

DETAILED ESTIMATE

Jal Jeevan Mission (JJM)-JJM PROVIDING FHTCS TO ALL HOUSEHOLD IN ERATTAYAR AND KAMAKSHI (PART) PANCHAYATHS IN IDUKKI DISTRICTS-Supply and Laying CWPM's -200 mm D I Pipe from WTP to Hero pady ,150 mm DI Pipe from Heropady to Adayalakkallu ,80mm GI(M) pipe from Kurissummotil padi to Kurissummotil padi Top and Construction of Sump cum Pump house at Heropady. Supply and Installation of Steel Tanks at Adayalkallu, Vazhavara ,Nanguthotty and Kurissummootilpadi Top.-Pipeline Work

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
1	Part I - Supply and Laying CWPM 200 mm DI Pipe from WTP to Heropady and CWPM 150 mm DI Pipe from Heropady to Adayalakkallu- Cost of materials						
1.001	100.98.116 Supply of DI K9 Pipe Conforming to IS 8329/2000, 150mm Dia. 150 mm Di Pipe						
	150 mm DI K9	1	2942.000				2942.000
	Add 2 % of future mace	1	2942.000			0.0200 00	58.840
	Round off	1				0.1600 00	0.160
	Total						3001.000
	Total Quantity in metre						3001.000
1.002	100.98.117 Supply of DI K9 Pipe Conforming to IS 8329/2000, 200mm Dia. 200mm DI Pipe						
		1	2145.000				2145.000
	2 % spare pipe	1	2145.000			0.0200 00	42.900
	Round off	1				0.1000 00	0.100
	Total						2188.000
	Total Quantity in metre						2188.000
1.003	100.98.460 Supply of CI Double Flanged Sluice Valve Conforming to IS 14846 - 2000, Sluice Valve with Cap PN 1.6, Size 150mm. 150 mm Sluice valve						
	150 MM VALVE	1					1.000
	Total						1.000
	Total Quantity in no						1.000

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
1.004	100.98.461						
	Supply of CI Double Flanged Sluice Valve Conforming to IS 14846 - 2000, Sluice Valve with Cap PN 1.6, Size 200mm.						
	200 mm Sluice valve						
	200 MM VALVE	1					1.000
	Total						1.000
	Total Quantity in no						1.000
1.005	100.98.444						
	Supply of CI Air Valve, Conforming to IS 14848 - 2000, Single Orifice, Large Orifice Type S2, Size 50mm.						
		8					8.000
	Total						8.000
	Total Quantity in no						8.000
1.006	100.98.441						
	Supply of CI Air Valve, Conforming to IS 14848 - 2000, Single Orifice, Small Orifice Type S1, Size 40mm.						
	40 MM Air valve						
		10					10.000
	Total						10.000
	Total Quantity in no						10.000
1.007	100.98.469						
	Supply of CI Double Flanged Sluice Valve Conforming to IS 14846 - 2000, Sluice Valve with Cap PN 1.0, Size 80mm.						
	valve for CWPM from Kurishumootilpady to Kurishumootilpady top						
	80 mm valve	1					1.000
	Total						1.000
	Total Quantity in no						1.000
2	Part II - Working charges						
2.001	100.1.1						
	Excavating trenches of required width for pipes, cables, etc., including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20cm in depth, including consolidating each deposited layer by ramming, watering, etc., and disposing of surplus excavated soil as directed, within a lead of 50m, in all kinds of soil.						
	all kinds of soil						
	150 mm DI K9	1	2942.000	0.600	1.100	0.6500 00	1262.118

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	200 mm DI K9	1	2145.000	0.800	1.150	0.6500 00	1282.710
	Total						2544.828
	Total Quantity in cum						2544.828
2.002	100.1.5	Excavating trenches of required width for pipes, cables, etc., including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20cm 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, in Ordinary Rock.					
	Ordinary Rock						
	150 mm DI K9	1	2942.000	0.600	1.100	0.2500 00	485.430
	200 mm D I K9	1	2145.000	0.800	1.150	0.2500 00	493.350
	Total						978.780
	Total Quantity in cum						978.780
2.003	100.2.2	Excavation work by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5m in width or 10m ² on plan), including dressing of sides and ramming of bottoms, lift up to 1.5m, including getting out the excavated soil and disposal of surplus excavated soils as directed, within a lead of 50m, in Medium Rock where Blasting is Prohibited.					
	Medium Rock						
	150 mm DI K9	1	2942.000	0.600	1.100	0.0500 00	97.086
	200 mm DI K9	1	2145.000	0.800	1.150	0.0500 00	98.670
	Total						195.756
	Total Quantity in cum						195.756
2.004	100.1.13	Excavating trenches of required width for pipes, cables, etc., including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20cm in depth, including consolidating each deposited layer by ramming, watering, etc., and disposing of surplus excavated soil as directed, within a lead of 50m, in Hard Rock where Blasting is Prohibited.					
	Hard rock						
	150 mm DI K9	1	2942.000	0.600	1.100	0.0500 00	97.086
	200 mm DI K9	1	2145.000	0.800	1.150	0.0500 00	98.670

