



**Project:**

Bulkhead Replacement  
United States Coast Guard Station  
Lewes, DE

**Prime Contractor:**

DAL Construction, LLC  
Newport News, VA

**Subcontractors:**

Dissen & Juhn Company,  
Stevensville, MD  
Cahill Electric, Middletown, DE  
Rommel Cranston, Linthicum, MD  
Creative Concepts Group, Inc.,  
Baltimore, MD



**PROJECT SCOPE:**

The job entailed installing a new 650' long steel sheet pile bulkhead around the perimeter of the United States Coast Guard Station in Lewes, DE. The project also included selective repairs made to an existing gabion wall (i.e. wire mesh cages filled with stone) outside of the operational area of the station. Additional selective repairs were made to the existing timber pier, including new deck boards, hardware replacement, and utility upgrades.

**CHALLENGES:**

- The proximity of the new bulkhead to the station building and requirements to maintain access to the building and dock facilities at all times precluded the use of a conventional deadman anchoring system which would have been more disruptive to the on-going activities.
- The site contained a large quantity of fill material with poor structural characteristics.

**SOLUTIONS:**

Instead of utilizing a deadman anchoring system, the design featured a heavy-duty steel wale and 50' and 90' long x 1 ¼" diameter grouted tieback anchors. The grouted tiebacks enabled the crew to drive down into firmer soils and provided for an overall stronger bulkhead design.

Because the grouted tiebacks were driven through both the new and old bulkheads and underneath the parking area, access to both the station building and dock facilities were maintained. Maintaining access to these two structures for quick emergency response was a key requirement of the project. A conventional anchoring system using deadmen and tie rods would have required extensive excavation of the parking lot making access to the building and dock facilities difficult.

Because of a reduced loading requirement, approximately 190 LF of the new bulkhead was driven in cantilever (i.e. not tied back) outside of the operational area of the station.

