DATA ANALYSIS(Observed Data Only)

DEPOSIT-PROVIDING PUMPING SYSTEM & PUMPING MAIN FROM INTAKE WELL AT CHAKKAKANAM TO TANK AT NEDUMKANDAM TALUK HOSPITAL-PROVIDING PUMPING SYSTEM & PUMPING MAIN FROM INTAKE WELL AT CHAKKAKANAM TO TANK AT NEDUMKANDAM TALUK HOSPITAL-General Civil Work

SOR/Spec Code	MR code	Description/Remarks				
		Unit	Quantity	Rate	Amount	Label
1:Cost of materials						
1.001-Specification code: OD95359/2022-2023						
Supply of 100mm GI medium pipe						
Material						**M**
	MR	Supply of 100mm GI medium pipe				
		metre	1.00000	1017.00	1017.00	M1
		Total	1.000	metre	1017.00	
		Unit Total	1.000	metre	1017.00	
		Add Water Charge	1017.00	@1.00%	10.17	
		Total			1027.17	
		Add Contractors Profit & Overhead	1027.17	@15.00%	154.08	
		Total			1181.25	
		Add Cost Index	0.00	@41.53%	0.00	
		Total			1181.25	
		GRAND TOTAL		metre	1181.25	
Note						
1.002-Specification code: OD95371/2022-2023						
5 % specials for 100 mm GI pipe						
Material						**M**
	MR	Specials for 100 mm GI pipe(5% of total cost for pipe)				
		metre	1.00000	50.82	50.82	M1
		Total	1.000	metre	50.82	

SOR/Spec Code	MR code	Description/Remarks				
		Unit	Quantity	Rate	Amount	Label
		Unit Total	1.000	metre	50.82	
		Add Water Charge	50.82	@1.00%	0.51	
		Total			51.33	
		Add Contractors Profit & Overhead	51.33	@15.00%	7.70	
		Total			59.03	
		Add Cost Index	0.00	@41.53%	0.00	
		Total			59.03	
		GRAND TOTAL		metre	59.03	
Note						
2:WORKING CHARGES						
2.001-Specification code: OD101032/2022-2023						
100 mm GI pipes by cutting and Joining by three run welding to make a water tight joint, painting the welded portion , testing the line to the required pressure , including the charges hire and conveyance of tools , plant and material to site , lighting, watching, ribbon fencing , caution boards, traffic diversion , necessary scaffolding including the cost of specials but excluding cost of pipe and as per the direction of departmental officers etc.. complete.						
Labour						**L**
0116		Fitter(grade1)				
		Day	0.20000	738.00	147.60	L1
0114		Beldar				
		Day	0.20000	558.00	111.60	L2
Tools&Plants(Hire charges)						T
9999		Sundries				
		L.S	1.82000	2.00	3.64	T1
9999		Sundries				
		L.S	10.00000	2.00	20.00	T2
Sub Data						**S**
10.22		Welding by gas or electric plant including transportation of plant at site etc. complete.				
		cm	47.10000	2.52	118.69	S1
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.				

SOR/Spec Code	MR code	Description/Remarks				
		Unit	Quantity	Rate	Amount	Label
		metre	1.00000	19.95	19.95	S2
		Total	1.000	no	421.48	
		Unit Total	1.000	no	421.48	
		Add Water Charge	421.48	@1.00%	4.21	
		Total			425.69	
		Add Contractors Profit & Overhead	425.69	@15.00%	63.85	
		Total			489.54	
		Add Cost Index	480.03	@41.53%	199.36	
		Total			688.90	
		GRAND TOTAL		no	688.90	

Note

3:Supply, erection, testing and commissioning of 20HP submerged pump set

3.001-Specification code: OD95641/2022-2023

Design,Supply, testing,errection and commissioning of submerged pumpsets with required starter, cables etc as per I.E.Rules for an operating head of 140 m and a total discharge of 6.5 lps, including cost of
all required protection equipments , relays as per IE Rules , Supply of pressure guages, Electric connection ,
interconnection with the Raw water pumping main, trail run etc. including cost of 30 m cable length for each pumpset
,specials required for carrying out the connections etc complete.
1.

