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NPS Form 10-900
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(Approved 3/87)

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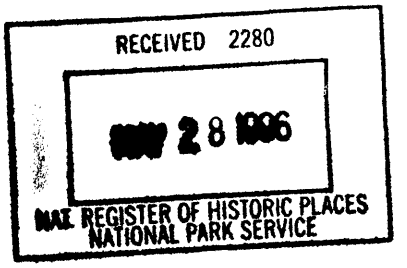
United States Department of the Interior
National Park Service




NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in Guidelines for Completing National Register Forms (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries. Use letter quality printer in 12 pitch, using an 85 space line and a 10 space left margin. Use only archival paper (20 pound, acid free paper with a 2% alkaline reserve).

1. Name of Property

historic name: Cunningham Lane Bridge

other names/site number: N/A

2. Location

street & number: Hansberry Lane — N/A not for publication

city, town: Town of Rockbridge — N/A vicinity

state: Wisconsin — code: WI — county: Richland — code: 103 — zip code: 53581

3. Classification

| Ownership of Property | Category of Property | No. of Resources within Property | |
|---|---|---|---|
| | | contributing | noncontributing |
| X private | ___ building(s) | | ___ buildings |
| ___ public-local | ___ district | ___ | ___ sites |
| ___ public-State | ___ site | ___ | ___ structures |
| ___ public-Federal | X structure | 1 | ___ objects |
| | ___ object | ___ | 0 Total |
| | | 1 | |

Name of related multiple property listing:
N/A

No. of contributing resources previously listed in the National Register 0

Cunningham Lane Bridge
Name of Property

Richland County, Wisconsin
County and State

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this _X_ nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements setforth in 36 CFR Part 60. In my opinion, the property _x_ meets ___ does not meet the National Register criteria. ___ See continuation sheet.

Signature of certifying official — Date 7/21/96

State or Federal agency and bureau

In my opinion, the property ___ meets ___ does not meet the National Register criteria.
___ See continuation sheet.

Signature of commenting official/title — Date

Division of Historic Preservation
State Historical Society
816 State Street
Madison, WI 53703
(608) 264-6500

5. National Park Service Certification

| | | | |
|---|---|---|---|
| √ | entered in the National Register<br>See continuation sheet | Edson H. Beall | 9.5.96 |
| ___ | determined eligible for the National Register. ___ See continuation sheet | Entered in the National Register | |
| ___ | determined not eligible for the National Register. | | |
| ___ | removed from the National Register. | | |
| ___ | other, (explain): _____ | | |
| | | Signature of the Keeper | Date |

6. Functions or Use

| Historic Functions (enter categories from instructions) | Current Functions (enter categories from instructions) |
|---|---|
| TRANSPORTATION/road-related (vehicular) | TRANSPORTATION/pedestrian-related |
| | |

7. Description

| Architectural Classification (enter categories from instructions) | Materials (enter categories from instructions) | |
|---|---|---|
| Other: Pratt full-slope pony truss | foundation | CONCRETE |
| | walls | N/A |
| | roof | N/A |
| | other | STEEL |

Describe present and historic physical appearance.

*Description*

At its original site, the Cunningham Lane Bridge, a small, Pratt full-slope pony truss, maintained access to two small farms south-east of the town of Rockbridge in Richland County, Wisconsin. The bridge spanned the Pine River approximately .2 miles east of State Highway 80. In 1989, it was moved approximately six miles to the southwest, to its current location off the township road of Hansberry Lane. Designed and fabricated by the Chicago Bridge and Iron Company, and erected at its original site in 1895, the Cunningham Lane Bridge is one of Wisconsin's oldest remaining examples of the Pratt design. According to the 1986 state-wide truss bridge survey, there are 317 existing Pratt trusses in Wisconsin, sixty-nine of which are full-slope Pratt pony truss bridges. Two half-hip Pratt trusses are older than the Cunningham Lane Bridge; one formerly in the Town of Freedom, Sauk County (now relocated to the New Glarus area), and the other in the Town of Buena Vista, Richland County (now demolished).[1]

The three-panel Cunningham Lane Bridge has an overall length of 41'-3", and a width of 12'-11" **(See Photo 1)**. Two small bridge-plates (now removed), which identified the fabricator as the Chicago Bridge and Iron Company, and the date of construction as 1895, were once mounted on the inclined end posts.[2] The deck is composed of home-sawn lumber of uneven lengths and supported by five large, wood joists **(See Photo 2)**. These joists are, in turn, supported by iron I-beam lateral struts which are connected to the bottom chord members and hipped verticals **(See Photo 3)**. Lower lateral rods give the bridge deck additional diagonal stability. Two parallel rows of 4" x 6" railroad ties have recently been mounted on the surface of the deck, at the edges; these are to prevent vehicles from veering off-course and striking the structure's vertical elements **(See Photo 4)**.

_X_ See continuation sheet

[1]Barbara Wyatt, Cultural Resource Management in Wisconsin, Vol. 2 (Madison, WI: Historic Preservation Division, State Historical Society of Wisconsin, 1986), pp. 12-8 through 12-10.

[2]The former locations of the plaques are revealed by less-weathered spots (vaguely shield-shaped) which appear two-thirds of the way up on the bridge's end posts (visible in **Photo 10**).

At its present location, the bridge rests on simple expansion bearings which are mounted to cylindrical concrete footings encased in steel forms. Wood retaining walls help retard erosion from the pier areas **(See Photo 5)**. Concrete block and earthen revetments have been built on either side of the stream over which it spans so that approaches to the bridge are on-grade with the deck **(See Photos 10, 11)**. These, too, are lent support by lateral wood retaining walls.

All major truss members of the Cunningham Lane Bridge are pin-connected **(See Photo 6)**. The inclined end posts and top chords are formed by two channels, connected with a cover plate, and iron latticework on the underside **(See Photo 7)**. The riveted latticework further enhances the stiffness of the upper chord members. Hip verticals are composed of two opposing angle irons joined at intervals with riveted plates. The bottom chord is composed of dual wrought-iron eye-bars pinned where they meet the hip verticals and expansion bearings **(See Photo 3)**.

An interesting feature of the bridge's design is the rectangular wrought-iron diagonal members **(See Photo 8)**. These members, which include a turnbuckle **(See Photo 9)** for adjusting the diagonal tension, terminate in forged, double loop-eye connections. These connections form a slot into which the hipped verticals fit. The complex termination allows the diagonal tension members to retain centering at the pin joints.

Such an unusual double-eye connection appears to be a standard feature of the Chicago Bridge and Iron Company's designs during this period. The Bills Street Bridge in the town of Augusta, Eau Claire County, Wisconsin, is an 102' long Pratt through-truss fabricated by that company in 1894.[3] The Augusta bridge also contains the unique, split, looped-eye bar connections and dual, riveted angle irons used to create the hipped vertical members. It is quite possible that these distinctive engineering aspects were a trademark of Chicago Bridge and Iron Company designs.

