Historic Bridges of Somerset County Pennsylvania

Scott D. Heberling

Pennsylvania Department of Transportation
Federal Highway Administration

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Photographs by Scott D. Heberling and Stephen Simpson except as noted

Layout and design by Christopher Yohn

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Glessner Bridge

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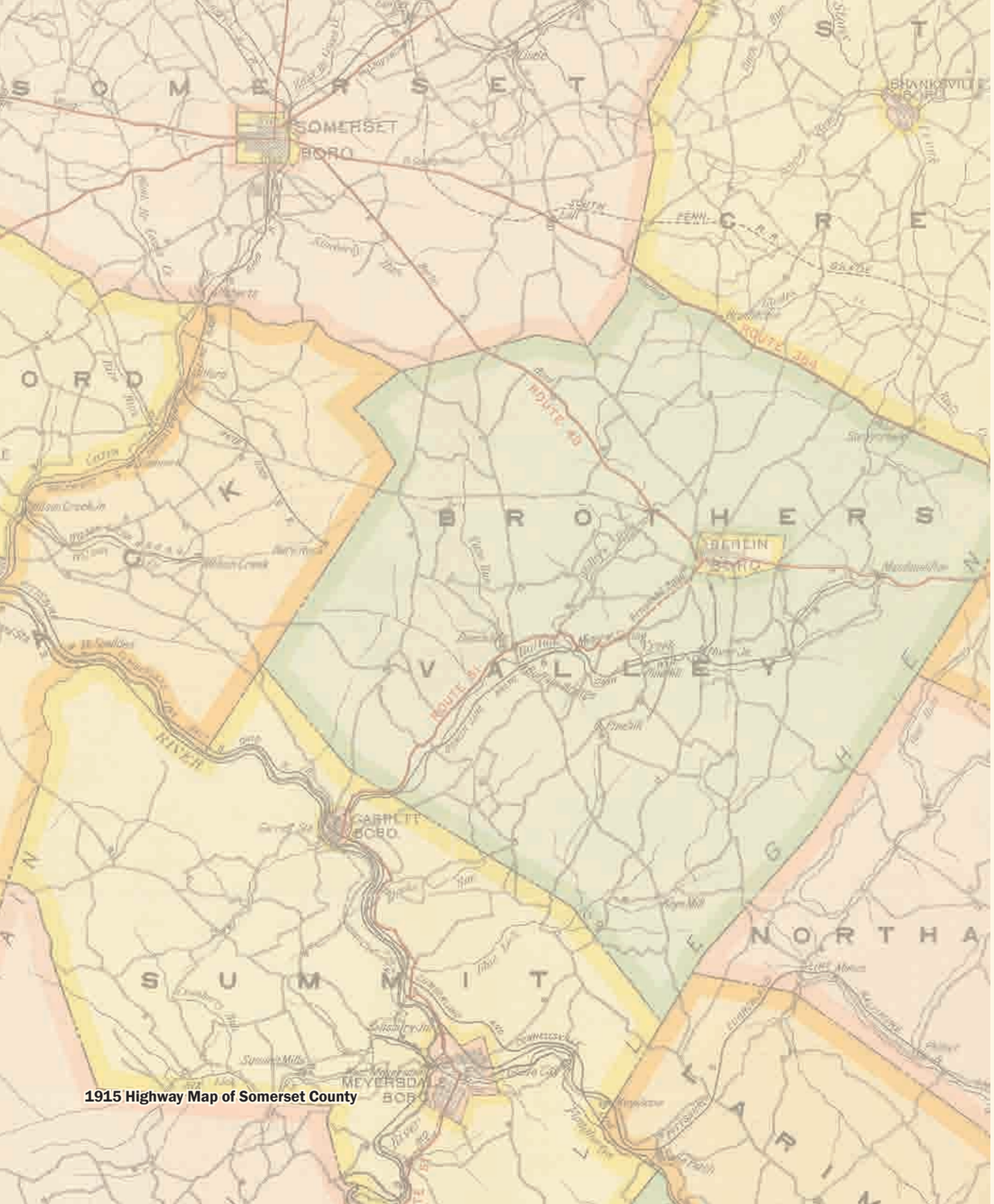


1915 Highway Map of Somerset County

Salisbury Viaduct

Somerset County's Historic Bridges

Somerset County, high in the Laurel Highlands of southwestern Pennsylvania, is renowned for its stunning natural beauty and expansive rural landscapes. It is also rich in history. The county's many historic farms, villages, and winding country roads contribute to a strong "sense of place" that appeals to residents and visitors alike. The people who have called Somerset County home for thousands of years have created a unique cultural environment unlike any other. From the ancient settlements in the "Turkeyfoot" region of the south, to the rolling farm country of Brothers Valley in the center, to the coal patch towns of the north, history is everywhere in Somerset County. Something interesting always seems to lie just around the next bend in the road.

The county's development was shaped by its hydrology and rugged topography. Although its forested hills hid immeasurable mineral wealth just below the surface they also limited the areas suitable for settlement and agriculture. The landscape is deeply dissected by many small streams that feed the county's principal watercourses: the Youghiogheny River, Casselman River, Laurel Hill Creek, Wills Creek, Shade Creek, Quemahoning Creek, and Stonycreek River. The hills and streams made traveling difficult as each one was an obstacle that had to be gone over or around. Streams had to be forded, spanned, or avoided. It is no wonder that Somerset County contains a great number of highway and railroad bridges representing 200 years of engineering technology.

Dozens of these bridges are historically and technologically significant and qualify for listing in the National Register of Historic Places. Each bridge has a special story to tell, either because of where it is, why it was built, or how it represents an important technological innovation. The following pages feature 31 significant highway and railroad bridges that still survive today. Best known and already widely appreciated are the county's nine historic covered bridges (a tenth bridge, the New Baltimore Bridge (NB), is a replica of one that was destroyed in 1996), but also important are a variety of stone arch, metal truss, and reinforced concrete bridges that are all very special in one way or another. They represent bridge types that were once common but are becoming scarcer each year. Before they disappear forever they deserve to be appreciated for the technology they represent, their beautiful visual qualities and their contribution to the historic landscape.

Maust Bridge

Bridge Building In Pennsylvania[1]

Until the early 20th century, most road and bridge building in Pennsylvania was the responsibility of township and county authorities. Except for private turnpikes and a few state-built trunk routes, roads were for local travel, connecting farms and market towns. By the 1870s railroads and canals carried most long-distance traffic, and local movement depended on a poorly constructed and maintained network of roads that were impassable in bad weather. In rural areas smaller streams were forded or spanned by simple bridges of timber or stone. Ferries or private toll bridges carried traffic across the larger rivers. Timber beam structures were used for short spans, and stone arch or wooden truss bridges for longer distances. State involvement in constructing and maintaining roads and bridges was minimal.

In the cities professional engineers often were responsible for approving bridge designs and hiring contractors. In rural areas like Somerset County these tasks fell to elected officials who typically had little engineering expertise. Generally the larger highway bridges were built and maintained by the county and the smaller bridges and culverts by the townships. For this work township supervisors relied on local laborers and local materials while the county, with slightly greater resources, could use outside bridge companies and more elaborate designs. Competition among bridge companies and contractors was intense, and it became increasingly so toward the end of the century. This was a time of great experimentation with new materials and designs, much of it by the railroads, which were innovators in metal truss bridge technology and the greatest bridge builders of their day (Lichtenstein and Associates 1999). The new technology was adapted for highway purposes, and by the late 1800s huge numbers of prefabricated metal truss bridges were being marketed by bridge companies and erected by county commissioners throughout Pennsylvania.

