

# MINNESOTA ARCHITECTURE - HISTORY INVENTORY FORM

## Project: Local Historic Bridge Study - Phase II Beaver Creek, Rock County, Minnesota

Identification	
<b>Historic Name</b>	Bridge L2340
<b>Current Name</b>	Bridge L2340
<b>Field #</b>	
<b>Address</b>	N/A 30th Avenue over Springwater Creek
<b>City/Twp</b>	Beaver Creek
<b>County</b>	Rock
<b>Legal Desc. Twp</b>	102 <b>Range</b> 46 <b>Sec</b> 18 <b>QQ</b> SWSW
<b>USGS Quad</b>	GARRETSON EAST
<b>UTM Zone</b>	15N <b>Datum</b> NAD83
<b>Easting</b>	224734 <b>Northing</b> 4836654
<b>Property ID (PIN)</b>	

<b>SHPO Inventory Number</b>	RK-BCT-005
<b>Review and Compliance Number</b>	
<b>Form (New or Updated)</b>	Updated

Description
<b>Linear Feature?</b> No
<b>HPC Status:</b> Unknown
<b>Resource Type</b> Structure
<b>Architect/Engineer</b> Perley Nye Gillham
<b>Style</b> No Style
<b>Construction Date</b> 1906
<b>Original Use</b> Transportation
<b>Current Use</b> Transportation

### Description

Bridge L2340 is located in Beaver Creek Township, Rock County, Minnesota. Constructed in 1906, the one-lane, concrete arch bridge has a north to south alignment and carries minimum maintenance gravel Township Road 108, 30th Avenue, over Springwater Creek. The bridge is located in a rural, agricultural area, surrounded by fields.

Bridge L2340 is a small, single-span reinforced-concrete arch bridge. The substructure is comprised of reinforced-concrete abutments and concrete wingwalls at either end of the bridge. The wingwalls slightly angle out from the bridge approaches at a shallow angle. The superstructure is comprised of a single-span, reinforced-concrete elliptical arch that is 14 feet 3 inches in length. The bridge has closed spandrel walls of reinforced-concrete. The deck is 18 feet 10 inches wide with a gravel surface. The bridge has simple, Classical Revival, solid concrete railings that are capped with decorative coping and molding. An inscription on the top of the east railing reads "P.N Gillham, contractor, Luverne, Minn." In all instances, the letter "N" was written backwards.

### EVALUATION AND ANALYSIS

#### Historical Context

Reinforced-Concrete Highway Bridges in Minnesota, 1900-1945

#### Historical Narrative

According to MnDOT records, Bridge L2340 was built in 1906 (MnDOT 2012). The "P.N. Gillham contractor, Luverne, Minn." inscription on the east railing attributes the construction of this bridge to well-known local vernacular bridge builder Perley N. Gillham. Research at the City of Luverne, the Rock County Courthouse, the Rock County Highway Department, and the Rock County Historical Society did not yield any information on the bridge's construction. Additionally, records of any changes, alterations, or repairs to this bridge have not been found. The lack of information regarding the construction and maintenance of this bridge is to be expected as the historic context "Reinforced-Concrete Highway Bridges in Minnesota, 1900-1945" notes that "there is very little documentation of reinforced-concrete bridge construction in Minnesota for the years prior to state involvement," meaning prior to the creation of the Minnesota Highway Commission (MHC) in 1905 (Frame 1988a:E-11). Therefore, "almost all the evidence exists in the few surviving structures themselves" (Frame 1988a:E-11).

Perley Nye Gillham

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Bridge L2340 was one of a number of bridges designed and built by Perley Nye Gillham. Despite several studies on Gillham bridges over the years, very little is actually known about Mr. Gillham, other than that he was “an obscure mason and general contractor” who designed and built “small but elegant reinforced-concrete bridges in Rock County” (Frame 1988a:E-11). Perley N. Gillham was born in Jamestown, Wisconsin, on November 25, 1854 (Arizona State Department of Health 1945). He arrived in Luverne, Minnesota, in 1875, following his brother Edwin, who had arrived in 1868 and worked as a mail carrier on a stage coach route and became the Rock County Sheriff in 1878 (Frame 1988b:8-2; Rock County Star 1945; The 106 Group 1994:14). The NRHP nomination for Bridge L2162, another reinforced-concrete arch bridge by Gillham, summarized what little is known about him:

He first appears in county commissioners’ records for plastering work in 1875, and periodically is mentioned in connection with various contracting work. His name is first associated with a bridge, but only for repairs, in 1883. In 1887 he was appointed superintendent of construction for the new county courthouse, and in 1900 was awarded the contract for construction of a new county jail. From the 1890s onward, he [sic] name appears regularly for miscellaneous county work, including building, bridge, and road contracts. Unfortunately, the county commissioner’s minutes rarely discuss bridge work in any detail, and usually do not mention the bridge type or the contractor’s name. A 1934 county history referred to Gillham as ‘our first contractor and builder,’ noting that ‘many of the prominent buildings of the city at the present time were built by him’ (Frame 1988b:8-2).

An obituary from December 27, 1945 states that “P. N. Gillham, 91, long time resident of Luverne, died on December 14, at the home of his son near Tucson, Ariz” (Rock County Star 1945). The obituary also notes that “Mr. Gillham will be remembered as bridge contractor in Rock county [sic]. He also made many bridges in adjoining Pipestone and Nobles counties” (Rock County Star 1945).

As a bridge builder, Perley N. Gillham had a long career that spanned 45 years. He began his career as a bridge contractor in 1883, at the age of 29, when he was awarded a contract to repair the Ash Creek Bridge in Rock County, and continued until he constructed his last bridge in 1928, at the age of 74. While Gillham’s obituary indicates that he designed and built bridges in several counties in southwestern Minnesota, only one bridge in Nobles County and no bridges in Pipestone County have been identified (Rock County Star 1945; The 106 Group 1994:14). The greatest concentration of his work is in Rock County, where he is estimated to have constructed about 90 percent of the concrete bridges in the county (Rock County Star 1945). Although the exact number of bridges that Gillham designed and built is unknown, at least 12 bridges in Rock County and one in Nobles County are known to have the identification “P. N. Gillham” inscribed into the concrete. There are at least 16 additional bridges in the county that do not have an inscription, but “have design elements so similar to the confirmed Gillham bridges as to allow attribution to him” (Frame 1988b:8-1). Bridges known to have been designed and built by Gilliam based on an inscription on the bridge span the years 1908-1913; while bridges attributed to him based on their design characteristics span the period c. 1901-1926 (The 106 Group 1994:14)

Perley Gillham was awarded a contract to repair the Ash Creek Bridge in 1883; however, the earliest known bridge designed by Gillham was Bridge L2315 (RK-KAN-004) in Kanaranzi Township, designed c. 1901; according to Minnesota SHPO records this bridge has been razed. The latest known Gillham bridge is Bridge L2194 (RK-MGT-002) constructed in Magnolia Township in 1928; this bridge is still extant. Known and attributed reinforced-concrete arch bridges by Gillham in Rock County include, but are not limited to: Bridge L2197 (1913; RK-MND-016); Bridge L2198 (1914; RK-KAN-007); Bridge L2201 (1910; RK-MAR-007); Bridge L2208 (1908; RK-MAR-008); Bridge L2210 (1911; RK-CLN-001); Bridge L2215 (1917; RK-MAR-010); Bridge L2246 (1911; RK-MAR-009); Bridge L2250 (1913; RK-MAR-006); Bridge L2258 (1908; RK-LVC-031); Bridge L2318 (1912; RK-BPL-001); and Bridge L2350 (1913; RK-CLN-002) (The 106 Group 1994:9-10). These bridges are now on the MnDOT dead bridge list which indicates that the bridges have been replaced. At least one other bridge attributed to P.N. Gillham in Rock County is known to have been removed.

Perley Gillham is noteworthy for his early use of reinforced-concrete for bridge construction. It is not known exactly how Gillham came to build reinforced-concrete arch bridges during the early years of this construction type. Frame suggests that the 1894 Fritz von Emperger-designed Melan-arch concrete bridge in Rock Rapids, Iowa may have been influential in Gillham’s work. Rock Rapids is located only a few miles from Luverne and it is possible that he could have traveled to see this bridge.

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The proportions and dimensions of the Rock Rapids Bridge are almost identical to Gillham's designs. It has also been suggested that Gillham may have had an opportunity to develop a relationship with noted Minneapolis bridge builder William S. Hewett. In 1883, Gillham repaired the Ash Creek Bridge in Rock County and in 1884, Hewett was awarded the contract for the replacement of this same bridge (Frame 1988b:8-2). While all such suggestions of influence are speculative, these potential connections serve to show that Gillham did not necessarily work in isolation and was likely well aware of current design methods and ideas.

