



vi. All mitigation measures proposed in the EMP report for all the phases of the project shall be fully implemented.

·vi
 مۆدۆفۇئەت ئۆلچەملىرى ۋە تەدبىرلەر بارلىق باسقۇچلاردا تەمىن قىلىنىشى كېرەك.
 مۆدۆفۇئەت راپورتىدا باسقۇچلارغا كۆرسىتىلگەن بارلىق تەدبىرلەر پۈتۈنلەن ئىجرا قىلىنىشى كېرەك.

vii. The date of expiry stated in this Environmental Decision Statement is the duration given to commence the project activities approved under this Environmental Decision Statement.

·vii
 مۆدۆفۇئەت سېلىمىدىكى مۆددەت ئۆتۈش ۋاقتى مۆدۆفۇئەت راپورتىدا مۆدۆفۇئەت قىلىنىشى كېرەك.
 مۆدۆفۇئەت راپورتىدا مۆدۆفۇئەت قىلىنىشى كېرەك.

viii. Once the project activities have started, the Proponent must inform the Environmental Protection Agency, the date of commencement of project activities.

·viii
 مۆدۆفۇئەت قىلىنىشى كېرەك ۋە مۆدۆفۇئەت قىلىنىشى كېرەك.
 مۆدۆفۇئەت قىلىنىشى كېرەك ۋە مۆدۆفۇئەت قىلىنىشى كېرەك.

Date of initial Issue: 20th February 2025

مۆدۆفۇئەت قىلىنىشى كېرەك ۋاقتى: 20 فېۋرېۋال 2025

Date of expiry: 20th February 2026

مۆدۆفۇئەت قىلىنىشى كېرەك ۋاقتى: 20 فېۋرېۋال 2026

Name: Mr. Ibrahim Naeem

ئىسمى: مۇھەررىر مۇھەررىر مۇھەررىر

Designation: Director General

ئورنى: مۇھەررىر مۇھەررىر مۇھەررىر



Signature:

ئىسمى:

ސަރުކާރުގެ ނަންބަރު: 203-ECA/161/2025/9

ހުށަހަޅާ ފަރާތްތަކުގެ ނަންބަރު: 2025/01/01 ގެ ދަށުން ދެނެގަތި ވާ ފަރާތްތަކުގެ ނަންބަރު

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ހުށަހަޅާ ފަރާތްތަކުގެ ނަންބަރު
2025/01/01 ގެ ދަށުން ދެނެގަތި ވާ ފަރާތްތަކުގެ ނަންބަރު



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މާލެ / ހުށަހަޅާ ފަރާތްތަކުގެ ނަންބަރު

Information Lacking in the EMP for the Proposed Development of a Wreck Dive Site at K.Kudagiri

1. The outputs are currently discussed under the inputs section. Ensure proper categorization and labeling, and include relevant details specifically under the outputs section. Additionally, label all tables appropriately under project inputs.
2. The methods for managing construction and operational waste are currently placed under inputs. Ensure that this information is relocated to the correct section dedicated to waste management.
3. Specify the timeline, expertise, manpower, and technological requirements necessary for implementing the proposed mitigation measures.
4. The cover page needs to include the report date.
5. The report does not contain a contingency plan for managing the accidental displacement of wrecks due to storms or strong ocean currents.
6. The responsibility for long-term monitoring and maintenance after the initial implementation phase has not been clearly defined.



This document is made as an attachment to the document made for the SD 203-ECA/161/2025/4. This should be an attachment to the document.

Information Lacking in the EMP for the Proposed Development of a Wreck Dive Site at K.Kudagiri

Information required	Comment / page ref
1. The outputs are currently discussed under the inputs section. Ensure proper categorization and labeling, and include relevant details specifically under the outputs section. Additionally, label all tables appropriately under project inputs.	See attachment 1
2. The methods for managing construction and operational waste are currently placed under inputs. Ensure that this information is relocated to the correct section dedicated to waste management.	See attachment 1
3. Specify the timeline, expertise, manpower, and technological requirements necessary for implementing the proposed mitigation measures.	See attachment 2
4. The cover page needs to include the report date.	See Cover page.
5. The report does not contain a contingency plan for managing the accidental displacement of wrecks due to storms or strong ocean currents.	See attachment 3
6. The responsibility for long-term monitoring and maintenance after the initial implementation phase has not been clearly defined.	See attachment 2 For monitoring please refer to MA1 For management please refer to MA13.1

Attachment 1 : The outputs are currently discussed under the inputs section. Ensure proper categorization and labeling, and include relevant details specifically under the outputs section. Additionally, label all tables appropriately under project inputs.

The methods for managing construction and operational waste are currently placed under inputs. Ensure that this information is relocated to the correct section dedicated to waste management.

1.1. Project inputs and outputs

The following are the estimated major inputs as per the work methodology specified. Since the management and operation is carried out inhouse, the inputs and outputs are greatly conserved. It must be noted that the anticipated quantities are assumed since the estimation is not finalised.

1.1.1. Project Inputs

Input source	Source type	Anticipated quantities	How to obtain
Trainers	HDC staff	3 staff	Internal staff
Management and operation staff	HDC staff	20 staff totals	Through the proponent's procurement process
Material for training	Books and pens	Enough for 23 staff	Through the proponent's procurement process
	Food	Enough for 23 staff per training	Through the proponent's procurement process
Material for construction	Safety shoes Goggles Gloves N25 masks	Enough for 23 staff for the operation	Internal acquisition
	Tow truck Crane	Sufficient for the operation	Internal acquisition and through stakeholder collaboration.
	Power tools Welding set	Sufficient for the operation	Internal acquisition
	Energy supply during construction	Approximately 100kW	From contractor generator
Material for management and mobilisation	Dive gear / material First aid kit	Sufficient for the operation	
	Landing craft Barge Boat Dinghy	Sufficient for the operation	Internal acquisition and through stakeholder collaboration.

1.1.2. Project Outputs

Products and waste	Source type	Anticipated quantities	Method of disposal
Urban canteen waste	Non degradable, degradable waste.	Maximum 100 kg	Through WAMCO procedure Disposal procedure: HDC operations will sort, and collect urban canteen waste in jumbo bags to be transported to the waste disposal site. Simultaneously, as per the procedure, HDC operations

Products and waste	Source type	Anticipated quantities	Method of disposal
			<p>will request, book and pay (MRF424 per tonne) for a transport slot from WAMCO transport to Thilafushi.</p> <p>Once a date is scheduled with WAMCO, HDC will request for HDC transport to move the waste to the landing craft.</p> <p>Once on the landing craft, the waste will be handed over to WAMCO, for disposal.</p>
<p>Construction waste (if generated)</p>	<p>Metal, sand, rock</p>	<p>Maximum 20 kg</p>	<p>Through WAMCO procedure Disposal procedure: HDC operations will collect construction waste in a location, and sort out the reusable components.</p> <p>Simultaneously, as per the procedure, HDC operations will request, book and pay (MRF424 per tonne) for a transport slot from WAMCO transport to Thilafushi.</p> <p>Once on the landing craft, the waste will be handed over to WAMCO, for disposal.</p>
<p>Vehicle waste oil and grease waste. (if generated)</p>	<p>Form machines on site.</p>	<p>Anticipated 25 barrels</p>	<p>Disposal procedure: HDC operations will collect oil, and grease waste in sealed containers.</p> <p>Simultaneously, as per the procedure, HDC operations will request, book and pay (MRF424 per tonne) for a transport slot from WAMCO transport to Thilafushi.</p> <p>Once in the collection site, the containers will be approved, and containers sealed until approved by the supervisors at WAMCO.</p> <p>After approval, the waste will be handed over to WAMCO, for disposal.</p>

Products and waste	Source type	Anticipated quantities	Method of disposal
Air pollution	Overall construction	Moderate quantity	Through sufficient screens surrounding the work frame.
Noise pollution	Overall construction	>65db(A)	Minimised by site demarcations

Attachment 2 Specify the timeline, expertise, manpower, and technological requirements necessary for implementing the proposed mitigation measures. The responsibility for long-term monitoring and maintenance after the initial implementation phase has not been clearly defined.

1.2. Impact mitigation

1.2.1. Category: Environmental Impacts Mitigation

Impact	Mitigation Measures	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
Marine Habitat Disturbance	MI1) Use precision deployment techniques to minimize disturbance.	During deployment phase	Marine ecologists, engineers	Contractor's deployment team	GPS-guided deployment tools	Contractor	No added cost to the contract
	MI2) Conduct pre-deployment surveys to avoid sensitive habitats.	Before deployment	Marine surveyors, divers	Survey team, contractor + proponent	Sonar mapping, GPS systems	Contractor + Proponent	No added cost to the contract
	MI3) Work at low tide, never at receding tide to minimize the tidal impact and use barge anchor spud pile to minimize movement.	During deployment	Coastal engineers	Barge operators, contractors	Tide prediction tools, barge with spud piles	Contractor	No added cost to the contract
Sedimentation & Water Quality	MI4) Schedule deployment during low tidal movement.	During deployment	Marine surveyors, divers	Contractor's deployment team	Tide monitoring tools	Contractor + Proponent	No added cost to the contract
Potential Pollutants & Contaminants	MI5) Ensure wrecks are cleaned of oil, paint, and contaminants before deployment.	Pre-deployment	Marine, waste management experts	Cleaning crew	Oil spill response kits, non-toxic cleaning agents	Contractor + Proponent	This work is complete. The total cost of the entire process round up is 70,000 MVR
	MI6) Use marine-grade, non-toxic materials.	Procurement stage	Material engineers, marine biologists	Procurement & quality control team	Testing and certification tools for materials	Contractor + Proponent	
Impact on Marine Biodiversity	MI7) Use spud pile on precise locations to avoid	During deployment	Marine biologists,	Contractors, barge	GPS positioning	Contractor	No added cost to the contract

Impact	Mitigation Measures	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
	unnecessary destruction of biodiversity.		ecologists	operators	tools, underwater cameras		

1.2.1. Category: Environmental Impacts Management

Impact	Management Actions	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
Marine Habitat Disturbance	MA1) Monitor the benthic environment before, during, and after deployment.	Pre, during & post-deployment as per the monitoring schedule	Env consultant, divers	Monitoring team	Transects, cameras, and quadrats	Proponent	50, 000 MVR per year
	MA2) Restore disturbed areas if feasible.	Post-deployment (as needed)	Ecological restoration specialists	Restoration team	Coral transplant equipment, sediment relocation tools	Proponent	Must be a separate project budgeted. Estimated cost 500,000 MVR
Sedimentation & Water Quality	MA3) Regularly monitor water quality (turbidity, DO, etc.).	During deployment	Environmental consultant, divers	Field technicians	Water quality probes, turbidity meters	Reference to MA1	Reference to MA1
	MA4) Implement adaptive management if thresholds are exceeded after construction.	If impact exceeds thresholds	Environmental managers	Field & data analysis team	Remote sensing tools, GIS software	Reference to MA1	Reference to MA1
Potential Pollutants & Contaminants	MA5) Conduct water and sediment sampling periodically.	Bi-annual	Marine chemists	Laboratory team	Spectrophotometers, (<u>since its specified to do so we have mentioned it here, however, this is a lab tool and should not be a parameter the proponent should</u>	Proponent	50, 000 MVR per year

Impact	Management Actions	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
					control) sediment analysers		
	MA6) Develop a spill response plan.	Pre-deployment	Risk management experts	Emergency response team	Oil spill containment kits, absorbent booms	Proponent	No added cost to the project. This will be done internally.
Impact on Marine Biodiversity	MA7) Monitor marine organisms around structures.	Annually	Marine biologists, taxonomists	Monitoring team	Underwater cameras, species identification guides	Reference to MA1	Reference to MA1
Hydrodynamic Changes	MA8) Monitor water flow patterns and sediment transport around the structures.	Annually	Coastal engineers, hydrologists	Survey team	ADCP (Acoustic Doppler Current Profiler), hydrodynamic models	Reference to MA1	Reference to MA1
	MA9) Shift the sediment or introduce mitigation measure if necessary.	As needed	Coastal engineers	Construction team	Dredging equipment, geotextiles	Proponent	Must be a separate project budgeted. Estimated cost 300,000 MVR. This cost is high due to potentially introducing structures surrounding the footings.

1.2.2. Category: Social & Cultural Impacts mitigation

Impact	Mitigation Measures	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
Tourism Development	MI8) Develop sustainable tourism guidelines. Limit visitors per day.	Before site opening	Tourism specialists, ecologists	Tourism policy team	Digital booking & visitor management systems	Proponent	No added cost to the project. This will be done internally.

Impact	Mitigation Measures	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
Marine Awareness & Conservation	MI9) Integrate educational programs into the project. Partner with schools and universities.	Annually	Educators, conservationists	Education team	Virtual reality modules, outreach materials	Proponent	Must be a separate project budgeted. Estimated cost 70,000 MVR
Conflicts Over Resource Use	MI10) Develop a resource use plan, a time table or a booking system.	Pre-implementation	Community planners, conflict resolution experts	Stakeholder engagement team	Online scheduling platforms	Proponent	No cost added
Diver Safety Concerns	MI11) Ensure structures are securely anchored. Mark entanglement hazards clearly.	During deployment	Structural engineers	Contractors	Sonar mapping, diver communication systems	Proponent	50,000 MVR for the added material cost.
	During development contact with the contractor to assure safety of media and monitoring staff	Pre & post-deployment	Dive safety instructors	Diving instructors	Emergency beacons, underwater signage	Proponent	No added cost to the project. This will be done internally.

1.2.1. Category: Social & Cultural Impacts Management

Impact	Management Actions	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
Tourism Development	MA10) Promote the site as an eco-tourism destination. Train vendors in marine conservation.	Continuous	Marine conservation educators	Training team	E-learning platforms, outreach materials	Proponent	No cost added
Marine Awareness & Conservation	MA11) Establish a conservation fund from site revenues. Update educational materials based on research.	After revenue generation	Finance & policy experts	Administrative team	Financial management software	Proponent	No cost added

Impact	Management Actions	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
Conflicts Over Resource Use	MA12) Create a stakeholder committee for conflict resolution. Regularly review resource allocation policies.	Quarterly meetings	Governance & policy experts	Community leaders	Virtual meeting platforms	Proponent	No cost added
Diver Safety Concerns	MA13) Train dive operators in emergency response. Install safety signage and emergency communication devices.	Pre & post-deployment	Dive safety instructors	Diving instructors	Emergency beacons, underwater signage	Proponent	No added cost to the project. This will be done internally.
Long term management of the wreck	Ma13.1) Establish MOUs with potential management dive vendors to establish long term management of the wreck.	Post-deployment	Business strategists	Finance team	E-commerce & payment gateways	Proponent	** the cost can be estimated once the MOU is made. So no cost added to this project.

1.2.2. Category: Economic Impacts Mitigation

Impact	Mitigation Measures	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
Revenue Generation	MI12) Develop a diversified revenue model (entry fees, tours, merchandise).	Before site operation	Business strategists	Finance team	E-commerce & payment gateways	Proponent	Must be a separate project budgeted. Estimated cost 500,000 MVR
Financial Risks & Sustainability	MI13) Conduct feasibility studies before implementation.	Pre-project (missed step)	Economists, project managers	Feasibility team	Market research tools	Proponent	**unfortunately this step was skipped in the organization of the project.
	MI14) Develop a contingency fund.	Before site operation	Business strategists	Finance team	E-commerce & payment gateways	Reference to MI12)	Reference to MI12)

1.2.1. Category: Economic Impacts Management

Impact	Management Actions	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
Revenue Generation	MA14) Review financial performance regularly.	Annually	Financial analysts	Finance team	Accounting & analytics software	Proponent	No cost added
	MA15) Reinvest revenues into site maintenance and community development.	Annually	Financial analysts	Finance team	Accounting & analytics software	Proponent	No cost added
Employment Opportunities	MA16) Monitor job creation and employee satisfaction.	Quarterly	HR specialists	HR & administration	Employment tracking software	Proponent	No cost added
	MA17) Collaborate with vocational schools for workforce training.	Before site operation	Business strategists	Finance team	E-commerce & payment gateways	Proponent	No cost added
Financial Risks & Sustainability	MA18) Review financial performance regularly. Seek private or government partnerships to reduce financial risks.	Pre-project (missed step)	Economists, project managers	Feasibility team	Market research tools	Proponent	No cost added

1.2.2. Category : Regulatory & Compliance Impacts Mitigation

Impact	Management Actions	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
Legal & Environmental Compliance	MI15) Ensure compliance with Maldivian laws and international best practices. Obtain necessary permits before implementation.	Before & during project	Legal advisors, environmental lawyers	Regulatory team	Compliance tracking software	Proponent	No cost added
Stakeholder Expectations & Approval	MI16) Engage stakeholders early in the planning process on further	Pre-project	Public relations experts	Community liaisons	Survey & feedback tools	Proponent	20,000MVR for all session

Impact	Management Actions	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
	development. Address concerns through public consultations.						

1.2.1. Category : Regulatory & Compliance Impacts Management

Impact	Management Actions	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
Legal & Environmental Compliance	MA19) Conduct regular environmental monitoring. Maintain communication with regulatory authorities.	As per the schedule	Environmental regulators	Field inspectors	Remote sensing tools	Reference to MA1	Reference to MA1
Stakeholder Expectations & Approval	MA20) Establish a stakeholder advisory board. Regularly update stakeholders on project progress.	Annually	Governance specialists	Advisory board	Online collaboration tools	Proponent	Meeting cost 2000 MVR per session

1.2.2. Category : Monitoring & Adaptive Mitigation

Impact	Management Actions	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
Monitoring Plan	MI17) Establish a comprehensive monitoring program. Use baseline data for impact assessment.	Before project execution	Environmental monitoring experts	Data collection team	GIS, environmental sensors	Reference to MA1	Reference to MA1
Adaptive Management	MI18) Regularly review monitoring data. Adjust management practices based on lessons learned.	Continuous	Project managers, ecologists	Data analysis team	Big data analytics tools	Reference to MA9	Reference to MA9

1.2.1. Category : Monitoring & Adaptive Management

Impact	Management Actions	Timeline	Expertise Required	Manpower	Technological Requirements	Responsible party	Cost (MVR)
Adaptive Management	MA21) Incorporate findings into future project phases.	post-project (updated step)	Economists, project managers	Feasibility team	Market research tools	Reference to MI12)	Reference to MI12)

Attachment 3 The report does not contain a contingency plan for managing the accidental displacement of wrecks due to storms or strong ocean currents.

Contingency Plan for Managing Accidental Displacement of Wrecks Due to Storms or Strong Ocean Currents

Introduction

The wreck dive site at Kudagiri is subject to environmental forces such as storms and moderately strong ocean currents that may, in the long run, displace the wreck. This contingency plan outlines measures to prevent, detect, and respond to accidental displacement, ensuring site integrity and diver safety.

Objectives of the plan

1. Minimize environmental and structural damage to the wreck dive site.
2. Establish rapid response protocols for wreck displacement.
3. Ensure the safety of divers and marine biodiversity.
4. Maintain Kudagiri's reputation as a sustainable dive site.

Risk Assessment

Potential Causes of Wreck Displacement:

1. Strong ocean currents during monsoons.
2. Storm surges.
3. Vandalism or unauthorized tampering.

Potential Consequences:

1. Damage to the wreck structure.
2. Impact on marine biodiversity around the site.
3. Navigation hazards for boats and divers.
4. Loss of tourism revenue due to site closure.

Preventive Measures

1. **Structural Stability Checks:** Routine inspections of wreck anchorage and stability.
2. **Monitoring Systems:** Establish Routine dives on a daily basis
3. **Diver and Operator Training:** Awareness sessions for dive operators on identifying early signs of wreck displacement.
4. **Regulatory Compliance:** Compliance with environmental and marine safety regulations.

Response Protocol

Phase 1: Detection and Initial Assessment

1. Conduct immediate underwater surveys after storms and surges or reports of unusual movements.

2. Assess potential environmental and navigational hazards.

Phase 2: Containment and Recovery

1. Deploy dive teams to secure the wreck if displacement is minimal.
2. If significant displacement occurs, establish safety perimeters to prevent diving until restoration is complete.
3. Engage marine engineers and local authorities to plan and execute repositioning if necessary.

Phase 3: Restoration and Mitigation

1. Use safe repositioning techniques such as controlled lifting and stabilization.
2. Conduct ecological impact assessments post-restoration.
3. Implement additional anchoring or protective structures to prevent future displacements.

Emergency Communication and Stakeholder Coordination

1. **Local Authorities:** Maldives Environmental Protection Agency (EPA), Coast Guard (MNDF).
2. **Dive Operators:** Trained response teams to coordinate initial assessment.
3. **Marine Conservation Groups:** Consultation on ecological impact mitigation.
4. **Tourism Stakeholders:** Notification to relevant diving communities and travel agencies.

Post-Incident Evaluation and Reporting

1. Document the incident, response actions, and effectiveness of measures taken.
2. Conduct stakeholder debriefings to improve future response strategies.
3. Update contingency protocols based on lessons learned.



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EMP for the proposed development of a wreck dive site at K. Kudagiri.

7901665 Hassaan Abdul Muhsin
5 July 25 P02 2020
7970007 Housing Development Corporation

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Table with 2 columns: Selection options (checkboxes and numbers) and corresponding descriptions in Maldivian.



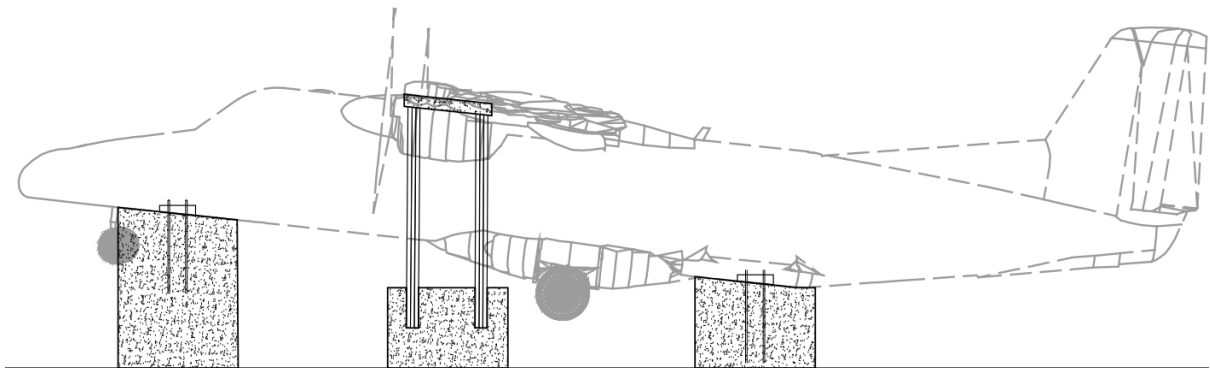
12/2/25 Hassan Akram
On behalf of the proponent
Housing Development Corporation

Form for official use with checkboxes and lines for signatures.

ENVIRONMENTAL MANAGEMENT PLAN

For the proposed development of a wreck dive site at 'Kudagiri island.

Prepared for Housing Development Corporation



Environment Management Plan

203-ECA/161/2025/4,

Date 12/2/25

Additional information

203-ECA/161/2025/9,

Date 19/2/25

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ



Screening Institution: **Environmental Protection Agency of Maldives**

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Date of issue: **27th January 2025**
Date of Expiry: **27th January 2026**

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Name: **Mr. Ibrahim Naeem**
Designation: **Director General**

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Signature:

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2.1. Declaration of the consultant

This environment management plan has been prepared in accordance with the regulation 2012. I certify that the statements made in this EMP are true, complete, and correct to the best of my knowledge and abilities.

Further please be informed that this EMP is the second submission, and since the scope is the same as the previous submission, a lot of the material will be a repeated. So reference is made to the EMP approved through the DS 203-ECA/161/2023/7



Hassaan Abdul Muhsin
EIA P02 2020

2.2. Declaration of the proponent

HDC(161)-MPR/203/2025/2

12th February 2025

Mr Ibrahim Naeem

Director General

Environment Protection Agency

Male', Maldives.

Declaration And Commitment to Implement the Proposed Management Plan During and After the Development of a Wreck Dive Site at K. Kudagiri.

The Management of Housing Development Corporation Ltd endorses this Management Plan and assures that this Management Plan is accurate and complete.

Further, we confirm our commitment to implement all mitigation, management, and monitoring during the development phase as well as operation phase as specified in the management plan.

Sincerely,



Managing Director

Housing Development Corporation Ltd

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3. Introduction

3.1. The main objective of the document

The objective of this EMP is to:

- A. identify and propose an environmentally sound solution for:
 - a. deploying the objects to site,
 - b. assembling structures on site, and
 - c. operating, managing and using the component.
- B. satisfy the obligations of the proponent to undertake an EMP under Clause 5 of the Environmental Protection and Preservation Act of the Maldives.
- C. undertake the proposed project work with minimum damage to the environment.
- D. promote informed and environmentally sound decision making.
- E. propose recommendations to the proponent based on the assessments made.

3.2. Introduction to the EMP

This Environment management plan (EMP) is compiled in response to the screening decision (SD) number 203-ECA/161/2022/24. The EMP is compiled by a team lead by Hassaan Abdul Muhsin (EIA P02/2020) from Housing Development Cooperation (HDC) working with the autonomy to provide informed decisions so as to make the project a socially, financially and environmentally acceptable to the local and international recipients.

3.3. Introduction to the proponent

HDC is the master planner and master developer of Hulumalé. HDC is the proponent for the development. This state-owned enterprise (SOE) is expanding the scope gradually to achieve other government social needs. Hence, post development of the island of K. Kudagiri on the reef lagoon that was previously known as Bangaa, HDC is now appointed the operator of the island. The current project is an effort by HDC as a proponent to fulfil specific social, and financial needs as a proponent and operator of the island.

3.4. Legal agreement with the partners and collaborators.

The project partners in the project are Maldives Marketing and Public Relations Cooperation (MMPRC); working as the financier and Maldives Transport and Contracting Company (MTCC); working as the contractor. These are the partnerships during the Construction period.

During the operating period, the management of Kudagir island; acting as the proponent, will ensure the weekly upkeep and management of the wreck.

The project partners will work parallel with the proponent during development and operation. The collaborating partners will come in contribute and leave while others will pick up from the necessary points.

4. Introduction to the project

4.1. Background information of the project/activity

The project proposes to develop a dive site at K.Kudagiri. The methodology of the process is detailed in Project construction details and methodology. Through this project, ideally a safe and fun dive site can be created that can, ideally attract tourists and generate finances. The area for the proposed development is on the map.

The project is a component of the Kudagiri picnic island. The development will enable the operator to provide a wide variety of experiences to the locals using the island.

4.2. Purpose of the project

The purpose of the project is to create:

- A tourism attraction in the proposed location,
- a way to generate a revenue from the project for the proponent and partner stakeholders, and
- unique employment openings for qualified Maldivians through the management process.

Objectives of the proposal

The objectives of the proposal are to:

- diversify the tourism attractions in the island,
- aid in direct generation of revenue from the project for the proponent,
- provide an opportunity for the local stakeholders residing at Hulhumale to partner with the proponent and generate a financial benefit from the development, and
- potentially provide a unique employment opening for qualified Maldivians in the management process,

4.3. Donors and finance

The financier for the project is MMPRC. The funding arranged for the project, approval, and development is MRF700,000.00. Further, miscellaneous funding for the project including for this work sums up to MRF 31,000.00. The overall budget for monitoring for the project is MVR 50,000.00 annually.

4.4. Project context and documentation

The two aircrafts being submerged are Dornier 228, the 2nd set of aircrafts purchased by Air Maldives (The first airline company of Maldives) and the first domestic aircrafts flown between Gan International Airport & Velana International Airport. After discontinuation, these two aircrafts were kept in Hulhumale' phase 2 and now at Thilafushi at MTCC site.

The idea of the dive point came up when HDC had to clear up the land for a development. Initially it was decided to sell these decommissioned aircrafts. However, while in a discussion with a dive centre in Hulhumale, the possibility of creating a dive site was taken into consideration.

Thus, after discussion internally and with external parties, the project was designed. An EMP was made for the screening DS 203-ECA/161/2022/24. However, due to mismanagement of the proponent, and lack of a clear vision, even though the work did not commence during the stipulated duration, the proponent did not have proper documentation to show to the government authorities to extend the DS 203-ECA/161/2023/7 which expired on 24th Jan 2024.

During this period the work done was the casting of the foot paddings and cleaning of the wrecks. The status of which will be further detailed in the work carried out section.

To resume work, a new application was sent. The DS 203-ECA/161/2025/4 was issued which triggered this EMP.

4.5. Institutional arrangements.

There are few parties involved in the development and operation. The table lists down the parties involved and the function.

Table 1 Table showing the institutional arrangements made for the project

Institutions	Role in the collaboration	Duration of engagement	Focal point
The proponent (HDC)	Main financier	Throughout the Construction process	MMPRC, MD
	Project Planner	Throughout the development	Director Marketing & Sales
	Project manager	Throughout the development	Project manager, Projects
	Environment clearance	Through term of engagement	Director, Planning and environment
	Main Contractor	During the development	MTCC
	Main Operator	Throughout the project development	Kudagiri Operations Team
	Main monitor	Throughout the project	A staff within the proponents team

4.6. Proposed Project components

The project proposes to set up a dive site with the said decommissioned aeroplanes placed on structures reinforced, to ensure clearance to allow divers to hover underneath and avoid sediment collection inside the fuselage.

The proposed project proposes:

- to move the aircrafts from K.Thilafushi to K. Kudagiri.
- to cast the structures that will act as the footings
- to place the structures,
- to place the planes, and
- to operate manage and monitor.

Further details of the project are provided in Project construction details.

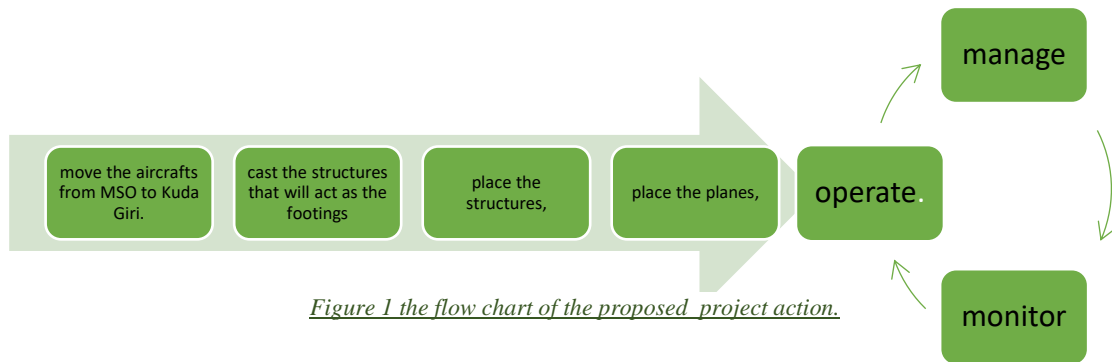


Figure 1 the flow chart of the proposed project action.



Figure 2 structure 1, in service image



Figure 3 Structure 2, in service image

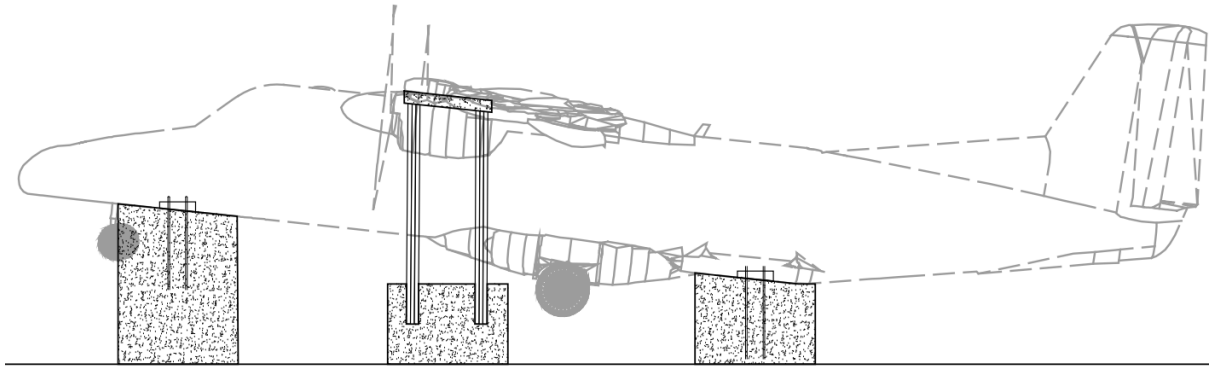


Figure 4 proposed concept for the dive site

4.1. Work completed

Due to the above-mentioned project management limitation, some of the work proposed has already been completed by the team. Summary of the project work completed are below.

