Victory Bridge
Perth Amboy and Sayreville, NJ

Team

Owner:
New Jersey Department of Transportation

Designer:
FIGG, Tallahassee, FL

General Contractor:
George Harms Construction Company, Farmingdale, NJ

Reinforcing Bar Fabricator:
Harris Rebar, Bethlehem, PA

Total Project Cost:
$109.1 million

Total Project Size:
3,971 ft overall span; 440 ft main span; (2) 330 ft back spans

Award:
2008 CRSI Design Award Honorable Mention – Bridges Category

Photography:
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STRUCTURAL FRAMING SYSTEM

Victory Bridge replaced an aging swing-span bridge and represents the first concrete segmental bridge built in New Jersey. The twin 3,971-foot structures, which honors World War II service-men, feature fully match-cast, 440-foot main spans, a record in the United States at the time. Built sequentially to maintain traffic during construction, the first bridge opened to traffic 15 months after notice to proceed, while the second structure opened only nine months later — ahead of schedule.

The aggressive completion was achieved with the use of precast reinforced concrete box piers, some as tall as 100 feet, which were each assembled in just one day. The approach spans then were erected using span-by-span construction concurrent with erection of the main span unit, which was built using the balanced-cantilever method.

The construction team also took advantage of the using the existing 3-D CAD production drawings which eliminated the time and money needed to prepare and review new shop drawings. The drawings included details on reinforcing bar bends, segment geometry and tendon stressing.

The 440-foot main span provides 355 feet of horizontal clearance, an increase of 227' from the previous structure. This dramatically improved safety and traffic flow. Superstructure segments vary in depth from 21' at the piers to 10' at mid-span, creating an arching effect over the river. The approach spans feature a constant depth, which allowed for ease of construction of the span-by-span sequence.

A 1¼" layer also was cast with the segment to provide a durable, integral wearing surface. All superstructure segments were cast with a ½" sacrificial layer of concrete on the top slab. After erection was completed, the top slabs were ground to achieve the desired surface for rideability.

The design and use of reinforced concrete produced a bridge that was cost efficient to construct ($220 per square foot in an expensive labor market), offers a service life exceeding 100 years, and projects a dramatic image that will reflect the history of the former swing-span bridge at the site. Four concrete obelisks, two at each end, display the original bronze markers, along with new ones, rededicating the bridge to the World War II veterans’ honor.

With a service life exceeding 100 years, it offers unique aesthetics that honor New Jersey veterans who served in WWI.