



PROJECT PROFILE

Rickenbacker Causeway

Cathodic Protection Specialist Services | Miami, FL



CLIENT

Coastal Gunite
Construction Company

BACKGROUND

The Rickenbacker Causeway connects Miami, Florida, to the barrier islands of Virginia Key and Key Biscayne across Biscayne Bay. The causeway is a toll road, owned and operated by Miami-Dade County.

Sacrificial cathodic protection jacket systems were installed on twenty-two prestressed concrete piles of the Rickenbacker Causeway to mitigate corrosion of embedded reinforcement. WJE served as cathodic protection specialist for the project conducting construction observations and quality control testing.



SOLUTION

To mitigate corrosion of embedded reinforcement, jacket cathodic protection systems were installed at the Rickenbacker Causeway. Typical jackets consist of two C-shaped fiberglass stay-in-place forms, which wrap around the piles connecting longitudinally via tongue and groove connections. Each jacket has a diamond-shape zinc mesh adhered to the inside face of the stay-in-place form, which serves as one of the anodes. Plastic stand-offs maintain an annulus between the supplemental reinforcement and the jacket. The annulus formed is filled with a cementitious material. For every jacket, there is a submerged bulk zinc anode. Wiring for the anodes and the system negatives is routed through PVC conduit to a junction box overtop of the jacket where the anodes and cathode are connected.



WJE prepared a quality control plan to supplement the quality control requirements in the construction documents. Also, WJE conducted periodic site visits during the installation. The purpose of the site visits was to observe both completed and in-progress installation of the jackets, conduct electrical continuity testing, and energize the CP systems. Electrical continuity testing included the existing reinforcement, the supplemental steel cage, and system negatives. WJE conducted energization testing, which comprised AC resistance measurements, current measurements, and polarization development testing.