Photo records	Comments
	Foot padding blocks casted and cured, Dec 22
	Prepared wrecks cleaned and ready at MSO. Feb 2023
	Wrecks moved to FKF. Jan 24

Photo records

Comments

Foot padding blocks casted and cured, Dec 22



Wrecks moved to K. Thilafushi. Dec 24



Setting out at Kudagiri. Dec 24



Prepping work in progress. Jan 25



Photo records

Comments

Foot padding blocks casted and cured, Dec 22

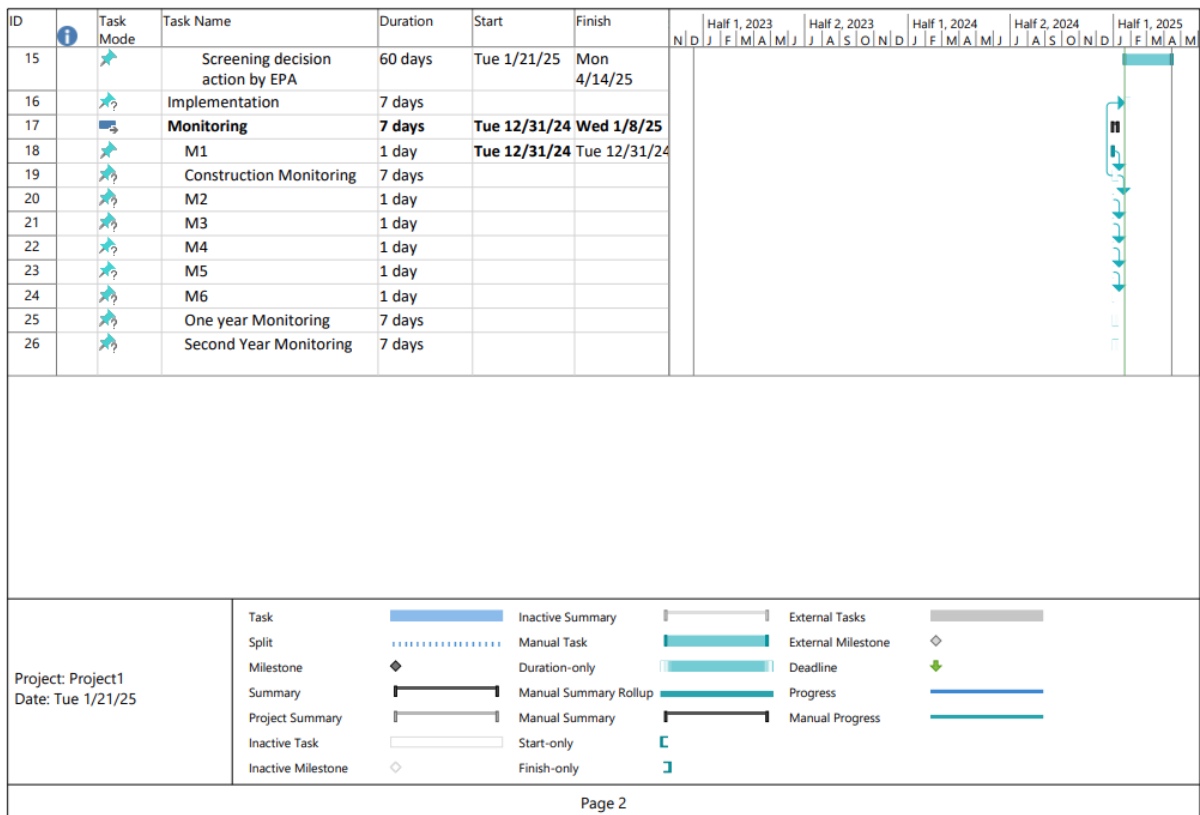
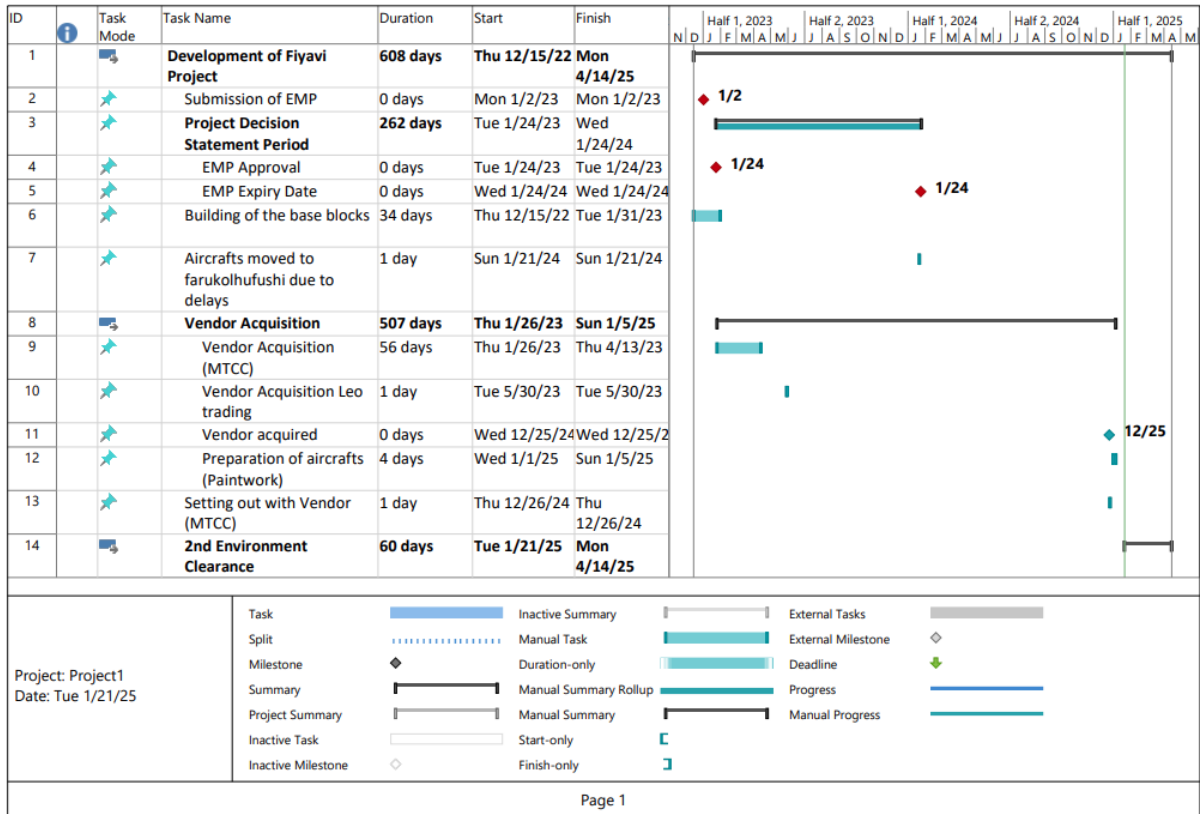


Prepping work completed. Jan 25

Implications of this development are, some of the initially predicted construction impacts will no longer apply, at the sometime some of the construction management facilities will not be necessary. This will be reflected in the necessary components of the document.

4.2.Schedule

The new proposed Wreak site Project tasks over a 608-day period from December 15, 2022, to April 14, 2025. The project began with the submission and approval of the (EMP) in January 2023, with the approval expiring a year later. Building base blocks was completed early in 2023, while delays led to aircraft relocation in January 2024. Vendor acquisition spanned over two years, with MTCC and Leo Trading as key vendors, culminating in vendor acquisition in December 2024. Preparation of aircraft was completed by January 2025, followed by a second environmental clearance process and implementation, concluding in April 2025; approximately. Monitoring tasks, including construction and periodic reviews, extend into the project’s later stages, with provisions for both first-year and second-year monitoring. For high resolution document see attachment ([Link](#)).



4.3. Proposed project location

The proposed project location is 43 N, 325764.30 m E, 467279.03 m N. A detailed description of the existing area is provided in the section, that describes the existing environment. The area was selected as HDC will be operating the island on location.

Specific locations of placement are provided below.

- T5; 325868.163, 467130.914 at -10.03m below MSL, and
- T6; 325764.107, 467161.988 E at -10.03m below MSL.

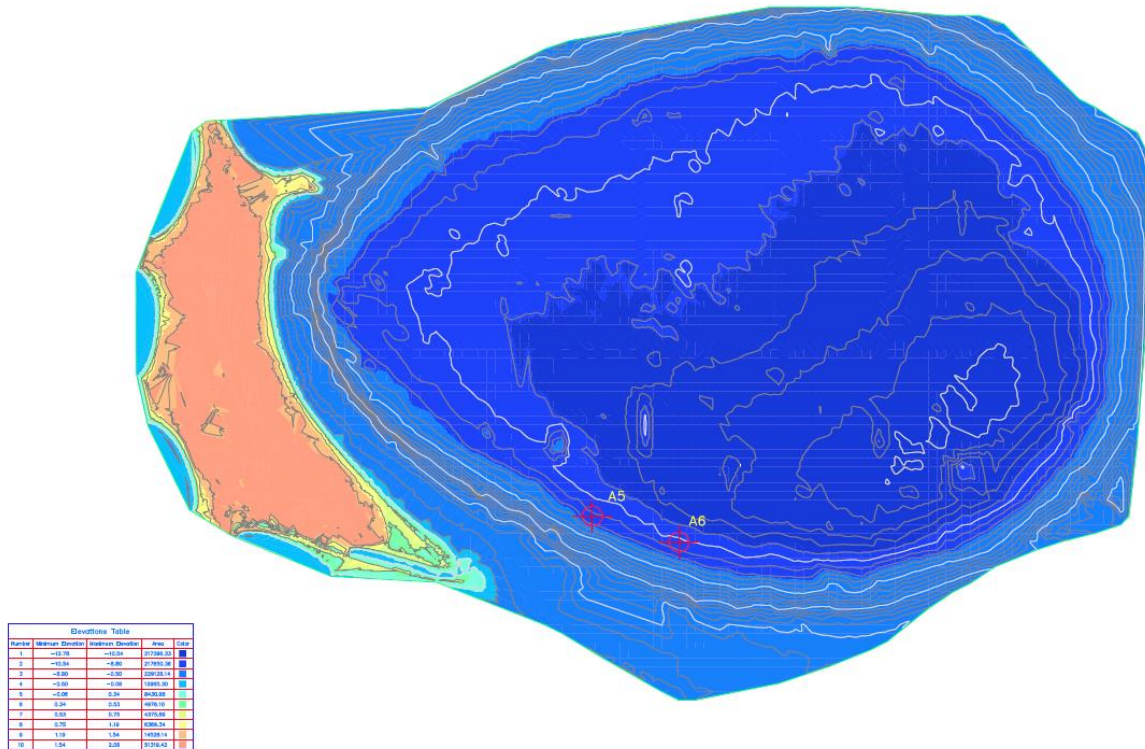


Figure 5 Placement locations See attachment for high resolution map. [\(Link\)](#)

4.4. Need of the project

4.4.1. Foreseeable social and economic advantages of the development

This dive site is proposed as an attraction for the customers of Kudagiri and local dive vendors that wishes to use the location as a dive site and free dive site. This can be a significant attraction to the local divers and it adds value to the new development of Kudagiri.

4.5. Ultimate outcome of the project

To provide the island with a dive site shallow enough and safe enough that can be used by divers with the minimum qualification of open water certification and provide a possible navigation activity from one wreck to the other.

4.6. Proposed sustainability and longevity vision

The project will be managed and monitored by the proponent and partners. To ensure permanency of the project, the management has planned to outsource the management obligation to the third-party divers at Kudagiri.

4.7. Proposed budget of the project

The proposed budget of the project is below.

Component	Amount / MVR	Explanation
Completion of moving of the wreck to K. Thilafushi	700,000.00	Financier would pay for this component.
Completion of repair works		
Completion of moving of the wreck to K. Kudagiri.		
Placement of the wreck on location		
EMP fees	20,000.00	Proponent would pay for this component.
Management cost	**	To be determined through the management arrangements
Monitoring cost	**	To be budgeted by the proponent.

4.8. Project construction details and methodology

Objective: to describe the various construction components, describe the construction details and inform the relevant authorities of the factors involved in the proposed project.

4.8.1. Components of the project and methodology.

Main task	Sub task	Methodology	Tools	Project management update
Move the aircrafts from K. Thilafushi to Kudagiri.	o Place the aircrafts on the barge	On barge the aircrafts can be lifted using cranes and placed on the vessel.	Barge cranes	The Aircrafts are at K. Thilafushi ready to be deployed.
	o Lifting the load, shifting the load	Lifting, Shifting and moving will be carried out using the cranes on the barge.		
Cast the structures that will act as the footings	o set up the cast	Cast will be set using 10 mm plywood The cast will be reinforced using wood Reinforced using rebar 12mm	Plywood Wood 10 mm Wood planks 15mm by 10mm Nails 5mm Hammer	Casting completed and attached to the airplanes.
	o mix concrete	The concrete will be mixed using a mixer	Concrete mixer Sand Gravel cement	
	o cast the mixture	Drop and vibrate compaction	Concrete vibrator	
	o finish	Cure, and remove the cast.	Hammer Crowbar	
Place the structures on site and adjust position	o Attach buoyancy balloons	The buoyancy balloons will be attached to the sides of the foot paddings and the aeroplane will be made buoyant so that the structure can be moved to the location	buoyancy balloons 300 mm thick rope.	Included in the scope of this EMP

Main task	Sub task	Methodology	Tools	Project management update
	o Lift to shallow water	Hoist the structure using the crane place in set out location.	Crane 300 mm thick rope.	Included in the scope of this EMP
	o Tug out to location	Once buoyant, the structure can be tugged out to the location using a rope.	Tug Rope 300 mm thick rope.	Included in the scope of this EMP
	o Controlled descend	Once on site, a guide line can be attached to the point of decent by the divers and structure can be made negatively buoyant	Divers Guide line Dive gear	Included in the scope of this EMP
	o Lift to shallow water	Hoist the structure using the crane place in set out location.	Crane 300 mm thick rope.	Included in the scope of this EMP
	o Orient and change buoyancy if necessary	During deflation, the structure can be oriented to the required position.	Divers	Included in the scope of this EMP
Operation	o Tours	Tours can be through a management system	Specific booking system	Included in the scope of this EMP
To manage and operate.	o Cleaning	Cleaning can be carried out as per a schedule		Included in the scope of this EMP
	o Maintaining	Maintenance as per the need	Maintenance crew	Included in the scope of this EMP
	Monitoring	Monitoring to be carried out as per the management plan schedule	Monitoring plan	Included in the scope of this EMP

4.9. Project inputs

The following are the estimated major inputs as per the work methodology specified. Since the management and operation is carried out inhouse, the inputs and outputs are greatly conserved. It must be noted that the anticipated quantities are assumed since the estimation is not finalised.

Input source	Source type	Anticipated quantities	How to obtain
Trainers	HDC staff	3 staff	Internal staff
Management and operation staff	HDC staff	20 staff totals	Through the proponent's procurement process
Material for training	Books and pens	Enough for 23 staff	Through the proponent's procurement process
	Food	Enough for 23 staff per training	Through the proponent's procurement process
Material for construction	Safety shoes Goggles Gloves N25 masks	Enough for 23 staff for the operation	Internal acquisition
	Tow truck Crane	Sufficient for the operation	Internal acquisition and through stakeholder collaboration.
	Power tools Welding set	Sufficient for the operation	Internal acquisition
	Energy supply during construction	Approximately 100kW	From contractor generator
Material for management and mobilisation	Dive gear / material First aid kit	Sufficient for the operation	
	Landing craft Barge Boat Dinghy	Sufficient for the operation	Internal acquisition and through stakeholder collaboration.

Products and waste	Anticipated quantities	Method of disposal
Urban canteen waste	Maximum 100 kg	Through WAMCO procedure Disposal procedure: HDC operations will sort, and collect urban canteen waste in jumbo bags to be transported to the waste disposal site. Simultaneously, as per the procedure, HDC operations will request, book and pay (MRF424 per tonne) for a transport slot from WAMCO transport to Thilafushi. Once a date is scheduled with WAMCO, HDC will request for HDC transport to move the waste to the landing craft. Once on the landing craft, the waste will be handed over to WAMCO, for disposal.
Construction waste (if generated)	Maximum 20 kg	Through WAMCO procedure Disposal procedure:

Products and waste	Anticipated quantities	Method of disposal
		<p>HDC operations will collect construction waste in a location, and sort out the reusable components.</p> <p>Simultaneously, as per the procedure, HDC operations will request, book and pay (MRF424 per tonne) for a transport slot from WAMCO transport to Thilafushi.</p> <p>Once on the landing craft, the waste will be handed over to WAMCO, for disposal.</p>
Vehicle waste oil and grease waste. (if generated)	Anticipated 25 barrels	<p>Disposal procedure:</p> <p>HDC operations will collect oil, and grease waste in sealed containers.</p> <p>Simultaneously, as per the procedure, HDC operations will request, book and pay (MRF424 per tonne) for a transport slot from WAMCO transport to Thilafushi.</p> <p>Once in the collection site, the containers will be approved, and containers sealed until approved by the supervisors at WAMCO. After approval, the waste will be handed over to WAMCO, for disposal.</p>
Air pollution	Moderate quantity	Through sufficient screens surrounding the work frame.
Noise pollution	>65db(A)	Minimised by site demarcations

5. Policy and legal framework

5.1.Introduction

The following section addresses the legal, policy, administrative framework for the environmental management and some regulatory guidelines and standards relevant for the proposed project. All the activities during both development and operation stage of the proposed project will be carried out in accordance with existing plans, policies, guidelines, laws and regulations of Maldives in addition to relevant international conventions to which Maldives is a party to.

Relevant, Environment Legislation

Law / Regulation / Guideline / Treaty	
<p>5.1.Environment Protection and Preservation Act (Act no. 4/93)</p> <p>This Act set the basic principles and rules for the protection of the environment in the Maldives and whereby the Environmental guidance shall be provided by the authorized government bodies. Under this Act Environmental Impact Assessments (EIA) is mandated to be undertaken for all development projects that may have an undesirable impact on the environment. This addresses the disposal of oil, waste, and toxic gas or any substance that may have harmful effects on the environment within the Maldivian territory. it also deals with the penalty for breaching the law, and damaging the environment. The following articles are relevant during the undertakings of this project:</p> <p>Article 2 states that the instructions for environmental protection will be given from the competent authority and everyone must respectfully follow these instructions</p> <p>Article 3 states that all matters relating to environmental protection and preservation must be handled by the Ministry of Planning, Human Resource and Environment (MPHRE);</p> <p>Article 4 states that the Ministry of Planning, Human Resources and Environment shall be responsible for identifying protected areas and natural reserves and for drawing up the necessary rules and regulations for their protections and preservation.</p> <p>Article 5 states that any projects which pose significant impacts to the environment, an EIA report has to be made and submitted to the MPHRE. The projects which require an EIA and the regulation must be made by MPHRE;</p> <p>Article 6 states that if any project is found to cause significant adverse impacts, MPHRE have the right to stop the project;</p> <p>Article 7 states that any waste, oil or hazardous gas must not be dumped into any part of the Maldives, however, if strictly needed to be disposed it should be disposed of in an area designated by the Government. If such hazardous gas, waste or oil is to be disposed by combustion, it should be done in a way it does not impact human health and environment;</p> <p>Article 9 states that any party who violates this law or any regulation under this law is punishable to no more than MVR 100 million according to the offence. The fine will be applied by the MPHRE.</p> <p>Article 10 states that any offence to this law or any regulation under this law or any action resulting in environmental damage, the compensation for such damages can be taken through judicial processes.</p> <p>1st addendum to Environmental Protection and Preservation Act (4/93) law no 12/2014</p>	<p><u>Relevance to the project:</u> the project is carried out in the existing environment of Maldives, hence must abide by all the regulatory requirements set forth.</p>

<p>Article 3 and 11 of the Environmental Protection and Preservation Act (4/93) of Maldives is amended as follows: - Under article 3, all matters relating to environmental protection and preservation must be handled by the Ministry charged with implementation of environmental policy.</p>	
<p>5.1.Environmental Impact Assessment Regulations 2012 The decision to go forward with an EIA will be decided upon the screening process. which dictates a category and the scope of the EIA. The proponent and the proponent’s consultant (who is a registered consultant) will meet the EPA and stakeholders in a scoping meeting which will approve the TOR which will set the limits for the EIA. The EIA will start with the baseline studies, impact prediction and finally reporting the findings with impact mitigation and monitoring program. The EIA report will be reviewed by EPA, where a decision note will be given accordingly. After approval the project proponents will be required to follow the monitoring and implement the mitigation measures prescribed in the EIA.</p> <p>5.2.Environmental Impact Assessment 2012 and Amendments The EIA Regulation, which came into force in 2007, has been revised and this revised EIA Regulation is currently in force since May 2012. The Regulation sets out the criteria to determine whether a development proposal is likely to significantly affect the environment and is therefore subject to an EIA. Schedule D of the EIA Regulation defines the type of projects that would be subject to EIA. The main purpose of this Regulation is to provide step-by-step guidance for proponents, consultants, government agencies and the general public on how to obtain approval in the form of an Environmental DS.</p> <p>5.2.1. 2nd addendum to the Environmental impact Assessment Regulation 2012 With the 2nd addendum to the environmental impact assessment regulation 2012, there were some procedural changes made to the EIA process. The most important was the shifting of tourism related development projects EIAs to the Ministry of Tourism. Other than that, slight changes were made to the process such as the finalization of the TOR during the scoping meeting (article 11(b)) and changes in the fees for the review processes under three different categories (article 7(c)).</p> <p>5.2.2. 3rd addendum to the Environmental Impact Regulation 2012 One of the main modifications to the EIA regulation is that the EIA consultants are classified into 2 categories. To be eligible for a category A consultant, the applicant should hold a minimum of level 7 qualification in an environment related field recognized by the Maldives National Qualification Framework. Likewise, to be eligible for a category B consultant, the applicant should hold a minimum of level 7 qualification in specific fields relevant for the nature of the project recognized by the Maldives National Qualification Framework. As such, this report is prepared by registered category A EIA consultants.</p> <p>5.2.3. 4th addendum to the Environmental Impact Regulation 2012 One of the main modifications to the EIA regulation is that the exclusive list for EIAs were changed such that EIAs are not required for reclaimed lands until three years from the reclaimed date unless the project involves dangerous chemicals, oil storage, incinerators, release of toxic chemicals to atmosphere, and fiberglass works.</p>	<p><u>Relevance to the project:</u> The current project although not specifically specified, upon screening was categorized by EPA as a project that requires an EMP.</p>

<p>5.1.Regulation on Sand and Coral Mining This regulation covers the ban on sand, coral, and aggregate mining from cost al zones, and uninhibited islands that have been leased.</p>	<p>The project notes, identifies and strictly follows the ban on coral mining from house reef, and atoll rim which has existed since 26 September 1990</p>
<p>5.2.The Environmental Liability regulation (Regulation 2011/R-9) This regulation is also pursuant to Environment Protection and Preservation Act of Maldives (4/93). The regulation is aimed at maintaining equal standards for reprimanding and enforcing environmental liabilities, fines for those who violate the rules and regulations and give guidance to those who are involved in the implementation process of the regulations pursuant to Preservation Act of Maldives (4/93). Provide the basis for levying fines on environmentally damaging violations to avoid environmental deterioration, extinction of biological resources, environmental degradation and wastage of natural resources. One of the key objectives of the environmental liability regulation is also to practice polluter-pay-principles in the Maldives.</p>	<p><u>Relevance to the project:</u> Apply with respect to the environmentally relevant aspects of the construction and operation phase and contractors shall take all practical measures to ensure that the mitigation proposed in this EMP is followed.</p>
<p>5.1.Construction Site Health and Safety Regulation (2019/R-156) The regulation was published by Ministry of National Planning and Infrastructure on 30th January 2019 as supporting document to National Construction Act (4/2017). The purposes of the regulation are To define the minimum Health and Safety precautions that needs to be practiced to ensure the Health and Safety of workers and the public. To define the fines and actions that will be taken against the parties that do not follow the regulation. Ministry of National Planning and Infrastructure will be the implementing authority of the regulation. The regulation defines the responsibilities of the contractor and fines for breaching the regulation. As per the regulation it is mandatory for the contractor to carry out the following: A. To provide Personal Protection Equipment (PPE) to all workers. B. To conduct Health and Safety Inductions sessions for all workers. C. All workers must complete the Health and Safety Training when they start work at a company. D. All contractors must have a Health and Safety Plan and Emergency Plan and workers must be trained to follow the both plans. E. Contractor must ensure all the works are carried out as per Health Safety Plan. F. Contractor must install Health and Safety Boards at the Works site. Warning signs and speed limits should be installed accordingly at the site. G. Contractor must ensure the safety of adjacent properties next the work site and take all necessary precautionary measures to prevent damages to nearby properties.</p>	<p><u>Relevance to the Project:</u> The project must follow regulation to ensure a safe working environment for the workers, volunteers, and staff. The project will follow all the requirements of the regulation at all mediums; land and sea, to ensure the Health and Safety of workers and the Public.</p>

<p>H. Contractor must provide safe passage for the public when the works are carried out on public places and roads.</p> <p>I. All work sites must have a Health and Safety Supervisor to assess the Health and safety of site and compile reports. He must record all accidents on site and inform the head office.</p>	
<p>5.2.Public health emergency regulation (2020/R40) The guideline defines the procedures to follow in case of a public health emergency.</p>	<p><u>Relevance to the project:</u> The contractor and the proponent is responsible for the general health of the staff involved. Hence must follow the procedures accordingly.</p>
<p>5.1.Regulation on treatment of the diseased in case of a contagious disease (2020/R34). The guideline dictates the best practice for management and treatment of the diseased in case of suspected or confirmed contagious pathogen.</p>	<p><u>Relevance to the project:</u> Although the project is carried out in an isolated lagoon a major component of the development is carried out in an inhibited island. Given the current climate of reoccurring COVID 19 cases, the contractor must be informed and prepared for the proper procedure for such an unfortunate event.</p>
<p>5.1.1. Regulation on isolation and quarantine facility standards (2020/R35), amendment 1 (2020/R-76) The regulation and the amendment define the requirements, and standards of the mandatory quarantine facilities for isolation of incoming, potential cases, and outgoing staff.</p>	<p><u>Relevance to the project:</u> The contractor is required to follow the guideline to prepare proper quarantine facilities.</p>

<p>5.1.Regulation on waste management (58-R/2013), amendment 1 (10-R/2014), amendment 2 (29-R/2014), amendment 3 (90-R/2017), amendment 4 (63-R/2018), and amendment 5 (109-R/2021),</p> <p>The waste management policy ensures that the Maldivians are well aware of the waste management techniques and maintains cleanliness as well as the natural aesthetics and clean air quality of the country is well maintained. Under this policy, all the inhabited islands need to implement a waste management plan and manage all the wastes generated from that island in accordance with that policy. The policy was framed keeping in mind a healthy environment which is solid waste free. Ensuring safe disposal of Solid waste, chemicals and hazardous industrial waste. Encouraging recycling, and reducing of waste generated. It also allows development of guidelines on waste management and disposal and advocate enforcing such guidelines.</p>	<p><u>Relevance to the project:</u> This project will comply with this guideline such that any wastes generated during the construction and operation phases of this project will be dealt with in accordance with the waste management plans of HDC and the government</p>
<p>5.1.EIA decision Statement</p> <p>The DS is to be issued by EPA to allow commencement of the project giving clearance and go ahead by the government.</p>	<p><u>Relevance to the project:</u> This project is one that requires an EMP, hence requires a DS to either allow the project to go ahead or to stop the project.</p>

6. Methodology

The following chapter describes the methodology of work used in the EMP.

6.1. Stakeholder consultation

Stakeholder consultation was carried out by the project formulation and management team. Each consultation followed the following steps.

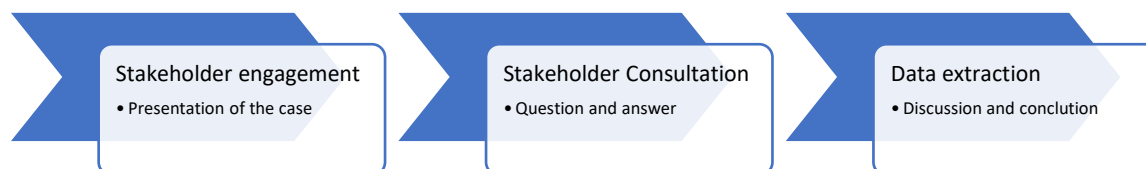


Figure 6 the basic method used in stakeholder consultation

At the end of each meeting the team requested for an official executive summary of the conclusions in written form.

6.2. Existing environment

6.2.1. Geological survey

Geological survey was carried out using a single beam sonar. A grid of the location of interest was mapped, a zig zag pattern was followed for maximum surface area coverage. The bathymetry was modelled and profiles of the required section extracted.

6.2.2. Benthic survey

Due to the unique nature of the location and due to the unique scope of the project two methodologies had to be utilised. The prior to qualify the location and the former to analyse the site.

6.2.2.1. Method 1

Since the benthos was uniform, and since the work will have an effect on the entire footprint, the footprint analysis was carried out using circular plots. The objective of the circular plot is to select an ideal location for the placement of the proposed structures.

The circular plot was carried out to using a 10m rope, where a centre point was selected and the rope was used as the radius. The parameters checked was the existence of hard coral, debris and other marine habitat in and at the edge of the circular plot. If the plot contained anything that can be considered as an obstacle, or anything of concern, then the plot was moved to another location.

6.2.2.2. Method 2

Methodology 2 was used on the footprint and monitoring locations. For uniformity, a 20m transect was taken across the diameter from the centre. Followed by a tally count of the benthic structures under the belt, with a reasonable buffer of 0.5m from each side. Samples were taken at every 0.5m.

6.2.3. Fish count

The fish count method used is a modification of the Reef Check methodology. It was carried out by tallying encounter. This was carried out for all sites

6.2.4. Impact prediction

Environmental impacts are predicted by using checklists and its significances are evaluated using matrices that are widely adopted in IEE / EIA / MP studies and in the Maldives. Expert judgment and professional opinion as well as a thorough literature review of relevant publications and IEE / EIA / MP studies were used throughout the impact assessment and evaluation process. These methods are described in detail in the relevant section of this report.

7. Literature looked into

Use of the source in the EMP	Source address	Use in the project
EMP for the development of wreck dive site at K.Kudagiri	EPA. Com. mv	Borrow the details and methodology of the previous approved project.
Context of the use	Edney, Joanne & Howard, Jonathon. (2013). Review 1: wreck diving.	For review of acceptable general use.
Dive methodology and operation proposed by the proponent	A Beginner's Guide to Wreck Diving (scuba.com)	The source/s provided a platform to cross check and specify the typical scenario in operation
Construction and operation impacts of wreck diving.	Edney, Joanne & Howard, Jonathon. (2013). Review 1: wreck diving.	For review of anthropological impacts of wreck diving.
Specific operation impact and economic benefit	Edney, Joanne & Boyd, William & Dimmock, Kay. (2021). Diving Deeper into Wreck Diver Motivations and Attitudes. 2. 195-217. 10.3390/tourhosp2020012.	For review of the specific economic impact of strict management controls in wreck diving.
		For review of diver access control proposed in the project
Mitigation measures during wreck diving	A Beginner's Guide to Wreck Diving (scuba.com) Wreck Diving: A Diver's Guide SCUBAPRO	The source/s provided a platform to cross check and specify the potential hazards during operation.
Location and placement impact on the development.	Salam, Ibnu & Mussadun, Mussadun. (2019). Priority Determination of Dive Site Development for Tourism in Ternate City. 10.4108/eai.18-7-2019.2290303.	Economic impact of location of placement of the wreck in comparison to the shoreline, and biodiversity.
Management measures for wreck dive sites	Edney, Joanne & Howard, Jonathon. (2013). Review 1: wreck diving.	for feasible management procedures.

8. Existing environment

The following section deals the existing environment of the proposed project. the methodology is specified in the relevant section.

8.1. Location of the existing structure

The structures are currently at the K. Thilafushi. The structures are cleaned, prepared and reinforced, attached to the base and ready for Transportation.



Figure 7 the structures, washed, cleaned and painted with marine grade paint.



Figure 8 Planes placed on the footing at K. Thilafushi.

8.2. Existing structure condition

The structures are clean and the extent of the damage is known. Therefore, reinforcement is required. One of the aeroplanes shows extensive damage when it comes to the tip of the plane and the right side of the structure. The crush and break need to be reinforced before it can be moved. the location.

8.3.Study area

Below is the area of proposed project implementation. The maps below show the sites of study and the table below provides the coordinates to location.

