

HISTORIC BRIDGE INVENTORY

Wash Bridge

PROPERTY IDENTIFICATION

county	Cochise	inventory number	00058
milepost	399.89	inventory route	SR 80
location	35.2 mi E Jct US 191	feature intersected	dry wash
city/vicinity	Douglas	structure owner	Arizona Department of Transportation
USGS quad	Apache	UTM reference	12.671664.3501372

STRUCTURAL INFORMATION

main span number	8	main span type	1 01
appr. span number	0	appr. span type	
degree of skew	45	guardrail type	4
main span length	22.0	superstructure	concrete slab
structure length	176.0	substructure	concrete abutments, wingwalls and piers
roadway width	24.0	floor/decking	concrete deck with asphalt overlay
structure width	27.0	other features	AHD-standard concrete guardrails with slotted cutouts

HISTORICAL INFORMATION

construction date	1929	designer/engineer	Arizona Highway Department
project number	FAP 38 (Reo.)	builder/contractor	Veater & Davis, El Paso TX
info source:	ADOT bridge records	alteration date(s)	
		alterations	

NATIONAL REGISTER EVALUATION

inventory score	49	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A <u>x</u> B <u> </u> C <u>x</u>
program comment	-	signif. statement	typical example of common structural type, altered

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
5700 Jackdaw Drive
Loveland, Colorado 80537
1 October 2018

HISTORIC BRIDGE INVENTORY

Tex Canyon Bridge

PROPERTY IDENTIFICATION

county	Cochise	inventory number	00059
milepost	402.52	inventory route	SR 80
location	37.9 mi E Jct US 191	feature intersected	Tex Canyon
city/vicinity	Douglas	structure owner	Arizona Department of Transportation
USGS quad	Apache	UTM reference	12.674335.3503236

STRUCTURAL INFORMATION

main span number	5	main span type	1 01
appr. span number	0	appr. span type	
degree of skew	0	guardrail type	4
main span length	22.0	superstructure	concrete slab
structure length	110.0	substructure	concrete abutments, wingwalls and piers
roadway width	24.0	floor/decking	concrete deck with asphalt overlay
structure width	27.0	other features	AHD-standard concrete guardrails with slotted cutouts

HISTORICAL INFORMATION

construction date	1929	designer/engineer	Arizona Highway Department
project number	FAP 38 (Reo.)	builder/contractor	Veater & Davis, El Paso TX
info source:	ADOT bridge records	alteration date(s)	
		alterations	

NATIONAL REGISTER EVALUATION

For additional information, see "Vehicular Bridges in Arizona 1880-1978" National Register Multiple Property Documentation Form

inventory score	46	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/>
program comment	-	signif. statement	well-preserved example of AHD standard bridge design

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
5700 Jackdaw Drive
Loveland, Colorado 80537
1 October 2018

TEX CANYON BRIDGE

Structure No. 00059



PHOTO INFORMATION

date of photo.: April 2018

view direction: northeast north

photo no.: DSCF5954 DSCF5963

CONSTRUCTION HISTORY

When Arizona was designated as a state in 1912, the Borderland Highway extended from Yuma to Phoenix, Tucson, past Bisbee and on to Douglas. There the improved route stopped. During the 1910s a dirt route was extended from Douglas northeast along the El Paso & Southwestern Railroad to the New Mexico border. Later designated as the Douglas-Rodeo Highway, a part of U.S. Highway 80, this was improved during the 1920s in segments beginning in Douglas. In May 1928 AHD let the contract for some twelve miles of highway under Federal Aid Project 14-A (Reopened) to S.Y. Faucett of Blythe, CA. Costing little more than \$84,750, this section involved construction of eight major bridges [Structure Nos. **00054, 00055, 00056, 00057, 00064, 00065, 00066** and **00067**]. Blythe's crew had almost completed construction in June 1929, when the highway department advertised for proposals for the final segment of the Douglas-Rodeo Highway. Extending some 26½ miles from the northern terminus of Faucett's section to the New Mexico state line, this was designated Federal Aid Project 38-1 (Reopened). FAP38-1 involved construction of fourteen bridges and culverts [including Structure Nos. **00058, 00059, 00060, 00061, 00062, 00063, 00068, 00069, 00070** and **00071**]. In July AHD awarded the contract to Veater and Davis for \$184,559. The El Paso-based company began work that summer under AHD Resident Engineer W.J. Tavenor. By the end of the year they had the project 63% completed. By the following March they were done. The Douglas-Rodeo Highway carried interstate traffic over the following years until its replacement by Interstate 10. The roadway was widened and graded and eventually paved, and several of the bridges [**00054, 00055, 00056, 00057, 00062**] were modified with the replacement of their guardrails. The Douglas-Rodeo Highway is now designated State Route 80.

SIGNIFICANCE STATEMENT

The bridges along the Douglas-Rodeo Highway were all concrete slab structures, technologically important as representative examples of AHD bridge construction. The Arizona State Engineer delineated standardized designs for concrete slab and girder bridges as early as 1912, updating them occasionally in subsequent years.. As the state assumed greater responsibility for bridge design and construction, these structural types received widespread use on Arizona's roads in the 1920s and 1930s with few technological advances. These bridges in Cochise County display a standard concrete slab configuration. What distinguishes them is the level of integrity of such a large collection of similar structures. No other pre-WWII highway in Arizona has maintained such integrity. They are also historically noteworthy for their association with the Douglas-Rodeo Highway and U.S. 80. Alternately known as the Ocean-to-Ocean Highway, the road has served historically as the principal east-west transcontinental route across southern Arizona, carrying the heaviest traffic loads in the state. Built in the 1920s during a period of extensive highway construction in Arizona, these bridges were an integral part of this significant highway. The Tex Canyon Bridge is unaltered.

