

WORLD VISION INTERNATIONAL DAWAM WASH Project BoQ for Solar Powered Water Supply Project						
Village/CDC: Taheri Haji Saleh			District: Dawlat Abad		Province: Faryab	
Sl. No.	Activity/Item/Description	Unit	Quantity	Unit Cost AED	Total Cost AED	Remarks
<b>A-(R.C.C Ground Water Tank+ Valve Box)</b>						
A1	<b>Site Preparation:</b> Proposed Tank and Valve box site preparation according to technical specification and engineering considerations.	M <sup>2</sup>	40			
A2	<b>Foundation Excavation:</b> Proposed water Tank and Valve box foundation excavation, According to attached technical drawing, technical specification and engineering considerations.	M <sup>3</sup>	50			
A3	<b>Back Filling :</b> Back filling by well-compacted materials (the compaction should be layer by layer according to Engineering technical considerations.	M <sup>3</sup>	7			
A4	<b>P.C.C (Plain Cement Concrete), M(1:2:4):</b> in Water tank and Valve box , According to attached construction materials Specification with proper curing.	M <sup>3</sup>	3.5			
A5	<b>R.C.C (Reinforced Cement Concrete), M-(1:1.5:3):</b> R.C.C work including Bar-bending and Form working, According to attached drawing, Specification and engineering consideration with proper Curing.	M <sup>3</sup>	28			
A6	<b>Water Stopper:</b> Installation of Water Stopper according to drawing.	M	22			
A7	<b>Plastering Work (Interior of Water Tank) M(1:3):</b> The plaster should have water proof admixture (ISOMAT) products according to technical requirements, with proper curing.	M <sup>2</sup>	85			
A8	<b>Plastering Work (Exterior Side of Water Tank) M(1:3):</b> The Materials Should be according to engineering Specification( should be proper and clean).	M <sup>2</sup>	60			
A9	<b>Painting work</b> Painting work of water tank Weather Shield 100% with Office Logo.	M <sup>2</sup>	60			
A10	<b>Roof Insulation:</b> Supply and installation of Isogam weight 42 Kg and thickness 4mm	M <sup>2</sup>	22			
A11	<b>Installation of Iron Gate.</b> Installation of iron gate for tank manhole ( 3 mm Steel sheet) With its relevant features/fittings according to drawing.	M <sup>2</sup>	0.8			
A12	<b>Interior Ladder of tank</b> Supply and installation of ladder in interior side of the Water tank according to Attached Drawing Specification.	M	2			
A13	<b>Inlet GI Pipe.</b> Supply and Installation Flanged GI Pipe Ø 3", Min Wall thickness =2.9 mm, Min Weight =6.25 Kg/M with Nut+bolt+Washer and other accessories.	M	3			
A14	<b>Over flow Pipe:</b> Supply and Installation Flanged GI Pipe Ø 2 1/2", Min Wall thickness =2.9 mm, Min Weight =5.20 Kg/M with Nut+bolt+Washer and other accessories.	M	3			
A15	<b>Outlet Pipe :</b> Supply and Installation Flanged GI Pipe Ø 3", Min Wall thickness =2.9 mm, Min Weight =6.25 Kg/M with Nut+bolt+Washer and other accessories.	M	3			
A16	<b>Covering Glass wool:</b> covering the inlet and outlet pipe with glass wool and iron sheet (th=0.5mm) with all required activities according to technical requirements	Job	1			
A17	<b>Drain Out Pipe:</b> Supply and Installation Flanged GI Pipe Ø 2", Min Wall thickness =2.6 mm, Min Weight =3.81 Kg/M with Nut+bolt+Washer and other accessories.	M	3			
A18	<b>Ventilation Pipe:</b> Supply and Installation GI Pipe Ø 2", Min Wall thickness =2.6mm, Min Weight =3.81Kg/M with 2 Elbows, and 1-Statd.	M	1			
A19	<b>PVC Rain Water Drain Pipe:</b> Supply and Installation of PVC, class-C Pipe Ø 2", with all required activities and engineering considerations for roof rain water drainage.	M	2			
A20	<b>Flanged Gate Valve :</b> Supply and installation of Flanged Gate Valve Ø 2" with Nut Bolt and Washers and other accessories. And with relevant composite fitting, should be connected with (OD-63 ) GI pipe, according to attached drawing.	No	1			
A21	<b>Flanged Gate Valve :</b> Supply and installation of Flanged Gate Valve Ø 3" with Nut Bolt and Washers and other accessories. And with relevant composite fitting to be connected with network main pipe( OD 90) mm HDPE pipes, according to attached drawing	No	1			
Sub Total for Ground Tank and Valve Box					-	

Water Tank construction should be according to attached drawing, Technical specification and Engineer recommendations, all concrete elements and other construction process should be properly cured, the construction materials (Sand, Gravel, Crushed Gravel, Portland Cement, Steel Bars and Pipe should be best quality and according to attached Specification).