At this time the traditionally decentralized system of rural road management was shifting to a more rationalized and centralized arrangement better able to meet the needs of local travelers and commercial interests that were lobbying for improved roads. A "Good Roads Movement" commenced in the 1880s and intensified after 1900 as automobiles became popular and long-distance travel more common. The pace of road and bridge building began to accelerate.

In Pennsylvania one result of the Good Roads Movement was the 1903 Sproul-Roberts Act, which established a professionally staffed state highway department to oversee road improvements and provide financial and technical assistance to second-class (mainly rural) townships. Pennsylvania was one of the first states to take this step. Increasing state involvement with road maintenance coincided with a movement toward a cash tax which financed permanent

[1] This section is drawn from: Lichtenstein and Associates, *Historic Context for Transportation Networks in Pennsylvania, Pennsylvania Historic Bridge Inventory and Evaluation*, Langhorne, PA, 1999.

improvements such as bridges. Initial rural resistance to state control of roads was appeased by direct state funding of both bridge and road projects in the countryside. Road improvements brought many benefits to farmers, including improved market access, free rural mail delivery, and an overall higher standard of living.

The State Highway Department developed the state's first standard bridge designs, consisting of culverts and small concrete encased steel stringer structures for minor township roads. After 1910 these were expanded to include longer structures employing steel thru-girder and truss designs as well as reinforced concrete arch, slab, and T-beam types. Reinforced concrete increasingly was becoming the engineers' material of choice for short and medium spans, supplanting the earlier timber, stone, and metal structures. A.E. Rayman, Somerset County's Superintendent of Bridges in the 1910s, was a strong advocate of concrete bridge technology who embraced the new designs for the many county bridges built during this period.


Construction of a concrete arch bridge, 1908.

In 1911 the Highway Department was given authority over an integrated system of 8,500 miles of mostly-unimproved dirt roads linking county seats and market towns, along with a mandate to bring them up to modern standards. The Sproul Act of 1911 was landmark highway legislation that put Pennsylvania at the forefront of the national Good Roads Movement. However, while the Sproul Act made the state responsible for many rural township roads and bridges, the Highway Department did not assume control of county bridges on state routes until 1929. This transfer of control resulted in the rapid replacement of older county bridges, most of which were timber beam, wood truss, metal truss, and stone arch structures. The county bridges that survived usually were on local roads that remained under county control, a situation that continues today; most of the bridges featured in the following pages are county-owned and maintained structures.

State funding for highway improvements proved to be totally inadequate in the early years until the 1916 Federal-Aid Road Act provided federal funds for highway construction for the first time. This brought a wave of road and bridge building activity that was only briefly interrupted by World War I. Popular short and medium-span bridge types in the 1920s were steel stringer and concrete T-beam structures that were economical to build but could handle heavy loads.

During the Depression, more than 20,000 miles of township roads were added to the state system in an effort to "get farmers out of the mud" and create highway construction jobs. Hundreds of cheap, standard-design steel-stringer bridges were built on these roads in the early 1930s and were considered so good that the design was a highway department favorite through the mid-1950s. Federal work programs pumped money into highway projects throughout Pennsylvania. Today there are over 1,250 surviving state-owned bridges dating to 1936–1940, more than any other period between 1911 and 1955.

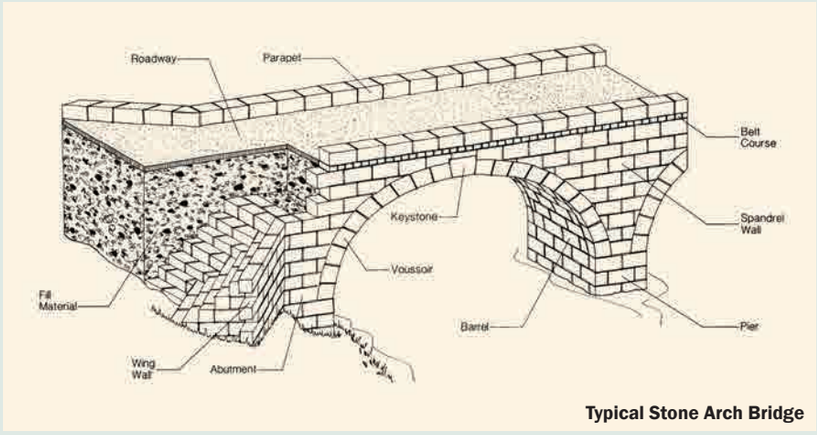
World War II brought important changes in bridge design, as precast concrete quickly gained favor over structural steel and cast-in-place concrete construction for short spans on secondary roads. Precast concrete bridges were relatively inexpensive and fast to build, making them appealing to county and state governments. The federal government and the state both invested heavily in highway construction after the war, improving local roads as well as state highways and the new federal interstate system. All of this construction activity led to labor shortages and higher material costs, which made precast bridge types such as the channel beam design all the more appealing. They are still being built today.

Stone Arch Bridges

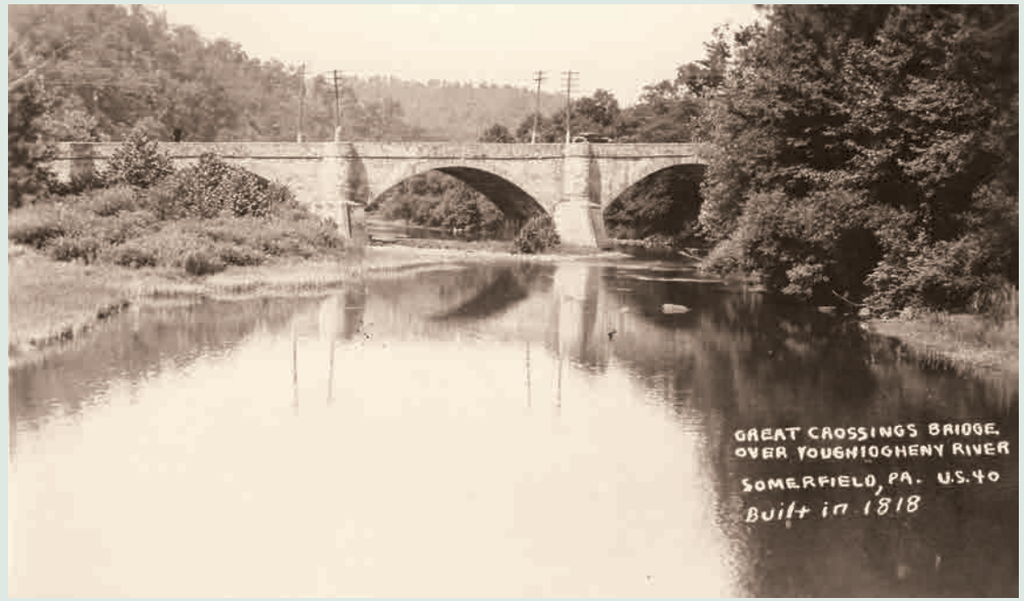
Stone arch bridge technology is thousands of years old and was brought to this country by the earliest European settlers. Bridges of this type began to be built in Pennsylvania in the 17th century and remained popular into the early 20th century, until stone masonry was supplanted by reinforced concrete. They are most common in the southeastern part of the state, but examples can be found in almost every county, including Somerset.

The earliest stone arch bridges were constructed of rubble coursed fieldstone, but as time went on the stones were carefully cut to present a more formal appearance, and the shape of the arch became more elliptical. However the basic principal of the arch design did not change: the curved arch was formed by an "arch ring" of shaped blocks that compressed together under vertical loads, and the outward thrust at the base of the arch was countered by abutments (Lichtenstein and Associates 1999). Although they were very durable and could carry heavy loads, their construction required considerable skill and an abundance of good stone, and they were not very practical for spanning large waterways.

