BMDO | Bridge Material Design Options

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

Contact:

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