*Current Setting*

On August 16, 1989, the Cunningham Bridge was moved from its previous site to the private farm of Kent C. Houck, in Section 30 of the town of Rockbridge. It was relocated over a small, spring runoff ditch, within approximately one-hundred yards of the west end of Hansberry Lane **(See Photos 10, 11)**. A small, secluded valley surrounded by forested hills and open farmland, the bridge's new setting is pastoral and seems farther removed from nearby Richland Center than it actually is. There are a variety of antique metallic structures on the grounds of Houck property, including a windmill, beacon tower, and a small railway; the Cunningham Lane Bridge is located alongside these, as the newest addition to the owner's collection of outdoor "museum pieces." Houck agreed, when

[3]George M Danko, A Selective Survey of Truss Bridges (Madison, WI: Historic Preservation Division, State Historical Society of Wisconsin, 1977), p. 39.

buying the bridge, to maintain it in "an historically appropriate manner."[4] Therefore, it now serves only pedestrian traffic. To prevent vehicular access from Hansberry Lane, the owner has erected a small, wood barrier in front of the approach to the bridge.

The move of the Cunningham Lane Bridge was achieved via a heavy crane and flat-bed truck, at a cost of $1,117.01 to the new owner.[5] It was transported *in toto*, and remained intact throughout the move. Only the metallic frame of the structure was moved. The deteriorated, wood deck--the only structurally unsound part of the bridge--was left behind, and a new one installed at the present site. Otherwise, the bridge remains unchanged.

*Integrity*

The present physical appearance of the Cunningham Lane Bridge is essentially unaltered from its historic state. The most substantial change--arguably negligible--was that of the substructure, which was left behind when the bridge was moved. Abutments had raised the deck height to 6'-3"--well above the waters of the Pine River. The ditch over which the bridge is now located is shallower, and requires less pronounced abutments. The bridge's deteriorated wood decking was also replaced, although some of the original materials were reused. Otherwise, there have been only a few minor repairs, such as welding, and they are visually unobtrusive. The bridge retains its red color from previous paintings. The I-beams under the deck and the large I-beams attached to the bottom of the hip verticals have been given two coats of dark red Rustoleum paint which closely approximates the remaining original paint of the bridge's upper reaches.

Until recently, two shield-shaped, cast-iron plaques were bolted to the bridge's inclined end posts. Upon these, the manufacturer and construction date were inscribed: "Chicago Bridge Company, 1895." These have since disappeared, although contemporary photographs of the still-attached plates exist. The sets of holes remain, too, and can been seen on the left-hand end post when viewing the bridge from either side.

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[4]Kent C. Houck, (Unpublished bid), 4 September 1987.

[5]Letter to Bob Newberry, dated 10-13-1989.

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:

___ nationally ___ statewide X locally

Applicable National Register Criteria ___ A ___ B X C ___ D

Criteria Considerations (Exceptions) ___ A X B ___ C ___ D ___ E ___ F ___ G

| Areas of Significance (enter categories from instructions) | Period of Significance | Significant Dates |
|---|---|---|
| Engineering | 1895[6] | 1895 |
| | Cultural Affiliation | |
| | N/A | |
| | | |
| | | |
| | | |

| Significant Person | Architect/Builder |
|---|---|
| N/A | Chicago Bridge and Iron Company |

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

*Statement of Significance*

The Cunningham Lane Bridge is eligible for the National Register of Historic Places for its local significance under **Criterion C**, in the area of **Engineering**. It is one of the oldest full-slope, Pratt pony trusses in Wisconsin. Built in 1895, the bridge is a fine example of its kind. Moreover, it represents a design adaptable to many lengths and sites, and is indicative of the growing movement towards standardization, economy, and utility in highway construction at the time of its erection. Built by the Chicago Bridge and Iron Company, a significant regional bridge fabricator, the small truss represents bridge design and construction ideology typical of the period. The significance date denotes the year of the Cunningham Lane Bridge's fabrication.

X See continuation sheet

[6]1895 indicates the year of fabrication. Date and designer were both indicated on cast-iron plaques affixed to the bridge's inclined end posts. These have recently been removed--probably stolen.

*Historic Setting*

A peculiar rocky outcropping which spans a minor river in northern Richland County inspired the christening of a nearby village--and later, an entire township: Rockbridge. This geological landmark, which was prominently depicted in the otherwise sparingly-detailed, early plat maps of the area, was one of a few places where travellers could easily cross the potentially hazardous Pine River.[7] Settlers congregated in this hospitable area, and the village of Rockbridge grew near the fortuitous, natural river crossing. This was in 1851[8]--only three years after Wisconsin became a state.[9] A brief eleven years had elapsed since John Coumbe, the first white settler in the greater Richland County area, had arrived, and fourteen had passed since the Native Americans of the region had relinquished ownership of their lands to the United States Government.[10] Forty-four years later, the Cunningham Lane Bridge would be built south-east of the town, in section ten of the Rockbridge township.

As is the case with so many Midwestern towns established in the expansionistic nineteenth century, many of Rockbridge's original citizens hailed from the New England and Mid-Atlantic states.[11] Often, they arrived following temporary stays in states like Ohio and Illinois, or older counties in Wisconsin. Such was the case of Harry Coles, formerly of Galena, Illinois. In 1845, Coles bought settler Samuel Swinehart's local claim, and immediately began construction on a small saw-mill. This was the area's first industry, though others soon followed.

Rockbridge's first town meeting was held in the spring of 1851. This occurred in "a building owned by Orrin Hazeltine," who had come to Rockbridge from Vermont, after a brief stay in adjacent Dane County.[12] The unspecified building wherein this first momentous meeting took place was probably Hazeltine's own house, as only two buildings--a "frame house" and Coles' saw-mill--are known to have existed in the village at that time.

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[7]An account of the difficulties inherent in moving people, wagons, and horses across the innocuously-titled Pine River appears in History of Crawford and Richland Counties, Wisconsin (Springfield, IL: Union Publishing Co., 1884), pp. 1237-38.

[8]James H. Miner, The History of Richland County, Wisconsin (Madison, WI: Western Historical Association, 1906), p. 279, maintains that the board of supervisors of Richland County established the town of Rockbridge in June 1850 from land included in the township of Richmond.

[9]History of Crawford and Richland Counties, pp. 1237-38. Settlers had, however, made land claims in the Rockbridge area as early as 1844. Samuel Swinehart holds the distinction of being the first to do so.

[10]Margaret Helen Scott, Chapters in the History of Richland County, Wisconsin (Richland Center, WI: Richland Center Publishers, Inc., 1978), pp. 1-3.

[11]History of Crawford and Richland Counties, pp. 1237-59. Biographies local citizens are included in this gazetteer, from which inferences about the general population are meant to be made. Many of the subjects, from states such as New York, Vermont, and Virginia, were considered "representative" of the citizenry of Rockbridge.

[12]History of Crawford and Richland Counties, pp. 1241, 1245.

