

1420

**United States Department of Interior
National Park Service**

**National Register of Historic Places
Registration Form**

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900A). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Sturgeon Bay Bridge
other names/site number Michigan Street Bridge

2. Location

street & number Michigan Street N/A **not for publication**
city or town Sturgeon Bay N/A **vicinity**
state Wisconsin **code** WI **county** Door **code** 029 **zip code** 54235

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this 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 set forth in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register criteria. I recommend that this property be considered significant nationally statewide locally. (See continuation sheet for additional comments.)


Signature of certifying official/Title 11/28/07
Date

State Historic Preservation Officer - Wisconsin

State or Federal agency and bureau

In my opinion, the property meets does not meet the National Register criteria.
(See continuation sheet for additional comments.)

Signature of commenting official/Title Date

State or Federal agency and bureau

Sturgeon Bay Bridge
Name of Property

Door
County and State

Wisconsin

4. National Park Service Certification

I hereby certify that the property is:
 entered in the National Register.
____ See continuation sheet.
____ determined eligible for the
National Register.
____ See continuation sheet.
____ determined not eligible for the
National Register.
____ See continuation sheet.
____ removed from the National
Register.
____ other, (explain:)

Edson H. Beall

1.17.08

for

Signature of the Keeper

Date of Action

5. Classification

Ownership of Property
(check as many boxes as
as apply)

Category of Property
(Check only one box)

Number of Resources within Property
(Do not include previously listed resources
in the count)

private
public-local
X public-State
public-Federal

building(s)
district
X structure
site
object

contributing noncontributing
 buildings
 sites
 structures
 objects
1 0
1 total

Name of related multiple property listing:
(Enter "N/A" if property not part of a multiple property
listing.)

N/A

**Number of contributing resources
is previously listed in the National Register**

0

6. Function or Use

Historic Functions

(Enter categories from instructions)

TRANSPORTATION/road-related (vehicular)

Current Functions

(Enter categories from instructions)

TRANSPORTATION/road-related (vehicular)

7. Description

Architectural Classification

(Enter categories from instructions)

Other – truss bridge

Materials

(Enter categories from instructions)

Foundation: Concrete

Walls: Steel

Roof N/A

Other N/A

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

SEE CONTINUATION SHEET

Sturgeon Bay Bridge
Name of Property

Door
County and State

Wisconsin

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for the National Register listing.)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B Property is associated with the lives of persons significant in our past.
- C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- A owned by a religious institution or used for religious purposes.
- B removed from its original location.
- C a birthplace or grave.
- D a cemetery.
- E a reconstructed building, object, or structure.
- F a commemorative property.
- G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance

(Enter categories from instructions)

Engineering

Period of Significance

1931

Significant Dates

1931

Significant Person

(Complete if Criterion B is marked)

N/A

Cultural Affiliation

N/A

Architect/Builder

Keller & Harrington (Engineers: Chicago, IL)
Wausau Iron Works (Builders: Wausau, WI)

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

SEE CONTINUATION SHEET

Sturgeon Bay Bridge
Name of Property

Door
County and State

Wisconsin

9. Major Bibliographic References

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous Documentation on File (National Park Service):

- 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 #
- recorded by Historic American Engineering Record #

Primary location of additional data:

- State Historic Preservation Office
- Other State Agency
- Federal Agency
- Local government
- University
- Other

Name of repository:

10. Geographical Data

Acreage of Property: 1.07 acres

UTM References (Place additional UTM references on a continuation sheet.)

1 16 469880 4964141
Zone Easting Northing

3 _____
Zone Easting Northing

2 _____
Zone Easting Northing

4 _____
Zone Easting Northing

See Continuation Sheet

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet)

SEE CONTINUATION SHEET

Boundary Justification (Explain why the boundaries were selected on a continuation sheet)

SEE CONTINUATION SHEET

11. Form Prepared By

| | | | |
|-----------------|----------------------------------|-----------|--------------|
| name/title | John N. Vogel & Marisa A. Stueck | date | January 2007 |
| organization | Heritage Research, Ltd. | telephone | 262.251.7792 |
| street & number | N89 W16785 Appleton Avenue | zip code | 53051 |
| city or town | Menomonee Falls | state | WI |

Sturgeon Bay Bridge

Door

Wisconsin

Name of Property

County and State

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A USGS map (7.5 or 15 minute series) indicating the property's location.
A sketch map for historic districts and properties having large acreage or numerous resources.

Photographs

Representative black and white photographs of the property.

Additional Items (Check with the SHPO or FPO for any additional items)

Property Owner

Complete this item at the request of SHPO or FPO.)

| | | | |
|----------------------------|--|------------------|--------------|
| name/title | Wisconsin Department of Transportation | date | January 2007 |
| organization | State of Wisconsin | telephone | 608.266.0369 |
| street & number | 4802 Sheboygan Avenue | zip code | 53707 |
| city or town | Madison | state | WI |

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects, (1024-0018), Washington, DC 20503.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

Section 7 Page 1

GENERAL DESCRIPTION:

The Sturgeon Bay Bridge carries the business routes of STH 42 and STH 57, also known as Michigan Street, across Sturgeon Bay—which is a body of water on the Green Bay component of Lake Michigan. It is a thirteen-span structure constructed in three distinct portions: 1) a five span, post-and-beam section to the north; 2) five Parker Through-Truss spans—one to the north and four to the south; and 3) two Warren Truss spans, each of which anchors a leaf of the two-span, heel counterweight, Warren Truss, bascule section—all set between the Parker Through-Truss spans. Built in 1931, the bridge is 1,413'-4" long and carries a 24'-0" wide traffic deck with 6" curbs. A 6'-0" sidewalk also extends the length of the bridge on its southeast side. The overall width of the structure (including traffic deck and sidewalk) is 33'.

DESCRIPTION OF STRUCTURE:

Piers 1 through 5 (counting from northeast to southwest), and the concrete deck they carry (spans 1-5), are also known as a concrete trestle. The piers are constructed on 30' centers. Each carry five columns (three square and two rectangular) on 6'-9" centers. The piers are anchored in the north bank, as well as the river bottom, and crowned with a concrete beam that is 2'-3" wide and 2'-6" high. The beams carry nine, concrete encased, "I" beam deck stringers on 3'-6" centers, and a final, tenth stringer on a 7'-2" center along the southeast side of the bridge that carries the 8'-1" sidewalk.

