

## Section 4 – Employer’s Requirement

### SCOPE OF WORKS

Road Development Project has been proposed for **the following listed islands**, as shown in the concept drawing.

- S. Feydhoo – 2.432 km
- S. Hithadhoo – 9.58 km
- S. Hulhumheedhoo – 4.908 km
- S. Maradhoo – 1.549 km
- S. Maradhoo-Feydhoo – 1.09 km

The scope of works of the project includes (but not limited to):

1. Assessment of existing road conditions.
2. Preliminary design of road layout and basic road facilities.
3. Detailed design and construction of carriageways, sidewalks, road drainage system, allowance for service lines, identification and marking of parking zones, allocation and construction of speed breakers, settlement tanks, identifying locations for street lights, allowances for roads side landscaping and beautification.
4. Supply and installation of street lights with necessary power cables and foundation of street lights.
5. Supply and installation of road safety sign boards, road markings to ensure the safe usage of the road for vehicles and pedestrians in compliance with standards of Transport Authority.
6. Supply and installation of pump stations for storm water management.

### DESIGN CRITERIA

The design layout and structural components of road should be established after careful consideration of various operational, functional, environmental and site conditions and physical constraints.

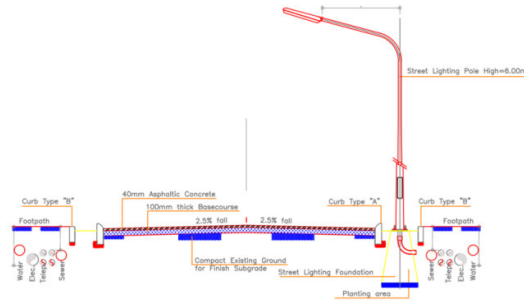
Environmental constraints, road safety, physical environmental factors (such as topography, climate, and soils), traffic requirements, traffic service levels should be addressed in the design.

Technical Indexes (i.e. Design Speed, Lane Width, Shoulder Width, Grade, Horizontal Curvature, Super elevation, Stopping Sight Distance, Vertical Clearance, Travel Lane Cross Slope, Rollover, Structural Capacity, Level of Service, Control of Access, Pedestrian Accommodation, Median Width, and Horizontal Clearance) shall be calculated as per the site conditions.

The materials and construction methods of various structures must reflect the usage of the structure.

Structural components should be designed as per the technical specifications given in the contract.

The following is a schematic cross section diagram of a typical road in the Maldives.



## CONTRACTORS DOCUMENTS:

The contractor shall submit following to the employer:

1. Drawing of the proposed road layout.
2. Preliminary design and final design of the road showing existing levels of the roads and the final levels of the roads (plan & profile), layout of road safety signs and markings, design drawing of street lights, detailed design of road drainage system.
3. Contractor's proposed equipment to carry out the work, including the proposed work methodology.
4. Preliminary design calculations.
5. Based on the design, the contractor shall submit technical specification for approval.
6. Project costing
 

The project is a lump sum contract, with bill of quantities. Provide linear meter or cubic metre rates for the individual components. Any cost not detailed on the cost sheets (bill of quantities) shall be deemed covered by other rates and prices in the bill of quantities. The costing sheet shall show costs for the following major components (All costs related to these activities shall be included in the rate).

  - a) Earthworks.
  - b) Supply and installation of settlement tanks, road cubs, settlement tanks and cable junctions.
  - c) Walkways.
  - d) Road drainage system.
  - e) Carriageway.
  - f) Road lightings and Road markings.
  - g) Total cost of the project.
7. Work schedule
 

The contractor shall submit a proposed work schedule. The work schedule shall be subdivided into major components and shall indicate the works to be carried out under the scope of the project. The work schedule shall clearly show the proposed start and end date for the construction works. Following points shall be taken into consideration when preparing the work schedule.

- a) 'Days' will be regarded as calendar days.
- b) Detail design period shall be clearly specified and should be included within the total duration of the project
- c) The total duration of the project shall not be more than 12 months.
- d) Contractor shall allow for yearly climatic conditions in the Maldives.

8. Contractors Personnel

The contractor shall submit a proposed schedule of staffs who will be working in the project. The schedule of staff should include the following personals.

- a) Project Manager
- b) Project Engineer (Road Engineer)
- c) Surveyors
- d) Quality Controller
- e) Supervisor

9. Operation and Maintenance Manual

Contractor shall provide to the Engineer maintenance and operation manual with sufficient details for regular maintenance minor repair of road for design lifetime.

Contractor shall provide this manual upon completion of tests on completion

## OTHER INFORMATION

- 1. Ground water shall not be used for any construction. Coral sand shall not be used for any concrete works. Sand shall not be taken from the island or the island lagoon except as specified under the scope of the project.
- 2. All designs shall be to the relevant and latest British Standards or an equivalent standard.
- 3. Quality of construction and materials shall be as specified in the technical specifications. Contractor shall submit manufacturers and / or suppliers specifications for any materials or works not covered in the technical specifications.
- 4. The contractor shall have his quality control measures in place and submit quality reports regularly. Apart from this the employer may at anytime without notice carry out independent quality assurance tests to verify the quality of materials and works. If the quality of materials or works is below the specified standard the contractor shall rectify the situation to the satisfaction of the employer at his own expense
- 5. The contractor shall provide the testing results provided by an independent third party.
- 6. Electricity and water required for the project shall be supplied by the contractor at his expense.
- 7. It is contractors' responsibility to obtain all the permits required (from regulatory authorities, service providers etc.) for the designs, and for construction.
- 8. The metric system of units shall be used throughout.
- 9. The confirmation of the ground conditions is the responsibility of the contractor.

#	REF	DESCRIPTION	QUERIES	CLARRIFICATION
1	Road Networks	S. Hulhumeedhoo – 4.908 km	Road network diagram not showing the length and width of each stretch of road in the drawing. Please provide the same.	Already given
2	Road Concept	<ul style="list-style-type: none"> <li>- S. Feydhoo-2.432 km</li> <li>- S. Hithadhoo-9.58 km</li> <li>- S. Hulhumeedhoo- 4.908 km</li> <li>- S. Maradhoo -1.549 km</li> <li>- S. Maradhoo Feydhoo- 1.09 km</li> </ul>	It is noted that there is two types of road concept given in the drawings (Opt 1 – Two side walk and Opt2-one side walk) please clarify that wherever two side and one side walk is applicable	It is selected depending on the width of the road. Carriage way should be of minimum 3.2m width for one watand 6.4 m for two way road.
3	Cable junction for future utilities in the road concept	All the island	Section drawing indicates that the utilities crossing comes at every 15m interval whereas Elevation drawings showing at every 25m interval. Please clarify the same.	It should be every 25m.
4	Pump station and settlement tanks	All the islands	Please mark the locations of pump station and settlement tanks for each island. Also mention the number of pump and settlement tanks with its capacity.	The contractor should design and propose the number of pump station and number if settlement tanks for each island
5	Street lights	All the islands	Kindly provide the distance between two street lights.	100 ft
6	Compacted sand below base course	All the islands	Kindly, confirm the thickness of the sand compaction below base course. Please confirm that whether the existing ground soil to be compacted for required CBR or imported soil to be used. If so, please specify the borrow area for soil.	Imported soil to be used. Tentative borrow area are attached in the map.