Material			**M**
	MR	Design,Supply, testing,errection and commissioning of submerged pumpsets with required starter, cables etc as per I.E.Rules for an operating head of 140 m and a total discharge of 6.5 lps, including cost of all required protection equipments , relays as per IE Rules , Supply of pressure guages, Electric connection , interconnection with the Raw water pumping main, trail run etc. including cost of 30 m cable length for each pumpset ,specials required for carrying out the connections etc complete. 1. The pump set shall be of Compact Unitary monoblock construction. The pump casing shall be of high efficiency, Volute or Bowl diffuser Casing type with the Impeller mounted directly onto the Extended Solid Motor Shaft (without any couplings). 2. The pump maybe mounted directly into the water body (Canal /	

SOR/Spec Code	MR code	Description/Remarks				
		Unit	Quantity	Rate	Amount	Label
		Sump) 3. Suction Strainer : The pump is fitted directly with a Suction Bell mouth to which is compulsorily fitted a Heavy duty Strainer (to avoid pick up of gravel, pebbles, vegetation, etc.). As per Documents. 4. Induction Motor (Submerged) End Design : 4.1. The motor shall be of Squirrel Cage, Induction type, Air Filled yet capable of Water Immersion upto 20mwc for S1 duty – Motors with Oil or Water filled windings shall not be allowed. 4.2. It is rated for 4l5V for upto 335kW & HT for larger ratings ± 10 % V, 3 phase 50 ± 5% c/s A.C. Its winding should be of Class “F or H” insulation * while the nominal temp rise of winding hotspot should not exceed that of class “B”. 4.3. The Motor Rating should be higher of the two criteria : • 5% over maximum power consuption through out the range of perfomance at 50 Hz. OR • 15% more than the pump shaft power consumed at duty point at 50 Hz. 4.4. Motor Cooling the motor can be cooled just by water immersion 4.5. Motor Protection 4.5.1. Thermal Overload Protectors (Bi Metallic Over Load Relays) should be embedded in each phase of the stator winding to detect overheating & trip the motor from the control panel in the event of the temperature exceeding the safe operating limit (above 130C). 4.5.2. To detect primary Mechanical Seal’s Leakage a Moisture Sensor shall be provided in intermediately Oil Chamber (& not in the Motor casing or else where) – this shall detect water mixing in oil by mode of increased leakage current from the moisture sensor. 4.5.3. Cables A watertight Cable Junction Box sealed from the motor shall be provided for the motor power and signaling cables. The cable shall be brought directly out of the submerged motor without joints, and shall be of sufficient length, minimum 10 m (to be seal jointed by the manufacturer for longer lenghts) outside adjacent to the wet well & above the HFL. They shall be sized in accordance with the electricity utility regulations and BS 7671. 5. Shaft & Bearings 5.1. The Solid Shaft shall be supported by heavy duty Ball or Roller bearings with a minimum L10 life of 75,000 hours & should be Permanently Greased				

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		Unit	Quantity	Rate	Amount	Label
		 6. Stuffing Box / Oil Chamber 6.1. The pressurized entry of water into the motor (from the pump casing) should be prevented by Two separate mechanical seals in mounted in a Tandem mode within an oil chamber & the Primary (Inboard) seal should always be of Silicon Carbide or Tungsten Carbide faces to withstand erosive wear due to any silt particles. (Efficiency-Min 70 %) 5% for 2 year warranty				
		set	1.00000	281102.02	281102.02	M1
		Total	1.000	set	281102.02	
		Unit Total	1.000	set	281102.02	
		Add Water Charge	281102.02	@1.00%	2811.02	
		Total			283913.04	
		Add Contractors Profit & Overhead	283913.04	@15.00%	42586.96	
		Total			326500.00	
		Add Cost Index	0.00	@41.53%	0.00	
		Total			326500.00	
		GRAND TOTAL		set	326500.00	
Note						

Approved By

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