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

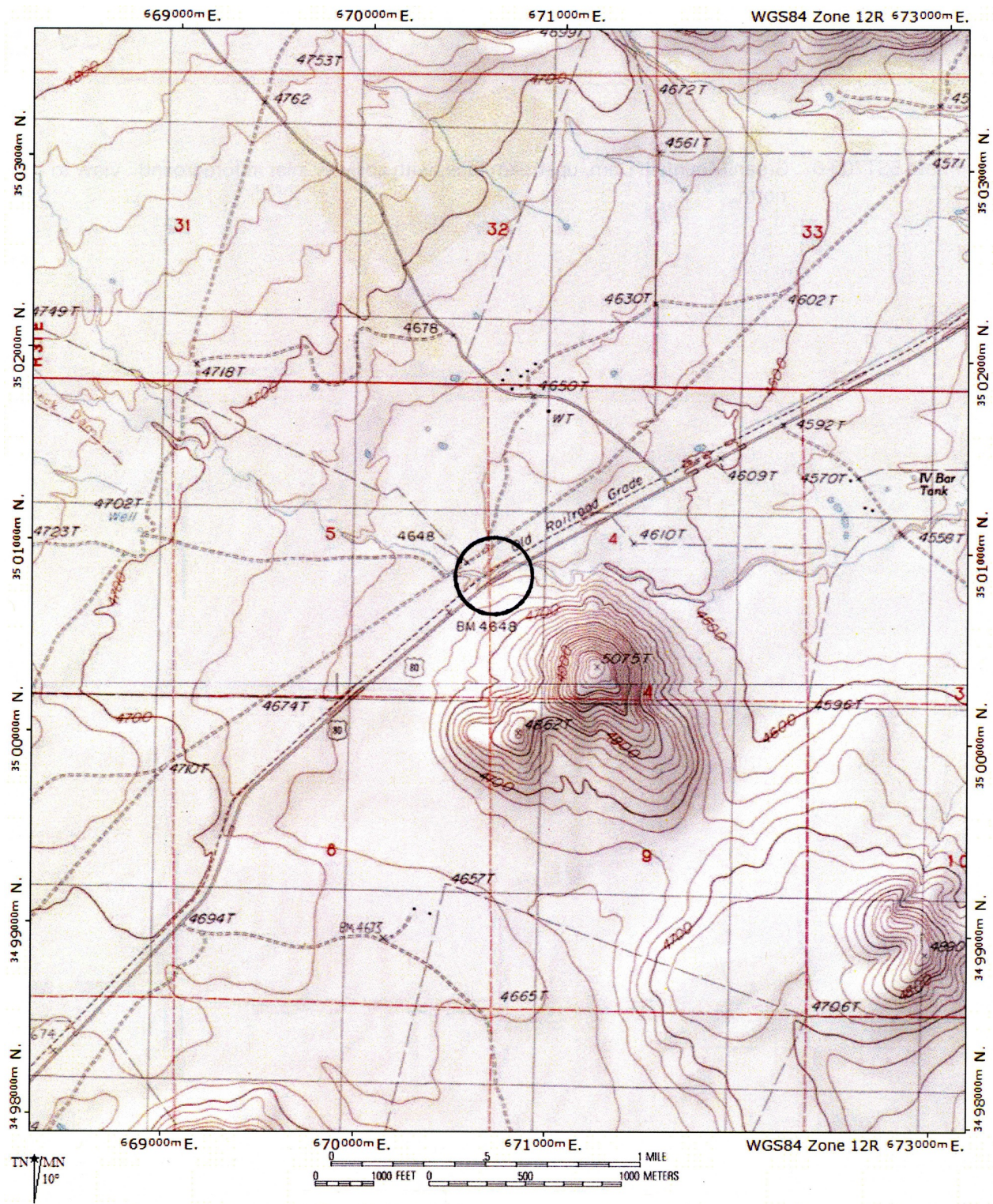
NATIONAL REGISTER ELIGIBILITY

individually eligible ☒ yes ☐ no
 contributes to district ☐ yes ☒ no

AREA OF SIGNIFICANCE: Transportation; Engineering
 PERIOD OF SIGNIFICANCE: 1929-1978
 THEME(S): Transportation: Highways

TEX CANYON BRIDGE

Structure No. 00059



LOCATION MAP

HISTORIC BRIDGE INVENTORY

Cottonwood Draw Bridge

PROPERTY IDENTIFICATION

county	Cochise	inventory number	00060
milepost	405.04	inventory route	SR 80
location	40.4 mi E Jct US 191	feature intersected	Cottonwood Draw
city/vicinity	Douglas	structure owner	Arizona Department of Transportation
USGS quad	Apache	UTM reference	12.676448.3506688

STRUCTURAL INFORMATION

main span number	5	main span type	101
appr. span number	0	appr. span type	
degree of skew	0	guardrail type	4
main span length	22.0	superstructure	concrete slab
structure length	110.0	substructure	concrete abutments, wingwalls and piers
roadway width	24.0	floor/decking	concrete deck with asphalt overlay
structure width	27.0	other features	AHD-standard concrete guardrails with slotted cutouts

HISTORICAL INFORMATION

construction date	1929	designer/engineer	Arizona Highway Department
project number	FAP 38 (Reo.)	builder/contractor	Veater & Davis, El Paso TX
info source:	ADOT bridge records	alteration date(s)	
		alterations	

NATIONAL REGISTER EVALUATION

inventory score	46	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A <u>x</u> B <u> </u> C <u>x</u>
program comment	-	signif. statement	well-preserved example of AHD standard bridge design

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
5700 Jackdaw Drive
Loveland, Colorado 80537
1 October 2018

COTTONWOOD DRAW BRIDGE

Structure No. 00060



PHOTO INFORMATION

date of photo.: March 2018

view direction: northeast north

photo no.: DSCF5967 DSCF5968

COTTONWOOD DRAW BRIDGE

Structure No. 00060

CONSTRUCTION HISTORY

When Arizona was designated as a state in 1912, the Borderland Highway extended from Yuma to Phoenix, Tucson, past Bisbee and on to Douglas. There the improved route stopped. During the 1910s a dirt route was extended from Douglas northeast along the El Paso & Southwestern Railroad to the New Mexico border. Later designated as the Douglas-Rodeo Highway, a part of U.S. Highway 80, this was improved during the 1920s in segments beginning in Douglas. In May 1928 AHD let the contract for some twelve miles of highway under Federal Aid Project 14-A (Reopened) to S.Y. Faucett of Blythe, CA. Costing little more than \$84,750, this section involved construction of eight major bridges [Structure Nos. **00054, 00055, 00056, 00057, 00064, 00065, 00066** and **00067**]. Blythe's crew had almost completed construction in June 1929, when the highway department advertised for proposals for the final segment of the Douglas-Rodeo Highway. Extending some 26½ miles from the northern terminus of Faucett's section to the New Mexico state line, this was designated Federal Aid Project 38-1 (Reopened). FAP38-1 involved construction of fourteen bridges and culverts [including Structure Nos. **00058, 00059, 00060, 00061, 00062, 00063, 00068, 00069, 00070** and **00071**]. In July AHD awarded the contract to Veater and Davis for \$184,559. The El Paso-based company began work that summer under AHD Resident Engineer W.J. Tavenor. By the end of the year they had the project 63% completed. By the following March they were done. The Douglas-Rodeo Highway carried interstate traffic over the following years until its replacement by Interstate 10. The roadway was widened and graded and eventually paved, and several of the bridges [**00054, 00055, 00056, 00057, 00062**] were modified with the replacement of their guardrails. The Douglas-Rodeo Highway is now designated State Route 80.

SIGNIFICANCE STATEMENT

The bridges along the Douglas-Rodeo Highway were all concrete slab structures, technologically important as representative examples of AHD bridge construction. The Arizona State Engineer delineated standardized designs for concrete slab and girder bridges as early as 1912, updating them occasionally in subsequent years. As the state assumed greater responsibility for bridge design and construction, these structural types received widespread use on Arizona's roads in the 1920s and 1930s with few technological advances. These bridges in Cochise County display a standard concrete slab configuration. What distinguishes them is the level of integrity of such a large collection of similar structures. No other pre-WWII highway in Arizona has maintained such integrity. They are also historically noteworthy for their association with the Douglas-Rodeo Highway and U.S. 80. Alternately known as the Ocean-to-Ocean Highway, the road has served historically as the principal east-west transcontinental route across southern Arizona, carrying the heaviest traffic loads in the state. Built in the 1920s during a period of extensive highway construction in Arizona, these bridges were an integral part of this significant highway. Other than the repair of a section of guardrail, the Cottonwood Draw Bridge is unaltered.

