FAST FACTS:

Hybrid Composite Beam

**PROJECT LOCATION:** Dade County, MO

**PROJECT NAME:** B0410

**BRIDGE MATERIAL DESIGN OPTION:** Hybrid Composite Beam (HCB)

**UNIQUE FEATURE:** Double Web Hybrid Composite Beams

**PROJECT DESCRIPTION:** This project replaced a deficient 20’ wide, “21’,49’,21’” steel bridge over Sons Creek with a new 28’ wide, 104’ long Hybrid Composite Beam bridge.
**Purpose and Need:**

The existing bridge was listed in serious condition. In addition, its width and approach alignment was not consistent with the route. A new, wider bridge was constructed and the approach roadway geometry was modified to correct the alignment issue.

**Contract Amount:**

N/A

**Engineer’s Estimate:**

N/A

**Bid Amount:**

N/A

**Final Contract Value:**

N/A

**What was unique about this project?**

This project demonstrates the adaptability of the HCB. The beams for the project were fabricated using double webs encased in a single box. This design allowed three beams to be used to span 104’ over Sons Creek.

**Traditional Approach:**

Use a single span of prestressed concrete girders with four girder lines.

**New Approach:**

Use of three girder lines of Hybrid Composite Beams. This is the first application of HCB that was designed with double concrete arch webs.

**Bridge Details:**

- Span: 104’
- Rise: 5’ deep beams
- Width: 28’ Roadway
- Skew: Square
- Arch: N/A
- Headwall: N/A

**Benefits Realized/Expected:**

Unlike traditional members, Hybrid Composite Beams are anticipated to be maintenance free, requiring no paint and not subject to corrosion from chlorides.

**Duration of Activity:**

50 days

**Owner:**

Missouri Department of Transportation

**Team/Affiliations:**

KTU Constructors (as part of Missouri’s Safe & Sound Bridge Improvement Project); Missouri University of Science and Technology (bridge instrumentation to document its performance under known loads); Missouri Department of Transportation

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