

SCOPE OF WORK

FOR

**JET A-1 STORAGE, PIPELINE AND SETUP AT
MADIFUSHI PRIVATE ISLAND, MEEMU ATOLL**

NOVEMBER 2022

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a. BACKGROUND AND PURPOSE

1.1 Island Aviation Service Ltd. has a requirement to establish JET-A1 storage at Madifushi Private Island /meemu atoll.

b. GENERAL

- 1.1 The Contractor shall provide personnel, material, equipment, and supervision to complete the technical requirements in this scope of work. The contractor shall be responsible for hiring labor, equipment vendors and shall follow safety and security directives.
- 1.2 The Contractor shall not to be admitted to areas of the property outside the areas designated for the project except with permission from the resort. The Contractor shall address the impact of the consequent disruption caused by the proposed work.
- 1.3 The Contractor shall always clear the work site upon completion of work and remove any excess material immediately from the site and maintain cleanliness.
- 1.4 Required measurements shall be taken during the Site visit.
- 1.5 All finishing materials shall be approved by employer prior installation.
- 1.6 Nor variations will be accepted without approval from the employer and any alteration made without approval shall be rectified without any cost.

c. PROCEDURALS & INSTRUCTIONS

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Section 1 - Scope of Works

The contractor shall carry out the following works

- Site Management
- Site Preparation
- Safety measures (scaffoldings & site fencing if required)
- Fabrication and installation of Tank
- Construction of bund wall
- Construction of underground duct for pipeline
- Installation of fire safety standards full complete.
- Installation of Fuel pump and panel
- Installation of pipeline (supply and distribution line)
- Clean-up

The contract comprises the provision of labor, materials, tools, transportation, instrumentation and all things necessary to construct the permanent works in accordance with the contract drawings and to the quality standards set in the contract specifications, inclusive of material and performance tests where these are specified.

The Contractor shall submit in the tender that the method of working, equipment and program which are compatible with constructions aligned with the technical specifications mentioned in this scope. The reliance being placed upon the Contractor shall be deemed to be in respect of the Contractor's skill, care and diligence as an experienced contractor executing workmanship and not in respect of any design expertise the Contractor may possess.

The following points shall also be taken into consideration by the contractor

1. All foreign employees must possess valid work permit.
2. All employees of the contractor shall wear a uniform outfit or at least safety vest visible with contractor's label to ensure authorized access for the safety of both employer and the contractor.
3. All material to be used shall be presented before commencement and nor substitution will be allowed prior approval.
4. All wiring and electrical fittings shall comply latest British Standards.
5. Comprehensive work schedule with daily tasks including timing which will be carried on a sequence that does not interrupt daily operation shall be presented prior commencement to circulate through airport operational authorities.
6. If the quality workmanship is below the acceptable standard, the contractor shall rectify the situation to the satisfaction of the employer at his own expense
7. Electricity and water required for the project will be provided by the island.
8. It is contractors' responsibility to obtain all the permits required (from regulatory authorities' service providers etc.) for construction.
9. Any damage during the construction/ installations/ delivery to roads, rectified on contractors' cost. Any contingencies shall be taken into consideration during construction.
10. As build drawing shall be submitted upon completion of said work
11. The metric system of units shall be used throughout.

Section 2 - General Requirements

2.0 General Requirements

- 1- Project title: Jet-A1 storage, pipeline and setup
- 2- Project scope/specific:
 - a. Storage tank
 - b. Pump system
 - c. Bund wall
 - d. Concrete duct
 - e. Pipeline
 - f. Fire Safety standards
- 3- Storage tank: JET-A1 capacity minimum 25,000 Ltrs (general volume capacity: (31,800 ltrs)
 - a. Storage tank type: Horizontal Cylindrical
 - b. Material: Steel (shall be free from galvanized parts)
 - c. Sandblast: mandatory
 - d. Condition: New/Used
 - a. Used condition shall not exceed 5 years from the built date.
 - e. Safe fill Capacity Tolerance: +/- 1%
 - f. Paint: Epoxy Paint free from Metallic zinc, aluminum, lead, cadmium, copper or copper alloys
- 4- Concrete bund wall:

Specification;

 - i- L: 9 meters, W: 4.8 meters, H: 1 meter
 - ii- Reinforced concrete base and walls
 - iii- Shall be water tight / leak proof
 - iv- Thickness; Minimum 120mm
 - v- Internal epoxy primer/paint for concrete shall be applied
 - vi- Slope at floor of min 25mm drop to lowest point for drain.
 - vii- Over climb staircase.
- 5- Saddles and support:
 - i- GI HSS Saddles with concrete base bolted
 - ii- Ref: drawing

- 6- Concrete duct for pipeline:
- i- L: 8000mm, W: 448 mm, H: 340mm
 - ii- Reinforced concrete duct with cover
 - iii- Thickness: 50mm
- 7- Pump system:
- a. Blackmar XL12 (2" dia) vane pump
 - b. Synchronized panel board for safe and reliable operation and pressure consistency shall be installed.
 - c. Average pressure of 50 PSI
 - d. Maximum LPM 150
 - e. Parts shall be free from GI, Brass, copper, copper alloy, lead, zinc, cadmium
 - f. Connection shall work both ways, for filling and dispense.
- 8- Pipeline, pipe connections, junctions and bends:
- a. Stainless steel schedule 40 pipe for/from tank and underground pipeline
 - b. Yellow band hose for under jetty and dispense.
 - c. PVC high-pressure sleeving for underground pipes where ducts are not presented.
 - d. Concrete airtight junctions for bends/ sampling points where ducts are not presented.
 - e. Long radius elbows shall be used for bends.
 - f. SS Gate valve shall be used for necessary diversion and safety stops.
 - g. Proper pipe Supports/clips at regular intervals preventing vibration shall be installed.
 - h. Supports/saddles shall be installed at concrete junctions/ducts at regular intervals providing sufficient clearance between floor and pipe. (Minimum allowed 100mm)
 - i. Bitumen sheet or proper insulations shall be affixed at pipe /valve/bends/joints contact points to concrete or metal supports preventing corrosion.
- 9- Fire Safety:
- a. Foam Bladder tank to suffice tank requirement complying with MNDF regulation.
 - b. Foam pouring and sprinkler system shall be established in accordance with the MNDF regulation by an authorized fire safety service provider.
 - c. Fire safety plan including operation instructions shall be furnished to IASL safety and security and MNDF where necessary.
 - d. Smoke and leak detection shall be synchronized with firefighting equipment's.
 - e. Other safety and firefighting installation where necessary and obligatory by MNDF shall be considered.

- f. Layout of tank and safety setup shall be established authorized by MNDF and same shall be submit to IASL Safety and security department and other concerning authorities or personnel.

10- Test on completion:

- a. Full scale test shall be conducted in the presence of employer's representatives.
 - i. Joined Quality test tank internally and externally before fill shall be conducted with employer's representative.
 - 1. Such test shall include
 - a. Welded parts
 - b. Welded joints
 - c. Paint quality
 - 2. Such test shall examine the materials used inside the tank, pump, affixes and installation with direct contact to Aviation fuel supply and dispense in compliance with aviation standards.
- b. Leak test of tank shall be conducted and recorded and certification shall be furnished with joined employers' representative's signatures.
- c. Leak test of bund wall shall be conducted and recorded and certification shall be furnished with joined employers' representative's signatures.
- d. Thorough test on Pump system testing supply and dispense shall be made.
- e. Test of equipment, plant and machinery shall be conducted and recorded and certification shall be furnished with joined employers representatives signatures.
- f. Bends, connections and joints shall be tested for leak and pressure. And all tested bends/joints/affixes and connections shall be labeled with seal.
- g. A warranty period of 12 months/1 year from the date of handover shall be granted by the contractor to the employer.
- h. All bolts and screws at the connections/joints shall be tightened and marked as a warranty seal. And any failure at the bends/joints/affixes during the warranty period shall be rectified by the contractor free of charge unless otherwise the marks are being segregated.
- i. Fire safety Certification and warranty shall be obtained by the authorized service provider and shall be endorsed by MNDF.

