



BRIDGE TO SUCCESS:

Opportunities for
Reusing
Pennsylvania's Metal
Truss Bridges

October 2020

In This Issue...

[Bridge for Sale Spotlight:
Bergey's Mill Road Bridge](#)

[From the Blog: Preserving York
County's Hull Drive Bridge](#)

Resources

[Bridge Marketing FAQs](#)

[PennDOT's Bridge Marketing
Website](#)

[PA SHPO Blogs](#)

[Other Online Resources](#) - **New!**



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Forward



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Bridge For Sale Spotlight



Bergey's Mill Road Bridge in Lower Salford Township, Montgomery County. Image courtesy of PennDOT.

Bergey's Mill Road Bridge

Metal Truss bridges are an important part of Pennsylvania's engineering and technological history and are a standing legacy to the state's iron and steel industry. Many of these bridges were built over a hundred years ago and were never meant to carry the load of modern traffic.

PennDOT, with the help of the Pennsylvania State Historic Preservation Office developed a management plan that includes marketing bridges that can no longer meet the needs of their crossing in advance of the bridge become a removal project. This allows more time to find a new owner and new use for the historic metal truss bridge. Even with the best planning efforts, sometimes, it is unknown if the historic bridge can meet the needs of the crossing until it becomes a bridge project.

This was the case with the Bergey's Mill Road Bridge.



Bergey's Mill Road Bridge in Lower Salford Township, Montgomery County. Image courtesy of PennDOT.

It was recently determined that this bridge could not be rehabilitated in a way that preserved its character defining features while meeting the needs for the crossing. Located in Lower Salford, Montgomery County where it carries Bergey's Mill Road (T-356) over the East Branch of Perkiomen Creek, this 2-span, pin-connected Pratt thru truss bridge is [eligible for listing](#) in the National Register of Historic Places.



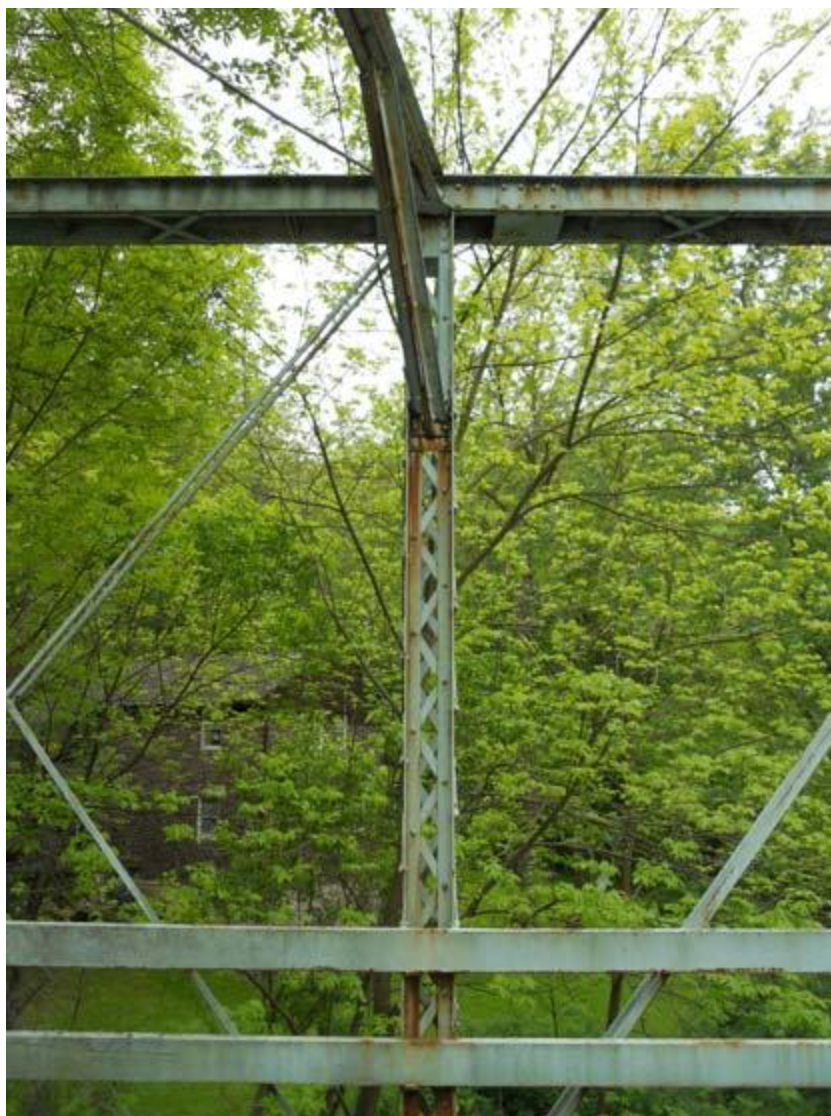
Looking through the two spans of Bergey's Mill Road Bridge in Lower Salford Township, Montgomery County. Image courtesy of PennDOT.

