

Henefer Bridge
Spanning Weber River at Center Street
Henefer
Summit County
Utah

HAER No. UT-49

HAER
UTAH,

22-HENF,
1-

PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
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Department of the Interior
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HISTORIC AMERICAN ENGINEERING RECORD

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UTAH,
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Henefer Bridge

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Location: Spanning the Weber River at Center Street,
Henefer, Summit County, Utah

UTM: A 12/4540675/458400
B 12/4540680/458420

Quad: Henefer

Date of Construction: 1907-1908

Present Owner: City of Henefer, Utah

Present Use: Vehicular and pedestrian bridge, to be replaced by a
new vehicular and pedestrian bridge. Projected
removal date is Winter 1987.

Significance: The Henefer Bridge is a single-span pony truss bridge
constructed in 1907-1908. The bridge is one of the
few, if not the only, example of a pony truss with
pinned connections built in the State of Utah.

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Office of Public Archaeology
August 1987

Edited, Retyped
and Transmitted by: Jean P. Yearby, HAER, 1988

I. HISTORY

A. Henefer

The town of Henefer (population 450) is situated in a small valley along the Weber River. It is about four miles north of Echo Canyon in the northern portion of Summit County, Utah. The early pioneers traveled through Henefer Valley north from Echo Canyon into the Great Salt Lake Valley.¹ The trail was used by the Bryant-Russell Party and the later Donner Party in 1846, and the following year by the Mormon settlers (Church of Jesus Christ of Latter-day Saints).^{2,3}

Henefer was first settled in 1859 by Mormon pioneers William and James Henefer, who operated a blacksmith shop.⁴ During 1860, additional Mormon settlers moved into the area and, in 1861, a town plot was laid out by Jesse W. Fox.^{5,6} The town was temporarily abandoned in 1866, during a period of unrest between Anglo-European settlers and Native Americans, but was resettled by the end of the year.^{7,8} The main transportation route into Salt Lake City changed and moved south from Echo Canyon through the Weber River Valley. In 1867, a post office was established at Henefer, and mail was retrieved once a week from the Echo Canyon stagecoach station four miles to the south.⁹

As communication became more important throughout the State, roads also became more important. On January 18, 1862, the State legislature enacted a poll tax. This law required every male over 16 years and under 50 years of age to donate two days of labor, at \$1.50 per day.¹⁰ Work was to be performed on county roads or territorial roads within the county, under the direction of a supervisor. This law remained in effect until 1919, when it was repealed. In the early part of Utah's history, when money was scarce and roads were important lines of communication, the tax made possible the construction of the early road and bridge system.¹¹

Roads and bridges in Summit County began to be erected in 1861. A toll bridge was constructed across the Weber River five to six miles below Silver Creek (approximately 22 miles south of Henefer). Another toll bridge was built at Wanship (16 miles south of Henefer) across the Weber River. In January 1866, the legislature approved the construction of a road from Salt Lake City to Wanship, Summit County, at a cost of \$6,000.00.¹² This road was divided into four sections, each section complete with toll gates.¹³ The Henefer Bridge was constructed at this time, using funds derived from the poll tax system. However, there is no evidence that the old Henefer Bridge was ever used as a toll bridge.

No roads or bridges existed in Henefer prior to 1870, except for a few wagon and cattle trails. In 1870, the first road supervisor, Charles Richins, was chosen. He oversaw the construction of roads and bridges around Henefer. In 1909, the State legislature created the State Road Commission, which took over development of the state road system. Thus, the Henefer Bridge became one of the last county bridge projects undertaken before the organization of the state road system.

B. Construction of Henefer Bridge

It is not certain whether Charles Richins or his successors kept detailed drawings or other records on the bridges they produced. If they did, the records have subsequently been lost or destroyed. Therefore, little is known of the 1907-1908 steel pony truss bridge and its construction, or the bridges that preceded it. What information about the bridge that can be found is in the following one-line news accounts in the county newspaper, the Coalville Times of 1970:

1907:

- 9 July - The Henefer Bridge is still in a dangerous condition and much land has been washed away by continued high water.¹⁴
- 9 Oct. - The County Commissioners were in Henefer on the 8th on business connected with the building of the new iron bridge at this place across the Weber River.¹⁵
- 15 Oct. - R. A. Jones has commenced to tear up the old bridge here, but a good ford has been located and a good foot bridge made by our supervisor, Arthur Richins.¹⁶
- 30 Oct. - The contract for putting the abutments of the Henefer Bridge has been let to Samuel Ellingsferd and Hyrum Dearden.¹⁷
- 19 Nov. - Work slowed at Henefer Bridge on abutments-water fills up faster than they can get it out.¹⁸

1908:

- 15 Jan. - The Henefer Bridge is now completed and the people rejoice.¹⁹

From these accounts, and the fact that the State employed a poll tax system of local labor, the bridge appears to have been constructed, at least in part, by local contractors. All the individuals mentioned in the articles are known residents of Henefer. No mention of the

engineers, builders or manufactures are made in any of the news reports. The Henefer Bridge was one, if not the last, bridge built under these conditions.

II. BRIDGE

A. Description

The abutments of the Henefer Bridge are constructed of portland cement poured into a wood plank frame. Each of the two abutments is divided into five panels, the four outer panels being set back at 17- and 45-degree angles to prevent erosion by the Weber River (Figures 1 and 2), while the center panel supports the bridge. The southern panel of the east abutment bears an inscription:

1907
ED

This refers to the "erection date" of 1907 for the abutments and the proposed completion of the bridge, which was really January 1908.

The Henefer Bridge is a single-span steel Pratt half-hip pony truss, 68 feet long, with horizontal top chords, three panels, and inclined end posts (Figure 2). The major structural members are held together by a pin-connected system (Figure 3). The steel I-beam members are embossed with "Illinois" every three to four feet along the body of the beam. The truss height from centerline of top chord to centerline of lower chord was 7 feet 6 inches. The overall width of the structure was 16 feet 10 inches, while the interior clearance was 15 feet 2 inches. Channels, cover plates and lacing bars were riveted together to form the upper chord and inclined end posts. The vertical members were L-irons and lacing bars riveted together and pinned at the top to the upper chord and at the bottom to the lower chords. The lower chords, diagonals (cross chords) and hip verticals were double rectangular eyebars. The lower pin connection supported an inverted U-bolt which carried the floor I-beam (Figure 3). Bottom lateral braces were connected to these beams. The floor I-beams supported twelve 12" x 2" wood stringers. A deck of wood planks, 12" x 2", covered the stringers, and the deck in turn was overlaid with two sections of two 16' x 4" wood planks that ran the length of the bridge for vehicular traffic (Figure 4).

The Pratt pony truss was a common type of bridge design used to span small distances where light single-lane traffic was employed during the late 19th and early 20th centuries. Many of these bridges are found in the rural areas of Utah. However, the majority, if not all, of these bridges have riveted connections. The Henefer Bridge is the

only known exception, having been pin-connected.²⁰ It is this engineering feature (pin connection) that makes the Henefer Bridge unique in the State and makes the bridge eligible for nomination to the National Register of Historic Places.

B. Modifications

Three minor modifications have been made to the original structure. A weight limit sign was posted on the bridge sometime in the 1930s or 1940s. This sign was modified in the 1960s. The second modification was the addition of a three foot-high chain-link fence along each side of the trusses. This modification was done to prevent small children from falling into the Weber River. The bridge is used by pedestrian traffic and is close to the center of the community where children play. This change was accomplished within the last three years. On the north side of the bridge is a three-inch sewer pipe which is lightly supported by the bridge structure along the lower chord. No other known modifications have been made to the structure.

C. Ownership and Future

The Henefer Bridge was built, owned and maintained by Summit County and the city of Henefer. It has been studied by Uintah Engineering, Inc. of Vernal, Utah, on behalf of the city of Henefer. The study indicates that the bridge is limited in its ability to safely handle future traffic flow and loads. The structure is a bottleneck, as it brings a two-lane street down to a one-lane bridge. Center Street, which is conveyed by the bridge across the Weber River, is an important thoroughfare of Henefer City, acting as a secondary route to Main Street travel. Some damage has already occurred to the inclined end posts which will require costly repair. The Henefer Bridge is, therefore, in need of replacement. Demolition and replacement of the bridge is scheduled for late 1987 and early 1988.