The finest—and probably the first—stone arch bridge to be built in Somerset County was the massive "Great Crossings Bridge" 1 that carried the National Road over the Youghiogheny River at the village of Somerfield. This masterpiece of early American civil engineering now lies beneath the waters of Youghiogheny Lake. In this area timber was favored over stone as a bridge building material, so no other 19th century examples are known. Stone arch bridges enjoyed a brief resurgence between 1905 and 1915 when the county engineering department built a number of handsome short-span structures on rural roads throughout the county.



Typical Stone Arch Bridge



1.
Great Crossings (Somerfield) Bridge

Built: 1818
Location: Adjacent to U.S. 40, Addison Twp.
Spans: Youghiogheny River
Length: 375 ft

The Great Crossings Bridge, once a landmark along the National Road and perhaps the most significant highway bridge in Somerset County, now lies beneath the surface of Youghiogheny Lake and can be seen only during periods of very low water. This beautiful three-span stone arch structure carried the National Road over the Youghiogheny River. It was constructed in 1818 by the firm of Kinkead, Beck, and Evans, the contractor for all of the National Road bridges in Maryland and Pennsylvania. The Great Crossings Bridge was used continuously until 1940, when construction of the Youghiogheny Lake Dam inundated the valley, submerging the bridge and the adjacent village of Somerfield. Occasionally water levels in the lake drop enough for the bridge to re-emerge from the depths, revealing the exceptionally fine design and craftsmanship used in its construction.

photo by Vince Ferrari, 2001

photo by Vince Ferrari, 2001

2.
Cumberland Highway Bridge

Built: 1905
Location: S.R. 160, 1.5 miles south of Berlin, Brothers Valley Twp.
Spans: Buffalo Creek
Length: 38 ft

3.
Horner Bridge (County Bridge No. 50)

Built: 1907
Location: T-626 (Tedrow Rd), 2.4 miles southwest of Stoystown, Quemahoning Twp.
Spans: Beaver Dam Creek
Length: 34 ft

4.
Pilltown Bridge

Built: 1908
Location: S.R. 4033, village of Pilltown, Jenner Twp.
Spans: Roaring Run
Length: 33 ft

These are three of the seven nearly identical stone arch bridges designed by the county engineer and built by local contractors between 1905 and 1915. Five of them continue to carry traffic today, a testament to their fine design and solid construction. Distinguishing features include rusticated ashlar stonework and graceful barrel arches and, often, stepped parapet walls and flared wingwalls. The statewide bridge survey notes that these bridges exhibit "fine masonry that is the hallmark of the best stone arch bridges from the last quarter of the 19th century and early 20th century." The Horner and Pilltown Bridges are essentially unaltered, but the Cumberland Highway Bridge was widened in 1935 and, unfortunately, inappropriately repaired with concrete about 2008. Only the earliest three of the five surviving bridges are considered significant, but another excellent intact example is the Reading Mines Bridge RM (circa 1914) which carries Reading Mine Road over Beaver Dam Creek in Quemahoning Township. Beginning in 1915 the county's material of choice for its short-span arch bridges changed from stone to reinforced concrete.

5.
Center Street Bridge

Built: 1914
Location: Center Street, Meyersdale Borough
Spans: Flaugherty Creek
Length: 66 ft

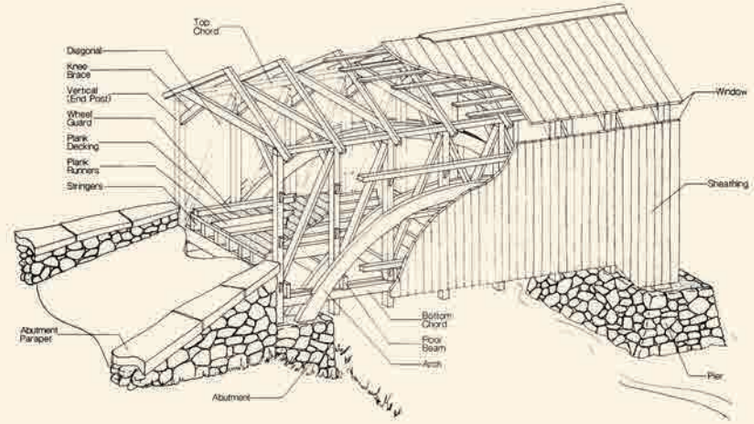
Stylistically this single-span stone arch bridge in the heart of the Meyersdale Historic District is similar to the contemporary rural bridges previously described, but it is nearly twice as long and much wider since it carried an important road over a major waterway. According to its inset marble plaques, the Center Street Bridge was designed by B.J. Lynch and constructed by F.H. Ziegler in 1914. The Neo-Classical concrete balustrades with vase-shaped balusters may have been added at a later date. This nod to formal style befitted a bridge located in the business district of southern Somerset County's most prosperous town.

Wooden Covered Bridges

To most people, wooden covered bridges are the most recognizable and most appealing of all small highway bridges. They are charming reminders of a simpler, slower era when craftsmanship was prized and bridges were organic parts of the natural environment. Because of their general appeal and their value in tourist promotion efforts, covered bridges are widely considered to be valuable assets which should be preserved, unlike their more mundane but equally significant metal and concrete counterparts. Somerset County owns nearly a dozen covered bridges and has been a leader in the movement to preserve and showcase these important historic resources.

Pennsylvania once had at least 1,500 covered bridges, including prototypes of nearly all of the major truss designs. Today it still leads all states with over 200 surviving examples (Zacher 1982:1). Ten of them are in Somerset County, although one (the New Baltimore Bridge NB) is a modern replica built to replace an earlier version destroyed by a 1996 flood.

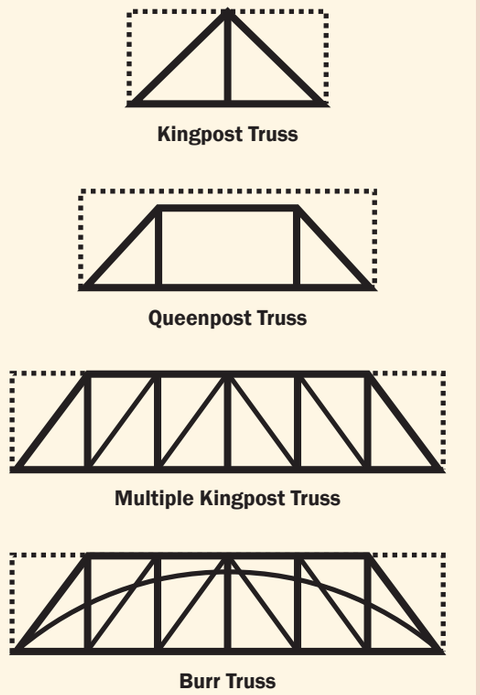
The first covered bridge in the United States was built in Philadelphia in 1800, and the technology quickly spread across Pennsylvania. Although they required more maintenance, timber truss bridges were better for spanning long distances than stone arch bridges and were not limited to locations having easy access to quality building stone (Zacher 1982:1). Because they could be constructed by local carpenters using local materials and were adaptable to many different situations, wooden covered bridges continued to be constructed throughout the 19th century. They were an important link in the transition from stone to metal.



Typical Covered Bridge

A covered bridge is simply a timber truss bridge that is sheltered from the weather by wood siding and a roof. Protection from the elements could extend the life of a timber bridge from 10 to 50 years. A truss system consists of multiple beams arranged to form a series of triangles, the only geometric shape that cannot be distorted under stress. The diagonals transfer vertical forces horizontally. To construct a bridge, two trusses are joined together, one on each side of the structure.

