BODINES BRIDGE
Carrying State Route 1006 over Lycoming Creek
Bodines vicinity
Lycoming County
Pennsylvania

HAER No. PA-179

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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BODINES BRIDGE HAER NO. PA-179

Location: Carrying State Route 1006 over Lycoming Creek, Bodines vicinity, Lycoming County, Pennsylvania.

UTM: 18.334510.4590200
Quad: Bodines

Date of Construction: 1890

Present Owner: Commonwealth of Pennsylvania
Department of Transportation
Transportation & Safety Building
Commonwealth Avenue & Forster Street
Harrisburg, Pennsylvania 17120

Present Use: Vehicular and pedestrian bridge.

Significance: The Bodines Bridge is a pin-connected Pratt through truss spanning 149 feet. One of 47 metal truss bridges nominated to the National Register of Historic Places as part of a statewide historic bridge nomination, it is an intact representative example of a late nineteenth century Pratt through truss. Relatively inexpensive and easy to manufacture, ship, and erect, this bridge type found widespread application in rural areas throughout the last quarter of the nineteenth century and well into the twentieth century.

Project Information: This documentation was undertaken from May 1989 through January 1990 by the Pennsylvania Department of Transportation as a mitigation measure prior to the removal and replacement of the bridge.

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The Bodines Bridge is a Pratt through truss bridge constructed in 1890, spanning 149 feet across Lycoming Creek in Lewis Township, Lycoming County, Pennsylvania. It carries single lane vehicular traffic on State Route 1006 from the intersection of State Route 14 to the village of Bodines, approximately one-half mile to the east of the bridge. Bodines is a very small village primarily characterized by simple late nineteenth century frame buildings. Downstream from the bridge is an abandoned plate girder railroad bridge.

The Pratt truss bridge at Bodines is an intact representative example of a late nineteenth century Pratt through truss. It is a lightly structured bridge, composed of typical compression members made of channels with lacing bars and plates; bottom chords are die-forged eyebars, and diagonals and counters consist of eyebars and rods with turnbuckles. The truss is pin-connected at the joints, and exhibits simple decorative elements at the portal bracing. A bridge plate riveted on the northeast endpost documents the bridge's construction in 1890 by contractors E.A. and J.S. Perkins of Williamsport, Pennsylvania. The truss is supported on stone masonry abutments with flared wingwalls; most of the original masonry of the substructure has been obscured by concrete.

The single span Pratt truss bridge was the first vehicular bridge to be constructed at this site, constituting a substantial improvement over the ford which travelers used previously, and it represents a typical, standardized highway bridge design of the nineteenth century. The metal truss bridge offered a unique solution for crossings at remote locations, as in this case, or for immediate replacement needs, such as those following a destructive flood. They were easily manufactured of standardized and pre-fabricated parts, easily transported to the site, lightweight, and quickly erected with little need for skilled labor. In many cases, they were "catalog" bridges, chosen by localities from a bridge company salesman's catalog. Prospective bridge buyers treated the catalog much as today's mail order catalog customer does. The bridge company instructed its customers to "follow directions" and provide information concerning the site for the proposed bridge. After these data were furnished, the company gave a price proposal which often included erection of the superstructure. The cash rate was lower in some cases when a number of trusses was ordered. This procedure was frequently used by counties for highway bridges. The choice of a metal truss bridge for the Bodines site may have been influenced by this factor in light of the need for many replacement bridges in Lycoming County following a devastating flood on June 1, 1889.

Metal trusses were not built solely in response to special circumstances, however. The metal truss was a structural form which suited the tremendously rapid technological

and geographical progress of nineteenth century railroad and early twentieth century highway travel. It was a popular bridge form well into the twentieth century because of its relative ease of construction and the tendency of manufacturers to encourage standardization. During the nineteenth century, it was a bridge type of diverse forms, with a multitude of proprietary types registered at the U. S. Patent Office; an early example among these was the Pratt truss.