Built in 1893, by John Denithorne & Sons of Phoenixville, PA, the Bergey's Mill Road bridge represents an increasingly rare group of metal truss bridges built before the turn of the 20th century.



Bergey's Mill Road Bridge in Lower Salford Township, Montgomery County. Image

In addition, this multi span bridges features unusual built up members that do not reflect the standards of the period, making it a one-of-a-kind bridge. Bergey's Mill Road bridge is ranked as an exceptional preservation priority, the highest ranking in the statewide metal truss bridge population.



Structural detail on Bergey's Mill Road Bridge in Lower Salford Township, Montgomery County. Image courtesy of PennDOT.

Are you looking to link Pennsylvania's cultural heritage to your trail or do you value the concepts of recycling and reuse? If so, then consider acquiring the Bergey's Mill Road Bridge on your trail. This unique and rare bridge would complement any trail. The new owner can choose to reuse one or both spans.

This historic bridge will not be available for long!

If you or your organization is interested in assuming ownership of the Bergey's Mill Road bridge, please contact

Office at tyguyton@pa.gov or (717) 540-0017 or Susan

Guisinger-Colon at smguisinger-
colon@mccormicktaylor.com.

Bergey's Mill Road Bridge Quick Facts:

Year Built: 1893
Type: Pratt Thru Truss
Number of Spans: 2
Length: 196'
Width: 16'
Builder: John Denithorne & Sons, Phoenixville, PA
Location: Lower Salford, Montgomery County
Carries: Bergey's Mill Road (T-356) over the East Branch of the Perkiomen Creek

[Learn more about the Bergey's Mill Road Bridge on PennDOT's Bridge Marketing Website](#)

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From the Blog



Hull Drive Bridge over Bermudian Creek.

Preserving York County's Hull Drive Bridge

County Bridge #226 carries Hull Drive over Bermudian Creek in a rural setting south of the village of Kralltown in Washington Township, York County. Two different truss types make up the structure – a 68-foot-long pony truss joins with a 151-foot-long pin-connected Pratt thru truss.

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RESOURCES

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Although each bridge marketing experience is unique, PennDOT has put together a list of frequently asked questions and answers about the marketing program to help guide those who are interested in acquiring a bridge.

[Read it here](#) on the NEW bridge marketing website.

List of Available Bridges

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The website contains a list of the available metal truss bridges along with a picture and brief description of each bridge. If you need assistance finding a bridge to meet your needs, contact Tyra Guyton at (717)-346-0617 or tyguyton@pa.gov for help.

PA SHPO Blogs

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Other Online Resources - New!

The internet is a great resource for finding information about historic metal truss bridges. Here is a sampling of a few websites where you can learn more about metal truss bridges, their history and engineering.