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

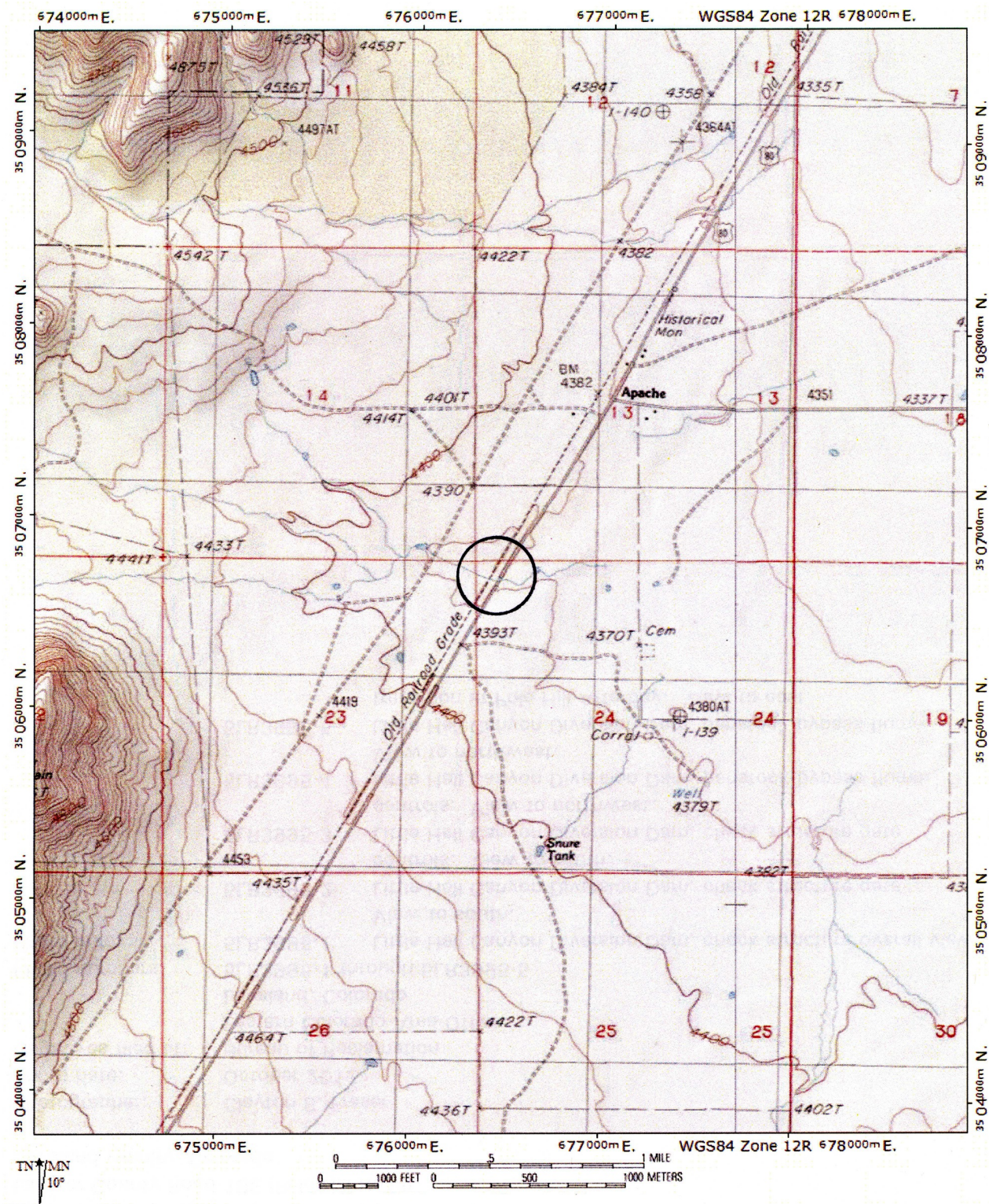
NATIONAL REGISTER ELIGIBILITY

individually eligible ☒ yes ☐ no
contributes to district ☐ yes ☒ no

AREA OF SIGNIFICANCE: Transportation; Engineering
PERIOD OF SIGNIFICANCE: 1929-1978
THEME(S): Transportation: Highways

COTTONWOOD DRAW BRIDGE

Structure No. 00060



LOCATION MAP

HISTORIC BRIDGE INVENTORY

Jack Wood Wash Bridge

PROPERTY IDENTIFICATION

county	Cochise	inventory number	00061
milepost	406.44	inventory route	SR 80
location	41.8 mi E Jct US 191	feature intersected	Jack Wood Wash
city/vicinity	Douglas	structure owner	Arizona Department of Transportation
USGS quad	Apache	UTM reference	12.677546.3508620

STRUCTURAL INFORMATION

main span number	7	main span type	101
appr. span number	0	appr. span type	
degree of skew	30	guardrail type	4
main span length	22.0	superstructure	concrete slab
structure length	154.0	substructure	concrete abutments, wingwalls and piers
roadway width	24.0	floor/decking	concrete deck with asphalt overlay
structure width	27.0	other features	AHD-standard concrete guardrails with slotted cutouts

HISTORICAL INFORMATION

construction date	1929	designer/engineer	Arizona Highway Department
project number	FAP 38 (Reo.)	builder/contractor	Veater & Davis, El Paso TX
info source:	ADOT bridge records	alteration date(s)	
		alterations	

NATIONAL REGISTER EVALUATION

inventory score	48	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/>
program comment	-	signif. statement	well-preserved example of AHD standard bridge design

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
5700 Jackdaw Drive
Loveland, Colorado 80537
1 October 2018

JACK WOOD WASH BRIDGE

Structure No. 00061



PHOTO INFORMATION

date of photo.: March 2018

view direction: northeast north

photo no.: DSCF5973 DSCF5974

CONSTRUCTION HISTORY

When Arizona was designated as a state in 1912, the Borderland Highway extended from Yuma to Phoenix, Tucson, past Bisbee and on to Douglas. There the improved route stopped. During the 1910s a dirt route was extended from Douglas northeast along the El Paso & Southwestern Railroad to the New Mexico border. Later designated as the Douglas-Rodeo Highway, a part of U.S. Highway 80, this was improved during the 1920s in segments beginning in Douglas. In May 1928 AHD let the contract for some twelve miles of highway under Federal Aid Project 14-A (Reopened) to S.Y. Faucett of Blythe, CA. Costing little more than \$84,750, this section involved construction of eight major bridges [Structure Nos. **00054, 00055, 00056, 00057, 00064, 00065, 00066** and **00067**]. Blythe's crew had almost completed construction in June 1929, when the highway department advertised for proposals for the final segment of the Douglas-Rodeo Highway. Extending some 26½ miles from the northern terminus of Faucett's section to the New Mexico state line, this was designated Federal Aid Project 38-1 (Reopened). FAP38-1 involved construction of fourteen bridges and culverts [including Structure Nos. **00058, 00059, 00060, 00061, 00062, 00063, 00068, 00069, 00070** and **00071**]. In July AHD awarded the contract to Veater and Davis for \$184,559. The El Paso-based company began work that summer under AHD Resident Engineer W.J. Tavenor. By the end of the year they had the project 63% completed. By the following March they were done. The Douglas-Rodeo Highway carried interstate traffic over the following years until its replacement by Interstate 10. The roadway was widened and graded and eventually paved, and several of the bridges [**00054, 00055, 00056, 00057, 00062**] were modified with the replacement of their guardrails. The Douglas-Rodeo Highway is now designated State Route 80.

SIGNIFICANCE STATEMENT

The bridges along the Douglas-Rodeo Highway were all concrete slab structures, technologically important as representative examples of AHD bridge construction. The Arizona State Engineer delineated standardized designs for concrete slab and girder bridges as early as 1912, updating them occasionally in subsequent years.. As the state assumed greater responsibility for bridge design and construction, these structural types received widespread use on Arizona's roads in the 1920s and 1930s with few technological advances. These bridges in Cochise County display a standard concrete slab configuration. What distinguishes them is the level of integrity of such a large collection of similar structures. No other pre-WWII highway in Arizona has maintained such integrity. They are also historically noteworthy for their association with the Douglas-Rodeo Highway and U.S. 80. Alternately known as the Ocean-to-Ocean Highway, the road has served historically as the principal east-west transcontinental route across southern Arizona, carrying the heaviest traffic loads in the state. Built in the 1920s during a period of extensive highway construction in Arizona, these bridges were an integral part of this significant highway. The Jack Wood Wash Bridge is unaltered.