The Pratt truss type was widely used from the mid-nineteenth to the early twentieth century for simple highway bridges. Patented in 1844 by Thomas and Caleb Pratt (U.S. Patent Number 3523), the original design was for a composite timber and iron truss, wherein the iron diagonals resisted tension and the timber members resisted compressive loads. The Pratt configuration easily adapted into an all metal truss, first built of iron and then steel. Compared with its contemporaneous competitor, the Howe truss, it was more economically suited to the transition in material. Its tension diagonals could be made of small bars or rods, and its compressive members were shorter and could better resist buckling for a given cross-section. The Pratt truss became the predominant metal truss bridge type built in the United States after 1860.

The bridge built at Bodines in 1890 conformed to the typical configuration of the popular Pratt truss. Located on the Lycoming Creek near the mouth of Slack's Run, this simple truss bridge has served the needs of the community for one hundred years. It was constructed near the location of a historic ford which may have served travellers for centuries. A historic Indian trail, the great Sheshequin path, followed the Lycoming Creek, which flows into the West Branch of the Susquehanna River. This trail, long used by the aborigines, also provided an important north-south route for the Europeans who settled in this region of Pennsylvania in the latter half of the eighteenth century. It was used by Conrad Weiser, the Indian language interpreter, as well as by the Moravian missionaries on their way to Onondaga, the capital of the Six Nations. Prior to the land purchase of 1768 this part of Lycoming County was occupied primarily by Indians. The exact boundaries of the 1768 purchase were debated for sixteen years, leaving ownership of the lands between Pine Creek and Lycoming Creek uncertain and contested. A 1784 treaty made at Fort Stanwix established the boundary and secured the previously disputed lands between Pine and Lycoming Creeks. A land office opened in 1785 and settlement of the area progressed.

A. M. Slack was purportedly the first settler on the site of what is now Bodines. Coming to the area shortly after the end of the Revolutionary War, he squatted on a land tract surveyed to Isaac Penrose. Slack's Run, one of the principal tributaries of Lycoming Creek, takes its name from him. Other early settlers near the site of Bodines included A. M. Riley, who is said to have settled on the creek below Bodines prior to

1812, James Lusk, who purchased land from Riley, and a Mr. Keys. All of these settlers came to the area prior to 1814.

Among the most prominent of the early settlers in Bodines was John Bodine, who came in April of 1838 and was employed as a contractor in the laying of the "strap railroad" which ran between Bodines and Ralston. After completion of the work, he settled there and his place came to be known as Bodines. He was followed in 1839 by his son, Samuel, who also settled in Bodines. Samuel Bodine was connected with the building of the West Branch Canal and the Williamsport & Elmira Railroad, which was completed in 1854 and greatly facilitated transport through the valley. He was the first stationmaster at Bodines Station and also served three times as justice of the peace. When the post office was established on August 3, 1856, originally with the name of Bodinesville, Samuel Bodine was its first postmaster. He served in that capacity for thirty-six years. The name Bodines was adopted by the village on August 10, 1887.

The first commercial establishments in Bodines were associated with lumbering which was among the earliest industries in this area of Pennsylvania. As early as the Revolutionary decade, the timber resources of southeastern Pennsylvania were dwindling. Much of Pennsylvania, however, was still covered with timber lands; in 1843 Trego's Geography of Pennsylvania stated that two-thirds of Pennsylvania was still covered with timber. Demand for timber products continued high throughout the eighteenth and nineteenth centuries. Between 1860 and 1870 Pennsylvania was the leading lumbering state in the United States. Until nearly the turn of the twentieth century, lumber was a basic building material for residential and industrial use; additional demands for forest products, such as the need for hemlock bark in the tanning of leather, were also important. During this era, every stream in central Pennsylvania which was large enough to successfully transport timber was filled with floating logs in the spring; this included Lycoming Creek. Williamsport, the seat of Lycoming County located south of Bodines at the confluence of the Lycoming Creek and the Susquehanna River, became the lumber capital of the world from the 1860s to the 1880s due to its innovative lumber boom. The Williamsport lumber boom was a large log, iron and log crib structure which stretched across the Susquehanna River. It allowed for stopping, sorting and grading logs as they came through the river at Willamsport.

