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**Ocean and Resources Engineering**  
**M.S. PLAN B**  
**PRESENTATION & DEFENSE**  
**MONDAY, DECEMBER 11, 2017**  
**HOLMES HALL 400**  
**Noon – 1:30 pm (Seating limited)**

**SITE-SPECIFIC DESIGN FOR MODULAR  
EXPEDITIONARY SMALL BOAT PIER, CARLSON  
HARBOR, KWAJALEIN ATOLL, REPUBLIC OF THE  
MARSHALL ISLANDS**

**Abstract**

**To expand the U.S. Navy’s capability to conduct small-scale amphibious operations worldwide, the Navy is creating engineering solutions for small-scale piers to be built by Naval construction forces and utilized in an expeditionary location. This report provides a site-specific design for a prototype of a core ballasted closed expeditionary finger pier on Carlson Island located in the Kwajalein Atoll of the Marshall Islands utilizing International Standard Organization (ISO) container as the primary structural component. Based on a general characterization of Carlson Island’s nearshore geology the design quantifies the oceanographic parameters for Kwajalein Atoll, potential failure modes based on hydraulic loading caused by approaching wave action on the pier, and berthing requirements of the design vessel. A constructability and economic analysis is also created based on the restriction of construction material and equipment in an expeditionary setting while leveraging the skillsets and capabilities of Naval construction units that specialize in performing underwater construction tasks in an expeditionary environment.**