III. FOOTNOTES

- 1 Tullidge, Edward W., Tullidge's Histories, p. 125.
- 2 Miller, David E., Utah History Atlas, map 25.
- 3 Peterson, Marie R. and Mary M. Pearson, Echoes of Yesterday; Summit County Centennial History, p. 48.
- 4 Tullidge, Edward W., Tullidge's Histories, p. 125.
- 5 Ibid., p. 125.

- 6 Peterson, Marie R. and Mary M. Pearson, Echoes of Yesterday, p. 50.
- 7 Tullidge, Edward W., Tullidge's Histories, pp. 125-126.
- 8 Peterson, Marie R. and Mary M. Pearson, Echoes of Yesterday, p. 51.
- 9 Ibid., p. 52.
- 10 Knowlton, Ezra C., History of Highway Development in Utah, p. 869.
- 11 Peterson, Marie R. and Mary M. Pearson, Echoes of Yesterday, pp. 43-44.
- 12 Knowlton, Ezra C., History of Highway Development in Utah, p. 878.
- 13 Peterson, Marie R. and Mary M. Pearson, Echoes of Yesterday, p. 46.
- 14 The Coalville Times, July 12, 1907.
- 15 Ibid., October 11, 1907.
- 16 Ibid., October 18, 1907.
- 17 Ibid., November 1, 1907.
- 18 Ibid., November 22, 1907.
- 19 Ibid., January 17, 1908.
- 20 John McEwan, UDOT, personal communication.

V. BIBLIOGRAPHY

A. Books:

Knowlton, Ezra C., History of Highway Development in Utah. Publication date available.

Miller, David E., Utah History Atlas, Salt Lake City: Smith's Printery, 1980.

Peterson, Marie R. and Mary M. Pearson, Echoes of Yesterday; Summit County Centennial History, Summit County: Daughters of Utah Pioneers, 1947.

Richins, Fanny J. and Maxine R. Wright, Henefer Our Valley Home, Salt Lake City: Utah Printing Co., 1958.

Tullidge, Edward W., Tullidge's Histories, Vol. II, Salt Lake City:
Juvenile Instructor,, 1889.

B. Periodicals:

Comp, T. Allan and Donald C. Jackson, "Bridge Truss Types: A Guide to
Dating and Identifying," History News 32(5), May 1977.

C. Newspapers:

Coalville Times, July 12, 1907, Vol. XV, No. 26.
_____, October 11, 1907, Vol. XV, No. 39.
_____, October 18, 1907, Vol. XV, No. 40.
_____, November 1, 1907, Vol. XV, No. 42.
_____, November 22, 1907, Vol. XV, No. 45.
_____, January 17, 1908, Vol. XVI, No. 3.

