

## Terms of Reference (ToR) – Lot 2 - Gated/Large Culverts X 5

### 1) Personnel Capabilities

Experience of prime candidates and alternatives for key management and specialist positions in the construction site:

- a) **Site manager:** senior staff representing the company in the field holds a bachelor's degree in administrative or construction management with a minimum experience managing construction projects for 10 years.  
They will supervise and manage all site-based staff employed by the contractor; overall planning; coordinate resources; monitor and control progress and quality; communicate and provide feedback and reports on the progress to IOM's site engineer.
- b) **Site foreman:** senior construction foreman in the field, holds a diploma degree in construction (preferably not mandatory) with minimum experience in organising construction work on the site for 10 years.  
They will organise tools, workshops, machinery, and materials; organise and supervise workers; ensure construction is carried out accurately, following plans and specifications; take responsibility for the site's health and safety and communicate project progress to IOM's technical staff and site engineer.
- c) **Site engineer:** technical staff in the field holds a bachelor's degree in civil/construction engineering with a minimum experience in implementing similar construction projects for 5 years.  
They will be responsible for setting out, levelling, planning, and surveying the site; assessing materials for suitability; supervising and monitoring the site workforce; conducting quality tests and inspection and health and safety; planning day-to-day activities; resolving any technical difficulties; liaising with foremen and workers; maintaining contact with IOM's technical staff through regular progress meetings and site visits.  
They will also lead the foremen, provide technical guidance, coordinate, and supervise site investigation work and planning, arrange to test materials, monitor the work, acting as main technical focal points to provide reports and feedback on adherence and compliance of the construction to IOM's Engineer.
- d) **Surveyor:** technical staff in the field holds a bachelor's degree in surveying or a valid certificate in surveying with a minimum experience in implementing similar construction projects for 5 years.  
They will be responsible for land assessment, surveying and mapping using technical equipment; boundary and benchmarks identification; creating records of survey results; producing maps, sketches, and charts; planning and levelling the construction site; and maintaining contact with site engineers.

The following table represents the minimum number needed:

Lot number	Project Name	Site Manager	Site foreman	Site engineer	Surveyor
2	Gated/Large Culverts X 5	1	5	1	1

*Requested documents/information: filling key Personnel table in the respective section of the bid documents, including staff name, position/title, academic qualification, number of years of experience, location and contact details and provide a copy of each personnel curriculum vitae (CV)*

### 2) Equipment Capabilities

*Type, characteristics, minimum number, and availability of key equipment*

- A. **Earth Moving Equipment:** used to carry out various excavation tasks such as digging and moving the earth. Different types of earth-moving equipment have unique applications and are primarily used for repairing, constructing, elevating, agriculture, and demolition.
  - a) **Crawler Excavators:** earth-moving vehicles that feature a bucket/auger/breaker, arm, rotating cab, and movable tracks to perform various functions, from digging trenches and breaking holes to lifting away waste and excavating underground level.
  - b) **Wheeled Loading Shovel:** a vehicle attached with a shovel designed to perform heavy-duty tasks in earthwork and construction operations. This shovel has specific capabilities to accomplish the loading tasks. This wheeled loader is furnished as a skid-steer, payload, bucket loader, skip loader, and wheel loader.

- c) **Compactors:** crush and compress loads of gravel and soil and contribute to the smoothing and levelling of a work site. The work performed by a heavy-duty compactor machine condenses, stabilises, and prepares the earth for concrete foundations or pavements.

The following table represents the minimum number needed:

Lot number	Project Name	Crawler Excavators	Wheeled Loading Shovel	Vibratory Rollers Compactor (Capacity 20 tons)	Plate Compactor (Capacity 4-5 Tons)
2	Gated/Large Culverts X 5	1	1	1	1

## B. Construction Equipment

- a) **Concrete Mixers:** A concrete mixer is a device that homogeneously combines cement, aggregate such as sand or gravel, and water to form concrete.

**Preferred specifications:**

Charging Capacity: 800 – 1200 Liter

Discharging Capacity: 500 – 750 Liter

Productivity: 18 – 22 cubic meter per hour

The following table represents the minimum number needed:

Lot number	Project Name	Concrete Mixer (Tilting Drum Mixers)	Concrete Truck (capacity 5 to 9 cubic metres)
2	Gated/Large Culverts X 5	2	1

## C. Surveying Equipment

- a) **Total Stations:** An electronic/optical instrument used for surveying and building construction. It is an electronic transit theodolite integrated with electronic distance measurement (EDM) to measure both vertical and horizontal angles and the slope distance from the instrument to a particular point, and an on-board computer to collect data and perform triangulation calculations.
- b) **Automatic level:** It is an instrument to take levels of any surface. Have property of automatic horizontal adjustment of the line of sight, an erect figure, and a horizontal circle of 0 - 360° and large ribbed control buttons to simplify the adjustment of the instrument.

The following table represents the minimum number needed:

Lot number	Project Name	Total Stations	Automatic Level
2	Gated/Large Culverts X 5	1	1

## 3) Facilities Capabilities

*Type, characteristics, minimum number, and availability of key facilities*

Lot number	Project Name	Warehouse (to store raw materials and equipment's)	Workshop (to prefabricate steel section and gates)
2	Gated/Large Culverts X 5	1	1

#### 4) Schedule of Execution

The Contractor shall complete the work and services of the project to be executed under the contract in accordance with the execution schedule. Under the proposed project, an outlined work schedule is provided below:

##### Lot 2: Gated/Large Culverts X 5

Provision of Five Gated/Large Culverts in 60 calendar days (Two month)

SN	Item	Operation	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
1	Site preparation	Site Cleaning and Safety measures												
2		Excavation												
3	Culvert	Culvert foundation work												
4		Culvert Installation												
5		Head and wing walls												
6	Flap gate	Prefabrication												
7		Installation												
8	Handover	Backfilling and Compaction												
9		Testing												
10		Demobilization and site cleaning												

*Requested documents/information: submit the Schedule of Execution in tabular or graphical form for the lot and per the above-suggested schedule.*