HISTORIC BRIDGE INVENTORY

Santa Cruz River Bridge

PROPERTY IDENTIFICATION

county	Santa Cruz	inventory number	08166
milepost	0.00	inventory route	South River Road
location	0.1 mi W Jct SR 82	feature intersected	Santa Cruz River
city/vicinity	Beyerville	USGS quadrangle	Cumero Canyon
district	81	UTM reference	12.511945.3472685

STRUCTURAL INFORMATION

main span number	11	main span type	104
appr. span number	0	appr. span type	
degree of skew	0	guardrail type	6
main span length	65.0	superstructure	concrete two-beam deck girder
structure length	465.0	substructure	concrete abutments, wingwalls and piers
roadway width	18.1	floor/decking	concrete deck with asphalt overlay
structure width	20.4	other features	concrete girders with incised panels; cantilevered roadway; steel pipe guardrails

HISTORICAL INFORMATION

construction date	1917	designer/engineer	Arizona State Engineer
project number		builder/contractor	state work force
information source	ADOT bridge records	structure owner	Santa Cruz County
alteration date(s)	ca1970	alterations	minor guardrail repairs

NATIONAL REGISTER EVALUATION

For additional information, see "Vehicular Bridges in Arizona 1880-1964" National Register Multiple Property Documentation Form

inventory score	90	NRHP eligibility	listed
		NRHP criteria	A x B ____ C x
		signif. statement	earliest and longest concrete girder structure in use on state road system

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
420 South County Road 23E
Loveland, Colorado 80537
31 October 2004

SANTA CRUZ BRIDGE

Structure No. 8166

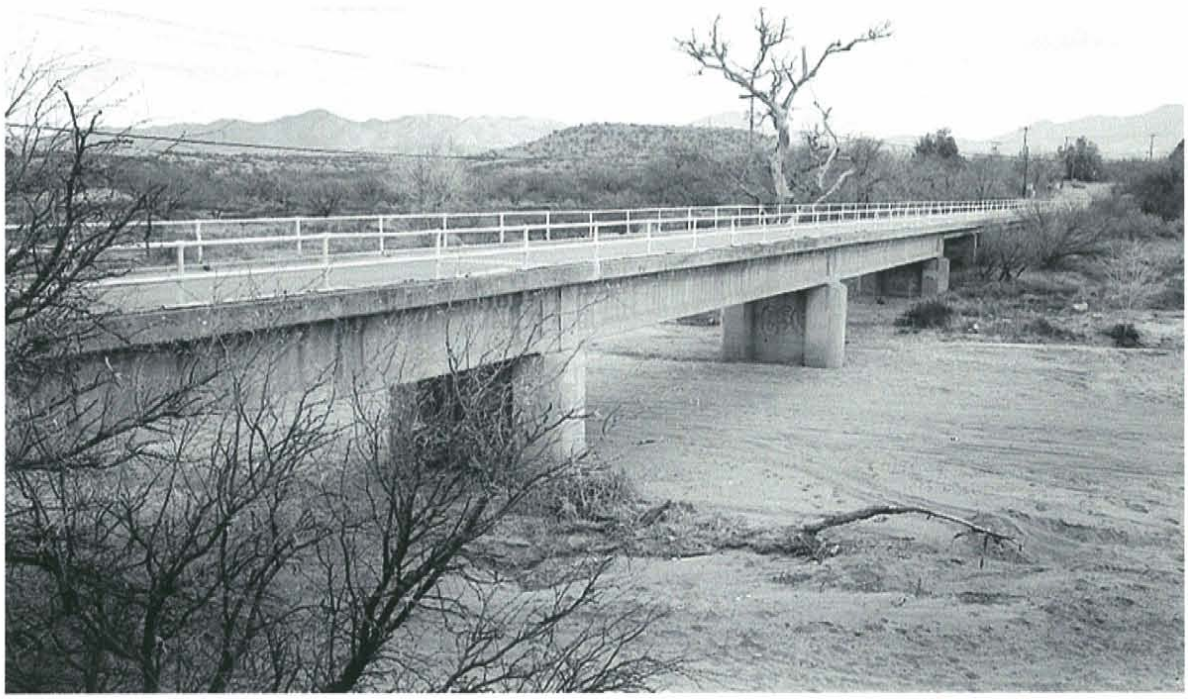


PHOTO INFORMATION

date of photo.: November 2002 view direction: west northeast photo no.: 02.11.148 02.11.161

