

CENTENNIAL BRIDGE
Station Avenue spanning Saucon Creek
Center Valley
Lehigh County
Pennsylvania

HAER No. PA-408

HAER
PA
39-CENVA,
2-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Northeast Region
Philadelphia Support Office
U.S. Custom House
200 Chestnut Street
Philadelphia, P.A. 19106

HISTORIC AMERICAN ENGINEERING RECORD

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LOCATION: Station Avenue spanning Saucon Creek, Center Valley, Lehigh County, Pennsylvania.

USGS Allentown East, PA Quadrangle,
UTM Coordinates: 18.466800.4486280

DATE OF CONSTRUCTION: 1876

BUILDER: Lehigh County Commissioners

PRESENT OWNER: Pennsylvania Department of Transportation

PRESENT USE: Highway bridge, closed due to structural deterioration.

SIGNIFICANCE: The Centennial Bridge is a representative example of a short-span stone triple-arch wagon bridge, typical of mid-to-late nineteenth century bridges built with local labor and materials along important county roads in Pennsylvania.

PROJECT INFORMATION: The Centennial Bridge was recorded in April and May 1996 by the Cultural Resource Group of Louis Berger & Associates, Inc., East Orange, New Jersey for the Pennsylvania Department of Transportation (PennDOT). The recordation was undertaken pursuant to a Memorandum of Agreement between the Federal Highway Administration and the Pennsylvania State Historic Preservation Office. Project personnel included Richard M. Casella, Senior Architectural Historian, and Rob Tucher, Senior Photographer.

DESCRIPTION

Built in 1876, this three-span, coursed rubble masonry bridge crosses the South Branch of Saucon Creek near the intersection of Routes 309 and 378 in Upper Saucon Township, Lehigh County, Pennsylvania. For over 100 years Centennial Bridge has connected Station Avenue, or the east portion of the village of Center Valley, with the portion of the village that lies west of the creek along Main Street.

Centennial Bridge is approximately 229' long overall, consisting of three arches and two piers totaling 79' long, and two solid fill approaches with abutments totaling 150' long. The west arch is 23' long, the center arch and east arch are both 20' long, and the two channel piers are each 8' long. The west approach is 70' long and the east approach is 80' long. The west end of the bridge is 15' higher in elevation than the east end, and as a result the three arch spans are of differing heights. The west arch rises 25' above the water surface, the center arch 22' and the east arch 20'.

The masonry of the bridge, abutments, and retaining walls of the approaches is all constructed of locally quarried limestone. The only cut and dressed stonework is in the voussoirs, which are finished with a hammered face. All other stonework is quarry-faced, coursed rubble-work consisting of "one man" stones which are generally less than a cubic foot in size, and capable of being placed by one mason. Because the stone split nicely along its natural bedding planes, a good degree of uniformity in thickness and shape was achieved among the stones, giving a random-ashlar appearance to the work in various places.

The footings of the piers and abutments are encased in concrete which was placed during repairs made in 1918. Triangular concrete icebreakers and starlings were cast on the upstream faces of the piers and footings at that time as well. The stone bridge and approach railings, 2' thick and 3' high, are simply a continuation of the sidewalls. As evidenced by 1918 repair plans, the railings were originally capped with wood plank coping. The wood coping was replaced with the existing concrete coping at that time (Lehigh County 1918).

A bridge plaque, consisting of a carved rectangular marble slab, is inset in the south railing at the west end of the bridge. The plaque reads:

CENTENNIAL
COUNTY BRIDGE
ERECTED A.D. 1876

DANIEL LAUER
A. McKEE
A. SINGMASTER

COMMISSIONERS

HISTORICAL INFORMATION

Background

Lehigh County, Pennsylvania, is bounded by Northampton, Berks, and Montgomery counties. The greater part of the area that comprises Lehigh County was deeded in 1736 by twenty-three Native American chiefs to three of William Penn's sons (Roberts 1914:60). The first settlers of the region were Germans seeking religious freedom in the New World. Scotch-Irish and Moravian settlers soon followed. It was not until 1812 that the population of the portion of Northampton County lying west of the Lehigh River had so significantly increased that the formation of a new county, called Lehigh, was proposed and passed by the Assembly (Roberts 1914:212).