- [Pennsylvania's Historic Truss Bridge Management Plan](#), PennDOT
- [Pennsylvania's Bridge Technology Context](#), PennDOT
- [Evolution of Pittsburgh's River Bridges](#)
- [Pittsburgh Bridges](#)
- [Historic American Engineering Record \(HAER\)](#), National Park Service
- [HAER Truss Types](#), National Park Service
- [HistoricBridges.org](#)
- [Historic Bridge Foundation](#)
- [Workin' Bridges](#)
- [Bridgehunter.com](#)
- [Digital Bridges](#) from Lehigh University, Bethlehem, PA



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June 2021

In This Issue

[Introducing PennDOT's New
Bridge Program Manager](#)

[Bridge for Sale Spotlight:
Hodgen's Bridge](#)

[From the Blog: Rehabilitated
Mott Street Bridge](#)

Resources

[Bridge Marketing FAQs](#)

[PennDOT's Bridge Marketing
Website](#)

[PA SHPO Blogs](#)

[Other Online Resources](#)



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Welcome!



Veronica Martin at the Bollman Truss Railroad Bridge, a National Historic Landmark, in Savage, Maryland.

Introducing Veronica Martin, PennDOT's New Bridge Program Manager

Veronica Martin is originally from Michigan and has a Bachelor of Arts degree in Public History from Western Michigan University. She completed two summer internships with PennDOT before attending graduate school at the University of Maryland. In 2020, she graduated with a Master's in Historic Preservation.

In conjunction with her Master program Veronica completed internships with the Advisory Council on Historic Preservation and the National Park Service. In May of 2021, Veronica returned to PennDOT as the Historic Bridge Program Manager. She will be focusing on several initiatives including historic bridge marketing and historic bridge management. You can reach Veronica at vermartin@pa.gov.



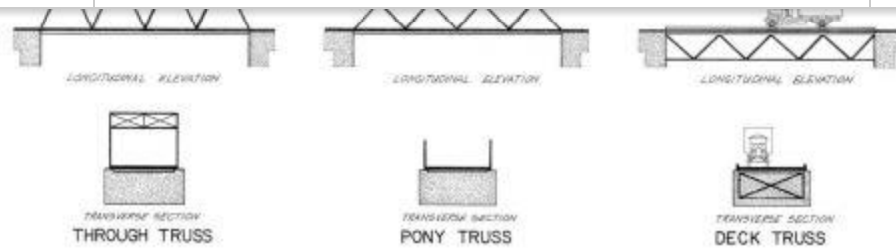
Hodgens Bridge

The Hodgens Bridge, also known as the Walker Hill Road Bridge or Buffalo Creek Bridge No. 29, is an early 103-foot-long Pratt through truss bridge located in Blaine Township, Washington County. It carries Walker Hill Road (TR 476) over Buffalo Creek.



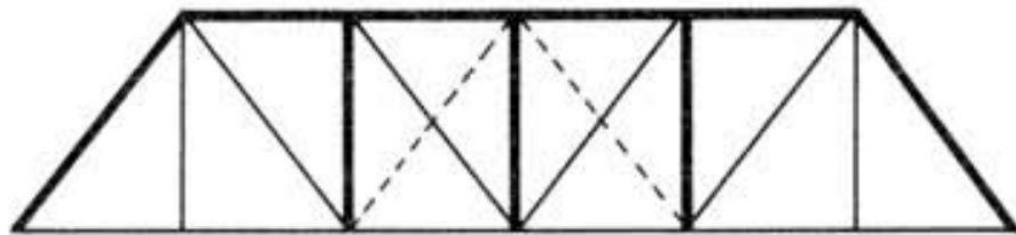
Hodgens Bridge in Blaine Township, Washington County. Source: PennDOT inspection Records.

Metal truss bridges are characterized by how traffic is carried over the structure. There are three ways a truss bridge carries traffic. The deck truss carries traffic entirely on top of the truss structure and the trusses are not seen from the roadway. The pony truss carries traffic over the bottom chord with trusses extending up on either side but not connected or braced at the top. The through truss is much like the pony truss except the sides extend higher and are cross braced over the traffic lanes, thereby allowing traffic to travel through the truss. Since through trusses extends above the flow of traffic, these bridges often stand out as impressive structures on the landscape.



Through, Pony, and Deck Truss Bridge Configuration from Tussses, A study by the Historic American Engineering Record. Source: Historic American Engineering Record, National Park Service. Accessed online, 5/21/21, <https://www.nps.gov/hdp/samples/HAER/truss%20poster.pdf>.