The structure's remaining piers are situated between Pier 5 and the southwest abutment. Piers 6 and 13 are anchored on concrete bases built on 45 timber piles and that measure 40'-6" long by 7'-6" wide and 3'-6" high. Generally varying by river depth, Pier 6 rises 24'-3" above the base, while Pier 13 rises 22'-9". Pier 7 is anchored on a base set on 54 piles and measures 43'-6" long by 10'-0" wide and 4'-0" high. Its height is 28'-0" above the base. Piers 8 and 9 anchor the bascule spans and rise from bases constructed atop 95 piles. Each of the two is 53'-3" long, 14'-0" wide and 5'-0" high, and rises 35'-9" from the base. Pier 10 is constructed on 76 piles and measures 54'-0" long, 13'-0" wide and 7'-0" high. Its height reaches 38'-0" above the base. Anchored to 64 piles is the base for Pier 11, which is 46'-6" long, 13'-0" wide and 7'-0" high. This pier rises 35'-9" above the base. And, finally, Pier 12 is anchored to 48 piles. Its base is 48'-0" long, 9'-0" wide and 4'-0" high. The pier itself rises 22'-9" above the base. All piers are of reinforced concrete and taper from bottom to top. The southwest abutment is constructed on 39 piles and rises 16'-6" above its 3'-0" base. The primary face of the base is 34'-11" long, while a 10'-3.5" wingwall is to the north northeast and a 14'-0" wingwall is to the southeast.

Spans 6, 10, 11, 12 and 13 are all nine panel, Parker-Through Truss structures. Span 6 is 140'-0" long (15'-9" panels), while Spans 10-13 are 162'-9" long (18'-1" panels). The roadway deck is carried by ten floor beams per span, each of which is an approximately 28" by 10" "I" beam. Perpendicular to the floor beams are six deck stringers. Each stringer is an approximately 12" by 6" "I" beam. The bottom lateral bracing is comprised of

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

Section 7 Page 2

2.5" by 2.5" angles. The deck is concrete.

The floor beams in Span 6, with the exception of the first and tenth in each span (they sit upon the piers), are hung from 14" by 7" hip and 14.5" by 9" or 14" by 8" intermediate verticals, all of which are comprised of channels and lacing. The inclined end posts, as well as the top chords, are 12.5" by 16". Each is two channels, connected with lacing and coverplates. Top lateral bracing is comprised of paired, 2.5" by 2.5" angles. Portal struts and portal bracing are fabricated from two, 3.5" by 3" angles with lacing, as well as 2.5" by 2.5" angles with lacing. The top struts are built from double, back-to-back 3" by 2.5" angles with lacing, while the lower chord of the sway bracing consists of the same. 2.5" by 2.5" angle cross lacing complete the sway bracing. The diagonals in panels 2 and 8 are paired, back-to-back, 3.5" by 3" angles with stay plates, while those in panels 3 and 7 are paired 6" by 3.5" angles with stay plates. Diagonals in panels 4, 6 and 7 are arranged in an "X" fashion. Those in panels 4 and 6 are paired 3.5" by 3.0", as well as 3.5" by 2.5", all with stay plates. Diagonals in panel 7 are 3.5" by 2.5". All bottom chords are paired angles, back-to-back. Those in panels 1, 2, 8 and 9 are comprised of 3.5" by 3" angles. Those in panels 3 and 7 are 4" by 3". In panels 4 and 6 they are 5" by 3.5", while those in panel 5 are 6" by 4.5".

The floor beams in Spans 10, 11, 12 and 13 are all hung from 16" by 8" hip and 16.25" by 9" or 16.25" by 8" intermediate verticals and are comprised of channels and lacing. As with those in Span 6, the first and last floor beam in each span rest on the piers. The inclined end posts, along with the top chords, are 18" by 12.75" and are comprised of channels with coverplates and lacing. Top lateral bracing is fabricated from paired, 2.5" by 2.5" angles. Portal struts and portal bracing are fabricated from two, 3.5" by 3" angles with lacing, as well as 2.5" by 2.5" angles with lacing. The top struts are built from double, back-to-back 3" by 2.5" angles with lacing, while the lower chord of the sway bracing consists of the same. 2.5" by 2.5" angle cross lacing complete the sway bracing. The diagonals in panels 2 and 8 are paired, back-to-back, 4.0" by 3.0" angles with stay plates, while those in panels 3 and 7 are paired 6.0" by 4.5" angles with stay plates. Diagonals in panels 4, 6 and 7 are arranged in an "X" fashion. Those in panels 4 and 6 are paired 4.0" by 4.0", as well as 3.5" by 2.5", all with stay plates. Diagonals in panel 7 are 3.5" by 2.5", again with stay plates. All bottom chords are paired angles, back-to-back. Those in panels 1, 2, 8 and 9 are comprised of 3.5" by 3" angles. Those in panels 3, 4, 5, 6 and 7 are 4" by 4".

The bascule span, and those that flank it, are the overall structure's final components. The flanking spans are Warren trusses, each of which maintains its traditional form through 5 panels. Thereafter is placed the bascule span. The floor beams in the flanking spans 7 and 9 are built up "I" beams. Those situated on the piers are approximately 34.25" by 12", while those that hang from the verticals are typically over 36" by 12". The roadway deck on these spans is carried by ten, 12" "I" beam stringers placed on 32.5" centers. Bottom lateral bracing is comprised of 3.5" by 3.5" angles. The deck is concrete.

With the exceptions of floor beam 1 in Span 7 and beam 9 in Span 9, which rest on the adjacent piers, the next four beams are hung from a hip vertical and three intermediate verticals. The hip vertical and two intermediate verticals are comprised of four angles that measure 5" by 3.5", while the angles in the other intermediate

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 7 Page 3

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

vertical measure 6" by 3.5". The inclined endposts and top chords are 26" by 17.5". They are comprised of channels with coverplates and lacing. Top lateral bracing is fabricated from 3.5" by 2.5" angles. The top struts are built from double, back-to-back 6" by 3.5" angles with lacing, while the lower chord of the sway bracing likely consists of the same. Lacing between the strut chords completes the sway bracing. The diagonals in the panels closest to the piers are paired 12" channels. Moving toward the bascule span, the next diagonals are constructed from two, 15" channels, while those in the following two spans are of two, 12" channels. The bottom chords for each flanking span consist of two, 15" channels.

The bascule span (Span 8) of the bridge is also a Warren truss. It is specifically a Scherzer-type, two-leaf, rolling structure with overhead counterweights. Each of the two spans consists of four, 19' panels per span for a length of 76'. The five floor beams in each bascule leaf are rolled "I" beams which carry eleven, rolled "I" beam deck stringers. The center deck stringer (stringer #6) is larger than the others, while the bottom lateral bracing is comprised of 3.5" by 3.5" angles. The width of the bascule spans is 27'-4", center-to-center-of truss. Top and bottom chords are paired 12" channels, while the verticals are paired, 5" by 3.5" angles, back-to-back. Diagonals are of paired channels, either 8" or 10". Top struts are comprised of paired, 6" by 3" angles place back-to-back. The top laterals are of paired 3.5" by 2.5" angles.

The segmental girder, on which the bascule spans roll, employs a 16' radius. It is comprised of angles, channels, I-beams, and operates on a 23'-3" roll length. The segmental girder contains fifteen tooth spaces. The counterweight is constructed of concrete and weighs 273,000 lbs. It measures 29'-8" by 8'-6" by 13'-1". Each leaf of the bascule span was operated by two, 15 h.p. electric motors that operated at 680 r.p.m. when fully loaded.

