ABSTRACT ESTIMATE

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

Sl No	Specification	Quantity	Rate	Amount
1	Part I - Supply and Laying CWP CWPM 150 mm DI Pipe from He			
1.001	100.98.116			
	Supply of DI K9 Pipe Conforming	to IS 8329/2000	, 150mm Dia.	
	Net Total	3001.000metr e	@1890.46/metre	5673270.46
1.002	100.98.117	Martinen -		
	Supply of DI K9 Pipe Conforming	to I <mark>S 832</mark> 9/2000	, 200mm Dia.	
	Net Total	2188.000metr e	@2589.09/metre	5664928.92
1.003	100.98.460	BUE WORKS		
	Supply of CI Double Flanged Sluice Valve with Cap PN 1.6, Size 150m	e Valve Conform n.	ming to IS 14846 - 2	000, Sluice
	Net Total	1.000no	@13396.74/no	13396.74
1.004	100.98.461			
	Supply of CI Double Flanged Sluice Valve with Cap PN 1.6, Size 200m		ming to IS 14846 - 2	000, Sluice
	Net Total	1.000no	@23723.64/no	23723.64
1.005	100.98.444			
	Supply of CI Air Valve, Conformin Orifice Type S2, Size 50mm.	g to IS 14848 -	2000, Single Orifice	, Large
	Net Total	8.000no	@6110.65/no	48885.20
1.006	100.98.441			
	Supply of CI Air Valve, Conforming to IS 14848 - 2000, Single Orifice, Small Orifice Type S1, Size 40mm.			
	Net Total	10.000no	@6110.65/no	61106.50
1.007	100.98.469			
	Supply of CI Double Flanged Sluice Valve with Cap PN 1.0, Size 80mm		ming to IS 14846 - 2	000, Sluice
	Net Total	1.000no	@6136.20/no	6136.20

Sl No	Specification	Quantity	Rate	Amount
			Heading Total(Rs)	11491447.6 6
2	Part II - Working charges			
2.001	100.1.1			
	Excavating trenches of required wid sockets, and dressing of sides, ramr getting out the excavated soil, and t exceeding 20cm in depth, including watering, etc., and disposing of surp 50m, in all kinds of soil.	ning of bottoms hen returning th consolidating e plus excavated s	, depth up to 1.5m, in the soil as required, in each deposited layer soil as directed, with	ncluding layers not by ramming, in a lead of
	Net Total	2544.828cum	@579.88/cum	1475694.86
2.002	100.1.5 Excavating trenches of required wid sockets, and dressing of sides, ram getting out the excavated soil, and t exceeding 20cm in depth, including watering, etc., and disposing of sur m, in Ordinary Rock.	ning of bottoms hen returning th consolidating e	, depth up to 1.5m, i he soil as required, in each deposited layer	ncluding layers not by ramming,
	Net Total	978.780cum	@842.08/cum	824211.06
2.003	100.2.2			
	Excavation work by mechanical me foundation trenches or drains (not e including dressing of sides and ram out the excavated soil and disposal lead of 50m, in Medium Rock when	xceeding 1.5m ming of bottom of surplus exca	in width or 10m2 on s, lift up to 1.5m, inc vated soils as directed	plan), cluding getting
	Net Total	195.756cum	@1106.31/cum	216566.82
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.			
	Net Total	195.756cum	@1624.47/cum	317999.75
2.005	100.8.1 Fencing one side of trenches, 1.50n tape in vertical casuarina pole (girth			
	Net Total	3000.000metr e	@28.84/metre	86520.00
2.006	18.12.8			
	Providing and fixing G.I. pipes com refilling etc. External work80 mm c			nching and
	Net Total	659.000metre	@1064.49/metre	701498.91
2.007	100.31.2.1			
	Conveying and fixing C.I. sluice va insertions etc., complete, but exclud will be paid separately): 80mm diar	ling the cost of		