Site name	Site code	Water samples	Coordinates
location 3	A3		4°13'34.15"N, 73°25'43.86"E
location 4	A4		4°13'34.86"N, 73°25'46.05"E
location 5	A5	N5	325868.163 467130.914
location 6	A6	AL6	325764.107 467161.988
Control	Cont.	Control	4°13'28.11"N, 73°25'47.18"E

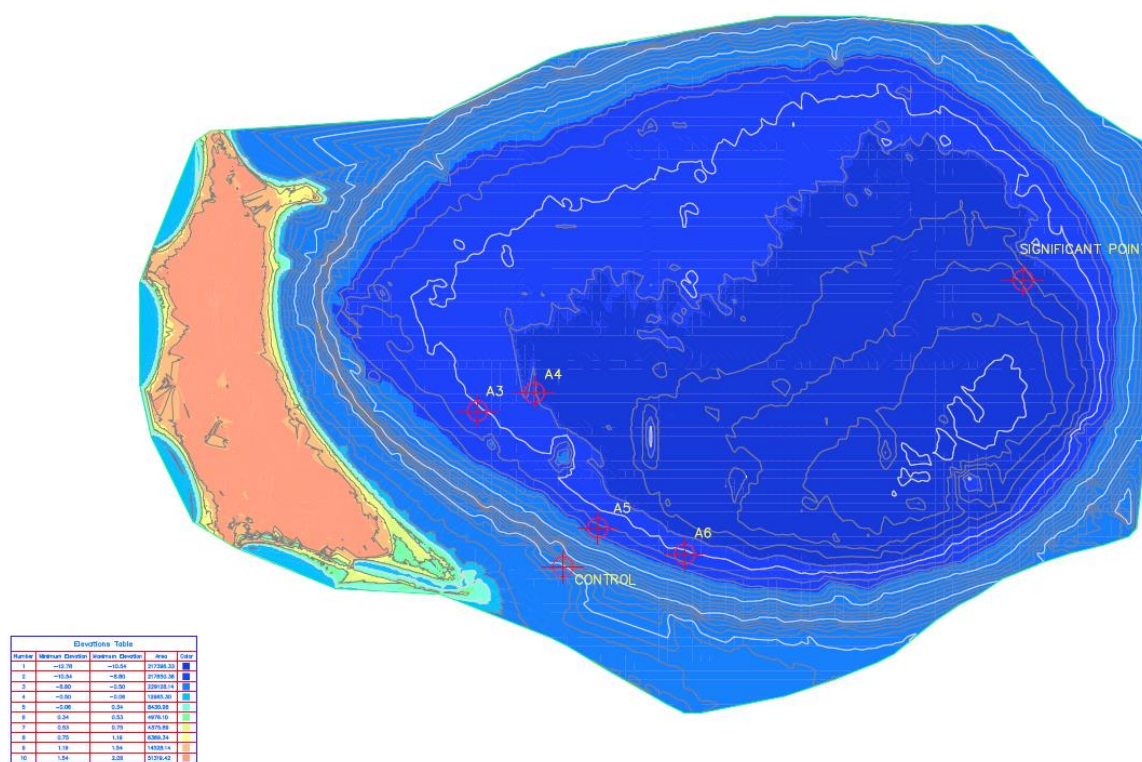


Figure 9 Survey map (see attachment (link) for details)

8.3.1. Water quality

Sample Description ~	N5	AL6	Control	TEST METHOD	UNIT
Location name	Location 5	Location 6	Control		
Physical Appearance	Clear with particles	Clear with particles	Clear with particles		µS/cm
Conductivity *	51800	52000	52000	Method 2510 B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	
pH *	8.2	8.2	8.1	Method 4500-H+ B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	
Salinity	34.06	34.14	34.20	Method 2520 B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	‰
Total Dissolved Solids	25900	26000	26000	Electrometry	mg/L
Total Suspended Solids	<5 (LoQ 5 mg/L)	<5 (LoQ 5 mg/L)	<5 (LoQ 5 mg/L)	HACH Method 8006	mg/L
Turbidity *	0.120	0.117	0.130	HACH Nephelometric Method (adapted from HACH 2100N Turbidimeter User Manual)	mg/L
Nitrate *	6.0	4.7	5.9	HACH Method 8171	mg/L
Nitrite	0.021	0.011	0.016	HACH Method 8507 mg	mg/L
Nitrogen Ammonia	<0.02 (LoQ 0.02 mg/L)	0.02	<0.02 (LoQ 0.02 mg/L)	HACH Method 8038	mg/L

Water samples were collected from three locations: A15, A16, and a Control site during a dive. The parameters measured include physical appearance, conductivity, pH, salinity, total dissolved solids (TDS), total suspended solids (TSS), turbidity, nitrate, nitrite, and nitrogen ammonia.

All samples appeared clear with particles, indicating minor particulate matter in the water but no visible pollution. Conductivity Measured between 51,800–52,000 µS/cm, suggesting a high presence of dissolved salts, which is typical for marine environments. Ph Ranges from 8.1 to 8.2, which is within the normal seawater range (typically 7.5–8.4), suggesting stable oceanic conditions. Salinity ranges from 34.06 to 34.20‰, which aligns with average seawater salinity

(~35%). Slight variations are natural due to tides and temperature differences. TDS values range from 25,900–26,000 mg/L, indicating a stable level of dissolved salts and minerals, consistent with marine conditions. TSS Below the detection limit of 5 mg/L, indicating clear water with minimal particulate pollution. Turbidity ranges from 0.117 to 0.130 mg/L, which is low, confirming high water clarity and minimal sediment disturbance.

NO_3^- values range from 4.7 to 6.0 mg/L, with the highest concentrations at N5 and Control. While these levels are within natural seawater variability, any increase could indicate nutrient loading from nearby activities. NO_2^- was measured between 0.011–0.021 mg/L, with the highest at N5. Nitrite is an intermediate compound in the nitrogen cycle, and elevated levels could suggest organic matter decomposition or wastewater influence. $\text{NH}_3\text{-N}$, is mostly below the detection limit (0.02 mg/L), except for A16 (0.02 mg/L). Low ammonia levels indicate minimal organic pollution, as ammonia is a byproduct of decomposition and sewage contamination.

The pH, salinity, and dissolved solids indicate a stable oceanic system with no major disturbances. Low total suspended solids (TSS) and turbidity confirm minimal sediment disturbance, suggesting that recent activities, such as construction or natural disturbances, have not significantly impacted visibility or sediment deposition. However, slightly elevated nitrate and nitrite levels at N5 and Control suggest a possible localized nutrient input, which could be attributed to organic matter breakdown, minor runoff, or biological activity. Despite this, the low ammonia levels indicate a lack of fresh organic pollution, suggesting no significant wastewater contamination in the area. See link for report ([link](#))

8.3.1. Geological survey

The bathymetry of the area shows that the proposed location has a maximum depth of approximately -11.66m from MSL. The project area is approximately -11.66m from MSL.

8.3.2. Site study

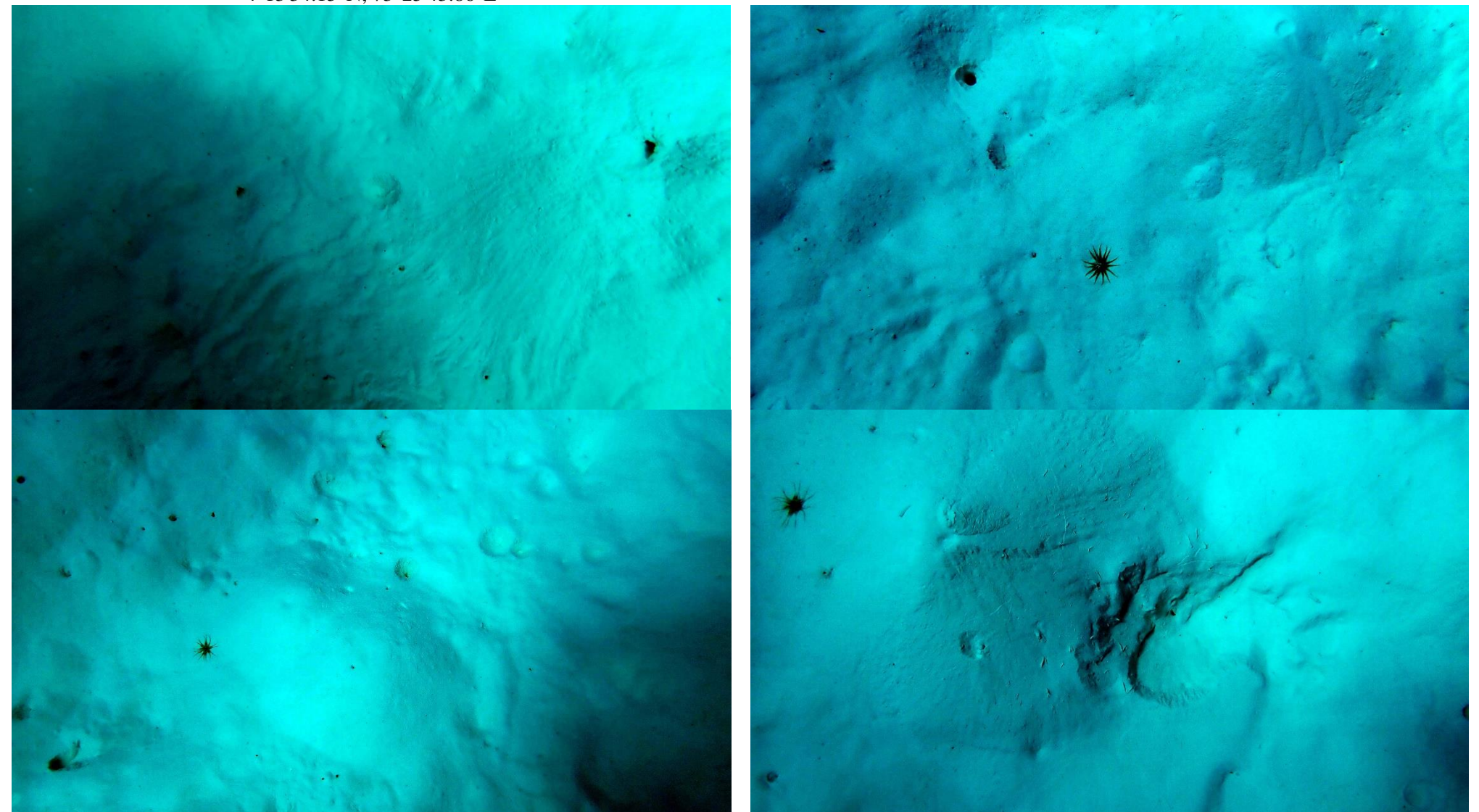


Figure 10 photos from the benthos

The monitoring results indicate minimal changes in the benthic composition compared to the baseline assessment conducted on November 21, 2022. Hard coral (HC), soft coral (SC), macroalgae (MA), seagrass (SG), and other biotic categories are absent due to lack of substratum. The most notable change is the emergence of turf algae (TA) at 6.55%, which was previously not observed. This could indicate early-stage algal colonization, potentially influenced by available nutrients or substrate conditions. Additionally, there is a slight reduction in silt cover from 94% to 89.83%, with a corresponding decrease in sand cover from 6% to 3.62%. This suggests subtle shifts in sediment distribution, possibly due to hydrodynamic changes or site-specific disturbances or sediment distribution.

Figure 11 location benthos 3

Site name
location 4

Site code
A4

Coordinates
4°13'34.86"N, 73°25'46.05"E

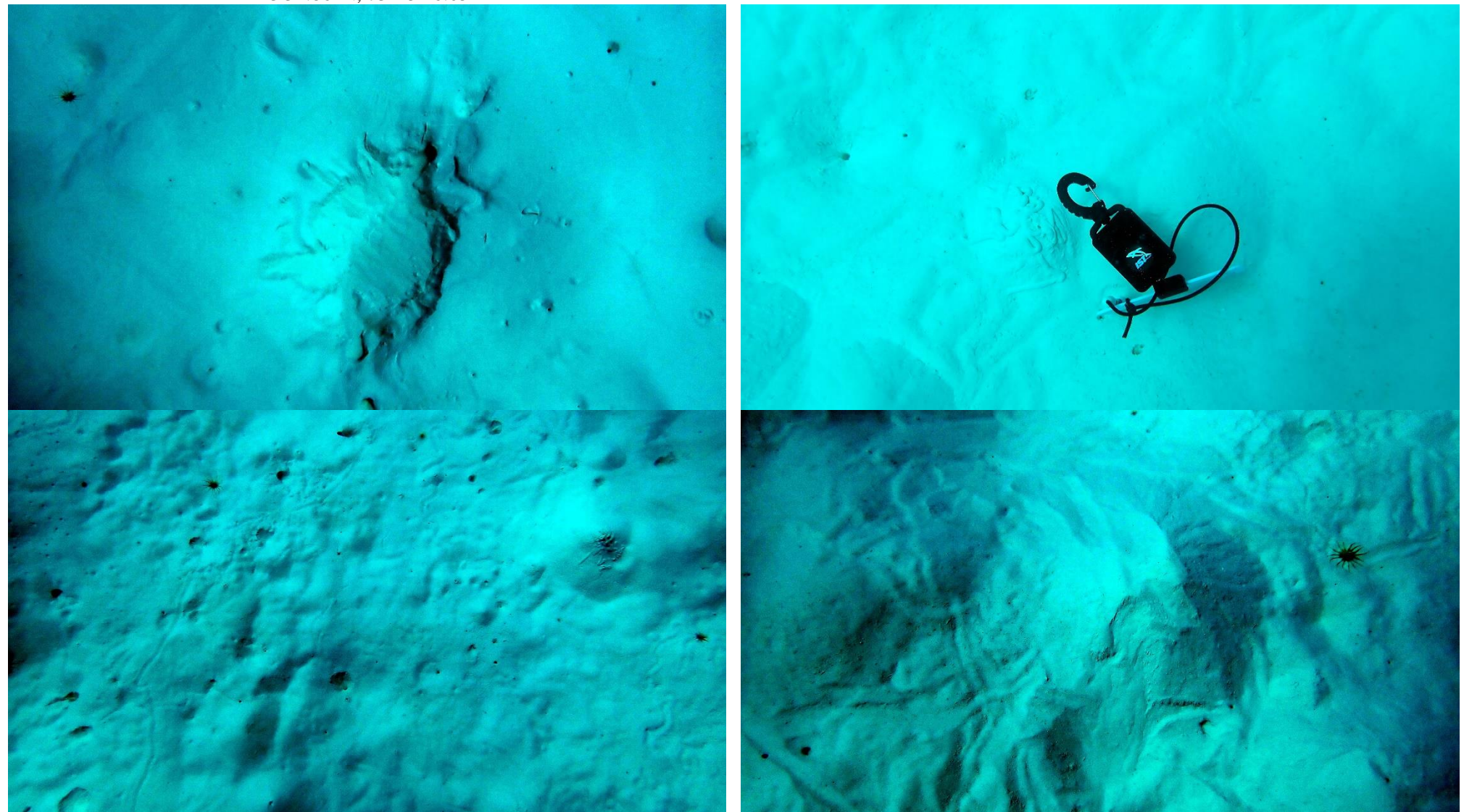
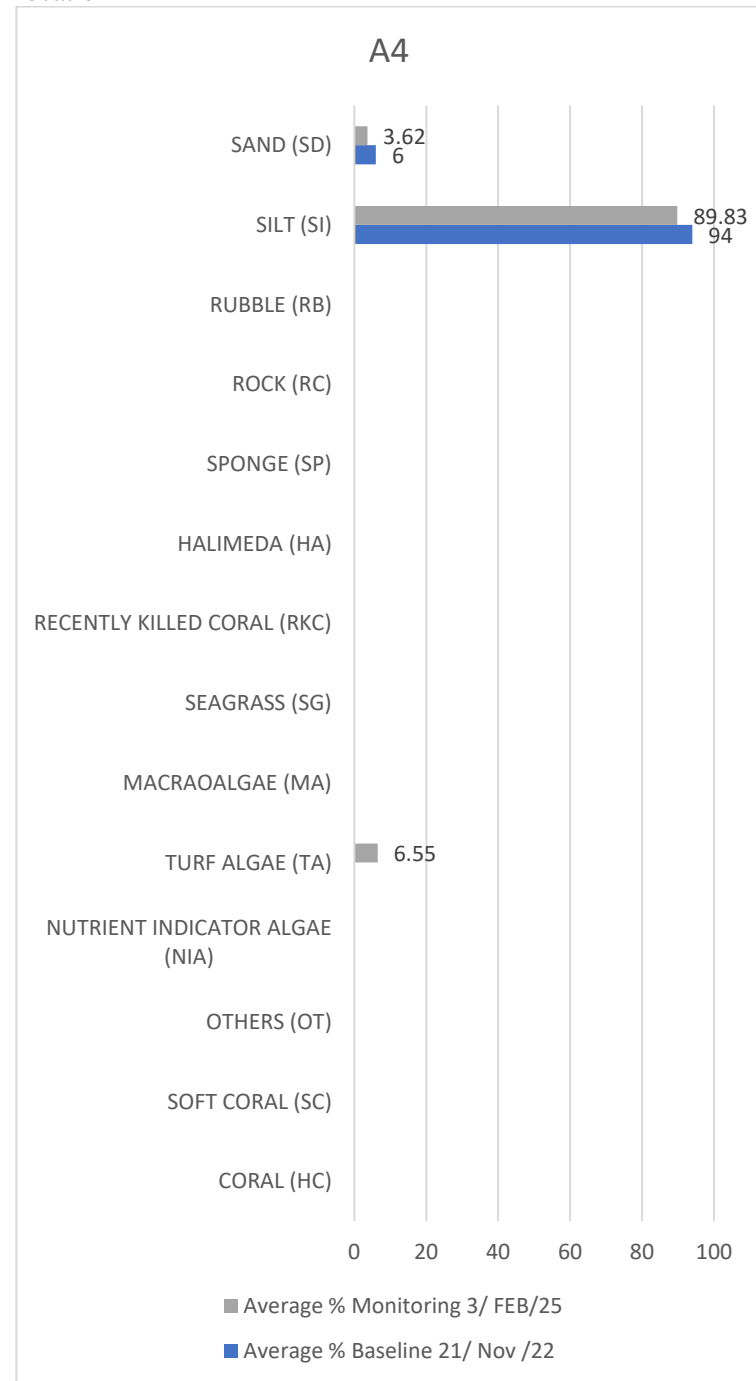


Figure 12 photos from the benthos

The monitoring results indicate minimal changes in the benthic composition compared to the baseline assessment conducted on November 21, 2022.. The most notable change is the emergence of TA at 6.55%, which was previously absent. This could indicate early-stage algal colonization, potentially influenced by available nutrients or substrate conditions. Additionally, there is a slight reduction in SI cover from 94% to 89.83%, with a corresponding decrease in SD cover from 6% to 3.62%.

Figure 13 location benthos 4

Site name
Control

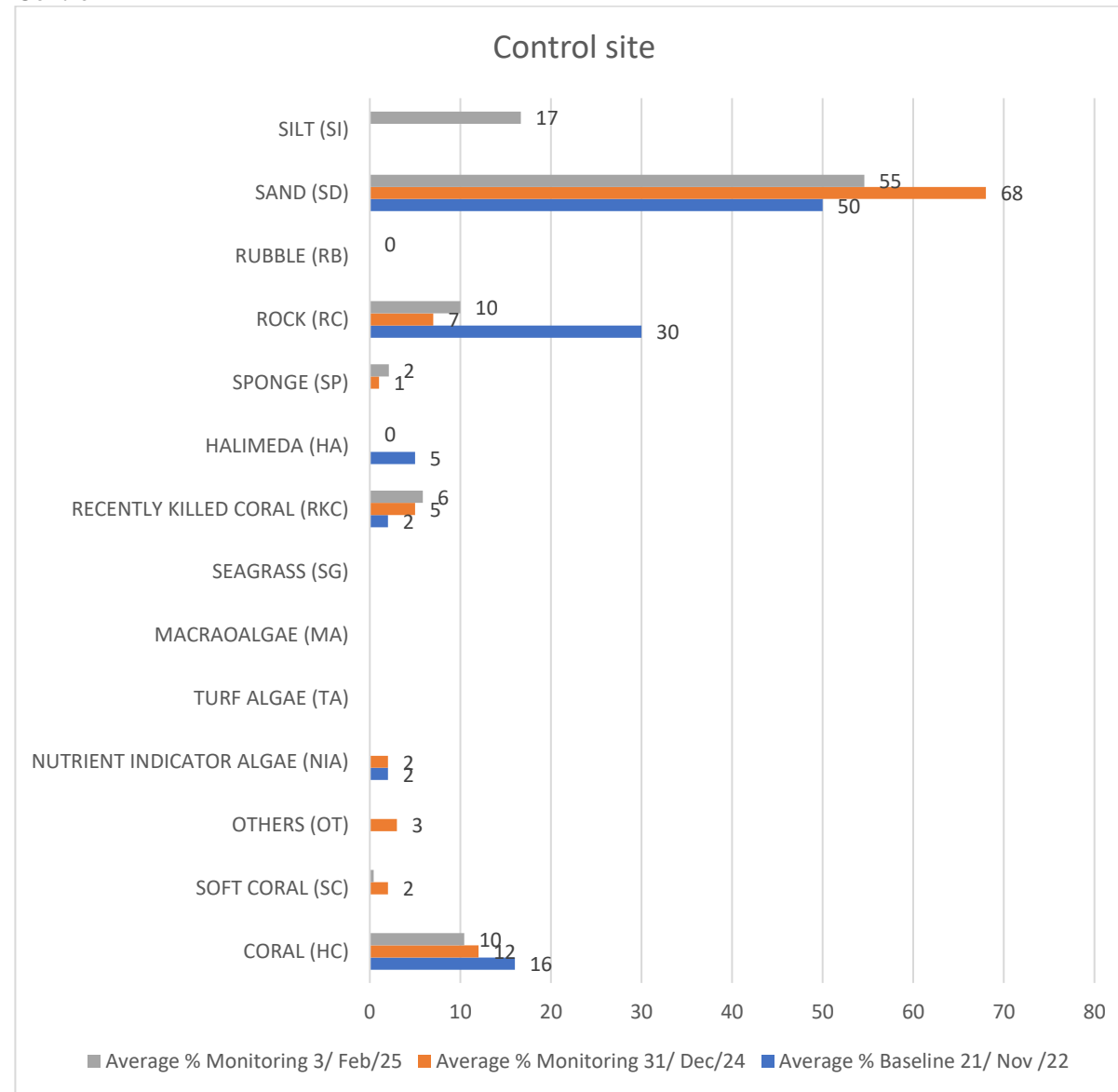


Figure 14 location benthos 7

HC cover has declined from 16% in the baseline assessment to 12% in December 2024 and further to 10% in February 2025, indicating potential stress or degradation. SC appeared in December 2024 (2%) but was absent again by February 2025. NIA remained stable at 2% initially but disappeared by February 2025, suggesting nutrient flux changes. Recent Killed Coral (RKC) increased from 2% in the baseline to 6% in February 2025, indicating ongoing coral mortality. HA, previously present at 5%, disappeared entirely, possibly due to changes in substrate stability or grazing pressure. Notably, RC decreased significantly from 30% in the baseline to 7% in December, recovering slightly to 10% in February. SD increased from 50% in the baseline to 68% in December before dropping to 55% in February, suggesting shifting sediment dynamics. The most significant change is the emergence of SI at 17% in February 2025, which was previously absent, potentially indicating increased sedimentation that may impact coral health.

Site code
Cont.

Coordinates
4°13'28.11"N, 73°25'47.18"E

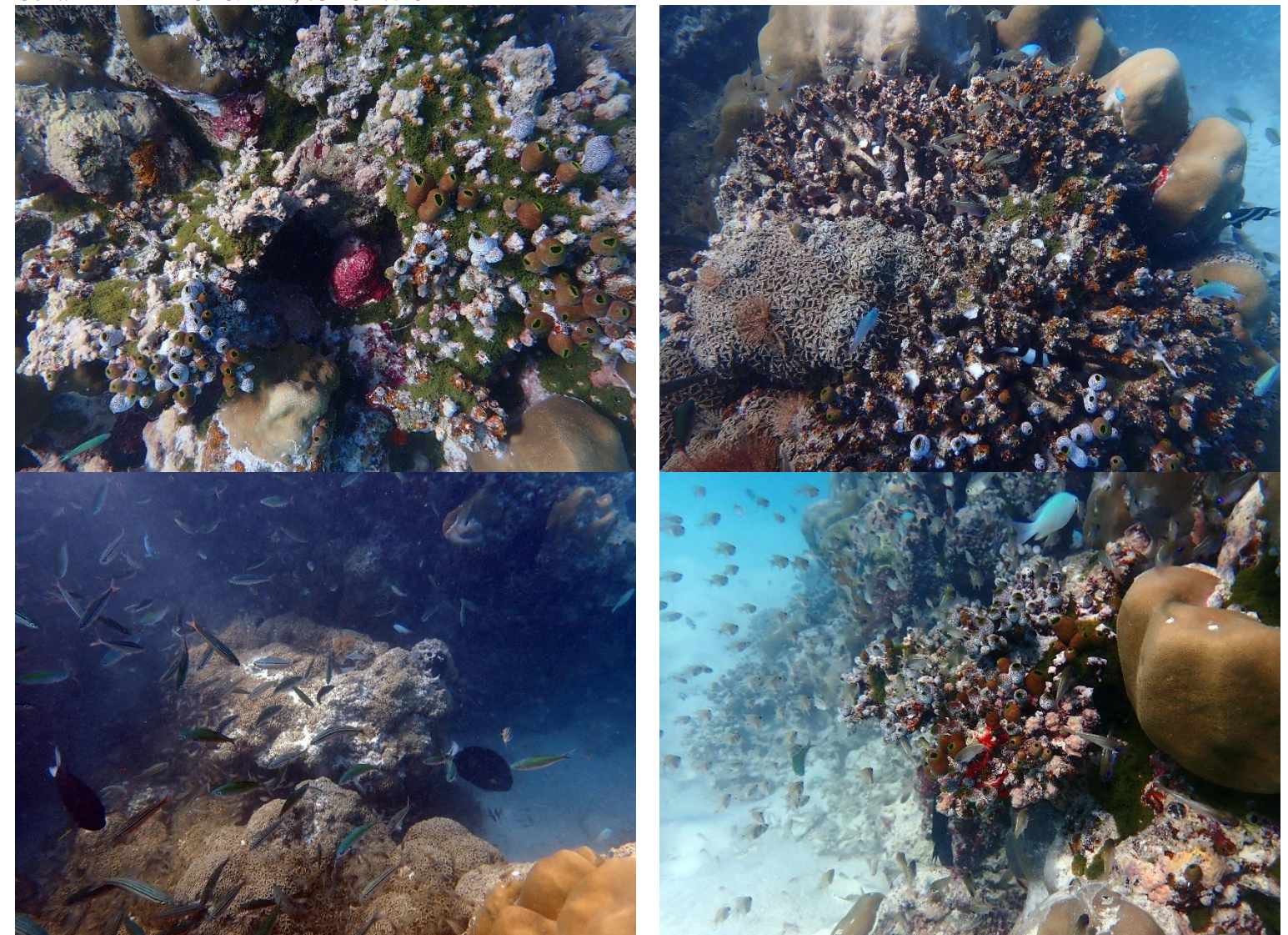


Figure 15 photos from the benthos

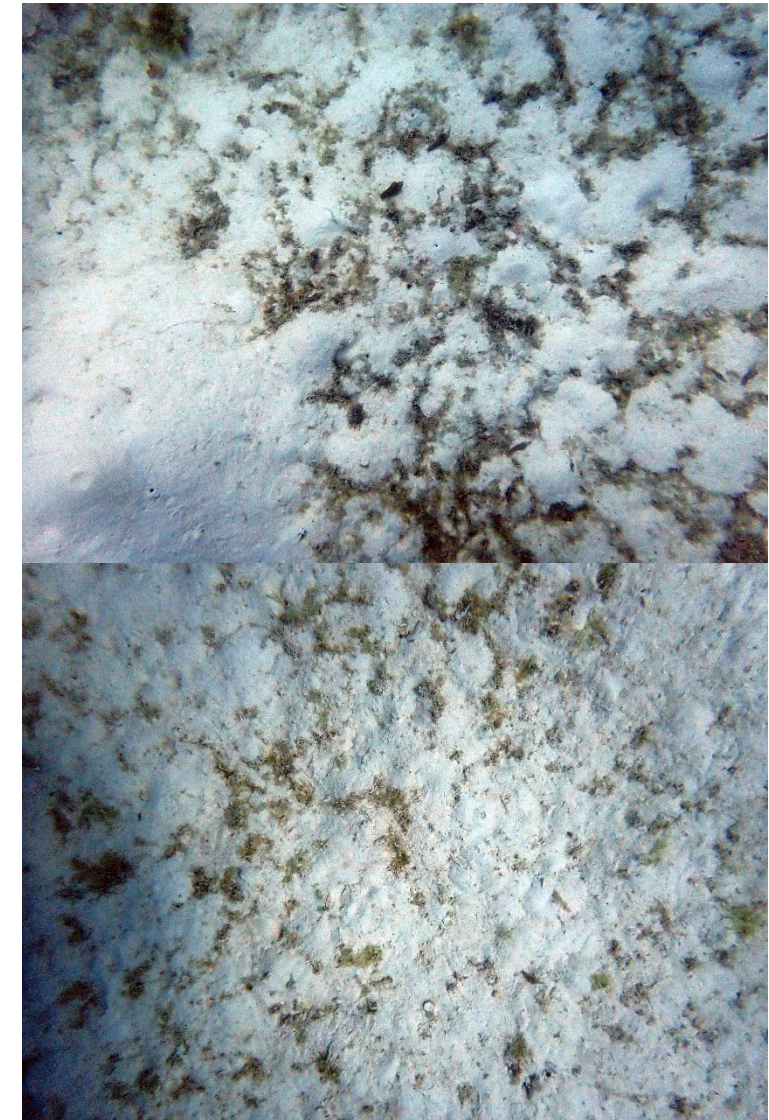
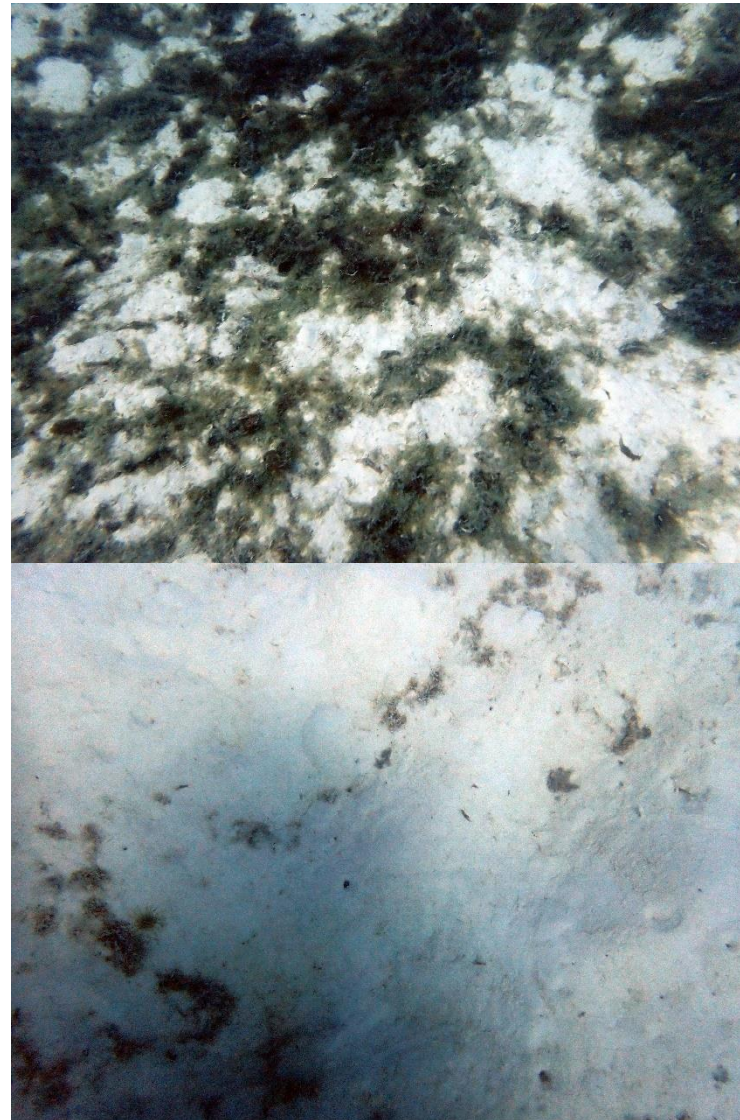
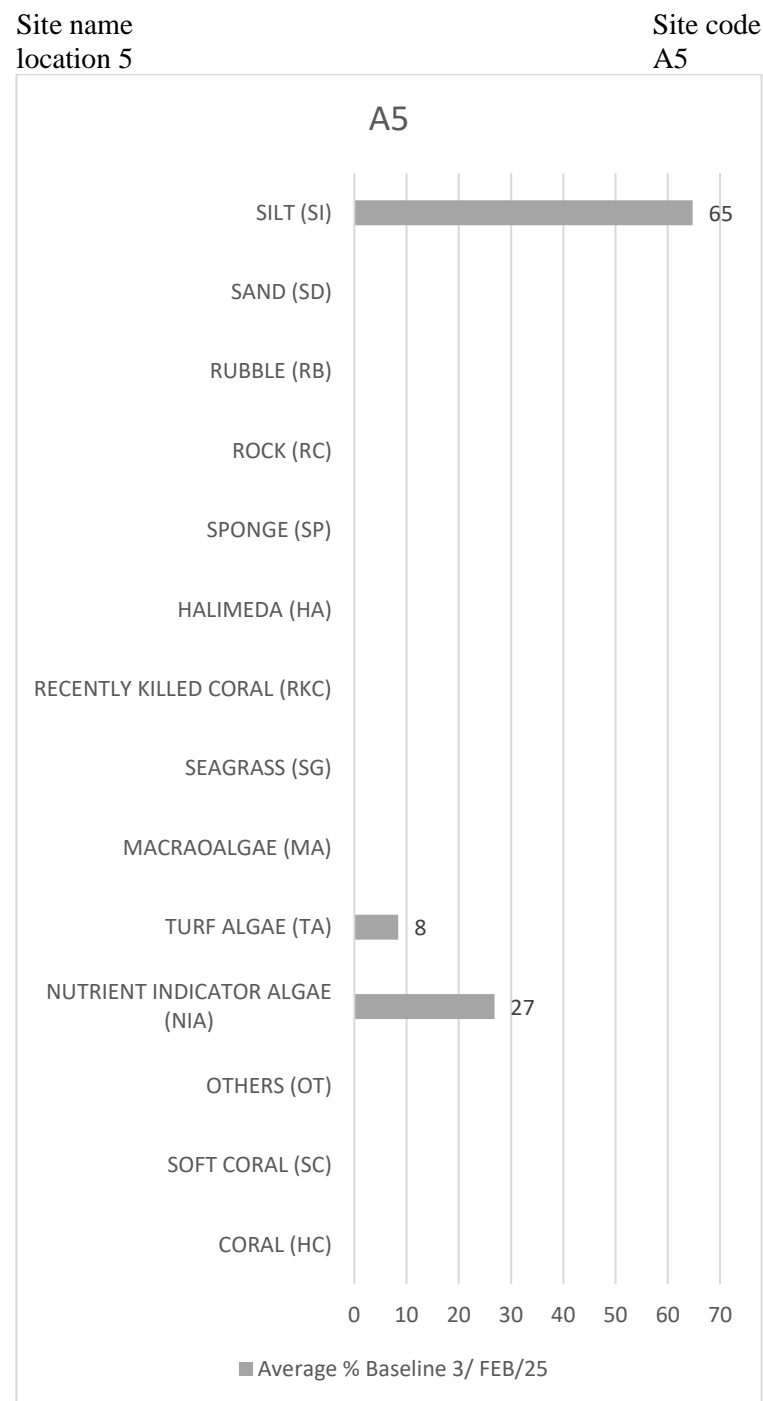


Figure 16 photos from the benthos
 The baseline results from February 3, 2025, show a significant presence of NIA at 27%, suggesting an increase in nutrient availability in the system, potentially due to runoff, organic matter accumulation, fertiliser runoff or other environmental factors. TA is also present at 8%, indicating early colonization on available benthose. The dominant substrate remains SI at 65%, reinforcing the likelihood of sedimentation as a key environmental factor affecting benthic composition. The absence of SD, RB, and RC leads to a soft-bottom environment with minimal structural complexity, which may influence habitat suitability for marine organisms.

