

HISTORIC HIGHWAY BRIDGES IN WISCONSIN

Volume 2, Part 2: Appendix A2

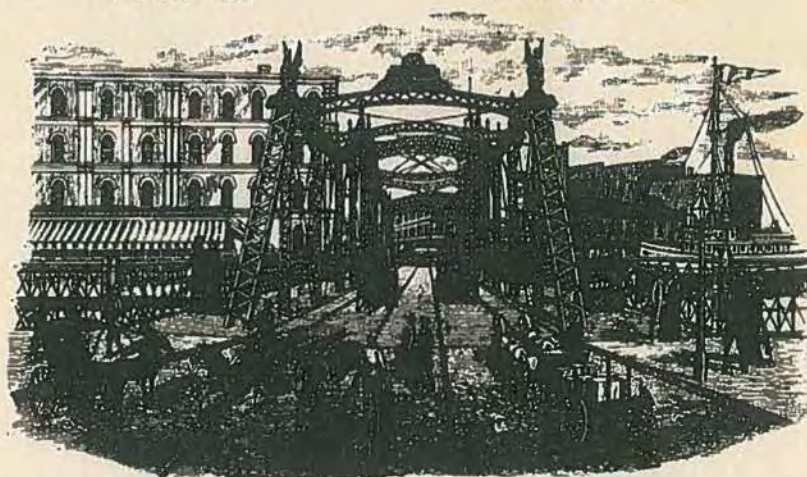


TRUSS BRIDGES

MILWAUKEE BRIDGE AND IRON WORKS.

FOUNDED 1870.

INCORPORATED 1887.



Grand Avenue Bridge, Milwaukee.—Length, 180 feet.

Office and Works, Corner Fowler and Seventeenth Sts., Milwaukee, Wis.

Wisconsin State Gazetteer and Business Directory. 1888-1889

INTENSIVE SURVEY FORMS 1998

WISCONSIN DEPARTMENT OF TRANSPORTATION

HISTORIC HIGHWAY BRIDGES IN WISCONSIN

HISTORICAL SURVEY OF WISCONSIN TRUSS BRIDGES

Appendix A2

Truss Bridge Intensive Survey Forms

**WISCONSIN DEPARTMENT OF TRANSPORTATION
1998**

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TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-35-032

WISDOT Designation: P-35-032
Historic Name: Reagen Bridge (A)
Other Name:
Current Owner: County of Lincoln
Year Built: 1922
Engineer: Wisconsin State Highway Commission
Fabricator: Unknown
Contractor: Unknown
Status: Replaced in 1989

Geographical Data

County: Lincoln
City, Village or Town: Town of Harding
Legal Description: Section 15, Town 32N, Range 5E
Crossing: County Trunk Highway E over New Wood River
Sketch Diagram (For survey photos, see contact sheet 02014/1)

Technical Data

Bridge Category: Metal pony truss
Spans--No./Type: 1 Warren standard span (60')
Connection Type: Riveted
Substructure: Concrete abutments and wing walls
Overall Length x Width: 62'10" x 20'
Inclined End-Post/Upper Chord: L0-U1-U7-L8: double upright channels (8-1/4") with cover plate (12"), tied with batten plates
Lower Chord: L0-L8: back-to-back angles
Verticals: L2-U2, L4-U4, L6-U6: double back-to-back angles ("H" section)
Diagonals: L2-U1, L2-U3, etc.: double angles ("U" section) tied with batten plates
Counters: None
Floor System: Rolled section floor beams and stringers; concrete deck
Bracing: Bottom laterals: rods
Bearings: Fixed plates on east end; slotted plates on west end

Summary Description

The Reagen Bridge (P-35-032) is a single span, metal, riveted, Warren standard pony truss. It carries County Trunk Highway E over the New Wood River in rural Lincoln County. The overall length is 62'10" and the span length is 60'; the overall width is 20' with a roadway width of 19'. In characteristic Warren truss fashion, the design incorporates diagonals carrying both compressive and tensile forces, with verticals to stiffen the truss. The entire bridge is composed of riveted angles and channels joined with gusset plates; the verticals are heavier members than in earlier Warren trusses. The floor beams and deck are hung below the bottom chord. The truss was designed in 1922 by the Wisconsin State Highway Commission and built at a cost of \$4,200 (B). It retains contextual and structural integrity.

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-35-032

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1922

The Reagen Bridge (P-35-032), erected in 1922, is an unaltered representative of the Warren standard pony truss as designed by the Wisconsin State Highway Commission and employed on the rural county trunk highway system. It is one of 443 Warren standard trusses identified in Wisconsin in 1981 by the Historic Bridge Advisory Committee (C).

Sources of Information (Reference to Above)

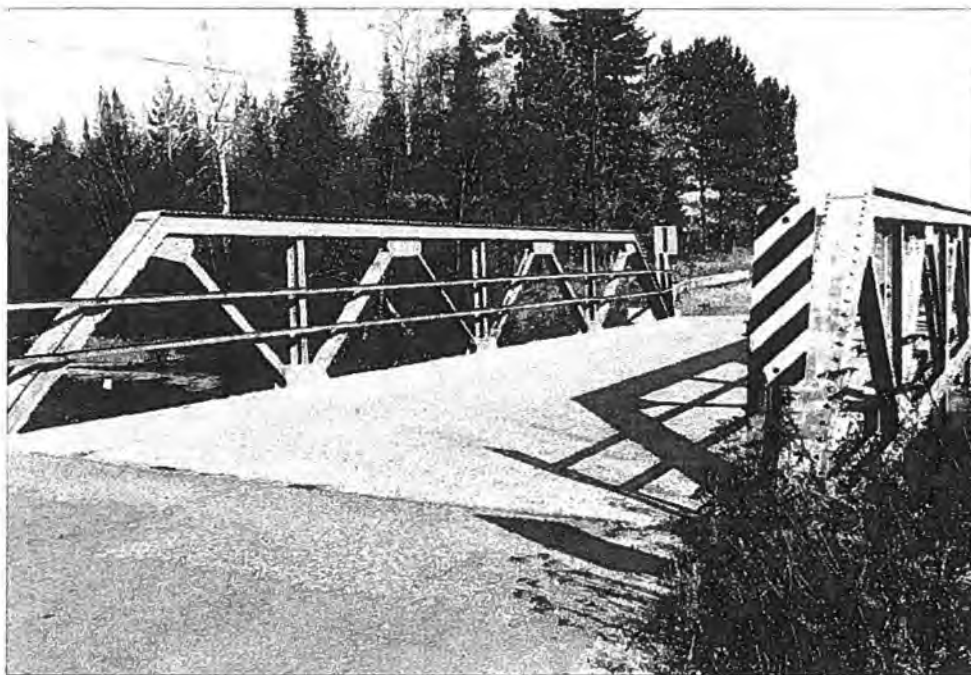
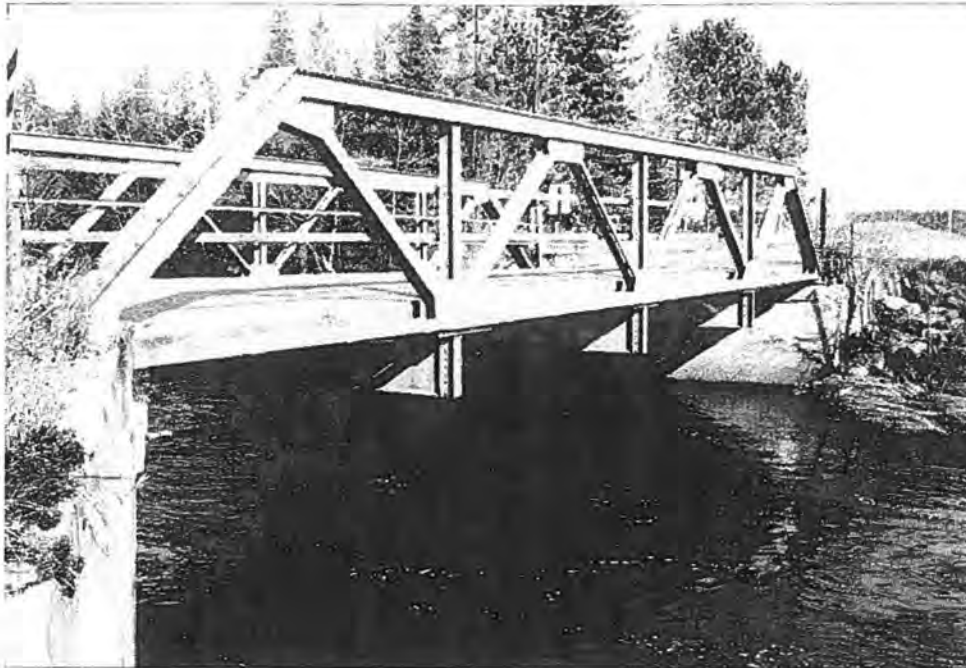
- A. Plans for bridge P-35-032 (1922). Microfilm copy. Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- B. Lincoln County Board of Supervisors. Proceedings. May 1921-Jan. 1922, pp. 41-42; May -Nov. 1922, pp. 39, 45.
- C. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin, 1986.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

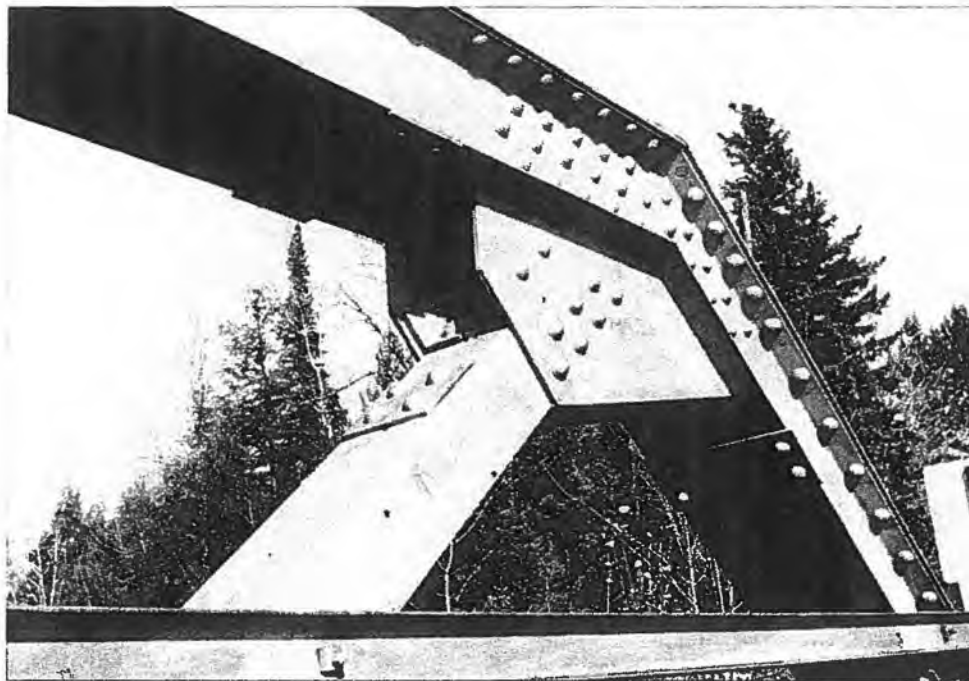
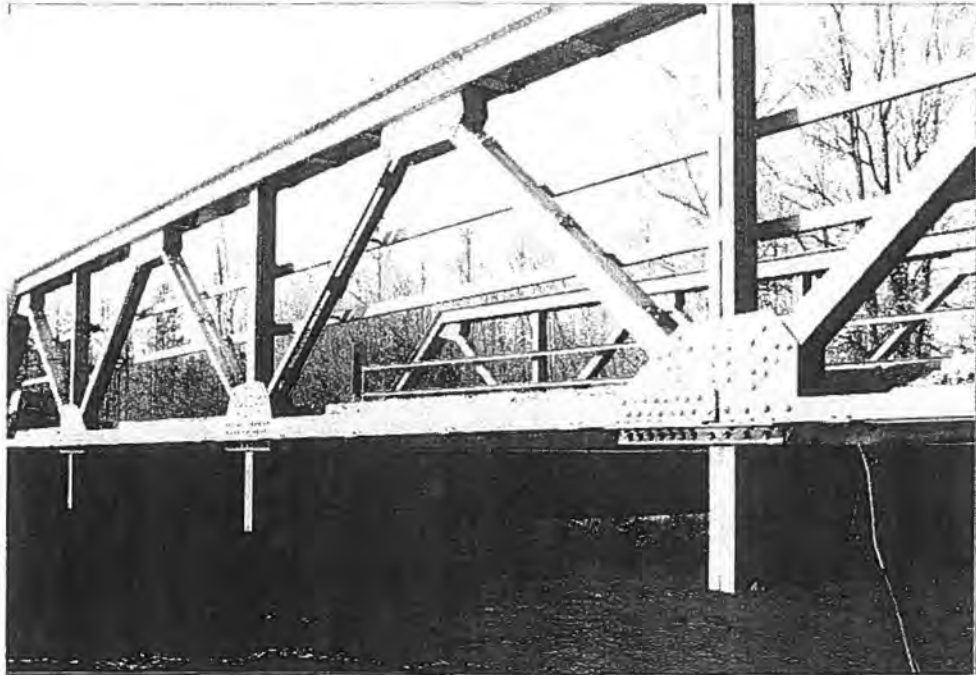
Date of Survey: October 20, 1986 Surveyor: Robert M. Frame III

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-35-032



Reagen Bridge (P-35-032), Town of Harding, Lincoln County
Top: South elevation - Source: J.A. Hess, 1986
Bottom: West end, perspective view - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-35-032



Reagen Bridge (P-35-032), Town of Harding, Lincoln County
Top: South elevation, perspective view - Source: J.A. Hess, 1986
Bottom: Detail of connection - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-36-022

WISDOT Designation: P-36-022

Historic Name:

Other Name: Mill Road Bridge

Current Owner: Town of Manitowoc Rapids

Year Built: 1887

Engineer: Wisconsin Bridge and Iron Company

Fabricator: Wisconsin Bridge and Iron Company

Contractor: Unknown

Status: Extant as of 1996

Geographical Data

County: Manitowoc

City, Village or Town: Town of Manitowoc Rapids

Legal Description: Section 23, Town 19N, Range 23E

Crossing: Mill Road over Manitowoc River

Sketch Diagram (For survey photos, see contact sheet 02014/5)

Technical Data

Bridge Category: Metal pony truss

Spans--No./Type: 1 Pratt full-slope span (150')

Connection Type: Pinned

Substructure: Rough coursed stone abutments and wing walls

Overall Length x Width: 151' x 16'

Inclined End-Post/Upper Chord: Upper chord U1-U7: double upright channels (9-1/4") with cover plate (12-3/4"), tied with batten plates; inclined end posts L0-U1, L8-U7: double upright channels (9-1/4"), tied with V-lacing front and back

Lower Chord: L0-L8: double rectangular eyebars, looped

Verticals: L2-U2, L3-U3, etc.: double upright channels tied with V-lacing front and back; L1-U1, L7-U7: rectangular eyebars looped

Diagonals: Rectangular eyebars looped (L2-U1, L6-U7: 1" x 1-3/4"; L3-U2, L5-U6: 1" x 1-1/4"; L4-U3, L4-U5: 7/8" sq.)

Counters: L3-U4, L5-U4: 3/4" sq. eyebars with turnbuckles

Floor System: Built-up, fish-belly floor beams riveted via angles to post ends, above bottom chord; rolled-section stringers with wood-plank deck

Bracing: **Top laterals:** Cylindrical eyebars, looped, with turnbuckles; **Lateral struts:** Double angles with lacing (double struts with sway rods at U3 and U5); **Bottom laterals:** Cylindrical looped eyebars with turnbuckles and bent heads, bolted to floor beams

Bearings: Fixed on south end; expansion on north end

Summary Description

Bridge P-36-022 is a single span, metal, pin-connected, full-slope Pratt truss. Built in 1887 (A), it carries Mill Road over the Manitowoc River in what is today a suburban area of Manitowoc County. Overall length is 151' with a span length of 150'; overall width is 16' carrying a 15' roadway. The bridge design is a representative Pratt configuration, although the span's relatively large size--especially for the early construction date--necessitated extra lateral sway bracing on two of the verticals and on the portals. The general construction of the bridge fits the pattern identified by the Wisconsin Historic Bridge Advisory Committee for trusses built 1880-94 (B). It employs built-up compression members and tension members of round and rectangular, looped eyebars. It has several additional items of note: the end posts are V-laced front and back, without the usual cover plate and therefore different from the top chord, and the floor beams are built-up members and configured in a "fish-belly" design. The deck is wood plank. The portal

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-36-022

is particularly interesting, having cresting made with metal lattice bars extended above the top strut, and very unusual triangular builder plates mounted atop the portal strut. Representing the early construction date and contributing to the structure's overall integrity are the rough-coursed stone abutments and wingwalls. The bridge was built by the Wisconsin Bridge and Iron Company.

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1887

Bridge P-36-022, erected in 1887, is a very significant representative example of an early Pratt truss of relatively long span. Having considerable contextual and structural integrity, it retains several notable early elements in addition to the basic Pratt metal construction, including the stone abutments, built-up floor beams, and wood plank deck. Particularly interesting are the aesthetically distinctive portals, with their metal cresting and triangular, sunburst builder plates (in fact, it is significant that two plates of any design from 1887 have survived at all). The plates state that the bridge's designer and builder was Wisconsin Bridge and Iron Company or Milwaukee, a "known prolific Wisconsin builder" of significance (B). In 1986, this bridge was identified as one of only five Pratt trusses extant from the pre-1890 period, and therefore significant. It is the longest span in this group.

Sources of Information (Reference to Above)

- A. P-36-022 builder's plates, mounted on each portal.
- B. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges," in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin, 1986.
- C. Danko, George M. "A Selective Survey of Metal Truss Bridges in Wisconsin." M.S., State Historical Society of Wisconsin-Historic Preservation Division, Madison, Wis., 1977, pp. 67-68.

National Register Status

- Listed
- Determined eligible
- Eligible
- Not eligible

Date of Survey: October 22, 1986 Surveyor: Robert M. Frame III

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-36-022



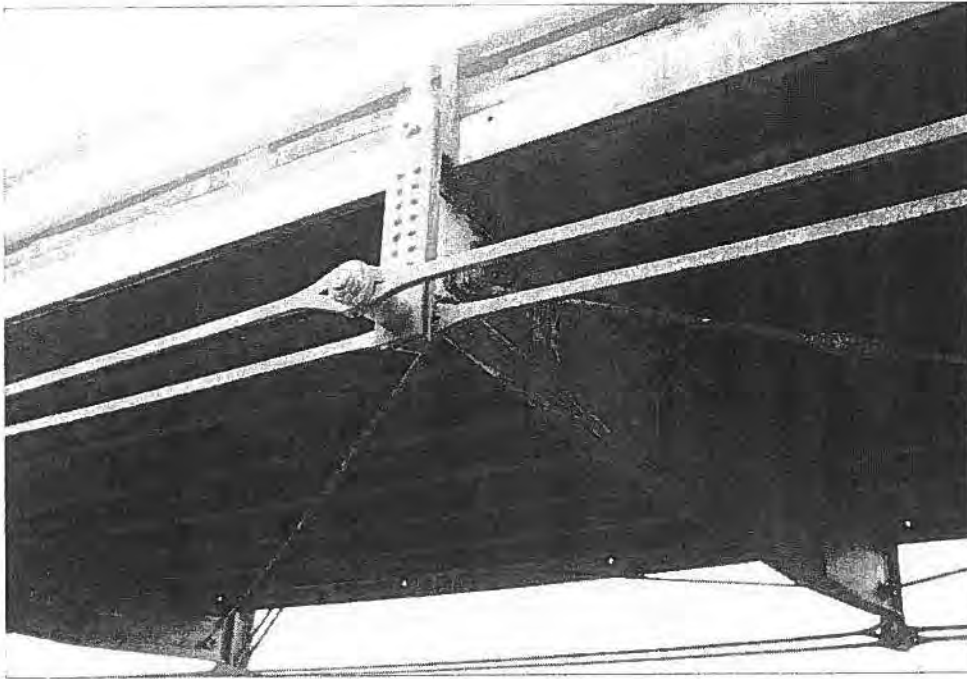
Mill Road Bridge (P-36-022), Town of Manitowoc Rapids, Manitowoc County
Top: South approach - Source: J.A. Hess, 1986
Bottom: Detail of builder's plate - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-36-022



Mill Road Bridge (P-36-022), Town of Manitowoc Rapids, Manitowoc County
Top: Barrel view - *Source: J.A. Hess, 1986*
Bottom: West elevation - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-36-022



Mill Road Bridge (P-36-022), Town of Manitowoc Rapids, Manitowoc County
Detail of deck - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-36-022



Mill Road Bridge (P-36-022), Town of Manitowoc Rapids, Manitowoc County
North abutment - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-36-088

WISDOT Designation: P-36-088

Historic Name:

Other Name: Nachtway Road Bridge

Current Owner: Town of Gibson

Year Built: 1903

Engineer: Wisconsin Bridge and Iron Company

Fabricator: Wisconsin Bridge and Iron Company

Contractor: Unknown

Status: Replaced, prior to 1996

Geographical Data

County: Manitowoc

City, Village or Town: Town of Gibson

Legal Description: Section 7, Town 21N, Range 23E

Crossing: Nachtway Road over Neshota River

Sketch Diagram (For survey photos, see contact sheet 02014/4)

Technical Data

Bridge Category: Metal pony truss

Spans--No./Type: 1 Pratt half-hip span (75'5")

Connection Type: Pinned

Substructure: Rough-coursed stone abutments and wing walls; stone bridge seat

Overall Length x Width: 79'10" x 16'4"

Inclined End-Post/Upper Chord: L0-U1-U6-L7: double upright channels (7"), with cover plate (12"), tied with batten plates

Lower Chord: L0-L7: double rectangular punched eyebars

Verticals: L2-U2, L3-U3, etc.: double back-to-back angles (2-1/2" x 2") tied with batten plates ("H" in section)

Diagonals: L2-U1, L3-U2, L4-U5, L5-U6: double rectangular punched eyebars (2" x 5/8")

Counters: L3-U4, L4-U3: cylindrical looped eyebars (1-1/2") with open turnbuckles

Floor System: Rolled-section floor I-beams hung from panel points with riveted flat plates; rolled-section I-beam stringers; re-decked with treated timber (3" x 4") with bituminous overlay

Bracing: **Bottom lateral:** Threaded rods; inside knee brace: rotated angle with splayed foot

Bearings: Sliding plates on north end; fixed plates on south end

Summary Description

Bridge P-36-088 is a single span, metal, pin-connected, Pratt half-hip truss. It carries Nachtway Road over the Neshota River in rural Manitowoc County. The overall length is 79'10" with a span length of 75'5"; overall width and roadway width are 16'4". In characteristic fashion, the superstructure is constructed of built-up members, employing batten plates instead of V-lacing. The diagonals and bottom chords are punched eyebars. The counters are cylindrical-section looped eyebars with open turnbuckles. There is no hip vertical member in this Pratt half-hip configuration. In the bridge's only structural alteration, the original corrugated metal deck (see B) has been replaced by a timber deck. The bridge was designed and constructed in 1903 by the Wisconsin Bridge and Iron Company (A).

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-36-088

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1903

Bridge P-36-088, built in 1903, is significant as a representative Pratt half-hip, metal, pony truss highway bridge, constructed at the end of the pre-State Highway Commission era. It exhibits typical design and structural features for the period: built-up members, pin connections, and punched and looped eyebars. The only structural alteration is the replacement of the original corrugated metal deck with a timber plank deck. However, the original stone abutments, wing walls, and bridge seats remain. In 1981, this bridge was identified by the State Historic Bridge Advisory Committee as one of the four "best examples of Pratt half-hip pony trusses" out of 125 in the state (C). In addition, the builder, Wisconsin Bridge and Iron Company, was identified by HBAC as a "known prolific Wisconsin builder," and therefore of significance (C).

