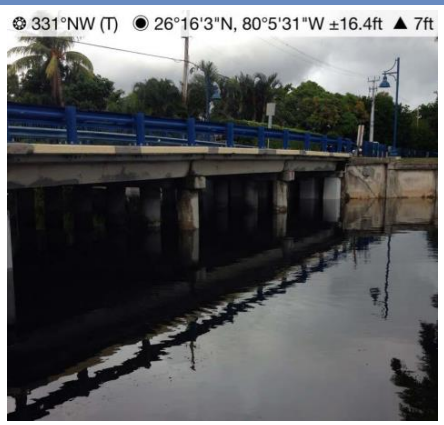
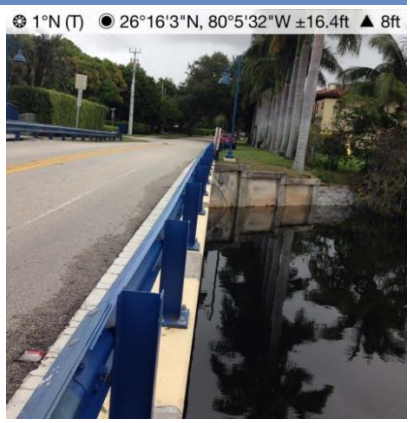
FDOT Transportation Innovation Initiative:

FRP – Design Innovation

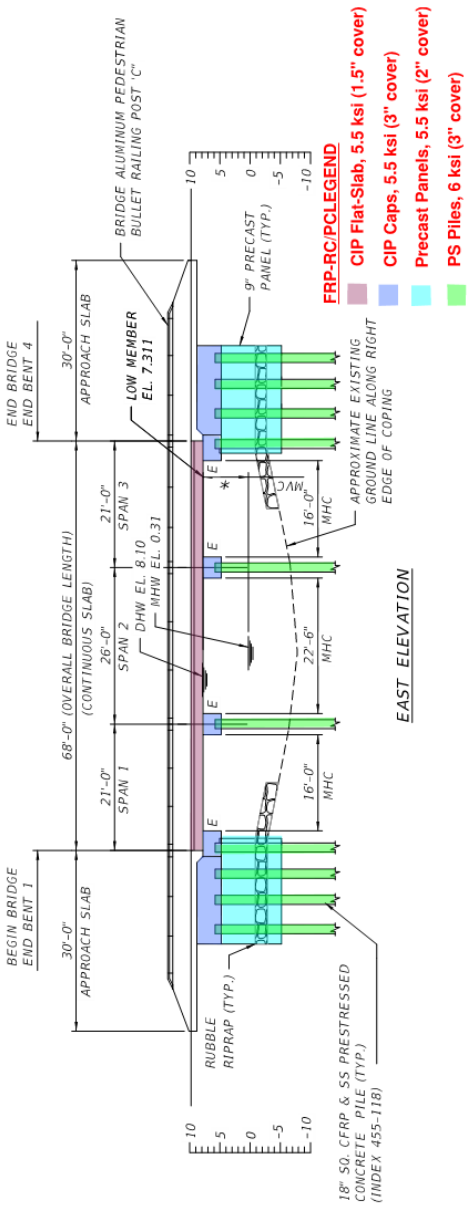




Fast Facts:

Glass Fiber Reinforced Polymer

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 Budge Estimate)

What was unique about this project?

First GFRP-RC 3-span continuous flat-slab bridge in Florida. First soldier pile bulkhead-seawall with GFRP-RC precast panels. Includes GFRP-RC for CIP End Bents, Intermediate Bent Caps, and Bulkhead Caps.

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. CONSOR Engineers, Inc
	FDOT Project Manager:	Donavan Pessoa, P.E. FDOT District Four Donovan.Pessoa@dot.state.fl.us
	FDOT State Materials Office:	Chase C. Knight, Ph.D. FDOT Composite Materials Specialist Chase.Knight@dot.state.fl.us

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