A walkway is located along the southeast side of the bridge. On the five span, post-and-beam section of the bridge to the north it is 8'-1" wide. Along truss spans 6, 10, 11, 12 and 13 it is 6'-9" wide and carried by beams of 2.5" by 2.5" and 2.5" by 3" angles that project beyond the south side truss and taper to a common point, as well as three 7" stringers—one outer channel and two inner "I" beams. And finally, the walkway adjacent to spans 7 and 9, as well as the truss span 8, is 9'-11" wide. It is supported by a solid beam comprised of a plate that tapers to a common point and that is framed by two angles (one on each side of the plate) that measure 3.5" by 3.5". A generally consistent railing is associated with each section of the bridge and extends the length of the structure. The top chord of the railing is 4" wide and 37.5" above the walkway. A 3" tee projects down from the center of the top chord, attached to which is 1.5" by .18" flat steel lacing that completes the railing.

On the bridge, at the north side of the bascule span, is a small bridge-tender's house. It is a small, wooden-framed, hip roof structure that measures 13' long by 9' wide and is sheathed with clapboard siding. Symmetrically placed in the south side of the structure is a door to the left and a large window to the right. The remaining three walls all contain windows that permit the operator to view activities on the bridge and along the waterway. All windows have wooden surrounds and sills.

Over the past seventy-five years the Sturgeon Bay Bridge has experienced some repair/maintenance work. In

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 7 Page 4

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

1959, a new steel grid floor was installed and, in 1960, extensive repair work was completed to fix damages from a ship collision with the bridge. The structure itself was painted in 1970 and again in 1984. Some deterioration from the entire superstructure was addressed in 1978, while new electrical components were installed on the drive system. A motor was rebuilt in 1992.¹

¹ "Remote Global Monitoring of the Michigan Street Bridge, Sturgeon Bay, Wisconsin," Northwestern University, Infrastructure Technology Institute (ITI) Technical Report No. 19, Prepared by David W. Prine and Philip Fish, May 1996, Accessed online 7 August 2006 at www.iti.northwestern.edu/publications/technical_reports/tr19.html.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 1

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

SUMMARY PARAGRAPH:

The Sturgeon Bay Bridge is nominated to the National Register of Historic Places under Criterion C: Engineering. The bridge is the only overhead truss, Scherzer-type, double-leaf, rolling-lift Bascule Bridge that remains in Wisconsin. It has experienced little change since it was constructed in 1931, and remains an excellent example of its type. The bridge maintains its segmental girder, which permits its movement, as well as its Warren and Parker Through-trusses that were incorporated to help withstand the sweeping winds of Sturgeon Bay. Additionally, the bridge design was provided by the prominent Chicago firm of Keller & Harrington, which was started by Charles Keller and Howard Parsons Harrington. Both Keller and Harrington had gained bascule and rolling-lift expertise while they were employed with the Charles Scherzer Rolling Lift Bridge Company of Chicago. The firm designed several prominent and impressive bridges across the country. The Sturgeon Bay Bridge is a significant representation of their engineering work.

HISTORY:

Located in the center of the City of Sturgeon Bay (Door County Seat), the Sturgeon Bay Bascule Bridge spans Sturgeon Bay and its associated ship canal. Door County is largely surrounded by water and drew a significant number of fishermen to the area beginning in the 1830s. The first plat of Sturgeon Bay was recorded by 1855, when three lumber mills were in operation. Joseph Harris, Sr., came to Sturgeon Bay by 1860 and advocated for a canal that would connect Green Bay to Lake Michigan. It would provide an easier passage for ships than the "deaths door" passage around the northern tip of the Door County peninsula. Harris formed in 1866 the Sturgeon Bay & Lake Michigan Ship Canal and Harbor Company. Six years later, the construction of the 7,400-foot-long, and 100-foot-wide Sturgeon Bay Ship Canal was underway. Sturgeon Bay was incorporated as a village in 1874. The canal was completed in 1882. The following year, Sturgeon Bay became a city.²

The city grew and, by 1885, reached a population of approximately 1,450 residents. The community claimed a notable downtown commercial district by 1887, when local businessmen--John Leathem and Thomas H. Smith--built a toll bridge (no longer extant) over Sturgeon Bay. Prior to the construction of the toll bridge, a ferry service facilitated those who wanted to cross the bay. The government purchased the canal in 1893 for \$103,000. One year later, the Ahnapee & Western Railway completed a line from Green Bay to Sturgeon Bay. As a result, the population of the city grew steadily. It reached approximately 3,500 in 1898, 4,500 in 1904 and 6,000 persons by 1919.³

The City of Sturgeon Bay in 1924 gained control of the utilities within its corporate limits. Those utilities included water works, electric lights, heating, and the toll bridge, which had all been under the city's maintenance since 1911. By 1928, the toll bridge was over forty years old, well traveled and had been in poor

² Hjalmer Rued Holand, *History of Door County, Wisconsin*, 2 vols. (Chicago: The S.J. Clarke Publishing Company, 1917) 1:83-86, 90-92.

³ Sanborn Map Company, *Sanborn-Perris Fire Insurance Map-Sturgeon Bay, Wis.* (New York: Sanborn Map Company, 1885, 1898, 1894, 1919); Holand, *History of Door County*, 319.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 2

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

condition for some time. The citizens of Door County in general, and Sturgeon Bay in particular, were largely in favor of a new "free" bridge over the waterway. The bridge facilitated travel between the mainland and the northern part of the Door County peninsula. It was heavily used by residents of the city and county, as well as by numerous tourists. Bridge replacements were needed all over Wisconsin at that time and the State Highway Commission funds were low. As a result, continuous public support for a bridge was needed. In July 1928, Sturgeon Bay Mayor James G. Martin, publicly rallied support for various improvements within the city--including a new bridge. The following month the Wisconsin State Highway Commission approved its largest project at the time. It was a new overhead-truss, Scherzer-type, double-leaf, rolling-lift Bascule Bridge (see Section 7 for full bridge description) designed by the Chicago engineering firm of Keller and Harrington (see Engineer section on page 4, for biographical information on Keller and Harrington) in Sturgeon Bay.⁴

Although the bridge was approved in 1928, it took several months to establish its specific location. Two options were discussed in local newspapers. They included either building the bridge directly next to the existing toll bridge, or 650 feet to the south. Also, the re-routing of two state highways was initiated by the State Highway Commission (at the time the two highways were 17 and 57). The new bridge was finally to be constructed 650 feet south of the old toll bridge, a decision that drew interest from Marine-related concerns. The old bridge and the new bridge construction were to be so close together that vessels traveling through the canal would experience problems making each bridge's "draw." As a result of a federal hearing on the project in June 1929, ships were allowed to increase speed (during bad weather) in order to get through both of the bridge draws. Finally, on 22 October of that year, the bridge contracts were let. The Wausau Iron Works Company of Wausau, Wisconsin, won the contract with lowest bid of \$386,866. In addition to the bridge construction, the contract also included the concrete street approaches on both sides of the bay that connected with the existing streets.⁵

