

HISTORIC BRIDGE INVENTORY

Midgley Bridge

PROPERTY IDENTIFICATION

county	Coconino	inventory number	00232
milepost	375.66	inventory route	SR 89 A
location	1.6 mi E of Jct SR 179	feature intersected	Wilson Canyon
city/vicinity	Sedona	USGS quadrangle	Munds Park
district	85	UTM reference	12.432163.3860567

STRUCTURAL INFORMATION

main span number	1	main span type	311
appr. span number	3	appr. span type	402
degree of skew	0	guardrail type	6
main span length	240.0	superstructure	steel two-hinge spandrel-braced deck arch
structure length	374.0	substructure	concrete abutments and arch pedestals with stone masonry wingwalls
roadway width	24.0	floor/decking	concrete deck over steel stringers
structure width	27.2	other features	lower chord: 2 built-up channels w/ double lacing; upper chord: 2 channels w/ double lacing; post: 2 channels w/ double lacing / wide flange; diagonal: 2 channels w/ batten plates; strut / lateral bracing: 2 angles w/ lacing; floor beam: I-beam

HISTORICAL INFORMATION

construction date	1939	designer/engineer	US Bureau of Public Roads
project number	AFP 7-B(1)	builder/contractor	Lewis Brothers, Phoenix AZ
information source	ADOT bridge records	structure owner	Arizona Department of Transportation
alteration date(s)		alterations	

NATIONAL REGISTER EVALUATION

inventory score	70	For additional information, see "Vehicular Bridges in Arizona 1880-1964" National Register Multiple Property Documentation Form	
NRHP eligibility	listed		
NRHP criteria	A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/>		
signif. statement	outstanding, large-scale example of rare structural type		

FORM COMPLETED BY

Clayton B. Fraser, Principal

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Loveland, Colorado 80537
31 October 2004

