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

OMB No. 1024-0018

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NATIONAL REGISTER

**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: Meridian Bridge
other name/site number: Yankton Bridge; NEHBS Number CD00-256

## 2. Location

street & number: U.S. Highway 81 over the Missouri River — N/A not for publication
city, town: just south of Yankton, South Dakota — X vicinity
state: NE; SD county: Cedar, NE; Yankton, SD code: 027, 135 zip code: 57078

## 3. Classification

Ownership of Property: State of South Dakota
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: **Highway Bridges in Nebraska, 1870-1942**

## 4. State/Federal Agency Certification

As the 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 Part 60. In my opinion, the property X meets _____ does not meet the National Register Criteria.

South Dakota SHPO — 12/15/92
Signature of certifying official — Date

State or Federal agency and bureau

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

May 10, 1993
Signature of commenting or other official — Date

Director, Nebraska State Historical Society
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 — 6/17/93

for Signature of the Keeper — Date of Action

## 6. Function or Use

| Historic Function (enter categories from instructions) | Current Function (enter categories from instructions) |
|---|---|
| TRANSPORTATION/road-related | TRANSPORTATION/road-related |

## 7. Description

| Architectural Classification (enter categories from instructions) | Materials (enter categories from instructions) | |
|---|---|---|
| OTHER / rigid-connected Pratt vertical-lift truss | foundation | N/A |
| | walls | N/A |
| | roof | N/A |
| | other | N/A |

Describe present and historic physical appearance.

Located just south of Yankton, South Dakota, the Meridian Bridge spans the Missouri River in a setting that has changed little since the structure's period of significance. Despite various modifications, noted below, the Meridian Bridge today retains a large measure of integrity of location, design, setting, materials, workmanship, feeling and association. A description of the structure follows:

| | | | |
|---|---|---|---|
| span number: | 19 | construction date: | 1924 |
| span length: | 250.0' | construction cost: | $1,146,319.00 |
| total length: | 3013.0' | current condition: | excellent |
| roadway wdt.: | 33.0' | alterations: | 1953: lower deck converted into highway use; 1969: partial rebuilding of south approach; early 1980s: all other approach spans replaced and vertical-lift span deactivated |

superstructure: double-deck, riveted Pratt vertical-lift truss with Pratt through truss and steel girders
substructure: solid concrete abutments and piers
floor/decking: steel

___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 | 1920 - 1924 (The period of significance is derived from the original construction date.) |
| Significant Dates | 1924 |
| Cultural Affiliation | N/A |
| Significant Person | N/A |
| Architect/Builder (Designer) | Harrington, Howard and Ash, Kansas City MO |
| (Fabricator) | American Bridge Company, New York NY |
| (Builder) | Kelly Atkinson Company, Chicago IL (superstructure); Missouri Valley Bridge and Iron Company, Leavenworth KS (substructure) |

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

Carrying U.S. Highway 81 over the Missouri River, the Meridian Highway Bridge connects downtown Yankton, South Dakota on the north with rural Cedar County on the south. Prior to the bridge's completion in 1924, transportation across the Missouri River at this point relied on either ferry service, inaugurated in 1870, or a seasonally operated pontoon bridge, installed in 1890. As a protection against ice damage, the pontoon bridge was disassembled each year before winter freeze and spring thaw - and then rebuilt when the pontoons could be placed on open water or firm ice. The disruption was particularly troublesome for Yankton merchants, who counted northern Nebraska in their trade territory. In 1915, Yankton business interests organized a private bridge company and gained federal approval to build a permanent bridge across the Missouri, but the enterprise lapsed with the country's entrance into World War I. In 1919, the project was revived with the full backing of the Yankton Chamber of Commerce, which helped organize a new bridge company, with local seed merchant D.B. Gurney as president. In addition to its regional importance, the proposed bridge would be one of the last major links in an international highway running from Winnipeg, Canada to Mexico City, Mexico. Since this road followed the Sixth Principal Meridian, it was commonly called the "Meridian Highway." The Yankton boosters named both their bridge company and bridge after the route.

In January 1920, the Meridian Highway Bridge Company retained Harrington, Howard and Ash of Kansas City, Missouri, to design a combined railroad and highway bridge, with a movable span to allow unobstructed navigation. Established in 1914 with John Lyle Harrington [1868-1942] as senior partner, the engineering firm was especially well respected for its movable bridges. While in a previous partnership with bridge engineer John Alexander Low Waddell, Harrington had helped develop a major movable type, which is still known as the Waddell and Harrington Vertical Lift. Operating on the same principal as counterbalanced, hung window sash, the design employed "a simple span equipped with machinery for operation, suspended at each end by wire ropes which pass over sheaves on towers and connect to counterweights about equal to the span weight."

In their plans for the Yankton bridge, the Kansas City firm incorporated a standard, Waddell and Harrington vertical-lift span, measuring 250 feet in length with a maximum lift of 27 feet. Like the other six river spans in the bridge, the vertical-lift span was a heavy, riveted, steel, Pratt truss with flat upper chord, predominately channel-section web, and concrete piers. Approached by extended, trestle work on both shores, the trusses were equipped with two concrete decks: an upper level above the top chord for highway traffic, and a lower level, just above the bottom chord, for railroad traffic.

