Enhancing Community Resilience and Local Governance Project

TERMS OF REFERENCE

Rehabilitation of one Hafir 60x50m in Gongbar village of Jerbena boma; and Construction of Amdulwis Haffir 50x30m; and Rehabilitation of Gosfami primary school at Gerger Payam Renk County Upper Nile State.

1. PROJECT INFORMATION

1.1. Background

International Organization for Migration (IOM), South Sudan Mission, is implementing the Enhancing Community Resilience and Local Governance Project (ECRP). ECRP provides training to boma and Payam level development committees which have prioritized infrastructure for selected Payams in eight Counties and two Administrative Areas.

IOM South Sudan therefore is seeking contractors to carry out mobilization and construction of the various community infrastructure projects to the required standards of ECRP for construction, quality control, and health, safety, and environmental protection.

IOM requires prompt and immediate action in mobilization of a team and excavation equipment for the construction of the water reservoir and all other components required for construction of a protected water drawing well. As a result, the Contractor must provide a suitable and experienced team that can quickly and efficiently carry out the required construction work, as well as any required tools, equipment, and transportation for the team to and from the sites. The Contractor shall furnish all the necessary materials, tools and equipment, labor supervision and other services for the satisfactory and timely completion of the works in accordance with this agreement.

1.2. Project Details

Project Name	Rehabilitation of one Hafir 60x50m in Gongbar village of Jerbena boma; and Construction of Amdulwis Haffir 50x30m; and

	Rehabilitation of Gosfami primary school at Gerger Payam Renk County Upper Nile State.
Project Site 1	Gongbar village of Jerbena boma, Geiger Payam-Renk County-Upper Nile state GPS: N=6.676250, E=33.207728
	Scope of Work: Rehabilitation of one Hafir 60x50m in Gongbar village of Jerbena boma with abstraction well fitted with a rope pump
Project Site 2	Amdulwis village of Jerbena boma, Geiger Payam-Renk County-Upper Nile state
	Scope of Work: Construction of Amdulwis Haffir 50x30m
Project Site 3	Gosfami primary school Gosfami boma, Geiger Payam-Renk County-Upper Nile state
	Scope of Work: Rehabilitation of Gosfami primary school
Schedule	The project is expected to commence in February 2024 and be completed within 6 months with a twelve-month warranty period.

2. Supervision

The IOM ECRP Lead Engineer is responsible for the overall infrastructure program supported by Project Engineers who manage the Field Engineers at the site level. IOM will also recruit a community site supervisor who will support the Field Engineer to supervise the works. The Project Engineer and Field Engineer are hereinafter referred to as the "IOM Engineer" unless otherwise specified specifically.

The condition and specification of the equipment and materials utilized will be subject to physical inspection and approval by IOM Engineer and should be disclosed by the Contractor prior to mobilizing the materials to the site. The installation of the inlet and outlet pipes, strainers, gravel pack and manual rope pump must be done in the presence of the IOM Engineer.

To avoid double reporting, the Contractor is not allowed to report externally to any other platform of coordination.

The Contractor will maintain a complete construction team at the work site. If a member of the team quits for personal reasons or must leave because of illness or injury, the Contractor must replace the person as soon as possible, with a worker of similar experience.

3. Scope of Work

These General Specifications are to be used with reference to the following documents:

Annex A. Design Drawings
Annex B. Guideline for Standards on Workmanship and Materials
Annex C. ECRP IOM Project Health and Safety Management Plan (HSMP)
Annex D. ECRP IOM Quality Management Plan (QMP)
Annex E. ECRP Environmental and Social Management Plan (C-ESMP)
Annex F. ECRP Labour Management Procedure (extract from ESMP)

The project aims to construct a water reservoir of 2,350 m^3 capacity using mechanized equipment employed during the mass excavation stage of the main reservoir and local labor during the construction of other components. The work shall include but not limited to resource mobilization, site surveying and setting out, site clearance, excavation, leveling, filling and compaction, inlet, outlet and well construction.

The work shall include the provision and installation of inlet and outlet pipes attached with strainers, materials for the construction of the inlet and outlet and the well, disinfection of the well, provision, and installation of manual rope pump.

The following detailed scope of work is supplementary to the design drawings. Any discrepancies between the drawings and these specifications shall be brought to the attention of the Site Engineer for clarification.

