



# **NATIONAL MARITIME SAFETY AUTHORITY**

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## **TERMS OF REFERENCE**

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### **TASK DESCRIPTION**

<b>PROJECT/TASK TITLE:</b>	AtoN Pile Replacements - Rabaul
<b>EXECUTING AGENT:</b>	National Maritime Safety Authority (NMSA)
<b>IMPLEMENTING AGENT:</b>	National Maritime Safety Authority (NMSA)
<b>PROJECT SPONSOR:</b>	General Manager / CEO
<b>PROJECT LOCATION:</b>	Rabaul, East New Britain Province
<b>COMMENCEMENT:</b>	TBA
<b>PROJECT DURATION:</b>	15 Days

## **1.0 INTRODUCTION/BACKGROUND**

The Navigation Safety Services Department (NSSD) of the National Maritime Safety Authority (NMSA) is responsible for the operation and maintenance of marine Aids to Navigation (AtoN) sites and structures in and around PNG waters. The NSSD has funds allocated in its 2023 Work Plan Budget and intends to utilize these funds to install new pile structures for existing sites for this year.

East New Britain Province particularly is one of the maritime Province where both domestic and international trade is experienced all year round. Every year, there are movements of vessels both flag and port state - constantly transiting into those ports and waterways. These make them very significant and critical ports and waterways. Thus, NMSA as the mandated Authority is obligated to ensure safety of those vessels and that the marine environment is protected. This requires the marine Aids to Navigation to be constantly operational, detected, identified and visible throughout the year for the mariners.

Through inspections and assessments by the Navigation Safety Services Department on the existing piles in the ENB, there were offshore AtoN piles which are at critical stage of replacement. The outcome of the assessment indicated pile deterioration due to excessive corrosion. Therefore, the AtoN's of interest has been zoned as;

- 1.1 Zone 1 – Simpson Harbour (Dawapia Rocks, 600mm steel pile with platform)
- 1.2 Zone 2 – Duke of York (Nakukuru Point, 600mm Steel Pile)
- 1.3 Zone 3 – Tavanatangir Harbor (Open Bay #1, Open Bay #2, Open Bay #3, Open Bay 4, 180mm Steel Piles)

The AtoNs located at the specified zones are very important for safe guiding mariners from the existing marked hazards when entering and exiting or transiting a fairway or berthing a wharf. The AtoNs assist in the protection of the marine environment, thus upholding the safety of maritime. The structural assessment indicated that these structures have now reached the end of their service lives and are recommended for replacement.

## **2.0 OBJECTIVE**

The objective of this ToR is to secure a suitably qualified contractor who will undertake marine pile replacement for the six (6) deteriorating AtoN structures at their specified locations.

## **3.0 ESSENTIAL REQUIREMENTS OF THE PILES & ACCESSORIES**

The National Maritime Safety Authority requires the AtoN Installation Contractor (AIC) to procure the piles according to its requirement ensuring they meet international standards set by IALA. The design, construction, and general requirements shall be on best practice.

### **3.1 Zone 1: Simpson Harbor – Dawapia Rocks AtoN**

NMSA currently has in storage a 14m pile (762mm diameter) required steel pile and their structural attachments and accessories held at AES base in Napanapa, Port Moresby. The pile is epoxy fusion bonded pile of 762 mm diameter, 13.3mm thickness, 450 MPa grade steel. The structural attachment includes the platform, pile cap and ladder among others. These materials will be made available to the contractor.

The AtoN Installation Contractor (AIC) shall ensure the following:

- 3.1.1 Collect the 762mm diameter pile and associated accessories from the NMSA storage location and transport to installation site ensuring items remain in good condition prior to installation.

- 3.1.2 Pre-coated corrosion protection shall be maintained intact and in good condition during the transportation of the piles and prior to installation.
- 3.1.3 The AIC shall procure the Denso anti-corrosion sealing tape and its adhesive cover tape including restraining bands

### **3.2 Zone 2: Duke of York – Nakururu Point AtoN**

The AIC to procure appropriate piles as required. For Zone 2, a 355mm diameter mono-pile and its accessories including a steel ladder are required to be provided by the AIC.

The AIC shall ensure the following;

- 3.2.1 Procure a 355mm stainless steel pile including its fabricated components to the installation site
- 3.2.2 Mobilize the pile from the AIC's base to the installation site ensuring items remain in good condition prior to installation.
- 3.2.3 The AIC shall procure the Denso anti-corrosion sealing tape and its adhesive cover tape including restraining bands

### **3.3 Zone 3: Tavanatangir Harbor – Open Bay #1, Open Bay #2, Open Bay #3, Open Bay #4**

- 3.3.1 The AIC to procure four (4) stainless steel piles including its fabricated components
- 3.3.2 Mobilize the 355mm mono-piles from the AIC's base to the installation site ensuring items remain in good condition prior to installation.
- 3.3.3 The AIC shall procure the Denso anti-corrosion sealing tape and its adhesive cover tape including restraining bands

**Note:** *The preferred Contractor is to have the appropriate vessel, machinery and equipment as required for the piling works.*

## **4.0 SITE LOCATION & CONDITION**

The following are the designated piling sites:

- 4.1 Simpson Harbor (Dawapia Rocks)
  - Site coordinates (WGS-84): LAT:04° 14.165' S LONG: 152° 10.132' E
  - Water depth is 5m.
  - Pile size 762mm diameter pile with platform
  - IALA: Port
- 4.2 Nakukuru Point
  - Site coordinates (WGS-84): 04° 09.831' S 152° 24.634' E
  - Water depth at site is 4m.
  - Pile size required here is the 355mm diameter, no platform.
- 4.3 Open Bay #1
  - Site coordinates (WGS-84): 04° 49.060' S 151° 40.402' E
  - Water depth at site is up to 5m.
  - Pile size required here is the 355mm pile without platform
  - IALA: Starboard