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	Total						195.756
							Total Quantity in cum 195.756
2.005	100.8.1						
	Fencing one side of trenches, 1.50m height with two rows of 10cm plastic caution tape in vertical casuarina pole (girth 15cm to 24cm) fixed at 2m intervals.						
	Fencing						
		1	3000.000				3000.000
	Total						3000.000
							Total Quantity in metre 3000.000
2.006	18.12.8						
	Providing and fixing G.I. pipes complete with G.I fittings including trenching and refilling etc. External work 80 mm dia nominal bore						
	CWPM From Kurissummotil padi to Kurissummotil padi Top						
	80 mm GI Pipe	1	659.000				659.000
	Total						659.000
							Total Quantity in metre 659.000
2.007	100.31.2.1						
	Conveying and fixing C.I. sluice valves (with cap) by providing bolts, nuts, rubber insertions etc., complete, but excluding the cost of the valve (tail pieces, if required, will be paid separately): 80mm diameter, Class II.						
	valve for CWPM from Kurishumootilpady to Kurishumootilpady top						
	80 mm valve	1					1.000
	Total						1.000
							Total Quantity in no 1.000
2.008	100.59.1						
	Cutting the bituminous / concrete roads with cutting machine for a minimum depth of 200mm along the sides of proposed alignment of the pipe to be laid without causing any damage to other utilities, including the charges for hire and conveyance of tools and plant, cost of consumables and charges for lighting, watching, ribbon fencing, caution boards, traffic diversion, and as per the direction of departmental officers etc. complete, before carrying out the demolition of bituminous / concrete road by mechanical means and carrying out the excavation.						
	Cutting Bituminous road						
		2	1000.000				2000.000
	Total						2000.000
							Total Quantity in metre 2000.000
2.009	15.43.2						
	Dismantling 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: Bituminous road						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	Dismantling						
		1	1000.000	0.700			700.000
	Total						700.000
						Total Quantity in sqm	700.000
2.010	15.2.1						
	Demolishing cement concrete manually / by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in-Charge.Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)						
	Demolishing Concrete						
		1	2500.000	0.600	0.150		225.000
	Total						225.000
						Total Quantity in cum	225.000
2.011	100.14.2						
	Conveying and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS: 8329 excluding cost of pipes and specials: 150mm diameter Ductile Iron Class K-9 Pipes.						
	Laying 150 mm DI Pipes						
		1	2942.000				2942.000
	Total						2942.000
						Total Quantity in metre	2942.000
2.012	100.14.3						
	Conveying and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS: 8329 excluding cost of pipes and specials: 200mm diameter Ductile Iron Class K-9 Pipes.						
	Laying 200 mm DI Pipe						
		1	2145.000				2145.000
	Total						2145.000
						Total Quantity in metre	2145.000
2.013	18.30.4						
	Providing flanged joints to double flanged C.I./ D.I pipes and specials, including testing of joints:150 mm diameter pipe						
	150 mm Flanged Joint						
		6					6.000
	Total						6.000
						Total Quantity in no	6.000
2.014	18.30.5						
	Providing flanged joints to double flanged C.I./ D.I pipes and specials, including testing of joints:200 mm diameter pipe						
	200 mm Flanged joint						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
		6					6.000
	Total						6.000
						Total Quantity in no	6.000
2.015	18.68.1						
	Providing and laying D.I specials of class K - 12 suitable for push - on jointing as per IS : 9523 :Upt 600 mm dia						
	D I Specials						
	150*90 degree bend	4				0.2000 00	0.800
	150*45 degree bend	10				0.1600 00	1.600
	150*22.5 degree bend	16				0.1400 00	2.240
	150*11.25 degree bend	20				0.1300 00	2.600
	150*150 mm TEE	2				0.2700 00	0.540
	150mm TP	1				0.1400 00	0.140
	200*200 mm TEE	1				0.4600 00	0.460
	200*90 mm Bend	4				0.3800 00	1.520
	200*45 mm Bend	6				0.2600 00	1.560
	200*22.5 mm Bend	16				0.2200 00	3.520
	200*11.25 mm Bend	25				0.2100 00	5.250
	Total						20.230
						Total Quantity in quintal	20.230
2.016	18.67.1						
	Providing and laying S & S C.I. Standard specials suitable for mechanical jointing as per IS 13382:Upto 300 mm dia						
	150mm Mechanical joint						
	150 mm M J Collar	5				0.2500 00	1.250
	Total						1.250
						Total Quantity in quintal	1.250
2.017	18.70.2						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	Providing push - on-joints to Centrifugally (Spun) Cast Iron Pipes or Ductile Iron Pipes including testing of joints and including the cost of rubber gasket:150 mm dia pipes						
	Push on Joint						
		530					530.000
	Total						530.000
	Total Quantity in joint						530.000
2.018	18.70.3						
	Providing push - on-joints to Centrifugally (Spun) Cast Iron Pipes or Ductile Iron Pipes including testing of joints and including the cost of rubber gasket:200 mm dia pipes						
	Push-on-Joints						
		390					390.000
	Total						390.000
	Total Quantity in joint						390.000
2.019	OD107091/2022-2023						
	Labour for Cutting DI Pipe with steel saw 150 mm diameter DI Pipe						
	cutting						
		15					15.000
	Total						15.000
	Total Quantity in Each Cut						15.000
2.020	OD107078/2022-2023						
	Labour for Cutting DI Pipe with steel saw 200 mm diameter DI Pipe						
	cutting						
		12					12.000
	Total						12.000
	Total Quantity in each						12.000
2.021	100.35.2						
	Testing 150mm DI/CI pipeline with potable water to the required test pressure 150 mm dia Observed Data derived from item no.1018 of PHED DATA						
	Testing						
		1	2942.000				2942.000
	Total						2942.000
	Total Quantity in metre						2942.000
2.022	100.35.3						
	Testing 200mm DI/CI pipeline with potable water to the required test pressure 200 mm dia Observed Data derived from item no.1020 of PHED DATA						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	Testing						
		1	2145.000				2145.000
	Total						2145.000
						Total Quantity in metre	2145.000
2.023	100.32.3						
	Conveying and fixing C. I. Double Acting Air Valve of approved quality with bolts, nuts, rubber insertions etc., complete, but excluding the cost of air valve (tail pieces, if required, will be paid separately): 50mm Double Acting Air Valve.						
		8					8.000
	Total						8.000
						Total Quantity in no	8.000
2.024	100.32.2						
	Conveying and fixing C. I. Single Acting Air Valve of approved quality with bolts, nuts, rubber insertions etc., complete, but excluding the cost of air valve (tail pieces, if required, will be paid separately): 40mm Single Acting Air Valve.						
	40 MM Air valve						
		10					10.000
	Total						10.000
						Total Quantity in no	10.000
2.025	100.31.1.4						
	Conveying and fixing C.I. sluice valves (with cap) by providing bolts, nuts, rubber insertions etc., complete, but excluding the cost of the valve (tail pieces, if required, will be paid separately): 150mm diameter, Class I.						
	150 mm Sluice valve						
		1					1.000
	Total						1.000
						Total Quantity in no	1.000
2.026	100.31.1.5						
	Conveying and fixing C.I. sluice valves (with cap) by providing bolts, nuts, rubber insertions etc., complete, but excluding the cost of the valve (tail pieces, if required, will be paid separately): 200mm diameter, Class I.						
	200 mm Sluice valve						
		1					1.000
	Total						1.000
						Total Quantity in no	1.000
2.027	2.6.1						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50 m and lift up to 1.5 m, disposed earth to be levelled and neatly dressed.All kinds of soil						
	For Valve Chambers of inside size 1.50mx1.50mx1.30m- 2Nos						
	For valve chamber	2	2.100	2.100	1.800		15.876
	Total						15.876
	Total Quantity in cum						15.876
2.028	4.1.3						
	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level:1:2:4 (cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)						
	For Valve Chambers of inside size 1.50mx1.50mx1.30m						
	Valve Chambers	2	2.100	2.100	0.100		0.882
	For concreting concrete/ tar road cutting	1	700.000	0.600	0.150		63.000
	Total						63.882
	Total Quantity in cum						63.882
2.029	5.1.2						
	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level:1:1:5:3 (1 cement 1.5 coarse sand :3 graded stone aggregate 20 mm nominal size)						
	For Valve Chambers of inside size 1.50mx1.50mx1.30m						
	Cover slab	2	1.500	1.500	0.250		1.125
	base slab	2	2.000	2.000	0.150		1.200
	side wall long	2	4.000	0.250	1.300		2.600
	side wall	2	3.000	0.250	1.300		1.950
	Road reconcrete	1	2500.000	0.600	0.150		225.000
	Total						231.875
	Total Quantity in cum						231.875
2.030	5.22.4						
	Steel reinforcement for R.C.C work including straightening, cutting, bending, placing in position and binding all complete upto plinth levelHot rolled deformed bars						
	Steel						
	@80 kg/cum for Valve chamber	7				80.000 000	560.000
	@45 kg/cum for Anchor Block	20				45.000 000	900.000

