

Delgany Street Railroad Bridge  
Platte River Valley Area  
Denver  
Denver County  
Colorado

HAER No. CO-57

HAER  
COLO,  
16-DENV,  
56-

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**PHOTOGRAPHS  
HISTORICAL AND DESCRIPTIVE DATA**

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Historic American Engineering Record  
Department of the Interior  
National Park Service  
Rocky Mountain Regional Office  
P.O. Box 25287  
Denver Colorado 80225

HISTORIC AMERICAN ENGINEERING RECORD

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COLO,  
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56-

Delgany Street Railroad Bridge

HAER No. CO-57

Location: Spanning Cherry Creek at Delgany Street  
Denver, Denver County, Colorado

UTM: 13.499605.4399700  
Quad: Arvada

Date of Construction: 1891; relocated in 1923

Builder/Designer: Burlington & Missouri River Railroad

Present Owner: Burlington Northern Railroad  
373 Inverness Drive North  
Englewood, Colorado 80112

Present Use: Abandoned. Potential reuse by the city of Denver has  
been proposed.

Significance: The Delgany Street Railroad Bridge is a single span,  
wrought and cast iron through Pratt truss and is one  
of the few remaining representations of this once-  
common bridge type in Denver. It is technologically  
significant as a rare Colorado example of wrought and  
cast iron construction.

Historian: Rebecca Herbst  
October 1988

## I. HISTORY

The first railroads to extend their lines to Denver - the Denver Pacific and Kansas Pacific Railroads - entered the city in the year 1870. These lines provided connections to Kansas City and to the Union Pacific's transcontinental line at Cheyenne, giving the city its long-anticipated outlet to the east. Over the next decade, these initial rail connections were augmented by a multitude of independent branch lines. By the early 1880s, Denver had a well-defined railroad network to the east and west, as well as lines projected to reach the Gulf at New Orleans and Galveston, Texas. Its growing importance as a transportation hub for the Rocky Mountain region attracted the attention of another approaching line, the Burlington & Missouri River Railroad (B&MR).

Organized as a subordinate company of the Chicago, Burlington & Quincy Railroad (CB&Q) in 1854, the B&MR was intended to extend the main line from Burlington, Iowa, west across the Missouri River. By 1870, this line had reached East Plattsmouth on the Missouri River, at which time the CB&Q established a second subsidiary - the Burlington & Missouri River Railroad in Nebraska - to extend the line further. The Nebraska-based company pushed construction to the border of Yuma County, Colorado, before the close of 1881, when it was passed to the control of the CB&Q. The Burlington & Colorado Railroad (B&C), yet another subsidiary incorporated by the CB&Q to continue the Colorado extension, arrived in Denver on May 29, 1882. (The Burlington & Colorado Railroad later reassumed the name of the Burlington & Missouri River Railroad, which remained an active subsidiary until the early 1900s.)

The third outlet to the east, the Burlington line was welcomed in Denver as the chief competitor of the Union Pacific Railroad, which by then held both the Denver Pacific and Kansas Pacific lines.<sup>1</sup> The B&C also found itself in fierce competition with other railway lines for right-of-way through the central South Platte Valley. Located in ideal proximity to the industrial and warehouse sectors of lower downtown and West Denver, this area was virtually transformed in the 1880s, with railroad facilities lining either side of Cherry Creek.

By 1885, the B&C had extended its lines to the banks of Cherry Creek and acquired a choice site for its freight facilities. That same year, the railroad bridged Cherry Creek at Chestnut Street<sup>2</sup> and at the Chestnut/Delgany alley. Burlington records indicate that the original Chestnut Street Bridge consisted of 127-foot Bollman iron truss on masonry piers.<sup>3</sup> The bridge was already considered obsolescent five years later, when the B&MR began drafting construction drawings for a replacement bridge.<sup>4</sup> The structure which replaced it is the present Delgany Street Bridge, relocated from Chestnut Street in 1923.

As reflected in the plans prepared by the B&MR Engineers Office in Nebraska for "Bridge No. 493 over Cherry Creek," the Delgany Street Bridge is a single span 125-foot Pratt through truss of wrought and cast iron construction.<sup>5</sup> The roadway width is 16-1/2 feet wide, standard for railroad bridges of the period.