- 4.4 Open Bay #2
- Design site coordinates (WGS-84): 04° 48.677' S 151° 40.491' E
  - Water depth at site is 4m
  - Pile size to be installed: 355mm diameter without platform
  - IALA: Port
- 4.5 Open Bay #3
- Design site coordinates (WGS-84): 04° 48.576' S 151° 40.875' E
  - Water depth at site is 5m
  - Pile size to be installed: 355mm diameter without platform
  - IALA: Starboard
- 4.6 Open Bay #4
- Design site coordinates (WGS-84): 04° 48.142' S 151° 41.325' E
  - Water depth at the site is 8m
  - Pile size to be installed: 355mm diameter without a platform
  - IALA: Starboard

## 5.0 SCOPE OF WORKS

- 5.1 Transport the respective mono-piles including all required structural attachments and accessories from the storage to specified sites.
- 5.2 The old pile structure shall be dismantled and the pile removed and stowed away neatly for disposal in an orderly and environmentally friendly manner.
- 5.3 Piles shall be driven to an adequate depth below the seabed to ensure pile stability in the given environment.
- 5.4 Top of the piles shall be 7m above the mean high water mark (high tide).
- 5.5 A sacrificial zinc anode block shall be fixed to the piles well below the MLLW mark (lowest tide).
- 5.6 The top of the 762mm diameter pile shall be prepared for attachment of the pile cap, fixed atop the cap of the pile provided as a base for the platform installation.
- 5.7 The 355mm diameter mono-pile structures with a ladder attached shall only support a lantern and top mark. A platform is not required.
- 5.8 For the 762mm diameter pile prepare the pile surface and apply denso™ tape corrosion prevention and sealing system wrap on the pile directly beneath the platform. Complete with Sea Shield wrap.
- 5.9 For the 355mm pile, the Denso anti-corrosion and sealing system shall be applied the full length of the pile from pile top to sea level, MLLW mark
- 5.10 Install the pile structure attachments (platform, ladder & support).
- 5.11 Install the lantern and the top marks (day marks).
- 5.12 Ensure features and properties of the completed structure shall provide a successful and long-lasting use in the given environment.

### Notes:

1. NMSA will provide all materials for the larger pile structure for Dawapia Rocks including; the 762mm piles, associate structure (top platform & ladder), the aids to navigation lantern and its top mark.
2. The Contractor is to procure the five (5) 355mm diameter piles including associate components (ladder) and top marks for the other sites. NMSA will supply the marine lantern.

## **6.0 REQUIREMENTS FOR THE BIDDER**

### **6.1 GENERAL PRINCIPLES**

By accepting the Terms of Reference (ToR), the Bidder agrees and confirms that they shall meet the following general conditions:

- The Bidder presents a brief company profile in its bid.
- The Bidder gives an assurance of proof of evidence of capability and experience in supplying to a high standard and reliability of services and products required.
- Documentations and specifications of the project shall be compiled and shall be supplied to NMSA after installation completion and shall be properly collated and labeled.

### **6.2 QUALIFICATIONS AND EXPERIENCES**

The successful Bidder is expected to be technically qualified and experienced and having all the required working assets for commencement through to completion of the project.

The successful Bidder is expected to be familiar with the specifications of the maritime industry standards and guidelines aligned with the works required in this ToR.

### **6.3 EXPECTED RESPONSE PROPOSALS**

6.3.1 EOI are required to include and detail the following requirements:

- Description of proposed works to accomplish the scope of works and requirements.
- Proposed works implementation schedule
- Detailed costing and proposed schedule of payment

