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NPS Form 10-900
(Rev. 8-86)

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NATIONAL REGISTER

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name: Niobrara River Bridge
other name/site number: NEHBS Number KX00-334

2. Location

street & number: over the Niobrara River 1.3 miles NW of Niobrara — N/A not for publication
city, town: Niobrara — X vicinity
state: NE county: Knox code: 107 zip code: 68760

3. Classification

Ownership of Property: Nebraska Game and Parks Commission
Category of Property: structure

Number of Resources within Property	
Contributing	Noncontributing
0	0 buildings
0	0 sites
1	0 structures
0	0 objects
1	0 Total

Number of contributing resources previously listed in the National Register: 0
Name of related multiple property listing: N/A

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, 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 Part 60. In my opinion, the property X meets _____ does not meet the National Register Criteria.

Signature of certifying official — Date: 10/8/92

Director, Nebraska State Historical Society
State or Federal agency and bureau

In my opinion, the property _____ meets _____ does not meet the National Register Criteria.

Signature of commenting or other official — Date

State or Federal agency and bureau

5. 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:)

Entered in the National Register
Signature of the Keeper — Date of Action: 11/12/92

6. Function or Use

Historic Function (enter categories from instructions)
TRANSPORTATION/rail-related

Current Function (enter categories from instructions)
TRANSPORTATION/pedestrian-related

7. Description

Architectural Classification (enter categories from instructions)
OTHER/rigid-connected Warren through truss

Materials (enter categories from instructions)

foundation	N/A
walls	N/A
roof	N/A
other	N/A

Describe present and historic physical appearance.

Located in northwestern Knox County, the Niobrara River Bridge spans the Niobrara River immediately upstream from its confluence with the Missouri River. The small town of Niobrara is located slightly more than a mile to the southeast, and Bon Homme County, South Dakota, is visible across the Missouri to the north. The bridge sits within the Niobrara State Park, in a beautiful, unaltered rural setting at the river's mouth.

The structure was designed in 1929 by engineers from the Chicago and North Western Railroad and built by a C&NW construction crew. With an overall length of approximately 1200 feet, it is comprised of three rigid-connected through trusses flanked on one side by multiple steel girder and timber stringer approach spans. The trusses cross the river's main channel next to the west bank. Each single-track truss has a span length of 120 feet and an overall width of slightly more than 20 feet. The trusses feature a Warren configuration, with the upper chords, end posts and diagonals in compression and the lower chords and verticals in tension. They use typical design and detailing for their period of construction. Built up using rolled steel members from the Illinois Steel Company, all the truss members have been machine-riveted in the fabricating shop and field riveted to the massive gusset plates that connect them. The components are configured as follows:

superstructure: rigid-connected Warren through truss
substructure: concrete abutments and piers with tapered upstream cutwaters
floor/decking: treated wood railroad ties over two I-beam stringers
other features: upper chord and inclined end post, two built-up channels with double lacing on both sides; end post stiffener, two channels with double lacing on both sides; lower chord, two channels with batten plates; vertical, wide flange; diagonal, wide flange or 2 channels with double lacing; top lateral bracing, four angles with double lacing; lower lateral bracing: one angle; strut, four angles with double lacing; floor beam, plate girder.

The trusses are joined on the east by seven steel plate girders. Each spans 70 feet and features a through configuration and upper flanges that curve continuously to form the end post. Stiffeners for the girder webs are built up from angles and plates. Beyond the girders, over the river's flood plain, are twenty-nine timber stringer approach spans, each with a 12-foot length. Unlike the trusses and girders, which are supported by massive concrete piers, the timber spans are supported by timber pile bents.

The only modification of note to the bridge's fabric is the removal of the steel rails, which occurred when the line was abandoned in 1978. The treated timber ties remain in place, with some minor deterioration where winter snows have accumulated between the girders. The superstructure, substructure and floor system remain otherwise intact. Unmoved and unchanged from its original construction, the Niobrara River Bridge today retains a high degree of integrity of location, design, setting, materials, workmanship, feeling and association.

__See continuation sheet

8. Statement of Significance

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

	statewide
Applicable National Register Criteria	C
Criteria Considerations (Exceptions)	N/A
Areas of Significance	Engineering
Period of Significance	1929 (The period of significance is derived from the original construction date.)
Significant Dates	1929
Cultural Affiliation	N/A
Significant Person	N/A
Architect/Builder	Chicago and North Western Railway

State significance of property, and justify criteria, criteria considerations and areas of significance noted above.

