

United States Department of the Interior  
Heritage Conservation and Recreation Service

National Register of Historic Places  
Inventory—Nomination Form

See instructions in *How to Complete National Register Forms*  
Type all entries—complete applicable sections

For HCBS use only

received

date entered

## 1. Name

historic READING-HALLS STATION BRIDGE

and/or common

## 2. Location

street & number 200 yds. South of Route 147 not for publication

city, town Muncy Township vicinity of congressional district 17

state Pennsylvania code 42 county Lycoming code 081

## 3. Classification

Category	Ownership	Status	Present Use
<input type="checkbox"/> district	<input type="checkbox"/> public	<input type="checkbox"/> occupied	<input type="checkbox"/> agriculture
<input type="checkbox"/> building(s)	<input checked="" type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial
<input checked="" type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational
<input type="checkbox"/> site	<b>Public Acquisition</b>	<b>Accessible</b>	<input type="checkbox"/> entertainment
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes: restricted	<input type="checkbox"/> government
	<input type="checkbox"/> being considered	<input type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial
		<input type="checkbox"/> no	<input type="checkbox"/> military
			<input type="checkbox"/> museum
			<input type="checkbox"/> park
			<input type="checkbox"/> private residence
			<input type="checkbox"/> religious
			<input type="checkbox"/> scientific
			<input checked="" type="checkbox"/> transportation
			<input type="checkbox"/> other:

## 4. Owner of Property

name Consolidated Rail Corporation

street & number Williamsport Field Terminal

city, town Williamsport vicinity of state Pennsylvania

## 5. Location of Legal Description

courthouse, registry of deeds, etc. Lycoming County Courthouse

street & number West Third Street

city, town Williamsport state Pennsylvania

## 6. Representation in Existing Surveys

title Pa. Inventory of Historic Places has this property been determined eligible?  yes  no

date 1976  federal  state  county  local

depository for survey records Pennsylvania Historical and Museum Commission

city, town Harrisburg state Pennsylvania

# 7. Description

<b>Condition</b>		<b>Check one</b>	<b>Check one</b>	
<input type="checkbox"/> excellent	<input type="checkbox"/> deteriorated	<input type="checkbox"/> unaltered	<input type="checkbox"/> original site	
<input checked="" type="checkbox"/> good	<input type="checkbox"/> ruins	<input checked="" type="checkbox"/> altered	<input checked="" type="checkbox"/> moved	date <u>ca. 1883</u>
<input type="checkbox"/> fair	<input type="checkbox"/> unexposed			

## Describe the present and original (if known) physical appearance

The Reading-Halls Station Bridge is an all metal Howe, Pony truss railroad bridge. Its span of approximately 70 feet carries the limited traffic of a private estate road over a single track of the Consolidated Rail Corporation (formerly Reading Railroad).

The basic construction of the bridge consists of hollow, diagonal, cast iron members used in compression, and thin vertical, wrought iron members used in compression, and thin vertical, wrought iron members used in tension. These members make up a 15 pannel span in a Howe Pony truss construction. The connection of the members to the top and lower cords is completed through the use of a unique pinning system. Both the top and lower cords, which consist of four parallel, rectangular strips of iron, are divided by three (in most cases) threaded ends of the vertical tension members. These are then bolted to each cord by large wrought iron bolts tightened to a narrow cross plate. Each compression member is pinned into the connection by the insertion of its ends into the gap between the parallel members of the cords. Here the compression members are pinned through by the threaded ends of each tension member, completing the connections which constitute each pannel.

The compression members of the Reading-Halls Station Bridge are situated as two parallel members on the outside of another single member, each set in opposite diagonal positions. Two thirds of the way across the bridge the position of the compression members reverses itself from the previous situation. That is, from north to south, the first nine pannels of the bridge have two parallel compression members which angle to the south on the sides of a single compression member that angles to the north. The last 6 pannels, (from the same perspective) however, are the reverse, parallel compression members which angle to the north split by a single member which is at a diagonal to the south.