The truss is divided into seven panels, each 17 feet 10 inches wide, with pinned connections. Structural components were fabricated by the Carnegie and Phoenix Bridge companies (the latter provided floor components).<sup>6</sup> Channel sections with riveted lacing bars and cover plates are utilized for the upper chords, end posts and verticals. The lower chords, diagonals and top lateral bracing consist of flat and square eyebars, and hip verticals are flat eyebars pinned to built-up bars. Iron I-beam floor beams and stringers are used in the floor system. Concrete abutments comprise the substructure (the original plans for the Chestnut Street alignment specified concrete piers on top of seat stone). A curious feature of the proposed bridge design, which is not reflected in the existing bridge, was the specification of two eyebars in the center and in one of the west end panels as opposed to four eyebars in the two east end panels, ostensibly due to the heavier flood factorings on the east end of the bridge.<sup>7</sup>

Except for the apparent variation in the number of diagonal members, as previously noted, the Chestnut Street Bridge was completed according to the B&MR specifications in 1891. A typical example of the common Pratt truss type, favored by the railroad lines to span Cherry Creek during the 1880s and 1890s,<sup>8</sup> the Chestnut Street Bridge was also standard in its use of wrought and cast iron components. Although steel bridge components had come into wider use by 1890, the reliability of the new material was still regarded with skepticism by many railroad bridge engineers. As one steadfast engineer pointed out in a report on railway bridge construction published in 1890, the advantages of steel over iron remained a debatable matter:

The use of steel seems to be on the increase as applied to railroad bridges; but in my opinion, iron in a good many places is just as good - perhaps better - and much cheaper on account of ease in working it... we can get nothing to excel iron where there is much abuse shown.<sup>9</sup>

Despite the arguments, steel had entirely superseded iron in bridge construction by the late 1890s, but heavy iron trusses, such as the Chestnut Street Bridge, continued to provide adequate service to the railroads for many more years.

A more immediate problem for the B&MR and other Denver railroads was the threat posed to bridge stability by the flood-prone Cherry Creek. As observed by Denver pioneer, H. G. Wolff, in 1902, the flooding hazard was

particularly serious near the mouth of Cherry Creek, due to the difference in fall between the creek and the dam on the South Platte River at 18th Street, a problem made worse by the precarious location of the railroad bridges:

...The danger begins at the Market Street bridge...Below that are the railway bridges which particularly rest on the sand. It would take very little debris - two little cottonwood trees would do it - to back up the water all over the lower part of the city.<sup>10</sup>

The city administration ultimately addressed the flood danger with the passage of a 1903 ordinance to establish the channel of the creek and authorized the construction of retaining walls in 1906.<sup>11</sup> This work was carried out over the next two decades and included the addition of the concrete retaining walls beneath the Cherry Creek railroad bridges.

During the 1910s, two timber pile bridges were constructed alongside the Chestnut Street Bridge,<sup>12</sup> as it had become an important crossing adjacent to the yards of the CB&Q and Colorado & Southern lines (the latter railroad was acquired by the CB&Q as a subsidiary in 1908). By 1923, the C&S determined that a four track bridge, jointly owned by the two railroads, would better serve the Chestnut Street alignment. Accordingly, plans for the present double Pratt truss bridge were prepared and the C&S removed the 1891 truss to its present location at Delgany Street.

The Delgany Street Bridge remains in fairly original condition, with part of the timber deck and floor system removed. Although moved to this location from Chestnut Street in 1923, it represents the only surviving example of the 19th century railroad bridges across Cherry Creek (the bridge to the north, Cherry Creek Railroad Bridge [HAER No. CO-58], also dates from that period but was moved in from another location). The structure is also significant as one of the last remaining examples in Denver of the pin-connected Pratt truss, a once-common bridge type. Finally, the bridge is notable as a rare Colorado example of wrought and cast iron construction.

## II. FOOTNOTES

- 1 Jerome Smiley, History of Denver, Denver: Times-Sun Publishing Company, 1901, p. 614.
- 2 Renamed in 1890, Chestnut Street was originally known as Williams Street.
- 3 Burlington Northern Railroad, Denver, Colorado, Bridge Records, Structure B027.a. Although records cite a construction date of 1882 for this bridge, historical maps of Denver indicate the later date.

