

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

PH0681440

FOR NPS USE ONLY
RECEIVED AUG 9 1978
DATE ENTERED NOV 28 1978

NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM

SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC Cappelen Memorial Bridge

AND/OR COMMON Franklin Avenue Bridge

LOCATION

STREET & NUMBER County State Aid Highway 5 (Franklin Avenue) at the
Mississippi River

CITY, TOWN Minneapolis VICINITY OF Fifth

STATE Minnesota CODE 22 COUNTY Hennepin CODE 053

CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE
<input type="checkbox"/> DISTRICT	<input checked="" type="checkbox"/> PUBLIC	<input type="checkbox"/> OCCUPIED	<input type="checkbox"/> AGRICULTURE
<input type="checkbox"/> BUILDING(S)	<input type="checkbox"/> PRIVATE	<input type="checkbox"/> UNOCCUPIED	<input type="checkbox"/> COMMERCIAL
<input checked="" type="checkbox"/> STRUCTURE	<input type="checkbox"/> BOTH	<input type="checkbox"/> WORK IN PROGRESS	<input type="checkbox"/> EDUCATIONAL
<input type="checkbox"/> SITE	<input checked="" type="checkbox"/> PUBLIC ACQUISITION	<input type="checkbox"/> ACCESSIBLE	<input type="checkbox"/> ENTERTAINMENT
<input type="checkbox"/> OBJECT	<input type="checkbox"/> IN PROCESS	<input type="checkbox"/> YES: RESTRICTED	<input type="checkbox"/> GOVERNMENT
	<input type="checkbox"/> BEING CONSIDERED	<input checked="" type="checkbox"/> YES: UNRESTRICTED	<input type="checkbox"/> INDUSTRIAL
		<input type="checkbox"/> NO	<input type="checkbox"/> MILITARY
			<input type="checkbox"/> MUSEUM
			<input type="checkbox"/> PARK
			<input type="checkbox"/> PRIVATE RESIDENCE
			<input type="checkbox"/> RELIGIOUS
			<input type="checkbox"/> SCIENTIFIC
			<input checked="" type="checkbox"/> TRANSPORTATION
			<input type="checkbox"/> OTHER:

OWNER OF PROPERTY

NAME Hennepin County Department of Transportation

STREET & NUMBER 320 Washington Avenue South

CITY, TOWN Hopkins VICINITY OF STATE Minnesota

LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC. Hennepin County Government Center

STREET & NUMBER 5th Street at 3rd Avenue South

CITY, TOWN Minneapolis STATE Minnesota

6 REPRESENTATION IN EXISTING SURVEYS

TITLE Donald R. Torbert, Significant Architecture in the History of Minnesota

DATE 1969 FEDERAL STATE COUNTY LOCAL

DEPOSITORY FOR SURVEY RECORDS Minneapolis Urban Design Study - Minneapolis Planning Commission

CITY, TOWN Minneapolis STATE Minnesota

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input checked="" type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input checked="" type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED DATE _____
<input type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Cappelen Memorial Bridge is located at the Mississippi River crossing of County State Aid Highway (CSAH) 5, 0.3 miles west of the junction of CSAH 48. At this point, CSAH 5, known as Franklin Avenue, joins two residential districts: south Minneapolis and southeast Minneapolis. At the western approach the bridge also crosses the West River Parkway.

According to the Minnesota Department of Transportation - Structure Inventory Sheet this continuous arch bridge of steel-reinforced concrete has five spans in the main unit and two spans in the approach units. The total length is 1054.3 feet with a maximum span length of 435 feet. The navigable vertical clearance is 88 feet. The deck width (out-out) is 66.3 feet with a roadway width of over 50 feet, carrying four lanes of traffic. There are pedestrian sidewalks of seven feet along each side of the roadway.

In American Building, Carl Condit describes the famous main span as consisting "of a pair of flattened parabolic ribs with a 400-foot span that carry simple transverse slabs that in turn support the deck" (p. 255). The Engineering News-Record (90:148-152, Jan. 25, 1923, quoted in Bjork, p. 151) reported that "the detailed design... is unusually simple in its architectural features, making use of almost no ornament; for example, the ends of the spandrel columns are simple square faces, without any molding. The result is a demonstration of what can be achieved with plain details provided the structural proportioning is good."

Built in 1919-23, the bridge was closed and reconditioned in 1971 and reopened. The primary alterations included removal and replacement of the bridge deck and spandrels. Only half the original number of spandrels were replaced--every other spandrel. A new railing was installed and the roadway was widened although the deck width remained the same. The county engineer, however, states that the main river piers and all of the arches, including the famous 435-foot main arch, received only surface maintenance and remain totally intact. This rehabilitation, while preserving the primary historic engineering elements, has increased the bridge's life span by an additional twenty to thirty years and major repair or replacement probably will not be considered again until the 1990s, according to the county engineer.