Within the next few years, Rockbridge steadily grew, as evidenced in the increasing number and diversity of types of buildings. A post office was constructed in 1855. That same year, a general store began operation. Its existence was short-lived; the store-owner left for the more lucrative markets of Richland Center almost immediately, and the resultant gap in the village's retail infrastructure was not filled until years later. Rockbridge House, the first local hotel, opened in 1876. By 1900, the population of Richland County had nearly reached 20,000. The town of Rockbridge had 991 residents, making it the fifth largest settlement in the county.[13]

Perhaps one of the most important early citizens of Richland County was M. H. B. Cunningham, for which Cunningham Lane may have been named. Cunningham was born in 1842 in Huntingdon County, Pennsylvania, and arrived in Wisconsin after a four-year stopover in Illinois. He served as a Union soldier in the American Civil War, and participated in many battles in the Confederate South.[14] After the war, he returned to Wisconsin and assumed a less life-threatening job as a store-keeper in the now fourteen-year-old village of Rockbridge. For his efforts in the war and upstanding position in Rockbridge's mercantile community, it is likely that Cunningham Lane was named in his honor.

*Cunningham Lane Bridge*

On July 3, 1895, a public meeting was held in Rockbridge. It was overwhelmingly decided (with only one dissenter among the forty-eight voters) that the town needed to build a new iron bridge.[15] Audit reports dated October 9, 1895, indicate a payment of $300.00 was made to the Chicago Bridge and Iron Company for "one steel bridge." In addition to this entry, the audit indicates several other payments for non-specific bridge-work; it is therefore impossible to definitively ascertain if and when the Cunningham Lane Bridge is being referred to.[16] But given the small size of Rockbridge at the time, and the relative infrequency with which such municipal projects were probably undertaken in a single year, the "one steel bridge" referred to in this report is probably that at Cunningham Lane; other payments likely refer to the installation of the Cunningham Lane Bridge or repairs on already-existing bridges in the village.

At its original site, the Cunningham Lane Bridge carried traffic on its namesake thoroughfare, a short, dead-end road in section ten of Rockbridge Township. The structure served its intended purpose until 1988, when it was removed from service following the construction of a sturdier replacement bridge--one capable of carrying the larger, heavier

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[13]Miner, History, p. 190.

[14]History of Crawford and Richland Counties, p. 1246.

[15]Records from the Town Clerk's Office, Town of Rockbridge, of 4 July 1895.

[16]A single page from the Auditor's Report indicates fifteen payments were made to various individuals for different bridge-related work (e.g. "Piling for bridge," "Bridge work and blacksmithing").

loads common in late twentieth-century transportation.[17] The Cunningham Lane Bridge was relocated to its present site a year later, and now serves pedestrian and light vehicular traffic.

*Design and Engineering*

*A historic context for bridges in Wisconsin has been developed by Wisconsin Department of Transportation historian, Robert S. Newbery, and is excerpted below.*

There are three essential aspects of a truss. First, a truss is a combination of relatively small members which are "framed or jointed...to act as a beam".[18] Second, each component member is subjected only to tension or compression. (Tensile forces tend to stretch or elongate a member while compressive forces tend to push or compress a member.) Third, the component members of the truss are configured in triangles because "the triangle is the only geometrical figure in which the form is changed only by changing the lengths of the sides."[19] In other words, the triangle remains rigid until the forces applied distort or break the material used in the components.[20]

A truss bridge consists of two trusses, each with a top chord, bottom chord, and endposts. The space enclosed by these members is called the web. The web members reinforce the truss. The particular arrangement of the web members was the subject of much study in the mid- and late-nineteenth century, and different names were given to trusses with different web configurations. The two types of trusses most frequently used in Wisconsin were the Pratt and the Warren.

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[17]According to the DOT's Preliminary Case Report, the Cunningham Lane Bridge was "too narrow for modern farm equipment and structurally deficient for most farm vehicles, heavy emergency vehicles and even materials delivery trucks." Consequently, the otherwise isolated 240 acres of land had suffered from lack of access. Structural modifications to make the bridge viable would have nullified its historic integrity, so ultimately a new bridge was built.

[18]J. B. Johnson, C. W. Bryan, and F. E. Turneaure, The Theory and Practice of Modern Framed Structures (8th ed.; New York: Wiley & Sons, Inc., 1905), p. 3. Hereafter cited as *Johnson*. In other words, the "assemblage had rigidity and behaved as a unit." Ellis L. Armstrong, History of Public Works in the United States, 1776-1976 (American Public Works Association, 1976), p. 109.

[19]Milo S. Ketchum, The Design of Highway Bridges and the Calculation of Stresses in Bridge Trusses (New York: McGraw-Hill, 1908), p. 1.

[20]A rectangle, on the other hand, can become a parallelogram as everyone with a sagging screen door knows. The common solution to the sagging door is to run a small rod diagonally across it, thus creating two triangles. The resulting figure looks remarkably like one panel of a nineteenth century Pratt truss.

Truss bridges are generally divided into three categories: pony (or low) trusses, overhead (or through) trusses, and deck trusses.[21] Both pony and overhead trusses carry the traffic between the trusses and the roadway, either at or near the bottom chord of the trusses. A deck truss carries the roadway at or near the top chord; thus the roadway is on top of the trusses.

*Materials*

The relative merits of cast- versus wrought-iron for bridge construction were still being debated in the late-nineteenth century, when the first surge of building truss bridges began in Wisconsin. Because cast-iron is brittle, it is subject to sudden and dramatic failure. Thus, it was "an unsatisfactory material for bridges, and quite a number of failures occurred."[22] Shunned for a time in the United States in the 1850s, cast-iron bridges made a comeback, and then only "gradually, but stubbornly," fell out of favor.[23] As late as 1870, one bridge engineer wrote that "the rigidity of cast-iron is the very quality needed in a compression member." Moreover, as the quality of casting in the United States was excellent, "nothing can be found that will compare with cast-iron for resisting strains of compression either in reliability or in cost."[24]

Before the issue of cast- versus wrought-iron had been completely resolved, a new material entered the picture: steel. Steel was not a newly discovered material, of course, but high cost and small output had limited its use mainly to the manufacture of tools. The Bessemer and Siemens-Martin processes reduced the cost and greatly improved the quantity of structural steel available.[25] Steel was used for special purposes and special bridges beginning with the Eads bridge in St. Louis in 1874. From the late 1880s to the early 1890s structural shapes (beams and columns) were rolled in both wrought-iron and steel by the major manufacturers. The qualities of wrought-iron and steel remained controversial until the turn of the century, and engineers continued to debate the relative merits of the two

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[21]T. Allen Comp and Donald Jackson, "Bridge Truss Types: A Guide to Dating and Identifying." American Association for State and Local History, Technical Leaflet 95, History News, 32 (May, 1977), pp. 5-11.

[22]James A. L. Waddell, Bridge Engineering (New York: J. Wiley & Sons, 1925), p. 16. Hereafter cited as *Waddell (1925)*.

[23]Theodore Cooper, "The Use of Steel for Bridges, " Transactions of the American Society of Civil Engineers, VIII (Oct. 1879), 265. Important railroad bridges in the United States were built of cast-iron in the 1870s and thousands of short span cast-iron girder bridges were still in use on the railroads in England and Wales as late as 1896 (*Waddell (1925)*, pp. 17, 24); Henry Grattan Tyrrell, History of Bridge Engineering: From the Earliest Times to the Present Day (Chicago: By the author, 1911), p. 151.

