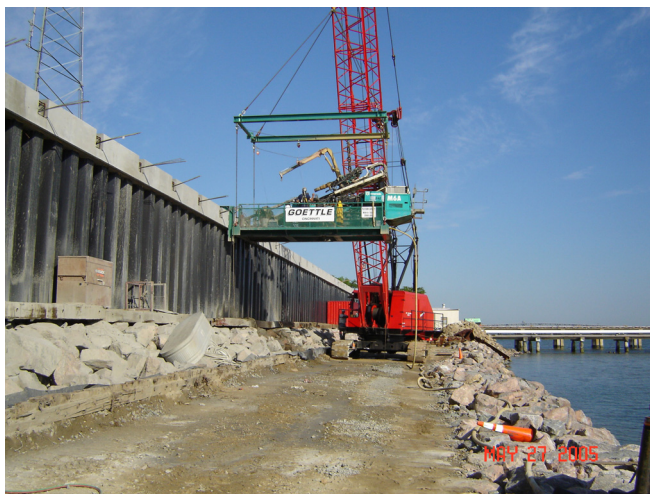




PROJECT TITLE: Shoreline Repairs
CONTRACT NO.: HSCG47-04-C-3EFK14
LOCATION: U. S. Coast Guard Training Center, Yorktown, Virginia
AWARD DATE: October 2004 **COMPLETION DATE:** January 2006
FINAL VALUE: ☐ \$0-1 Mil ☒ \$1-5 Mil ☐ \$5-10 Mil ☐ \$10-20 Mil
☐ \$20-30 Mil ☐ \$30-40 Mil ☐ \$40-50 Mil ☐ \$50+ Mil
TYPE OF CONTRACT: ☒ Fixed Price ☐ Cost Reimbursable

PROJECT DESCRIPTION:

The project consisted of installing an anchored steel sheet pile bulkhead starting in the vicinity of the Navy Pier and extending approximately 700 feet to the southeast. The anchoring system consisted of soil cement anchors installed at approximately ten-feet on center with a reinforced concrete cap serving as the wale. The soil cement anchors were approximately 75 feet long and were installed with an angle of inclination 70 degrees from vertical in order to clear the Base Commander's house and residential quarters. The anchors were designed to an allowable load of 120 kips per anchor. The bulkhead was placed approximately nineteen-feet above the top of the new riprap toe protection.



Soil cement anchor installation

To protect the toe of the bulkhead from scour during storm events, we installed approximately 3,900 tons of new VDOT Class III stone toe protection, which rested on a 6 inch bedding layer of No. 357 stone (approx. 665 tons) and geotextile fabric. The remaining 2,100 feet of shoreline, not protected by the bulkhead, was reworked and reinforced by placing a layer of stone protection. We installed approximately 17,100 tons of new VDOT Class III stone toe protection, which rested on a six-inch bedding layer of No. 357 stone (approx. 2,335 tons) and geotextile fabric.

In the final stage of the project, we renovated an area of beach, which consisted of placing and grading sand on the shoreline behind existing breakwater mounds, to build it up to pre-storm conditions. The sand was trucked in and mechanically placed and graded. To complete this area, we installed vegetation sprigging on the new sand slopes between the York River and Wormley Creek in order to provide erosion control measures for the slope.



The existing storm drainage outfalls, which consisted of reinforced concrete pipe, corrugated metal pipe, cast iron pipe, and PVC pipe, were extended through the new stone shore protection using ductile iron pipe. Work also included removal of existing concrete blocks, miscellaneous debris, removal of approximately 1050 feet of chain link fence, and installation of approximately 1050 feet of decorative handrail.

The project was completed on time and within budget.



Construction of the concrete cap for the steel sheet pile bulkhead



Steel sheet pile bulkhead with concrete cap, soil cement anchors, and customized handrail