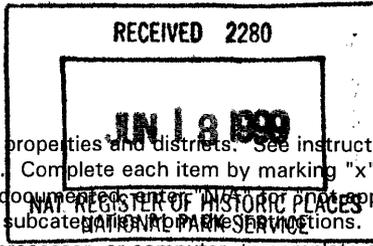


**United States Department of the Interior
National Park Service**

844

**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 any item does not apply to the property being documented, mark "N/A" in the appropriate box. 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 Sorlie Memorial Bridge
other names/site number Red River Bridge; 32GF279

2. Location

street & number East end of Demers Avenue N/A not for publication
city or town Grand Forks vicinity
state North Dakota code ND county Grand Forks code 035 zip code 58201

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, 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 Samuel J. Wegner 06/21/99
Samuel J. Wegner Date
State Historic Preservation Officer (North Dakota)

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 or other official _____ Date _____

State or Federal agency and bureau

4. National Park Service Certification

- I, hereby certify that this 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
- removed from the National Register
- other (explain): _____

Signature of the Keeper

Ronda M. Clallard

Date of Action

7/19/99

Sorlie Memorial Bridge
Name of Property

Grand Forks, North Dakota
County and State

5. Classification

Ownership of Property
(Check as many boxes as apply)

- private
- public - local
- public - State
- public - Federal

Category of Property
(Check only one box)

- building(s)
- district
- site
- structure
- object

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

Contributing	Noncontributing	
_____	_____	buildings
_____	_____	sites
<u>1</u>	_____	structures
_____	_____	objects
<u>1</u>	_____	Total

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

Historic Roadway Bridges of N.D.

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions)

TRANSPORTATION: Road-related

Current Functions
(Enter categories from instructions.)

TRANSPORTATION: Road-related

7. Description

Architectural Classification
(Enter categories from instructions)

OTHER: Parker through truss bridge

Materials
(Enter categories from instructions.)

foundation concrete
walls _____
roof _____
other Steel

Narrative Description

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

Sorlie Memorial Bridge
Name of Property

Grand Forks, North Dakota
County and State

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for 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.

Narrative Statement of Significance

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

9. Major Bibliographical References

Bibliography

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

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey Name of repository: # _____
- recorded by Historic American Engineering Record # _____

Areas of Significance

(Enter categories from instructions)

TRANSPORTATION

ENGINEERING

Period of Significance

1929-1946

Significant Dates

1929

Significant Person

(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

N/A

Architect/Builder

Builder: Minneapolis Bridge Co.

Primary location of additional data:

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

Name of repository: _____

Sorlie Memorial Bridge
Name of Property

Grand Forks, North Dakota
County and State

10. Geographical Data

Acreage of Property Less than one acre.

UTM References

(Place additional UTM references on a continuation sheet.)

1	<u>1</u> <u>4</u>	<u>6</u> <u>4</u> <u>7</u> <u>3</u> <u>2</u> <u>0</u>	<u>5</u> <u>3</u> <u>0</u> <u>9</u> <u>8</u> <u>4</u> <u>0</u>	2	<u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>
	Zone	Easting	Northing		Zone	Easting	Northing
3	<u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	4	<u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	<u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>

See continuation sheet

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

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

11. Form Prepared by

Name/Title: Mark Hufstetler / Historian
Organization: Renewable Technologies, Incorporated Date: December 10, 1996
Street & Number: 511 Metals Bank Building Telephone: (406) 782-0494
City or Town: Butte State: Montana Zip code: 59701

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: North Dakota Department of Transportation
Street & Number: 608 East Boulevard Telephone: (701) 328-2731
City or Town: Bismarck State: North Dakota Zip code: 58505

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 the 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 Project (1024-0018), Washington, DC 20503.

