FDOT Transportation Innovation Initiative:
FRP – Design Innovation

Project Location: FDOT District Four
Broward County
City of Lighthouse Point, Florida

Agency: Florida Department of Transportation

URL: http://www.fdot.gov/structures/innovation/FRP.shtm

Project Name: NE 23rd Ave over Ibis Waterway
Bridge No. 867212
FPID: 434359-1-52-01

Project Description: Replacement of three-span low-level local bridge and abutment bulkheads

Project Purpose & Need: Bridge Inspection Reports identified deterioration, including evidence of corroded steel reinforcement. Work activities included removal of the existing bridge and bulkhead cap and installation of a new GFRP-RC flat-slab bridge and seawall-bulkhead with corrosion-resistant master piles and GFRP-RC precast panels.
Overall Budget/Cost Estimate: $1,922,763 (Proposed Budget Estimate)

What was unique about this project?

Describe Traditional Approach:
Traditional approach includes installation of Grade 60 carbon-steel rebar with 3-inches or more concrete cover and Class IV concrete with additional pozzolan material (silica fume, metakaoline or ultrafine flyash) in the splash zone.

Describe New Approach:
Utilization of GFRP bars in lieu of traditional Grade 60 carbon-steel rebar in most elements with reduced concrete cover and no added pozzolan material required in the concrete mix design.

Top Innovations Employed:
Utilization of GFRP bars within the splash zone/marine environment.

Primary Benefits Realized/Expected:
Longer service life of the bridge and bulkhead.

Project Start Date/Substantial Completion Date:
April 2019 – April 2020

Affiliations:
PE Consultant: CONSOR Engineers, Inc.
Construction Contractor: ANZAC Contractors, Inc.
Construction Engineering Inspection: Target Engineering Group, LLC

Project Contact:
Engineer of Record: Sybille Bayard, P.E.
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