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	Total						1460.000
						Total Quantity in kilogram	1460.000
2.031	4.3.1						
	Centering and shuttering including strutting, propping etc. and removal of form work for: Foundations, footings, bases for columns						
	Centering Shuttering						
	valve chamber cover slab side	2	8.000			0.2500 00	4.000
	valve chamber side Wall	2	14.000			1.3000 00	36.400
	anchor block	60	2.400	0.600			86.400
	Total						126.800
						Total Quantity in sqm	126.800
2.032	100.37.6.1						
	In situ fabrication of M.S. pipes of size 150mm (I.D.) using 8mm thick M.S. plate including cost and conveyance charges of M.S. plate, all fabrication charges, charges of painting the steel work with two or more coat deluxe multi surface paint to give an even shade over an under-coat of primer etc., complete.						
	MS pipe 150 mm						
	For culvert Crossing	1	30.000				30.000
	For Inter connecting Steel Tanks with Existing GLSR	3	10.000				30.000
	Total						60.000
						Total Quantity in metre	60.000
2.033	100.37.6.2						
	Fabricating M.S. flanges of diameter 150mm using 12mm thick M.S. plate including cost and conveyance charges of M.S. plate, all fabrication charges, charges of painting the steel work with two or more coat deluxe multi surface paint to give an even shade over an under-coat of primer etc., complete: For pipes fabricated with 8mm thick M.S. plates.						
	MS flange						
	150 MM	6					6.000
	Total						6.000
						Total Quantity in no	6.000
2.034	100.37.6.3						
	Cutting 150mm (I.D.) M.S. pipes for making bends and other specials by gas cutting including cost of gas, all labour and hire charges of tools etc., complete: For pipes fabricated with 8mm thick M.S. plates.						
	Cutting						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
		8					8.000
	Total						8.000
						Total Quantity in no	8.000
2.035	100.37.6.4						
	Welding 150mm (I.D.) M.S. pipes for making bends and other specials by gas/electric welding machine including cost of gas and welding rods, all labour and hire charges of tools etc., complete: For pipes fabricated with 8mm thick M.S. plates.						
	welding						
		10					10.000
	Total						10.000
						Total Quantity in no	10.000
2.036	100.37.6.5						
	Grinding cut and weld edges of 150mm (I.D.) M.S. pipes during fabrication work including all labour and hire charges of tools etc., complete: For pipes fabricated with 8mm thick M.S. plates.						
	Grinding						
		20					20.000
	Total						20.000
						Total Quantity in no	20.000
2.037	100.37.7.1						
	In situ fabrication of M.S. pipes of size 200mm (I.D.) using 8mm thick M.S. plate including cost and conveyance charges of M.S. plate, all fabrication charges, charges of painting the steel work with two or more coat deluxe multi surface paint to give an even shade over an under-coat of primer etc., complete.						
	200 mm ms pipe						
	200 mm DI Pipe	1	30.000				30.000
	Total						30.000
						Total Quantity in metre	30.000
2.038	100.37.7.2						
	Fabricating M.S. flanges of diameter 200mm using 12mm thick M.S. plate including cost and conveyance charges of M.S. plate, all fabrication charges, charges of painting the steel work with two or more coat deluxe multi surface paint to give an even shade over an under-coat of primer etc., complete: For pipes fabricated with 8mm thick M.S. plates.						
	Flange						
		6					6.000
	Total						6.000
						Total Quantity in no	6.000
2.039	100.37.7.3						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	Cutting 200mm (I.D.) M.S. pipes for making bends and other specials by gas cutting including cost of gas, all labour and hire charges of tools etc., complete: For pipes fabricated with 8mm thick M.S. plates.						
	Cutting						
		10					10.000
	Total						10.000
	Total Quantity in no						10.000
2.040	100.37.7.4						
	Welding 200mm (I.D.) M.S. pipes for making bends and other specials by gas/electric welding machine including cost of gas and welding rods, all labour and hire charges of tools etc., complete: For pipes fabricated with 8mm thick M.S. plates.						
	welding						
		12					12.000
	Total						12.000
	Total Quantity in no						12.000
2.041	100.37.7.5						
	Grinding cut and weld edges of 200mm (I.D.) M.S. pipes during fabrication work including all labour and hire charges of tools etc., complete: For pipes fabricated with 8mm thick M.S. plates.						
	grinding						
		24					24.000
	Total						24.000
	Total Quantity in no						24.000
2.042	5.1.3						
	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level:1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)						
	Anchor block						
	Anchor block	60	0.600	0.600	0.600		12.960
	Total						12.960
	Total Quantity in cum						12.960
2.043	OD111602/2022-2023						
	Supply and Installation of Surge Arrestor 200 mm as per direction						
	200 mm Surge arrestor- zero velocity valve and aircushion valve						
		1					1.000
	Total						1.000
	Total Quantity in job						1.000
3	Part III - Construction of 2.6LL GLSR AND PUMP HOUSE at Heropady						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
3.001	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 50 m outside the periphery of the area cleared						
	Clearing Jungle						
		1	10.000	7.000			70.000
	Total						70.000
	Total Quantity in sqm						70.000
3.002	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 kinds of soil						
	All kinds of Soil						
	sump	1	7.000	5.000	0.200		7.000
	Total						7.000
	Total Quantity in cum						7.000
3.003	2.7.3						
	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50 m and lift up to 1.5 m, disposed earth to be levelled and neatly dressed.Hard rock (blasting prohibited)						
	Hard Rock						
		1	10.000	8.000	0.600		48.000
	Total						48.000
	Total Quantity in cum						48.000
3.004	OD76090/2022-2023						
	DOWEL BARS - Supplying and Providing MS dowel bars of size 16 mm dia of 2.0m long (1m in rock and 1m in concrete) including drilling holes of 20mm dia and filling the gap with cement grout(0.50kg/each) etc						
	Dowel Bars						
		300					300.000
	Total						300.000
	Total Quantity in no						300.000
3.005	4.1.3						
	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level:1:2:4 (cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)						
	cement concrete						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity	
	sump	1	10.000	8.000	0.700		56.000	
	deductions for Column footing	-4	1.000	1.000	0.200		-0.800	
	Total						55.200	
	Total Quantity in cum							55.200
3.006	5.33.1							
	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including 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 Engineer - in-charge. Note:- Cement content considered in this item is @ 330 kg/ cum. Excess or less cement used as per design mix is payable or recoverable separately.All work upto plinth level							
	M25 concrete							
	sump	1	9.700	9.700	0.250		23.523	
	Deduction for column	-4	0.300	0.300	0.250		-0.090	
	Total						23.433	
	Total Quantity in cum							23.433
3.007	5.33.2							
	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including 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 Engineer - in-charge. Note:- Cement content considered in this item is @ 330 kg/ cum. Excess or less cement used as per design mix is payable or recoverable separately.All work above plinth level upto floor V level							
	M25							
	wall	1	38.800	0.250	3.200		31.040	
	haunch	1	36.800	0.400	0.150	0.5000 00	1.104	
	column footing	4	1.000	1.000	0.200		0.800	
	column	4	0.300	0.250	3.200		0.960	
	column	4	0.300	0.250	3.000		0.900	
	beam	4	9.700	0.250	0.200		1.940	
	cover slab	1	10.000	10.000	0.200		20.000	
	lintel PH	1	19.250	0.200	0.200		0.770	
	Sunshade PH	2	1.700	0.600	0.075		0.153	
	roof slab PH	1	6.800	3.650	0.100		2.482	

