## Rapid Replacement and On-Site Erection for Short Span Bridges

Fiber Reinforced Polymer Honeycomb (FRPH) structural panels can be used as a competitively priced, rapidly constructed permanent bridge to replace an existing structure. FRPH composite bridges are light weight but heavy duty, short span bridges that can be installed on existing abutments in one day. They are made of a series of two to four interlocking panels each with widths between eight and twelve feet. These lightweight panels are easily transported by truck to the erection site and lifted into place with light cranes. These bridges are not temporary, but are permanent bridges able to last 50 years or more with minimal maintenance. They meet a span-to-deflection ratio of 750 or more. As modular structures, these bridges are complete, including bridge rails, tie downs, and polymer concrete wearing surface. FRPH bridges have been demonstrated in the erection of the No Name Creek bridge in Russell, Kansas.

The No Name Creek bridge was fabricated as three panels with interlocking edges. Each panel was 23.5 feet long and 9 feet wide. The cross section of these panels consisted of a 20 inch high honeycomb gridwork core with panel surfaces 1/2 inch thick on the top and 5/8 inch thick on the bottom. A 3/4 inch polymer concrete wear surface was placed on the top surface. A layer of polymer concrete was added to the outer edges of the bridge. The bridge railings were made of composite materials and supported on composite posts. The posts and railings were mounted in their final configuration at the factory. The factory-built bridge was assembled at the site in about eight hours.


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