

United States Department of the Interior  
National Park Service

RECEIVED

NATIONAL REGISTER OF HISTORIC PLACES  
REGISTRATION FORM

OCT 25 1993

NATIONAL  
REGISTER

1. Name of Property

historic name: N/A

other name/site number: South Dakota Dept. of Trans. Br. No. 29-221-060

2. Location

street & number: Local road over the Big Sioux River

not for publication:     

city/town: Castlewood

vicinity: X

state: SD county: Hamlin

code: 057

zip code: 57223

3. Classification

Ownership of Property: public-local

Category of Property: structure

Number of Resources within Property:

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


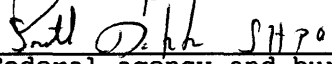
Number of contributing resources previously listed in the National Register: 0

Name of related multiple property listing: Historic Bridges in South Dakota

4. 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. \_\_\_\_\_ See continuation

sheet.

  
 Signature of certifying official \_\_\_\_\_ Date 12/12/92  
  
 State or Federal agency and bureau \_\_\_\_\_

In my opinion, the property \_\_\_\_\_ meets \_\_\_\_\_ does not meet the National Register criteria. \_\_\_\_\_ See continuation sheet.

Signature of commenting or other official \_\_\_\_\_ Date \_\_\_\_\_

State or Federal agency and bureau \_\_\_\_\_

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5. National Park Service Certification

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I, hereby certify that this property is:

- entered in the National Register \_\_\_\_\_ LMcCulland 12/9/93  
     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 Keeper                      Date of Action

=====  
6. Function or Use  
=====

Historic: Transportation Sub: road-related (vehicular)

Current : Transportation Sub: road-related (vehicular)

=====  
7. Description  
=====

Architectural Classification:

Other  
\_\_\_\_\_  
\_\_\_\_\_

Other Description: Hybrid of Pratt and Warren trusses

Materials: foundation concrete roof \_\_\_\_\_  
walls \_\_\_\_\_ other metal : steel  
\_\_\_\_\_

Describe present and historic physical appearance. \_X\_ See continuation sheet.

=====  
8. Statement of Significance  
=====

Certifying official has considered the significance of this property in relation to other properties: \_\_\_\_\_.

Applicable National Register Criteria:  C

Criteria Considerations (Exceptions) : \_\_\_\_\_

Areas of Significance:  Engineering   
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Period(s) of Significance:  1894

Significant Dates :  1894  \_\_\_\_\_

Significant Person(s):  N/A

Cultural Affiliation:  N/A

Architect/Builder:  King Bridge Company   
\_\_\_\_\_  
\_\_\_\_\_

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.  
 X  See continuation sheet.

=====  
9. Major Bibliographical References  
=====

X  See continuation sheet.

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 # \_\_\_\_\_
- recorded by Historic American Engineering Record # \_\_\_\_\_

Primary Location of Additional Data:

- State historic preservation office
- Other state agency
- Federal agency
- Local government
- University
- Other -- Specify Repository: South Dakota Department of Transportation

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 10. Geographical Data  
 =====

Acreege of Property: less than 1 acre

UTM References: Zone Easting Northing    Zone Easting Northing

    A 14 654860 4953100    B                   
     C                             D                 

    \_\_\_ See continuation sheet.

Verbal Boundary Description:    \_\_\_ See continuation sheet.

    The nominated property consists of a rectangle, 20 feet wide by 108 feet long, whose vertices coincide with the outside corners of the bridge abutments at each end of the bridge, and includes only the bridge superstructure and substructure.

Boundary Justification:    \_\_\_ See continuation sheet.

    Because the bridge is located on a public road, there are no legal boundary lines for the ends of the bridge. Therefore, these boundaries are drawn to encompass only the superstructure and substructure of the bridge itself.

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 11. Form Prepared By  
 =====

Name/Title: Jennifer Traeger/Historian and Fred Quivik/Architectural Historian

Organization: Renewable Technologies, Inc.

Date: August 1990/9-93

Street & Number: 510 Metals Bank Bldg.