Figure 17 location benthos 3

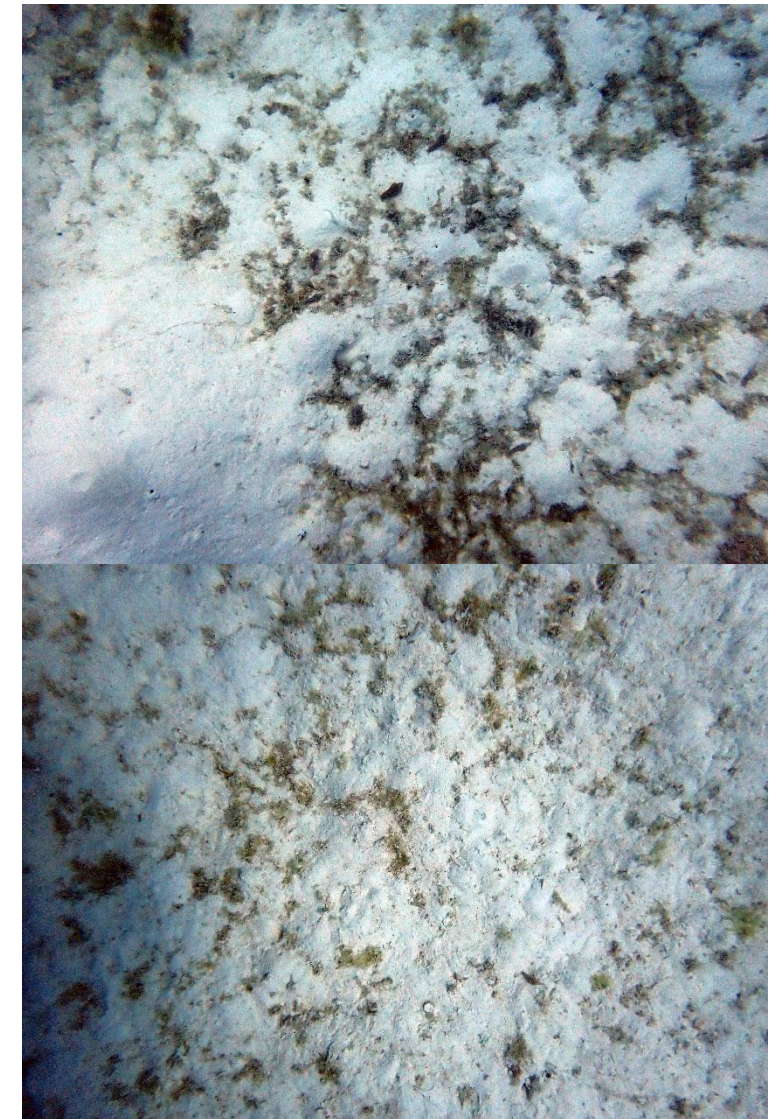
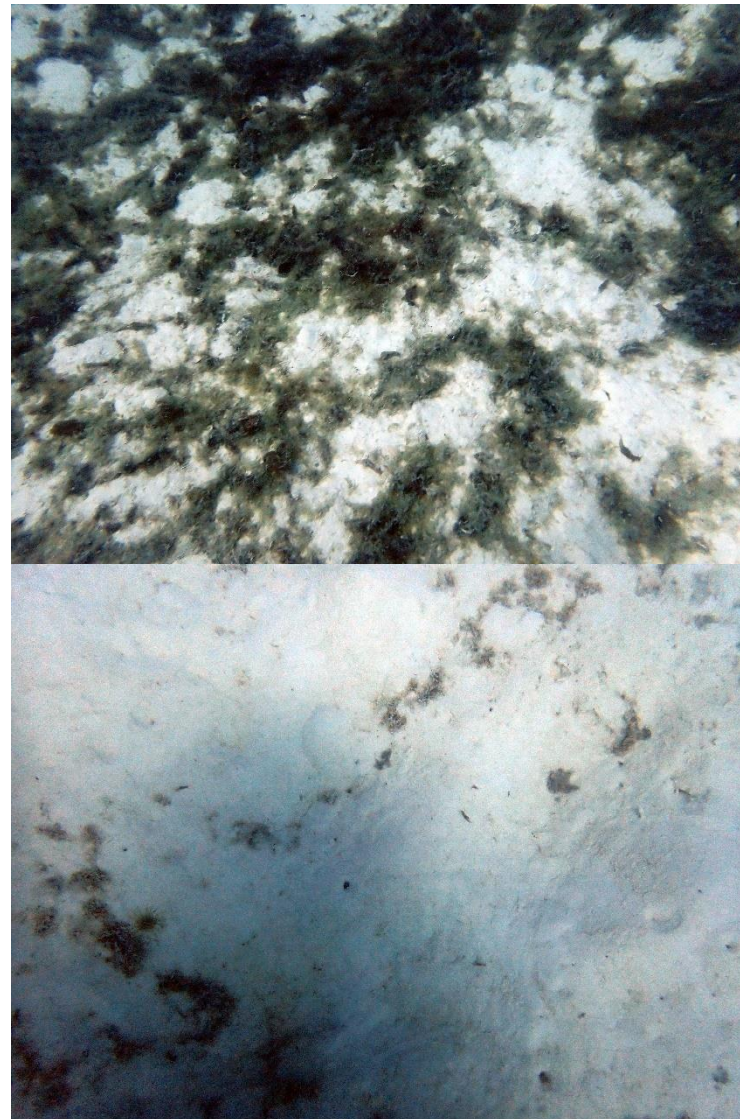
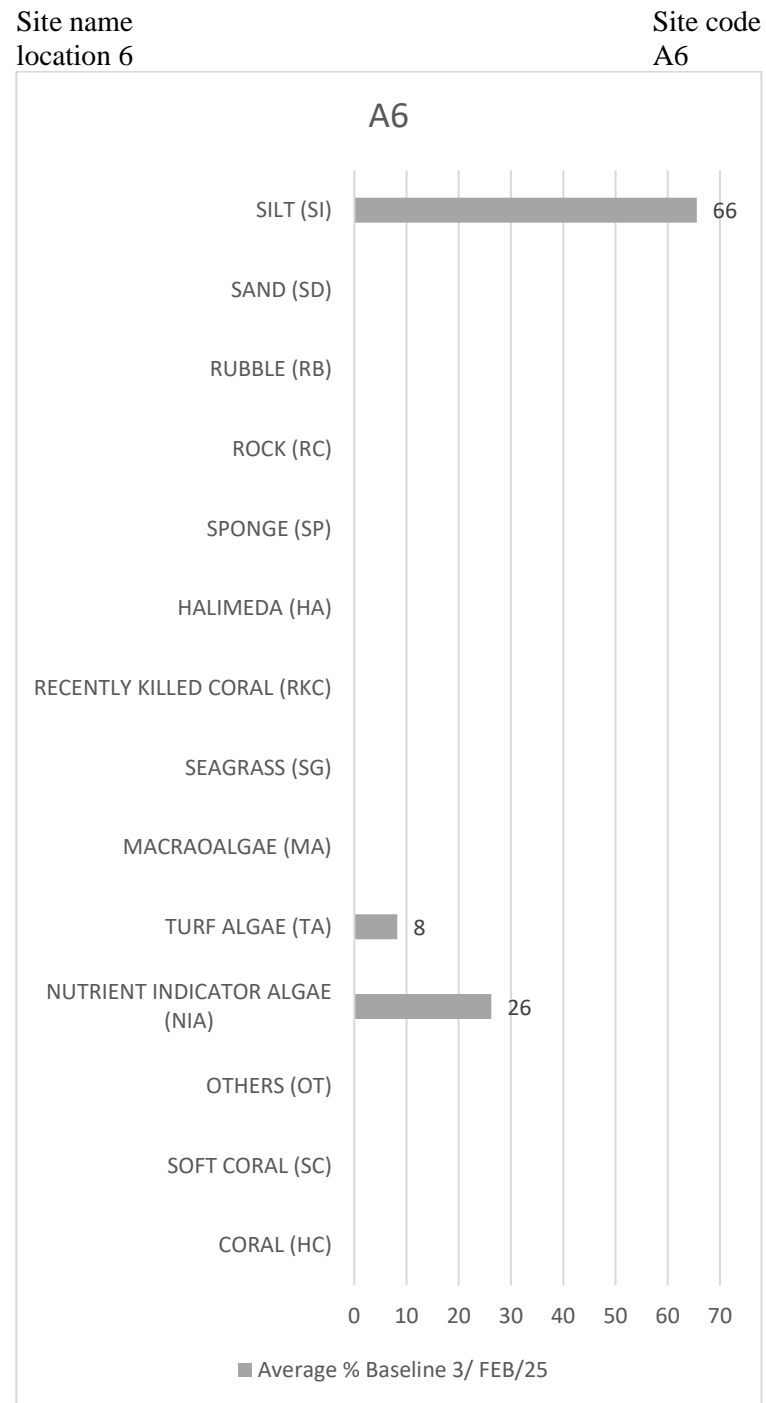


Figure 18 photos from the benthos
 The baseline data from February 3, 2025, reveals a benthic environment dominated by SI at 66%. NIA make up 26% of the substrate, suggesting increased nutrient availability, possibly due to organic matter deposition or runoff, which could lead to eutrophication if not managed. TA is present at 8%, further indicating early-stage colonization on available surfaces.

Figure 19 location benthos 3

8.3.3. Significant feature

A significant feature can be observed at GPS location 4°13'39.26"N, 73°26'4.96"E. The area of about 68m across and 28m wide is approximately at a depth of 10m and is approximately 68m from L1. The area also has a substratum with hard coral on the eastern side of the structure which is 4m across. And approximately 3m wide.

The structure is a combination of colonies of *Goniopora* sp extending the entire area.

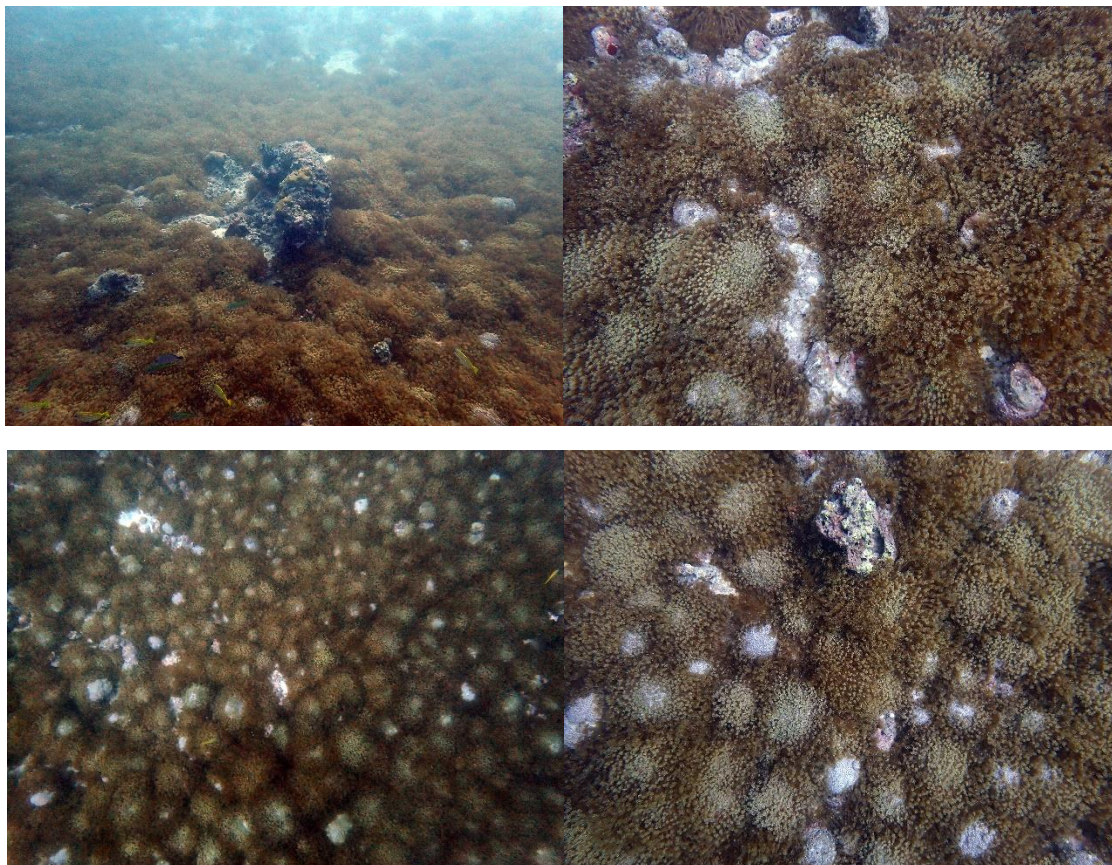


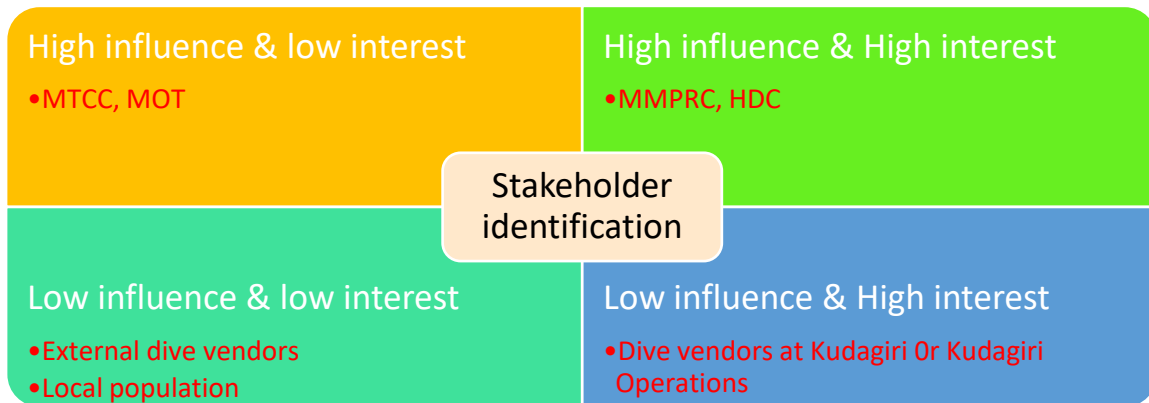
Figure 20 location image from 5m elevation.

9. Stakeholder consultation

Due to the limited scope, limitation of reach and limitation in access of the project, and as public perception is accounted in the EPA review process, public perception is limited to a perception analysis stakeholder consultation process,.

9.1. Stakeholder identification.

There are 4 classes of stakeholders involved in the project with regards to construction and operation. Stakeholders with High influence and High interest, high influence and low interest, high influence and high interest and low influence and low interest.



The stakeholders identified are;

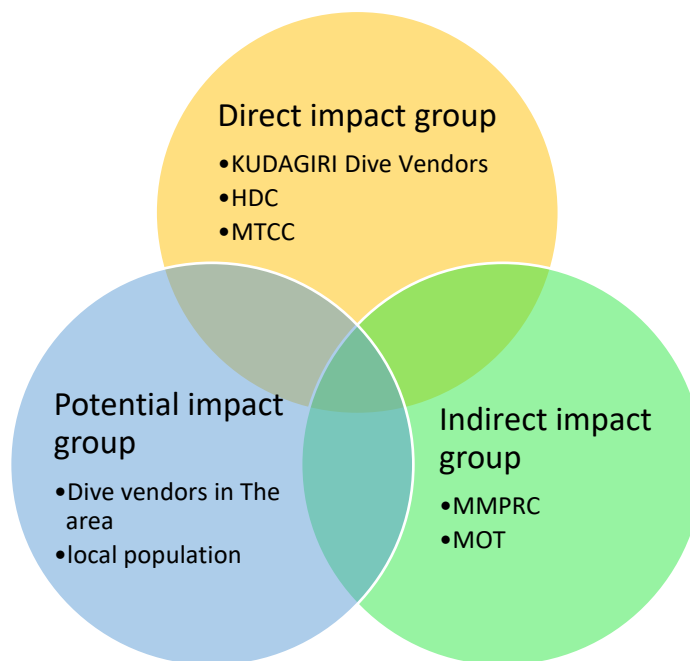
- 1) MOT,
- 2) MTCC,
- 3) MMPRC,
- 4) Dive vendors at K.Kudagiri, and
- 5) External Dive vendors.
- 6) Local populations

An analysis of the stakeholder groups.

Stakeholder groups	Stakeholder	Comments
High influence & High interest	MMPRC, HDC	These are stakeholders who are driving the project in one way or the other.
High influence & Low interest	MTCC, MOT	MTCC is the vendor in a contract with MMPRC for the project contract.
Low influence & High interest	Dive vendors at Kudagiri Or Kudagiri Operations	The exact operation of the process is not clear, however, the only bit that is clear is that the Kudagiri operations team will attend to the process.
Low influence & Low interest	External Dive vendors Local populations	These are the stakeholder that can potentially benefit form the development process, but are not key players in the project as of the current engagement.

9.2. Stakeholder grouping

Stakeholder grouping was carried out considering the partners in the development and operation process. The direct impact group and the potential and indirect impact groups are considered in the analysis process.



All three groups are consulted to capture the essence of their views and the level of engagement towards the project. Direct impact group includes stakeholders who will directly impacted by the project. This includes, Dive vendors at K. Kudagiri, MTCC, and the proponent; HDC. The indirect impact group contains those shareholders who will gain an indirect impact from implementing the project. They are MMPRC; who can use the wreck as a PR tool, and MOT, who can build the political portfolio of the projects in the government term. The potential impact group consists of those who are not; at this moment in a position of gaining any advantage, due to the project. However, can be made to receive direct positive impacts through the mitigation process.

9.3. Questioner for the stakeholders

The approach of the questioner is to engage the stakeholders initially through a presentation, followed by an attaining an understanding of the stakeholder’s concerns and understanding on environmental considerations, socio economic impact, health and safety concerns, operational, legal and sustainability components of the project post implementation of the project.

Grater theme to be measured	Detailed being analysed	Questions
General Project Understanding	Awareness and Understanding	What are your initial thoughts on the project?
		Do you feel that the project has adequately consulted with the community so far? If not, how can this be improved?
		Do you think that the project will be accepted by the local; dive community?
	Project Objectives	Do you believe the project aligns with the goals of eco-tourism and sustainable development in Maldives?
		What are the primary benefits of this project for the local community, dive community and the environment?

Grater theme to be measured	Detailed being analysed	Questions
Environmental Considerations	Environmental Impact	What are your concerns regarding the potential environmental impacts of the project
		Do you believe the proposed mitigation measures are sufficient to protect the marine environment?
		How can the project balance the economic benefits of tourism with the need to preserve the local environment?
	Monitoring and Management	How do you feel about the proposed environmental monitoring plan? Are there any additional measures you would suggest? Do you think the project will have any long-term effects on the local marine ecosystem?
Social and Economic Impact	Community Involvement	How can the local community be more involved in the planning and implementation of the project?
		How can the project ensure that women and disadvantaged groups in the community benefit from the development?
		Are there any specific barriers that might prevent certain groups from participating in or benefiting from the project?
	Community Benefits and Social Cohesion	How do you think this project will benefit the local community?
		Are there any potential negative social impacts that you foresee?
		Do you think the project will strengthen or weaken social cohesion within the community; dive and tourism community? Why?
	Economic Opportunities	What economic opportunities do you think the dive site will create for the external vendors and dive community
		How can local businesses be supported to take advantage of the increased tourism?
		How can the project ensure that the revenue generated from the dive site benefits the local community?
		Should a portion of the revenue be re invested into community development projects? If so, what areas should be prioritized
Health and Safety	Safety Concerns	What are your concerns regarding the safety of workers during the construction and operation phases?
		Do you believe the proposed safety measures for divers and workers are adequate?
		How can the project ensure the safety of divers, especially those with less experience?
	Public Safety and Emergency Response	Are there any concerns about public safety, especially regarding the use of the dive site by tourists and locals
		What emergency response measures should be in place for the dive site? Are there any specific risks that the project should prepare for?
Operational and Management Concerns	Project Management and Stakeholder Involvement	Do you have confidence in the project management team’s ability to execute the project as planned?
		Are there any specific concerns you have about the project’s timeline or budget?
		How would you like to be involved in the project moving forward
Legal and Regulatory Compliance	Compliance and Permits	Do you believe the project complies with all relevant environmental and legal regulations?
		Are there any specific regulations or laws you think the project should pay more attention to?

Grater theme to be measured	Detailed being analysed	Questions
		Do you think the project has obtained all necessary permits and approvals?
Sustainability and Maintenance	Long-term Sustainability	How do you think the project can ensure long-term sustainability, both environmentally and economically?
		What measures would you suggest to ensure the dive site remains a viable attraction for years to come?
		What measures would you suggest to ensure the dive site remains a viable attraction for years to come?
		Who should be responsible for the ongoing maintenance and monitoring of the dive site?
		How can the project ensure that the site is well-maintained over time?

All meetings started with an engagement presentation with a detailed explanation of the project, impacts, management and mitigation strategies and monitoring schedule.

9.4.Meeting with MMPRC

Held on 9th Feb 25

See attachment ([link](#))

Concerns about environmental disturbances, such as water quality and coral growth, were raised but were generally considered manageable through mitigation measures. Community involvement, including divers and local businesses, is emphasized as crucial for long-term sustainability. The project is expected to enhance social cohesion, create economic opportunities, and align with eco-tourism principles.

Analysis of the meeting

The MMPRC has an overall positive perception of the Kudagiri Dive Site Project, with strong support for its economic and environmental benefits. However, while stakeholders acknowledge potential environmental risks, their responses indicate a high level of confidence in mitigation measures without detailed scrutiny of long-term ecological impacts.

Social concerns, such as overcrowding and unequal benefit distribution; to vendors, were concerns raised. But MMPRC being the main financier, was not further explored. The emphasis and interest on community involvement and reinvestment of revenue suggests a need for structured governance to ensure equitable benefits and continuity of finance. The reliance on local businesses and dive operators for maintenance, raises sustainability questions, necetating clear long-term management strategies. The project’s success will depend on continuous monitoring, adaptive management, and meaningful stakeholder engagement.

9.5.Meeting with MTCC

Held on 9th Feb 25

See attachment ([link](#))

Overall, stakeholders view the project as a positive initiative that aligns with eco-tourism and sustainable development goals, enhances tourism, and benefits local businesses. They do not anticipate significant environmental or social concerns but emphasize the importance of safety measures, risk assessments, and regulatory compliance.

Analysis of the meeting

The consultation responses from MTCC reflect strong stakeholder support for the Kudagiri Dive Point Project, highlighting economic opportunities for local businesses and the dive community. However, as the contractor there is limited discussion on potential environmental risks beyond the assumption that artificial dive sites improve marine biodiversity over time; which is expected. While safety measures for divers and workers are acknowledged, the mention of risks like heavy lifting on floating platforms shows a need for more rigorous safety protocols during operation. The absence of major concerns about environmental impact indicates either strong confidence in mitigation measures, given the baseline. Additionally, the mention of project delays signals potential challenges in execution. To enhance project effectiveness, further engagement with local divers, businesses, and environmental experts is recommended, ensuring a balanced approach between economic gain and ecosystem preservation.

9.1. Feedback to the EMP survey link from the general population.

The survey respondents primarily consisted of males (majority) and a smaller proportion of females, with most participants falling within the 18-30 and 31-45 age groups. The respondents represented a mix of backgrounds, including regular citizens (both divers and non-divers), recreational divers, and a few dive specialists such as instructors and guides. Recreational divers formed a significant portion of the sample, indicating strong interest from the diving community.

The survey results indicate strong support for the Kudagiri Wreck Dive Site project, with most respondents agreeing that it aligns with eco-tourism and sustainable development goals. There is widespread belief that the project will create economic opportunities, and a majority support reinvesting revenue into community development. However, concerns exist regarding stakeholder consultation, with many feeling that engagement with the community, particularly the dive sector, has been insufficient. Opinions on the project's long-term environmental impact are mixed, highlighting the need for continuous monitoring and adaptive management. Confidence in the project management team is generally positive but not unanimous, suggesting that greater transparency and communication could improve trust.

10. Impact prediction

The following section deals the impact identification. The methodology is specified in the section named Methodology.

10.1. Identification of impact

Impact definition was carried out where, specific activities were analysed and environmental factors were cross checked. If an impact is evident, then the component was further looked into

Table 2 Impact criteria scale and attribute definition

In assessing project impacts, we adopted an extrapolative analogue model by comparing the impacts of the proposed development with similar existing developments and sites with comparable environmental conditions in the Maldives and other similar countries. This approach was developed based on site visits, literature searches, and monitoring of similar projects. Given the absence of mathematical modeling and the timeline of the MP process, this method is the most suitable for the current project.

To systematically assess impacts, we used a structured set of criteria, including reversibility, impact period, and magnitude:

Reversibility

Irreversible (I) – The impact cannot be undone or restored.

Reversible (R) – The impact can be mitigated or restored over time.

Impact Period

Less than one year (>1)

1 to 2 years (1-2)

2 to 5 years (2-5)

Range The distance in which the impact will reach

50 m

100 m

200 m

Local area

Magnitude This represents the level of effect or influence an impact could have on the environment, categorized as follows:

Positive Impacts

[1] Very Significant

[2] Significant

[3] Major

[4] Moderate

[5] Minor

Negative Impacts

[-1] Minor

[-2] Moderate

[-3] Major

[-4] Significant

[-5] Very Significant

Since the current project requires an MP, emphasis was placed on the magnitude and significance of impacts associated with specific methodological activities. This helped define the necessary mitigation and management measures.

Once potential predicted impacts were identified and analyzed, cumulative impacts were further categorized based on their interactions:

Additive – The sum of individual impacts.

Synergistic – Greater than the sum of individual impacts due to interactions.

Antagonistic – Impacts counteract each other.

Time-lagged effects – Consequences that appear after a delay.

The objective of this section is to investigate the potential impacts of the proposed project on the existing environment. Identifying an impact does not ensure its occurrence nor imply that it cannot be mitigated. However, this process ensures that authorities are informed, the proponent is aware of potential impacts, and the contractor understands the expected mitigation measures before project commencement.

10.2. Limitations of impact prediction

The limitations of the impact prediction are stated below; due to time constrains and scheduling, long term data necessary for impact prediction is unavailable. Thus, this becomes a major limitation. Long term data is necessary to understand the complex systems of the project area A limited understanding of the unique island systems, and how these features change over time, and the impact the locals have on these features due to their activities and a lack of documented historical data is another limitation.

The possible bias in the available historical data, stakeholder’s consultation and the proponent’s information is also considered. Impact prediction is carried out using the available data during site visit. Hence, is another major limitation.

10.3. Impact zone analysis.

The impact zone is presented in the map in the attachment under Impact map. In the lagoon zone, the predicted impact is typical of any marine disturbance that does disturb benthic sediment. The zones cover a marine area and minor terrestrial area while transport. The maximum impact footprint predicted to be seen on the radius marked. It is predicted that the impact diminishes as the distance increases from the general work area.

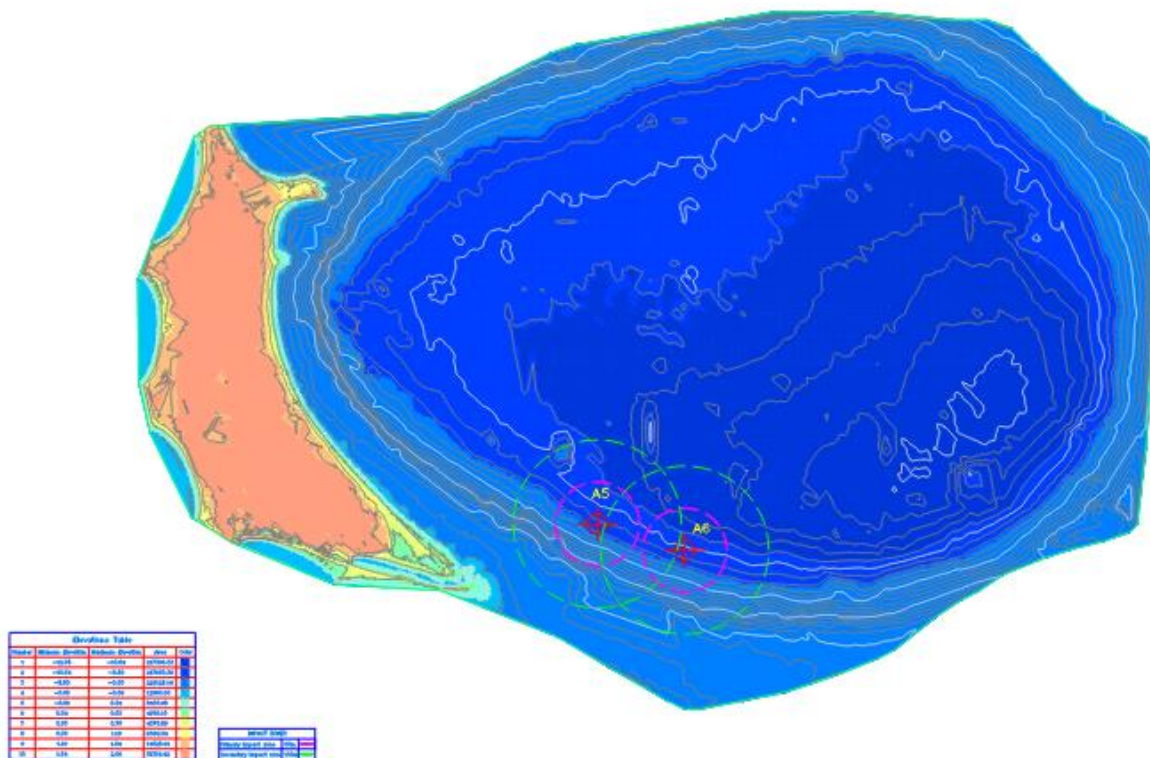


Figure 21 Reduced Impact Map (see link for detailed map)

10.4. Impact factors

The impact factors used are specific to the project. As the project is one that can have a significant impact on the socio-economic and natural environment, the MP focuses on the following.

- Environmental Impacts
- Social and Cultural Impacts
- Economic Impacts
- Regulatory and Compliance Impacts

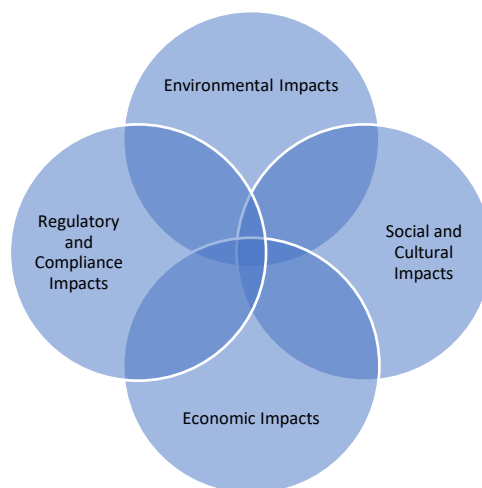


Figure 22 an illustration of the impact factors

10.5. Identification of impacts

Below shows the exploration of identification of impacts for the development activities.

Identified Impact category	Identified impact	Explanation
Environmental Impacts	Marine Habitat Disturbance	The process of moving, placing, and assembling the wrecks may disrupt the existing benthic environment and marine species.
	Sedimentation and Water Quality Issues	Movement of large objects in the marine environment can cause sediment resuspension, affecting water clarity and quality
	Potential Pollutants and Contaminants	Residual materials such as oil, paint, and metals from aircrafts could introduce pollutants into the marine ecosystem.
	Impact on Marine Biodiversity	The artificial structure will attract fish and other marine organisms, altering the natural distribution and behaviour of marine species
	Hydrodynamic Changes	Placement of artificial structures could influence water currents and sediment transport patterns
Social and Cultural Impacts	Tourism Development	The site could enhance local tourism and recreational diving opportunities, contributing to economic diversification.

