

LYCOMING COUNTY
L.R. 266, SECTION A06
NATIONAL REGISTER
ELIGIBILITY DETERMINATION
DOCUMENTATION

Subject: Lycoming County, PA
Legislative Route 266, Section A06
National Register Eligibility Determination Documentation

Property Name: The property under consideration is the PA Route 44 highway bridge over Little Pine Creek at Waterville, Lycoming County, PA. It is known locally as "the Waterville Bridge" and has been designated by the Department of Transportation as L.R. 266, Section A06.

Location: The Village of Waterville, PA, as shown on Figure 1, is located approximately 12 miles NNW of the Borough of Jersey Shore along Pennsylvania State Highway Route 44 at the confluence of Pine Creek and Little Pine Creek. The "Waterville Bridge" spans Little Pine Creek approximately 700' upstream (north) of the confluence and is located within the Village limits as shown in Figure 2.

Classification Structure (Highway Bridge)
Category:

Ownership: Commonwealth of Pennsylvania
Department of Transportation
Harrisburg, Pennsylvania 17120

Representation In Existing Surveys

The following historic resource surveys were reviewed to determine if the Waterville Bridge has been recognized for historic values.

<u>Reference</u>	<u>Waterville Bridge Inclusion</u>
1. "A Survey of Historic Sites and Landmarks of Lycoming County" Lycoming County Planning Commission September , 1971	Not Listed
2. "Historical Preservation - A Plan for Lycoming County" Lycoming County Planning Commission September, 1974	Not Listed
3. "A Plan for Historic Preservation in PA, Vol. II Inventory of Sites, County Listing" PA Historical and Museum Commission, 1973	Not Listed



Figure 1
LOCATION MAP

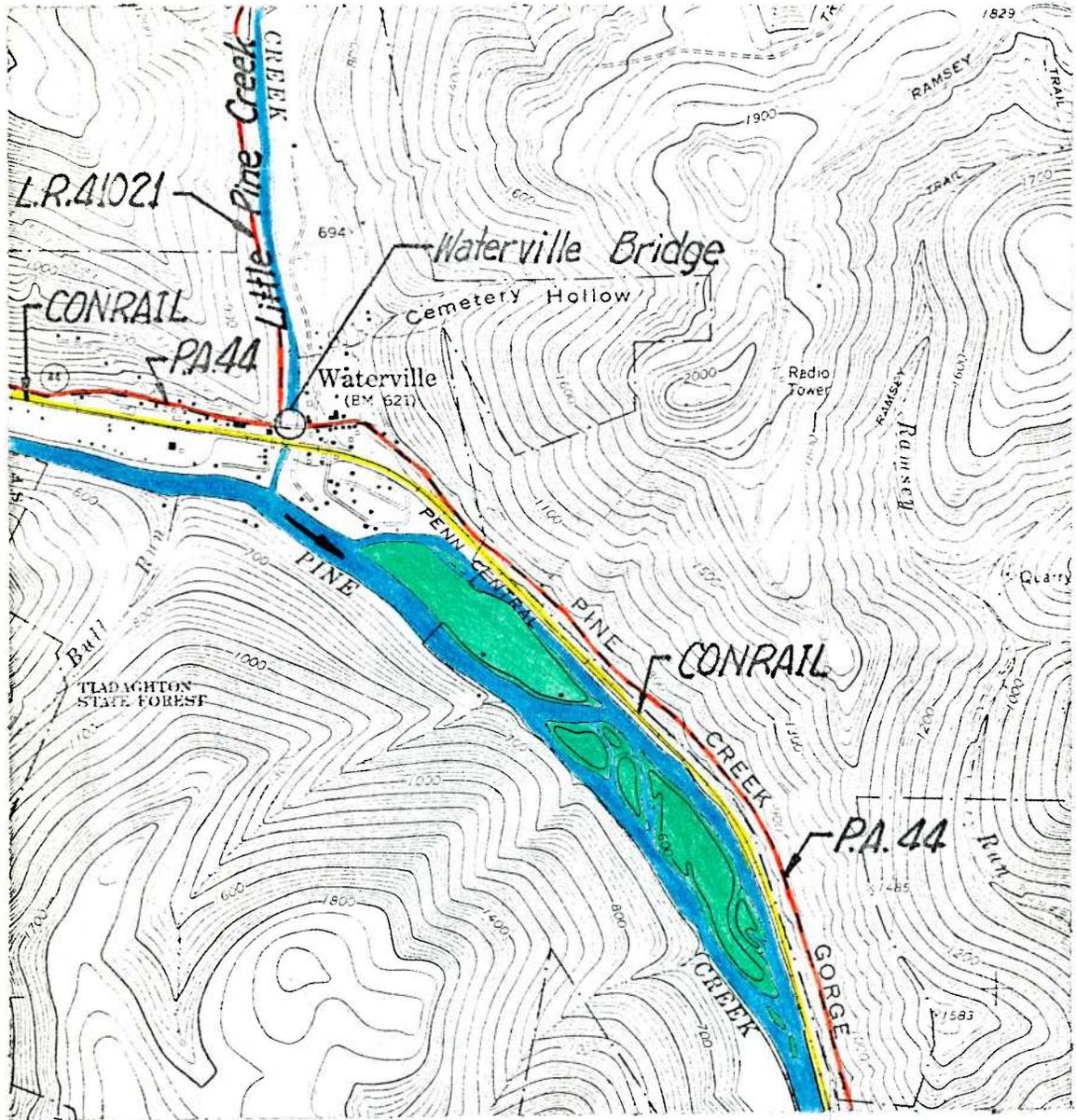


Figure 2
 GENERAL TOPOGRAPHIC VIEW

4. "A Nation in Motion - Historic American Transportation Sites"
U.S. DOT
August, 1976
Not Listed

5. "Pennsylvania's Nominations to the Bicentennial Transportation Catalog"
PA Department of Transportation, revised
March, 1976
Not Listed

At their October 24, 1979, meeting the Pine Creek Task Force, an organization created by PennDER to promote actions to protect the environmental values in the watershed, went on record as attaching no historic value to the existing PA 44 structure over Little Pine Creek and favoring replacement of the span with a new structure at the existing location. A similar position was previously adopted by the Lycoming County Planning Commission at a regular Commission Meeting on April 15, 1971. The Lycoming County Historical Society and Museum in a letter dated September 14, 1970 indicated the proposed replacement of the subject structure would not involve any conflict with any site of historic significance to the County. The Society was again contacted on November 2, 1979, and their letter of November 7, 1979, reaffirms their position of attaching no historic significance to the existing PA 44 structure over Little Pine Creek at Waterville.

Copies of the minutes of the Pine Creek Task Force meeting, the Lycoming County Planning Commission's April 15, 1971 meeting minutes and the September 14, 1970 and November 2, 1979 letters from the Lycoming County Historical Society and Museum are attached to this report.

Description:

1. Overview

The "Waterville Bridge" (see Figure 3) is a single span, through "lenticular" truss structure constructed in 1890 by the Berlin Iron Bridge Company of East Berlin, Connecticut, for the Lycoming County Commissioners. Also known as a "parabolic" truss, the bridge has a span length of 220'-9" with a normal underclearance of 14'-0". Supported on stone masonry abutments, the through truss members are spaced 17'-6" center-to-center allowing a 15'-5" wide cartway which technically classifies the structure as a single lane bridge.

Vertical end posts support the ends of the trusses and provide vertical portals at each end of the structure (see Figure 4). The sway bracing which interconnects the truss diagonals (Warren Web) and top chord members limits the vertical clearance of the cartway to 14'-0". In-depth inspections of the bridge in 1968 and 1976 have continued a 15 Ton load limit posting begun in 1955.

2. Specifics

The top chords, end posts, sway bracing members, and diagonal web members of the Waterville Bridge are all of the same box-shaped section with lacing on the open side. The lower chords are pin-connected eyebars. The supporting members beneath the laminated, creosoted timber floor and 1-3/4" bituminous wearing surface consist of 10" WF 26 lb. longitudinal stringers at 2'-2" spacing on transverse 14" WF 28 lb. floor beams. The floor beams are suspended from the trusses by means of dual 1-1/8" square vertical hangers located close to the panel points (generally at 18'-4-1/2" spacing). The floor beams in turn rest upon 16" built-up longitudinal girders. The girders do not carry direct tensile stresses as bottom chords usually do, instead they distribute the floor beam loads, anchor the trusses to the bearings, and serve as wind chords for the bottom lateral system.

Examination of the structure members during the 1968 in-depth inspection revealed no fibrous surface which would have been positive evidence the members are of wrought iron. Since no members could be cut for testing without destroying the member, and since the American Institute of Steel Construction suggested that eyebars of the 1890 period might have been made of forged steel, the conclusion was reached that the structure is probably of steel construction.



Figure 3



Figure 4

3. Repair History

The "Waterville Bridge" was built for the county in 1890 and remained under their jurisdiction until sometime around 1931. On January 1, 1932, the structure was posted by the Department of Highways (now Pennsylvania Department of Transportation) for a 6 Ton load limit - presumably as a two lane bridge.

In 1935 the first major repairs were undertaken on the bridge. At that time new steel stringers and floor beams were installed. A new laminated, treated timber deck was also installed. Following the repairs, the structure was posted as a single lane bridge with a 13 Ton weight limit.

The bridge deck was replaced again in May of 1954 with laminated, treated timbers. This time the repair included a bituminous surface and the weight limitation for loads was removed. Traffic volumes using the bridge averaged about 400 vehicles per day including 15% trucks. The normal legal loading period for the bridge remained in effect only 1-1/2 years until December, 1955, when a 15 Ton limit was established.

In October, 1958, the far left end post (downstream side, Waterville end) was severely damaged by fire. The necessary repairs included reinforcement of the end post with a section of ship channel and replacement of about 10' of the timber bridge deck. Traffic volumes at this time had increased to 525 vehicles per day with 10% trucks. There have been no other accidents causing major damage to the structure, however, there have been numerous minor accidents resulting in bent and sometimes broken portions of members including bent portals, broken sway frame struts, and bent hanger bars.

The structure was last painted in 1961. In September, 1977, the deck suffered a partial collapse and was permanently repaired in early 1978 when the deck was again replaced and a new bituminous wearing course laid. Current traffic volumes average about 850 vehicles per day with approximately 10% trucks. The legal load limit posting, established in 1955, remains at 15 Tons.

4. Condition

The Department of Transportation has, as previously indicated, undertaken several in-depth inspections of the Waterville Bridge in the past 10 years. In general, the structure has been found to be both functionally and structurally inadequate for the current highway needs of PA Route 44.

The Department uses a sufficiency rating system to assess the condition of its bridges. The system relates such factors as traffic volumes, cartway width, structure age and type, the condition of the sub-structure and the superstructure, bridge approach conditions, waterway opening adequacy, and posting and arrives at a rating between 0 and 100. Generally speaking, a "good" structure carries a sufficiency rating between 80 and 100, a structure requiring major rehabilitation generally ranges between 50 and 80, and a rating below 50 would

indicate complete replacement. The latest sufficiency rating for the Waterville Bridge is 5.2, and based on the past in-depth inspections, the bridge has outlived its structurally and functionally useful life. The condition of the bridge, as shown in Figures 4A and 4B, is highlighted by

- a. a truss system rated at 15 Tons which is showing areas of heavy corrosion and spot rusting;
- b. many truss vertical, diagonal, and sway bracing members having sustained vehicle collision damage;
- c. stone abutments with almost a complete absence of mortar between the joints and structure backwalls in extremely poor condition; and,
- d. truss bearings in very poor condition with the expansion bearings rusted and completely nonfunctional.

Significance

1. History of the Lenticular Truss Bridge in the U.S.

Prior to 1850 the vast majority of structures were constructed of wood or cast iron. These structures possessed inherent deficiencies; wood joints were inadequate under tensile loading and cast iron strength was low. As a result, structure construction transitioned from wood and cast iron to wrought iron which would resist tensile forces four times greater than that of cast iron. Eventually, with the advent of improved processing techniques, steel became a competitive construction material and replaced wrought iron as the construction material of the future.

During the early development stages of "iron" bridge building, the design and construction of trusses was done by competing bridge - fabricating companies. This economic competition channeled bridge design and construction into a path governed by economy and facility of erection. Bridge companies developed patents over different shapes of wrought iron compression members (which still required cast iron blocks at joints) and structure designs. These patents continued during the early stages of steel construction.

The lenticular truss is the direct outgrowth of the bowstring girder design. The bowstring girder is composed of a parabolic top chord connected at its termini by a straight chord. The lenticular truss expands the bowstring concept by providing a parabolic bottom chord with equal but opposite amplitude of the top chord and eliminating the straight bottom chord. If the top and bottom chord are loaded equally, the outward pressure of the top chord is balanced by the inward pressure of the bottom chord at the connection and the truss attains equilibrium without any intermediate (straight) chord. Since



Damaged Member



Corrosion and Rusting

Figure 4A



Abutment and Backwall



Corroded Truss Bearing

Figure 4B

the bottom chord of a bowstring truss requires nearly the same amount of material as the top chord, but provides no additional supporting power to the truss, replacing the straight chord with a subverted arch can double the supportive power of the arch. The only additional consideration necessary is to provide a roadway surface and sufficient panelling and light bracing inside the arches to preserve the form and equilibrium of the structure.

A lenticular bridge was easily designed since each chord was of the same cross-section throughout - the top chord being of two channels with plates on top and bottom chord of eyebars. Such trusses were invariably pin-connected. The stresses in the web system were small, allowing the diagonals to be round bars with loop eyes and turnbuckle or sleeve-nut adjustment. The posts were four latticed angles, and the floor beams were hung from pins by inverted U-suspenders of square bar iron, whose lengths could easily be varied to give any desired camber. Few working drawings were needed, and fabrication was simple.

An objection to the lenticular bridge was its lack of stiffness. The entire floor system was suspended from the lower chords by bar hangers, some of which were often several feet long. As the height of the end posts were about one-half the center depth of truss, an upper lateral system of bracing could be carried only to the tops of the end posts. It was, therefore, often necessary to end the upper lateral system at a portal moved far enough back from the end posts to allow sufficient headroom. To carry the lateral force to the abutments, dependance was placed on the rigidity of the chords and end posts.

The lenticular design had been used in Europe and the United States as early as 1855 for railroad structures and as time progressed, highway bridges were also constructed in this manner.

In 1878 Mr. William O. Douglas of the Corrugated Metal Company was granted a patent for a particular style of lenticular truss bridge which was described as:

"A combination of two or more elliptical trusses connected as herein described with the floor and joists and the necessary flooring to form a through deck or swing bridge."

The Corrugated Metal Company constructed very few of these structures and the bridge patent was not capitalized until some time later. In the interim, the company changed its name to the Berlin Iron Bridge Company and had as its chief engineer a Mr. Charles M. Jarvis. In 1886, the president of the Berlin Iron Bridge Company died and Mr. Jarvis directed the company until it merged with 25 other bridge companies to form the American Bridge Company in 1900.