The Most Common Timber Truss Bridge Types in Western Pennsylvania
(source: Evans & Evans 1993:8-9)



Kingpost Truss

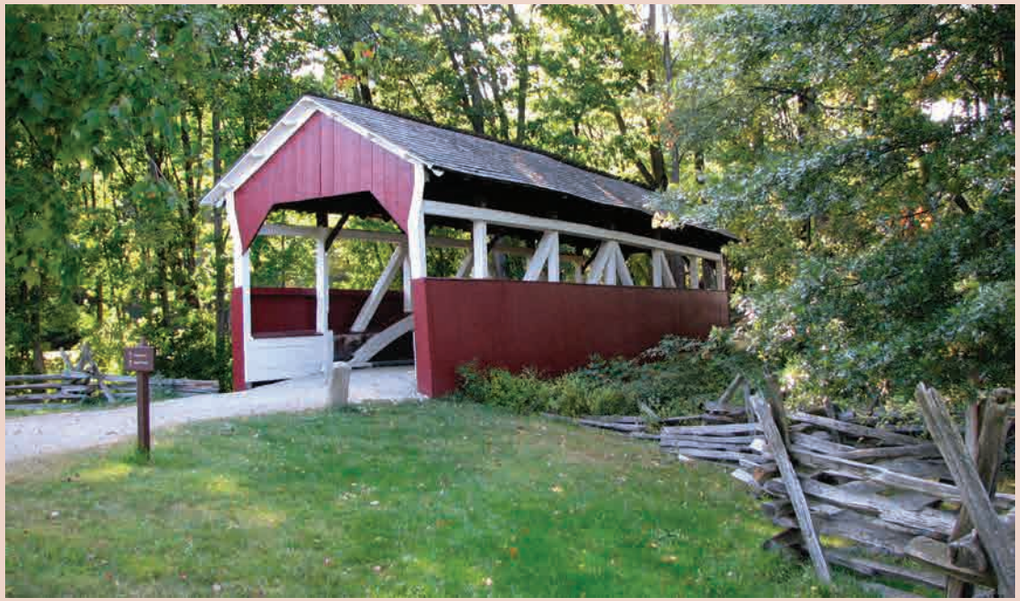
Queenpost Truss

Multiple Kingpost Truss

Burr Truss

A variety of truss designs were developed for timber bridges. The oldest and most basic design is the *Kingpost Truss*, composed of a vertical kingpost (center post), two diagonals, and a bottom stringer; it was used for short spans of 20 to 30 feet. The *Queenpost Truss*, used for spans up to 75 feet, was an expansion of the Kingpost design and added an additional rectangular panel in the center. New truss designs multiplied the truss pattern many times to span longer distances. The *Multiple Kingpost Truss*, which could span distances of up to 100 feet, consisted of a central kingpost structure with a series of right angle panels to each side, with all of the diagonals inclined toward the center. The *Burr Truss* was a Multiple Kingpost Truss with a difference: to provide additional support it incorporated long reinforced arches that were anchored in the abutments at both ends. In the early years of the automobile age, internal arches were added to many older Multiple Kingpost bridges to meet the new weight demands. Other truss designs were developed (for example, the *Town Truss*, *Howe Truss*, *Warren Truss*, and *Smith Truss*), but they were not popular in western Pennsylvania.

The Burr Truss is the most common covered bridge type in Pennsylvania, with seven extant examples in Somerset County. The county also has two Multiple Kingpost bridges.



6.
Walter's Mill Bridge

Built: 1830 or 1859
Location: Somerset Historical Center, Lincoln Twp.
Spans: Haupts Run
Length: 60 ft
Type: Burr Arch

There is conflicting information concerning the construction date, but if the 1830 date is correct then the Walter's Mill Bridge is the oldest surviving covered bridge in Somerset County, and one of the oldest in Pennsylvania. It originally spanned Coxes Creek four miles south of Somerset, but was saved from destruction in the 1960s by relocating it to the grounds of the Somerset Historical Center. This relatively short bridge has been altered twice: once in 1908 when Burr arches were added to the original Multiple Kingpost design in order to strengthen it for automobile traffic; and again in 1986 when extensive repairs included the addition of steel beams beneath the deck.

7.
Trostletown / Kantner Bridge

Built: Probably 1845
Location: Stoystown Lions Club Park, Quemahoning Twp.
Spans: Stony Creek
Length: 104 ft
Type: Multiple Kingpost

Again, there is disagreement about the original date of construction of this bridge: most sources list the date as 1845 but the plaque on the bridge assigns a date of 1873. Along with Packsaddle Bridge 9, it is one of only two surviving Multiple Kingpost bridges in Somerset County; the interior photograph illustrates the significant differences between this bridge type and the much more common Burr Arch. Because this is a three-span structure, it features three pairs of kingposts. By the mid-20th century the bridge had become badly deteriorated, but beginning in 1965 it was painstakingly restored by the Stoystown Lions Club which continues to maintain it as a pedestrian bridge. Located in Lions Club Park, it still stands in its original location and retains its old cut-stone abutments and piers.

8.
Kings Bridge

Built: Circa 1860; rebuilt circa 1906
Location: Just off S.R. 653 west of New Lexington, Middlecreek Twp.
Spans: Laurel Hill Creek
Length: 127.3 ft
Type: Burr Arch

This bridge probably was constructed in the mid-19th century as a Multiple Kingpost truss structure but was mostly rebuilt in 1906 when the Burr arches were added for the additional support required to carry automobile traffic. The bridge was bypassed in the early 1930s when a new steel bridge was built adjacent to it, resulting in its preservation and lack of alteration. During the next half-century it was privately-owned and used as a barn for livestock. In 2004–2005 Kings Bridge underwent a comprehensive but historically-sensitive rehabilitation which should guarantee its long-term preservation. There are plans to create a community park which will include both the Kings and Barronvale 14 covered bridges.

9.
Packsaddle / Doc Miller Bridge

Built: Probably 1870
Location: Township Route 407 near Fairhope in Fairhope Twp.
Spans: Brush Creek
Length: 48 ft
Type: Multiple Kingpost

Spanning Brush Creek in a remote corner of Fairhope Township, the Packsaddle Bridge occupies one of the most picturesque settings in Somerset County. It was constructed in 1870 by an unknown builder. At only 48 feet in length it is the shortest covered bridge in the County, and one of only two surviving Multiple Kingpost structures. Unlike the three-span Trostletown Bridge 7, this short single-span structure requires only one kingpost on each side. The Packsaddle Bridge is nearly unique among the County's historic covered bridges in that its vertical board siding extends almost to the eaves, while all of the others are partially open; the only other bridge with closed sides is the New Baltimore Bridge NB, which was completely rebuilt in the late 1990s. The Packsaddle Bridge was rehabilitated in 1950 and meticulously and sensitively restored in 1998, two years after it sustained massive flood damage. Repairs included new steel stringers, a new roof and wooden deck, and stone-faced concrete abutments.

10.
Beechdale / Burkholder Bridge

Built: 1870
Location: Township Route 548 near Beechdale in Brothers Valley Twp.
Spans: Buffalo Creek
Length: 52 ft
Type: Burr Arch

After the Packsaddle Bridge 9, the 52-foot long Beechdale or Burkholder Bridge is the shortest covered bridge in Somerset County. Located just off U.S. Route 219, it spans Buffalo Creek about two miles north of Garrett. Its truss structure is more visible than is the case for most of the county's covered bridges, since only half of the exterior is covered with vertical wood planking and none of the interior. In the 20th century, steel stringers replaced the original timber stringers, and later steel beams were added beneath the deck to strengthen the structure.

