MINNESOTA ARCHITECTURE - HISTORY INVENTORY FORM

Project: Local Historic Bridge Study - Phase II
Maine, Otter Tail County, Minnesota

**Identification**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historic Name</td>
<td>Phelps Mill Bridge</td>
</tr>
<tr>
<td>Current Name</td>
<td>Bridge L0885</td>
</tr>
<tr>
<td>Address</td>
<td>N/A Pedestrian Crossing over Ottertail River</td>
</tr>
<tr>
<td>City/Twp</td>
<td>Maine</td>
</tr>
<tr>
<td>County</td>
<td>Otter Tail</td>
</tr>
<tr>
<td>Legal Desc.</td>
<td>Twp 134 Range 41 Sec 35 QQ NWNW</td>
</tr>
<tr>
<td>USGS Quad</td>
<td>PHELPS</td>
</tr>
<tr>
<td>UTM Zone</td>
<td>15N</td>
</tr>
<tr>
<td>Datum</td>
<td>NAD83</td>
</tr>
<tr>
<td>Easting</td>
<td>283038</td>
</tr>
<tr>
<td>Northing</td>
<td>5140158</td>
</tr>
<tr>
<td>Property ID (PIN)</td>
<td></td>
</tr>
</tbody>
</table>

**SHPO Inventory Number** OT-MNE-009

**Review and Compliance Number**

**Form (New or Updated)** Updated

**Description**

Bridge L0885, commonly known as the Phelps Mill Bridge, is a two-span, steel Pratt pony truss bridge located in the southeast portion of Maine Township in Ottertail County, Minnesota. The overall width of the bridge is 16 feet 10 inches and the overall length is 123 feet 5 inches with each span being 60 feet and 6 ½ inches long (MnDOT 2009; Kadrmas Lee & Jackson 2012). Located in the moderately wooded Phelps Mill County Park, Bridge L0885 spans the Ottertail River directly southwest of the Phelps Mill (OT-MNE-006). The 18-acre park also features the Phelps Mill complex, picnic tables, park equipment, a small beach, and covered picnic areas. The Phelps Mill Road originally crossed Bridge L0885 but the bridge is now only open to pedestrian and bicycle traffic. The bridge, built in 1907, is a part of the Phelps Mill Historic District (OT-MNE-005) which, in addition to the Phelps Mill Bridge (OT-MNE-009), includes the Phelps Mill (OT-MNE-006; 1889), the Phelps Store (OT-MNE-007; 1891), and the William E. Thomas House (OT-MNE-008; 1902) (MHS 2013). To the north, a small dam and pedestrian walkway are located parallel to the bridge. A concrete stair and viewing platform are located to the northwest of the bridge and provide access to the walkway. A second sidewalk is located to the northeast of the bridge and leads to the mill. Wood platforms attached to the mill are also located north of the bridge. A new concrete section marks the transition from the Phelps Mill Road and bridge on both the east and west sides of the bridge and feature a large planter that prevents vehicular traffic.

The substructure of Bridge L0885 is comprised of reinforced concrete abutments and wingwalls at each end and a reinforced concrete open pier between the two spans. The abutments are flanked along the riverbank by riprap to the south and stone retaining walls to the north. The open pier consists of two circular steel piers connected to each other by tubular metal cross-braces.

The superstructure of Bridge L0885 is comprised of two identical, four-panel, steel Pratt pony truss spans. Each span is 60 feet in length and has a truss on either side. The trusses are of rivet construction and have a height of 9 feet 3 inches. The Pratt trusses are bolted to the abutments at either end of the bridge. The lower chords of the trusses are connected to the vertical posts and the deck by a pin connection. The latticed vertical posts are riveted to the web of stringers. The truss is braced by metal diagonals and bracing ties. The end posts and upper chords of the trusses are covered with sheet metal on the top side. The vertical posts are connected to the top chord of the truss by pin connections. Seven floor beams are located transversely under the bridge, three under each truss and the seventh at the open pier. A segment of the floor beams are eight I-beam stringers. The stringers support the bridge deck. The stringers are supported by metal cross-braces. The wood plank deck is laid perpendicular to the span. The deck has wooden curbs on either side of the bridge (MnDOT 2009; Kadrmas Lee & Jackson 2012). Approximately four-foot tall bi-rail guardrails are located on the deck, between the trusses and the wood curbs. The guardrails are of angle iron construction, with vertical posts and two rails. Three steel cable rails have been added to the railing, above, between, and below the angle-iron rails. The bridge has two bridge plates located on the inclined end posts at opposite ends of...
Maine, Otter Tail County, Minnesota

Project: Local Historic Bridge Study - Phase II

MINNESOTA ARCHITECTURE - HISTORY INVENTORY FORM

the structure; one reads “Built by Security Bridge Co. 1907 Mpls, Minn.”, and a second plaque reads “BR L0885 1907-2012”.

