

Greenspot Road Bridge:

BY JIM TALBOT

A Century of Service in SoCal



**STEEL CENTURIANS
SPANNING 100 YEARS**

Our nation's rich past was built on immovable determination and innovation that found a highly visible expression in the construction of steel bridges. The Steel Centurions series offers a testament to notable accomplishments of prior generations and celebrates the durability and strength of steel by showcasing bridges more than 100 years old that are still in service today.



One of the nation's few remaining Pennsylvania truss bridges still carries traffic, but is slated for conversion as part of a trail for cyclists, horseback riders and hikers.

IF YOU DRIVE DUE EAST from Los Angeles, following the route of historic Route 66 (now decommissioned), you'll eventually be on Foothill Boulevard, California State Road 66.

Near San Bernardino, SR 66 continues as 5th Street. The old US 66 turned north near I 215, eventually reaching Chicago, while today 5th Street continues east. After 5th Street passes Rt 210, it becomes Greenspot Road. This old two-lane road continues east along the wide wash of the Santa Ana River. It winds through orange groves, headed for the San Bernardino Mountains. Near the mountains it suddenly turns south to cross the river toward the towns of Mentone and Redlands.

The crossing is the site of the Greenspot Road Bridge, our latest Centurion steel bridge, built in 1912. This historic pin-connected, 14-panel Pennsylvania through-truss steel bridge (which uses approximately 200 tons of steel) takes Greenspot Road across the river, where it flows out of the San Bernardino Mountains and into the San Bernardino Valley. Citrus, grapes and other agricultural crops flourished on both sides of the river early in the 20th century (in 1911, for example, San Bernardino held the first National Orange Show), and the bridge may have been built in anticipation of tolls for transporting nearby crops to rail terminals.

Upstream, the river moves quickly through mountain canyons, historically famous for the mining of gold, silver, copper and other metals. Before the river reaches the bridge, however, it enters the wide, flat bed of the valley. The area near the bridge, boulder-strewn and sun-bleached, often experiences summer temperatures above 100° F.

The Penn Truss

The Pennsylvania truss design has similarities to a Pratt truss, with diagonals sloping away from the center. In this particular bridge, the vertical members are double-paired angle sections with V-lacing. V-laced lateral sections also brace the top chords, which also consist of laced channels. Two pairs of punched eye bars serve as the bottom chords. The vertical and diagonal members meet at the ends of the eye bars. Steel cross beams at these interconnections support the four steel stringers below the wood deck.

Many of the diagonals between verticals are augmented with half-length vertical, horizontal and diagonal struts and ties—a defining characteristic of the Pennsylvania truss design. Gusset plates steady the interconnections. The Pennsylvania Railroad pioneered the design, making it popular for hundreds of bridges in the United States early in the 20th century. Few remain.

The asphalt-covered wood deck of the Greenspot Road Bridge has a width of only 16.7 ft, marginally sufficient for two lanes. Drivers familiar with the bridge usually wait for opposing traffic to clear the bridge to avoid losing a side-view mirror. A white-painted railing lines both sides of the roadway. Deformations of the metal superstructure have resulted from traffic collisions, and the bridge is classified as structurally deficient.

Stampings on the steel identify the manufacturer as the Cambria Steel Company from Johnstown, Pa., which also built the bridge. This company started up in the mid-1850s as the Cambria Iron Works, and the company's beginnings coincided with the arrival of the Pennsylvania Railroad into Johnstown. In 1916, the Midvale Steel and Ordnance Company bought Cambria Steel, and several years later sold it to Bethlehem Steel.

Despite its condition, the 255-ft-long bridge still serves as a vital local link for more than 35,000 people who live in neighboring Highland to the north and Mentone to the south. The bridge sees traffic of about 3,500 vehicles daily (many motorists use it to avoid Interstate 10). Plans are underway to widen Greenspot Road and to rehabilitate the bridge as a crossing for the Santa Ana River Crest-to-Coast Trail for hikers and horseback riders; the project is still awaiting full funding. A replacement bridge for vehicular traffic will be built nearby (to the west) when more funds become available.

Today, the area surrounding the Greenspot Road Bridge consists of wide river bottom and floodplain terraces and falls within the Santa Ana River Wash Land Management and Habitat Conservation Plan area, an area of 4,365 acres of river and its surrounding floodplain that is set aside for conservation and recreation. And this Centurion is a significant component of it.

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