6.3.2 Provide copies of the following documents to comply to business requirements:

- IPA Certificate
- IRC TIN/CoC
- Worker Insurance

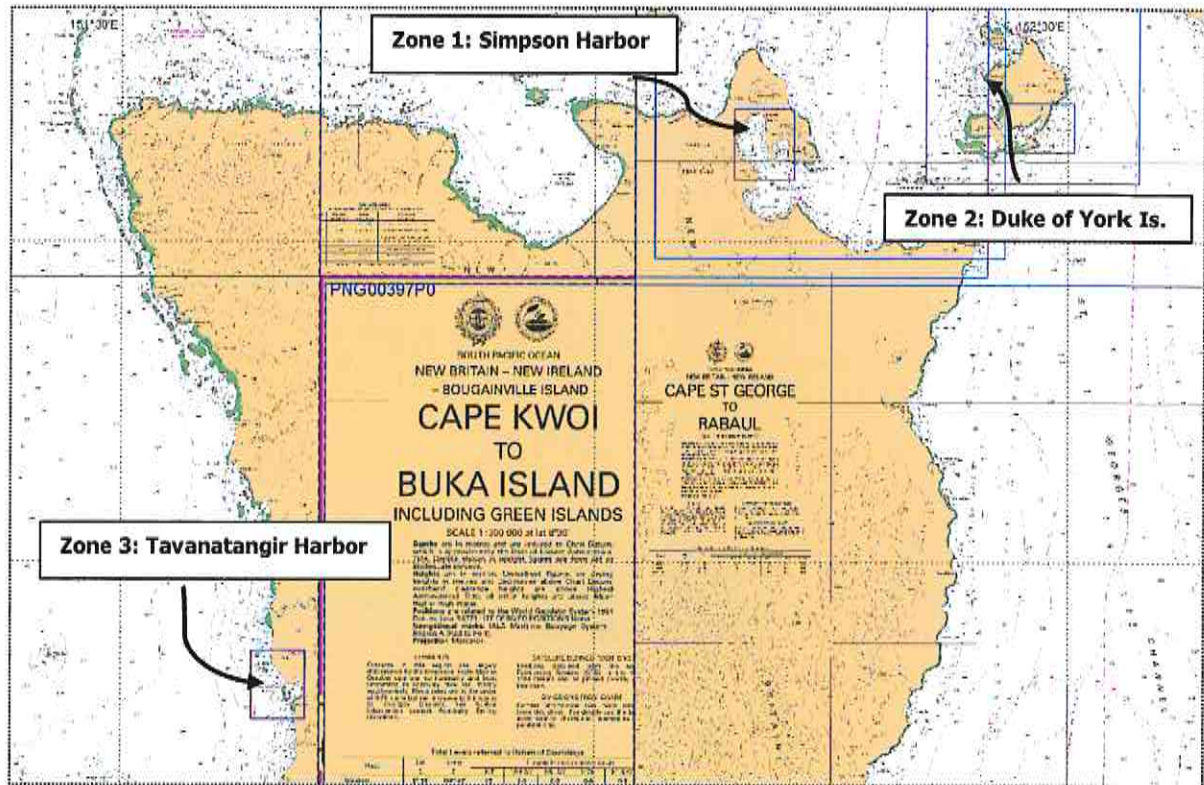
## **7.0 CONTRACT ARRANGEMENT**

The preferred bidder will enter into contract agreement with National Maritime Safety Authority. The successful contractor will commence work after the signing of the contract agreement.



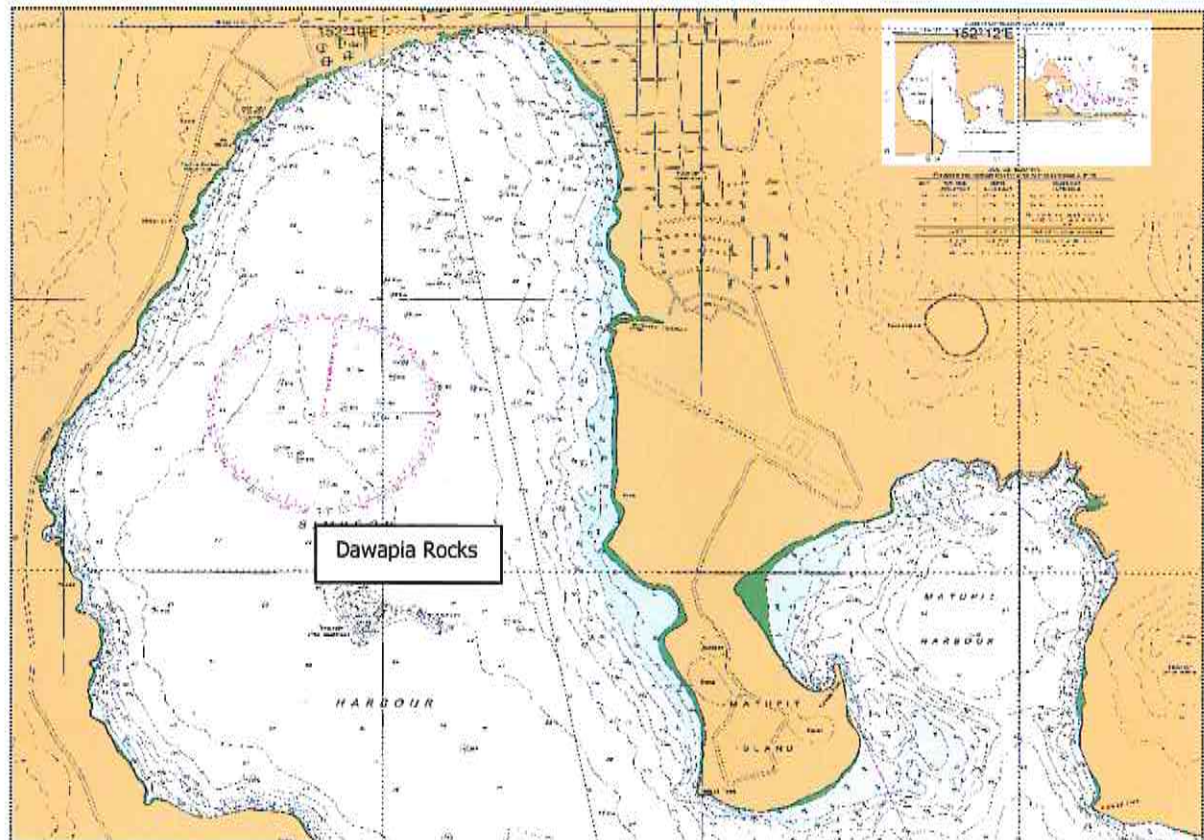
## Attachments...