Integrity -
Bridge L0885 remains in its original location adjacent to the Phelps Mill and within its historic setting of the Phelps Mill complex. Therefore, the bridge retains its integrity of location and setting. The bridge retains its historic use as a crossing over the Ottertail River, although it is now only open to pedestrian traffic, whereas the bridge was originally used as a vehicular crossing. Bridge L0885 was rehabilitated in 2012 in accordance with the SOI’s Standards. The State Historic Preservation Office (SHPO) found that the project met the SOI’s Standards and determined that the project would result in no adverse effect on the Phelps Mill Bridge or the Phelps Mill Historic District (Letter from Mary Ann Heidemann, Manager Government Programs and Compliance SHPO to Kristen Zschomler, MnDOT Cultural Resource Unit, June 29, 2011). Therefore, Bridge L0885 retains its integrity of design, materials, workmanship, feeling, and association. Accordingly, the bridge retains sufficient integrity to convey its historic significance.

EVALUATION AND ANALYSIS

Historical Context

Historic Iron and Steel Bridges in Minnesota, 1873-1945

Historical Narrative

Phelps Mill
The Phelps Mill property is comprised of two tracts of land that were purchased by William E. Thomas, a merchant from Fergus Falls, between 1886 and 1887. Mr. Thomas purchased the riverside property, on which the mill stands, from Mr. Matthew Sharp on November 18, 1886, and then purchased approximately 37 acres of adjacent land from the Northern Pacific Railway (NP) on January 26, 1887 (Giencke 1986:3; Gardner 2008:59). Soon after acquiring the property, Mr. Thomas constructed a wooden dam across the Red River (now known as the Ottertail River) (Giencke 1986:3). Circa 1888, Mr. Thomas took on Ezra P. Adams as a partner. Thomas, Adams, and hired workers then constructed the four-story, 36 foot by 30 foot mill in 1889 and immediately started to produce flour. The mill was originally named the Maine Roller Mill, but was later renamed the Phelps Mill, which was Mr. Thomas’s wife’s maiden name (Giencke 1986:4). The mill had a capacity of 60-75 barrels per day (Giencke 1986:3). Mr. Adams left the mill in 1894, and in 1895 the mill began grinding rye and buckwheat flour (Giencke 1986:3-4).

As the mill began to prosper, the complex was expanded. A barn was added to the property in 1890, the Phelps Store was constructed in 1891, and William E. Thomas built his residence in 1902 (Giencke 1986:5; Minnesota Historical Society 2013). Bridge L0885 was built in 1907, and soon after, in 1908, a concrete dam was constructed to replace the original wooden barrier (Giencke 1986:6). Mr. Thomas owned the Phelps Mill until 1920 when he sold it to the Farmers Mercantile Company for $33,500. The Phelps Mill was sold again in 1928 to Halvor G. Evenson (Giencke 1986:7). Due to drought and a steady decline in the demand for flour, the mill closed sometime between 1938 and 1939 (Giencke 1986:7).

Through the work of Miss Geneva Tweten of Fergus Falls, the long-idle Phelps Mill was purchased by the Ottertail County Board in 1965 along with the 18 adjacent acres of land to create the County’s first park. At that time, the County also decided to restore the deteriorating mill. Although located in the park, the bridge was not purchased by the county at that time (Ottertail Historical Society 1965; Giencke 1986:7). The entire Phelps Mill complex, including Bridge L0885, was listed in the National Register of Historic Places (NRHP) as a historic district in 1984 (Harvey 1984).