The bridges Perley Gillham designed and built in Rock County are easily identifiable by their shared common characteristics. Gillham bridges are almost exclusively single span, reinforced-concrete, arch bridges with closed spandrels, found in remote locations throughout the county. These small, simple structures display some decorative elements, suggestive of the classicism of the City Beautiful Movement that flourished around the turn of the century. Moldings are often used to delineate the deck and the railings, while the railings, which are usually solid, often have cylindrical rail posts (The 106 Group 1994:13). Bridge L2340 is unusual among Gillham's bridges because of its simpler design. The bridge lacks the cylindrical endposts and decorative deck coping that are common features found on many of his designs, including his earliest works, such as Bridge L2315. Designed in 1906, Bridge L2340 is also one of the earliest known Gillham bridges, only Bridge L2315, constructed c. 1901, and Bridge L2306 (non-extant) were earlier.

#### **Significance**

The early vernacular bridges built in Rock County by Perley N. Gillham are significant under Registration Requirement 6 "Designed by an Important Engineer, Architect, or Firm," as identified in the "Reinforced-Concrete Highway Bridges in Minnesota Multiple Property Documentation Form (MPDF)." The bridges designed by Gillham are significant in the development of the reinforced-concrete bridge, as examples of the early experimental, non-standardized-design era of 1890-1911 (Frame 1988a:F-5). Gillham's work serves as an important body of work that demonstrates typical bridge construction methods, and their evolution, prior to the creation of the MHC in 1905; namely that of experienced, but often unschooled, local contractors who designed and built bridges influenced by local and national construction technique developments. Though Bridge L2340 was built in 1906, after the creation of the MHC, standardized bridge plans for reinforced-concrete bridges were not developed by the MHC until 1912 (Cooley 1912). Thus, the reinforced-concrete arch bridges designed by Gillham exemplify the types of bridges built under the sponsorship of township and city governments, prior to statewide standardization efforts. Bridge L2340 is one such example.

Though the "Reinforced-Concrete Highway Bridges in Minnesota MPDF" identifies Gillham designed bridges as being eligible for the NRHP, Bridge L2340 was not individually evaluated for the NRHP until 1994. In 1994, Bridge L2340 was determined eligible for the NRHP under Criterion C within the statewide historic context "Reinforced-Concrete Highway Bridges in Minnesota, 1900-1945" as exemplary of the work of local vernacular bridge builder, P. N. Gillham (Letter from Britta L. Bloomberg, Minnesota SHPO to K. Anne Ketz, 106 Group, personal communication, November 22, 1994). The bridge was noted as being significant for displaying simpler forms of characteristic elements of Gillham's reinforced-concrete arch bridges, including decorative coping and molding and solid railings. The bridge was also noted as having significance for its early construction date; only two other Gillham-designed bridges (L2306 and L2315) are known to have been constructed prior to 1906, of which only L2315 is still extant (The 106 Group 1994). Bridge L2340 continues to have local significance under NRHP Criterion C as a work of a master. It meets Registration Requirement 6 "Designed by an Important Engineer, Architect, or Firm," as identified in the "Reinforced-Concrete Highway Bridges in Minnesota MPDF" as an early example of the work of Perley N. Gillham.

#### **Integrity**

Bridge L2340 remains in its original location, retains its setting, and maintains its historic use as a one-lane vehicular bridge. Therefore, the bridge retains good integrity of location and setting. A MnDOT bridge inspection report from 2012 indicated that previously noted cracks in the bridge railings were progressively getting worse and that a four-foot segment of the west railing on the southwest corner of the bridge was separating from the bridge (MnDOT 2012). A field survey conducted in October 2013 confirmed that this portion of the railing has since fallen off the bridge. Additionally, the southeast wingwall has completely detached from the structure. There is material loss near the bottom of the abutments due to scouring, as well as in

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the arch and on the railings and wingwalls due to spalling. This deterioration has affected the physical integrity of the bridge in terms of design and materials. However, according to the integrity requirements in the “Reinforced-Concrete Highway Bridges in Minnesota MPDF,” “to be eligible for the National Register, the significant reinforced-concrete element in the superstructure span (i.e., the actual arch, slab, girder, mushroom-capped column, or rigid frame) must be in substantially original condition. Because this engineering element is the most important feature of bridges in this property type, neither an original substructure nor an original deck and railing system are necessary for the bridge to be eligible (although these components, when original, may enhance the significance of the bridge)” (Frame 1988:F-7). No repairs have been made to the structure to significantly alter the visual impression of the bridge as an early Gillham designed bridge and the arch is original and intact. Therefore, Bridge L2340 retains sufficient integrity of design, materials, workmanship, feeling, and association to convey its significance as an early example of a reinforced-concrete arch bridge and its association with Perley N. Gillham. Overall, the bridge retains sufficient integrity to convey its historic significance.