2.1. General Standards

The Conditions of Contract, Bill of Quantities and the Detailed Drawings shall be read in conjunction with the Specifications Matters referred to, shown or described in any one of these documents are not necessarily repeated in others. Notwithstanding the subdivision of the specifications in various headings, every part is to be deemed supplementary to every other part and various parts are to be read with each other, so far as it may be practical to do so or when the context so warrants.

2.2. Standards and Workmanship

In various places throughout this specification and the Bills of Quantities reference is made to the Standards if applicable. If any standard is mentioned in any product/material, such shall be approved prior commencement of procuring process. Any product/material, which standard or specification is mentioned and not available in the market, such shall be submitted to the employer for approval.

2.3. Drawings and Specifications

Drawings: Drawings and Specifications are intended to complement each other, so that if anything is shown on the Drawings, but not mentioned in the specifications or vice versa, it is to be furnished and built as though specifically set forth in all three. If any discrepancies, errors, ambiguities or omissions occur in the Drawings or Specifications, the same shall be referred to the Employer before proceeding with the Works, and the Employers representative decision on such discrepancies, errors, ambiguities or omissions shall be final in writing.

Specifications: In addition to the Drawings, BOQ and Specifications attached hereto, the Employer will during the progress of the Works furnish additional Drawings, Specifications, and instructions as may be necessary, in the opinion of the Employer, for the purpose of the proper and adequate execution and maintenance of the Works, and the Contractor shall make his work conform to these. Such drawings and instructions shall be deemed to be part of the Contract Documents.

2.4. Transportation to the Site

The Contractor shall provide all necessary transport, handling and storage of all materials, components and the like to their points of installation on site including transport to and from storage. The Contractor shall provide all necessary transport of labour to and from the site. The contractor shall use routes specified by the island authorities for transporting heavy and oversized goods to the site.

2.5. Schedule and Execution Plan

The Contractor shall prepare and submit to the Employer for approval the construction schedule and an execution plan of temporary facilities, stock yards, etc., before the start of the Works.

Work shall be scheduled part by part or in full with conjunction of the work schedule and shall not carry any work partly leaving incomplete blocking roadways/paths or leading to hazardous area for fellow employees and island dwellings.

2.6. Repairing and Correction

Any breakage(s) or defect(s) of existing buildings, roads utilities, or part(s) of them caused by the Works including transportation for the works shall be repaired or corrected by the Contractor with his responsibility.

2.7. Materials, Goods and Workmanship

Materials, goods and workmanship shall be of the best quality of their respective kinds and, as far as applicable, shall comply in every respect with the requirements of the quoted Standards, Codes of Practice and Specifications or any other National Standard approved by the Employer. Preambles and descriptions of materials, goods and workmanship given in any one section of the specifications shall apply throughout the whole of these specifications unless otherwise described. The substitution of materials, goods, workmanship and the like from that specified shall only be permitted with the written approval of the Consultant.

All workmanship shall be of the best standard. All goods and materials to be incorporated in the Works must be new, unused, of the most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the contract.

2.8. Samples

The Contractor shall furnish for approval with reasonable promptness, all samples as directed by the Employer. The Employer shall check and approve such samples with reasonable promptness only for conformance with the design concept of the Works and for compliance with the information given in Contract Documents. The work shall be in accordance with the approved samples.

All samples shall be delivered to the Employer with all charges in connection therewith paid by the Contractor and deemed to be included in the contract price.

Duplicate final approved samples, in addition to any required for the Contractor's use, shall be furnished to the Employer, one for office use and one for the Site.

Samples shall be furnished so as not to delay fabrication, allowing the Employer reasonable time for consideration of sample submitted.

Each sample shall be properly labelled with the name and quality of the material, name of the project, the Contractor's name and date of submission, and the specification article number to which the sample refers.

2.9. Ordering Materials

The Bills of Quantities shall not be used as a basis for ordering materials and the Contractor is entirely responsible for assessing the quantities of materials to be ordered. Upon receipt of the Employer's order to commence the Works, the Contractor shall immediately place orders for all required materials and will be held responsible for any delays occurring due to the late placing of such orders. Prior to finalizing material orders, the Contractor shall advise the Employer and await the Employer's written approval to complete the same. The Contractor shall pay all expenses, taxes and dues etc. incurred on the procurement of materials from abroad.