Sl No	Specification	Quantity	Rate	Amount	
	Net Total	1.000no	@652.75/no	652.75	
2.008	100.59.1				
	Cutting the bituminous / concrete ro 200mm along the sides of proposed any damage to other utilities, includ and plant, cost of consumables and caution boards, traffic diversion, an complete, before carrying out the de mechanical means and carrying out	alignment of the ing the charges charges for light d as per the dire emolition of bitt	e pipe to be laid with for hire and conveya ting, watching, ribbo action of departmenta	hout causing ance of tools on fencing, al officers etc.	
	Net Total	2000.000metr e	@31.77/metre	63540.00	
2.009	15.43.2				
	Dismantling manually / by mechani material and disposal of unserviceal of Engineer -in-Charge:Bituminous	ole material with			
	Net Total	700.000sqm	@376.74/sqm	263718.00	
2.010	15.2.1	12841-11			
	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)				
	Net Total	22 <mark>5.0</mark> 00cum	@2134.74/cum	480316.50	
2.011	100.14.2	FORM FOR THE P BLIC WORKS	MANAGEMENT		
	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.				
	Net Total	2942.000metr e	@91.51/metre	269222.42	
2.012	100.14.3				
	Conveying and laying S&S Ce conforming to IS: 8329 excluding c				
	Iron Class K-9 Pipes.	r			
	Iron Class K-9 Pipes. Net Total	2145.000metr e	@127.49/metre	273466.05	
2.013			@127.49/metre		
2.013	Net Total	e langed C.I./ D.I		273466.05	
2.013	Net Total 18.30.4 Providing flanged joints to double f	e langed C.I./ D.I		273466.05	
2.013 2.014	Net Total 18.30.4 Providing flanged joints to double f testing of joints:150 mm diameter p	e langed C.I./ D.I ipe	pipes and specials, i	273466.05 ncluding	
	Net Total 18.30.4 Providing flanged joints to double f testing of joints:150 mm diameter p Net Total	e langed C.I./ D.I ipe 6.000no langed C.I./ D.I	pipes and specials, i @402.30/no	273466.05 ncluding 2413.80	
	Net Total 18.30.4 Providing flanged joints to double f testing of joints:150 mm diameter p Net Total 18.30.5 Providing flanged joints to double f	e langed C.I./ D.I ipe 6.000no langed C.I./ D.I	pipes and specials, i @402.30/no	273466.05 ncluding 2413.80	

Sl No	Specification	Quantity	Rate	Amount	
	Providing and laying D.I specials of IS : 9523 :Upt 600 mm dia	f class K - 12 su	itable for push - on j	ointing as per	
	Net Total	20.230quintal	@21003.05/quint al	424891.70	
2.016	18.67.1				
	Providing and laying S & S C.I. St per IS 13382:Upto 300 mm dia	andard specials	suitable for mechani	cal jointing as	
	Net Total	1.250quintal	@14708.68/quint al	18385.85	
2.017	18.70.2				
	Providing push - on-joints to Centri Pipes including testing of joints and pipes				
	Net Total	530.000joint	@184.10/joint	97573.00	
2.018	18.70.3	AN			
	Providing push - on-joints to Centri Pipes including testing of joints and pipes	fugally (Spun) (including the c	Cast Iron Pipes or Du ost of rubber gasket:	actile Iron 200 mm dia	
	Net Total	390.000joint	@270.11/joint	105342.90	
2.019	OD107091/2022-2023				
	Labour for Cutting DI Pipe with steel saw 150 mm diameter DI Pipe				
	Net Total	15.000Each Cut	@337.10/Each Cut	5056.50	
2.020	OD107078/2022-2023				
	Labour for Cutting DI Pipe with ste	el saw 200 mm	diameter DI Pipe		
	Net Total	12.000each	@449.61/each	5395.32	
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				
	Net Total	2942.000metr e	@32.86/metre	96674.12	
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				
	Net Total	2145.000metr e	@41.66/metre	89360.70	
2.023	100.32.3				
	Conveying and fixing C. I. Double nuts, rubber insertions etc., complet if required, will be paid separately):	e, but excluding	g the cost of air valve		

Sl No	Specification	Quantity	Rate	Amount	
	Net Total	8.000no	@229.21/no	1833.68	
2.024	100.32.2				
	Conveying and fixing C. I. Single A nuts, rubber insertions etc., complet if required, will be paid separately):	e, but excluding	g the cost of air valve		
	Net Total	10.000no	@184.44/no	1844.40	
2.025	100.31.1.4				
	Conveying and fixing C.I. sluice vai insertions etc., complete, but exclud will be paid separately): 150mm dia	ing the cost of	by providing bolts, r the valve (tail pieces	nuts, rubber , if required,	
	Net Total	1.000no	@1253.32/no	1253.32	
2.026	100.31.1.5				
	Conveying and fixing C.I. sluice vai insertions etc., complete, but exclud will be paid separately): 200mm dia	ing the cost of	by providing bolts, r the valve (tail pieces	nuts, rubber , if required,	
	Net Total	1.000no	@1625.85/no	1625.85	
2.027	2.6.1	A COLOR			
	Earth work in excavation by mechanical means (Hydraulic excavator)/ma over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm of including disposal of excavated earth, lead up to 50 m and lift up to 1.5 m earth to be levelled and neatly dressed.All kinds of soil				
	Net Total	15.876cum	@223.41/cum	3546.86	
2.028	4.1.3				
	Providing and laying in position cer cost of centering and shuttering - Al sand (zone-III) : 4 graded stone agg	l work up to pl	inth level:1:2:4 (cem		
	Net Total	63.882cum	@8340.91/cum	532834.01	
2.029	5.1.2				
	Providing and laying in position spe excluding the cost of centering, shut to plinth level:1:1:5:3 (1 cement 1.5 nominal size	ttering, finishin	g and reinforcement	- All work up	
	Net Total	231.875cum	@9483.13/cum	2198900.77	
2.030	5.22.4				
	Steel reinforcement for R.C.C work in position and binding all complete				
	Net Total	1460.000kilo gram	@102.61/kilogra m	149810.60	
2.031	4.3.1				
	4.3.1 Centering and shuttering including strutting, propping etc. and removal of form work				
	for:Foundations, footings, bases for		ing etc. and removar	of form work	

