FDOT Transportation Innovation Initiative:  
UHPC – Design Innovation

Project Location: FDOT District Two  
Bronson  
Levy County, Florida

Agency: Florida Department of Transportation

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

Project Name: CR 339 over Waccasassa River  
Bridge No. 344009  
FPID: 211728-1

Project Description: Single UHPC H-Pile substitute for 20” Sq. PC-Pile on an intermediate bent of a three-span FSB bridge.

Project Purpose & Need: Demonstration of pile driving capacity of a 30” UHPC Prestressed H-pile, that could be used on future projects as a substitute for conventional or corrosion-resistant square prestressed piles.

Overall Budget/Cost Estimate: Pile fabrication and materials donated by Dura-stress, Inc. & Cor-Tuf UHPC.

What was unique about this project? First UHPC H-pile used on a bridge in Florida.

Describe Traditional Approach: Square solid or voided prestressed concrete piles using Class V (Special) concrete.
Describe New Approach: 30”x30” H-pile fabricated with Cor-Tuf® UHPC.

Top Innovations Employed: Utilization of prestressed UHPC member with H-shape.

Primary Benefits Realized/Expected: Improved corrosion-resistant for longer maintenance-free service life; allows for thinner sections without pile damage during impact driving; reduces handling and shipping weight; increases pile surface area for potential greater pile skin friction resistance and short piles from UHPC connections.

Project Start Date/Substantial Completion Date: Pile Driving 02/13/2020

Affiliations: PE Design: FDOT District Two
Construction Contractor: Leware Construction Company
Precaster: Dura-stress, Inc.

Project Contacts: Engineer of Record: Ying Tsai, P.E. (FDOT)
FDOT Project Manager: Chris Rhude (FDOT)
Chris.Rhude@dot.state.fl.us

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