

Roosevelt Drive Bridge
(Third Street Bridge)
Spanning Menomonee River on Roosevelt Drive
Village of Menomonee Falls
Waukesha County
Wisconsin

HAER No.

WI-79

HAER
WIS
67-MENOMONEE,
6-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
Rocky Mountain Regional Office
National Park Service
P.O. Box 25287
Denver, Colorado 80225-0287

HISTORIC AMERICAN ENGINEERING RECORD

ROOSEVELT DRIVE BRIDGE
(Third Street Bridge)HAER
WIS
67-MENFA,
2-

- Location: Roosevelt Drive over the Menomonee River
Village of Menomonee Falls, Waukesha County, Wisconsin
- USGS Menomonee Falls Quadrangle, Universal Transverse Mercator
Coordinates: Zone 16 Easting 409435 Northing 4781430
- Present Owner: Village of Menomonee Falls
- Present Use: Vehicular bridge
- Significance: The Roosevelt Drive Bridge is a two-arch, limestone structure that was completed in 1899. It is significant as the only example of a late nineteenth century, stone-arch bridge in the historic portion of the Village of Menomonee Falls. In addition, according to the 1986 publication Historic Highway Bridges in Wisconsin, Volume 1: Stone and Concrete Arch Bridges, it is significant as one of only eight, statewide, stone-arch bridges located in a municipality that were deemed eligible for the National Register.¹

PART I. HISTORICAL INFORMATION

- A. Physical History:
1. Date of erection: 1899²
 2. Architect: Unknown
 3. Original and subsequent owners: Public ownership.
 4. Builder: Nels Peter Lund³

¹Menomonee Falls Village Board, Minutes of the Meetings of the Board of Trustees, vol. 1, 12 December 1899. Available on microfilm at the Maude Shunk Public Library, Menomonee Falls, WI; Jeffrey A. Hess and Robert M. Frame, III, Historic Highway Bridges in Wisconsin, Volume 1: Stone and Concrete Arch Bridges (Madison: Wisconsin Department of Transportation, 1986), 74, 129.

²Village Board, Minutes, vol. 1, 11 September 1899, ,12 December 1899.

³Ibid., 11 September 1899.

5. Alterations and additions: Although the form of its arches is generally good, the bridge's architectural character has been substantially altered, and its integrity diminished, through the removal of its original stone railing and the subsequent addition of sidewalks and a new railing constructed of pipes--all of which is thought to have taken place prior to, or in the 1930s.⁴

B. Historical Context:

MENOMONEE FALLS HISTORY

According to the intensive historical/architectural resources survey of the village completed in 1986, Menomonee Falls traces its history back to 1836 when Garrett Vliet surveyed the area for the government. Impressed with the waterpower sites he observed on the Menomonee River, Vliet built a sawmill at the falls on the Menomonee in 1838, and then bought the 640 acres around the falls in 1839. Building another mill at the falls in 1842, he retained Hollingsworth Smith to operate it. Smith is generally thought to be Menomonee Falls' first permanent settler.⁵

Frederick Nehs visited the area in 1842. Convinced of its potential for development, he bought all of Vliet's property in 1844. In conjunction with Jesse Nehs' 1851 gristmill, Menomonee Falls' location on the Fond du Lac Road had drawn over 200 residents to the area by 1860. The fledgling community's early role was that of an agricultural support community, and to that end its first store was built in 1853.⁶

Growth in the 1860s focused on commerce and manufacturing. It was in that decade, for instance, that the Coates & Ostrander General Store and the I.B. Rowell & Company Agricultural Works were built. Growth in the 1870s and 1880s was stymied to an extent by the Panic of 1873 and the westward movement. But by 1890, a railroad served Menomonee Falls, and that opened up a number of new development opportunities. In 1891, the Enterprise Roller Mill began operation as did the Marble Gloss Lime Company, which consisted of three large kilns. As well, occupying a

⁴Hess and Frame, Historic Highway Bridges in Wisconsin, 127.

⁵Joan Rausch, et al, Intensive Survey Report: Architectural and Historical Survey Project (La Crosse, WI: Architectural Researches, Inc., 1986), 13.