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

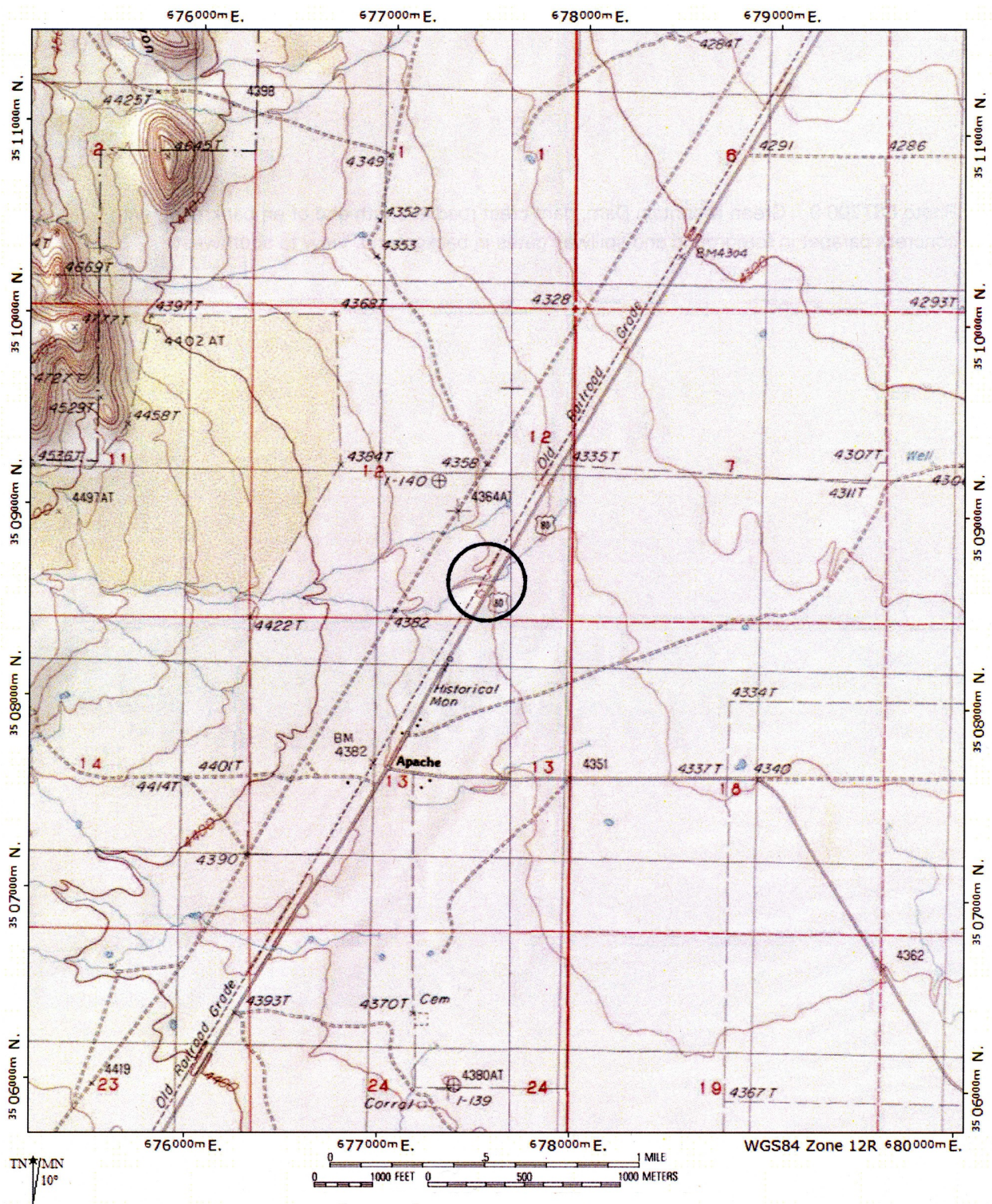
NATIONAL REGISTER ELIGIBILITY

individually eligible ☒ yes ☐ no
 contributes to district ☐ yes ☒ no

AREA OF SIGNIFICANCE: Transportation; Engineering
 PERIOD OF SIGNIFICANCE: 1929-1978
 THEME(S): Transportation: Highways

JACK WOOD WASH BRIDGE

Structure No. 00061



LOCATION MAP

HISTORIC BRIDGE INVENTORY

Horseshoe Canyon Bridge

PROPERTY IDENTIFICATION

county	Cochise	inventory number	00063
milepost	411.86	inventory route	SR 80
location	47.2 mi E Jct US 191	feature intersected	Horseshoe Canyon
city/vicinity	Douglas	structure owner	Arizona Department of Transportation
USGS quad	Rodeo	UTM reference	12.682230.3516838

STRUCTURAL INFORMATION

main span number	3	main span type	101
appr. span number	0	appr. span type	
degree of skew	0	guardrail type	4
main span length	20.0	superstructure	concrete slab
structure length	60.0	substructure	concrete abutments, wingwalls and piers
roadway width	24.0	floor/decking	concrete deck with asphalt overlay
structure width	27.0	other features	AHD-standard concrete guardrails with slotted cutouts

HISTORICAL INFORMATION

construction date	1929	designer/engineer	Arizona Highway Department
project number	FAP 38 (Reo.)	builder/contractor	Veater & Davis, El Paso TX
info source:	ADOT bridge records	alteration date(s)	
		alterations	guardrail replaced with Thrie beam in one panel

NATIONAL REGISTER EVALUATION

For additional information, see "Vehicular Bridges in Arizona 1880-1978" National Register Multiple Property Documentation Form

inventory score	44	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A <u>x</u> B <u> </u> C <u>x</u>
program comment	-	signif. statement	well-preserved example of AHD standard bridge design

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
5700 Jackdaw Drive
Loveland, Colorado 80537
1 October 2018

HORSESHOE CANYON BRIDGE

Structure No. 00063



PHOTO INFORMATION

date of photo.: March 2018

view direction: northeast north

photo no.: DSCF5979 DSCF5980

HORSESHOE CANYON BRIDGE

Structure No. 00063

CONSTRUCTION HISTORY

When Arizona was designated as a state in 1912, the Borderland Highway extended from Yuma to Phoenix, Tucson, past Bisbee and on to Douglas. There the improved route stopped. During the 1910s a dirt route was extended from Douglas northeast along the El Paso & Southwestern Railroad to the New Mexico border. Later designated as the Douglas-Rodeo Highway, a part of U.S. Highway 80, this was improved during the 1920s in segments beginning in Douglas. In May 1928 AHD let the contract for some twelve miles of highway under Federal Aid Project 14-A (Reopened) to S.Y. Faucett of Blythe, CA. Costing little more than \$84,750, this section involved construction of eight major bridges [Structure Nos. **00054, 00055, 00056, 00057, 00064, 00065, 00066** and **00067**]. Blythe's crew had almost completed construction in June 1929, when the highway department advertised for proposals for the final segment of the Douglas-Rodeo Highway. Extending some 26½ miles from the northern terminus of Faucett's section to the New Mexico state line, this was designated Federal Aid Project 38-1 (Reopened). FAP38-1 involved construction of fourteen bridges and culverts [including Structure Nos. **00058, 00059, 00060, 00061, 00062, 00063, 00068, 00069, 00070** and **00071**]. In July AHD awarded the contract to Veater and Davis for \$184,559. The El Paso-based company began work that summer under AHD Resident Engineer W.J. Tavenor. By the end of the year they had the project 63% completed. By the following March they were done. The Douglas-Rodeo Highway carried interstate traffic over the following years until its replacement by Interstate 10. The roadway was widened and graded and eventually paved, and several of the bridges [**00054, 00055, 00056, 00057, 00062**] were modified with the replacement of their guardrails. The Douglas-Rodeo Highway is now designated State Route 80.

SIGNIFICANCE STATEMENT

The bridges along the Douglas-Rodeo Highway were all concrete slab structures, technologically important as representative examples of AHD bridge construction. The Arizona State Engineer delineated standardized designs for concrete slab and girder bridges as early as 1912, updating them occasionally in subsequent years.. As the state assumed greater responsibility for bridge design and construction, these structural types received widespread use on Arizona's roads in the 1920s and 1930s with few technological advances. These bridges in Cochise County display a standard concrete slab configuration. What distinguishes them is the level of integrity of such a large collection of similar structures. No other pre-WWII highway in Arizona has maintained such integrity. They are also historically noteworthy for their association with the Douglas-Rodeo Highway and U.S. 80. Alternately known as the Ocean-to-Ocean Highway, the road has served historically as the principal east-west transcontinental route across southern Arizona, carrying the heaviest traffic loads in the state. Built in the 1920s during a period of extensive highway construction in Arizona, these bridges were an integral part of this significant highway. Other than the repair of a section of guardrail, the Horseshoe Canyon Bridge is unaltered.