What is now Upper Saucon Township experienced European settlement by the 1730s, primarily by German, English and Welsh immigrants (Roberts 1914:922). The township was formally organized in 1743 (Roberts 1914:928). Agriculture formed the basis of the township's economy for most of its history, with early crops including wheat, rye, oats, corn, potatoes, clover, timothy, fruits, and garden vegetables (Roberts 1914:937). Access to markets was provided by the precursor to present-day Route 309, then as now a primary route between Philadelphia and Allentown.

The village of Center Valley evolved as a linear community initially focused around the intersection of present-day Routes 309 and 378, the latter of which branched off the main road, due north toward Bethlehem. As of 1848, the village consisted of only a store, hotel, and a sixty-acre farm. Construction of the North Pennsylvania Railroad through the township in 1856 brought improved transportation and expanded access to urban markets. However, the rail line established its Center Valley Station on the east side of a Saucon Creek tributary about a quarter-mile east of the village nucleus. The village along the highway continued to grow nonetheless, and by 1862, boasted not only a hotel and store, but also a post office, blacksmith shop, and shoemaker, along with about a dozen dwellings (Aschbach 1862).

The presence of the railroad station on the east side of the Saucon Creek tributary was bound to attract development, which was initiated by Joel Roth's construction of a hotel (variously known as Fulmer's and the Bald Eagle) in 1858 (Reinick 1976:140). The area's growth in the following decade is not well documented, but by 1873 at least seven households appear to have been established near the station (Lehigh County Directory 1873-74). In 1874, the route of present-day Route 309 was taken over as a toll road by the Allentown-Coopersburg Turnpike Company (Reinick 1976:141). The following year, local commissioners authorized the construction of a bridge over the Saucon Creek tributary, completed and named the Centennial Bridge in 1876 (Reading Publishing House 1876:10).

By the time the bridge was completed in 1876, there were approximately eighteen dwellings, two coal yards, one store, and a hotel in the vicinity of the Center Valley railroad station. Most of these buildings were arranged along Station Avenue, which extended west from the station to the Centennial Bridge, and thence to the Allentown-Coopersburg Turnpike (present-day Route 309), and the original village nucleus. The Center Valley station became an important shipping point for agricultural products from surrounding farms. The community around the station was at one point locally known as "Milk Town" because of the large quantity of milk produced by farms in the vicinity and shipped out of the area. According to the Bucks County Historical Society, two and one-half million gallons of milk were shipped annually to Philadelphia via the North Pennsylvania Railroad (Reinick 1976:140). Within the community, Station Avenue and New Street (the latter laid out sometime after 1876 to extend south from Station Avenue to the Turnpike) became the focus of a residential "suburb," with over forty dwellings, primarily of brick, erected by the end of the century.

Whether due to the establishment of the turnpike, construction of the bridge, or simple growth over time, the old village nucleus along the highway had by the mid-1870s also experienced some population increase, with two stores, a post office, the hotel, the Swartz and Theuer blacksmith and wheelwright shop, plus the Erdman & Geisinger gristmill and limekiln about 1/4 mile to the south (Reading Publishing House 1876). This "Main Street" area became home for individuals of various occupations, including a tinsmith, shoemaker, butcher, stone mason, and iron miners. Also resident were employees of a local brickyard, which had been established by Samuel Kaufman on his farm toward the north end of the village in 1860.

Based upon evidence from the existing built environment, the portion of the village on the east side of the Saucon Creek tributary proved the most fashionable address for local residents, their frame and brick dwellings exhibiting clear attention to architectural styles popular during the latter half of the nineteenth century. Today the Station Avenue-New Street area is almost entirely residential, presenting characteristics of a Victorian-era domestic neighborhood that would not be out of place in a town or small city. The original village nucleus along the highway has experienced greater transformation over time, particularly since the 1920s when the old Allentown-Coopersburg Turnpike was incorporated into the Federal highway system and paved to accommodate the growing numbers of motorized vehicles. Increasingly heavy traffic eventually resulted in the construction of a separate two-lane southbound route around the west side of the community; the original two-lane road was reserved for northbound traffic. Modern intrusions, in the form of a gasoline station, and large regional high school, have further altered the character of this portion of the village. A sense of separation from its eastern "suburb" along Station Avenue and New Street has been imposed by the width of Route 309, and its heavy utilization as a through route between Philadelphia and Allentown, and has been exacerbated by the recent closure of Centennial Bridge due to severe structural problems.

