

# **The International Committee of the Red Cross**

**WATER & HABITAT DEPARTMENT**

**Manarat Shabak / Boosting Station / Rehabilitation**

**Bartulla / Hamdaniya / Nainawa**

07 - June - 2017

## Manarat Shabak / pumping stations / Rehabilitation

### Bartulla / Hamdaniya / Nainawa

No.	Item Description	Unit	Estim Qty	Unit P. (USD)	Total Price (USD)
<b>A</b>	<b>Mechanical works</b>				
A.1	<p><b>Boosting pumps:-</b> Supplying materials and providing the required equipment, labor and tools for installing and operating brand new set horizontal pump (Split case type, Turkish made, contractor shall submit technical specifications of alternative and submit the catalogs of the pumps and will provide a supplier's pump efficiency curve for each pump requested, to ensure that the pumps installed are efficient and not simply matching the requested flow rate and head).</p> <p>Complete set, Electrical Motor and suitable Starter).</p> <p>The specification of the Pump:            Electrical motor, 380 VAC Y/D, 50 Hz.            Q = 300 M<sup>3</sup>/hr. &amp; H = 60 m, RPM=1450.            Shaft: stainless steel.</p> <p>Work &amp; Price include; installation of the pumps and the mechanical-electrical connections and any modifications regarding the suction and delivery pipes with all the fittings needed to connect the pumps in proper way and according to the instructions of the ICRC engineer.</p>	No.	2		
A.2	<p>Supplying and installing new brand cast iron gate valve DN 200, PN16 for the suction and delivery side, working temperature (-10 to + 110), hand wheel type, stem should be stainless-steel, wedge should be ductile iron rubber coated, casket EPDM- NBR (Ethylene propene, Nitrile, Fluorine (Viton)), western origin, flange type, with all bolts and nuts. The work includes providing any fittings required or any pipe modification and paint all with Jotun paint.</p>	No.	8		
A.3	<p>Supplying and installing new brand cast iron check valve DN 200, PN16, working temperature (-10 to + 110), hand wheel type, stem should be stainless-steel, wedge should be ductile iron rubber coated, casket EPDM- NBR (Ethylene propene, Nitrile, Fluorine (Viton)), western origin, flange type, with all bolts and nuts. The work includes providing any fittings required or any pipe modification and paint all with Jotun paint.</p>	No.	4		

A.4	<p><b>Chlorination System :</b>  Supplying materials and installing new chlorination system, consist of, chlorinator, cabinet type, Aldose or best equivalent (capacity of 2 Kg/hr., manual adjusting flow 0-100%, back pressure regulator, complete with all accessories such as injector, heaters, gas flow meter glass type, ( return valves. Etc.), booster pump, vertical multistage centrifugal pumps (Grundfose or best equivalent) (capacity of 5 m<sup>3</sup>/h, with 100 m head with 3 ph. and electric starter), and with all the required piping (COPPER ,CPVC,HDPE of different sizes) to connect the chlorine device to the cylinders and to the storage tank, and all necessary fittings, valves for gas and water as well as injection CPVC pipe to ensure proper performance. All the components mentioned above should be of the best quality and approved by the ICRC Eng. The work includes dismantling the old, installing the new with all connections, fittings required to complete the job.</p>	No	1		
A.5	Supplying materials and tools for repairing and maintaining the existing (Electric overhead Travelling crane 10 ton, with two movement directions), the price includes all the fittings needed and the electrical connections with the electrical cables needed to connected to source and re-operating the crane.	No.	1	2'000	
A.6	Supplying materials and tools for maintaining, cleaning the existing concrete storage tank 500 m3, the price includes cleaning the inside of the tank from all the sediment materials, maintain and repairing all the inlet, outlet, washing and overflow valves of different sizes, with replacing all the fittings needed.	L.S	1	2'000	
A.7	Supplying materials and tools sets for maintenance, the sets should containing of Wrenches size (8-36), Ratchets size (8-32), Screwdrivers of different sizes and types, Termal's pressing (10-240 mm), Socket Swivels, two different size of electric Jack Hammer, two different size of angle electric grinder.	Set	2	500	
<b>Sub-total A</b>					<b>0</b>
<b>B</b>	<b>Electrical works</b>				
B.1	Providing materials & fixing electrical distribution transformer (11/0.4 k.v, 630 KVA, working with stable voltage 400 V out door according to IEC 76 (Turkish, French or German made), including supplying and installing (Ring Main Unit, Schneider type) with all the fittings and cables for the connection. The work includes as well installing circuit of 1000 amp with the board and should be Schneider type. The work should includes installing metallic board for the main circuit and supplying, connecting power high tension Armoured cable size (3x150 mm <sup>2</sup> ) to connect to the Ring Main Unit and then connecting to the transformer, including as well cable (1x240 mm <sup>2</sup> )for connection between the transformer and existing cutting cables with all the thermal joints needed.	No.	1		