SI No	Specification	No	Length	Width	Depth	Cf	Quantity	
	Beam PH	3	3.450	0.200	0.300		0.621	
	man hole cover	-4	0.455	0.610	0.100		-0.111	
	Total						60.659	
	Total Quantity in cum							60.659
3.008	5.34.1							
	Extra for providing richer mixes at all floor levels. Note:- Excess/less cement over the specified cement content used is payable/ recoverable separately. Providing M-30 grade concrete instead of M-25 grade BMC/RMC. (Note:- Cement content considered in M-30 is @ 340 kg/cum).							
	Extra for Providing richer Mixes							
	wall	1	38.800	0.250	3.200		31.040	
	haunch	1	36.800	0.400	0.150	0.5000 00	1.104	
	column footing	4	1.000	1.000	0.200		0.800	
	Column	4	0.300	0.250	3.000		0.900	
	Column	4	0.300	0.250	3.200		0.960	
	beam	4	9.700	0.250	0.200		1.940	
	cover slab	1	10.000	10.000	0.200		20.000	
	lintel PH	1	19.250	0.200	0.200		0.770	
	sunshade	2	1.700	0.600	0.075		0.153	
	beam PH	3	3.450	0.200	0.300		0.621	
	roof slab	1	6.800	3.650	0.100		2.482	
	man hole cover	-4	0.455	0.610	0.100		-0.111	
	Total						60.659	
	Total Quantity in cum							60.659
3.009	5.9.1							
	Centering and shuttering including strutting, etc. and removal of form for: Foundations, footings, bases of columns, etc for mass concrete							
	Centering and shuttering							
	sump basement pcc	4	10.000		0.700		28.000	
	sump basement Rcc	4	9.700		0.250		9.700	
	Total						37.700	
	Total Quantity in sqm							37.700
3.010	5.9.2							
	Centering and shuttering including strutting, etc. and removal of form for: Walls (any thickness) including attached pilasters, buttersesses, plinth and string courses etc.							
	Centering and shuttering							

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	side wall-inside	1	36.800		3.200		117.760
	side wall-out side	1	38.800		3.200		124.160
	column	4	1.100		3.100		13.640
	lintel of pump house	1	38.500		0.200		7.700
	Total						263.260
						Total Quantity in sqm	263.260
3.011	5.9.3						
	Centering and shuttering including strutting, etc. and removal of form for:Suspended floors, roofs, landings, balconies and access platform						
	Centering and shuttering						
	cover slab	1	10.000	10.000			100.000
	cover slab side	1	40.000		0.250		10.000
	Column	4	3.200	1.100			14.080
	Column PH	4	3.000	1.100			13.200
	beam	4	9.200		0.250		9.200
	Beam PH	3	3.450	1.000			10.350
	roof slab	1	6.875	3.750			25.781
	roof slab side	1	21.250		0.100		2.125
	Sun shade	2	1.700		0.600		2.040
	man hole cover	-4	0.455	0.610	0.100		-0.111
	Total						186.665
						Total Quantity in sqm	186.665
3.012	5.22.6						
	Steel reinforcement for R.C.C work including straightening, cutting, bending, placing in position and binding all complete upto plinth level Thermo - Mechanically Treated bars of grade Fe-500D or more						
	Steel						
	@ 100kg/cum	60.659				100.00 0000	6065.900
	Total						6065.900
						Total Quantity in kilogram	6065.900
3.013	13.7.1						
	12 mm cement plaster finished with a floating coat of neat cement of mix:1:3 (1 cement : 3 fine sand)						
	Plastering						
	side wall-inside	1	36.800		3.200		117.760
	side wall-out side	1	38.800		3.450		133.860
	column	4	1.100		3.100		13.640

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	column PH	4	1.100		3.000		13.200
	cover slab side	1	42.400		0.125		5.300
	cover slab of sump	1	10.000	10.000			100.000
	Beam of sump	4	9.200		0.750		27.600
	Roof slab for pump house	1	6.875	3.750			25.781
	roof slab side	1	21.250		0.100		2.125
	pump house wall inside	1	18.450		3.000		55.350
	pump house wall out side	1	20.050		3.000		60.150
	pump house floor	1	6.000	6.000			36.000
	man hole cover	-4	0.500	0.500		3.1400 00	-3.140
	rolling shutter	-1	2.400		2.400		-5.760
	windows	-2	1.500		1.500		-4.500
	ventilators	-1	0.450		0.450		-0.202
	Total						577.164
						Total Quantity in sqm	577.164
3.014	13.16.1						
	6 mm cement plaster of mix:1:3 (1 cement : 3 fine sand)						
	plastering roof						
	plastering roof	1	3.050	6.200			18.910
	Total						18.910
						Total Quantity in sqm	18.910
3.015	13.44.1						
	Finishing walls with water proofing cement paint of required shade:New work (Two or more coats applied @ 3.84 kg/10 sqm)						
	Waterproofing						
	Waterproofing side wall	1	1.000	36.800	3.200		117.760
	Waterproofing base	1	9.200	9.200			84.640
	Total						202.400
						Total Quantity in sqm	202.400
3.016	13.47.1						
	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade:New work (Two or more coats applied @ 1.43 ltr/ 10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm)						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	Painting						
	sump-side wall-out side	1	38.800		3.450		133.860
	cover slab side	1	40.000		0.200		8.000
	pump house wall	1	20.050		3.000		60.150
	pump house cover slab side	1	21.250		0.100		2.125
	Sun shade	4	1.700	0.600	0.000		0.000
	Sun shade side	2	2.900	0.075			0.435
	deduction for shutter	-1	1.000	2.400	2.400		-5.760
	deduction for window	-2	1.000	1.500	1.500		-4.500
	Total						194.310
						Total Quantity in sqm	194.310
3.017	13.71						
	Lettering with black Japan pint of approved brand and manufacture						
		100					100.000
	Total						100.000
						Total Quantity in per Letter per cm height	100.000
3.018	10.25.2						
	Item Shifted to Sub head 14 as item 14.73 Item Shifted to head 14 as item 14.74 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 gratings, frames, guard bar, ladder, railings, brackets, gates and similar works						
	Ladder 3 m length and width 35 cm and stair from ground to PH						
	ladder, vent cowl etc	1				250.00 0000	250.000
	Total						250.000
						Total Quantity in kg	250.000
3.019	100.41.34						
	Supplying and fixing Rectangular C.I. manhole cover 455mm x 610mm with frame (low duty) charges including all cost, labour charges etc., complete.						
	CI manhole cover						
	455x610	4					4.000
	Total						4.000
						Total Quantity in no	4.000

SI No	Specification	No	Length	Width	Depth	Cf	Quantity	
3.020	50.6.1.2							
	Solid block masonry using pre cast solid blocks (Factory made) of size 40x20x20cm or nearest available size confirming to IS 2185 part I of 1979 for super structure up to floor two level thickness 20cm and above in: CM 1:6 (1 cement: 6 coarse sand) etc complete.							
	Brick Masonry							
	pump house	1	19.250	0.200	3.200		12.320	
	rolling shutter	-1	2.400	0.200	2.400		-1.152	
	windows	-2	1.500	0.200	1.500		-0.900	
	ventilators	-1	0.450	0.200	0.450		-0.040	
	Total						10.228	
	Total Quantity in cum							10.228
3.021	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.80x1.25 mm M.S. laths with 1.25 mm thick top cover							
	Rolling Shutter							
		1	2.400		2.800		6.720	
	Total						6.720	
	Total Quantity in sqm							6.720
3.022	21.1.1.1							
	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): For fixed portion Anodised aluminium (anodised transparent or dyed to required shade according to IS : 1868, Minimum anodic coating of grade AC 15)							
	Aluminium for window frame							
	Aluminium	2				9.0000 00	18.000	
	Total						18.000	
	Total Quantity in kg							18.000