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

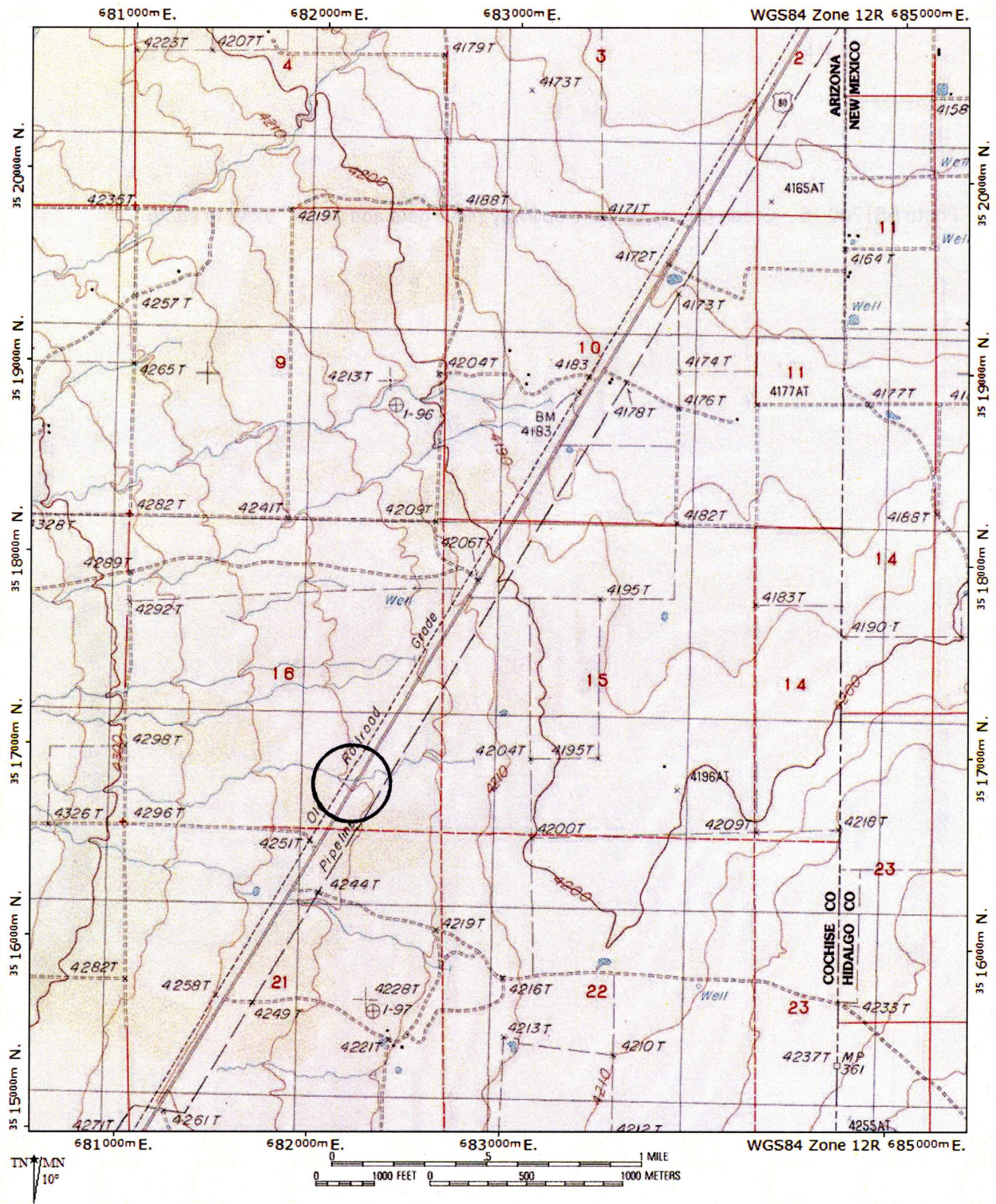
NATIONAL REGISTER ELIGIBILITY

individually eligible ☒ yes ☐ no
contributes to district ☐ yes ☒ no

AREA OF SIGNIFICANCE: Transportation; Engineering
PERIOD OF SIGNIFICANCE: 1929-1978
THEME(S): Transportation: Highways

HORSESHOE CANYON BRIDGE

Structure No. 00063



LOCATION MAP

HISTORIC BRIDGE INVENTORY

Wash Bridge

PROPERTY IDENTIFICATION

county	Cochise	inventory number	00068
milepost	393.65	inventory route	SR 80
location	29.0 mi E Jct US 191	feature intersected	dry wash
city/vicinity	Douglas	structure owner	Arizona Department of Transportation
USGS quad	Pedregosa Mountains	UTM reference	12.664640.3493194

STRUCTURAL INFORMATION

main span number	2	main span type	1 04
appr. span number	0	appr. span type	
degree of skew	0	guardrail type	4
main span length	40.0	superstructure	concrete deck girder
structure length	80.0	substructure	concrete abutments, wingwalls and pier
roadway width	24.1	floor/decking	concrete deck with asphalt overlay
structure width	26.5	other features	AHD-standard concrete guardrails with slotted cutouts

HISTORICAL INFORMATION

construction date	1929	designer/engineer	Arizona Highway Department
project number	FAP 38 (Reo.)	builder/contractor	Veater & Davis, El Paso TX
info source:	ADOT bridge records	alteration date(s)	
		alterations	

NATIONAL REGISTER EVALUATION

inventory score	43	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A <u>x</u> B <u> </u> C <u>x</u>
program comment	-	signif. statement	well-preserved example of AHD standard bridge design

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
5700 Jackdaw Drive
Loveland, Colorado 80537
1 October 2018

WASH BRIDGE

Structure No. 00068



PHOTO INFORMATION

date of photo.: March 2018

view direction: north northwest

photo no.: DSCF5944 DSCF5945

CONSTRUCTION HISTORY

When Arizona was designated as a state in 1912, the Borderland Highway extended from Yuma to Phoenix, Tucson, past Bisbee and on to Douglas. There the improved route stopped. During the 1910s a dirt route was extended from Douglas northeast along the El Paso & Southwestern Railroad to the New Mexico border. Later designated as the Douglas-Rodeo Highway, a part of U.S. Highway 80, this was improved during the 1920s in segments beginning in Douglas. In May 1928 AHD let the contract for some twelve miles of highway under Federal Aid Project 14-A (Reopened) to S.Y. Faucett of Blythe, CA. Costing little more than \$84,750, this section involved construction of eight major bridges [Structure Nos. **00054, 00055, 00056, 00057, 00064, 00065, 00066** and **00067**]. Blythe's crew had almost completed construction in June 1929, when the highway department advertised for proposals for the final segment of the Douglas-Rodeo Highway. Extending some 26½ miles from the northern terminus of Faucett's section to the New Mexico state line, this was designated Federal Aid Project 38-1 (Reopened). FAP38-1 involved construction of fourteen bridges and culverts [including Structure Nos. **00058, 00059, 00060, 00061, 00062, 00063, 00068, 00069, 00070** and **00071**]. In July AHD awarded the contract to Veater and Davis for \$184,559. The El Paso-based company began work that summer under AHD Resident Engineer W.J. Tavenor. By the end of the year they had the project 63% completed. By the following March they were done. The Douglas-Rodeo Highway carried interstate traffic over the following years until its replacement by Interstate 10. The roadway was widened and graded and eventually paved, and several of the bridges [**00054, 00055, 00056, 00057, 00062, 00064, 00065, 00066, 00067**] were modified with the replacement of their guardrails. The Douglas-Rodeo Highway is now designated State Route 80.