Telephone: (406)782-0494

City or Town: Butte

State: MT    ZIP: 59701

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NATIONAL REGISTER OF HISTORIC PLACES  
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Section Number 7

Bridge No. 29-221-060 Page 6

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Bridge No. 29-221-060 is located 1 mile south and .9 miles west of Castlewood, carrying a county road over the Big Sioux River. The bridge is a three-span structure; the main span (80 feet) is an iron or steel, pin-connected through truss, and there is a steel stringer approach span at each end. The arrangement of members in the main-span truss does not conform to any common types, although with its diagonals at varying angles it resembles the Thatcher truss patented in 1881. A more accurate description of the truss is that it is a hybrid of the Pratt and the Warren types. The superstructure consists of five panels: the middle one resembles a panel in a Warren truss, with diagonals designed to serve both tension and compression; the two panels at each end resemble a 19th century, Pratt truss with its hip verticals and diagonal members designed to function in tension only. Upper chords consist of channel sections riveted with lacing bars. The orientation of the channel sections differs from the conventional condition, however, because the flat backs of the channels form the top and bottom of the chords, while the lacing bars form the sides. The hip verticals are paired forged square eye-bars. The diagonals serving in tension are paired punched eye-bars. The diagonals in the middle panel are paired angle sections riveted with batten plates to form an X-section. Rather than meeting at a pin connection at their apex, the two diagonal members of the middle panel are riveted to a gusset plate. The lower chord consists of paired punched eye-bars. The corrugated steel floor has a gravel wearing surface and rests on steel I-beam stringers, which in turn rest on the upper flanges of I-beam beams. The floor beams are riveted to plate hangers suspended from the pin-connections along the lower chords. Portal bracing consists of lattice bars between paired angle sections, with the lattice reaching down to the knee braces. Sway bracing is paired angle sections; top and bottom lateral bracing is round rods. The main span rests on paired, concrete-filled, steel tubular piers. The southwest abutment is of poured concrete, and the northeast abutment is not visible. The bridge railing consists of two angle sections.

Except for the new deck materials, this bridge has very good integrity.

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Section number 8

Bridge No. 29-221-060

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Bridge no. 29-221-060 is being nominated to the National Register of Historic Places as part of the "Historic Bridges in South Dakota" Multiple Property Nomination. It is related to the historic context of "Historic Bridges in South Dakota, 1893-1943" and is classified with the associated property type for iron and steel frame bridges. This bridge is individually eligible for the National Register under Criterion C as a rare example nationally of a type of through truss that appears as hybrid of the Pratt and Warren types. It is one of only two such bridge types known to exist in the county. The bridge is also eligible under Criterion C one of only a few pre-1900 truss bridges to survive in South Dakota and for its association with the King Bridge Company, an important 19th Century bridge fabricator.

On April 4, 1894, the Hamlin County Commissioners received petitions for three bridges over the Big Sioux River, including one at this site. The following day, the commissioners rejected the other two petitions and instructed the auditor to advertise for bids for this bridge. On May 15, twelve firms, including some of the leading bridge builders and fabricators in the region, submitted bids. Although several other companies had lower bids the commissioners unanimously agreed that the bid, plans, and specifications of the King Bridge Company of Cleveland, Ohio were the most acceptable, and they decided to enter into a contract with that firm.

This is a very unusual truss type. The arrangement of members in the main-span truss does not conform to any common types, although with its diagonals at varying angles it resembles the Thatcher truss patented in 1881. A more accurate description of the truss is that it is a hybrid of the Pratt and the Warren types. The only other example known to exist crosses the Yellow Bank River in Lac qui Parle County, Minnesota. It was built by the King Bridge Company in 1893. It is identical to this Hamlin County bridge in its overall configuration and in most of its details, differing only in its floor beams, deck, and railing. The floor beams of the Lac qui Parle County bridge are plate girders of variable depth, and the deck and railings are wood plank. While the largest number of bridges erected by the King Bridge Company were conventional trusses of the Pratt configuration, the company continued to try new truss configurations through the end of the 19th century. These two bridges may represent such

(continued)

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Bridge No. 29-221-060

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8. Significance (continued)

an experimental effort. Although not a Thatcher truss, the A-frame configuration at the center panel bears similarity to a Thatcher. The Wrought Iron Bridge Company of Canton, Ohio, is known to have built several Thatcher trusses, but according to David Simmons (Ohio State Historic Preservation Office, and an expert on the King Bridge Co.), the King Bridge Company is not known to have built any. These two bridges may have been an experiment related to the Thatcher.

