Falls Bridge
Spanning the Schuylkill River,
Connecting East and West River Drives
Philadelphia
Philadelphia County
Pennsylvania

HAER No. PA-35

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Wahington, D. C. 20240

HAER
PA,
51-PHILA,
701-

HISTORIC AMERICAN ENGINEERING SURVEY

FALLS BRIDGE

HAER No. PA-35

Location: Spanning the Schuylkill River, connecting East and West River Drives, Philadelphia, Pennsylvania.

Description: Steel bridge with stonemasonry abutments and two stonemasonry piers, 540 feet by 40 feet (including sidewalks), and three Pratt-type pin-connected trusses, each 180 feet long. Secondary system of bracing for carrying intermediate floor system.

History: Built 1894-95 by George S. Webster, the chief engineer and James H. Wundrim, director of the Department of Public Works. The bridge was designed as a double-deck bridge but an upper deck was never built.

Source: Webster, Richard J. Phildelphia Preserved. Philadelphia; Temple University Press, 1976.

INVENTORY OF PHOTOGRAMMETRIC IMAGES

The glass photogrammetric plates listed below are not reproducible except with special permission. However, reference prints and film copy negatives have been made from the plates indicated by an asterisk (*) and are included in the Library of Congress collection of formal HABS/HAER photographs.

6 5" x 7" glass plate negatives (3 stereopairs) produced by Perry E. Borchers of the Ohio State University in 1971.

One survey control contact print from each plate; survey control information for each pair.

LC-HAER-GS05-B-1971-501L *	VIEW FROM SOUTH ON EAST BANK--LEVEL
LC-HAER-GS05-B-1971-501R	VIEW FROM SOUTH ON EAST BANK--LEVEL
	Left and right overlap: 95%
LC-HAER-GS05-B-1971-502L *	EAST VIEW OF EAST END OF BRIDGE--LEVEL
LC-HAER-GS05-B-1971-502R	EAST VIEW OF EAST END OF BRIDGE--LEVEL
	Left and right overlap: 85%

LC-HAER-GS05-B-1971-503L * — INTERIOR OF BAY OVER PIER, INCLINED UP 10 DEGREES

LC-HAER-GS05-B-1971-503R — INTERIOR OF BAY OVER PIER, INCLINED UP 10 DEGREES

Left and right overlap: 80%

2 5" x 7" master contact prints, each mounted on cardstock.

No original negatives; no survey control information. Copy prints and copy negatives have been made from both prints.

LC-HAER-PS05-2000-401 * — STEEL BRIDGEWORK

LC-HAER-PS05-2000-402 * — DESCRIPTION PLAQUE

PROJECT INFORMATION STATEMENT

Photogrammetric images were incorporated into the HABS/HAER collections in the summers of 19B5 and 19B6. Inventories of the images were compiled and filed as data pages for each structure recorded. Since the glass photogrammetric plates are not reproducible except with special permission, a reference print and film copy negative were made from one plate of each stereopair and from the most informative plates in sequential sets. The reference prints and copy negatives were then incorporated into the formal HABS/HAER photograph collections.

The Photogrammetric Images Project was a cooperative endeavor between the HABS/HAER Division of the National Park Service and the Prints and Photographs Division of the Library of Congress. The reference prints and film copy negatives of the original plates were made by the Library of Congress Photoduplication Service with funds provided by the Library of Congress Flat Film Preservation Fund. Additional reproductions were made by HABS/HAER. The project was supervised by HABS/HAER Architect John A. Burns, AIA, and completed by HABS Historians Jeanne C. Lawrence (University of London) in 1985 and Caroline R. Alderson (Columbia University) in 1986.

ADDENDUM TO
FALLS BRIDGE
Spanning Schuylkill River
connecting East & West River Drives
Philadelphia
Philadelphia County
Pennsylvania

HAER No. PA-35

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XEROGRAPHIC COPIES OF COLOR TRANSPARENCIES

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Department of the Interior
Washington, DC 20001

ADDENDUM TO
FALLS BRIDGE
Pennsylvania Historic Bridges Recording Project - II
Spanning Schuylkill River, connecting E. and W. River Drives
Philadelphia
Philadelphia County
Pennsylvania

HAER No. PA-35

PHOTOGRAPHS

XEROGRAPHIC COPIES OF COLOR TRANSPARENCIES

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
1849 C Street, NW
Washington, DC 20240

HISTORIC AMERICAN ENGINEERING RECORD

ADDENDUM TO
FALLS BRIDGE

This is an addendum to a 2-page report previously transmitted to the Library of Congress.