11.
Shaffer Bridge

Built: 1877
Location: Township Route 634 near Bens Creek, Conemaugh Twp.
Spans: Bens Creek
Length: 68 ft
Type: Burr Arch

In 1877, William Kline built this single-span Burr Arch structure, which spans Bens Creek in a wooded setting near the northern edge of the county. Approximately half of the exterior and one-third of the interior are uncovered by siding, revealing most of the truss system. This bridge retains its original stone abutments and has been relatively unaltered except for the steel stringers added beneath the deck in 1978.

12.
Glessner Bridge

Built: 1881
Location: Township Route 565 near Shanksville, Stony Creek Twp.
Spans: Stony Creek
Length: 90 ft
Type: Burr Arch

Tobias Glessner built this two-span Burr Arch structure over Stony Creek in 1881, at a cost of $412. Modifications were made in 1969, when a concrete pier was added and the abutments were reinforced with concrete, but by 1995 the bridge had become so deteriorated that it was closed to traffic. In 1998 it underwent a major rehabilitation that included a new concrete pier and abutments, replacement of many wooden components, and addition of steel beams beneath the deck. As was typical in the county, two-thirds of the exterior is covered with vertical wood planking, as is one-third of the interior.

13.
Lower Humbert / Faidley Bridge

Built: 1891
Location: Township Route 393 near Ursina, Lower Turkeyfoot Twp.
Spans: Laurel Hill Creek
Length: 126.5 ft
Type: Burr Arch

This relatively long single-span bridge carries a township road over Laurel Hill Creek in the extreme southwest corner of Somerset County. It was constructed by an unknown builder in 1891 to replace an earlier covered bridge which had been built in 1845. An extensive but historically-sensitive rehabilitation was completed in 1991, involving the addition of four steel beams beneath the deck as well as major work on the abutments and erection of a new pier to support the middle of the span. With these repairs and modifications, the bridge should continue to carry traffic for many years to come.

14.
Barronvale Bridge

Built: 1902
Location: On private land in Barronvale, Middlecreek Twp.
Spans: Laurel Hill Creek
Length: 162.25 ft
Type: Burr Arch

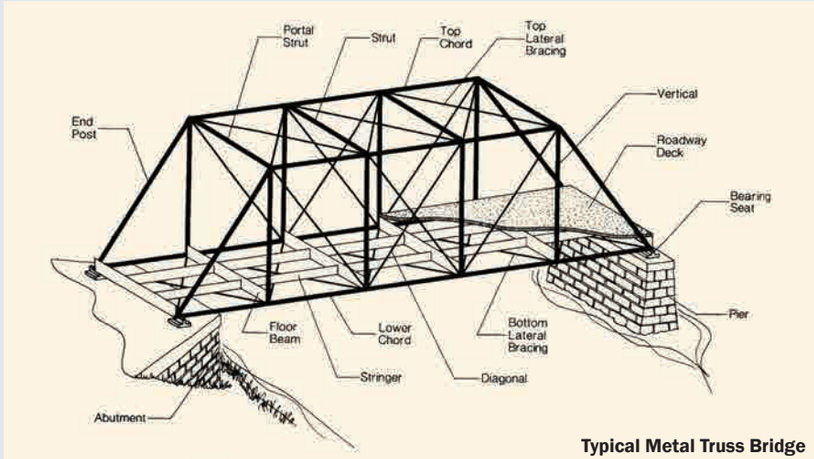
The Barronvale Bridge, located only one mile upstream from Kings Bridge 8, is by far the longest wooden covered bridge in Somerset County. The most likely construction date is 1902, although some sources claim a date of 1830 or 1846. The most interesting feature of this bridge, other than its overall size, is that its two spans are of different lengths, resulting in Burr arches of varying heights. The vertical plank siding extends only halfway up the exterior and is absent in the interior so that the truss system is mostly exposed. The Barronvale Bridge was bypassed by S.R. 3014, resulting in its preservation and relative lack of alteration since it is now open only for pedestrian traffic. It still retains its original cut-stone abutments and pier.

Metal Truss Bridges

The truss bridge form was well established by the mid-19th century, when timber truss bridges could be found in every corner of Pennsylvania's rural landscape. As technology evolved builders experimented with new materials and designs for truss bridges in an effort to make them stronger and more durable. The use of metal in place of wood was a key innovation with far-reaching implications. Cast-iron truss members were introduced in the 1840s, and the increasing availability of rolled wrought-iron shapes soon led to the development of all-metal bridges. By 1895 steel had replaced wrought-iron as the predominant metal material for bridge construction.

America's railroads promoted innovation both in the use of iron and steel as a building material and in the design of metal truss bridges. Railroads required bridges that were strong, durable, and could be produced using standard designs. Railroad bridge engineers developed many truss forms that later were adapted for highway purposes. The rail system also facilitated the movement of materials used in bridge construction. After the Civil War numerous large bridge companies began to market their products on a regional or national scale, selling standardized, prefabricated metal truss bridges to county authorities who were working to improve their rural roads to address the demands of the Good Roads Movement. The bridges were shipped to the site by rail and assembled by local contractors. They were extremely popular in rural areas as an economical and easily assembled solution to local transportation needs.

As noted in the discussion of wooden covered bridges, a truss system consists of a series of triangles, the only geometric shape that cannot be distorted under stress. The top and bottom



Typical Metal Truss Bridge

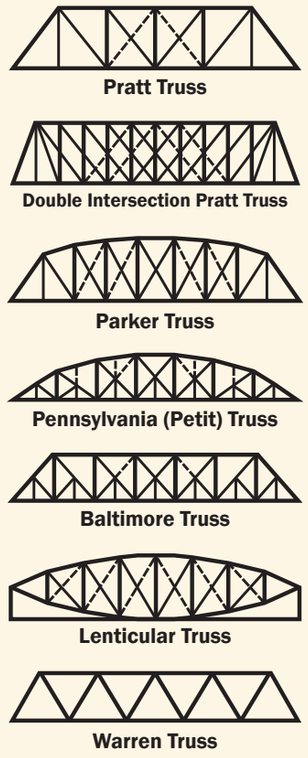
chords are the horizontal members that carry the loads applied to the bridge. Loading induces major stresses to these horizontal members: compression to the top chord and tension to the bottom chord. Due to their differing physical qualities, cast-iron generally was used in compression and wrought-iron in tension. The top and bottom chords are connected by an array of vertical and diagonal members to form the truss, utilizing large metal pins for the main connections.

> It is the arrangement of the chords and web members that determine the specific truss type, as a wide variety of configurations are possible. Since different truss types have different characteristics and capabilities, many truss variations were patented throughout the nineteenth and early twentieth centuries for use in both railroad and highway bridges (Commonwealth of Pennsylvania 1986:111).

The most popular 19th century metal truss type in Pennsylvania for spans less than 250 feet was the *Pratt Truss*, patented by Thomas and Caleb Pratt in 1844. Originally composed of both wood (top chord and verticals) and iron (bottom chord and diagonals), it transitioned to an all-metal bridge type that was built through the early 20th century. Most of Somerset County's surviving metal truss bridges are Pratts. Variations of the Pratt truss included the *Parker Truss*, which modified the design to feature an inclined top chord; the *Pennsylvania Truss*, which added sub-struts to the Parker; and the *Baltimore Truss*, which kept the horizontal top chord of the Pratt but added sub-struts. The *Lenticular Truss* featured lens-shaped upper and lower chords. The *Warren Truss* was a simple design based on a series of equilateral triangles and gained great popularity after 1900 with the transition from pinned to riveted connections. There also were many other designs illustrating the spirit of creativity and innovation that were hallmarks of the period.

