The Bridge of Honor, SR 33

Pomeroy (Ohio to Mason), WV

The new Pomeroy-Mason Bridge replaces a structurally deficient steel-truss design to carry Ohio SR 33 over the Ohio River. The cast-in-place, segmental, cable-stayed bridge represents a unique partnership, as it was built by the Ohio Department of Transportation and then turned over to West Virginia Department of Highways to maintain.

After considering several alternative structure types and span layouts, designers selected a symmetrical design of three spans (244, 675, and 244 feet) with a width of 74 feet. Approaches on the West Virginia side consist of six spans of concrete spread box beams, while the Ohio side uses two spans of AASHTO Type III girders. The bridge features a cast-in-place deck that includes epoxy-coated reinforcing steel (ECR rebar) was used to provide corrosion protection to the reinforcing steel.

The cable-stayed superstructure features a cast-in-place reinforced concrete edge-girder system with transverse floor beams constructed using form travelers. The horizontal curvature of the roadway along the Ohio bank, caused by a steep, rocky hillside paralleling the shoreline, created an additional layout challenge. This curve required short end-span lengths for the cable-stayed bridge portion relative to the mainspan length.

The reinforced concrete towers were designed in an "A" shape, with two planes of cables supporting the superstructure's two edge girders. Each tower is supported on six 8-foot 6-inch diameter drilled shafts with a waterline footing that was created with concrete contained epoxy-coated reinforcing steel. Designers utilized a snag-free waterline footing, which saved time and money while reducing construction risk by eliminating the need for deep cofferdams.

The new bridge maintains the original structure's existing horizontal clearance of 645 feet and provides 55 feet of vertical clearance. It opened in late 2008 and was turned over to its new owner on the other side of the river.

Team

Owner:
West Virginia Department of Highways

Designer:
URS Corp.

Builder:
C.J. Mahan and National Engineering, (a Joint Venture)

Design Criteria:
– 75-Year Service Life.

– Provide for four-lanes of traffic.

– Create a centerpiece for adjacent communities.

Total Project Cost:
$65 million

Total Size:
LENGTH: 1852 ft

WIDTH: 76 ft

Epoxy-coated Reinforcing Steel:
3,400 tons