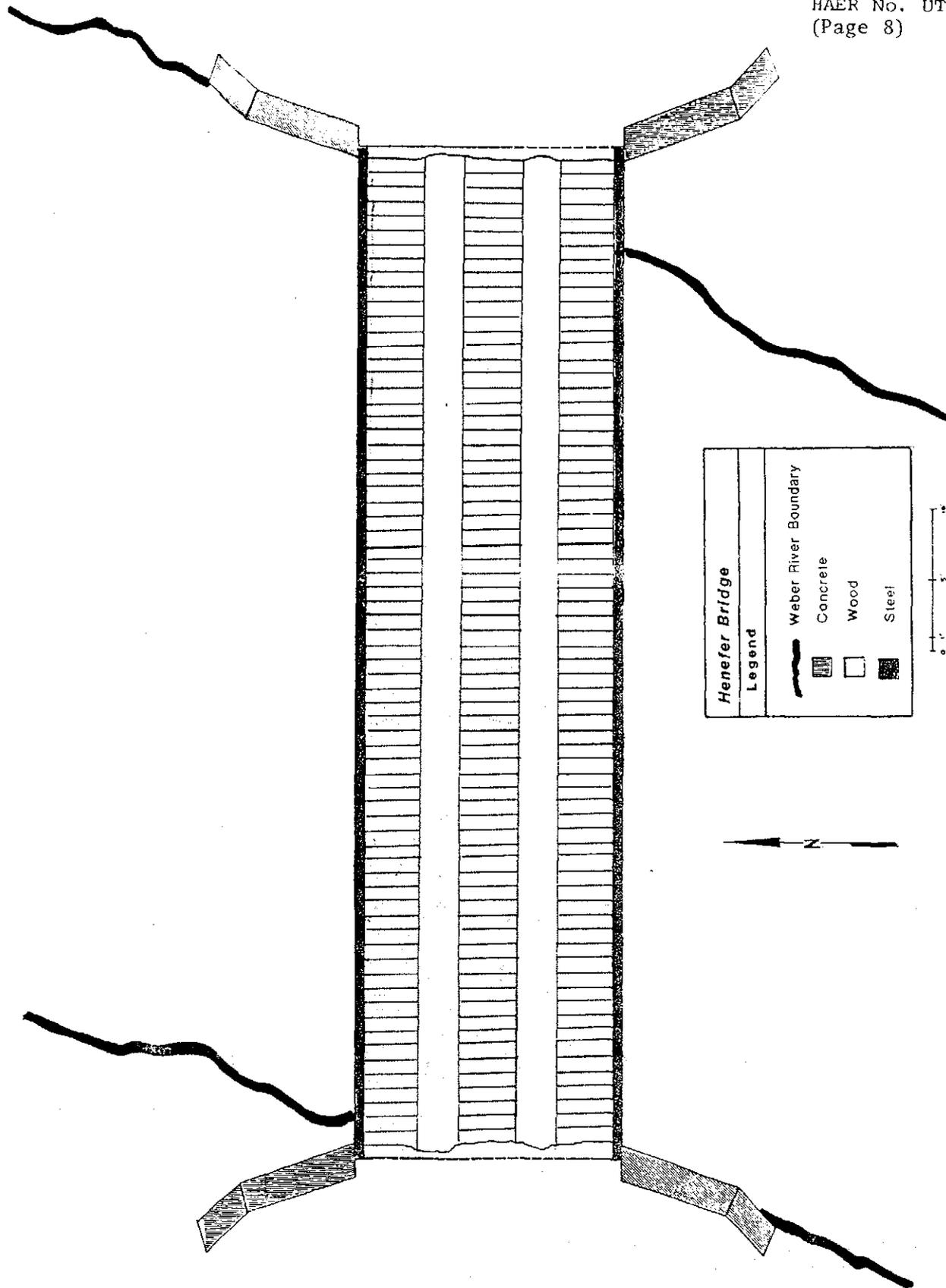
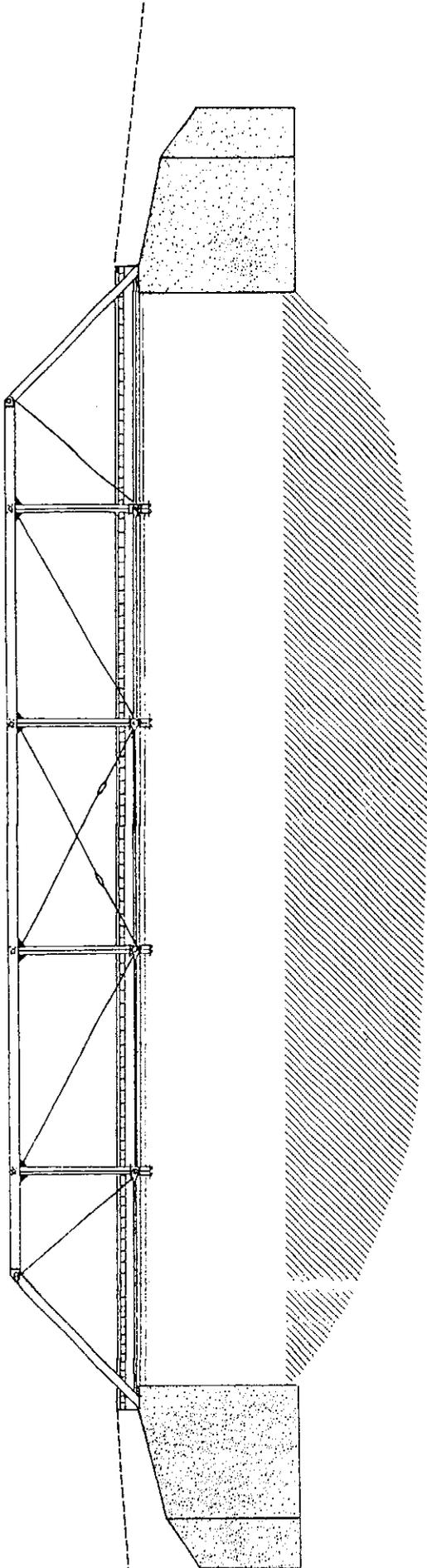


Figure 1 - Drawing of Henefer Bridge elevation



Henefer Bridge	
Legend	
---	Road Surface
	Weber River
	Concrete

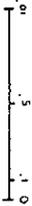


Figure 2. - Drawing of south elevation of Henefer Bridge.