CONSTRUCTION HISTORY

In 1915 the Arizona State Legislature appropriated $12,500 from the state's General Fund for construction of a major bridge over the Santa Cruz River on the Nogales-Patagonia Highway. State Engineer B.M. Atwood located the site for this bridge some 5½ miles northwest of Nogales and, because its construction was contingent on an equal contribution from Santa Cruz County, waited until the county appropriated its share early in 1916. Atwood then surveyed the site and engineered this concrete deck girder bridge. As delineated by Atwood, the structure consisted of three 65-foot two-girder spans, with eight shallower 32-foot spans over the flood plain east of main river channel. The spans were supported by massive concrete piers built with bullnosed ends to withstand heavy flooding on the Santa Cruz. The bridge featured a concrete deck poured integrally with the girders; this was flanked on both sides by steel pipe guardrails.

Rather than let the bridge's construction out for competitive bid, Atwood instead opted to build it using day laborers under state supervision. In May a state work force began construction of the bridge under the direction of General Foreman F.W. Haynes. The crew completed the structure early the next year for a total cost of about $38,000. Although the design of the bridge was relatively simple, the workmanship of its forming, pouring and detailing was excellent. The Santa Cruz Bridge No. 1 carried mainline highway traffic until a route realignment in 1927. It has since functioned as a county bridge in unaltered condition.

SIGNIFICANCE STATEMENT

One of the earliest major vehicular bridges undertaken by the Arizona State Engineer's Office, the Santa Cruz Bridge was for decades a regionally important river crossing. As such it is historically significant for the role it has played in southern Arizona transportation. Technologically, the bridge is distinguished as an outstanding representative of a formative structural type. Although numerous concrete girder bridges were erected throughout Arizona in the 1910s, 1920s and 1930s, most featured designs with four or more relatively shallow girders. The earliest concrete girders in Arizona typically employed two-girder designs. Their superstructures were massive and able to withstand the flooding that was the bane of bridges in the desert. But they consumed sizable amounts of concrete and reinforcing steel. Of the earliest structures, only the Santa Cruz, Hell Canyon [**abd.**] and Antelope Hill [**abd.**] bridges remain. The Santa Cruz Bridge is the earliest and longest-span concrete girder bridge still in use on the state's road system. A visually striking structure and a point of pride for the highway department in its early days, it is a significant early Arizona transportation-related resource.

