Technical Scope of Work for Construction of AFJR4 –Project 40 Toilets

1.0 INTRODUCTION

The scope of the works requires construction of Toilets for Girls' High Schools which includes: stone masonry footing, brick walls, reinforced concrete (RCC) slab, Septic tank, and water supply system for 40 Cabin toilets. The goal of these works is to provide sustainable sanitation facilities to IDPs and host girl's students at their Schools. The sanitation facilities will include construction of Toilet blocks in which each Toilet block contain five toilets with water supply facility. We will do construction of 8 toilets blocks at 6 Girls High Schools .These Schools are Located at 3 Districts (Kuz Kunar, Goshta and Surkhud). Three Schools (Abdul Khil Girls High School, Qalatak Girls High School, Tawkal Baba Girls High School) are located at Kuz Kunar, 1 school (Mullah Rahmat Baba Girls High School) located at Goshta and remaining 2 Schools (Peer Said Hassan Gilani Girls high School and Nazanin Jabarkhil Girls High School) are located at Surkhud districts. We planned to construct 5 toilets (1 Blocks) at Abdul Khil Girls High School , 5 toilets (1 Blocks) at Qalatak girls high school , 10 toilets (2 Blocks) at Tawkal baba Girls high school , 5 toilets (1 Blocks) at Mullah Rahmat Baba Girls High, 10 toilets (2 Blocks) at Peer Said Hassan Gilani Girls high School , 5 toilets (1 Blocks) at Nazanin Jabarkhil Girls High School . This work also includes provision of water facilities inside toilets for toilet flushing. The water connection for toilets will be taken from water tanks placed on top of toilet blocks.

2.0 SITE PREPARATION

For implementation of project, contractor will clear approx.100m2 land. The site should be cleared base on needs around the toilets. The ground should be levelled and barriers set up to demarcate the working area. The layout of the toilets construction sites should allow for easy access to the toilet site for moving the materials, during work excavated soil will transfer far from working area and similar at completion stage of work the area will be made clean so that people can utilize the toilets for defecation.

3.0 CONSTRUCTION WORKS

The construction works will mainly consist of following:

3.1 EXCAVATION

Excavation will take place for footing of walls, stair and septic tank. The excavation will take place at surveyed and selected site. IRC Technical staff will guide the contractor regarding selected sites for toilets and septic tanks. Excavation will take place for 40 toilets as per drawing. IRC will provide technical drawing to contractor for knowing dimensions of excavation for each part of construction. Contractor will hire all unskilled labours from the local area including for excavation.

3.2 SEPTIC TANK

Total 8 septic tanks will construct for 40 toilets. In this project mainly septic tank will excavate according to the Guides of site Engineers. In construction phase, contractor will take care of sizes or dimensions of each part of septic tank as they are very critical. All sizes are shown in details in technical drawings. Before starting work, contractor will receive drawings of girl's high schools toilets.

3.4 STONE MASONRY

Stone masonry will take place for footing of septic tank sidewalls and stairs. Stone masonry will be done with cement sand mortar of 1:4. The stone will be from mines of mountains of Kama District block size with good quality crack free and stone will be acceptable to Site Engineers. Trained skilled worker will place and shape the rocks according to the walls width and height. After stone masonry and toilets construction, pointing of stone masonry will be done with sand cement mortar of 1:3.All free space of stone masonry will fill by mortar and not to by using the stone Pieces in free space of stone masonry .contractor should bring Clean and pour sandy gravel to have the proper fine aggregate and free of dust and soil. It will be approved by site engineer.

3.5 PLAIN CEMENT CONCRETE (PCC)

PCC will pour on the bed of Septic tank according to drawing and norms base of need 150 Mark concrete (1:2:4). Crush stone of maximum size 0.75" size, sand of Fineness modulus 2.5 and cement according ASTM C150 will be used in making concrete mix. In case of gravel usage, contractor will use clean, and well graded gravel. Around the outer walls of toilets should pour the PCC according to the technical drawing.

