

Section 9 – Employer’s Requirement

9.1 SCOPE OF WORKS

The reclamation and civil works shall be carried according to the concept provided under ‘Proposed Reclamation Areas’. Proponents are required to submit with their proposals detailed specifications for the intended works. The minimum requirements must meet those specified under Section 8 (Technical Specification).

The Government of Maldives wishes to undertake reclamation of a total sum of 127.6 Ha in K. Himmafushi, GDh. Thinadhoo, and S. Feydhoo and associated civil works including protecting shoreline of the respective islands, which amounts to a total of 4.4km.

The contractor is expected carry out the works on his own account. No payment would be made to the contractor from the Government of Maldives for any of the works carried out.

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

1. Bathymetric and Topographic survey to determine the volume of sand required to reclaim the required area and also to determine the volume of sand available from the borrow area.
2. Undertake geological studies in a sand search campaign to identify borrow areas and alternative borrow areas. A total of 3 potential borrow areas must be identified in the proposed atolls. Proposed borrow regions for the islands are the following Atolls. Atoll locations are illustrated in Section 9.6 (Proposed Sand Borrow Regions).
 - K. Himmafushi – Alif Alif Atoll
 - GDh. Thinadhoo – Gaaf Dhaal Atoll
 - S. Feydhoo – Seenu Atoll

The contractor must provide results of the sand search campaign to the Employer in the form of a written report. The Employer will have full rights to the results of the sand search campaign.

3. Study the existing sewerage network, and identify the location of the outfalls and if any outfall is located in the proposed reclamation area, the contractor should allow for this in his work methodology and if required, should allow for the possible diversion of the outfall. This may be included as a Provisional Sum in the Contract Price.
4. Proper drainage between the existing island the new reclaimed island should be addressed.
5. Carrying out an Environmental monitoring to the requirement of the Environmental Protection Agency (EPA) and also to fulfill any other requirement by the EPA.

6. Final report providing final volume calculations, borrow area(s) and dredging and reclamation methodology.
7. Carrying out the dredging and reclamation works as per the proposed methodology.
8. Carrying out revetment construction works as per the proposed methodology.

9.2 DESIGN CRITERIA

Contractor shall design the dredging, and reclamation works, by determining the reclamation volume and the dredge volume available at the borrow area and by collecting the required data from alternative borrow sites (both within and outside the island if required). Contractor should submit a dredging and reclamation design report with the above details, including the proposed work methodology.

The reclamation should be carried out as per the layout drawing given in Section 6. The height of reclamation should be +1.6m above mean sea level. Final leveling should allow for proper drainage. The design should also address drainage issue in the area where the existing island and the new reclaimed area interact, since it is likely that there would be significant level difference. The dredging and reclamation works should be carried out as per the specifications given under Section 8. Proposed reclamation areas are given in Section 9.5. The area required for each island are as follows

- K. Himmafushi – 21.6 Ha
- GDh. Thinadhoo – 53.0 Ha
- S. Feydhoo – 50.0 Ha

Contractor shall design the revetment construction works. The revetment construction works should be carried out on 80% of the total length of reclaimed shoreline in each island. This amounts to the following estimated dimensions.

- K. Himmafushi – 890m
- GDh. Thinadhoo – 1852m
- S. Feydhoo – 1680m

The contractor can propose either rock boulders or sand filled geo bags as the main material in the construction of the revetment. If geo bags are to be used, contractor is to provide detailed specification of the bags.

The height of the revetment crest shall be at least +2.0m above mean sea level.

9.3 SUBMITALS

The contractor shall submit the following with the tender:

1. Proposed methodology for the sand search campaign in the 3 regions given.
2. Proposed work methodology including proposed equipment for dredging and reclamation

works.

3. Proposed borrow site(s) and proposed methodology to dredge and transport the material to the proposed islands.
4. Proposed material for revetment construction. Bidders may propose an alternative material such as the use of geo bags. If an alternative material is used, please provide technical specifications for the material.
5. Proposed methodology for revetment construction and concept design

6. Project costing

The Contractor should submit the total estimated project cost for bid evaluation and valuation purpose. Contractor may submit Bill of Quantities with breakdown of Costs.

The contractor should also submit a cubic meter rate for dredging and reclamation. This single rate should be inclusive of both dredging, reclamation and transport cost (even if the borrow site is outside the proposed region).

Since the exact borrow areas cannot be determined at this stage, the bidders are to submit aforementioned costing assuming borrowing sand from 1km away from the reclaim area. This is applicable for all project sites including K. Himmafushi as well.