NATIONAL REGISTER EVALUATION

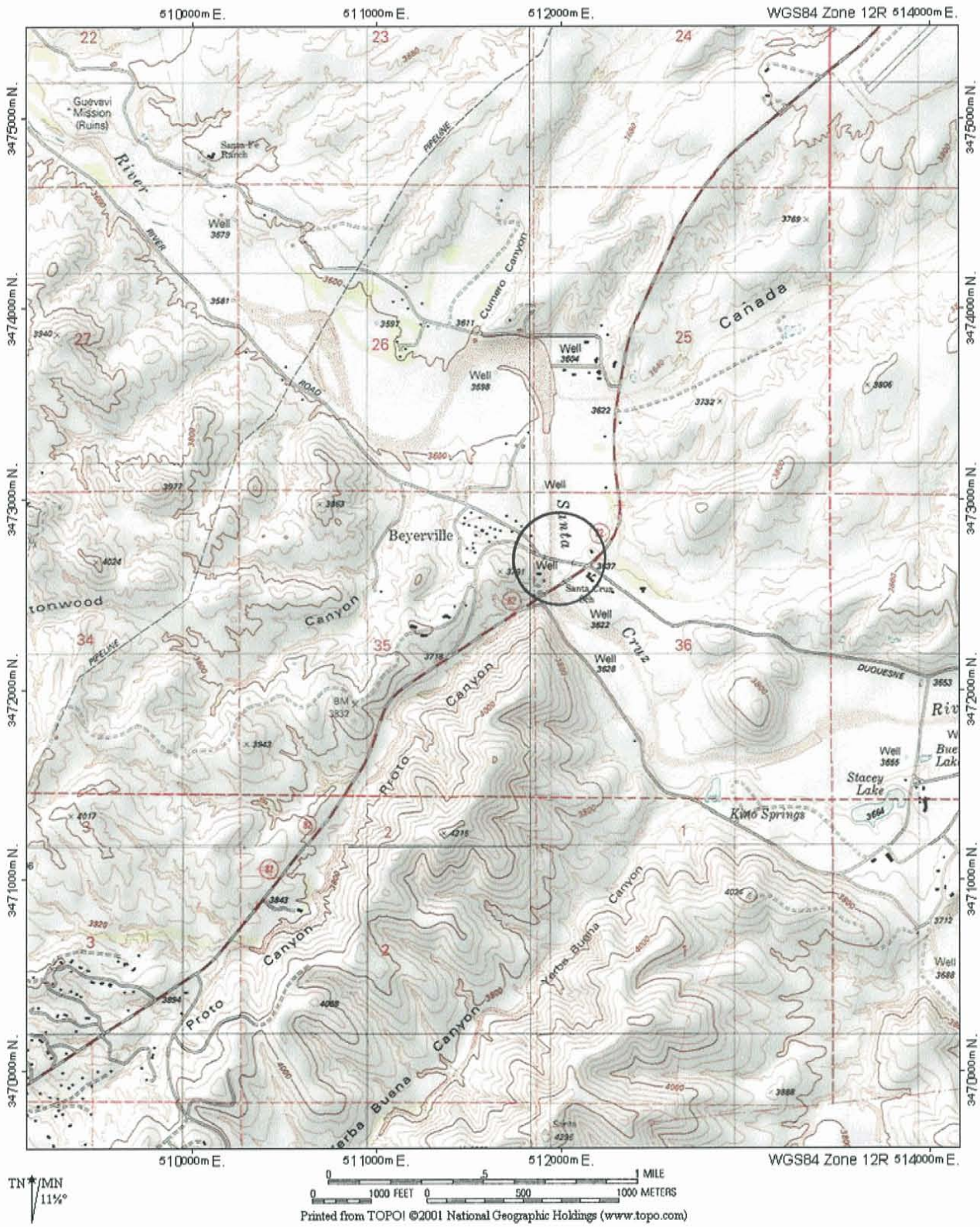
TECHNOLOGICAL SIGNIFICANCE
___ represents the work of a master
___ possesses high artistic values
_x_ represents a type, period or method of construction

HISTORICAL SIGNIFICANCE
___ associated with significant persons
_x_ associated with significant events or patterns
___ contributes to historical district

NATIONAL REGISTER CRITERIA
_x_ Criterion A
___ Criterion B
_x_ Criterion C

NATIONAL REGISTER ELIGIBILITY
individually eligible _x_ yes ___ no
contributes to district ___ yes _x_ no

AREA OF SIGNIFICANCE: Transportation; Engineering
PERIOD OF SIGNIFICANCE: 1917-1964
THEME(S): Transportation: Highways



Location Map

HISTORIC BRIDGE INVENTORY

Nogales Wash Bridge

PROPERTY IDENTIFICATION

county	Santa Cruz	inventory number	08167
milepost	0.00	inventory route	Old Tucson Road
location	0.75 mi N Jct B 19	feature intersected	Nogales Wash
city/vicinity	Nogales	USGS quadrangle	Rio Rico
district	81	UTM reference	12.504475.3473660

