



# Organization for Afghan Woman capacity and knowledge (OAWCK)

## TECHNICAL SPECIFICATION STANDARD FORMAT FOR DRY VAULT LATRINE

Kushandi and Zari Districts of  
Balkh Province

### 1. Description

This is a succinct description of the activities to do. The technical specification required will be described below. The designs are in Appendix.

Organization for Afghan Woman Capacity and Knowledge (OAWCK) proposes to improve sanitation conditions of local communities in Kushandi and Zari Districts of Balkh Province

. Organization for Afghan Woman Capacity and Knowledge (OAWCK) will construct 30 community latrines. The latrine is a pit latrine with a back pipe (vent pipe) fitted to the pit and a screen (fly screen) at the top outlet of the pipe.

Latrines are an improvement to overcome the disadvantages of simple pit latrines, i.e. fly and mosquito nuisance and unpleasant odors. The smell is carried upwards by the chimney effect and flies are prevented from leaving the pit and spreading disease. The locations for the latrines will be finalized in consultation with the local communities and OAWCK Staff.

- Stone masonry of vault (height 1.8m, length 2.225 m, width 0.5) with foundation and pointing.
- Stone masonry of stair (height 1.4m, length 2.3m, width 1m) and pointing.
- Mark of concrete/mortar for stone masonry M-120
- Installation of metallic or RCC trap door (45cm X 45cm) in the vault for empty excreta from latrine.
- The Floor of latrine will be RCC according to the Map
- Installation 4" PVC normal type black color pipe for ventilation
- PCC for covering the floor for seating place (thickness 10cm).
- Mark of PCC concrete is (M-150).
- Installation urine 2" GL pipe
- Metallic door (180\*90) cm Gage 2mm or Made from container the best Quality (180 x 90) cm and some Palace where find the good Quality Wooden Timber the Contactor will be give advice for OAWCK Engineer
- Installation of wooding window frame (40 x 40) cm with mesh

### 2-Quality of Workmanship:

The (OAWCK) 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 (OAWCK) WASH Engineer will reject any works, which have not been executed to the



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required standard. The Contractor shall redo any rejected works at his own expense and no time delays to the overall scheme.

### **Sand:**

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

Shall have a maximum size of 1mm

### **Aggregate:**

The coarse aggregate used for concrete mix shall be angular crushed rock varying from 5mm to 20mm for Grade 1 Concrete. It shall be clean and free from contaminants such as oil, silt, soil, wood, metal, or vegetation's. If this type of aggregate is not available, the CONTRACTOR/SUPPLIER must seek the (OAWCK) WASH Engineer's approval in the Journal book on which other types to use.

### **Cement:**

Cement (Portland 400 or 500) or equal Specification cement shall be delivered to the site in prime powder form and sealed bags. 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. The Contractor will store the empty bags for the (OAWCK) WASH Engineer's count and dispose of them by the Contractor.

### **Bricks:**

Shall be obtained from an approved source and of uniform color, size (7\*11\*22) cm, and shape. Bricks shall have smooth rectangular faces with sharp straight, right-angle edges. Maximum absorption shall not be more than 20% of its dry weight on immersion in water for 24 hours. Minimum crushing strength shall be 75 kg/cm<sup>2</sup>.

### **Water:**

Water used for concrete mix, mortar, plaster, and other construction materials shall be potable, clean, and free from organic material. If none is available on site, the Contractor shall transport suitable water to the site.

### **Stone Masonry:**

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 (OAWCK) 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



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staining the faces of the walls. The faces of walls shall be regular and even, with no irregular stone

### **Mortar:**

Mortar for stone and brick masonry shall be mixed in the proportion 1 cement: 4Medium Sand by volume. Sufficient water shall be added to achieve the desired workability. The surfaces of the

stones must be smooth and have 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.

### **Brick masonry in Cement Mortar:**

The bricks shall be first-class, regular in shape, size, color, free from flaws, cracks, lumps, minimum crushing strength 75kg/cm<sup>2</sup>. 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 the specified proportion of cement and Sand. The materials are weighed or measured and mixed on a watertight platform after allowing the 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.