[24]Captain William E. Merrill, Iron Truss Bridges for Railroads (New York, 1870), p. 126.

[25]Bessemer's initial claim that tons, rather than pounds, could be mass-produced was met with skepticism. After early disappointments, however, this proved true. Douglas A. Fisher, The Epic of Steel (New York: Harper & Row, 1963), p. 117. Hereafter cited as *Fisher*.

metals.[26] Nevertheless steel was the predominant if not exclusive structural material for bridges by the mid-1890s. Although some bridge-building companies continued to advertise bridges built of either metal as late as 1900, after 1892 wrought-iron structural shapes were no longer being produced.[27]

In the twentieth century, the continued development of steel focused on alloys. James A.L. Waddell devoted an entire chapter to alloy steels in his 1916 textbook and its 1921 sequel.[28] By 1921, one English engineer indicated that developments since the turn of the century had made both the "mild" steel of the 1890s and wrought-iron old fashioned. Both the engineer and the metallurgist developed an increasingly sophisticated understanding of the variations which resulted from changes in the chemical composition, heat treatment, macrostructure, and microstructure.[29] Because the major advantage of alloy steels lay in very long span bridges and welded connections—the latter feature not becoming common until after World War II—it is assumed that metallurgical developments were not a major concern for bridge engineers designing modest rural bridges such as the ones which predominated in Wisconsin.[30]

*Historical Context*

On Wisconsin highways, the predominance of metal-truss bridges for crossings of all lengths seems to have lasted from about 1890 to 1910. Trusses remained an important bridge type in Wisconsin until the advent of World War II, but after 1910, most short crossings (less than 35 feet) employed girder, beam, or slab spans of steel and/or

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[26]David Plowden, Bridges: The Spans of North America (New York and London: W. W. Norton & Co., 1974), pp. 125-7; *Fisher*, p. 103; Herbert W. Ferris, ed., Rolled Shapes: Historical Record--Dimensions and Properties--Steel and Wrought-iron Beams and Columns (New York: American Institute of Steel Construction, 1953).

[27]A number of companies, including Wisconsin Bridge and Iron, continued to advertise both iron and steel bridge until the turn of the century. See the advertisements for Wisconsin Bridge and Iron Company, in Polk's Wisconsin State Gazetteer and Business Directory, 1895-96, p. 687; and for Wrought-iron Bridge Company in Cassier's Magazine, 17:6 (1900), pp. 25-26. On the page opposite the Wrought-iron advertisement, the Berlin Iron Bridge Company prominently advertised only "Steel Bridges and Buildings."

[28]*Waddell (1925)*, Chapter IV, "Alloy Steels"; and James Waddell, Economics of Bridgework: A Sequel to Bridge Engineering (New York: J. Wiley & Sons, 1921), Chapter V, "Economics of Alloy Steels." Hereafter cited as *Waddell (1921)*.

[29]Leslie Aitchison, Engineering Steels (London: MacDonald, 1953), p. vii; W. E. Dalby, Strength and Structure of Steel and Other Metals (London: E. Arnold, 1923) relies on three sophisticated laboratory instruments designed and developed by the author. A brief overview of twentieth century structural steels is in Edwin H. Gaylord and Charles N. Gaylord, Design of Steel Structures (New York: McGraw-Hill, 1957), pp. 43-46.

[30]Although the Biennial Reports were not sophisticated in their engineering discussions, they did highlight new techniques and designs. The lack of any mention of metallurgy in the Biennial Reports is taken as a measure of a lack of priority.

concrete. The Wisconsin State Highway Commission (SHC), established in 1911 to improve the quality of road and bridge construction in the state, was particularly enthusiastic about using concrete for culverts and small bridges.[31]

The "bowstring" truss bridge may have been the state's first, common, all-metal truss configuration. Nationwide, thousands were apparently built, but the popularity of this design in Wisconsin is difficult to determine.[32] Although records of a number of them exist, none remain on Wisconsin highways. Seven are preserved in parks and wildlife refuges.[33]

The two truss designs that came to dominate highway bridge construction by the late nineteenth- century were the Warren and the Pratt. The Warren truss was patented by two British engineers in 1840. In this design, the vertical members handle only nominal stress, while the diagonals serve as both tension and compression members. The vertical members, like the diagonals, were usually paired angles, but of smaller dimension. In Wisconsin, Warren trusses are by far the most common type of highway truss, having been promoted by the SHC after 1911. Of the approximately 450 Warren trusses in Wisconsin in 1980, over four-fifths were riveted pony trusses built according to SHC standard plans.[34]

The Pratt truss, patented by Caleb and Thomas Pratt in 1844, features vertical compression members and diagonal tension members. Although originally built as a combination bridge, the Pratt truss was not as efficient in that form as the Howe. As an all-metal bridge, however, the Pratt had the advantage because it used less iron and was easier to erect. The oldest existing truss bridge in Wisconsin, the 1877 White River Bridge in Burlington, is a Pratt.[35]

During the 1870s, an important variation of the Pratt design was introduced for long-span bridges. Because the depth of truss required in the center of a bridge is greater than at the abutments, a considerable amount of material can be saved on a long-span structure by "bending" the top chord into a polygonal configuration known as a

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[31]Hans Nelson Brue, "The Development of Highway Bridges in Wisconsin" (unpublished thesis, University of Wisconsin, 1916) pp. 4-5. The historical record is sketchy here, and there is no reliable census of bridges by type for this period. The 1880s and 1890s saw a large number of metal trusses built, often with some controversy of the higher first cost when compared to the familiar old wooden bridge. It was not just a phenomenon of the late nineteenth century. Simple wood beam, beam-and-pier, and truss bridges were recommended for the cost-conscious land owner in Frederick S. Langa, "Bridge Your Way to a Low-Cost Lot," Rodale's New Shelter (April 1981) pp. 66-75.

[32]Diane Kromm, "Milford Bridge," (HAER No. WI-21), Historic American Engineering Record Report, unpublished, 1987. Hereafter cited as *Kromm*.

[33]Oconomowoc City Clerk Records, 1871, unprocessed collection, Archives Division, SHSW; *Kromm*, pp. 2-4.

[34]Comp and Jackson; Working Files, HBAC. Hereafter cited as *Comp*.

[35]*Comp*. A few all-metal Howe trusses were built, including, apparently, one built in Watertown in 1875. *Kromm*, p. 2.