STRUCTURAL INFORMATION

main span number	1	main span type	104
appr. span number	0	appr. span type	
degree of skew	30	guardrail type	4
main span length	43.0	superstructure	concrete deck girder
structure length	48.0	substructure	concrete abutments and wingwalls
roadway width	24.0	floor/decking	concrete deck with asphalt overlay
structure width	27.0	other features	concrete guardrails with slotted cutouts; steel Thrie beams at approaches

HISTORICAL INFORMATION

construction date	1931	designer/engineer	Arizona Highway Department
project number	FAP 86-E	builder/contractor	Skeels & Graham Company, Tucson AZ
information source	ADOT bridge records	structure owner	Santa Cruz County
alteration date(s)		alterations	

NATIONAL REGISTER EVALUATION

For additional information, see "Vehicular Bridges in Arizona 1880-1964" National Register Multiple Property Documentation Form

inventory score	47	NRHP eligibility	eligible
		NRHP criteria	A x B ____ C x
		signif. statement	well-preserved, early example of standard structural type, on important route

FORM COMPLETED BY

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31 October 2004

NOGALES WASH BRIDGE

Structure No. 8167

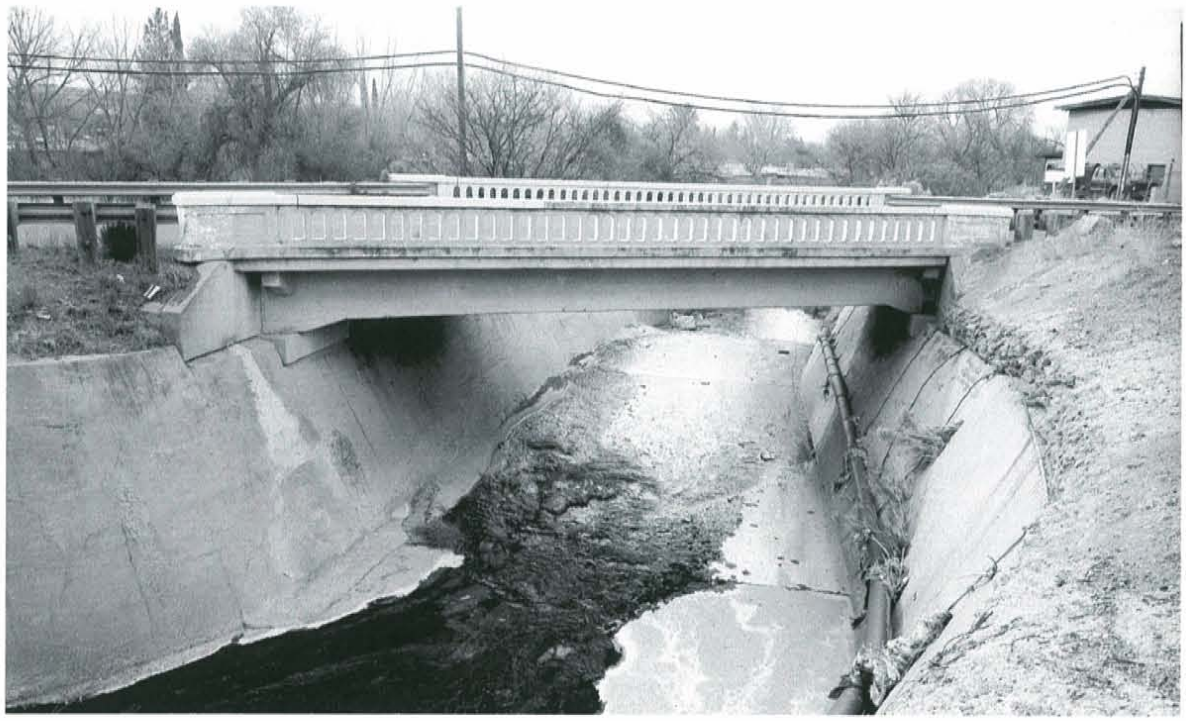


PHOTO INFORMATION

date of photo.: February 2003 view direction: north west photo no.: 03.02.150 03.02.163

