

## **JOB PROGRESS REPORT DEVELOPMENT PROJECT SEGMENT**

**STATE:** Territory of Guam

**PROJECT NO:** F-2-D  
**SEGMENT:** 11

**PROJECT TITLE:** Fabrication and Deployment of Shallow Water Moorings (2331)

**PERIOD COVERED:** October 1, 1997 to September 30, 1998

### **OBJECTIVE**

To develop a shallow water mooring program at popular fishing and recreational diving locations to minimize anchor damage to reef habitats.

### **SUMMARY**

Figure 1 provides an updated list of the shallow water mooring (SWM) sites and maps their approximate locations; Figures 2-10 provide a more detailed illustration of each site. Some sites may be deleted from the list at a later time if they are found to be in areas no longer suitable for fishing or diving, or are determined to be in conflict with local, federal, or military regulations or program objectives.

Figure 11 illustrates the design of the SWM systems to be used and their components. The smaller, more economical Type I buoy design will be used for sites outside of Apra Harbor because of its ability to withstand rough seas and typhoon conditions. The Type II buoy design on the other hand, places much more strain on the mooring system in rough conditions and thus may be reserved for use in Apra Harbor only. The type of anchoring system used for either type of buoy will be determined by the type of substrate at the selected anchor site: a cemented eye bolt for uneven rocky substrate, or a "Manta Ray" anchor for flat sandy sites.

On March 13, 1997, DAWR submitted an application for an Army Corps of Engineers General Permit for the SWM project. In late-April DAWR was informed by ACOE that the U.S. Coast Guard objected to the location of a majority of the sites in the original proposal because they were situated in areas frequently transited by small vessels. As a result, the Coast Guard would require DAWR to equip each SWM buoy with a navigation light if the project were to proceed as proposed. In response to this objection, DAWR amended the original proposal to relocate the proposed anchor sites in question closer to shore and at depths less than ten fathoms (60 feet). The relocation of the sites into shallower water was eventually found by the Coast Guard to pose much less of a threat to navigation and thus obviated the need to install navigation lights on the buoys. Having addressed this concern, DAWR received ACOE authorization on October 15, 1997, to proceed with the project with the provisions that 1) the Guam Bureau of Planning issue a CZM Consistency Statement for the project (which had already been issued on April 7, 1997), and 2) the Navy authorize the installation of SWMs on Navy submerged property.

Although, the relocation of the buoys into shallower waters served to address initial Coast Guard objections, the modification necessitated additional authorization by the Guam Seashore Protection Commission (GSPC) since the sites were now in waters less than 60

feet deep. The application and review process was completed in FY98 and DAWR received GSPC Seashore Clearance on March 27, 1998.

As required by the ACOE permit, DAWR submitted a request on July 7, 1997 to the Commander U.S. Naval Forces, Marianas, for authorization to install SWMs at 19 sites located on submerged Navy property. Approval for 14 of the 19 sites was finally granted on March 30, 1998. Sites 3, 16, 18, 19 and A5 were not authorized due to Navy safety and operational considerations.

After receiving approval for the majority of the requested sites on Navy submerged property, the permitting process was essentially completed by April 1998. Thus, installation of the SWMs could begin once the necessary installation equipment and materials were purchased and received, and a contractor selected to conduct the initial installation procedures.

Original plans also included training of DAWR staff on the use of the equipment and proper installation procedures so that future installations could be handled in-house. However, the concern was raised that only professional commercial divers could conduct this type of work according to OSHA regulations. Because of this, a Request for Proposals (RFP) was issued on July 1, 1998 for commercial dive services and a vessel to serve as a work platform for the SWM installation procedures. The need to go through the RFP process resulted in a further delay in getting the project underway before the end of September 1998. The contracts for commercial dive services and the work vessel are expected to be finalized during FY99. The SWM installations will occur in FY99.

Purchase and receipt of ropes, chains and miscellaneous hardware to assemble the SWM systems was completed in FY97. Purchase of the hydraulic installation equipment and other required materials was made in May 1998. Receipt of the equipment and materials was completed by August 1998.

