Scope of works & building specifications

Introduction:

Islamic Relief Worldwide has been operating in Sudan since 1984, initially responding to a famine. They have established a main office in Khartoum and expanded their presence to multiple states within Sudan. The IR Sudan operations include providing emergency relief, food security, livelihood support, women's empowerment, education, and basic health services. Also, IR Sudan run programs for orphans and offer seasonal support like Ramadan and Qurbani distributions.

Islamic Relief's work in Sudan has focused on assisting those affected by conflict, displacement, and natural disasters and provided aid to over 1.2 million people affected by the recent conflict, distributing food, water, and hygiene kits. In addition to this, IR Sudan support health centers and nutritional feeding centers, and have provided financial assistance and livelihood support to displaced families.

Currently IR Sudan is looking to engage with qualified contractor to rehabilitate Two water yards in Damazine locality – Blue Nile state.

Scope of works:

- The successful contractor will be given the task to undertake the rehabilitation of 2 water yards (water yard # 61 and water yard # 86) in Damazine locality – Blue Nile state.
- The construction works must be completed according to the BOQ specification.
- The contractor should be able and have the capacity to supply the required materials, skilled, un-skilled labors , equipment and tools to complete the construction works within the time frame specified in work plan and with required quality.
- Any change or amendment on the construction works, BOQ and scope of work should be discussed and agreed with IR Sudan field engineer in advance and on writing.
- The contractor should supply good quality materials in complaisance with IR Sudan procurements standards and execute work as specified bellow and detailed in the drawing.

Works specification:

Rehabilitation of water yard-86 in Damazine locality

1. Pumping system

- Calibration of a 12-inch iron well using a drilling machine and lowering 8-inch 10-bar UPVC pipes, 45 meters long, with 8-inch 10-bar UPVC filters, 20 meters long.
- Air compressor purification, conducted production trial and water sample test.
- Supply of a 3-inch submersible pump with a capacity of 30 m/h and a vertical pressure of 70 m, with all accessories, 15 3-inch pipes, 3 meters long, galvanized, and a 6-millimeter cable, 50 meters long, + control valve.

2. Distribution system:

- Supply and installation of a 10,000-litter capacity tank on a 4m high tower made of 14*7*7mm steel, with all connections for the upstream and downstream lines and accessories.
- Supply, installation and construction of a distribution point of (3) inch galvanized pipes with (6) well-made one-inch and (2) inch taps installed on them and their accessories, the plug, the hose and the throat (10) meters and so on with a platform (4) meters long and (90) cm long of reinforced concrete supported on walls of ordinary red brick number one and cement mortar with a height of (1) meter with plaster and concrete bedding around the sale with a width of one meter and the control valve for the sale with treatment of the water flowing from the platform by means of a cement mortar frame and collecting it in a ground basin with a (1) inch pipe to the outside.
- Supply and installation of a fence for the distribution point made of cable wire (6m x 5m) and 2-inch square pipes, tightening with a bar, and making a door (2m x 1m) from the pipes to etc.

3. Fencing of the water yard:

A 15*10m corral as fencing for the water yard made of 5mm wire, pipes, rebar, three lines of 3-line rebar, and a 120*180cm gate.

4. Solar system

- Supply and installation of 11 kW solar panels.
- Pannel's carrier of the waist for the base and square tubes with concrete fixing.
- Supply and installation of a 5.5 kW inverter with its accessories.

Rehabilitation of water yard-61 in Damazine locality

1. Pumping system

- Well casing and filter.
- Air compressor purification, conducted production trial and water sample test.
- Supply of a 3-inch submersible pump with a capacity of 30 m/h and a vertical pressure of 70 m, with all accessories, 15 3-inch pipes, 3 meters long, galvanized, and a 6-millimeter cable, 50 meters long, + control valve.

2. Distribution system:

- Supply and installation of 10 bar HDPE pipes with excavation, backfilling and connection accessories to the main network.
- Supply and installation of a 3*3 room made of zinc and good square pipes.

3. Fencing of the water yard:

- A 15*10m corral as a fencing for water yard made of 5mm wire, pipes, rods, three lines of 3-line rods, and a 120*180cm gate.
- Supply and installation of a 2-inch angled sign with the organization's logo written on both sides according to the design prepared by the organization.

4. Solar system

- Supply and installation of 11 kW solar panels.
- panels holder of the waist for the base and square pipes with concrete fixing.

