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ABSTRACT:

Completed in 1977, the Reef Runway embankment at Honolulu International Airport was created by placing and compacting millions of cubic meters of dredged coral fill material over an existing coral reef. The wave protection structure on the deeper portion of the ocean side of the embankment included the placement of more than 18,000 6-ton and 4-ton unreinforced concrete dolos armor units. The wave protection structure has been in place for more than 30 years and, although to date it has fulfilled its essential performance objectives, has experienced ongoing maintenance, repair, and replacement challenges associated with the dolos armor units. This paper builds upon surveys, maintenance, and repairs conducted by and for the Hawaii Airport Authority.