Owensboro Bridge, Kentucky - USA

First Bridge to use Steel Cable.

▲ *The 4,505 foot-long William Natcher Bridge was the first US bridge to use steel cable anchorages.*

The William Natcher Bridge is Kentucky's second cable stayed design and carries US 231 over the Ohio River. The 4,505 foot bridge is a traditional two-tower cable stayed bridge with two planes of inclined stays anchored in diamond-shaped pylons with span lengths of 152, 366 and 152 meters. The bridge is part of an ongoing project to upgrade the USA 231 corridor to four lanes from Interstate 64 in Indiana to the William H. Natcher Parkway in Kentucky. According to the requirements of the Kentucky DOT, the bridge was required to withstand seismic loads up to 0.1G, HS 25 live load, thermal loads and wind loads up to 82 mph, impact from fully loaded jumbo barges and an accidental loss of a cable.

Scope of works performed

- Supply stay cable system and provide technical assistance

The bridge deck consists of steel edge girders and transverse floor beams, decked with precast concrete panels overlayed with a latex-modified concrete. The bridge was erected using the balanced cantilever method of construction.

The 96 stays range in size from 6-19 to 6-61 and vary in length from 56 m to 190 m. VSL supplied pre-assembled, pre-grouted anchorages, which simplified the installation and increased the quality of the anchorage assembly. The pre-assembled anchorages were configured to allow the contractor to install the stay-cable strands one at a time. The stays were encased in colored co-extruded HDPE pipe. The towers' prefabricated steel cable anchorage, a first for US bridges, was efficient and economical to construct, provided a protective anchorage environment and ensured geometrical control, even if a cable is lost. An innovative design eliminated the use of expansion joints and resulting span rotation thereby reducing vibrations, increasing resistance to uplift and providing a smoother ride.

The $70 million bridge was named one of the Top 10 road and bridge projects in the U.S. by *Roads and Bridges Magazine (November 2002)*.

PROJECT
Owensboro Stay Cable Bridge
Kentucky, USA

OWNER
Kentucky Transportation Cabinet

TURNKEY CONTRACTOR
Traylor Brothers, Inc.

POST-TENSIONING SUBCONTRACTOR
VSL

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