Soon after becoming chief engineer for the Berlin Iron Bridge Company, Mr. Jarvis changed the shape of the patented bridge design so that the pins were placed at points of true parabolas and the name "parabolic truss" soon became accepted. Between the years 1880 and 1895, some 300 or more of these bridges were built, mostly in New England and New York.

With a single exception, the parabolic trusses were used for carrying highways. Few of the structures were built after 1895 as, 1) the demand for this type of bridge had waned and, 2) the company was stressing the construction of steel-framed industrial buildings during its later years.

2. The Waterville Bridge and Its Setting

The Pine Creek Valley is characterized by small, rustic, creekside communities scattered along PA Routes 44 and 414. These two highways are the only all weather, north-south routes serving the central 40 odd mile portion of the Pine Creek Valley. Much of the adjoining land is in public ownership as State forests, gamelands, and parks. Pine Creek, itself, is a candidate for inclusion on both the Pennsylvania and National Scenic River Systems.

At the present time, PennDER (administrator of the State Scenic River Program) has shelved its attempts at State System designation due to local opposition to such issues as land use controls and public land acquisitions. The National System efforts are being undertaken by the U.S. DOI. Their study is presently in the final EIS stage and it is expected to recommend State Scenic River designation and management.

None of the published Pine Creek scenic river reports by either PennDER or the U.S. DOI specifically recognizes the Waterville Bridge or any other bridges in their study areas as having definitive historic significance. The U.S. DOI's EIS's inventory of various historic markers and local landmarks such as churches, stores, inns, and homes does not mention any bridges. In fact, the F-EIS recognized the need for the eventual replacement of the 5 highway bridges spanning Pine Creek within their study area. The PennDER Summary Report also recognized the need for "road and bridge maintenance and upgrading" and makes no mention of any historic values attached to any of their study area's bridges.

The specific limits of Pine Creek under Scenic Rivers consideration depend upon the study alternative. The most likely creek segment extends from Ansonia to Torbert (see Figure 5) and includes the Pine Creek Gorge, the Grand Canyon of Pennsylvania, and all the highway structures over Pine Creek north of U.S. 220 and south of U.S. 6. While the width of the Pine Creek Scenic River corridor has yet to be finalized, the Waterville Bridge over Little Pine Creek will most likely be included as it is located within the lands visible from Pine Creek.

The Waterville Bridge is one of several structures located within the Scenic River area constructed between 1890 and 1906 by various fabricators. These bridges (see Figure 5) constitute a number of representative metal trusses popular at that time and were constructed for the commissioners of Lycoming and Tioga Counties. With the exception of the bridge over Pine Creek at Cedar Run, all the structures transferred from county jurisdiction to the Department of Highways circa 1930.

PINE CREEK
 PROPOSED PROTECTION
 BOUNDARY

LEGEND

- PROPOSED PROTECTION BOUNDARY
- PROPOSED RECREATION SITES
- ▲ EXISTING STATE PARKS

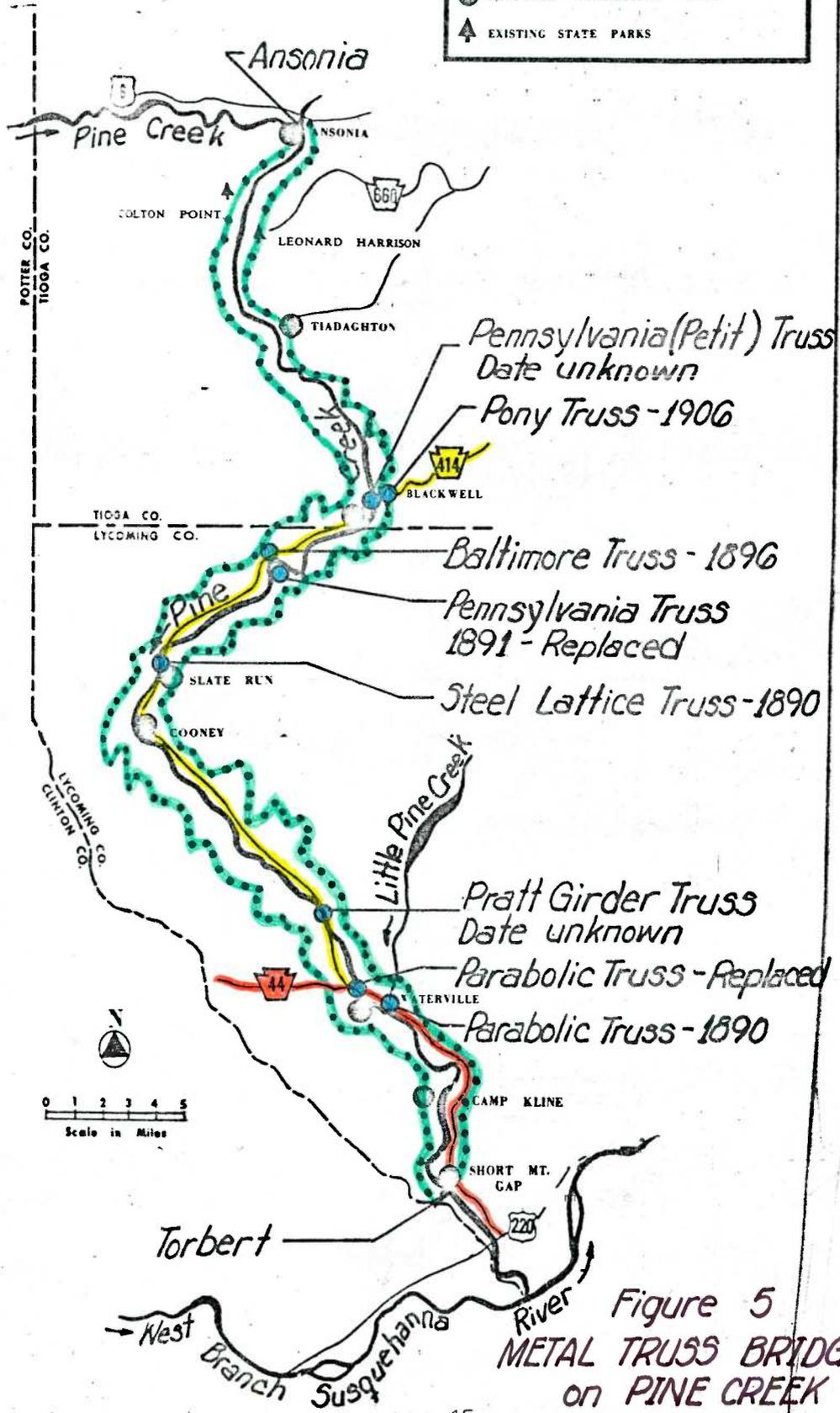


Figure 5
 METAL TRUSS BRIDGES
 on PINE CREEK

In recent years, several of these Pine Creek structures have been replaced. A 276' single span lenticular truss over Pine Creek one mile north of the Waterville Bridge was destroyed by the 1972 Agnes Flood. It has since been replaced. Lycoming County replaced its bridge over Pine Creek at Cedar Run in 1975. The old structure at Cedar Run, a Pennsylvania Truss, was severely corroded, structurally inadequate, and deteriorated beyond rehabilitation.

Summary Statement

The Waterville Bridge is a lenticular truss built in 1890 over Little Pine Creek near its confluence with Pine Creek at the Village of Waterville, Lycoming County, Pennsylvania.

The segment of Pine Creek which includes the Waterville area has been a candidate for both the State and National Scenic River Systems. Within the confines of Pine Creek's scenic river "visual" corridor, there are a number of metal truss bridges (including the Waterville Bridge) of varying designs constructed between 1890 and 1906. Neither the State Scenic River Study nor the National Study attaches any historic significance to the Waterville Bridge, or to any other bridge within their study areas. Both studies, however, recognize the need for highway maintenance and bridge replacements. Local opposition to Scenic River Status has effectively shelved the Creek's designation at this time. Existing surveys show an absence of historic recognition at both the State and county registry level.

There are more unique lenticular truss bridges currently on the National Register. They are located as follows:

- 1) The Smithfield Street Bridge, Pittsburg, PA (2 span, by Gustav Lindenthal, 1883, see Figure 6).
- 2) Lover's Leap Bridge, New Milford, Conn. (1 span, 173', Berlin Iron Bridge Company, 1895, see Figure 7).
- 3) Boardman's Bridge, New Milford, Conn, (1 span, 190', Berlin Iron Bridge Company, 1888, see Figure 8).

Based on this study, it does not appear that the Waterville Bridge has definitive historic significance based on its design, other engineering/architectural factors, its location, or associated historical events.

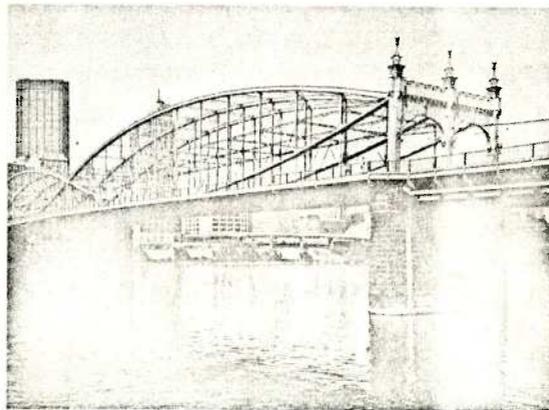


Photo 6. Smithfield Street Bridge over the Monongahela River, Pittsburg, Pa. Two-span pin-connected lenticular through truss, 1883.