### #1. Location of the ENB Aids to Navigation



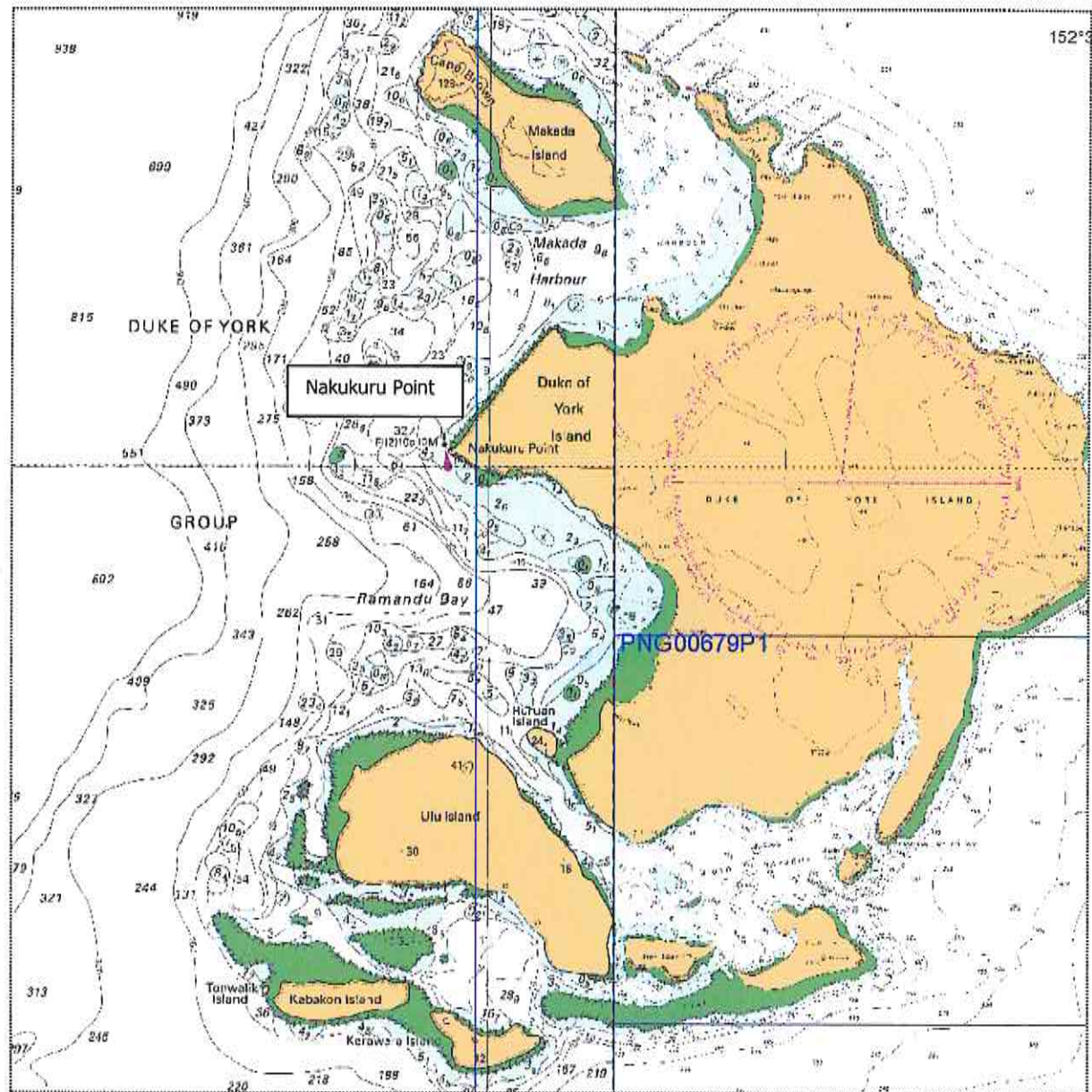
### #2. General location of AtoNs in the three (3) Zones