Sl No	Specification	Quantity	Rate	Amount		
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, charge of painting the steel work with two or more coat deluxe multi surface paint to give even shade over an under-coat of primer etc., complete.					
	Net Total	60.000metre	@5174.49/metre	310469.40		
2.033	100.37.6.2					
	Fabricating M.S. flanges of diameter cost and conveyance charges of M.S. painting the steel work with two or even shade over an under-coat of pr 8mm thick M.S. plates.	S. plate, all fabri more coat delux	ication charges, char a multi surface pain	ges of t to give an		
	Net Total	6.000no	@1544.03/no	9264.18		
2.034	100.37.6.3					
	Cutting 150mm (I.D.) M.S. pipes for including cost of gas, all labour and fabricated with 8mm thick M.S. pla	hire charges of				
	Net Total	8.000no	@171.45/no	1371.60		
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.					
	Net Total	10.000no	@648.09/no	6480.90		
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.					
	Net Total	20.000no	@121.73/no	2434.60		
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.					
	Net Total	30.000metre	@6165.53/metre	184965.90		
2.038	100.37.7.2					
	Fabricating M.S. flanges of diameter cost and conveyance charges of M.S. painting the steel work with two or even shade over an under-coat of pr	S. plate, all fabri more coat delux	ication charges, char te multi surface pain	ges of t to give an		
	8mm thick M.S. plates.					
		6.000no	@2081.10/no	12486.60		
2.039	8mm thick M.S. plates.	_	@2081.10/no			

Sl No	Specification	Quantity	Rate	Amount	
	including cost of gas, all labour and fabricated with 8mm thick M.S. pla		tools etc., complete	: For pipes	
	Net Total	10.000no	@223.11/no	2231.10	
2.040	100.37.7.4				
	Welding 200mm (I.D.) M.S. pipes f welding machine including cost of of tools etc., complete: For pipes fa	gas and welding	g rods, all labour and	hire charges	
	Net Total	12.000no	@843.32/no	10119.84	
2.041	100.37.7.5				
	Grinding cut and weld edges of 200 including all labour and hire charge 8mm thick M.S. plates.				
	Net Total	24.000no	@158.40/no	3801.60	
2.042	5.1.3				
	Providing and laying in position spe excluding the cost of centering, shu to plinth level:1:2:4 (1 cement : 2 c nominal size)	ttering, finishin	g and reinforcement	- All work up	
	Net Total	12.960cum	@8964.75/cum	116183.16	
2.043	OD111602/2022-2023				
	Supply and Installation of Surge Arrestor 200 mm as per direction				
	Net Total	1.000job	@177688.57/job	177688.57	
			Heading Total(Rs)	9594648.87	
3	Part III - Construction of 2.6LL (GLSR AND PU	JMP HOUSE at He	ropady	
3.001	2.31				
	Clearing jungle including uprooting saplings of girth up to 30 cm measu removal of rubbish up to a distance	red at a height of 50 m outside	of 1 m above ground the periphery of the	level and area cleared	
	Net Total	70.000sqm	@15.40/sqm	1078.00	
3.002	2.8.1				
	Earth work in excavation by mecha in foundation trenches or drains (no including dressing of sides and ram getting out the excavated soil and d within a lead of 50 m.All kinds of s	t exceeding 1.5 ming of bottom isposal of surple	m in width or 10 squ s, lift up to 1.5 m, in	m on plan), cluding	
	Net Total	7.000cum	@309.99/cum	2169.93	
3.003	2.7.3				
	Earth work in excavation by mecha over areas (exceeding 30 cm in dep including disposal of excavated earth earth to be levelled and neatly dress	th, 1.5 m in wid th, lead up to 50	th as well as 10 sqm) m and lift up to 1.5	on plan)	
	Net Total	48.000cum	@1248.59/cum	59932.32	

