**FAST FACTS:**

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<th>Rigified FRP</th>
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**Project Location:** Auburn, ME  
**Project Name:** Royal River Bridge  
**Bridge Material Design Option:** Rigified FRP  
**Unique Feature:** Project was selected as a National 2011 Engineering Excellence Grand Award winner by the American Council of Engineering Companies.  
**Project Description:** The Royal River Bridge spans the Royal River in Auburn and is located on the Old Danville Road, a local road. The new bridge is a 38’ span composite arch on concrete footings and piles. The width was increased to 28’. T-walls were used to minimize stream impacts.
**Purpose and Need:** The stream was constricted at the previous bridge and erodible soils were evident downstream. The bridge had a sufficiency rating of 59.4 and consisted of a 24’ span with steel girders on concrete abutments and granite and gabion wingwalls. Width, alignment, and sight distances were deficient.

**Contract Amount:** N/A

**Engineer’s Estimate:** $793,854

**Bid Amount:** $764,164

**Final Contract Value:** $793,854

**Traditional Approach:** Use precast voided slab superstructure

**New Approach:** Bridge in a Backpack

**Bridge Details:**
- Span: 38’
- Rise: 9’ 6”
- Width: 38’
- Skew: 15 degrees
- Arch: 13 carbon filter tubes, 12” in diam., spaced @ 3’ 1”
- Headwall: cast-in-place concrete footing and precast modular gravity wall

**Top Innovations Employed:** Bridge in a Backpack; a stepped cast-in-place concrete footing placed for the headwall

**Benefits Realized/Expected:** Long lasting, maintenance free, buried structure.

**Duration of Activity:** June 2010 to November 2010

**Owner:** MaineDOT

**Team/Affiliations:** MaineDOT; Advanced Infrastructure Technologies; University of Maine AEWC Advanced Structures and Composites Center; Kleinfelder ● SEA; Wyman & Simpson

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