Life-Saving Basic Primary Health Services, in Kunar province, Afghanistan:

"Negotiation procedures for Construction of emergency ward in Karchando Health facility of Norgal district, Kunar Province, Afghanistan."

PURPOSE OF THIS "TENDERING DOCUMENT"

The tendering document concerns an **IMC project implementation** in collaboration with the MoPH regarding the construction of one Emergency ward in the **Karchando Health facility of Norgal district, Kunar Province.**

The details provided below:

DESCRIPTION OF THE ACTIVITIES

The document is a succinct description of the activities to be implemented. The technical specification required described below. The designs are in the below **Appendix**.

LOCATION AND ACCESSIBILITY

The proposed work sites are located in the Karchando health facility of Norgal district, Kunar Province. IMC team, in collaboration with the **Health Facility and PPHD,** will inform on the exact locations of the Emergency ward site. IMC will hand over the site to a successful contractor to initiate the agreed civil works through a **joint IMC and HF and PPHD site visits**.

PRE-AMBLE TO THE SPECIFICATION

This specification covers the minimum standards for required workmanship and materials required by the contract. All the proposed works shall be **carried out before the approvals** of the WASH team designated person. Any items, which do not meet the requirements defined in this specification shall be repaired or demolished and re-instated at the contractor's expense. The contractor shall be liable for any delays to the project caused by construction or demolishing the defective work.

Any items of work not described in this specification but forming part of the works shall meet the minimum standards of workmanship and materials, which can usually be expected locally; **Needs prior approvals of the WASH team designated person**. Where there is a conflict between local standards of and this specification, this specification shall take precedence.

This document forms part of the contract and should be read in conjunction with the other Contract Documents:

- Contract Agreement
- Conditions of Contract
- Bid Form
- Contract Drawings
- Other documents referred to any of the contract documents

MINIMUM STANDARDS FOR WORKMANSHIP AND MATERIALS

Quality of Materials

The qualities of all construction materials to be under the Afghanistan civil works standards. The IMC WASH Engineer shall check the quality of all materials delivered to the site. Any materials, which do not meet the minimum standards, shall be rejected. Such materials shall be removed from the site and replaced at the contractor's expense with materials of the required quality.

Quantity of Materials

The IMC WASH Engineer shall check that the **required quantity of materials** has been delivered to the site and used in the works. The WASH Engineer will not **certify payments for any materials** which have been specified in the contract but have not been used in the proposed works, for whatever reason.

Quality of Workmanship

The IMC WASH Engineer shall be responsible for checking that the quality of workmanship by the contractor is of an acceptable standard according to this specification. The **IMC WASH Engineer will reject any works**, which have not been executed to the required standard. The contractor shall redo any rejected works at his own expense and no time delays to the overall scheme.

Materials Specifications

Sand:

Sand shall be clean and free from contaminants such as oil, silt, soil, wood, metal, or vegetable matters. Very fine or smooth sand shall not be used. The sand sizes are defined as Coarse sand (used for concrete) shall have a **maximum of 5mm down.** Medium sand (used for mortar) shall have a **maximum size of 2mm down.** Fine sand (used for plaster) shall have a **maximum size of 1mm down**.

Aggregate

Aggregate used for concrete works shall be angular crushed rock varying in size from **5mm to 20mm down** for the Grade 1 Concrete. It shall be clean and free from contaminants such as oil, silt, and soil, wood, metal, or vegetable matters. If this type of aggregate is not available, the **CONTRACTOR/SUPPLIER must seek prior approvals** of the IMC WASH Engineer on the use of alternative aggregates.

Cement

Cement (Portland 400 or 500) shall be delivered in its original powder form and sealed bags to the site. It shall be kept clean and dry until usage. Partially used bags of cement shall be stored in a dry place until required. Any partially used bags, which have become damp, shall be rejected.

Water

Water used for mixing concrete, mortar, plaster, and other construction materials/works **shall be potable, clean, and free from organic materials.** If none is available on site, the contractor shall transport suitable water to the site. The IMC WASH Engineer checks the **quality of the water at the site through random visits;** if non-compliance is found, the contractor would be liable to penalties.

TECHNICAL SPECIFICATIONS

Excavations

The excavations work to be **clean and free of water.** The WASH Engineer shall inspect all excavations before the work proceeds. The contractor shall give the WASH Engineer **reasonable (5 days) notice of the inspection date.**

Excavations are dangerous and liable to collapse, particularly in wet weather or waterlogged grounds. The contractor shall take all necessary precautions to ensure that all excavations are **adequately protected** to prevent accidental collapse. Excavations depth must be following the WASH Engineer instructions, drawings, and design. **The excavation works shall not be entered unless they are shored up with wooden or another temporary bracing**. The contractor shall be responsible for providing **safety gear** and be liable for any accidents, which may occur.