Sources of Information (Reference to Above)

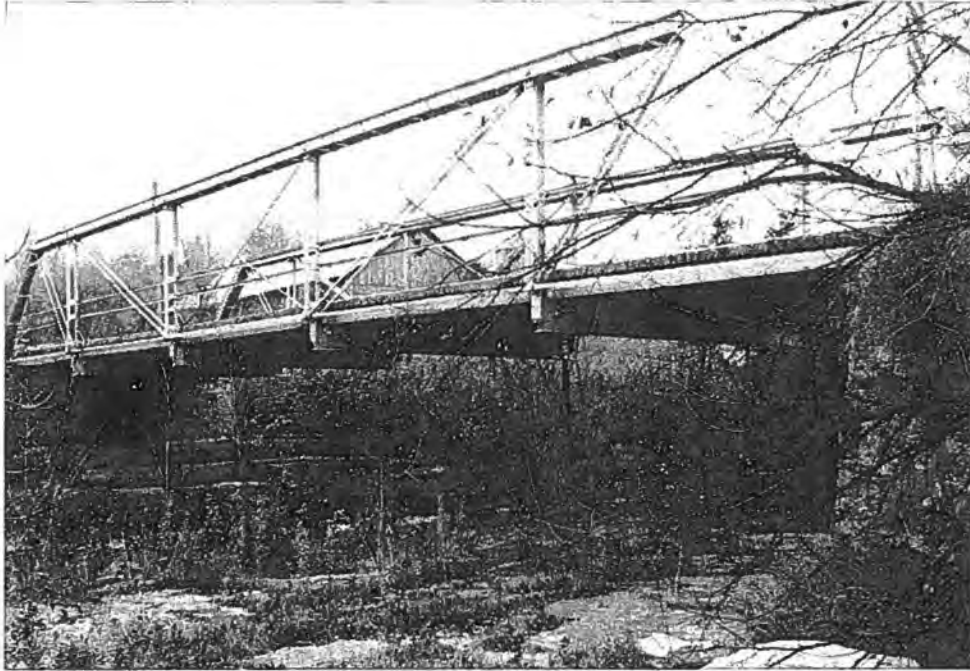
- A. P-36-088 builder's plate mounted on endpost.
- B. Danko, George M. "A Selective Survey of Metal Truss Bridges in Wisconsin," M.S., State Historical Society of Wisconsin-Historic Preservation Division, 1977, pp. 71-72.
- C. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

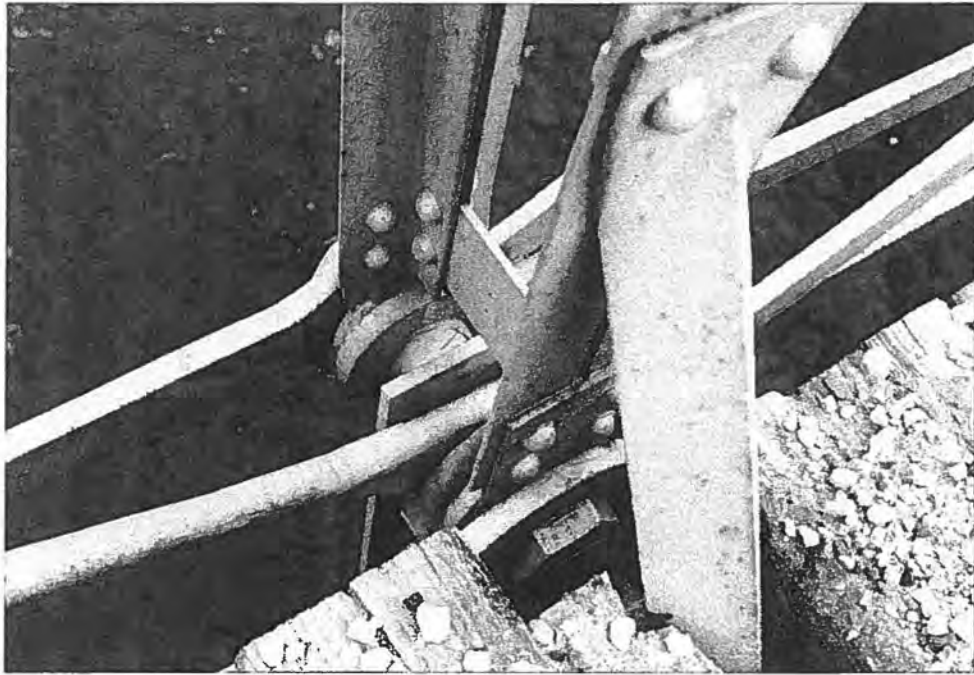
Date of Survey: October 22, 1986 Surveyor: Robert M. Frame III

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-36-088



Nachtway Road Bridge (P-36-088), Town of Gibson, Manitowoc County
Top: East elevation - Source: J.A. Hess, 1986
Bottom: Detail of builder's plate - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-36-088



Nachtway Road Bridge (P-36-088), Town of Gibson, Manitowoc County
Detail of hanger - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-36-089

WISDOT Designation: P-36-089

Historic Name:

Other Name: Melnik Road Bridge

Current Owner: Town of Gibson

Year Built: 1910

Engineer: Unknown

Fabricator: Worden-Allen Company

Contractor: Unknown

Status: Extant as of 1996

Geographical Data

County: Manitowoc

City, Village or Town: Town of Gibson

Legal Description: Sections 19/20, Town 21N, Range 23E

Crossing: Melnik Road over West Twin River

Sketch Diagram (For survey photos, see contact sheet 02014/4)

Technical Data

Bridge Category: Metal pony truss

Spans--No./Type: 1 Warren standard span (80')

Connection Type: Riveted

Substructure: Concrete abutments, bridge seat, and wing walls

Overall Length x Width: 80' x 15'11"

Inclined End-Post/Upper Chord: L0-U1-U9-L10: double channels (9"), with cover plate (14"), tied with batten plates

Lower Chord: L0-L10: double angles (3-3/4" x 2-3/4"), tied with batten plates

Verticals: L2-U2, L4-U4, etc.: double angles (2-1/2" x 2-1/2"), tied with batten plates

Diagonals: L2-U1, L2-U3, etc.: double back-to-back angles (2-1/2" x 3"), tied with batten plates

Counters: None

Floor System: Rolled-section floor I-beams hung from panel points by riveted angles; rolled-section I-beam stringers; poured concrete deck with bituminous overlay

Bracing: Bottom: Crossed angles

Bearings: Sliding plates on north end; fixed plates on south end

Summary Description

Bridge P-36-089 is a single span, metal, riveted, Warren standard pony truss. It carries Melnik Road over West Twin River in rural Manitowoc County. The overall length and span length are 80'; the overall width and roadway width are 15'11". In characteristic Warren standard truss fashion for this period, this bridge is constructed on built-up members, incorporating channels and angles tied with batten plates. The design incorporates diagonals carrying both compressive and tensile forces, with lighter verticals to stiffen the truss. The triangular gusset plates at L4 and L6 are slightly unusual, such plates usually having a more irregular shape. The bridge was built in 1910 (B) by the Worden-Allen Company, of Milwaukee (A). It retains structural and contextual integrity and exhibits concrete abutments and bridge seat.

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-36-089

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1910

Bridge P-36-089, built in 1910, is significant as an unaltered representative Warren standard pony truss of the period involving the transition from private design to Wisconsin State Highway Commission design. It has appropriate Warren standard design elements with built-up, riveted members and connections. The 80' span length makes this bridge one of the longer Warren standard pony trusses, and it is one approximately 443 identified in the state (C). The builder, Worden-Allen Company of Milwaukee, has been identified as a "known prolific Wisconsin builder" and therefore of significance (C).

Sources of Information (Reference to Above)

- A. P-36-089 builder's plate mounted on bridge endpost.
- B. File for bridge P-36-089, includes "Bridge Inventory Report" (1979). Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- C. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 22, 1986 Surveyor: Robert M. Frame III

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-36-089



Melnik Road Bridge (P-36-089), Town of Gibson, Manitowoc County
Top: East elevation - Source: J.A. Hess, 1986
Bottom: Detail of builder's plate - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-36-089



Melnik Road Bridge (P-36-089), Town of Gibson, Manitowoc County
Top: West elevation - Source: J.A. Hess, 1986
Bottom: West truss, east elevation - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-36-116

WISDOT Designation: P-36-116
Historic Name: Branch River Bridge
Other Name: Hillcrest Road Bridge
Current Owner: Town of Franklin
Year Built: c.1900
Engineer: Unknown
Fabricator: Unknown
Contractor: Unknown
Status: Replaced in 1990

Geographical Data

County: Manitowoc
City, Village or Town: Town of Franklin
Legal Description: Sections 17/20, Town 20N, Range 22E
Crossing: Hillcrest Road over Branch River
Sketch Diagram (For survey photos, see contact sheet 02014/4,5)

Technical Data

Bridge Category: Metal pony truss
Spans--No./Type: 1 Pratt full-slope span
Connection Type: Pinned
Substructure: Rough-coursed stone abutments and wing walls
Overall Length x Width: 94' x 16'4"
Inclined End-Post/Upper Chord: L0-U1-U5-L6: double upright channels (7") with cover plate (12"), tied with V-lacing
Lower Chord: L0-L6: double rectangular section punched eyebars
Verticals: L1-U1, L2-U2, etc.: double back-to-back angles tied with batten plates ("H" section)
Diagonals: Double rectangular punched eyebars (L2-U1, L4-U5: 2" x 3/4"; L3-U2, L3-U4: 1-1/2" x 5/8")
Counters: Square looped eyebars with open turnbuckles
Floor System: Rolled-section floor I-beams riveted to ends of vertical posts, above bottom chord; rolled-section stringer I-beams with wood plank deck and thin bituminous overlay
Bracing: Bottom laterals: Threaded rods; triangular plate inside knee braces at verticals
Bearings: Fixed and sliding plates

Summary Description

Bridge P-36-116 is a single-span, metal, pinned, Pratt full-slope, pony truss. It carries Hillcrest Road over Branch River in rural Manitowoc County. Overall length is 94' and span length is 91'6"; overall width is 16'4" with a roadway width of 16'2". The bridge exhibits typical Pratt full-slope design and construction elements, including pinned connections, built-up members with V-lacing, and punched and looped eyebars. An uncommon, but minor, feature is the use of triangular plates as inside knee braces. The site retains original rough-coursed stone abutments and wing walls. The designer and contractor are not known. The bridge retains structural and design integrity.

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-36-116

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: c.1900

Bridge P-36-119, built ca. 1900 (A), is significant as a representative example of a pinned, metal, Pratt full-slope pony truss highway bridge with a relatively long span (B). It is unaltered and retains design, structural, and contextual integrity.

Sources of Information (Reference to Above)

- A. File for bridge P-36-116, includes "Bridge Inventory Report" (1979). Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- B. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin, 1986.

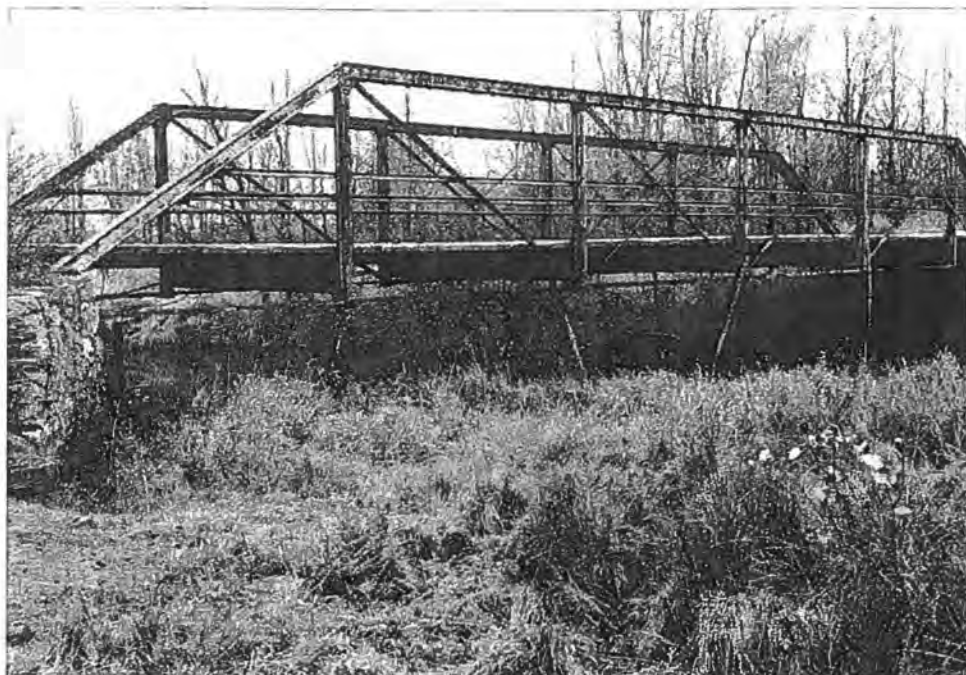
National Register Status

- Listed
- Determined Eligible
- Eligible
- Not eligible

Date of Survey: October 22, 1986 Surveyor: Robert M. Frame III

Documentation: HAER No. WI-44, 1990

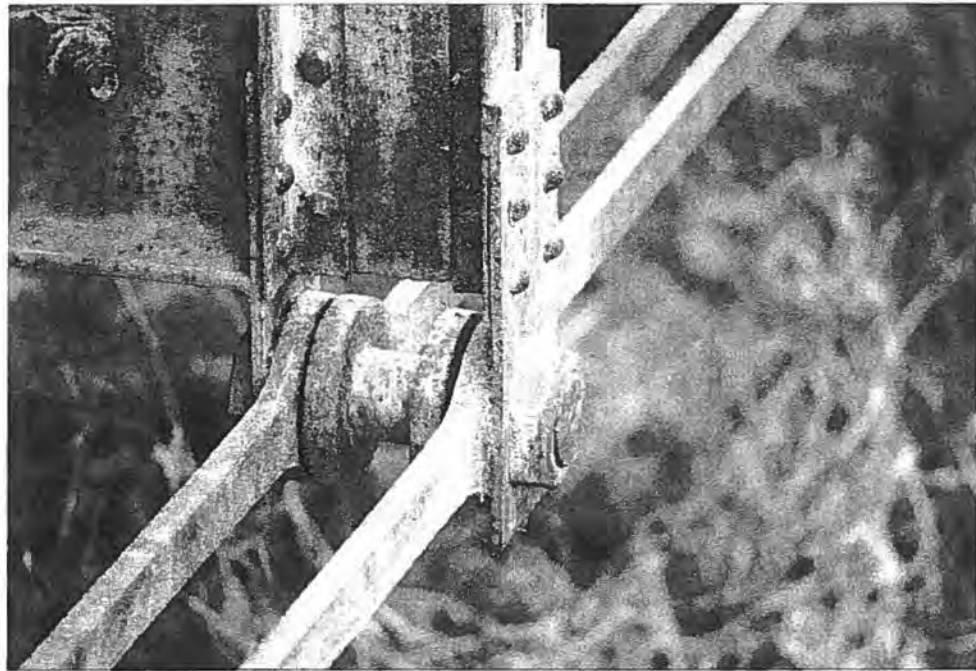
TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-36-116



Branch River Bridge (P-36-116), Town of Franklin, Manitowoc County

Top: North elevation - Source: J.A. Hess, 1986

Bottom: Detail of bottom chord - Source: J.A. Hess, 1986



Branch River Bridge (P-36-116), Town of Franklin, Manitowoc County
Detail of hanger - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-38-096

WISDOT Designation: P-38-096
Historic Name: Ferndale Road Bridge
Other Name: Lake Road Bridge
Current Owner: Towns of Lake and Grover
Year Built: 1910
Engineer: Elkhart Bridge and Iron Company
Fabricator: Elkhart Bridge and Iron Company
Contractor: Unknown
Status: Replaced in 1990

Geographical Data

County: Marinette
City, Village or Town: Towns of Lake and Grover
Legal Description: Sections 25 & 26, Town 31N, Range 21E
Crossing: Ferndale Road over Peshtigo River
Sketch Diagram (For survey photos, see contact sheet 02014/6)

Technical Data

Bridge Category: Metal overhead truss
Spans--No./Type: 1 Pratt span (150'10")
Connection Type: Pinned
Substructure: Steel tubes with steel retaining wall
Overall Length x Width: 154'10" x 16'
Inclined End-Post/Upper Chord: L0-U1-U8-L9: double upright channels (9") with cover plate (14"), tied with V-lacing
Lower Chord: L0-L9: double rectangular looped eyebars (4-3/8" x 1" on center panel; others smaller)
Verticals: L1-U1, L8-U8: double rectangular looped eyebars (1-1/2" x 5/8"); L2-U2, L3-U3, etc.: double upright channels (8"), tied with V-lacing both sides
Diagonals: L2-U1, L7-U8, etc.: double rectangular looped eyebars (3" x 3/4" at L2-U1, others smaller)
Counters: L3-U4, L6-U5: square looped eyebars with turnbuckles; L4-U5, L5-U4: double square looped eyebars with turnbuckles
Floor System: Rolled-section floor I-beams riveted to plate hung from panel points below bottom chord; rolled-section stringer I-beams; 2-1/2" corrugated metal decking with bituminous surface
Bracing: **Top laterals:** rods; **Top struts:** Double back-to-back angles with X-lacing; top knee bracing: double angles; **Bottom laterals:** Threaded rods
Bearings: Fixed bearing on north end; expansion roller bearing on south end

Summary Description

Bridge P-38-096 is a single span, metal, pin-connected, Pratt overhead truss highway bridge. It carries Ferndale Road over the Peshtigo River in rural Marinette County. It has nine panels of 16'9" each for a span length of 150'10"; the overall length is 154'10". The overall width is 16' and the roadway width is 15'4". The depth of truss is relatively long by Wisconsin standards. The Ferndale Road Bridge has a number of features typical of the period 1890-1910. These include built-up members, looped eyebars, and corrugated metal floor. The bridge also uses roller expansion-bearings, and steel tube abutments, but these features continued to be common for a number of years after 1910. The bridge retains integrity of design, structure, and setting.

After an initial dispute over location, the bridge was authorized by the towns of Lake and Grover to connect them across the Peshtigo River (D). It was designed and built in 1910 by the Elkhart Bridge and Iron Company of

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-38-096

Elkhart, Indiana. Willis E. Gifford of Madison, Wis., was the agent for the company. The cost of the bridge was approximately \$6,000 (A,D), with the towns of Lake and Grover providing half, and Marinette County providing half.

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1910

Bridge P-38-096, built in 1910, is significant as an unaltered representative example of the large Pratt overhead truss highway bridge for the era 1895-1910, just prior to the advent of the Wisconsin State Highway Commission. Along with its basic Pratt design, the bridge exhibits the period's metal-truss characteristics: light built-up members, pin connections, looped eyebars, roller bearings, and metal-tube abutments. In 1981, this bridge was selected by the state Historic Bridge Advisory Committee (HBAC) as one of the best examples of the Pratt from this period, out of a total population of about 32. In addition, the builder, Elkhart Bridge and Iron Company of Elkhart, Indiana, was determined by the State Historic Preservation Office to be a "known prolific out-of-state builder" operation in Wisconsin (C).

Sources of Information (Reference to Above)

- A. Bridge P-38-096 builder's plates, mounted above portals.
- B. File for bridge P-38-096, includes "Bridge Inventory Report." Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- C. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.
- D. Marinette County Board of Supervisors. Proceedings. 1909-10, pp. 35, 40, 44, 56. 1910-11, p. 39.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 1986

Surveyor: Robert M. Frame III

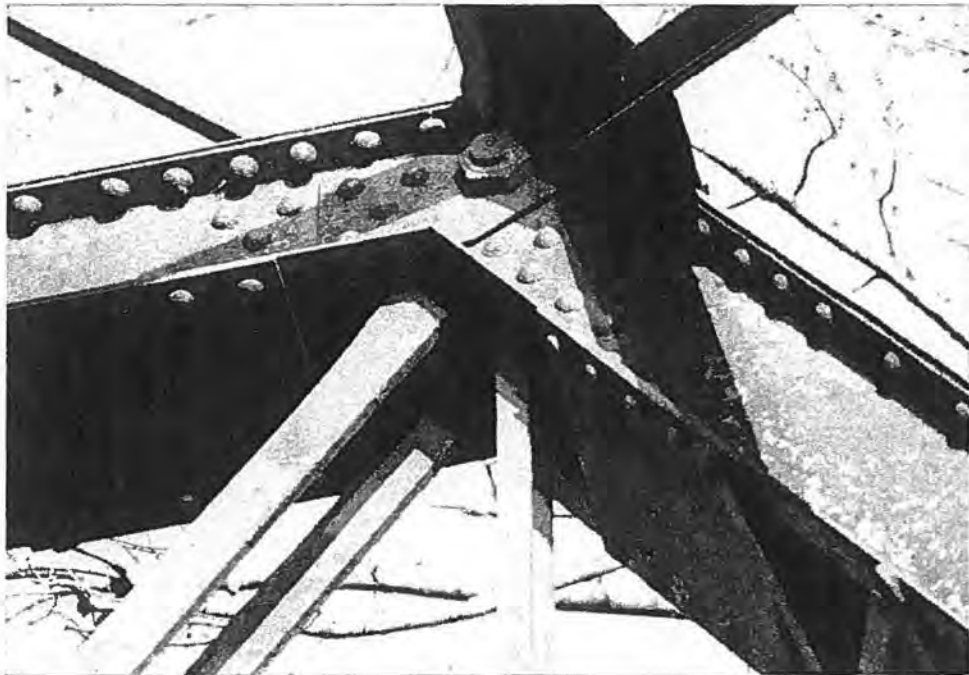
Documentation: HAER No. WI-58

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-38-096



Ferndale Road Bridge (P-38-096), Towns of Lake and Grover, Marinette County
Top: South approach - Source: J.A. Hess, 1986
Bottom: Detail of builder's plate - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-38-096



Ferndale Road Bridge (P-38-096), Towns of Lake and Grover, Marinette County
Top: East elevation - *Source: J.A. Hess, 1986*
Bottom: Detail of endpost connections - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-42-042

WISDOT Designation: P-42-042
Historic Name: Beyer Bridge (A)
Other Name:
Current Owner: Town of Lakewood
Year Built: 1928
Engineer: Wisconsin State Highway Commission (A)
Fabricator: Milwaukee Bridge Company (B)
Contractor: Garvey-Weyenberg Construction Company (B)
Status: Extant as of 1996

Geographical Data

County: Oconto
City, Village or Town: Town of Lakewood
Legal Description: Section 30, Town 33N, Range 17E
Crossing: Smyth Road over North Branch of the Oconto River
Sketch Diagram (For survey photos, see contact sheet 02014/7)

Technical Data

Bridge Category: Metal overhead truss
Spans--No./Type: 1 Pratt span (90')
Connection Type: Riveted
Substructure: Concrete abutments and wing walls
Overall Length x Width: 93' x 26'
Inclined End-Post/Upper Chord: L0-U1-U5-L6: double upright channels (9") with cover plate (12"), tied with V-lacing
Lower Chord: Double back-to-back angles (L0-L2, L4-L6: 2 ½" x 2 ½"); L2-L4: 3 ½" x 3 ½"), tied with batten plates (spread "+" section)
Verticals: L1-U1, L2-U2, etc.: double upright channels (7") with V-lacing both sides
Diagonals: L2-U1, L4-U5: double back-to-back angles (3 5/8" x 2 5/8"), tied with batten plates ("H" section); L3-U2, L3-U4: double angles (2 ½" x 3"), tied with batten plates ("U" section)
Counters: L2-U3, L4-U3: double angles (2 ½" x 3"), tied with batten plates ("U" section), and spliced at crossing of diagonals
Floor System: Built-up floor beams, riveted to gusset-plate connections at ends of verticals; rolled-section stringer I-beams; concrete deck with cast-grate drains
Bracing: **Top laterals:** Double angles tied with V-lacing; **Top struts:** Double back-to-back angles tied with X-lacing; **Top sway:** Single angles; **Portal:** Double angles with V-lacing; **Bottom laterals:** Single angles
Bearings: Rockers with center key on east end; fixed plates on west end

Summary Description

The Beyer Bridge (P-42-042) is a single span, metal, riveted, Pratt, overhead truss, highway bridge. It carries Smyth Road over the North Branch of the Oconto River in a rural, wooded area of Oconto County. The overall length is 93' and the span length is 90'; overall width is 26' and the roadway width is 23'. The bridge design is a late adaptation of the Pratt overhead configuration, with the predictable diagonals and counters, but with the counters (L2-U3, L4-U3) being scarcely discernable from the diagonals, and identified only by the fact that they are spliced (in order to cross and pass the diagonals) where the more familiar counter would have a turnbuckle. The bridge employs heavy built-up members, including the floor beams, with gusset-plate riveted connections, typical of metal truss construction during the period 1926-31. There are no bridge sidewalks, but there is a curved-end, X-laced railing on the roadway side of each truss. The bridge was designed by the Wisconsin State Highway Commission (A), fabricated by Milwaukee Bridge Company, and constructed by Garvey-Weyenberg Construction Company in 1928

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-42-042

(B). The bridge retains integrity of design, construction, and setting, with the minor exception of a redecking that was completed in 1983 (C).

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1928

Beyer Bridge (P-42-042) is significant as an unaltered representative example of a Pratt overhead truss bridge as designed by the Wisconsin State Highway Commission during the period 1926-31. It displays the proper Pratt design elements, as well as the appropriate construction details, for the period: heavy, built-up members, with riveted, gusset-plate connections.

Sources of Information (Reference to Above)

- A. Beyer Bridge Plans (P-42-042), 1928. Microfilm copy. Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- B. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.
- C. Bridge P-42-042 Redecking Plans (1983). Drawn by Foth and Van Dyke. Copy in Oconto County Highway Department, Oconto.