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
3.023	21.1.1.2						
	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): For fixed portion Powder coated aluminium (minimum thickness of powder coating 50 micron)						
	Aluminium For window shutters						
	For window shutters	2				6.0000 00	12.000
	Total						12.000
	Total Quantity in kg						12.000
3.024	21.3.1						
	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 4.0 mm thickness						
	Glazing for shutters						
	Glazing shutters	2	1.400	1.400		1.2500 00	4.900
	Glazing	1	0.450	0.450			0.203
	Total						5.103
	Total Quantity in sqm						5.103
3.025	21.15.2						
	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary necessary screws etc. complete.Powder coated minimum thickness 50 micron aluminium						
	Window fastners						
	.	2				2.0000 00	4.000
	Total						4.000
	Total Quantity in no						4.000
3.026	9.48.1						
	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 steel windows by welding						
	M.S Grill for Windows						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity	
	MS Grill	2				40.000 000	80.000	
	Total						80.000	
	Total Quantity in kg							80.000
4	Part - IV - Road restoration charges							
4.001	3.11							
	Removal of unserviceable soil including excavation, loading and disposal upto 1000 metres lead but excluding replacement by suitable soil which shall be paid separately as per clause 305.							
	Removal of unserviceable soil							
	pwd berm	1	750.000	0.600	0.200		90.000	
	pwd CC	1	450.000	0.600	0.400		108.000	
	pwd TC	1	15.000	0.600	0.500		4.500	
	Total						202.500	
	Total Quantity in cum							202.500
4.002	10.2							
	Maintenance of Earthen Shoulder (filling with fresh soil) Making up the loss of material/ irregularities on the shoulder to the design level by adding fresh approved soil and compacting it with appropriate equipment.							
	pwd berm							
	pwd berm	1	750.000	0.600	0.200		90.000	
	Total						90.000	
	Total Quantity in sqm							90.000
4.003	4.2.A.1							
	Construction of granular sub-base by providing graded material, spreading in uniform layers with a motor grader on a prepared surface, mixing by mix in-place method with rotavator at OMC, and compacting with a vibratory roller to achieve the desired density, complete as per clause 401. Grading-III -For lower sub-base - Mix in Place Method							
	GSB							
	pwd CC	1	450.000	0.600	0.400		108.000	
	pwd TC	1	15.000	0.600	0.500		4.500	
	Total						112.500	
	Total Quantity in cum							112.500
4.004	5.1.a							
	Providing and applying primer coat with bitumen emulsion (SS) on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.70 - 1.0 kg/sqm using mechanical means.							
	PRIMER COAT							
	PRIMER COAT	1	15.000	0.900			13.500	

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	Total						13.500
						Total Quantity in sqm	13.500
4.005	4.12						
	Providing, laying, spreading and compacting graded stone aggregate to Wet Mix Macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.						
	WMM						
	pwd TC	1	15.000	0.600	0.500		4.500
	Total						4.500
						Total Quantity in cum	4.500
4.006	5.2.b						
	Providing and applying tack coat with bitumen emulsion (RS) using emulsion pressure distributor at the rate of 0.25 - 0.30 kg per sqm on the prepared Granular Surface cleaned with mechanical broom.						
	TACK COAT						
	pwd TC	1	15.000	0.900			13.500
	Total						13.500
						Total Quantity in sqm	13.500
4.007	5.7.1						
	Providing, laying and rolling of close-graded premix surfacing material of 20 mm thickness composed of 11.2 mm to 0.09 mm (Type-A) aggregates using viscosity grade bitumen (VG - 30) to the required line, grade, and level to serve as wearing course on a previously prepared base, including mixing in a suitable HMP of appropriate capacity not less than 75 tonnes/hour., laying and rolling with a Smooth wheeled roller 8-10 tonne capacity, and finishing to the required level and grade.						
	CLOSE GRADED PREMIX						
	pwd TC	1	15.000	0.900			13.500
	Total						13.500
						Total Quantity in sqm	13.500
4.008	5.8.a						
	Providing and laying surface dressing as wearing course in single coat using crushed stone aggregates of specified size on a layer of bituminous binder (VG 30) laid on the prepared surface and rolling with 8-10 tonne smooth wheeled steel roller. Grading I - 19 mm nominal chipping size						
	tack coat						
	pwd TC	1	15.000	0.900			13.500
	Total						13.500
						Total Quantity in sqm	13.500
4.009	12.4						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days.						
	40 mm						
	pwd CC	1	450.000	0.900	0.150		60.750
	Total						60.750
	Total Quantity in cum						60.750
4.010	12.8.B.1						
	Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications
 PCC Grade M20
						
	M20						
	pwd CC	1	450.000	0.900	0.075		30.375
	Total						30.375
	Total Quantity in cum						30.375
5	Construction of Steel Tanks in Nanguthotty, Vazhavara, Adayalakkallu and Kurishumoottil pady						
5.001	2.1.1						
	Earth work in surface excavation not exceeding 30 cm in depth but exceeding 1.5m in width as well as 10 sqm on plan including disposal of excavated earth up to 50 m and lift up to 1.5 m, disposed soil to be levelled and neatly dressed: All Kinds of soil						
	For site Levelling						
	Nanguthotty	1	10.000	10.000	0.300		30.000
	Nanguthotty for PCC	1	9.000	9.000	0.150	0.7850 00	9.538
	Vazhavara	1	10.000	10.000	0.300		30.000
	Vazhavara for PCC	1	9.000	9.000	0.150	0.7850 00	9.538
	Adayalakkallu	1	11.000	11.000	0.300		36.300
	Adayalakkallu for PCC	1	10.000	10.000	0.150	0.7850 00	11.775
	Kurishumoottil Pady	1	5.000	5.000	0.300		7.500
	Kurishum moottilpady for PCC	1	4.000	4.000	0.150	0.7850 00	1.884
	Total						136.535
	Total Quantity in sqm						136.535
5.002	4.1.3						
	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:2:4 (cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	For site Levelling						
	Nanguthotty	1	9.000	9.000	0.150	0.7850 00	9.538
	Vazhavara	1	9.000	9.000	0.150	0.7850 00	9.538
	Adayalakallu	1	10.000	10.000	0.150	0.7850 00	11.775
	Kurishummoottil pady	1	4.000	4.000	0.150	0.7850 00	1.884
	Total						32.735
	Total Quantity in cum						32.735
5.003	5.1.2						
	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level:1:1:5:3 (1 cement 1.5 coarse sand :3 graded stone aggregate 20 mm nominal size						
	RCC Ring Beam						
	Nanguthotty	3.14	7.768	0.450	0.450		4.939
	Vazhavara	3.14	7.768	0.450	0.450		4.939
	Adayalakkallu	3.14	8.739	0.450	0.450		5.557
	Kurishummoottil pady	3.14	3.884	0.450	0.450		2.470
	Total						17.905
	Total Quantity in cum						17.905
5.004	5.9.1						
	Centering and shuttering including strutting, etc. and removal of form for:Foundations, footings, bases of columns, etc for mass concrete						
	Centering and shuttering						
	Nanguthotty outside	3.14	8.218		0.450		11.612
	Nanguthotty Inside	3.14	7.318		0.450		10.340
	Vazhavara O/S	3.14	8.218		0.450		11.612
	Vazhavara I/S	3.14	7.318		0.450		10.340
	Adayalakkallu O/S	3.14	8.739		0.450		12.348
	Adayalakkallu I/S	3.14	8.289		0.450		11.712
	Kurishummoottil pady O/S	3.14	4.334		0.450		6.124
	Kurishummoottil pady I/S	3.14	3.434		0.450		4.852