Phelps Mill Bridge
Newspaper articles partially chronicle the early history of the Phelps Mill Bridge. An article in the Fergus Falls Daily Journal from January 15, 1907, indicates that the Ottertail County Commissioners had asked the members of the state legislative delegation from Ottertail County to secure appropriations for new iron bridges at six locations, including “across the Red River at Thomas’ mill in Maine, where there is an old worn out wooden bridge that is unsafe for travel” (Fergus Falls Daily Journal...
1907a). The articles goes on to state that, “the iron bridges are imperatively needed at these places and would be of benefit to the county and state and that the townships in which they are located are not in a position to pay for the them and there is no money in the county treasury available for the purpose” (Fergus Falls Daily Journal 1907a). The county commissioners asked the legislators to push for legislation to permit or require counties to construct and maintain bridges, since under laws of the time, that burden fell to townships, villages, and cities (Fergus Falls Daily Journal 1907b). A March 25, 1907, article indicates that very little funding would be given to each county by the State for the building and maintenance of bridges (Fergus Falls Daily Journal 1907c). No articles were found that indicate the final funding source for the bridge, but on July 6, 1907, an article in the Fergus Falls Daily Journal states that, “work on the new iron bridge at Phelps is being pushed” (Fergus Falls Daily Journal 1907d). A 2011 article states that the bridge was originally built as a railroad bridge and privately owned by the NP and mill owners (Mahooney 2001). No other sources support the statement that the Phelps Mill was a railroad bridge and according to 1939 and 1963 historic aerial photographs there is no visible evidence of an in-place or even an abandoned railroad line or spur in the vicinity of the Phelps Mill (ASCS 1939; ASCS 1963). The nearest NP line extended through Underwood approximately seven miles away so it is unlikely that the bridge was built to accommodate a railroad line (Schmidt et al 2007). Further research would be required to document this potential link to the NP.

Concerns about the stability of the bridge were raised in 1981 and replacement of the bridge was considered. Plans for replacement were never carried out and Bridge L0885 was finally closed to vehicular and pedestrian traffic in 1999 due to the deterioration of the structure (Berdan 1981; Hintgen 2012). During the early 2000s, Maine Township and Ottertail County considered the fate of the bridge. At that time, Maine Township was assumed to be the owner of the bridge as the structure was not purchased by the County in 1965. As discussions continued about what to do with the bridge, questions as to who was the true owner of the bridge arose. In the end the Township asked Ottertail County to assume ownership of the bridge due to its historic nature and its relationship to the County-owned Phelps Mill Park. The County assumed ownership of the bridge in 2001 (Hintgen 2011; Mahooney 2001).

Bridge L0885 was rehabilitated in accordance with the Secretary of the Interior’s Standards for the Treatment of Historic Properties (SOI’s Standards) in 2012. The rehabilitation was funded in part by grants from the Federal Highway Enhancement Grant Program and the Minnesota Historical Society’s Capital County and Local Preservation Program (Hintgen 2012; Letter from Mary Ann Heidemann, Manager Government Programs and Compliance SHPO to Kristen Zschomler, MnDOT Cultural Resource Unit, June 29, 2011). Plans were prepared by the firm of Kadrmas Lee & Jackson based in Bismarck, North Dakota in 2012 (Kadrmas Lee & Jackson 2012). Ottertail County awarded the construction of the project to Industrial Builders of Fargo, North Dakota, for a cost of $453,342 (Hintgen 2012).

Security Bridge Company
Bridge L0885 was built by the Security Bridge Company of Minneapolis, Minnesota. The Security Bridge Company was established in 1906 by cousins William and Arthur Hewett. William S. Hewett was a well-known and highly regarded bridge builder/engineer in Minnesota during the early twentieth century. William Hewett and his cousin, Arthur L. Hewett, came to Minneapolis from Hope, Maine in 1887, to join their uncle’s company, S.M. Hewett and Co., later the Hewett Bridge Company, in the construction of bridges. Although William Hewett did not have formal technical training as an engineer, he received his training in bridge and structural design from his uncle Seth and a German engineer employed by his uncle’s company (Hewett 1956:2).

In 1897, William S. Hewett left his uncle’s firm and formed the W. S. Hewett Company. The company soon secured bridge construction contracts throughout Minnesota and several other states, including Montana and the Dakotas (Hewett 1956:2; Quivik and Martin 1988:E10-E12). Circa 1904, William Hewett’s cousin, Arthur Hewett, joined him as an agent and the company was re-organized as the Security Bridge Company in 1906 (Hewett 1956:2; Quivik and Martin 1988:E10-E12). Sources refer to Arthur Hewett as the bridge agent.