⁶Ibid., 14-15.

thirteen acre site, the Wisconsin Beet Sugar Company was built in 1893.⁷

Menomonee Falls was incorporated as a village in 1892. Its 1890 population was 422, and reached 949 by 1910. It was in this period that the community received telephone and electrical service. The village's growth was largely accommodated by an expanding residential area along Main Street between Water and Pilgrim, as well as in the vicinity immediately to the south and north of Main Street. That area included Park Boulevard, platted in 1905 and considered a "very desirable residential district."⁸

Post-World War I development was greatly facilitated by the completion of STH 15, a concrete road between Chicago and Green Bay that ran through the village. The automobile orientation it promoted propelled the creation of several new business establishments, including Bast's 1-Stop Service Station, the Schuman Motor Company Ford Garage and the Klinger & Southern Motor Company Garage. Additional commercial growth, including the Hille Building and Mueller's Cafe, was also attributed to the increased automobile traffic through the village.⁹

Menomonee Falls' most significant period of growth occurred after World War II, however, and again, the automobile was at the heart of that expansion. The post-war economic boom and the mobility the auto offered inspired many city dwellers to live beyond their urban work environment. Accordingly, it was in this period that Milwaukee's suburbs began to experience rapid growth. And Menomonee Falls was no exception. With a 1950 population of 4,683, the community increased to include over 31,500 residents by 1970. Today, the village exists as a suburb closely tied to the metropolitan Milwaukee area.

The stone-arch, Roosevelt Drive Bridge evolved within this general historical context to provide access across the Menomonee River.

STONE-ARCH BRIDGES

Historian David Plowden has observed that the construction of stone-arch bridges was not popular in the United States because it was economically unfeasible and

⁷Ibid., 17-18; Viola E. Ruby and Allen Johnson, comps., Photographs and Memories: A Pictorial History of Menomonee Falls, Wisconsin, 2nd ed. (Menomonee Falls: Menomonee Falls Historical Society, 1977), 48.

⁸Rausch, et al., Intensive Survey Report, 18, 20-21.

⁹Ibid., 21.

construction was too time consuming. Plowden noted, "With few exceptions, impatient America [did not] take the time to lay up a stone bridge where an alternative was available."¹⁰ Contrary to historical consensus, however, stone-arch bridges in Wisconsin were not uncommon in the early twentieth century. In a 1986 study conducted by the Wisconsin Department of Transportation, forty-nine stone-arch bridges were identified in the state, about one-half of which are found in northeastern Wisconsin. The bridges were grouped into three categories: railroad, country and city. This discussion, however, focuses on the latter two types. To understand why stone-arch bridges were more prevalent than historians suggest, it is useful to examine the conditions that facilitated their construction.¹¹

A primary reason stone-arches were built in Wisconsin was the abundant supply of the four basic types of building stone: limestone, fieldstone, sandstone and granite quarry. A particular bridge's building material would "conform to [the] local bedrock conditions." For example, surviving quarried granite bridges are located in Lincoln and Waupaca Counties, while sandstone bridges are found in Monroe and Grant Counties and fieldstone structures exist in the Wisconsin "Drift" Area, especially in Price and Waupaca Counties. The most common building material was limestone, found in the eastern quarter of the state. In order to keep costs down, bridge builders obtained these abundant natural resources, which were supplied by the hundreds of local quarries throughout the state. In fact, it has been noted that it was possible "in almost every instance, to identify a quarry site within five miles of a Wisconsin stone-arch bridge."¹² Because of the large number of quarries, stone-arch bridge construction was much more frequent than existing evidence suggests. It is unknown exactly how many of this type were constructed statewide, but in Outagamie County, of thirty-five stone-arch bridges built between 1898 and 1910, only nine remain. This example illustrates that "longevity has never been a strong point for the state's stone-arch bridge population."¹³ Building methods generally accounted for this attrition rate, especially among country bridges.

Thirty-three of the forty-nine bridges in the study were categorized as country bridges. These structures were generally built between 1900 and 1913 by residents

¹⁰David Plowden, Bridges: The Spans of North America (New York: The Viking Press, 1974), 9, 32, cited in Hess and Frame, Historic Highway Bridges in Wisconsin, 13.