Sl No	Specification	Quantity	Rate	Amount
3.004	OD76090/2022-2023			
	DOWEL BARS - Supplying and Pr long (1m in rock and 1m in concrete) including with cement grout(0.50kg/each) etc	drilling holes of		
	Net Total	300.000no	@645.92/no	193776.00
3.005	4.1.3			
	Providing and laying in position centering and shuttering - A sand (zone-III) : 4 graded stone agg	ll work up to pli	inth level:1:2:4 (cem	
	Net Total	55.200cum	@8340.91/cum	460418.23
3.006	5.33.1			
	Providing and laying in position ma 25 grade cement concrete for reinfo as per approved design mix, includi excluding the cost of centering, shu admixtures in recommended propor of concrete, improve workability wi direction of Engineer - in-charge. N 330 kg/ cum. Excess or less cement separately.All work upto plinth leve	rced cement co ng pumping of ttering, finishin tions as per IS: ithout impairing ote:- Cement co used as per des	ncrete work, using co concrete to site of la g and reinforcement, 9103 to accelerate, r g strength and durabi ontent considered in	ement content ying but including etard setting lity as per this item is @
	Net Total	23.433cum	@9825.93/cum	230251.02
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			
2 000	Net Total	60.659cum	@11550.42/cum	700636.93
3.008	5.34.1 Extra for providing richer mixes at a specified cement content used is pay grade concrete instead of M-25 grad in M-30 is @ 340 kg/cum). Net Total	yable/ recoveral	ble separately.Provid (Note:- Cement cont	ing M-30
3.009	5.9.1	00.007 cu iii	C 00.00/ 0011	5177.20
5.007	Centering and shuttering including for:Foundations, footings, bases of			
	Net Total	37.700sqm		13195.00
3.010	5.9.2			

Sl No	Specification	Quantity	Rate	Amount	
	Centering and shuttering including thickness) including attached pilast				
	Net Total	263.260sqm	@748.62/sqm	197081.70	
3.011	5.9.3				
	Centering and shuttering including strutting, etc. and removal of form for:Susp floors, roofs, landings, balconies and access platform				
	Net Total	186.665sqm	@851.49/sqm	158943.38	
3.012	5.22.6				
	Steel reinforcement for R.C.C work in position and binding all complete bars of grade Fe-500D or more				
	Net Total	6065.900kilo gram	@102.61/kilogra m	622422.00	
3.013	13.7.1				
	12 mm cement plaster finished with cement : 3 fine sand)	a floating coat	of neat cement of m	ix:1:3 (1	
	Net Total	577.164sqm	@418.80/sqm	241716.28	
3.014	13.16.1				
	6 mm cement plaster of mix:1:3 (1 cement : 3 fine sand)				
	Net Total	18.910sqm	@279.31/sqm	5281.75	
3.015	13.44.1 OF PUI	BLIC WORKS			
	Finishing walls with water proofing or more coats applied @ 3.84 kg/10		f required shade:Nev	w work (Two	
	Net Total	202.400sqm	@112.08/sqm	22684.99	
3.016	13.47.1				
Finishing walls with Premium Acrylic Smooth exterior paint with Silicon of required shade:New work (Two or more coats applied @ 1.43 ltr/ 10 so including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm)					
	Net Total	194.310sqm	@198.01/sqm	38475.32	
3.017	13.71				
	Lettering with black Japan pint of approved brand and manufacture				
	Net Total	100.000per Letter per cm height	@5.82/per Letter per cm height	582.00	
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				

Sl No	Specification	Quantity	Rate	Amount	
	Net Total	250.000kg	@160.93/kg	40232.50	
3.019	100.41.34				
	Supplying and fixing Rectangular C.I. manhole cover 455mm x 610mm with fra (low duty) charges including all cost, labour charges etc., complete.				
	Net Total	4.000no	@2920.75/no	11683.00	
3.020	50.6.1.2				
	Solid block masonry using pre cast or nearest available size confirming floor two level thickness 20cm and a complete.	to IS 2185 part	I of 1979 for super s	structure up to	
	Net Total	10.228cum	@6748.20/cum	69020.59	
3.021	10.6.1				
	Supplying and fixing rolling shutter laths, interlocked together through t by end locks, mounted on specially arrangements for inside and outside including the cost of providing and manufactured from high tensile stee 4454 - part 1 and M.S. top cover of mm M.S. laths with 1.25 mm thick	heir entire lengt designed pipe s locking with pu fixing necessary l wire of adequa required thickn	th and jointed togeth haft with brackets, s ush and pull operation y 27.5 cm long wire ate strength conform	er at the end ide guides and on complete, springs ing to IS:	
	Net Total	6.720sqm	@3617.31/sqm	24308.32	
3.022	21.1.1.1	FORM FOR THE I	MANAGEMENT		
	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, Aluminnium 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 portionAnodised aluminium (anodised transparent or dyed to required shade according to IS : 1868, Minimum anodic coating of grade AC 15) Net Total 18.000kg @520.92/kg 9376.56				
3.023	21.1.1.2				
	Providing and fixing aluminium wo with extruded built up standard tubu sections of approved make conform fasteners of required dia and size, in i.e. at top, bottom and sides with rec Aluminium sections shall be smooth mechanically wherever required inc glazing /paneling, C.P. brass/ stainled drawings and the directions of Engin fasteners to be paid for separately):	llar sections/ ap ing to IS : 733 a cluding necessa juired EPDM ru n, rust free, strai luding cleat ang ess steel screws	propriate Z sections and IS: 1285, fixing ary filling up the gap ubber/ neoprene gask ight, mitred and join gle, Aluminnium sna , all complete as per	and other with dash as at junctions, tet etc. ted p beading for architectural	