Figure 6
**SMITHFIELD STREET BRIDGE,
PITTSBURGH, PENNSYLVANIA**

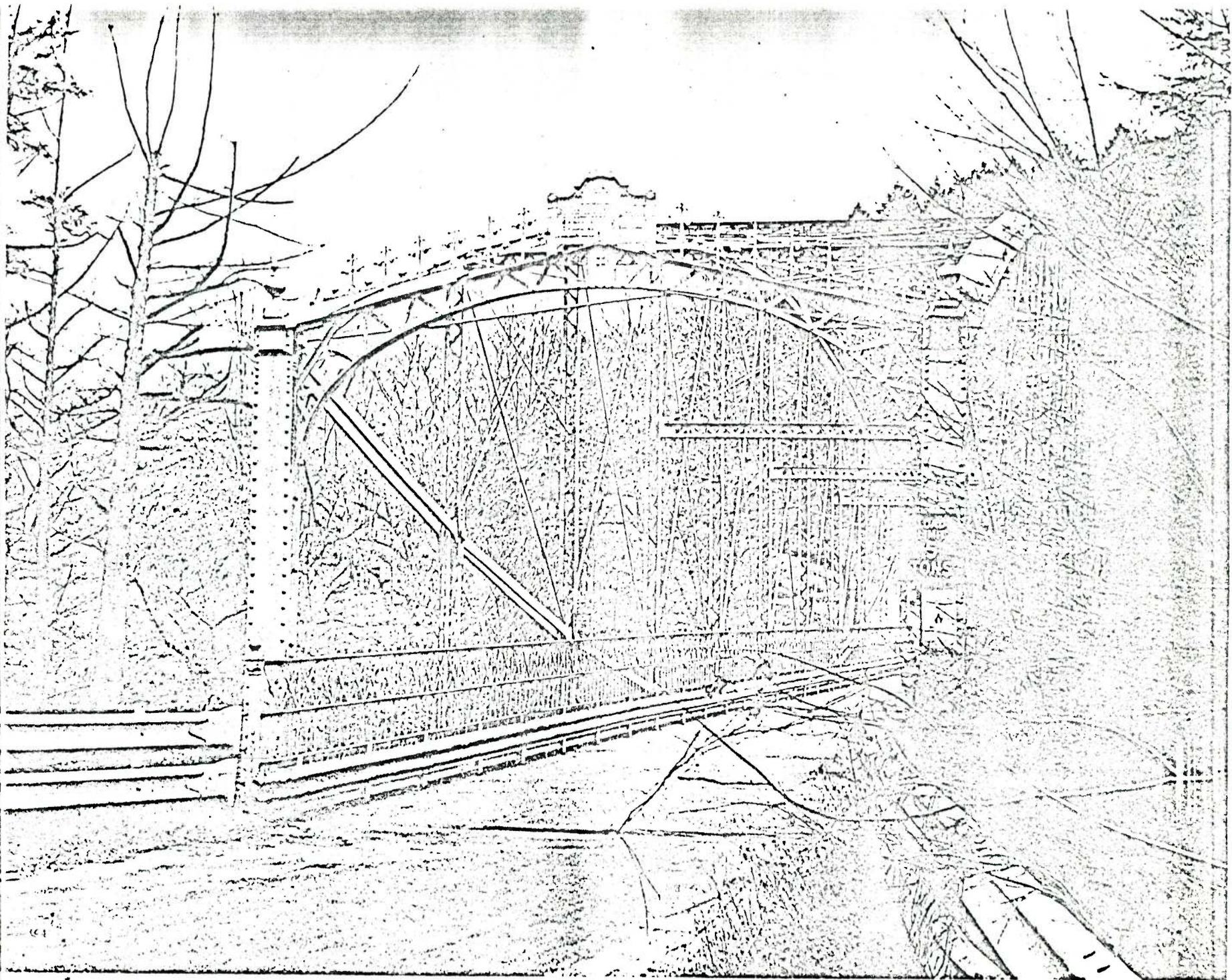


Figure 7
LOVER'S LEAP BRIDGE,
NEW MILFORD, CONNECTICUT

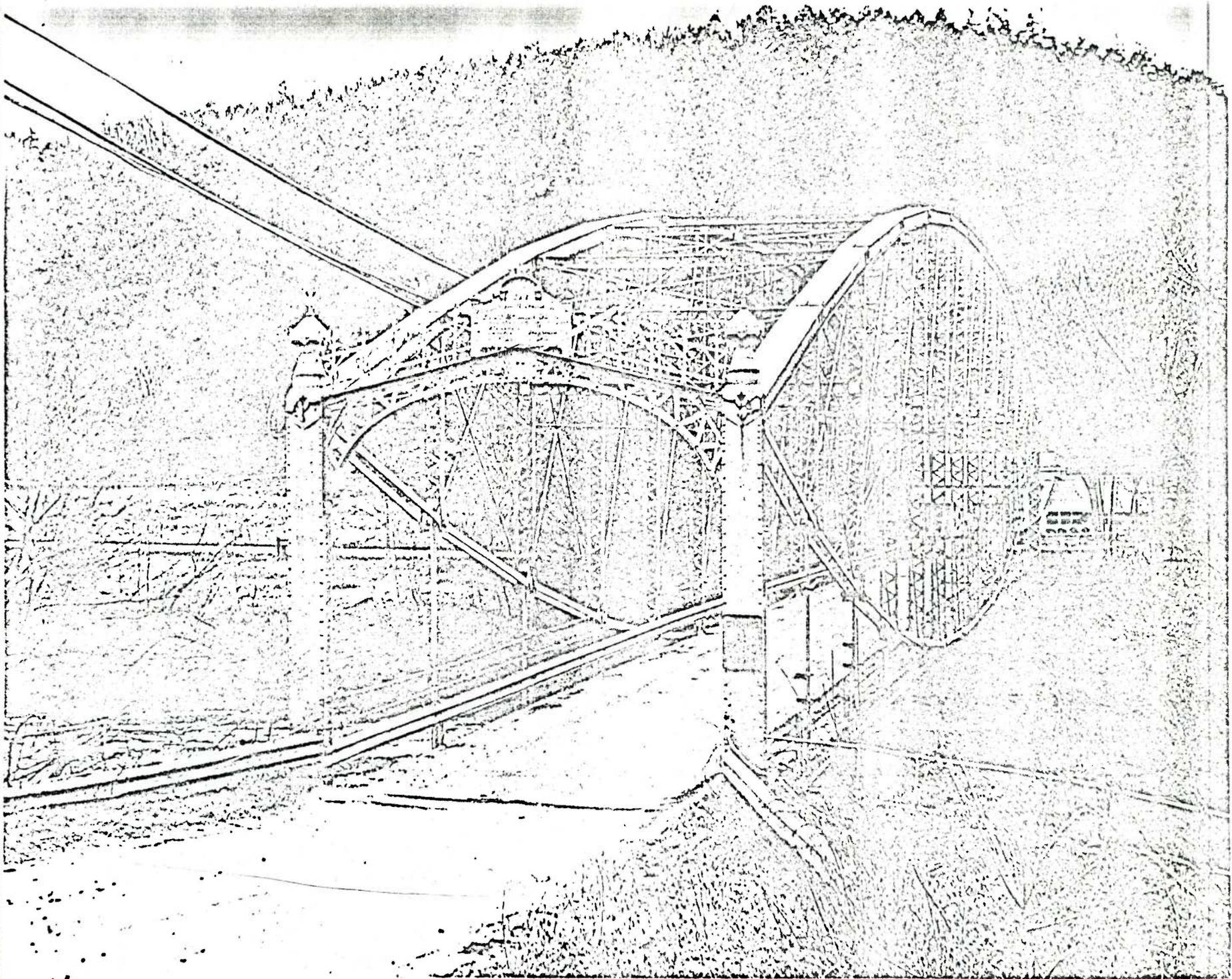


Figure 8
BOARDMAN'S BRIDGE,
NEW MILFORD, CONNECTICUT

A T T A C H M E N T S

Minutes
Pine Creek Task Force Meeting
October 24, 1979
Highlanders Inn - Oregon Hill

(See Pages 22 & 23)

Meeting opened at 10:00 A.M. by Chairman Walter A. Lyon. Mr. Lyon explained to the Task Force that he is no longer with the Bureau of Water Quality Management, but he is now Deputy Secretary for Planning. Jerry Walls made a motion that the Pine Creek Task Force express appreciation to Secretary Jones for allowing a Deputy Secretary to exert leadership for the Task Force and request the assignment be continued. Motion was seconded by Mr. Jarrett and all were in favor. The Task Force requested that Bill Parsons carry out this obligation.

Mr. Lyon mentioned that there will be more copies available of the Progress Report and he thanked Bill Parsons for putting the report together. Anyone wanting additional copies should contact Bill Parsons. Minutes of the April 1979 meeting were approved as mailed.

Mining Committee - Paul Corson, Chairman

Al Dalberto reported on returning coal tax money which will be available to Pennsylvania which will allow them to restore ravages of previously mined areas. There are new regulations - 35 cents a ton is collected, this goes into the general fund and each state can expect to get back a percentage of the money if it is used to restore previously mined areas. This is a Surface Mining Act, but it is only for coal. The Act covers deep and strip mining, even though it is called Surface Mining Act. Pennsylvania can expect to get about six to seven million for the state program.

Bill Parsons reviewed the letter addressed to the Fisher Mining Company from Tony Ercole, Director of the Bureau of Surface Mine Reclamation, which gave reasons why their mine drainage permit was denied. Each person received a copy of this letter. Mr. Lyon mentioned that he attended the meetings on this issue and they asked the operator whether or not daylighting of the old mine would be possible. Prior to the Barnes and Tucker decision, we could ask coal operators to clean up pollution problems, but now they become legally responsible for cleaning up. Now the operators know they are legally responsible and they are reluctant to daylight old deep mines.

Mr. Jarrett mentioned that the Otter Run Fish and Game Club wanted to go on record thanking the Task Force for the support they gave to Otter Run and other streams in the watershed at the hearings in June. Their support is deeply appreciated by the Otter Run Club.

Question came up from Don Lindsey regarding a mining operation in the vicinity of Rattler Run. Lindsey thought there was a new company moving in to conduct mining operations. Al Dalberto said the Bureau of Surface Mining said they would take over the same permit which was held by P & M Coal Company.

Bill Parsons was given an obligation of finding out who is doing mining here and what the boundaries are of the existing permit and whether or not the new mining company is staying within the boundaries of the permit. This is an area in Morris and Delmar Townships, Tioga County.

Solid Waste Management Committee - Jerry Walls, Chairman

Jerry Walls reported that Lycoming County is working with DER on closing dumps and they have a preapplication in to the Appalachian Regional Commission for a grant to close dumps on state-owned land; and they expect this approval may come next year.

A multi-county list of priority dumps to be closed has been submitted by the County Commissioners to Secretary Jones for priority action on closure. The two in the Pine Creek valley are Clay Mine and Truman Run. Funds to close these dumps on state-owned land will go to DER.

Irvin Brown reported that a contract has been let for construction of the landfill in Potter County, so they are proceeding, but it is a slow process and they have had delays. Mr. Brown also reported that Tioga County is eight to twelve months away from a county landfill. Their land acquisition plans have changed - there is now a private tract of land available and will avoid need for condemnation, so they now must go through design and site acquisition.

Rural collection needs were discussed. The Task Force feels there are many possibilities such as a green box type of collection system. but there are problems with this because of weight limits on bridges, etc.

The Game Commission, Fish Commission and PennDOT should be looking into solutions to the solid waste problems in the watershed. Mr. Lyon has an obligation to write a letter to Don Lazarchik to urge him to check into possibilities as to funding to resolve the solid waste collection problems in the watershed. The Pine Creek Preservation Association would like to be in on the planning stages if this is accomplished.

Flood Management Committee Report - Bob McCullough, Chairman

Jerry Walls reported for the Flood Management Committee. He noted there was a meeting held in Danville, and efforts are being coordinated to have the National Weather Service install equipment as part of a 20-county pilot program effort. As part of this program, there would be financial obligations for equipment that would be installed. The cost would be born by the National Weather Service. There are rain gauges in the watershed, but they are not intended to do away with the volunteer network. They feel that although they have a good volunteer system, there might be a time when they may not receive an alert through the present system.

There are four federal agencies that have selected the Lycoming County area to do about a 30-minute slide show with music and narrative and a technical document to publicize our self-help volunteer system as a model, nationwide. This would publicize nationwide the flood warning system in Lycoming County. The system works well, and they are on target during times of high water at predicting a crest - and the industries appreciate their efforts.

Land Use and Project Review Committee - Bob McCullough, Chairman

Jerry Walls reported for Bob McCullough. He noted that flood mapping is now available to many municipalities. The Lycoming County Planning Commission is setting up workshops to train local municipalities on zoning and will be getting underway in February or March. He reported that DER Secretary Jones has approved procedure for mandatory referral of DER projects for review. PennDOT gave a report on their projects in the Pine Creek Valley. The rip rap project is about completed. The only other project is the construction or replacement of the bridge at Waterville.

The bridge is being considered as a historical structure and they must do a report on whether or not it can be restored. Most of those present at the Task Force meeting felt it should not be restored because it cannot be strengthened. The municipality would have to maintain it and they are not financially able to do this. The Planning Commission has gone on record as being in favor of the bridge being replaced. Jerry Walls noted that the bridge is not on their list of significant historical structures.

Report on Status of Legislation on Increasing In Lieu of Taxes for State Lands

House Bill 805 would increase the taxes the state pays on its gamelands by 19 cents per acre - from 20 cents to 39 cents. Local governments would also receive a bigger slice of the financial pie. The 39 cents will be divided equally between county governments, local school districts and municipalities. This bill was passed by the House in June, and is now in the Senate Committee. The Task Force received this as good news because the local governments claim they do not have sufficient funds to handle the crowds that go to Pine Creek for recreational activities.

Single Residence Sewage Treatment Committee Report - Irvan Brown, Chairman

Mr. Brown reported on some subdivision problems. There was to be some followup done, but he said in the meantime much of the problem has been taken care of. They have been working on area disposal sites for septage. One problem is with a chemical (Bottomside) they are using to treat sewage in state parks. The Department says any sewage treated with these chemicals may not be disposed of on these approved sites.

Mr. Turner (PSU) has film available on land application of wastewater and sludge. He offered to bring this to the next task force meeting. Bill Parsons will bring a film to the next meeting on transfer of sludge from Philadelphia to Somerset County.

Report on Transfer of Administration of the On-Lot Sewage Program

Bill Parsons explained the transfer in administration of the on-lot sewage program which has been handled by the Bureau of Community Environmental Control will now be administered by the Bureau of Water Quality Management. Bill also noted the water supply program which has been administered by the Bureau of Water Quality Management will be transferred to the Bureau of Community Environmental Control. The advantage to the change is that it will put all wastewater into one program.

Sam Heitzenrater had a few pamphlets available on "Guide to the Safe Drinking Water Act" which he had available to Task Force members. Additional copies are available by contacting Sam.

Special Report on Galeton's Efforts to Improve Wastewater Treatment

Jack Walter, Project Manager for the Meadville Region, Bureau of Water Quality Management, gave a report on Galeton's efforts to improve wastewater treatment. He reported that Galeton's design is completed and there are problems with their infiltration/inflow study. They don't give enough consideration to land application. They completed a stream survey and that is contained in their facilities plan. Land application was not feasible because they could not spray irrigate. The total cost for the project is \$1.3 million and they will receive a 75 percent grant. Another

5 percent grant might be available from the state. Local share will be about \$400,000. The cost now is about \$9.00 per household per month and the added cost will total about \$15.00. The new system should be in operation within two or three years. Their plan will be given to the Pine Creek Task Force for review. The local people were opposed to the plan at the public hearing because of the added costs.

Sediment Control Committee Report - Francis Kennedy, Chairman

Mr. Kennedy was away and unable to attend the meeting, so there was not an official committee report. Irvin Brown noted he attended a meeting in Potter County where sediment was discussed, and where pollution in streams comes from. It was always considered as farm runoff. There are areas in the streams where they are not near farm runoff, but they are still getting the sediment in the streams. They are noticing subsoil sediment which coats the stones. It is coming from construction work.

Public Use and Litter Committee Report - Nick Lylo, Chairman

Although the study for Pine Creek inclusion in the Wild and Scenic River Act has not passed, the state has continued to acquire land in the area and has many access places. It was noted that 20 percent of energy is being supplied by wood on state lands.

Jack Campbell asked if there is a chance the scenic river study will be reactivated. Mr. Lyon noted the number of streams being studied under the Wild and Scenic River Act has been cut down and Pine Creek is not at the present time on the study list. Mr. Campbell requested that we send 15 copies of the Progress Report to him. (This is an obligation for Bill Parsons).

Meeting was adjourned at 2:30 P.M. It was decided the Task Force will meet again in April of next year at the Cedar Run Inn. Bill Parsons office is to make the arrangements.

OBLIGATIONS

PINE CREEK TASK FORCE MEETING
(October 24, 1979)

1. Bill Parsons write a letter to Secretary Jones expressing the appreciation of the Pine Creek Task Force in allowing a Deputy Secretary to exert leadership for the Task Force and request the assignment be continued.
2. Bill Parsons is to find out who is now conducting mining operations in the Rattler Run area, whether or not they are taking over the permit which was held by P & M Coal Company, what the boundaries of the existing permit are, and if the operation is staying within the boundaries of the permit.
3. Walter Lyon is to write a letter to Don Lazarchik to urge him to check into possibilities as to funding to resolve the solid waste collection problems in the watershed.
4. Bill Parsons is to send 15 copies of the Progress Report of the Task Force to Jack Campbell for the Pine Creek Preservation Association.

MINUTES

Lycoming County Planning Commission
Regular Meeting
Court House Conference Room #1
April 15, 1971 7:00 P.M.

Members present: Robert Hinaman, John Konkle, J. Robert Lamade, Raymond Rehrig, Henry Rozenberg, Paul Stapleton, Robert Waltz.

Members absent: Ralph Price and Carl Simon

Others present: Kenneth Larson, John Matthews, Ronald Springman, Larry Erdley of PennDOT; Joseph Sick of Lycoming County Soil and Water Conservation District; Clyde Thompson of WMPT; John Brockway of Sun-Gazette; Richard Kirkpatrick of Grit; and Jerry Walls, Carl Kindred and Robert Yowell of Staff.

- I. Chairman Rehrig called the meeting to order at 7:10 P.M.
- II. Mr. Konkle moved, seconded by Mr. Stapleton, approval of the March 18, 1971 minutes as submitted. Carried unanimously.
- III. Mr. Lamade moved, seconded by Rozenberg, approval of the Financial Report and bills as submitted (see attached). Carried unanimously.

It was agreed to revise the order of business to take New Business first.

V. A. Ron Springman, Location Engineer for PennDOT District 3-0, presented the proposed improvements on T.P. 44 at Waterville. He noted the existing narrow (16') bridge, 28 degree horizontal curve and 8% grade with two lanes of inadequate width are the major problems. Three possible alignments were identified with the widening and straightening of the existing roadway selected to minimize property damage and construction cost and protect the social orientation of Waterville. The proposed improvement involves 1/2 mile of road at 7 degrees 30' curve, slight grade, a new 38' wide bridge, curbing, sidewalk on south side, 8' parking lane on south side, deceleration and turning lane on bridge for north-bound traffic to Little Pine State Park, design speed of 45 MPH at a total cost of \$628,000. He explained the north alternate would cost more to construct and the southern would take more dwellings and provide less desirable service. Meetings with the Cummings Township Supervisors in Waterville (February 1970) and a field view with Mr. Zaleski were reported as reflecting strong local support for the project. He stated the project is on the Six Year Program but not yet budgeted. Stream and

fish protection measures were also described. The Director recommended favorable comment on the proposed alignment and overall improvement concept. A motion by Mr. Konkle with second by Mr. Lanado to endorse the proposed alignment and concept was carried unanimously.