¹¹Hess and Frame, Historic Highway Bridges in Wisconsin, 6, 13-15, 21-22.

¹²Ibid., 15-21.

¹³Ibid., 21.

of small towns or villages. The bridges stand in ten Wisconsin counties, but the majority can be found in Outagamie, Price and Waupaca Counties. Most are located on farm roads, and thus are noted more for their functional rather than their aesthetic qualities. The basic features of country bridges include "rock-faced, rubble masonry construction with mortar joints..., one or two segmental arches averaging about 18 feet in span..., stone or simple metal railings, and an overall, structure width of about twenty feet."¹⁴

Construction, design and quality varied from bridge to bridge and county to county. The regional variations can be classified as the fieldstone bridges of Price County, the fieldstone bridges of Waupaca County and the limestone bridges of Brown, Calumet, Fond du Lac and Outagamie Counties. Many of the Price County fieldstone bridges exhibited low quality, since only six of several dozen structures survive. Built by people who had little or no engineering training, many of these bridges suffered from erosion or "scour" because the arch foundations were not deep enough. Most of the bridges had a massive, block-like appearance that resulted from the use of roughly shaped fieldstone. That was the characteristic masonry style of Price County's German settlers. Finnish settlers in the area preferred a "smaller, clean-cut" style with carefully squared rubble masonry and uniformly blocked voussoirs.¹⁵

There are eight fieldstone country bridges built between 1900 and 1908 in Waupaca County. Common features include one to three arches, long approaches, pipe-metal railings and split-fieldstone voussoirs. These bridges display a more finished appearance because they use smaller, matched, rounded fieldstone which is also evident in other Waupaca buildings.¹⁶

The final category of regional country bridges includes the fourteen limestone structures in Outagamie, Calumet, Brown and Fond du Lac Counties. These structures date from 1900 to 1909, and they have from one to nine arches. Their features include "heavily-mortared, rock-faced, rubble-masonry construction with bedding planes from 4 to 9 inches thick, which matches the region's thin-bedded limestone." Up close, the limestone gives these bridges a rough appearance; however, at a distance they have a "sophisticated" and "aesthetically-pleasing" effect. Exhibiting a Roman profile, the Palm Tree Road Bridge in Fond du Lac County is a fine example of a country limestone bridge. With nine arches, it has the largest

¹⁴Ibid., 35-36.

¹⁵Ibid., 35-51.

¹⁶Ibid., 51-58.

number of spans among extant stone-arch bridges in Wisconsin.¹⁷

Eight city stone-arch bridges were built between 1881 and 1913 and are scattered across seven counties. The construction of these bridges involved considerably more sophisticated engineering than the country bridges because the former handled heavier traffic. Since they were more visible, city bridges utilized more elaborate ornamentation as a means to display civic pride. Aside from the ornamentation, these bridges often featured pedestrian walkways and had a minimum width of thirty feet. They included from one to six arches and used one of the four major types of building material. The finest example of the state's stone-arch city bridges is Merrill's First Street Bridge. Its three segmental arches each span thirty-seven feet, the longest stone-arch highway spans in Wisconsin.¹⁸

The Roosevelt Drive Bridge is one of those eight, city stone-arch bridges. It is a two-arch, limestone structure and was built in a county well known for its limestone buildings.¹⁹ Indeed, several large, Waukesha County quarries continue to operate near Menomonee Falls today. In addition, the structure followed in a Menomonee Falls tradition of stone-arch bridges that was established as early as the 1860s when a single-span, stone-arch bridge was built to carry Main Street across the Menomonee River. The Roosevelt Drive Bridge is the only Waukesha County stone-arch bridge identified in Historic Highway Bridges.²⁰

ROOSEVELT DRIVE BRIDGE

Although this structure was completed in 1899, construction plans were initially underway as early as 1897. In January of the latter year, the Menomonee Falls Committee on Streets and Sidewalks hired surveyor J.B. Loomis to make preparations for extending Third Street (present-day Roosevelt Drive) across the Menomonee River. This project was highly desirable--if not necessary--after the

¹⁷Tbid., 58-61.

¹⁸Tbid., 69-79. Note that a full discussion on stone-arch bridges in Wisconsin can be found in Hess and Frame, Historic Highway Bridges of Wisconsin, Volume 1.