Fabricated and erected in 1929 by the Chicago and North Western Railway, the Niobrara River Bridge illustrates American railroad bridge construction of the 1920s and 1930s. Its three rigid-connected trusses, riveted through girders and timber stringer spans all typify the prevailing civil engineering trends of the period. Although the individual components of the bridge are representative, the structure as a whole is technologically significant on a statewide basis as one of the few multiple-span railroad truss bridges in Nebraska.

Railroads across the state have historically eschewed all-metal truss construction for their river crossings - a reluctance that is rooted primarily in economics. Much of Nebraska is characterized by flat or gently rolling terrain and lightly sloping, shallow watercourses. The Platte, Loup and Republican rivers are noted for their meandering course and wide floodplains. These conditions - low banks, shallow water flow under normal conditions and wide plains to drain the intermittent floods - typically engender long bridges with relatively short individual spans. Steel truss construction under these conditions is unnecessarily expensive, with timber pile bridges typically employed as an economical alternative. The Niobrara and Missouri rivers, with their steep bluffs and relatively deep channels, call for long individual spans supported by substantial piers. And longer spans for railroad bridges has typically meant trusses. It is not coincidental, then, that most of the multiple-span railroad trusses in the state are found over the Niobrara and Missouri rivers. Located at the confluence of these two major streams, the Niobrara River Bridge is distinguished among Nebraska's railroad bridges for its scale and multiplicity of truss, girder and stringer spans. Exhibiting an exceptionally high degree of physical integrity, it ranks as a rarity in Nebraska; the bridge is therefore eligible for inclusion in the National Register of Historic Places under Criterion C for its technological significance.

The latter half of the 19th century marked the golden age of railroading in America. Depicting the final, and perhaps most far-reaching, thrust in settling the American West, railroad building epitomized the concept of Manifest Destiny. As the eastern link in the nation's first transcontinental line, the Union Pacific Railroad spearheaded the western movement in the post-Civil War years. The UP had a profound influence on the country, on the railroading industry, and especially on the settlement and subsequent development of states along its route - states such as Nebraska.

The impact of the Union Pacific on Nebraska's socioeconomic development can hardly be overstated, but it was not the only railroad to leave a lasting legacy in the state. In northeastern Nebraska, the impetus was to establish railheads on the Missouri River and connect with the UP further south. In August 1864 venerable railroad builder John I. Blair (1802-1899) organized the

X See continuation sheet

Sioux City and Pacific Railroad as the northern branch of the Pacific Railroad system. Built from Missouri Valley, Iowa, northward, the SC&P extended to Sioux City by 1868. That September the SC&P consolidated with the smaller Nebraska Air Line Railroad and soon began to build westward across the Missouri River to Fremont, Nebraska. On January 20, 1869, the Fremont, Elkhorn and Missouri Valley Railroad was organized as a subsidiary of the SC&P. Also under the control of John Blair, the FE&MV was to stretch up the Elkhorn River Valley, from Fremont to the confluence of the Niobrara and Missouri Rivers.

The ground breaking ceremony for the FE&MV occurred in Fremont on November 5, 1869. With great fanfare, a procession of citizens and railroad officials marched through the streets to the corner of Second and E Streets, where the tracks were to begin. Construction on the railroad commenced soon thereafter, progressing up the Elkhorn Valley in the early 1870s. A number of towns along the way were renamed for railroad executives and their relatives; Maple Creek Station was rechristened Nickerson, Jalapa became Hooper, and Pebble was renamed Scribner after Blair's son-in-law, publisher Charles Scribner. By July 1871, the tracks extended as far north as Wisner in Cuming County. But the Panic of 1873, precipitated ironically by the collapse of another railroad empire, soon halted construction on the line.

News of gold in the Black Hills in the summer of 1874 provided a new catalyst for railroad construction north of Fremont. The *Fremont Tribune* at that time touted the FE&MV as the most advantageous line into the Black Hills, urging its completion as quickly as possible. Blair also recognized this and resumed construction on the line that year. Beset by financial difficulties from his other rail holdings, however, he was unable to proceed very quickly. The tracks arrived in Stanton, seventeen miles west of Wisner, in June 1874; by September they had reached Norfolk. Blair had believed that the way north to the mouth of the Niobrara was the most expedient route to the Black Hills, reasoning that it would best serve the water-borne trade on the two rivers. Other FE&MV officials, however, argued for a more westerly route across Nebraska, crossing the Niobrara near Valentine.