## **RECOMMENDATIONS**

The project to develop and enhance the Guam SWM program under F-2-D-11 should be continued with the following recommendation for FY99:

1. Complete contract negotiations for commercial dive services and work-boat by the end of November, 1998.
2. Begin installation of SWMs by mid to late-December; complete installations within 90 days of the start date if weather and sea conditions permit.

## **PROGRAM COST**

The FY98 estimated cost for the SWM project is \$42,306.

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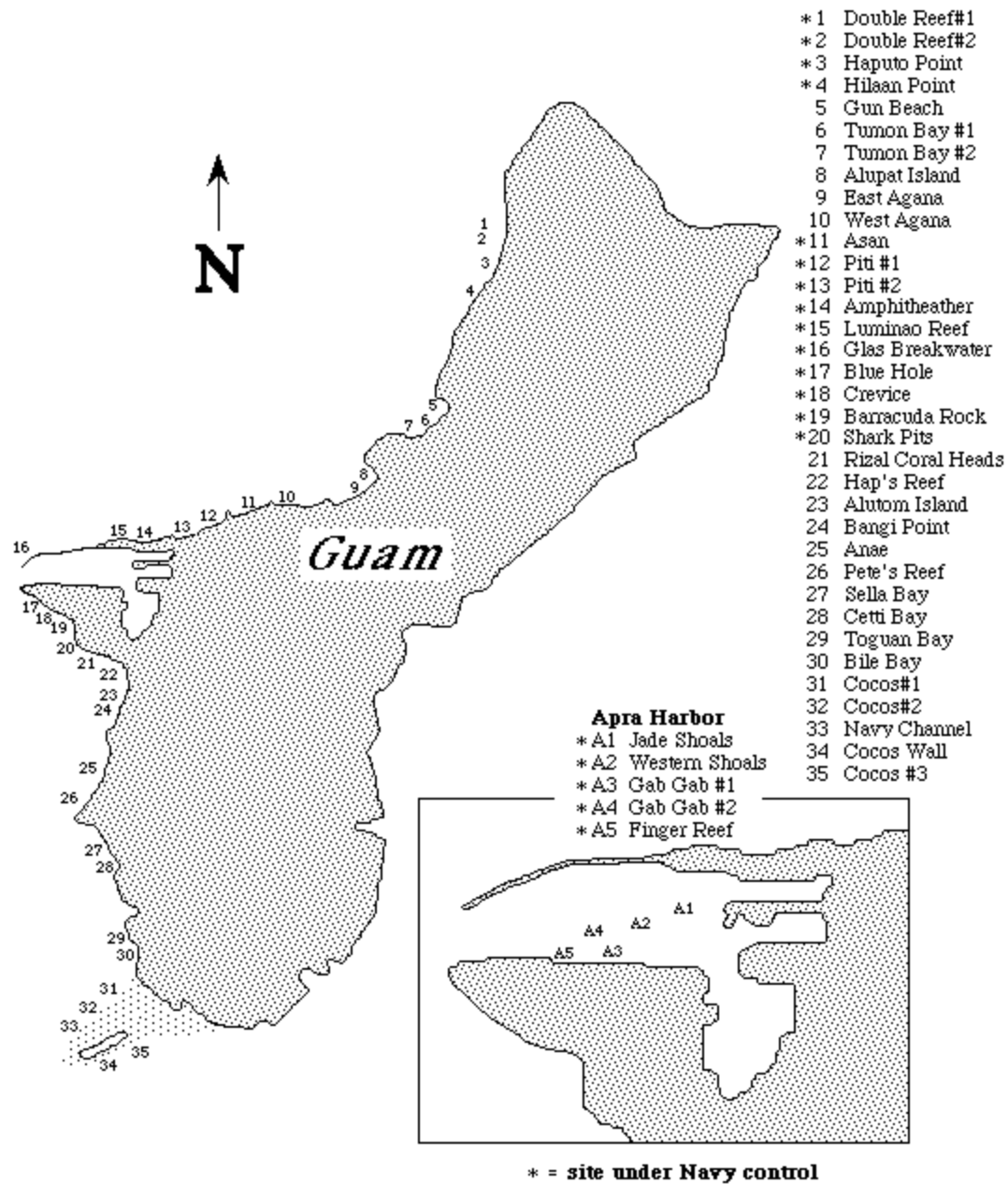


