

## **Annex A– Preamble and Technical Specifications**

### **Al Oroba Street Railing Rehabilitation Statement of Work**

#### **Background:**

The Stabilization Facility for Libya aims to bridge the critical period of transition from initial period of humanitarian relief towards mid- and long-term structural and sector-specific support. It includes time bound quick interventions at the municipality level providing concrete improvements and peace dividends at the community level through rehabilitation of critical infrastructure, building the capacity of local authorities and enhancing local mediation and conflict resolution capacities and processes.

Under this project, UNDP will repair light infrastructure within the conflict affected areas to reverse the physical disruption caused by the conflict and enable the reopening of key services at the municipal level. It will also support quick recovery of businesses that are critical to the survival of whole communities through rehabilitation and provision of equipment. Through these activities it will also aim to boost the capacity of municipalities.

This particular project incorporates the required road rehabilitation works in two lots; lot # 1 includes the supply and installations of new galvanized guardrails and replacement of the existing damaged galvanized steel guardrails, and lot # 2 includes the supply and installation of median precast concrete road barriers, at different locations of Al Oroba road in Benghazi. The project includes dismantling and collecting the existing damaged steel guardrails, (which will be delivered to the Municipality of Benghazi) and replacement of the new guardrails and firmly fixing of the guardrails and the supporting galvanized steel U posts (spacing of the post should be at distances sufficient to support the guard rails and as per the existing ground conditions and the in accordance with the relevant specification and as instructed by the Engineer). The concrete barriers are considered as passive protectors with a view to ensure the safety of the pedestrians by the wayside and the vehicles. The bidders should visit the site to fully understand the required scope of work, the existing damaged material and the site condition.

1.1 The Bill of Quantities shall be read in conjunction with the Conditions of Contract, Specifications, Drawings and Employer's requirements and the Tenderer shall provide against the bill rates or in the prices for the full scope of the work covered by the Contract, no claim or variations shall be considered on account of the Tender's failure to comply with this provision.

1.2 The various documents collectively referred to herein as the Bill of Quantities shall jointly constitute the Bill of Quantities referred to in the Conditions of Contract and these preambles are to be read in conjunction with item descriptions in the Bill of Quantities.

1.3 The Bill of Quantities has generally been measured in accordance with the Principals of Measurement (International) for Works of Construction (June 1979), as published by the Royal Institution of Chartered Surveyors with amendments made to suit local practice and conditions. The Quantities inserted against items in the Bill of Quantities are estimated quantities for the Works for the purpose of Tender evaluation, and the Tenderer shall be deemed to have checked and verified such quantities in the compilation of his Tender Price prior to the submission of his Tender. Upon the award of the Contract, the priced Bill of Quantities shall be used solely for evaluating interim payments due to the Contractor, and as a schedule of rates for establishing the value of variations.

1.4 The Contractor shall not use the Bill of Quantities for the purpose of ordering materials or arranging Subcontractors. References to these activities shall be the Specifications and Drawings and instructions issued by the Engineer.

1.5 All items in the Bill of Quantities shall be deemed to have a monetary value, whether priced or unpriced. In the absence of a unit rate or price against any item, the cost shall be deemed to have been included elsewhere within the Contract Price and the work described to that item shall be executed by the Contractor without any additional payment.

1.6 The descriptions in the Bill of Quantities may be incomplete and the Tenderer is referred to the Drawings, Photographs and Specifications for complete information in respect of all the relevant descriptions, quality, dimensions, capacities, design parameters and the like.

## 2.0 Format of Descriptions

2.1 In addition to common abbreviations the following have been adopted; POM (I), Principal of Measurement (International) for Works of construction dated June 1979 as published by the royal Institution of Charted Surveyors, London

## 3.0 Rates

3.1 Rates and Prices shall be all inclusive, comprehensive and include the following:

- a) All obligations imposed by the Contract.
- b) Complying in every respect with the requirements and the considerations of the Specifications and Drawings.
- c) All considerations arising from the definitions incorporated in each Preamble section.
- d) Labour for fixing and all associated costs.
- e) Materials and goods and all associated costs
- f) Fitting and /or fixing materials and goods in any position, hoisting to any height.

- g) Use of Scaffolding, plant, equipment and tools.
- h) Any additional labours usually associated with measured items.
- i) All necessary protection of the Works, removing all casings and temporary covering and making good and clearing away upon completion.
- j) All applicable taxes, duties, charges, government levies, landing charges and transport.
- k) Overheads & profit.

#### 4.0 Measurements

4.1 All measurements are net and the rates shall include for all laps, waste, working space and trade or traditional allowances.

4.2 The pricing of materials shall take account of the following:

- a) Pricing Preambles, Drawings and specifications shall apply reciprocally between the various sections of the Works, unless otherwise described.
- b) Materials shall be of the specified quality unless otherwise described.
- c) All materials shall be transported, handled, stored and fixed in accordance with the printed instruction or recommendations of their manufacturer or suppliers.
- d) Protection of completed work, all casings and temporary coverings and making good and clearing away upon completion.