2.10. Protection

The Contractor shall have the Works and adjoining properties protected from inclement weather. Any loss or damage caused by weather, carelessness or lack of skill of workers, accident or otherwise shall be of such property that is affected. The Contractor shall provide all necessary dust sheets, barriers and guard rails and clear away at completion.

The work shall be suspended for such time as may be directed and/or approve by the employer if the specified quality of work is difficult to maintain during inclement weather.

2.11. Cutting and Patching

The Contractor shall be responsible for all cutting and patching and making good required for all trades for all work and his prices will be deemed to include for all such cutting and patching and making good.

2.12. Electricity for the Works

The Contractor shall make all necessary arrangements and provide all artificial lighting and power (maintaining a generator if necessary) for the proper execution and security of the Works and its protection, with all meters, temporary wiring and fittings, pay all charges and alter adapt and maintain the temporary work as necessary and remove and make good at completion.

2.13. Working Platform

Any temporary platforms shall be secured and safe and shall be covered with safety nets where necessary to avoid falling objects. Temporary platforms shall not be moved without proper footing and sliding equipment's and shall avoid any scratches at the floor and sidewalls or any damage to the surrounding.

2.14. Interference with Access to Properties and Apparatus

Before interfering with access to any property, the Contractor shall make adequate alternative arrangements for the occupiers.

The Contractor shall not obstruct access to any apparatus or utilities of any service or utility.

2.15. Procedure for Complaints and Damage Claims

Details of complaints received by the Contractor as a result of work he is carrying out shall be passed to the Employer without delay. The Employer shall likewise pass to the Contractor details of complaints, which may be submitted directly to him.

A similar exchange of information shall be made in relation to all claims and intended claims, which may be received.

2.16. Protection against Damage

The Contractor shall avoid causing unwarranted damage to streets, pathways, land, property, trees and other features. He shall deal promptly with any complaints from owners or occupiers.

The Contractor shall avoid damage to apparatus or utilities of other undertakers, and shall temporarily support or work around any such apparatus, which crosses or runs alongside his works. In the event of damage, the Contractor shall notify the Employer and the Undertaker.

2.17. Apparatus of Statutory Undertakers

The Contractor shall liaise with all relevant statutory Undertakers before commencing any demolition, and shall satisfy himself of the exact position of existing apparatus, which may be affected by the works.

The Contractor shall notify the Employer in advance of any diversion or removal of apparatus or utilities required for his own convenience or proposed method of working and shall comply with any requirements of the Employer with respect to them.

2.18. Work Standard

Works should be carried out according to professional standard acceptable to Employer. The contractor shall reimburse Employer the cost of material lost or damaged due to faulty installation within the warranty period mentioned in the contract.

Risk management is the identification, measurement and economic control of risks. A qualitative assessment of risk is essential in order to gain an appreciation of the relative importance of the various issues and to determine a risk management strategy during the demolition and construction.

2.19. Tidiness of the Site

The Contractor shall be responsible for the proper up keeping and maintenance of the site and the works and shall remove from the site rubbish and other waste as it accumulates. Materials and equipment shall be positioned, stored and stacked in an orderly manner.

2.20. Care of Works

The Contractor shall take all necessary and reasonable precautions to protect the existing utilities, properties, and structures etc. in which his is carrying out his activities and make good, at his own cost, any loss or damage that he might cause.

2.21. Security

The contractor shall ensure that the site is secure during the period of work and shall be liable for any loss or damage sustained as a result of their failure to comply with this condition.

Where the works are in close proximity to other existing structures, the contractor shall take adequate measures to prevent any damage. In addition, before commencing work the Contractor shall submit details in writing of his proposed method of carrying out these measures and shall not commence operations until these are approved in writing.

2.22. Sample

The Contractor shall submit samples of all necessary required materials and goods for inclusion in the works to the employer and only those approved by the employer and to the standards specified elsewhere in the Contract may be ordered for supply. Samples shall be submitted promptly in order not to delay the works.