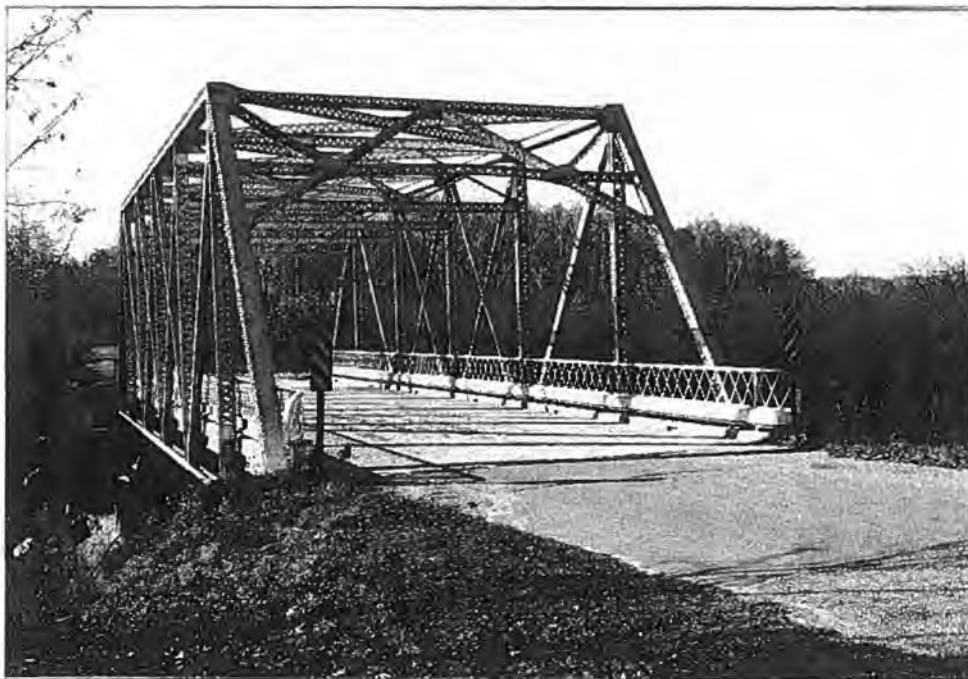
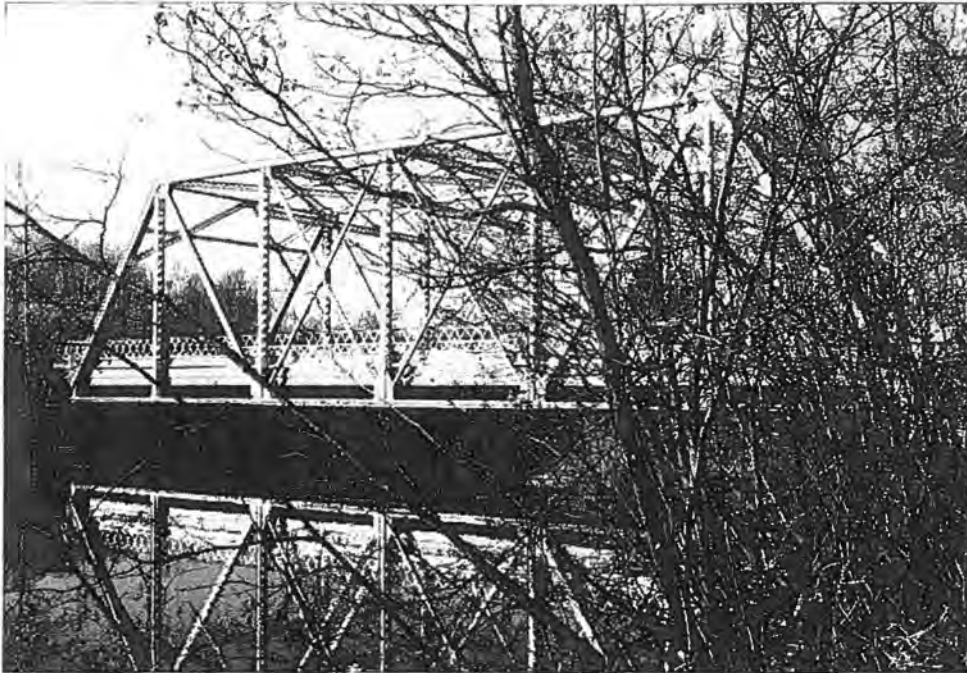
National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 21, 1986 Surveyor: Robert M. Frame III

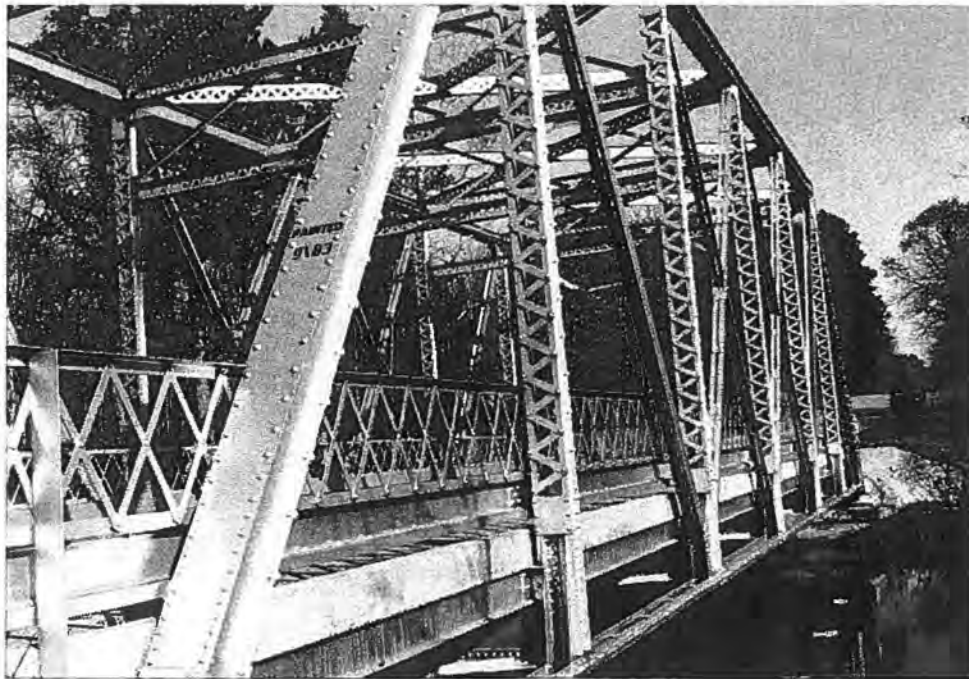
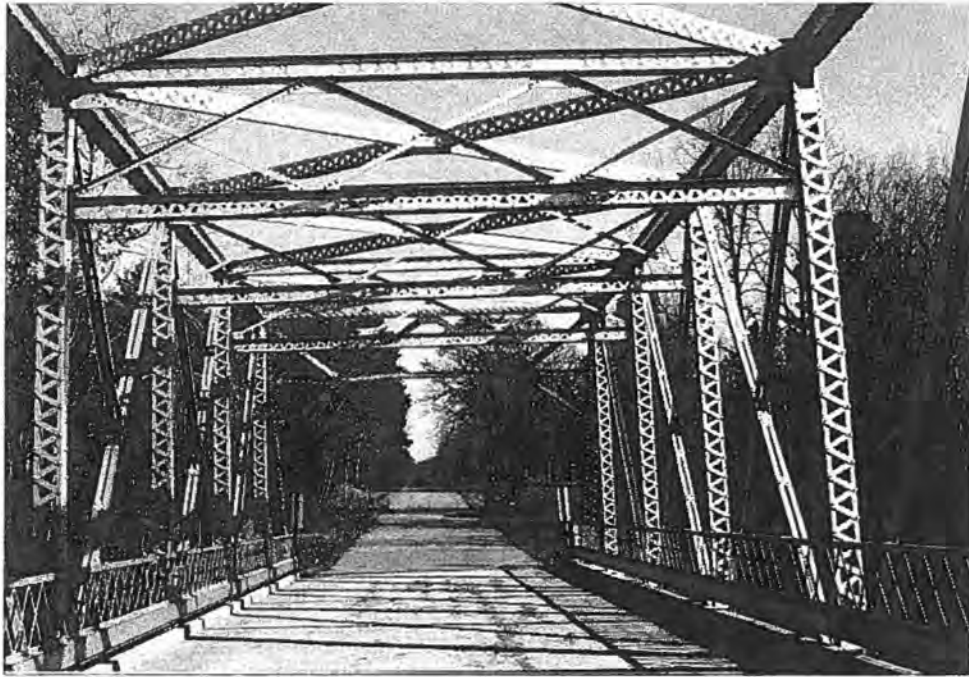
Documentation: National Register Nomination, 1996

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-42-042



Beyer Bridge (P-42-042), Town of Lakewood, Oconto County
Top: South elevation - Source: J.A. Hess, 1986
Bottom: East approach - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-42-042



Beyer Bridge (P-42-042), Town of Lakewood, Oconto County
Top: Barrel view - Source: J.A. Hess, 1986
Bottom: South elevation - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-42-081

WISDOT Designation: P-42-081
Historic Name: Van Laenen Road Bridge
Other Name:
Current Owner: Town of Stiles
Year Built: 1906
Engineer: Unknown
Fabricator: Unknown
Contractor: Unknown
Status: Road closed as of 1996

Geographical Data

County: Oconto
City, Village or Town: Town of Stiles
Legal Description: Section 34, Town 28N, Range 20E
Crossing: Van Laenen Road over Oconto River
Sketch Diagram (For survey photos, see contact sheet 02014/6)

Technical Data

Bridge Category: Metal overhead truss
Spans--No./Type: 1 Pratt span (140')
Connection Type: Pinned
Substructure: Metal tubes with metal retaining walls
Overall Length x Width: 141'6" x 16'1"
Inclined End-Post/Upper Chord: L0-U1-U7-L8: double upright channels (9") with cover plate (16"), tied with V-lacing.
Lower Chord: Double rectangular punched eyebars (L0-L2, L6-L8: 3" x 9/16"; L2-L3, L5-L6: 3 1/2" x 1"; L3-L5: 4" x 1")
Verticals: L1-U1, L7-U7: rectangular punched eyebars (3" x 3/4"); L2-U2, L3-U3, etc.: double channels with V-lacing on both sides
Diagonals: L2-U1, L3-U2, etc.: double rectangular punched eyebars
Counters: L3-U4, L4-U4: cylindrical eyebars with turnbuckles
Floor System: Rolled-section floor I-beams, riveted to vertical ends or plate hangers, above lower chord; rolled-section stringer I-beams (some with wood bolted alongside); corrugated metal deck with bituminous overlay
Bracing: **Top laterals:** Rods; **Top struts and sways:** Double angles with X-lattice web; **Bottom laterals:** Threaded rods
Bearings: Expansion plates on south end; fixed plates on north end

Summary Description

Bridge P-42-081 is a single span, metal, pin-connected, Pratt overhead truss, highway bridge. The bridge carries Van Laenen Road over the Oconto river in rural Oconto County. Overall length is 141'6" and the span length is 140'; overall width and roadway width are both 16'1". The design exhibits the basic Pratt elements, with verticals in compression, diagonals in tension, and turnbuckled counters to stiffen the truss. The construction is typical for the 1895-1910 era (C), having built-up sections employing channels and angles, with pin connections. The floor beams are rolled section. The bridge is seated on metal tubes and metal retaining walls, indicative of pre-State Highway Commission abutment and seat specifications, although there is no particular indication of abutment washout (B). Another early element is the corrugated metal deck. The bridge retains design, construction, and contextual integrity.

Statement of Significance

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-42-081

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1906

Bridge P-42-081, built in 1906, is significant as an unaltered representative example of the Pratt overhead truss, as designed prior to the advent of the Wisconsin State Highway Commission. It exhibits the appropriate Pratt truss design characteristics, as well as the typical construction elements for the 1895-1910 period, including built-up members joined with pin connections. Additionally, the bridge retains original metal tube seats and abutments with metal retaining walls, and the original corrugated deck. Today the bridge is closed to vehicular traffic. According to the 1981 study by the Historic Bridge Advisory Committee, P-42-081 is one of the best extant examples out of only 32 surviving bridges of this type in the state (C).

Sources of Information (Reference to Above)

- A. File for bridge P-42-081, includes "Bridge Inventory Report," 1979, by Donohue & Associates, Inc., Consulting Engineers, Sheboygan, Wis. Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- B. Brue, Hans Nelson. "The Development of Highway Bridges in Wisconsin," M.S. thesis, U of Wisconsin, 1916.
- C. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

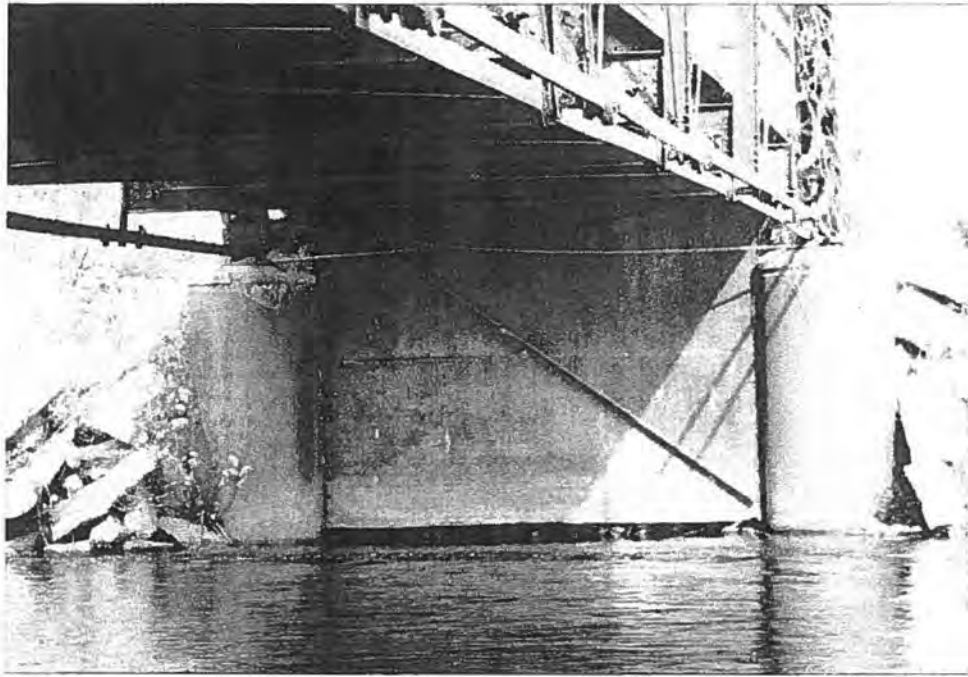
Date of Survey: October 22, 1986 Surveyor: Robert M. Frame III

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-42-081



Van Laenen Road Bridge (P-42-081), Town of Stiles, Oconto County
West elevation - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-42-081

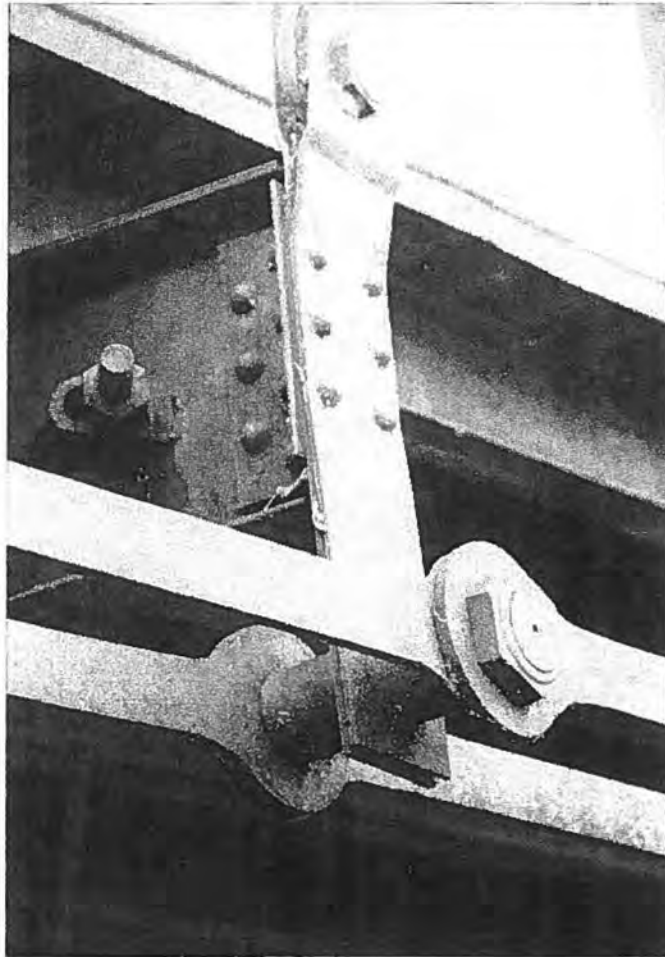


Van Laenen Road Bridge (P-42-081), Town of Stiles, Oconto County
Beneath deck - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-42-081



Van Laenen Road Bridge (P-42-081), Town of Stiles, Oconto County
South approach - *Source: J.A. Hess, 1986*



Van Laenen Road Bridge (P-42-081), Town of Stiles, Oconto County
Detail of hanger connection - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-42-901

WISDOT Designation: P-42-901
Historic Name: Iron Bridge Road Bridge
Other Name:
Current Owner: Town of Armstrong
Year Built: 1906
Engineer: [Wisconsin Bridge and Iron Company?] (A)
Fabricator: [Wisconsin Bridge and Iron Company?] (A)
Contractor: Unknown
Status: Extant as of 1996

Geographical Data

County: Oconto
City, Village or Town: Town of Armstrong
Legal Description: Section 4, Town 31N, Range 16E
Crossing: Iron Bridge Road over the North Branch of the Oconto River
Sketch Diagram (For survey photos, see contact sheet 02014/7)

Technical Data

Bridge Category: Metal pony truss
Spans--No./Type: 1 Warren standard span (55'3"), continuous top chord
Connection Type: Riveted
Substructure: Rubble stone abutments and wing walls
Overall Length x Width: 58' x 15'
Inclined End-Post/Upper Chord: L0-U1-U7-L8: continuous back-to-back angles (4" x 3"; "T" section)
Lower Chord: L0-L8: back-to-back angles (L0-L2, L6-L8: 2 1/2" x 3 1/2"; L2-L6: 3" x 5") (right angle "Z" section)
Verticals: L1-U1, L2-U2, etc.: single angles (2 1/2" x 2)
Diagonals: Back-to-back angles (L2-U1, L6-U7: 2 1/2" x 3 1/2"; L2-U3-L4-U5-L6: 2 1/2" x 2") ("T" section)
Counters: None
Floor System: Rolled-section floor I-beams, riveted via angles to gusset plates at L2, L4, and L6; rolled-section stringer I-beams; irregular wood-plank deck
Bracing: **Bottom laterals:** Threaded rods; **Side knee bracing:** Rotated angle with splayed foot, from U2, U4, and U6, to extended floor-beam end at L2, L4, and L6
Bearings: All bearings consists of large angle plates wrapped around L0 and L8, termed "steel on steel"(B)

Summary Description

Bridge P-42-901 is a single span, metal, riveted, Warren standard (continuous top chord) pony truss highway bridge. Appropriately, it carries Iron Bridge Road over the North Branch of the Oconto River in a forested area of rural Oconto County. Overall length is 58' and span length is 55'3"; overall width is 15', with a narrow 13'7" roadway. The design of the bridge is a Warren standard configuration, with indeterminate compression/tension diagonals, and with verticals at every panel point to stiffen the truss web. A major design element differentiating this bridge from other Warren standard bridges is the top chord which is continuous through the inclined endposts, with no connections. Overall, the construction employs very light members, built up entirely of angles, except for the floor beams and stringers, which are rolled-section I-beams. Even the continuous top chord is composed of only two angles, back-to-back in "T" section, and of very light weight compared to the conventional top chord built of channels and plates in box section. The single-angle verticals also are very light. The bearings are unusual, being simply large angle plates, wrapped around the end connection which is a riveted gusset plate. The bridge's light construction, rubble stone masonry, and irregular timber plank deck, all contribute to a structure in aesthetic harmony with its rural, wooded setting. Additionally, the bridge retains integrity of design and structure. Although the builder's plate is missing from the structure, the general

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-42-901

design and construction are similar to continuous top chord bridge P-34-060, known to have been built by the Wisconsin Bridge and Iron Company, one of only two firms known to have built such designs in the state (A).

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1906

Bridge P-42-901, built in 1906, is significant as a representative example of the Warren standard truss with continuous top chord. This bridge was selected by the Historic Bridge Advisory Committee as one of the two best examples of the state's 43 bridges of the same type (A). It exhibits the general Warren design characteristics, including the "W" web configuration with stiffening verticals at all panel points, with riveted connections. Of note, however, is the continuous top chord, a design element attributed to only two builders operating in Wisconsin. In terms of construction, the bridge is typical of the period, having very light, built-up members. In fact, with the back-to-back angle top chord, this truss is even lighter than most of its contemporaries. Based on an analysis of design and construction, this bridge is believed to have been built by the Wisconsin Bridge and Iron Company, reported by HBAC to be a "known prolific Wisconsin builder" and therefore of significance.

Sources of Information (Reference to Above)

- A. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.
- B. "Annual Bridge Inspection Report" for P-42-901, 1985. Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 21, 1986 Surveyor: Robert M. Frame III

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-42-901



Iron Bridge Road Bridge (P-42-901), Town of Armstrong, Oconto County
Top: South elevation - Source: J.A. Hess, 1986
Bottom: Detail of south elevation - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-42-901



Iron Bridge Road Bridge (P-42-901), Town of Armstrong, Oconto County
Detail of northeast endpost connection - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-45-700

WisDOT Designation: P-45-700

Historic Name:

Other Name: Bridge Street Bridge

Owner: Village of Grafton

Year Built: 1888

Engineer: Unknown

Fabricator: Wisconsin Bridge and Iron Company of Wauwatosa

Contractor: Wisconsin Bridge and Iron Company of Wauwatosa

Status: Moved in 1996

Geographical Data

County: Ozaukee

City, Village, or Town: Village of Grafton

Legal Description: Section 24, Town 10N, Range 21E

Crossing: Bridge Street over Milwaukee River

Sketch Diagram (For survey photos, see contact sheet 79139/4)

Technical Data

Bridge Category: Metal overhead truss

Spans--No./Type: 1 Pratt span (109'2")

Connection Type: Pinned

Substructure: Rubble fieldstone abutment on west end; concrete abutment on east end

Overall Length x Width: 113'1" x 17'

Inclined Endpost/Upper Chord: L0-U1-U6-L7: double upright channels (8" x 2") tied with cover plate (12" x 3/8") and batten plates

Lower Chord: Dimensions progressively increasing toward middle panel; L0-L2, L5-L7: double rectangular-section eyebars (1 3/4" x 3/4" on south; 2 1/4" x 3/4" on north); L3-L4: double, rectangular-section eyebars (2 3/4" x 1" on south; 3 1/2" x 1" on north)

Verticals: L1-U1, L6-U6: single rectangular-section eyebar (1 1/2" x 1" on south; 2" x 1" on north); L2-U2, L3-U3, etc.: double channels (6" x 1 3/4") tied with V-lacing

Diagonals: L2-U1, L5-U6: double rectangular-section eyebars (2" x 3/4" on south; 2 1/2" x 1" on north); L3-U2, L4-U5: double rectangular-section eyebars (1" x 1" on south; 2" x 5/8" on north)

Counters: L3-U4, L4-U3: double rectangular-section eyebars (3/4" x 3/4" on south; 1" x 3/4" on north) with turnbuckles

Floor System: Wood decking with metal treads on wood stringers and built-up I-beam girders riveted to verticals above lower chord

Bracing: **Portals:** Single angles; **Top laterals:** Cylindrical eyebars; **Overhead lateral struts:** Back-to-back angles with V-lacing

Bearings: West end, fixed; east end, bronze-plate, slide, expansion bearings, slide-plate expansion bearings

Summary Description

Located immediately below a waterpower dam in the former milling district of Grafton, the bridge crosses the Milwaukee River in an east-west direction. The structure is a metal, overhead truss with a single, pin-connected, Pratt span containing wood decking; metal bumper guards on either side of the roadway; a sidewalk on the north side with a modestly detailed, metal railing; and ornamental bridge plates above each portal. According to the bridge plate, the structure was erected in 1888 by the Wisconsin Bridge and Iron Company of Wauwatosa, Wisconsin. Founded in the 1880s by Frederich Weinhagen, the company was incorporated in 1891 and developed into one of Wisconsin's most important bridge builders, "rapidly cover[ing] the state with Pratt trusses in the last decade of the nineteenth century and early years of the twentieth century" (B).

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-45-700

In addition to pedestrian and vehicular traffic, the bridge also carries utilities across the river: hung from the lower chord are a sewer main on the south side and a water main on the north side. Apparently because of the unequal loading of the two mains, the tensions members in the north-side web are considerably heavier than those in the south-side. Since utilities were almost certainly added to the bridge after its construction, the web disparity is probably an alteration. In 1977, the Bridge Road Bridge was struck by a vehicle and partially dislodged from its abutments. The ensuing repair work included the reconstruction of the portal bracing according to the original lattice-like design and the addition of new wood decking, new bearings, and a new concrete abutment at the east end to replace the original fieldstone abutment (C). A few weeks after the repairs were completed, the bridge was involved in another traffic accident. This time the portals were rebuilt without regard to the original decorative pattern.

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of Significance: 1888

Retaining the essential features of its original design, the Bridge Road Bridge is one of only four metal, overhead, highway trusses surviving in Wisconsin from before 1890. As the Wisconsin Historic Preservation Division has already noted: "Because of the dwindling number, all should be considered significant" (D). The bridge typifies this early period of metal truss design in its relatively light, built-up structural members in the web; built-up floor girders; wood decking; pin connections; and ornamental bridge plate. The bridge is also significant as one of the earliest surviving structures built by the Wisconsin Bridge and Iron Company, a major Wisconsin bridge builder of the late nineteenth and early twentieth century (C, D). On a local level, the bridge is significant as a century-old landmark, displaying highly unusual longevity for a metal truss bridge in an urban area. The retention of the ornamental bridge plate during two remodelings in the late 1970s demonstrates local sensitivity to the bridge's historic status.

Sources of Information (Reference to Above)

- A. Bridge Plate.
- B. Danko, George M. "A Selective Survey of Metal Truss Bridges in Wisconsin." M.S., State Historical Society of Wisconsin-Historic Preservation Division, Madison, Wis., 1977, p.85.
- C. Graff, Anhalt, Schloermer & Associates. Plans for the Repair of P-45-700, 1977. Company files, Milwaukee, Wis.
- D. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.