SIGNIFICANCE STATEMENT

The bridges along the Douglas-Rodeo Highway were all concrete slab structures, technologically important as representative examples of AHD bridge construction. The Arizona State Engineer delineated standardized designs for concrete slab and girder bridges as early as 1912, updating them occasionally in subsequent years.. As the state assumed greater responsibility for bridge design and construction, these structural types received widespread use on Arizona's roads in the 1920s and 1930s with few technological advances. These bridges in Cochise County display a standard concrete slab configuration. What distinguishes them is the level of integrity of such a large collection of similar structures. No other pre-WWII highway in Arizona has maintained such integrity. They are also historically noteworthy for their association with the Douglas-Rodeo Highway and U.S. 80. Alternately known as the Ocean-to-Ocean Highway, the road has served historically as the principal east-west transcontinental route across southern Arizona, carrying the heaviest traffic loads in the state. Built in the 1920s during a period of extensive highway construction in Arizona, these bridges were an integral part of this significant highway. This bridge is unaltered.

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

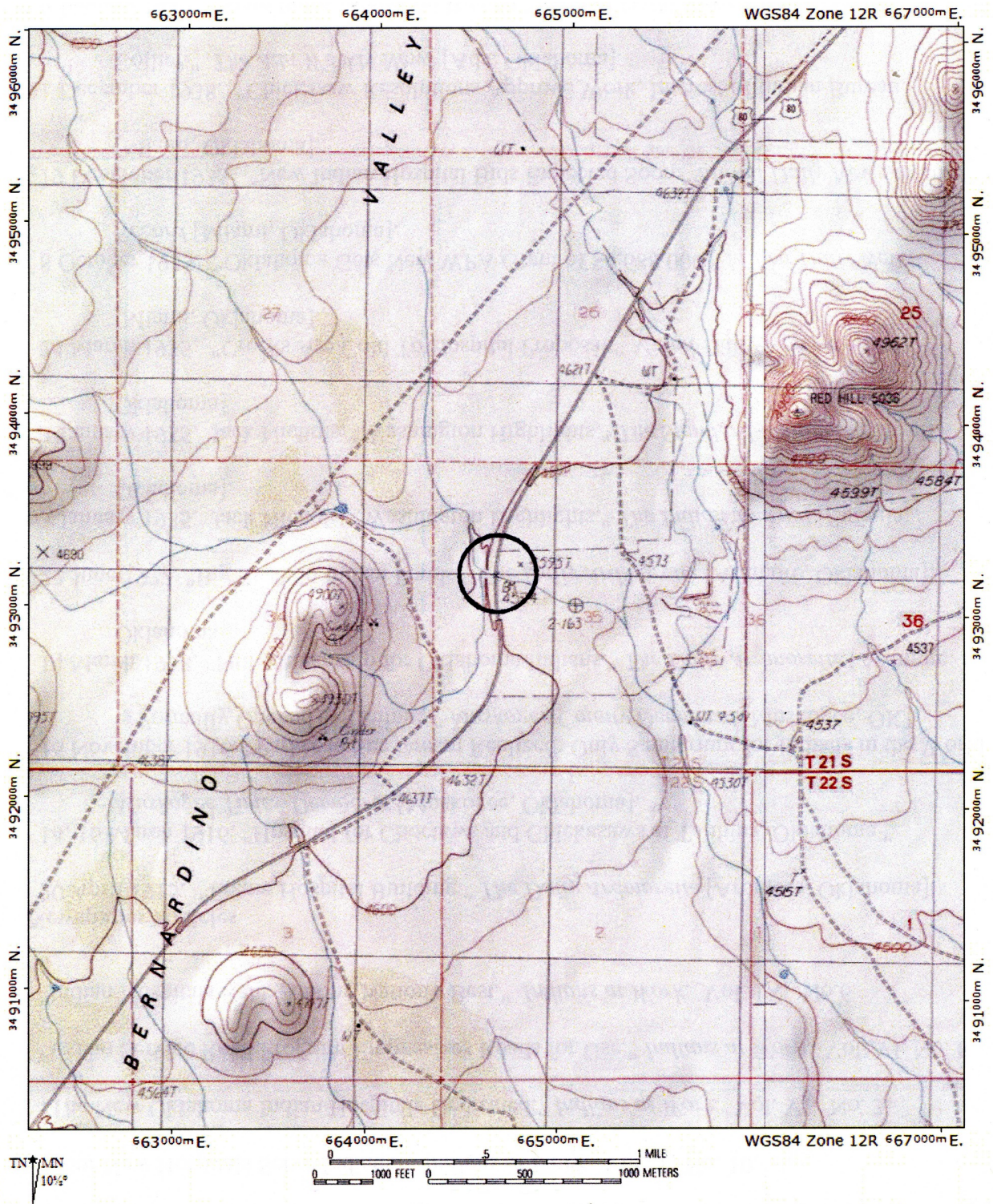
NATIONAL REGISTER ELIGIBILITY

individually eligible ☒ yes ☐ no
 contributes to district ☐ yes ☒ no

AREA OF SIGNIFICANCE: Transportation; Engineering
 PERIOD OF SIGNIFICANCE: 1929-1978
 THEME(S): Transportation: Highways

WASH BRIDGE

Structure No. 00068



LOCATION MAP

HISTORIC BRIDGE INVENTORY

Mulberry Canyon Bridge

PROPERTY IDENTIFICATION

county	Cochise	inventory number	00069
milepost	394.67	inventory route	SR 80
location	30.0 mi E Jct US 191	feature intersected	Mulberry Canyon
city/vicinity	Douglas	structure owner	Arizona Department of Transportation
USGS quad	Pedregosa Mountains	UTM reference	12.665352.3494646

STRUCTURAL INFORMATION

main span number	2	main span type	1 04
appr. span number	0	appr. span type	
degree of skew	30	guardrail type	4
main span length	32.0	superstructure	concrete deck girder
structure length	64.0	substructure	concrete abutments, wingwalls and pier
roadway width	24.0	floor/decking	concrete deck with asphalt overlay
structure width	27.0	other features	AHD-standard concrete guardrails with slotted cutouts

HISTORICAL INFORMATION

construction date	1929	designer/engineer	Arizona Highway Department
project number	FAP 38 (Reo.)	builder/contractor	Veater & Davis, El Paso TX
info source:	ADOT bridge records	alteration date(s)	
		alterations	guardrail replaced with Thrie beam in one panel

NATIONAL REGISTER EVALUATION

For additional information, see "Vehicular Bridges in Arizona 1880-1978" National Register Multiple Property Documentation Form			
inventory score	43	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A <u>x</u> B <u> </u> C <u>x</u>
program comment	-	signif. statement	well-preserved example of AHD standard bridge design

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
5700 Jackdaw Drive
Loveland, Colorado 80537
1 October 2018

MULBERRY CANYON BRIDGE

Structure No. 00069



PHOTO INFORMATION

date of photo.: March 2018

view direction: northeast west

photo no.: DSCF5948 DSCF5949

CONSTRUCTION HISTORY

When Arizona was designated as a state in 1912, the Borderland Highway extended from Yuma to Phoenix, Tucson, past Bisbee and on to Douglas. There the improved route stopped. During the 1910s a dirt route was extended from Douglas northeast along the El Paso & Southwestern Railroad to the New Mexico border. Later designated as the Douglas-Rodeo Highway, a part of U.S. Highway 80, this was improved during the 1920s in segments beginning in Douglas. In May 1928 AHD let the contract for some twelve miles of highway under Federal Aid Project 14-A (Reopened) to S.Y. Faucett of Blythe, CA. Costing little more than \$84,750, this section involved construction of eight major bridges [Structure Nos. **00054, 00055, 00056, 00057, 00064, 00065, 00066** and **00067**]. Blythe's crew had almost completed construction in June 1929, when the highway department advertised for proposals for the final segment of the Douglas-Rodeo Highway. Extending some 26½ miles from the northern terminus of Faucett's section to the New Mexico state line, this was designated Federal Aid Project 38-1 (Reopened). FAP38-1 involved construction of fourteen bridges and culverts [including Structure Nos. **00058, 00059, 00060, 00061, 00062, 00063, 00068, 00069, 00070** and **00071**]. In July AHD awarded the contract to Veater and Davis for \$184,559. The El Paso-based company began work that summer under AHD Resident Engineer W.J. Tavenor. By the end of the year they had the project 63% completed. By the following March they were done. The Douglas-Rodeo Highway carried interstate traffic over the following years until its replacement by Interstate 10. The roadway was widened and graded and eventually paved, and several of the bridges [**00054, 00055, 00056, 00057, 00062, 00064, 00065, 00066, 00067**] were modified with the replacement of their guardrails. The Douglas-Rodeo Highway is now designated State Route 80.