Larry Erdley, Projects Engineer for PennDOT District 3-0, reviewed the history of the Beltway and its current status (see written report). Discussion on the bypass route at Montoursville ensued with Mr. Larson stating that no significant delay is resulting from the current restudy of corridors. He explained that to now change to a southern alignment would cause an extra \$250,000 cost for the interchange plus 2-1/2 - 3 years delay. He noted three general types of problems:

-----Need authorization to lease or purchase or condemn outside right-of-way for borrow pits in order to control location, reuse and reclamation standards more effectively.

-----Need authorization for advance acquisition.

-----Need authorization to acquire entire parcels to avoid severing farms and restructure land modules.

Larry Erdley explained the Route 15 Corridor Location Study from High Street to Trout Run (see section of written report). He noted that the relocation is not on the Six Year Program but is on the Inventory of Suggested Improvements. Construction cost was estimated at nearly equal on all three alternatives. Environmental impact favors the east corridor although it does involve a taking of the Hepburn Township Elementary School and Fire Hall and the Old Lycoming Township Fire Hall and Municipal Building. The east corridor provides improved access to Mill Creek Dam. Since the funding problems have caused a delay, PennDOT representatives stated that this briefing was intended only to update the Planning Commission and review comments are not needed at this time.

B. The Director explained that interest in aerial photography had been expressed by Loyalsock Township, Old Lycoming Township, Woodward Township and Shrewsbury Township. Carl Kindred reported the information he had secured on what is available and the cost of new flights and maps. He noted that most needs could probably be fulfilled by available USDA photos, PP&L photos and PennDOT maps. Mr. Hinaman suggested that recent photos and good contours are needed for road projects, dam locations, subdivision plan review and recreation facility design. He proposed that this might be approached as a joint effort with industry and utility companies. Discussion ensued and it was resolved that the cost prohibited new flights but that a more complete description of what is available and how to gain access to it should be disseminated to municipalities as soon as staff workload permits.

SEP 15 1970

LYCOMING COUNTY

HISTORICAL SOCIETY AND MUSEUM

858 WEST FOURTH STREET, WILLIAMSPORT, PENNSYLVANIA 17701 / TELEPHONE 717 326-3326



Sept. 14, 1970

RE: Lycoming County
L.R. 1036-B41 (Traffic Route 15)
Consideration of Historical Resources

Lycoming County
L.R. 265, Section A06
Traffic Route 44
Village of Waterville

Mr. K. C. Larson, Jr., District Engineer
Pennsylvania Department of Highways
P. O. Box 218
Montoursville, Pa. 17754

Dear Mr. Larson:

This will reply to your letters of May 4 and May 20, 1970, in connection with possible historic site preservation. Please accept our apologies for our delay in replying to this correspondence. There was considerable delay in getting people to look at these sites.

As to the log cabin owned by Mrs. Arthur Beck (Anna Beck), we have surveyed the property with Mr. Hugh MacMullan and Mr. Francis Maneval. Mr. MacMullan, who is Chairman of the County Historical Preservation Committee, has discussed what seems to be a practical disposition of the property with Commissioner Henry Frey. The latter has discussed this matter with your office. By now you are undoubtedly well aware of the proposals which have been made in connection with the possibility of relocating the cabin to a site near the covered bridge at Buttonwood.

In regard to Traffic Route 44 through the village of Waterville, we are informed by people in the Jersey Shore Historical Society that this route would not conflict with any historic site of great significance to the county.

On behalf of the Society, we wish to express our sincere appreciation for your referral of these two matters for our consideration.

Very truly yours,

D. W. Carson
D. W. Carson, President
LYCOMING COUNTY HISTORICAL SOCIETY

DMC:kc

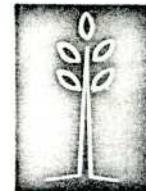
*cc
1036-341*

*cc
2265*

Not to be removed from this office

RECEIVED DIST. 3-0
NOV - 9 1979
PennDOT MONTICOURSVILLE

LYCOMING COUNTY HISTORICAL SOCIETY AND MUSEUM



858 WEST FOURTH STREET, WILLIAMSPORT, PENNSYLVANIA 17701 / TELEPHONE 717 326-3326

November 7, 1979

11/9	
11-9	
JPS	
JWE	
JPS	

Mr. K. C. Larson, Jr.
District Engineer
Pa. Dept. of Highways
715 Jordan Avenue
Montoursville, PA 17754

Dear Mr. Larson:

We wish to reinforce our letter of September 14, 1970, by stating that changes to, or replacement of the iron bridge on Legislative Route 266, Pennsylvania Route 44, at Waterville, will not in any way change the historical significance of the Pine Creek Valley.

Sincerely,

Andrew K. Grugan

Andrew K. Grugan
Museum Director

AKG:pk

BIBLIOGRAPHY

- 1) Bridges and Their Builders; Steinman, David B. and Watson, Sara R.; Dover Publications, Inc.; N.Y., 1941
- 2) The World's Great Bridges; Smith, H. Shirely, Harper and Brothers; N.Y., 1953
- 3) Spon's Dictionary of Engineering; Division II; E. and F. N. Spon; London, 1871
- 4) Bridges and Men; Gies, J.; Doubleday & Company; N.Y., 1963
- 5) Bridge Truss Types; Comp, T. Allen and Jackson, D.; Technical Leaflet 95; History News, Vo. 32, No. 5; 1977
- 6) "Early Parabolic Truss Bridges", Engineering News Record; Vol. 100, No. 19; 1928
- 7) "Railroads, Truss Bridges, . . .", Civil Engineering; Vol. 47, No. 10, 1977
- 8) "Structure Inventory Record, Bridge Inspection Report - L.R. 266, Station 569+", PA Department of Transportation, 1976
- 9) "Report on . . . Through Truss Bridge over Little Fine Creek at Waterville, PA"; Harry J. Engle, Consulting engineer, 1968
- 10) A Survey of Historic Sites and Landmarks of Lycoming County; Lycoming County Planning Commission, 1971
- 11) Historical Preservation - A Plan for Lycoming County; Lycoming County Planning Commission, 1974
- 12) A Plan for Historic Preservation in PA, Vol. II; "Inventory of Sites, County Listing", PA Historical and Museum Commission, 1973
- 13) A Nation in Motion - Historic American Transportation Sites; U.S. DOT, 1976
- 14) Pennsylvania's Nomination to the Bicentennial Transportation's Catalog, PA Department of Transportation, 1976
- 15) Various Correspondence with David A. Poirier, Archaeologist, Office of the State Historic Preservation Officer for Connecticut.
- 16) Catalog; Berlin Iron Bridge Company, East Berlin, Conn.; Charles M. Jarvis, President and Chief Engineer; circa 1890
- 17) Revised Draft Summary, Pine Creek Scenic River Study; Commonwealth of PA, Department of Environmental Resources; March 1978
- 18) "Proposed Pine Creek State and National Scenic River, PA", F-EIS 78-16; U.S. DOI, Heritage Conservation and Recreation Service, National Park Service; Aug. 1, 1978

PENNSYLVANIA HISTORIC RESOURCE SURVEY FORM
Bureau for Historic Preservation
PA Historical & Museum Commission

Box 1026
Harrisburg, PA 17120

9. HISTORICAL DATA

Already declared Historical

8. USGS QUAD. Waterville

UTM's: Zone

E 3 0 2 1 2 0

N 4 5 7 5 6 2 0

E

N

Designer/Engineer: _____

Builder/Contractor: ~~Berlin Iron Bridge Company~~
East Berlin

Bridge Company: *Berlin Bridge Company*

Date(s): 1890 ; basis Inspection Report

1890 ; basis Plaque

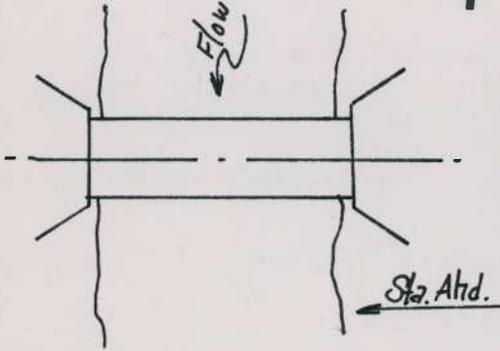
_____ ; basis

_____ ; basis

Use: Vehicular present; same original.

10. SITE PLAN

1



1. County Lycoming
2. Municipality Cummings Twp.
3. Structure No. 411101012161610101516191317
4. Survey Code 030-310
5. Present Name _____
6. Other name (historic name if any) _____
7. Crossing I.R. 266 (T.R. 44) over Little Pine Creek

11. INTEGRITY

_____ altered; _____
 unaltered; _____
_____ moved; _____

Explain:

12. VIEW

no.



13. COMMENTS

Unusual features:
Fancy portals
lenticular truss

Locale/environment:
Village of Waterville
Rural community, Pine Creek Valley

Machinery (describe/identify type/
equipment): None

14. DIMENSIONS

spans: 1 no., 221 ft. 0/A

main: 1 no., 221 ft. *224'*

secondary: _____ no., _____ ft. *W 18'*

approach: _____ no., _____ ft.

piers: _____ no.

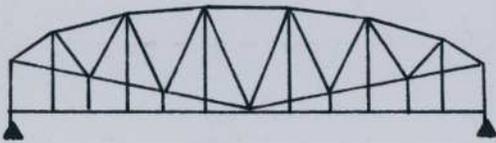
towers: _____ no., _____ ft.

DOE

15. TYPE 10

CHARACTERISTICS 64

Truss: ~~continuous/cantilever~~



Arch: masonry/metal:

Suspension:

Bascule:

Swing:

Vertical Lift:

Other:

- webbing: Lenticular Truss
- ~~anchor span~~
- ~~cantilever span~~
- ~~suspended span~~
- thru/deck/low (pony): full-slope/half-hip.
- connections: pin/riveted.
- eyebars: loop welded/die forged.
- railing: cable
- columns: vert: 4-angles w/lacing on 4 sides,
Top chord: 2-channels, plate & lacing
- thru/deck/ $\frac{1}{2}$ -thru.
- fixed (hingeless) /1/2/3-hinged.
- ribs: solid/braced; crescent/parallel.
- spandrels: open/solid/braced.
- intrados/vault; ribbed/solid.
- shape: semi-circular/elliptical/segmental; stilted.
- skew : 90°
- stiffening: braced-chain (1/2/3-hinged) /suspended truss.
- wire cable: twisted/parallel.
- eyebar chain.
- back-stay: straight/curved.
- single/double leaf.
- rolling lift: Schertzer.
- trunnion: simple (Chicago) /multiple (Strauss).
- counterweights: heel/overhead.
- Page/Rall.
- semi-lift/direct lift.
- bearing: center/rim/combination.
- (see Truss above).
- (see Truss above).
- other: _____

16. MATERIALS (primary) 06,09

14

Superstructure	type	treatment/finish	source
main span:	<u>steel</u>	_____	_____
towers:	<u>none</u>	_____	_____
railings:	<u>cable</u>	_____	_____
Substructure			
piers:	<u>none</u>	_____	_____
abutments:	<u>stone masonry</u>	_____	<u>has been repainted and</u>
wings:	<u>stone masonry</u>	_____	<u>gunited.</u>
intrados/ribs:	<u>none</u>	_____	_____
voussiors:	<u>none</u>	_____	_____

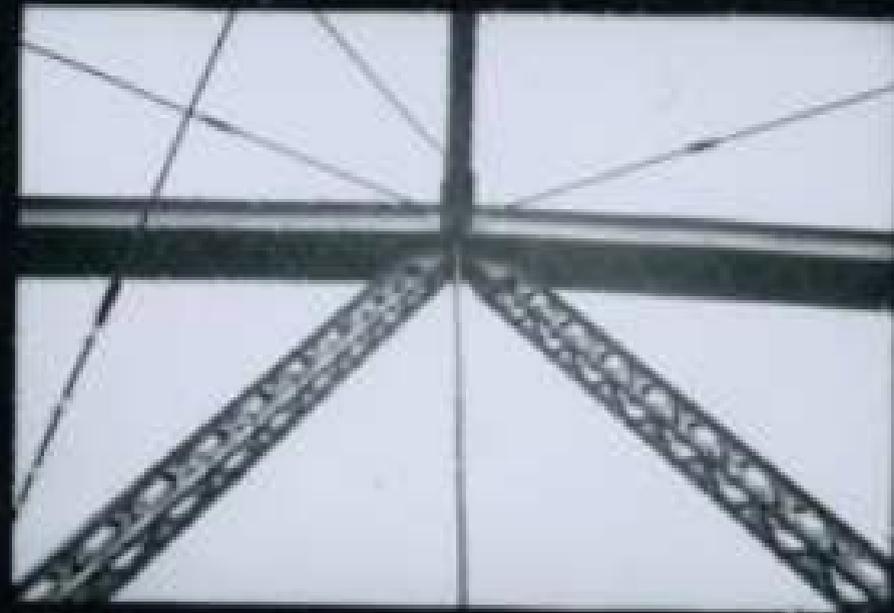
17. PHOTO NO's. 03 - 03 (11-16)

18. PREPARED BY: _____
 AGENCY/ORGANIZATION: _____
 ; DATE: Aug 1982

X P1 400



11A



12

12A

11





3 13A



14 14A



15 15A



15 16A

20'

4578

4577

5566 IV SW
HANEVILLE 6 MI (JERSEY MILLS)

4575

4574

17°30"



9. HISTORICAL DATA

8. USGS QUAD. Indiantown Gap

UTM's: Zone 18
 E | 3 | 7 | 0 | 1 | 5 | 0 |
 N | 4 | 4 | 8 | 1 | 9 | 8 | 0 |
 E | | | | | | | |
 N | | | | | | | |

Designer/Engineer:
 Unknown

Builder/Contractor:
 Berlin Iron Bridge Company, East Berlin

Bridge Company:
 Unknown

Date(s): 1890 _____; basis Inspection report

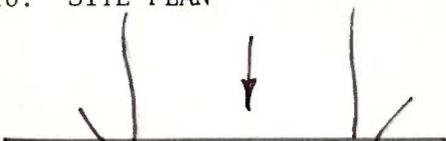
1890 _____; basis plaque

_____; basis

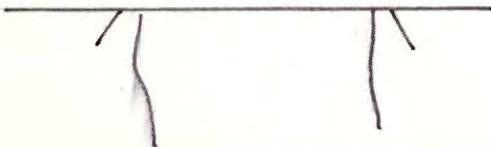
_____; basis

Use: vehicular present; pedestrian original.