William S. Hewett became well known for his bridges and his work was held in such high esteem that between 1900 and 1910 all bridges built for the Twin City Rapid Transit Company and the Minneapolis Park Department were designed and built by him and his companies (Hewett 1956:2). Notable bridge works from this period include the Soldiers’ Home Bridge (1908) and the strengthening of the Marshall/ Lake Bridge (Bridge No. 6520) (1905). In the first decade of the twentieth century, William...
Hewett also contributed to the development and use of new concrete technologies. Hewett patented a pre-cast concrete culvert system, known as the Security Culvert, which could be assembled in sections. He also experimented with the use of pre-stressed concrete for the construction of large concrete water tanks and concrete domes. In the early 1920s, based on circa 1920 experiments conducted by Professor Franklin R. McMillan at the University of Minnesota regarding the shrinkage of concrete, William evolved his method of concrete tank construction to incorporate this new understanding of concrete. Tanks based on Hewett’s methods were constructed were throughout the country (Hewett 1956:2-4; Quivik and Martin 1988:E10-E12).

Under the leadership of William Hewett, the Security Bridge Company was one of the most active and important late-nineteenth and early twentieth-century bridge builders headquartered in Minnesota (Quivik and Martin 1988:F7). The Security Bridge Company was prolific in building bridges in Minnesota, Montana, and the Dakotas (Quivik and Martin 1988:E10-E12; Gardner 2008:59). The company was important both for its products and its association with William S. Hewett, as it was through this company that William Hewett completed some of his most important work. As the company’s work gradually shifted from Minnesota to Montana, Arthur Hewett moved the headquarters of the Security Bridge Company from Minneapolis to Billings, Montana, in 1911. William Hewett chose to stay in Minnesota where he continued to design bridges and water tanks. He later separated from the Security Bridge Company and set up a new company in his own name (Hewett 1956:2-3; Quivik and Martin 1988:E10-E12).

Significance

Bridge L0885 was listed in the NRHP in 1984 as a contributing resource to the Phelps Mill Historic District, which has local significance under National Register Criterion A in the areas of Commerce and Industry. The Phelps Mill Historic District is significant as an unusually well-preserved example of a milling community once commonly found throughout Minnesota. Additionally, the historic district is a rare surviving example of an agricultural, commercial, and industrial center in Ottertail County built during the last decade of the nineteenth century. The mill complex, which is comprised of the Phelps Mill, Bridge L0885, the William E. Thomas House, and the Phelps Store, all of which are contributing resources to the historic district, forms the nucleus of the rural community of Phelps. The Mill has a period of significance of 1889-1939, which corresponds to the construction and closure of the Mill (Harvey 1984; Minnesota Historical Society 2013). Bridge L0885 contributes to the Phelps Mill Historic District as it played an important role in the function and commercial success of the mill by providing access to the mill from farms on the west side of the Ottertail River. The bridge benefitted both from the local farmers who travelled to the mill to have their grain processed and the mill itself, as it facilitated the opening of the mill to a much larger market area by providing customer access to the site from lands across the river.

Bridge L0885 has also been previously determined individually eligible for listing in the NRHP under Criterion C, within the historic context “Historic Iron and Steel Bridges in Minnesota, 1873-1945” found within the “Iron and Steel Bridges in Minnesota Multiple Property Documentation Form” (MPDF). The Pratt truss, of which Bridge L0885 is an example, is the most common truss type in the inventory of Minnesota historic bridges built in the nineteenth and early twentieth century. Pratt trusses are therefore important to the history of bridge building in Minnesota (Quivik and Martin 1988:F6). However, according to the registration requirements in this MPDF, because of their early ubiquity, to have significance within this context, “the structure must move beyond typicality as an indicator of significance. The structure should identify additional important qualities, such as being the sole surviving example, the oldest example, the longest span, the most intact example, the work of a major engineer, fabricator, or contractor, or exhibiting notable engineering or decorative details” (Quivik and Martin 1988:F5). Bridge L0885 was constructed by the Security Bridge Company of Minneapolis, which was one of the most active and important late-nineteenth and early twentieth-century bridge builders headquartered in Minnesota (Quivik and Martin 1988:F7). The company is also associated with important bridge builder William Hewett. As such, Bridge L0885 meets Registration Requirement 5, built by an important Minnesota bridge builder (Quivik and Martin 1988:F9). Bridge L0885, therefore, has individual significance for listing in the NRHP under Criterion C in the area of Engineering within the context “Historic Iron and Steel Bridges in Minnesota, 1873-1945” as a Pratt pony truss built by the important Minnesota builder the Security Bridge Company. The bridge has a period of significance of 1907, corresponding with its construction.