Location:	Spanning Schuylkill River, connecting E. and W. River Drives, Philadelphia, Philadelphia County, Pennsylvania.
USGS Quadrangle:	Germantown, Pennsylvania (7.5-minute series, 1983).
UTM Coordinates:	18/483071/4428490
Dates of Construction:	1894-95.
Designer:	George S. Webster, Chief Engineer, Philadelphia Department of Public Works and Bureau of Surveys.
Fabricator:	Edge Moor Iron Company (Wilmington, Delaware).
Builder:	Filbert, Porter and Company (Philadelphia).
Present Owner:	City of Philadelphia.
Present Use:	Vehicular and pedestrian bridge.
Significance:	The Falls Bridge is a unique and well-preserved example of the Petit through truss design, capable of carrying a roadway on both its upper and lower chords. The upper deck remains incomplete, but is nonetheless an example of the Philadelphia Department of Public Works and Bureau of Surveys' far-sighted transportation planning under Chief Engineer George S. Webster. The bridge crosses the Schuylkill River in Fairmount Park, a National Register-listed historic district.
Historians:	Helen P. Ross, August 1998. Revised and expanded by Justin M. Spivey, March 2001.

Project Description: The Pennsylvania Historic Bridges Recording Project II was co-sponsored during the summer of 1998 by HABS/HAER under the general direction of E. Blaine Cliver, Chief; the Pennsylvania Department of Transportation, Bureau of Environmental Quality, Wayne W. Kober, Director; and the Pennsylvania Historical and Museum Commission, Brent D. Glass, Executive Director and State Historic Preservation Officer. The fieldwork, measured drawings, historical reports and photographs were prepared under the direction of Eric DeLony, Chief of HAER.

Introduction

Spanning the Schuylkill River in Philadelphia's Fairmount Park, the Falls Bridge is a unique and well-preserved example of its type and one of the city's great incomplete structures. Looking somewhat out of place in its park setting, this late nineteenth-century steel truss has unusually heavy proportions that result from a proposed but unbuilt second deck on its upper chords. The bridge connects Kelly (East River) Drive with West River Drive, upstream from the Roosevelt Boulevard (U.S. 1) expressway bridge. The western approach ends at a T-intersection below a wooded hillside, while the eastern approach leaves the park to enter an urban enclave of modern convenience stores, fast-food restaurants, and service stations. The current structure is the first metal truss bridge to cross the Schuylkill at the Falls, replacing a series of suspension and wooden spans erected throughout the nineteenth century. It was designed by George S. Webster, Chief Engineer of the city's Department of Public Works and Bureau of Surveys, and built by Filbert, Porter and Company, one of a handful of local contractors that specialized in erecting the city's bridges. The steel fabrication work was subcontracted to the Edge Moor Iron Company of Wilmington, Delaware, another firm well-represented in Philadelphia-area structures during the late nineteenth century.

In the 1890s, Fairmount Park was the world's largest urban park. From five acres surrounding the Fairmount Water Works in 1812, the park was expanded to more than 4,000 acres, including land formerly occupied by some of the city's wealthiest residents. The park also contains fourteen miles of tributaries and the Schuylkill itself, which formerly provided water power for a variety of enterprises. The earliest industries were mills in the Wissahickon Creek valley, with Richard Townsend operating a grist mill as early as 1686. In the vicinity of the Falls of the Schuylkill, the east bank slowly developed as a mixed enclave of working class residences and cottage industries known as East Falls Village. Not until after the end of the Civil War was the west bank included in the park. Following the U.S. Centennial Exposition of 1876, the park matured into a picturesque combination of landscaped parkland and natural areas. The Exposition drew thousands of visitors to West Fairmount Park, a massive array of buildings and landscaped grounds. Celebrating a century of U.S. history and demonstrating futuristic applications of technology, the Exposition was an instant hit with the city and the world. In the

wake of the event, the park became a year-round destination for refuge-seeking locals and day trippers. Private ventures and various city agencies scurried to improve the urban infrastructure as West Philadelphia opened up for development. During the closing decades of the nineteenth century, modern iron and steel spans such as the Girard Avenue Bridge (1874), Falls Bridge (1895), and Strawberry Mansion Bridge (1897) were built to ensure reliable and safe access to West Fairmount Park and beyond.[1]