10. SITE PLAN

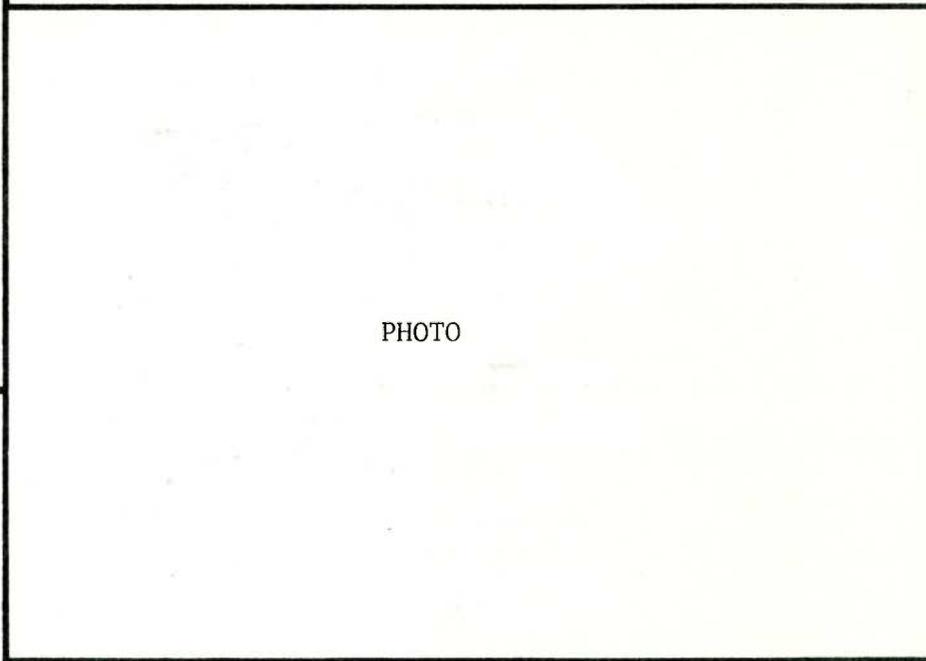


Appalachian Trail



12. VIEW

no.



11. INTEGRITY

___ altered; _____
 ___ unaltered; _____
 x moved; 1985 _____

Explain:

members numbered, dismantled,
 and reassembled

13. COMMENTS

Unusual features:

Ornamental portals;
 lenticular truss

Locale/environment:

Village of Waterville
 Rural community, Pine Creek Valley (original)
 Swatara State Park, Lebanon County-rural (present)

Machinery (describe/identify type/
 equipment):

N/A

14. DIMENSIONS

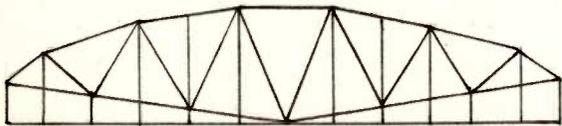
spans: 1 no., 221 ft. 0/A
 main: 1 no., 221 ft.
 secondary: ___ no., ___ ft.
 approach: ___ no., ___ ft.
 piers: ___ no.
 towers: ___ no., ___ ft.

1. County: Lebanon
 2. Municipality: Swatara
 3. Structure No.: 4110026610056937
 4. Survey Code: 030-310 T-27
 5. Present Name: Waterville Bridge
 6. Other name (historic name if any): N/A
 7. Crossing: Appalachian Trail over Swatara Creek

15. TYPE

CHARACTERISTICS

Truss: ~~continuous/cantilever.~~ XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX



Arch: masonry/metal:

Suspension:

Bascule:

Swing:

Vertical Lift:

Other:

- webbing: Lenticular Truss _____.
- anchor span: _____.
- cantilever span: _____.
- suspended span: _____.
- thru/deck/low (pony): full-slope/half-hip.
- connections: pin/riveted.
- eyebars: loop welded/die forged.
- railing: cable _____.
- columns: vert: 4 angles w/lacing on 4 sides,
Top chord: 2 channels, plate & lacing
- thru/deck/1/2-thru.
- fixed (hingeless) /1/2/3-hinged.
- ribs: solid/braced; crescent/parallel.
- spandrels: open/solid/braced.
- intrados/vault; ribbed/solid.
- shape: semi-circular/elliptical/segmental; stilted.
- skew 90°
- stiffening: braced-chain (1/2/3-hinged) /suspended truss.
- wire cable: twisted/parallel.
- eyebar chain.
- back-stay: straight/curved.
- single/double leaf.
- rolling lift: Schertzer.
- trunnion: simple (Chicago) /multiple (Strauss).
- counterweights: heel/overhead.
- Page/Rall.
- semi-lift/direct lift.
- bearing: center/rim/combination.
- (see Truss above).
- (see Truss above).
- other: _____.

16. MATERIALS (primary)

Superstructure	type	treatment/finish	source
main span:	<u>steel</u> ;	_____ ;	_____.
towers:	<u>none</u> ;	_____ ;	_____.
railings:	<u>cable</u> ;	_____ ;	_____.
Substructure			
piers:	_____ ;	_____ ;	_____.
abutments:	<u>stone masonry</u> ;	_____ ;	<u>has been repainted and</u>
wings:	<u>stone masonry</u> ;	_____ ;	<u>gunited</u> _____.
intrados/ribs:	_____ ;	_____ ;	_____.
voussoirs:	_____ ;	_____ ;	_____.

17. PHOTO NO's.

03-03 (11-16)

18. PREPARED BY:

AGENCY/ORGANIZATION:

; DATE:

Survey Number: T-27

Bridge Name and Address: Waterville Bridge
Originally L.R. 266 over Little Pine Creek
Moved to Swatara State Park, Lebanon County in 1985

Owner: Commonwealth of Pennsylvania
Department of Transportation
Transportation & Safety Building
Harrisburg, Pennsylvania 17120

Statement of Significance: The Waterville Bridge is an excellent example of an unusual truss type. Constructed by the Berlin Iron Bridge Company of East Berlin, Connecticut in 1890, this single span bridge is one of three lenticular trusses included in this nomination. The lenticular truss derives its name from the lens-like shape of its curved upper and lower chords. This 221 foot long pin-connected truss is made of typical members composed of channels, angles, eyebars and lacing bars. It features an unusually ornamental portal design. This lenticular truss bridge was originally located in Waterville, an unincorporated rural village of scattered residences, located in Cummings Township, Lycoming County. It carried state route (SR) 44 over Little Pine Creek which cuts a narrow gorge through the Appalachian Mountains in North Central Pennsylvania. The bridge was carefully disassembled after a girder structure was erected to support the bridge during this process. The truss members were carefully removed and numbered for identification. In the workshop each piece was cleaned (by sandblasting), certain members were reinforced where necessary and a primer coat was applied. In the summer of 1985, the truss members

were transported to the new location and re-assembled on new abutments for use as a pedestrian bridge on the Appalachian National Scenic Trail. A new wooden deck was put on the bridge as it would have had originally and the bridge was repainted. Since no evidence of the original color(s) survived, the trusses were repainted following the procedure recommended by nineteenth century bridge engineer, James A.L. Waddell using two colors to differentiate between tension members (light blue-gray) and compression members (dark gray).

The new setting for the bridge is similar to the original because the stream (Swatara Creek) is of comparable width and because it cuts through a ridge of the Appalachian chain at this particular point which frames the crossing as at Waterville. The only changes to miscellaneous truss members was the reinforcement of original members by welding steel plates at specific spots. No members were replaced. The bridge's original width was retained. Relocating the bridge saved it from being demolished by the Pennsylvania Department of Transportation in a bridge replacement project.

Boundary Description:

The nominated property consists of a 241 foot long by 25 feet wide rectangle, whose vertices coincide with the outside corners of the wing walls, and includes only bridge superstructure and substructure.

Acreage of Nominated Property:

Less than one acre.

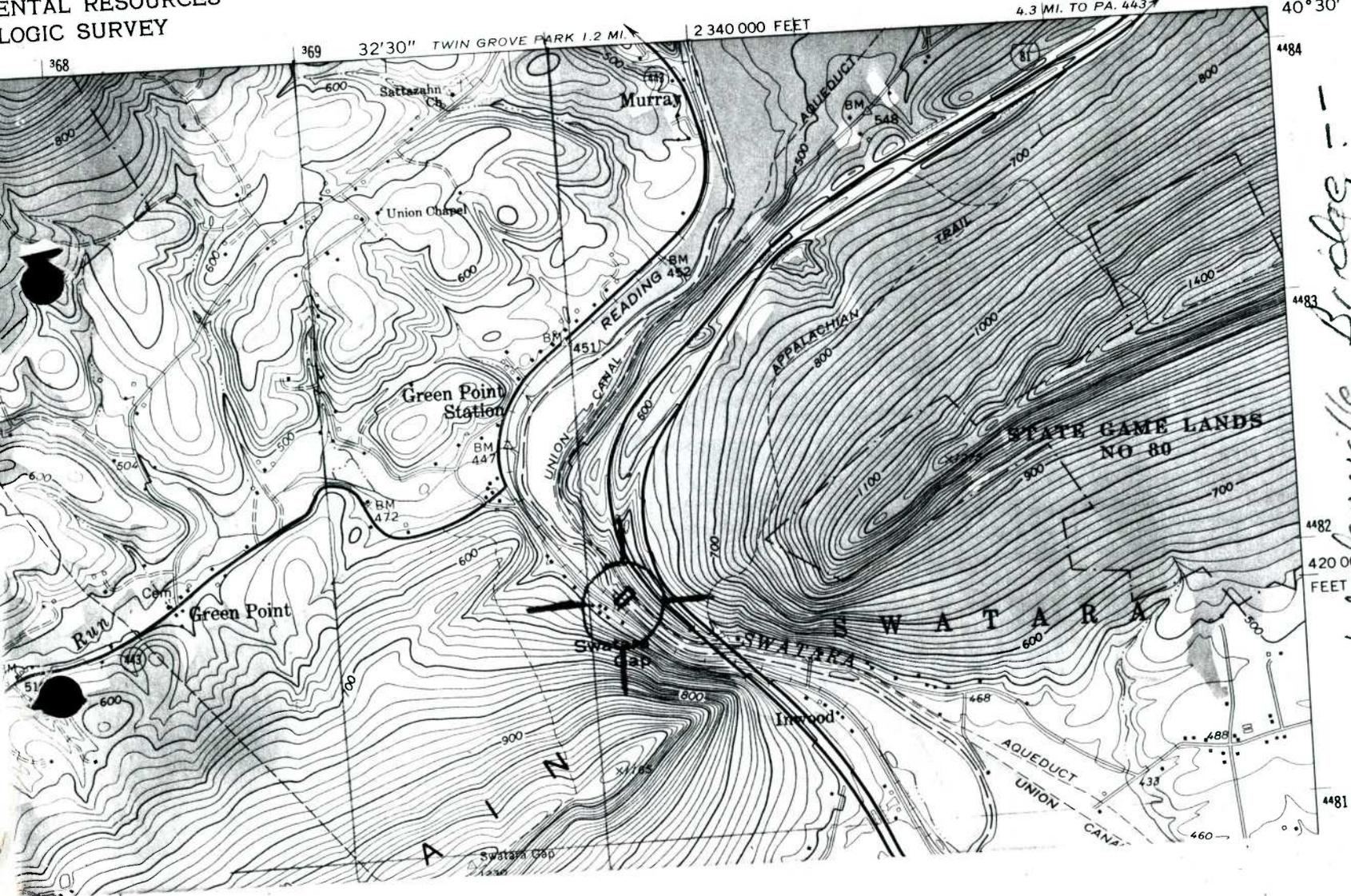
Area of Significance:

Engineering. Criterion C.

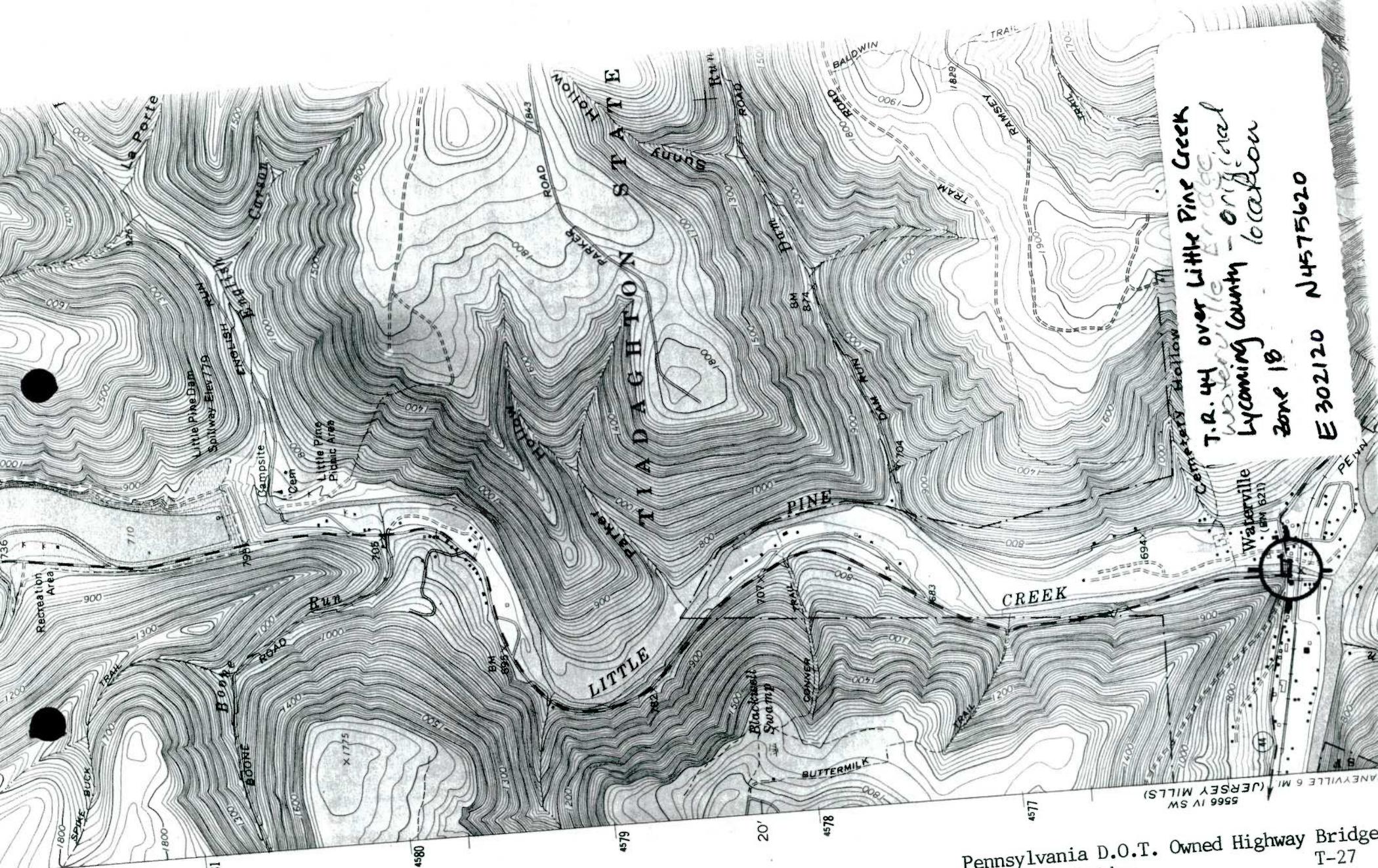
PENNSYLVANIA
NATURAL RESOURCES
TOPOGRAPHIC SURVEY

INDIANTOWN GAP QUADRANGLE
PENNSYLVANIA-LEBANON CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
NE/4 HUMMELSTOWN 15' QUADRANGLE

5785 III SW
(PINE GROVE)



Waverly Bridge -
Present location
Lebanon County
Zone 18
E 370150 N 4481980



Pennsylvania D.O.T. Owned Highway Bridge
 Waterville Bridge T-27

T.R. 44 over Little Pine Creek
 Waterville Bridge
 Adams County - original
 location
 Zone 18
 E 302120 N 4575620

WATERVILLE BRIDGE

HAER No. PA-462

Pennsylvania Historic Bridges Recording Project
Spanning Swatara Creek at Appalachian Trail
Green Point vic. *Swatara Twp*
Lebanon County
Pennsylvania

HAER PA, 38-GREPO.V, 1-

LAT/LON

40.48026, -76.53193

Key # 097444

PHOTOGRAPHS

XEROGRAPHIC COPIES OF COLOR TRANSPARENCIES

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

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

HISTORIC AMERICAN ENGINEERING RECORD

INDEX TO PHOTOGRAPHS

WATERVILLE BRIDGE

HAER No. PA-462

Pennsylvania Historic Bridges Recording Project
Spanning Swatara Creek at Appalachian Trail
Green Point vicinity
Lebanon County
Pennsylvania

Joseph Elliott, photographer, summer 1997.