Figure 1. Shallow Water Mooring Sites

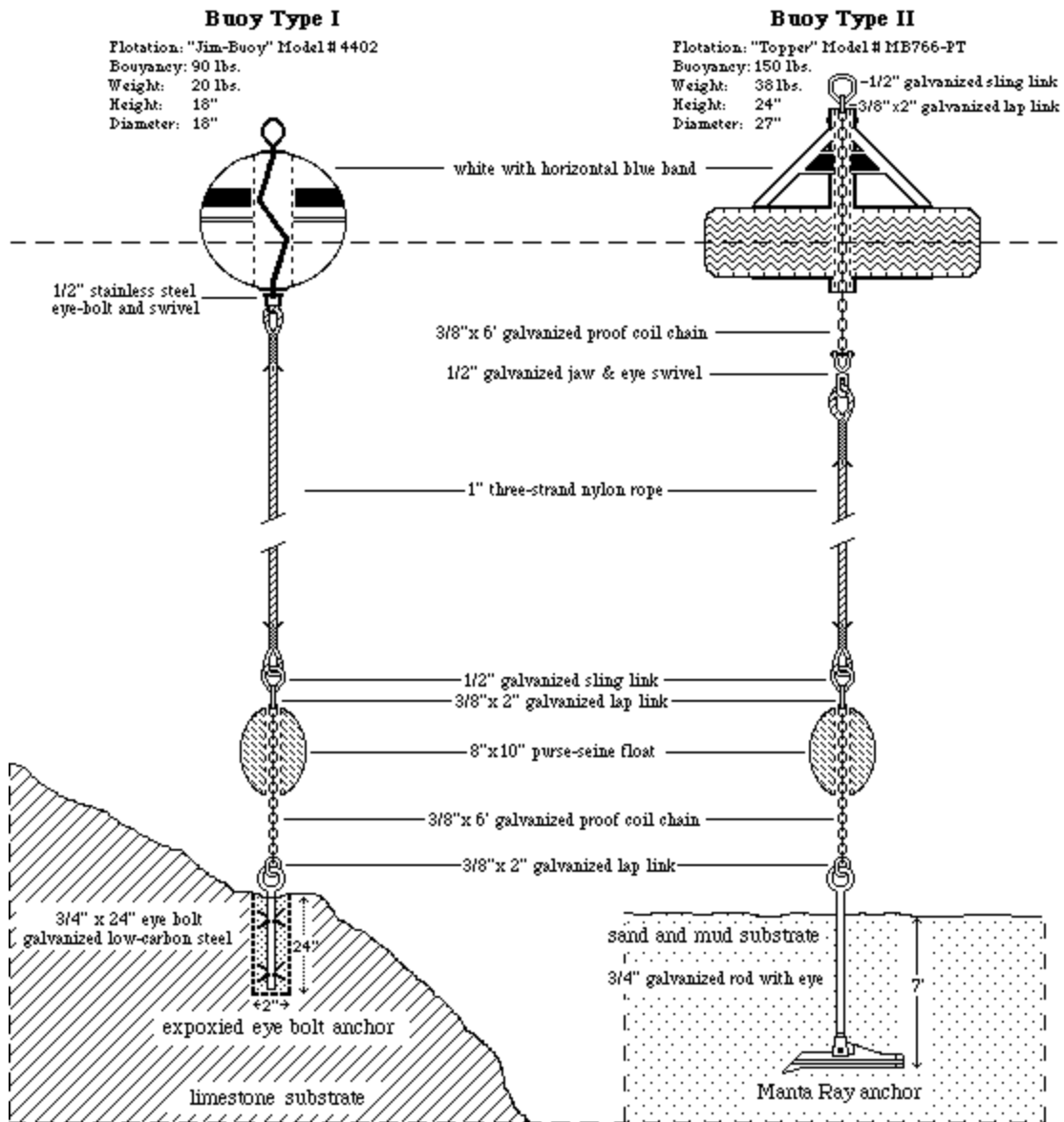


Figure 11. Shallow Water Mooring Designs