HISTORY OF CENTENNIAL BRIDGE

The impetus for the Centennial Bridge was to connect the east and west sides of the village of Center Valley, separated by the steep ravine of Saucon Creek, thereby stimulating greater communication and commerce. The bridge would extend Station Avenue over the creek and provide direct access for the villagers on the west side of town with the North Penn Railroad station located less than a quarter-mile to the east. Local farmers and businessmen probably submitted a petition for the construction of a bridge to the county court or county commissioners, although no documentary evidence of such is known to exist. A Lehigh County grand jury studied a proposal for a bridge at Center Valley and submitted their findings, along with a recommendation that the bridge be built, to the county commissioners on August 2, 1875 (Whelan 1992).

At the September 13, 1875 meeting of the Lehigh County Commissioners, presiding commissioners Jacob A. Leiby, Jesse Solliday and Daniel Lauer submitted for the record a cost estimate that they had prepared for the construction of a permanent stone arch bridge to carry Station Avenue over Saucon Creek in Center Valley. The commissioners had arrived at a figure of \$12,000 for the completion of the bridge and had apparently already obtained quotes from some local labor and material suppliers. They decided to award the contract to provide the lime for the mortar to Enos Erdman, who agreed to furnish the material for fifteen cents per bushel delivered to the bridge site (Lehigh County Minute Book 1875-1876:121).

According to the county records, no further official business was conducted on the subject of the bridge until the following spring. On April 10, 1876, the board of commissioners, now composed of Daniel Lauer and two new members, Alex McKee and Alex Singmaster, resolved "to meet at Center Valley Bridge on Wednesday next to make arrangements for the completion of said bridge" (Lehigh County Minute Book 1875-1876:163).

As a result of the meeting at the bridge site, McKee and Lauer made a contract with Owen Harmony, a laborer and hauler from Allentown, and Jonathan Swartz, a blacksmith from Center Valley, to provide the stone for the arches of the bridge. The contract specified that Harmony and Swartz would quarry first class building stone from Sell's quarry and deliver it to the site for \$1.20 per ton of 2,240 pounds. The county stipulated that it would pay Sell directly for the stone and the weighing, and make payments every two weeks to Harmony and Swartz for their labors (Lehigh County Minute Book 1875-1876:166).

The exact day that construction of the bridge began was not recorded; however, Harmony and Swartz received their first payment of \$300 on May 8, 1876 (Lehigh County Minute Book 1875-1876:169). County records show that on June 5, 1876, a payment of \$262.87 was made for mason's labor as well as \$294.62 for "filling Center Valley Bridge," suggesting that the abutments were under construction, and that the approaches were being filled (Lehigh County Minute Book 1875-1876:174). These payments, along with numerous others made by the county

over the next four months of construction were made to Daniel Lauer, who dispersed the funds directly to the masons, haulers and other laborers. It appears that Lauer was appointed to oversee the project, and act as the "general contractor" for the county. Other local laborers and material suppliers involved in the project that were paid directly by the county, and therefore noted in the commissioners records include:

C. W. Bauch	"stones"	\$22.27
W. R. Yeager	"Lime"	\$161.55
Kistler & Pretz	"Sand"	\$2.28
William Quint	"for weighing 3170 tons of stone"	\$90.93
John Weaver	"carpenter work"	\$86.07
Daniel Stahler	"timber"	\$70.19
George Walter	"labor"	\$10.18
Jacob Solliday	"sand"	\$29.12
Herman Yeager	"carting & filling"	\$4.40
Phaon Albright	"stones"	\$42.62
Henry Fry	"nails, spikes, paint"	\$12.51
Henry Sell	"stone"	\$34.75
William Hartman	"hauling"	\$8.75
Anslett & Geisinger	"lumber"	\$105.18
G.J. Snyder	"horse hire for viewing bridge"	\$9.50

On September 18, 1876, Daniel Lauer was paid \$18.15 for "inspection of Center Valley Bridge" suggesting that the construction was complete by that date. The last entry in the county records regarding the hridge is a payment of \$5.00 to Soloman Reinhard for labor. It is likely that this was for the setting of the marble bridge plaque in the stone railing, commemorating the county commissioners and naming the structure the "Centennial Bridge" (Lehigh County Minute Book 1875-1876:190-191).