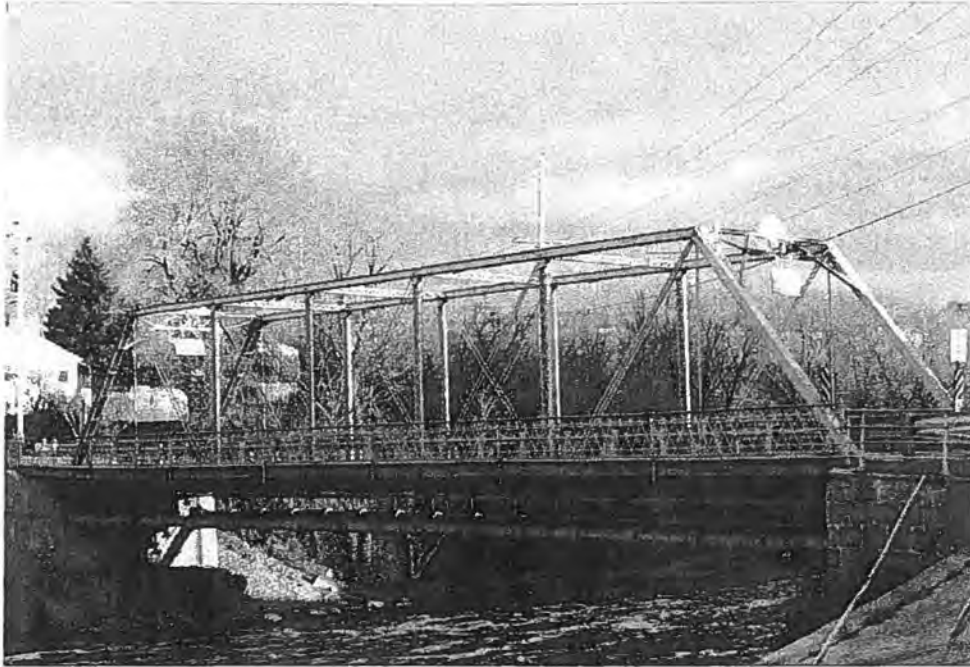
National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 1986 Surveyor: Jeffrey A. Hess

Documentation: Determination of Eligibility, 1994

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-45-700



Bridge Street Bridge (P-45-700), Village of Grafton, Ozaukee County
Top: North elevation - Source: J.A. Hess, 1986
Bottom: North elevation, south side - Source: J.A. Hess, 1986



Bridge Street Bridge (P-45-700), Village of Grafton, Ozaukee County
Bridge plate, west portal - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-45-714

WisDOT Designation: P-45-714
Historic Name:
Other Name: Sauk Creek Bridge
Current Owner: City of Port Washington
Year Built: Unknown
Engineer: Unknown
Fabricator: Unknown
Contractor: Unknown
Year Moved to Site: c.1925
Contractor: Unknown
Status: Extant as of 1996

Geographical Data

County: Ozaukee
City, Village, or Town: City of Port Washington
Legal Description: Section 28, Town 11N, Range 22E
Crossing: Access Road over Sauk Creek in Port Washington Harbor
Sketch Diagram (For survey photos, see contact sheet 79139/4)

Technical Data

Bridge Category: Metal pony truss
Spans--No./Type: 1 king post (40'6")
Connection Type: Riveted and bolted
Substructure: Concrete abutments
Overall Length x Width: 42'3" x 12'5"
Inclined Endposts/Upper Chord: L0-U1-L2: Double upright channels (6 1/2" x 2 1/8") tied with cover plate (10" x 3/8") and V-lacing
Lower Chord: LO-L2: double angles (3" x 4") tied with batten plates at mid-panel
Verticals: L1-U1: back-to-back angles (3" x 4") forming a "Z" section; lower end of verticals are bolted to a tie plate, which is riveted to floor beam
Floor System: Wood decking on rolled I-beam stringers and rolled I-beam floor beam
Bracing: Side bracing, back-to-back angles at point L1
Bearings: North end, fixed; south end, slide-plate expansion bearings

Summary Description

Located on an unnamed service road off South Wisconsin Street in the Port Washington harbor, the bridge spans the mouth of Sauk Creek in a north-south direction. Resting on concrete abutments, it is a metal pony truss of king post configuration, with angle-iron railings, metal bumper guards, and wood decking and curbs. Although formerly open to vehicular traffic, it is now strictly a pedestrian crossing. Its date of construction is unknown. According to the city engineer, the bridge was moved to its present site in "the late 1920s or early 1930s" from its original location over a small stream on Lake Street about 1 mile to the north (A). The king post, however, may have arrived at its present location somewhat earlier. In August 1924, the "normally docile little Sauk Creek . . . rampaged through Port Washington," destroying the city's major bridges and wreaking havoc in the harbor area (B). It seems reasonable to surmise that the bridge was relocated to the harbor shortly after the flood to replace a washed-out structure. If such were indeed the case, it might explain the 1925 construction date listed for the structure in the WisDOT bridge files.

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-45-714

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of Significance: c.1925

Retaining full design integrity, the Sauk Creek Bridge is significant as Wisconsin's only known example of a metal, king post truss bridge. With a pedigree extending back to the Middle Ages, the timber king post is generally considered to be the most ancient of truss configurations. In 1916, Hans Nelson Brue noted that the type was "quite common [in Wisconsin] with spans ranging from twenty to thirty feet" (C). At present, only one timber, king post truss bridge is known to survive in the state. Listed on the National Register of Historic Places, it was built near La Crosse in 1920 by the Clinton Bridge Company of Clinton, Iowa (D). Two vernacular, wood-and-metal, king post truss bridges, both built in Portwing in the early 1950s, have also been identified (E). The Sauk Creek Bridge, however, is unique for its all-metal, king post construction.

Sources of Information (Reference to Above)

- A. Hightower, Barbara E. Interview with Robert Dreblow, Port Washington City Engineer, 30 October 1986.
- B. Port Washington, 1835 to 1985. Port Washington: Port Publications, 1985, p. 25.
- C. Brue, Hans Nelson. "The Development of Highway Bridges in Wisconsin," M.S. thesis, U of Wisconsin, 1916, p. 5.
- D. Brown, George C. "National Register Nomination for Loon Wildlife Area Truss Bridge Group." M.S., State Historical Society of Wisconsin-Historic Preservation Division, 1979.
- E. Intensive Survey Forms for P-04-043 and P-04-044.

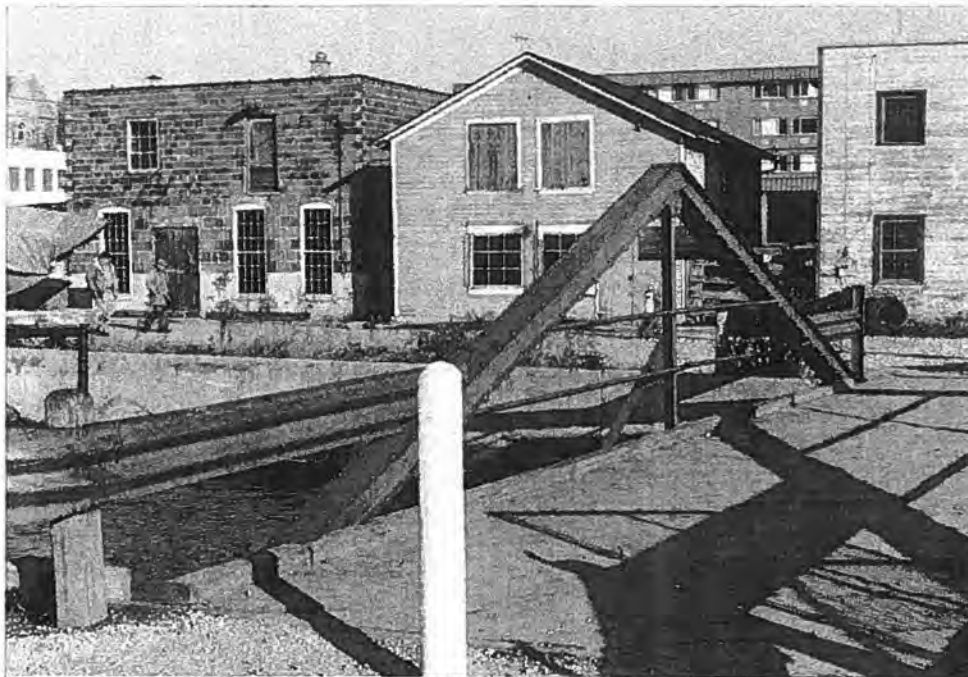
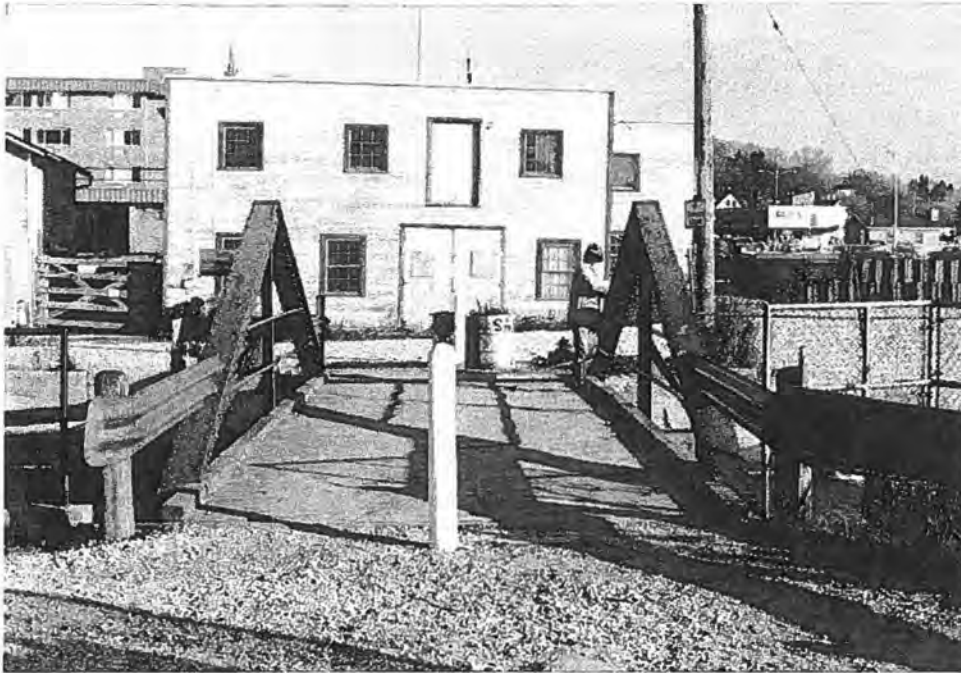
National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: November 1986 Surveyor: Jeffrey A. Hess

Documentation: Determination of Eligibility
HAER No. WI-40

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-45-714



Sauk Creek Bridge (P-45-714), City of Port Washington, Ozaukee County
Top: Approach - Source: J.A. Hess, 1986
Bottom: West elevation, east side - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-45-714



Sauk Creek Bridge (P-45-714)
City of Port Washington, Ozaukee County
East elevation - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-50-090

WISDOT Designation: P-50-090

Historic Name: Kennan-Jump River Bridge

Other Name:

Current Owner: County of Price

Year Built: 1924

Engineer: Wisconsin State Highway Commission (A)

Fabricator: Unknown

Contractor: J.F. McCombs (B)

Status: Replaced in 1989

Geographical Data

County: Price

City, Village or Town: Town of Kennan

Legal Description: Sections 27/28, Town 34N, Range 2W

Crossing: County Trunk Highway N over South Fork Jump River

Sketch Diagram (For survey photos, see contact sheet 02014/1)

Technical Data

Bridge Category: Metal overhead truss

Spans--No./Type: 1 Camelback span (140')

Connection Type: Riveted

Substructure: Concrete abutments and wing walls

Overall Length x Width: 142'10" x 20'

Inclined End-Post/Upper Chord: L0-U1-U7-L8: double upright channels (10") with cover plate (16"), tied with V-lacing

Lower Chord: Double back-to-back angles (L0-L2, L6-L8: 3 ½" x 2 ½"; L2-L6: 4" x 3"), tied with batten plates ("+" section)

Verticals: L1-U1, L2-U2, etc.: double upright channels with V-lacing both sides

Diagonals: L2-U1, L3-U2, etc.: double angles tied with batten plates ("U" section)

Counters: None

Floor System: Rolled-section floor I-beam, riveted to vertical extension; rolled-section stringer I-beams

Bracing: Top laterals: Rods; top struts sway bracing: back-to-back angle struts with single angle X-web; **Bottom laterals:** Angles

Bearings: Fixed plates on north end; cast rocker bearings on south end

Summary Description

The Kennan-Jump River Bridge (P-50-090) is a single span, metal, riveted, overhead camelback-truss highway bridge. It carries County Trunk Highway N over the South Fork of the Jump River. The design follows the basic Pratt configuration with a polygonal top chord with exactly five slopes, creating the camelback truss. The construction employs built-up members of channels, angles, lacing, and batten plates, with the typical exception of rolled-section floor beams and stringers. Connections are riveted. The expansion bearings are cast rockers. The bridge was designed by the Wisconsin State Highway Commission using a standard 140' camelback plan, with the fabricator to prepare the working drawings. The construction was begun in 1924 and completed in 1925. J.F. McCombs was the contractor. (B) The bridge retains integrity of design, construction, and setting.

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-50-090

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1924

Jump River Bridge (P-50-090) is significant as an unaltered representative overhead, camelback truss, highway bridge as designed by the Wisconsin State Highway Commission. In addition, it is representative of the metal truss construction elements of the early Highway Commission period, 1911-25, employing built-up members of channels and angles, with riveted connections. The State Historic Bridge Advisory Committee determined that Jump River Bridge is one of only two camelback overhead trusses extant in Wisconsin in 1986 (B).

Sources of Information (Reference to Above)

- A. Plans for Jump River Bridge (P-50-090), 1924. M1328. Microfilm copy. Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- B. "Documentation for determination of eligibility for Project ID 8715-02-00, South Fork Jump River Bridge" (1986), in Bridge P-50-090 file. State Historical Society of Wisconsin-Historic Preservation Division, Madison, Wis.
- C. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 20, 1986 Surveyor: Robert M. Frame III

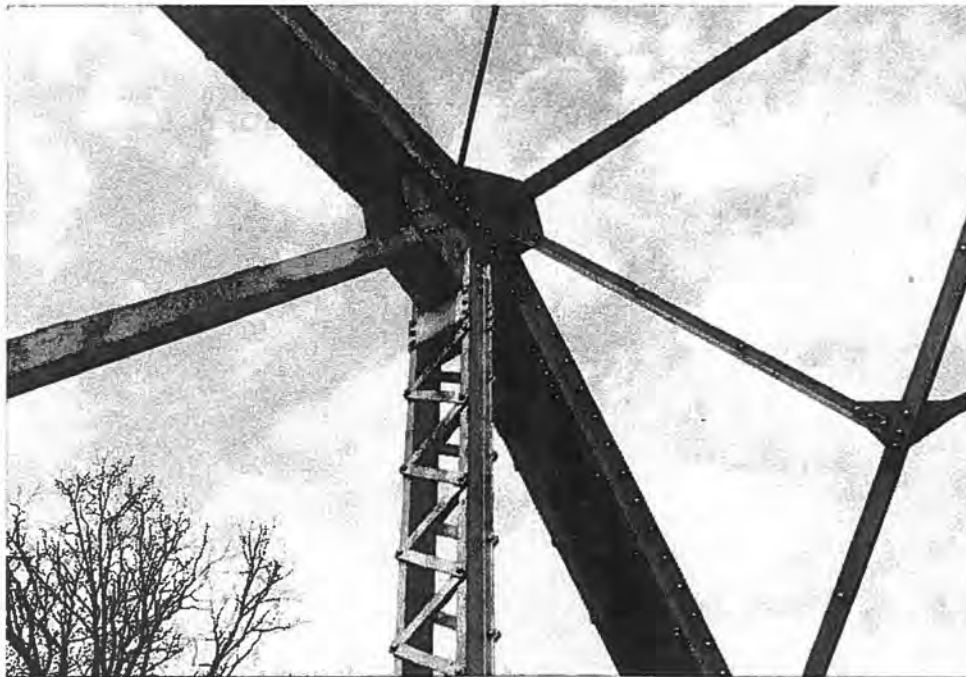
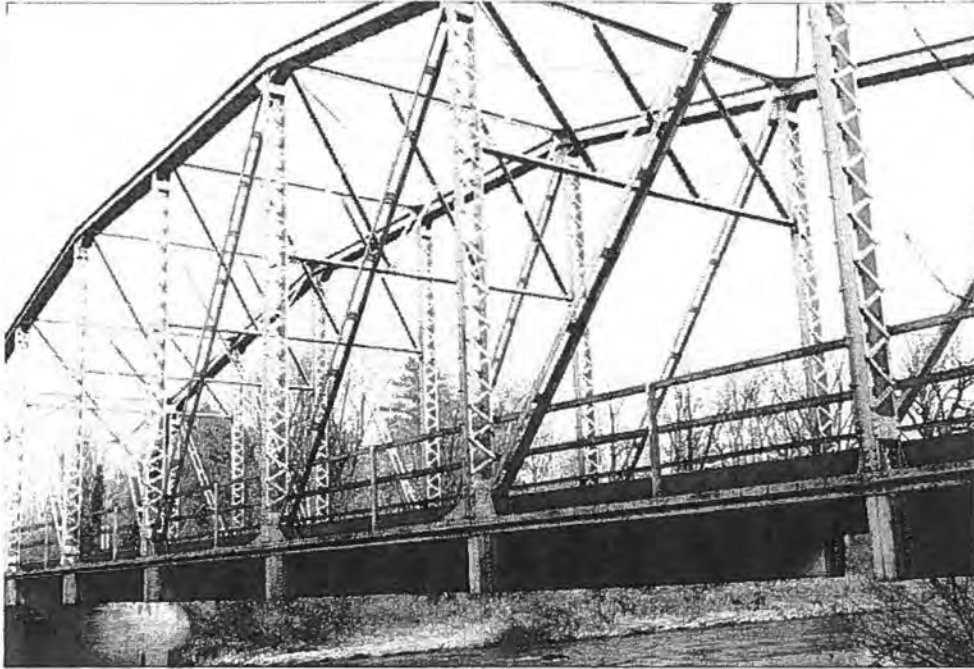
Documentation: HAER No. WI-55

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-50-090



Kennan-Jump River Bridge (P-50-090), Town of Kennan, Price County
Top: West elevation - Source: J.A. Hess, 1986
Bottom: South approach - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-50-090



Kennan-Jump River Bridge (P-50-090), Town of Kennan, Price County
Top: West elevation, north end - Source: J.A. Hess, 1986
Bottom: Detail of connection - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-52-049

WISDOT Designation: P-52-049
Historic Name: Bowen's Mill Bridge (A)
Other Name:
Current Owner: County of Richland
Year Built: 1907
Engineer: Unknown
Fabricator: Unknown
Contractor: Unknown
Bridge Moved In: 1966
Status: Moved and stored in 1994

Geographical Data

County: Richland
City, Village or Town: Town of Richland
Legal Description: Section 4, Town 10N, Range 1E
Crossing: County Trunk Highway AA over Pine River
Sketch Diagram (For survey photos, see contact sheet 79157/1)

Technical Data

Bridge Category: Metal overhead truss
Spans--No./Type: 1 Pratt span (114'3")
Connection Type: Pinned
Substructure: **South abutment:** Concrete; **North abutment:** Stone with concrete bridge seat; bridge is longer than original abutments at the site
Overall Length x Width: 118'8" x 18'
Inclined End-Post/Upper Chord: L0-U1-U6-L7: double upright channels (10") with cover plate (14"), tied with V-lacing
Lower Chord: L0-L7: double rectangular punched eyebars (3 1/2" x 7/8")
Verticals: L1-U1, L2-U2, etc.: double upright channels with V-lacing both sides
Diagonals: Double rectangular punched eyebars (L2-U1, L5-U6: 3" x 1"; L3-U2, L4-U5: 2" x 3/4")
Counters: L3-U4, L4-U3: double square looped eyebars (7/8") with open turnbuckles
Floor System: Rolled-section floor I-beams, riveted to plate hangers at panel points; rolled-section stringer I-beams; vertical wood plank deck with bituminous overlay
Bracing: **Top laterals:** Square bars; **Top struts:** Double back-to-back angles with X-lacing; **Bottom laterals:** Threaded square rods (1 1/8")
Bearings: Fixed plates on south end; expansion plates on north end

Summary Description

Bowen's Mill Bridge (P-52-049) is a single span, metal, pinned, Pratt overhead truss highway bridge. It carries County Trunk Highway AA over the Pine River in rural Richland County. Beneath the bridge is the dam which was erected for the mill which gave the bridge its name. The bridge was moved to the site in 1966 (A) and extends over and beyond both original abutments. The design follows the basic Pratt truss configuration, with verticals in compression and diagonals in tension. The bridge reportedly was built in 1907 (A), and the construction is appropriate for the time, employing built-up members joined with pin connections. Only the floor beams and stringers are rolled. Although the bridge was moved, it retains integrity of design and construction. According to WisDOT records, the present structure is one span of the bridge which crossed the Wisconsin River at Spring Green, connecting Sauk and Iowa counties, and which collapsed in 1948. The 1966 re-erection was completed by V.J. Valentine, contractor (A).

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-52-049

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1907

Bowen's Mill Bridge (P-52-049), built in 1907, is significant as a representative example of the metal, overhead, Pratt highway truss for the period 1895-1910, the era just prior to the advent of the State Highway Commission-designed truss. This bridge exemplifies the basic Pratt design, as well as the appropriate construction techniques, including built-up members and pin connections. It retains integrity of design and construction. Bowen's Mill Bridge was selected by the State Historic Bridge Advisory Committee in 1983 as one of the best examples of Pratt overhead trusses for the period, out of 32 extant structures in Wisconsin (B). Since the structure was moved to the site in 1966, it has lost its original integrity of setting; however, as the State Historic Preservation Office report on metal truss bridges points out, "such mobility would be viewed as proof of the intrinsic engineering value of iron trusses" (B).

Sources of Information (Reference to Above)

- A. File for bridge P-52-049, includes "Bridge Inventory Report," completed by Barrientos and Associates, Inc., Madison, Wis., 1979, and "Structure Condition Survey," which includes information on the bridge move, 1966. Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- B. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.

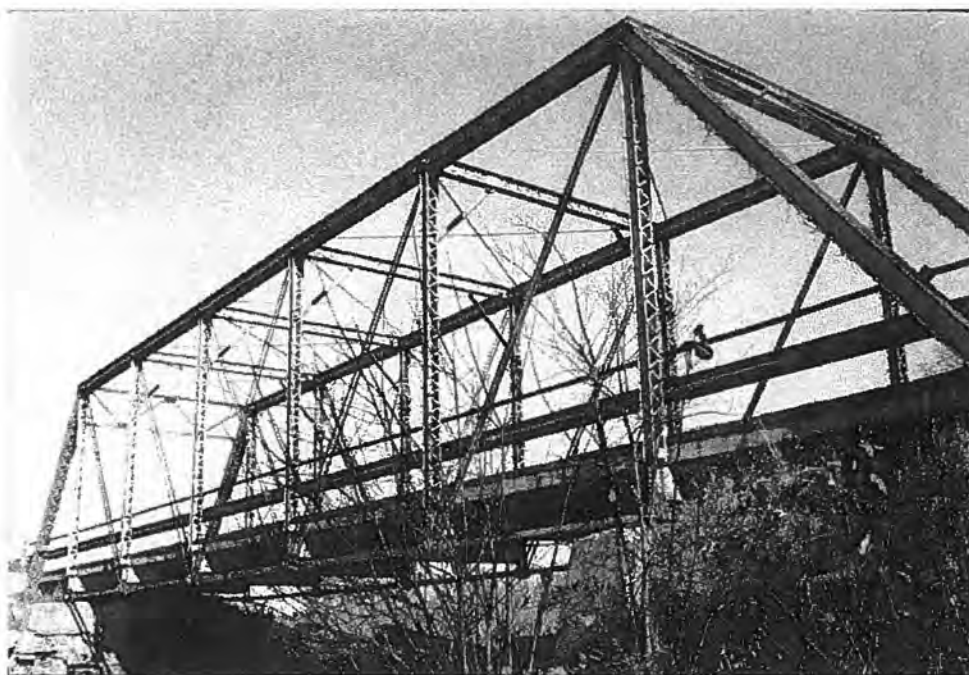
National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: November 4, 1986 Surveyor: Robert M. Frame III

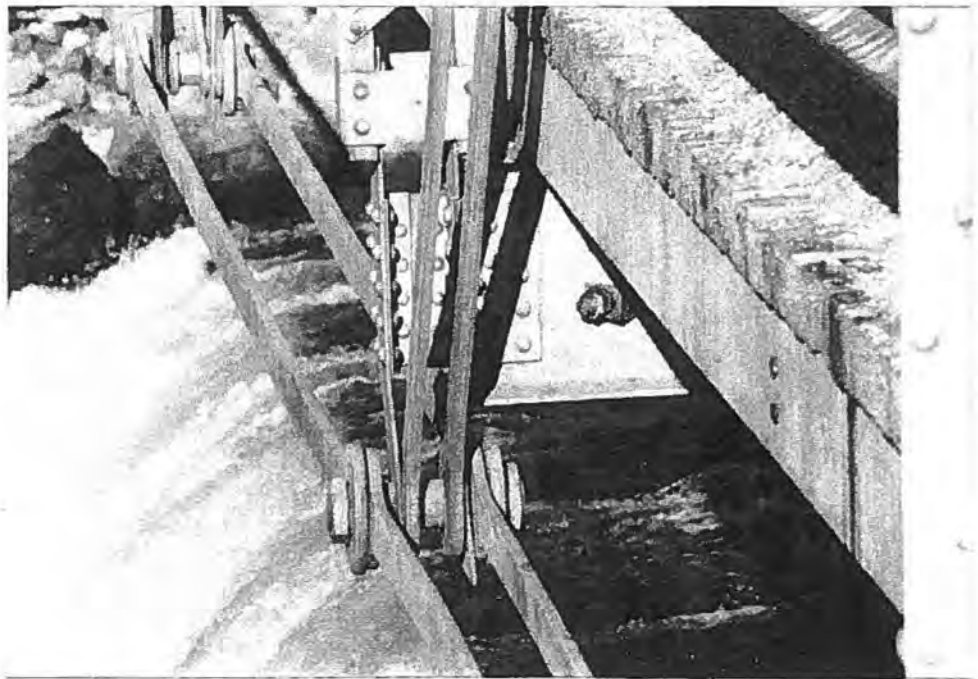
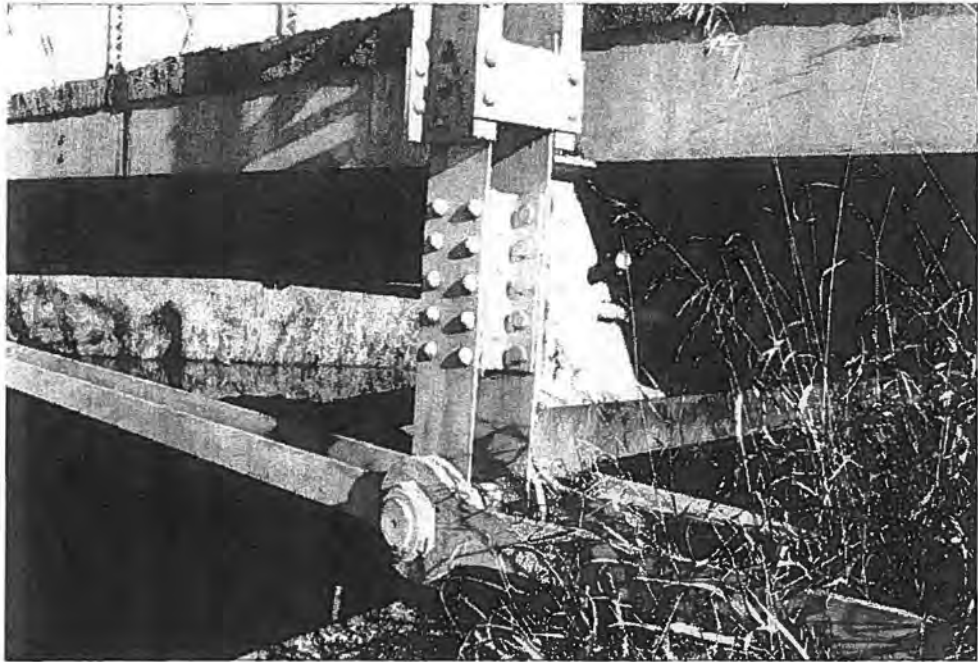
Documentation: Determination of Eligibility, 1990
HAER No. WI-67