Concrete

Except otherwise specified by the IMC WASH Engineer, all plain and reinforced concrete works and concrete in general (either hand or machine mix at the site) to meet the applicable standards & specifications defined by the Afghanistan schedule of works.

Concrete design mix:

The materials used in concrete works shall be proportionate by weight and size defined, following the standard cement/sand/aggregate mix ratios as follows:

- For reinforced concrete mix **- 1:1:2** mix ratio only for footing and columns.
- For reinforced concrete mix **- 1:1.5:3** mix ratio for beams, slab, and peaks.
- For plain/mass concrete mix - **1:1.5:3** mix ratio.

The concrete aggregates mixes, cement, sand, and water content ratio shall be selected to obtain the best results for compression strength, density, water tightness & durability, workability, and finish quality. The concrete mix must be such that the design is compatible with the minimum water content ratio to give adequate workability for each grade of concrete mix.

The grades of concrete for the various civil works shall be noted on the drawings and as below:

All reinforced concrete (foundations, slabs, etc.)

- Characteristics compressive strength at **28days: 250kg/cm**
- Minimum cement content: **280 kg/m**
- Max free water content ratio: **0.40**
- Max nominal size of aggregates: **25mm**

After placement, the concrete to be vibrated by mechanical means. The method of vibration is to be approved by the IMC WASH Engineer before the operations. The vibrated and consolidated concrete is to be finished to toweling or floating the surface to a smooth and flat finish.

Following the placement, vibration, and finishing work to the concrete and after the initial set has occurred so as not to damage the surface of the concrete, appropriate measure, approved by the IMC WASH Engineer are to be implemented to cure the concrete for a **minimum period of 14 days.**

Where concrete previously placed as part of the works is to be butted, jointed, or raised with the addition of further concrete, except in the case where the initial concrete is blinding concrete, the first concrete surface must be suitably prepared by the scrabbling, i.e., removing the laitance (fine concrete surfacing) before placement of the new concrete. The method is to be approved by the WASH Engineer. After scrabbling, **the concrete shall be a thoroughly wetted and thin layer of 1:2 cement**: sand mortar applied just before pouring the new concrete.

Steel reinforcement shall be positioned with a clearance or **40mm (center to center)** to the face of the concrete unless otherwise directed by the IMC WASH Engineer or shown in the Contract documentation.

Formwork for the concrete needs the approval of the IMC WASH Engineer and shall not allow grout loss from the concrete mix.

Prior to the placement of the concrete, the formwork to be inspected, and **all harmful materials** were removed to the approval of the IMC WASH Engineer.

No mixing or placement of concrete is to be undertaken by the contractor without prior permission.

Reinforcement

Steel reinforcement shall be the correct of diameter, as defined and shown on the drawings. The bars shall be clean and free from rust. They shall be **securely fastened with wire** before placing the concrete. The minimum cover to **reinforcement shall be 25mm**.

Framework:

The exact dimensions and positions shall be as per the **issued execution drawing**. All formworks shall be **designed and built to maintain rigidity throughout the placing, ramming, vibration, and setting of the concrete t**o the required shape, position and level, and specified class of finish. All joints shall be sufficiently tight to prevent leakage of concrete.

Before concreting is commenced, the **formwork shall be thoroughly cleaned and freed** from all sawdust, tie wire, shavings, earth, dirt, and any other debris. Release agents should be applied and should be compatible with the class of finish; care must be taken not to contaminate the reinforcement.

Striking of formwork shall be done without damage to the concrete, including removal without shock to prevent impact load on the partially hardened concrete. For columns, walls, and other parts, not supporting the weight of the concrete may be removed as soon as the concrete has hardened sufficiently to resist possible damage due to removal operations. For suspended slabs or supporting formworks, **at least 14 days of hardening are required before striking forms**.

Placing Concrete

Once mixed, concrete shall be used immediately. Any concrete, which had been allowed to achieve its initial set, shall not be placed. Concrete shall be placed in layers with a **maximum thickness of 250mm or defined in contract documents**. Each layer shall be thoroughly compacted with a wooden (or any other) rammer. When placing on old or set concrete, the surface of the old concrete shall be thoroughly cleaned and wetted with water. If the surface is smooth, it must be chipped to form a suitable key. Old concrete shall be painted with liquid cement before placing the new concrete.