#### Zone 1: Simpson Harbor - Dawapia Rocks

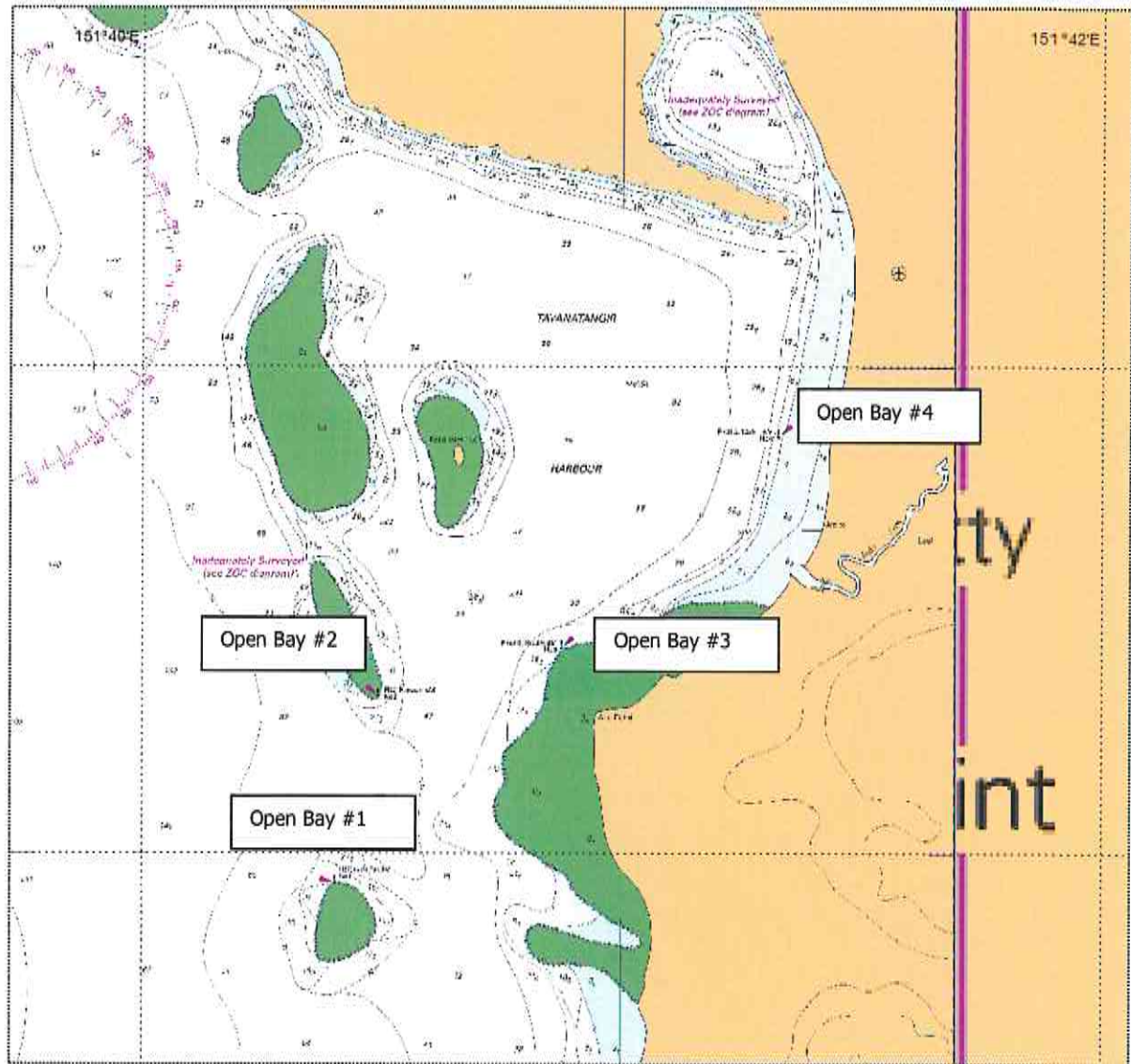




## Zone 2: Duke of York Island – Nakukuru Point



Zone 3: Tavanatangir Harbor – Open Bay #1, Open Bay #2, Open #3, Open Bay #4





### #3. Marine Charts showing designated positions of the AtoN sites.

