



PROJECT TITLE: P-283, Replace Piers 44-51 and Quaywall
CONTRACT NO.: N40085-06-C-6000
LOCATION: NAB Little Creek, Virginia Beach, Virginia
AWARD DATE: February 2006 **COMPLETION DATE:** December 2008
FINAL VALUE: \$0-1 Mil \$1-5 Mil \$5-10 Mil \$10-20 Mil
 \$20-30 Mil \$30-40 Mil \$40-50 Mil \$50+ Mil
TYPE OF CONTRACT: Fixed Price Cost Reimbursable

PROJECT DESCRIPTION:

The P-283, Replace Piers 44-51 and Quaywall project scope and objectives, as presented in Request for Proposal No. N40085-04-R-4035, required a Design/Build team with extensive waterfront and load handling experience to design and construct a facility that met the needs of the Navy. For this project, we selected TranSystems Corporation as our Design/Build team partner. As a team, we were able to bring the necessary capabilities required to ensure the U. S. Navy achieved their desired outcome at the completion of this project.

Removal and Replacement of Piers and Quaywall

Our scope of work for this contract included the removal and replacement of the total perimeter quaywall (approx. 3,000 linear feet) and eight (8) piers (approx. 10' W by 120' L) that can support the loading requirements for cranes and forklifts.

The existing quaywall and pier structures were demolished to make way for the new facility and were sequenced to minimize disruption of ACB2 operations. It was the Design/Build team's intent to reuse on site material to the maximum extent possible to reduce the waste stream. The replacement systems for the pier and quaywall at Little Creek were based on a combination of precast and cast in place systems. The main Quay was designed to assure two-way behavior of the main deck system. This was the best way to dissipate the extremely large pad loads from the ATC 3200 crane. These loads, of over 200 kips a pad, required a thick slab to perform well over the fifty year life span of the structure.

The new Quay was constructed to be a relieving platform consisting of a 2'-2" thick cast-in-place slab supported by precast/prestressed concrete piles. The new piers have a cast-in-place cap supported by precast/prestressed concrete piles. The deck system for the Piers is a twelve-inch precast slab and a six-inch topping slab complete with curbs and pads for the marine hardware.

Lateral loads on the Quay are resisted by batter piles. The stability of the piers was accomplished by keying the pier into the quay for transverse loads and by installing a system of batter piles. This results in a pier system that can sustain the heavy weather mooring forces applied by the new INLS. Also, substantial dredging of the cove area was performed to facilitate the new INLS vessels.



Utility Services

New telecommunications services, fire protection services, and electrical services were added to the site and the piers. Electrical service was connected to the existing 13.2Kv, underground medium voltage circuit 480Y/277 volt and 208Y/120 volt 3-Phase, 4-Wire, 60Hz base electrical distribution system. Two transformers were provided; one for the power circuits and one for the site lighting and navigational lighting. Secondary power was distributed to each pier's four utility bollards. Utility power convenience receptacles and navigational lights were distributed in fiberglass conduit. All components are NEMA 4X. Utility bollards are protected by arched pipe guards to avoid damage from mooring lines.



Aerial view of the project work area