The deck of the Reading-Halls Station Bridge is supported by a series of 5 iron beams spaced every 3 pannels along the structure. Each of these beams (which look like former railroad rails) run perpendicular to both lower cords, providing the basic support for the road deck. A small angle brace runs from the ends of each of these beams to a clamp which encompasses the four metal strips constituting the top cord. In between each of the longer beams run three parallel shorter iron beams (also with the appearance of former railroad rails). On top of this underpinning of iron beaming are a series of wood stringers which run the length of the bridge. The final wooden deck of the structure is layed directly on the wooden stringers or parallel to the iron beaming beneath it.

Each of the abutments which support the ends of the Reading-Halls Station Bridge are of substantial field stone construction. Both are in an excellent state of repair, having been recently remortared.

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An interesting irregularity makes itself present in the construction of the bridge through the differing number of tension members seen throughout the panels in the span. The bridge's design seems to call for the use of 3 tension members in each connection. However, most of the connections have only two members, and in a few cases only one tension member. Whether this construction is intentional in terms of the bridge's design, or that it has come about for what would be a more serious reason, neglect, is unknown.

# 8. Significance

Period	Areas of Significance—Check and justify below		
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature
<input type="checkbox"/> 1600-1699	<input checked="" type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input checked="" type="checkbox"/> engineering	<input type="checkbox"/> music
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy
<input type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input type="checkbox"/> industry	<input type="checkbox"/> politics/government
		<input type="checkbox"/> invention	<input type="checkbox"/> religion
			<input type="checkbox"/> science
			<input type="checkbox"/> sculpture
			<input type="checkbox"/> social/
			<input type="checkbox"/> humanitarian
			<input type="checkbox"/> theater
			<input checked="" type="checkbox"/> transportation
			<input type="checkbox"/> other (specify)

**Specific dates** ca. 1850 **Builder/Architect**

## Statement of Significance (in one paragraph)

The Reading-Halls Station Bridge, an all metal pony Howe truss (hollow) railroad bridge located just off Pa. Rt. 147 in Muncy Township, derives its significance from its age, architectural merits, and its representation of early transportation methods. It is also an excellent example of early transportation methods. It is also an excellent example of early American Railroad engineering. Constructed ca. 1850, the Reading-Halls Station Bridge is probably the oldest bridge of its type still in use in Pa. Unfortunately very little factual information about the structure and its history remains.

Initially the Howe truss bridge was used by American railroads in a construction of wood (compression members), and iron (tension members). Soon however, the short comings of wood as a viable material for railroad bridge building became apparent. Its tendency to catch fire, rot, and the lack of an adequate means to attach it to metal, ushered in the first all metal railroad bridges. The pony Howe truss was the first type of bridge adapted to the all metal composition in this country.

Richard B. Osborne, chief engineer of the Philadelphia and Reading Railroad (beginning 1842) designed and built the first American all metal railroad bridge in 1845 at West Manayunk, Pa.2. This was the famous all metal pony Howe triple truss bridge which saw active service from 1845-1901. Another very early all metal pony Howe truss railroad bridge was used as an overgrade on the Philadelphia and Reading line south of Reading, Pa. on Pa. route 83 (demolished 1965).3 This bridge, which was also designed by Richard Osborne, was nearly the duplicate of the Reading-Halls Station Bridge. That is, an all metal pony Howe truss bridge, featuring hollow compression members of cast iron, cast in an Egyptoid style. The Civil Engineering Division of the Museum of History and Technology, Smithsonian Institution date this structure ca. 1846. It is quite conceivable that Richard Osborne could have designed and built its apparent twin, the Reading-Halls Station Bridge.

The history of the railroad line beneath the Reading-Halls station Bridge sheds futher light on the assumptions that Richard Osborne designed and built the structure, but that he probably did so originally for its use in another location.

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The Catawissa Railroad first constructed this line as part of their operations in 1871-72.4 Twelve years later in 1883-84, the Philadelphia and Reading Railroad absorbed this section of the faltering Catawissa line. Upon taking over the line, the Philadelphia and Reading made some minor improvements. It would seem more than probable that the Reading-Halls Station Bridge was erected, or re-erected at this time (1883-84). Judging from the style of the bridge, which is decidedly pre-Civil War, and the fact that Osborne was Chief Engineer of the Philadelphia and Reading Railroad for the balance of the years prior to 1883-84, it is more than speculation that the Reading-Halls Station Bridge was re-erected at its present location. Whether the structure was in use some where else until its installation at the Halls Station overgrade, or whether it was in storage for future use after its obsolescence in its initial stint of duty, is impossible to tell.