- PA-462-1 BARREL VIEW FROM SOUTHWEST.
- PA-462-2 3/4 VIEW FROM WEST.
- PA-462-3 3/4 VIEW FROM NORTH.
- PA-462-4 3/4 VIEW FROM EAST.
- PA-462-5 DETAIL ELEVATION OF TRUSS FROM SOUTHEAST.
- PA-462-6 BARREL VIEW FROM CENTER SPAN, LOOKING EAST.
- PA-462-7 UNDERSIDE FROM NORTHEAST.
- PA-462-8 LOWER CONNECTIONS FROM SOUTH.
- PA-462-9 DETAIL OF BUILDER'S PLATE AT NORTHEAST END.
- PA-462-10 DETAIL OF EAST CORNER POST.
- PA-462-11 DETAIL OF BACK SIDE OF EAST CORNER POST.
- PA-462-12 DETAIL OF LOWER CHORD CONNECTIONS.

INDEX TO COLOR TRANSPARENCIES

All color xerographic copies were made from a duplicate color transparency.

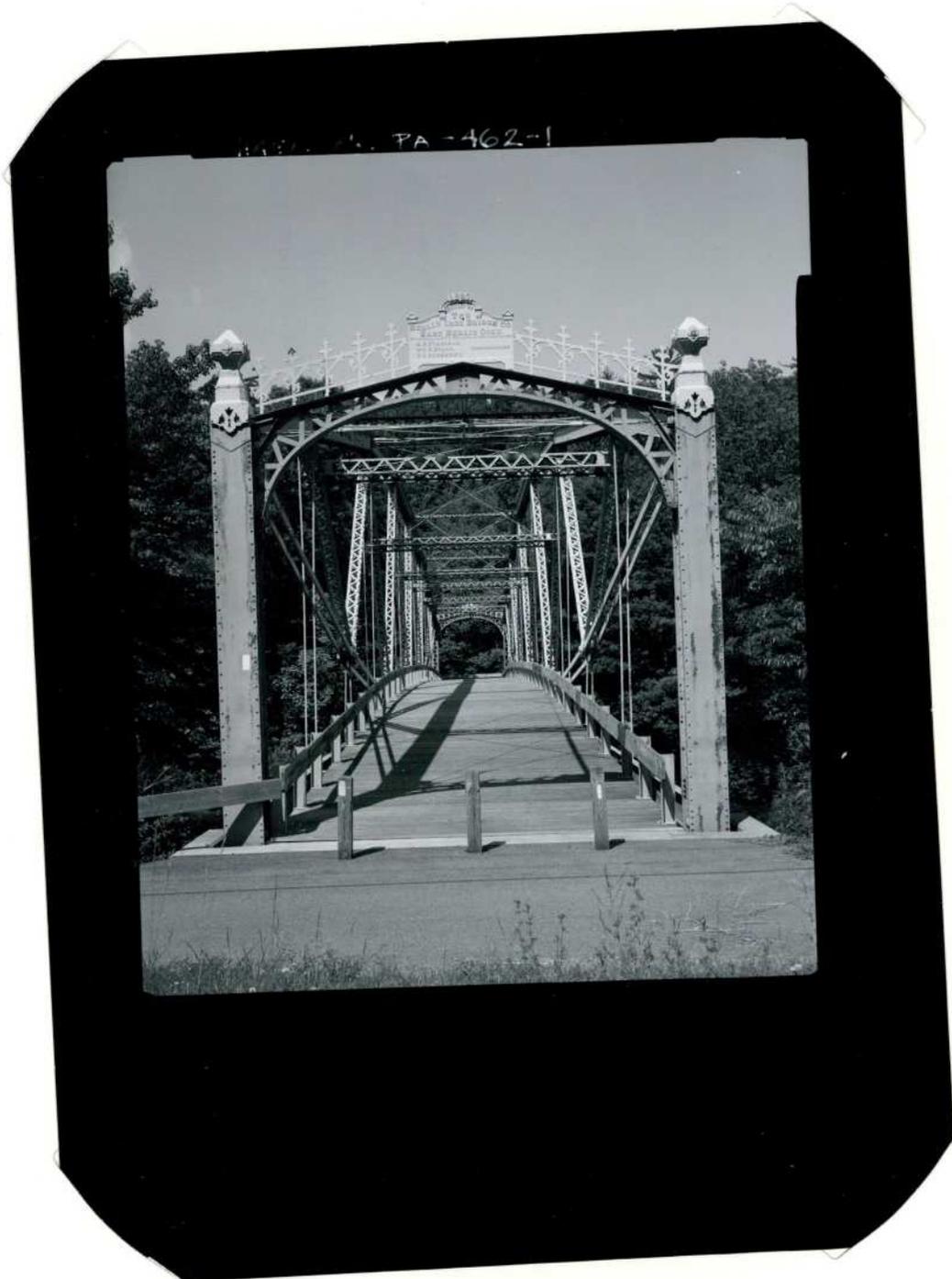
Joseph Elliott, photographer, summer 1997.

PA-462-13 (CT) BARREL VIEW FROM SOUTHWEST.

PA-462-14 (CT) 3/4 VIEW FROM EAST.

HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

HAER No. PA-462-1





PA-462-2

HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTION
HAER No. PA-462-2



HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

HAER No. PA-462-4



HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

HAER No. PA-462-5



HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

HAER No. PA-462-6



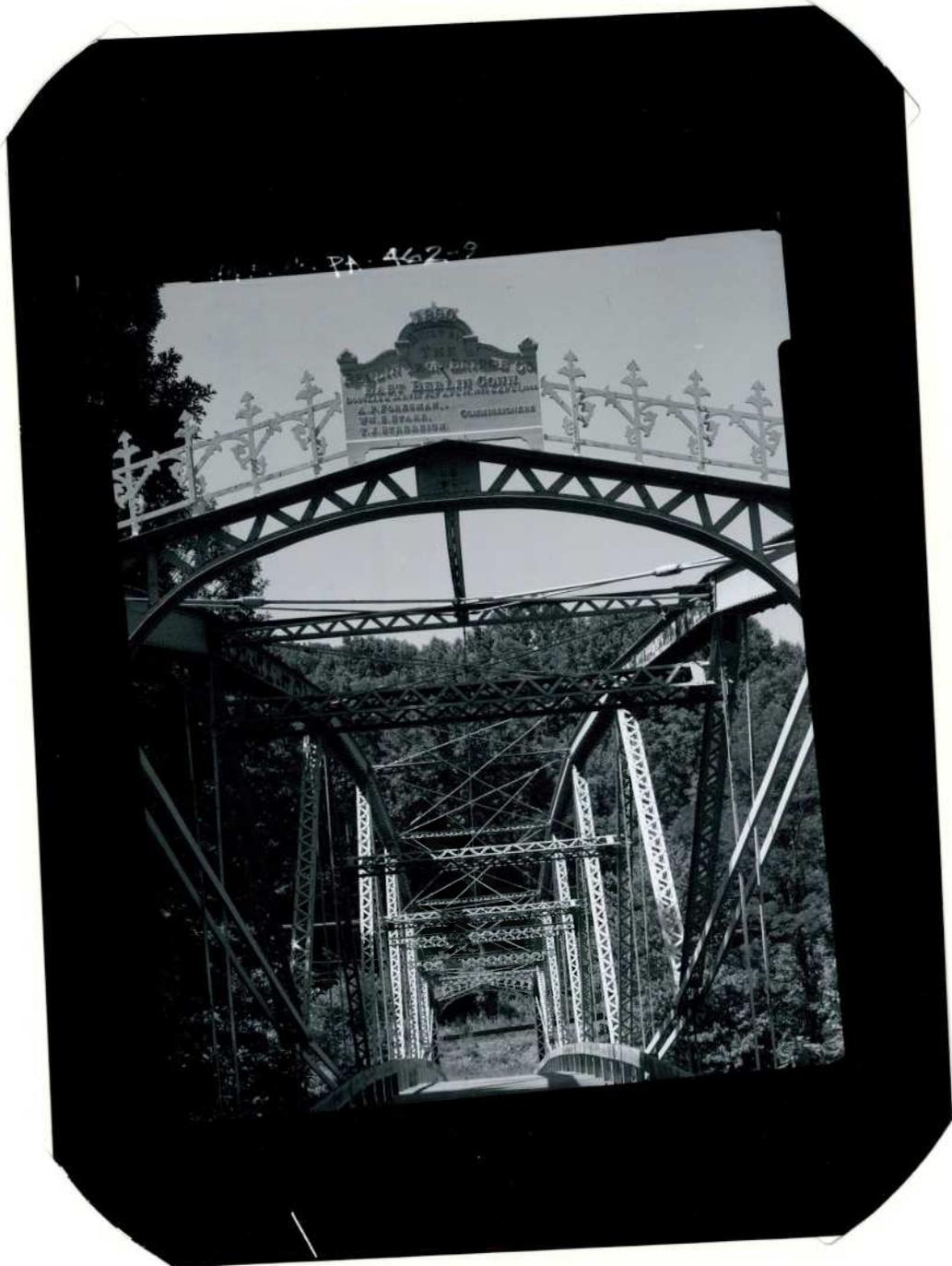
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SEE INDEX TO PHOTOGRAPHS FOR CAPTION
HAER No. PA-462-7

HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

HAER No. PA-462-8



HAER No. PA-462-9

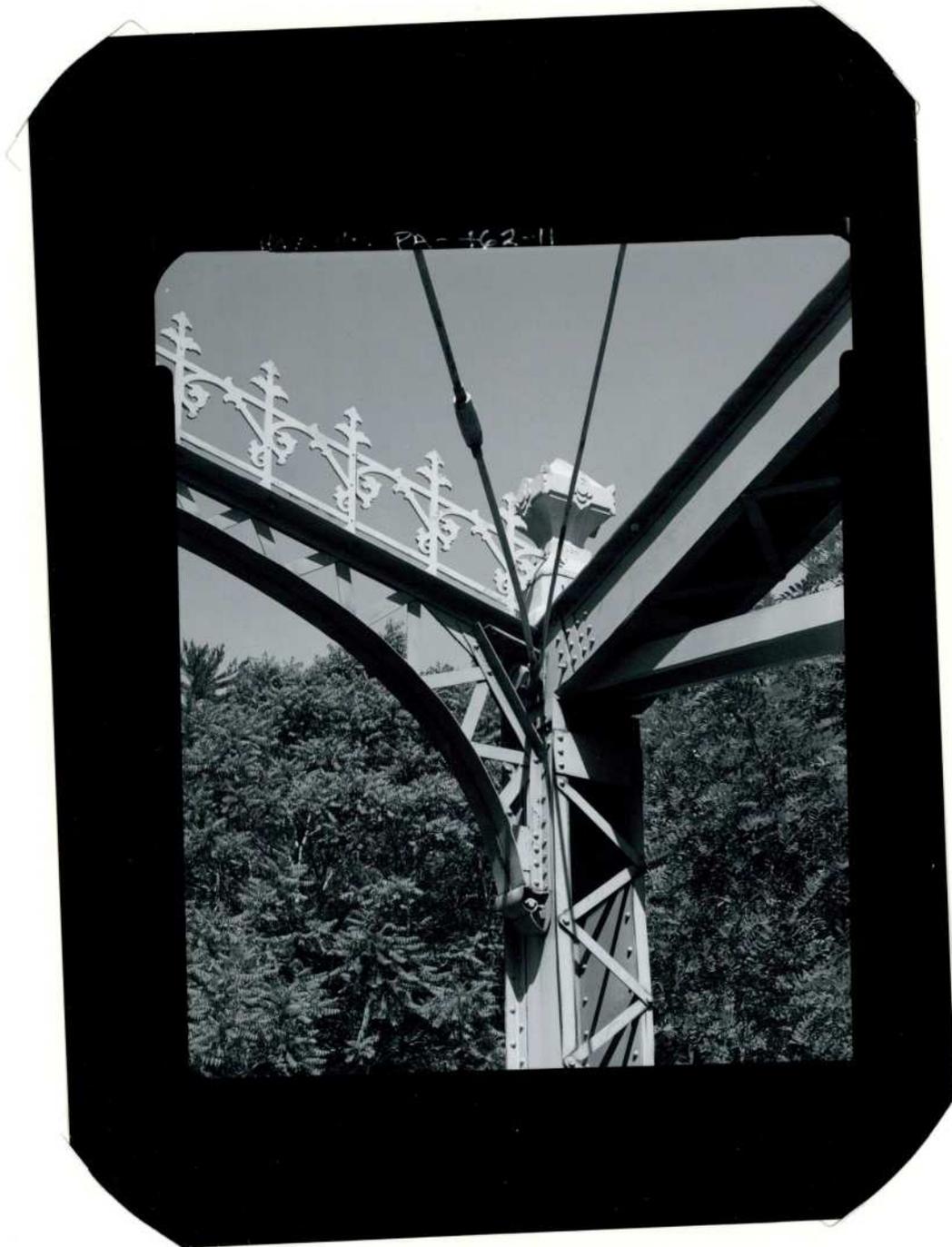


HAER No. PA-462-10



HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

HAER No. PA-462-11



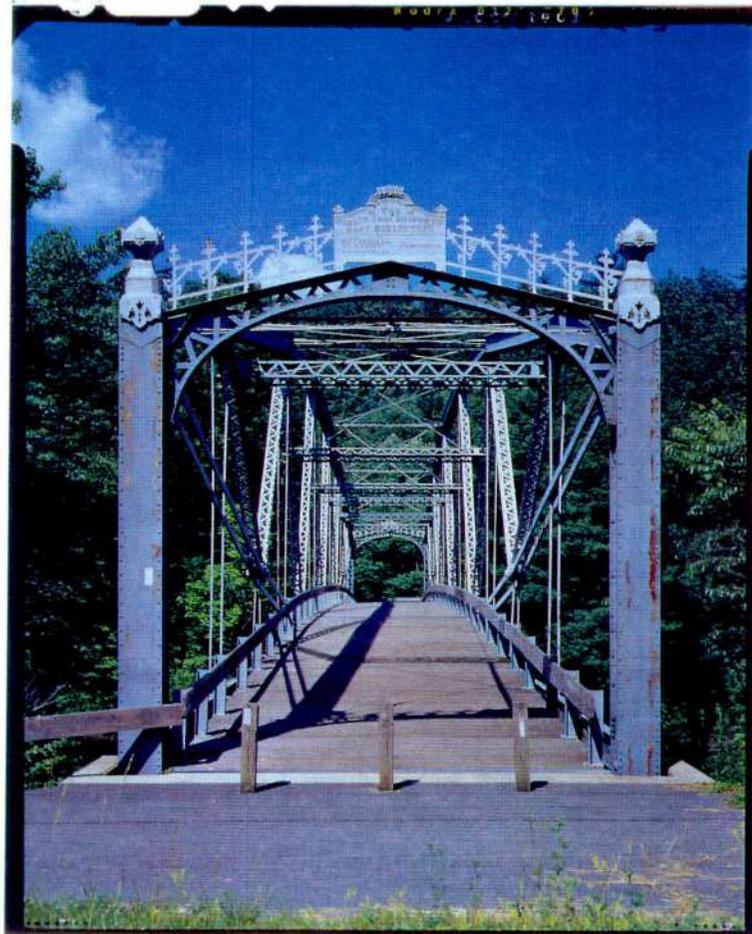
HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

