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United States Department of the Interior  
National Park Service

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National Register of Historic Places  
Registration Form

NATIONAL  
REGISTER

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 Colorado Street Bridge  
other names/site number Bridge No. L8803

2. Location

street & number East side of South Wabasha Street N/A  not for publication  
city, town St. Paul N/A  vicinity  
state Minnesota code MN county Ramsey code 123 zip code 55107

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
<input checked="" type="checkbox"/> private	<input type="checkbox"/> building(s)	Contributing	Noncontributing
<input type="checkbox"/> public-local	<input type="checkbox"/> district	_____	_____ buildings
<input type="checkbox"/> public-State	<input type="checkbox"/> site	<u>1</u>	_____ sites
<input type="checkbox"/> public-Federal	<input checked="" type="checkbox"/> structure	_____	_____ structures
	<input type="checkbox"/> object	_____	_____ objects
		<u>1</u>	<u>0</u> Total

Name of related multiple property listing:  
Minnesota Masonry-Arch Highway Bridges

Number of contributing resources previously listed in the National Register 0

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, 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 Ian R. Stewart Date 5/14/90  
Deputy State Historic Preservation Officer  
State or Federal agency and bureau Minnesota Historical Society

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 \_\_\_\_\_

5. National Park Service Certification

I, hereby, certify that this property is:

entered in the National Register.  
 See continuation sheet. Mark Z. Baker Entered in the National Register 5 July 1990

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 \_\_\_\_\_ Date of Action \_\_\_\_\_

**6. Function or Use**

Historic Functions (enter categories from instructions)

Transportation, road-related (vehicular)

Current Functions (enter categories from instructions)

Transportation, road-related (pedestrian)

**7. Description**

Architectural Classification

(enter categories from instructions)

Other: Masonry-arch bridge

Materials (enter categories from instructions)

foundation Stone, granite

walls

roof

other Brick; stone

Describe present and historic physical appearance.

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Colorado Street Bridge, Ramsey County, MN

Section number 7 Page 1Description: Colorado Street Bridge

Originally constructed as a municipal highway bridge carrying one city street across another, the Colorado Street Bridge is a skewed, single-span, masonry-arch structure that has been closed to vehicular traffic and converted into a pedestrian walkway over a park meadow in the Torre de San Miguel housing development in St. Paul, Minnesota. Although the site has been extensively altered, the bridge retains integrity.

The Colorado Street Bridge is of unorthodox construction. In masonry-arch bridges, the voussoirs customarily are laid in courses perpendicular to the longitudinal axis of the arch so that each course forms a continuous ring from abutment to abutment. In the Colorado Street Bridge, only the voussoirs on the face of the arch are laid in the traditional manner. All other voussoirs are laid in courses parallel to the longitudinal axis. Since the intradosal surface of the arch is sheathed in red brick, the unusual construction is concealed from view, except for a few places where the brick has fallen from place. These "holes" in the soffit also reveal that the voussoirs are both brick and limestone, alternating every two courses. The brick matches the soffit; the limestone is grey, locally quarried, rubble stone. The nature of the construction indicates that the arch is sustained by the adhesive power of the mortar rather than by the "pressure" fit of the voussoirs.

The bridge displays a variety of building stone. Red granite is used for the abutments; buff-colored limestone for the ring stones, spandrel walls, railings, and coping; and local grey limestone for the curved wing walls that buttress all corners except the southeast. The wing walls are dry rubble masonry, while the railings are dressed coursed ashlar. Otherwise, the elevations display rock-faced, coursed-ashlar stonework. Joints are about one-half inch in the spandrel walls and one-quarter inch between the ring stones, which are ornamented with tooled margins. Although the face voussoirs are cut to simulate the appearance of a segmental arch, the bridge is a skewed structure. Springing approximately 5 feet above grade, the arch rises 11 feet over an oblique span of 70 feet, 6 inches. It is 58 feet in width. A heavy stringcourse marks the roadway level. The roadway itself is bordered by stone railings about 3 feet high and 2 feet thick. At the southwest corner, the railing has been removed. On both elevations, the railings noticeably dip at midpoint, indicating settlement of the arch, which partly occurred immediately after construction.<sup>1</sup>

In 1927, the bridge was waterproofed by excavating the roadway and sidewalks, removing the dirt fill, and sealing the crown of the arch with concrete and tar felt membrane.<sup>2</sup> Repaved with a new roadway and sidewalks, the bridge remained a public highway facility until the early 1970s, when it was included in a parcel of land scheduled for redevelopment as a residential complex. Apart from replacing the roadway and sidewalks with a single sheet of blacktop, the redevelopment project had little structural impact on the bridge, although it considerably altered the general site. The most drastic change concerned the road passing under the bridge, which was vacated, excavated, and landscaped as a park meadow. The bridge itself still serves a transportation function

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Colorado Street Bridge, Ramsey County, MN

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Description Con't.: Colorado Street Bridge

as a pedestrian walkway, linking the new housing development on the east with South Wabasha Street on the west.