Work on the bridge began in November 1929 and was to be finished within 375 working days (fifteen months). Thus the bridge was to be completed by 1 August 1931. Grading was necessary on both sides of the canal, and a Wadhams oil station was displaced on the west side. By January 1930, two crews were working on both the west and east sides of the canal. It was estimated that 500 railroad carloads of material would go into the new bridge, including at least 353 carloads of steel. Bridge construction moved rapidly. Four of the eight concrete piers were completed by June, as well as the concrete approach on the east side of the canal. During the construction of the bridge, the old toll bridge continued to provide pedestrians and automobiles with a route

⁴ An early estimate of the bridge construction was \$600,000, however, that number was later reconfigured to \$475,000. "The New Bridge," *The Door County* (Sturgeon Bay, WI) *News*, 3 May 1928; "Bridge Cost \$4,398 in Excess Estimate," *The Door County News*, 28 April 1932; "Political Pull Needed For New Bridge States Mayor," *The Door County News*, 19 July 1928; "New Bridge," *The Door County News*, 23 August 1928; "Bridge Bids to Be Opened Oct. 22; Will Complete Work in 15 Months," *Door County* (Sturgeon Bay, WI) *Advocate*, 11 October 1929.

⁵ "Many Attended Hearing on Routing Change for Bridge," *Door County Advocate*, 19 October 1928; "Much Interest Show At Federal Hearing On Bridge," *The Door County News*, 27 June 1929; "Bridge Contract Is Signed Wednesday," *Door County Advocate*, 8 November 1929.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 3

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

over the canal. In fact, auto traffic between 1929 and 1930 increased from 320,928 vehicles to 382,648.⁶

It was assumed in December 1930 that the operation of the new bridge would fall to the City of Sturgeon Bay. However, the bridge would span federal waters and link two state highways (17 and 57). The bridge construction continued steadily and by May 1931 the last heavy steel was in place. The lifts, spans and draws were also tested for adjustments at that time. A bill was sent in June to the highway committee of the Wisconsin State Senate to determine specific maintenance responsibilities for the new bridge. It was decided that Door County and the City of Sturgeon Bay would handle the regular operating cost of the bridge, while any damage that might occur from boat collisions would be paid for by the Wisconsin state bridge fund.⁷

The bridge was completed almost a month ahead of schedule. A celebration for the new structure was held on the 4 July 1931. The festivities included speeches by the Governor Philip La Follette and by a Lieut. Commander McGillan, as the bridge was dedicated to "those who gave their services to their country in times of emergency" (see photograph of plaque in Appendix, #4). At the time of its completion, the bridge was the thirty-ninth special state bridge constructed by the Wisconsin State Highway Commission. It was also the first free structure to offer passage over Sturgeon Bay. Three bridge tenders were hired to manage the new structure. The old toll bridge was closed by July 15th and turned over to the Ahnapee & Western Railroad. The Wisconsin State Highway Commission paid in October for a modern device on the new bridge that displayed (graphically) the position of its lifts.⁸

In April 1932, the final cost of bridge was estimated at \$479,398.03. That figure was only \$4,398.03 over the original estimate (\$475,000). The Wausau Iron Works Company exceeded its original contract amount of \$386,866.77, by \$47,527.08, while other costs, including right-of-way purchases, engineering (drawing and plans) and other contingencies, reached \$45,004.18.⁹

The bridge was heavily used during WWII, when the shipbuilding industry dramatically increased in Sturgeon Bay. Many of the local shipbuilding firms, such as Leathem & Smith and the Riebolt & Wolter Company, acquired Navy contracts and employed men on all three shifts. Approximately 10,000 men were employed to

⁶ "Officials Here To Start New Bridge," *Door County Advocate*, 15 November 1929; "Work on New Bridge Here Progressing at Good Pace," *Door County Advocate*, 24 January 1930; "Rapid Progress is Being Made On New Bridge Here," *Door County Advocate*, 13 June 1930; "Bridge Has New Traffic Record," *Door County Advocate*, 9 January 1931.

⁷ "Operation of New Bridge," *The Door County News*, 18 December 1930; "Bridge Maintenance," *The Door County News*, 24 December 1930; "Last Heavy Steel in Place on Bridge," *Door County Advocate*, 1 May 1931; "Go To Hearing On Goff Bridge Bill," *Door County Advocate*, 19 June 1931.

⁸ "New Bridge is Completed Ready for Opening on 4th," *Door County Advocate*, 3 July 1931; "Council Names Bridge Crew," *The Door County News*, 2 July 1931; "Bridge Celebration Crowd Packs City Over Weekend," *Door County Advocate*, 20 July 1931; "Installing Modern Device on Bridge," *Door County Advocate*, 23 October 1931.

⁹ "New Bridge is Completed Ready for Opening on 4th," *Door County Advocate*, 3 July 1931; "Bridge Cost \$,398 in Excess Estimate," *The Door County News*, 28 April 1932; "Statement On Bridge Costs Received Here," *Door County Advocate*, 29 April 1932.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 4

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

build ships in Sturgeon Bay during the war, while peace time employment numbers averaged 3,000-5,000. The tourism industry increased in Sturgeon Bay and in Door County after the war, thus increasing the use of the bridge.¹⁰

On 21 October 1960, a Swedish-American vessel (the *Carlsholm*), was traveling south in the Sturgeon Bay Canal. It lost control and collided into the bridge's eastern draw mechanism. The extensive damage included bending the bridge's heavy steel beams and twisting the draw. As a result, the bridge could not close properly, and both vehicle and pedestrian traffic were immediately halted. Pedestrian traffic resumed over the bridge a few days later, however, vehicles were not allowed on the bridge for almost three weeks. While the Sturgeon Bay Bridge was repaired, a temporary bridge that was carried by floated barges was constructed to carry traffic along State Highways 42 and 57.¹¹

In the following years, the Sturgeon Bay Bridge continued to support heavy vehicular and truck traffic. Although another bridge over the bay was anticipated by 1961, it was not officially approved until 1975. The new bridge was constructed at 18th Street (southeast of the subject structure) in 1978 and carries both state highways 42 and 57 around the city. The old alignment for state highways 42 and 57, through the City of Sturgeon Bay and over the subject bridge, was then designated as the business alignment for highways 42 and 57.¹²