Only IOM may approve any changes, modifications, deviations, and substitutions in the scope of work.

3.1. SPECIFICATIONS – CONSTRUCTION OF WATER RESERVIOR

3.1.1. Site Layout

Orientation of haffir: The orientation of the haffir shall be as per the site assessment. Confirmation of the orientation shall be part of the initial site inspection and agreed upon with the contractor immediately after site handover. Additional measures should be taken to ensure that sites are located outside the minimum distances prescribed from sanitation installations, sources of pollution, landfills, graveyards, and animal pastures.

Measurements: During the setting out, the Contractor shall obtain the correct measurements from the drawings and cross check the diagonals to see if they are equal. The contractor shall use wooden pegs of

approximately 40 cm to mark the dimensions of the haffir. Before starting the construction works, the contractor shall place reference pegs for the extent of the excavation and ensure that these pegs are hammered deep into the ground so that they are not easily removed.

3.1.2. Site Clearance

The Contractor shall clear the site and debris for an area as specified in the BoQ (Bill of Quantities) and as shall be guided by the IOM Engineer.

3.1.3. Excavation for main reservoir, inlet and protected well.

The contractor shall excavate the main reservoir as per the cross sections specified on the design drawing. The IOM Engineer shall supervise and monitor the excavation of the reservoir size subject as per the following guidance:

The Contractor shall excavate the main water reservoir to a depth of *3 m* starting in phases from *0-2 m* in loose soil followed by *2-3 m* in stiff soil with a side slope on all edges formed on a slope ratio of 3:1 as per the plan layout.

The native excavated materials are used to construct a protective embankment of 1.5 m high around the water reservoir as per the drawing, compacted in layers not exceeding 200 mm, all round the dam using a slope ratio of 1.5H:1V.

The contractor shall excavate for:

- 2 inlet boxes - the box is 1.7 m tall with the top 0.5 m above the final ground level and 1.5 m away from the embankment, as per the drawings.
- Trenches for installation of inlet and outlet pipes
- One 1.9 m diameter well to a depth of 3.7 m

The surplus excavated materials are used to build embankment lines at an angle (to be determined on site) to divert surface runoff to the inlet box.

3.1.4. Concrete work on the inlet, outlet, and well

The Contractor should provide a weak concrete blinding class C-10 (1:4:8) of *50 mm thickness* after proper compaction of the base soil. Followed by reinforced concrete base of class C-25 (Ratio of 1:1.5:3) (Cement: Sand: Aggregate).

For the box's base slab, they shall be *200 mm* thick reinforced on the top and bottom with *A393* reinforcing fabric mesh 10mm diameter bar weighing 6.16 kg/m2.

For the box walls, they shall be *150 mm* thick reinforced with two layers of *A142* reinforcing fabric mesh 6mm diameter bar weighing 2.2 kg/m2.

The base slab of the well slab shall be *200 mm* thick reinforced with two layers of *A393* fabric mesh.

3.1.5. Reinforced Concrete Wall (Inlet and Outlet Box)

Reinforced concrete boxes shall be constructed to a *height of 500 mm* above the ground level for the inlet boxes while for outlet box shall be as per the design using concrete class C-25 (Ratio 1:1.5:3) (Cement: Sand: Aggregate).

For the box walls, they shall be *150 mm* thick reinforced with two layers of *A142* reinforcing fabric mesh 6mm diameter bar weighing 2.2 kg/m2.

The top grill for the inlet and outlet boxes shall be fabricated from Standard Y-12 bars spaced @ 100mm c/c both longitudinally and transversely to trap any debris from the surface water.

After the casting of the concrete boxes, they must be cured for 5 days.

3.1.6. Back Filling the Soil

After completing the reinforced concrete wall work, the back-void spaces must be filled out with approved selected soil material. The selected material should be put in layers of up to 200 mm with each layer properly compacted.

3.1.7. Pipe Installation

The contractor shall install uPVC, PN10, drinking water standards, non-toxic plain casings with a 12" nominal diameter for inlets and 6" diameter for outlets complaint with the standards of EN ISO 1452 and ISO 4422 and observance of the requirements of DIN 8063 and EN ISO 15493 for the use of plastic pipes. The pipes shall be installed with strainers at the pipe inlets to trap sediments and debris. For the outlet pipe only, the strainer and gravel pack assembly must allow for routine maintenance including removal, cleaning, and reinstallation. The strainer shall be in cage of wire mesh framed 500x500x500mm sitting on a platform 500x500x400mm for the inlet while for the outlet the platform shall have a height of 570mm to ensure longer lifespan and high efficiency.