Chart No: PNG00680P0 – Dawapia Rocks

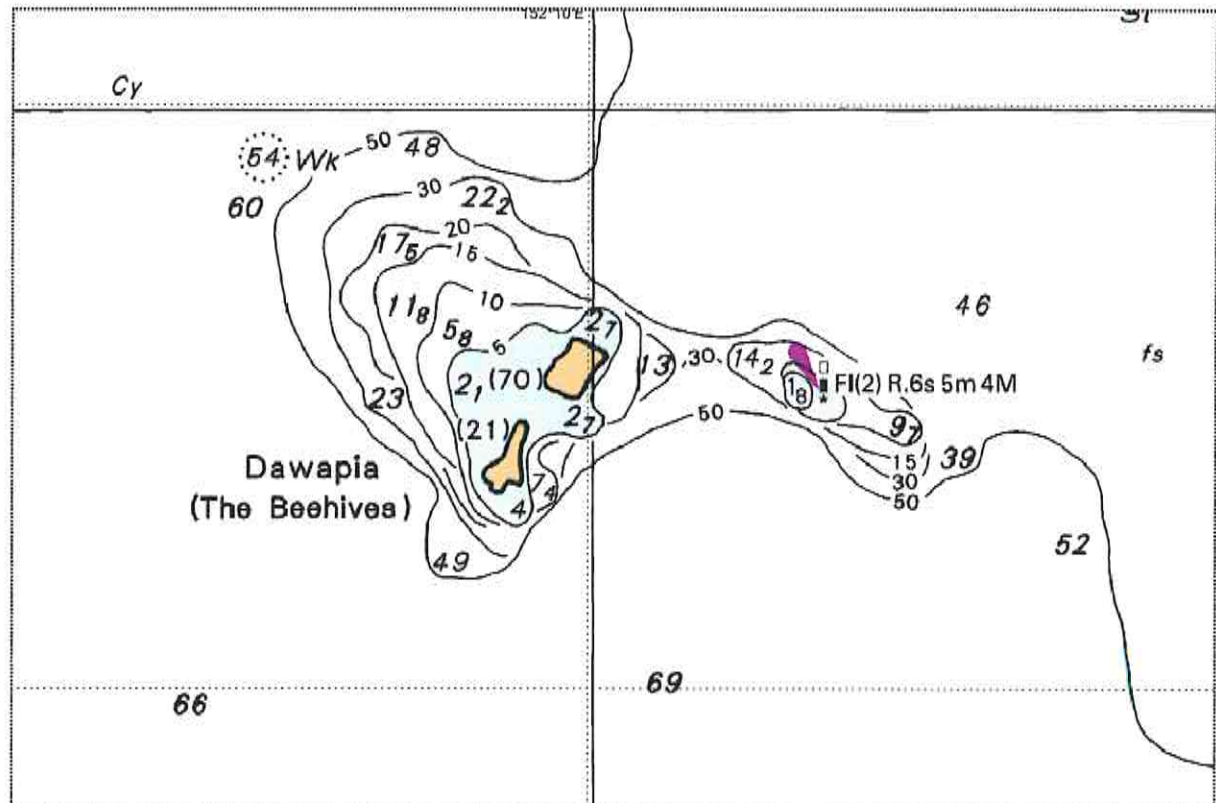


Chart No: PNG00679P0 – Nakukuru Point

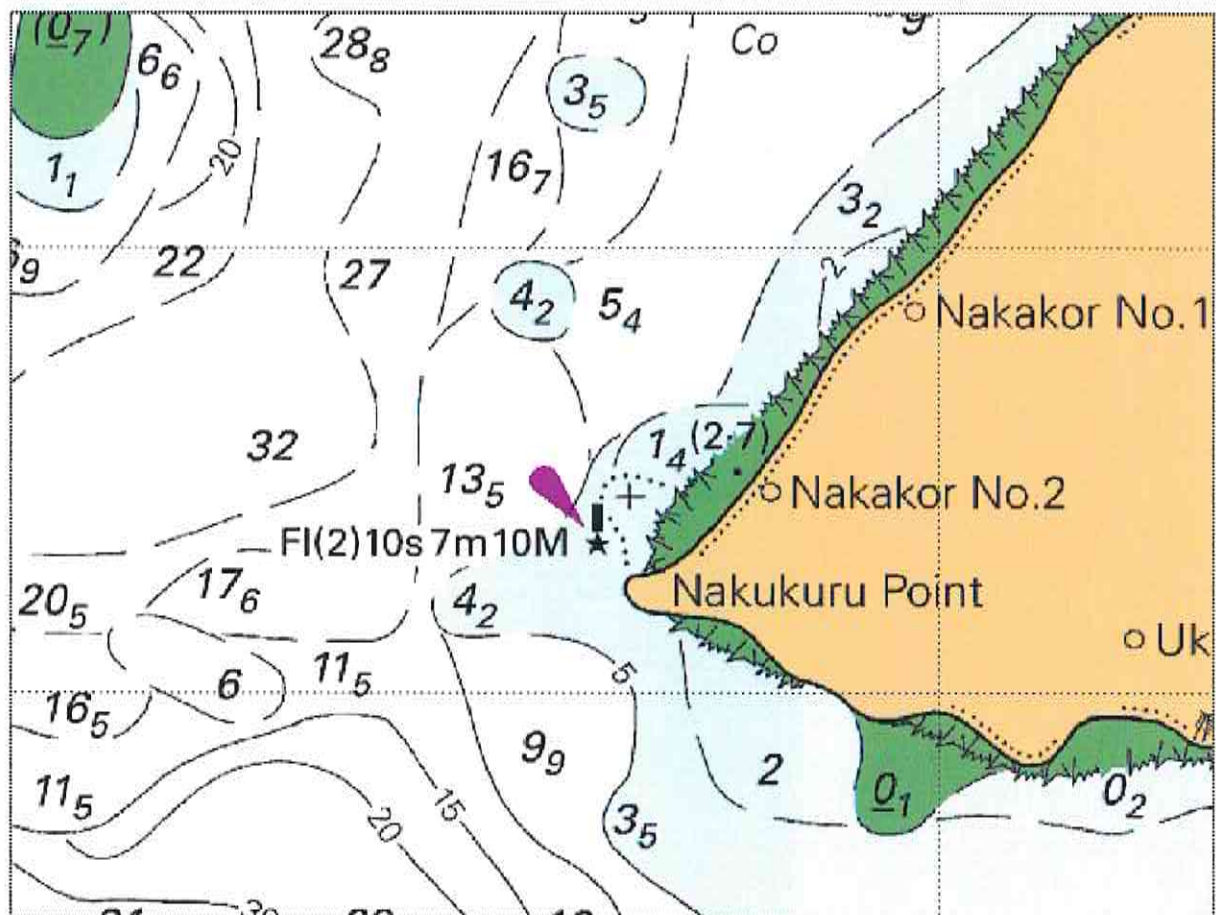
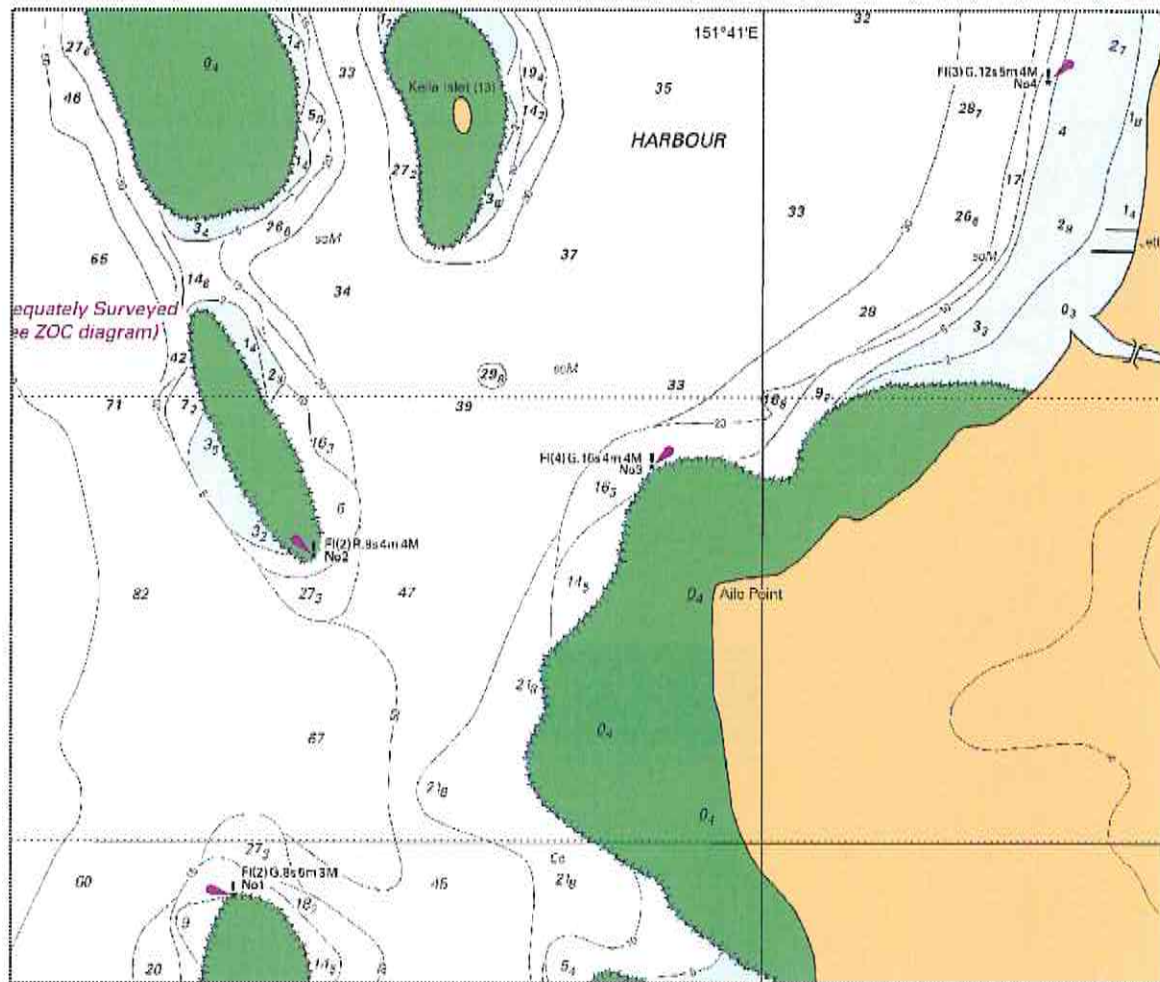
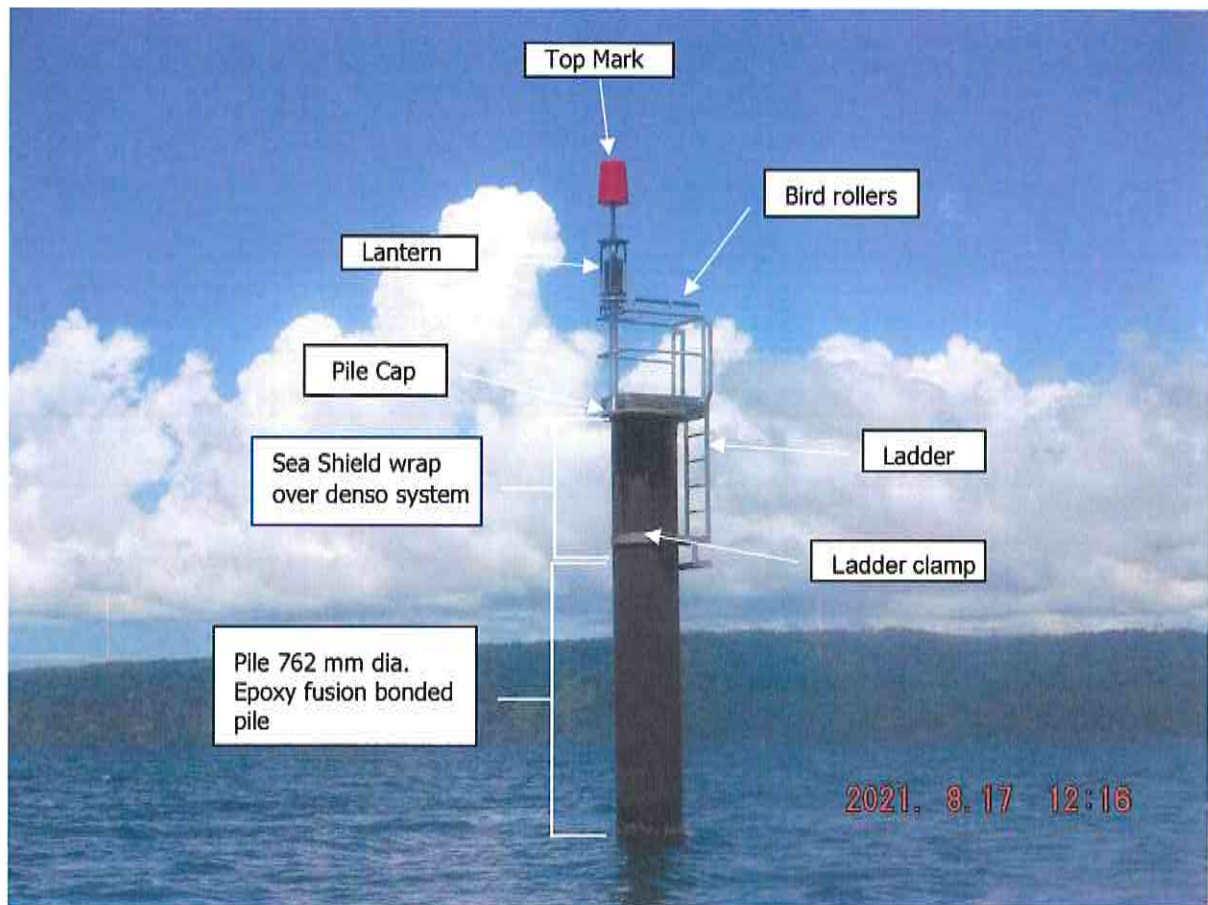