Description

The Falls Bridge has details typical of late nineteenth-century Petit trusses, but executed on an unusually large and heavy scale. It consists of three through truss spans, each 180'-0"-long, measured from center to center of the end bearings. Because of 7'-0" gaps between bearings on the piers, and because the end posts have the substantial width of 2'-4", the structure's overall length is 556'-4". The trusses are installed on a 1.5 percent grade, so the west end of each span is approximately 2'-8" higher than the east. Because the vertical members were installed perpendicular to the chords, they are tilted slightly from the vertical. The trusses are spaced 43'-0" on center transversely. With 30'-0" between the centers of upper and lower chords, the trusses are too deep for the Pratt pattern of diagonals to work efficiently. Each of the eight 22'-6" panels is therefore divided in half, with secondary members supporting intermediate panel points, a variant known as the Petit truss after its inventor. Because the bridge was designed to carry a roadway upon each of its upper and lower chords, the secondary members are a superposition of Petit through truss and Petit deck truss patterns. The members are mostly pin-connected, except for some riveted connections in the secondary members. Even by modern standards, the structure is over-built for carrying traffic on a single deck. There is no posted weight limit.[2]

The substructure consists of two masonry piers in the river and an abutment with curved wing walls on each bank. Foundations were carried either to rock or to firm footing in gravel. The piers consist of rough-pointed ashlar, and the abutments of rock-faced ashlar, in both cases backed with rubble masonry. Most of the stone is Port Deposit granite quarried by McClenahan Brothers, except for coping blocks supplied by a granite quarry in Pigeon Cove, Maine. Handwritten specifications prepared by the Department of Public Works and Bureau of Surveys even dictate the minimum size of certain blocks, 17'-0" wide by 2'-10" thick for bridge seats on the piers, and 9'-0" wide by 2'-0" thick for those on the abutments. The specifications also cover

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[1] John Bowie, ed., *Workshop of the World: A Selective Guide to the Industrial Archeology of Philadelphia* (Wallingford, Pa.: Oliver Evans Press, 1990), 11-3 through 11-6; George B. Tatum, "Fairmount Park," Philadelphia County, Pennsylvania, National Register of Historic Places Registration Form, 1972, Section 7, p. 1, U.S. Department of the Interior, National Park Service, Washington, D.C.; Richard J. Webster, *Philadelphia Preserved: Catalog of the Historic American Buildings Survey* (Philadelphia: Temple Univ. Press, 1976), 225.

[2] Bridge inspection cards, City of Philadelphia, Department of Streets, Highway Division, Bridge Maintenance Unit.

foundations for columns supporting the future upper deck approaches, with terra-cotta planters concealing the anchor bolts.[3] These were either omitted or subsequently removed. A cornerstone in the top course of the south-east wing wall contains a time capsule with plans of the bridge, a guidebook to Fairmount Park, other miscellaneous documents, and coins.[4]

The lower deck carries two lanes of vehicular traffic on a 26'-0"-wide roadway, with 7'-0" sidewalks on either side, for a total width of 40'-0". Transverse floor beams are 5'-0-1/2" deep under the roadway, tapering to 2'-7-1/2" under the sidewalks. The floor beams, spaced 11'-3" on center longitudinally, are riveted to the main vertical members and to suspenders from the secondary panel points. A system of lateral cross-bracing is attached to the lower chord pins and riveted to the midpoints of the secondary floor beams. In the original configuration, there were no stringers. Steel Z-bars and plates were riveted below the top flanges of the floor beams, forming a series of trough sections resembling a modern orthotropic deck. The troughs were filled with an bituminous concrete base, which was then covered with an asphalt wearing surface. The sidewalks were of similar construction, except with the trough sections sitting above the top flanges of the floor beams. Cast-iron drain pipes pierced the steel curbs at intervals, draining the roadway into the river below. In 1986, the deck system was rehabilitated by installing new stringers and a reinforced concrete deck adjacent to the expansion joints. Four expansion rollers are found at the east side of each river pier and on the west abutment. Originally these were roller nest bearings forming part of Chicagoan George S. Morison's patented expansion-joint system. The roller nests had rusted solid and were replaced with slide bearings in the 1986 rehabilitation.[5]