In addition to the truss system, these bridges also are classified according to the position of the deck in relation to the top and bottom chords. In the *through-truss*, the bridge deck is located near the bottom chord, and the top chords of the full-height trusses are connected by cross bracing. The *pony-truss* has a shallow truss height and a lack of upper cross bracing. In the *deck-truss*, the deck is supported on the upper chord of the bridge. Somerset County has many examples of all three types.

Important 19th Century Metal Truss Bridge Types
(source: Commonwealth of Pennsylvania, 1986)



15.
W. Bollman and Company Bridge

Built: 1871
Location: Allegheny Highland Trail, Summit Twp.
Spans: Scratch Hill Road
Length: 81 ft
Type: Warren Through Truss

This old and significant iron bridge has served three very different functions over the years. It originally was constructed in 1871 to carry the Baltimore and Ohio Railroad's main line tracks over Wills Creek in eastern Somerset County. It is the last survivor of seven truss bridges on the B & O's Pittsburgh Division which were designed by renowned bridge engineer Wendell Bollman. In 1910 it was moved to the Meyersdale area and converted to a vehicular bridge because it could not carry the heavy locomotives that were coming into general use. In 2007 the bridge again was saved from demolition by moving it to a third site, where it serves as a key link on the Allegheny Highland Trail. Its ornate portals, lacework, and compression members are cast-iron, while the end posts and tension members are wrought-iron. The bridge was listed in the National Register of Historic Places in 1978 based on its technological significance and association with Wendell Bollman.

16.
Bender Bridge Road Bridge

Built: 1885
Location: T-504, near Summit Mills one mile west of Meyersdale, Summit Twp.
Spans: Elk Lick Creek
Length: 48 ft
Type: Pratt Pony Truss

This single-span, pin-connected Pratt pony-truss bridge was built in 1885 by the Penn Bridge Company of Beaver Falls, PA. It carries a narrow country road over Elk Lick Creek in a landscape that is little changed from a century ago, consisting of active farms and the village of Summit Mills, the heart of Somerset County's Old Order Amish community. Despite some minor alterations made in 1993, the bridge remains significant as a relatively early example of its type and also as a component of the historic landscape.

17.
Rockingham Bridge (County Bridge No. 56)

Built: circa 1885
Location: T-712, 1.3 miles north of Central City, Shade Twp.
Spans: Dark Shade Creek
Length: 57 ft
Type: Pratt Pony Truss

This single-span wrought and cast-iron Pratt pony-truss bridge was built about 1885 to carry a township road over Dark Shade Creek near Central City. Based on details such as the use of rolled wrought-iron I-beams for the compression members and the distinctive lower chord bars with bolted lap-joint splices, the bridge is likely a product of the Columbia Bridge Works of Dayton, Ohio. As a rare and complete example of a wrought and cast-iron truss bridge, it is historically and technologically significant.

18.
Fleegle Bridge (County Bridge No. 48)

Built: 1887
Location: .3-mile southeast of Stoystown, Quemahoning Twp.
Spans: Stonycreek River
Length: 95 ft
Type: Pratt Through Truss

This outstanding intact example of a wrought-iron pin-connected Pratt through-truss bridge was constructed in 1887 by the Groton Bridge Company of Groton, New York. Stylistically it is similar to the North Street Bridge 19 in Meyersdale, which was built by the same company. It retains virtually all of its original features, including the timber deck and stringers; distinctive sway bracing and decorative latticework, plaques, and finials at the portals (all Groton hallmarks); and ashlar stone abutments and wingwalls. It is significant as a relatively early and complete example of an important historic bridge type and deserves to be preserved and maintained.

19.
North Street Bridge (County Bridge No. 38)

Built: circa 1890
Location: western edge of Meyersdale Borough
Spans: Flaugherty Creek
Length: 97 ft
Type: Pratt Through Truss

Located at the edge of the Meyersdale Historic District, this is another fine example of a pin-connected Pratt through-truss bridge, constructed by the Groton Bridge Company about 1890. The North Street Bridge exhibits many of the same distinctive stylistic features as the Fleegle Bridge 18 near Stoystown (another Groton product), although it has lost its decorative plaques and finials.

20.
Beachy Street Bridge (County Bridge No. 25)

Built: 1894
Location: T-805, Salisbury Borough and Elk Lick Twp.
Spans: Casselman River
Length: 108 ft
Type: Pratt Through Truss

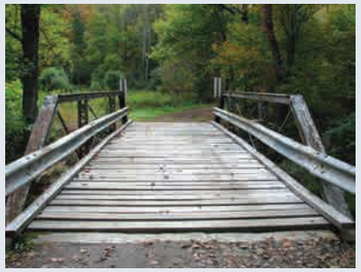
This visually-striking pin-connected Pratt through-truss bridge carries Depot Street over the Casselman River and links the communities of Salisbury and West Salisbury. Built in 1894 by the Horseheads Bridge Company of Horseheads, New York, the bridge is badly deteriorated but virtually unaltered except for some repairs to the wooden deck. Its most distinctive feature is the ornate twisted knee bracing which may be unique to the Horseheads Bridge Company. Unfortunately the bridge is now closed to traffic for safety reasons and is slated for removal.

21.
Maust Bridge (County Bridge No. 21)

Built: 1900
Location: T-353, 2 miles northeast of Salisbury, Elk Lick Twp.
Spans: Casselman River
Length: 130 ft
Type: Pratt Through Truss

The Maust Bridge, constructed in 1900 to span the Casselman River northeast of Salisbury, is one of the county's most interesting truss bridges. In its early years it carried the tracks of the Pennsylvania & Maryland Street Railway as well as providing vehicular access to farms west of the river. This single-span, pin-connected Pratt through-truss on cut stone abutments was fabricated by the Groton Bridge Company and erected by the Walker Brothers of Charleston, West Virginia, a firm known for its eclectic truss configurations. The Maust Bridge is no exception: the trusses are traditionally composed, but the lower chords feature punched plates rather than eye bars and loop forged connections for the hip floor beam hangers and lower sway bracing. Reflecting its historic use as a street railway bridge, the bridge is unusually tall and narrow, presenting a visually striking profile. The Maust Bridge is historically and technologically significant as an intact example of a non-standard design metal truss bridge. However its days may be numbered as it is scheduled for replacement in the near future.

22.
Philson Bridge



Built: circa 1900
Location: T-713, 3 miles west of Glencoe, Northampton Twp.
Spans: Wills Creek
Length: 43 ft
Type: Pratt Pony Truss

The Philson Bridge carries an unimproved township road over Wills Creek in a remote part of State Game Lands No. 82. It is a single-span, pin-connected Pratt pony-truss bridge resting on stone abutments. Like the Maust Bridge 21, its trusses are traditionally composed, but the design of the lower panel points is not common: instead of suspending the floor beams from U-shaped hangers, they are riveted to the bottom of the verticals, which are punched for the pin connection of the eye bar diagonals and lower chords.

23.
Oldham Bridge

Built: 1908
Location: T-816, 3 miles southwest of Ogletown, Ogle Twp.
Spans: Clear Shade Creek
Length: 49 ft
Type: Parker Pony Truss

The Oldham Bridge carries an unimproved township road over Clear Shade Creek on state forest land. The builder is not known. It is a single-span, riveted Parker pony-truss structure which retains its original stone abutments and lattice railings and appears to be a completely intact example of its type. The setting is little changed from a century ago.