CONSTRUCTION HISTORY

In the summer of 1930 the Arizona Highway Department contemplated improving a segment of the Tucson-Nogales Highway in Santa Cruz County. This part of the route began at the edge of the pavement in north Nogales and extended for 8.7 miles northward toward Tucson. It included highway grading and surfacing, as well as the construction of two reinforced concrete bridges over intermittent washes. This structure over Nogales Wash was comprised of a single concrete deck girder span supported by concrete abutments. As delineated by AHD engineers, the girder extended 43 feet and featured angled haunches at the supports. The concrete deck cantilevered slightly over the spandrel beams on concrete brackets; it was bounded by concrete guardrails with slotted "doghouse" cutouts.

The construction was designated as Federal Aid Project 86-E. In August 1930 AHD advertised for competitive bids for the project, awarding the construction contract to Skeels & Graham of Tucson on September 3. The contractors, who were then working on large-scale construction of the Douglas-Rodeo Highway, began work immediately. By the end of the year, under the supervision of AHD Resident Engineer J.R. Horn, they reported the work 80 percent complete. The Skeels & Graham crew completed the highway and bridges in March 1931. The route carried mainline traffic for some 37 years until construction of Interstate 19 in 1967-1968. At that time this bridge was retired from the primary road system and left in place as a county-owned bridge. It now carries local traffic in unaltered condition.

SIGNIFICANCE STATEMENT

The Nogales Wash Bridge is historically noteworthy for its association with US 89. As the latter-day iteration of the Territorial North-South Highway, the road has served historically as the principal north-south arterial through Arizona. Built in 1930 during a period of extensive highway construction in Arizona, this bridge was an integral part of this significant highway. The bridge is technologically important as a representative example of AHD bridge construction. The state had begun using concrete for bridge superstructures as early as 1910. The earliest girder bridges, such as the Antelope Hill Bridge [**abd.**] in Yuma County and the Santa Cruz River Bridge [**8166**] in Santa Cruz County, employed two deep girders that were cast integrally with the concrete deck. By the 1920s AHD had refined its girder standard to incorporate four or more shallower girders, to create greater under-bridge clearance. The Nogales Wash Bridge uses this latter design. It is today distinguished as one of the best-preserved early examples in Arizona of this revised configuration.