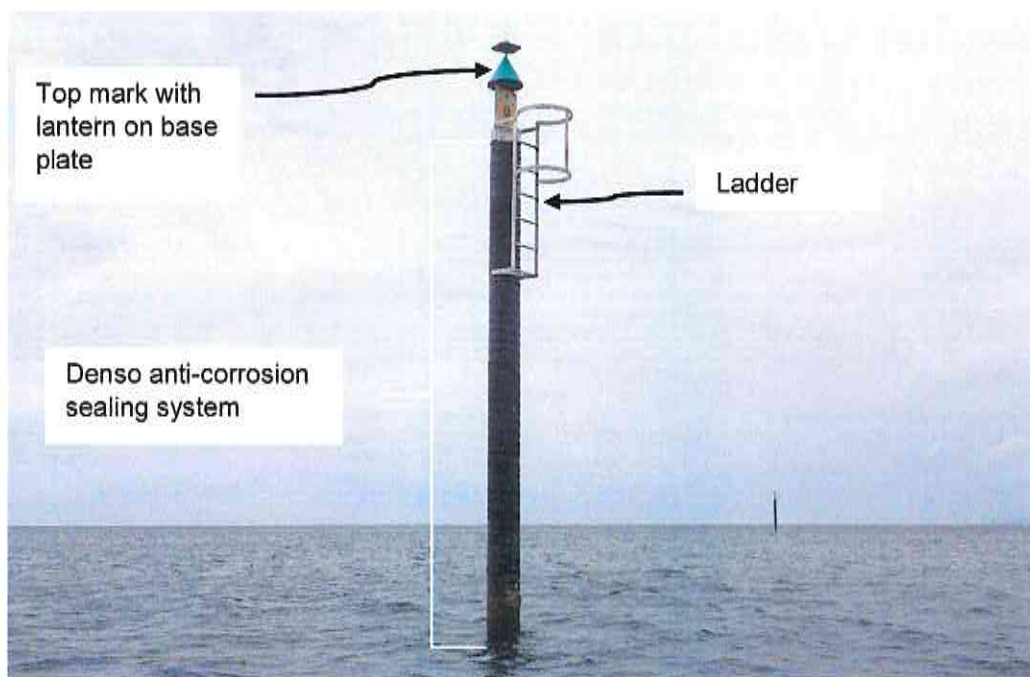
Chart No: PNG00672P0 – Open Bay AtoN Piles



#4. Structure Details for the 762mm diameter pile structure.



