



1996 MERIT BRIDGE AWARD: LONG SPAN HOFFSTADT CREEK BRIDGE



BECAUSE OF THE DEVASTATION CAUSED BY THE ERUPTION OF WASHINGTON STATE'S MOUNT ST. HELENS in 1980, the federal government decided to construct a road up to a strategic viewpoint where an information center would then be constructed. About three miles west of the information center, the road crosses over Hoffstadt Creek Bridge, which spans over Hoffstadt Canyon.

The bridge is a continuous steel deck truss with plate girder approaches. The main spans are 332'-600'-332'. In an innovative construction sequence, the outside spans were erected on falsework from the canyon floor and then the center span was erected by cantilevering 300' from each side to the center of the 600' span. The bridge was designed as an alternative to a cast-in-place concrete box girder bridge and was bid at approximately 20% less than the concrete box.

The approaches are welded steel plate girders varying in span from 148' to 232'. The girders are continuous and act compositely with the deck.

The steel truss is actually two parallel trusses with bracing crossframes located at each panel point. The steel truss varies in depth from 56' at the middle piers to 33' at the ends and middle of the center span. Panel points are 33'-4". All main truss members are boxes fabricated from four plates fillet welded together at the corners. The welded boxes are economical to fabricate

Judges Comments:

"A good looking bridge with good site utilization"

"An attractive and interesting truss design"



and provide very efficient cross sections for compression members. Hand holds are provided throughout the length of the box member to allow for painting of the inside of the box and to facilitate inspection. The box members are bolted to gusset plates at the panel points.

The truss has a concrete deck

supported on composite longitudinal stringers cut from rolled beams. The stringers are supported on welded plate girder floor beams spanning transversely between trusses.

All of the steel is coated with an epoxy-urethane paint system over a zinc-rich primer.

Project Team

Designer:
WSDOT—Bridge & Structures
Office

General Contractor:
Selby Bridge Co.
Vancouver, WA

Fabricator:
Universal Structural, Inc.
Vancouver, WA *

Erector:
Western Pacific Erectors
Portland

Owner:
WSDOT—Bridge & Structures
Office

Project Data

**Steel wt./sq. ft.
of deck:**
68 lbs.

Cost:
\$12.6 million

Steel tonnage:
2,505

**Please note
that red text
denotes an
AISC member*