¹⁹Richard, W.E. Perrin, Historic Wisconsin Buildings: A Survey in Pioneer Architecture 1835-1870 2nd ed. (Milwaukee: Milwaukee Public Museum, 1981), 103, 108, 110-111.

²⁰Ruby and Johnson, Photographs and Memories, 2-3; Hess and Frame, Historic Highway Bridges in Wisconsin, 74.

railroad arrived in 1890.²¹ By transporting agricultural goods and, most significantly, stone extracted from the numerous area quarries, the Milwaukee, Menomonee Falls & Western line transformed the village into a "shipping point and supply station for a considerable country."²² Consequently, the village bustled with activity. This was particularly apparent around north Water Street, where the railroad company located the depot. Soon thereafter, an array of businesses, including several factories and hotels as well as a foundry, creamery and lumberyard, sprouted in the area. People on the west side of the river could only reach this hub via the bridge at Main Street. To relieve the heavy traffic through the heart of the village, it was desirable to create another river crossing.²³ Hence, the Menomonee Falls Village Board launched plans for a new bridge in January 1897, to be located north of Main Street at Third Street.

The Village Board hired J.B. Loomis on 11 January to survey the area and to inquire about purchasing the needed property from owner Herman Schultz. The following day, the Sidewalk and Street Committee reported that the project would require a fifty-foot strip off the southern end of Schultz's property. It was noted, however, that Schultz refused to sell the parcel for less than \$500, a sum the committee found unsatisfactory. A compromise was reached in February when the committee accepted Schultz's offer of \$300.²⁴ The Village Board began accepting bids for the proposed bridge in September 1899, but the only two received were for iron structures. The board wanted a stone bridge; thus it rejected these plans. A few days later, the board received a suitable offer, and on 11 September, entered into a contract with Nels Peter Lund to build a double-arch stone bridge at a cost of \$850.²⁵ A native of Denmark, Lund had arrived in Menomonee Falls in the early 1890s and quickly earned a solid reputation as a stonemason.²⁶

It was not long, however, before the project hit a snag. M.F. Lepper & Co. owned a local mill and also owned the riverbed at the proposed bridge site. On 19

²¹Village Board, Minutes, vol. 1, 11 January 1897; Hess and Frame, Historic Highway Bridges in Wisconsin, 127; Allen Johnson, Historic Resources Survey Report, Village of Menomonee Falls, Wisconsin (Menomonee Falls, WI: Department of Community Development, [1985]), 24.

²²Theron W. Haight, ed., Memoirs of Waukesha County, Wisconsin (Madison: Western Historical Company, 1907), 294.

²³Johnson, Historic Resources Survey Report, 25.

²⁴Village Board, Minutes, vol. 1, 11 January 1897, 12 January 1897, 8 February 1897.

²⁵*Ibid.*, 8 September 1899, 7 September 1899, 11 September 1899.

²⁶Rausch, et al., Intensive Survey Report, 49, 76-77.

September, company representatives filed objections with the village clerk concerning the placing of stone abutments for the bridge in the river. The mill operators offered to grant the village use of the riverbed if the board would agree to enter into a bond "to hold the mill-owners harmless from any damage that might acru[e] [sic] in the future by the placing of the obstructions in the river-bed." After a lengthy debate, the board declined the offer and instead formed a committee to explore the possibility of purchasing the riverbed. The committee members met with M.F. Lepper representatives and eventually resolved the issue. Initially, the representatives offered to sell the area for \$250, but finally they agreed to sell a 31'x 92' strip across the river for \$100.²⁷

With that problem settled, construction of the bridge proceeded smoothly. On 12 December 1899, the Village Board accepted the completed bridge. Lund presented his bill to the board the following day. After some extended negotiating, the board awarded him the sum of \$1,425 for his work.²⁸

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural Character: The Roosevelt Drive Bridge was built in 1899. It is a two-span, limestone-arch bridge.
2. Condition of fabric: The historic fabric of this structure was compromised when the stone railings were removed and the sidewalks and pipe railings installed. The form of the structure's arches, however, appears to be good--although the mortar is deteriorating and some of the stones in the arches occasionally fall out.