Sl No	Specification	Quantity	Rate	Amount	
	For fixed portionPowder coated aluated for the second seco	minium (minim	um thickness of pow	vder coating	
	Net Total	12.000kg	@560.61/kg	6727.32	
3.024	21.3.1				
	Providing and fixing glazing in alum partitions etc. with EPDM rubber / n architectural drawings and the direc aluminium snap beading shall be pa thickness	neoprene gasket tions of Engine id in basic item	etc. complete as per er - in -Charge. (Co	r the st of	
	Net Total	5.103sqm	@1228.18/sqm	6267.40	
3.025	21.15.2				
	Providing and fixing aluminium cas aluminium windows with necessary minimum thickness 50 micron alum	necessary screw	s fastener of required ws etc. complete.Po	l length for wder coated	
	Net Total	4.000no	@87.92/no	351.68	
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				
	Net Total	80.000kg	@203.11/kg	16248.80	
	e-PLAT	FORM FOR THE	Heading Total(Rs)	3138058.28	
4	Part - IV - Road restoration charg	ges			
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.				
	Net Total	202.500cum	@49.16/cum	9954.90	
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.				
	Net Total	90.000sqm	@53.74/sqm	4836.60	
4.003	4.2.A.1				
	Construction of granular sub-base b layers with a motor grader on a prep rotavator at OMC, and compacting density, complete as per clause 401. Method	bared surface, m with a vibratory	ixing by mix in-place roller to achieve the	ce method with e desired	
	Net Total	112.500cum	@3283.03/cum	369340.88	
4.004	5.1.a				
-	Providing and applying primer coat of granular Base including clearing				

Sl No	Specification	Quantity	Rate	Amount	
	0.70 - 1.0 kg/sqm using mechanical	means.			
	Net Total	13.500sqm	@73.49/sqm	992.12	
4.005	4.12				
	Providing, laying, spreading and con Macadam specification including pr mechanical mix plant carriage of mi layers with paver in sub- base / base with vibratory roller to achieve the o	remixing the Ma ixed Material by course on well	terial with water at (tipper to site, laying prepared surface an	OMC in g in uniform	
	Net Total	4.500cum	@3375.91/cum	15191.60	
4.006	5.2.b				
	Providing and applying tack coat with pressure distributor at the rate of 0.2 Surface cleaned with mechanical br	25 - 0.30 kg per			
	Net Total	13.500sqm	@14.49/sqm	195.62	
4.007	5.7.1	And so			
	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.				
	Net Total	13.500sqm	@211.89/sqm	2860.52	
4.008	5.8.a Providing and laying surface dressin stone aggregates of specified size or prepared surface and rolling with 8- 19 mm nominal chipping size Net Total	n a layer of bitu	minous binder (VG 3	30) laid on the	
4.009	12.4	15.500sqm	e 115.75/3qm	1555.05	
4.007	Plain cement concrete 1:3:6 nomina 40 mm nominal size mechanically r vibration including curing for 14 da	nixed, placed in ys.	foundation and com	pacted by	
	Net Total	60.750cum	@6718.30/cum	408136.73	
4.010	12.8.B.1 Plain/Reinforced Cement Concrete Technical Specifications 			Drawing and	
	Net Total	30.375cum	@8377.76/cum	254474.46	
			Heading Total(Rs)	1067519.06	
5	Construction of Steel Tanks in Na Kurishumoottil pady				
5.001	2.1.1				
	Earth work in surface excavation no	ot exceeding 30	cm in depth but exce	eding 1.5m in	

