

Comparison of High Performance Steel and Conventional Steel Girder Bridges

Prepared for
University Transportation Center
University of Missouri – Rolla

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Project Description

This University Transportation Center project was a matching grant for an American Iron & Steel Institute fellowship awarded to Dr. Michael G. Barker for work in steel bridge research. A student was selected to develop High Performance Steel bridge designs as alternates for a Missouri Department of Transportation conventional steel girder bridge. Eight designs were produced. The designs were examined by steel fabricators to develop a cost comparison. The results show that HPS has a promising future in steel bridges. Hybrid girder bridges were especially economical. This project was practical in nature and was meant to illustrate the benefits of HPS throughout the country. The following are reports, presentations and papers resulting from the combined fellowship and UTC project funding. The Missouri Department of Transportation is acknowledged for their support of this work.

Reports, Presentations and Papers

Schrage, SD, "High Performance Steel Bridge Design Alternatives," MS Thesis, University of Missouri – Columbia, Columbia, MO 65211, 189 pgs.

Barker, MG and Schrage, SD, "High Performance Steel Bridge Design and Cost Comparison," submitted to Transportation Research Board for TRB annual meeting presentation and TRR publication.

Barker, M.G., "High Performance Steel Bridge Design and Cost Comparison," Presentation for the Steel Bridge Forum, Frankfort, KY, NSBA, Nov 9, 1999.

Barker, M.G., "Comparative Design of Steel Bridges Using 50 and 70 ksi Steels," Presentation for Recent Advances in Steel Bridge Design and Construction with Emphasis on High Performance Steel, Kansas City, MO, Nov 4-5, 1999.

Barker, M.G., "High Performance Steel Bridge Design and Cost Comparison," Presentation for the AISI Steel Bridge Task Force Meeting, Portland, ME, August 4, 1999.

Barker, M.G., "High Performance Steel Bridge Design and Cost Comparison," Presentation for the Steel Bridge Forum, Nashville, TN, NSBA, July 29, 1999.

Barker, M.G., "Comparison of Steel Bridge Design Using 50 and 70 ksi Steel," Presentation for the ASCE Steel Bridge Committee, 1999 ASCE Structures Congress, New Orleans, LA, April 19-21, 1999.

Barker, M.G., "HPS Bridge Design of a Missouri Steel Girder Bridge," Presentation for the AASHTO T14 Committee Meeting, Orlando, FL, Feb 3-5, 1999.