In 1918 major repairs to the hridge were undertaken by Lehigh County under the direction of county engineer Tilghman H. Moyer. Plans were drawn by Moyer for the repairs which included repointing of the stonework, concrete encasement of the pier and abutment footings, structural repairs to the arches and rebuilding the roadway and railings. The extent of the repairs is evidenced by the following note on the plans: "Dig out all roadway fill from A to B (over all three arches). Thoroughly clean out the arch rings. Float over with wet concrete, filling all joints and making rings 3" thicker. Cover all surfaces with waterproofing up to roadway level. Replace roadway fill" (Lehigh County 1918). In addition, new curbs, gutters and catch basins were installed to improve drainage, and the grade at the west end of the bridge was leveled.

Since the 1918 overhaul, the bridge has undergone only minor repairs. Between 1932 and 1934, Lehigh County engineer Howard C. Roeder specified and oversaw repairs to the bridge which included patching the roadway and curbing, repointing walls and arches and painting coping and

curbing "traffic white" (Roeder 1932). In 1935, Roeder wrote the Pennsylvania Power and Light Company in Bethlehem requesting that the county no longer be billed for lighting on the bridge as of January 1, 1936 when ownership of the bridge transferred to the Pennsylvania Department of Highways (Roeder 1936).

According to PennDOT bridge inspection reports, the far right retaining and spandrel walls have been repaired, the coping has been rebuilt, and the arch ring at the water line has been repointed. These repairs were all made between 1975 and 1983. The 1985 inspection report indicated that the deck and curb-parapet had been patched, the sidewalks were breaking up, the left spandrel wall was "pushing," and the headwalls and wings contained some loose stones. Centennial Bridge was listed on the National Register of Historic Places on June 22, 1988, as part of a multiple property nomination for historic highway bridges in Pennsylvania. The most recent inspection of the bridge in 1992 identified cracks in its supporting stone arches which resulted in the present closure of the span (Commonwealth of Pennsylvania 1986; PennDOT 1996).

REFERENCES CITED

Aschbach, G.A.

1862 *Map of Lehigh County*. On file, Pennsylvania State Archives, Harrisburg.

Commonwealth of Pennsylvania

1986 *Historic Highway Bridges in Pennsylvania*. Pennsylvania Historical and Museum Commission and Pennsylvania Department of Transportation, Harrisburg.

Lehigh County

1873-74 *Lehigh County Directory*. Published by J. H. Lant, Allentown, Pennsylvania. Located in Lehigh County Historical Society, Allentown, Pennsylvania.

1875-1876 *Lehigh County Minute Book*. Vol.2. Originally located in Lehigh County Historical Society, Allentown, Pennsylvania.

1918 Drawing entitled "General Plan, Repairs to Stone Arch Bridge over the South Branch of Saucon Creek," dated July 31, 1918. Original located in Lehigh County Historical Society, Allentown, Pennsylvania.

Pennsylvania Department of Transportation (PennDOT)

1996 *Centennial Bridge Inspection Reports*. Located in Centennial Bridge File, Pennsylvania Department of Transportation Engineering District 5-0, Allentown, Pennsylvania.

Reading Publishing House

1876 *New Historical Atlas of Lehigh County, Pennsylvania.* On file, Lehigh County Historical Society, Allentown.

Reinick, Ruby

1976 *The Village of Center Valley.* In *Upper Saucon: A Bicentennial Tribute 1743-1976*, edited by Daniel J. Harrington. On file, Lehigh County Historical Society, Allentown.

Roberts, Charles Rhoads

1914 *History of Lehigh County, Pennsylvania and Genealogical and Biographical Records.* Lehigh Valley Publishing Company, Ltd., Allentown.

Roeder, Howard C.

1932-1935 Inspection Notes, Centennial Bridge. Original located in Centennial Bridge hanging file, Lehigh County Historical Society, Allentown.

1936 Letter to W. E. Lewis, dated October 23, 1935. Original located in Centennial Bridge hanging file, Lehigh County Historical Society, Allentown.