NATIONAL REGISTER EVALUATION

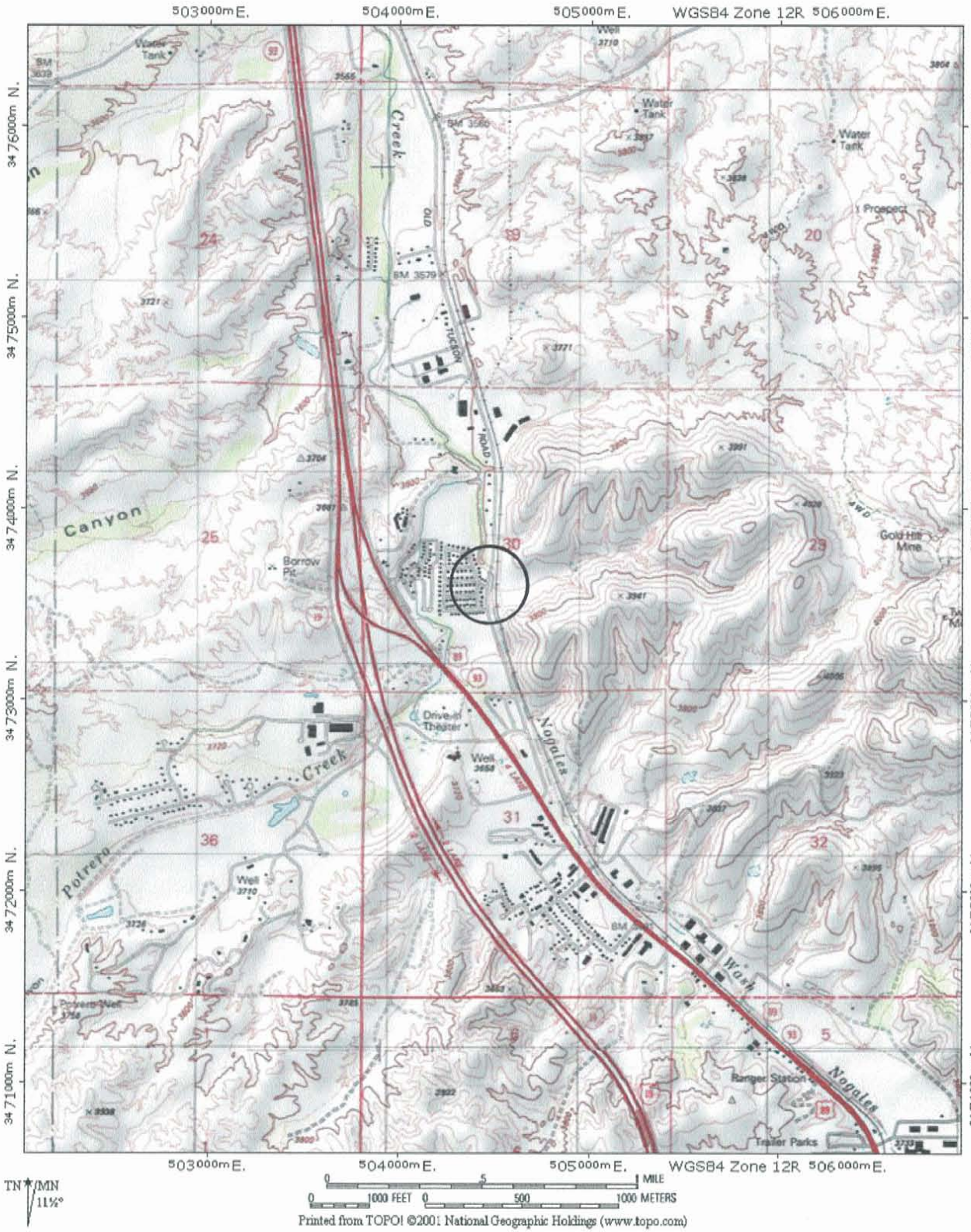
TECHNOLOGICAL SIGNIFICANCE
- ___ represents the work of a master
- ___ possesses high artistic values
- _x_ represents a type, period or method of construction

HISTORICAL SIGNIFICANCE
- ___ associated with significant persons
- _x_ associated with significant events or patterns
- ___ contributes to historical district

NATIONAL REGISTER CRITERIA
- _x_ Criterion A
- ___ Criterion B
- _x_ Criterion C

NATIONAL REGISTER ELIGIBILITY
- individually eligible _x_ yes ___ no
- contributes to district ___ yes _x_ no

AREA OF SIGNIFICANCE: Transportation; Engineering
PERIOD OF SIGNIFICANCE: 1931-1964
THEME(S): Transportation: Highways



Location Map

HISTORIC BRIDGE INVENTORY

Portrero Creek Bridge

PROPERTY IDENTIFICATION

county	Santa Cruz	inventory number	08171
milepost	0.00	inventory route	Old Tucson Road
location	2.7 mi N of Jct B 19	feature intersected	Potrero Creek
city/vicinity	Rio Rico	USGS quadrangle	Rio Rico
district	81	UTM reference	12.503835.3476610

STRUCTURAL INFORMATION

main span number	2	main span type	104
appr. span number	2	appr. span type	101
degree of skew	0	guardrail type	4
main span length	32.0	superstructure	concrete deck girder
structure length	66.0	substructure	concrete abutments, wingwalls and pier
roadway width	24.0	floor/decking	concrete deck
structure width	27.0	other features	concrete guardrails with slotted cutouts