HAER No. PA-462-12



HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

HAER No. PA-462-13 (CT)





HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTION
HAER No. PA-462-14 (CT)



1. Name of Nomination: Highway Bridges Owned by the Commonwealth of Pennsylvania, Department of Transportation
2. Name of Structure: Waterville Bridge
3. County: Lebanon
4. Photo Date: 1982
5. Photo Credit: Pennsylvania Department of Transportation
6. Negative Location: Pennsylvania Department of Transportation
7. Photo View: Bridge in new location, south elevation
8. Photo Number: T-27-2

Doe Run Village, Chester Co., PA
PD: 1984 PC: Emily Hart
NL: Brandywine Conservancy
PV: C Workers' housing on Highland
Dairy Road



CLEARANCE
↓ 13 FT 7 IN ↓

CLEARANCE
↓ 9 FT 10 IN ↓

LITTLE PINE
CREEK

S
69

1. Name of Nomination: Highway Bridges Owned by the Commonwealth
of Pennsylvania, Department of Transportation
2. Name of Structure: Waterville Bridge
3. County: Originally Lycoming, Moved to Lebanon
4. Photo Date: 1982
5. Photo Credit: Pennsylvania Department of Transportation
6. Negative Location: Pennsylvania Department of Transportation
7. Photo View: Bridge in original location, Lycoming County
8. Photo Number: T-27-1

HISTORIC AMERICAN ENGINEERING RECORD

WATERVILLE BRIDGE

HAER No. PA-462

Location: Spanning Swatara Creek at Appalachian Trail, Green Point vicinity, Lebanon County, Pennsylvania. (Moved from Little Pine Creek at State Route 44, Waterville, Lycoming County, Pennsylvania.)

USGS Quadrangle: Indiantown Gap, Pennsylvania (1969, photorevised 1977).

UTM Coordinates: 18/370150/4481980

Date of Construction: 1890; moved 1985.

Designer: Berlin Iron Bridge Company (East Berlin, Connecticut).

Builder: Berlin Iron Bridge Company (East Berlin, Connecticut).

Present Owner: Pennsylvania Department of Conservation and Natural Resources.

Present Use: Pedestrian bridge.

Significance: The Waterville Bridge is an example of a lenticular truss, so named because of the lens-like shape of its curved upper and lower chords. It is representative of the Berlin Iron Bridge Company's trademark bridge type, based on the patent of William O. Douglas. This bridge also exhibits a Warren pattern of web bracing and a highly decorated portal. The process of moving the Waterville Bridge in 1985 is a notable example of how historically significant bridges can be preserved and adapted to new uses. The structure was listed in the National Register of Historic Places in 1988.

Historian: Blythe Semmer, August 1997.

Project Information: This bridge was documented by the Historic American Engineering Record (HAER) as part of the Pennsylvania Historic Bridges Recording Project - I, co-sponsored by the Pennsylvania Department of Transportation (PennDOT) and the Pennsylvania Historical and Museum Commission during the summer of 1997. The project was supervised by Eric DeLony, Chief of HAER.

Description

The Waterville Bridge formerly carried State Route 44 over Little Pine Creek in the village of Waterville, Lycoming County, Pennsylvania. The bridge is an example of the unusual lenticular, or parabolic, truss type that was a specialty of the Berlin Iron Bridge Company of East Berlin, Connecticut, who built this bridge in 1890 for the commissioners of Lycoming County.¹ At its new location over Swatara Creek in Swatara State Park, the bridge rests on new concrete abutments. Its twelve-panel, lens-shaped trusses measure 220'-9" long and are entirely pin-connected. The panel points are spaced 17'-6" apart and support a single-lane roadway 15'-5" wide. A Warren-pattern web reinforces the truss, and the diagonal members are laced box sections. These members are designed for compression but can carry both tension and compression forces. A central tension member runs the length of the bridge along the upper plane of the truss to brace the transverse struts against buckling. The diagonal web members also have transverse bracing due to the bridge's extreme length.

The top chord, end posts, and sway bracing members are all box-shaped sections with single lacing on the open side. Along the upper chord, joints occur at panel points. The lower parabolic chords are pin-connected eye-bars. The longitudinal deck girder is suspended from the truss by bent U-bolts. Since the web has a Warren pattern, panel points in the upper and lower parabolic chords do not align vertically. The deck is therefore suspended from a pin in the upper chord where there is no corresponding pin on the lower chord. Joints in the deck girders are not at the panel points, although they appear to be regularly spaced. There is lateral bracing on the underside of the deck. New steel deck beams and stringers were added during 1935 repairs to the bridge, and a new wooden wearing surface was added after the bridge's move in 1985. The lateral bracing is now welded to the deck structure.

The Waterville Bridge has a highly decorated portal. In addition to the ornament running across the portal, finials incised with a decorative design cap the end posts. There is a builder's plate in the center of each portal. The west end's plaque reads "Built by the Berlin Iron Bridge Company, East Berlin, Conn., Douglas and Jarvis Pat. Ap'l 16, 1878 and Ap'l 7, 1885." The last line refers to the patents granted to William O. Douglas for the lenticular truss. The plaque also credits Charles M. Jarvis, president of the Berlin Iron Bridge Company, although his name does not appear on the patents. The plaque on the east end of the bridge lists the names of the Lycoming County Commissioners responsible for the bridge's erection: A. P. Foresman, William S. Starr, and T. J. Strebeigh.

¹ Another lenticular truss was documented during the Pennsylvania Historic Bridges Recording Project - I; see U.S. Department of the Interior, Historic American Engineering Record (HAER) No. PA-468, "Nicholson Township Lenticular Bridge," 1997, Prints and Photographs Division, Library of Congress, Washington, D.C. There are about six lenticulars extant in Pennsylvania and around fifty in the U.S., according to research by Dr. Mark M. Brown, project historian.

The Lycoming County commissioners' bridge book records the Waterville Bridge's date of erection as August 1889, although the builder's plate bears the date 1890.² Construction may not have been completed until 1890. According to the Lycoming County bridge book, the Berlin Iron Bridge Company was a popular choice for bridge construction in the county during the last two decades of the nineteenth century. The listing that precedes the Waterville Bridge in the Cummings Township section of the bridge book is also a Berlin bridge, built in November 1884 over Big Pine Creek at Pine Bottom at a cost of \$9,660.00.³ The 1884 bridge is described as wrought iron, the material typically used by the Berlin Iron Bridge Company. Most of their lenticular trusses were wrought iron, as they did not commonly use steel until 1894.⁴ The Waterville Bridge is also probably wrought iron but could include steel members.

The Waterville Bridge did not undergo major repairs until it came under the state's control in 1931. In 1935, new steel stringers and floor beams were added, and the weight limit was raised from six to thirteen tons as a result. Fire damaged an end post of the truss in October 1958. Minor accidents took their toll on truss members, but none were replaced.

Moving the Bridge

The Waterville Bridge served the Little Pine Creek crossing until it was determined inadequate for the amount of traffic traveling State Route 44 in the 1970s. In 1980, the division administrator of the Federal Highway Administration submitted a Eligibility Documentation Report to the National Register of Historic Places in Washington, D.C., in anticipation of replacing the bridge at this crossing. He requested the opinion of Carol Shull, the Acting Keeper of the National Register, because of a difference of opinion between the local historical society and the Bureau of Historic Preservation, the state historic preservation office for Pennsylvania.⁵ The Lycoming County Historical Society and Museum stated in letters on 14 September 1970, and 7 November 1979, that the replacement of the Waterville Bridge would have no detrimental

²Another Berlin Iron Bridge Company bridge located in Lycoming County was documented by the Pennsylvania Historic Bridges Recording Project - I; see HAER No. PA-460, "Upper Bridge at Slate Run," 1997, Prints and Photographs Division, Library of Congress, Washington, D.C. The Upper Bridge is a 196'-0" lattice truss bridge spanning Pine Creek above Slate Run in Lycoming County. The same county commissioners were responsible for the construction of both bridges in 1890, according to the builder's plates.

³ Lycoming County, Pennsylvania, *Bridge Book* (Lycoming County Courthouse, Williamsport, Pennsylvania), 10.

⁴ Victor C. Darnell, "Lenticular Bridges from East Berlin, Connecticut," *IA: The Journal of the Society for Industrial Archaeology* 5, No. 1 (1979): 21.

⁵ Donald E. Hammer, to Carol Shull (Acting Keeper of the National Register), 8 August 1980 (Waterville Bridge National Register file, Commonwealth of Pennsylvania Historical and Museum Commission, Bureau of Historic Preservation, Harrisburg, Pennsylvania).

effect on the historic character of the Pine Creek valley.⁶ However, the State Historic Preservation Officer, Ed Weintraub, contended that “this bridge is a particularly rare type of parabolic truss bridge using a Warren truss framework. In my opinion ... the bridge is eligible for listing in the National Register of Historic Places.”⁷ The Waterville Bridge was officially determined National Register-eligible on 3 September 1980. The Keeper of the National Register commented briefly, “Built in 1890 by the East Berlin Iron Bridge Company, one of the principal late nineteenth-century manufacturers of iron bridges, the Waterville Bridge meets the National Register criteria as an important example of a lenticular truss bridge. It is significant as a rare instance of a lenticular truss bridge with a Warren configuration for the web members.”⁸ Although the determination of eligibility was not intended to stop the replacement of the Waterville Bridge, it did dictate that the bridge would fall under the protective regulations of Section 106 of the National Historic Preservation Act of 1966, which state that projects using federal funding must make efforts to mitigate their effect on historic properties listed in or eligible for the National Register. The Federal Highway Administration’s involvement indicates that federal funding was planned for this project.

However, the Determination of Eligibility Documentation concurred with inspection reports that stated the Waterville Bridge was structurally and functionally inadequate for the traffic on State Route 44.⁹ When PennDOT decided to replace the Waterville Bridge, the agency made it known that the lenticular truss was available for re-use at another site. The Bureau of Facility Design and Construction of the Pennsylvania Department of Conservation and Natural Resources was developing a state park in Lebanon County along the Appalachian Trail. Ultimately, a crossing for the Trail over Swatara Creek would be required, and using a historic bridge was a unique way to provide one.¹⁰

Using the engineering services of both the Bureau of Facility Design and Construction and PennDOT, the bridge was disassembled and moved to Swatara State Park in Lebanon County, at a crossing similar to Little Pine Creek. All funding came from state agency budgets: PennDOT financed disassembly, reassembly, and moving, while the Bureau of Facility Design

⁶ Determination of Eligibility Documentation (Waterville Bridge National Register File), appendices. The Lycoming County Historical Society and Museum was not alone in its determination that the Waterville Bridge was not of great historical value. The Lycoming County Planning Commission and the Pine Creek Task Force, a group formed by the Pennsylvania Department of Environmental Resources to protect the environment in the Pine Creek area, voiced similar opinions. All favored the replacement of the bridge.

⁷ Ed Weintraub, to Donald Hammer, 23 June 1980 (Waterville Bridge National Register file).

⁸ Determination of eligibility notification, 30 September 1980 (Waterville Bridge National Register file).

⁹ Determination of eligibility notification, 8.

¹⁰ Gene Comoss (director, Bureau of Facility Design and Construction, Pennsylvania Department of Conservation and Natural Resources), telephone conversation with author, 22 August 1997.

and Construction paid for construction of new abutments, deck replacement, and painting.¹¹ The members were numbered for identification and individually cleaned by sandblasting. Some members were reinforced by welding steel plates at weakened spots. None of the truss members were replaced, though, and the deck width was kept the same. The bridge was given a new wooden deck, and the members were repainted according to the recommendations of nineteenth-century bridge engineer J. A. L. Waddell: compression members are dark gray and tension members are a light blue-gray.¹²

The Lenticular Truss

After the Civil War, dramatic growth in manufacturing extended to the production of bridges. Bridge companies began to specialize in particular truss types, marketing their product to county commissions and town governments. Competition for business revolved around the price of the bridge and the company's advertising prowess as well as their possession of unique truss designs. The Berlin Iron Bridge Company of East Berlin, Connecticut, was known for the construction of wrought-iron and steel lenticular trusses in New England and New York during the last three decades of the nineteenth century. The lenticular truss was particularly competitive as a highway bridge because it was easy to assemble in the field and used less material than other truss types, thus reducing cost. Berlin's signature truss was based on the patent of William O. Douglas.¹³

William O. Douglas was granted U.S. Patent No. 202,526 for the lenticular truss form on 16 April 1878. Douglas was not the first to employ the parabolic shape, nor the first to do so in the U.S. Lenticular trusses had been used in France, England, and Germany in the mid-nineteenth century, and two other American patents had been issued for the truss type. Edwin Stanley was given a patent in 1851, and Horace Hervey and Robert Osborne received theirs four years later.¹⁴ The lenticular truss developed out of the bowstring arch bridge, where the deck of the bridge is supported by a parabolic upper chord and a straight lower chord. The lenticular form makes both the upper and lower chords parabolas, and forces are balanced between them. Light bracing between the upper and lower chords sufficiently stabilizes the truss and preserves the strength of its parabolic shape. The lenticular truss was easy to fabricate, required few working drawings, and was usually entirely pin-connected, making it a natural choice for highway bridges.