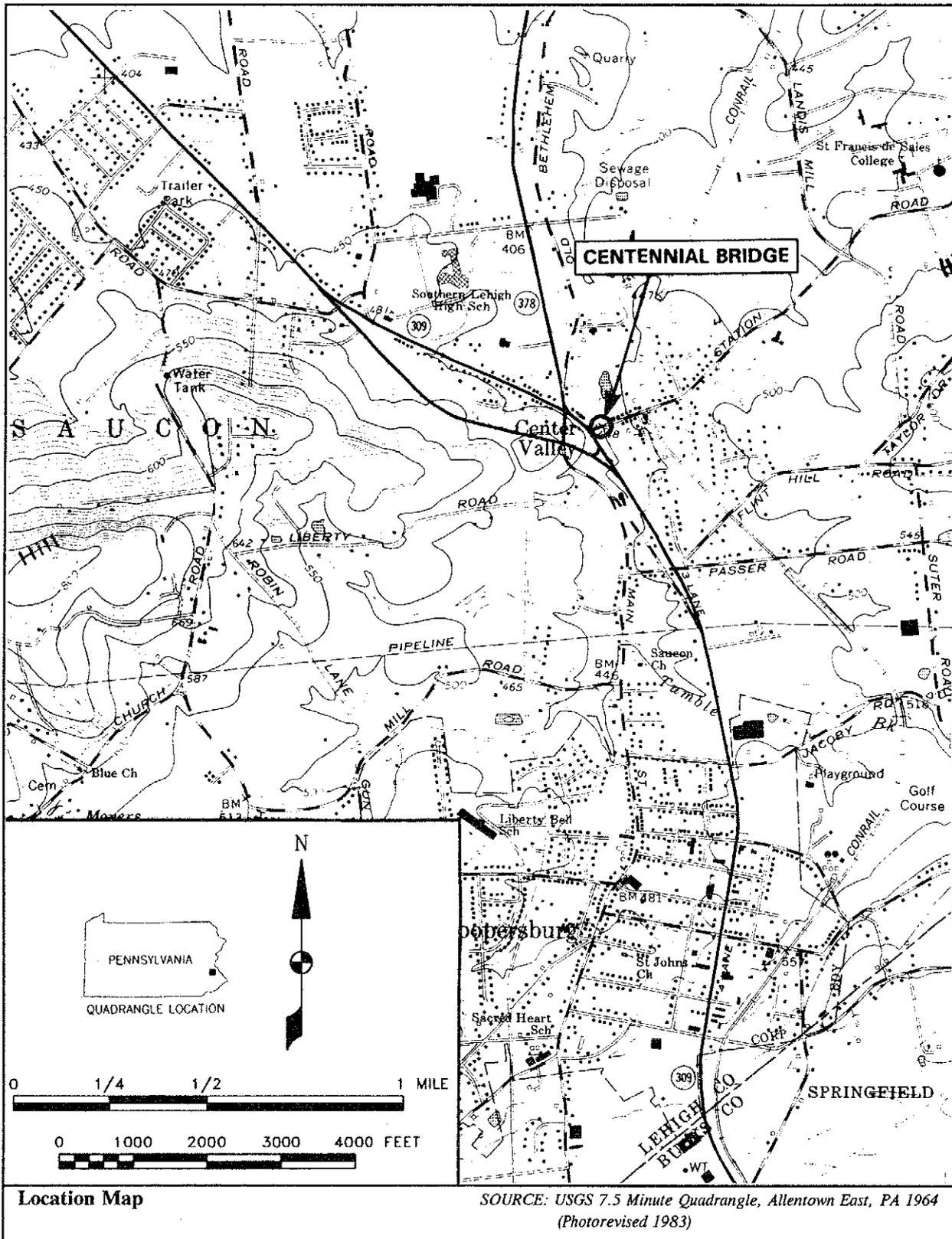
United States Geological Survey [USGS]

1964 *Allentown East, Pennsylvania, Quadrangle. 7.5 Minute (Topographic) Series (Photorevised 1983).* United States Geological Survey, Washington, D.C.

Whelan, Frank

1992 *Center Valley's Bridge Helped Milk Get to Market.* The Lehigh County *Morning Call.*

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Location Map

SOURCE: USGS 7.5 Minute Quadrangle, Allentown East, PA 1964
 (Photorevised 1983)