Notes

1. Roy E. Grieder, Bridge Engineer, St. Paul Department of Public Works, Letter to Allan Block, Housing and Redevelopment Authority, January 29, 1970, unpublished, in Colorado Street Bridge File, City of St. Paul Engineer's Office.
2. Alfred H. Schroeder and Associates, "Report on Colorado Street Bridge," p. 2, unpublished report prepared for St. Paul Housing and Redevelopment Authority, August 19, 1969, in Colorado Street Bridge File, City of St. Paul Engineer's Office.
3. The road under the bridge was called Starkey Street; for a photograph of its condition just prior to redevelopment, see Schroeder, photograph no. 2.

**8. Statement of Significance**

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

nationally     statewide     locally

Applicable National Register Criteria     A     B     C     D

Criteria Considerations (Exceptions)     A     B     C     D     E     F     G

Areas of Significance (enter categories from instructions)

Engineering  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Period of Significance

1888  
\_\_\_\_\_  
\_\_\_\_\_

Significant Dates

1888  
\_\_\_\_\_  
\_\_\_\_\_

Cultural Affiliation

N/A  
\_\_\_\_\_  
\_\_\_\_\_

Significant Person

N/A  
\_\_\_\_\_

Architect/Builder

Munster, Andreas W., engineer  
O'Brien Brothers, builder  
\_\_\_\_\_

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

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## Significance: Colorado Street Bridge

The Colorado Street Bridge embodies engineering significance in the context of Minnesota masonry-arch highway bridges constructed during the period 1870 to 1945. Completed in 1888, the bridge is notable for its unorthodox skewed construction and for the length of its span, which at 70 feet, 6 inches, surpasses all other masonry-arch highway bridges in the state.

In June 1887, Leonard W. Rundlett, head of the City Engineer's Office, reported to the St. Paul Common Council on the cost of replacing the Colorado Street Bridge -- a wooden viaduct over Starkey Street in a rapidly growing section of the city known as West St. Paul. According to Rundlett's estimates, "a wooden bridge without any stone abutments, with a 320-foot roadway and two 8-foot walks would cost \$3,500; an iron bridge of the same dimensions with stone abutments and cedar block paving would cost about \$23,000; a stone arch bridge, same dimensions, with stone sidewalks and cedar block paving would cost about \$24,000." Despite the higher cost, Rundlett recommended a stone-arch bridge "as being a more permanent structure and as being better adapted to the location." The common council agreed, and the project was put out for bid.<sup>1</sup>

For reasons unknown, the first bids were rejected. Although most proposals were at least \$4,000 over the estimated cost, the low bidder -- P. Durand -- would seem to have been acceptably close at \$24,019.96. When the second bids were opened a month later in September 1887, the project was awarded to O'Brien Brothers, who had reduced their previous offer by about \$2,500 to become the new low bidder at \$26,893.86.<sup>2</sup> The successful firm was experienced in masonry-arch construction. In 1883, Michael A. O'Brien, then working under his own name alone, had been awarded a major city contract for the Seventh Street Improvement project, which entailed the construction of a 320-foot-long, stone-arch, sewer culvert, as well as foundation work for a skewed, double-arch, stone, highway bridge known as the "Seventh Street Improvement Arches."<sup>3</sup>

In preparing plans for the Seventh Street Arches, the City Engineer's Office had thoroughly researched the topic of skewed-arch construction, eventually selecting the innovative "helicoidal method," which required highly complicated calculations and very precise stone cutting.<sup>4</sup> On the Colorado Street project, Rundlett and his staff attempted to simplify the problems of skewed-arch construction by adopting a still more experimental approach. The actual design work was the responsible of assistant city engineer Andreas W. Munster, a native of Bergen, Norway and a graduate of the Chalmers Institute in Gothenburg, Sweden. Munster's plan was to lay the voussoirs "in lines parallel to the [longitudinal] axis of the vault." As he later explained, "This avoided the curved lines, elaborate computations and warped surfaces involved in the usual construction of<sup>5</sup> the oblique . . . arch, and greatly reduced the labor and expense of stone cutting."

Essentially, Munster eliminated the customary pressure fit of stone-arch construction.

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Colorado Street Bridge, Ramsey County, MN

Section number 8 Page 2Significance Con't: Colorado Street Bridge

Anticipating the future of concrete construction, he devised a method of building a rubble arch held together by the adhesive power of the mortar. The experiment was particularly bold in view of the fact that the structure's 70-foot span was (and still is) the longest of any masonry-arch highway bridge in the state. To ensure the proper bonding of materials, Munster left the centering in place for more than a year.<sup>6</sup> Although the bridge was opened to traffic in the summer of 1888, the centering was not struck until the following spring, at which time it was discovered that the arch had settled about 2 inches. An equal amount of settling occurred over the next few decades without significant effect on the bridge's stability.