9. Bibliography

Hamlin County "Commissioners Record," Book 1, pp. 470 & 478, Auditor's Office, Hamlin County Courthouse, Hayti.

Edwin Thatcher, "Specification forming part of Letters Patent No. 242, 396, dated May 31, 1881," (U.S. Patent Office).

Fred Quivik, telephone interview with David Simmons, Ohio State Historic Preservation Office, April 5, 1988.



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SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: see below Date Listed: 12/09/93

Property Name: see below

County: see below State: South Dakota

Historic Bridges in South Dakota MPS  
Multiple Name

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The following properties are listed in the National Register of Historic Places in accordance with the attached nomination documentation subject to the following exceptions, exclusions, or amendments, notwithstanding the National Park Service certification included in the nomination documentation.

  
\_\_\_\_\_  
Signature of the Keeper

December 9, 1993  
Date of Action

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Amended Items in Nomination:

Section 3/8. State Certification/Statement of Significance. Certifying official has considered the significance of the following properties to be of state significance.

Reference No.	Property	County
93001295	Capa Bridge	Jones County
93001287	Chilson Bridge	Fall River County
93001308	Eighth Street Bridge	Minnehaha County
93001298	Esmond Bridge	Kingsbury County
93001317	Hall Bridge	Spink County
93001274	Hay Creek Bridge	Butte County
93001264	Kemp Avenue Bridge	Codington County
93001266	Larson Bridge	Codington County
93001277	Minnesela Bridge	Butte County
93001268	Old Cochrane Bridge	Deuel County
93001281	Red Shirt Bridge	Custer County
93001300	Redwater Bridge, Old	Lawrence County

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93001269	South Dakota Dept. of Transportation Bridge No. 03-338-100	Beadle County
93001260	South Dakota Dept. of Transportation Bridge No. 03-020-008	Beadle County
93001261	South Dakota Dept. of Transportation Bridge No. 03-327-230	Beadle County
93001270	South Dakota Dept. of Transportation Bridge No. 05-028-200	Bon Homme county
93001271	South Dakota Dept. of Transportation Bridge No. 05-032-170	Bon Homme County
93001272	South Dakota Dept. of Transportation Bridge No. 05-138-080	Bon Homme County
93001273	South Dakota Dept. of Transportation Bridge No. 05-255-130	Bon Homme County
93001276	South Dakota Dept. of Transportation Bridge No. 10-112-355	Butte County
93001275	South Dakota Dept. of Transportation Bridge No. 10-109-360	Butte County
93001278	South Dakota Dept. of Transportation Bridge No. 12-503-230	Charles Mix County
93001265	South Dakota Dept. of Transportation Bridge No. 15-210-136	Codington County
93001279	South Dakota Dept. of Transportation Bridge No. 16-570-054	Carson County
93001280	South Dakota Dept. of Transportation Bridge No. 17-289-107	Custer County
93001282	South Dakota Dept. of Transportation Bridge No. 18-040-137	Davison County
93001283	South Dakota Dept. of Transportation Bridge No. 18-060-202	Davison County
93001284	South Dakota Dept. of Transportation Bridge No. 18-100-052	Davison County
93001285	South Dakota Dept. of Transportation Bridge No. 18-142-150	Davison County
93001286	South Dakota Dept. of Transportation Bridge No. 20-153-210	Deuel County
93001288	South Dakota Dept. of Transportation Bridge No. 25-218-141	Faulk County
93001262	South Dakota Dept. of Transportation Bridge No. 25-380-142	Faulk County
93001289	South Dakota Dept. of Transportation Bridge No. 27-000-201	Gregory County
93001290	South Dakota Dept. of Transportation Bridge No. 27-060-298	Gregory County