The existence of the Reading-Halls Station Bridge is indicative of the growth of the American Railroad at this time (1850). Technically its creation is representative of the growth and innovative nature of the American Iron industry in its infancy. Being one of the earliest types of construction (all metal railroad bridge), the bridge represents an experiment in American engineering. It was soon learned that this particular experiment was, in a sense, a failure. The use of cast iron in Howe truss bridges was found to be a poor choice of material in larger spans. A number of disastrous railroad bridge failures in the early days of all metal structures was due to the lack of strength inherent in cast iron when used as the compression members of a Howe truss bridge. This fact led to their quick demise and consequently, their lack of significant numbers today.

The Reading-Halls Station Bridge could possibly be the sole working survivor of a novel type of early American Railroad technology, necessitating preservation efforts beyond those currently being conducted. The bridge's weight limit (12 tons) is jeopardizing its future. Although the structure carries the limited weight traffic of a private estate road, a number of services including fire protection are prohibited to use it because of excessive vehicle weights. An adequate solution to this problem would insure the preservation of the Reading-Halls Station Bridge.

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Foot Notes: Historical Significance Section

1. Bridge Truss Types: A Guide To Dating and Identifying by T. Allen Comp and Donald Jackson. Historic American Engineering Record - National Park Service, Technical Leaflet #95.
2. Civil Engineering Journal, for January 1938. Vol. 8, No. 1
3. File Photograph, Civil Engineering Division, Museum of History and Technology, Smithsonian Institution. (courtesy Robert M. Vogel). See enclosure
4. A Chronological History of Muncy by Thomas T. Tabor. Muncy Luminary Press, 1975
5. Same as #1

# 9. Major Bibliographical References

(See Continuation Sheet)

# 10. Geographical Data

Acreeage of nominated property .06

Quadrangle name Muncy, Pa.

Quadrangle scale 1:24,000

### UMT References

A 

1	8	3	4	6	4	0	0	4	5	6	6	3	4	0
Zone		Easting				Northing								

B 

Zone		Easting				Northing								

C 

Zone		Easting				Northing								

D 

Zone		Easting				Northing								

E 

Zone		Easting				Northing								

F 

Zone		Easting				Northing								

G 

Zone		Easting				Northing								

H 

Zone		Easting				Northing								

### Verbal boundary description and justification

70' x 40"

### List all states and counties for properties overlapping state or county boundaries

state code county code

state code county code

# 11. Form Prepared By

name/title Tom Richey

organization Muncy Historic Survey Project

date

street & number 14 N. Washington Street

telephone 717-546-3952

city or town Muncy

state Pennsylvania 17756

# 12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

national  state  local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the Heritage Conservation and Recreation Service.

### State Historic Preservation Officer signature

ED WEINTRAUB, Director

title Office of Historic Preservation

date

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I hereby certify that this property is included in the National Register

date

Keeper of the National Register

Attest:

date

Chief of Registration

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1. Bridges and Their Builders by David B. Steiman and Sara Ruth Watson. Published G. P. Putman's Sons, N.Y. 1941.
2. Bridge Truss Types: A guide to dating and identifying by T. Allen Comp and Donald Jackson. Pub. AASLH and Department of the Interior as Technical Leaflet #95.
3. Chronological History of Muncy by Thomas T. Tabor. Muncy Luminary Press
4. Civil Engineering, for January 1938, Vol. 8, No. 1
5. History of Lycoming County by Meginess. 1872 Vol. 2



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The boundaries include the abutments and form a rectangle 110' long by 50' wide with the center of the bridge coexistent with the center of the rectangle. The acreage for this area is .12.

5666 IV SW  
(MONTGOMERY NORTH)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

STATE OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
TOPOGRAPHIC AND  
5666  
(HUNTER)

76° 52' 30"  
41° 15'

344000m E.