Curing Concrete

Sufficient water is required for **concrete to harden through hydration**. The concrete must be kept **moist or "cured"** to ensure that it does not dry out. Poorly cured concrete will shrink or crack, and not achieve its full strength. Concrete shall be cured by **covering in plastic sheets.**

While spraying with water, covering with wet sand or other methods proposed by the contractor and approved by the IMC WASH Engineer. The contractor shall ensure that all concrete is adequately cured. Curing shall start as soon as the concrete has been poured and shall continue **until curing is complete after 28 days.**

Concrete Finishing

Concrete shall be finished to a smooth, uniform surface and finished using a metal or wooden float. The surface texture shall be flat and smooth, with **no irregularities or air bubbles**. When formwork is removed, the face of the concrete shall be flat and smooth. If there are signs of voids, air bubbles, or inadequate compaction, the concrete shall be removed, disposed of, and re-laid with a fresh mix.

Wall Stone Masonry

The stone must be granite, and stone shall be of **uniform size and shape**, and the specified dimensions. The contractor may substitute alternative sized stone with the prior approval of the IMC WASH Engineer, and at no additional expense.

Walls shall be **straight, perpendicular, and dimensionally** correct, constructed as shown on the drawings (if they are included). The **lines of mortar shall be horizontal, with no excess mortar staining the faces of the walls**. The faces of walls shall be regular and even, with no irregular stones.

Mortar

Mortar for stone masonry shall be mixed in the proportion 1 cement: 4

Medium sand by volume. Sufficient water shall be added to achieve the desired workability.

The surfaces of the **stones are must be smooth and has a medium size;** the mortar shall be placed on all horizontal and vertical faces between the stone, with no gaps. Each stone shall be placed to the correct line and level and shall be level in all directions. Any gaps shall be filled with additional mortar rammed in with a small wooden rammer. The outside faces of stone walls shall be pointed. No excess mortar shall be allowed to stain the faces of the stone.

Specifications for Brick masonry in Cement Mortar

The bricks shall be of first-class, regular in shape, size, color, free from flaws, cracks, lumps, **minimum crushing strength 75kg/cm2.** Maximum absorption shall not be more than 20% of its dry weight on immersion in water for 24 hours. The sand used shall be medium coarse, clean, sharp, free from clay, mica, and other organic matter. The cement used shall satisfy the requirement of common Standard. The mortar is designated in a specified proportion of cement and sand. The materials are weighed or measured and mixed on a watertight platform after allowing bulk age of sand; bricks before laying shall be thoroughly soaked in water, and the brickwork shall be kept wet for at least 10 days.

Plaster and Pointing

Plaster and pointing for internal walls and external rendering shall be mixed in the **proportion 1 cement: 5 for plaster, and 1 cement 3 for pointing fine sand by volume**. Sufficient water shall be added to achieve the desired workability.

The walls shall be wetted before the application of the plaster and pointing. The plaster shall be **10mm to 20mm thick** and pointing according to stone construction state, and shall have a uniform flat finish free of irregularities and blemishes. At corners and between walls and ceilings, the finish shall be clean and precise in a straight line. Untidy or poorly finished plaster shall be rejected.

When the plaster is still damp, the wall shall be floated to a smooth finish with a wet steel float.

Doors and Windows

All doors and windows should be made from PVC 8000 standard quality; frames shall be properly jointed at corners and mortised, tenanted, and wedged in the best manner. The Contractor shall provide all nails, brads, screws, glass paper, tools, etc. for the proper execution of this job, and the doors and window size and shape should meet according to drawing sizing and shape.

Nails

Nails shall be of an appropriate size for their application.

Glazing

Glazing of doors and windows shall be done with plain **4mm thick glass unless specified otherwise** by the IMC WASH Engineer. Panes fitted into the single compartment shall be whole and secured with either putty or glazing beads.

Painting

For the exterior side, the paint shall be **plastic water sheet paint 75%, and for the interior side shall be used plastic color 75% two times, and for stone**, masonry shall be used oil paint tow times, and for wooden work also use oil paint with as per site engineer coordination.

Drainage System

All water from the facility must be collected and channeled through the drainage channel into soak away pits. The water drained from the high risk shall be channeled to the high-risk soak away pit, while the water drained from the low risk shall be channeled to the low risk soak away pit.

All water from the facility, including water from hand washing basins and surface rainwater, must be collected and channeled through man-holes into a soakaway pit as per site need.