B BoQ for House connection Stand Post/ Total # of Stand post 123						
B1	<b>Excavation Work:</b> Excavation of Each stand post foundation according to Designed drawing and Site conditions.	M <sup>3</sup>	856.1			
B2	<b>Stone bolder Pitching:</b> Supply and pitching of stone in foundation and surrounding area of stand post.	M <sup>3</sup>	34.8			
B3	<b>P.C.C (Plain Cement Concrete) M(1:2:4)</b> The construction materials should be according to attached Specification.	M <sup>3</sup>	24.0			
B4	<b>PVC Stand Pipe:</b> Diameter=4", Class B, Min Wall thickness (3.4 mm), min Weigth=1.17 Kg/m	M	123.0			
B5	<b>Back Filling &amp; Earth work:</b> Back Filling , Cleaning, Drain out, Site preparation and soak pit according to site requirement.	M <sup>3</sup>	797.2			
<b>Sub Total Cost of Stand Posts</b>					-	

The stand post should be properly selected in house considering all Hygienic recommendations, water management should be properly considered.

C BoQ Well Boring and Development.						
C1	<b>Site Preparation:</b> Including leveling+Trimming and installation of Well drilling machine.	M <sup>2</sup>	10			
C2	<b>Well Drilling by Percussion Machine:</b> Diameters=(16") inches, The sampling should be recorded from each geological formations in proper sample box and Recording sheet.	M	100			Its Prosping depth, The actual depth will be depend to soil texture
C3	<b>Gravel Packing:</b> the Size of Gravel Packing (3-6) mm, the exact size will be declared after boring and Well Hydralogical calculations, the Gravel should be clean and technical acceptable.	M <sup>3</sup>	8.5			Depend on soil texture and geological starta
C4	<b>Soil/Clay :</b> Supply and applying Clay soil for Blocking the Casing side of water well, special precausion should be considered.	M <sup>3</sup>	4.2			Depend on soil texture and geological starta
C5	<b>Supply and installation of PVC Casing and Filter Pipe:</b> Diameter=(8") inches, Class D, Min Wall Thickness (10.3 ) mm, Min weight (10.3 kg/m) According to ASTM D1785 Sch.80, DIN 8061, DIN 8062, ASTM F480 Standards.	M	100			the Exact Pipes Will be declared after well design
C6	<b>R.C.C for Well Protection Box Construction, M(1:1.5:3)</b> RCC (M:1:1.5:3) for Well protection box including Varnished steel form working, bar bending and other requirements according to drawing and technical specification.	M <sup>3</sup>	1.43			
C7	<b>Installation of Iron Gate.</b> Installation of iron gate for well protection box, including anti-rust painting and be lockable ( 4 mm Steel sheet) With its relevant features/fittings according to drawing.	M <sup>2</sup>	1.96			
C8	<b>Supply and Installation of PVC fittings:</b> Cable, Screw, Glue and other require materials.	L.s	1			
C9	<b>Well Cleaning :</b> Cleaning should be carried out by compressor Machine.	Job	1			
C10	<b>Pump Test:</b> Proper pump data should be recorded, the test should be min for 8 hours.	Job	1			
<b>Sub-Total Cost for Well Construction</b>					-	

Well drilling should be according to site condition and attached technical drawing and its specification, each geological formation and starta should be properly sampled in well sample box and relevant technical sampling record book, depth determination should be with close consultation of WASH engineer, well cleaning should be properly carried out, during pump test the relevant data should be properly recorded to assure well yield and future response for community demands

D BoQ of Boundary Fencing for PV-System						
D1	<b>Excavation in Foundation:</b> Excavation according to drawing and technical requirements.	M <sup>3</sup>	25.0			
D2	<b>Stone Masonry Work:</b> Stone masonry for foundation and superstructure: use 1:4 ratio of mortar, stone shall have high bearing capacity and smooth surface for decoration. With it's all related activities according to the drawing and technical specification	M <sup>3</sup>	32.0			
D3	<b>Pointing Work</b> Pointing of stone masonry with 1:4mortar of cement and sand with it's all related activities according to required specification.	M <sup>2</sup>	70.0			
D4	<b>P.C.C (Plain Cement concrete) M(1:2:4)</b> According to Attached Drawing and its specification	M <sup>3</sup>	10.5			
D5	<b>Fence work :</b> Supply and installation of GI-Pipes 2.5"(wall Th=2.9mm, weigth=6.25 kg/m) , GI-Net Mesh (wire dia=3mm) and	M	67.0			
D6	<b>Painting Work of Super Structure stone:</b> Whether Shield Painting work (100%) with three coats.	M <sup>2</sup>	70.0			
D7	<b>Gravel Filling:</b> Supply and laying of gravel at boundry fencing area according to techncial requirements with	M <sup>3</sup>	28			
<b>Sub-Total Cost for boundary Fencing Construction</b>					-	