Recommendation

The Phelps Mill Historic District has been previously listed in the NRHP under Criterion A in the areas of Commerce and
MINNESOTA ARCHITECTURE - HISTORY INVENTORY FORM

Project: Local Historic Bridge Study - Phase II

Maine, Otter Tail County, Minnesota

Industry for its significance as a rare surviving example of an agricultural, commercial, and industrial center in Ottertail County built during the last decade of the nineteenth century. The Phelps Mill Historic District is significant as an unusually well-preserved example of a milling community once commonly found throughout Minnesota. Bridge L0885 contributes to the Phelps Mill Historic District as it played an important role in the function and commercial success of the mill by providing access to the mill from farms on the west side of the Ottertail River. The bridge retains sufficient integrity to convey its historical significance under Criterion A, for its association with the historic district. Therefore, 106 Group recommends Bridge L0885 as still eligible for the NRHP as a contributing resource to the Phelps Mill Historic District. The district has a period of significance of 1889-1939, which corresponds to the construction and closure of the Mill.

Additionally, Bridge L0885 has been previously determined individually eligible for the NRHP under Criterion C within the historic context “Historic Iron and Steel Bridges in Minnesota, 1873-1945.” As a Pratt pony truss built by the important Minnesota bridge building company the Security Bridge Company, the bridge meets “Iron and Steel Bridges in Minnesota MPDF” Registration Requirement 5, built by an important Minnesota bridge builder. The bridge retains sufficient integrity to convey its historical significance under Criterion C for its association with the Security Bridge Company. Therefore, 106 Group recommends Bridge L0885 as individually eligible for listing in the NRHP under Criterion C in the area Engineering, within the historic context “Historic Iron and Steel Bridges in Minnesota, 1873-1945” for its association with the Security Bridge Company. The recommended period of significance for its individual eligibility is 1907, corresponding with the year the bridge was built.

Sources
Agricultural Stabilization and Conservation Service [ASCS]
1939 Historical Aerial Photograph, Ottertail County, Minnesota. United States Department of Agriculture, Washington, D.C.
On file at the John R. Borchert Map Library, Minneapolis, Minnesota.

1963 Historical Aerial Photograph, Ottertail County, Minnesota. United States Department of Agriculture, Washington, D.C.
On file at the John R. Borchert Map Library, Minneapolis, Minnesota.

Berdan, Kathy

Fergus Falls Daily Journal


1907c “Bridge Money” 25 March. Fergus Falls, Minnesota.

1907d “Maine” 6 July. Fergus Falls, Minnesota.

Gardner, Denis P.

Giencke, Rosanne B.

Harvey, Thomas

Hewett, Maurice W.
1956 William Sherman Hewett, a Biography: Builder of Bridges, Originator and Designer of Pre-stressed Concrete Tanks and

OT-MNE-009
Maine, Otter Tail County, Minnesota

Project: Local Historic Bridge Study - Phase II

MINNESOTA ARCHITECTURE - HISTORY INVENTORY FORM


Hintgen, Tom
2012 Phelps Mill Bridge work to begin. East Ottertail Focus 3 May. Perham, Minnesota.
Kadrmas Lee & Jackson

Mahooney, Mary
2001 County may already own bridge. Fergus Falls Daily Journal. 6 June. Fergus Falls, Minnesota.

Minnesota Department of Transportation [MnDOT]

Minnesota Historical Society [MHS]

Ottertail Historical Society
1965 Victory for an Old Landmark. On file at the Ottertail County Historical Society, Fergus Falls, Minnesota.

Quivik, Fredric L. and Dale L. Martin

Schmidt, Andrew J., Daniel R. Pratt, Andrea C. Vermeer, and Betsy H. Bradley

National Register Status
Contributing to Listed District

Consultant’s Recommendation of Eligibility
Eligible - Contributing

Prepared By
Katie Ohland
The 106 Group Ltd.

Date Surveyed
7/15/2013

OT-MNE-009
MINNESOTA ARCHITECTURE - HISTORY INVENTORY FORM

Project: Local Historic Bridge Study - Phase II
Maine, Otter Tail County, Minnesota

Property Photograph

Facing NE

Property Photograph

Facing SW
MINNESOTA ARCHITECTURE - HISTORY INVENTORY FORM

Project: Local Historic Bridge Study - Phase II
Maine, Otter Tail County, Minnesota

Property Photograph

Facing W

Property Photograph

Facing W

OT-MNE-009
MINNESOTA ARCHITECTURE - HISTORY INVENTORY FORM

Project: Local Historic Bridge Study - Phase II
Maine, Otter Tail County, Minnesota

Property Photograph

Facing SW

Property Photograph

Bridge Plate