B.2	<p><b>Main Control Panel:</b> - Supplying, assembling and testing new control panel for all the electrical connections of the station, the price includes all the cables needed and the installation of the followings:</p> <ul style="list-style-type: none"> <li>- One main circuit breaker 1200 AM for incoming supply with full protection.</li> <li>- Bas Bar 1000 A complete set.</li> <li>- Digital gages multi readings.</li> <li>- MCCC 400 A (4 pieces).</li> <li>- MCCC 200 A (2 piece).</li> <li>- MCCC 100 A (2 piece).</li> <li>- MCCC 63 A (2 piece).</li> <li>- Cover all non isolated part by using isolated sheet</li> </ul> <p>signal lights, gages multi readings, ampere transformer (C.T) 400/5 (4 No) and (C.T) 200/5 (2 No) .</p> <ul style="list-style-type: none"> <li>- Automatic fan cooling &amp; lighting systems.</li> <li>- All the circuits should be ABB or Schneider type.</li> <li>- All inlet outlet connection should be from bottom of the board</li> <li>- All connections needed should be by using only Bus bar &amp; all accessories, metal frame of installation as to instructions of ICRC engineer.</li> </ul>	No.	1		
	<p>he work includes making complete anti lighting system by using cupper bars/wire of 50 mm with all connections to the plant from inside &amp; outside, electrical connection with the existing power supply source in the area and all other necessary works to put all the plant equipment's in full operation capacity.</p>				
B.3	<p>Supplying materials and skilled technicians for fixing new control panel Y-• 132 kw for the (boosting pumps) with metal painted cabinet double door (120cm x 80cm x 40cm x 2mm thick), delta star connection.</p> <p>Including:</p> <ol style="list-style-type: none"> <li>1-Main circuit breaker 400A (Schneider type).</li> <li>2-Contactors (3x 132 kw, LG type).</li> <li>3-Thermal overload (80-130).</li> <li>4-Automatic fan cooling system</li> <li>5-Automatic lighting system.</li> <li>6-Cover all non isolated part by using isolated sheet</li> <li>7- Ampere transformer C-T 250 / 5 A (3 No).</li> <li>8-Isolated Bus Bar 200 A complete set (4m length, size 2cm x 0.5 cm).</li> </ol> <p>the power connection should be with Bus Bar and the control by wires</p> <p>phase failure sequence, push button, Digital Ampere&amp; voltmeter and testing, all the supplied items should be of ABB, original as to instructions of ICRC engineer</p>	No	4		