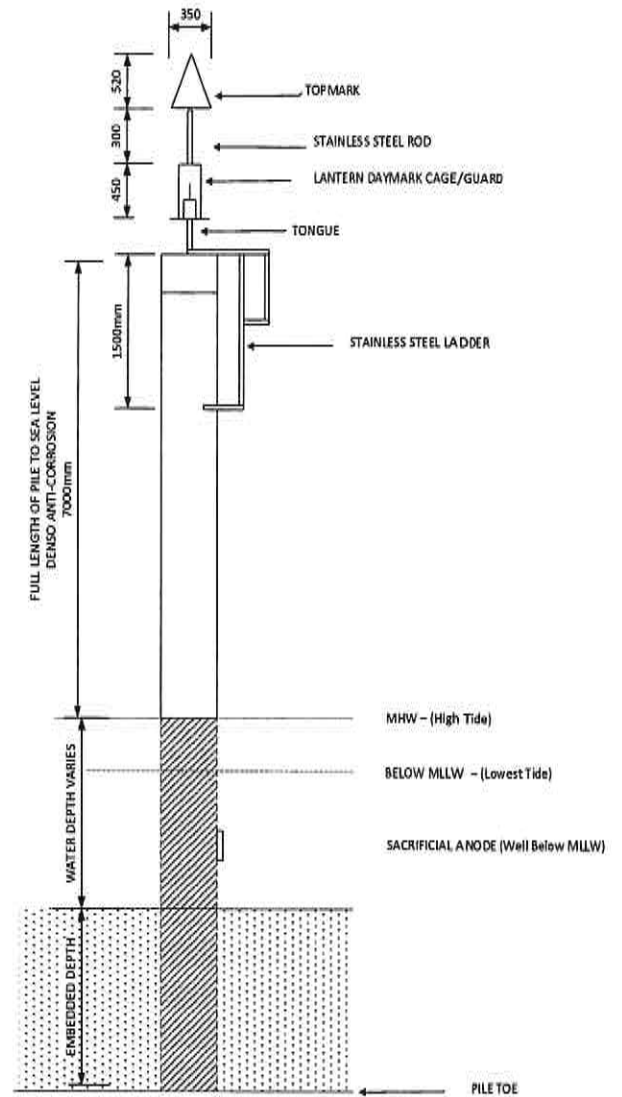
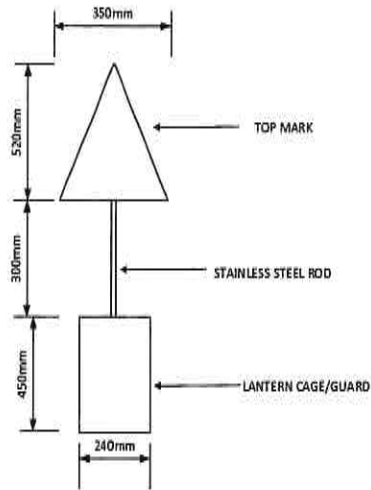
#5. Structure details of the 355mm diameter pile structure.



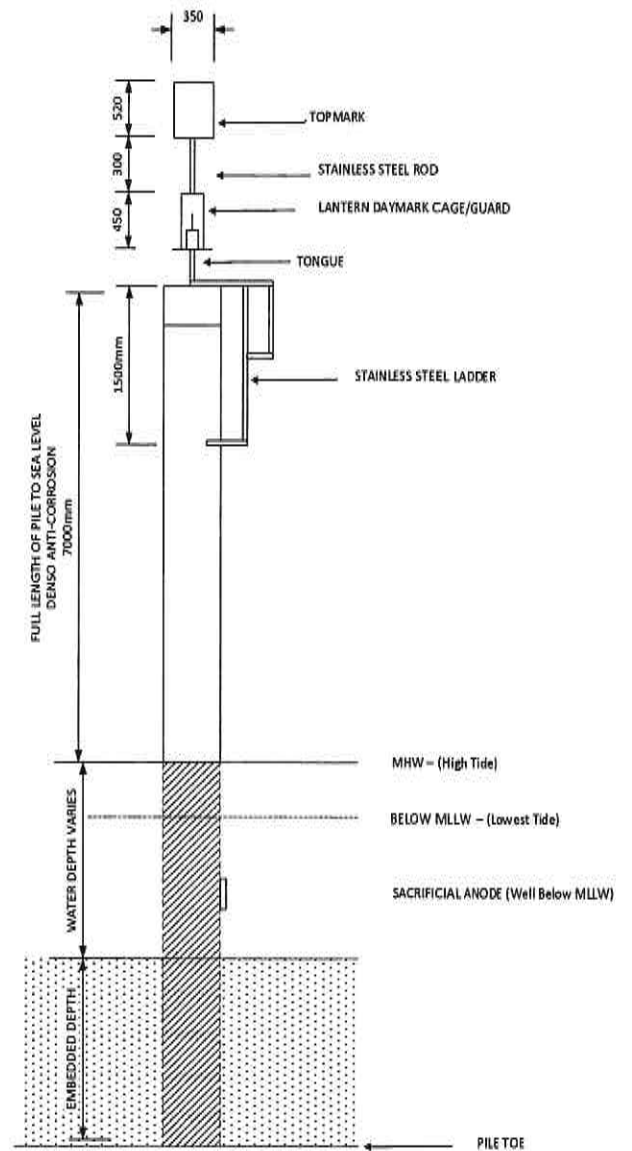
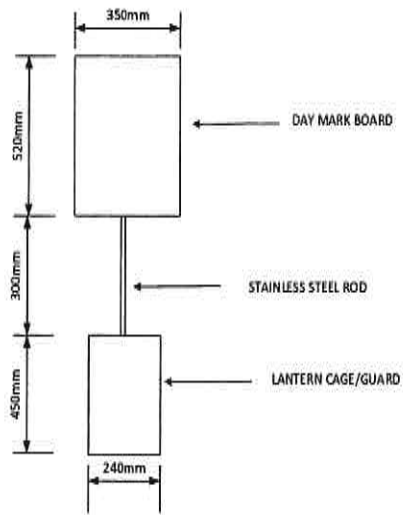


# SKETCH DRAWING WITH DIMENSIONS

## STARBOARD



## PORT



## 8.0 APPROVAL TO PROCEED

We approve the TOR as described above to proceed as necessary.

Manager Navigation Safety Services	Executive Manager Maritime Operations
Approved <input type="checkbox"/>	Approved <input type="checkbox"/>
Not Approved <input type="checkbox"/>	Not Approved <input type="checkbox"/>
Signature	Signature
Date:        /        / 2023	Date:        /        / 2023