In the early 1970s, the Colorado Street Bridge was retired from highway use and slated for demolition to make way for a city-sponsored housing development. Demolition, however, was opposed by the city's bridge engineer, Roy E. Grieder, who urged that "this bridge should be preserved as it is one of few remaining true stone-arch bridges in our vicinity and does show remarkable workmanship."<sup>8</sup> Grieder's position prevailed, and the bridge was incorporated into the redevelopment project as a pedestrian walkway for the new residential complex.

## Notes

1. Rundlett's estimates are recorded in Proceedings of the St. Paul Common Council, June 7, 1887, unpublished, Minnesota Historical Society.
2. Proceedings of the St. Paul Common Council, August 2, 16, September 6, 1887.
3. W. A. Truesdell, "The Seventh Street Improvement Arches," Association of Engineering Societies Journal, 5 (July 1886), 317, 320; Proceedings of the St. Paul Common Council, October 16, 1883.
4. Truesdell, 318; see also the National Register Documentation for the Seventh Street Improvement Arches.
5. "The Colorado Street (St. Paul) Skew Arch Bridge," Engineering and Building Record, 20 (November 23, 1889), 365-366. The Seventh Street Improvement Arches had been designed by William Albert Truesdell, who left the City Engineer's Office in 1885. Munster joined the city engineering staff in 1884, a year after immigrating to the United States. He remained the city's bridge engineer until 1904; see "A. W. Munster," Norwegian-American Technical Journal, 2 (July 29, 1929), 5; Kenneth Bjork, Saga in Steel and Concrete (Northfield, MN: Norwegian-American Historical Association, 1947), pp. 141, 144-146.

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Significance Con't.: Colorado Street Bridge

Notes Con't.

6. Annual Report of the City Engineer of the City of Saint Paul, 1888 (n. pl.: Globe Job Office, D. Ramaley and Sons, Printers, 1998), p. 34.
7. Roy E. Grieder, Bridge Engineer, St. Paul Department of Public Works, Letter to Allan Block, Housing and Redevelopment Authority, January 29, 1970, unpublished, in Colorado Street Bridge File, City of St. Paul Engineer's Office.
8. Ibid.



**9. Major Bibliographical References**

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 # \_\_\_\_\_

See continuation sheet

Primary location of additional data:

- State historic preservation office
- Other State agency
- Federal agency
- Local government
- University
- Other

Specify repository: \_\_\_\_\_

**10. Geographical Data**

Acreage of property Less than one acre

UTM References

A 

1	5
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4	9	13	3	15	10
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4	9	7	15	5	0	0
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Zone Easting Northing

B 

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Zone Easting Northing

C 

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D 

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See continuation sheet

**Verbal Boundary Description**

The nominated property consists of a quadrangle defined by the westerly right-of-way line of Parnell Street (prior to vacation), the easterly right-of-way line of Wabasha street, the northerly right-of-way line of Colorado Street (prior to vacation), and the southerly right-of-way line of Colorado Street (prior to vacation).

See continuation sheet

**Boundary Justification**

The boundaries enclose the bridge's superstructure and substructure, including wing walls. The boundaries are based on a plat attached to a "petition for vacation" filed with the St. Paul City Clerk by the St. Paul Redevelopment Authority in July 1970.

See continuation sheet

**11. Form Prepared By**

name/title Jeffrey A. Hess, Historical Consultant  
organization N/A date August 1988  
street & number 305 Grain Exchange Building telephone 612-338-1987  
city or town Minneapolis state Minnesota zip code 55415

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Bibliography: Colorado Street Bridge

"A. W. Munster." Norwegian-American Technical Journal, 2 (July 1929), 5.

Annual Report of the City Engineer of the City of Saint Paul, 1888. N. pl.: Globe Job Office, D. Ramaley and Sons, Printers, 1998.

Bjork, Kenneth. Saga in Steel and Concrete. Northfield, MN: Norwegian-American Historical Society, 1947.

"The Colorado Street (St. Paul) Skew Arch Bridge." Engineering and Building Record, 20 (November 23, 1889), 365-366.

Grieder, Roy E. Letter to Allan Block, Housing and Redevelopment Authority, January 29, 1970. Unpublished, Colorado Street Bridge File, City of St. Paul Engineer's Office.

Proceedings of the St. Paul Common Council, October 16, 1883; June 7, August 2, 16, September 6, 1887. Unpublished, Minnesota Historical Society.

Truesdell, W[illiam] A[lbert]. "The Seventh Street Improvement Arches." Association of Engineering Societies Journal, 5 (July 1886), 317-324.