The bidders are also required to submit a provisional rate for borrowing sand for each additional km greater than 1km from reclaim area. This provisional rate should be given in cost of dredging per km (eg: USD/m³/km)

Both rates will be considered during bid evaluation.

A linear meter rate is to be proposed for the construction of revetment.

7. Work schedule

The contractor shall submit proposed work schedule. The work schedule shall clearly show the proposed start and end date of each island and each component. Following points shall be taken into consideration when preparing the work schedule.

- a) The total duration and components for the sand search campaign should be given separately.
- b) The total duration of the reclamation and revetment construction component shall not be more than 12 months.
- c) Contractor shall allow for seasonal climatic conditions in the Maldives total duration.
- d) The schedule be made in such a way that revetment construction commences within less than 1 month after reclamation is completed.

9.4 OTHER INFORMATION

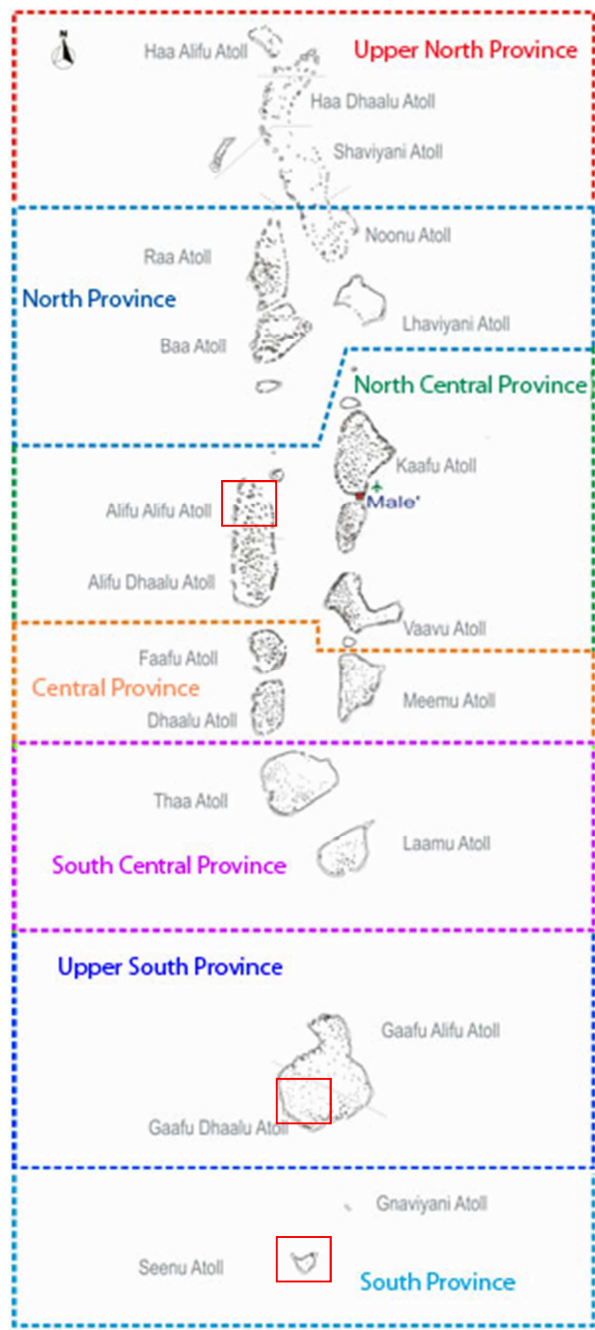
1. This is NOT a duty free project, hence the final contract price should be inclusive of all import duty for any material, equipment, vessels etc. the Contractor wish to import for this project.

2. Electricity and water required for the project shall be supplied by the contractor at his expense.
3. It is contractors' responsibility to allow for and obtain all the permits required (from regulatory authorities, service providers etc.) for the contractor's personnel, designs, and for construction.
4. The metric system of units shall be used throughout.
5. The confirmation of the ground conditions is the responsibility of the contractor. The contractor shall allow for the possible use of drop hammer or any other means to remove the hard strata, if encountered, in his dredging and reclamation rate. Hence the cost of any such work would be deemed to have been covered in the contract price.
6. 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.
7. Contractor must also include in the proposal a proposed Environmental monitoring plan. The Contractor should estimate the costs of monitoring and mitigation and include these costs in the Contract Price.

9.5 PROPOSED RECLAMATION AREAS

(Attached in the following pages)

9.6 PROPOSED SAND BORROW REGIONS



K. Himmafushi
sand borrow region
- AA. Atoll

GDh. Thinadhoo
sand borrow region
- GDh. Atoll

S. Feydhoo
sand borrow region
- S. Atoll