Sl No	Specification	Quantity	Rate	Amount	
	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				
	Net Total	136.535sqm	@113.73/sqm	15528.13	
5.002	4.1.3				
	Providing and laying in position cer cost of centering and shuttering - A sand (zone-III) : 4 graded stone agg	ll work up to pli	inth level:1:2:4 (cem		
	Net Total	32.735cum	@8340.91/cum	273039.69	
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 to to plinth level:1:1:5:3 (1 cement 1.5 coarse sand :3 graded stone aggregate 20 mm nominal size				
	Net Total	17.905cum	@9483.13/cum	169795.44	
5.004	5.9.1	M			
	Centering and shuttering including for:Foundations, footings, bases of				
	Net Total	78.940sqm	@350.00/sqm	27629.00	
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 levelThermo - Mechanically Treated bars of grade Fe-500D or more				
	Net Total	1790.500kilo gram	@102.61/kilogra m	183723.21	
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.				
	Net Total	65.866cum	@269.88/cum	17775.92	
5.007	OD78600/2022-2023				
	Supply of Sand including loading, unloading, transportation and other incidental charges as per the direction of departmental officers.1				
	Net Total	98.799cum	@1882.79/cum	186017.77	
5.008	OD78727/2022-2023				
	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 & amp; amp; the Liner material shall be manufactured in a facility certified and compliant to ISO 9001 -				

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%

Sl No	Specification	Quantity	Rate	Amount	
	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	iuguiou Suivuit		liun oo uomeu,	
	heavy- duty Hot-dip Galvanized truss frame for support, and capable of supporting 4-				
	5 persons for maintenance and cleaning and ta	nly chall have a	n agaga hatah with a	over on the	
	roof, for	ank shan nave a	in access natch with t	cover, on the	
	operation and Maintenance TANK	COVER :Tank	covers shall be of ap	proved	
	galvanized		•	-	
	vermin proof construction. Roof en	ds shall be fitted	d with suitable vermi	n-proofing	
	tape or other	and foreign obj	oota Covora shall ha	firmly fixed	
	material, to prevent ingress of dust to the top	and foreign obje	ects. Covers shall be	IIIIIIy IIxeu	
	edge of the tank with galvanized bo	lts and nuts. LA	DDERS : Tanks shal	l be provided	
	with Hotdip				
	Galvanized ladders internally or ext				
	appropriately designed Hot-dip galv with relevant	anized Steel co	onstruction. Tanks sh	all comply	
	spill level, air gap and overflow req	uirements relati	ve to Effective Cana	city All nuts	
	and bolts		MANAGEMENT	ony. Thi huts	
	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	shall be proper	ly flushed out with c	lean water	
	brought into service TANK DIMENSIONS: The dimensions of the Tank shall be of 7.768m in				
	diameter and 2.200m in height DES	IGN LIFE: The	e tanks shall have a d	esign life of	
	50 years.				
	TANK CONNECTIONS: Standard	design valve ou	itlet connection : i) 2	00mm CI	
	Flanged valve ii) Overflow connection including a	n Internal appr	oved hell-mouth shar	ed bends to	
	maximize	in mornar appro	sved ben-mouth shap		
	the overflow capacity. One no. 100	mm, iii) One (1) scour drain outlet f	from the floor	
	of the				
	tank with isolation valve. One No. 100mm.TANK LINERS:Tank liners shall be				
	purposedesigned and manufactured and shall comply	to $AS/NZS 40^{\circ}$	20 (Appendix A) of 2	2005 and	
	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 th	e tanks. Tank li	ners shall: i) Be facto	orv	
	manufactured to onepiece	- units, runt in		~- <u>j</u>	
	construction, fabricated from multi-	layer PE sheet,	certified for potable	drinking	
	water, to				
	(ANSI/ NSF 61) and duly UV Stabi construction	lized. 11) Be of	PE (polyethylene) in	multi-layer	

Sl No	Specification	Quantity	Rate	Amount	
	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	a continuous inte	ermediate liner supp	ort designed	
	out of nylon				
	(or other material)cord, around the	circumference o	f the tank, at vertica	l intervals	
	corresponding to the level of each ring. ix) The int	ermediate liner	support cords shall h	e firmly	
	secured to the		support cords sharr c	C IIIIIIy	
	steel shell at each level, to prevent s	stre <mark>ss on</mark> the line	er welded joints, and	thereby	
	eliminate				
	possibility of failure CORROSSIO			e 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	aball bainstall	ad average of the tag	ls and	
	concrete apron	s shall be installe	ed external to the tan	капа	
	with their location marked with a su	uitably label-Cos	st for Tank steel with	n 10years	
	guarantee	•			
	includes shel l,Steel wall,steel dome	ed roof,Zinc Alu	ım steel&39;,C	ost for Poly	
	ethylene infinity liner ,Geo synthetic Fibre with food	l grade plastics a	are used for inside co	pating and	
	Support Arrangements,Cost for Fab	pricated items.at	tachments and acces	sories 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.				
		104250.000Li			
	Net Total	104230.000L1 tre	@8.34/Litre	869445.00	
5.009	OD78968/2022-2023				
	Supply, installation and commissioning of a pre-engineered, pre-fabricated, factory				
	manufactured steel storage Water T				
	thichness 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 & amp; the Liner	material shall b	e manufactured in a	facility	