Originally, the company had hoped to finance the bridge through an initial stock subscription, covering future maintenance costs and shareholder dividends by toll charges. However, the venture was shy several hundred thousand dollars of the estimated cost when, in the fall of 1920, it awarded its first

X See continuation sheet

construction contract for substructure work to the Missouri Valley Bridge and Iron Company of Leavenworth, Kansas. When the substructure was completed two years later, the company still had not raised all the necessary capital, causing a temporary suspension of activity. Construction finally resumed in the fall of 1923, with Kelly Atkinson Company of Chicago serving as contractor; the American Bridge Company as fabricator. The steel work was completed in the spring of 1924, and the lift span was raised for the first time in July. When the bridge was officially opened to traffic in October 1924, the total cost stood at $1,146,319. Although the lower deck was equipped with trackage, the anticipated rail route never materialized, and the bridge remained a pure highway facility.

The construction of the Meridian Highway Bridge was an undisputed boon for the Yankton region, but it was of less immediate advantage to the bridge company's shareholders, who earned a total of about two percent on their investment over a twenty-year period. In 1946, the bridge company agreed to sell the toll bridge to the City of Yankton for $700,000. After recovering the expense through toll collection, the city turned the bridge into a free facility, which was subsequently taken over by the State of South Dakota. The toll bridge era ended in 1953, the same year that the bridge's previously-idle lower deck was converted into a highway lane, allowing one-way traffic on both levels. After a partial rebuilding of the south approach in 1969, all remaining approach spans were replaced in the early 1980s, creating the present configuration of seven steel-girder shore spans on the north, twelve on the south. At approximately the same time, the vertical-lift span was deactivated and the counterweights removed from the towers. These later alterations were supervised by the Nebraska Department of Roads, although the bridge remains in South Dakota ownership.

Despite various modifications, the Meridian Highway Bridge retains the original configuration of its seven, main, steel-truss river spans, including the distinctive towers of the vertical-lift span. As the only example of vertical lift design in Nebraska and South Dakota and one of the few remaining vertical lift bridges remaining on the Missouri River, the bridge enjoys a high degree of technological significance.

For further contextual information regarding bridge building in Nebraska, registration requirements, and property types, see related multiple property listing "Highway Bridges in Nebraska, 1870 - 1942."

## 9. Major Bibliographical References

Fred H. Monfore, "Pioneer Dream of River Crossing Realized in Yankton Bridge Story." **Yankton Press and Dakotan**, June 13, 1961; "Yankton Bridge on the Meridian Highway Will Fill the Last Gap." **Nebraska Department of Public Works Monthly Report**, July 1922, p.10; Edwin Layton, "John Lyle Harrington," **Dictionary of American Biography, Supplement 3**, pp. 331-332; Ernest E. Howard, "General Elements in the Design of Vertical Lift Bridges," **Railway Age**, 70 (June 17, 1921), 1393; Otis Ellis Hovey, **Movable Bridges**, vol. 1 (New York: John Wiley and Sons, Inc., 1926), p.170; "First Contract Let," **Yankton Press and Dakotan**, September 27, 1920; Fred H. Monfore, "Free Bridge Goal of Yankton's Citizens Realized in 1953," **Yankton Press and Dakotan**, June 13, 1961; "[Plans for] Reconstruction and Repair Missouri River Bridge," Project No. F-81-4 (1002), Nebraska Department of Roads, Bridge Division. Also Nebraska Department of Roads, Structure Inventory and Appraisal: Structure Number S081 21468; field inspection by Charlene K. Roise, 21 April 1990.

___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:

__x__ State historic preservation office
____ Other State agency
____ Federal agency
____ Local government
____ University
Other (specify repository:)

## 10. Geographical Data

| | | | | | | |
|---|---|---|---|---|---|---|
| Acreage of Property | 2.42 acres | | | | | |
| Cadastral Reference | S2, T33N, R1W | | | | | |
| USGS Quadrangle | Gavins Point Dam, Nebraska - South Dakota (7.5 Minute Series, 1968) | | | | | |
| UTM References | 1. zone 14 | easting 631220 | northing 4747200 | | | |
| | 2. zone 14 | easting 631230 | northing 4746280 | | | ___See continuation sheet |

Verbal Boundary Description

The nominated property is a narrow, rectangular shaped parcel measuring 3013 feet by 35 feet, which is oriented north and south between the two UTM points listed above. Included within this rectangular parcel are the bridge's superstructure, substructure, floor system, and approach spans.

___See continuation sheet

Boundary Justification

The nominated structure includes the bridge's superstructure, substructure, floor system, any 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 | Charlene K. Roise, and Jeffrey A. Hess, Principals | | | | |
| organization | Fraserdesign and Hess, Roise and Company | date | 30 June 1991 | | |
| street & number | 1269 Cleveland Avenue | telephone | 303-669-7969 | | |
| city or town | Loveland | state | Colorado | zip code | 80537 |