	Increased Marine Awareness and Conservation	The site could serve as an educational and research opportunity for marine conservation initiatives.
	Conflicts Over Resource Use	Potential conflicts within the vendors on the number of individuals
	Diver Safety Concerns	Risks related to improper placement, entanglement hazards, or structural integrity issues could pose safety concerns for divers
Economic Impacts	Revenue Generation for the Proponent and Stakeholders	The dive site can create a new income stream for HDC and local businesses through entry fees, dive tours, and rentals.
	Employment Opportunities	The project may provide jobs for qualified Maldivians in areas like dive site management, equipment rentals, and guiding services
	Financial Risks and Sustainability	If the project does not attract sufficient divers or faces operational challenges, it may not generate the expected revenue, leading to financial losses.
Regulatory and Compliance Impacts	Legal and Environmental Compliance	The project must align with Maldivian environmental laws, including proper waste disposal, safety regulations, and ecosystem monitoring.
	Stakeholder Expectations and Approval	Ensuring continuous engagement with government agencies, conservation groups, and local communities will be essential for smooth project implementation.

Table 3 Impact identification

10.1. Impact prediction

10.1.1. Environmental Impacts

Identified impact	Explanation	Discussion from the existing environment	Reversibility	Impact Period	Range	Magnitude
Marine Habitat Disturbance	The process of moving, placing, and assembling the wrecks may disrupt the existing benthic environment and marine species.	The wreck is placed over a soft benthic bed of sand and silt. The changes will kick up a lot of sediment that will potentially disturb the organisms embedded in the area and kill the sediment-dwelling organisms in the area.	While the footprint damage is irreversible, the rest of the damages from the sediment kick-up will be reversed within a few hours.	Less than a year	Within 50m	Minor Negative (-1)
Sedimentation and Water Quality Issues	Movement of large objects in the marine environment can cause	Similar to the above-mentioned sedimentation, the impact this	Sedimentation and water quality act together due to correlated	Less than a year	Within 50m	Minor Negative (-1)

	sediment resuspension, affecting water clarity and quality.	work will have on water quality is minor as the water will be diluted, and the impact footprint is small.	chemistry. The baseline will likely be restored within a few hours.			
Potential Pollutants and Contaminants	Residual materials such as oil, paint, and metals from aircraft could introduce pollutants into the marine ecosystem.	The wrecks are cleaned, the rust scrubbed, and freshly painted using marine-grade paint, and are ready to be deployed. However, once deployed, the chances of material exchange are inevitable. Previous data shows NIA in the surveyed area.	The impact at a chemical level is not reversible.	2 to 5 years	More than 200m	Major Negative (-3)
Impact on Marine Biodiversity	The artificial structure will attract fish and other marine organisms, altering the natural distribution and behavior of marine species.	The area is devoid of rock substrate, so any small structure in the lagoon becomes a refuge for many fish.	The change is permanent.	2 to 5 years	More than 50m	Major Positive (+3)
Hydrodynamic Changes	Placement of artificial structures could influence water currents and sediment transport patterns.	The area has relatively calm water currents, and the introduction of structures may cause minor changes in local hydrodynamics. Given the bathymetry, the area can accrete sand to the bases and can change the dive experience overtime.	Changes may persist as long as the structures remain in place.	Long-term (5+ years)	Within 100m	Minor Negative (-1)

10.1.2. Social and Cultural Impacts

Identified impact	Explanation	Discussion from the existing environment	Reversibility	Impact Period	Range	Magnitude
Tourism Development	The site could enhance local tourism and recreational diving opportunities, contributing to economic diversification.	The Maldives is a popular tourist destination, and the addition of a new dive site could attract more visitors, especially diving enthusiasts.	The impact is reversible if the site is no longer maintained or promoted.	Long-term (5+ years)	Local area	Major Positive (+3)
Increased Marine Awareness and Conservation	The site could serve as an educational and research opportunity for marine conservation initiatives.	The site could be used for educational programs and research, raising awareness about marine ecosystems and conservation efforts.	The impact is reversible if educational and research activities cease.	Long-term (5+ years)	Local area	Moderate Positive (+2)
Conflicts Over Resource Use	Potential conflicts within the vendors on the number of individuals.	There may be competition among local businesses and vendors for access to the dive site, leading to conflicts.	Conflicts can be resolved through mediation and proper management.	Short-term (1 year)	Local area	Minor Negative (-1)
Diver Safety Concerns	Risks related to improper placement, entanglement hazards, or structural integrity issues could pose safety concerns for divers.	Proper placement and maintenance of the wrecks are essential to ensure diver safety. Structural integrity must be monitored regularly.	Risks can be mitigated through proper management and maintenance.	Long-term (5+ years)	Local area	Moderate Negative (-2)

10.1.3. Economic Impacts

Identified impact	Explanation	Discussion from the existing environment	Reversibility	Impact Period	Range	Magnitude
Revenue Generation for the Proponent and Stakeholders	The dive site can create a new income stream for HDC and local businesses through entry fees, dive tours, and rentals.	The dive site has the potential to generate significant revenue, especially if marketed effectively to tourists.	The impact is reversible if the site is no longer operational.	Long-term (5+ years)	Local area	Major Positive (+3)
Employment Opportunities	The project may provide jobs for qualified Maldivians in areas like dive site management, equipment rentals, and guiding services.	The project could create employment opportunities for locals, contributing to the local economy.	The impact is reversible if the site is no longer operational.	Long-term (5+ years)	Local area	Moderate Positive (+2)
Financial Risks and Sustainability	If the project does not attract sufficient divers or faces operational challenges, it may not generate the expected revenue, leading to financial losses.	There is a risk that the project may not be financially sustainable if it fails to attract enough visitors or if operational costs exceed revenue.	The impact is reversible if the project is discontinued.	Long-term (5+ years)	Local area	Moderate Negative (-2)

10.1.4. Regulatory and Compliance Impacts

Identified impact	Explanation	Discussion from the existing environment	Reversibility	Impact Period	Range	Magnitude
Legal and Environmental Compliance	The project must align with Maldivian environmental laws, including proper waste disposal, safety regulations, and ecosystem monitoring.	Compliance with environmental laws is critical to avoid legal issues and ensure the project's sustainability.	Non-compliance can be rectified through corrective actions.	Long-term (5+ years)	Local area	Moderate Negative (-2)
Stakeholder Expectations and Approval	Ensuring continuous engagement with government agencies, conservation groups, and local communities will be essential for smooth project implementation.	Stakeholder engagement is crucial to gain support and address concerns from various groups, including government agencies and local communities.	Poor stakeholder engagement can be improved through better communication and collaboration.	Long-term (5+ years)	Local area	Moderate Negative (-2)

10.1.5. Cumulative impacts

As mentioned above, the cumulative impact are explored through the analysis of the identified impacts and the interaction of impacts with each other over time and space

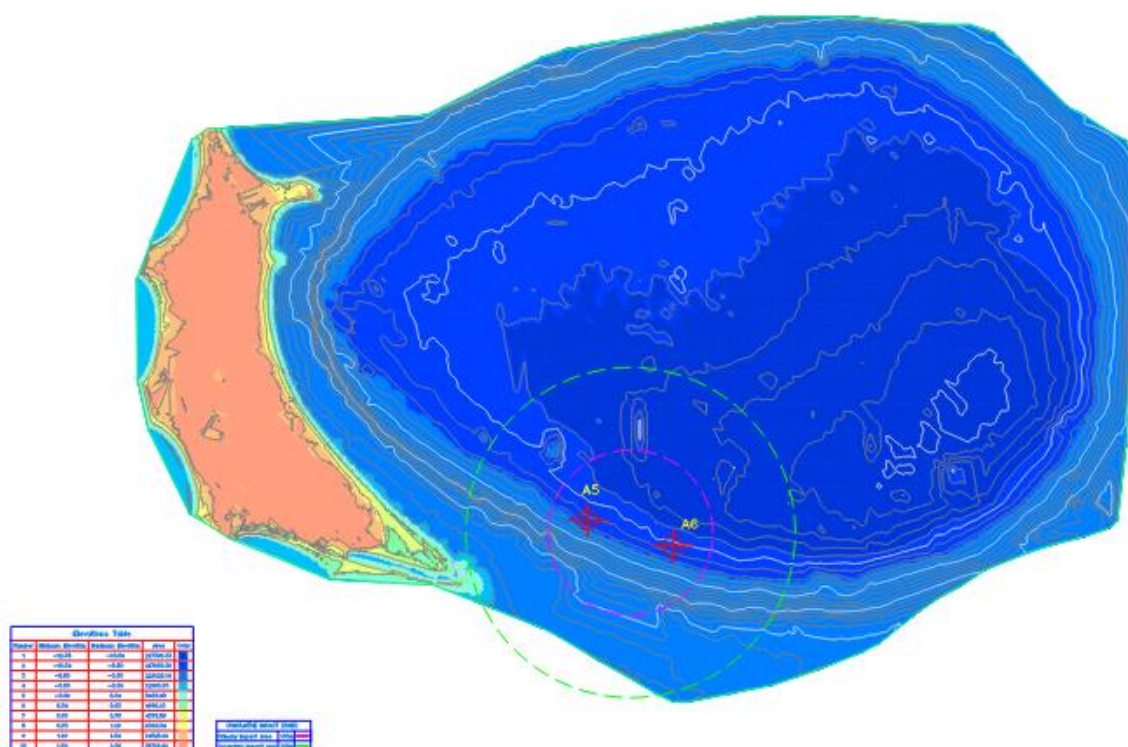


Figure 23 The special representation of the cumulative impact map is as above (see link for detailed map)

10.7. Cumulative impact Analysis

10.7.1. Additive Cumulative Impacts

10.7.1.1. Environmental Impacts

Marine Habitat Disturbance and Sedimentation and Water Quality Issues: Both impacts occur during the deployment phase and add to the overall disturbance of the benthic environment.

Potential Pollutants and Contaminants with Coral Damage: Pollutants and physical damage together degrade the marine ecosystem more than either impact alone.

10.7.1.2. Economic Impacts

Revenue Generation and Employment Opportunities: Both contribute positively to the local economy, creating a combined economic benefit.

10.7.2. Synergistic Cumulative Impacts

10.7.2.1. Environmental Impacts

Potential Pollutants and Contaminants and Impact on Marine Biodiversity: Pollutants may exacerbate the disruption of marine biodiversity by making the environment less hospitable for species attracted to the artificial structures.

Hydrodynamic Changes with Sedimentation and Water Quality Issues: Changes in water currents may amplify sedimentation issues, leading to prolonged water quality degradation.

10.7.2.2. Social and Cultural Impacts

Tourism Development and Diver Safety Concerns: If diver safety concerns are not addressed, they could negatively affect tourism development, leading to a greater overall negative impact on the project's success.

10.7.3. Antagonistic Cumulative Impacts

10.7.3.1. Environmental Impacts

Impact on Marine Biodiversity and Coral and Seagrass Damage: While the artificial structures may attract fish (positive impact), physical damage to corals and seagrass during deployment may offset some of the biodiversity benefits.

Marine Habitat Disturbance with Increased Marine Awareness and Conservation: Habitat disturbance during deployment may be mitigated by long-term conservation efforts and increased awareness.

10.7.3.2. Economic Impacts

Revenue Generation with Financial Risks and Sustainability: Revenue generation may counteract financial risks if the project is successful, but if revenue falls short, financial risks may dominate.

10.7.4. Time-lagged Cumulative Impacts

10.7.4.1. Environmental Impacts

Potential Pollutants and Contaminants: Pollutants may not show immediate effects but could accumulate over time, leading to long-term ecosystem degradation.

Hydrodynamic Changes: Changes in water currents may initially seem minor but could lead to significant sediment transport issues over several years.

10.7.4.2. Social and Cultural Impacts

Increased Marine Awareness and Conservation: The educational and conservation benefits of the project may take years to fully materialize as awareness grows and research progresses.

10.7.4.3. Economic Impacts

Employment Opportunities: The full economic benefits of job creation may take time to develop as local workers gain skills and experience.

11. Mitigation and management

11.1. Mitigation and management of the negative impacts

Impact of the environment from various activities have been identified in the respective chapter. The mitigation measures for the possible impacts and management actions with the estimated cost of the measure have been provided in this section.

11.2. Overall mitigation and management actions

The mitigation and management actions are provided for all significant actions. The actions proposed reflects the 4 main impact factors;

- Environmental Impacts
- Social and Cultural Impacts
- Economic Impacts
- Regulatory and Compliance Impacts

The mitigation and management actions required for environmental impacts, social and cultural impacts, economic impacts, regulatory and compliance impacts, specified above are on site, mostly executed by the proponent during various procedures in coordination with the workforce and the main stakeholders. The social components require an information session with the stakeholders for transparency. This requires preparation of material from the proponent, input from the main stakeholder for effective execution.

For the social areas, 2 major sessions are proposed. One session for the staff and the another for the interested locals.

11.3. Mitigation and management implementation plan

The mitigation and management implementation are action specific. The activity has to be carried out with the mitigation action that is defined and made specific by the management action.

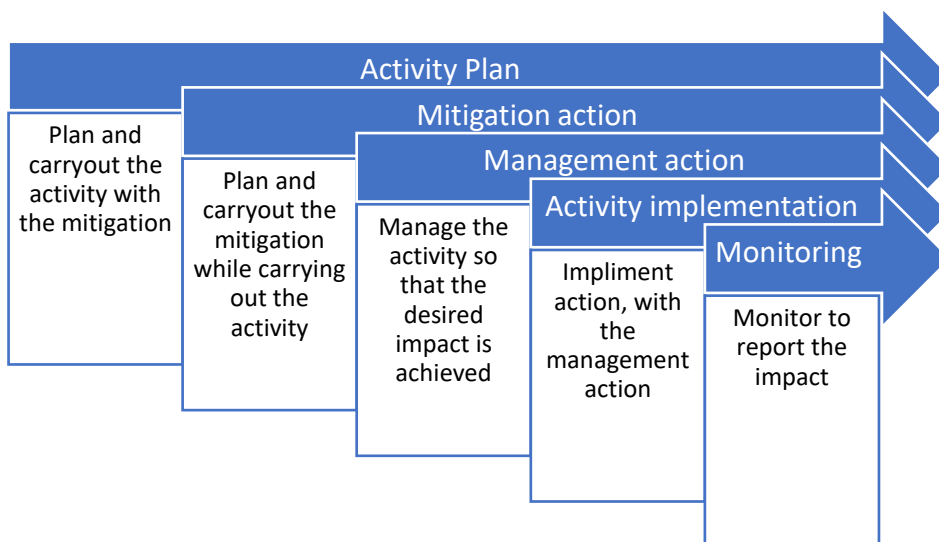


Figure 24 Flow chart to show the linear approach of mitigation and management

11.4. Impact mitigation

11.4.1. Category: Environmental Impacts Mitigation

Impact	Mitigation Measures	Responsible party	Cost (MVR)
Marine Habitat Disturbance	MI1) Use precision deployment techniques to minimize disturbance.	Contractor	No added cost to the contract
	MI2) Conduct pre-deployment surveys to avoid sensitive habitats.	Contractor + Proponent	No added cost to the contract
	MI3) Work at low tide, never at receding tide to minimize the tidal impact and use barge anchor spud pile to minimize movement.	Contractor	No added cost to the contract
Sedimentation & Water Quality	MI4) Schedule deployment during low tidal movement.	Contractor + Proponent	No added cost to the contract
Potential Pollutants & Contaminants	MI5) Ensure wrecks are cleaned of oil, paint, and contaminants before deployment.	Contractor + Proponent	This work is complete. The total cost of the entire process round up is 70,000 MVR
	MI6) Use marine-grade, non-toxic materials.	Contractor + Proponent	
Impact on Marine Biodiversity	MI7) Use spud pile on precise locations to avoid unnecessary destruction of biodiversity.	Contractor	No added cost to the contract

11.4.1. Category: Environmental Impacts Management

Impact	Management Actions	Responsible party	Cost (MVR)
Marine Habitat Disturbance	MA1) Monitor the benthic environment before, during, and after deployment.	Proponent	50, 000 MVR per year
	MA2) Restore disturbed areas if feasible.	Proponent	Must be a separate project budgeted. Estimated cost 500,000 MVR
Sedimentation & Water Quality	MA3) Regularly monitor water quality (turbidity, DO, etc.).		
	MA4) Implement adaptive management if thresholds are exceeded after construction.	Reference to MA1	Reference to MA1
Potential Pollutants & Contaminants	MA5) Conduct water and sediment sampling periodically.	Proponent	50, 000 MVR per year
	MA6) Develop a spill response plan.	Proponent	No added cost to the project. This will be done internally.
Impact on Marine Biodiversity	MA7) Monitor marine organisms around structures.	Reference to MA1	Reference to MA1
Hydrodynamic Changes	MA8) Monitor water flow patterns and sediment transport around the structures.	Reference to MA1	Reference to MA1

Impact	Management Actions	Responsible party	Cost (MVR)
	MA9) Shift the sediment or introduce mitigation measure if necessary.	Proponent	Must be a separate project budgeted. Estimated cost 300,000 MVR. This cost is high due to potentially introducing structures surrounding the footings.

11.4.2. Category: Social & Cultural Impacts mitigation

Impact	Mitigation Measures	Responsible party	Cost (MVR)
Tourism Development	MI8) Develop sustainable tourism guidelines. Limit visitors per day.	Proponent	No added cost to the project. This will be done internally.
Marine Awareness & Conservation	MI9) Integrate educational programs into the project. Partner with schools and universities.	Proponent	Must be a separate project budgeted. Estimated cost 70,000 MVR
Conflicts Over Resource Use	MI10) Develop a resource use plan, a time table or a booking system.	Proponent	No cost added
Diver Safety Concerns	MI11) Ensure structures are securely anchored. Mark entanglement hazards clearly.	Proponent	50,000 MVR for the added material cost.
	During development contact with the contractor to assure safety of media and monitoring staff	Proponent	No added cost to the project. This will be done internally.

11.4.1. Category: Social & Cultural Impacts Management

Impact	Management Actions	Responsible party	Cost (MVR)
Tourism Development	MA10) Promote the site as an eco-tourism destination. Train vendors in marine conservation.	Proponent	No cost added
Marine Awareness & Conservation	MA11) Establish a conservation fund from site revenues. Update educational materials based on research.	Proponent	No cost added
Conflicts Over Resource Use	MA12) Create a stakeholder committee for conflict resolution. Regularly review resource allocation policies.	Proponent	No cost added
Diver Safety Concerns	MA13) Train dive operators in emergency response. Install safety signage and emergency communication devices.	Proponent	100,000 MVR for the added material cost.

11.4.2. Category: Economic Impacts Mitigation

Impact	Mitigation Measures	Responsible party	Cost (MVR)
Revenue Generation	MI12) Develop a diversified revenue model (entry fees, tours, merchandise).	Proponent	Must be a separate project budgeted. Estimated cost 500,000 MVR
Financial Risks & Sustainability	MI13) Conduct feasibility studies before implementation.	Proponent	**unfortunately this step was skipped in the organization of the project.
	MI14) Develop a contingency fund.	Reference to MI12)	Reference to MI12)

11.4.1. Category: Economic Impacts Management

Impact	Management Actions	Responsible party	Cost (MVR)
Revenue Generation	MA14) Review financial performance regularly.	Proponent	No cost added
	MA15) Reinvest revenues into site maintenance and community development.	Proponent	No cost added
Employment Opportunities	MA16) Monitor job creation and employee satisfaction.	Proponent	No cost added
	MA17) Collaborate with vocational schools for workforce training.	Proponent	No cost added
Financial Risks & Sustainability	MA18) Review financial performance regularly. Seek private or government partnerships to reduce financial risks.	Proponent	No cost added

11.4.2. Category : Regulatory & Compliance Impacts Mitigation

Impact	Mitigation Measures	Responsible party	Cost (MVR)
Legal & Environmental Compliance	MI15) Ensure compliance with Maldivian laws and international best practices. Obtain necessary permits before implementation.	Proponent	No cost added
Stakeholder Expectations & Approval	MI16) Engage stakeholders early in the planning process on further development. Address concerns through public consultations.	Proponent	20,000MVR for all session

11.4.1. Category : Regulatory & Compliance Impacts Management

Impact	Management Actions	Responsible party	Cost (MVR)
Legal & Environmental Compliance	MA19) Conduct regular environmental monitoring. Maintain communication with regulatory authorities.	Reference to MA1	Reference to MA1
Stakeholder Expectations & Approval	MA20) Establish a stakeholder advisory board. Regularly update stakeholders on project progress.	Proponent	Meeting cost 2000 MVR per session

11.4.2. Category : Monitoring & Adaptive Mitigation

Impact	Mitigation Measures	Responsible party	Cost (MVR)
Monitoring Plan	MI17) Establish a comprehensive monitoring program. Use baseline data for impact assessment.	Reference to MA1	Reference to MA1
Adaptive Management	MI18) Regularly review monitoring data. Adjust management practices based on lessons learned.	Reference to MA9	Reference to MA9

11.4.1. Category : Monitoring & Adaptive Management

Impact	Management Actions	Responsible party	Cost (MVR)
Adaptive Management	MA21) Incorporate findings into future project phases.	Reference to MI12)	Reference to MI12)

12. Monitoring

The objective of the section is to state the requirements of monitoring, inform an estimated cost of monitoring and layout the required parameters of monitoring.

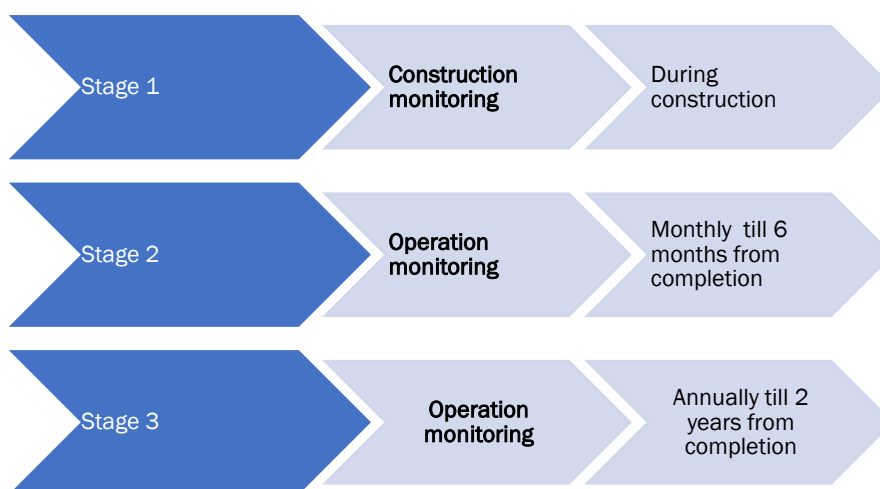
The monitoring program and plan is set out for the construction and operation of the development. It is necessary to conduct a monitoring operation because;

- The monitoring will determine if potential impacts are minimized.
- The monitoring can help shape impact management
- The monitoring in the long-term aids improve impact management.

The program is divided to the construction phase and the operation phase. The methodology used, will be similar to the environment assessments as much as possible. The cost of monitoring is added to the monitoring program to act as a guideline for monitoring.

12.1. Recommended monitoring program.

The monitoring program is divided to 2 sections as per the TOR, construction monitoring and operation monitoring.



The report must be compiled by a registered environmental consultant with a permanent EIA consultant license as per the EPA regulations. If the contractor employs other staff for the project, final supervision must be carried out by the consultant.

12.2. Monitoring parameters

Impact	Monitoring Actions	Frequency During Construction	Frequency Post-Construction	Responsible Party	Cost (MVR)
Marine Habitat Disturbance	Monitor benthic environment before, during, and after deployment at implementation site and control site.	During deployment process	Every 3 months for 2 years, then annually for 2 years	Proponent	50,000 per year
	Restore disturbed areas if feasible	As needed	As needed	Proponent	Estimated 500,000
Sedimentation & Water Quality	Regularly monitor water quality (all tested in the baseline)	If the construction process exceeds a week, every month.	Every 3 months for 2 years, then annually for 2 years	Reference to MA1	Reference to MA1
	Monitor any implemented adaptive management if	As needed	As needed	Reference to MA1	Reference to MA1

Impact	Monitoring Actions	Frequency During Construction	Frequency Post-Construction	Responsible Party	Cost (MVR)
	thresholds are exceeded				
Potential Pollutants & Contaminants	Conduct water and sediment sampling periodically	If the construction process exceeds a week, every month.	Every 3 months for 2 years, then annually for 2 years	Proponent	50,000 per year
	Develop a spill response plan	One-time	Updated as needed	Proponent	No added cost
Impact on Marine Biodiversity	Monitor fish and marine organisms around structures. Do fish count similar to baseline.	If the construction process exceeds a week, every month.	Every 3 months for 2 years, then annually for 2 years	Reference to MA1	Reference to MA1
Tourism Development	Check if the site is promoted as an eco-tourism destination	**	Annually	Proponent	No added cost
Marine Awareness & Conservation	Check if there is a conservation fund from site revenues	**	Annually	Proponent	No added cost
	Check if any educational materials based on research exist.	**	Annually	Proponent	No added cost
Conflicts Over Resource Use	Check if there is a stakeholder committee for conflict resolution	**	Every 3 months for 2 years, then annually for 2 years	Proponent	No added cost
	Check if there is a resource allocation policy	**	Annually	Proponent	No added cost
Diver Safety Concerns	Check if the dive operators have updated EFR certification.	**	Annually	Proponent	100,000
	Check if the dive sites have installed safety signage and emergency devices	**	Annually	Proponent	100,000
Revenue Generation	Check the financial performance regularly	**	Every 3 months for 2 years, then annually for 2 years	Proponent	No added cost
	Check how much of the revenue is reinvested into site maintenance and development	**	Annually	Proponent	No added cost
Employment Opportunities	Check how many additional vendors came in due to the new development.	**	Every 3 months for 2 years, then annually for 2 years	Proponent	No added cost
	Check if there is any collaboration with vocational schools for workforce training	**	Annually	Proponent	No added cost

Impact	Monitoring Actions	Frequency During Construction	Frequency Post-Construction	Responsible Party	Cost (MVR)
Financial Risks & Sustainability	Seek private or government partnerships	**	Annually	Proponent	No added cost
Legal & Environmental Compliance	Check if regular environmental monitoring is conducted	If the construction process exceeds a week, every month.	Every 3 months for 2 years, then annually for 2 years	Reference to MA1	Reference to MA1
	Check if communication is maintained with regulatory authorities	If the construction process exceeds a week, every month.	Every 3 months for 2 years, then annually for 2 years	Reference to MA1	Reference to MA1
Stakeholder Expectations & Approval	Check if there are established stakeholder advisory board	**	Every 3 months for 2 years, then annually for 2 years	Proponent	2,000 per session
	Check if stakeholders are updated on project progress	During key project phases	Every 3 months for 2 years, then annually for 2 years	Proponent	2,000 per session
Adaptive Management	Check if in the previous monitoring, measures are adjusted for management	As needed	As needed	Reference to MA9	Reference to MA9

Table 4 Defined parameters for monitoring to use as a guideline.

12.3. Monitoring schedule

The monitoring is scheduled into the project. During construction, monitoring occurs continuously at key phases to assess immediate impacts such as marine habitat disturbance, sedimentation, water quality changes, and potential pollutants. This real-time monitoring helps identify and mitigate any negative effects before they escalate. Post-construction, monitoring is scheduled every three weeks for the first two years to track recovery, evaluate adaptive management measures, and assess the long-term effectiveness of mitigation efforts. After this intensive period, annual monitoring continues for an additional two years to ensure sustained environmental health, economic benefits, and regulatory compliance. Social and economic aspects, such as tourism promotion, employment opportunities, and stakeholder engagement, are assessed periodically to ensure positive community impact. Additionally, regulatory and compliance checks, including stakeholder consultations and communication with authorities, are conducted to maintain adherence to legal frameworks. Frequency is presented in the table. A monitoring report should be presented to EPA every 3 months during construction and every 3 months for 2 years during operation, then annually for 2 years.

12.4. Monitoring cost

Environmental monitoring, particularly for marine habitat disturbance, water quality, and biodiversity, is estimated at 50,000 MVR per year to cover periodic sampling, assessments, and reporting. Restoration of disturbed areas, if needed, is projected at 500,000 MVR, while adaptive management actions, such as shifting sediments or introducing mitigation structures, could cost an estimated 300,000 MVR. Social and cultural impact monitoring, including diver safety measures like installing emergency devices and safety signage, is budgeted at 100,000 MVR. Stakeholder consultations and regulatory compliance checks are allocated 2,000 MVR per session to ensure engagement with authorities and community members. Some activities, such as financial performance reviews, resource use planning, and eco-tourism promotion, have no additional costs as they are managed within the project's operational framework.

12.5. Monitoring report format

The monitoring report is to follow the typical format accepted in Maldives. The monitoring should include Sample Format. The following is a guiding outline.

Executive Summary

Introduction

- Project background and objectives
- Purpose of monitoring
- Monitoring schedule and methodology

Monitoring Summary

Environmental Impacts Monitoring

Impact	Findings
Marine Habitat Disturbance	[Findings]
Sedimentation & Water Quality	[Findings]
Potential Pollutants & Contaminants	[Findings]
Impact on Marine Biodiversity	[Findings]

Social & Cultural Impacts Monitoring

Impact	Findings
Tourism Development	[Findings]
Diver Safety Concerns	[Findings]

Economic Impacts Monitoring

Impact	Findings
Revenue Generation	[Findings]
Employment Opportunities	[Findings]

Regulatory & Compliance Monitoring

Impact	Findings
Legal & Environmental Compliance	[Findings]
Stakeholder Engagement	[Findings]

Adaptive Management Monitoring

Impact	Findings
Adaptive Management	[Findings]

13. Mani discussions and decision.

The following is a consideration of the combined factors that drive the project for a decision. The following table was used for the decision process. The methodology used is a modified Fritz Zwicky’s General Morphological Analysis (GMA) method. Where the most favourable parameters are weighed across multiple parameters.

13.1. Context and parameter of consideration

Given the factors to consider, the most ideal dive sites are at a median distance form the dive school, not too deep, not too shallow, far from the water sports area that enables a quick the EFR staff access. The area should also not be able to be reached form the shore, this will not make it feasible when we

consider a business. Also, the site should not be in the entrance path and should be feasible for safe construction.

All locations have an approximate depth of 10 meters and allow for diving and freediving, though only A3 supports snorkelling for strong swimmers due to proximity to shore. The benthic conditions vary slightly, with A3 being sandy-silty, while the others are silty. Emergency ascent from 10 meters is considered safe for all configurations. However, access for Emergency First Responders (EFR) staff becomes increasingly difficult from A3 to A6, with A6 being the furthest. A3 and A4 pose hazards as they are within the transport route, whereas A5 and A6 are safer in this regard. Construction is most challenging at A3 and A4 due to swell waves, while A5 and A6 are easier, with A6 being the most favourable. A3 is deemed unsuitable for business due to its proximity making access control difficult, while A4, A5, and A6 are considered viable, as they are at a manageable distance and accessible by assisted boats.

Configuration	A3	A4	A5	A6
Parameters				
Estimated distance to dive school	250m	300m	350m	460m
Depth	Approximately 10m	Approximately 10m	Approximately 10m	Approximately 10m
Dual mode of use (Dive, free dive, and snorkelling	Dive, Free dive, Snorkelling for strong swimmers	Dive, and Free dive	Dive, and Free dive	Dive, and Free dive
Benthic Conditions	Sandy silty	Silty	Silty	Silty
Emergency elevation from the dive.	Safe, maximum can go to 10 m, can ascend to 10m in an emergency ascend.	Safe, maximum can go to 10 m, can ascend to 10m in an emergency ascend.	Safe, maximum can go to 10 m, can ascend to 10m in an emergency ascend.	Safe, maximum can go to 10 m, can ascend to 10m in an emergency ascend.
Access for EFR staff	Near	Far	Further	Furthest
Hazard	In the way of the transport route	In the way of the transport route	Not in the way of the transport route	Away from the transport route.
Ease of Construction	Difficult due to swell waves	Difficult due to swell waves	Easier than A and A4.	Easiest, being far
Can be used as a business model	No, too close no control	Yes. Yes. Reasonable distance to manage, can be accessed by assisted boat.	Yes. Yes. Reasonable distance to manage, can be accessed by assisted boat.	Yes. Yes. Reasonable distance to manage, can be accessed by assisted boat.

The table above shows highlighted colours on the ones that are the most ideal.

13.2. Analysis

A5 and A6 emerge as the most viable options, as they are outside the transport route, have safer construction conditions, and are accessible for business operations. A3, despite supporting snorkelling,

is unsuitable due to its proximity to shore and high exposure to transport-related hazards. A4 presents similar construction challenges but remains viable for business. However, A6, while offering the easiest construction conditions and being far from hazards, has the most limited access for EFR, which may pose safety concerns. But this can be mitigated and managed through the management actions.

