FDOT Transportation Innovation Initiative:

FRP – Design Innovation

Project Location: FDOT District One & Seven
Manatee & Pinellas County, Florida

Agency: Florida Department of Transportation

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

Project Name: I-275 Skyway Rest Area & Seawall
Rehabilitation
FPID: 437973-1-52-01

Project Description: Design-Build for rehabilitation of south
end bulkhead-seawall, access roads and
parking lot. Replacement of Rest Area
buildings and vehicle barriers.

Project Purpose & Need: Severe corrosion damage of existing
concrete bulkhead caps and guardrail
sections requiring replacement with
GFRP-RC solutions. 180 feet of new
CFRP/GFRP concrete sheet pile wall.
Replacement and updating of adjacent
Rest Area buildings does not involved
GFRP reinforcing.

Overall Budget/Cost Estimate: $18,221,515

Project Start Date: March 2017

Substantial Completion Date: July 2019

Fast Facts:

Glass Fiber Reinforced Polymer
What was unique about this project?
• 5330’ length of bulkhead-seawall cap to be replaced and first roadway shoulder barrier wall with GFRP reinforcement for long-term durability and additional corrosion protection in an extremely aggressive environment.
• First FDOT Design-Build project requiring GFRP reinforcing bar in design.
• Coordinate design approvals required from both District 1 & 7.

Describe Traditional Approach: Traditional approach includes installation of Grade 60 steel rebar with supplemental cementitious material or ternary blends and additional concrete cover to ensure concrete durability.

Describe New Approach: Utilization of GFRP bars in lieu of traditional Grade 60 steel rebar in the bulkhead caps and barrier wall which are exposed to salt spray from Tampa Bay.

Innovations Employed: Utilization of GFRP bars within a coastal marine environment.

Primary Benefits Realized/Expected: Longer service life of replaced elements.

Affiliations:
PE Consultants: RS&H, Inc.
Mott MacDonald Florida, LLC

Construction Contractor: David Nelson Construction Co.

Construction Engineering Inspection: Target Engineering Group, LLC

Project Contacts:
Seawall Engineer of Record: Lowry J. Denty, P.E.
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