After a surveying party reported on the severe grading and flooding problems along the Niobrara River, the western route was chosen as the main line to the Dakota gold fields. The northern route through Pierce, Creighton, Verdigre and Niobrara took on secondary status from that point; the FE&MV did not make it to Verdigris in Knox County until the late 1880s. Meanwhile, the railroad had come under the control of the Chicago and North Western Railway. The consolidation with C&NW meant that John Blair no longer had total autonomy over the FE&MV. His loss of power was only marginal, though. In 1884 Blair became a member of the C&NW's Board of Directors, and he continued to exert influence on the company's operations until his death in 1899.

After the railroad finally reached Verdigre in 1888, citizens in Niobrara, the next town north, eagerly anticipated its arrival there. Located at the confluence of the Niobrara and Missouri rivers, the town had been founded in 1856. The following year Niobrara became the county seat of L'eau Qui Court County, and began to develop

as a regionally important trade center. Renamed Knox County, the region's settlement began to intensify after 1870. In 1881 Niobrara was wiped out by floodwaters of the Missouri River. Undaunted by the disaster, the town's residents quickly rebuilt the town on higher ground, a mile-and-a-half southwest.

Between 1888 and 1902 a stage line carried passengers from the railhead at Verdigre to Niobrara, a distance of some eleven miles. During this time agitation to bring rails into Niobrara intensified. For more than a decade no direct action was taken, however. Then, in 1901 a group of Niobrara businessmen proposed to build an electrical railroad from Verdigre to Niobrara and northwest to Ft. Pierce, South Dakota, along Blair's original route. Motive power for the trains would be generated by hydroelectric plants along the Niobrara River. Incorporated as the Niobrara, Missouri River and Western Railroad, the company quickly bought or leased much of the right-of-way needed for the new line.

It soon became apparent, however, that the fledgling enterprise lacked the capital for actual construction. Observing these developments, officials of the Chicago and North Western were only too happy to take over the project. In December 1901 the electrical railroad was dissolved after ceding its lands to the C&NW. Dismissing the idea of an electrical line, the C&NW quickly completed trackage between Verdigre and Niobrara. Just west of Niobrara, the company erected a wooden bridge across the mouth of the Niobrara River in the summer of 1902. Construction then pushed northwest at a feverish pace, reaching Bonesteel, South Dakota, in the winter of 1903.

The structure that the railroad built at Niobrara consisted of three truss spans next to the bluff on the river's west bank and a series of shorter approach spans over the flood plain on the east. Like the bridge that the FE&MV had built in 1883 over the Niobrara River near Valentine, the channel spans of this bridge were configured as Howe trusses, with timber compression members and steel tension rods. Unlike its predecessor, however, which spanned a deep ravine with deck trusses beneath the roadbed, clearance height for this bridge was at a premium, and the trusses carried the bed on their lower chords in a through configuration.

The trusses at Niobrara were supported by timber crib piers filled with stone ballast. Timber crib fenders with angled, steel-edged cutwaters were positioned upriver from the piers to deflect the flow of the Niobrara. The east approach was comprised of seven timber lattice girder spans, with a long series of timber pile spans beyond. The trusses' upper chords and the latticework of the girders were all sheathed with wood planking to protect the structural members from deterioration.

Despite these steps to shield the timber structure from flooding and weather, the Niobrara River Bridge had deteriorated to the point of replacement by the late 1920s. This decline was exacerbated by the heavier rolling stock that the bridge was required to carry. In 1929 the C&NW designed a replacement structure, had it fabricated using steel rolled by the Illinois Steel Company, and erected it using a railroad construction crew. Like the earlier truss at this location, the new Niobrara River Bridge consisted of three trusses on the west side, approached on the east by a

series of girder and stringer approach spans. The lengths of the old and new structures were similar. The principal difference between them lay in the materials used. The 1902 bridge relied almost exclusively on timber for both super- and substructure; the 1929 replacement used an all-steel superstructure and concrete substructure to form a heavier, more durable structure.