Webster designed the upper deck wider than the lower deck so that it could carry a double-track streetcar line down the middle of a 40'-0" roadway. Sidewalks, 10'-0" wide, would be cantilevered outside the trusses on either side. Webster's specifications directed that floor beams be installed on the upper chords, ready to receive the steel deck, curbs, and sidewalk brackets for the upper roadway. The floor beams occur at the same 11'-3" intervals as on the lower deck. Because of the heavier design load, the upper deck floor beams measure 6'-2-5/8" deep, notched to 3'-7-3/4" over the chords. Lateral bracing between the upper chords follows the

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[3] City of Philadelphia, Department of Public Works and Bureau of Surveys, construction drawings; ibid., "Proposal for Falls Bridge," 31 Aug. 1894; both in Falls Bridge inspection file, Department of Streets, Bridge Section (hereinafter cited as Streets inspection file).

[4] City of Philadelphia, Department of Public Works and Bureau of Surveys, *Record of Bridges,* 150, currently located in Department of Streets, Bridge Section; City of Philadelphia, *First Annual Message of Charles F. Warwick, Mayor of the City of Philadelphia, with Annual Report of Thomas M. Thompson, Director of the Department of Public Works and of the Bureau of Surveys, for the Year Ending December 31, 1895* (Philadelphia: Dunlap Printing Co., 1896), 90.

[5] Bridge inspection cards; City of Philadelphia, *Fourth Annual Message of Edwin S. Stuart, Mayor of the City of Philadelphia, with Annual Report of James H. Windrim, Director of the Department of Public Works and of the Bureau of Street Cleaning, for the Year Ending December 31, 1894* (Philadelphia: Dunlap Printing Co., 1895), 92.

same pattern as between the lower chords. In addition, each main panel point (22'-6" centers) has sway bracing in the form of a six-panel lattice truss 6'-3" deep, riveted to the main vertical members and to the underside of the upper deck floor beams. The end panels of the lattice truss have a solid web, pierced with a 26"-diameter hole to accommodate future pipes.[6] Spandrel brackets, pierced with a decorative pattern, form knee braces beneath the sway bracing.

The bridge's ornamental details include four bronze plaques (two pairs with the same wording). The present plaques are not original; inspection records refer to replacements installed in 1975. A plate with the construction date of 1895 is hung from the sway bracing in both portals. The bridge retains its original wrought-iron railing with cast-iron terminal posts on the approaches, although inspection records record numerous sections being damaged and replaced throughout the bridge's life.[7] Fourteen lanterns once hung from the sway bracing; these were half gas and half electric, providing a measure of redundancy in keeping the bridge lighted. Webster also designed electric light standards, made of cast-iron bases with wrought-iron posts, to stand at each corner of the approaches. This detail has been scratched out in the drawings, and could not be seen in any of historic photographs viewed in researching this report.[8] The metal work was originally decorated in a four-tone paint scheme (white, buff, brown, and red), following the late nineteenth-century tradition of demarcating structural functions by color.[9] This scheme has been lost beneath subsequent re-painting; the Falls Bridge has been a light green tint throughout much of the twentieth century.

Previous Bridges at the Falls of the Schuylkill River

The present location of the Falls Bridge has actually been home to six previous nineteenth-century bridges. On 22 February 1808, a legislative act authorized Robert Kennedy and Conrad Carpenter to build a bridge on their land at the Falls of the Schuylkill and to collect a toll. The earliest span to cross the Falls was the 1808-09 chain suspension bridge built on Judge James Finley's patented design. In 1801 in Fayette County, Finley had created America's first suspension bridge with a rigid deck for vehicular traffic. Within two years, however, the iron chain bridge at the Falls was damaged when the weight of a cattle herd caused some suspenders to fail, allowing part of the floor to fall into the river. Rebuilt in 1811, the bridge survived until it was destroyed by a heavy snowfall in 1816. In that same year, Josiah White, who co-owned a wire mill on the western bank of the river and needed access to his business, erected the country's first wire suspension bridge. The structure, nicknamed the "spider bridge," had cables

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[6] Department of Public Works and Bureau of Surveys, "Proposal for Falls Bridge," 6d.