B. Description:

The length of this two-span, limestone-arch bridge is 91 feet (measured from the end of the east wingwall to the end of the west wingwall). It is 30 feet 2 inches wide and carries two 4 foot 8 inch sidewalks, two 5 inch curbs and a two-lane, 20 foot wide traffic deck. The two, 20 foot 6 inch segmental arches spring from a 4 foot wide pier

²⁷Village Board, Minutes, 19 September 1899, 21 September 1899.

²⁸Ibid., 12 December 1899, 13 December 1899, 15 December 1899, 3 January 1900.

with an upstream cutwater and embankment foundations. The segmental arch stones are generally 18 inches by 6 inches and the top of the arch is approximately 10 feet above the uneven river bottom.

The bridge's two, concrete slab walkways are supported by railroad rails that project perpendicularly from the structure itself. The walkway railings are fabricated from pipe. The top rail, which has a 2 inch diameter, is 42 inches high. The intermediate and lower rails have 1.25 inch diameters and are 24 inches and 7.5 inches high respectively, while the railing uprights are 2.25 inches.

C. Setting:

The bridge is located in the Village of Menomonee Falls, at that point where Roosevelt Drive (formerly Third Street) crosses the Menomonee River. At one time, the area around the bridge was a booming part of the village. Nearby were the railroad depot, hotels, factories and other businesses. Today, however, the bridge's neighborhood is largely residential. The exception is that area immediately at the west end of the bridge. Formerly the location of the railroad right-of-way, it is now vacant--although houses are just to the west.

PART III. SOURCES OF INFORMATION

A. Bibliography:

1. Primary and unpublished sources:

Menomonee Falls Village Board. Minutes of the Meetings of the Board of Trustees, 1897-1900. Available at the Maude Shunk Library, Menomonee Falls, WI.

2. Secondary and published sources:

Haight, Theron W., ed. Memoirs of Waukesha County, Wisconsin. Madison, WI: Western Historical Company, 1907.

Hess, Jeffrey A., and Frame, Robert M., III. Historic Highway Bridges in Wisconsin. Volume 1: Stone and Concrete-Arch Bridges. Madison: Wisconsin Department of Transportation, 1986.

- Johnson, Allen. Historic Resources Survey Report, Village of Menomonee Falls, Wisconsin. Menomonee Falls, WI: Department of Community Development, [1985].
- Perrin, Richard W.E. Historic Wisconsin Buildings: A Survey in Pioneer Architecture 1835-1870 2nd ed. Milwaukee: Milwaukee Public Museum, 1981.
- Plowden, David. Bridges: The Spans of North America. New York: The Viking Press, 1974. Cited by Jeffrey A. Hess and Robert M. Frame, III, Historic Highway Bridges in Wisconsin, Volume 1: Stone and Concrete Arch Bridges, 13. Madison: Wisconsin Department of Transportation, 1986.
- Rausch, Joan; Kilsdonk, Betty; and Johnson, Allen. Intensive Survey Report: Architectural and Historical Survey Project. La Crosse, WI: Architectural Researches, Inc., 1986.
- Ruby, Viola E. and Johnson, Allen, comps. Photographs and Memories: a Pictorial History of Menomonee Falls, Wisconsin. 2nd ed. Menomonee Falls: Menomonee Falls Historical Society, 1977.

Prepared by:

John N. Vogel, Ph.D.
Heritage Research, Ltd.
N89 W16785 Appleton Avenue
Menomonee Falls, Wisconsin
3 April 1995

PART IV. PROJECT INFORMATION

This project has been sponsored by the Wisconsin Department of Transportation. RUST Environment and Infrastructure, consulting engineers in Madison, Wisconsin, formally acted as the contracting agency. The project was directed by Dr. John N. Vogel, Principal Investigator and Sr. Historian for Heritage Research, Ltd. (HRL), who provided the photographic documentation and the architectural/technical data. The general context and bridge-specific material was prepared by Laura Abing, HRL Historian and Project Manager and Kevin Abing, HRL Assistant Historian.

ROOSEVELT DRIVE BRIDGE
HAER NO. WI-79
Page 11

Roosevelt Drive Bridge
Menomonee Falls
Waukesha County
UTM Coordinates:
16/409435/4781430

