FDOT Transportation Innovation Initiative:  
UHPC – Design Innovation

Project Location: FDOT District Five  
Brevard County, Florida

Agency: Florida Department of Transportation

URL: [http://www.fdot.gov/structures/innovation/UHPC.shtm](http://www.fdot.gov/structures/innovation/UHPC.shtm)

Project Name: I-95 NB over CR 5A  
Bridge No. 700156  
FPID: 438321-1

Project Description: Partial Deck Replacement using full depth precast deck panels with UHPC joints.

Project Purpose & Need: Bridge Inspection Reports identified deterioration, of deck sections using partial depth precast panels. Work activities included removal of the existing deck concrete and panels, installation of a new full depth precast panels and connections with straight splice bars and UHPC joint fill.
Overall Budget/Cost Estimate: $334,599 (Construction Contract)

What was unique about this project? First use of UHPC for connections full-depth precast deck panels for interstate repair in Florida.

Describe Traditional Approach:
Traditional approach includes using hooked and lacing reinforcing bars within wider closure pours using high early strength concrete.

Describe New Approach:
Utilization of short length straight bars lap splices with nominal 8” with UHPC closure pour.

Top Innovations Employed:
Utilization of UHPC connections for rapid replacement of damage deck.

Primary Benefits Realized/Expected:
More robust and longer service life from precast deck panel and UHPC connections. Short closure time for interstate bridge lane (4/9/8 – 4/12/18).

Project Start Date/Substantial Completion Date:
10/9/2017 – 4/19/2018

Affiliations:
PE Consultant: Kisinger Campo and Associates Corp.
Construction Contractor: Oceaneer Consulting, LLC.
Construction Engineering Inspection: Target Engineering

Project Contact:
Engineer of Record: Patrick D. Mulhearn, P.E.
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