The first industrial enterprise in Bodines was a lumber mill. The earliest lumber mill in Bodines was opened in 1835 by John Reed and soon after was taken over by Samuel Bodine. Other important industries included the tannery of Robert Innes, established in 1877 and in 1892 considered the leading industry of Lewis Township.

Innes was three years old when his parents immigrated to the United States from Scotland in 1848. He learned his trade from his father, working at his tannery in Ulster County, New York. Coming to Bodines in 1877, he established a prosperous tannery business, which employed thirty people. Innes' tannery manufactured Union Crop leather and was one of the leading tanneries of the West Branch Valley. He also erected a flour mill in 1883, which was capable of processing 50 barrels a day by 1892; in 1891 he took a partner, S.L. Andrews, and the flour mill became S. L. Andrews and Company. In Bodines Innes also operated a general mercantile business, built a creamery in 1887, owned a 300 acre farm surrounding the village, and operated the undertaking establishment for this part of the county. The tannery, mill and creamery business were named "Bruce", after Scotland's Robert Bruce. Innes was responsible for the construction of the small dwellings in the village of Bodines, which were built as tenant houses for his workers. In addition, Innes, one of the most prosperous businessmen in Lycoming County, erected a church in Bodines for the free use of all denominations.

The location of Bodines on a tributary of the Susquehanna River not only encouraged commercial establishments, its remote mountainous setting on a trout stream encouraged a version of late nineteenth century tourism. In 1876 Dr. Thaddeus S. Up de Graff of Elmira, New York, established a summer camp on Lycoming Creek at Bodines, where he usually spent several weeks during trout season. He set up the camp on an island in Lycoming Creek, near the mouth of Slack's Run; the island has since been diminished by floods and erosion. Up de Graff's camp became a noted place and was visited by many prominent men. In 1879, while visiting his camp, Dr. Up de Graff wrote his book, Camping in the Alleghanies; or Bodines which was considered a good authority on roughing it in the wilderness. Up de Graff's experience and publication coincided with the national "back to nature" movement of the 1870s and 1880s.

Although the Bodines area remained sparsely populated, commerce and travel through the region had increased by the late 1870s to the point that residents began to feel a need for a bridge to replace the difficult ford which provided the only road crossing of the Lycoming Creek at that location. On January 12, 1878, residents of Lewis Township presented a petition to the Court of Quarter Sessions of the Peace of Lycoming County, requesting that a bridge be erected at County expense over Lycoming Creek "where the said creek crosses the public road a short distance below the rail road bridge", and indicating that the cost of erecting such a bridge would be more than the Township could bear. The Court appointed J. W. Hays, James Thompson and Abram Swartz as viewers to inspect the proposed bridge site and determine whether a bridge was necessary and whether the construction would be too

expensive for the Township to finance. In addition, the viewers were authorized to examine the route of the road crossing the creek and comment whether a realignment of this road would result in an improvement and a savings in cost. Their report, presented at the next Quarter Session, March 4, 1878, indicated their unanimous agreement that the construction of a bridge was warranted and that the cost of such a structure would be an unreasonable burden to the Township. Appended to their report was a sketch indicating the preferred location of the proposed bridge, spanning the Lycoming Creek from a point on the west bank north of the railroad bridge to a point on the east bank "near Samuel Bodine's saw mill". No changes were recommended to the public roads on either side of the creek other than might be required by the approaches to the proposed bridge.

These recommendations were not acted upon until 1889, when two events coincided in this region of Lycoming County. The road which became the present State Route 14 was relocated to the west side of Lycoming Creek, and a flurry of bridge building activity occurred following the catastrophic flood of June 1, 1889. Originally the road that became State Route 14 was on the east side of Lycoming Creek at this location, approximately following the alignment of the current Bodines Road. Its relocation intensified the need for a bridge at Bodines. Although this bridge was not a replacement, its construction occurred after the flood of 1889, which destroyed many bridges in the valley and incited a brief boom in bridge construction in the county.