14. Recommendations and conclusion

14.1. Recommendations

The following are the recommendations to the proponent

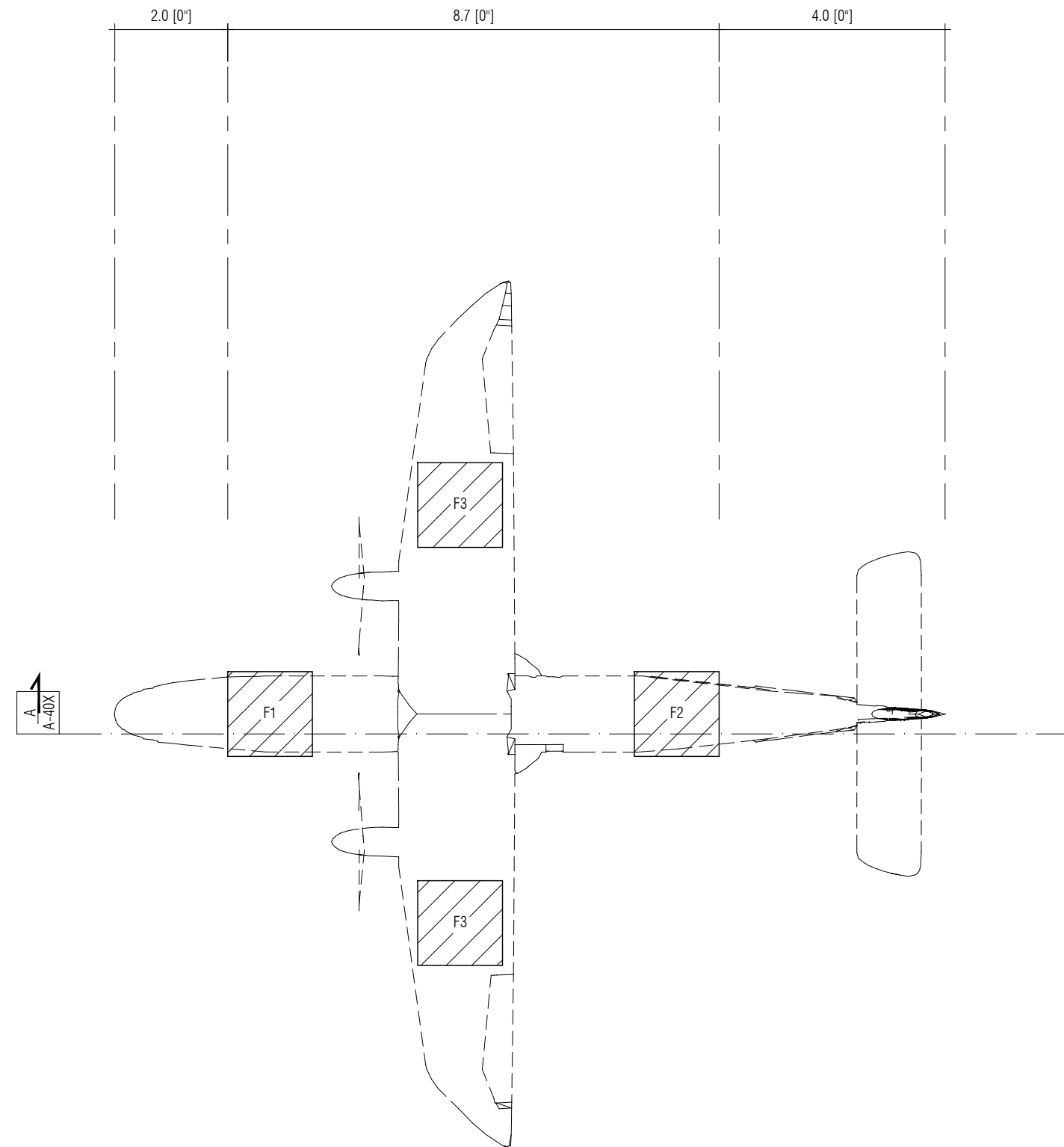
- R1) Placement of the wreck at site A5 and A6.
- R2) Establish clear demarcations for anchoring zones to prevent unregulated vessel movements and seabed disturbance
- R3) Implement baseline and continuous water quality monitoring to assess changes due to the wreck placement.
- R4) Ensure that hazardous materials, including oil residues and loose components from the wreck, are fully removed prior to deployment.
- R5) Develop protocols for managing potential contamination sources, including fuel spills from dive boats.
- R6) Encourage coral transplantation and artificial reef initiatives to enhance marine biodiversity around the wreck; post environment clearance.
- R7) Establish a monitoring framework to track changes in benthic habitats.
- R8) Enforce good practice diving practices, including no-contact policies and buoyed mooring points for dive boats.
- R9) Develop educational programs to raise awareness about sustainable diving and marine conservation.
- R10) Promote eco-tourism and responsible diving guidelines among visitors.
- R11) Implement emergency response plans, including first aid and rescue protocols for dive accidents.
- R12) Regularly inspect dive site infrastructure for stability and safety compliance.
- R13) Train dive operators and guides on safety protocols and marine conservation ethics.
- R14) Establish a long-term environmental monitoring program to assess ecological changes due to the wreck's presence.
- R15) Implement an adaptive management approach that allows for modifications in response to observed environmental impacts.
- R16) Develop and enforce carrying capacity limits for diver traffic to prevent excessive site degradation.

14.2. Conclusion

The development of this project is a unique opportunity to enhance marine tourism and biodiversity while contributing to local economic growth. It is critical to implement this EMP to ensure that ecological, social, and safety concerns are adequately addressed. Through proactive site selection, rigorous monitoring, stakeholder engagement, and sustainable management practices, the project can achieve its objectives without compromising environmental integrity. Ongoing monitoring and adaptive management will be essential in maintaining the site's ecological balance, ensuring long-term sustainability, and fostering a thriving marine ecosystem around the wreck dive site.

15. Attachments

15.1. Project details and attachments



FOOTING PLAN
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AUTHOR	AHMED ANSADH	CREATED DATE	24/02/2022
LAST UPDATED BY	AHMED ASNADH	LAST UPDATED DATE	24/02/2022
REVIEWED BY	SAEED ADAM	REVIEWED DATE	24/02/2022
APPROVED BY	MOHAMED SAIF	APPROVED DATE	24/02/2022
INFORMATION CLASSIFICATION SCHEME	(Public, Open, Confidential, Confidential & Sensitive and Secret)		

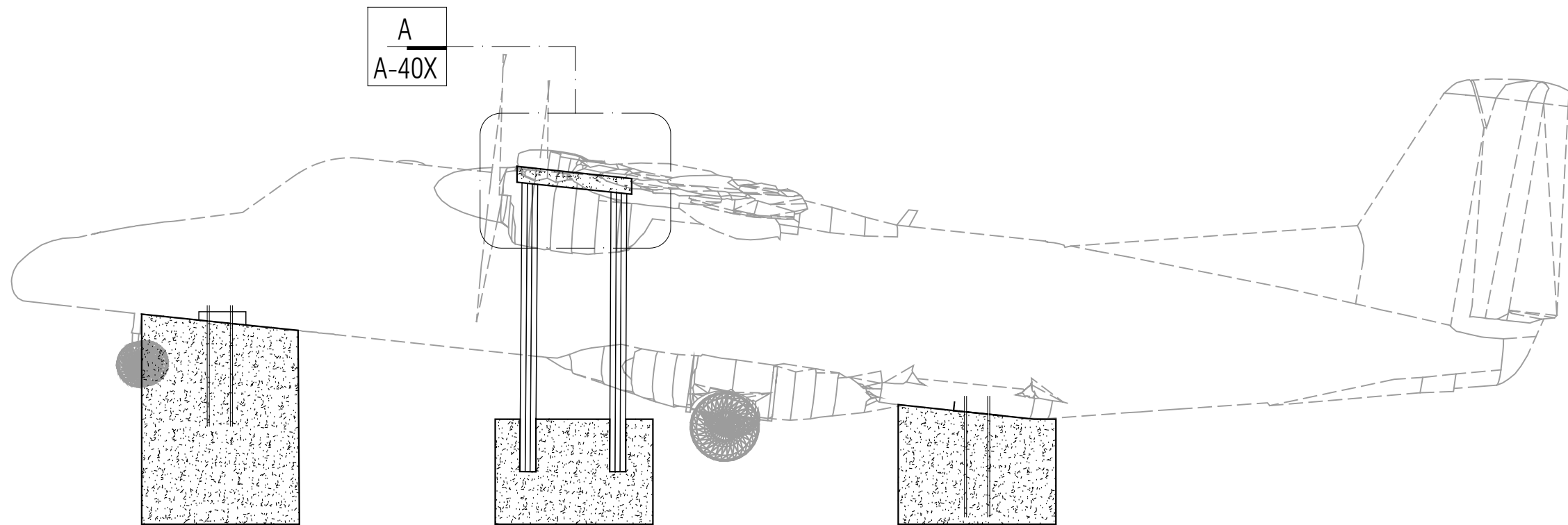
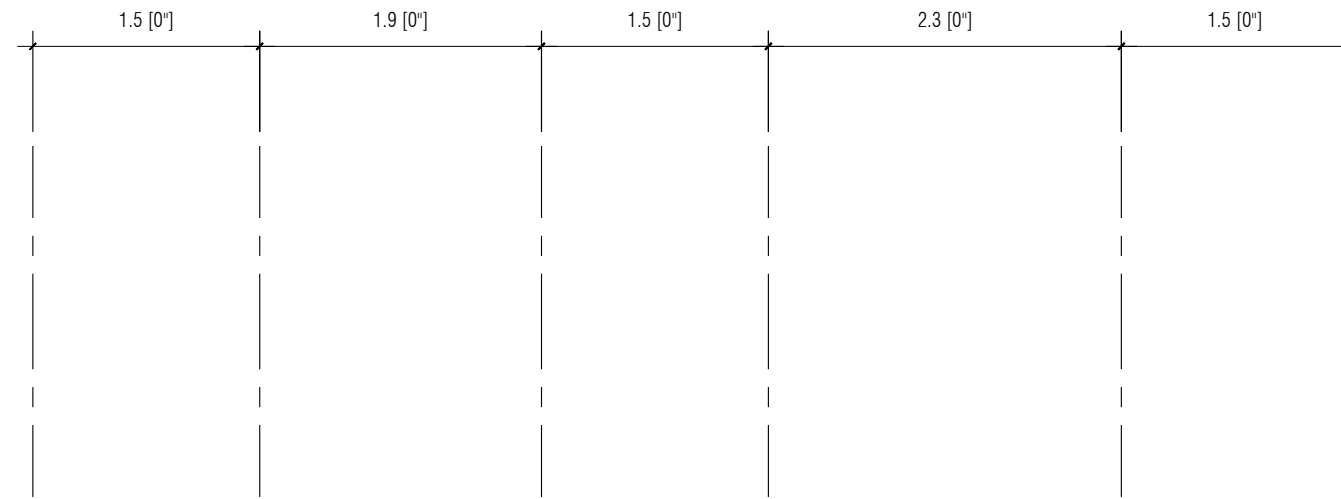
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MECHANICAL ENG.	NAME
ELECTRICAL ENG.	NAME
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SHEET CONTENT
FOOTING PLAN

SHEET NO. _____

A-102
62



SECTION A
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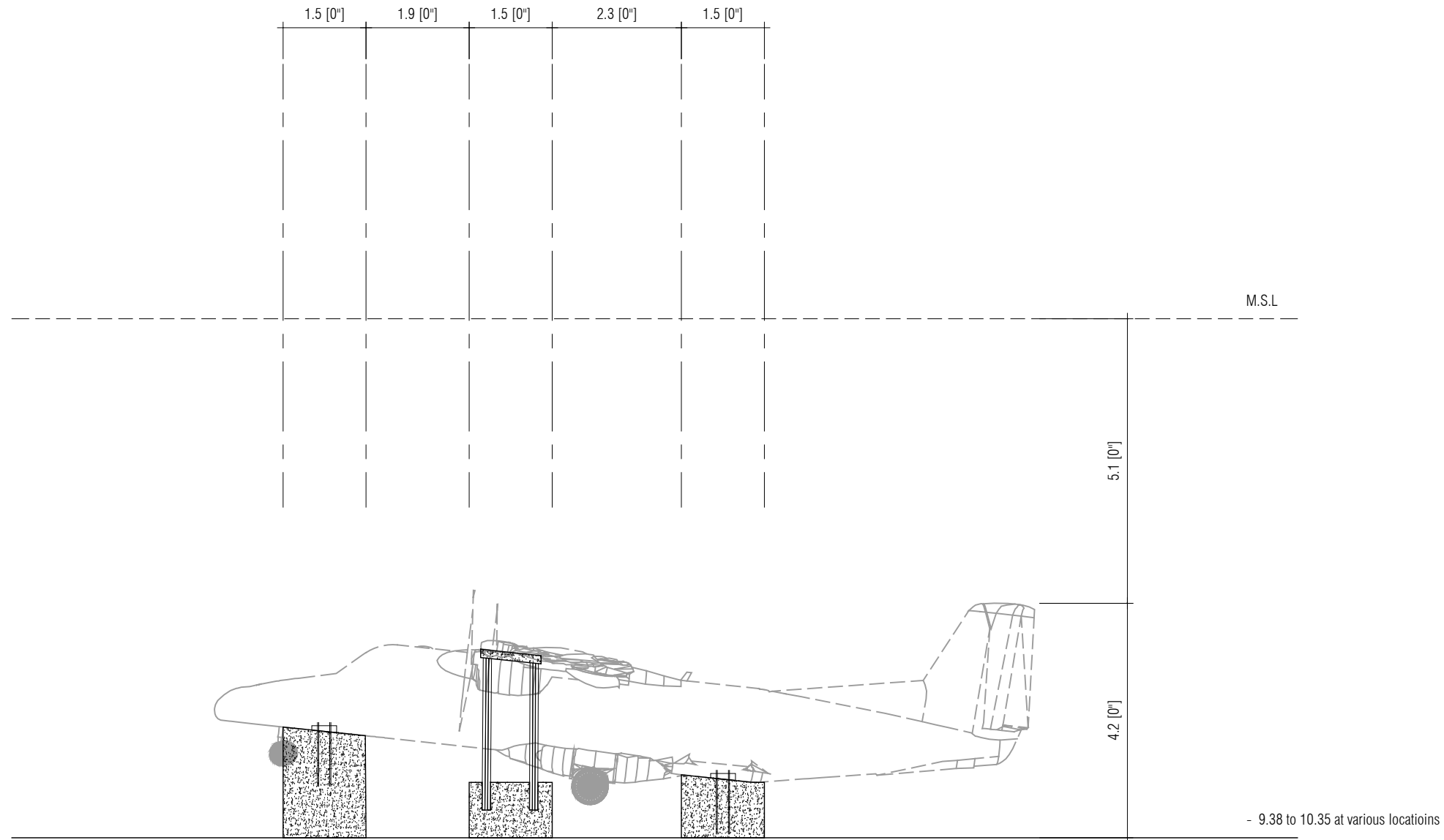
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ELECTRICAL ENG.	NAME
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SHEET CONTENT
SECTION A

SHEET NO.
A-103
63



SECTION AT A3,4,5,6

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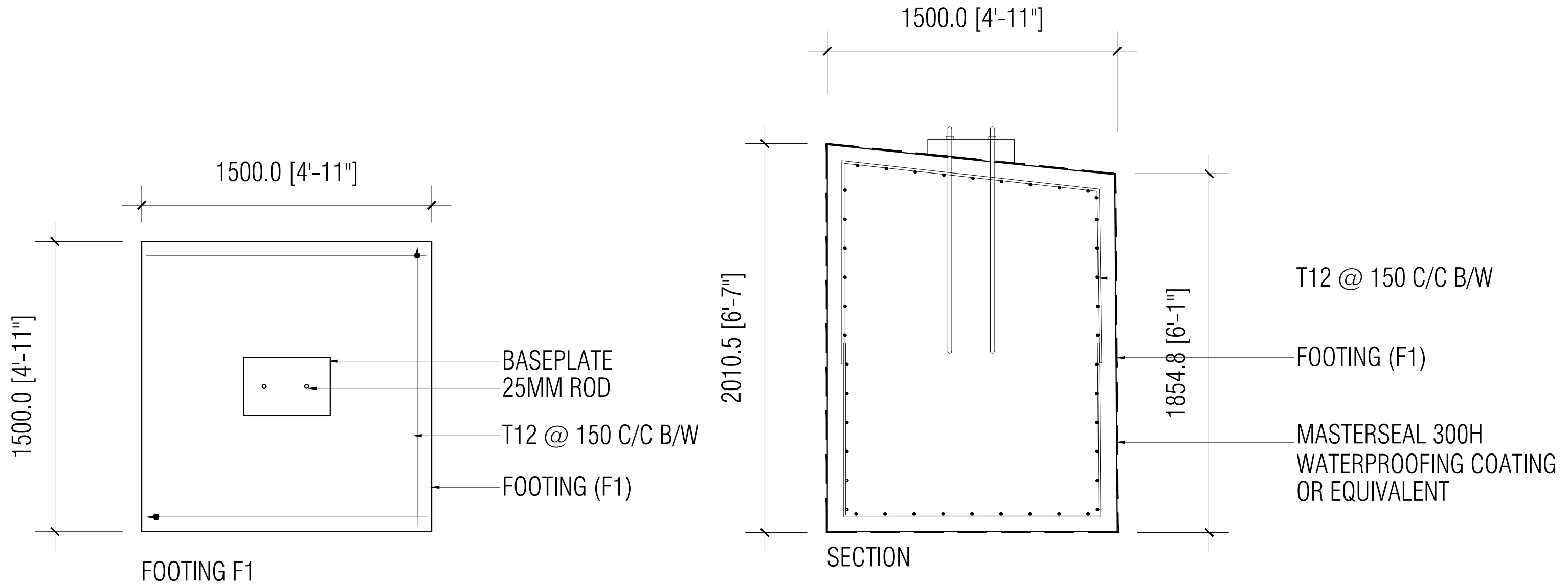
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SHEET CONTENT
SECTION AT T1

SHEET NO.

A-104

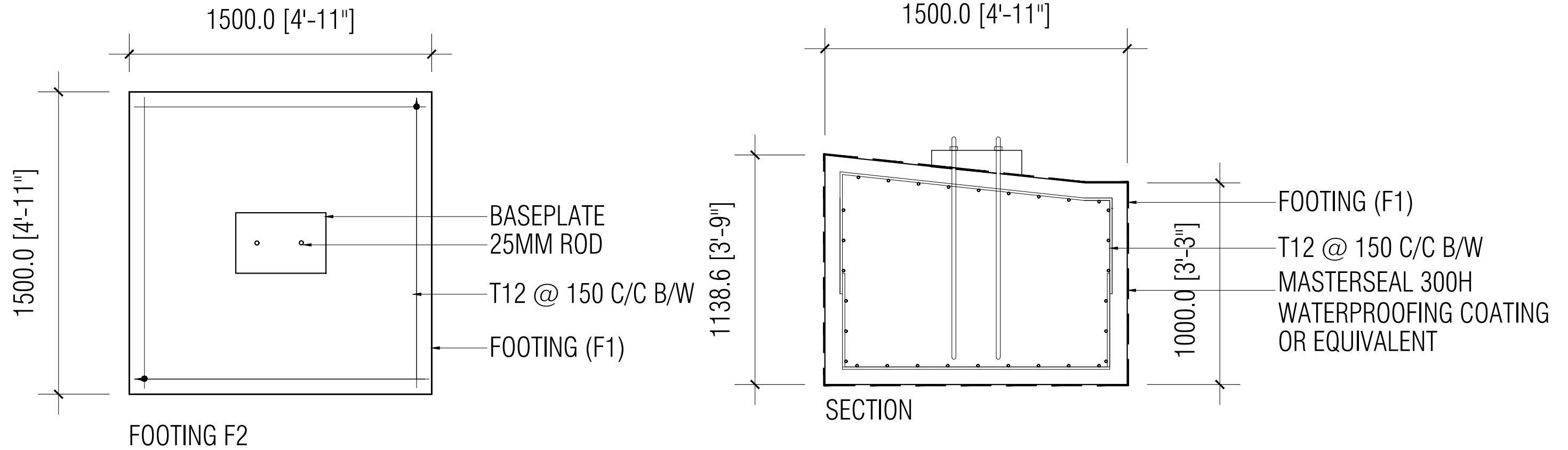


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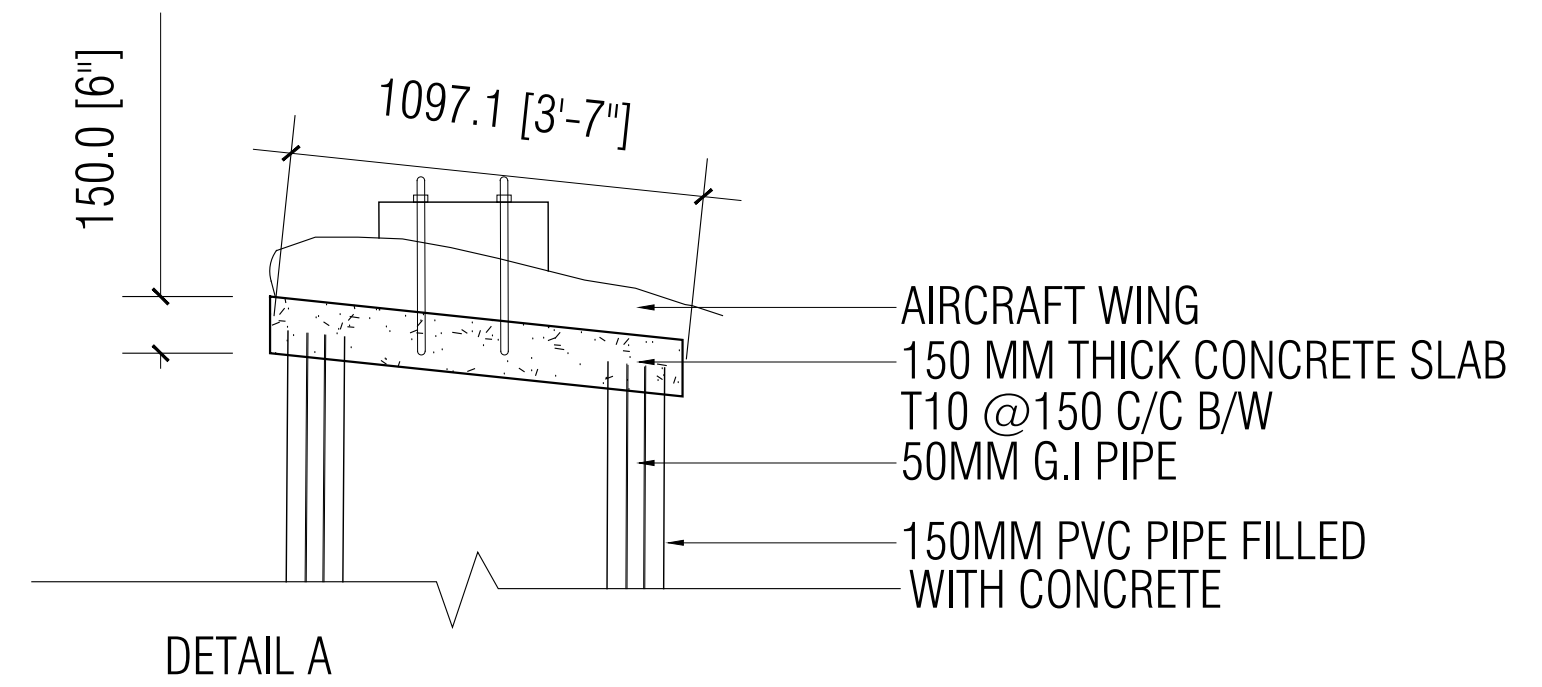
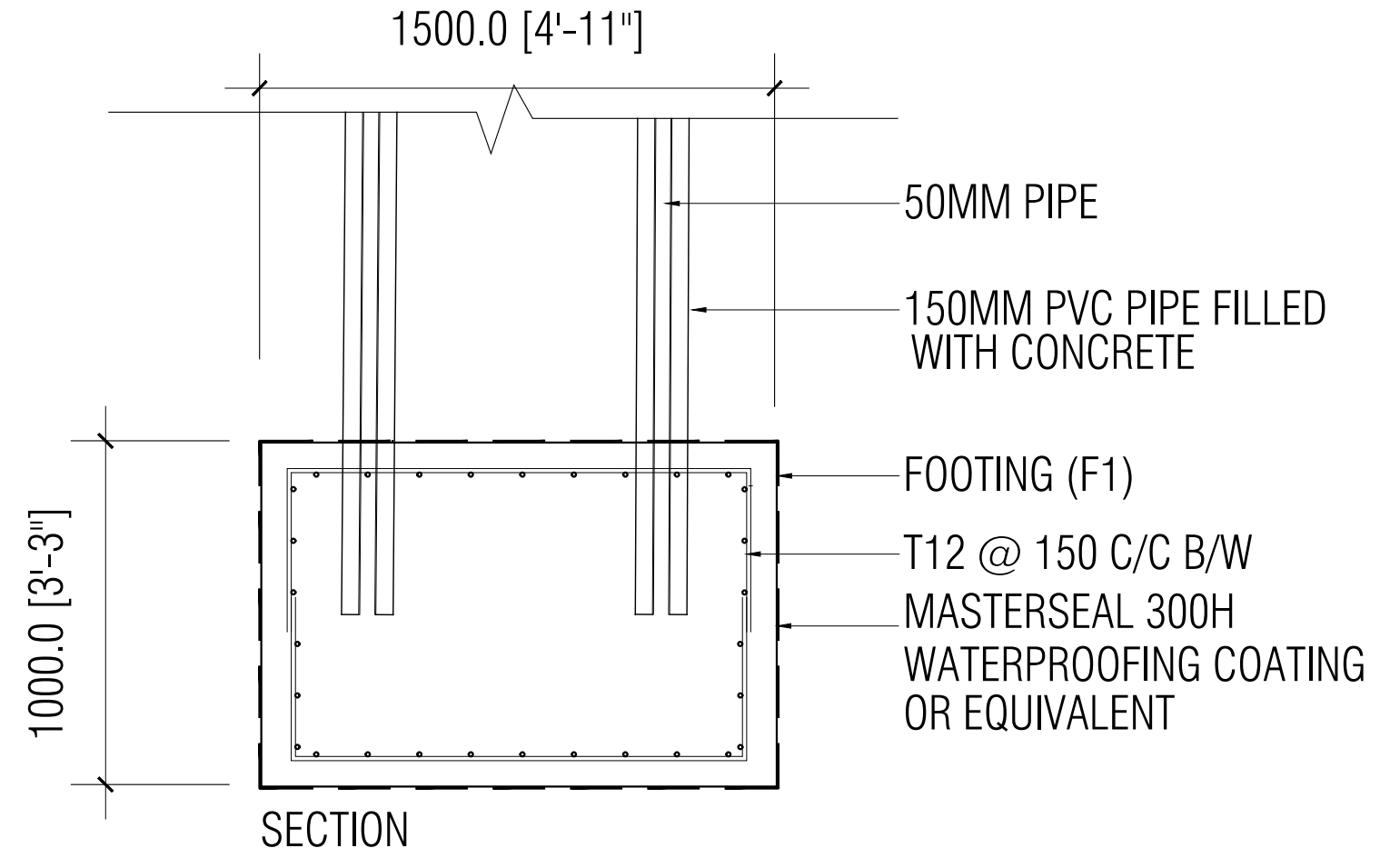
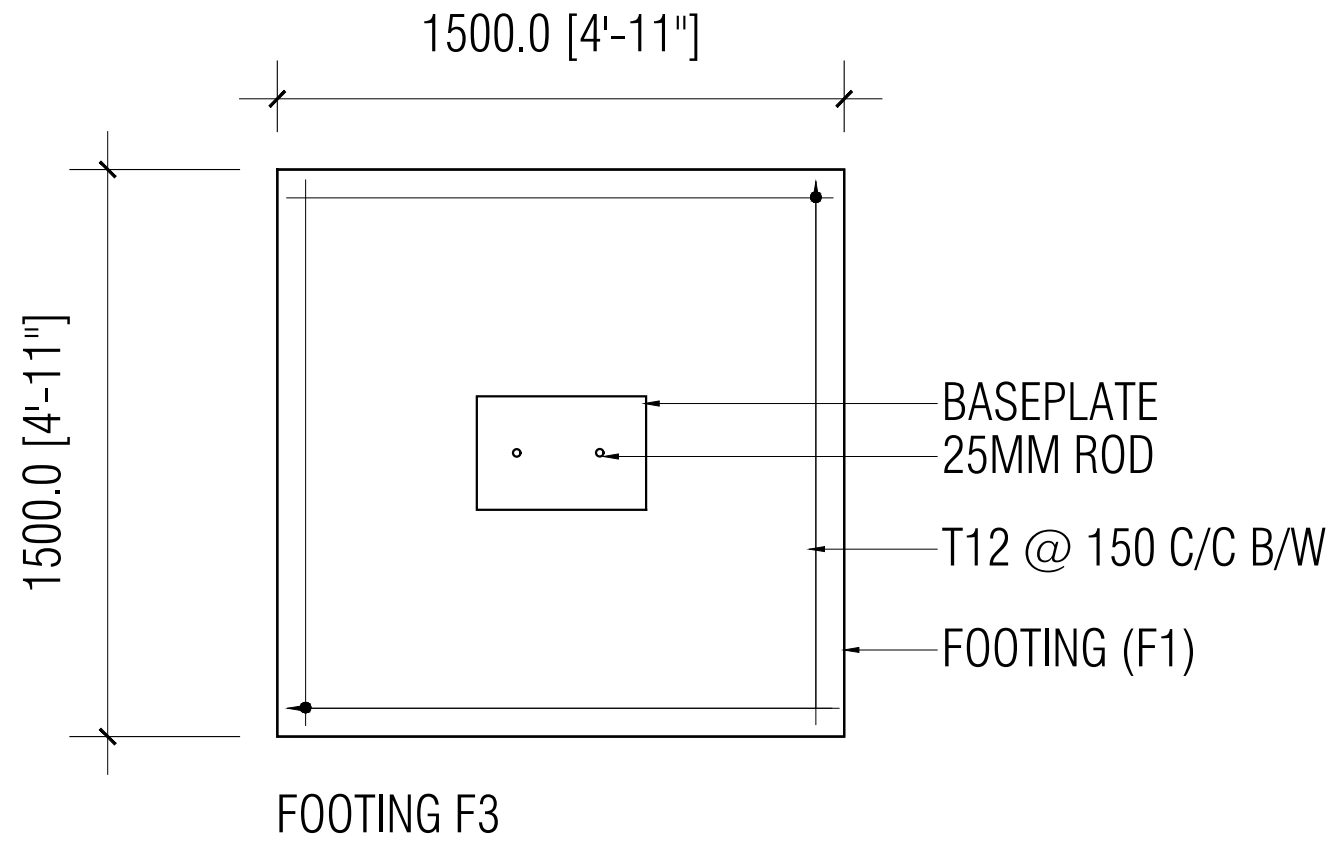


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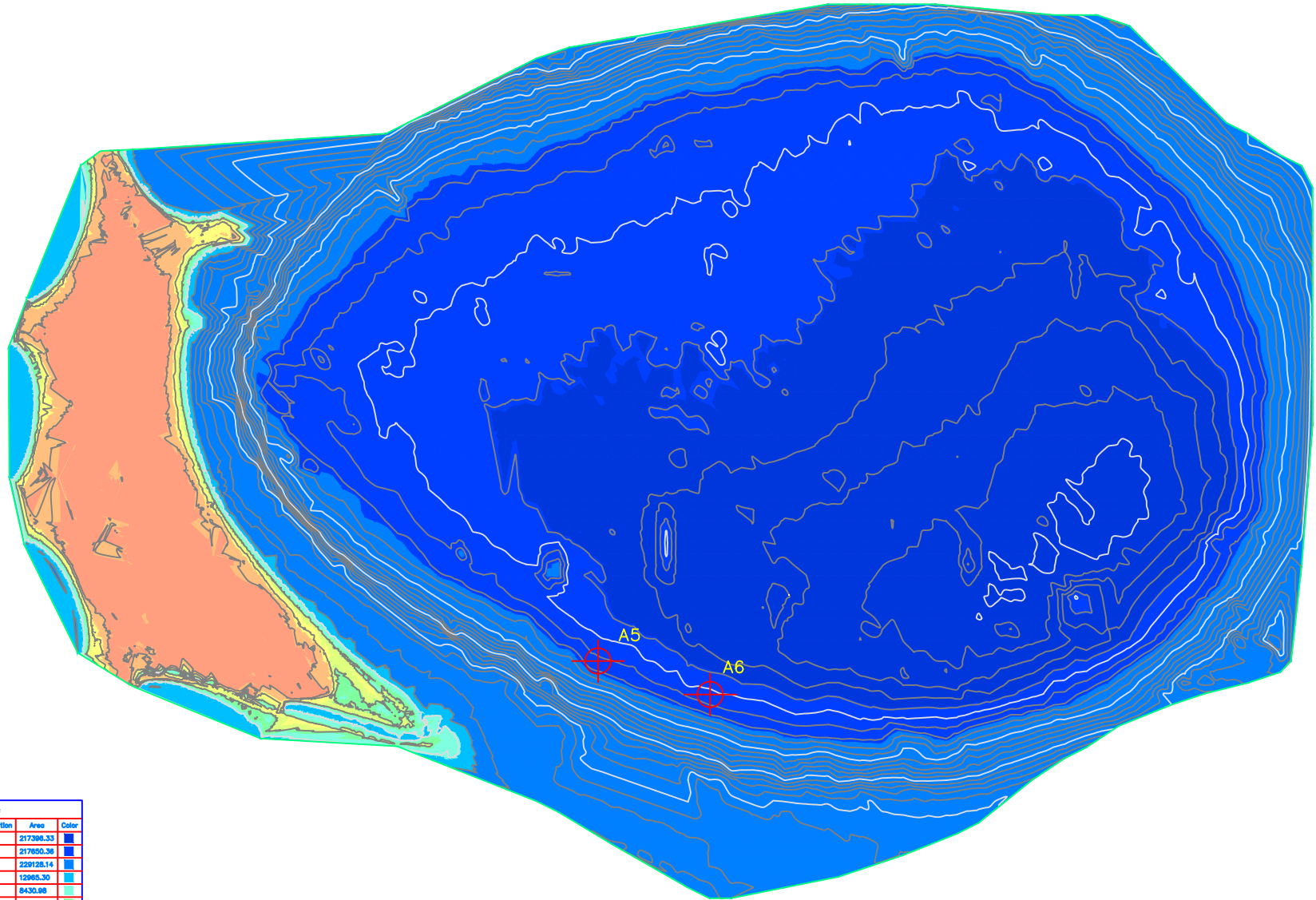
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ELECTRICAL ENG.	NAME
SCALE	1:1000