"Parker" truss. If the top chord has exactly five sides, the bridge, by convention, is called a "camelback" truss. The addition of substruts and/or subties makes a Pratt into a Baltimore and a Parker into a Pennsylvania.[36]

The development of the Pratt and its variations was influenced by a debate over the merits of pin connections versus riveted connections for main truss members. Proponents of riveted bridges usually cited the advantages of increased structural rigidity and the reduction of damaging vibrations. In pin-connected bridges, vibrations caused the pin to grind on the eye-bar, thus enlarging the pin hole. Advocates of pin-connected bridges, on the other hand, emphasized the theoretically correct distribution of stresses and the smaller amount of metal required. They also criticized the difficulty of ensuring that a riveted joint was properly fabricated, especially in the field. The pin-connected bridge, they argued, was the reason why Americans surpassed the rest of the world in bridge building.[37]

The issue of pin versus riveted connections was complicated by practical factors, including machinery, tools, and power sources, both in the shop and in the field. The debate also was easily sidetracked by tangential issues; as, for example, when some commentators denied that the pin *per se*, was the most important feature of "characteristically American" bridgework. In addition, both connection types came to incorporate features that were not an intrinsic part of the design. Many early riveted spans, for example, used the lattice girder (or multiple triangulation) design, which was clearly excessive in material, while many pin-connected bridges were dangerously light, particularly in their details. Thus, a fair comparison between the two systems was not always made.[38]

According to Waddell, the controversy raged in engineering circles for a dozen years around the turn of the century. No dramatic resolution of the issue occurred, but "time and steady development of the real science of bridge designing" gradually changed minds. Significant changes in rivetting technology also altered the terms of the debate.[39] A compromise of sorts was finally reached, resulting in the adoption of the best features of each design.

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[36]*Comp.*

[37]*Waddell (1921)*, pp. 73-74; Alfred P. Boller, Practical Treatise on the Construction of Iron Highway Bridges, (4th ed.; 1890), pp. 44-49; "Discussion of American Railroad Bridges," American Society of Civil Engineers, Transactions 26:429 (1889), p. 593. According to Boller (p. 47), "Whatever objection has been urged against shop-riveting is intensified in a high degree when the field-riveter steps in to do his part of the work." For an argument that pin-connected Pratts require more metal than riveted Warrens, see *Johnson*, p. 276.

[38]*Waddell (1925)*, p. 7; "The Development of Bridge Trusses," Engineering Record, 42 (November 3, 1900), p. 411. Hereafter cited as *Development*.

[39]Charles Evan Fowler, "Machinery in Bridge Erection," Cassier's Magazine, 17.4 (1900), pp. 327-44; Charles Evan Fowler, "Some American Bridge Shop Methods," Cassier's Magazine, 17.4 (1900), pp.200-15; "Pneumatic Percussion Riveters," Engineering News, 39 (March 3, 1898), pp. 148-149; "Field Riveting by Power," Engineering News, 42 (October 27, 1900), p. 385; "Pneumatic Field Riveting in Railway Bridgework," Engineering News, 42 (October 27, 1900), pp. 393-94.

Riveted bridges were designed with less duplication of members and pin-connected bridges were still accepted for long-span highway bridges.[40]

In Wisconsin, SHC officials clearly favored riveted construction from an early date. Consequently, the distinction between pin connections and riveted connections establishes an important subcategory boundary, separating the era of state-planned bridges from the preceding period in which bridge companies were largely responsible for bridge design. As early as 1908, state engineers advocated the use of riveted pony trusses for short-span bridges.[41] When the SHC was formally established in 1911, the riveted Warren became the state's standard pony design. In that year, the SHC also drafted a standard plan for riveted, overhead, Pratt trusses, and by 1914, the agency had adopted riveted construction for all overhead Pratt variations. As SHC engineer A. R. Hirst wrote in 1913, "Very seldom do we use a pin-connected truss..."[42]

In the mid-1930s, the SHC seems to have developed a preference for overhead Warren trusses for long-span bridges, although some overhead Pratts continued to be built. Riveting remained dominant in bridge building until well after World War II. As late as 1931, the construction specification of the American Association of State Highway Officials (AASHO) stated, "Welding of steel shall not be done except to remedy minor defects and then only with the approval of the engineer." Shortly thereafter, however, riveting rapidly disappeared and was replaced by better welding and high strength bolts.[43]

*The State Highway Commission*

The involvement of local governments in bridge repair, replacement, and construction projects was the subject of numerous laws in the late nineteenth-century. With the Good Roads Movement of the late 1890s and early 1900s,

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[40]*Waddell (1921)*, p. 74; *Development*, p. 411.

[41]See, for example, the photograph of "a riveted steel [Pratt pony truss] highway bridge 40' span...built under the supervision of the Highway Division" in Arthur R. Hirst and M. W. Torkelson, Culverts and Bridges (2nd ed.; Madison, Wisc: Highway Division, Wisconsin Geological and Natural History Survey, Road Pamphlet No. 4, 1908), p. 43. The SHC standard plan (dated 1908) for a riveted Warren pony truss with a 40-foot span is found in Microfilm Reel M-1, "Miscellaneous Standards," Bridge Section, WisDOT.

[42]A. R. Hirst, "Bridges and Culverts for Country Roads," Engineering News (October 9, 1913), p. 729. With minor modifications, these standards are reiterated in Wisconsin Highway Commission, Second Biennial Report, p. 24.

[43]U. S. Department of Transportation, Federal Highway Administration, "Design and Construction of Welded Bridge Members and Connection" (Washington, D.C.: Government Printing Office, 1980), pp. 1, 6-9.

a specific set of proposals were put forth for greater involvement by the state government in promoting good quality bridges.[44]

In 1907, the state legislature established a Highway Division within the Wisconsin Geological and Natural History Survey to conduct experiments in road design and to advise local governments about specific projects. Town governments, traditionally reluctant to hire an independent engineer to assist in bridge building, could now avail themselves of free engineering counsel from the state. At the same time, the legislature required counties to make a commitment to professional oversight and increased funding by appointing "a competent engineer or experienced road builder" to serve as County Highway Commissioner and by levying a tax of not less than one-fourth nor more than two mills on the assessed valuation of all county property for the county road and bridge fund.[45]

In 1908, Wisconsin voters removed their greatest obstacle to creating a progressive statewide system of bridge and highway construction. In that year, by a three-to-one margin, voters eliminated the state's constitutional prohibition against direct state aid to transportation projects. When the legislature made its first appropriation for highway improvements in 1911, it also transformed the Highway Division of the Geological Survey into an autonomous State Highway Commission (SHC), which was given the responsibility of overseeing the expenditure of state funds for the development of a state highway network.[46] Like the former Highway Division, the SHC emphasized the use of standardized plans for various types of bridges and culverts.[47] The first set of standardized truss plans encompassed spans ranging from 36 to 128 feet, generally in five-foot increments. All but one had a sixteen-foot roadway. Revised several times by the 1920s, these plans gradually provided for wider bridges, and continually incorporated the latest engineering wisdom and detailing.[48]

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[44]Ballard Campbell, "The Good Roads Movement in Wisconsin, 1890-1911," Wisconsin Magazine of History, 49 (Summer 1966), pp. 273-93. Hereafter cited as *Campbell*. M. G. Davis, A History of Wisconsin Highway Development, 1825-1945 (Madison, Wisc: Wisconsin Department of Transportation, 1947), pp. 218--222. Hereafter cited as *Davis*. Wisconsin Statutes, Second Session of the Legislature, January 10, 1849 (Southport, 1849), pp. 182-83; Town Laws of Wisconsin, 1858, p. 157; Legislature of Wisconsin, Private and Local Laws, 1867, pp. 60-61, 179-82; Laws of Wisconsin, 1881, Chapter 315, pp. 407-08; Laws of Wisconsin, 1885, Chapter 187, pp. 162-64. Richard N. Current, The History of Wisconsin, Vol. II: The Civil War Era, 1848-1873, Edited by William Fletcher Thompson (Madison, WI: State Historical Society of Wisconsin, 1976), p. 28; Robert Nesbit, Wisconsin, A History (Madison, WI: University of Wisconsin Press, 1973), p. 197. A sampling of available county board records suggest that county-aid bridge projects were infrequent during the 1880s, and numbered five to ten per county per year during the 1890s.

[45]*Campbell*, p. 278-79; Laws of Wisconsin, 1907 (Madison, 1907), Chapter 552, p. 292.

[46]*Campbell*, pp. 279-84; *Davis*, p. 104.

[47]SHC, Second Biennial Report, July 1, 1911 to January 1, 1915 (Madison, 1915), p. 24.

[48]WisDOT, Bridge Section, Microfilm Reel M-1.

In the first three and one-half years of its work, the SHC designed over 1,500 bridges of all types. All were designed to carry a live load of 15 tons. Believing firmly in the use of reinforced concrete to "the fullest extent practical," the SHC was pleased that all but three of their designs had concrete floors. These figures included almost 900 bridges requested by local governments in 70 counties. Practically all the local bridges in the state during these years were either designed by the SHC or were based on SHC standard plans.[49]

Despite its enthusiastic support for concrete construction, the SHC declared in 1926 that the steel bridge "is not looked upon with disfavor," and it continued to refine its truss designs. In the late 1930s, it made a major commitment to keeping its standardized plans up to date by dropping the Pratt design in favor of the Warren for all overhead truss configurations. Newly-completed SHC-designed truss bridges, both monumental and modest, also continued to be featured in the photographic sections of the agency's biennial reports. Nevertheless, the SHC clearly favored concrete spans, citing advantages of lower cost, greater compatibility with aesthetic treatment, and greater adaptability to remodeling, especially in terms of roadway widening.[50] The metal truss, however, remained cost effective in many situations, and the SHC continued to design some truss bridges until well after World War II.

During its early years, the SHC was guided by five key figures, all of whom had previously worked at the Highway Division of the Geological Survey. These staff members were W.O. Hotchkiss, first chief of the Highway Division; Arthur R. Hirst, first State Highway Engineer; Martin W. Torkelson, first State Bridge Engineer; Herbert C. Keulling, assistant highway engineer; and Walter C. Buetow, assistant bridge engineer. When these men moved on to the SHC, they found a helpful ally in Frederick E. Turneaure. Turneaure was Dean of the College of Engineering at the University of Wisconsin and had been instrumental in establishing the new state highway agency.[51]

*Historic Bridge Advisory Committee*

The systematic study of Wisconsin truss bridges began in 1976. Under the sponsorship of the State Historic Preservation Office (SHPO) of the State Historical Society, George M. Danko produced two volumes. The first volume was based on an extensive literature search, and traced related developments in engineering, metallurgy, and

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[49]*Davis*, pp. 112-13; SHC Second Biennial Report, pp. 14, 21, 30; see also SHC, Preliminary Biennial Report, July 1, 1911 to January 1, 1913 (Madison, WI: 1913), p. 17.

[50]The SHC succinctly assessed the pros and cons of steel and concrete bridges in its Sixth Biennial Report, 1925-1926 (Madison, WI: 1926), p. 67. From 1911 to 1915, truss bridges in Wisconsin cost considerably less per foot to build than concrete structures, but then steel began its "great advance in price." see SHC, Fourth Biennial Report, 1916-1918 (Madison, WI: 1918), pp. 11-12; see also the comparative cost chart in Engineering News, 47 (February 28, 1917).

[51]Brief biographies of these men are in Robert S. Newbery, Jeffrey A. Hess, and Robert F. Frame, III, Truss Bridges: Vol. II, Historic Highway Bridges of Wisconsin (Madison, WI: Wisconsin Department of Transportation, forthcoming).

manufacturing to provide a general historical overview of truss-bridge design and construction on both a state and national level. In 1977, Danko conducted an intensive field survey of truss bridges in 11 Wisconsin counties. Using the records of the Wisconsin Department of Transportation (WisDOT), he focused his study on counties which he hypothesized would have both a high concentration of truss bridges and high replacement pressures. Danko's second volume included intensive survey forms for 35 bridges. The forms for bridges which Danko thought significant were starred.[52]

By 1980, when WisDOT established the Historic Bridge Advisory Committee (HBAC), 17 bridges had been listed in or found eligible for listing in the National Register of Historic Places. Neither Danko's studies nor the individual nominations and determinations of eligibility provided a fully developed statewide historical and chronological context or specific criteria for rating truss bridges. The goal for HBAC, then, was a statewide inventory that would expedite the evaluation of truss bridges, which, in 1980, accounted for approximately one-tenth of the state's 10,386 surviving highway bridges built before 1950.

The HBAC was guided by the basic assumption that all distinctive types of truss bridges are worthy of some degree of preservation. Thus, the planning for the statewide survey focused on two major information sources in the WisDOT Bridge Section: (1) a card file containing rudimentary structural information and a photograph for every highway bridge in the state; (2) a computerized data bank adapted to meet the FHWA's interest in a statewide inventory to promote an engineering evaluation of all bridges in the state. These two sources generated an initial pool of 996, pre-1941 truss bridges representing 18 structural types.[53]

The 1941 cut-off date was selected to satisfy, with a comfortable margin, the 50-year age criterion customarily required for National Register eligibility. Moreover, Danko had only located one truss built after that date. Although subsequent research located several dozen trusses built after 1941, these trusses were markedly different in design. Thus, the 1941 date is an appropriate interim boundary, if not final marker, for the truss bridge era in Wisconsin.[54]

On the basis of data derived primarily from WisDOT sources, the initial pool was carefully studied to identify, for each truss type, those bridges which had the earliest known construction dates, were in the best condition, had the

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[52]Ibid.

[53]Originally, Pratt pony trusses with a single vertical member were considered to be a separate category, but this distinction was subsequently dropped and the number of categories was reduced to seventeen.

[54]George M. Danko, "The Development of the Truss Bridge, 1820-1930, with a Focus Toward Wisconsin" (unpublished report prepared for the State Historic Preservation Office, State Historical Society of Wisconsin, 1976); George M. Danko, "A Selective Survey of Metal Truss Bridges in Wisconsin" (unpublished report prepared for Historic Preservation Division, State Historical Society of Wisconsin, 1977). Hereafter cited as *Danko*.

best available historical data (e.g., bridge plates, SHPO research files, previous historical studies), and had the most obvious noteworthy features (e.g., longest span, greatest number of spans, unusual workmanship). This winnowing reduced the initial pool by approximately 75 per cent. Up to this point, the study had focused exclusively on bridges on or over public thoroughfares, including city streets, county highways, and town roads. Some bridges of historical interest, however, were known to exist in park settings, and these also were included in the study. With these additions, the study sample totaled 247 bridges.