All work executed shall be of equal standard in all respects to the approved samples and the employer may reject any work which, in his opinion, does not comply with the approved samples.

2.23. Site Safety

2.28.1 Safety on Site

The Contractor shall ensure that the works are carried out in a safe manner to an accepted guidelines on safe working procedures and to the satisfaction of the Employer.

The following requirements shall be complied with by the Contractor:

- (a) Scaffolding - Suitable and sufficient scaffolds shall be provided and properly maintained for all work that cannot safely be carried out from the ground or from part of the structure or from a ladder.

Every scaffold shall be of good construction, of suitable and sound material and of adequate strength for the purpose for which it is used. Unless designed as an independent structure, every scaffold shall be rigidly connected to a part of the structure which is of sufficient strength to afford safe support. Protective headgear shall always be worn.

(b) Correct fencing-off of the site and all appropriate security measures. This should be specified under contractor work methodology.

The safety equipment which shall be made available shall include but not limited to:

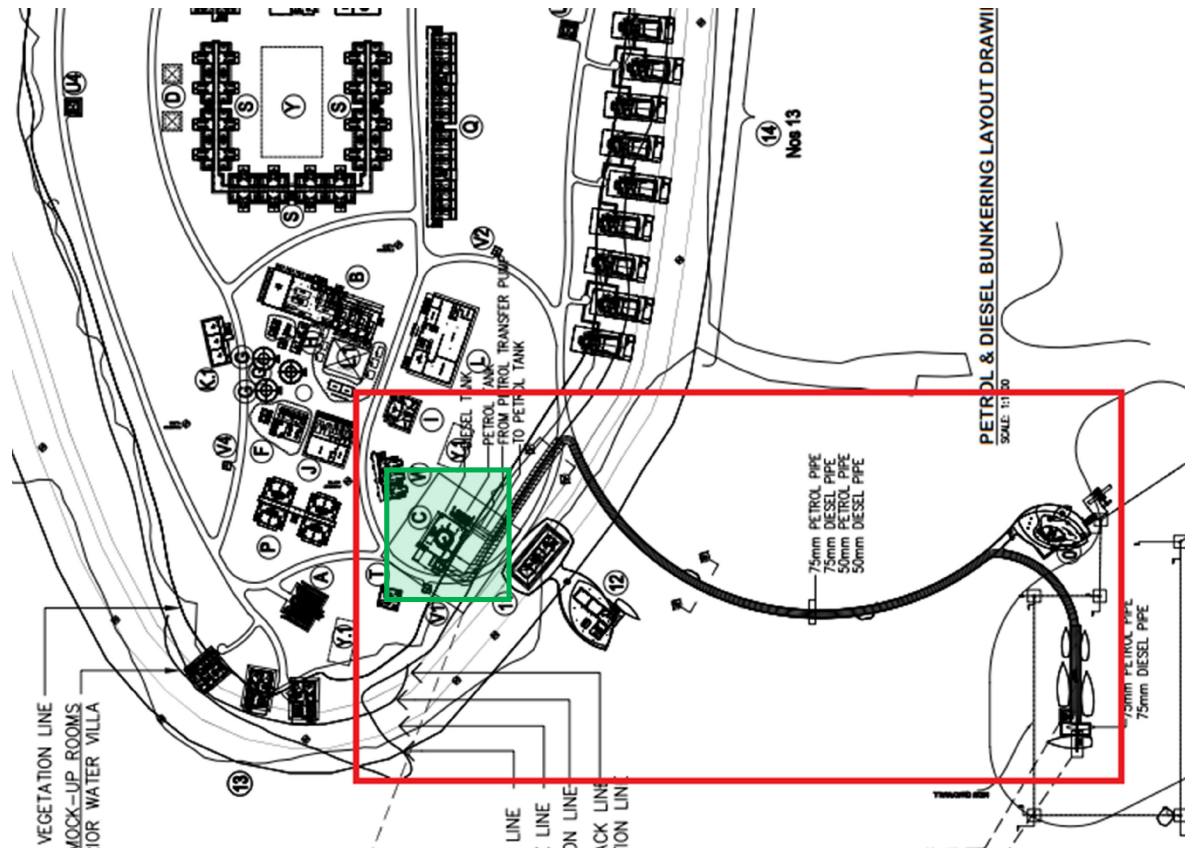
- Lifting harness with ropes.
- Protective head gear.
- First Aid Box
- Fire Extinguishers.
- Safety sign boards

