

UHPC OVERLAY OF MUD CREEK BRIDGE

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HISTORY OF THE BRIDGE

- 100 ft. x 30 ft. Three Span Continuous Concrete Slab Bridge
- Year Built: 1967
- Built on a curve with a 5% cross slope
- 2013 AADT: 370 vehicles per day

WHY MUD CREEK

- Deck is highly worn
- Several patches on deck that were in need of repair
- Generally overall in need of rehabilitation



CONSTRUCTION OF OVERLAY

PREPARATION OF DECK

- Deck was ground down $\frac{1}{4}$ inch then textured for UHPC to better bond to the existing deck
- Deck was then power-washed to remove any debris left over from grinding
- Asphalt patches were removed from deck as well as sections near abutments were repaired
- Wire mesh was placed over piers and anchored to the deck with nails



TEST BATCH

- A test pour was conducted the day before the deck pour back on Tuesday to determine the correct consistency of the mixture before application at the bridge site.



OVERLAY-FIRST POUR

- First pour was conducted yesterday morning
- Only half of bridge was done
- UHPC was finished using a vibrating screed
- Covered with curing compound and plastic once construction was complete



MIXING AND POURING OF UHPC



FUTURE WORK

- Finish pouring deck
- Build asphalt wedges for the approaches to the bridge
- Grind the final surface of the deck

SUMMARY

- In general the UHPC deck overlay may be beneficial to the life of a bridge
- Improves deck resistance to corrosion from salts
- Construction time takes longer and is a little more labor intensive than traditional concrete.
- Less material needed and lasts longer