24.
Salisbury Junction Viaduct

Built: 1911
Location: 1.5 miles northwest of Meyersdale, Summit Twp.
Spans: Casselman River, U.S. 219 and T-381
Length: 1,900 ft
Type: Deck Plate Girder

In 1911 the McClintic-Marshall Construction Company built this 1,900-foot long viaduct to carry the Western Maryland Railroad over the Casselman River Valley. Eight workers died during its construction. It was the longest trestle on the Western Maryland line and was built to carry two sets of tracks. It consists of a deck plate-girder section supported by steel bent towers resting on concrete piers. After the railroad's abandonment the rail line and viaduct found new life as key components of the Allegheny Highland Trail. It has been noted that "the bridge is an exceptional example of bridge technology at the height of the railroad era, and illustrates how train companies conquered the terrain of southwestern Pennsylvania to find the shortest and fastest routes through the countryside. The viaduct also is a monument to one of the single largest tragedies in Meyersdale history, resulting in the loss of many lives during the bridge's construction" (US DOT and PennDOT 1994).

25.
Keystone Viaduct

Built: 1911
Location: 2 miles east of Meyersdale, Summit Twp.
Spans: Flaugherty Creek, B & O (CSX) Railroad, and S.R. 2006
Length: 910 ft
Type: Deck Plate Girder; Pennsylvania Truss

This is a smaller version of the Salisbury Junction Viaduct 24, which like its larger counterpart was built in 1911 by the McClintic-Marshall Construction Company for the Western Maryland Railroad. It is 910 feet long and spans the B & O Railroad (CSX) main line, Flaugherty Creek, and S.R. 2006. The structure originally consisted of an eight-span deck plate-girder section over the stream and highway and a large through-truss section over the railroad main line. In 2003 the Keystone Viaduct was rehabilitated to carry the Allegheny Highland Trail, at which time two of the original eight concrete piers were removed to eliminate a dangerous curve in the roadway below. Like the Salisbury Junction Viaduct, the Keystone offers stunning scenic views to trail users.

26.
Salisbury Branch Railroad Bridge

Built: circa 1900–1910
Location: western edge of Meyersdale Borough
Spans: Casselman River
Type: Pratt Through Truss

The B & O Railroad's Salisbury Branch followed the Casselman River south from Meyersdale where it connected with the B & O mainline. Completed in 1876, the busy Salisbury Branch served the complex of coal mines and coke ovens at Shaw Mines and also connected with a number of private coal and timber-hauling short lines in southern Somerset County and northern Garrett County, Maryland. This bridge over the Casselman is the last survivor of at least four truss bridges on the Salisbury Branch. It replaced an earlier iron bridge in this location sometime after 1900. Distinctive features of the pin-connected Pratt through-truss structure include the attractive portal bracing, a latticed bottom chord, and knee bracing. It was built to carry only a single set of tracks. Although most of the Salisbury Branch was abandoned long ago, this section continues to carry occasional traffic.

Concrete Bridges

Concrete has been used in construction for thousands of years but its utility as a bridge material was limited by the inability of unreinforced concrete to support stress in tension. In the late 19th century, ongoing experimentation with Portland cement and with different reinforcement methods led to designs that could support tensile stresses. By 1895 bridges of steel-reinforced concrete had been built in several major cities, employing European technologies and innovations, and almost immediately it became a preferred material for highway bridges across the nation (Commonwealth of Pennsylvania 1986:155).

The popularity of concrete as a bridge-building material was due not only to its utility, but also to zealous promotion by its proponents as a modern method and material (Commonwealth of Pennsylvania 1986:11). Although lagging far behind European counterparts, a handful of the large, established bridge companies embraced reinforced concrete as a specialty and lent a degree of standardization to the industry (Wittfoht 1984:109–111). In most urban environments, bridge companies were aggressive in their embrace of concrete, dominating the market and driving innovation in a highly competitive environment.

Initially, concrete bridges were considered an extension of traditional masonry bridge technology although they were capable of spanning much longer distances. Builders simply substituted reinforced concrete for stone to create a familiar solid-filled barrel arch bridge, often even treating the concrete surfaces to simulate stone. Somerset County Bridge No. 41 (Mickey Bridge) 29 is a good example, representing about 20 extant bridges of this type in the county. As they gained greater understanding of the material, they began to experiment with the shape and

configuration, flattening the arch and making the structure less bulky and more efficient in the use of materials. One result was the graceful open-spandrel arch design, which began to appear about 1905 and employed lighter, flatter arches to span long distances (Commonwealth of Pennsylvania 1986:11). Somerset County has a single, unusually small example of this bridge type, the Engle Bridge 28 east of Salisbury.

County engineers and the State Highway Department typically used simpler, more utilitarian designs for short-span highway bridges, especially in rural areas like Somerset County. State engineers developed standard designs for all of the various types prior to World War I, and many examples can be found in Somerset County due to the influence of the county's prolific Superintendent of Bridges, A.E. Rayman, an enthusiastic proponent of concrete bridge technology.

The most basic design was the *concrete slab*, used for culverts and bridges of less than 20 feet; as its name suggests, it consisted of a reinforced concrete slab resting on stone or concrete abutments. The *thru-girder bridge* was slightly more elaborate and could span longer distances, featuring a superstructure of cast-in-place longitudinal concrete beams supporting a separately-poured slab deck and integral paneled parapets; it essentially was an improved version of the traditional timber beam bridge. The *T-beam bridge* consists of a series of cast-in-place concrete beams integrated into the concrete deck slab, forming a profile similar to a series of upper-case "T"s. This design was much lighter, stronger, and cheaper than the concrete slab bridge and was used extensively by county engineers as well as the State Highway Department from the late 1910s through the 1950s. The Buffalo Creek Bridge 30 at Salco is a good example.

Concrete also was used to encase the metal structural members of steel stringer bridges to protect them from corrosion. This technique was common from the late 1890s through the first half of the 20th century and was very successful as evidenced by the large number of concrete encased steel stringer bridges that still survive in Pennsylvania. Many examples are found in Somerset County, including the Compton's Mill Bridge 31 in Elk Lick Township.

27.
Brush Creek Bridge

Built: circa 1908
Location: S.R. 2022, 1 mile northwest of Johnsburg, Northampton Twp.
Spans: Brush Creek
Length: 32 ft
Type: Thru-Girder

This single-span concrete thru-girder bridge was built in 1906–1908 by the Nelson-Merydith Company, an important regional fabricator. Unfortunately, the original concrete parapets with decorative simulated keystones at the center were removed or obscured by repairs which have detracted from the bridge's integrity and significance. Still, it remains a very early example of its type in the region and represents the development of reinforced concrete technologies by independent contractors.

28.
Engle Bridge (County Bridge No. 24)

Built: circa 1910
Location: T-325, 1.1 miles east of Salisbury, Elk Lick Twp.
Spans: Piney Run
Length: 50 ft
Type: Open Spandrel Arch

This small but very handsome bridge is located in a picturesque setting surrounded by rolling farmland east of the borough of Salisbury in Elk Lick Township. It is Somerset County's only example of a reinforced concrete open-spandrel deck arch bridge, a type normally used for much longer spans. The character-defining elements of its delicate and graceful design are intact, although the concrete deck and steel guide rails date to a 1985 rehabilitation. The bridge represents economy of both concrete and reinforcing steel for a short span. It is technologically and historically significant because it reflects the experimentation associated with the early days of reinforced concrete bridge technologies.