SIGNIFICANCE STATEMENT

The bridges along the Douglas-Rodeo Highway were all concrete slab structures, technologically important as representative examples of AHD bridge construction. The Arizona State Engineer delineated standardized designs for concrete slab and girder bridges as early as 1912, updating them occasionally in subsequent years. As the state assumed greater responsibility for bridge design and construction, these structural types received widespread use on Arizona's roads in the 1920s and 1930s with few technological advances. These bridges in Cochise County display a standard concrete slab configuration. What distinguishes them is the level of integrity of such a large collection of similar structures. No other pre-WWII highway in Arizona has maintained such integrity. They are also historically noteworthy for their association with the Douglas-Rodeo Highway and U.S. 80. Alternately known as the Ocean-to-Ocean Highway, the road has served historically as the principal east-west transcontinental route across southern Arizona, carrying the heaviest traffic loads in the state. Built in the 1920s during a period of extensive highway construction in Arizona, these bridges were an integral part of this significant highway. Other than the repair of a section of guardrail, the Mulberry Canyon Bridge is unaltered.

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

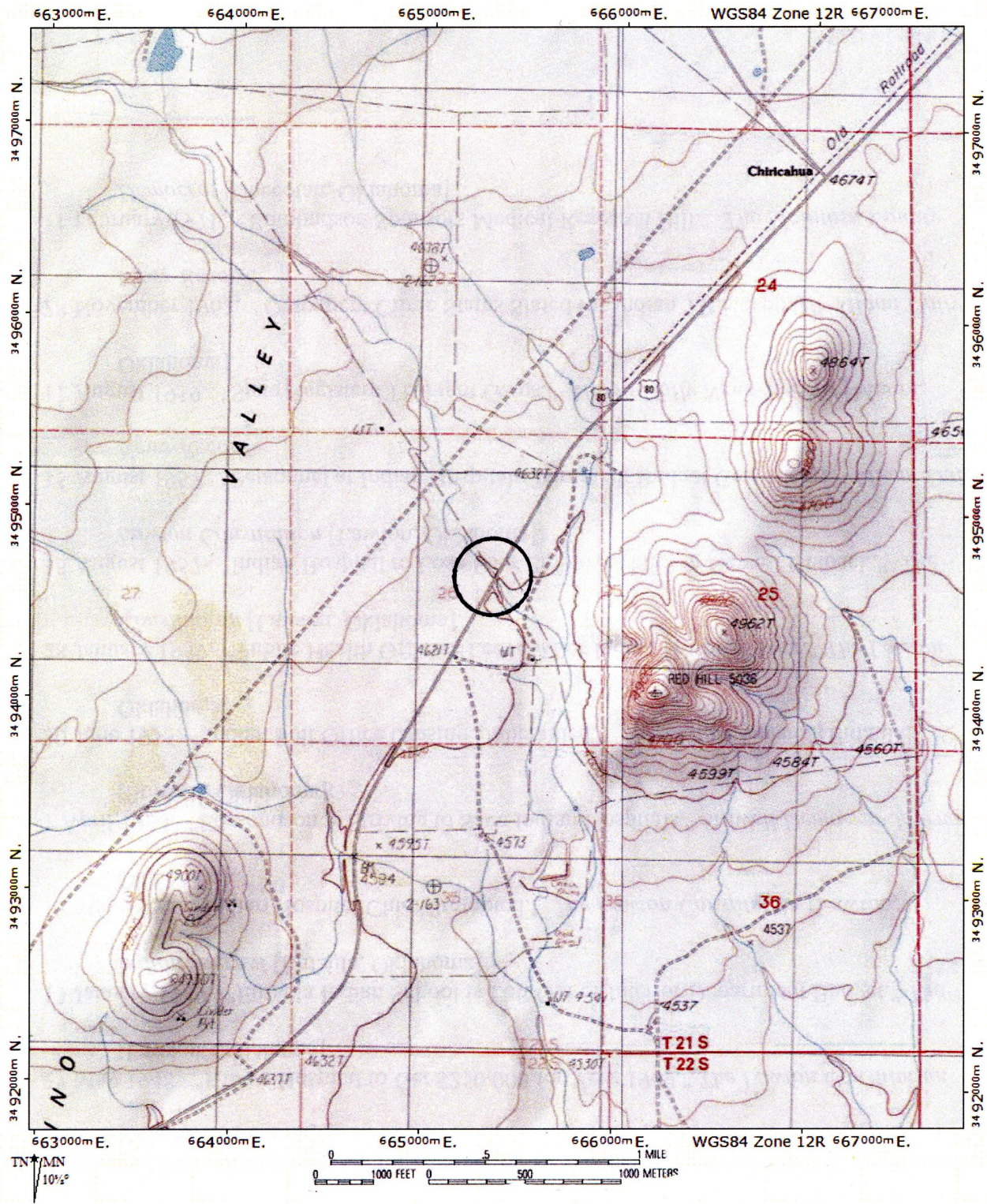
AREA OF SIGNIFICANCE: Transportation; Engineering

PERIOD OF SIGNIFICANCE: 1929-1978

THEME(S): Transportation: Highways

MULBERRY CANYON BRIDGE

Structure No. 00069



LOCATION MAP

HISTORIC BRIDGE INVENTORY

Wash Bridge

PROPERTY IDENTIFICATION

county	Cochise	inventory number	00071
milepost	400.56	inventory route	SR 80
location	35.9 mi E Jct US 191	feature intersected	Wet Wash
city/vicinity	Douglas	structure owner	Arizona Department of Transportation
USGS quad	Apache	UTM reference	12.677546.3508633

STRUCTURAL INFORMATION

main span number	1	main span type	104
appr. span number	0	appr. span type	
degree of skew	0	guardrail type	4
main span length	26.0	superstructure	concrete deck girder
structure length	30.0	substructure	concrete abutments, wingwalls
roadway width	24.0	floor/decking	concrete deck with asphalt overlay
structure width	27.0	other features	AHD-standard concrete guardrails with slotted cutouts

HISTORICAL INFORMATION

construction date	1929	designer/engineer	Arizona Highway Department
project number	FAP 38 (Reo.)	builder/contractor	Veater & Davis, El Paso TX
info source:	ADOT bridge records	alteration date(s)	1985
		alterations	

NATIONAL REGISTER EVALUATION

inventory score	42	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A <u>x</u> B <u> </u> C <u>x</u>
program comment	-	signif. statement	well-preserved example of AHD standard bridge design

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
5700 Jackdaw Drive
Loveland, Colorado 80537
1 October 2018

