

Precast Concrete Segmental Bridge Design 1994 NOVA Award Nomination 10

Innovations in Precast Concrete Segmental Bridge Design and Construction

Resulting in substantially lower construction costs and an accelerated construction schedule, the Baldwin Bridge in Old Saybrook/Old Lyme, Connecticut, is a tangible product of innovation in precast concrete segmental bridge design and construction techniques. Utilizing cross sections that are among the heaviest and widest used in the country for cantilever construction, the bridge was completed eight months ahead of schedule and was bid at \$6.1 million less than its closest steel alternative.

By utilizing a car barge system designed to extend three quarters of the way across the river, work continued throughout the harsh winter, when movement through the river ice flows would otherwise have been impossible. The barges, decked with concrete, made a floating roadway that provided access to pier concrete work. This method enabled work to continue on six piers at a time. The bridge is composed of 488 unique precast segments, each weighing almost 150 tons. Only eight different cross-section designs were required. The large number of segments reduced form work costs and allowed speedy erection. Precasting during the cold winter months further compressed the construction schedule and improved quality control. The huge segments, cast at a rate of better than one segment per day, were made at a nearby casting yard created especially for this project and provided the contractor with tighter control over materials production and delivery.

The segments were then erected with a specially designed 430 foot long, 600 ton overhead gantry enabling bridge erection to take place from above with minimal impact on the river. This saved time since it alleviated the need for working with cumbersome cranes, barges and tugboats. The bridge was opened to traffic on May 25, 1993.

Contact: Chris Reseigh
Organization: Parsons Brinkerhoff Construction Services
Address: 465 Spring Park Place
City: Herndon
State/Province: VA
Postal Code: 22070
Country: USA
Phone No: 703-742-5700
FAX: 703-742-5800
URL: <http://www.pbworld.com>
Email: