Bill of Quantity

No.	Description	Items	CAT	CS	IT	Unit Cost	Quan.	Unit	Total	Remarks
A	**FDAS**									
1	Fire alarm control Panel						1	set	-	
2	Smoke Detectors		F	5	4	2,160.00	7	units	15,120.00	
3	Heat Detectors		F	5	4	1,620.00		units	-	
4	Manual Pull Station		F	5	4	1,890.00	3	units	5,670.00	
5	Horn Strobe Annunciator		F	5	4	2,700.00	1	units	2,700.00	
6	Twisted Pair wire 2.5mm2		F	5	4	108.00	60	lm	6,480.00	
7	20mmØ IMC pipe		F	5	4	540.00	15	lm	8,100.00	
8	Locknut and Bushing		F	5	4	10,000.00	1	lot	10,000.00	
9	15mmØ FMC Conduit		F	5	4	10,000.00	1	lot	10,000.00	
10	FMC Connectors		F	5	4	1,890.00	1	pcs	1,890.00	
11	Junction Box		F	5	4	2,160.00	1	pcs	2,160.00	
12	Hangers and Supports		F	5	4	2,000.00	1	lot	2,000.00	
13	Testing and Commissioning		F	5	4	10,000.00	1	lot	10,000.00	
B	**Mechanical**									
1	Installations for Instrumentation/Controls	SCADA integration (Total and individual kW, V, A, PF, eff, data logger and organizer)	M	-	6	-	1	lot	10,000,000.00	Refer to conceptual design
2		PLC integration	M	-	6					
3		Flow meter at mains	M	-	6					
4		Flow meter at branches (per pump)	M	-	6					
5		Pressure gauge and transmitter mains	M	-	6					
6		Pressure gauge and transmitter branch	M	-	6					
7		Vibration monitoring probes	M	-	6					
8		Motor Wind temperature sensor	M	-	6					
9		Thermodynamic efficiency device	M	-	6					
10		Motorization of Discharge isolation valve	M	-	6					
11		MOV position sensor and actuator	M	-	6					
12		Reservoir water level meter	M	-	6					
13		Chlorine tank level meter	M	-	6					
14		Chlorine dosage monitoring device	M	-	6					
15		VFD upgrade	M	-	6					
16	Pump performance	Pump Reconditioning	M	-	1	-	1	lot	2,000,000.00	See vibration analysis recommendations. Immediate attention required
17		Automatic pump lubrication system upgrade	M	-	6	80,000.00	8	point	640,000.00	
18		Replace existing motor with new high efficiency motors	E	-	3				200,000.00	
19	Building layout reconfiguration	Pump house layout reconfiguration	M	-	4				2,500,000.00	Improve space utilization
20		Control center and operator room refubishing		-	4				1,000,000.00	Ergonomically sound Pump Station for Operator's Welfare
21	Pipe and fitting reconfiguration and refurbishing	Adjustment of pump positions	M	-	4	-	1	lot	3,000,000.00	Refer to conceptual design
22		Provision of straight pipe at suction side of pumps and use of eccentric FOT reducer	M	-	4					
23		Relocation of valves: BV at suction and discharge, CV at discharge side only	M	-	4					
24		Removal of redundancy between FJ and STC (remove STC retain FJ)	M	-	4					
25		Modification of suction take off line int Y - connection (preferably at 45deg)	M	-	4					
26		Replacement of defective dial pressure gauges	M	-	4					
27		Replacement of defective valves	M	-	4					
28		Refurbishment of corroded areas and cleaning of clogged orifices	M	-	4					
29		Installation of pressure gauges at desirable points near pump	M	-	4					Refer to conceptual design
30	Rehabilitation of machine foundation	Single main slab with each baseplate mounted spaced accordingly	M	-	4	-	1	lot	1,000,000.00	Refer to conceptual design
31		Replace existing mounting with appropriate pump baseplate	M	-	4					Refer to conceptual design. Follow proper installation (sequence, alignment, etc.)
32	Condition monitoring	Regular vibration analysis		-	7	10,000.00	4	pump	500,000.00	Cost considered is for long term monitoring at regular interval
33	Reliability	Installation of additional pump (with corresponding pipes, fittings, labor and monitoring devices)	M	-	6	-	1	lot	1,000,000.00	
34	Reservoir leakage	Additional recommendation on the reservoir (analysis and investigation regarding the structural integrity and cause of leakage, provide recommendations to the problem)	M	-	1	-	1	lot	500,000.00	For analysis and investigation, rehabilitation cost not yet included
d	Lighting	Installation of lights for pump vicinity and reservoir	M	-	6	-	1	lot	100,000.00	