The Sturgeon Bay Bridge was slated for demolition in 1996. At that time, many of its components were deteriorated, including the following: the segmental and track girders on the lift span; the truss members on the overhead truss span; the rocker bearings, and; the concrete deck girder approach spans on the north end. Although the bridge was in need of repair, many citizens valued its historic character. Thus were organized local efforts to save the bridge. That same year, the "Save our Bridge Group" was formed and in 1998, later changing its name to "Citizens for Our Bridge" (COB). The Wisconsin Trust for Historic Preservation listed in 1998 the bridge among its Ten Most Endangered Properties. It was re-listed by the Trust in 2004. The COB group was officially incorporated in 2005, and is dedicated to the preservation of the bridge. The organization started an annual Steel Bridge Songfest in order to promote and protect the historic Sturgeon Bay Bridge. This festival, which supports local songwriters and musicians, also raises money for the maintenance costs of the bridge that are not covered by City, State or Federal funding. The bridge is scheduled for rehabilitation in late 2008 and remains one of two links that connect northern Door County with the rest of Wisconsin. It continues

¹⁰Bruce M. Kriveskey and Richard H. Zeitlin, *Intensive Architectural/Historical Survey and Recommendations for Downtown Revitalization and Historic Preservation for Sturgeon Bay, Wisconsin* (Milwaukee, WI: Pfaller Herbst Associates, Inc., 1983), 22-23.

¹¹"Officials Parley About Latest Bridge Problems," *Door County Advocate*, 25 October 1960, 1/8; "New Dock, Canal Bridge Latest Measures Here," *Door County Advocate*, 27 October 1960, 1/8; "Barge Bridge Replaces Auto Ferries," *Door County Advocate*, 1 November 1960, 1/1; "Expect Sturgeon Bay Bridge Back in Operation Tomorrow," *Door County Advocate*, 8 November 1960, 1/8.

¹²"Ferries and Bridges Helped in City's Growth," *Door County Advocate*, Bridge Souvenir Edition, 8/1; University of Wisconsin, Bureau of Community Development, *Economic Base Survey of Sturgeon, Bay, Wis.* (Madison: 1956), 7.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 5

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

to carry local business highways 42 and 57.¹³

AREA OF SIGNIFICANCE: ENGINEERING

The Sturgeon Bay Bridge was designed by the Chicago engineering firm of Keller and Harrington (Charles Lincoln Keller and Howard Parsons Harrington), under the supervision of the Wisconsin State Highway Commission. The firm played an important role in the state's evolving design of highway bridges. Keller and Harrington used their experience gained from their former employer—the Scherzer Company—to make a name for themselves in the design of bascule bridges. Including the subject structure, Keller and Harrington went on to design seven Scherzer-type, bascule bridges in the state—five of which remain. They are the subject structure, as well as the Claude Allouez Memorial Bridge in DePere, Brown County; the Eureka Bascule Bridge in Rushford, Winnebago County; the Wrightstown Bascule Bridge in Wrightstown, Winnebago County; and the Winneconne Bascule Bridge in Winneconne, Winnebago County. Of these five, the Sturgeon Bay Bridge is unique. It is the only Keller and Harrington bridge in Wisconsin to claim, for example, an over-head truss and double-leaf bascule span. As well, none of the other bridges is included on the National Register of Historic Places.¹⁴

Charles Lincoln (Charles L.) Keller was born in Dubuque, Iowa, on 9 March 1871. At the age of 23 he received a degree in engineering from Lehigh University in Pennsylvania. He was married in 1907 to Faith More in Polo, Illinois, and had one daughter. After the death of Albert H. Scherzer in 1916, Keller became the President and Chief Engineer for the Scherzer Rolling Lift Bridge Company. He remained in that position until 1922. Keller then left the Scherzer firm and started his own engineering consulting company. Shortly after, H. P. Harrington (a former Scherzer company employee) partnered with Keller. Together they formed Keller and Harrington. They were able to specialize in the Scherzer-type, bascule highway bridges since a majority of the Scherzer Company's patents were terminated by the 1920s. The firm of Keller and Harrington remained in practice until at least 1939. It designed a number of other highway bridges across Wisconsin as well as in other states.¹⁵

Howard Parsons (H.P.) Harrington was born in Wyoming, Iowa, on 3 February 1889. He moved to Chicago by 1910, where he started his career working as a railroad civil engineer. He was employed with the Scherzer

¹³ "Mission Statement for the Steel Bridge Songfest (SBSF), a Production of the Citizens for Our Bridge, Inc.," Copy on file at Heritage Research, Ltd., Menomonee Falls, WI; Information regarding the Wisconsin Trust for Historic Preservation Top Ten Endangered Properties was gleaned from their website, www.wthp.org; Geoffrey Gyrisco, "The Sturgeon Bay Bridge," *Wisconsin Preservation News: The State Historical Society of Wisconsin*, Vol. XXII, No. 5, September/October 1998, 1-3.

¹⁴ Jeffrey A. Hess and Robert M. Frame III. *Historic Highway Bridges in Wisconsin: Movable Bridges*, Vol. 3, Part 2 (Madison, WI: Wisconsin Department of Transportation, 1996), n.p., See inventory form for bridge B-15-100. Of these other four bridges, the only one that is suggested as potentially eligible is the Eureka Bascule Bridge. Wisconsin Architecture & History Inventory, accessed online at www.wisahrd.org and www.wisconsinhistory.org.

¹⁵ Ibid.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 6

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

Rolling Lift Bridge Company by 1917, where he met Charles L. Keller. After Keller left the company in 1922, Harrington followed shortly after and partnered with Keller, forming the engineering consulting firm of Keller and Harrington. By 1923, Harrington was married to his wife Cecile. They had one son.¹⁶

AREA OF SIGNIFICANCE: ENGINEERING:

According to Hess and Frame's *Historic Highway Bridges in Wisconsin*, the Sturgeon Bay Bridge (built 1931) is Wisconsin's only example of a movable, overhead-truss, Scherzer-type, double-leaf, rolling-lift Bascule Bridge in the State of Wisconsin. For centuries, different variations of moveable bridges were used over navigable waterways so that vessels could pass. By the beginning of the twentieth century, however, bridge engineers concentrated on three moveable bridge types: swing, vertical lift and bascule. Bascule bridges are movable structures that rotate in a vertical plane on a horizontal axis, creating a movement similar to a seesaw. Early models typically included a system of counterweights, chains and pulleys that was not conducive for easy starting/stopping or proper balance.¹⁷

The concept of bascule bridge design and operation was updated by William Scherzer in 1893. His influence added a "rolling lift" component (Patent No. 511,713) to the bascule design, in which the center of the rotation continuously changes (it slides backward or forward—depending on if the bridge is opening or closing), thus evening out the weight of the span on the piers. While the moveable leaf was raised, the segmental girders rolled back on a track, which resembles the movement of a rocking chair (see Appendix, #3). Truss systems were added to provide additional counterweight in windy areas, such as canals. Scherzer passed away the same year he received his patent. His brother, Albert, formed the Scherzer Rolling Lift Bridge Company which went on to design by World War I over 175 bascule structures in the United States. In 1910, the activation method was updated by the Scherzer Company. It included a rack-and-pinion system that was later motor-powered. The Scherzer Company also invented a fixed center lock for double-leaf bascules bridges. It essentially tied the leaves together when the bridge was closed. By the 1930s, as most patents held by the Scherzer Company expired, former Scherzer employees started to develop rolling lift designs on their own commissions--such as the Sturgeon Bay Bridge by Keller and Harrington.¹⁸