General notes:

Materials/Equipment to be supplied by contractor:

All materials and equipment supplied locally by the contractor shall be of the best quality in their class and of the respective kinds as described in the contract and in accordance with the "Supervisor's" instructions and to the satisfaction of the IR Sudan Engineer. They shall be inspected from time to time at the site during the progress of the work.
Any materials/equipment arriving on site found unsuitable shall be rejected. The contractor shall replace the rejected material/equipment at his own expense.

Health & Safety

Safety

During implementation period, many factors of safety should be considered:

- Laboure's shall have enough and appropriate digging tools and keep excavated materials back at least 600 mm (2 ft.) from the edge of any trench excavation and 1.2 m (4 ft.) from any other excavation.
- Protective gloves and suitable protective clothing to protect hands or the whole body as required that should be provided to Laboure's.
- Provide a ladder when workers are required to enter excavation over 1.5 meter (5ft) in depth, the ladder should be properly fixed to prevent slipping.
- During the digging some argument should take place to prevent falling stone in the well, and support the sides of excavations by sheet pilling, shorting and bracing to guard against danger to workers from fall or dislodgement of earth, rock or other material.
- The well should be covered during the night to prevent falling children inside.
- Fence the construction site to prevent the entry of unauthorized persons on construction sites, which are located in built-up areas and alongside vehicular and pedestrian traffic routes.
- The contractor shall also follow the field engineer of IR Sudan guidelines for working in excavations and ensure that these standards are met at all times during construction work alongside the above specific points.

Quality assurance:

All materials and equipment supplied by the contractor shall be of the best quality in their class and of the respective kinds as described in the contract and in accordance with the (supervisor's) instructions and to the satisfaction of the IR Sudan engineer. They shall be inspected from time to time at the site during the progress of the work. Any materials / equipment arriving on site found unsuitable shall be rejected. The contractor shall replace the rejected materials at his own expense.

Materials and workmanship:

All the work noted in this specification must be carried out to the highest standard which is normally possible using only the best materials and most skilled workmen. Samples of all construction materials must be shown to a representative of IR Sudan for written approval before starting construction.

Site in charge:

The contractor must employ an experienced site-in-charge who must be on site to supervise the work at all times when work is generally leave the whole area of the site clean, washed, tidy and ready for use.

A. Basic materials:

Cement:

The choosing of cement brand must agree with a representative of IR Sudan. All cement brought to the site must be fresh (manufactured within previous tree months) and in perfect condition for use. All cement brought must be stored carefully so that it remains in perfect condition. Storage must be a totally dry place with a platform of planks or bamboo to keep all cement 6 minimum height above ground.

Coarse aggregate for concrete:

The first choice of coarse aggregate chosen by IR Sudan is graded river gravel of suitable type and strength. The second choice of aggregate is broken stone of suitable type and strength.

The source of aggregate should be clean and free from impurities and plant material. The shape of the aggregate should be mostly rounded with a small number which are long or flat. If this type of aggregate is not available the contractor must agree with a representative of IR Sudan which other type to use.

Sand:

The first choice of sand chosen by IR Sudan is good quality river sand. The sand must not contain mud, dust, or pieces of plants. The contractor must make all efforts to obtain coarse sand (with zero fines). A sample of sand must be shown to a representative of IR Sudan. For plastering the sand must be sieved according to the IR Sudan field engineer additional specification.

Water:

Clean water must be used in all construction works especially for plaster or mortar. The contractor must inform a representative of IR Sudan. As to the source of water used in all construction works.

B. Workmanship:

Blockwork wall workmanship:

All block walls should be laid in 1:2:4 cement: sand mortar. All bricks or block surfaces must be wetted with water before laying commences. Blocks should be soaked for just sufficient time for water to penetrate the whole brick. Existing wall brick layers should be wetted slightly before laying new bricks. All vertical and horizontal joints are to be completely filled with mortar. New brickwork and blockwork must not be laid for more than 1m above the general construction level at any one time. Brickwork and blockwork must be kept covered with wet sacking for one week after laying.

Concrete workmanship:

All materials for concrete (cement, sand, aggregate and water) must meet the quality specifications set out in section B. The proportions of cement, sand and aggregate and must be determined by volume according to the following table:

Concrete mix (1m3)	Cement	Dry sand	Gravel
1:2:4	320 kg	0.45 m3	0.9 m3
1:3:6	220 kg	0.46 m3	0.92 m3

Water / cement ratio quantity of water must not exceed the following:

Concrete mix	Amount of water
1:2:4	32 liters per 50kg cement
1:3:6	25 liters per 50kg cement