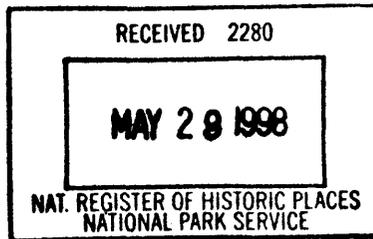


United States Department of the Interior
National Park Service



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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 Rockwell City Bridge

other names/site number _____

2. Location

street & number 270th Street over unnamed stream not for publication

city or town eastern edge of Rockwell City vicinity

state Iowa code IA county Calhoun code 025 zip code 50579

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.)

Patricia Chalkley DSHD 5-6-98
Signature of certifying official/Title Date

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 certifying official/Title Date

State or Federal agency and bureau

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
- removed from the National Register
- other, (explain): _____

Edson A. Beall 6-25-98

5. Classification

Ownership of Property
(Enter as many boxes as apply)

- private
public-local
public-State
public-Federal

Category of Property
(Enter only one box)

- building(s)
district
site
structure
object

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

Table with 2 columns: Contributing, Noncontributing. Rows for buildings, sites, structures, objects, Total.

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

Highway Bridges of Iowa

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)

VACANT/not in use

7. Description

Architectural Classification
(Enter categories from instructions)

other: concrete Marsh arch

Materials
(Enter categories from instructions)

foundation CONCRETE

walls

roof

other Concrete

Narrative Description

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

Located on the eastern edge of Rockwell City, the bridge spans an unnamed stream in a setting that has changed little since the structure's period of significance. A description of the structure follows:

span number: 1 construction date: 1915
span length: 60.0' construction cost: \$4107.65
total length: 60.0' current condition: good
roadway wdt.: 17.0' alterations: bridge closed, 1981

superstructure: concrete, 6-panel, fixed Marsh arch
substructure: concrete abutments and wingwalls
floor/decking: concrete deck
other features: tapered concrete arch ribs; concrete hangers, cast integrally with concrete floor beams; slotted concrete guardrails with paneled concrete bulkheads; builder's plate: Marsh Rainbow Arch / patented Aug. 12, 1914 / Built by / Iowa Bridge Co. / 1915

Although now closed to traffic, the Rockwell City Bridge remains essentially unaltered. The bridge today retains a high degree of integrity of location, design, setting, materials, workmanship, feeling and association.

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 continuation sheets.)

Areas of Significance

(Enter categories from instructions)

ENGINEERING

Period of Significance

1915

(The period of significance is derived from the original construction date.)

Significant Dates

1915 (construction date)

Significant Person

(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

N/A

Architect/Builder

designer:

James B. Marsh, Des Moines IA

fabricator:

none

builder:

Iowa Bridge Company, Des Moines IA

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
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 DataAcreage of Property less than one acre**UTM References**

(Place additional UTM references on a continuation sheet)

1 15 367740 4695120
zone easting northing2 _____
zone easting northing**Verbal Boundary Description**

(Describe the boundaries of the property)

The nominated property is a rectangular-shaped parcel measuring 19 feet by 60 feet, which is centered on the UTM point(s) listed above. Included within this rectangular parcel are the bridge's superstructure, substructure, approach spans and floor system.

Boundary Justification

(Explain why the boundaries were selected)

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 the bridge.

11. Form Prepared Byname/title Clayton Fraser and Michelle Crow-Dolbyorganization Fraserdesign date 31 August 1994street & number 1269 Cleveland Avenue telephone 303-669-7969city or town Loveland state Colorado zip code 80537**Additional Documentation**

Submit the following items with the completed form:

Continuation Sheets**Maps**A **USGS map** (7½ or 15 minute series) indicating the property's locationA **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 Calhoun Countystreet & number 416 Fourth Street telephone 712-297-8322city or town Rockwell City state Iowa zip code 50579

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**

Section Number 8 Page 1 Rockwell City Bridge Calhoun County; Iowa

One of only two Marsh arches remaining in the county and eleven in the entire state, this medium-span concrete structure stands just east of Rockwell City. The bridge traces its origins to 1915. That year the county requested that the state highway commission design a structure for this crossing of a small stream on the main highway into Rockwell City from the east. ISHC engineers delineated a concrete girder structure, comprised of two 34-foot spans supported by a concrete substructure. As an alternative, the county also commissioned Des Moines engineer James B. Marsh to design a single-span concrete arch, using his patented rainbow arch configuration. Featuring a 60-foot span, a 15-foot arch rise and an 18-foot roadway, the structure employed a fixed-span design, with the arch ribs extending below the floor line to bear into the concrete abutments. Additionally, Marsh's bridge structure featured his trademark slotted guardrails with paneled concrete bulkheads. The county designated the crossing Bridge Number 1970 and in July solicited competitive proposals for its construction, based on both the girder and arch designs. On August 10th a contract to build this bridge and six others was awarded to the Iowa Bridge Company of Des Moines for an aggregate sum of \$11,690.00. The arched version of the bridge was chosen by the supervisors. The bridge was completed in 1915 for a cost of \$4107.65. The county road was later incorporated as part of U.S. Highway 20, and the bridge carried relatively heavy traffic until it was replaced in a highway re-alignment in 1981. Today the bridge stands unused, in unaltered condition.

Although it pales in comparison with the Lake City Bridge [CALH09] (as do all of Iowa's other Marsh arches), this medium-span structure is significant as one of the last remaining examples in the state of James Marsh's patented bridge form. Patented in 1912, Marsh's namesake arch featured tapered arch ribs, from which was suspended the roadway deck by concrete/steel hangers. Marsh's design represented the hybridization of continuous concrete and segmental steel-arch designs, marking a radical departure from standard engineering practice. To reinforce the concrete hangers and floor beams against their tensile loads, Marsh inserted large amounts of structural steel. His bridges may have looked like concrete spans, but the arch ribs and hangers carried such heavy and complicated reinforcing that they were in reality steel structures encased in concrete. He touted his arches as an alternative to steel truss construction, pointing to the superior strength of his bridges against lateral flooding loads, their ease of construction, their relative lack of maintenance (they did not require periodic painting, as did steel), their durability under load, and their aesthetic qualities.

Marsh began marketing his invention to Iowa's counties soon after receiving the patent rights in August 1912. He claimed that his bridges were economical for relatively short-span applications. With the main structural members of the rainbow arch held above the roadway, he could point to greater waterway clearance than that provided by concrete deck arches. Marsh often submitted arch designs to state and county engineers as alternatives for steel trusses. The comparison was apt, given the large quantities of steel that made up his structures. As he would for other bridges in the state, he offered his design for this bridge to Calhoun County as an alternative to the standard engineering of the state highway commission. Flush from the success of the Lake City Bridge, the county built Marsh's structure instead of the more prosaic girder design of the highway commission. The bridge is thus significant as a well-preserved, typically configured example of Marsh's patented arch type - one of only a few remaining examples in Iowa of this indigenous structural type.

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

**National Register of Historic Places
Continuation Sheet**

Section Number 9 Page 2 Rockwell City Bridge Calhoun County; Iowa

Iowa Department of Transportation, Structure Inventory and Appraisal: Structure Number 092030.

Calhoun County Supervisors' Minutes, Book 7: page 543 (8 June 1915), page 554 (20 July 1915), page 561 (10 August 1915).

Calhoun County Supervisors' Minutes, 12 May 1981.

Calhoun Country Bridge Record Number 1.

Original construction drawings by Marsh Engineering Company, dated 15 April 1914.

Construction drawings for two 34-foot concrete deck girders by Iowa State Highway Commission.

Field inspection by Clayton Fraser, 14 July 1990.