G BoQ for Solar Panels					
G1	<b>Excavation of Foundation:</b> Site preparation and excavation in foundation for solar frame:	M <sup>3</sup>	2.0		
G2	<b>Solar Panel:</b> Providing and installation of Solar Panels according to MRRD Manual (European made or Equivalenat meet by IEC, ISO, TUV and CE, Solar array rated power = 8.1 KW Solar module type: POLYCRYSTALLINE or MONOCRYSTALLINE Water proof PV junction boxes IP68 for each array including DC Fuses, DC switch disconnectors, bus bars ,terminals, ducts or trays, supports & labels suitable to the PV arrays loads. Contractor must submit manufacturer warranty for solar panel for a period not less than 25	Watt	8100		The # of Solar depend to Redesign of Pump PV system
G3	<b>Submersible pump with its Compatible inverter, control box and Fuse box in stainless steel.</b> Eupean Made Technology Comply EN 1.4301 (AISI 304).EN 1.4301 (AISI 304). EN 1.4539 (AISI 904L). EN 1.4401 (AISI 316).. Rated power - P1- 5.852Kw , P2-5.5KW Rated voltage: 3*220-230 V Main frequency: 50 Hz Compatible inverter:RSI 3x208-240V IP66 7.5kW 31A, Pure sine wave, VFD and soft starter Avg. water production per day: (99.3 m <sup>3</sup> /day),	set	1		the Pump Model Depend to Redesign of the system.
G4	<b>Well Probe Sensor:</b> Dry running sensor including Electrical Wire and other fittings , According to Attached Electrical parameters	set	1		
G5	<b>Motor (Submersible drop Cable)</b> 12 mm <sup>2</sup> 3-phase cable for power and 1-phase cable for ground according to drawing and technical requirements.	M	120		
G6	<b>PV System-Inverter Cable</b> (1x12mm <sup>2</sup> ), Cable from PV-combiner Box to Inverter	M	20		
G7	<b>Grounding/Earthing.</b> All system Should be proper Grounded by ground Rod and Copper Cable (PV, PV-Frame, Inverter, Sumersible and other electrical installed features)	LS	1		
G8	<b>Pump Holding Rope :</b> Plastic made. diameter=16 mm Double line with its relevant accessoires and features.	M	220		
G9	<b>Electrical Conduite:</b> Electrical Conduite for External Wire:	L.s	1		
G10	<b>Circuite Breaker and Auto Fuses:</b> Circuite Breaker and Auto fuses should be installed to prevent system during electrical issues.	Set	1		
G11	<b>HDPE/Pipe/PN16/Dia=90mm</b> (SDR17)- (W.T-8.2mm)- Weigth(2.12kg/m)ISO4427, , Comply ISO4427, DIN8074, ASTM D2239, ASTM D2737. ASTM D3035. ASTM D2515 All relevant marks should be attached in nine /Bar	M	910		
G12	<b>PE and GI Fittings:</b> PE and GI 16 Bars fittings for Sumersible-Tank (PE Flanged Adapter, Flanged Elbow, Flanged Sockets and etc.) according ot technical requirment and site conditions.	L.s	1		
G13	<b>Boulder Stone Pitching:</b> Bolder Stone pitchine in foundation of Solar svstem frame according to drawing and technical	M <sup>3</sup>	1		
G14	<b>P.C.C (Plain Concrete and Cement)(M1:2:4)</b> according to attached Drawing and technical specification	M <sup>3</sup>	1		
G15	<b>RCC (Reinforced Concrete and Cement)-(M:250) for Solar Stand:</b> including Varnished steel form working, bar bending and other requirements according to	M <sup>3</sup>	3		
G16	<b>PV-Solar Frame of solar panels.</b> Supply and installation of Stand and frame for solar panels, able to be rotated manually ( Steel pipe dia 6", th=4mm, Profile box 40 x 80, th=2mm)	Frame	3		
G17	<b>Back Filling and Compaction:</b> Back Filling, Draining out. and Site Cleaning of Solar svstem plant.	M <sup>3</sup>	2		
G18	<b>Sign Board:</b> Supply and istallation of metallic sign board.	No	1		
<b>Sub Total cost of Pipe network</b>					-
Attached is the solar system Design. The Solar pump PV system has designed based on technical survey, the actual design well be determined after boring well to show well discharge, dynamic water table, draw down and etc. the contractor will be paid based on actual works. - Construction site Must be cleaned Properly after construction Work is completed.					
<b>Grand Total for All BoQ (A+B+C+D+E+F+G)</b>					-

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