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-52-049



Bowen's Mill Bridge (P-52-049), Town of Richland, Richland County
Top: West elevation - Source: J.A. Hess, 1986
Bottom: Detail of west elevation - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-52-049



Bowen's Mill Bridge (P-52-049), Town of Richland, Richland County
Top and bottom: Detail of hanger - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-52-224

WISDOT Designation: P-52-224
Historic Name: Bear Creek Bridge
Other Name:
Current Owner: Town of Buena Vista
Year Built: 1886 (A)
Engineer: Penn Bridge Works (A)
Fabricator: Penn Bridge Works (A)
Contractor: Unknown
Status: Extant as of 1996

Geographical Data

County: Richland
City, Village or Town: Town of Buena Vista
Legal Description: Section 1, Town 9N, Range 2E
Crossing: St. Killian Road over Bear Creek
Sketch Diagram (For survey photos, see contact sheet 79157/1)

Technical Data

Bridge Category: Metal pony truss
Spans--No./Type: 1 Pratt half-hip span (39')
Connection Type: Pinned
Substructure: Concrete abutments, seats, and wing walls
Overall Length x Width: 41' x 13'6"
Inclined End-Post/Upper Chord: L0-U1-U4-L5: double upright channels (4 7/8"), tied with V-lacing on top and bottom (9 1/2" out-out chord width)
Lower Chord: Double rectangular looped eyebars (L0-L2, L3-L5: 3/4" sq.; L2-L3: 1 1/4" x 3/4")
Verticals: L2-U2, L3-U3: double back-to-back angles, tied with X-lacing ("+" section)
Diagonals: L2-U1, L3-U4: double square looped eyebars (7/8")
Counters: L2-U3, L3-U2: double square looped eyebars (7/8") with upset ends and solid turnbuckles
Floor System: Built-up fish-belly floor beams hung from panel-point pins with square U-bolt; rolled-section floor I-beams with rolled outside channels (which rest on bridge seats and appear to carry bridge load); concrete deck
Bracing: Bottom laterals missing, although there are floor beam holes for threaded rods
Bearings: West bearings appear to be plates not bolted to seat; east bearings are fitted into niches in abutment and seat and appear fixed

Summary Description

Bridge P-52-224 is a single span, metal, pin-connected, Pratt half-hip, pony truss highway bridge. The overall length is 41' and the span length is 39'; both overall width and roadway width are 13'6". The bridge is located in a rural area of Richland County, and carries St. Killian Road over Bear Creek. However, the concrete abutments, seats, and wingwalls are not appropriate to the 1886 (A) construction date of this bridge, and suggest that this bridge has been moved to the site. The fact that the span does not properly fit the abutments, which have been notched to fit the east bearings, support the conclusion that the bridge was moved. The design follows the basic Pratt configuration, with verticals in compression and diagonals in tension. In its half-hip form, there are no hip verticals. And since the span is so short, with only three panels, the center diagonals are counters, in their typical single form and with turnbuckles. As is appropriate for its date, the bridge is constructed almost entirely of built-up members, including the fish-belly floor beams, which are hung by square U-bolts from the pins of this pin-connection structure. An unusual feature is the lack of a cover plate on the top chord and end posts, employing instead V-lacing on top and bottom. All eyebars have looped ends. The substantial rolled channels, serving as the outside stringers, rest directly on the bridge seats

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-52-224

(or on seat shims), and may not be original to the structure. The deck is concrete. The bridge was constructed in 1886 by the Penn Bridge Works of Beaver Falls, Pennsylvania. Other than noted possible alterations, the bridge retains integrity of design and construction.

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1886

Bridge P-52-224, built in 1886, is significant as a representative example of a very early, single span, metal, Pratt half-hip pony truss. It exhibits the basic characteristics of Pratt design in a relatively small scale. Further, its construction technique of built-up members, is typical for the pre-1895 period. Further supporting the date are several notable features, including the built-up fish-belly floor beams and the unusual double-laced top chords and end posts. Given the date, the bridge probably is constructed of wrought iron (C). In 1983, this bridge was one of four such Pratt half-hip pony truss bridges, out of total Wisconsin population of 130, chosen as the states best remaining examples (C). It is by far the oldest bridge in the group, and any truss bridge from the 1880s is significant for its early construction. The builder, Penn Bridge Works of Beaver Falls, Pennsylvania, has been identified by SHSW as a "known prolific out-of-state builder," and therefore of significance (C). Physical evidence suggests that the bridge was moved to the site, although no documentary evidence gives any date or discusses the move. It is possible the abutments simply were rebuilt, but that does not explain the fact that the span is slightly longer than the abutment seats. Nevertheless, as the State Historic Preservation Office points out, the fact that the bridge was moved "should be viewed as proof of the intrinsic engineering value of iron trusses" (C).

Sources of Information (Reference to Above)

- A. Bridge P-52-224 builder's plate, mounted on inside channel of top chord.
- B. File for bridge P-52-224, includes Bridge Inventory Report, prepared c. 1979 by Barrientos & Associates, Inc. Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- C. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges." in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.
- D. Hans Nelson Brue. "The Development of Highway Bridges in Wisconsin." M.S. thesis, U of Wisconsin, 1916.

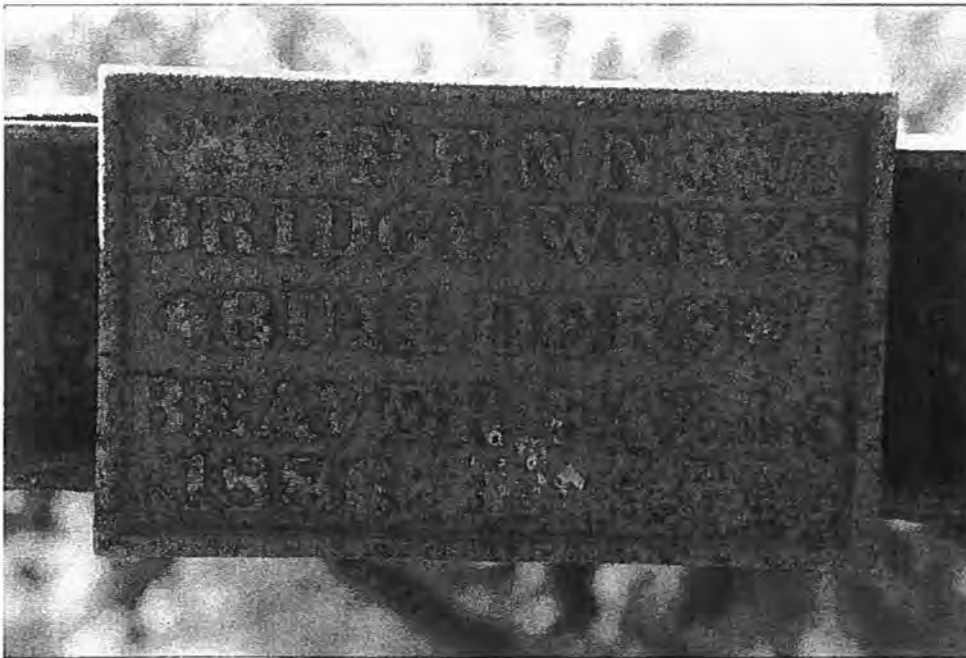
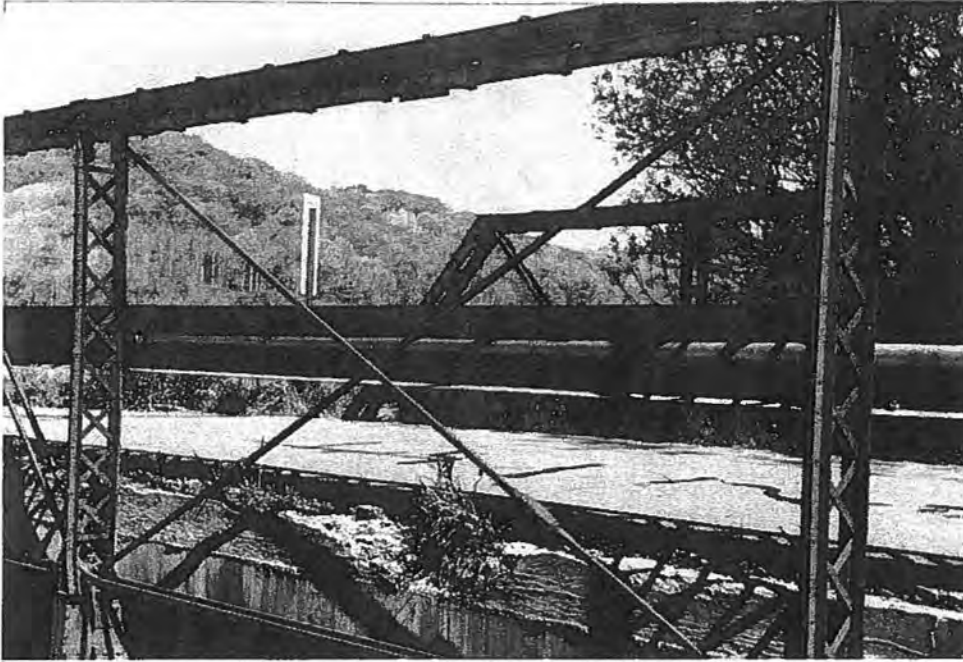
National Register Status

- Listed
- Determined eligible
- Eligible
- Not eligible

Date of Survey: November 4, 1986 Surveyor: Robert M. Frame III

Documentation: HAER No. WI-42

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-52-224



Bear Creek Bridge (P-52-224), Town of Buena Vista, Richland County
Top: Detail of side elevation - *Source: Wisconsin Department of Transportation, 1981*
Bottom: Detail of bridge plate - *Source: Wisconsin Department of Transportation, 1981*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-52-224



Bear Creek Bridge (P-52-224), Town of Buena Vista, Richland County
Detail of pin connection - *Source: Wisconsin Department of Transportation, 1981*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-53-162

WISDOT Designation: P-53-162
Historic Name: Turtleville Iron Bridge (D)
Other Name: Lathers Road Bridge (D)
Current Owner: Town of Turtle
Year Built: 1887
Engineer: Wisconsin Bridge and Iron Company (A,D)
Fabricator: Wisconsin Bridge and Iron Company (A,D)
Contractor: Unknown
Status: Extant as of 1996

Geographical Data

County: Rock
City, Village or Town: Town of Turtle
Legal Description: Section 9, Town 1N, Range 13E
Crossing: Lathers Road over Turtle Creek
Sketch Diagram (For survey photos, see contact sheet 79157/2)

Technical Data

Bridge Category: Metal overhead truss
Spans--No./Type: 1 Pratt span (141'4")
Connection Type: Pinned
Substructure: Rough-coursed stone abutments, seats, and wing walls, with concrete bridge seats under stringer ends
Overall Length x Width: 147'4" x 16'2"
Inclined End-Post/Upper Chord: L0-U1-U7-L8: double upright channels (9 1/8") with cover plate (12"), tied with batten plates
Lower Chord: Double rectangular punched eyebars (L0-L1, L7-L8: 2 1/4" x 3/4"; L1-L2, L6-L7: 2 1/4" x 3/4"; L2-L3, L5-L6: 3 1/4" x 7/8"; L3-L5: 3 1/2" x 1")
Verticals: L1-U1, L7-U7: double square eyebars; L2-U2, L3-U3, etc.: double channels (7"), tied with V-lacing front and back
Diagonals: L2-U1, L6-U7: double rectangular punched eyebars (2 1/2" x 1"); L3-U2, L5-U6: double rectangular punched eyebars (2" x 3/4"); L4-U3, L4-U5: double square looped eyebars (1")
Counters: Single square looped eyebars (7/8") with solid turnbuckles
Floor System: Rolled section floor and stringer I-beams; double threaded U-bolt floor-beam hangers, extended through floor-beam flanges; metal open-grid deck
Bracing: **Top laterals:** Threaded rods; **Lateral struts:** Double back-to-back angles with V-lacing (double struts with threaded-rod cross sway brace at M3 and M5); **Bottom laterals:** Threaded rods; **Portals:** Double back-to-back angles with X-lacing, which is extended above the portal strut to form decorative cresting
Bearings: Fixed plates on south end; roller next expansion bearings on north end

Summary Description

Bridge P-53-162 is a single span, metal, pin-connected, Pratt overhead highway truss bridge. It carries Lathers Road over Turtle Creek in the town of Turtle in once rural, now suburban Rock County. Overall length is 147'4" with a span length of 141'4"; overall width is 16'2" carrying a roadway of 15'4". The design follows the basic Pratt truss configuration, with verticals in compression and diagonals in tension. Construction is appropriate for the pre-1895 period, consisting of built-up members and looped eyebars with pinned connections (lower chord eyebars, however, are punched). The roller-nest bearings also are typical of the period, as are the stone abutments. According to a metallographic examination, the bridge is built of wrought iron (E). Of special note is the decorative portal cresting, created by extending the X-lacing bars above the top portal strut, and the unusual triangular builder's plate. The origin of the floor beams, stringers, and central bridge seat is unclear. The beams are rolled-section, and the stringers

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-53-162

rest directly on a concrete seat (unlike the bearings). The "Bridge Inventory Report" indicates that the stringers are a replacement, probably from another structure (B). The same report indicates that the lower-chord eyebars are out of position on the pins (also visible in the field photographs). These details could be the result of general floor-system repairs. The wood plank deck, a subject of concern to the town in the 1970s, has been replaced with the present metal open grid sometime since 1973 (B). The bridge is the only remaining iron bridge of three over Turtle Creek which were which were contracted for in June, 1887, by the town of Turtle and the Wisconsin Bridge and Iron Company, with a total sum of \$5875 stipulated for the set of three bridges. With the noted exceptions, it retains design, construction, and contextual integrity.

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1887

Turtleville Iron Bridge (P-53-162), built in 1887, is significant as a very early, representative Pratt overhead metal highway truss bridge. The design exhibits the typical Pratt truss configuration. The construction is appropriate for the pre-1895 period, including built-up members, pinned connections, roller-nest expansion bearings, and stone abutments. The origin of the rolled-section floor beams and stringers is unclear, but likely relate to repairs. The bridge has unusual aesthetic interest with its decorative portals and unusual triangular builder's plates. It is an excellent example of the type of bridge the Wisconsin Bridge and Iron Company constructed during the brief period when it utilized wrought iron. This is one of the handful of overhead truss bridges surviving in Wisconsin from the pre-1895 period, and is among the oldest in the group. In 1977, it was added to the National Register of Historic Places. The State Historic Preservation Office has identified the builder, Wisconsin Bridge and Iron Company, as a "known prolific Wisconsin builder," and therefore of significance (C). This bridge is probably one of the few wrought iron trusses built by that company which remain in existence, and in fact was built three years before the company formally incorporated under that name (D).

Sources of Information (Reference to Above)

- A. Bridge P-53-162 builder's plate, mounted above portals.
- B. File for bridge P-53-162, includes "Bridge Inventory Report." Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- C. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.
- D. "National Register Nomination of the Turtleville Iron Bridge." State Historical Society of Wisconsin-Historic Preservation Division, 1977.
- E. Smith, Charles H. "Results of Metallographic Examination of Specimens from Turtle Creek Bridge." Rock County Historical Society, Janesville, Nov. 28. 1976. Referenced in NRHP Nomination Form (D).

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-53-162

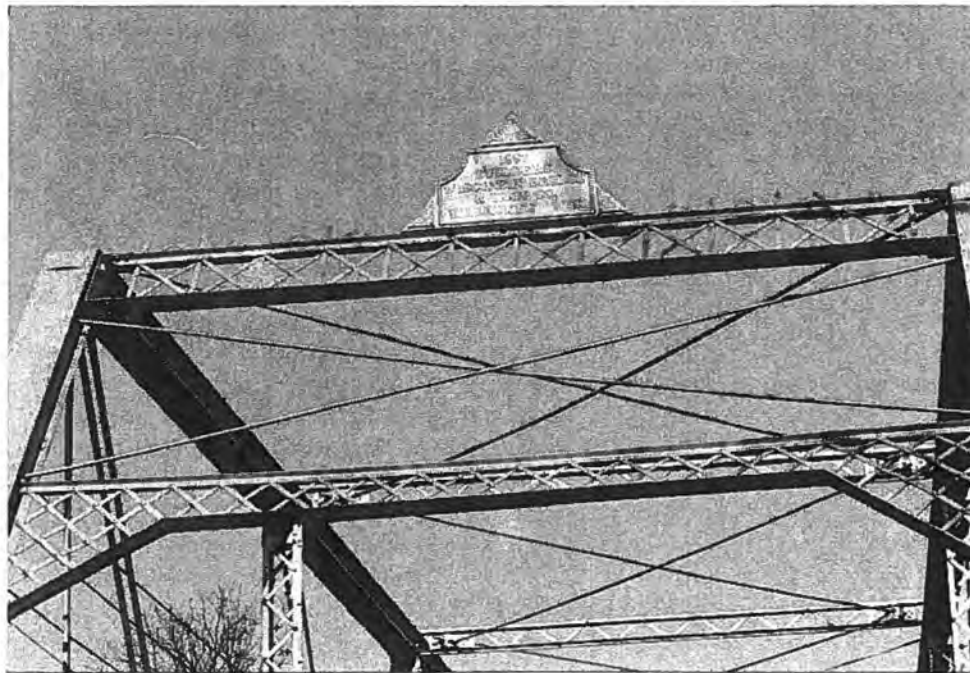
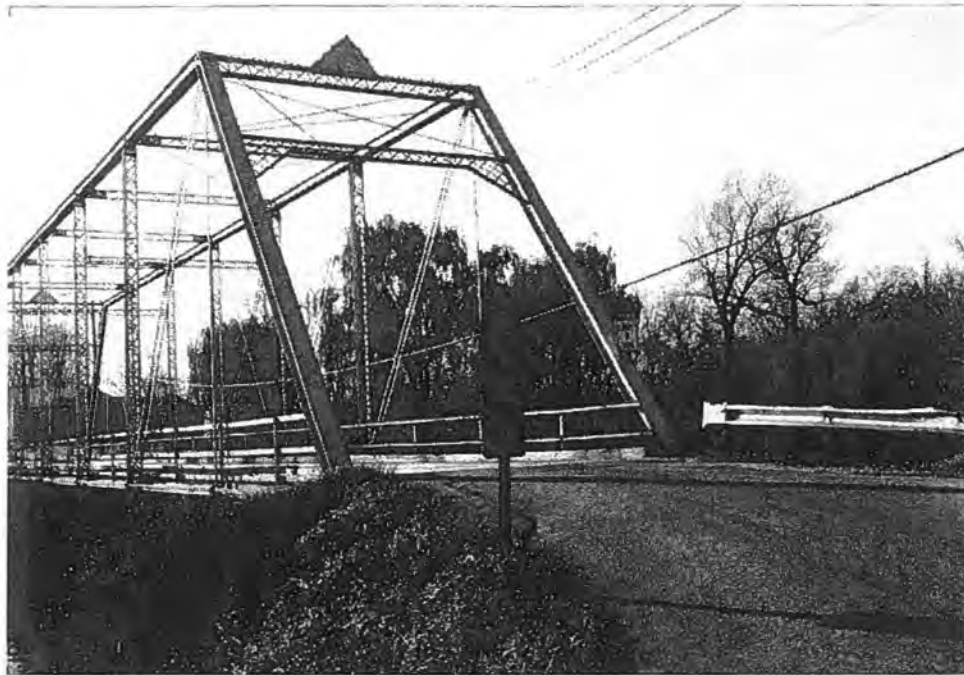
National Register Status

- Listed**
- Determined Eligible**
- Eligible**
- Not Eligible**

Date of Survey: November 5, 1986 Surveyor: Robert M. Frame III

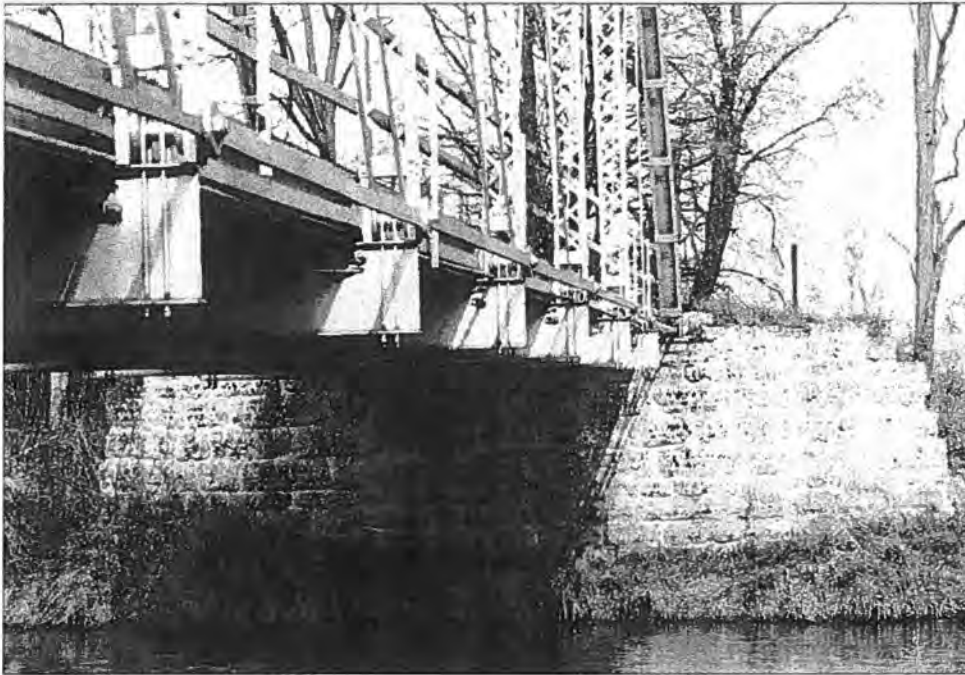
Documented: National Register Nomination, 1977
HAER No. WI-4

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-53-162



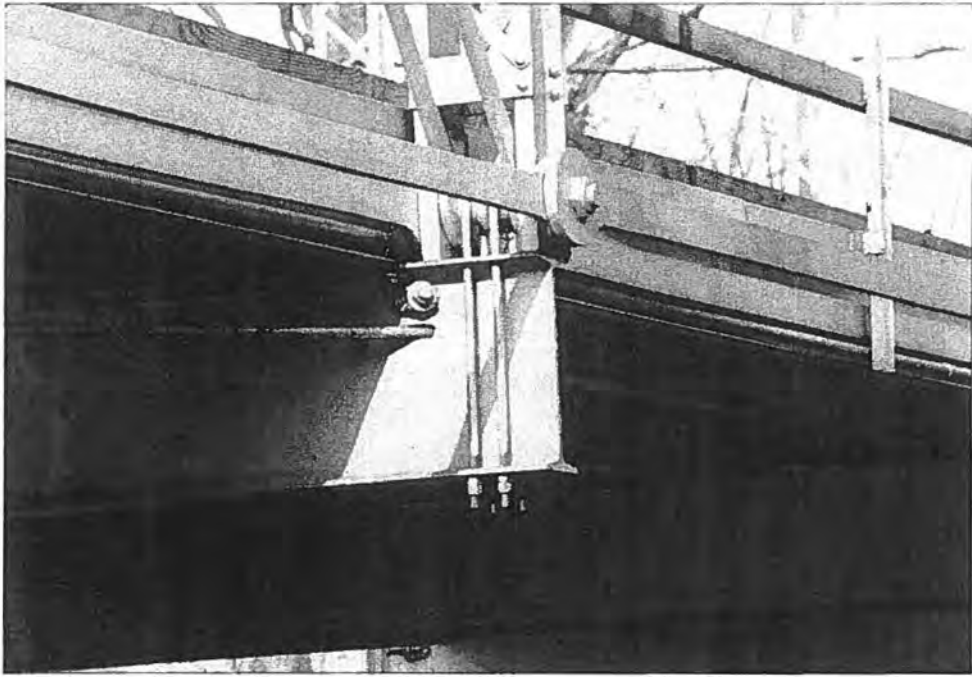
Tuttleville Iron Bridge (P-53-162), Town of Turtle, Rock County
Top: North approach - Source: J.A. Hess, 1986
Bottom: Detail of south portal bracing - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-53-162



Tuttleville Iron Bridge (P-53-162), Town of Turtle, Rock County
Detail of east bottom-chord & hangers - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-53-162



Turtleville Iron Bridge (P-53-162), Town of Turtle, Rock County
Detail of hanger - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-54-107

WisDOT Designation: P-54-107
Historic Name:
Other Name: Larson Road Bridge
Current Owner: Town of Grant
Year Built: c.1900-1910
Engineer: Unknown
Fabricator: Unknown
Contractor: Unknown
Status: Replaced in 1989

Geographical Data

County: Rusk
City, Village, or Town: Town of Grant
Legal Description: Section 23, Town 34N, Range 6W
Crossing: Larson Road over Deer Tail Creek
Sketch Diagram (For survey photos, see contact sheet 02100/2)

Technical Data

Bridge Category: Metal pony truss
Spans--No./Type: 1 Pratt full-slope span (75')
Connection Type: Riveted
Substructure: Concrete abutments
Overall Length x Width: 76' x 15'7"
Inclined Endpost/Upper Chord: L0-U1-U4-L5: double upright channels (12" x 2 1/16") tied with cover plate (11 7/8" x 1/4") and V-lacing
Lower Chord: L0-L5: double angles (3" x 2 1/2")
Verticals: L1-U1, L2-U2, etc.: double back-to-back angles (2 1/2" x 2") forming "H" in section, tied with V-lacing
Diagonals: L2-U1, L3-U4: single angles (3" x 2 1/2"); L2-U3, L3-U2: single angles (2" x 2")
Floor System: Corrugated-metal decking with bituminous overlay on rolled I-beam stringers and rolled I-beam girders bolted to verticals below lower chord
Bracing: Bottom laterals: Cylindrical eyebars

Summary Description

The bridge follows an unpaved farm road in an east-west direction across Deer Tail Creek about 5 miles southeast of the city of Ladysmith. Resting on concrete abutments, the metal pony truss consists of a single, 75-foot, Pratt full-slope span with angle-iron railings and corrugated-metal decking covered with a bituminous surface. Although the construction date is unknown, the bridge was probably built during the period 1900-1910, when rural areas throughout Wisconsin upgraded their roads and bridges to handle heavier loads (A). After 1910, country road trusses generally conformed to the specifications of the newly established Wisconsin State Highway Commission, which mandated riveted, concrete deck, Warren pony trusses for spans between 40 and 90 feet (B, C). Before 1900, riveted Pratt trusses were quite rare in Wisconsin, and although they remained less common than the pin-connected variety during the next decade, they were being constructed in increasing numbers (D). In 1907, for example, the Joliet Bridge and Iron Co. built a 52-foot, riveted, Pratt, pony truss in neighboring Washburn County (E). And a year later, an official state publication published a photograph of a new, riveted, Pratt, pony truss in Crawford County, which was intended to serve as example of acceptable, modern, bridge design (F). The corrugated-metal decking of the Larson Road Bridge is compatible with construction practices of the period -- at least one other example has been noted on a 1903 Pratt pony truss in Manitowoc County (G).