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

**National Register of Historic Places
Continuation Sheet**

Section number 1, 2 Page 1

SORLIE MEMORIAL BRIDGE
POLK COUNTY, MINNESOTA

1. Name of Property
Historic Name: Sorlie Memorial Bridge
Other names/site number: Bridge No. 4700

2. Location
Street & number: West end of Demers Avenue
City or town: East Grand Forks
State: Minnesota
Code: MN
County: Polk
Code: 119
Zip Code: 56721

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

**National Register of Historic Places
Continuation Sheet**

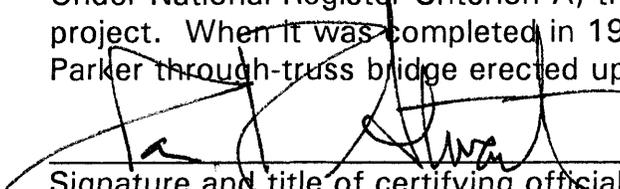
Section number 3 Page 2

Sorlie Memorial Bridge
Grand Forks, North Dakota/East Grand Forks, Minnesota

State/Federal Agency Certification

As designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this X nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR 60. In my opinion, the property X meets does not meet the National Register criteria. I recommend that this property be considered significant nationally X statewide locally.

The Sorlie Memorial Bridge (Bridge No. 4700) is eligible under National Register Criterion C as the best example of a rigid Parker Through Truss bridge in Minnesota. Its spans are, by nearly 100 feet, the longest surviving examples of a simply supported Parker, through truss, highway-bridge design in the state. As such, they provide the best illustration of the type's engineering capabilities. Under National Register Criterion A, the bridge is considered a major engineering project. When it was completed in 1929, the bridge was the most impressive Parker through-truss bridge erected up to that time in Minnesota.



Signature and title of certifying official
Ian R. Stewart
Deputy State Historic Preservation Officer

 10/1/97
Date

State or Federal agency and bureau
Minnesota Historical Society

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 7 Page 3

Sorlie Memorial Bridge
Grand Forks County, ND

Description

The Sorlie Memorial Bridge is located at the eastern end of Demers Avenue in the City of Grand Forks, North Dakota. The bridge crosses the Red River, which acts as the North Dakota-Minnesota state line in this area; consequently, the eastern half of the bridge is located in Polk County, Minnesota. The area surrounding the bridge is heavily urbanized, with the central business district of Grand Forks immediately west of the bridge's west abutment. On its east side, the bridge touches the historic commercial district of East Grand Forks, Minnesota. The immediate riverbank area on both sides of the river has been developed into landscaped parkland, with footpaths and non-native grasses and trees. Historic railroad bridges are visible both north and south of the bridge; to the south, the former Great Northern Railway bridge remains in active use, while the former Northern Pacific Bridge to the north has been converted into a pedestrian crossing. The Sorlie Memorial Bridge carries a busy urban street connecting the two cities. When built, the bridge had additional importance as the only vehicular river crossing in the immediate area, and as the route of transcontinental U.S. Highway 2.

The bridge itself is a rigid-connected (riveted) Parker through truss, with a steel superstructure. The Parker design, which saw widespread use nationally during the early and mid-twentieth centuries, is characterized by the presence of relatively-heavy vertical members designed to handle the compressive stress of a bridge load. These members are beneath a polygonal upper chord. The bridge contains two truss spans, each nine panels in length; there are no approach spans. Overall, the bridge is approximately 605 feet long, with a vehicle deck 60 feet wide.

Design details of the bridge's substructure and superstructure are outlined below:

Substructure: concrete abutments and solid concrete piers

Superstructure:

upper chords: two built-up channel girders with continuous cover plate along the upper flanges and lattice bars along the lower flanges

lower chords: two built-up channel girders with batten plates along the upper and lower flanges

verticals: two built-up channel girders with lacing bars along the upper and lower flanges

diagonals: two channel sections with batten plates along the upper and lower flanges

bracing (portal): lacing pattern across the portal, with knee braces

bracing (sway): lattice bars across the top of the portal, with lacing bars elsewhere; angle sections below

laterals (bottom): angle sections

moveable ends: located at the abutment end of each span; each corner has 4 flanged wheels (2 axles) on rails

floor system: I-beam stringers riveted to floor beams of I-beams and built-up girders, which are riveted to the superstructure

decking: concrete, with concrete curbs

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 7, 8 Page 4

Sorlie Memorial Bridge
Grand Forks County, ND

Description (continued)

railing: a repeating pattern of rectangle-within-diamond-within-rectangle with diagonals
steelmaker's marks: Inland Steel Co., East Chicago, Ind.

