

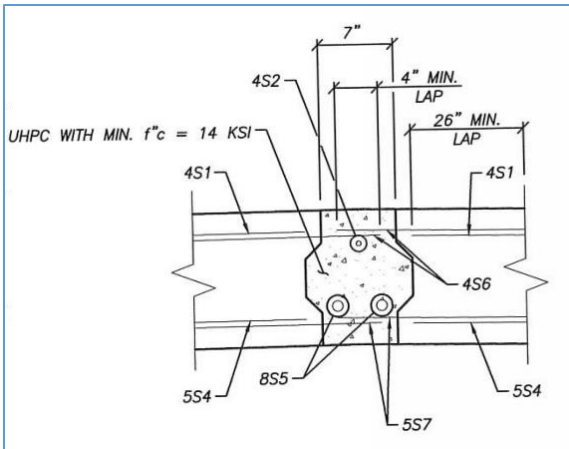
FDOT Transportation Innovation Initiative: UHPC – Design Innovation



Fast
Facts:
Ultra-High
Performance
Concrete



- Project Location:** FDOT District Four
Okeechobee County, Florida
- Agency:** Florida Department of Transportation
- URL:** <http://www.fdot.gov/structures/innovation/FRP.shtm>
- Project Name:** US 441 (SR 5) over Taylor Creek
Bridge No. 910021
FPID: 437984-1
- Project Description:** Span 12 Replacement using full depth precast deck panels with UHPC joints.
- Project Purpose & Need:** Bridge Inspection Reports identified deterioration in span 12, which consisted mostly of large delaminations to the underside of the deck slab, resulting in a 6-month inspection frequency. Work activities included removal of the existing span, near-site casting of conventionally reinforced precast panels, installation of a new full depth precast panels and connections with straight splice bars and UHPC joint fill.



Overall Budget/Cost Estimate:

\$399,878 (Construction Contract)

What was unique about this project? First UHPC for connection proposed by Contractor for span replacement/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 #4 bar lap splices with 4" overlap using UHPC closure pour. The precast deck units were also cast with the overhangs and concrete railing attached, prior to placement.

Top Innovations Employed: Utilization of UHPC connections for rapid replacement (weekend) of damaged/deteriorated span.

Primary Benefits Realized/Expected: More robust and longer service life from precast deck slabs and UHPC connections. Short closure time for highway bridge lane (5/11/18 – 5/13/18).

Project Start Date/Substantial Completion Date:

4/9/2018 – 6/11/2018

Affiliations:

PE Consultant:

WSP USA, Inc.

Construction Contractor:

Cone & Graham, Inc.

Construction Engineering Inspection:

WSP USA, Inc.

Project Contacts:

Engineer of Record:

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