Mentone, AL
Arch Bridge Construction

Wright Brothers Construction Company, Inc.

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Contractor & Suppliers

Prime Contractor:
Wright Brothers Construction Company, Inc.

Precast Supplier:
Forterra Building Product,
Pelham Bridge Plant

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Engineering Services:
Tucker Jones Engineering Associates, P.C.

Alabama Department of Transportation
Project Number: BRF-0117(501)
Replace BIN 000543 State Route 117
Over West Fork of Little River
Grade, Drain, Base Pave, Bridge, & Retaining Wall
DEKALB COUNTY

Project Length: 2450'
Overall Bridge Length 156'
108' Precast Arch Span
Contract Value: $5,714,487

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Project Team

Project Manager: Joshua Reeser
Project Superintendent: Steve Turner

PROJECT CHALLENGES

Environmental

Utilities
Limited Access
Historical Structures
Construction Challenges

TIME
No Clearing between April 1st - August 30th

CLEARING
All Clearing in the bridge area near West Fork of Little River shall be cleared by hand.

PLACEMENT
No temporary crane pads shall be allowed within 20' of the river.

STABILIZATION
Satisfactory stabilization/vegetation for the Bridge/Roadway approach slopes must be established on one side of the river before work could begin on the opposite side of the river.

WATER QUALITY
Containment of water and slurry generated from the excavated areas was high priority due to the proximity of the river. Installation and maintenance of the BMP train was critical.

Exposed Areas were Covered with Polyethylene when Rain Events were Forecast

Water Clarifier

Construction of the Mentone Arch Bridge
Construction of the Mentone Arch Bridge

BMP Turns consisted of Jute Mesh and Wattle Check Dams. Sealed with Filter Fabric and #57 Stone

Utilities

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Utilities

OE utilities on East and West end of project created access challenges for cranes. OTC located in permanent location and OE is located on temporary poles.
**Limited Access**

**DISTANCE**
Distance between soil nail wall restricted

**ACCESS**
Maintain access to property owner on west side.

**LAYDOWN**
Limited laydown area for equipment and materials.

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**Limited Access**

**DRIVEWAYS**
Property owner on West side has two driveways, one always had to remain open.

**ACCESS**
At widest point there was only 85' between existing SR 117 and temporary construction easement.

**EXISTING STRUCTURE**
Existing SR117 bridge had to be taken into consideration for permitting of equipment and precast deliveries.

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**HISTORICAL STRUCTURES**

**STONE BOATHOUSE**
Construction was restricted around adjacent property owner’s stone boathouse and retaining wall, which had been declared a historical monument.

**THREE HISTORICAL STONE COLUMNS**
To be relocated due to local historical ordinances.

**GATE STRUCTURE**
The neighboring property owner’s gate and adjoining columns were also designated historical monuments, and decision made to preserve.

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**CONSTRUCTION CHALLENGES**

Construction of the Mentone Arch Bridge
CONSTRUCTION CHALLENGES

VALUE ENGINEERING PROPOSAL #1
Arches, Columns, Impost Blocks

VALUE ENGINEERING PROPOSAL #2
Temporary lock-gate wall & block

Impost Blocks

Arches

VE Design

Original Design
Construction of the Mentone Arch Bridge
Temporary Shoring
FOR ARCHES

Access for Cranes

Transporting
THE ARCHES

Specialty Trailer
SETTING THE ARCHES

Pre-Lift Meeting

Construction of the Mentone Arch Bridge
RISING WATERS

Almost 6" of Rain in Two Days

RECENT FLOODING

Temporary Bracing

Construction of the Mentone Arch Bridge
Almost 6" of Rain in Two Days

Over 15,000 cubic feet of water per second was measured at the falls.

This video was recorded by Matt Whitaker of the National Parks Service at 7:00 AM on February 6. Little River was currently flowing at 15,600 cubic feet per second.