In July 1889, the Lycoming County Commissioners contracted with the firm of E. A. Perkins and Company of Cleveland, Ohio, to construct a metal truss bridge at this site. E. Arthur and James S. Perkins established a business address at 317 Pine Street in Williamsport for the duration of their contract with the County, and took up residence as boarders at 341 Pine Street. This accounts for the bridge plate's statement of the firm's location as Williamsport; however, the city directory only carried their listing for one year. The Bodines Bridge was one of seven metal truss bridges that the Perkins brothers were to construct across Lycoming Creek in 1889-90; they also were responsible for the structures at Fields, Apkers, Trout Run, Perryville, Hepburnville, and McKinneys. The total contract price for these seven structures was $32,197; the Bodines Bridge accounted for $3,748 of this total.

The date the contractors began work on the Bodines Bridge is unknown. Local newspapers often mentioned the progress of construction of the numerous bridges which were going up in the county in the summer of 1889, but no specific references to the Bodines Bridge appeared until November 19, 1889, when a flood occurred; it was feared that this flood would repeat the destruction wrought by the deluge of June

1, 1889, and special reports were communicated to the Williamsport offices of the **Sun & Banner** from outlying areas, presumably by telegraph. One such report was received from Bodines, which indicated that "the county bridge just went out . . . this refers to the temporary trestling, as a permanent bridge had not yet been completed". This indicates that the bridge was under construction at that time, and suggests that a **Sun & Banner** reporter had been overly optimistic in observing on the past October 2 that "within the next two weeks all of the iron bridges being built by the county will be finished".

The Perkins company had four trestles destroyed by the November 19 flood, at Fields, Bodines, Trout Run, and Perryville; a newspaper reporter praised the County Commissioners for their foresight in requiring the bridge contractors to post bonds for the completion of the work:

> By a provision of the contracts the contractors were to keep and maintain these bridges in good and passable condition until the erection of the permanent structures, and were required to give bonds for the performance of their contracts. By this wise provision thousands of dollars have been saved to the county, although it is somewhat unfortunate for the contractors, who will be compelled to do their work over again.

It is possible that this setback discouraged the contractors from attempting to establish a permanent business in Williamsport. They continued in business at that location at least as long as was required to complete their contractual obligations on Lycoming Creek. The County Commissioners traveled by rail to inspect the completed Apkers Bridge on December 9, 1889; four days later, the appointed viewers examined the McKinneys Bridge and found the work acceptable. The County Commissioners' ledgers for January 1890, include substantial payments to E. A. Perkins and Company on account of contracts for bridges at Bodines, Trout Run, and Fields. The Lycoming County Bridge Book records the final cost of the Bodines Bridge as $3,806.

The Pratt truss at Bodines has carried vehicular and pedestrian traffic for one hundred years. It is currently posted to carry a nine ton weight limit and it measures fifteen feet wide with sixteen feet for vertical clearance. Based on factors of structural adequacy, safety and serviceability, the bridge has been determined structurally inadequate and functionally obsolete. It will be removed and a replacement bridge will be built at this location.

The Bodines Bridge is one of 47 metal truss bridges nominated to the National Register of Historic Places by the Pennsylvania Historical and Museum Commission and

the Pennsylvania Department of Transportation as part of a statewide historic bridge nomination. Most of the historic metal truss bridges are located in the northwestern, north-central, and southwestern counties of Pennsylvania; a total of five are located in Lycoming County. About half of the metal truss bridges are Pratt trusses, including both low and through trusses; in this group, the Bodines Bridge represents one of sixteen Pratt through trusses nominated to the National Register in Pennsylvania.