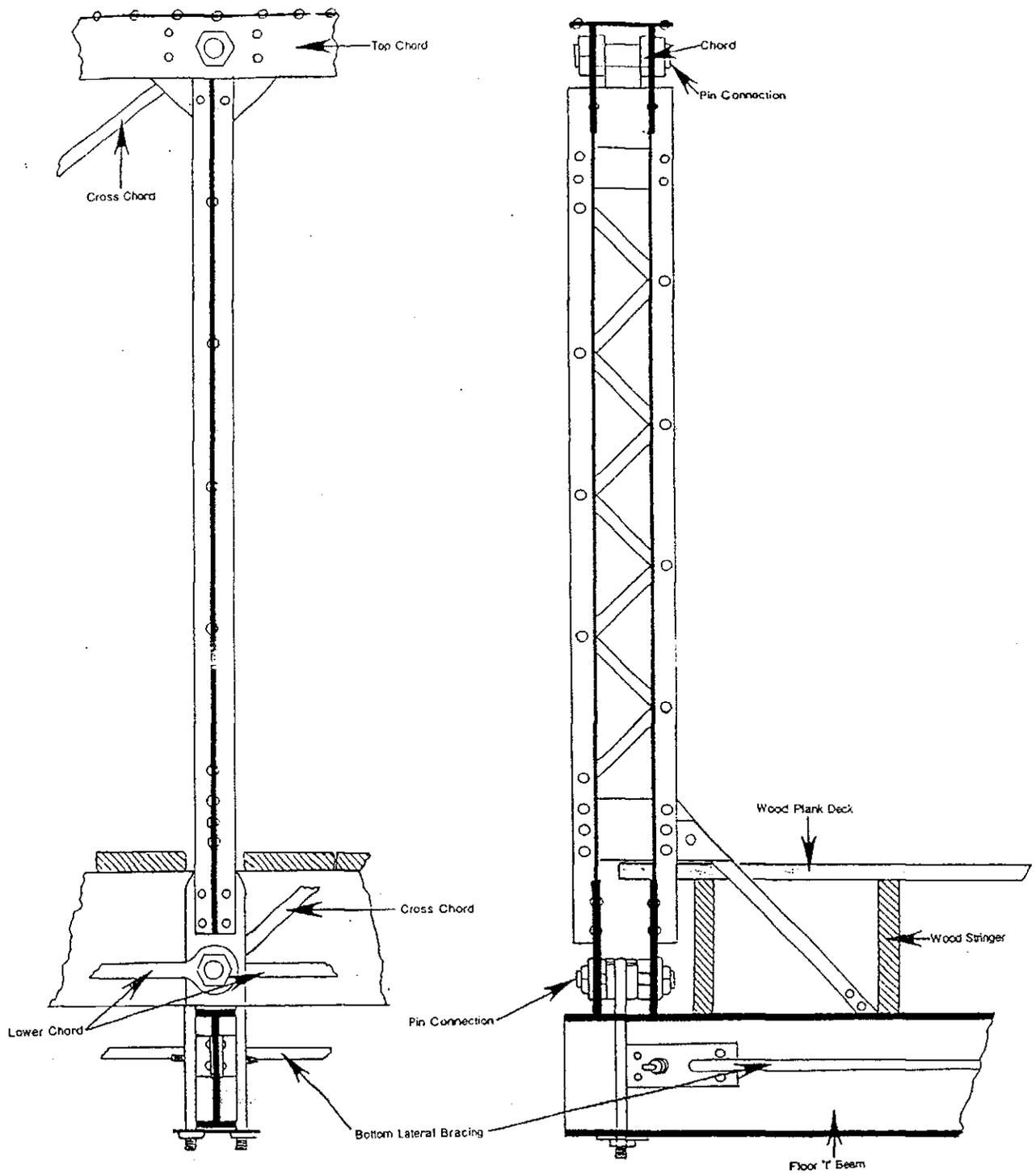


Figure 3 - Drawing of vertical support system and pin connections