HISTORICAL INFORMATION

construction date	1931	designer/engineer	Arizona Highway Department
project number	FAP 86-E	builder/contractor	Skeels & Graham Company, Tucson AZ
information source	ADOT bridge records	structure owner	Santa Cruz County
alteration date(s)		alterations	

NATIONAL REGISTER EVALUATION

For additional information, see "Vehicular Bridges in Arizona 1880-1964" National Register Multiple Property Documentation Form

inventory score	45	NRHP eligibility	eligible
		NRHP criteria	A x B ____ C x
		signif. statement	well-preserved example of standard structural type, on important route

FORM COMPLETED BY

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31 October 2004

PORTRERO CREEK BRIDGE

Structure No. 8171

PHOTO INFORMATION

date of photo.: February 2003 view direction: northwest northeast photo no.: 03.02.149 03.02.162

CONSTRUCTION HISTORY

In the summer of 1930 the Arizona Highway Department contemplated improving a segment of the Tucson-Nogales Highway in Santa Cruz County. This part of the route began at the edge of the pavement in north Nogales and extended for 8.7 miles northward toward Tucson. It included highway grading and surfacing, as well as the construction of two reinforced concrete bridges over intermittent washes. This structure over Portrero Creek was comprised of two concrete deck girder spans supported by concrete pier and abutments. As delineated by AHD engineers, the girders extended 32 feet and featured angled haunches at the supports. The concrete deck cantilevered slightly over the spandrel beams on concrete brackets; it was bounded by concrete guardrails with slotted "doghouse" cutouts.

The construction was designated as Federal Aid Project 86-E. In August 1930 AHD advertised for competitive bids for the project, awarding the construction contract to Skeels & Graham of Tucson on September 3. The contractors, who were then working on large-scale construction of the Douglas-Rodeo Highway, began work immediately. By the end of the year, under the supervision of AHD Resident Engineer J.R. Horn, they reported the work 80 percent complete. The Skeels & Graham crew completed the highway and bridges in March 1931. The route carried mainline traffic for some 37 years until construction of Interstate 19 in 1967-1968. At that time this bridge was retired from the primary road system and left in place as a county-owned bridge. It now carries local traffic in unaltered condition.

SIGNIFICANCE STATEMENT

The Portrero Creek Bridge is historically noteworthy for its association with US 89. As the latter-day iteration of the Territorial North-South Highway, the road has served historically as the principal north-south arterial through Arizona. Built in 1930 during a period of extensive highway construction in Arizona, this bridge was an integral part of this significant highway. The bridge is technologically important as a representative example of AHD bridge construction. The state had begun using concrete for bridge superstructures as early as 1910. The earliest girder bridges, such as the Antelope Hill Bridge [**abd.**] in Yuma County and the Santa Cruz River Bridge [**8166**] in Santa Cruz County, employed two deep girders that were cast integrally with the concrete deck. By the 1920s AHD had refined its girder standard to incorporate four or more shallower girders, to create greater under-bridge clearance. The Portrero Creek Bridge uses this latter design. It is today distinguished as one of the best-preserved early examples in Arizona of this revised configuration.