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93001291	South Dakota Dept. of Transportation Bridge No. 29-221-060	Hamlin County
93001292	South Dakota Dept. of Transportation Bridge No. 29-279-010	Hamlin County
93001293	South Dakota Dept. of Transportation Bridge No. 30-257-400	Hand County
93001294	South Dakota Dept. of Transportation Bridge No. 31-115-110	Hanson County
93001297	South Dakota Dept. of Transportation Bridge No. 39-006-070	Kingsbury County
93001299	South Dakota Dept. of Transportation Bridge No. 39-176-100	Kingsbury County
93001301	South Dakota Dept. of Transportation Bridge No. 44-028-220	McCook County
93001302	South Dakota Dept. of Transportation Bridge No. 44-212-090	McCook County
93001303	South Dakota Dept. of Transportation Bridge No. 47-215-363	Meade County
93001263	South Dakota Dept. of Transportation Bridge No. 47-151-389	Meade County
93001305	South Dakota Dept. of Transportation Bridge No. 48-244-204	Melette County
93001306	South Dakota Dept. of Transportation Bridge No. 49-095-190	Miner County
93001267	South Dakota Dept. of Transportation Bridge No. 50-200-035	Minnehaha County
93001310	South Dakota Dept. of Transportation Bridge No. 56-090-096	Sanborn County
93001312	South Dakota Dept. of Transportation Bridge No. 56-174-090	Sanborn County
93001311	South Dakota Dept. of Transportation Bridge No. 56-117-123	Sanborn County
93001313	South Dakota Dept. of Transportation Bridge No. 58-010-376	Spink County
93001314	South Dakota Dept. of Transportation Bridge No. 58-021-400	Spink County
93001315	South Dakota Dept. of Transportation Bridge No. 58-025-370	Spink County
93001316	South Dakota Dept. of Transportation Bridge No. 58-062-270	Spink County
93001318	South Dakota Dept. of Transportation Bridge No. 58-120-231	Spink County
63001319	South Dakota Dept. of Transportation Bridge No. 58-140-224	Spink County

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63001320	South Dakota Dept. of Transportation Bridge No. 58-218-360	Spink County
63001321	South Dakota Dept. of Transportation Bridge No. 62-220-512	Tripp County
63001322	South Dakota Dept. of Transportation Bridge No. 64-061-199	Union County
93001309	Split Rock Park Bridge	Minnehaha County
93001304	Stamford Bridge	Miner County
93001307	Summit Avenue Viaduct	Minnehaha County
93001296	Van Metre Bridge	Jones County

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Section 8: Applicable Criteria

93001266 Larson Bridge Codington County

Criterion C should be checked and not A to be consistent with bridge's significance in engineering for its method of construction.

Section 8: Period of Significance

93001266 Larson Bridge Codington County

Period of significance is amended to read "1917" to indicate date of construction and to be consistent with significance in engineering.

93001281 Red Shirt Bridge Custer County

Period of significance is amended to read "1943-1944" to cover the period of construction.

93001278 South Dakota Dept. of Transportation Bridge No. 12-503-230  
Faulk County

Due to typographical error, period of significance is corrected to read " 1920-1943."

93001265 South Dakota Dept. of Transportation Bridge No. 15-210-136  
Codington County

Period of significance is amended to read "1917" since significance is under criterion C in engineering and the date of construction should be entered.

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93001262 South Dakota Dept. of Transportation Bridge No. 25-380-  
142 Faulk County

Period of significance is amended to read "1902" because the area of significance is engineering and the period of significance should be based on the date of construction. The bridge was moved from its original site in 1955.

Section 8: Date of Significance

93001308 Eighth Street Bridge Minnehaha County

"1977" is deleted because the date lies outside the period of significance.

93001317 Hall Bridge Spink County

"1904" is deleted because bridge is significant under criterion C for engineering and the move in 1904 falls outside the period of significance which is based on the date of construction and does not appear to have particular importance.

93001286 South Dakota Dept. of Transportation Bridge No. 20-153-  
210 Deuel County

"1960" is deleted because the date lies outside the period of significance.

93001262 South Dakota Dept. of Transportation Bridge No. 25-380-  
142 Faulk County

"1955" is deleted because the date lies outside the period of significance.

93001302 South Dakota Dept. of Transportation Bridge No. 44-212-  
090 McCook County

"1960" is deleted because the date lies outside the period of significance.

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93001267 South Dakota Dept. of Transportation Bridge No. 50-200-  
035 Minnehaha County

"1935" is deleted because the date lies outside the period  
of significance which is based on the date of construction.

93001311 South Dakota Dept. of Transportation Bridge No. 56-117-  
123 Sanborn County

"1905" is deleted because the date lies outside the period  
of significance and does not appear to have particular  
importance.

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Melissa Dirr, architectural historian, of the South Dakota State  
Historic Preservation Office was notified of the above-mentioned  
amendments by telephone on December 09, 1993.

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**DISTRIBUTION:**

**National Register property file  
Nominating Authority (without nomination attachment)**