Through truss bridges were designed to carry heavier loads and span further distances. In 1844, the father and son team of Thomas and Caleb Pratt designed one of the earliest all-metal through truss bridge. The bridge, which used diagonals in tension and verticals in compression with parallel chords and an inclined end post, was patented as the Pratt truss. It would become a popular bridge design used for crossings up to 250 feet in length in the late nineteenth to the early twentieth centuries and would inspire a number of new bridge variations.



PRATT

1844 - 20TH CENTURY

Pratt Through Truss Configuration from Tussses, A study by the hHistoric American Engineering Record. Source: Historic American Engineering Record, National Park Service. Accessed online, 5/21/21, <https://www.nps.gov/hdp/samples/HAER/truss%20poster.pdf>.

Hodgens Bridge is a pin connected bridge built in 1889. The earliest metal truss bridges were pin connected, a type of bridge construction where load bearing truss members are connected at the panel point by a pin that passes through a hole in each of the truss members. These connections permit metal truss bridges to be taken apart and reassembled allowing them to be moved to a different location.



Pin Connection on the Hodgens Bridge. Source: PennDOT inspection Records.

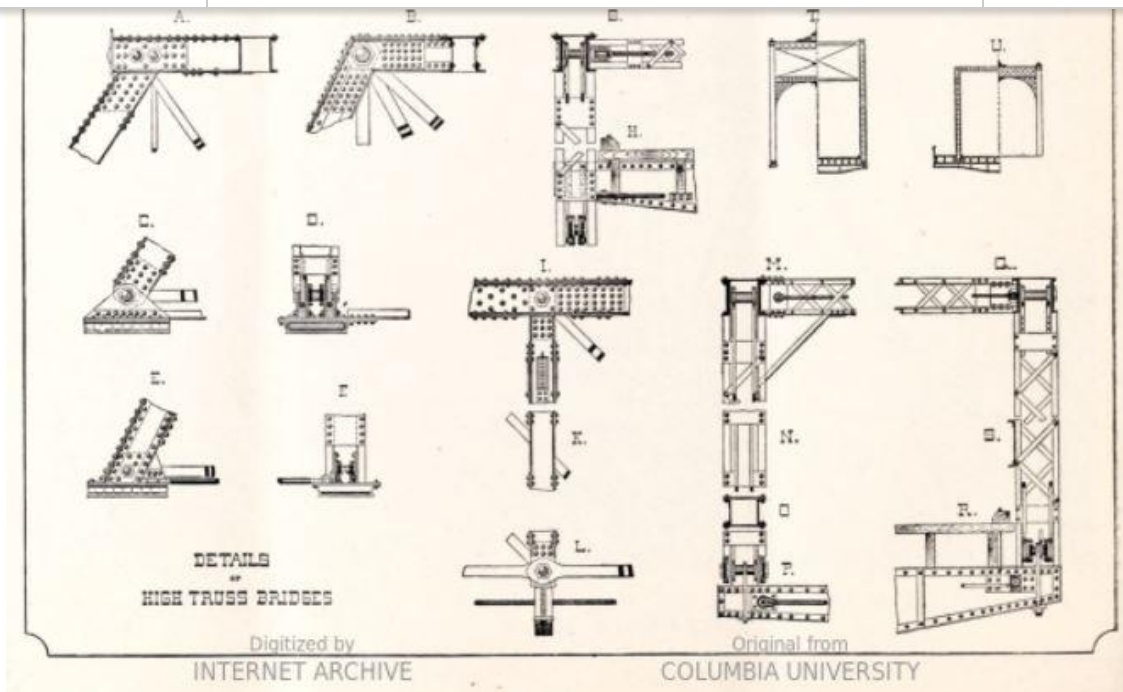
Hodgens Bridge was built by the Penn Bridge Company of Beaver Falls, Pennsylvania, an important metal truss bridge builder. The Penn Bridge Company got its start in 1859 when Timothy White began building wooden bridges in New Brighton, Pennsylvania. Ten years later, he established T. B. White & Sons and transitioned production to wrought iron truss bridges. After a fire in the New Brighton manufacturing plant in the early 1870s, White moved his bridge production to Beaver Falls and changed the name of the company to the Penn Bridge Company. The Penn Bridge Company sold bridge designs via catalogs and built bridges all over the country but was especially prolific in Pittsburgh and Southwest Pennsylvania.