### **Concrete**

Except otherwise specified, all plain and reinforced concrete works and concrete in general (either hand or machine mix at site) will meet the applicable standards & specifications.

Concrete design mix:

The materials used in concrete shall be proportionate by weight 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
- For brick masonry mortar mix- 1:5 Mix ratios
- For plastering mortar mix- 1: 3 Mix ratios
- For stone masonry mortar mix- 1:5 Mix ratios



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The aggregates mix, cement, and water content ratio shall be selected to obtain the best results for compressive 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 each grade adequate concrete workability.

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

C25: all reinforced concrete (foundations, slabs, etc.)

- Characteristics compressive strength at 28days: 250kg/cm<sup>2</sup>
- Minimum cement content: 280 kg/m<sup>3</sup>
- Max free water content ratio: 0.40
- Max W/C (0.45) and slump (50-10mm)
- Max nominal size of aggregates: 16mm
- Minimum Cement Content of 200 kg /m<sup>3</sup>
- Concrete mix design should be done as per ACI 318-19 and Verified before casting and approved by the Quality Control or site Engineer.

After placement, the concrete shall be vibrated by mechanical means. The vibration method is to be approved by the WASH Site Engineer/works personnel before the operation. The vibrated and consolidated concrete is finished by toweling or floating the surface to a smooth and flat finish.

Following placement, vibration, and finishing work to the concrete and after the initial set has occurred not to damage the surface of the concrete, appropriate measures, approved by the site Engineer/Works personnel 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,



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i.e., removing the laitance (fine concrete surfacing) before placement of the other concrete. The method is to be approved by the Site Engineer/Works personnel. After scrubbling, the concrete shall be a thoroughly wetted and thin layer of 1:2 cement: sand mortar applied before pouring the new concrete.

Steel reinforcement shall be positioned with a clearance or 40mm to the face of the concrete unless otherwise directed by the (OAWCK) WASH Engineer/Works personnel or shown in the Contract drawings.

Formwork for the concrete shall be to the approval of the (OAWCK) WASH Engineer and shall not allow grout loss from the concrete mix.

Prior to the concrete placement, the formwork is to be inspected and all harmful materials removed to the approval of the (OAWCK) WASH Engineer/Works personnel.

The Contractor's Site engineer must undertake no mixing or placement of concrete without prior permission by the (OAWCK) WASH Engineer.

### **Reinforcement:**

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

All structural concrete (Floor, Beam, Slab) are concrete with Specified Compressive Strength of  $F_c=250\text{kg/cm}^2$

The steel must be tashkandi or equal Specification steel will be used

## **2.WORK FOLLOW-UP**

In order to allow an effective follow-up of work, the Contractor will hold a book of building site on which all information related to the work will be reported. This book will allow the OAWCK controller, as of his arrival on the building site, to know exactly the progress report



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of construction work. The remarks and reserves of the Contractor and/or the person in charge for the programmed will be notified in the book of building site. A copy of this field notebook will have to be given to OAWCK in the end of the project and might be used as intermediate or final report to the donor. On the book of building site, all information will be written down concerning:

- Name of the building site (description of the location);
- logical description of the samples;
- Measurement of the works.
- Generally, all technical details, incidental, clean breakdowns, difficulties with the course of work, with indication of the hours when they occurred.

## Project Action Plan

### Construction of Communal Latrine

Project Name: Sustainable Access to Clean Drinking Water and Promotion of Hygiene in Balkh Province						Project Duration					Responsible Person		
						8-Nov-23		7-May-24					
S/N	Project Activities				Target		Nov	Dec	Jan	Feb		Mar	Apr
Construction of Community Latrines:													
1	Construction Work of 23 Communal latrines in Zari District of Balkh Province.				23								WASH officers
2	Construction Work of 23 Communal latrines in Kishende District of Balkh Province.				23								
Project Closing:													
1	Completion reports, Demobilization, Project hand Over				Closing								WASH officers

Prepared by: Project WASH Officer Team