Metal plaques mounted on both ends of the bridge identify the structure as the "Sorlie Memorial Bridge," in honor of Arthur Gustav Sorlie (1874-1928). The plaque includes a brief biography of Sorlie, and describes him as "a true friend of better roads and bridges."

The bridge retains a very high level of integrity; it remains in its original location, and all major structural components appear to retain their as-built appearance.

The North Dakota portion of the Sorlie Memorial Bridge is owned and maintained by the North Dakota Department of Transportation. It carries the state numerical designation 2-911.409.

Statement of Significance

In accordance with the guidelines established in the Multiple Property Documentation form for "Historic Roadway Bridges in North Dakota," the Sorlie Memorial Bridge is eligible for listing in the National Register of Historic Places with statewide significance under criteria "A" and "C." The bridge is significant under Criterion A as an early, important crossing of the Red River at a major urban center, as well as serving as an important river crossing on a major transcontinental highway route. The bridge is significant under Criterion C as a structure of exceptional engineering design built to meet unusual site conditions. Additionally, it is the oldest documented riveted Parker through bridge in North Dakota. Finally, the Sorlie Memorial Bridge spans, each 283 ft. long, are the longest spans of riveted Parker through trusses in the state.

Historical information: This bridge was built in 1929 as a joint project between the North Dakota Highway Department and the Minnesota Department of Highways. North Dakota initiated the project under the leadership of Governor Arthur G. Sorlie, ex-officio Chairman of the State Highway Commission. The North Dakota department designed the project and the Minneapolis Bridge Co. built the structure. The Sorlie Bridge project, built in part with federal aid (Bureau of Public Roads) funds, was among the first interurban projects in the country which used money from that source. The Sorlie bridge replaced an earlier swing bridge which had been constructed on the site in 1889.

The most noteworthy feature of the Sorlie Memorial Bridge is the use of trucks on pairs of track castings for the expansion bearings. The bearings were designed by North Dakota Highway Department bridge

United States Department of the Interior
National Park Service
National Register of Historic Places
Continuation Sheet

Section number 8, 9, 10 Page 5

Sorlie Memorial Bridge
Grand Forks County, ND

Statement of Significance (continued)

engineer Clifford Johnson to compensate for abutment movement due to unstable ground. At this location on the Red River, the river banks were unsuitable for what was then standard abutment design because of their clay composition. Because it was cost prohibitive to build a foundation of rock at the banks, the innovative expansion bearings were manufactured.

The bridge was repaired in 1986, with the superstructure and expansion bearings remaining unaltered.

Bibliography

"End Bearings of Bridge Allow for Shifting of Abutments," Engineering News-Record 104 (29 May 1930): 898-900.

Johnson, Lon, et. al. "Historic Bridges in North Dakota." Bismarck: North Dakota Department of Transportation, 1992.

North Dakota Highway Department, "Design of the Sorlie Memorial Bridge," North Dakota Highway Bulletin 6, No. 8 (September 1929): 12-14.

The Sorlie Memorial Bridge 1929 Souvenir Historical Programs, (Grand Forks: The Page Printing Company, 1929).

Verbal boundary description

The bridge is located in the northeast quarter of Section 3, Township 151 North, Range 50 West. The boundary consists of a rectangle, measuring 655 feet northeast-southwest and 110 feet southeast-northwest, and centered on the bridge superstructure.

Verbal boundary justification

The boundary is constructed to include the area occupied by the bridge superstructure and substructure, as well as a 25-foot buffer of land immediately surrounding the structure.

United States Department of the Interior
National Park Service
National Register of Historic Places
Continuation Sheet

Section number Photographs Page 6

Sorlie Memorial Bridge
Grand Forks County, ND

Index to Photographs

Photographer: Mark Hufstetler

Date: October 1990

Local of original negatives: State Historical Society of North Dakota, Bismarck.

Photograph Number	Description	Direction of view
1	South elevation	NE
2	Bridge deck	NE
3	West portal	E
4	West portal and north elevation	SE
5	Detail of moveable end	SW