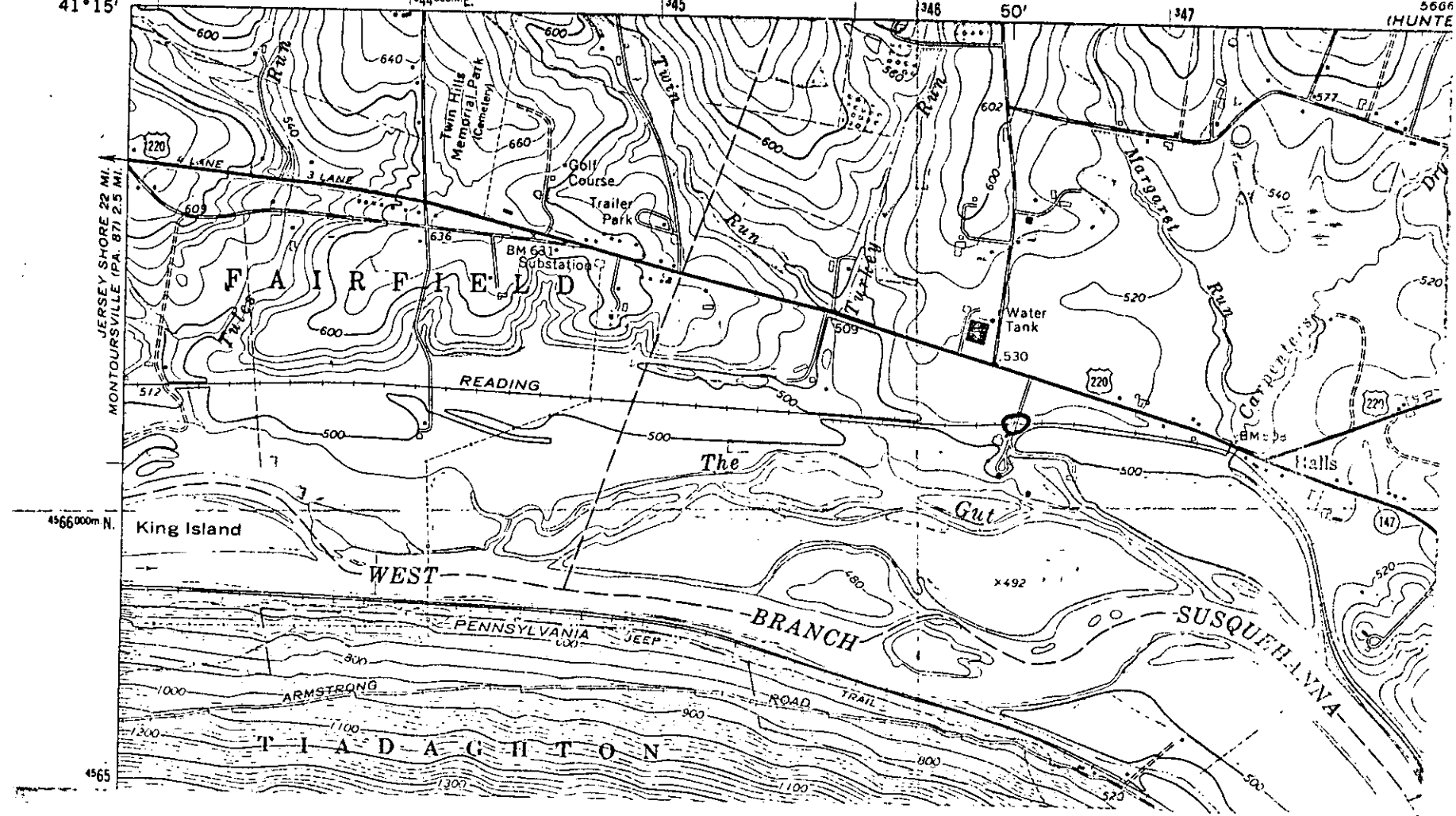
345

346

50'

347

Reading-Halls Station Bridge  
Lycoming County  
Zone 18  
466400 N4566240



JERSEY SHORE 22 MI.  
MONTGOMERY (PA. 87) 2.5 MI.

4566000m N.

4565