[7] Bridge inspection cards.

[8] Department of Public Works and Bureau of Surveys, "Proposal for Falls Bridge," 6d; ibid., "Wrought Iron Railing for Falls Bridge over the Schuylkill River," July 1894, both in Streets inspection file.

[9] Department of Public Works and Bureau of Surveys, *Record of Bridges,* 150.

composed of six wires "laid straight and bound at intervals with separate, smaller wires and tarred yarn," included a wooden floor eighteen inches wide, and spanned a length of 408'-0". It met its demise in an ice storm within six months of its completion.[10]

Between 1817 and 1895, four wooden bridges provided the link between the two riverbanks. The 1817 span was a covered bridge and remained in place for roughly five years until 1822, when it was washed away in a winter storm. The next bridges to be built on or near the same site were completed in 1829 and 1847, the latter an uncovered wooden toll bridge painted white and operated by Aaron Smith. When the debris-laden Schuylkill overflowed its banks in 1850, the remnants of the old Manayunk Bridge crashed into the existing structure, tearing out the westernmost truss, its masonry piers, and the abutment. Around 1861, another wooden bridge with three Burr arch-truss spans was set onto stone piers in the river. Constructed by the city, this covered bridge became known as "the old red bridge." It survived until gale force winds in October 1878 knocked the center and western trusses into the water below.[11]

Four months later, in February 1879, the city contracted with Cofrode and Saylor, proprietors of the Philadelphia Bridge Works, to repair the existing Burr truss span and replace the missing spans by building two Howe truss arches costing $8,500. For nearly thirteen years the bridge remained in service. On 29 June 1893, city inspectors recommended that the bridge be closed immediately due to missing portions of bottom lateral bracing. By 15 July, the bridge was closed to vehicular traffic and, on 6 August, the bridge's middle and western spans were blown off their piers, yet another victim to high winds.[12]

Design and Construction

Desiring to prove his mettle, the city's newly appointed Chief Engineer, George S. Webster, began preparing plans for a new Falls Bridge in late 1892. Webster, a native Philadelphian, was born on 19 October 1855. He graduated with a civil engineering degree from the University of Pennsylvania in 1875 and immediately went to work as a civil engineer for the U.S. Centennial Exposition project in Fairmount Park. Between 1880 and 1892, Webster was employed by the City of Philadelphia's Engineering Department, overseeing various engineering

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[10] Bowie, *Workshop of the World,* 11-25. See also newspaper clipping files, Urban Archives, Paley Library, Temple University, Philadelphia, Pa.

[11] Bowie, *Workshop of the World,* 11-25.

[12] Bowie, *Workshop of the World,* 11-26; Lois Childs, ed., *East Falls: Three Hundred Years of History* (Philadelphia: Lithographic Publications, 1976), 46; Victor C. Darnell, *Directory of American Bridge-Building Companies 1840-1900,* Occasional Publication No. 4 (Washington, D.C.: Society for Industrial Archeology, 1984), 61, 64; City of Philadelphia, Department of Public Works and Bureau of Surveys, "Specifications and Proposal for Building Two Wooden Howe Truss Spans," 15 Feb. 1879, Streets inspection file; and City of Philadelphia, *Third Annual Message of Edwin S. Stuart, Mayor of the City of Philadelphia, with Annual Report of James H. Windrim, Director of the Department of Public Works and of the Bureau of Surveys, for the Year Ending December 31, 1893* (Philadelphia: Dunlap Printing Co., 1894), 127.

and surveying projects. In 1892, Webster was appointed Acting Chief Engineer of the city's Department of Public Works and Bureau of Surveys, under Director James H. Windrim. Webster became the permanent Chief Engineer on 1 February 1893, a position he held until 1915.[13]

The Falls Bridge is typical of the forward-thinking designs that characterized Webster's tenure as Chief Engineer. His design for the Falls Bridge anticipated expansion of the city's transportation network, and used heavy metal trusses to resist the conditions that had destroyed six previous bridges at the Falls. Provisions for a roadway and streetcar line on the upper deck added yet more weight that would help keep the spans on their piers during floods or high winds. The structure has yet to see its full intended use, however.