Sl No	Specification	Quantity	Rate	Amount
SI No	certified and compliant to ISO 9001 with access points, penetrations for drain, high and low water level indi flanged or threaded nozzles, placed of the tank shall be of corrugated G heavyduty Hot-dip Galvanized truss persons for maintenance and cleanin on the roof, for operation and Main approved galvanized vermin proof suitable vermin-proofing tape or off objects. Covers shall be firmly fixed and nuts. LADDERS :Tanks shall be internally or externally. External roo Hot-dip galvanized Steel construction in gap and overflow requirements to used for the panels shall be a minim hardened. The tank shall have a circle the tanks, at the top, of minimum 2 with clean water prior to being brow dimensions of the Tank shall be of LIFE: The tanks shall have a design Standard design valve outlet connect connection including an Internal ap overflow capacity. One no. 100 mm the tank with isolation valve. One N purpose-designed and manufactured of 2005 and ANSI/NSF 61 - 2008, standards shall be furnished by the factory manufactured to one- piece certified for potable drinking water, Be of PE (polyethylene) in multi-lay woven scrim industrial fabric to pre total liner material thickness shall b shall not be less than 2266 N (warp 2056 N v) All the liner welded lap j encapsulating tape welded over the protect the exposed material at the c ingress of water into the scrim. vii) attached to the top outer edge of the water from the runoff from the roof height shall have a continuous inter other material)cord, around the circ corresponding to the level of each r be firmly secured to the steel shell a joints, and thereby eliminate possib The tank structure shall have a seco	l - 2000 standar inlets, outlets, o cators. All conr to the KWA wa alvalume sheet s frame for supp ng and tank sha tenance TANK construction. Ro her material, to p d to the top edge be provided with of supports shall on. Tanks shall relative to Effec- num of 12mm si cular angle fixed mm thickness. T aght into service 7.768m in diam h life of 50 years ction : i) 200mm proved bell-mou h, iii) One (1) sc No. 100mm.TAN d and shall comp Section 5 Certi manufacturer of construction, fa , to (ANSI/ NSF yer construction e no less than 0) and 2495 N (w oints shall be st overlap. vi) The edges of the line Liners shall be circumference structure. viii) mediate liner su umference of th ing. ix) The inter at each level, to ility of failure C ondary corrosion	ds. The Tank shall be drains and fittings, ov hections to the tanks a ater mains TANK RO steel and shall be dor out, and capable of s ll have an access hat COVER :Tank cover of ends shall be fitte prevent ingress of du e of the tank with gal a Hot-dip Galvanized l be of an appropriate comply with relevan tive Capacity. All nu- ize and hot-dip galva d around the total circ TANK DIMENSIO eter and 2.9 m in hei s. TANK CONNECT a CI Flanged valve ii uth shaped bends to re- our drain outlet from NK LINERS:Tank line ply to AS/NZS 4020 ficates of compliance f the tanks. Tank line bricated from multila F 61) and duly UV St a for strength, reinfor and enhance tensile .6 mm thick. The ten- veft) and heat sealing rengthened with Met e Metallocene tape sl er joints to further pre- positively and contin- of the tank to prever All liners on tanks ov apport designed out of the tank, at vertical inte- correction system u	e supplied verflow and shall be with DOF : The roof med, with upporting 4-5 ch with cover, rs shall be of ed with st and foreign vanized bolts ladders ely designed t spill level, its and bolts nized/Case cumference of ly flushed out 'NS: The ght DESIGN TIONS:) Overflow maximize the n the floor of ners shall be (Appendix A e to above rs shall: i) Be ayer PE sheet, abilized. ii) ced with strength. The sile strength of tallocene nall cover and event the nuously nt entry of ver 2m in of nylon (or ervals ort cords shall liner welded TECTION. sing sacrificial
		anodes, their lo anodes, their lo ed for anode rep al to the tank ar el-Cost for Tank ed roof,Zinc Alu c Fibre withfoo	a protection system un ocation around the tar placement frequency and concrete apron with steel with 10years grows the um steel \$\',Cost f d grade plastics are u	sing sacrificial hk and the of five years. th their guarantee for Poly used for inside