1886 Penn Bridge Company Catalog of Iron Highway Bridges. Source: Penn Bridge Company (Beaver Falls, Pa.). *Iron Highway Bridges: As Built by the Penn Bridge Company*. Beaver Falls, Pa.: The Co., 1886, page 1.

Accessed online, 5/21/2021, <https://catalog.hathitrust.org/Record/102484120/Home>.

The Hodgens bridge is eligible for listing in the National Register of Historic Places (PA-SHARE Resource #2004RE06322) The character defining features of this single span bridge include the Pratt through truss form, method of truss member connections (pin-connections), and structural members (top and bottom chords, vertical and diagonal members, sway bracing, and features of the portal). The bridge also displays a unique two pin connection at the top chord and end post intersection which was a distinctive feature of the Penn Bridge Company and is shown as Figure A on the Details of High Truss Bridges found in the 1886 Penn Bridge Catalog of Iron Highway Bridges.



1886 Penn Bridge Company Catalog showing drawing of details of High Truss Bridges. Figure A shows the two pin connection unique to Penn Bridge Company. Source: Penn Bridge Company (Beaver Falls, Pa.). *Iron Highway Bridges: As Built by the Penn Bridge Company*. Beaver Falls, Pa.: The Co., 1886, page 16. Accessed online, 5/21/2021, <https://catalog.hathitrust.org/Record/102484120/Home>.

The Hodges Bridge also displays decorative portal features. Originally, four cast iron covers capped the end of the top chord; today, one remains. Decorative medallions were included where the lattice crossed on the portal bracing and a few medallions still remain. These decorative features could be replicated to replace the missing elements.



Decorative features of the portal including the remaining rectangular cast iron end cover and small round medallions on the portal knee bracing. Source: PennDOT inspection records.

Washington County, owners of the Hodgens Bridge, recently determined the structure could not be rehabilitated to meet the needs of the crossing while retaining the features of the bridge that make it eligible for listing on the National Register of Historic Places. A new bridge is proposed for this location.

The historic bridge could be saved if a new owner is identified, and the bridge is relocated. This through truss bridge would make a stunning addition to a walking or bike trail. It could also serve as a direct link to the rich history of western Pennsylvania's steel industry and metal truss bridge manufacturing. Hodgens Bridge is unique and deserves to be a focal point, attracting and amazing visitors for years to come.



Strolling through the Hodges Bridge through truss. Source: PennDOT Inspection Reports.

This historic bridge will not be available for long!

If you or your organization is interested in assuming ownership of the Hodgens Bridge or finding out more about the steps to relocate the structure, please contact Tyra Guyton of the Pennsylvania State Historic Preservation Office at tyguyton@pa.gov or (717) 346-0617 or Lisa Cessna, Washington County Planning Director, at cessnal@co.washington.pa.gov or (724) 228-6811.

Hodgen's Bridge Quick Facts:

Year Built: 1889

Type: Pratt Thru Truss

Number of Spans: 1

Length: 103'

Width: 13' 11"

Vertical Clearance: 14' 6"

Carries: Walker Hill Road (TR 476) over Buffalo Creek

From the Blog



Mott Street Bridge after rehabilitation was complete.

Rehabilitated Mott Street Bridge Reconnects Milford and the Delaware River National Recreation Area

Driving along East Harford Street in Milford, a compact borough in Pike County nestled between National Historic Landmark Grey Towers and National Park Service's Delaware River National Recreational Area, it is easy to miss Mott Street.

A late 19th century home now hosting the regional newspaper is on one corner of Mott and East Harford and a low, one-story carpet shop is on the other. It looks a lot like the other small alleys branching off the borough's main drag. The narrow street lined with a handful of well-maintained residences shields the newly rehabilitated steel truss bridge at the road's end.

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