





Cost Estimate: \$8,200,000

**What was unique about this project?**

This county project will utilize corrosion-resistant prestressed precast 24" concrete square bearing piles and sheet piles, reinforced with either carbon fiber-reinforced polymer (CFRP) strands and spirals or Duplex 2205 High-Strength Stainless-Steel (HSSS) strands and spirals and GFRP stirrups for and bulkhead cap rebar

**Describe Traditional Approach:**

Traditional approach includes use of conventional steel strands and spirals in prestressed piles with highly reactive pozzolans (silica fume, metakaolin, or ultrafine flyash) and an allowance for future corrosion repairs, pile jacketing, and cathodic protection.

**Describe New Approach:**

CFRP/HSSS prestressing strands and spiral ties in the prestressed precast concrete piles, and GFRP stirrups and rebar in the bulkhead retaining wall, to eliminate future corrosion repair cost and extend the life of the substructure.

**Top Innovations Employed:**

Utilization of CFRP/HSSS prestressing strands and square spiral ties within the splash zone/marine environment. GFRP stirrups and rebar in the bulkhead retaining wall

**Primary Benefits Realized/Expected:**

Longer service life of the bridge foundations without major maintenance.

**Project Start Date/Substantial Completion Date:**

Late 2020 – Early 2022

**Affiliations:**

PE Consultant: Kisinger Campo and Associates.

Engineer of Record: Lucio Martinez, P.E.

Construction Contractor: TBA

Construction Project Manager: TBA