To determine the most significant bridges within each truss category, a set of evaluation criteria, with a corresponding numerical rating system, was developed, using the model developed by the State of Virginia.[55] A trial run was conducted on the bedstead-truss (truss-leg) category. Because this category consisted of only 8 examples, it was possible to rate all examples and compare the results with a "subjective" analysis of the entire group. The criteria were revised in light of this experience and then applied to each category with more than a dozen examples. Evaluations included a field review of the structure, and, when time permitted, limited historical research. Results were presented to HBAC at bimonthly meetings. Members of the HBAC found a slide show to be a useful complement to the evaluation sheet and other printed materials.

The HBAC evaluation process yielded a final group of 53 bridges deemed potentially eligible for the National Register. A thematic determination of eligibility, however, was not completed, and some attrition occurred. In 1986, WisDOT re-evaluated the remaining truss bridges, selected "next-best" substitutes for those that had been replaced, and initiated an intensive survey to document authoritatively the National Register eligibility of the sample. The field survey was conducted, on a contract basis, by historians Jeffrey A. Hess and Robert M. Frame III. The intensive field-survey sample contained a total of 54 bridges, including two which were already on the National Register (P-18-720 and P-53-162) for which additional information was desired. In addition to an in-depth field inspection, the consultants compiled historical research dossiers on the various bridges from local and state archives, libraries, and local residents.

The results of the intensive field-survey indicated that forty-eight bridges were immediately eligible for the National Register and that 2 bridges would soon be eligible when they reach 50 years of age (P-09-715 and P-10-266). These fifty bridges represented a total of 33 of Wisconsin's 72 counties. The SHPO determined that two wood king post bridges (P-04-043 and P-04-044) were ineligible for the National Register because they were built in the 1950s. One has subsequently been replaced.[56]

*Manufacturer: The Chicago Bridge and Iron Company*

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[55]Howard Newlon, Jr., "A Trial Rating System for Bridge," Interim Report No. 1, Criteria for Preservation and Adaptive Use of Historic Highway Structures., Virginia Highway and Transportation Research Council, 78-R29, January 1978.

[56]Richard W. Dexter to David H. Pantzlaff, January 20, 1988. WisDOT Project ID 8355-04-00; SHSW: #88-0053.

The Chicago Bridge and Iron Company was one of a number of regional Midwestern bridge fabricating firms founded shortly before the turn-of-the-century. The company was incorporated in July, 1889, by Horton, Wheelock, and King in Chicago.[57] Horace E. Horton, originally a bridge contractor in Rochester, Minnesota, proved to be the central figure in this business venture. Directories list the company as active from 1891 until 1909.[58] Horton appears in the business directories under contractors from 1886 until 1891.[59] Eventually, he became the sole owner of the bridge fabricating company.

The Cunningham Lane Bridge, which was fabricated in 1895, is considered to be eligible for listing under Criterion C as one of Wisconsin's oldest identified examples of a smaller full-slope pony type Pratt truss iron highway bridge. Intact examples of bridges of this date and type in Wisconsin are significant in part because of their early date of construction, but also because they are representative of the period of industry-led design experimentation that preceeded the period of standardized designs that followed in the early twentieth century. The context for such bridges that is included in the CRMP makes it clear that examples of this type and truss design that date from the late 1890s in Wisconsin are now quite rare. In addition to being a scarce surviving example of a once rather common Wisconsin bridge type, the Cunningham Lane Bridge also appears to be a good, representative example its type and it has retained nearly all of its original metal structural elements. It can also, therefore, be said to have retained its integrity within the context of metal highway bridges in Wisconsin.

*Criteria Consideration B*

Unlike most resource types, metal truss bridges were intentionally designed in a manner that facilitated disassembly so that they could readily be moved to a new site when conditions at the original site changed. In the context considerations section of the Iron and Steel Truss Highway Bridges study unit of the CRMP the question of integrity of location is dealt with by noting that: "Integrity of location simply indicates whether the bridge is located at its original site or has been moved. Iron trusses are somewhat unique in this aspect in that they were designed for easy transportation and erection and thus were very mobile structures. Such mobility should be viewed as proof of the intrinsic engineering value of iron trusses." Consequently, the fact that the Cunningham Lane Bridge has been moved from its original location does not appear to be of great importance in evaluating its potential significance. Since many smaller truss bridges have been moved at least once in their lifetime the significance of such bridges is not generally considered to have been compromised by having been moved if the structural integrity of the bridge

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[57]Eli W. Imberman, "The Formative Years of the Chicago Bridge and Iron Company" (unpublished Ph.D. dissertation, University of Chicago, 1973), p. 264.

[58]George M. Danko, "The Development of the Truss Bridge, 1820-1930, with a Focus Toward Wisconsin" (unpublished report prepared for the State Historic Preservation Office, State Historical Society of Wisconsin, 1976); George M. Danko, "A Selective Survey of Metal Truss Bridges in Wisconsin" (unpublished report prepared for Historic Preservation Division, State Historical Society of Wisconsin, 1977).

[59]Ibid.

remains intact. Because the Cunningham Lane Bridge still retains a high degree of structural integrity, this bridge, despite having been moved, is believed to meet the conditions set forth in Criterion Consideration B.

9. Major Bibliographical References

_X_ See continuation sheet

Previous documentation on file (NPS):

___ preliminary determination of individual listing (36 CFR 67) has been requested

___ previously listed in the National Register

___ previously determined eligible by the National Register

___ designated a National Historic Landmark

___ recorded by Historic American Buildings Survey #__

X ___ Recorded by Historic American Engineering Record #WI-51

Primary location of additional data:

X ___ State historic preservation office

X ___ Other State agency

___ Federal agency

___ Local government

___ University

___ Other

Specify repository:

10. Geographical Data

Acreage of property Less than one acre

UTM References

| | Zone | Easting | Northing | | Zone | Easting | Northing |
|---|---|---|---|---|---|---|---|
| A | 15 | 7/0/9/5/6/0 0 | 4/8/0/7/6/6/0 | B | | / / / / / | / / / / / / |
| C | | / / / / / | / / / / / / | D | | / / / / / | / / / / / / |

___ See continuation sheet

Verbal Boundary Description

_X_ See continuation sheet

Boundary Justification

_X_ See continuation sheet

11. Form Prepared By

name/title Ted Nordbrock, Amy Ross/Architectural Historians

organization Mead & Hunt, Inc. date 16 January 1995

Cunningham Lane Bridge
Name of Property

Richland County, Wisconsin
County and State

| | | | | | |
|---|---|---|---|---|---|
| street & number | 6501 Watts Road, Suite 101 | telephone | (608) 273-6380 | | |
| city or town | Madison | state | Wisconsin | zip code | 53719 |

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*Verbal Boundary Description*

The Cunningham Lane Bridge is currently located in Section 30, T11N, R1E, on the private farm of Kent C. Houck, in the town of Rockbridge, Richland County, Wisconsin, not far from the city of Richland Center. It is situated over a small, unnamed spring runoff ditch, near the west end of Hansberry Lane. The bridge is located in close proximity to the Houck residence, several outbuildings, and other vintage metallic structures. The boundary consists of the periphery of the rectangular parcel measuring 41'3" by 12'11" on which the bridge stands.

*Boundary Justification*

The boundary of this moved bridge encompasses the entire historic structure.

