FDOT Transportation Innovation Initiative:
UHPC – Design Innovation

Fast Facts:
Ultra-High Performance Concrete

Project Location: FDOT District Three
Gadsden County, Florida

Agency: Florida Department of Transportation

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

Project Name: I-10 (SR 8) over Flat Creek
Bridge No. 500082
FPID: 442914-1

Project Description: Approach slab replacement with precast slab units and full depth longitudinal UHPC joints.

Project Purpose & Need: The purpose of the project is to replace the deteriorated approach slab, replace the expansion joint, and upgrade the traffic railings.

Overall Budget/Cost Estimate: $985,000 (Construction)
What was unique about this project? This is the first UHPC for connection used for precast approach slabs in Florida for FDOT.

Describe Traditional Approach: A traditional approach requires cast-in-place concrete. This type of construction requires long duration lane closures during construction.

Describe New Approach: Precast approach panels will be installed to expedite construction. UPHC will be used in the longitudinal closure pour. The travel lane slabs will be replaced in a 36-hour lane closure period. The remainder of the work will be done during nighttime lane closures or lane diversions, limiting the impact to motorists.

Top Innovations Employed: UHPC connections will be used for the rapid replacement of a damaged/deteriorated interstate bridge approach slab.

Primary Benefits Realized/Expected: Precast deck slabs and UHPC connections are more robust and offer a longer service life. An accelerated construction duration will minimize impact to motorists while providing a strong structural solution. Construction will use limited lane closure periods for the interstate lane.

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

Affiliations: PE Consultant: Michael Baker International
Construction Contractor: TBA
Construction Engineering Inspection: TBA

Project Contacts: Engineer of Record: Piotr Paczkowski, P.E.
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