The Sturgeon Bay Bridge remains largely intact. The unique, overhead-truss, Scherzer-type rolling-lift, double-

¹⁶ United States Department of Commerce. Bureau of Census. *Thirteenth Federal Census of the United States, 1910, Population*. Washington D.C: Government Printing Office, Copy Accessed online at www.ancestry.com on 2 August 2006; States Department of Commerce. Bureau of Census. *Fifteenth Federal Census of the United States, 1930, Population*. Washington D.C: Government Printing Office, Copy Accessed online at www.ancestry.com on 2 August 2006; World War I Draft card for Howard Parsons Harrington, accessed online at www.ancestry.com on 2 August 2006.

¹⁷ Hess and Frame, *Historic Highway Bridges in Wisconsin: Movable Bridges*, Vol. 3, Part 1, 5, 17-24 & Vol. 3 Part 2, n.p., see inventory form for bridge B-15-100.

¹⁸ Hess and Frame, *Historic Highway Bridges in Wisconsin: Movable Bridges*, Vol. 3, Part 1, 5, 17-24, 87, 93-96 & Vol. 3 Part 2, n.p., see inventory form for bridge B-15-100; Terry L. Koglin, *Movable Bridge Engineering* (Hoboken, NJ: John Wiley & Sons, Inc., 2003), 157.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 8 Page 7

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

leaf bascule unit with its segmental girder (see Appendix, #1 & 2) continues to operate, and is flanked by its two original overhead Warren truss spans, which are then flanked by five Parker Through-trusses. Keller and Harrington incorporated the heavy duty overhead truss system to accommodate the frequent, sweeping winds on Sturgeon Bay. The subject bridge is rare. It is, in fact, the only example of its type remaining in the state of Wisconsin. Although the Scherzer patents originated with the Scherzer Rolling Lift Bridge Company in the 1930s, the firm of Keller & Harrington went on to incorporate the Scherzer Bascule plan into their own designs. As a result, the Sturgeon Bay Bridge is a fine example of Keller & Harrington's work.

SUMMARY:

The Sturgeon Bay Bridge is the only remaining example of an overhead truss, Scherzer-type, rolling-lift Bascule Bridge in Wisconsin and remains largely intact. It is considered eligible for the National Register under Criterion C for the engineering technology and features it incorporates. In addition, the bridge is significant for its association with the Chicago engineering firm of Keller & Harrington, who were significant engineers that designed bascule highway bridges in Wisconsin and across the country.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 9 Page 1

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

BIBLIOGRAPHY:

Door County Advocate. (Sturgeon Bay, WI) Various dates used, see footnotes for specific citations.

The Door County News. (Sturgeon Bay, WI) Various dates used, see footnotes for specific citations.

Gyrisco, Geoffrey M. "The Sturgeon Bay Bridge." *Wisconsin Preservation News: The State Historical Society of Wisconsin.* Vol. XXII, No.5, September/October 1998, 1-3.

Hess, Jeffrey A. and Robert M. Frame III. *Historic Highway Bridges in Wisconsin*, 3 vols. Madison, WI: Wisconsin Department of Transportation, 1996.

Holand, Hjalmer Rued. *History of Door County, Wisconsin*, 2 vols. Chicago: The S.J. Clarke Publishing Company, 1917.

*Hool, George A. *Movable and Long-Span Steel Bridges.* New York: McGraw-Hill Book Company, 1943.

Koglin, Terry L. *Movable Bridge Engineering.* Hoboken, NJ: John Wiley & Sons, Inc., 2003.

Kraviskey, Bruce M. and Richard H. Zeitlin. *Intensive Architectural/Historical Survey and Recommendations for Downtown Revitalization and Historic Preservation for Sturgeon Bay, Wisconsin.* Milwaukee, WI: Pfaller Herbst Associates, Inc., 1983.

"Mission Statement for the Steel Bridge Songfest (SBSF), a Production of the Citizens for Our Bridge, Inc.," Copy on file at Heritage Research, Ltd., Menomonee Falls, WI.

"Remote Global Monitoring of the Michigan Street Bridge, Sturgeon Bay, Wisconsin." Northwestern University, Infrastructure Technology Institute (ITI) Technical Report No. 19. Prepared by David W. Prine and Philip Fish, May 1996. Available online at www.iti.northwestern.edu/publications/technical_reports/tr19.html.

Sanborn Map Company. *Sanborn-Perris Fire Insurance Map-Sturgeon Bay, Wis.* New York: Sanborn Map Company, 1885, 1898, 1894, 1919.

University of Wisconsin. Bureau of Community Development. *Economic Base Survey of Sturgeon Bay.* Madison: 1956.

Wyatt, Barbara, ed. *Cultural Resource Management in Wisconsin.* Madison: State Historical Society, 1986.

WEBSITES:

www.ancestry.com

www.wisconsinhistory.org.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 9 Page 2

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

www.wisahrd.org

*www.wisconsinhighways.org

www.wthp.org

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section 10 Page 1

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

Verbal Boundary Description

Starting at the northeast corner of the bridge, the boundary extends 1,413 feet 4 inches to the west southwest, after which it makes a 90° turn to the south southeast for 33 feet, then extends 1,413 feet 4 inches to the east northeast, then makes a 90° turn and extends 33 feet to the Point of Beginning. The boundary steps out to include the 13 x 9 foot projection of the tender's house, as indicated on the attached site map.

Boundary Justification

The boundary encompasses the entire historic structure.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section photos Page 1

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

Sturgeon Bay Bridge (General view of bridge)
Michigan Street over Sturgeon Bay
City of Sturgeon Bay, Door County, WI
Photo by John N. Vogel
November 2005
Negatives located at the Wisconsin Historical Society
View to West
Photo #1 of 11

Sturgeon Bay Bridge (View of south portion of bridge, four of five Parker Through-Trusses)
Michigan Street over Sturgeon Bay
City of Sturgeon Bay, Door County, WI
Photo by John N. Vogel
November 2005
Negatives located at the Wisconsin Historical Society
View to North Northeast
Photo #2 of 11

Sturgeon Bay Bridge (Through view of south portion of bridge, detail of Parker Through-Truss)
Michigan Street over Sturgeon Bay
City of Sturgeon Bay, Door County, WI
Photo by John N. Vogel
November 2005
Negatives located at the Wisconsin Historical Society
View to East Northeast
Photo #3 of 11