B.4	<p>Supplying materials and installing generator (Perkins type-AC 400/ sound proof canopy and mobile units) of 400 K.V.A capacity with following specifications:</p> <p><b>Engine:</b></p> <ol style="list-style-type: none"> <li>1. Perkins heavy duty diesel engine.</li> <li>2. No. of Cylinders and Build: 6-inline, Water cooled, turbo charged.</li> <li>3. Engine Speed RPM 1500</li> <li>4. Electronic governor control system.</li> <li>5. Direct injection fuel system.</li> <li>6. Industrial capacity exhaust silencer and steel below.</li> <li>7. cooling radiator and fan. canopy.</li> </ol> <p><b>Alternator:</b></p> <ol style="list-style-type: none"> <li>1. Burshless, single bearing system, 4 poles.</li> <li>2. Self-exciting and self-regulating.</li> <li>3. Solid state Automatic voltage regulator. the canopy</li> </ol> <p>The work includes all the electrical connections with the main sources. The work includes constructing a metallic shed in the same location of the old one as follow:</p> <ul style="list-style-type: none"> <li>- Supply material and fixing squire section pipes 8x8 cm size of length 5 m as columns for the shed, the end of the columns should be welded by plate of 40x40 cm and thickness 4mm.</li> <li>- Supply material and fix ribbed sheet plates of dimension 1x6m and gage 18, the plates should be fixed by bolts with the angle section beams</li> </ul>	No.	1		
B.5	Supply and install steel storage tank for the fuel of the generator with capacity 5000 liter, the plate should be gage 16, the price includes painting with oil paint and constructing concrete base from solid blocks with height of 1 m and connecting the tank to the generator.	No.	1		
B.6	Supplying materials and extending electrical cable 4x16 mm <sup>2</sup> to connect the main board with the starters of the alum system, the work includes any procedure of laying the cable according to the instructions of ICRC Eng. could be excavation and backfilling, passing the cable through suitable PVC pipes or putting inside steel tray cable.	M.L	75		
B.7	Supplying materials and extending electrical cable 3x120+90 mm <sup>2</sup> for the connection of the transformer, the generator and the main electrical board of the project, the work includes any procedure of laying the cable according to the instructions of ICRC Eng. could be excavation and backfilling, passing the cable through suitable PVC pipes or putting inside steel tray cable.	M.L	150		
B.8	Supplying materials and extending electrical cable 1x120 mm <sup>2</sup> for the connection of the pumps starters to the main electrical board of the project, the work includes any procedure of laying the cable according to the instructions of ICRC Eng. could be excavation and backfilling, passing the cable through suitable PVC pipes or putting inside steel tray cable.	M.L	120		
B.9	<b>External Illumination:</b> - Providing, installing and operating lighting system (projectors 250 watt of sodium tv type with steel columns/poles 1.5" dia) with starters, cables, photo cells, switch boards and connecting them with power source.	No.	10		
<b>Sub-total B</b>					<b>0</b>
<b>C</b>	<b>Civil and general works</b>				
C.1	Supplying the materials and repairing the affected door and windows of the pumping station, replacing the damaged parts including the welding, painting with oil paint and fixing panels of glass 4 mm for the windows.	M <sup>2</sup>	20		
C.2	Supplying materials and cleaning the walls and ceiling and painting them with Turkish demolished paint in three layers for all the halls of the pumping stations and rooms of the treatment buildings.	M <sup>2</sup>	500		
C.3	Supplying materials and painting the walls of the buildings of the plant with Turkish oil paint in three layers for height of 1.5 m.	M <sup>2</sup>	200		
C.4	Supplying, installing & testing lamp LED type of best quality, wall mounting using wire size (2x1.5) mm <sup>2</sup> single core through a plastic conduit with suitable operating switch.	NO.	20		

C.5	Supply and installing new metal covered rain proof light (100)W, out side the buildings by necessary cables (2x2.5)mm2 accessing, with switches, including testing to complete the work properly	NO.	10		
C.6	Supplying & installing Industrial Exhaust fan best quality with 40x40) cm fan dimensions inside the pumps station using (2x2.5) mm2 wire single core through a plastic conduit and painted metal.	NO.	2		
C.7	Supplying the materials and rehabilitation the operators rooms and W.C, the work should include repairing the plastering of the affected walls with re-painting them, repairing or replacing the iron, P.V.C doors and the windows with fixing panels of glass 4 mm for the windows, repairing and fixing the electrical fittings and lighting system of all the rooms.	L.S	1		
C.8	Supplying materials and repairing the iron doors for the entrance of the plant, pumping station and the transformer room, two doors of size 4x2.5 m, and on of size 2x2.5 m with the iron frames, the price includes, replacing the damaged parts, re-painting with oil paint, changing the switch lock and all the requirements needed.	L.S	1		
C.9	Supply, install, and connect AC split unit (indoor, 2 tons, 24'000 BTU/hr., cooling and heating, type general Max or equivalent type available in the local market), the works includes all the fittings, base for the compressor and the labors to do the opening for the units inside the walls of the cells. requirements cables and circuits breaker needed to complete the work. The electrical connections of the AC split units should be from outside the building.	No.	2		
C.10	Supply & install metallic water tank 1200 liter gage 18 with float valve & 3/4" PVC pipe to connect to the water supply system.	PCS	1		
C.11	Supply & install wash basin ceramic 40*60cm complete with mixer, piping ,valves, fixing ----etc.	PCS	1		
C.12	Supply & install electrical heater boiler 120 lt, 3000 W good quality with all the fittings, pipes and valves needed.	LS	1		
C.13	Supplying materials and casting the front yard of the pumping station by reinforced concrete with B.R.C net 8 mm and opening 15x15 cm, the thickness of the casting should not be less than 15 cm, the work includes levelling the yard and paving layer of crushed stone 10 cm before casting the concrete.	M <sup>2</sup>	750		
<b>Sub-total C</b>					<b>0</b>
<b>No.</b>	<b>DESCRIPTION</b>				
<b>A</b>	<b>Civil works for the old and extension WTP</b>				
<b>B</b>	<b>Mechanical works for the old and extension WTP</b>				<b>0</b>
<b>C</b>	<b>Electrical works for the old and extension WTP</b>				<b>0</b>
<b>TOTAL AMOUNT</b>					<b>0</b>
<b>The duration</b>			<b>Working Days</b>	<b>XXX days</b>	