#### 5.0 Discrepancies

5.1 Any discrepancy arising in terms of these Preambles and the items contained within the Bill of Quantities must be brought to the attention of the Engineer for his clarification prior to the submission of tender.

### **CONCRETE WORK**

§ The rates for all concrete work shall include for the following:

- a) Concrete test cubes and testing costs wherever required.
- b) Mixing, hoisting and placing and compacting on the surfaces of any material.
- b) The forming any construction joints, including any required preparation for adjacent pours, together with expansion joints or the like.
- d) Curing and protecting concrete surfaces from harmful weather conditions

### **Particular Technical Specifications:**

#### **Galvanized steel guardrails:**

The guardrails shall be standard size guardrails, supported and fixed by bolts to the galvanized U steel posts. The galvanized steel posts must be firmly fixed to the ground by cement sand grout or steel base plates. (post spacing, fixing details, type, dimensions, and finishing of steel guards and posts shall be similar to the existing guardrails and according to relevant specifications and the Engineer's instruction). The work shall also include supplying and fixing approved light reflectors on the guardrails and crash end treatment, according to the specifications and the requirement of the relevant Authorities. The work shall also include all required work such as excavation works, drilling, fixing steel of steel posts, bolts, blockouts, and all other material and workmanship required to install and replace the damaged existing steel guardrails by new steel guardrails, complete. The work shall also comply with the following:

The contractor shall coordinate with the relevant Authorities in Benghazi and shall comply with requirement of the relevant applicable specifications and standard, and the site specific risk assessment, and the traffic management plan for the worksite.

Provide warning signs and advisory speed signs to inform drivers of the nature of a hazard they are approaching.

Ensure that appropriate temporary traffic management is in place for the barrier installation process. This include, temporary road or lane closures, speed restrictions, etc.

Consideration should be given to the visibility of the barrier system during all climatic conditions. Provide suitable signage to assist in the delineation of both the barrier system and the levelled bath.

The ends of safety barriers must be appropriately treated to avoid creating additional hazards.

The existing damaged steel guard rails are the sole property of Benghazi Municipality.

Steel Grade Q345 (S355JR / ASTM A529M 1994), or the relevant applicable Standard.

Surface treatment: Hot Dipped Galvanized, with rust resistance zinc coatings

Posts, Spacer U, Bolts and Nuts and washers, reflectors and terminal ends according to the applicable standards and the Engineer instructions and approval.

Features: Great corrosion resistant, high intensity, long and durable, with good impact resistance,

Posts, Spacer U, Bolts and Nuts and washers, Reflectors and terminal ends according to the applicable standards.

#### **Precast Concrete Road Barrier:**

Price shall include all associated costs to complete the work in accordance with the specification, and the relevant Standards. The price shall cover all costs including, excavation, leveling, concrete works and surface preparation.

The work shall comply with ASTM C 825 Specification (or relevant applicable Standard) and the following:

the precast concrete barrier must be placed on a flat, stable and compacted paved surface free of swales, ditches, or other irregularities.

Barriers must be placed at the same level as the travelled lane.

Barriers should be installed sequentially to ensure that the correct installation spacing is achieved. If a gap is required within a run of barriers the barriers should be installed through and past the gap and then removed.

Concrete quality shall be as required and comply with there levant applicable Standards.

**Placing and finishing of precast concrete barriers:**

Concrete shall be placed in the forms and carefully consolidated in strict accordance with Standards.

Curing and protection shall be carried out strictly in accordance with specifications.

Curing shall be considered complete when test cylinders reach the specified 28 day compressive strength provided such strength is reached not later than 28 days after the barriers are cast.

Exposed surfaces shall be uniform in texture and color as produced from well maintained steel form surfaces and proper vibration methods without excessive surface fines or laitance.

All concrete surfaces prior to shipment shall be accurate to detail and, in particular at the end connections, true to dimension tolerances.

The contractor shall notify the Engineering advance concerning the date when the precast is to be manufactured, so that detailed inspection can be carried out. All processes shall be open for inspection and approval by the Engineer.

Reinforcing steel for bent and hooked connections shall conform to the relevant applicable Standards.

Pick-up points for handling units shall be formed with accurately placed rigid P.V.C. pipe recessed 15 mm from both finished surface.

Drainage slots or grouting holes or both shall be provided.

Manufacture Concrete mixture shall be proportioned and mixed to meet the minimum strength level and cured.

Forms Sufficiently rigid to maintain dimensional parameters. All casting surfaces shall be of smooth, nonporous •  
Design Concrete Design, Air Entrainment all concrete will have an air content of  $5 \frac{1}{2} \pm 1\%$

Steel reinforcement shall be by the producer and be sufficient to permit handling, delivery and placement of the precast units.

Minimum concrete cover is 2.0 inches, except for end sections where cover may be less.

Concrete Finishing – Shall be uniform for all sections in the contract lot.