- 4 According to Burlington Northern records, the old truss was sold to Saunders County, Nebraska, in 1891.
- 5 Burlington & Missouri River Railroad, Nebraska, Blueprint Drawings for Bridge No. 493 over Cherry Creek, Denver, December 3, 1890, in the possession of the Burlington Northern Railroad, Denver, Colorado.
- 6 Ibid.
- 7 The arrangement of eyebar diagonals in the bridge is as follows: two eyebars, one counter in center panel; six eyebars in outer panels; and four eyebars, one counter in other panels.
- 8 Historical photographs of the South Platte Valley, taken in the 1890s, show five to six railroad bridges across Cherry Creek below Wazee Street; all appear to be of the pin-connected Pratt through truss type.
- 9 "Some Recent Construction of Railway Bridges," Journal of the Association of Engineering Societies, Vol. 9, No. 11 (November 1890), p. 515.
- 10 "H. G. Wolff Sees Danger to the City from Possible Floods in Cherry Creek," Denver Republican, March 30, 1902, p. 14, c. 2.
- 11 "The Epic of Cherry Creek," Denver Municipal Facts (January-February 1925), pp. 3, 11.
- 12 H. L. Aulls, Memo, Water Flow Tabulations for Cherry Creek Bridges, February 17, 1922, located at Denver Public Library, Western History Collection (clippings file).

### III. BIBLIOGRAPHY

#### A. Books

Albi, Charles and Kenton Forrest. Denver's Railroads. Golden: Colorado Railroad Museum, 1981.

Smiley, Jerome. History of Denver. Denver: Times-Sun Publishing Company, 1901.

Stone, Wilbur Fisk. History of Colorado. Vol. 1. Chicago: S. J. Clarke Publishing Company, 1918.

Wilkins, Tivis E. Colorado Railroads. Published by author, 1974.

B. Newspapers/Periodicals

- "Gulf Lines Sold." The Denver Times, November 19 , 1898, p. 11, c. 1.
- 'H. G. Wolff Sees Danger to the City from Possible Floods in Cherry Creek,"  
Denver Republican, March 30, 1902, p. 14, c. 2.
- "The Approaching B & M." Rocky Mountain News, November 23, 1881,  
p. 6, c. 1.
- "The Epic of Cherry Creek." Denver Municipal Facts (January-February  
1925), pp. 3, 11.
- "Some Recent Construction of Railway Bridges." Journal of the Association  
of Engineering Societies, Vol. 9, No. 11 (November 1890), pp. 511-517.

C. Maps

- Baist's Real Estate Atlas of the City of Denver.  
Philadelphia: G. W. Baist, 1905.
- Beeler, Edwin M. Beeler's Official Map of the City and County of Denver.  
Denver: Beeler Map Co., 1913.
- Clason, George S. Map of Denver, Colorado. Denver: Clason Map Co., 1909.
- Flett, J. H. Bird's Eye View of the City of Denver, Colorado.  
Cincinnati: Strobridge Lith. Co., 1882.
- Glover, E. S. Bird's Eye View of Denver. Cincinnati: Strobridge & Co.,  
1874.
- Marsh, Halbert W. Marsh's Real Estate Map of the City and County of  
Denver. Denver: H. W. Marsh, 1918.
- Robinson, Elisha. Atlas of the City of Denver, Colorado.  
New York: E. Robinson, 1887.
- Rollandet Drafting and Blueprint Co. Pocket Map of the City of Denver.  
Denver: Rollandet Drafting and Blueprint Co., 1899.
- Rollandet, Edward. Rollandet's Map of the City of Denver.  
Denver: Edward Rollandet, 1885.
- Sanborn Map and Publishing Company. Insurance Map of Denver, Colorado.  
New York: Sanborn Map Company, 1890.

Thayer, H. L. Thayer's Map of Denver. Denver: Thayer & Stubbs, 1872.

D. Unpublished Sources

Aulls, H. L. Memo, Water Flow Tabulations for Cherry Creek Bridges, February 17, 1822. Located at the Denver Public Library, Western History Collections (clippings file).

Burlington & Missouri River Railroad, Nebraska. Blueprint Drawings for Bridge No. 493 over Cherry Creek, Denver, December 3, 1890. In the possession of the Burlington Northern Railroad, Denver, Colorado.

Burlington Northern Railroad, Denver, Colorado. Bridge Records, Cherry Creek Railroad Bridges, Structures B027.a-B027.d.

Photographs, Construction of the Fourteenth Street Viaduct, 1898-1899. Located at the Denver Public Library, Western History Collection.