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	Total						78.940
						Total Quantity in sqm	78.940
5.005	5.22.6						
	Steel reinforcement for R.C.C work including straightening, cutting, bending, placing in position and binding all complete upto plinth level Thermo - Mechanically Treated bars of grade Fe-500D or more						
	Steel						
	Nanguthotty @ 100kg/M3	4.939				100.00 0000	493.900
	Vazhavara @ 100kg/M3	4.939				100.00 0000	493.900
	Adayalakkalu @ 100kg/M3	5.557				100.00 0000	555.700
	Kurissumootilpady @ 100kg/M3	2.47				100.00 0000	247.000
	Total						1790.500
						Total Quantity in kilogram	1790.500
5.006	2.25						
	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundation etc. in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.						
	Earth filling and compacting						
	Nanguthotty	3.14	4.109	4.109	0.300		15.905
	Vazhavara	3.14	4.109	4.109	0.300		15.905
	Adayalakkalu	3.14	4.590	4.590	0.300		19.846
	Kurissumootilpadi Top	3.14	3.884	3.884	0.300		14.210
	Total						65.866
						Total Quantity in cum	65.866
5.007	OD78600/2022-2023						
	Supply of Sand including loading, unloading, transportation and other incidental charges as per the direction of departmental officers.1						
	Sand filling						
	Nanguthotty	3.14	4.109	4.109	0.450		23.857
	Vazhavara	3.14	4.109	4.109	0.450		23.857
	Adayalakkalu	3.14	4.590	4.590	0.450		29.769
	Kurishummoottipady	3.14	3.884	3.884	0.450		21.316
	Total						98.799
						Total Quantity in cum	98.799

EST No. :WRD/KWA-CE(CR)/EST/822/2022_26_2_1 (Edit Id : 10)
(Dsor year : 2018, Cost Index (Place : Idukki, Value : 141.53), GST : 18%

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
5.008	OD78727/2022-2023						



SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	<p>Supply, installation and commissioning of a pre-engineered, pre-fabricated, factory manufactured steel storage Water Tank having a capacity of 104250 L(1Nos.) thickness of 0.6 mm, in multiple layers as required for the capacity and height of the tank and multiple-layered PE sheet/membrane for the inner containment liner. The Tank Shell / Body & the Liner material shall be manufactured in a facility certified and compliant to ISO 9001 - 2000 standards. The Tank shall be supplied with access points, penetrations for inlets, outlets, drains and fittings, overflow and drain, high and low water level indicators. All connections to the tanks shall be with flanged or threaded nozzles, placed to the KWA water mains</p> <p>TANK ROOF :The roof of the tank shall be of corrugated Galvalume sheet steel and shall be domed, with heavy-duty Hot-dip Galvanized truss frame for support, and capable of supporting 4-5 persons for maintenance and cleaning and tank shall have an access hatch with cover, on the roof, for operation and Maintenance</p> <p>TANK COVER :Tank covers shall be of approved galvanized vermin proof construction. Roof ends shall be fitted with suitable vermin-proofing tape or other material, to prevent ingress of dust and foreign objects. Covers shall be firmly fixed to the top edge of the tank with galvanized bolts and nuts. LADDERS :Tanks shall be provided with Hotdip Galvanized ladders internally or externally. External roof supports shall be of an appropriately designed Hot-dip galvanized Steel construction. Tanks shall comply with relevant spill level, air gap and overflow requirements relative to Effective Capacity. All nuts and bolts used for the panels shall be a minimum of 12mm size and hot-dip galvanized/Case hardened. The tank shall have a circular angle fixed around the total circumference of the tanks, at the top, of minimum 2 mm thickness. Tanks shall be properly flushed out with clean water prior to being brought into service</p> <p>TANK DIMENSIONS: The dimensions of the Tank shall be of 7.768m in diameter and 2.200m in height</p> <p>DESIGN LIFE: The tanks shall have a design life of 50 years.</p> <p>TANK CONNECTIONS: Standard design valve outlet connection : i) 200mm CI Flanged valve ii) Overflow connection including an Internal approved bell-mouth shaped bends to maximize the overflow capacity. One no. 100 mm, iii) One (1) scour drain outlet from the floor of the tank with isolation valve. One No. 100mm.</p> <p>TANK LINERS:Tank liners shall be purposedesigned and manufactured and shall comply to AS/NZS 4020 (Appendix A)of 2005 and ANSI/NSF 61 - 2008, Section 5 Certificates of compliance to above standards shall be</p>						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	<p>furnished by the manufacturer of the tanks. Tank liners shall: i) Be factory manufactured to onepiece construction, fabricated from multi-layer PE sheet, certified for potable drinking water, to (ANSI/ NSF 61) and duly UV Stabilized. ii) Be of PE (polyethylene) in multi-layer construction for strength, reinforced with woven scrim industrial fabric to prevent elongation and enhance tensile strength. The total liner material thickness shall be no less than 0.6 mm thick. The tensile strength shall not be less than 2266 N (warp) and 2495 N (weft) and heat sealing strength of 2056 N v) All the liner welded lap joints shall be strengthened with Metallocene encapsulating tape welded over the overlap. vi) The Metallocene tape shall cover and protect the exposed material at the edges of the liner joints to further prevent the ingress of water into the scrim. vii) Liners shall be positively and continuously attached to the top outer edge of the circumference of the tank to prevent entry of water from the runoff from the roof structure. viii) All liners on tanks over 2m in height shall have a continuous intermediate liner support designed out of nylon (or other material)cord, around the circumference of the tank, at vertical intervals corresponding to the level of each ring. ix) The intermediate liner support cords shall be firmly secured to the steel shell at each level, to prevent stress on the liner welded joints, and thereby eliminate possibility of failure CORROSSION PROTECTION. The tank structure shall have a secondary corrosion protection system using sacrificial magnesium anodes. The number of anodes, their location around the tank and the mass of each anode shall be designed for anode replacement frequency of five years. The anodes shall be installed external to the tank and concrete apron with their location marked with a suitably label-Cost for Tank steel with 10years guarantee includes shel l,Steel wall,steel domed roof,Zinc Alum steel&39;,Cost for Poly ethylene infinity liner ,Geo synthetic Fibre with food grade plastics are used for inside coating and Support Arrangements,Cost for Fabricated items,attachments and accessories like steel ladder,Cost of Fabricated nozzles,over flow nozzles and drain arrangements, Cost for HDG nut and bolts,Freight Charges,Erection Installation and commissioning of tank components including charges of extra 1 no 200 mm MS HDG Nozzle type BS10E table and 200 mm MS HDG anti vortex type E table and Transportation charges.</p>						
	Steel Tank						
	Nanguthotty	10425 0					104250.0 00