The Niobrara River Bridge carried traffic without alteration for 45 years. Railroads during this period were beginning to emphasize freight, rather than passenger service, in response to the growing popularity of the automobile. Following World War II, the advent of reliable commercial air service further eroded the need for passenger transport. Like many other lines, the FE&MV ceased carrying passengers altogether in the early 1950s. Two decades later, freight service on the line had also dwindled to the point of unprofitability; the last train rolled over the Niobrara Bridge in 1978.

Following C&NW's abandonment of the line, the Niobrara Bridge was acquired by local businessman Leonard Nielson. Nielson purchased a number of old railroad bridges at this time, selling the materials as scrap from all but this bridge. The Niobrara River Bridge was instead purchased by the State of Nebraska and placed under the aegis of the State Game and Parks Commission. Located on the eastern edge of Niobrara State Park, the bridge will be preserved in place for pedestrian use, with minor modifications to its deck. Finding new life as a pedestrian crossing, the Niobrara River Bridge will offer the potential to interpret this important aspect of the state's history.

9. Major Bibliographical References

Athearn, Robert G. *Union Pacific Country*. Lincoln: University of Nebraska Press, 1971.

Eckel, C.L. "The Development of Simple Types of Bridge Structures in the United States." *Colorado Engineer* (November 1928): 29-34.

Eich, Keith. Telephone interview conducted by Carl McWilliams of Fraserdesign, 11 June 1992. Employed at Chicago and North Western's general offices in Chicago, Mr. Eich provided information from plans and other construction details for the Niobrara River Bridge.

Fitzpatrick, Lilian L. *Nebraska Place Names*. Lincoln: University of Nebraska Press, 1960.

Kay, John, and Findlay, Mary. "Nebraska Historic Buildings Survey: Reconnaissance Survey Final Report of Knox County, Nebraska." 1 June 1988, on file at the Nebraska State Historical Society, State Historic Preservation Office, Lincoln NE.

Morison, George S. *The B.C.* [Blair Crossing] *Bridge*. New York: By the author, 1886.

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
X Other State agency
____ Federal agency
____ Local government
____ University
Other (specify repository:)

10. Geographical Data

Acreage of Property	less than one acre
Cadastral Reference	S8, T32N, R6W
USGS Quadrangle	Niobrara, SD - NE (7½ Minute Series, 1950)
UTM References	zone 14 easting 577840 northing 4735135
	zone 14 easting 578200 northing 4734930

___See continuation sheet

Verbal Boundary Description

The nominated property, which encompasses the entire bridge, is a rectangular parcel measuring 1200 feet by 30 feet and extending between the two UTM points listed above.

___See continuation sheet

Boundary Justification

The nominated property includes the Niobrara River Bridge's superstructure, substructure, floor system, approach spans and the property on which they rest. These boundaries encompass, but do not exceed, all of the property that has been historically associated with this bridge.

___See continuation sheet

11. Form Prepared By

name/title	Carl McWilliams, Research Historian, and Clayton Fraser, Principal		
organization	Fraserdesign	date	26 June 1992
street & number	1269 Cleveland Avenue	telephone	303-669-7969
city or town	Loveland	state	Colorado zip code 80537

Mulhair, Charles. Oral interview conducted by Clayton Fraser of Fraserdesign, 30 April 1992. A resident of Niobrara, Mr. Mulhair is a respected regional historian.

Nielson, Leonard. Telephone interview conducted by Clayton Fraser of Fraserdesign, 30 April 1992. An owner of a grain elevator in Niobrara, Mr. Nielson owned the Niobrara River Bridge for a brief time in the mid-1970s.

"Niobrara Centennial 1856 - 1956," 1956. Updated by the Niobrara Bicentennial Committee, 1976.

Riegel, Robert E. *The Story of the Western Railroads*. New York: Macmillan Co., 1926.

Roise, Charlene K. "Nebraska's Historic Bridges." National Register of Historic Places Multiple Property Documentation Form, July 1991, on file at the Nebraska State Historical Society, State Historic Preservation Office, Lincoln NE.

Seidel, David. *Fremont, Elkhorn and Missouri Valley Railroad Company*. Columbus, NE: Harbor Mist Publications, 1988.

Van Hoven, Jay. "The History of the Fremont, Elkhorn and Missouri Valley Railroad, 1868-1903." M.A. Thesis, University of Nebraska, 1940.