3.1.8. Gravel Pack

The Contractor will supply and install filter gravel pack, thoroughly washed, well-rounded of uniform grading from riverbeds consisting of particles with a diameter of 1-5 mm. The gravel pack shall comprise of at least 95% siliceous material and must contain no clay, shale, silt, fines, excessive amounts of calcareous material or crushed rock. Prior to delivery, the IOM Engineer shall validate a sample of gravel pack to inspection.

3.1.9. Well Lining

The contractor should construct a wall with a thickness not less than 200 mm by using good quality burnt clay bricks, all round the excavated well pit. The mortar grade shall be 1:3 (Cement: Sand). The well shall be finished with 12 mm thick plaster using a 1:3 cement sand ratio.

An intermediate and top beam with a depth 300mm and width of 200mm shall be constructed using standard 6 Y-10 bars and R-8 ring spaced at 100mm c/c.

3.1.10. Well Top Slab

The contractor shall pre-cast the top slab separates from the well so that it can be placed on and off for maintenance access. For the top beam, C-25 structural concrete class shall be used (1:1.5:3 Cement: Sand: Aggregate). The slab shall be *150mm* thick reinforced with two layers of A393 fabric mesh and include two loop handles bent from a Y-10 bar sized to allow a 10 cm diameter rod/pole/log to easily slide through both loops so that the slab can be lifted by 2 or more persons. In addition, provide a 600mm x 600mm square opening with a lockable galvanized access steel cover for drawing water on the top slab.

3.1.11. Headwork and Pumping Equipment

The Contractor shall supply, imbed, and install a manual rope pump with all the components including the steel frame, handles, pulley/spool system, ropes, and steel water drawing container of 10 L capacity as specified in the drawing. The system shall be attached to the top slab using bolts to allow for removal during cleaning and maintenance.

Provide a footstep circling the well, 250 wide and 150mm above the ground made of masonry work as shall be directed by the site Engineer.

3.1.12. Well Disinfection

The Well should be thoroughly disinfected with a chlorine-rich solution, preferably granular Calcium Hypochlorite (HTH) or Sodium Hypochlorite at a concentration of 500 grams per cubic meter of pack. This will initiate the process of sterilizing the Well and the chlorine solution should stay in the Well for at least 4 hours at the specified concentration, leaving a concentration of residual chlorine of 50 milligrams/liters (as per WHO (World Health Organization) standards). The disinfection procedure shall be discussed with the IOM Engineer to seek approval.

4. SPECIFICATIONS - ONE BLOCK OF FOUR CLASSROOMS WITH TWO OFFICES ATTACHED

4.1.1. Site Clearance

The Contractor shall clear the site and debris for an area as specified in the BoQ and as shall be guided by the Site Engineer.

4.1.2. Roofing Work, Metallic Elements

The contractor shall remove and put complete roofing sheets after realignments of two metallic purlins lines at the ridge cap and replacing corroded purlins with new ones. The price contains construction of bonding elements for metallic roof such as welding fillet, angle brackets etc.

The contractor should put pre-coated corrugated galvanized iron sheet (28G) as per the specification mentioned in BoQ. The CGI sheet should be joined with the purlin with appropriate roofing self-tapping screws or J-bolts and other necessary accessories. A 25 x 225mm high metallic valance board / barge board with approved anti rust paints shall be screwed/fasten to existing metallic purlins: The metallic fascia board shall be screwed to the edges of the rafters; payment includes all joint and placement work to install the fascia board. A gutter shall be installed on the lower side of the roof and connected to the 10,000L water tank using the appropriate accessories and fittings.

All metal parts of the roof construction shall be protected with 3 coats of painting to prevent the metals from rusting.

4.1.3. Parapet Walling and Fixing Cracks

The contractor should construct on top of the roof sheets a wall of thickness not less than 200 mm and 200mm high by using good quality burnt clay bricks or concrete blocks to resist wind force as indicated in photos provided in scope of works. The mortar ratio should be 1:3 (Cement: Sand).

The contractor should also fix all the cracks around the building with a smooth finish as directed by site Engineer.