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	Total						104250.0 00
						Total Quantity in Litre	104250.0 00
5.009	OD78968/2022-2023						



SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	<p>Supply, installation and commissioning of a pre-engineered, pre-fabricated, factory manufactured steel storage Water Tank having a capacity of 137420 L(1Nos.) thickness of 0.6 mm, in multiple layers as required for the capacity and height of the tank and multiple-layered PE sheet/membrane for the inner containment liner. The Tank Shell / Body & the Liner material shall be manufactured in a facility certified and compliant to ISO 9001 - 2000 standards. The Tank shall be supplied with access points, penetrations for inlets, outlets, drains and fittings, overflow and drain, high and low water level indicators. All connections to the tanks shall be with flanged or threaded nozzles, placed to the KWA water mains TANK ROOF :The roof of the tank shall be of corrugated Galvalume sheet steel and shall be domed, with heavy duty Hot-dip Galvanized truss frame for support, and capable of supporting 4-5 persons for maintenance and cleaning and tank shall have an access hatch with cover, on the roof, for operation and Maintenance TANK COVER :Tank covers shall be of approved galvanized vermin proof construction. Roof ends shall be fitted with suitable vermin-proofing tape or other material, to prevent ingress of dust and foreign objects. Covers shall be firmly fixed to the top edge of the tank with galvanized bolts and nuts. LADDERS :Tanks shall be provided with Hot-dip Galvanized ladders internally or externally. External roof supports shall be of an appropriately designed Hot-dip galvanized Steel construction. Tanks shall comply with relevant spill level, air gap and overflow requirements relative to Effective Capacity. All nuts and bolts used for the panels shall be a minimum of 12mm size and hot-dip galvanized/Case hardened. The tank shall have a circular angle fixed around the total circumference of the tanks, at the top, of minimum 2 mm thickness. Tanks shall be properly flushed out with clean water prior to being brought into service TANK DIMENSIONS: The dimensions of the Tank shall be of 7.768m in diameter and 2.9 m in height DESIGN LIFE: The tanks shall have a design life of 50 years. TANK CONNECTIONS: Standard design valve outlet connection : i) 200mm CI Flanged valve ii) Overflow connection including an Internal approved bell-mouth shaped bends to maximize the overflow capacity. One no. 100 mm, iii) One (1) scour drain outlet from the floor of the tank with isolation valve. One No. 100mm. TANK LINERS: Tank liners shall be purpose-designed and manufactured and shall comply to AS/NZS 4020 (Appendix A)of 2005 and ANSI/NSF 61 - 2008, Section 5 Certificates of compliance to above standards shall be furnished by the manufacturer of the tanks. Tank liners shall: i) Be factory manufactured to one- piece construction, fabricated from multilayer PE sheet, certified for potable drinking water, to (ANSI/ NSF 61) and duly UV Stabilized. ii) Be of PE (polyethylene) in multi-layer construction for strength, reinforced with woven scrim industrial fabric to prevent elongation and enhance tensile strength. The total liner material thickness shall be no less than 0.6 mm thick. The tensile strength shall not be less than 2266 N (warp) and 2495 N (weft) and heat sealing strength of 2056 N v) All the liner welded lap joints shall be strengthened with Metalocene encapsulating tape welded over the overlap. vi) The Metalocene tape shall cover and protect the exposed material at the edges of the liner joints to further prevent the ingress of water into the scrim. vii) Liners shall be positively and continuously attached to the top outer edge of the circumference of the tank to prevent entry of water from the runoff from the roof structure. viii) All liners on tanks over 2m in height shall have a continuous intermediate liner support designed out of nylon (or other material) cord, around the circumference of the tank, at vertical intervals corresponding to the level of each ring. ix) The intermediate liner support cords shall be firmly secured to the steel shell at each level, to prevent stress on the liner welded joints, and thereby eliminate possibility of failure CORROSION PROTECTION. The tank structure shall have a secondary corrosion protection system using sacrificial magnesium anodes. The number of anodes, their location around the tank and the mass of each anode shall be designed for anode replacement frequency of five years. The anodes shall be installed</p>						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	external to the tank and concrete apron with their location marked with a suitably label-Cost for Tank steel with 10years guarantee includes shel l,Steel wall,steel domed roof,Zinc Alum steel',Cost for Poly ethylene infinity liner ,Geo synthetic Fibre withfood grade plastics are used for inside coating and Support Arrangements,Cost for Fabricated items,attachments and accessories like steel ladder,Cost of Fabricated nozzles,over flow nozzles and drain arrangements, Cost for HDG nut and bolts,Freight Charges,Erection Installation and commissioning of tank components and including charges of extra 1 no 200 mm MS HDG Nozzle type BS10E table and 200 mm MS HDG anti vortex type E table and Transportation charges.						
	Steel tank at Vazhavara						
	Vazhavara	137420					137420.00
	Total						137420.00
	Total Quantity in Litre						137420.00
5.010	OD78979/2022-2023						



SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	<p>Supply, installation and commissioning of a pre-engineered, pre-fabricated, factory manufactured steel storage Water Tank having a capacity of 131941L(1Nos.) thickness of 0.6 mm, in multiple layers as required for the capacity and height of the tank and multiple-layered PE sheet/membrane for the inner containment liner. The Tank Shell / Body & the Liner material shall be manufactured in a facility certified and compliant to ISO 9001 - 2000 standards. The Tank shall be supplied with access points, penetrations for inlets, outlets, drains and fittings, overflow and drain, high and low water level indicators. All connections to the tanks shall be with flanged or threaded nozzles, placed to the KWA water mains TANK ROOF :The roof of the tank shall be of corrugated Galvalume sheet steel and shall be domed, with heavyduty Hot-dip Galvanized truss frame for support, and capable of supporting 4-5 persons for maintenance and cleaning and tank shall have an access hatch with cover, on the roof, for operation and Maintenance TANK COVER :Tank covers shall be of approved galvanized vermin proof construction. Roof ends shall be fitted with suitable vermin-proofing tape or other material, to prevent ingress of dust and foreign objects. Covers shall be firmly fixed to the top edge of the tank with galvanized bolts and nuts. LADDERS :Tanks shall be provided with Hot-dip Galvanized ladders internally or externally. External roof supports shall be of an appropriately designed Hot-dip galvanized Steel construction. Tanks shall comply with relevant spill level, air gap and overflow requirements relative to Effective Capacity. All nuts and bolts used for the panels shall be a minimum of 12mm size and hot-dip galvanized/Case hardened. The tank shall have a circular angle fixed around the total circumference of the tanks, at the top, of minimum 2 mm thickness. Tanks shall be properly flushed out with clean water prior to being brought into service TANK DIMENSIONS: The dimensions of the Tank shall be of 8.739m in diameter and 2.200m in height DESIGN LIFE: The tanks shall have a design life of 50 years. TANK CONNECTIONS: Standard design valve outlet connection : i) 150mm CI Flanged valve ii) Overflow connection including an Internal approved bell-mouth shaped bends to maximize the overflow capacity. One no. 100 mm, iii) One (1) scour drain outlet from the floor of the tank with isolation valve. One No. 100mm. TANK LINERS: Tank liners shall be purpose-designed and manufactured and shall comply to AS/NZS 4020 (Appendix A)of 2005 and ANSI/NSF 61 - 2008, Section 5 Certificates of compliance to above standards shall be furnished by the manufacturer of the tanks. Tank liners shall: i) Be factory manufactured to one- piece construction, fabricated from multilayer PE sheet, certified for potable drinking water, to (ANSI/ NSF 61) and duly UV Stabilized. ii) Be of PE (polyethylene) in multi-layer construction for strength, reinforced with woven scrim industrial fabric to prevent elongation and enhance tensile strength. The total liner material thickness shall be no less than 0.6 mm thick. The tensile strength shall not be less than 2266 N (warp) and 2495 N (weft) and heat sealing strength of 2056 N v) All the liner welded lap joints shall be strengthened with Metalocene encapsulating tape welded over the overlap. vi) The Metalocene tape shall cover and protect the exposed material at the edges of the liner joints to further prevent the ingress of water into the scrim. vii) Liners shall be positively and continuously attached to the top outer edge of the circumference of the tank to prevent entry of water from the runoff from the roof structure. viii) All liners on tanks over 2m in height shall have a continuous intermediate liner support designed out of nylon (or other material) cord, around the circumference of the tank, at vertical intervals corresponding to the level of each ring. ix) The intermediate liner support cords shall be firmly secured to the steel shell at each level, to prevent stress on the liner welded joints, and thereby eliminate possibility of failure CORROSSION PROTECTION. The tank structure shall have a secondary corrosion protection system using sacrificial magnesium anodes. The number of anodes, their location around the tank and the mass of each anode shall be designed for anode replacement frequency of five years. The anodes shall be installed</p>						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	external to the tank and concrete apron with their location marked with a suitably label-Cost for Tank steel with 10years guarantee includes shel l,Steel wall,steel domed roof,Zinc Alum steel',Cost for Poly ethylene infinity liner ,Geo synthetic Fibre withfood grade plastics are used for inside coating and Support Arrangements,Cost for Fabricated items,attachments and accessories like steel ladder,Cost of Fabricated nozzles,over flow nozzles and drain arrangements, Cost for HDG nut and bolts,Freight Charges,Erection Installation and commissioning of tank components including charges of extra 1 no150 mm MS HDG Nozzle type BS10E table and 150 mm MS HDG anti vortex type E table and Transportation charges.						
	Steel Tank						
	Adayalakkallu	13194 1					131941.0 00
	Total						131941.0 00
	Total Quantity in Litre						131941.0 00
5.011	OD78992/2022-2023						



SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	<p>Supply, installation and commissioning of a pre-engineered, pre-fabricated, factory manufactured steel storage Water Tank having a capacity of 26062 L(1Nos.) thickness of 0.6 mm, in multiple layers as required for the capacity and height of the tank and multiple-layered PE sheet/membrane for the inner containment liner. The Tank Shell / Body & the Liner material shall be manufactured in a facility certified and compliant to ISO 9001 - 2000 standards. The Tank shall be supplied with access points, penetrations for inlets, outlets, drains and fittings, overflow and drain, high and low water level indicators. All connections to the tanks shall be with flanged or threaded nozzles, placed to the KWA water mains TANK ROOF :The roof of the tank shall be of corrugated Galvalume sheet steel and shall be domed, with heavyduty Hot-dip Galvanized truss frame for support, and capable of supporting 4-5 persons for maintenance and cleaning and tank shall have an access hatch with cover, on the roof, for operation and Maintenance TANK COVER :Tank covers shall be of approved galvanized vermin proof construction. Roof ends shall be fitted with suitable vermin-proofing tape or other material, to prevent ingress of dust and foreign objects. Covers shall be firmly fixed to the top edge of the tank with galvanized bolts and nuts. LADDERS :Tanks shall be provided with Hot-dip Galvanized ladders internally or externally. External roof supports shall be of an appropriately designed Hot-dip galvanized Steel construction. Tanks shall comply with relevant spill level, air gap and overflow requirements relative to Effective Capacity. All nuts and bolts used for the panels shall be a minimum of 12mm size and hot-dip galvanized/Case hardened. The tank shall have a circular angle fixed around the total circumference of the tanks, at the top, of minimum 2 mm thickness. Tanks shall be properly flushed out with clean water prior to being brought into service TANK DIMENSIONS: The dimensions of the Tank shall be of 3.884m in diameter and 2.20m in height DESIGN LIFE: The tanks shall have a design life of 50 years. TANK CONNECTIONS: Standard design valve outlet connection : i) 150mm CI Flanged valve ii) Overflow connection including an Internal approved bell-mouth shaped bends to maximize the overflow capacity. One no. 100 mm, iii) One (1) scour drain outlet from the floor of the tank with isolation valve. One No. 100mm. TANK LINERS: Tank liners shall be purpose-designed and manufactured and shall comply to AS/NZS 4020 (Appendix A)of 2005 and ANSI/NSF 61 - 2008, Section 5 Certificates of compliance to above standards shall be furnished by the manufacturer of the tanks. Tank liners shall: i) Be factory manufactured to one- piece construction, fabricated from multilayer PE sheet, certified for potable drinking water, to (ANSI/ NSF 61) and duly UV Stabilized. ii) Be of PE (polyethylene) in multi-layer construction for strength, reinforced with woven scrim industrial fabric to prevent elongation and enhance tensile strength. The total liner material thickness shall be no less than 0.6 mm thick. The tensile strength shall not be less than 2266 N (warp) and 2495 N (weft) and heat sealing strength of 2056 N v) All the liner welded lap joints shall be strengthened with Metalocene encapsulating tape welded over the overlap. vi) The Metalocene tape shall cover and protect the exposed material at the edges of the liner joints to further prevent the ingress of water into the scrim. vii) Liners shall be positively and continuously attached to the top outer edge of the circumference of the tank to prevent entry of water from the runoff from the roof structure. viii) All liners on tanks over 2m in height shall have a continuous intermediate liner support designed out of nylon (or other material) cord, around the circumference of the tank, at vertical intervals corresponding to the level of each ring. ix) The intermediate liner support cords shall be firmly secured to the steel shell at each level, to prevent stress on the liner welded joints, and thereby eliminate possibility of failure CORROSSION PROTECTION. The tank structure shall have a secondary corrosion protection system using sacrificial magnesium anodes. The number of anodes, their location around the tank and the mass of each anode shall be designed for anode replacement frequency of five years. The anodes shall be installed</p>						

SI No	Specification	No	Length	Width	Depth	Cf	Quantity
	external to the tank and concrete apron with their location marked with a suitably label-Cost for Tank steel with 10years guarantee includes shel l,Steel wall,steel domed roof,Zinc Alum steel',Cost for Poly ethylene infinity liner ,Geo synthetic Fibre withfood grade plastics are used for inside coating and Support Arrangements,Cost for Fabricated items,attachments and accessories like steel ladder,Cost of Fabricated nozzles,over flow nozzles and drain arrangements, Cost for HDG nut and bolts,Freight Charges,Erection Installation and commissioning of tank components and Transportation charges						
	Steel tank at Kurishumoottilpady top						
	Kurishumoottilpady top	26062					26062.00 0
	Total						26062.00 0
	Total Quantity in Litre						26062.00 0

