**Scope of Works & Building Specifications**

**Description:**

Construction/ Rehabilitation of 10 classrooms and 6 latrines in 8 schools in Golo Jabal Marah locality- Central Darfur state as follows:

1. Construction of classroom in Manaboo school.
2. Rehabilitation of 2 classrooms and construction latrine 4 stances in Kiroo school.
3. Construction of latrine 4 stances in Killing school.
4. Rehabilitation of Classroom in El-Sadaga school.
5. Construction of latrine 4 stances in Golo Jabal Marah school.
6. Construction of 2 classrooms and latrine 4 stances in Kirnay school.
7. Construction of 2 classrooms and latrine 4 stances in Boroo school.
8. Rehabilitation of 2 classrooms and construction latrine 4 stances in Dorsa school.

The contractor shall provide all construction materials, equipment and tools to complete the works as the bill of quantities, drawings and SCI construction engineer directions.

**Specification**

* **Health & Safety**

In general, the contractor shall provide and maintain work environments and procedures which will safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to contractor operations and activities; avoid interruptions of Government operations and delays in project completion dates; and, control costs in the performance of this contract. For these purposes, the contractor shall consider several factors of safety during implementation which includes:

1. Laborers shall wear overalls and all the equipment safety measure for labors and must get instruction on the use of this equipment
2. Laborers shall have enough and appropriate tools and Keep maintenance 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.
3. Sensitive tools shall be protected from sunlight at all the times.
4. Laborers shall make safe passageway to prevent slipping and tripping hazards.
5. Contractor shall provide warning signs and safety tools for site safety.
6. All safety measures should be undertaken during COVID-19 pandemic including the provision of PPE materials for foremen, labors and engineers.
* **Site preparation and planning**
1. Contractor shall coordinate with SCI representative, community representatives and the local authority to present the work plan include the supply materials and determination the site location for all the interventions.
2. Contractor shall advise on site use and improvements, selection of materials and equipment, as well as provide recommendation on construction feasibility, availability of materials and labor, time requirements for installation and construction
3. Contractor shall manage the activities of all interdisciplinary interfaces for the Work, including civil, structural, architectural, mechanical, piping, electrical, and instrumentation and controls.
4. Contractor shall provide construction site safety notices.
5. Contractor shall Breaking out hard material contained and cleaning the site

**A) GENERAL NOTES**

**A1) 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 SCI for written approval before starting construction.

be replaced.

**A2) 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.
* The contractor employee’s must not be less than **18** years old in any case

**B) BASIC MATERIALS**

**B1) CEMENT**

The choosing of cement brand must agree with a representative of SCI. All cement brought to the site must be fresh (manufactured within previous three months) and in perfect condition for use. All cement brought to the site 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 h eight above the ground.

**B2) COARSE AGGREGATE FOR CONCRETE**

The first choice of coarse aggregate chosen by SCI 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 SCI which other type to use.

**B3) SAND**

The first choice of sand chosen by SCI 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 SCI. For plastering the sand must be sieved according to the SCI Construction Engineer’s additional specification.

**B4) WATER**

Clean water must be used in all construction works especially for plaster or mortar. The CONTRACTOR must inform a representative of SCI as to the source of water used in all construction works.

**B5) Sanitary materials**

Sanitary materials shall be accepted by SCI representative and shall meet the standard specification with brand new tools, devices, and equipment.

**B6) Roof cover material**

Roof cover shall be accepted by SCI representative and shall meet the standard specification. The roof sheet shall be new with good quality material that suitable for rain water harvesting. Roof cover shall cover the surface of the roof

**B7) Iron angle Tensile Steel**

The choosing of Iron angle brand must agree with a representative of SCI. The iron angle should be clean and free from impurities. The iron angle shall meet the mechanical properties including: high ductility, toughness, excellent weldability. Also, the iron angle shall have high working strength and in good quality form.

**C) WORKMANSHIP**

**C1) 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 | 320kg | 0.45m3 | 0.9m3 |
| 1:3:6 | 220kg | 0.46m3 | 0.92m3 |

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

|  |  |
| --- | --- |
| Concrete Mix | Amount of water |
| 1:2:4 | 32 litres per 50kg cement |
| 1:3:6 | 25 litres per 50kg cement |

**C2) PLUMBING WORKMANSHIP**

All materials for plumbing work must meet the quality specifications according to standard guideline.

**C3) WELDING WORKMANSHIP**

* Contractor should provide the suitable welding machine and the machine shall be capable for the work. filler materials, electrodes, and wire should be provided by the welder and it should achieve the standard quality. The Weld area should be contoured to permit complete fusion at the sides of the bevel and to minimize slag inclusions.  Flux and slag should be completely removed from weld beads and from the surface of completed welds and adjoining base material.  The flux removal should be done in a manner that will not contaminate or overheat the weld or adjoining base material. Weld reinforcement and finish should be as required by the Goal representative. Undercutting of the base metal or roof material is not permitted. Welding process shall be free of cracks, cold lap, excessive porosity, slag inclusions, and other defects indicative of poor workmanship.