NATIONAL REGISTER EVALUATION

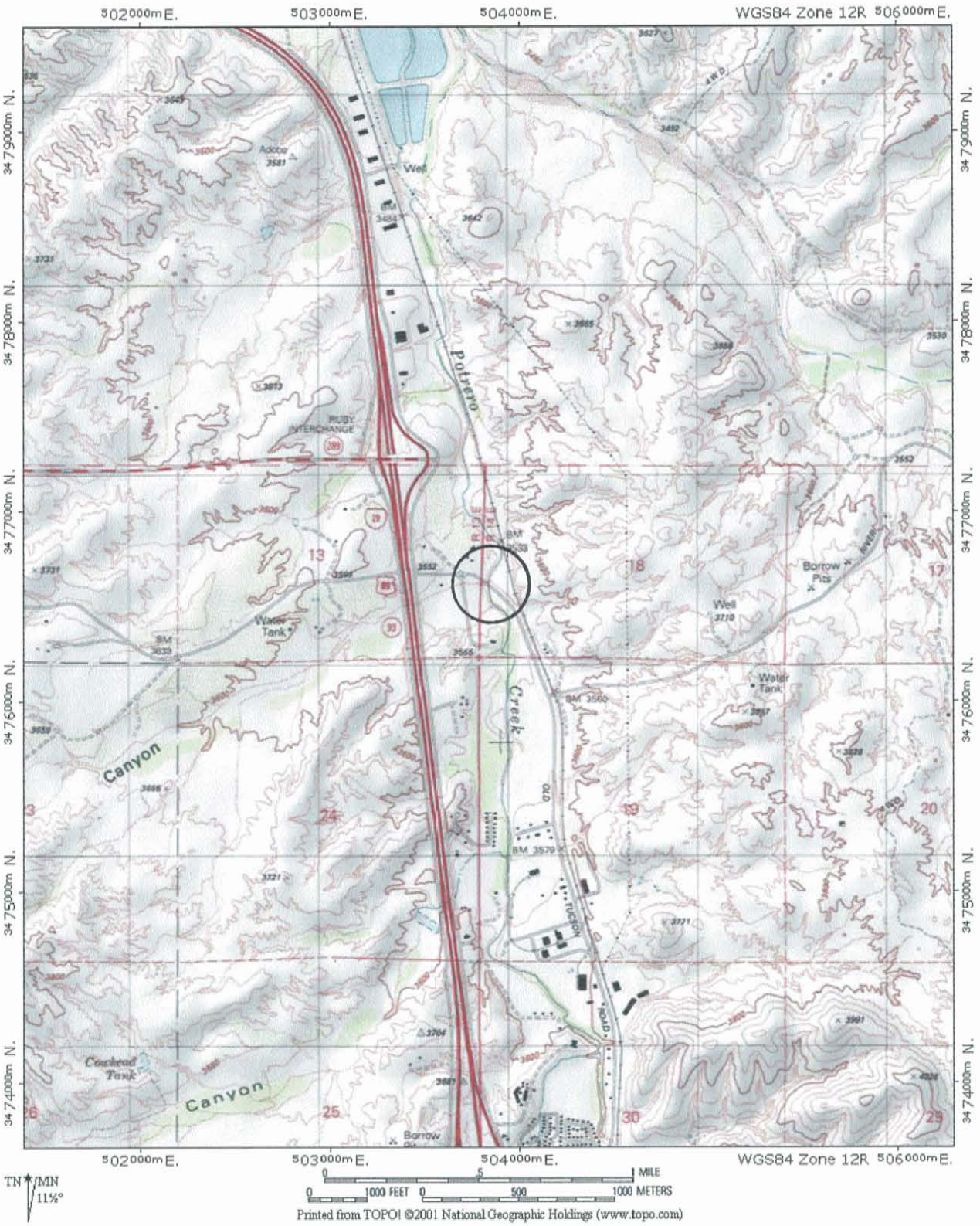
TECHNOLOGICAL SIGNIFICANCE
___ represents the work of a master
___ possesses high artistic values
_x_ represents a type, period or method of construction

HISTORICAL SIGNIFICANCE
___ associated with significant persons
_x_ associated with significant events or patterns
___ contributes to historical district

NATIONAL REGISTER CRITERIA
_x_ Criterion A
___ Criterion B
_x_ Criterion C

NATIONAL REGISTER ELIGIBILITY
individually eligible _x_ yes ___ no
contributes to district ___ yes _x_ no

AREA OF SIGNIFICANCE: Transportation; Engineering
PERIOD OF SIGNIFICANCE: 1931-1964
THEME(S): Transportation: Highways



Location Map