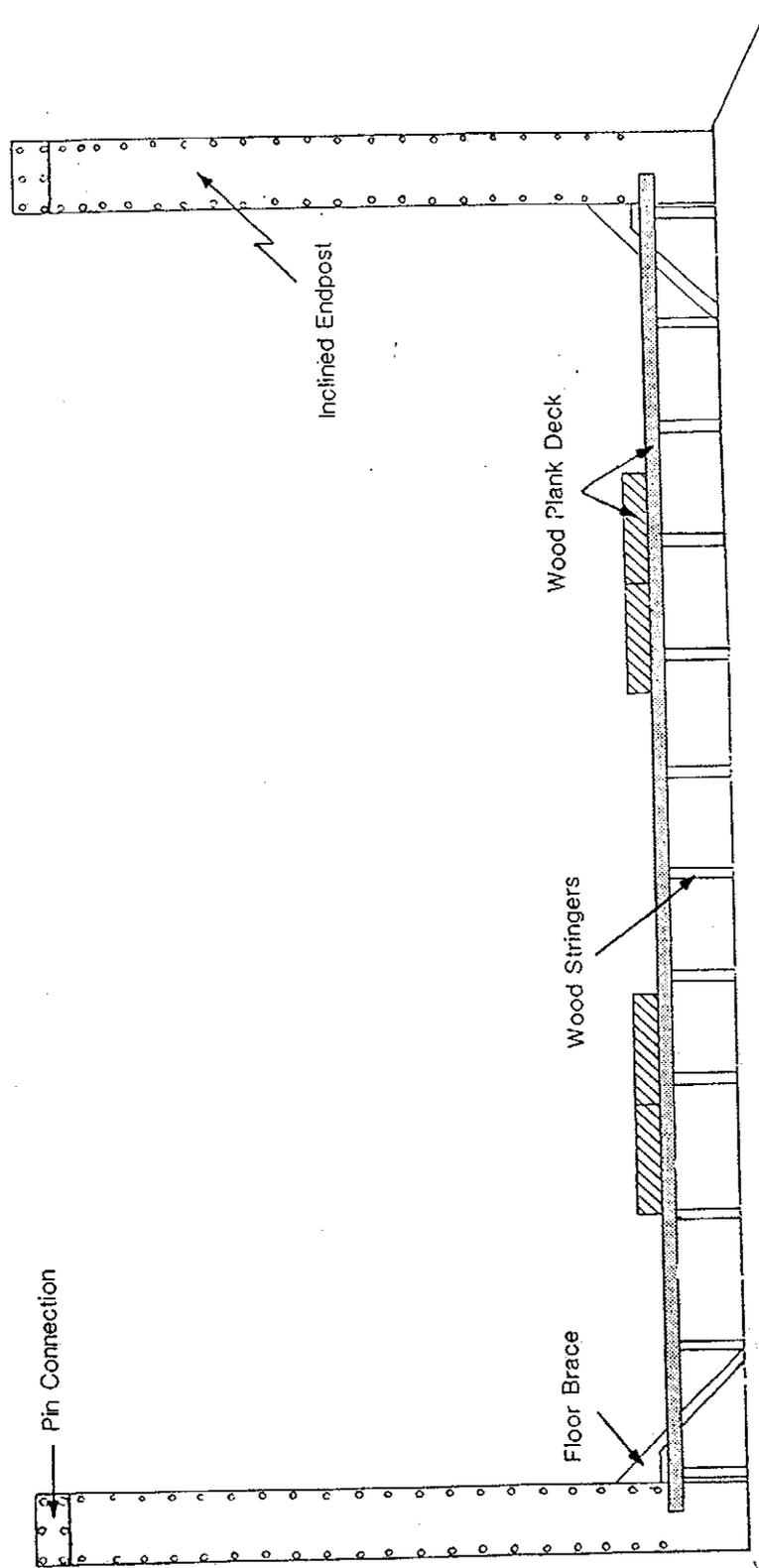


Figure 4 - Drawing of cross-section of Henefer Bridge