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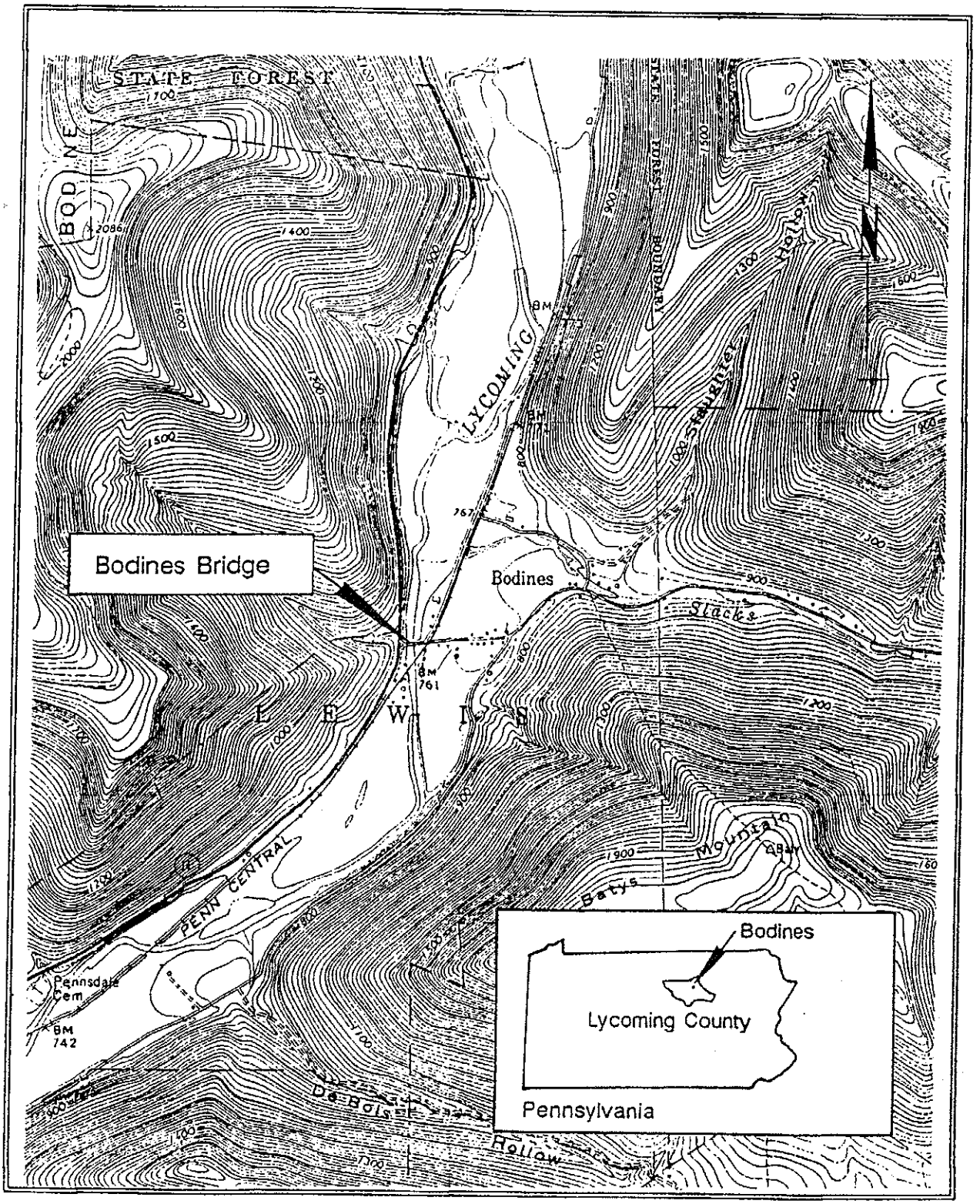
STATE FOREST
BOD NE
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STATE FOREST BOUNDARY
Bodines Bridge
Bodines
Slacks
Holton
Mountain
Batys
PENN CENTRAL
Pennsdale Cem
BM 742
BM 761
De Bolt
Hollow
Bodines
Lycoming County
Pennsylvania