**PHOTOS**

*Photo 1 of 12.*
Cunningham Lane Bridge.
Town of Rockbridge, Richland County, Wisconsin.
Photo by Ted Nordbrock, 28 September 1994.
Negative at State Historical Society of Wisconsin.
View Looking NW.

*Photo 2 of 12.*
Cunningham Lane Bridge.
Town of Rockbridge, Richland County, Wisconsin.
Photo by Ted Nordbrock, 28 September 1994.
Negative at State Historical Society of Wisconsin.
View Looking NW.

*Photo 3 of 12.*
Cunningham Lane Bridge, detail of lower chord, turnbuckle, and decking.
Town of Rockbridge, Richland County, Wisconsin.
Photo by Ted Nordbrock, 28 September 1994.
Negative at State Historical Society of Wisconsin.
View Looking SE.

*Photo 4 of 12.*
Cunningham Lane Bridge, detail of vertical members and deck-mounted railroad ties.
Town of Rockbridge, Richland County, Wisconsin.
Photo by Ted Nordbrock, 28 September 1994.
Negative at State Historical Society of Wisconsin.
View Looking NW.

*Photo 5 of 12.*
Cunningham Lane Bridge, detail of footings.
Town of Rockbridge, Richland County, Wisconsin.
Photo by Ted Nordbrock, 28 September 1994.
Negative at State Historical Society of Wisconsin.
View Looking NE.

*Photo 6 of 12.*
Cunningham Lane Bridge, detail of pin connections.
Town of Rockbridge, Richland County, Wisconsin.
Photo by Ted Nordbrock, 28 September 1994.
Negative at State Historical Society of Wisconsin.
View Looking NE.

*Photo 7 of 12.*
Cunningham Lane Bridge, detail of iron latticework under inclined end post.
Town of Rockbridge, Richland County, Wisconsin.
Photo by Ted Nordbrock, 28 September 1994.
Negative at State Historical Society of Wisconsin.
View Looking NW.

*Photo 8 of 12.*
Cunningham Lane Bridge.
Town of Rockbridge, Richland County, Wisconsin.
Photo by Ted Nordbrock, 28 September 1994.
Negative at State Historical Society of Wisconsin.
View Looking SE.

*Photo 9 of 12.*
Cunningham Lane Bridge, detail of turnbuckle.
Town of Rockbridge, Richland County, Wisconsin.
Photo by Ted Nordbrock, 28 September 1994.
Negative at State Historical Society of Wisconsin.
View Looking NE.

*Photo 10 of 12.*
Cunningham Lane Bridge, site view.
Town of Rockbridge, Richland County, Wisconsin.
Photo by Ted Nordbrock, 28 September 1994.
Negative at State Historical Society of Wisconsin.
View Looking S.

*Photo 11 of 12.*
Cunningham Lane Bridge, site view.
Town of Rockbridge, Richland County, Wisconsin.
Photo by Ted Nordbrock, 28 September 1994.
Negative at State Historical Society of Wisconsin.
View Looking SE.

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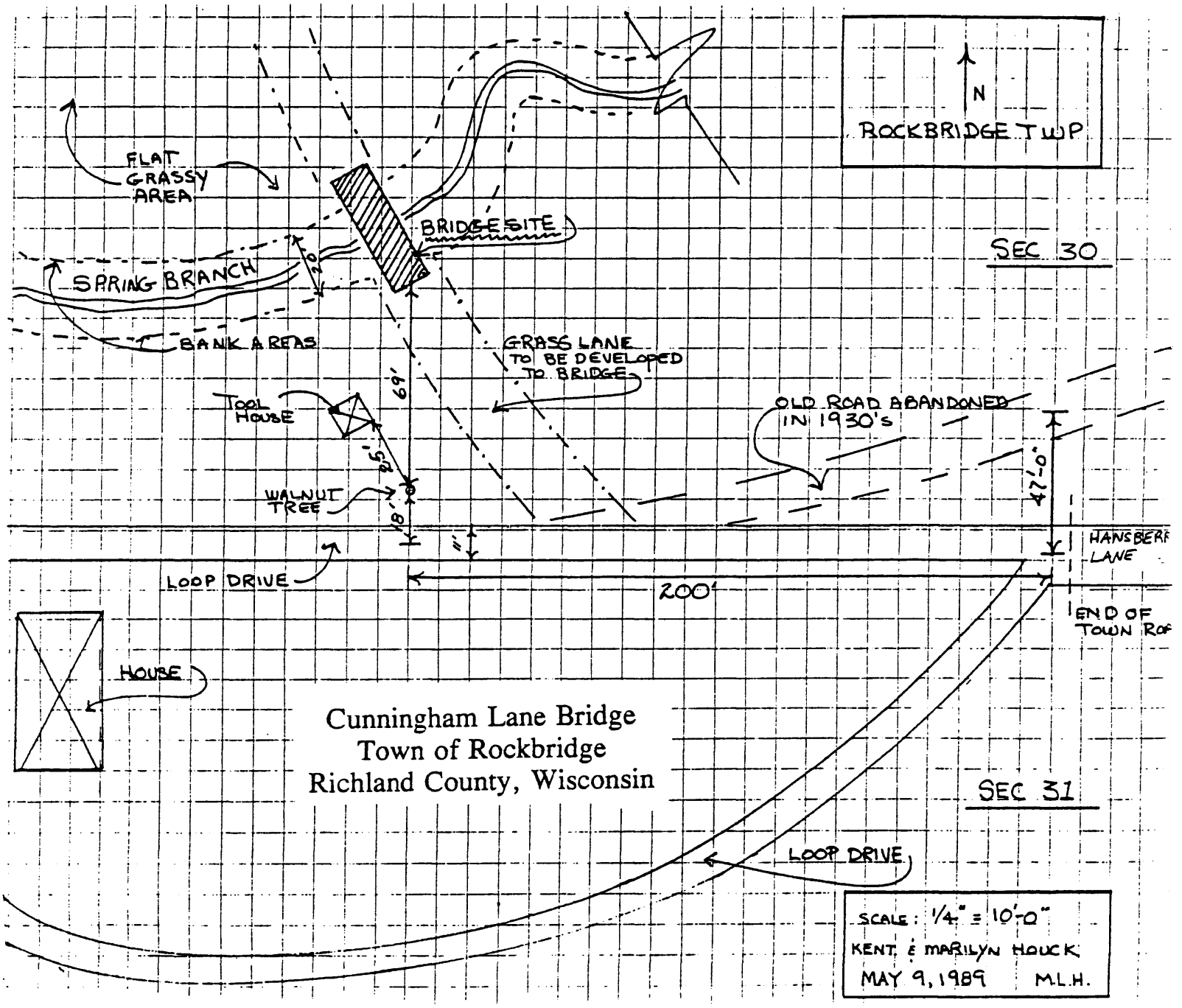
United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section number Site Plan Page 1 Town of Rockbridge, Cunningham Lane Bridge Richland County, Wisconsin

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Contributing

*Owner*

Kent C. and Marilyn Houck
Box 837, Rt. 5
Richland Center, WI 53581