#### **Recommendation**

Registration Requirement 6 “Designed by an Important Engineer, Architect, or Firm,” of the “Reinforced-Concrete Highway Bridges in Minnesota MPDF” states that bridges designed by Perley N. Gillham are eligible for listing in the NRHP. In 1994, Bridge L2340 was evaluated under the requirements of the “Reinforced-Concrete Highway Bridges in Minnesota MPDF” and was determined eligible for the NRHP under Criterion C for its significance as an exemplary work of local vernacular bridge builder Perley N. Gillham. Although this bridge does not exhibit decorative design characteristics that other Gillham bridges are known for, the bridge is significant for displaying simpler forms of characteristic elements of Gillham’s reinforced-concrete arch bridges, which included decorative coping and molding, and solid railings. The bridge is also significant for embodying the early part of his career and is the oldest extant bridge to display his inscription as builder. As such, Bridge L2340 is significant among Gillham’s body of work as one of his earliest and simplest bridge designs. Bridge L2340 retains sufficient historic integrity to convey its significance as an early example of a Gillham designed bridge. Therefore, Bridge L2340 is recommended as still eligible for the NRHP under Criterion C, work of a master, for its association with Perley N. Gillham within the context “Reinforced-Concrete Highway Bridges in Minnesota, 1900-1945.” The recommended period of significance is 1906 corresponding with the year the bridge was constructed.

#### **Sources**

Arizona State Department of Health

1945 Standard Certificate of Death: Perley Nye Gillham. State File 529, Registrar’s No. 1143. On file at the Arizona Department of Health Services, Phoenix, Arizona.

Cooley, George W.

1912 Standard Specifications for Steel and Concrete Highway Bridges. Minnesota State Highway Commission Bulletin No. 9, St. Paul, Minnesota.

Frame, Robert

1988a National Register of Historic Places Multiple Property Documentation Form: Reinforced-Concrete Highway Bridges in Minnesota. Prepared by Dr. Robert Frame. On file at the State Historic Preservation Office, St. Paul, Minnesota.

1988b National Register of Historic Places Nomination Form: Bridge L-2162. Prepared by Dr. Robert Frame. On file at the State Historic Preservation Office, St. Paul, Minnesota.

LHB Corporation

2013 Bridge L2340 Inspection Photographs. October 1, 2013. LHB Corporation, Minneapolis, Minnesota.

Minnesota Department of Transportation [MnDOT]

1994 Minnesota Historic Highway Bridge Inventory: Bridge No. L2340. Minnesota Department of Transportation, St. Paul, Minnesota.

2012 MnDOT Bridge Inspection Report Bridge L2340. Minnesota Department of Transportation, St. Paul, Minnesota.

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### Rock County Star

1945 P. N. Gillham Taken By Death. Rock County Star 27 December. Luverne, Minnesota.

### The 106 Group Ltd.

1994 Evaluation of 27 Bridges in Rock County, Minnesota for the National Register of Historic Places. Prepared by The 106 Group Ltd. Prepared for the Minnesota Department of Transportation, St. Paul, Minnesota and the Rock County Highway Department, Luverne, Minnesota. On file at The 106 Group Ltd, St. Paul, Minnesota.

### **National Register Status**

Considered Eligible Finding

### **Consultant's Recommendation of Eligibility**

Eligible - Individual

### **Prepared By**

Kelli Andre Kellerhals  
The 106 Group Ltd.

### **Date Surveyed**

10/1/2013

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**Property Photograph**



Facing W

**Property Photograph**



Facing S

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**Property Photograph**



Facing SE

**Property Photograph**



Bridge Plate

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## **Property Photograph**



Facing S

## **Property Photograph**



Facing SE



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**Property Photograph**



Facing SW

**Property Photograph**



Facing NW

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## **Property Photograph**



Facing N

## **Property Photograph**



Facing SW