2.28.2 Traffic Management

Before commencement, contractor shall specify dates which movements of vessel for delivery and removal of debris/construction waste and movement of material to and from the island which may require to utilize jetty and pathways.

d. Worksite guideline

The following standards apply to all Island Aviation Services Limited (Maldivian) hereafter referred as "IASL", contractors, subcontractors engaged in civil and maintenance related works. The term "worksite(s)" is used in its broadest sense and includes all company owned and/or leased sites, property, facilities, trailers, equipment, machinery, vehicles, parking areas and company provided housing. The guidelines establish expectations regarding appropriate worksite conduct;



Marked area (red): Fuel storage and pipeline route including jetty's.

Marked area (green): Fuel storage location (worksite)

1- **General:**

1. Contractors' employees/ representatives shall request prior approval in writing to travel to the island indicating purpose and duration of stay. Access shall be granted from island owners/management. Any extension of stay/work shall be notified and approved in writing.
2. Information of site manager/ supervisors name and contact details must be displayed at worksite.
3. During construction, all workers/laborers including material, garbage or any entrance/exit must be practiced according to the island guidelines and procedures.

4. During the project period, contactors/workers shall keep caution during lifting/ transferring materials through roadways/alleyways. Any damage caused during the event shall be reported and rectify immediately.

2. Restricted areas and gate protocol:

1. Once the worksite is finalized, access to that specific area including public areas can be access granted by island owners/management
2. During the project period, gate protocol shall be practiced at worksite area. Any unauthorized personals shall not be allowed during the said period.
3. During the project period, any vessel/s intending to deliver materials shall enter and exit port with necessary clearance from island owner/management.
4. Any crew of these vessel shall enter island or worksite with necessary approval from island/management. And contractor is liable for negligence of such crew members.
5. During any delivery/withdraw, any personal that access the site for loading or unloading, including driver/drivers assistants shall leave site immediately with that specific vehicle or vessel.
6. In any circumstance, contractor shall follow island rules and guideline and shall ensure safe workplace at all times.
7. Island owner/management has every right to withdraw / request to withdraw any personal from island who fails to oblige with the set rules and standards or breach the security in consideration to access to restricted area.

3. Use of public washroom/toilets.

1. Public washroom/toilet will be identified by the island owner/management designated to the contractors employees.
2. Bathing or cleaning equipment's and cloths are not permissible in washroom.
3. Always keep toilet bowls and washbowl clean after use.

4. Smoking:

1. Smoking is prohibited in worksite and in any area that is not labeled as designated smoking area.
2. Always keep designated smoking area clean.
3. Any employee of contractor found smoking in restricted and unauthorized area will be deemed to remove/withdraw from the island.

5. Trash:

1. Any trash or material leftover shall be kept within the parameter of that project worksite and shall not be exposed or left unsecured.
2. All trash or material leftover has to be withdrawn from site during or before site handover.
3. Food waste or any trash that might decay or produce bad smell shall be dumped to designated area or shall be cleared from work site immediately.

Any issue that is not address in this worksite guideline will be informed during an event of such activity and will be informed via email to respective personnel in charge.

Any complaints, queries during the project shall be informed via telephone during an emergency to **+960 9194848**, IASL Manager appointed for the project. Or via email to: a.waheed@iasl.aero

Note:

- 1- Accessible area and restricted area during construction will be instructed by island owner/management in writing/illustrations/island map.*
- 2- Labours lodging and meal arrangements shall be agreed with island owners/management during the site visit.*
- 3- General island rules and guideline shall be thoroughly familiarized and passed down the line for employees' awareness and shall be executed during the project period.*

e/f. DRAWINGS & BOQ

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Accurate measurements for pipeline and other installation shall be taken during site visit or prior commencement of work. Any major variation in consideration to the measurements mentioned in BOQ effecting the scope and price shall be notified in writing before commencement of work.