29.
Mickey Bridge (County Bridge No. 41)

Built: 1912
Location: T-338, 4 miles northwest of New Lexington, Middlecreek Twp.
Spans: Blue Hole Creek
Length: 46 ft
Type: Closed Spandrel Arch

The Mickey Bridge carries Township Road 338 over Blue Hole Creek in a beautiful part of Forbes State Forest near the borough of New Lexington in Middlecreek Township. Designed by the county engineer and built by the Farris Bridge Company in 1912, it is a single-span reinforced concrete deck arch bridge with plain concrete parapets which continue over the flared wingwalls. This bridge design quickly became popular after 1905, and Somerset County used it extensively beginning in 1908. Somerset County still has about 20 examples, but most of the others date to the period after 1914 and are not considered innovative or significant. This bridge is a well-preserved example of the type and represents the work of the prolific county engineer A.E. Rayman.

30.
Buffalo Creek Bridge

Built: 1928
Location: S.R. 2023, village of Salco, Brothers Valley Twp.
Spans: Buffalo Creek
Length: 36 ft
Type: T-beam

This single-span reinforced concrete T-beam bridge in the village of Salco was designed by the county engineer and constructed by John F. Trimpey, a local contractor responsible for many of Somerset County's early 20th century concrete bridges. It has paneled parapets with flared wingwalls and represents a very common bridge type constructed from the 1910s to the 1950s, especially for short spans. While it is not technologically significant, it contributes to the rural historic landscape in this part of Brothers Valley Township.

31.
Compton's Mill Bridge

Built: 1928
Location: S.R. 2001, village of Compton's Mill, Elk Lick Twp.
Spans: Tub Mill Run
Length: 36 ft
Type: Concrete-Encased Steel Stringer

This small single-span bridge is located within the Compton's Mill Historic District, which surely must be one of the most beautiful spots in Somerset County. The bridge spans Tub Mill Run, adjacent to the 1872 grist mill and miller's house. The bridge is an example of a concrete-encased steel-stringer bridge with paneled parapets and flared wingwalls, built according to a State Highway Department standard design by local contractor John F. Trimpey.

KEY

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- RM Reading Mines Bridge

Wooden Covered Bridges

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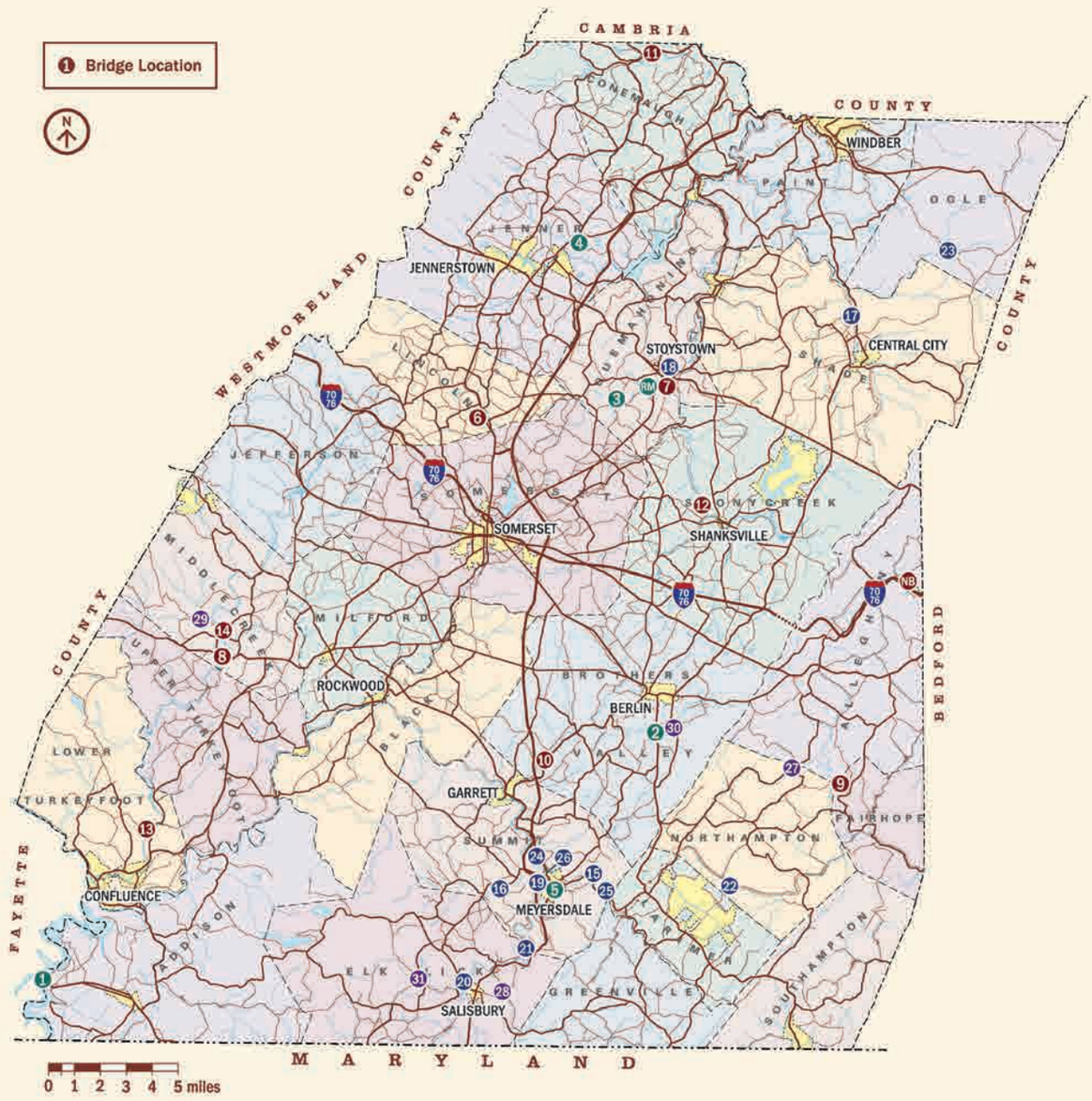
BRIDGE LOCATION MAP



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Images

cover, back: Packsaddle Bridge, Stephen Simpson.
contents: Stephen Simpson.
p.1, facing: detail, *Map of the Public Roads in Somerset, Pennsylvania*, Pennsylvania State Highway Department, 1915.
p.4, bottom: Pittsburgh City Photographer, Archives Services Center, University of Pittsburgh.
p.6: Commonwealth of PA 1986:28.
p.7, top: undated postcard, Heberling Associates, Inc. collection.
p.7, middle and bottom: Great Crossings Bridge, Vince Ferrari, gribblenation.com, 2001.
p.10: Commonwealth of PA 1986:60.
p.16, top and middle: Stephen Simpson.
p.19, top: Stephen Simpson.
p.20, top: Stephen Simpson.
p.21: Commonwealth of PA 1986:60.
p.35: Ketchum, 1920:273.
p.43: modified from *Traffic and State Route Map, Somerset County*, Pennsylvania Department of Transportation, Bureau of Planning and Research, Geographic Information Division, 2010.

All other photographs by Scott D. Heberling.

Somerset County, high in the Laurel Highlands of southwestern Pennsylvania, is renowned for its natural beauty and scenic vistas. Its historic farms, villages, and winding country roads contribute to a strong "sense of place" that appeals to residents and visitors alike. Somerset County also features a remarkable collection of highway and railroad bridges that represent 200 years of engineering technology. While the county lacks great rivers or landmark spans, it does retain dozens of small, locally built bridges of stone, wood, metal, and concrete: examples of bridge types that once were common but are becoming scarcer each year due to the ravages of time and weather. These special structures are celebrated in the pages of this publication.

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