Sl No	Specification	Quantity	Rate	Amount	
	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.				
	Net Total	137420.000Li tre	@7.46/Litre	1025153.20	
5.010	OD78979/2022-2023				
	Supply,installation and commission manufactured steel storage Water T thichness of 0.6 mm, in multiple lay tank and multiple-layered PE sheet/ Tank Shell / Body & amp; the Liner certified and compliant to ISO 9001 with access points, penetrations for drain, high and low water level indi flanged or threaded nozzles, placed of the tank shall be of corrugated G heavyduty Hot-dip Galvanized truss persons for maintenance and cleani on the roof, for operation and Main approved galvanized vermin proof suitable vermin-proofing tape or otf objects. Covers shall be firmly fixed and nuts. LADDERS :Tanks shall be internally or externally. External ro Hot-dip galvanized Steel constructi air gap and overflow requirements to used for the panels shall be a minim hardened. The tank shall have a circle the tanks, at the top, of minimum 2 with clean water prior to being brow dimensions of the Tank shall be of 3 DESIGN LIFE: The tanks shall have CONNECTIONS: Standard design valve ii) Overflow connection inclu bends to maximize the overflow caj outlet from the floor of the tank wit LINERS:Tank liners shall be purpo AS/NZS 4020 (Appendix A)of 200 of compliance to above standards sl Tank liners shall: i) Be factory man from multilayer PE sheet, certified duly UV Stabilized. ii) Be of PE (po strength, reinforced with woven scr enhance tensile strength. The total I mm thick. The tensile strength shall and heat sealing strength of 2056 N strengthened with Metallocene enca Metallocene tape shall cover and pr joints to further prevent the ingress	ank having a ca yers as required membrane for t material shall b 1 - 2000 standar inlets, outlets, o cators. All conn to the KWA wa alvalume sheet s frame for supp ng and tank shal tenance TANK construction. Ro her material, to p d to the top edge be provided with of supports shal on. Tanks shall relative to Effec- num of 12mm si cular angle fixed mm thickness. T ight into service 8.739m in diam re a design life of valve outlet con- ding an Internal pacity. One no. h isolation valve se-designed and 05 and ANSI/NS hall be furnished ufactured to one for potable drint olyethylene) in r im industrial fal iner material thi l not be less that v) All the liner apsulating tape v	pacity of 131941L(1 for the capacity and he inner containmen be manufactured in a ds. The Tank shall be drains and fittings, ow hections to the tanks ater mains TANK RO steel and shall be do bort, and capable of s ll have an access hat COVER :Tank cover of ends shall be fitte prevent ingress of du e of the tank with gal a Hot-dip Galvanized l be of an appropriat comply with relevan tive Capacity. All nu ze and hot-dip galva d around the total cire TANK DIMENSIO eter and 2.200m in h of 50 years. TANK unection : i) 150mm l approved bell-mout 100 mm, iii) One (1) e. One No. 100mm.T d manufactured and s SF 61 - 2008, Section d by the manufacture e- piece construction king water, to (ANSI multi-layer construct bric to prevent elong ickness shall be no lea a 2266 N (warp) and welded lap joints sh welded over the over ed material at the edg	Nos.) height of the t liner. The facility e supplied verflow and shall be with DOF : The roof med, with supporting 4-5 ch with cover, rs shall be of ed with ast and foreign lyanized bolts ladders ely designed t spill level, ats and bolts nized/Case cumference of ly flushed out DNS: The eight CI Flanged th shaped o scour drain TANK shall comply to a 5 Certificates er of the tanks. , fabricated I/ NSF 61) and ion for ation and ess than 0.6 2495 N (weft) all be lap. vi) The ges of the liner	

Sl No	Specification	Quantity	Rate	Amount	
	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 shell 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.				
	Net Total	131941.000Li tre	@7.13/Litre	940739.33	
5.011	OD78992/2022-2023) 3-11			
	OD78992/2022-2023 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 & amp; 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 DNENSIONS: The dimensions of the Tank shall have a design lif				

Sl No	Specification	Quantity	Rate	Amount	
	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 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 he a secondary corrosion protection system using sacrificial magnesium anodes. The number of anodes, their location around the tank and the mass of each a				
			Heading Total(Rs)	4206891.51	
	Total Estimation DAC			29498565.38	
7	Extra Charges				
6.001	Provision for GST				
		29498565.38	18.00%	5309741.77	
			Grand Total	34808307.1 5	
				1692.85	
				34810000.00	
	Rupees Three Crore Forty Eight Lakh Ten Thousand				