

NATIONAL STEEL BRIDGE ALLIANCE

2001 Prize Bridge Award

merit award: **SPECIAL PURPOSE**

East Boise River Footbridge

Boise, ID

As the Park Center region of Boise continued to grow and traffic congestion increased, the city of Boise decided that a bicycle/pedestrian river crossing for the area was necessary. The goal of the city was to provide facilities which would reduce the traffic congestion and assist in the improvement of the air quality by providing an alternate means of transportation and connecting pathways and various business centers on both sides of the river. This resulted in the construction of the East Boise River Footbridge. In the bridge type selection process, various issues played a key role in a steel tied arch structure being chosen.

Since the location of one of the pathways that ran parallel to the river did not allow for a lengthy approach to the bridge, the deck had to remain at the elevation of the riverbank. Additionally, in order to accommodate wheelchairs, the grade could not exceed five percent. These restrictions placed the top of the deck within 10' of the water surface. Because the river sees extensive use by recreational users (kayakers, rafters), a shallow superstructure was necessary. Additionally, since piers located within the waterway were not an acceptable option, the river had to be crossed using a single span. With these criteria and the desire to create a visually pleasing structure, a tied arch bridge was the obvious choice.

The East Boise River Footbridge is a 195', single span steel tied arch struc-





ture. The deck is 15'-3" wide with a widened section at mid-span, affording observation areas on both sides of the bridge. The arches are comprised of a 36" deep, 7/8" thick web with 1-1/2" by 12-1/2" flanges fabricated along a 150-radius arch. The arches are stabilized laterally with W section X braces. The deck is supported by the bottom chords of the arches, with each chord consisting of two angles back to back. The chords are supported by pairs of 1" diameter hanger rods spaced at 15' on center. The structure was designed for the deck to be formed utilizing stay-in-place metal forms; however, the contractor elected to use conventional formwork. The bridge is was constructed utilizing painted M270 Grade 50 steel. The bearing system consists of W section end beams on elastomeric bearing pads, fixed at one abutment and an expansion bearing at the other abutment. To illuminate the deck at night with a minimum impact on the natural surroundings, low intensity sodium vapor downward throw lights were flush mounted in the railing along both sides of the structure.

With the completion of the East Boise River Footbridge, the residents of Boise, ID, have received a functionally

beneficial, aesthetically pleasing structure.

Owner

City of Boise, Boise, ID

Structural Engineer

W&H Pacific, Boise, ID

Steel Fabricator

Jesse Engineering Company,
Tacoma, WA (AISC member)

Steel Detailer

N.C. Engineering Company, Burnart, BC
Canada (NISD member)

General Contractor

Universal Construction, Inc.,
Emmett, ID

Software

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