4.1.4. Doors and Windows

The contractor should provide all the ironmongery work of good quality, two coats of red oxide primer shall be applied at point of fabrication before delivery.

Steel doors and windows to fit structural opening like the existing ones. One coat of enamel paint to be applied on site. The finish shall be clean and uniform in color with no blemishes including the existing ones. All surfaces shall be covered uniformly. Adjacent surfaces that have not been painted shall be protected from splashing. Any paint splashes shall be cleaned off at the contractor’s expense.

4.1.5. Finishing work

For the floor finishing, a 25 mm floor screed should be applied on existing slab after creating keys for bonding. The ratio of cement to sharp sand should be 1:3.

The contractor shall provide 15 mm thick as rendering on parapet walls. The mortar ratio should be 1:3 (cement: plaster sand).

All the walls to be painted shall be clean and dry. Any dirt shall be removed through scrubbing. Specified color coats on the BoQ shall be applied to the satisfaction of the IOM Site Engineer. Spills on the floors, walls and roof shall be avoided and any accidental spillage should be thoroughly cleaned to a state that can't be seen. The walls shall be painted with 1 coat of emulsion under coat and finished with 3 coats of matte vinyl paint in soft white for internal walls and emulsion weather guard paint in cream for external walls. The metallic fascia board shall be painted with 1 coat of anti-rust and finished with 3 coats of an oil-based gloss paint in white. Paint color and where to apply to be coordinated with the IOM Site Engineer.

4.1.6. Roof Water Catchment System.

The contractor will put in place one water tank as per the water tank stand details in the drawing including the compacted earth base, brick walling (min. 225 mm thick, cement mortar 1:3) to hold compacted murram, top slab and 10,000L water tank with all fittings.

5. Role of the Contractor

The Contractor will have to provide for the construction and completion in every detail of the work described in the contract documents. All labor, materials, tools, equipment, transportation, supplies required to complete the work in accordance with the specifications and terms of the contract should be well furnished. The Contractor cannot deviate from the construction designs or specifications without seeking permission and approval from IOM.

IOM reserves the right to reject any materials, equipment, or resources and to delete or reduce any work item, whether in whole or in part and update Annexes, as necessary and a reduced contract price shall be agreed.

If the Contractor is not able to finish the construction works or must abandon the works due to loss of tools, accidents or any unforeseeable circumstances, the Contractor should remove all unused materials from the site. IOM will pay only for the work done as per rates in the filled Bill of Quantities in the contract document.

The ECRP IOM Project Health and Safety Management Plan (HSMP) outlines the Contractor's roles and responsibilities in the management of activities to prevent dangerous acts that could lead to injuries, illnesses or serious incidents in the workplace and damage or loss of assets.

The ECRP Quality Management Plan (QMP) outlines the Contractor's roles and responsibilities for meeting the quality standards expected of this program and the process and procedure for verifying each step.

To complete the task in a timely and efficiently the Contractor should:

1. Deploy qualified and well experienced managers, site engineers and workers to complete the required tasks.
2. Prepare and submit staff deployment plan/organogram for the project implementation assigning the specific persons in charge of communication and coordination with the project supervisor.
3. Prepare and submit Work Plans, Emergency Preparedness and Response Plan, Waste Management Plan, Labour Management Plan and Environmental and Social Management Plan as per the HSMP
4. Preparation of "Resource Plan" (materials, machine/tools, workforce) in accordance with the submitted Work Plans.
5. Develop Risk Assessments using Form HS05 as per the HSMP
6. Based on the approved work plan, the Contractor shall execute multiple work activities simultaneously to save time.
7. The Contractor shall allow unlimited access to construction sites for the ECRP staff as required.
8. Follow Guideline GHS12 – Site Establishment in the HSMP,
    A. The Contractor should arrange temporary office/accommodation at each site with necessary facilities for the staff and workers (water, toilets, first aid kits etc.)
    B. The Contractor is responsible for maintaining pollution/contamination-free surrounding environment.
    C. The contractor should display both work plan and resource plan at each site.
    D. The debris from any demolition activity and garbage at the construction sites should be removed by the Contractor and disposed of in a safe area away from the site.
9. As per the Quality Management Plan (QMP),
    A. Ensure that materials are properly packed and covered during transportation to ensure that the materials are not damaged.
    B. Ensure that all materials, cement, timber, paints etc. are properly stored on sites to prevent any deterioration of strength by water, moisture, or heat.
    C. All structural works such as foundation works, erection of columns, beams, support structures etc. shall be executed in the presence of IOM personnel.