W.W. MIDGLEY BRIDGE

Structure No. 0232

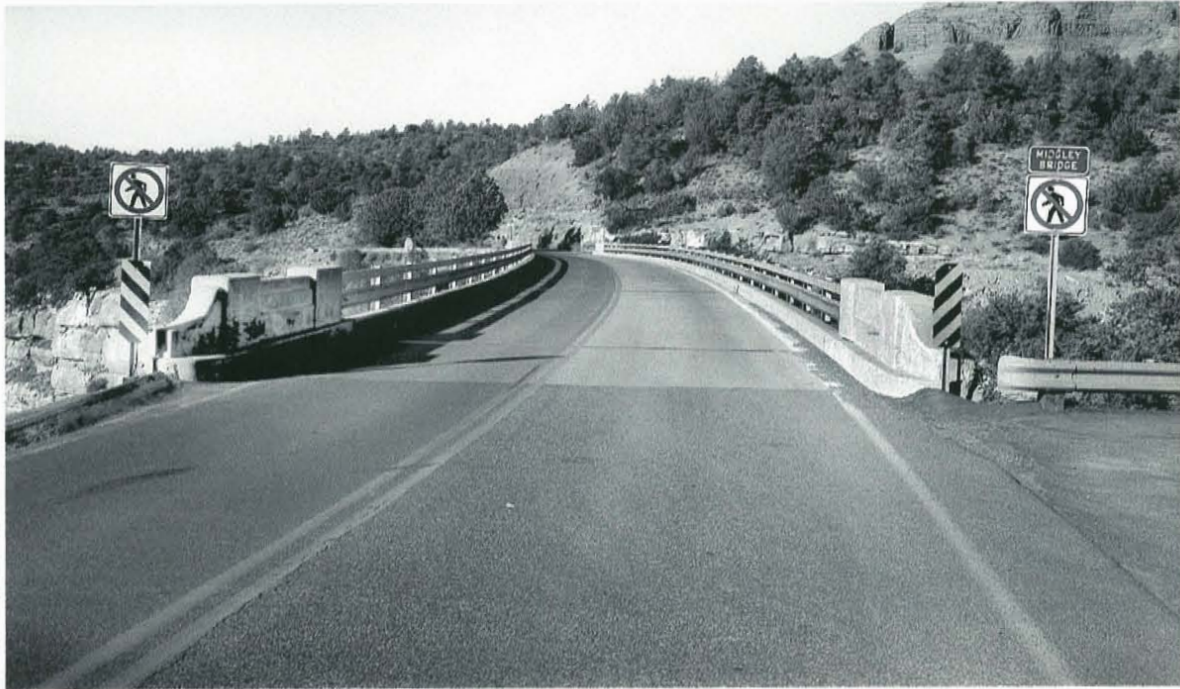


PHOTO INFORMATION

date of photo: November 2002

view direction: west north

photo no.: 02.11.203 02.11.206

CONSTRUCTION HISTORY

In 1930 the U.S. Bureau of Public Roads undertook an extensive upgrading of the Oak Creek Highway between Sedona and Flagstaff in Coconino County. Funded as Arizona Forest Project 7, the construction was divided into several intermediate sections and let under a series of contracts during the early 1930s. The final link to complete the new highway was the erection of a major bridge over Wilson Canyon near Sedona. For this location, BPR engineers designed this medium-span steel deck arch, which resembled a scaled-down version of the immense Navajo Bridge [0051], completed in 1929. As delineated by BPR, the proposed structure was a two-hinge, spandrel-braced deck arch that extended 240 feet between the reinforced concrete arch pedestals. The two steel arch ribs were comprised of a built-up box beam made of twin channels with double lacing on top and bottom. These supported a series of W-beam and built-up columns upon which the I-beam steel floor beams rested. The floor beams in turn supported a reinforced concrete deck bounded on the edges by steel guardrails.

Early in 1938 the Bureau of Public Roads contracted with Lewis Brothers under AFP 7-B(1) to place the foundations and erect the arch. The Phoenix-based contractors began the excavation in the canyon walls for the arch pedestals on March 24, 1938, and pushed the construction throughout the summer under the supervision of BPR Resident Engineer V.G. Watson. The Lewis crew completed the steel structure on October 31. Dedicated in honor of local personage W.W. Midgley, who ranched cattle in the area in the 19th century, the Midgley Bridge has since carried traffic on US 89 Alternate. The superstructure remains unaltered, though steel Thrie beams have more recently been installed onto the original guardrails.

SIGNIFICANCE STATEMENT

A number of long-span steel arches have been built on Arizona's roads, beginning with the breathtakingly lightweight through arch over the Colorado River at Topock [priv.], and including the Navajo Bridge, the Salt River Canyon Bridge [0129], the twin arches in Navajo County [0215], and a series of later structures. Of the deck arches, only the Navajo Bridge and the Midgley Bridge feature spandrel-braced arch configurations; the others have plate girder ribs. Although it suffers in comparison with the nationally significant Navajo Bridge, the Midgley Bridge is technologically significant as a well-preserved and picturesquely sited example of what must be considered an esoteric and inherently dramatic structural type. The bridge is historically noteworthy as the final link on the Oak Creek Highway between Sedona and Flagstaff, a beautiful and popular secondary route in central Arizona.

NATIONAL REGISTER EVALUATION

TECHNOLOGICAL SIGNIFICANCE

- represents the work of a master
- possesses high artistic values
- represents a type, period or method of construction

HISTORICAL SIGNIFICANCE

- associated with significant persons
- associated with significant events or patterns
- contributes to historical district