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-54-107

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of Significance: c.1900-1910

Retaining its original design integrity, the Larson Road Bridge is significant as an early, twentieth-century example of riveted, Pratt, pony, highway truss construction in Wisconsin. Patented by American engineers Thomas and Caleb Pratt in 1844, the Pratt truss became the country's "standard design in iron trusses by the late 1800s" (D). In Wisconsin, the Pratt pony truss was frequently used for highway spans ranging from 40 to 90 feet; in 1983 approximately 65 examples were extant (D). After 1910, however, the Warren pony truss increasingly replaced the Pratt in this length category, primarily because it was the preferred design of the newly established Wisconsin State Highway Commission, which had statutory review of most bridge construction in the state (B, C).

Sources of Information

- A. Hess, Jeffrey A. and Robert M. Frame, An Historical Survey of Wisconsin Stone-Arch and Concrete-Arch Bridges. Madison, Wis.: Wisconsin Department of Transportation, 1986, pp. 91-100.
- B. "The Organization and Standards of the Wisconsin Highway Commission." Engineering and Contracting, 42 (October 28, 1914), 401.
- C. Wisconsin State Highway Commission. Second Biennial, 1911-1915. Madison, Wis.: Published by the State, 1915, p. 24.
- D. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges." in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.
- E. Intensive Survey Form for P-65-051.
- F. Hirst, Arthur R. and M. W. Torkelson, Culverts and Bridges. Madison: Wisconsin Geological and Natural History Survey, Road Pamphlet Number 4, 1908, p. 43.
- G. Danko, George M. "A Selective Survey of Metal Truss Bridges in Wisconsin." M.S., State Historical Society of Wisconsin-Historic Preservation Division, Madison, Wis., 1977, p. 71.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 1986 Surveyor: Jeffrey A. Hess

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-54-107



Larson Road Bridge ((P-54-107), Town of Grant, Rusk County
Top: North elevation - *Source: J.A. Hess, 1986*
Bottom: Approach - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-54-107



Larson Road Bridge (P-54-107), Town of Grant, Rusk County
Detail of north side of south elevation - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-54-125

WisDOT Designation: P-54-125
Historic Name:
Other Name: Broken Arrow Road Bridge
Current Owner: Town of Willard
Year Built: 1907 (A, B)
Engineer: Unknown
Fabricator: Security Bridge Company of Minneapolis (A)
Contractor: Unknown
Status: Replaced in 1987

Geographical Data

County: Rusk
City, Village, or Town: Town of Willard
Legal Description: Sections 17/20, Town 33N, Range 6W
Crossing: Broken Arrow Road over Deer Tail Creek
Sketch Diagram (For survey photos, see contact sheet 02100/5)

Technical Data

Bridge Category: Metal pony truss
Spans--No./Type: 1 Pratt full-slope (60'5")
Connection Type: Pinned
Substructure: Concrete abutments
Overall Length x Width: 61' x 15'8"
Inclined Endpost/Upper Chord: L0-U1-U3-L4: double upright channels tied with cover plate and batten plates
Lower Chord: L0-L4: double rectangular-section eyebars
Verticals: L1-U1, L2-U2, L3-U3: back-to-back angles forming "H" in section, tied with V-lacing
Diagonals: L2-U1, L2-U3: double rectangular-section eyebars; L1-U2, L3-U2: single cylindrical eyebars with turnbuckles
Floor System: Wood decking on rolled I-beam floor beams hung below lower chord from plate riveted to bottom of verticals
Bracing: Bottom lateral bracing: Cylindrical eyebars
Bearings: West end, fixed; east end, slide-plate expansion bearings

Summary Description

Situated on an unpaved farm road about 10 miles south of the city of Ladysmith, the bridge crosses Deer Tail Creek in an east-west direction. Resting on concrete abutments, the structure is a metal pony truss with a single pin-connected, Pratt full-slope span, angle-iron railings, and wood decking. With town and county equally sharing the expense, the structure was erected in 1907 for about \$1,500 (B). The Security Bridge Company served as fabricator. Founded in Minneapolis in 1906 by William S. and Arthur Hewit, the firm relocated 5 years later to Billings, Montana, where it soon became that state's "most productive" bridge builder (C). Apparently, the company did not work extensively in Wisconsin (D).

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-54-125

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of Significance: 1907

The Broken Arrow Road Bridge is significant as a representative example of Pratt full-slope, pony truss, highway bridge construction, as practiced in Wisconsin during the period 1900-1910. Patented by American Engineers Thomas and Caleb Pratt in 1844, the Pratt truss became the country's "standard design in iron trusses by the late 1800s" (D). In Wisconsin, the Pratt pony truss was frequently used for highway spans ranging from 40 to 90 feet; in 1986 approximately 65 examples were extant (D). After 1910, however, the Warren pony truss increasingly replaced the Pratt in this length category, primarily because it was the preferred design of the newly established Wisconsin State Highway Commission, which had statutory review of most bridge construction in the state (E, F). Retaining its original design integrity, the Broken Arrow Road Bridge typifies Pratt, pony, highway truss design during 1900-1910 in its use of pin connections, relatively light built-up structural members, and wood decking (D).

Sources of Information (Reference to Above)

- A. Bridge plate.
- B. Rusk County Board of Supervisors Proceedings, 1907, pp. 6, 16.
- C. Quivik, Fredric L. "Montana's Minneapolis Bridge Builders." Journal of the Society for Industrial Archeology, 10 (1984), 45.
- D. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges." Cultural Resource Management in Wisconsin, Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.
- E. "The Organization and Standards of the Wisconsin Highway Commission." Engineering and Contracting, 42 (October 28, 1914), 401.
- F. Wisconsin State Highway Commission. Second Biennial Report, 1911-1915. Madison, Wis.: Published by the State, p. 24.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 1986

Surveyor: Jeffrey A. Hess

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-54-125



Broken Arrow Road Bridge (P-54-125), Town of Willard, Rusk County
South elevation - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-54-125



Broken Arrow Road Bridge (P-54-125), Town of Willard, Rusk County
South side of north elevation - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-54-125



Broken Arrow Road Bridge (P-54-125), Town of Willard, Rusk County
Detail of bridge plate on inclined endpost - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-54-125



Broken Arrow Road Bridge (P-54-125), Town of Willard, Rusk County
Detail of top chord and northeast pin, south side of north elevation - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-56-147

WISDOT Designation: P-56-147

Historic Name:

Other Name: Klein Road Bridge

Current Owner: Town of Freedom

Year Built: 1894

Engineer: Wisconsin Bridge and Iron Company

Fabricator: Wisconsin Bridge and Iron Company

Contractor: Unknown

Status: Replaced in 1991

Geographical Data

County: Sauk

City, Village or Town: Town of Freedom

Legal Description: Section 17, Town 11N, Range 5E

Crossing: Klein Road over Seeley Creek

Sketch Diagram (For survey photos, see contact sheet 79157/4)

Technical Data

Bridge Category: Metal pony truss

Spans--No./Type: 1 Pratt half-hip span (37'2")

Connection Type: Pinned

Substructure: Rough-coursed stone abutments with newer concrete additions and repairs

Overall Length x Width: 39'1" x 14'8"

Inclined End-Post/Upper Chord: L0-U1-U4-L5: double upright channels (5") with cover plate (8"), tied with batten plates

Lower Chord: L0-L2, L3-L5: double angles (2 1/2" x 2") tied with batten plates ("U" section); L2-L3: double rectangular looped eyebars (1 3/4" x 3/4")

Verticals: L2-U2, L3-U3: double back-to-back angles (1 3/4" x 1 3/4") tied at hangers

Diagonals: L2-U1, L3-U4: double rectangular looped eyebars (1 1/4" x 7/8")

Counters: L2-U3, L3-U2: single rectangular looped eyebars (1" x 7/8") with open turnbuckles

Floor System: Built-up floor beams, riveted to angles of verticals above the lower chord; rolled-section stringer I-beams (resting on abutments); poured concrete deck

Bracing: Bottom laterals: Threaded rods

Bearings: All four bearings completely encased in poured concrete

Summary Description

Bridge P-56-147 is a single span, metal, pin-connected, Pratt half-hip, pony truss highway bridge. It carries Klein Road over Seeley Creek in the town of Freedom, rural Sauk County. The overall length is 39'1" and span length is 37'2"; overall width is 14'8" with a roadway width of 13'2". The design is a characteristic Pratt truss, with verticals in compression and diagonals in tension. The construction technique is appropriate for the pre-1895 era, with built-up members, including the floor beam, joined with pinned connections. Eyebars have looped ends. The lower chord is a combination of eyebars (center panel) and angles (outside panels). Unfortunately, all four bearings have been completely encased in poured concrete and are not visible (nor are they described in any documents). The abutments are of original rough-coursed stone, but have been repaired with poured concrete (possibly at same time that bearings were encased). The bridge was built in 1894 by Wisconsin Bridge and Iron Company of North Milwaukee (A), at a total cost of approximately \$2,200 (B). With the exceptions of the concrete repairs, the bridge retains integrity of design, construction, and context.

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-56-147

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1894

Bridge P-56-147, built in 1894, is significant as an early representative example of a metal, pin-connected, Pratt half-hip pony truss. It exhibits the typical Pratt truss configuration as well as the appropriate construction for the pre-1895 era, including built-up members, pinned connections, looped eyebars, and stone abutments. The only "alteration" involves concrete repairs to the abutments and bearing area and a newer concrete deck. In 1983, the HBAC identified this bridge as one of the state's four best examples of Pratt half-hip pony trusses out of a total population of about 130. The builder, Wisconsin Bridge and Iron Company, has been identified by the State Historic Preservation Office as a "known prolific Wisconsin builder," and therefore of significance (D).

Sources of Information (Reference to Above)

- A. Bridge P-56-147 builder's plate, mounted on northwest endpost.
- B. Sauk County Board of Supervisors. Proceedings. Baraboo, 1893, pp. 9, 88.
- C. File for bridge P-56-147, includes "Bridge Inventory Report," Warzyn Engineering, Inc., 1977. Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- D. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.
- E. Brue, Hans Nelson. "The Development of Highway Bridges in Wisconsin," M.S. thesis, U of Wisconsin, 1916.

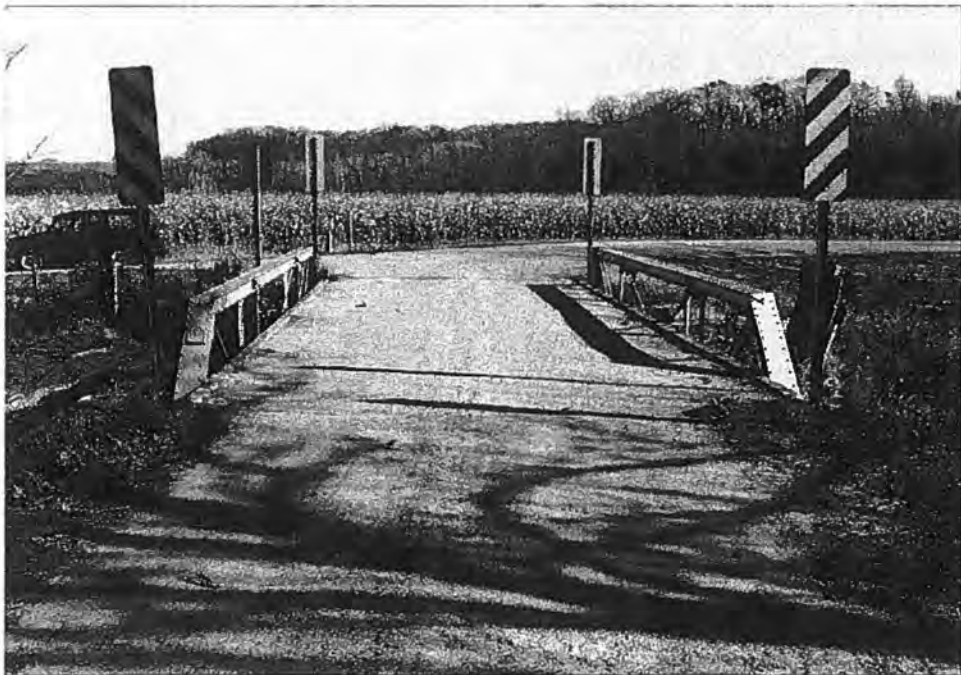
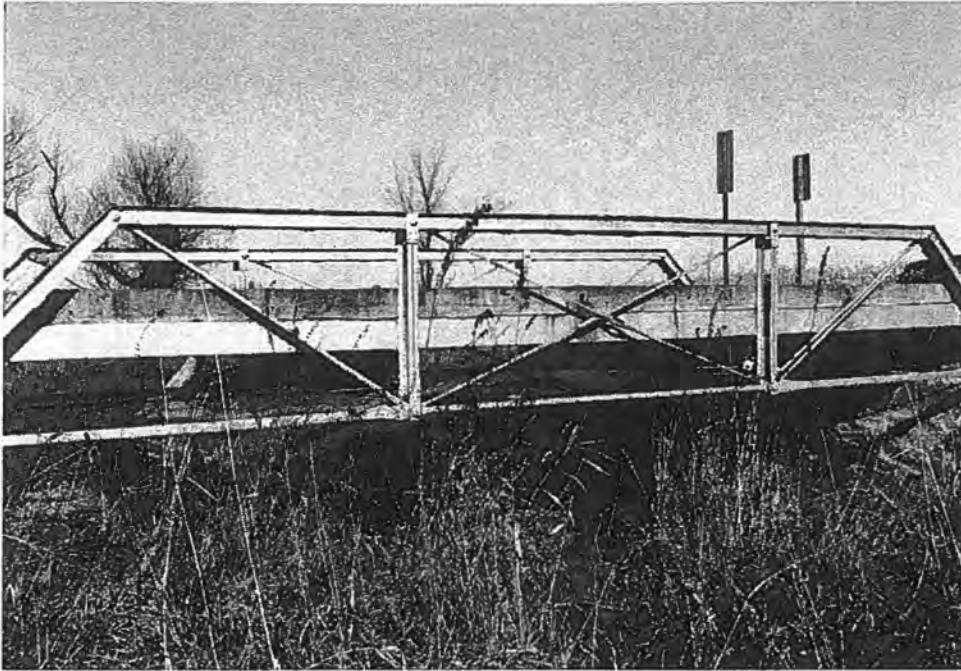
National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: November 4, 1986 Surveyor: Robert M. Frame III

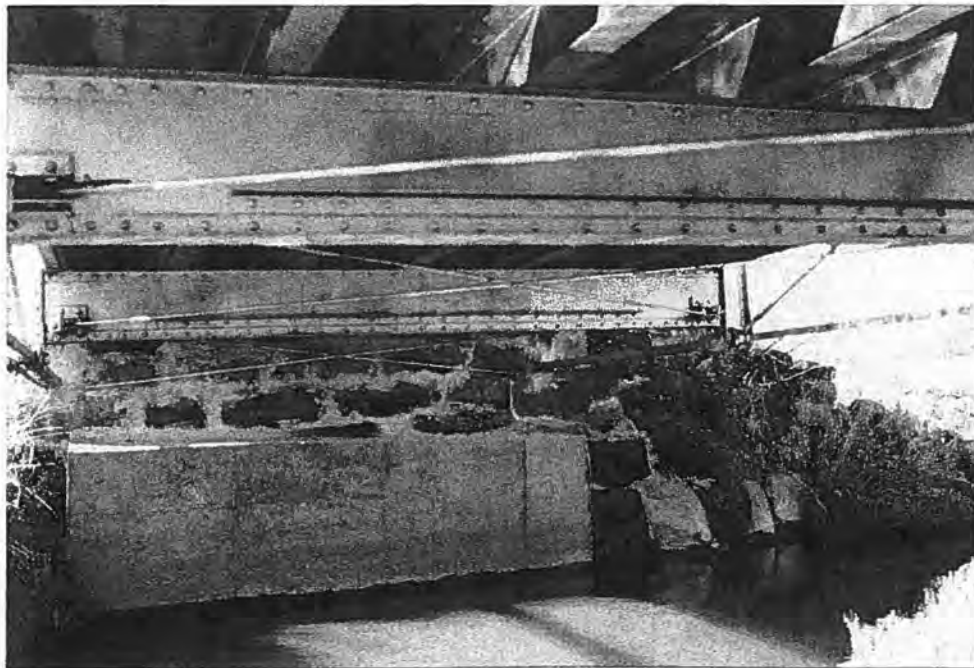
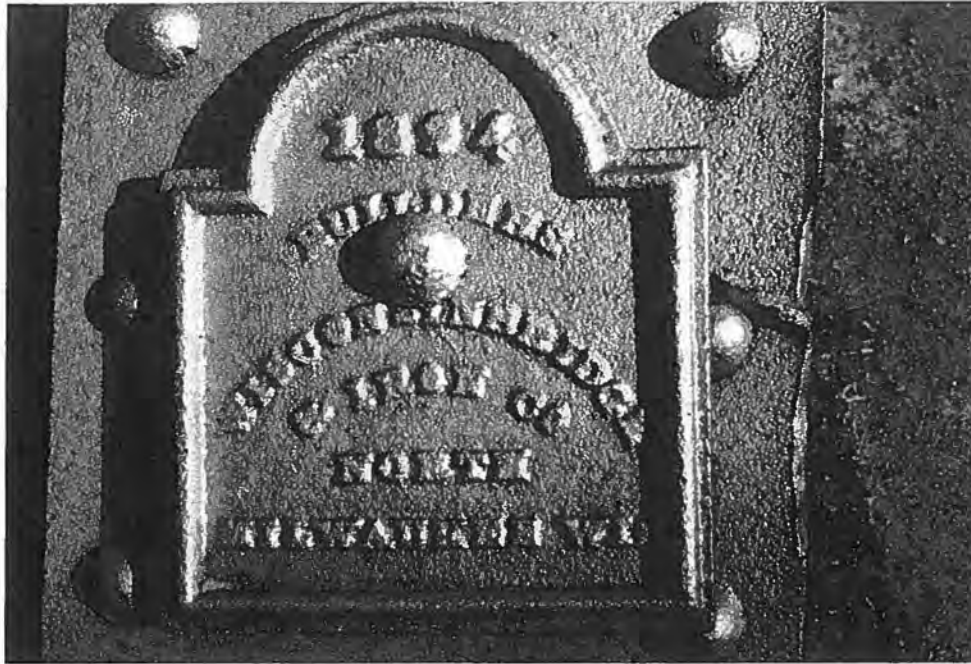
Documentation: Determination of Eligibility, 1987

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-56-147



Klein Road Bridge (P-56-147), Town of Freedom, Sauk County
Top: South elevation - Source: J.A. Hess, 1986
Bottom: West approach - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-56-147



Klein Road Bridge (P-56-147), Town of Freedom, Sauk County
Top: Detail of builder's plate - Source: J.A. Hess, 1986
Bottom: West abutment, beneath deck - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-56-713

WISDOT Designation: P-56-713

Historic Name:

Other Name: Manchester Street Bridge

Current Owner: City of Baraboo

Year Built: 1884

Engineer: Milwaukee Bridge and Iron Works (A)

Fabricator: Milwaukee Bridge and Iron Works (A)

Contractor: Keepers and Riddell Company, Milwaukee (B)

Status: Moved

Geographical Data

County: Sauk

City, Village or Town: City of Baraboo

Legal Description: Section 1, Town 11N, Range 6E

Crossing: Manchester Street over Baraboo River

Sketch Diagram (For survey photos, see contact sheet 79157/5)

Technical Data

Bridge Category: Metal overhead truss

Spans--No./Type: 1 camelback span (128'1")

Connection Type: Pinned

Substructure: Stone abutments and wingwalls

Overall Length x Width: 128'10" x 14'1"

Inclined End-Post/Upper Chord: L0-U1-U6-L7: double upright channels (8") with cover plate (12 3/8"), tied with V-lacing

Lower Chord: L0-L7: double rectangular punched eyebars

Verticals: L1-U1: single replacement bars; L6-U6: double rectangular eyebars (3/4' sq.); I2-U2, L3-U3, etc.: double upright channels with V-lacing both sides (lace faces deck)

Diagonals: L2-U1, L5-U6: double rectangular looped eyebars (2" x 1/2"); L3-U2, L4-U5: double cylindrical looped eyerods (5/8")

Counters: L2-U3, L5-U4: double cylindrical looped eyerods (7/8"); L3-U4, L4-U3: double cylindrical looped eyerods (3/4"), with solid turnbuckles

Floor System: Built-up fish-belly floor beams, pinned to post ends with transverse pin or riveted to strap hangers at end-post hip verticals; wood stringers with wood plank deck

Bracing: **Top laterals:** Eyerods with split ends and double loops; **Top struts and sways:** Double angles with V-lacing above and metal pipe struts below, with rods between; **Portals:** Double back-to-back angles with X-bracing and decorative, curved knee braces; **Bottom laterals:** Threaded rods

Bearings: Roller expansion bearings on west end; fixed plates on east end

Summary Description

The Manchester Street Bridge (P-56-713) is a single span, metal, pin-connected, overhead camelback highway truss. It carries Manchester Street over the Baraboo River just outside downtown Baraboo.

Overall length is 128'10" and span length is 128'1"; overall width is 14'1" carrying a roadway of 13'7". The bridge exhibits the fundamental camelback design characteristic of a Parker version of a Pratt truss having exactly five slopes on the polygonal top chord. The construction is appropriate for the pre-1895 period, having built-up members, including the fish-belly floor beams, pin connections, and roller-nest expansion bearings. Several additional features make this structure unusual, if not unique. These include the extra pin connections at the floor beam ends and the at the top laterals, with their split double loops; the use of pipes as lower top lateral struts; the wood-beam stringers; and the decorative portal bracing. Following a truck accident in 1972, the west hip verticals were replaced with the

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-56-713

present members which are different from the originals. Otherwise, the bridge retains integrity of design, structure, and context, including the stone abutments. The bridge was built in 1884 by the Milwaukee firm of Keepers and Riddell Company and the Milwaukee Bridge and Iron Company, of which Riddell was the vice president.

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1884

The Manchester Street Bridge (P-56-713), built in 1884, is very significant as a representative overhead camelback truss highway bridge, and as one of only two camelbacks extant in the state in 1986 (D). With the scheduled demolition of the other camelback, it will be the last in the state. It is by far the oldest camelback in Wisconsin, and the only one that is pin connected. In fact, the early 1884 date would qualify the bridge as significant regardless of its truss type. It exhibits the fundamental five-slope top-chord camelback design characteristic. It also has the construction details appropriate for a pre-1895 truss: pin-connected, built-up members (including the fish-belly floor beams); looped eyebars; roller bearings; and stone abutments. In addition, it has unusual extra pin connections, pipe struts, wood beam stringers, and a decorative portal. The only structural alteration (new west hip verticals) is relatively minor, considering the 103-year age of the structure. The State Historic Preservation Office has determined that the builder, Milwaukee Bridge and Iron Company, is a "known prolific Wisconsin builder," and therefore significant (D).

Sources of Information (Reference to Above)

- A. Bridge P-56-713 builder's plate, mounted above bridge portal.
- B. "Accompanying Document for Determination of Eligibility," 1985. Wisconsin Department of Transportation. Bridge Section, Central Office. Madison, Wis.
- C. File for bridge P-56-713. Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- D. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.