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input checked="" type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input checked="" type="checkbox"/> TRANSPORTATION
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES 1919-23

BUILDER/ARCHITECT Frederick William Cappelen and
Engineers: Kristoffer Olsen Oustad

STATEMENT OF SIGNIFICANCE

The Cappelen Memorial (Franklin Avenue) Bridge is nationally significant for being one of the most prominent of the Twin Cities nationally renowned concrete arch bridges of the 1920s and for having, at the time of construction, the longest concrete arch in the world.

Two prominent bridge authorities, Carl Condit and David Plowden, have recognized the significance of the Twin Cities' concrete arch bridges and the Cappelen Bridge in particular. As Plowden points out, "the first really sophisticated American program of concrete highway bridge construction evolved around Minnesota's Twin Cities." This happened, says Condit, because here "the Mississippi and Minnesota rivers offered the engineers numerous opportunities to try their ingenuity."

The bridge was planned, designed, and construction supervised by two prominent Norwegian-American engineers, Frederick William Cappelen (1857-1921) and Kristoffer Olsen Oustad. Cappelen, educated in Sweden and Germany, arrived in the United States in 1880, worked for the Northern Pacific Railroad, and after being municipal bridge engineer of Minneapolis was elected city engineer for two terms, 1893-98 and 1913-18. Oustad was Cappelen's successor as Minneapolis bridge engineer, serving from 1893 to retirement in 1929, and had general supervision of Minneapolis bridges for design and construction.

The Franklin Avenue site demanded a number of elements from a design: permanence, beauty (because of the scenic surroundings), and a single main span of at least 300 feet long and a clearance height of 50 feet for navigation. Cappelen, preparing a plan for the bridge, decided to use steel-reinforced concrete. He also planned to increase the central span to 400 feet to completely encompass the piers of the existing 35 year old bridge since it was useful to retain the old structure while the new one was being completed. Working against a total length of over 1,000 feet gave Cappelen an unbalanced thrust on the main piers since a 400 foot central span limited the approach spans to about 200 feet. The final plan was worked out in detail by Oustad and the construction began in 1919.

Cappelen died during the construction and the remainder of the work was under the complete supervision on Oustad. When finished and opened in 1923, the bridge was named the Cappelen Memorial Bridge. The bridge which Cappelen designed to meet the basic site needs and to overcome the various span restrictions resulted in a record-breaking single span length for a concrete arch which has been highly praised by engineering historians. Kenneth Bjork reports in Saga in Steel and Concrete that the 400-foot center span alone "made this bridge famous and brought engineers from Europe to study it" (p. 150). Plowden in Bridges has called it the most famous example of the Twin Cities' concrete arch bridges of this period, and termed it a "classic work, drawing from the past yet anticipating the future." It is, he says, "one of America's most beautiful concrete bridges" (p. 299).

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Bjork, Kenneth. Saga in Steel and Concrete: Norwegian Engineers in America, Northfield, Minnesota, Norwegian-American Historical Association, 1947, pp.148-154.
 Condit, Carl W. American Building. Chicago, University of Chicago Press, 1968, pp.254-255.

(see continuation sheet)

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY 1.6 acres (includes surface area of bridge)

UTM REFERENCES

A	1,5	4,8,2,3,0,0	4,9,7,8,6,2,0	A	1,5	4,8,2,5,6,0	4,9,7,8,8,4,0
	ZONE	EASTING	NORTHING		ZONE	EASTING	NORTHING
C				D			

VERBAL BOUNDARY DESCRIPTION

The nominated property is the bridge structure, as located between the termini of the bridge railings at the two approaches, as shown on the accompanying U.S.G.S. map.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE

Robert M. Frame III - State Historic Preservation Office

ORGANIZATION

DATE

Robert M. Frame III, Research Historian

May 12, 1978

STREET & NUMBER

TELEPHONE

Minnesota Historical Society - Building 25, Fort Snelling

612-726-1171

CITY OR TOWN

STATE

St. Paul

Minnesota

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL X

STATE

LOCAL

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

Russell W. Fridley

TITLE Russell W. Fridley
State Historic Preservation Officer

DATE

8/2/78

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

Charles A. ...
SPECIAL AGENT IN CHARGE, OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION

DATE

11.28.78

ATTEST: *Gucy D. Franklin*
KEEPER OF THE NATIONAL REGISTER

KEEPER OF THE NATIONAL REGISTER
DATE 11.20.78

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY	
RECEIVED	AUG 9 1978
DATE ENTERED	NOV 28 1978

Cappelen Memorial Bridge

CONTINUATION SHEET

ITEM NUMBER 9

PAGE 1

3. Minneapolis Board of Education. Bridges of Minneapolis and the State of Minnesota (mimeograph), Social Studies Bulletin No. 56. Work Projects Administration Project 165-I71-285 (3), April, 1942. Pp. 6-7.
4. Minnesota Department of Transportation. Structure Inventory Sheet, Bridge No. 2441, 1 & 2, September 23, 1977.
5. Plowden, David. Bridges: The Spans of North America. New York: Viking Press, 1974. P. 299.