Webster envisioned a double-deck Falls Bridge, but it soon became clear that his design could not be constructed in a single effort. The City Council passed an ordinance appropriating $300,000 for a new bridge on 11 May 1894, which was insufficient to construct the long approaches to the upper deck. The Department of Public Works and Bureau of Surveys prepared plans for the bridge minus its upper deck and advertised for bids, which it opened on 30 July 1894. After a short review, the city accepted Filbert, Porter and Company's bid of $248,500 to build the trusses, install the lower deck, and grade and pave the approaches. The bid included unit costs for additional excavation, masonry, fill, and paving, in anticipation of which the city set the maximum contract limit at $265,000. Filbert, Porter and Company received notice to proceed on 6 September 1894. The project was to be completed within five months, with damages set at $50 per day for delays. Construction photographs show that erection proceeded on falsework placed in the shallow river, with a gantry crane traveling on tracks parallel to the lower chord.[14] The new bridge opened to the public in June 1895, four months behind schedule, although under budget at a total cost of $261,744.37.[15] It could not be determined whether this figure includes the contractor's penalty, or whether the city even collected damages for the delay.

Plans for the Falls Bridge's unbuilt upper deck have been called an early example of multi-level bridge engineering.[16] The upper roadway would have connected Midvale Avenue on the west end to School Lane on the east. An 1892 rendering shows an elevated intersection beyond the east end of the bridge, with a curving ramp descending to Ridge Avenue.[17] A streetcar line, which other sources indicate would have run to Bala Cynwyd, does not appear in

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[13] Lewis R. Hamersly, ed., *Who's Who in Pennsylvania* 1st ed (New York: L. R. Hamersly, 1904), 778.

[14] U.S. Department of the Interior, HAER No. PA-35, "Falls Bridge," 1986, Prints and Photographs Division, Library of Congress, Washington, D.C., photographs PA-35-10 and PA-35-11.

[15] City of Philadelphia, *First Annual Message,* 91; Department of Public Works and Bureau of Surveys, "Proposal for Falls Bridge"; and "To Complete a Great Park Bridge," *Evening Bulletin* (Philadelphia), 14 Apr. 1900.

[16] Bowie, *Workshop of the World,* 11-26.

[17] The rendering is most easily found in City of Philadelphia, *First Annual Message.*

this early rendering. Construction drawings from mid-1894, however, clearly show two streetcar tracks on the upper deck.[18] The Department of Public Works and Bureau of Surveys dusted off this scheme five years after the bridge's completion. On 14 April 1900, the Philadelphia *Evening Bulletin* reprinted the rendering, with an accompanying article indicating that an additional appropriation of a quarter-million dollars would be needed.[19] Evidently the city never found the money to complete the project and the original plan was forgotten. The Schuylkill Falls public housing project, built in the 1950s, now blocks the eastern approach to the upper deck.

Conclusion

The Falls Bridge is a product of an era when the city of Philadelphia experienced phenomenal growth. Built only shortly after the World's Columbian Exposition of 1893, the bridge lacks the Beaux-Arts aesthetics of the ensuing City Beautiful movement. Instead, the contrast between heavy steel truss members and intricate wrought-iron handrails reflects more Victorian engineering sensibilities. Just beginning his career as Chief Engineer in the city's Department of Public Works and Bureau of Surveys, George S. Webster saw a heavy Petit truss system as appropriate for this important crossing of the Schuylkill River. His design anticipated future demands on the city's infrastructure by providing for a future upper deck. The deep upper chords and floor beams drove up the project's cost and gave the bridge its characteristic massive proportions, although the second deck was never installed. Today this workhorse of a bridge looks slightly out of place in its park setting, but it remains a unique and well-preserved example of the Petit truss type.

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[18] Department of Public Works and Bureau of Surveys, "Cross Section of Falls Bridge over Schuylkill River," 7 June 1894, in Streets inspection file. On the streetcar line, see "The Falls Bridge Started Out to Be a Double-Decker," *Evening Bulletin* (Philadelphia), 18 Mar. 1951.

[19] "To Complete a Great Park Bridge," *Evening Bulletin* (Philadelphia), 14 Apr. 1900.

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