Sturgeon Bay Bridge (General view of bridge)
Michigan Street over Sturgeon Bay
City of Sturgeon Bay, Door County, WI
Photo by John N. Vogel
November 2005
Negatives located at the Wisconsin Historical Society
View to East
Photo #4 of 11

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section photos Page 2

Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

Sturgeon Bay Bridge (View of two Warren Trusses that flank the double-leaf bascule span, and two of five Parker Trusses)
Michigan Street over Sturgeon Bay
City of Sturgeon Bay, Door County, WI
Photo by John N. Vogel
November 2005
Negatives located at the Wisconsin Historical Society
View to Southeast
Photo #5 of 11

Sturgeon Bay Bridge (View of open, double-leaf bascule span)
Michigan Street over Sturgeon Bay
City of Sturgeon Bay, Door County, WI
Photo by John N. Vogel
November 2005
Negatives located at the Wisconsin Historical Society
View to South Southeast
Photo # 6 of 11

Sturgeon Bay Bridge (Detail of open, double-leaf bascule span with ship passing)
Michigan Street over Sturgeon Bay
City of Sturgeon Bay, Door County, WI
Photo by John N. Vogel
November 2005
Negatives located at the Wisconsin Historical Society
View to South Southeast
Photo #7 of 11

Sturgeon Bay Bridge (Close-up of double-leaf and Warren Trusses)
Michigan Street over Sturgeon Bay
City of Sturgeon Bay, Door County, WI
Photo by John N. Vogel
November 2005
Negatives located at the Wisconsin Historical Society
View to South Southeast
Photo #8 of 11

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section photos Page 3

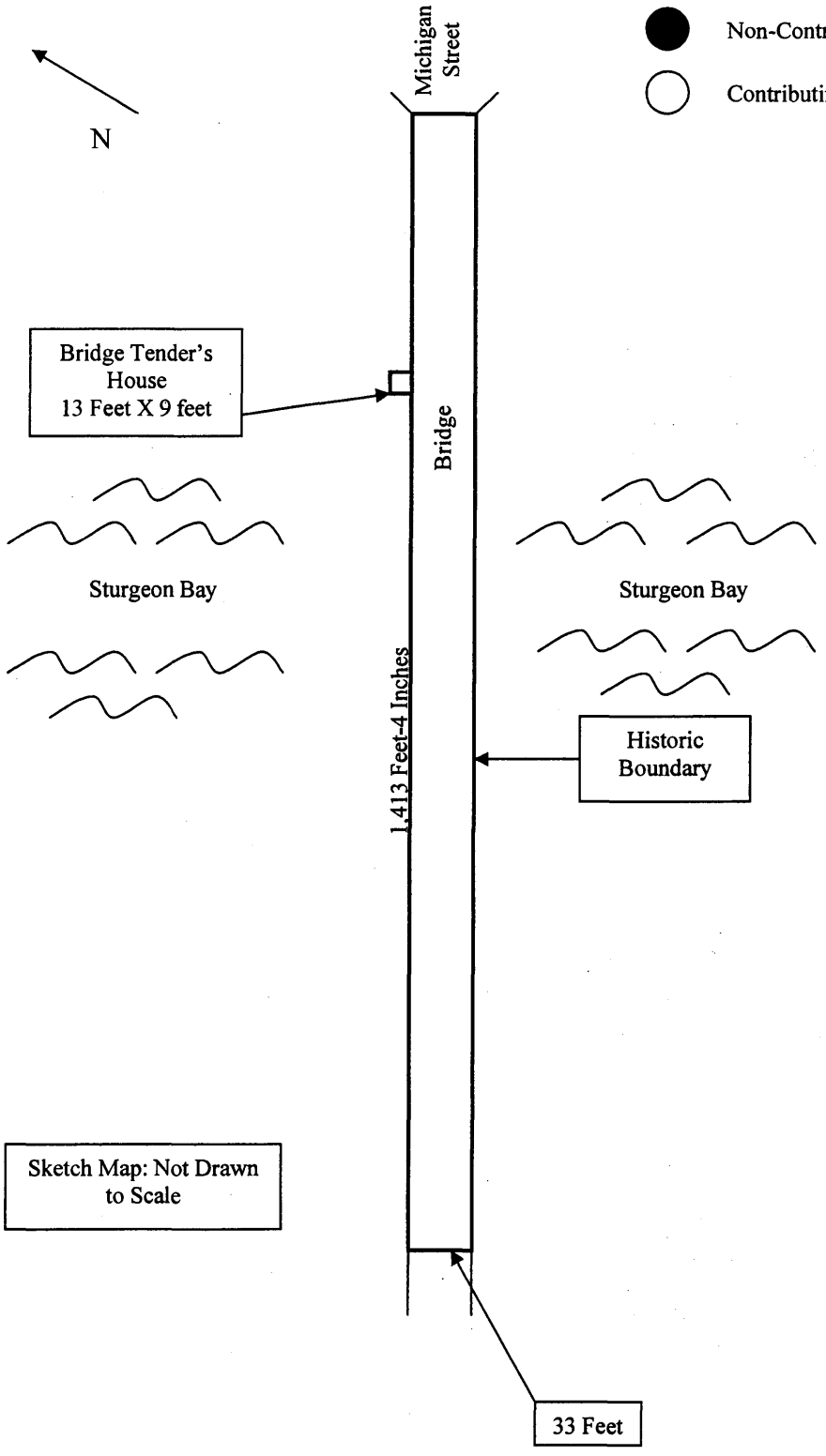
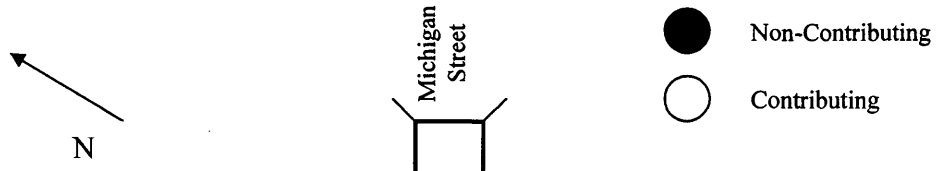
Sturgeon Bay Bridge
Sturgeon Bay, Door County, Wisconsin

Sturgeon Bay Bridge (View of concrete trestle at north end of bridge, followed by a Parker Truss and Warren Truss)
Michigan Street over Sturgeon Bay
City of Sturgeon Bay, Door County, WI
Photo by John N. Vogel
November 2005
Negatives located at the Wisconsin Historical Society
View to Southwest
Photo #9 of 11