Annex 1

Work Plan of the Emergency ward

No	Description	Month 1				Month 2				Month 3				Month 4			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Site preparation																
2	excavation																
3	PCC																
4	RCC																
5	Stone Masonry																
6	Brick Masonry																
7	Pointing																
8	Plaster																
9	Filling																
10	Doors and windows																
11	Izogam																
12	Painting																
13	Plumbing work																
14	Electrical work																

Annex 2

Plan of Emergency Ward

Annex 3

Footing Plan of the emergency ward

Annex 4

Long Section of Emergency ward

Annex 5

Cross-section of the emergency ward

Annex 6

Footing and column Reinforcement Plan

Annex 7

Column, Beam, and slab reinforcement plan

Annex 8

Electrical Plan

Annex 9

Front View

Annex 10

Details

Annex 11

Roof Drainage plan

Annex 12

Septic tank plan and section

Annex 13

Bill of Quantity for Emergency ward

Province: Kunar project ID:		Emergency Ward Bill of Quantities Norgal district Kunar Province.				
Title	**No.**	**Item**	**Quantity**	**Unit**	**Unit Cost**	**Total Cost for Emergency Ward**
A1	1.00	Site preparation	197	M2		
A2	2.00	Semi hard excavation loading and unloading	246	M3		
A3	3.00	PCC in footings, floor DPC, pathway and roof: mark 200 (1:1.5:3)	35	M3		
A4	4.00	RCC of footings, ring, ring beam, pillar, beams, slab and profit wall: mark 250 (1:1:2)	67	M3		
A5	5.00	Stone masonry, mortar mark: (1:4)	150	M3		
A6	6.00	Pointing, mortar mark: (1:3)	88	M		
A7	7.00	Brick masonry first class, mortar mark (1:4)	46	M4		
A8	8.00	Plaster, mortar mark: (1:5)	546.00	M2		
A9	9.00	Filling, including footing, floor and ramp from the soil and bolder	110.00	M3		
A10	10.00	Installation of doors and window from PVC 8000 with glasses thickness 4mm best quality	36.90	M2		
A11	10.01	Tile work for floor and walls and bathrooms	222.00	M2		
A12	10.02	Ezogam for roof company Kabul star	214.00	M2		
A11	**11.00**	**PANTING**				
	11.01	Weather sheet for outside 75% Including filling all necessary items high quality	241.00	M2		
	11.02	Plastic distemper color for inside 75% Including filling all necessary items high quality	298.00	M2		
	11.03	Oil Paint for stone masonry best quality	2.00	Gallon		
	11.04	Lining for doors and windows best quality	2.00	Gallon		
	11.05	Plastic emulsion washrooms beast quality	4.00	Gallon		
A12	**12.00**	**PLUMPING WORK**				
	12.01	Gutter full size from the roof to the pathway	2.00	Pcs		
	12.02	3" P-Trap	7.00	Pcs		
	12.03	4" and 3" PVC PIPE as per site with all fittings	90.00	M		
	12.04	Metallic water tank 1000 liter with wooden frame and iron sheet	1.00	Pcs		
	12.05	PPRC pipe with related fittings with all fittings	20.00	roles		
	12.06	Sanitary seat medium size including (hand sink, toilet, flush tank, mix shower, Muslim Shower, mirror, soup case with all fitting items) all items must be good quality	4.00	seat		

	12.0	Water boiler 80-liter Halaston company	2.00	pcs		
	12.08	Pashm shesha	6.00	role s		
	12.09	Wire for pashm sheha fitting	200.00	M		
A13	**13.00**	**ELECTRICAL WORK**				
	13.01	Switch Boards	8.00	Pcs		
	13.02	Holders	13.00	Pcs		
	13.03	Fans	5.00	Pcs		
	13.04	Sockets	9.00	Pcs		
	13.05	Lights (bulbs)	13.00	Pcs		
	13.06	European Solar Panels 250-watt standard quality	10.00	Pcs		
	13.07	13 Kw Inverter standard quality	1.00	Pcs		
	13.08	European 13 batteries, 200 Amperage Battery, 24V system standard quality	13.00	Pcs		
	13.09	Charge Controller 46Amp Current into Batteries standard quality	1.00	Pcs		
	13.10	Submersible 1000	1.00	Pcs		
	13.11	Air condition 18000 BTU with all fittings	2.00	Pcs		
	13.12	Metallic mobile 10 solar panels frame standard sizing of profile	1.00	Pcs		
	13.13	Wire 1.5 mm best quality	2.00	bun dle		
	13.14	Cable 10 mm for Connection	70.00	m		
	13.15	Cable 6mm for solar panels	30.00	m		
	13.16	Conductive pipe and all fittings of electrical system	1.00	LU M		
	13.17	Wooden frame with covering 07mm iron sheet for battery house	1.00	Pcs		
	13.18	Wooden table for pacing batteries and converter	1.00	Pcs		
GRAND TOTAL						