¹¹ Comoss, telephone conversation.

¹² Waterville Bridge National Register file.

¹³ For more information on Douglas and his patents for lenticular bridges, see U.S. Department of the Interior, HAER No. MA-105, "Tuttle Bridge," 1990, Prints and Photographs Division, Library of Congress, Washington, D.C.

¹⁴ Darnell, "Lenticular Bridges," 19.

The Waterville Bridge exhibits a Warren pattern of web trussing, which was an efficient way to add strength on longer trusses. The longest lenticular truss ever built by the Berlin Company was a 288'-0" through truss at Raymondville, New York, which also used Warren web trussing.¹⁵ More material was necessary to stabilize the bridge.¹⁶

One objection to the lenticular truss was a lack of stiffness, which was caused by the deck being suspended by hangers. Lateral bracing along the top of the truss could help stabilize the bridge. However, a problem arose in lenticulars of shorter spans, because the end posts were only approximately one half the height at mid-span. In these bridges, lateral bracing along the top chords would be stopped at the first panel point so that the placement of the portal would allow sufficient vertical clearance for vehicles crossing the bridge. Therefore, the stiffness of the chords and end posts became critical to the truss' stability.¹⁷

William O. Douglas was granted a second patent (No. 315,259) for the lenticular truss bridge on 7 April 1885. Bridge historian Victor Darnell describes the second patent as

aimed at a less expensive system of bracing.... The struts of the bracing system were to be replaced by rods, and the truss action replaced by the tension of the two lines of rods. In short spans, about seventy-five feet or less, the ties would be bolted to the abutments. In longer spans, the tension would be resisted by an inclined strut that was connected to the first interior panel point of the bottom chord.¹⁸

The revised design had no real advantage and was not widely used by the Berlin Company as it reduced the truss' lateral stiffness.¹⁹

The New England states had high concentrations of Berlin bridges, and those in Pennsylvania were concentrated near New York, with the exception of three in Philadelphia.²⁰ All but one of the lenticular trusses constructed by the Berlin company were for highways. Very few were built after 1895 because demand for the metal truss bridges declined and the company increasingly turned its attention to constructing steel-framed industrial buildings.²¹

An heir to the Berlin, Connecticut, tradition of tinware manufacturing dating to the eighteenth century, the immediate predecessor of the Berlin Iron Bridge Company was the

¹⁵ Darnell, "Lenticular Bridges," 26.

¹⁶ Darnell, "Lenticular Bridges," 21.

¹⁷ Robins Fleming, "Early Parabolic Truss Bridges Gradually Disappearing," *Engineering News-Record* 100 (10 May 1928): 749.

¹⁸ Darnell, "Lenticular Bridges," 21.

¹⁹ Darnell, "Lenticular Bridges," 21.

²⁰ Darnell, "Lenticular Bridges," 27.

²¹ Determination of Eligibility Documentation, 13.

Corrugated Metal Company, formed in 1873. The firm manufactured corrugated iron for buildings. Gradually the company began making iron roof trusses to support the corrugated iron sheets. This endeavor led to their involvement in bridge building. The firm was facing financial ruin in 1877 when S. C. Wilcox became president. The Corrugated Metal Company obtained exclusive rights to the Douglas patent soon after this crisis was averted. The company was reorganized and began to profit from bridge construction, particularly from lenticular trusses built for use on roadways. The name was changed to the Berlin Iron Bridge Company in 1887, reflecting this new emphasis. Charles M. Jarvis took over as president at Wilcox's death in 1886 and remained president until the firm joined with twenty-five other companies to form the American Bridge Company in 1900.²²

As early as 1928, the lenticular truss was recognized as a vanishing artifact of American bridge-building when an article on the disappearing parabolic truss appeared in *Engineering News-Record*. The article was written by Robins Fleming, an engineer for the American Bridge Company who had previously designed lenticular trusses for Berlin. Though he mentions European parabolic bridges, Fleming does not acknowledge the only lenticular bridge built in the U.S. by someone other than the Berlin Iron Bridge Company. The Smithfield Street Bridge in Pittsburgh is the longest lenticular truss ever built in this country, at 720'-0" in two spans, excluding the length of approaches. Gustav Lindenthal, the engineer of the Smithfield Street Bridge, responded to Fleming's article with an indignant letter to the editor. Lindenthal cited examples of the use of the parabolic truss in Germany in 1857 and in England in 1859, saying that "it is obvious that the American patent was worthless."²³ Although the Berlin Iron Bridge Company did not have an exclusive claim to the construction of lenticular trusses, they popularized this efficient and unusual truss type.

²² Darnell, "Lenticular Bridges," 24.

²³ Gustav Lindenthal, letter to the editor, *Engineering News-Record* 100 (10 May 1928): 789.

SOURCES CONSULTED

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- Bureau of Historic Preservation, Pennsylvania Historical and Museum Commission, Harrisburg, Pennsylvania. Waterville Bridge National Register file.
- Comoss, Gene (director, Bureau of Facility Design and Construction, Pennsylvania Department of Conservation and Natural Resources). Telephone conversation with author, 22 August 1997.
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- U.S. Department of the Interior, Historic American Engineering Record (HAER) No. MA-105, "Tuttle Bridge," 1990. Prints and Photographs Division, Library of Congress, Washington, D.C.
- _____, HAER No. PA-460, "Upper Bridge at Slate Run," 1997. Prints and Photographs Division, Library of Congress, Washington, D.C.
- _____, HAER No. PA-468, "Nicholson Township Lenticular Bridge," 1997. Prints and Photographs Division, Library of Congress, Washington, D.C.

APPENDIX: Suggestions for Future Research

Some questions arose during the research and writing for the report on the Waterville Bridge that, due to limitations in the scope of the Pennsylvania Historic Bridges Recording Project - I, could not be answered. Scholars interested in this bridge are encouraged to pursue the following:

1. On the last day of the project, plans and a description of the moving process for the Waterville Bridge were obtained from the Bureau of Facility Design and Construction. These documents are included in the historians' field notes and are an important source of information that should be more fully explored.
2. Although contract documents and specifications were not available from Pennsylvania state government agencies, the Susquehanna Supply Company, contractor for the bridge relocation, might be able to supply this information.
3. Many of the people involved in the bridge move are still professionally active at this writing in 1997. Scholars interested in a more detailed exploration of any aspect of the Waterville Bridge relocation project are encouraged to mine this valuable resource.



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION
BUREAU FOR HISTORIC PRESERVATION
BOX 1026
HARRISBURG, PENNSYLVANIA 17108-1026

January 6, 1989

Rose Marie Swanger, Chairman
Lebanon County Commissioners
Room 207, Municipal Building
400 8th Street
Lebanon, Pennsylvania 17042

Re: Waterville Bridge, Swatara State
Park, Lebanon County

Dear Rose Marie Swanger:

I am pleased to inform you that the above referenced property was placed on the National Register of Historic Places on November 14, 1988. Entry upon the National Register gives recognition to the historical, architectural or cultural merits of properties. Properties listed on the National Register receive consideration during the review of federal projects and may qualify for federal historic preservation tax credits or other assistance when available. (Currently no grant-in-aid funds are available). Enclosed is a brochure explaining the National Register program.

Sincerely,

A handwritten signature in black ink, appearing to read "Brenda Barrett".

Brenda Barrett
Director

BB/DGD/dc
cc: county official
local official
preparer of nomination



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION
BUREAU FOR HISTORIC PRESERVATION
BOX 1026
HARRISBURG, PENNSYLVANIA 17108-1026

January 6, 1989

Elian Adams, Jr., Chairman
Swatara Township Supervisors
1 Supervisor Drive
Jonestown, Pennsylvania 17038

Re: Waterville Bridge, Swatara State
Park, Lebanon County

Dear Chairman Adams:

I am pleased to inform you that the above referenced property was placed on the National Register of Historic Places on November 14, 1988. Entry upon the National Register gives recognition to the historical, architectural or cultural merits of properties. Properties listed on the National Register receive consideration during the review of federal projects and may qualify for federal historic preservation tax credits or other assistance when available. (Currently no grant-in-aid funds are available). Enclosed is a brochure explaining the National Register program.

Sincerely,

A handwritten signature in black ink, appearing to read "Brenda Barrett".

Brenda Barrett
Director

BB/DGD/dc
cc: county official
local official
preparer of nomination



United States Department of the Interior

HERITAGE CONSERVATION AND RECREATION SERVICE
WASHINGTON, D.C. 20240

81-081-0085 P07
FHWA
Region -
Waterville
Bridge

IN REPLY REFER TO: 436

Mr. Donald E. Hammer
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
Harrisburg, Pennsylvania 17108

SEP 3 1980

Dear Mr. Hammer:

Thank you for your letter requesting a determination of eligibility for inclusion in the National Register pursuant to Executive Order 11593 or the National Historic Preservation Act of 1966, as amended. Our determination appears on the enclosed material.

As you are aware, transportation projects requiring the use of lands from significant historic properties are also subject to the provisions of section 4(f) of the Department of Transportation Act of 1966. Your request for our professional judgment constitutes a part of the Federal planning process. We urge that this information be integrated into the National Environmental Policy Act and section 4(f) analyses in order to bring about the best possible program decisions. This determination does not represent the results of formal consultation by the Department of Transportation with the Department of the Interior pursuant to section 4(f). Such requirements would be fulfilled only when the Department of the Interior separately comments on any section 4(f) statement which may be prepared and approved by you for circulation. The determination also does not serve in any manner as a veto to uses of the property, with or without Federal participation or assistance. Any decision on the property in question and the responsibility for program planning concerning such properties lie with your agency after the Advisory Council on Historic Preservation has had an opportunity to comment.

We are pleased to be of assistance in the consideration of historic resources in the planning process.

Sincerely,

Carol D. Shull

Carol D. Shull
Acting Keeper of the National Register

Enclosure

RECEIVED

SEP 10 1980

PH & MC
Historic Preservation



U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

REGION THREE

HEV-PA.2

P.O. Box 1086
Harrisburg, Pennsylvania 17108

AUG 8 1980

Ms. Carol Shull
Acting Keeper of the National Register
Heritage Conservation & Recreation Service
U.S. Department of the Interior
440 "G" Street, N.W.
Washington, D.C. 20240

IN REPLY REFER TO:
Historic Preservation Procedures
Waterville Bridge Replacement
L.R. 266-A06
Lycoming County, Pennsylvania

Dear Ms. Shull:

The Pennsylvania Department of Transportation is proposing a bridge replacement project in the referenced area. The proposed project is predicated on two major roadway deficiencies within the study area; first, a structurally and functionally inadequate bridge over Little Pine Creek and second, a hazardous approach curve on PA 44 at the eastern edge of Waterville.

The historical background is discussed in the enclosed National Register Eligibility Determination Documentation Report. The Lycoming County Historical Society and Museum Commission does not consider the bridge historically significant. Recent coordination with the State Historic Preservation Officer has culminated with his opinion that the bridge is eligible for listing in the National Register of Historic Places (letter dated June 23, 1980, enclosed).

As a result of conflicting opinions between State and Local historic preservation groups, we consider it appropriate to submit this matter for your opinion. We will appreciate your prompt review of this information and your determination as to whether or not the Waterville Bridge is eligible for the National Register of Historic Places.

Sincerely yours,

Donald E. Hammer
Division Administrator

Enclosures



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

WILLIAM PENN MEMORIAL MUSEUM AND ARCHIVES BUILDING
BOX 1026
HARRISBURG, PENNSYLVANIA 17120

Followup Date 7/11/80
Action By ELW

June 23, 1980

Mr. Donald Hammer
Division Administrator
Department of Transportation
Federal Highway Administration
Region Three, Box 1086
Harrisburg, Pennsylvania 17108

Dear Mr. Hammer:

The Office of Historic Preservation has reviewed documentation on the Waterville Bridge over Pine Creek in Lycoming County. This bridge is a particularly rare type of parabolic truss bridge using a Warren truss framework. In my opinion as State Historic Preservation Officer the bridge is eligible for listing in the National Register of Historic Places.

Sincerely yours,

Ed Weintraub
State Historic Preservation Officer

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	HRP
	HBR
	HRW
	HAM
	HAL
	HMS
	LIS

DETERMINATION OF ELIGIBILITY
NOTIFICATION DISTRIBUTION

cc: ✓ State Historic Preservation Officer: Mr. Ed Weintraub

Federal Representative: Mr. Robert F. Crecco

Bureau Liason: Mr. Larry Isaacson

Advisory Council on Historic Preservation: Washington, D.C.

E.O. 11593

DETERMINATION OF ELIGIBILITY NOTIFICATION National Register of Historic Places Heritage Conservation and Recreation Service

Name of property: Waterville Bridge

Location: Lycoming County

State: PA

Request submitted by: DOT/FHWA Donald Hammer

Date received: 8/11/80

Additional information received:

Opinion of the State Historic Preservation Officer:

Eligible Not Eligible No Response

Comments: "This bridge is a particularly rare type of parabolic truss bridge using a Warren truss framework".

The Secretary of the Interior has determined that this property is:

Eligible **Applicable criteria:** C Not Eligible

Comments: Built in 1890 by the East Berlin Iron Bridge Company, one of the principal late 19th century manufacturers of iron bridges, the Waterville Bridge meets the National Register criteria as an important example of a lenticular truss bridge. It is significant as a rare instance of a lenticular truss bridge with a Warren configuration for the web members.

Documentation insufficient

(Please see accompanying sheet explaining additional materials required)

Carol D. Shull (Sgd.)

Keeper of the National Register

SEP 3 1980

Date: _____

Date Received

5/6/80

OFFICE OF HISTORIC PRESERVATION
Staff Review Sheet
TAX REFORM ACT

PROPERTY NAME: <i>Bridge over Little Pine Creek</i>		DETERMINATION OF ELIGIBILITY	
LOCATION: <i>Waterville LR 266, Sec. A06</i>			
COUNTY: <i>Lycoming</i>			
Located Within: <u>Historic District</u>		CERTIFICATION of SIGNIFICANCE	CERTIFICATION of REHABILITATION
STAFF MEMBER:	COMMENTS		
JANET BASSETT			
✓ SUSAN ZACHER		<i>yes</i>	
✓ WILLIAM WATSON		<i>yes</i>	
✓ BRENDA BARRETT		<i>yes</i>	
ALAN WALMER			

DETERMINATION
OF ELIGIBILITY