3.5 REINFORCED CEMENT CONCRETE (RCC)

RCC will take place in Rings of septic tank, slab of septic tanks and Roof slab of Toilets Blocks. In addition to it, lintel beams will be provided on top of Window and doors with at least 15 cm extension to both sides of doors and windows. This RCC concrete will be of M200. Crush stone of maximum size 0.75" size, sand of Fineness modulus 2.5 and cement according ASTM C150 will be used in making RCC concrete mix. In case of gravel usage, contractor will use clean, and well graded gravel.

3.6 BACKFILLING

Inside the toilets backfilling will take place. Contractor will use excavated soil as back filling material. The backfilling will occur in layers' shape. Each layer will be of 25 cm and compacted well before laying another layer of soil over it. For quality of backfilling, contractor can use water for improving the density of compacted soil inside toilets.

3.7 BRICK MASONRY

Contractor will use 1st class brick during construction of 8 blocks (40 toilets). The strength of bricks will be around 140 kg/cm^2 of brick area. During brick moulding no saline deposit should be used. Bricks will not absorb water more than 20% of brick weight when immersed in water for 24 hours. For brick masonry sand cement mortar of 1:3 will be used. Brick Masonry of outer wall will 35cm ,inner walls masonry 25cm thickness and perform as load bearing walls, thus essential care is required during its constructing regarding alignment, curing and mortar quality. Brick quality should be approved technical team.

3.8 CEMENT SAND PLASTER

Cement sand plastering is required of 0.5" for walls, bottom face of slab, inner faces of septic tank with three layer of mixed mortar with padlo powders and outside face of parapet wall with cement sand mortar (1:3). The plaster will be straight and not having vertically and horizontally up and downs beyond 5 mm. Before starting plaster, contractor will ensure curing of brick walls in order to ensure the quality of plaster. After finishing plaster, curing is required for 7-14 days.

3.9 PAINTING

Painting of walls, inner slabs and parapet walls will be carried out by the contractor. Contractor will provide and apply three coats of washable oil painting emulsion paint to interior plastered surfaces and water repellent, high breathable painting to exterior faces of toilets. IRC Technical team will select colour and brand of paint, for peak and should chosen deferent colours and for inner wall should provide plastic paints up to 1.2 m.

3.10 TILES WORK

Contractor will use 1st class of tiles for floors and walls of toilets during construction of communal toilets. The strength of tiles for walls and floor will be around 250 kg/cm2 of tile area. Tiles will not absorb more than 0.5 % of water placed on floor and walls of toilets. Tiles work should provide up to 1.5 m height from floor of toilets.

3.11 GLASSES OF WINDOWS

Glasses will install at the specific place for windows and it quality will good with 5 mm thickness.

3.12 RAMP AND STAIRS

Ramps should build for wheelchairs of disable students according to the proper slope and also stairs would be build according to need for toilets and technical drawings.

3.13 RAILINGS

Ramps and stair should have good quality of steel railing / fables fencing and one special bath that provide for disabled students. Would have Railing for stand stuck with walls and one near to the toilet.

3.14 Mud Roofing

Above the roof of RCC should two layer of mud with good quality plastic and good quality gutters will install for Toilets.

3.15 Door and Windows

All Doors and windows should be made of UPVC good quality .and install with the specific places and also it will has good quality locks and hangs with both sides.

3.16 WATER SUPPLY WORK

Water Supply work for toilets will include taking connection from water tanks and connecting all toilets taps with the water tanks. Each Toilet will have 0.5" tap with flexible hose .The PPR pipe will be of 0.5" and the length will be of 1 m length .This work will also include required labour and fitting cost for the mentioned work. It will include work of excavation and filling trench with fittings. The contractor will fix all these instruments as per IRC engineering team guidance.

3.17 SANITARY WORK

Sanitary work for Girls school toilets will include supply and fixing of DN63 pipe of PN16 for roof water 1m with elbow, 15 cm PVC pipe class D of required length including required fittings for connecting commode to septic tank, Indian seat commodes of white colour made of ceramic material. The contractor will carry out all sanitary work as per IRC engineering team guidance.

Note: all construction work will carried out with supervision and monitoring of IRC engineering staff. One special toilet will be build for disabled students in order one set of toilet should have shower sanitary tools for girls bathing. Also all construction materials and sanitary tools should approved by technical team.