NATIONAL REGISTER CRITERIA

- Criterion A
- Criterion B
- Criterion C

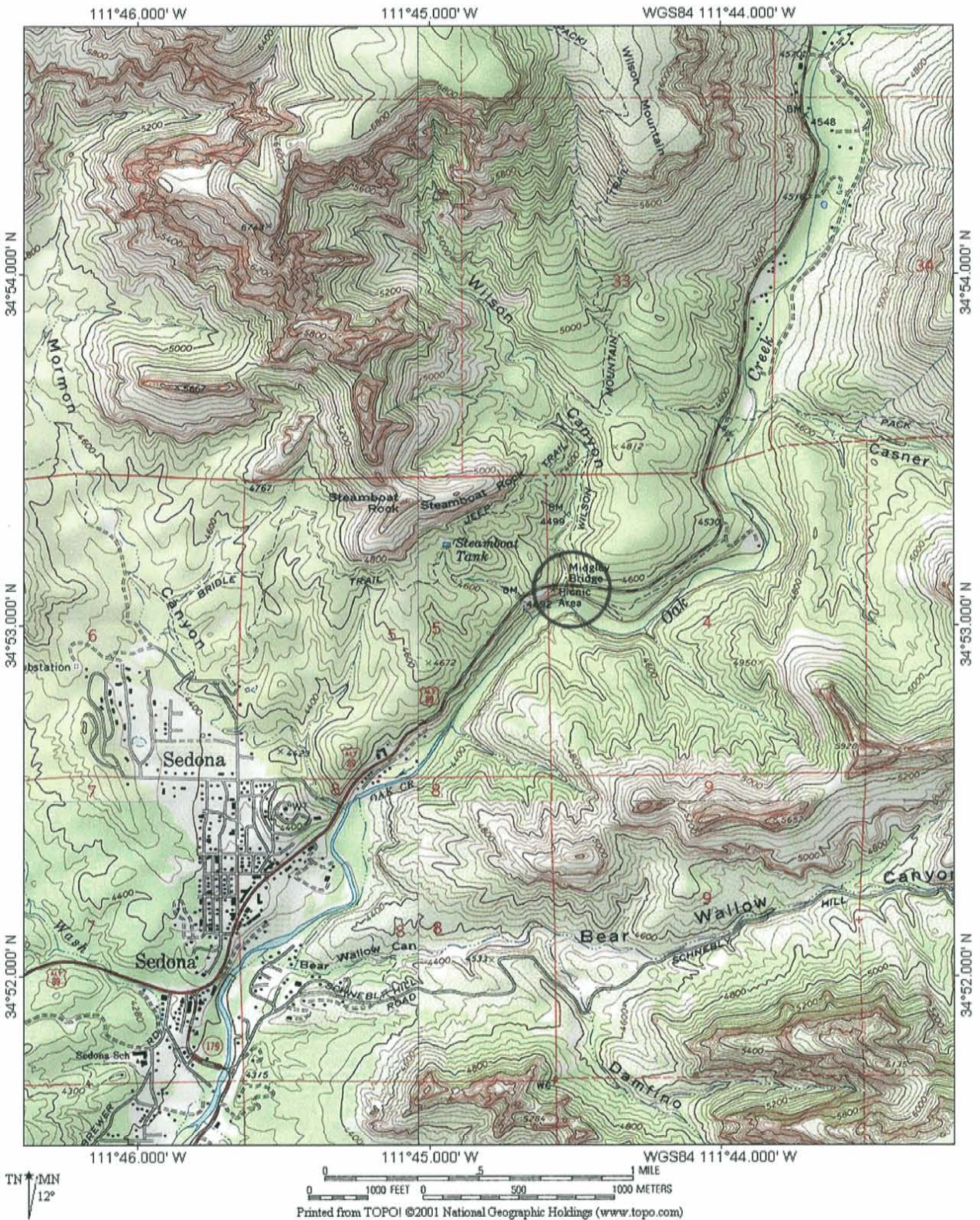
NATIONAL REGISTER ELIGIBILITY

- individually eligible yes no
- contributes to district yes no

AREA OF SIGNIFICANCE: Transportation; Engineering
 PERIOD OF SIGNIFICANCE: 1939-1964
 THEME(S): Transportation: Highways

W.W. MIDGLEY BRIDGE

Structure No. 0232



Location Map