SHEET CONTENT
STRUCTURAL DETAILS

15.2. Location map



Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-12.78	-10.54	217396.33	Blue
2	-10.54	-8.80	217650.36	Dark Blue
3	-8.80	-0.50	229125.14	Light Blue
4	-0.50	-0.06	12965.30	Light Green
5	-0.06	0.34	8430.68	Yellow-Green
6	0.34	0.53	4976.10	Yellow
7	0.53	0.75	4375.89	Light Orange
8	0.75	1.19	6389.34	Orange
9	1.19	1.54	14526.14	Red-Orange
10	1.54	2.06	91319.42	Red

Kudagiri
(Site Locations)

Drawing Name : Bathymetry Map

Scale: N.T.S

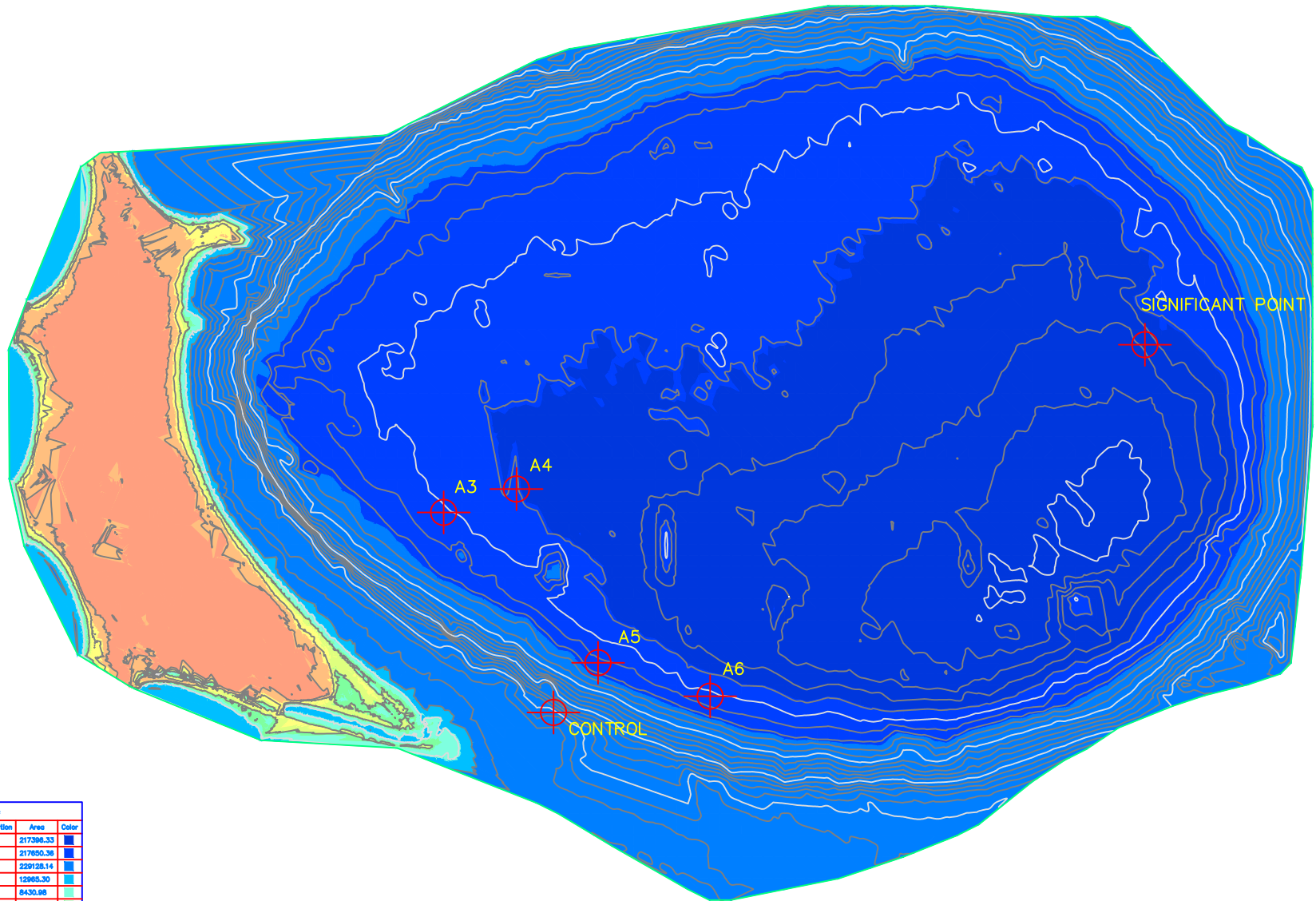
Surveying and Environment Department

Surveyed by: Hashma Hameed

Surveyed date: 03 February 2025

Checked by: Muhammad Ibrahim





Number	Minimum Elevation	Maximum Elevation	Area	Color
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2	-10.54	-8.80	217650.36	Blue
3	-8.80	-0.50	229128.14	Blue
4	-0.50	-0.06	12965.30	Blue
5	-0.06	0.34	8430.68	Light Blue
6	0.34	0.53	4976.10	Light Green
7	0.53	0.75	4375.89	Light Green
8	0.75	1.19	6389.34	Light Green
9	1.19	1.54	14528.14	Light Green
10	1.54	2.06	91319.42	Light Green

Kudagiri
(Surveyed Sites)

Drawing Name : Bathymetry Map

Scale: N.T.S

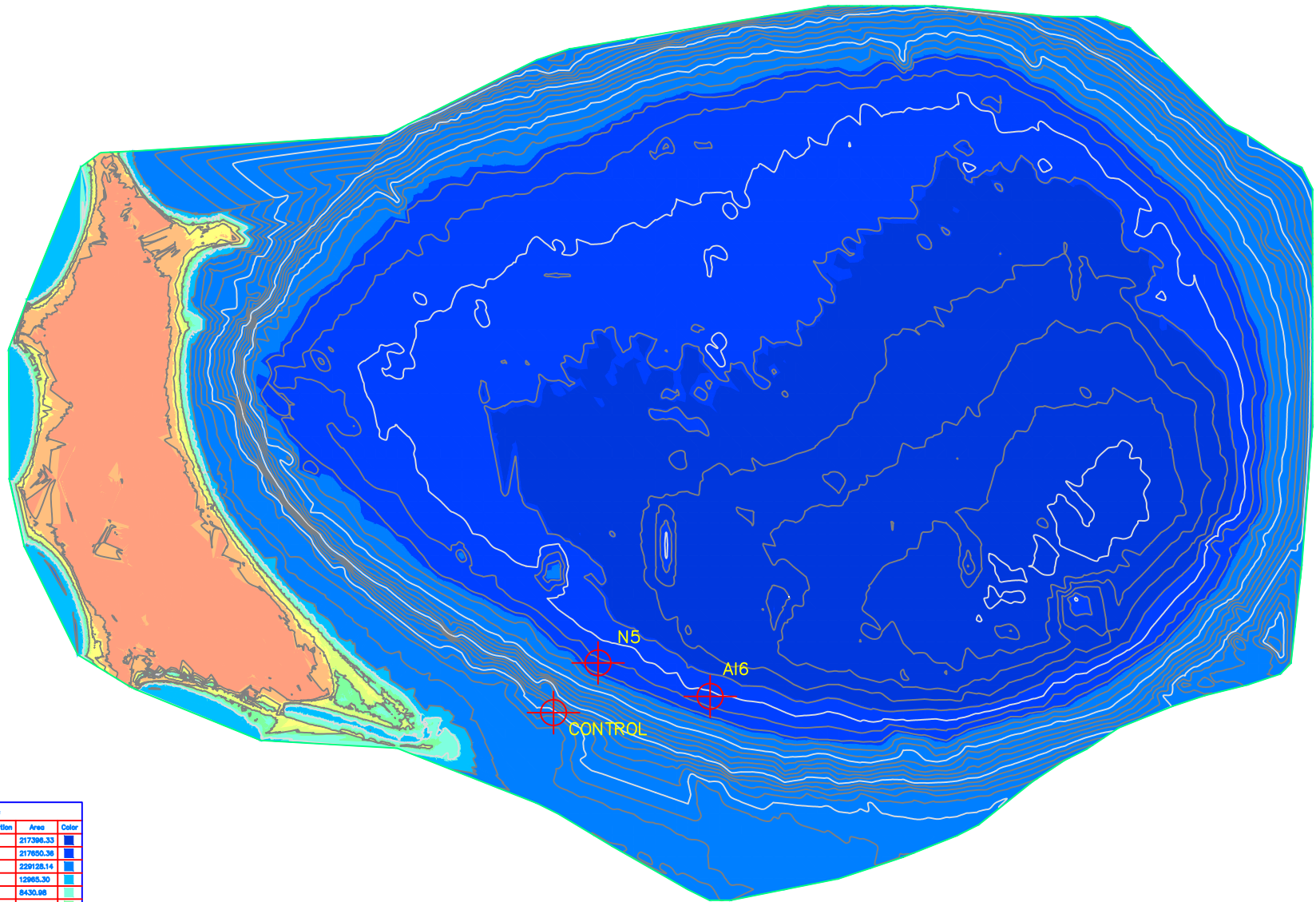
Surveying and Environment Department

Surveyed by: Hashma Hameed

Surveyed date: 03 February 2025

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5	-0.06	0.34	8430.68	Yellow-Green
6	0.34	0.53	4976.10	Yellow
7	0.53	0.75	4375.89	Orange
8	0.75	1.19	6369.34	Red-Orange
9	1.19	1.54	14526.14	Red
10	1.54	2.06	61319.42	Dark Red

Kudagiri
(Water Sample Locations)

Drawing Name : Bathymetry Map

Scale: N.T.S

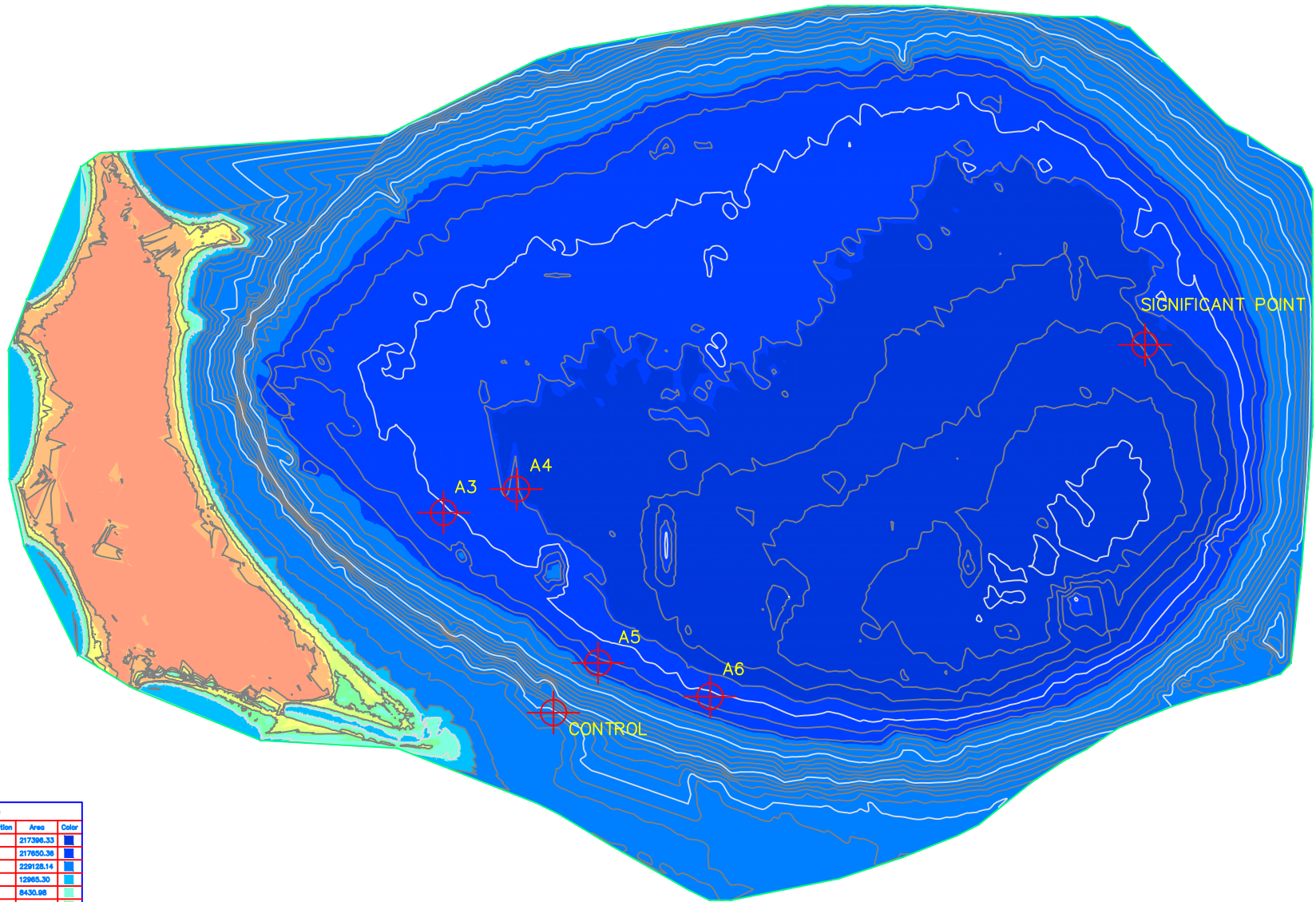
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Number	Minimum Elevation	Maximum Elevation	Area	Color
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2	-10.54	-8.80	217650.36	Blue
3	-8.80	-6.50	229128.14	Blue
4	-6.50	-4.00	12965.30	Blue
5	-4.00	-2.34	8430.68	Blue
6	-2.34	-0.53	4976.10	Blue
7	-0.53	0.75	4375.89	Blue
8	0.75	1.19	6389.34	Blue
9	1.19	1.54	14528.14	Blue
10	1.54	2.06	91319.42	Blue

Kudagiri
(Monitoring Locations)

Drawing Name : Bathymetry Map

Scale: N.T.S

Surveying and Environment Department

Surveyed by: Hashma Hameed

Surveyed date: 03 February 2025

Checked by: Muhammad Ibrahim



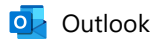
15.3. Duration

ID	Environment Management Plan		Duration	Start	Finish	203-ECA/161/2025/4																															
	Task Mode	Task Name				Half 1, 2023				Half 2, 2023				Half 1, 2024				Half 2, 2024				Half 1, 2025															
						N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	
1		Development of Fiyavi Project	608 days	Thu 12/15/22	Mon 4/14/25																																
2		Submission of EMP	0 days	Mon 1/2/23	Mon 1/2/23																																
3		Project Decision Statement Period	262 days	Tue 1/24/23	Wed 1/24/24																																
4		EMP Approval	0 days	Tue 1/24/23	Tue 1/24/23																																
5		EMP Expiry Date	0 days	Wed 1/24/24	Wed 1/24/24																																
6		Building of the base blocks	34 days	Thu 12/15/22	Tue 1/31/23																																
7		Aircrafts moved to farukolhufushi due to delays	1 day	Sun 1/21/24	Sun 1/21/24																																
8		Vendor Acquisition	507 days	Thu 1/26/23	Sun 1/5/25																																
9		Vendor Acquisition (MTCC)	56 days	Thu 1/26/23	Thu 4/13/23																																
10		Vendor Acquisition Leo trading	1 day	Tue 5/30/23	Tue 5/30/23																																
11		Vendor acquired	0 days	Wed 12/25/24	Wed 12/25/24																																
12		Preparation of aircrafts (Paintwork)	4 days	Wed 1/1/25	Sun 1/5/25																																
13		Setting out with Vendor (MTCC)	1 day	Thu 12/26/24	Thu 12/26/24																																
14		2nd Environment Clearance	60 days	Tue 1/21/25	Mon 4/14/25																																

Project: Project1 Date: Tue 1/21/25	Task		Inactive Summary		External Tasks	
	Split		Manual Task		External Milestone	
	Milestone		Duration-only		Deadline	
	Summary		Manual Summary Rollup		Progress	
	Project Summary		Manual Summary		Manual Progress	
	Inactive Task		Start-only			
	Inactive Milestone		Finish-only			

15.4. Team and details

15.5. Stakeholder consultation



Outlook

Stakeholder consultation regarding the development of a dive site at Kudagiri.

From Hassaan Abdul Muhsin <Hassaan.Abdul@hdc.mv>

Date Sun 2/9/2025 5:18 PM

To ahmed@visitmaldives.com <ahmed@visitmaldives.com>; ahmed.thiham@mtcc.com.mv <ahmed.thiham@mtcc.com.mv>; abdulla.niyaz@tourism.gov.mv <abdulla.niyaz@tourism.gov.mv>

Cc Hassan Akram <akram@hdc.mv>; Shauzab Adam <shauzab.adam@hdc.mv>; Hashma Hameed <hashma.hameed@hdc.mv>; Hassan Akram <akram@hdc.mv>; Shahid Ahmed Waheed <shahidahmed@hdc.mv>; Ahmed Zinaf <zinaf@hdc.mv>; bureau <bureau@hdc.mv>

📎 1 attachment (23 KB)

Survey and Environmnet Kudagiri divesite Stakeholder consultation questions.docx;

Dear Stakeholders at MOT / MECCT, MMPRC, and MTCC,

As per the meeting discussion, I am attaching the document that requires your input.

As discussed, please provide the feedback before 18:00 hrs tomorrow 10th Feb 25.

For questions regarding the project, please feel free to contact me tomorrow between 1:00 to 14:00

Thanks.

Regards.

**HASSAAN ABDUL MUHSIN**

Manager, (EIA P02/2020)

Surveying and Environment Management Section,
URBAN PLANNING DIVISION

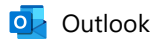
Housing Development Corporation Limited

HDC Building, Hulhumalé, Republic of Maldives

Hotline: 1516 | 00960 3353535

hello@hdc.mv | www.hdc.mv

This email and any attachments are private and intended only for the recipient. If you received it by mistake, please let the sender know and delete the message and attachments. Any use or sharing of this email or attachments is prohibited without permission.



Re: Stakeholder consultation regarding the development of a dive site at Kudagiri.

From Ahmed Thiham <ahmed.thiham@mtcc.com.mv>

Date Mon 2/10/2025 4:38 PM

To Hassaan Abdul Muhsin <Hassaan.Abdul@hdc.mv>

1 attachment (193 KB)

Survey and Environmnet Kudagiri divesite Stakeholder consultation questions.pdf;

Dear Hassaan,

Please find attached the document with my feedback.

Regards,

From: Hassaan Abdul Muhsin <Hassaan.Abdul@hdc.mv>

Sent: Sunday, February 9, 2025 5:18 PM

To: ahmed@visitmaldives.com <ahmed@visitmaldives.com>; Ahmed Thiham <ahmed.thiham@mtcc.com.mv>; abdulla.niyaz@tourism.gov.mv <abdulla.niyaz@tourism.gov.mv>

Cc: Hassan Akram <akram@hdc.mv>; Shauzab Adam <shauzab.adam@hdc.mv>; Hashma Hameed <hashma.hameed@hdc.mv>; Hassan Akram <akram@hdc.mv>; Shahid Ahmed Waheed <shahidahmed@hdc.mv>; Ahmed Zinaf <zinaf@hdc.mv>; bureau <bureau@hdc.mv>

Subject: Stakeholder consultation regarding the development of a dive site at Kudagiri.

Dear Stakeholders at MOT / MECCT, MMPRC, and MTCC,

As per the meeting discussion, I am attaching the document that requires your input.

As discussed, please provide the feedback before 18:00 hrs tomorrow 10th Feb 25.

For questions regarding the project, please feel free to contact me tomorrow between 1:00 to 14:00

Thanks.

Regards.

Urbanco

HASSAAN ABDUL MUHSIN

Manager, (EIA P02/2020)

Surveying and Environment Management Section,
URBAN PLANNING DIVISION

Housing Development Corporation Limited

HDC Building, Hulhumalé, Republic of Maldives

Hotline: 1516 | 00960 3353535

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Ahmed Thiham

Chief Engineering & Technical Officer
EMT - Executive Management Team

—

Tel + (960) 3025565 Fax + (960) 3323221 Mobile + (960) 7619139

7th Floor, MTCC Tower, Boduthakurufaanu Magu, Male' 20057, Maldives

Tel: + (960) 332 6822 - Fax: + (960) 332 3221 - Web: www.mtcc.mv

Environment Management Plan

203-ECA/161/2025/4

This communication is from MTCC PLC, any views expressed by an individual in this email do not necessarily reflect views of MTCC PLC. This message is intended only for the addressee. If you are not the intended recipient you are notified that disclosing, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited.



Outlook

Re: Stakeholder consultation regarding the development of a dive site at Kudagiri.

From Ahmed Naeem <ahmed@visitmaldives.com>**Date** Mon 2/10/2025 5:54 PM**To** Hassaan Abdul Muhsin <Hassaan.Abdul@hdc.mv>

1 attachment (16 KB)

Survey and Environmnet Kudagiri divesite Stakeholder consultation questions (1).docx;

Hello Mr. Hassaan,

Please find the questionnaires with answers from our end.

On Sun, 9 Feb 2025 at 17:18, Hassaan Abdul Muhsin <Hassaan.Abdul@hdc.mv> wrote:

Dear Stakeholders at MOT / MECCT, MMPRC, and MTCC,

As per the meeting discussion, I am attaching the document that requires your input.

As discussed, please provide the feedback before 18:00 hrs tomorrow 10th Feb 25.

For questions regarding the project, please feel free to contact me tomorrow between 1:00 to 14:00

Thanks.

Regards.

Urbanco

HASSAAN ABDUL MUHSIN

Manager, (EIA P02/2020)

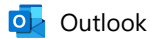
Surveying and Environment Management Section,
URBAN PLANNING DIVISION**Housing Development Corporation Limited**

HDC Building, Hulhumalé, Republic of Maldives

Hotline: 1516 | 00960 3353535

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Outlook

Re: Stakeholder consultation regarding the development of a dive site at Kudagiri.

From Hassaan Abdul Muhsin <Hassaan.Abdul@hdc.mv>**Date** Tue 2/11/2025 8:10 AM**To** Ahmed Naeem <ahmed@visitmaldives.com>

Noted and thanks

Regards.

**HASSAAN ABDUL MUHSIN**

Manager, (EIA P02/2020)

Surveying and Environment Management Section,
URBAN PLANNING DIVISION**Housing Development Corporation Limited**

HDC Building, Hulhumalé, Republic of Maldives

Hotline: 1516 | 00960 3353535

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From: Ahmed Naeem <ahmed@visitmaldives.com>**Sent:** Monday, February 10, 2025 5:53 PM**To:** Hassaan Abdul Muhsin <Hassaan.Abdul@hdc.mv>**Subject:** Re: Stakeholder consultation regarding the development of a dive site at Kudagiri.

Hello Mr. Hassaan,

Please find the questionnaires with answers from our end.

On Sun, 9 Feb 2025 at 17:18, Hassaan Abdul Muhsin <Hassaan.Abdul@hdc.mv> wrote:

Dear Stakeholders at MOT / MECCT, MMPRC, and MTCC,

As per the meeting discussion, I am attaching the document that requires your input.

As discussed, please provide the feedback before 18:00 hrs tomorrow 10th Feb 25.

For questions regarding the project, please feel free to contact me tomorrow between 1:00 to 14:00

Thanks.

Regards.

**HASSAAN ABDUL MUHSIN**

Manager, (EIA P02/2020)

Surveying and Environment Management Section,
URBAN PLANNING DIVISION**Housing Development Corporation Limited**

HDC Building, Hulhumalé, Republic of Maldives

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Outlook

Draft EMP for Kudagiri Wreak site

From Hassaan Abdul Muhsin <Hassaan.Abdul@hdc.mv>

Date Tue 2/11/2025 4:33 PM

To secretariat@malecity.gov.mv <secretariat@malecity.gov.mv>

Cc Hassan Akram <akram@hdc.mv>; Shahid Ahmed Waheed <shahidahmed@hdc.mv>; Ahmed Zinaf <zinaf@hdc.mv>

Hi team,

To fulfil the requirements of the EIA regulations PFA the draft copy of the mentioned EMP.

 [Copy for MCC Fiya Avi Project -Draft - Copy.pdf](#)

Regards.

**HASSAAN ABDUL MUHSIN**

Manager, (EIA P02/2020)

Surveying and Environment Management Section,
URBAN PLANNING DIVISION

Housing Development Corporation Limited

HDC Building, Hulhumalé, Republic of Maldives

Hotline: 1516 | 00960 3353535

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15.6. Stakeholder consultation data set.

Questions	Responses			
	MMPRC	MOT /MoCCEE	MTCC	HDC
1. What are your initial thoughts on the project?			The project is a good initiative. The dive site will attract divers both local and foreign.	
2. Do you feel that the project has adequately consulted with the community so far? If not, how can this be improved?			I believe so	
3. Do you think that the project will be accepted by the local; dive community?			Yes	
4. Do you believe the project aligns with the goals of eco-tourism and sustainable development in Maldives?			Yes	
5. What are the primary benefits of this project for the local community, dive community and the environment?			This will add to the number of famous dive points in Male region, giving divers more options.	
6. What are your concerns regarding the potential environmental impacts of the project			None	
7. Do you believe the proposed mitigation measures are sufficient to protect the marine environment?			Yes	
8. How can the project balance the economic benefits of tourism with the need to preserve the local environment?			The project will not degrade local environment.	
9. How do you feel about the proposed environmental monitoring plan? Are there any additional measures you would suggest?			Good	
10. Do you think the project will have any long-term effects on the local marine ecosystem?			No	
11. How can the local community be more involved in the planning and implementation of the project?			Local divers could be invited to assist in the project.	
12. How can the project ensure that women and disadvantaged groups in the community benefit from the development?			Not relevant	

Questions	Responses			
	MMPRC	MOT /MoCCEE	MTCC	HDC
13. Are there any specific barriers that might prevent certain groups from participating in or benefiting from the project?			No	
14. How do you think this project will benefit the local community?			It will attract divers to Kudagiri which would benefit small businesses in Kudagiri.	
15. Are there any potential negative social impacts that you foresee?			No	
16. Do you think the project will strengthen or weaken social cohesion within the community; dive and tourism community? Why?			It would enhance cohesion within the dive/tourism community	
17. What economic opportunities do you think the dive site will create for the external vendors and dive community			More dive tours for the dive community.	
18. How can local businesses be supported to take advantage of the increased tourism?			Provide safety measures freely at the dive site.	
19. How can the project ensure that the revenue generated from the dive site benefits the local community?			More diving schools could be allowed to open services in Kudagiri	
20. Should a portion of the revenue be re invested into community development projects? If so, what areas should be prioritized			Should be. A portion of the revenue could be invested in tourism-related projects which are directly related to small local businesses.	
21. What are your concerns regarding the safety of workers during the construction and operation phases?			Without adequate safety measures a lot of things can lead to injuries, asset damage. Lifting heavy objects on a floating platform is risky if proper risk assessment is not made.	
22. Do you believe the proposed safety measures for divers and workers are adequate?			Yes	
23. How can the project ensure the safety of divers, especially those with less experience?			Only qualified drivers will be chosen to work underwater. Risk assessment will be made and risk mitigation measures will be in place.	
24. Are there any concerns about public safety, especially regarding the use of the dive site by tourists and locals			No	

Questions	Responses			
	MMPRC	MOT /MoCCEE	MTCC	HDC
25. What emergency response measures should be in place for the dive site?			Risk assessment will be made for the project and risk mitigation measures will be made accordingly.	
26. Are there any specific risks that the project should prepare for?			Injury to personnel.	
27. Do you have confidence in the project management team's ability to execute the project as planned?			Yes	
28. Are there any specific concerns you have about the project's timeline or budget?			Yes. The project has already faced delays.	
29. How would you like to be involved in the project moving forward			I will oversee the works from MTCC side.	
30. Do you believe the project complies with all relevant environmental and legal regulations?			Yes	
31. Are there any specific regulations or laws you think the project should pay more attention to?			No	
32. Do you think the project has obtained all necessary permits and approvals?			Yes	
33. How do you think the project can ensure long-term sustainability, both environmentally and economically?			Since we are creating a dive site, such concerns are minimal because artificial dive sites tend to become richer with marine life over time even with minimal human intervention.	
34. What measures would you suggest to ensure the dive site remains a viable attraction for years to come?			Advertising the dive site, especially targeting tourists.	
35. What measures would you suggest to ensure the dive site remains a viable attraction for years to come?			None	
36. Who should be responsible for the ongoing maintenance and monitoring of the dive site?			Not MTCC as far as I am aware of.	
37. How can the project ensure that the site is well-maintained over time?			Regular inspections to monitor the condition of the site.	

Questions	Responses			
	MMPRC	MOT /MoCCEE	MTCC	HDC
1. What are your initial thoughts on the project?	A strategic investment that enhances the Maldives' tourism appeal, attracts high-value dive tourism, and supports long-term economic benefits while aligning with sustainable development goals.			
2. Do you feel that the project has adequately consulted with the community so far? If not, how can this be improved?	Not enough. Ongoing engagement ensures transparency, while stakeholder meetings and feedback can improve involvement.			
3. Do you think that the project will be accepted by the local; dive community?	Yes, the project is likely to be accepted as it enhances dive experiences. Ongoing engagement with the dive community will help ensure support.			
4. Do you believe the project aligns with the goals of eco-tourism and sustainable development in Maldives?	Yes, the project supports eco-tourism and sustainable development by enhancing marine biodiversity and promoting responsible dive tourism.			
5. What are the primary benefits of this project for the local community, dive community and the environment?	The project benefits the local community by boosting tourism and economic opportunities, the dive community by creating a new dive site, and the environment by promoting marine biodiversity through artificial reef development.			
6. What are your concerns regarding the potential environmental impacts of the project	Disturbances to marine ecosystems, water quality, and coral growth			
7. Do you believe the proposed mitigation measures are sufficient to protect the marine environment?	Yes			
8. How can the project balance the economic benefits of tourism with the need to preserve the local environment?	By promoting eco-friendly dive operations, and ensuring proper monitoring and efforts to protect marine life.			
9. How do you feel about the proposed environmental monitoring plan? Are there any additional measures you would suggest?	The proposed plan looks good.			