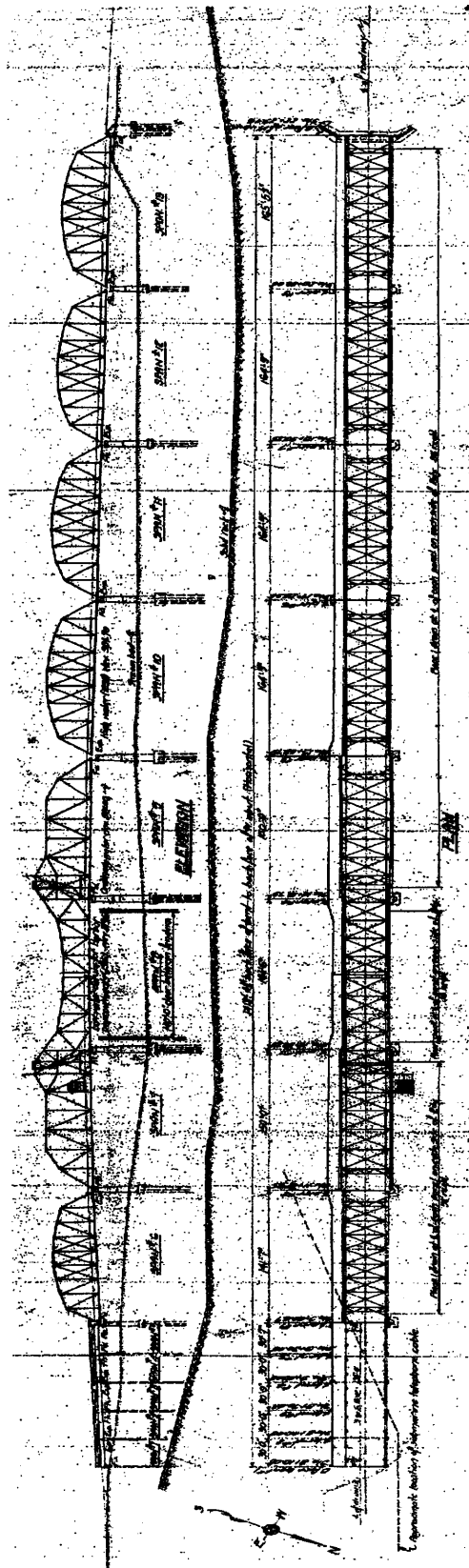
Sturgeon Bay Bridge (Through view of north portion of bridge)
Michigan Street over Sturgeon Bay
City of Sturgeon Bay, Door County, WI
Photo by John N. Vogel
November 2005
Negatives located at the Wisconsin Historical Society
View to West Southwest
Photo #10 of 11

Sturgeon Bay Bridge (Detail of bridge plate)
Michigan Street over Sturgeon Bay
City of Sturgeon Bay, Door County, WI
Photo by John N. Vogel
November 2005
Negatives located at the Wisconsin Historical Society
View to Northeast
Photo #11 of 11

Sturgeon Bay Bridge, City of Sturgeon Bay, Door County, WI

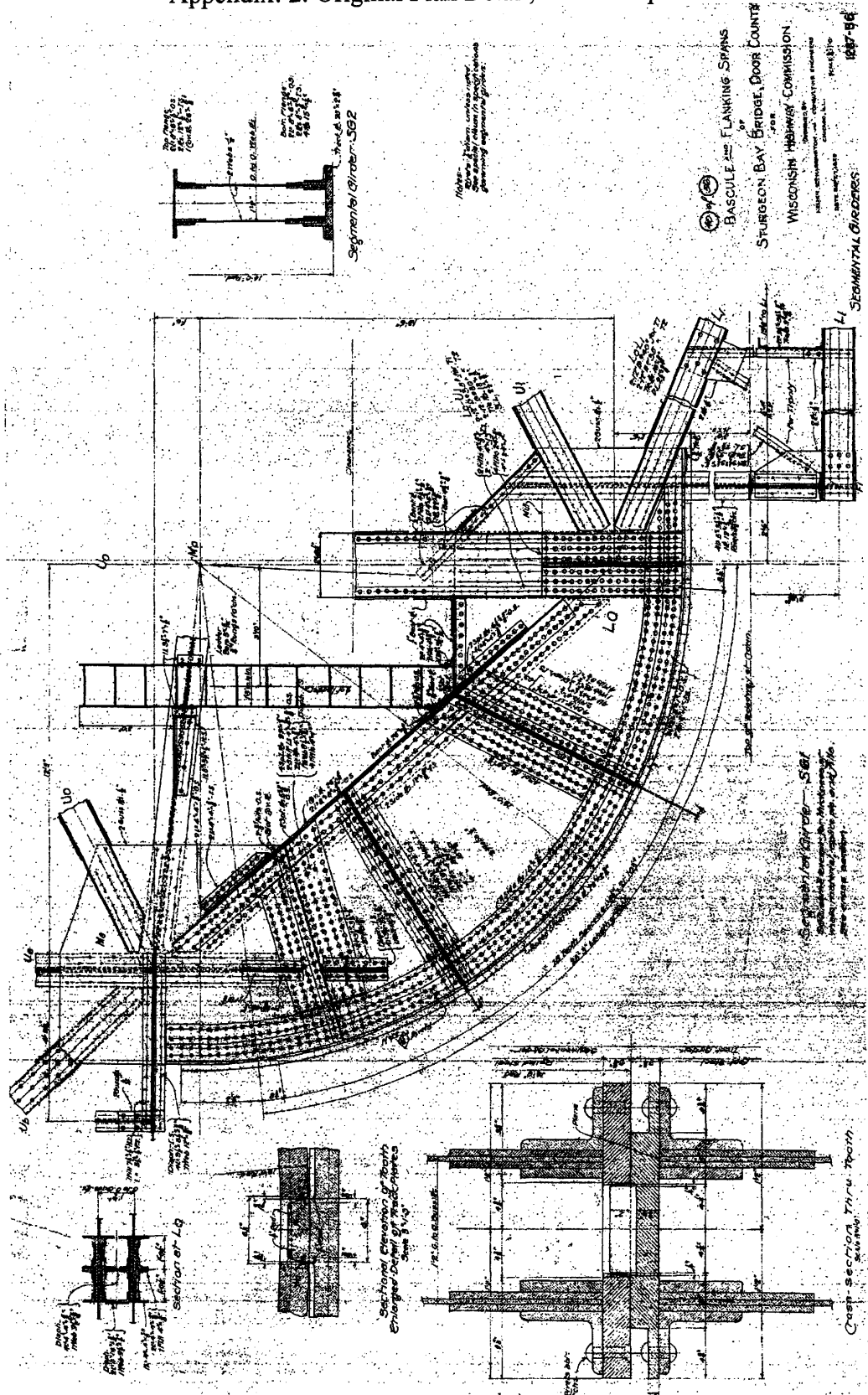


Appendix: 1. Original Elevation and Plan of Sturgeon Bay Bridge



STURGEON BAY BRIDGE
STURGEON BAY, DOOR COUNTY, WISCONSIN

Appendix: 2. Original Plan Detail, Bascule Span



**STURGEON BAY BRIDGE
STURGEON BAY, DOOR COUNTY, WISCONSIN**

Appendix: 3. Elevation of Typical Scherzer Rolling-Lift Bascule Bridge

