Project Overview

Project Team
- General Contractor: Brasfield & Gorrie
- Owner: ALDOT
- Engineer: AECOM
- Construction Engineer: FINLEY Engineering

Summary
- Located on I20/59 in Tuscaloosa, AL
- 4.5 miles of interstate widening
- 2 bridge replacements
- Single Point Urban Interchange (SPUI) at McFarland Blvd & I-59/20 interchange
- $83mm project

Project Overview – Skyland Bridge
- 4 Spans of BT-54 Girders
- 68 Girders Total
- Range from 55' to 105'
- Girders weigh up to 90,000 pounds
- Spans 350' over Skyland Blvd

Project Overview – Skyland Bridge
- Deep Foundations
- 284 12' H-Piles
- Estimated 7,245 LF of piles
- 3 Intermediate Bents
- 27 36' Round Columns
**Project Overview - McFarland**

McFarland Bridge
- Suspended arch bridge
- 2 independent steel arches
- 7 steel tub girders
- No intermediate bents
- Spans 255' over McFarland Blvd
- Drilled shaft foundations
- Mass concrete abutments/thrust blocks

**Project Overview - SPUI**

SPUI – Single Point Urban Interchange
- Handles larger volumes of traffic
- Allows wider turns
- Prevents collisions
- Consolidates two existing intersections into one

**Girder Installation – Temp Bent**

- Temp bent design by contractor
- HP14x117 Driven pile foundations
- Dbl W36x232 for bent cap
- Welded structure
- Designed to use for jacking and lowering bridge utilizing steel shim plates
- Removed after final arch installation
- Construction engineer inspection during each phase

**Girder Installation**

- Pre-installation preparations
- Temp bent construction
- Revised erection plan to complete splice 1 (of 2) in the fabricator’s shop
- Detailed erection plan including minimum number of bolts and floor beams required for stability
- Detailed pick plans including required rigging and crane layouts

Construction of Alabama’s First Steel Box Girder Bridge in Tuscaloosa
Girder Installation – Temp Bent

Girder Installation
- 54 hour window
  - Interstate to remain operational
  - Complete shut down of McFarland Blvd at bridge location
  - Limited to setting girders at night due to interstate restrictions
  - Work around University of Alabama’s home football schedule

Demolition
- 54-hour window
  - Removal of superstructure, substructure, & debris
  - Developed engineered demolition plant to avoid impacts to newly constructed adjacent bridge
  - Controlled collapse of bridge focusing on “attack zones”
  - Use 2-ft layer of sand to protect roadway below
  - Accelerated the start of foundation work

Arch Construction
- Original erection scheme
  - Construct 3 temp towers to erect arch
  - All field splices completed in the air
- Revised erection scheme
  - Strong back concept without towers
  - Weld two of three field splices on the ground
  - Erect and weld arch in one weekend

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THANK YOU