Questions	Responses			
	MMPRC	MOT /MoCCEE	MTCC	HDC
10. Do you think the project will have any long-term effects on the local marine ecosystem?	yes, there is possibility of it becoming an artificial reef			
11. How can the local community be more involved in the planning and implementation of the project?	divers, freedivers, snorkelers and other custodian of ocean should be provided information of the project			
12. How can the project ensure that women and disadvantaged groups in the community benefit from the development?	By providing training, employment opportunities, and support in tourism-related roles, such as hospitality, and local guiding.			
13. Are there any specific barriers that might prevent certain groups from participating in or benefiting from the project?	No			
14. How do you think this project will benefit the local community?	Creating jobs, and generating income through diving and eco-tourism activities			
15. Are there any potential negative social impacts that you foresee?	Overcrowding, disruption of local lifestyles, or unequal distribution of tourism benefits.			
16. Do you think the project will strengthen or weaken social cohesion within the community; dive and tourism community? Why?	Strengthen social cohesion by creating job opportunities, fostering collaboration among the local community, dive operators, and tourism businesses, and promoting shared benefits from eco-tourism.			
17. What economic opportunities do you think the dive site will create for the external vendors and dive community	Increased demand for dive equipment, tours, and related services. The dive community by attracting more tourists, leading to higher revenue for dive operators and local businesses.			
18. How can local businesses be supported to take advantage of the increased tourism?	Promoting their services in tourism packages, which leads to more economic growth			
19. How can the project ensure that the revenue generated from the dive site benefits the local community?	By allocating a portion of the revenue to community development initiatives.			
20. Should a portion of the revenue be re invested into community	Yes, Trainings and awareness programs			

Questions	Responses			
	MMPRC	MOT /MoCCEE	MTCC	HDC
development projects? If so, what areas should be prioritized				
21. What are your concerns regarding the safety of workers during the construction and operation phases?	none			
22. Do you believe the proposed safety measures for divers and workers are adequate?	yes			
23. How can the project ensure the safety of divers, especially those with less experience?	Initially experienced divers should conduct their own dives there to survey the potential risks of the site			
24. Are there any concerns about public safety, especially regarding the use of the dive site by tourists and locals	No			
25. What emergency response measures should be in place for the dive site?	local dive guides should be present when exploring the area			
26. Are there any specific risks that the project should prepare for?	No			
27. Do you have confidence in the project management team's ability to execute the project as planned?	yes			
28. Are there any specific concerns you have about the project's timeline or budget?	none			
29. How would you like to be involved in the project moving forward	by providing the branding for the project			
30. Do you believe the project complies with all relevant environmental and legal regulations?	yes			
31. Are there any specific regulations or laws you think the project should pay more attention to?	No			

Questions	Responses			
	MMPRC	MOT /MoCCEE	MTCC	HDC
32. Do you think the project has obtained all necessary permits and approvals?	Yes			
33. How do you think the project can ensure long-term sustainability, both environmentally and economically?	by involving the diving community			
34. What measures would you suggest to ensure the dive site remains a viable attraction for years to come?	annual maintenance			
35. What measures would you suggest to ensure the dive site remains a viable attraction for years to come?	Maintenance			
36. Who should be responsible for the ongoing maintenance and monitoring of the dive site?	Custodians of the lagoon			
37. How can the project ensure that the site is well-maintained over time?	by involving the community and making sure there is some maintenance			

Timestamp	Age:	Gender:	Are you a:	Do you believe the project aligns with the goals of eco-tourism and sustainable development in the Maldives?	Do you feel the project has adequately consulted with the community so far?	Do you think the project will be accepted by the local dive community?	How concerned are you about the project's potential long-term effects on the local marine ecosystem?	Should a portion of the revenue from the dive site be reinvested into community development projects?	Do you think the project will create new economic opportunities for local businesses?	How confident are you in the project management team's ability to execute the project as planned?	If you have any additional concerns or opinions, please share them below:
2/10/2025 14:55:25	18 - 30	Male	Regular Citizen (Non-Diver)	5	5	5	5	5	5	5	None
2/11/2025 8:30:02	31 - 45	Male	Regular Citizen (Non-Diver)	5	5	5	1	1	5	5	
2/11/2025 8:37:21	18 - 30	Female	Regular Citizen (Non-Diver)	5	2	5	1	5	5	3	
2/11/2025 8:48:30	18 - 30	Male	Recreational Diver	4	4	5	4	4	5	5	
2/11/2025 8:48:46	18 - 30	Male	Regular Citizen (Non-Diver)	3	4	5	3	5	1	5	
2/11/2025 8:49:25	31 - 45	Male	Recreational Diver	3	3	3	3	3	3	3	
2/11/2025 8:50:21	31 - 45	Male	Regular Citizen (Non-Diver)	3	2	3	3	5	3	4	
2/11/2025 8:56:24	18 - 30	Male	Recreational Diver	5	5	5	5	5	5	5	
2/11/2025 8:56:28	18 - 30	Male	Recreational Diver	5	5	5	5	5	5	5	
2/11/2025 8:59:39	31 - 45	Male	Recreational Diver	3	2	3	2	5	3	3	
2/11/2025 9:03:52	18 - 30	Male	Recreational Diver	4	3	4	2	2	4	3	
2/11/2025 9:05:08	31 - 45	Male	Recreational Diver	5	2	5	2	5	5	5	
2/11/2025 9:05:19	18 - 30	Female	Recreational Diver	3	2	2	5	4	4	1	

2/11/2025 9:11:29	31 - 45	Male	Recreational Diver	5	1	4	3	5	5	5	
2/11/2025 9:13:16	18 - 30	Male	Recreational Diver	4	2	4	1	3	4	3	Why not submerge it in an area that has more corals and fishes
2/11/2025 9:19:35	18 - 30	Male	Regular Citizen (Non-Diver)	4	3	4	3	4	4	4	
2/11/2025 9:27:13	18 - 30	Male	Regular Citizen (Non-Diver)	3	1	3	3	3	3	3	
2/11/2025 9:45:45	31 - 45	Male	Recreational Diver	5	4	5	2	4	5	5	
2/11/2025 10:54:20	18 - 30	Male	Dive Specialist (Instructor, Guide, Dive Shop Owner, etc.)	4	1	4	4	5	3	2	

15.7. Water sample report

LB-TEST-090

WATER QUALITY TEST REPORT Report No: 500203742

Customer Information:

Housing Development Corporation
 HDC Building, 3rd Floor
 NIROLHU MAGU
 HULHUMALE' 23028

Report date: **04/02/2025**
 Test Requisition Form No: **900202535**
 Sample(s) Received Date: **05/02/2025**
 Date of Analysis: **05/02/2025 - 05/02/2025**

Sample Description ~	N5	AL6	Control	TEST METHOD	UNIT
Sample Type ~	Sea Water	Sea Water	Sea Water		
Sample No	83255660	83255661	83255662		
Sampled Date ~	02/02/2025 09:45 AM	02/02/2025 09:45 AM	02/02/2025 09:45 AM		
Physical Appearance	Clear with particles	Clear with particles	Clear with particles		
Received Temperature	29.6 °C	29.6 °C	29.6 °C		
PARAMETER	ANALYSIS RESULT				
Conductivity *	51800	52000	52000	Method 2510 B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	µS/cm
pH *	8.2	8.2	8.1	Method 4500-H+ B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	-
Salinity	34.06	34.14	34.20	Method 2520 B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	‰
Total Dissolved Solids	25900	26000	26000	Electrometry	mg/L
Total Suspended Solids	<5 (LoQ 5 mg/L)	<5 (LoQ 5 mg/L)	<5 (LoQ 5 mg/L)	HACH Method 8006	mg/L
Turbidity *	0.120	0.117	0.130	HACH Nephelometric Method (adapted from HACH 2100N Turbidimeter User Manual)	NTU
Nitrate *	6.0	4.7	5.9	HACH Method 8171	mg/L
Nitrite	0.021	0.011	0.016	HACH Method 8507	mg/L
Nitrogen Ammonia	<0.02 (LoQ 0.02 mg/L)	0.02	<0.02 (LoQ 0.02 mg/L)	HACH Method 8038	mg/L

Keys: µS/cm : Micro Seimen per Centimeter, ‰ : Parts Per Thousand, mg/L : Milligram Per Liter, NTU : Nephelometric Turbidity Unit

Checked by



Aminath Shahidha
 Laboratory Executive

Approved by



Nihaz A. Zahir
 Assistant Quality Manager

Notes:

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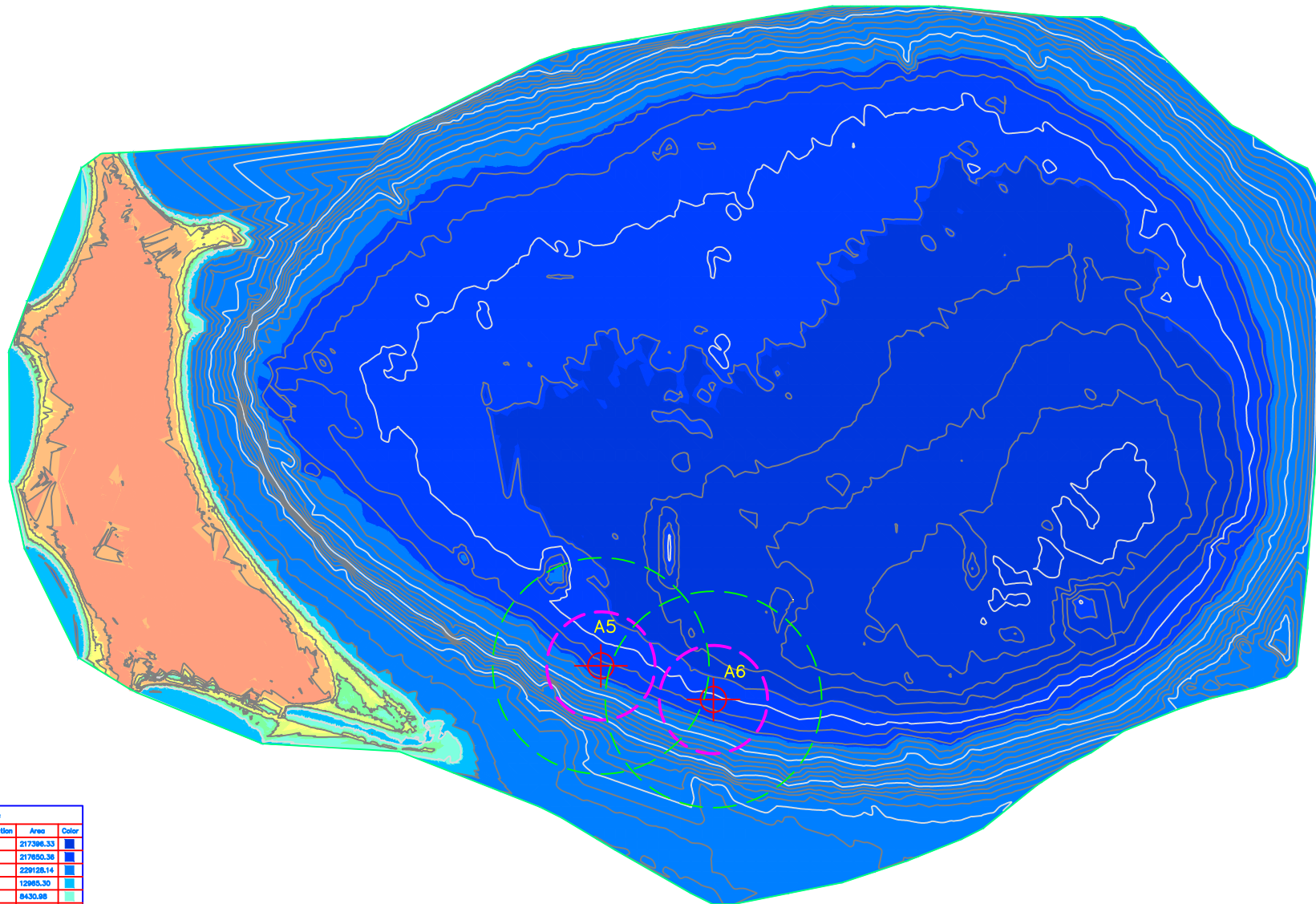
***** END OF REPORT *****



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15.8. Impact map

15.8.1. Impact map 1



Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-12.78	-10.54	217396.33	Blue
2	-10.54	-8.80	217850.36	Dark Blue
3	-8.80	-0.50	229128.14	Light Blue
4	-0.50	-0.08	12965.30	Light Green
5	-0.08	0.34	8430.88	Yellow
6	0.34	0.53	4976.10	Orange
7	0.53	0.75	4375.89	Red-Orange
8	0.75	1.19	4366.34	Red
9	1.19	1.54	14525.14	Dark Red
10	1.54	2.08	51319.42	Dark Red

IMPACT ZONES	
Primary Impact zone	50m
Secondary Impact zone	100m

Kudagiri (Impact Map)

Drawing Name : Bathymetry Map

Scale: N.T.S

Surveying and Environment Department

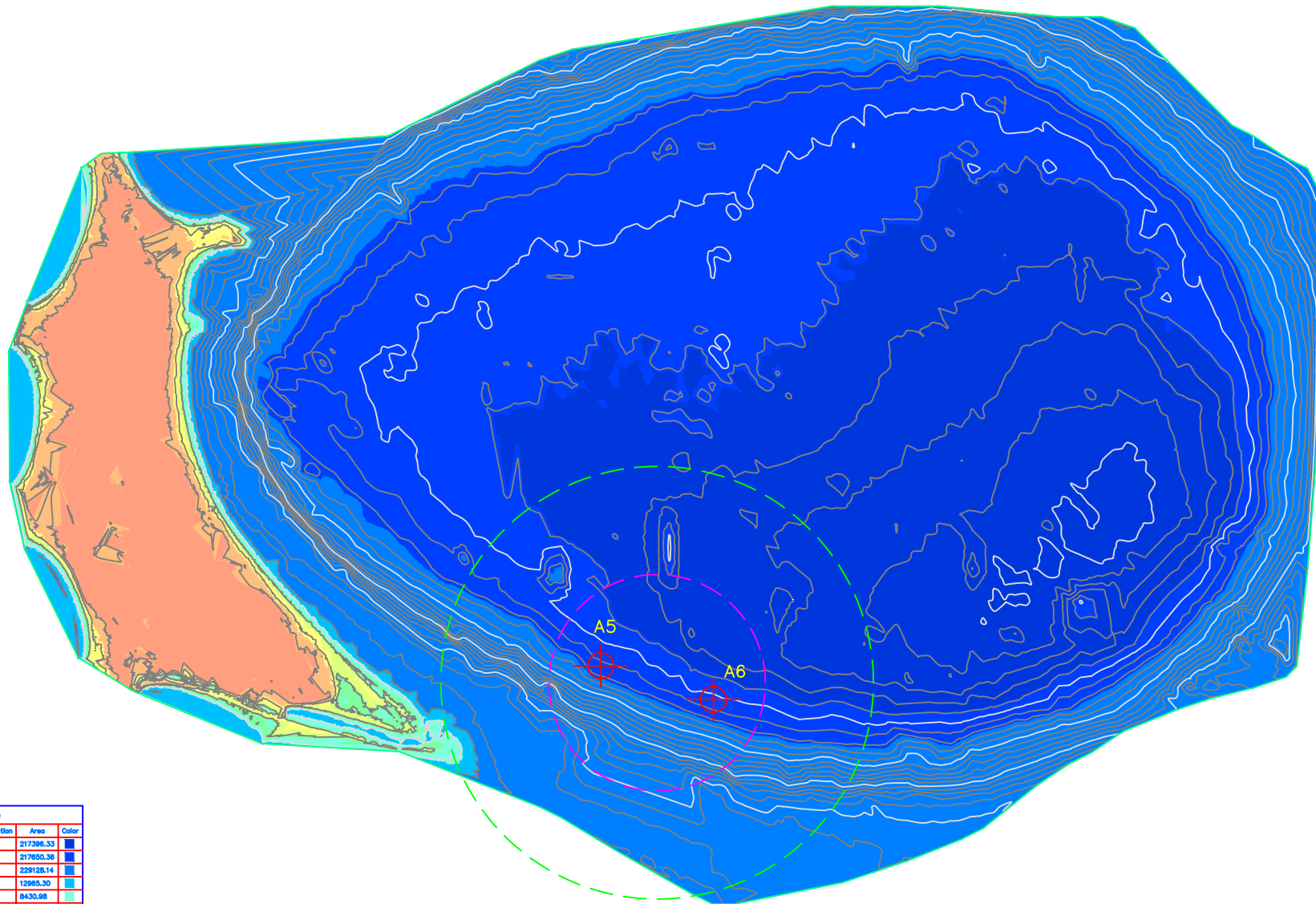
Surveyed by: Hashma Hameed

Surveyed date:03 February 2025

Checked by: Muhammad Ibrahim



15.8.2. Cumulative impact map



Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-12.78	-10.54	217396.33	Dark Blue
2	-10.54	-8.80	217850.36	Blue
3	-8.80	-0.50	229128.14	Light Blue
4	-0.50	-0.08	12965.30	Light Green
5	-0.08	0.34	8430.88	Green
6	0.34	0.53	4976.10	Yellow-Green
7	0.53	0.75	4375.89	Yellow
8	0.75	1.19	4366.34	Orange
9	1.19	1.54	14525.14	Red-Orange
10	1.54	2.08	51319.42	Red

CUMULATIVE IMPACT ZONES	
Primary Impact zone	100m
Secondary Impact zone	200m

Kudagiri
(Cumulative Impact Map)

Drawing Name : Bathymetry Map

Scale: N.T.S

Surveying and Environment Department

Surveyed by: Hashma Hameed

Surveyed date: 03 February 2025

Checked by: Muhammad Ibrahim

HOUSING DEVELOPMENT CORPORATION 01

15.9. CV

15.9.1. Hassaan Abdul Muhsin and Hashma Hameed

HASSAAN ABDUL MUHSIN

22nd April 1989 | Maldivian | +960 7901665 | hassaanabdulmuhsin@gmail.com

1. Profile

Environmental Specialist with a master's in environmental science and experience in environmental analysis, research, restoration and conservation. Licensed in conducting Environmental Impact Assessments [EIAs], biodiversity surveys, and disaster management planning

2. Education**2.1. Master of Science in Environmental Science**

Chiang Mai University, Chiang Mai, Thailand

Aug 2016 to June 2018

2.1.1. Achievements

2016 - Winner of Royal Thai Government Scholarship

2018 -107th ISER Excellent Paper Award for the category Best Presentation/Best Content

2018 - Graduated with a **GPA of 3.93/4**

2.2. Bachelor of Education [B.Ed]

St. Joseph's College of Education, University of Mysore, Mysore, India

Feb 2012 to Dec 2012

2.3. Bachelor of Science [BSc] in Biotechnology, Chemistry, and Zoology

St. Philomena's College, University of Mysore, Mysore, India

May 2008 to May 2011

3. Work Experience**3.1. Private Consultant [2018 – Present]**

Lead biodiversity surveys using scientifically appropriate methods and approved tools such as; RTK GPS, pitfall and light traps, and use various indices for analysis of results. Provide restoration and conservation solutions through data-driven management plans formulated through social engagement and environmental analysis to reestablish socio-environmental engagement and connection. Furthermore, conduct EIAs, management plans and adaptation plan for NGOs and government bodies. Key projects include:

A. HDh Kurin'bi Wetland Conservation Project (2023): Led the biodiversity survey, which revealed high plant mortality, a thick understory, and rare species like *Xylocarpus rumphii*. After an analysis of the state of the wetland taking into account the urban development of the island, trainings were conducted to resident on how to determine the desired optimum state of the mangrove ecosystem without compensating the economic development of the island.

B. Conserving Kelaa's Kandoofa (wetland) Project (2018): Conducted biodiversity surveys in Ha Kelaa, to assess and protect wetland biodiversity. Findings were shared with the community for conservation planning.

C. Island Water Resource Conservation and Management Planning Project (2022-2023): Developed the island-specific water conservation plans, incorporating sustainable practices for long-term water management.

D. Disaster Management, Hazard Mitigation, and Climate Change Adaptation Plan for Kulhudhuffushi City (2024 – Ongoing): As project manager, managing the hazard vulnerability capacity assessment, management and the development of a disaster resilience and climate adaptation plan to improve disaster risk reduction strategies, and response coordination between stakeholders during a disaster and enhance local climate adaptation efforts.

3.2. Environment Analyst [April 2022 – Sep 2024], Environment Manager [Sep 2024 – Present]

[Housing Development Corporation](#), Maldives

Conduct studies on natural and social environmental components, focusing on plant and animal species to support urban greening and planning. Perform ecological surveys using RTK GPS, drones, and provide output on GIS platforms and reports. Conduct conservation projects, biodiversity, impact assessments, and monitoring. Prepare management reports, assist in policy development, and advise government officials,

engineers, and planners on environmental matters. Review land use proposals, manage resources, and lead training programs to ensure environmental sustainability.

3.3. Teacher, Key Stage 3 [July 2020 – April 2022]

[Majeediyya School, Maldives](#)

Delivering science lessons including lesson planning, preparing teaching materials, worksheets, notes, assessment, marking rubrics and reporting. Furthermore, carrying out extra-curricular club activities.

3.4. Environmental Researcher & Licensed Consultant [Mar 2018 – May 2020]

INSA Pvt. Ltd., Maldives

Conduct marine and terrestrial ecological studies using traditional and modern techniques, including drone and RTK GPS technology. Perform impact assessments, monitoring, and present results in Civil 3D. Prepare management reports, consult on conservation, and assist in policy development using social-environmental reconnection approaches

3.5. Assistant Director [Aug 2015 – Aug 2016]

[Maldives Marketing & Public Relations Corporation, Maldives](#)

Responsible for implementing Environment Impact Assessment framework, supervise and provide technical input to support environment assessments, arranging and conducting scoping meetings, provide technical input to the Terms of Reference (TOR), monitor database of environment impact assessment and Environment Management Plan (EMP) and provide statistics to Ministry of Tourism.

3.6. Teacher, Key Stage 4 and 5 [Feb 2013 – Aug 2015]

[Majeediyya School, Maldives](#)

Delivering Biology lessons including lesson planning, preparing teaching materials, worksheets, notes, assessment, marking rubrics and reporting.

3.7. Environment Analyst [Aug 2011 – Dec 2011]

[Seamarc Pvt. Ltd \(now changed to reefscapers\), Maldives](#)

Assist in conducting marine conservation projects, establishment of Mars Assisted Reef Restoration System (MARRS) in coral restoration procedure, and development of marine corridors allowing reconnection to barren patch reefs, environmental impact assessments and monitoring, prepare management reports, and assist in setting out and engineering surveys.

4. Publications

4.1. Academic

[H. Abdul Muhisn, I. Patawang, C. Phalaraksh \[2018\]. Chromosomal Aberrations in Fejervarya spp. in Artisanal Mining Farms, Pichit, Thailand. International Journal of Advances in Science, Engineering and Technology. 107th ISER International Conference on Environment and Natural Science \[ICENS\], Phuket, Thailand](#)

Thesis Title: [H. Abdul Muhisn, \[2018\]. Chromosomal aberration affected from mercury and arsenic in some frog species from artisanal gold mining areas of Pichit Province, Thailand. Chiang Mai The Graduate School](#)

4.2. Professional

4.2.1. Research Surveys

- A. Abdul Muhisn, H, & Akram, H. (2023). HDh Kurin'bi Wetland Conservation Project: Biodiversity survey and socio-environmental connection restoration. Kurinbee Youth Movement. (Unpublished, the project is not yet closed by the NGO).
- B. Abdul Muhisn, H. (2018). *Conserving Kelaa's Kandoofa: Mangrove and wetland biodiversity conservation in Ha Kelaa, Maldives*. GEF SGP Conserving Kelaa's Kandoofa –A Biodiversity Mapping and Food Security Approach, Island Development and Environmental Awareness Society (IDEAS). Project data published at: <https://ideasmv.com/portfolio/gef-sgp-kandoofa-1/>

- C. MECCT (2023). *Island Water Resource Conservation and Management Planning (IWRMP): Sustainable water management for Maldivian islands*. Ministry of Environment Climate Change and Technology. Project data published at: <https://charrettestudio.mv/island-water-resources-management-plan/>
- D. Kulhudhuffushi City Council (2024). *Disaster Management, Hazard Mitigation, and Climate Change Adaptation Plan for Kulhudhuffushi City*.

4.2.2. Other Research Projects

4.2.2.1. Environmental Impact Assessments [EIAs]

Worked as the primary author and Environment specialist for the following projects. Followed the set standard by Maldives EPA to assess the socio environmental impact of the projects. Published at Environment Protection Agency website. <https://en.epa.gov.mv/>

- | | |
|---|---|
| <p>A. Abdul Muhisn, H. (2024). Environmental Impact Assessment for the Proposed Road Development Project in Thilafushi, Kaafu Atoll. Done for Housing Development Corporation [HDC]. EPA Maldives</p> <p>B. Abdul Muhisn, H. (2023–2024). <i>1st Addendum to the EIA for the Proposed Dredging, Reclamation, and Shoreline Modification Project, S. Hulhumeedhoo</i>. Done for Ministry of National Planning, Housing, and Infrastructure [MNPHI]. EPA Maldives</p> <p>C. Abdul Muhisn, H. (2022–2023). Environmental Impact Assessment for the Proposed Reef Scaping Project at Eastern Beach, Hulhumalé, Kaafu Atoll. Done for Housing Development Corporation [HDC]. EPA Maldives</p> <p>D. Abdul Muhisn, H. (2023). <i>Environmental Impact Assessment for the Development of a Wreck Dive Site at Kudagiri Island, Kaafu Atoll</i>. Done for Housing Development Corporation [HDC]. EPA Maldives</p> <p>E. Abdul Muhisn, H. (2022). Environmental Impact Assessment for the Development of a Wreck Dive Site at Kubuladi Thila, Fiyavi Dive Point. Done for Housing Development Corporation [HDC]. EPA Maldives.</p> <p>F. Abdul Muhisn, H. (2019–2021). Environmental Impact Assessment for the Water Supply Development Project at R. Rasmaadhoo, Maldives. Done for Ministry of National Planning, Housing, and Infrastructure [MNPHI]. EPA Maldives.</p> <p>G. Abdul Muhisn, H. (2019–2021). Environmental Impact Assessment for the Water Supply Development Project at TH Burunee, Done for Maldives. Ministry of National Planning, Housing, and Infrastructure [MNPHI]. EPA Maldives</p> | <p>H. Abdul Muhisn, H. (2021). Environmental Impact Assessment for the Water Supply Development Project at F. Feeali, Done for Maldives. Ministry of National Planning, Housing, and Infrastructure [MNPHI]. EPA Maldives.</p> <p>I. Abdul Muhisn, H. (2021). Environmental Impact Assessment for the Development of a 12-Story Building at M. Pisthaage, Male'. Done for Infinity Builders [SP-0814/2016]. EPA Maldives.</p> <p>J. Abdul Muhisn, H. (2021). Environmental Impact Assessment for the Access Platforms, Outdoor Rendezvous Area, and Community Replantation of Mangroves in Kelaa, Haa Alif Atoll. Done for Kelaa Youth Forum [KYF] and Island Development and Environment Awareness Society [IDEAS]. EPA Maldives</p> <p>K. Abdul Muhisn, H. (2020). Environmental Impact Assessment for the Tourist Resort and Factory and Island Development at Gulf Lagoon, Kaaf Atoll. Done For Gulf Craft Maldives Pvt Ltd. EPA Maldives</p> <p>L. Abdul Muhisn, H. (2020). Environmental Impact Assessment for the Harbour Redevelopment at Bilehfahi, Shaviyani Atoll. Done for Maldives Transport and Contracting Company. EPA Maldives</p> <p>M. Abdul Muhisn, H. (2020). Environmental Impact Assessment for the Harbour Expansion Projects at Hulhumeedhoo and Hulhudhoo, Seenu Atoll. Done for Maldives Transport and Contracting Company. EPA Maldives</p> |
|---|---|

4.2.3. Monitoring reports

Worked as the primary environment specialist for the following monitoring projects. Followed the monitoring schedule approved by Maldives EPA in the EIA.

- | | |
|--|---|
| <p>A. Abdul Muhisn, H. (2018 to 2019). Emboodhoo Lagoon Development, South Male' Atoll, Maldives.[Project reports 1 to 11]. SASe Pvt Ltd</p> | <p>B. Abdul Muhisn, H. (2019). Blue Beach Construction South Male' Atoll, Maldives[Project reports 1 to 6]. SASe Pvt Ltd.</p> |
|--|---|

C. Abdul Muhisn, H. (2020). Baglioni Island Maagau Shoreline Sediment Movement Monitoring; Detailed Baseline report, [Project reports 1]. Baglioni resorts Island

D. Abdul Muhisn, H. (2020 - 2021). Kahssan Faru Construction, North Male' Atoll, Maldives [Project reports 1 to 3]. SASE Pvt Ltd

5. Licenses

A. [Environment Consultant License](#)

Number: EIA P02/2020, Category A,

Date: 27 March 2019

B. RYA Powerboat Level 2

Number: P21291982

Date: Mar 2022

C. PADI Reef Check Eco Diver

Number: Maldives/EcoDiver/82

Date: May 2015

D. PADI Specialty Diver Dive Against Debris

Number: 1608EY4017

Date: May 2015

E. PADI Open Water Diver

Number: 1107ED1410

Date: July 2011

F. PADI Open Water Diver

Number: 2501UE8644

Date: Jan 2025

6. Other Certifications from key trainings

A. Data Modelling and Visualization [Sep 2024]

Organized by ALCOR Management Consultancy, Maldives

B. Solid Waste Management Civilian Training Program [06 – 25 Nov 2023]

Organized by Environment protection training and research Institute, Hyderabad, Telangana, India

C. Gender Sensitization Training [June 2023]

Organized by Ministry of Gender, Family and Social Service, Maldives

D. Gender Integration in Waste Management System Training [Nov 2022]

Organized by USAID Clean Cities, Blue Ocean

E. Social Behavior Change Training [Nov 2022]

Organized by USAID Clean Cities, Blue Ocean

Hashma Hameed

Chemical Engineer

A quick learner and dynamic individual who is willing to adapt in order to complete a certain task.

hashmahameed@gmail.com
203-ECA/161/2025/4

7632012

Raincrest, Hulhumale, Maldives

24 August 1997

linkedin.com/in/hashma-hameed-4a2a57152

EDUCATION

MASTERS'S DEGREE

UNIVERSITY OF NOTTINGHAM MALAYSIA

09/2016 - 06/2020

Malaysia

Courses

- ▶ Masters in Engineering with Honors (MEng) in Chemical and Environmental engineering
- ▶ Students Election commission member
- ▶ Cultural societies Student representative at student council

A-LEVEL

CENTER FOR HIGHER SECONDARY EDUCATION

2014 - 2016

Maldives

Courses

- ▶ Edexcel IAL
- ▶ Subjects: Physics , Biology, Chemistry, Islam, Dhivehi
- ▶ Optional Subjects: Mathematics with Mechanics

WORK EXPERIENCE

Junior Environmental Planner

Housing Development Corporation

03/2023 - Present

Achievements/Tasks

- ▶ Assist to plan and conduct studies of the environment and of the population, distribution, structure and functional characteristics and behavior of plants and animals; aiding in the overall greening and urban planning
- ▶ Provide assistance to conduct ecological and environmental impact and monitoring studies, and prepare reports accordingly.
- ▶ Assist to review and evaluate proposals for land use and development plans and prepare recommendations.

Engineer

Ministry of Environment, Climate Change and Technology

04/2021 - 02/2023

Achievements/Tasks

- ▶ Implementation of energy efficiency standards and labelling program 'Hakathari program'.
- ▶ Run the public awareness campaign for Energy Efficiency.
- ▶ Provide technical assistance for the Energy department for renewable energy projects.

SKILLS

- Autocad
- Adobe Photoshop
- Microsoft Word
- Microsoft Excel
- Microsoft Powerpoint
- Event planning
- Advance Open Water Diver

INTERESTS

- Photography
- Painting
- Travelling
- Fishing
- Sports
- Scuba Diving

LANGUAGES

- English
- Dhivehi

ORGANIZATIONS

Zero Waste Maldives (NGO)

(01/2021 - Present)

Promote a Zero Waste Low Impact Lifestyle in the Maldives and to enable individuals, businesses, communities and government to send nothing to the oceans, landfills or incinerators.



Quality Assurance Intern
Male' Water and Sewerage Company

06/2019 - 09/2019

Achievements/Tasks

- ▶ Assisted with planning of quality assurance testing projects following functional specifications.
- ▶ Created and achieved product quality objectives and met product specifications.
- ▶ Researched new tools and technologies for potential use by quality assurance team.

Research Assistant
CDE Consulting PVT.LTD

07/2017 - 09/2017

Achievements/Tasks

- ▶ Helped in compiling EIA reports for companies
- ▶ Assisted in completing sedimentation sampling
- ▶ Attended site visits throughout Maldives for EIA projects



PROJECTS

Consultancy for Environmental Impact Assessment for Proposed Reef Scaping Project at Eastern Beach Hulhumale (03/2023 - 05/2023)

- ▶ Non-technical Summary in Dhivehi and English compilation
- ▶ Description of the proposed project - Methodology analysis
- ▶ Stakeholder's consultation

Consultancy Services for Design of Regional Laboratory in Hdh.Hanimaadhoo for Epoch Associates (01/2021 - 09/2021)

- ▶ Conduct desk review of the local level regulatory water quality testing requirements set for water and sewerage services and international ISO certified laboratory testing requirements and related equipment's.

Consultancy Services for Design of Regional Laboratory in L.Fonadhoo for Epoch Associates (09/2021 - 12/2021)

- ▶ Conduct desk review of the local level regulatory water quality testing requirements set for water and sewerage services and international ISO certified laboratory testing requirements and related equipment's.

UNDP Small Grants program Plastic Innovation Project for Fuvahmulah City (08/2022 - Present)

- ▶ Improving the Effectiveness of Segregation of Waste in Fuvahmulah City of Maldives, towards a Zero Waste Future by Zero Waste Maldives

16. Bibliography

- LaValle, P. D., Brooks, A., & Lakhan, V. C. (1999). Zebra Mussel Wastes and Concentrations of Heavy Metals on Shipwrecks in Western Lake Erie. *Journal of Great Lakes Research*, 330-338. doi:ISSN 0380-1330
- Ndungu, K., Beylich, B. A., Staalstrøm, A., Øxnevad, S., Berge, J. A., Braaten, H. V., . . . Bergstrøm, R. (2017). Petroleum oil and mercury pollution from shipwrecks in Norwegian coastal waters. *Science of The Total Environment*, 593–594, 624-633. doi:ISSN 0048-9697
- Perilli, G., Di Battista, B., Montana, A., Pavia, J., Cauchi, S., N.M. Zerafa, M., & Pomara, C. (2015). A rare case of a scuba diver's death due to propeller injuries of a desalination pump. *Journal of Forensic and Legal Medicine*, 21-24. doi:ISSN 1752-928X
- Zintzen, V., Massin, C., Norro, A., Vincx, M., DeMaerschalck, V., Steyaert, M., . . . Mallefet, J. (2008). *Belgian shipwreck : hotspots for marine biodiversity (BEWREMABI)*. Belgium: Belgian Science Policy.

17. Team and details

Hassaan Abdul Muhsin;
Lead consultant

Hashma Hameed;
Assisting consultant, Benthic survey-Lead, impact assessment-Assist, Management and mitigation standards -Assist

Ahmed Nihureer;
Hydro-graphic survey - lead, Setting out - Lead, Marine Survey -Assist ,

Hassan Nadheem;
Marine Survey -Assist , Hydro-graphic survey -Assist , Mapping - lead,

Shauzab Adam
Community liaison- Lead