6. Health, Safety and Environment

The Contractor is required to comply with the *ECRP IOM Project Health and Safety Management Plan (HSMP)* and the *Environmental and Social Management Plan (ESMP)*. The following information is provided to guide the Contractor in the key aspects of the HSMP only.

The main health and safety legislation and other relevant compliance requirements in South Sudan are described in the *South Sudan Legal Register* (Form HSE03).

Risk assessments for hazard identification and activities are required for safety-critical activities prior to each stage of work commencing. These shall be documented using Form HS05. All IOM personnel have

the authority to stop any activity that has the potential to cause injury or damage to property until such times as the works are managed in a safe manner.

The Contractor's team leader shall take all reasonable precautions to prevent any death or injury to persons during said undertaken activities. These precautions shall include but not be limited to ensuring the crew wears the protective equipment such as safety helmets, hard-toed boots (safety boots) or gumboots, heavy-duty gloves and ensuring that all tools and equipment are in a safe condition and ensuring that their employees adopt safe working methods as instructed by IOM. No military-looking clothing will be accepted at any time. *Health, Safety, Social and Environmental inspection Site Reports* shall be carried out weekly on Form HSE05.

At the project sites, The Contractor's team leader has the obligation and responsibility to safeguard the safety and security of its personnel, the construction crew's equipment and other property, and personnel's personal effects and other property. The Contractor's team leader shall develop an *Emergency Preparedness and Response Plan* in consultation with IOM, including detailed procedures to cover evacuation, personnel, equipment, unlawful interference, and prevention of sabotage.

The Contractor is required to hire skilled and unskilled labour from the local project area to execute the contract. The Contractor shall submit their *Labour Management Plan* in accordance with the guidelines in Annex F on the ECRP *Labour Management Procedures*. Justification must be submitted to IOM for approval before the Contractor can recruit non-local skilled labour.

All selected staff to work as part of the construction crew are to abide by the Code of Conduct in the Construction Contract on the prohibition and prevention of sexual exploitation and abuse (SEA). The crew shall undertake a *PSEA (Prevention of Sexual Exploitation and Abuse), 1-day training* with IOM prior to conducting any work.

The Contractor is to ensure that all materials, solid or liquid, are stored in a manner so as not to damage or contaminate any surface by spillage. Further guidance is provided in *Guidelines on Environmental Management*: GEM02 Waste Management & Hazardous Substances, GEM03 Protection of Water, GEM05 Borrow Pit Management, and GEM06 Preservation of Historical, Archaeological and Cultural Remains.

7. Quality Management

The ECRP *Quality Management Plan (QMP)* outlines the Contractor's roles and responsibilities for meeting the quality standards expected of this program and the process and procedure for verifying each step. The following information is provided to guide the Contractor in the key aspects of the QMP only. More detailed guidance on quality of workmanship is provided in Annex B.

Section 5 of the QMP provides the framework for project staff responsibilities during Construction. From IOM, each site will be assigned a Site Engineer and Community Site Supervisor who are supervised by a

Project Engineer whose main task is to monitor and report on the performance of works being implemented. The Lead Engineer is responsible for the overall contract management.

The QA (Quality Assurance) process, in brief, starts with approval from the Lead Engineer for a construction activity to proceed (Form QM06). Once approval is obtained, the work can proceed. During the work phase and upon completion, the Contractor must allow testing of materials, inspection of construction activity and survey compliance checks to be performed. For *material testing*, relevant forms include QM07A Request for Inspection and Testing Results, QM07B Inspection of Materials on Site, and QM09 Inspection and testing plan. For inspection, the Contractor is responsible for submitting *QM10 Daily Logbook*, and *QM11 Weekly/Monthly Progress Report and Summary*.

Any materials or works that do not conform to the technical specifications, design drawings or BoQ (Bill of Quantities) shall be rejected with a *Non-Conformance Report (NCR)*. The Contractor will then be responsible for dismantling and removal of the rejected materials from the sites immediately. Rectification and reconstruction of works shall be carried out at the cost of the Contractor prior to continuing with the next phase of work. Refusal of this instruction will lead to immediate termination of the contract.