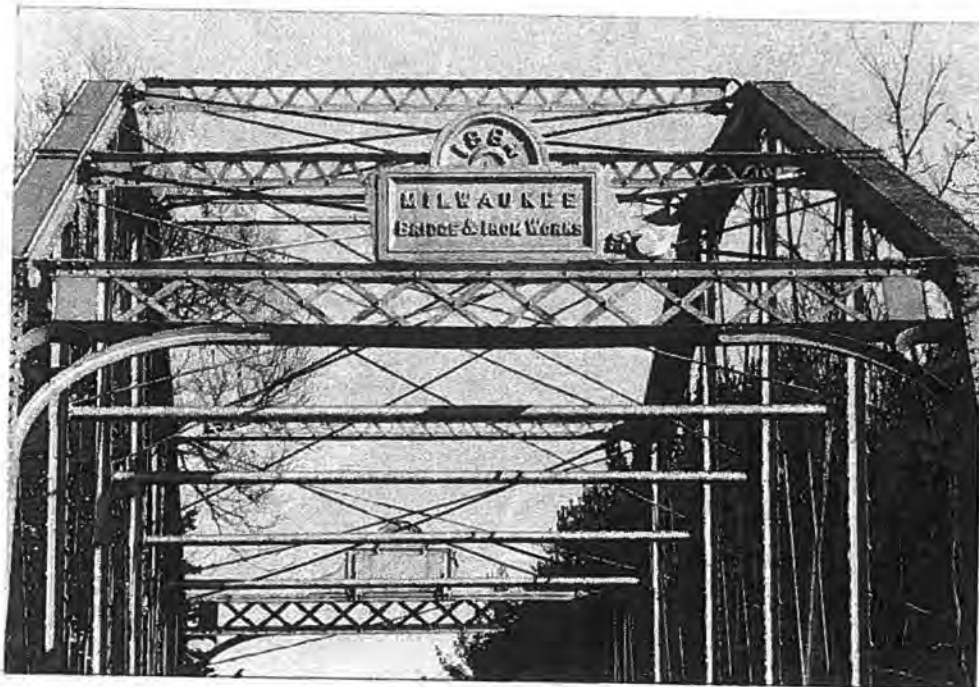
National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: November 4, 1986 Surveyor: Robert M. Frame III

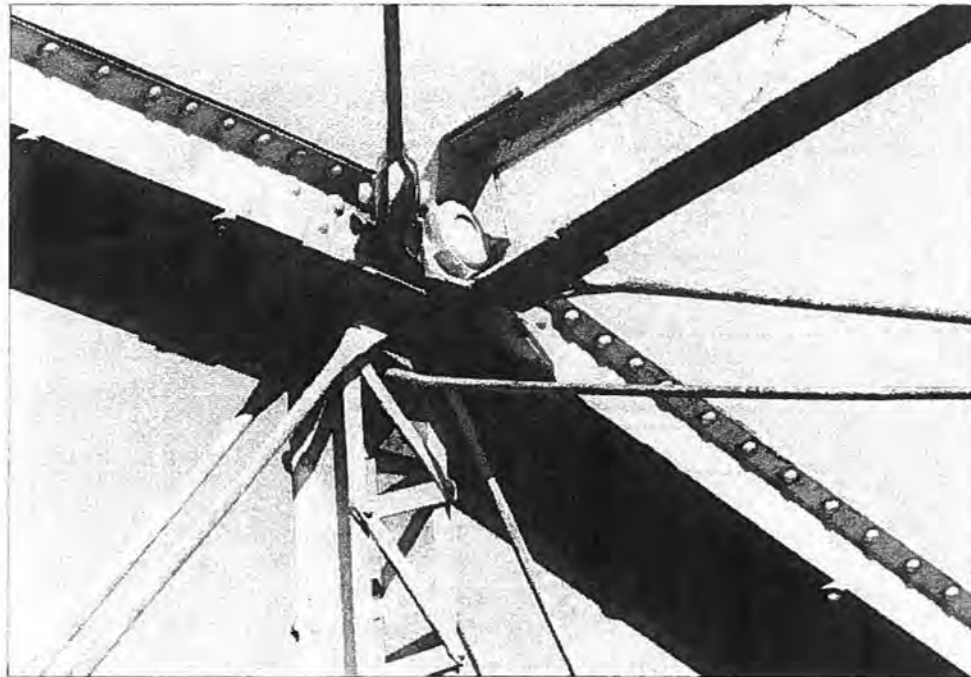
Documentation: National Register Nomination, 1988
HAER No. WI-14

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-56-713



Manchester Street Bridge (P-56-713), City of Baraboo, Sauk County
Top: South elevation - Source: J.A. Hess, 1986
Bottom: Detail of west portal - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-56-713



Manchester Street Bridge (P-56-713), City of Baraboo, Sauk County

Top: Barrel view - *Source: J.A. Hess, 1986*

Bottom: Detail of top chord connection - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-57-068

WisDOT Designation: P-57-068
Historic Name: Heath Bridge (A)
Other Name: Blomberg Road Bridge
Current Owner: Town of Weirgor
Year Built: 1914 (B)
Engineer: Wisconsin Highway Commission (A)
Fabricator: Worden-Allen Company of Milwaukee (B, C)
Contractor: Worden-Allen Company of Milwaukee (B, C)
Status: Replaced in 1993

Geographical Data

County: Sawyer
City, Village, or Town: Town of Weirgor
Legal Description: Section 14, 37N, Town 7W
Crossing: Blomberg Road over Chippewa River
Sketch Diagram (For survey photos, see contact sheet 02100/5)

Technical Data

Bridge Category: Metal overhead truss
Spans--No./Type: 2 identical Pratt spans (112'8" each)
Connection Type: Riveted
Substructure: Concrete abutments; dumbbell river pier consisting of steel tubes and built-up plate web
Overall Length x Width: 230' x 16'
Inclined Endpost/Upper Chord: L0-U1-U6-L7: Double upright channels (9 1/8" x 2 3/8") tied with cover plate (12" x 3/8") and V-lacing
Lower Chord: L0-L7: double angles (5" x 3")
Verticals: L1-U1, L2-U2, etc.: double channels (6 1/8" x 1 7/8") tied with V-lacing
Diagonals: L2-U1, L5-U6: double angles (5" x 3") tied with batten plates on top to form channel; L3-U2, L4-U5: double angles (3" x 2 1/2") tied with batten plates on top to form channel; L3-U4, L4-U3: double angles (2 1/2" x 2 1/2") tied with batten plates on top to form channel
Floor System: Bituminous-covered Wood decking on rolled I-beam stringers and rolled I-beam floor girders hung from bottom of verticals below lower chord
Bracing: **Bottom lateral bracing:** Single angles; **Top lateral bracing:** Single angles; **Overhead lateral struts:** Double back-to-back angles with X-lacing; portal bracing: back-to-back angles
Bearings: River pier, fixed; abutments, roller-nest expansion bearings

Summary Description

Located about two miles northeast of the village of Weirgor, the Heath Bridge follows a paved rural road across the Chippewa River. Displaying bituminous-covered wood decking bordered by angle-iron railings, the structure is a riveted, metal, overhead truss with two, identical, Pratt spans supported by concrete abutments and a steel, dumbbell river pier. The bridge was constructed in 1914 according to plans prepared by the Wisconsin State Highway Commission (A). Worden-Allen Company of Milwaukee was the low bidding contractor, receiving a total of \$6,500 from the town and county, which equally shared the expense (B, C). Incorporated in Wisconsin in 1902, Worden-Allen during the next three decades became one of the largest bridge-building companies in the central states region (D).

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-57-068

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of Significance: 1914

The Heath Bridge is significant as an early example of overhead, Pratt truss design, as practiced by the Wisconsin State Highway Commission from its inception in 1911 to about 1925. During this period, the riveted, overhead Pratt was the commission's recommended design for spans ranging from about 90 feet to 135 feet (E,F). In 1986, approximately 50 examples were extant. Like the Heath Bridge, they differ from earlier, contractor-designed Pratts in their use of riveted (instead of pin) connections and heavier, built-up, structural members in the web (G). The Heath Bridge's steel, dumbbell river pier is also consistent with early design practices of the commission, which approved such construction as "very economical" "where the current is not swift and where considerable depth must be reached to secure good bearing" (H). Less understandable, however, is the bridge's wood decking, which appears to contradict the highway commission's repeated advocacy of concrete slab flooring (E, F). The Heath Bridge is also significant for its association with Worden-Allen Company, one of the state's most important bridge builders during the first quarter of the twentieth century (G).

Sources of Information (References to Above)

- A. Wisconsin State Highway Commission. Plans for the Heath Bridge, 1914, microfilm N521, N563, N565. Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- B. Proceedings of Supervisors of Sawyer County, 1914-1915, pp. 12-13, 30-31.
- C. Bridge Plate.
- D. Danko, George M. "A Selective Survey of Metal Truss Bridges in Wisconsin," M.S., State Historical Society of Wisconsin-Historic Preservation Division, Madison Wisconsin, 1977, p. 55.
- E. "The Organization and Standards of the Wisconsin Highway Commission." Engineering and Contracting, 42 (October 28, 1914), 401.
- F. Wisconsin State Highway Commission. Biennial Report, 1911-1915. Madison, Wis.: Published by the State, p. 24.
- G. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resources Management in Wisconsin, Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 1986 Surveyor: Jeffrey A. Hess

Documentation: Determination of Eligibility
HAER No. WI-66

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-57-068



Heath Bridge (P-57-068), Town of Weirgor, Sawyer County
East elevation - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-57-068



Heath Bridge (P-57-068), Town of Weirgor, Sawyer County
Approach - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-57-068



Heath Bridge (P-57-068), Town of Weirgor, Sawyer County
West side of east elevation - *Source: J.A. Hess, 1986*



Heath Bridge (P-57-068), Town of Weirgor, Sawyer County
Detail of bridge plate on inclined endpost, southeast end - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-58-111

WISDOT Designation: P-58-111
Historic Name: Blomberg Road Bridge
Other Name:
Current Owner: Town of Grant
Year Built: 1900
Engineer: Wisconsin Bridge and Iron Company
Fabricator: Wisconsin Bridge and Iron Company
Contractor: Unknown
Status: Replaced in 1994

Geographical Data

County: Shawano
City, Village or Town: Town of Grant
Legal Description: Section 13, Town 26N, Range 13E
Crossing: Blomberg Road over Embarrass River
Sketch Diagram (For survey photos, see contact sheet 79157/9)

Technical Data

Bridge Category: Metal pony truss
Spans--No./Type: 1 Pratt full-slope span (90')
Connection Type: Pinned
Substructure: Rubble stone abutment with later concrete additions
Overall Length x Width: 90'11" x 15'9"
Inclined End-Post/Upper Chord: L0-U1-U5-L6: double upright channels (7") with cover plate (12"), tied with V-lacing
Lower Chord: L1-L6: double rectangular punched eyebars
Verticals: L1-U1, L2-U2, etc.: double back-to-back angles with batten plates ("H" section)
Diagonals: Double rectangular eyebars (L2-U1, L4-U5: 1 1/2" x 3/4"; L3-U2, L3-U4: 1" x 7/8")
Counters: L2-U3, L4-U3: singular rectangular section eyebars (7/8" sq.) with turnbuckle
Floor System: Rolled-section floor I-beams, riveted to verticals above bottom chord; rolled-section stringers; wood-plank deck
Bracing: Bottom laterals: Threaded rods
Bearings: Bearings forced into abutments at bridge seats

Summary Description

Bridge P-58-111 is a single span, metal, pin-connected, Pratt full-slope pony truss highway bridge. It carries Blomberg Road over the Embarrass River in the Town of Grant in rural Shawano County. The overall structure length is 90'11" with a 90' span, which is generally considered the maximum span length for a Pratt pony truss; overall width and roadway width are 15'9". It exhibits the basic Pratt characteristics of verticals in compression and diagonals in tension, all in a pony truss. The construction elements are appropriate for a bridge built between 1895 and 1910 (C): built-up members (but rolled-section floor beams), pinned connections, wood plank deck, and stone abutments. This bridge was the subject of a petition in 1898 (B). In 1899, the abutment (of "stone and cement") construction was let to August Schmidt of the town of Grant, and the bridge fabrication was let to the Wisconsin Bridge and Iron Company. The bridge was completed and accepted in 1900 (B). The bridge cost approximately \$2,000 and the abutment work cost \$310 (B). The bridge retains integrity of design, construction, and context.

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-58-111

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: 1899-1900

Bridge P-58-111, built in 1899-1900, is significant as an early representative of the Pratt full-slope ("Pratt standard") design in a pony truss configuration. In 1986, there are approximately 69 Pratt standard pony trusses extant in Wisconsin (C). This is among the oldest and also is about the longest span generally used for such trusses (C). The construction elements are appropriate for a truss bridge from the 1895-1910 (C), including built-up members, rolled-section floor beams, pinned connections, wood-plank deck, and stone abutments. The State Historic Preservation Office has identified the builder, Wisconsin Bridge and Iron Company, as a "known prolific Wisconsin builder," and therefore of significance (C).

Sources of Information (Reference to Above)

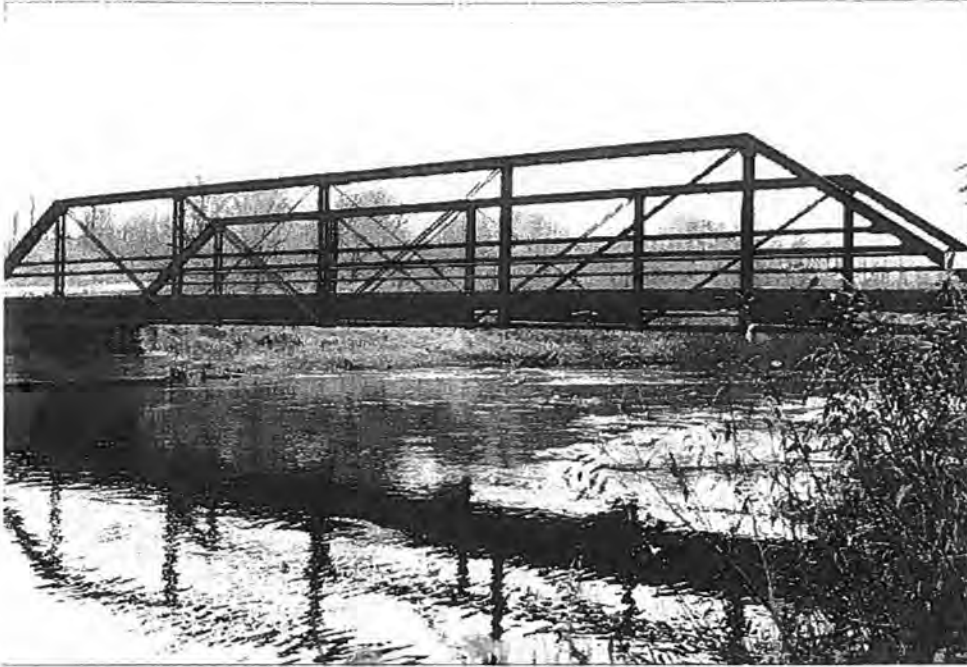
- A. Bridge P-58-111 file, includes "Bridge Inventory Report." Bridge Section. Wisconsin Department of Transportation, Central Office. Madison, Wis.
- B. Shawano County Board of Supervisors. Proceedings. Shawano. 1898-99, p. 12; 1899-1900, pp. 81-83, 107.
- C. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

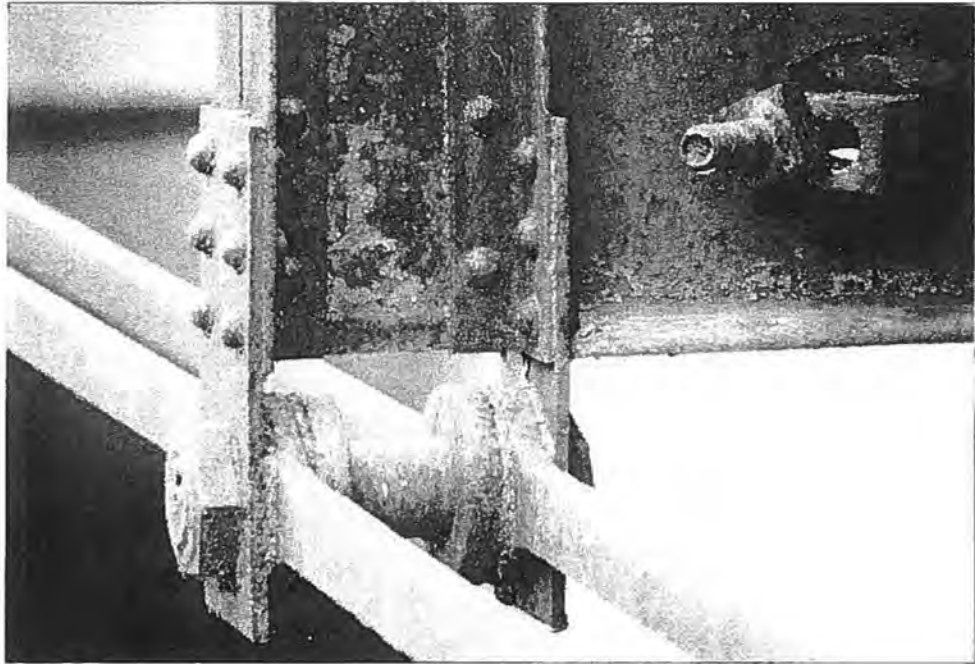
Date of Survey: October 23, 1986 Surveyor: Robert M. Frame III

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-58-111



Blomberg Road Bridge (P-58-111), Town of Grant, Shawano County
Top: West elevation - *Source: J.A. Hess, 1986*
Bottom: South approach - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-58-111



Blomberg Road Bridge (P-58-111), Town of Grant, Shawano County
Detail of hanger - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-60-117

WisDOT Designation: P-60-117

Historic Name:

Other Name: Mulberry Lane Bridge

Current Owner: Town of Medford

Year Built: 1905 (A)

Engineer: Unknown

Fabricator: Unknown

Contractor: Unknown

Status: Replaced in 1989

Geographical Data

County: Taylor

City, Village, or Town: Town of Medford

Legal Description: Section 4, Town 31N, Range 1E

Crossing: Mulberry Lane over Black River

Sketch Diagram (For survey photos, see contact sheet 02100/2)

Technical Data

Bridge Category: Metal pony truss

Spans--No./Type: 1 Pratt full-slope span

Connection Type: Pinned

Substructure: Concrete abutments

Overall Length x Width: 52'6" x 15'6"

Inclined Endpost/Upper Chord: L0-U1-U3-L4: Double upright channels (7" x 2") tied with cover plate (10" x 1/4") and batten plates
Lower Chord: L0-L4: double rectangular-section eyebars (1" x 2 1/2")

Verticals: L1-U1, L2-U2, L3-U3: double back-to-back angles (2" x 2") with X-lacing

Diagonals: L2-U1, L2-U3: Rectangular-section eyebars (1 3/4" x 5/8") with turnbuckles; L1-U2, L2-U3: cylindrical eyebars (7/8" diameter)

Floor System: Dirt fill on metal decking, supported by rolled I-beam stringers and rolled I-beam floor beams hung from pin connections of lower chord

Bracing: Bottom laterals: Cylindrical eyebars

Bearings: Too impacted and corroded to identify

Summary Description

Situated on a farm road about 4 miles north of the city of Medford, the Mulberry Lane Bridge is a pin-connected, pony truss with concrete abutments and a single, full-slope Pratt span bordered by angle-iron railings. It crosses the Black River in an east-west direction. With town and county equally splitting the expense, the structure was constructed in 1905 for approximately \$1,145: "the iron work was let for six hundred dollars . . . , for mason work, cement and planks was paid five hundred forty-four dollars and ninety-seven cents" (A). It apparently replaced a wooden bridge constructed on the same site in 1892 (B).

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-60-117

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of Significance: 1905

Patented by American engineers Thomas and Caleb Pratt in 1844, the Pratt truss became the country's "standard design in iron trusses by the late 1800s" (C). In Wisconsin, the Pratt pony truss was frequently used for highway spans ranging from 40 to 90 feet; in 1986, approximately 65 examples are extant (C). After 1910 however, the Warren pony truss increasingly replaced the Pratt in this length category, primarily because it was the preferred design of the newly established Wisconsin State Highway Commission, which had statutory review of most bridge construction in the state (D,E). The Mulberry Lane Bridge retains its original design, but is in poor condition and has become badly corroded.

Sources of Information (References to Above)

- A. County Board Proceedings, Taylor County, Wisconsin, 1905. N.p., n.d., pp. 20-21, 78-79.
- B. Proceedings of the County Board of Supervisors Taylor County, Wisconsin, 1892-93. Medford, Wis.: Star and News Print, 1893, pp. 14, 36-37.
- C. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Division of Historic Preservation, 1986.
- D. "The Organization and Standards of the Wisconsin State Highway Commission." Engineering and Contracting, 42 (October 28, 1914), 401.
- E. Wisconsin State Highway Commission. Second Biennial, 1911-1915. Madison, Wis.: Published by the State, 1915, p. 24.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 1987

Surveyor: Jeffrey A. Hess

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-60-117



Mulberry Lane Bridge (P-60-117), Town of Medford, Taylor County
Top: South elevation - Source: J.A. Hess, 1986
Bottom: Approach - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-60-117



Mulberry Lane Bridge (P-60-117), Town of Medford, Taylor County
South side of north elevation - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-60-125

WisDOT Designation: P-60-125

Historic Name:

Other Name: Sawyer Avenue Bridge

Current Owner: Town of Hammel

Year Built: 1906 (A)

Engineer/Fabricator/Contractor: Hennepin Bridge Company of Minneapolis (A)

Status: To be replaced as of 1996

Geographical Data

County: Taylor

City, Village or Town: Town of Hammel

Legal Description: Section 30, Town 31N, Range 1W

Crossing: Sawyer Avenue over Black River

Sketch Diagram: (For survey photos, see contact sheet 02100/2)

Technical Data

Bridge Category: Metal pony truss

Spans--No./Type: 2 identical Pratt full slope spans (75' each) with I-beam girder approaches

Connection Type: Pinned

Substructure: River pier: dumbbell pier consisting of steel tubes and plate web; end piers: steel tubes; abutments: plate wall

Overall Length x Width: 174' x 16'

Inclined Endpost/Upper Chord: L0-U1-U4-L5: double upright channels (6" x 2") tied with cover plate (12" x 3/16") and V-lacing

Lower Chord: LO-L5: double rectangular-section eyebars (2" x 3/4")

Verticals: L1-U1, L2-U2, etc.: double back-to-back angles (2" x 2 1/2") forming H in section, tied with V-lacing

Diagonals: L2-U1, L3-U4: double square eyebars (1" x 1")

Counters: L2-U3, L3-U2: double cylindrical eyebars (1" diameter) with turnbuckles

Floor System: Bituminous-covered wood decking on rolled I-beam stringers and rolled I-beam girders hung below lower chord from plate riveted to bottom of verticals

Bracing: Bottom: cylindrical eyebars

Bearings: Fixed at the river pier; slide-plate expansion bearings at the end piers

Summary Description

Located about 10 miles west of the city of Medford, the Sawyer Avenue Bridge follows an unpaved farm road across Black Creek in a roughly east-west direction. Bordered by angle-iron railings, the wood-decked structure consists of two, girder, approach spans with steel-plate, retaining wall abutments and two, pin-connected, pony, Pratt full-slope truss spans with steel tube end piers, steel-plate abutments, and a dumbbell river pier composed of two steel tubes and a plate web. Erected in 1906 for \$3,427, the structure replaced the washed-out "Sawyer Dam Bridge," which apparently was located about one-quarter mile to the south (A). When the town of Hammel petitioned Taylor County to underwrite half the construction cost, it intended the new bridge to occupy the same site as the old. On inspecting the site, however, county officials determined that another, slightly upstream location would be cheaper to span and, accordingly, they authorized the bridge's relocation -- a decision that so angered the town that it initially refused to pay for its share of the project (A). The Hennepin Bridge Company of Minneapolis was responsible for all aspects of design, fabrication, and construction. Founded in 1905, the company, which built bridges as far west as Montana (B), aggressively pursued the Wisconsin market, erecting 8 other bridges in Taylor County alone in 1906 (A, B). Like the Sawyer Avenue Bridge, at least one of these structures utilized steel-tube end piers (A).

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-60-125

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Associated with significant persons/firms
- Associated with significant events

Period of Significance: 1906

The Sawyer Avenue Bridge is significant as a representative example of Pratt full slope, pony truss, highway bridge construction, as practiced in Wisconsin during the period 1900-1910. Patented by American engineers Thomas and Caleb Pratt in 1844, the Pratt truss became the country's "standard design in iron trusses by the late 1800s" (C). In Wisconsin, the Pratt pony truss was frequently used for highway spans ranging from 40 to 90 feet; in 1986, approximately 65 examples are extant (C). After 1910, however, the Warren pony truss increasingly replaced the Pratt in this length category, primarily because it was the preferred design of the newly established Wisconsin State Highway Commission, which had statutory review of most bridge construction in the state (D, E). Retaining its original design integrity, the Sawyer Avenue Bridge typifies Pratt, Pony, highway truss design during 1900-1910 in its use of pin connections, relatively light built-up structural members, and wood decking (C).

The bridge's engineering significance is increased by its steel tube end piers and steel plate abutments. Although this type of construction was once common, it became increasingly rare after about 1910 (F). Such design particularly rankled Wisconsin highway reformers, who believed that it was advocated by bridge companies primarily because it "increase[d] the amount of steel used" (G). The reformers pointed out that concrete abutments were not only more durable, but also eliminated the need to build the additional approach spans required by steel tube end piers (G). The Sawyer Avenue Bridge is also significant for its association with the Hennepin Bridge Company of Minneapolis, one of the most prolific out-of-state bridge-building firms working in Wisconsin in the early twentieth century (C).

Sources of Information

- A. Proceedings of the Taylor County Board of Supervisors, 1906, pp. 34-36, 38-40, 82, 93, 97-104.
- B. Quivik, Fredric L. "Montana's Minneapolis Bridge Builders." Journal of the Society for Industrial Archeology 10, (1984), 47.
- C. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges." Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: Historic Preservation Division, State Historical Society of Wisconsin, 1986.
- D. "The Organization and Standards of the Wisconsin Highway Commission." Engineering and Contracting, 42 (October 28, 1914), 401.
- E. Wisconsin Highway Commission. Second Biennial Report, 1911-1915. Madison: Published by the State, p. 24.
- F. Brue, Hans Nelson. "The Development of Highway Bridges in Wisconsin." M.S. thesis, U of Wisconsin, 1916, pp. 43, 41.
- G. Hirst, Arthur R. and M. W. Torkelson. Culverts and Bridges. Madison, Wis.: Wisconsin Geological and Natural History Survey, Road Pamphlet No. 4, 1908, p. 46.

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-60-125

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 1986 Surveyor: Jeffrey A. Hess

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-60-125



Sawyer Avenue Bridge (P-60-125), Town of Hammel, Taylor County
Southwest side of northeast elevation - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-60-125



Sawyer Avenue Bridge (P-60-125), Town of Hammel, Taylor County
Detail of bearing, south end - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-60-125



Sawyer Avenue Bridge (P-60-125), Town of Hammel, Taylor County
Bottom chord, northeast elevation - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-62-320

WISDOT Designation: P-62-320
Historic Name: Willenberg Bridge
Other Name:
Current Owner: Town of Genoa
Year Built: Post 1912
Engineer: Unknown
Fabricator: Unknown
Contractor: Unknown
Status: Extant as of 1996

Geographical Data

County: Vernon
City, Village or Town: Town of Genoa
Legal Description: Section 15, Town 12N, Range 7W
Crossing: Willenberg Road over Bad Axe River
Sketch Diagram (For survey photos, see contact sheet 79157/6)

Technical Data

Bridge Category: Metal pony truss
Spans--No./Type: 1 Warren standard span (80'8")
Connection Type: Riveted
Substructure: Concrete abutment, seat, and wing walls
Overall Length x Width: 82'2" x 17'6"
Inclined End-Post/Upper Chord: L0-U1-U9-L10: double upright channels (9") with cover plate (14"), tied with batten plates
Lower Chord: Double back-to-back angles (L0-L2, L8-L10: 2 ½" x 2 ½"; L2-L8: 4" x 3") tied only at verticals ("+" section)
Verticals: L2-U2, L4-U4, etc.: double angles (2 ½" x 2 ½"), tied with batten plates ("U" section)
Diagonals: L2-U1, L8-U9: double back-to-back angles (2 ½" x 3"); L2-U3, L8-U7: double back-to-back angles (2 ½" x 2 ½"); L4-U3, L4-U5, L6-U5, L6-U7: double angles (3 ½" x 2 ½") tied with batten plates
Counters: None
Floor System: Rolled-section floor I-beams, riveted with angles to vertical extension below lower chord; rolled-section stringers; concrete deck
Bracing: **Bottom laterals:** Angles
Bearings: Slotted expansion plates on south end; fixed plates on north end

Summary Description

The present Willenberg Bridge (P-62-320) is a single span, metal, riveted, Warren standard pony-truss highway bridge. It carries Willenberg Road over the Bad Axe River in the town of Genoa, rural Vernon County. The overall length is 82'2" and the span length is 80'8"; overall width is 17'6" carrying a roadway of 15'1". The span exceeds the crossing by almost a half-panel on each end, suggesting that this bridge may have been moved to the crossing from another location. There is no other evidence currently available to support this thesis. The bridge is a typical Warren standard design, with diagonals of indeterminate compression/tension, and verticals to stiffen the truss. The construction is appropriate for an early 20th-century Warren truss, having built-up members of angles and channels, with riveted connections, rolled-section floor beams and stringers, and concrete abutments. The builder and date are not known, but research indicates that this bridge was not erected at the site earlier than 1912 (B). It is one of about 440 Warren standard pony trusses extant in the state (D). Of considerable interest is an earlier Willenberg bridge, still standing (albeit in deteriorated condition) about 75 yards southwest (downstream) of the present structure. This other bridge was built in 1895 by the Clinton Bridge and Iron Works, Clinton, Iowa, in 1895 (B,C). Painted on the end post is the route marker "County Trunk A." This 1895 structure is a single span, metal, Pratt half-hip truss, with

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-62-320

relatively light, pin-connected, built-up members. An unusual feature is the use of pipe railings, with the pipes placed through holes penetrating the center of the built-up verticals and end posts.

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of significance: c.1912

Willenberg Bridge (P-62-320) is a representative, early 20th-century, metal, riveted, Warren standard pony truss highway bridge. It has the typical Warren standard design configuration as well as the appropriate construction technology, including built-up members with riveted connections. The bridge retains design and structural integrity, but the contextual integrity is in slight doubt because of the length of the span vis-a-vis the crossing, and the lack of documentary evidence at the time of the reported construction date of 1910 (A,B). Of significance, however, is the 1905 Willenberg Bridge, which survives some 75 yards to the southwest of the present bridge. This bridge, documented in county records (B), was built by the Clinton Bridge and Iron Works and carried County Trunk Highway A.

Sources of Information (Reference to Above)

- A. Bridge P-62-320 file. Wisconsin Department of Transportation. Bridge Section, Central Office. Madison, Wis.
- B. Vernon County Board of Supervisors. Proceedings. 1895, p. 23; 1900, p. 23.
- C. Builder's plate mounted on 1895 Willenberg Bridge, located short distance from present structure.
- D. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: November 6, 1986 Surveyor: Robert M. Frame III

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-62-320



Willenberg Bridge (P-62-320), Town of Genoa, Vernon County
Top: West elevation - Source: J.A. Hess, 1986
Bottom: Approach - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-62-320



Willenberg Bridge (P-62-320), Town of Genoa, Vernon County
Detail of bottom chord and hanger - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-65-051

WisDOT Designation: P-65-051

Historic Name:

Other Name: Bridge Road Bridge

Current Owner: Town of Long Lake

Year Built: 1907 (A)

Engineer: Joliet Bridge and Iron Company of Joliet, Illinois (A)

Fabricator: Joliet Bridge and Iron Company of Joliet, Illinois (A)

Contractor: Joliet Bridge and Iron Company of Joliet, Illinois (A)

Status: Replaced in 1987

Geographical Data

County: Washburn

City, Village or Town: Town of Long Lake

Legal Description: Section 36, Town 37N, Range 11W

Crossing: Bridge Road over Brill River

Sketch Diagram: (For survey photos, see contact sheet 02100/5)

Technical Data

Bridge Category: Metal pony truss

Spans--No./Type: 1 Pratt full-slope (52'5") with short, girder approach spans

Connection Type: Riveted

Substructure: Steel-tube end piers with dirt-fill abutments

Overall Length x Width: 59'7" x 16'

Inclined Endpost/Upper Chord: L0-U1-U3-L4: double upright channels (6" x 1 7/8") tied with cover plate (9" x 1/4") and batten plates

Lower Chord: LO-L4: double angles (3" x 2 1/2") tied with batten plates

Verticals: L1-U1, L2-U2, etc.: double, back-to-back angles (1 3/4" x 1 3/4") forming "H" in section, tied with V-lacing

Diagonals: L1-U2, L3-U2: double angles (1 3/4" x 1 3/4") tied with batten plates to form channel; L2-U1, L2-U3: double angles (2" x 2") tied with batten plates, forming "H" in section

Floor System: Wood decking on rolled I-beam stringers and rolled I-beam girders riveted to bottom of verticals below lower chord

Bracing: Bottom: Cylindrical eyebars; **End piers:** Cylindrical eyebars, one end riveted to steel-tube pier and the other end buried in the earth (probably attached to concrete footing)

Bearings: All bearings appear to be stationary steel plates bolted to tube piers

Summary Description

Located about 5 miles west of the village of Birchwood, the bridge follows an unpaved, east-west, farm road over Brill Creek. Supported by dirt-filled abutments and steel-tube end piers, the structure is a metal pony truss with a single, riveted, Pratt full-slope span and two, short, girder approaches. The bridge contains wood decking and angled iron railings. It was designed and built in 1907 by the Joliet Bridge and Iron Works, an Illinois firm that was active during the first decade of the twentieth century (B). Although the company does not appear to have been a major bridge builder in Wisconsin (C), it may have been responsible for another riveted Pratt truss built about the same time in Rusk County (D).

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-65-051

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Associated with significant persons/firms
- Associated with significant events

Period of Significance: 1907

Retaining its original design integrity, the Bridge Road Bridge is significant as an early twentieth-century example of riveted, Pratt, pony, highway-truss construction in Wisconsin. Patented by American engineers Thomas and Caleb Pratt in 1844, the Pratt truss became the country's "standard design in iron trusses by the late 1800s" (C). In Wisconsin, the Pratt pony truss was frequently used for highway spans ranging from 40 to 90 feet, with pin-connected structures predominating over the riveted variety. After 1910, however, the Pratt pony truss quickly lost popularity to the Warren pony truss, which was the preferred design of the newly established Wisconsin State Highway Commission (E, F). The Bridge Road Bridge is also significant for its steel-tube end piers. Although a once-common feature, the tubular end pier became increasingly rare after about 1910 (G). It particularly rankled Wisconsin highway reformers, who believed that it was advocated by bridge companies primarily because it "increase[d] the amount of steel used" (H). The reformers pointed out that concrete abutments were not only more durable, but also eliminated the need to build additional approach spans customarily required by steel-tube end piers (H).

Sources of Information (Reference to Above)

- A. Bridge Plate.
- B. Danko, George. "The Development of the Truss Bridge, 1820-1930, with a Focus Toward Wisconsin," M.S., State Historical Society of Wisconsin-Historic Preservation Division, Madison, Wis., 1976, p. 50.
- C. Wyatt, Barbara, ed. "Iron and Steel Truss Highway Bridges" in Cultural Resource Management in Wisconsin. Volume 2. Madison, Wis.: State Historical Society of Wisconsin-Historic Preservation Division, 1986.
- D. Intensive Survey Form for P-54-107.
- E. "The Organization and Standards of the Wisconsin Highway Commission." Engineering and Contracting, 42 (October 28, 1914), 401.
- F. Wisconsin State Highway Commission. Second Biennial Report, 1911-1915. Madison, Wis.: Published by the State, 1915, p. 24.
- G. Brue, Hans Nelson. "The Development of Highway Bridges in Wisconsin," M.S. thesis, U of Wisconsin, 1916, p. 43.
- H. Hirst, Arthur R. and M.W. Torkelson. Culverts and Bridges. Road Pamphlet No.4. Madison, Wis.: Wisconsin Geological and Natural History Survey, 1908, p. 43.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 1986

Surveyor: Jeffrey A. Hess

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-65-051



Bridge Road Bridge (P-65-051), Town of Long Lake, Washburn County
Top: North elevation - *Source: J.A. Hess, 1986*
Bottom: Approach - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-65-051



Bridge Road Bridge (P-65-051), Town of Long Lake, Washburn County
Detail of slide plate bearing, northeast end - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM: BRIDGE NO. P-66-055

WisDOT Designation: P-66-055

Historic Name:

Other Name: Beaver Dam Road Bridge

Current Owner: Town of Addison

Year Built: c.1896

Engineer: Unknown

Fabricator: Unknown

Contractor: Unknown

Status: Extant as of 1996

Geographical Data

County: Washington

City, Village, or Town: Town of Addison

Legal Description: Section 5, Town 11N, Range 18E

Crossing: Beaver Dam Road over Rock River

Sketch Diagram (For survey photos, see contact sheet 79139/4)

Technical Data

Bridge Category: Metal pony truss

Spans--No./Type: 1 bedstead span (40')

Connection Type: Pinned

Substructure: Endposts extend into ground; joined by steel-plate retaining wall

Overall Length x Width: 40'8" x 14'

Endposts: L0-U0, L3-U3: double channels (6" x 2") tied, back-to-back, with V-lacing

Upper Chord: U0-U3: double upright channels (5" x 1 3/4") tied, back-to-back, with coverplate (10") and batten plates

Lower Chord: L0-L3: double, back-to-back angles (2 1/2" x 2 1/2") tied with V-lacing

Verticals: L1-U1, L2-U2: double, back-to-back angles (2" x 2") tied with V-lacing and batten plates

Diagonals: L1-U0, L2-U3: double, rectangular-section eyebars (1 3/4" x 5/8")

Counters: L1-U2, L2-U1: single cylindrical eyebars (1" diameter) with turnbuckles

Floor System: Wood decking with rolled channel and I-beam stringers bolted to rolled I-beam girders hung by batten plates from lower chord pins

Bracing: Bottom lateral bracing: Cylindrical eyebars

Summary Description

Crossing Rock Creek in an east-west direction, this pin-connected, bedstead truss is located on a paved farm road about 3 miles northwest of the village of Allenton. It has wood decking and pipe metal railings. Although its construction date is unknown, the bridge is virtually identical to another bedstead truss built in Allenton in 1896 by the Milwaukee Bridge and Iron Company (A). Although bedstead trusses were once quite common in Wisconsin, only 8 currently survive. The type was strongly criticized by highway reformers for its often flimsy construction and inefficient use of steel. In the words of one writer, bedstead trusses "were designed to sell rather than to serve" (B). The most serious design weakness concerned the abutments, which were merely extensions of the end posts driven into the ground and braced by a steel plate retaining wall. Subject to heavy corrosion, this arrangement was usually a poor match for the soil pressures of a shifting riverbank -- as is illustrated by the buckled "legs" of the Beaver Dam Road Bridge. Wisconsin's first official, state publication on bridges denounced the bedstead truss, warning, "Never use steel in contact with the ground" (C).

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-66-055

Statement of Significance

- Represents type, period, technique
- Possesses high artistic values
- Assoc. with significant persons/firms
- Assoc. with significant events

Period of Significance: c.1896

Retaining its original design integrity, the Beaver Dam Road Bridge is significant as a representative example of Wisconsin, bedstead truss, highway bridge design. The truss's buckled legs demonstrate the hazards of this type of endpost-abutment construction. The bridge's rural setting enhances the late-nineteenth-century, "farm-road" quality of the bedstead truss design.

Sources of Information (Reference to Above)

- A. Intensive Survey Form for Allenton Park Bridge.
- B. Brue, Hans Nelson. "The Development of Highway Trusses in Wisconsin," M.S. thesis, U of Wisconsin, 1916, p. 11.
- C. Hirst, Arthur R. Culvert and Bridges. Road Pamphlet No.4. Madison, Wis.: Wisconsin Geological and Natural History Survey, 1907, p. 46.

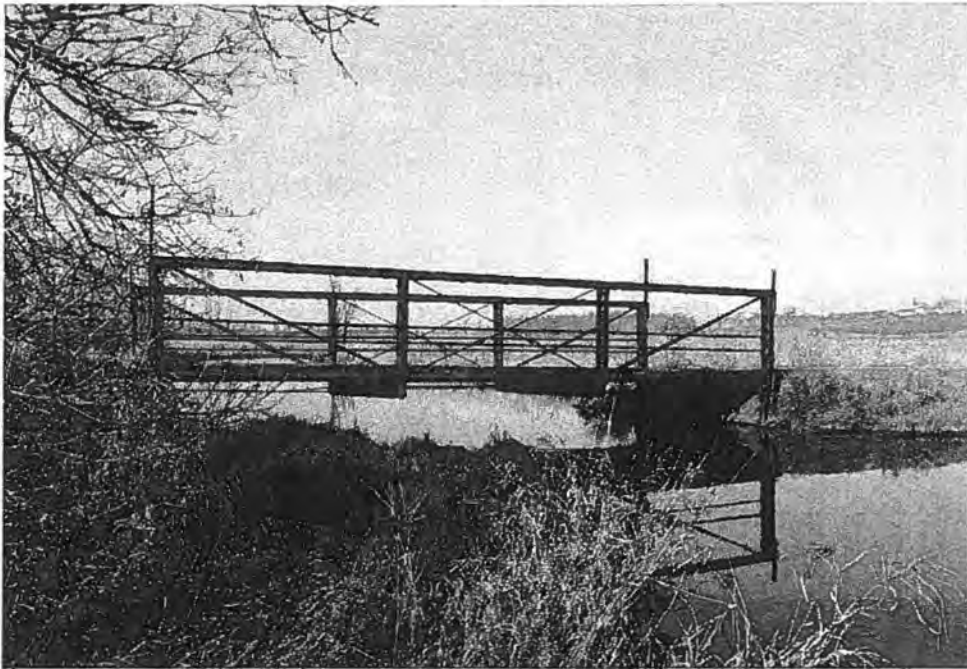
National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 1986

Surveyor: Jeffrey A. Hess

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-66-055



Beaver Dam Road Bridge (P-66-055), Town of Addison, Washington County
Top: South elevation - *Source: J.A. Hess, 1986*
Bottom: Approach - *Source: J.A. Hess, 1986*

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: BRIDGE NO. P-66-055



Beaver Dam Road Bridge (P-66-055), Town of Addison, Washington County
South elevation - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM: Allenton Park Bridge

WisDOT Designation: No number assigned

Historic Name:

Other Name: Allenton Park Bridge

Current Owner: Town of Addison

Year Built: 1896 (A)

Engineer: Unknown

Fabricator: Milwaukee Bridge and Iron Works

Contractor: Unknown

Status: Extant as of 1996

Geographical Data

County: Washington

City, Village or Town: Town of Addison

Legal Description: Section 16, Town 11N, Range 18W

Crossing: Rock River Drive over Rock River

Sketch Diagram (For survey photos, see contact sheet 79139/4)

Technical Data

Bridge Category: Metal pony truss

Spans--No./Type: 1 bedstead (about 41')

Connection Type: Pinned

Substructure: Endposts extend into ground; joined by steel-plate retaining wall

Overall Length x Width: About 16' x 41'

Endposts: L0-U0, L3-U3: double channels (6" x 2") tied, back-to-back, with V-lacing

Upper Chord: U0-U3: double channels (5" x 2") tied, back-to-back with coverplate (10") and batten plates

Lower Chord: L0-L3: double, back-to-back angles (2 ½" x 3 ½") tied with V-lacing

Verticals: L1-U1, L2-U2: double back-to-back angles (2" x 2") tied with V-lacing and batten
Diagonals: L1-U0, L2-U3: double, rectangular-section eyebars (1 ¾" x 5/8")

Counters: L1-U2, L2-U1: single cylindrical eyebars (1" diameter) with turnbuckles

Floor System: Wood decking with timber and channel-iron stringers on rolled I-beam girders hung by batten plates from lower chord pins

Bracing: **Bottom laterals:** cylindrical eyebars

Summary Description

Crossing Rock Creek in an east-west direction, this single-span, pin-connected bedstead truss still occupies its original site, although its function and setting have changed. Originally designed for vehicular traffic, it now serves as a pedestrian crossing in a small public park just west of the village of Allenton. Displaying wood decking and pipe-metal railings, the bridge was built in 1896 by the Milwaukee Bridge and Iron Works, which, since its establishment in 1870, "had become by the last decade of the nineteenth century one of the largest bridge building firms in the central states region" (B). Although bedstead trusses were once quite common in Wisconsin, only 8 currently survive. The type was strongly criticized by highway reformers for its often flimsy construction and inefficient use of steel. In the words of one writer, bedstead trusses "were designed to sell rather than to serve" (C). The most serious design weakness concerned the abutments, which were merely extensions of the end posts driven into the ground and braced by a steel-plate retaining wall. Subject to heavy corrosion, this arrangement was usually a poor match for the soil pressures of a shifting riverbank — as is illustrated by the buckled "legs" of the Allenton Park Bridge (D). Wisconsin's first official, state publication on bridges denounced the bedstead truss, warning, "never use steel in contact with the ground" (E).

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: Allenton Park Bridge

Statement of Significance

- Represents type, period, technique
- Associated with significant persons/firms
- Associated with significant events
- Possesses high aesthetic values

Period of Significance: 1896

Retaining its original design integrity, the Allenton Park Bridge is significant as a representative example of Wisconsin, bedstead-truss, highway bridge construction. The truss's buckled legs demonstrate the hazards of this type of endpost-abutment construction. The bridge is also significant for its association with the Milwaukee Bridge and Iron Works, one of the state's most prolific bridge-building companies in the late nineteenth and early twentieth centuries.

Sources of Information

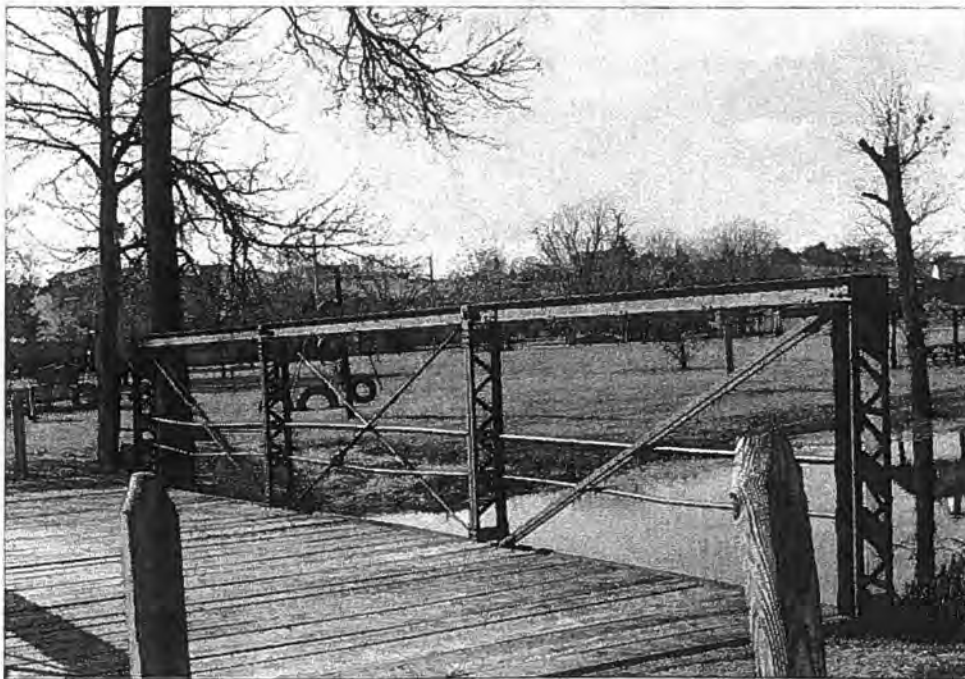
- A. Bridge plate.
- B. Danko, George M. "A Selective Survey of Metal Truss Bridges in Wisconsin." Unpublished Report prepared for the Historic Preservation Division, State Historical Society of Wisconsin, 1977, p. 17.
- C. Brue, Hans Nelson. "The Development of the Highway Trusses in Wisconsin." Unpublished civil engineering thesis, University of Wisconsin, 1916, p. 11.
- D. Newbery, Robert and Meyer H.W. Guy. "Ordinary Iron Highway Bridges." Wisconsin Academy Review, (March 1984), 36.
- E. Hirst, Arthur R. Culvert and Bridges. Madison: Published by the State, 1907, p. 46.

National Register Status

- Listed
- Determined Eligible
- Eligible
- Not Eligible

Date of Survey: October 1986 Surveyor: Jeffrey A. Hess

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: Allenton Park Bridge



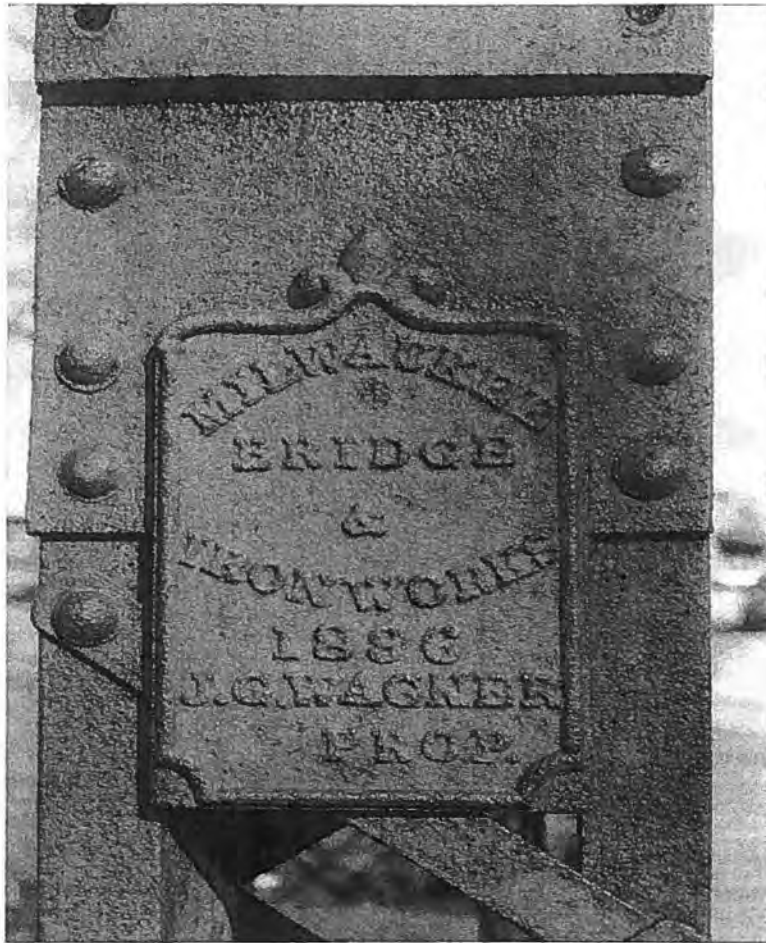
Allenton Park Bridge, Town of Addison, Washington County
Top: North elevation - Source: J.A. Hess, 1986
Bottom: North elevation, south side - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: Allenton Park Bridge



Allenton Park Bridge, Town of Addison, Washington County
South elevation - Source: J.A. Hess, 1986

TRUSS BRIDGE INTENSIVE SURVEY FORM CONT.: Allenton Park Bridge



Allenton Park Bridge, Town of Addison, Washington County
Bridge plate, northwest end - *Source: J.A. Hess, 1986*