WASH BRIDGE

Structure No. 00071



PHOTO INFORMATION

date of photo.: March 2018

view direction: northeast north

photo no.: DSCF5958 DSCF5960

CONSTRUCTION HISTORY

When Arizona was designated as a state in 1912, the Borderland Highway extended from Yuma to Phoenix, Tucson, past Bisbee and on to Douglas. There the improved route stopped. During the 1910s a dirt route was extended from Douglas northeast along the El Paso & Southwestern Railroad to the New Mexico border. Later designated as the Douglas-Rodeo Highway, a part of U.S. Highway 80, this was improved during the 1920s in segments beginning in Douglas. In May 1928 AHD let the contract for some twelve miles of highway under Federal Aid Project 14-A (Reopened) to S.Y. Faucett of Blythe, CA. Costing little more than \$84,750, this section involved construction of eight major bridges [Structure Nos. **00054, 00055, 00056, 00057, 00064, 00065, 00066** and **00067**]. Blythe's crew had almost completed construction in June 1929, when the highway department advertised for proposals for the final segment of the Douglas-Rodeo Highway. Extending some 26½ miles from the northern terminus of Faucett's section to the New Mexico state line, this was designated Federal Aid Project 38-1 (Reopened). FAP38-1 involved construction of fourteen bridges and culverts [including Structure Nos. **00058, 00059, 00060, 00061, 00062, 00063, 00068, 00069, 00070** and **00071**]. In July AHD awarded the contract to Veater and Davis for \$184,559. The El Paso-based company began work that summer under AHD Resident Engineer W.J. Tavenor. By the end of the year they had the project 63% completed. By the following March they were done. The Douglas-Rodeo Highway carried interstate traffic over the following years until its replacement by Interstate 10. The roadway was widened and graded and eventually paved, and several of the bridges [**00054, 00055, 00056, 00057, 00062, 00064, 00065, 00066, 00067**] were modified with the replacement of their guardrails. The Douglas-Rodeo Highway is now designated State Route 80.

SIGNIFICANCE STATEMENT

The bridges along the Douglas-Rodeo Highway were all concrete slab structures, technologically important as representative examples of AHD bridge construction. The Arizona State Engineer delineated standardized designs for concrete slab and girder bridges as early as 1912, updating them occasionally in subsequent years.. As the state assumed greater responsibility for bridge design and construction, these structural types received widespread use on Arizona's roads in the 1920s and 1930s with few technological advances. These bridges in Cochise County display a standard concrete slab configuration. What distinguishes them is the level of integrity of such a large collection of similar structures. No other pre-WWII highway in Arizona has maintained such integrity. They are also historically noteworthy for their association with the Douglas-Rodeo Highway and U.S. 80. Alternately known as the Ocean-to-Ocean Highway, the road has served historically as the principal east-west transcontinental route across southern Arizona, carrying the heaviest traffic loads in the state. Built in the 1920s during a period of extensive highway construction in Arizona, these bridges were an integral part of this significant highway. This bridge is unaltered.

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

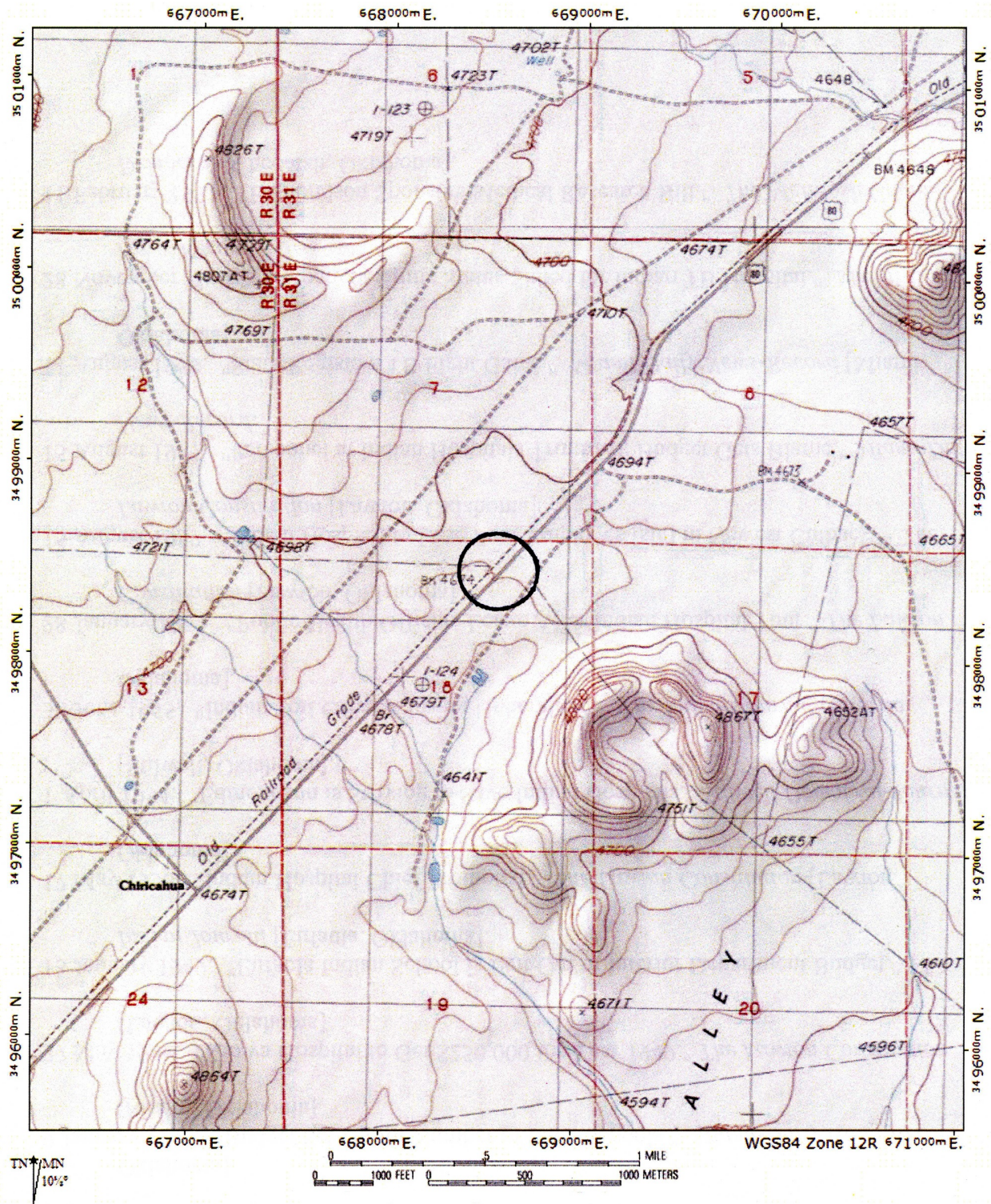
NATIONAL REGISTER ELIGIBILITY

individually eligible ☒ yes ☐ no
 contributes to district ☐ yes ☒ no

AREA OF SIGNIFICANCE: Transportation; Engineering
 PERIOD OF SIGNIFICANCE: 1929-1978
 THEME(S): Transportation: Highways

WASH BRIDGE

Structure No. 00071



LOCATION MAP

HISTORIC BRIDGE INVENTORY

Lowell Arch Bridge

PROPERTY IDENTIFICATION

county	Cochise	inventory number	00130
milepost	348.15	inventory route	SR 80
location	4.5 mi East Jct SR 92	feature intersected	Mule Gulch
city/vicinity	Bakerville	structure owner	Arizona Department of Transportation
USGS quad	Bisbee NE	UTM reference	12.611643.3479163

STRUCTURAL INFORMATION

main span number	1	main span type	1 1 1
appr. span number	0	appr. span type	
degree of skew	0	guardrail type	4
main span length	60.0	superstructure	concrete filled spandrel arch
structure length	105.0	substructure	concrete abutments and wingwalls w/ spread footings
roadway width	30.0	floor/decking	asphalt roadway over earth fill
structure width	33.5	other features	plain spandrel walls; moulded concrete guardrails w/ concrete doghouse guardrails

HISTORICAL INFORMATION

construction date	1911	designer/engineer	Arizona State Engineer
project number	none	builder/contractor	R. Tooney & Sons
info source:	ADOT bridge records	alteration date(s)	1934
		alterations	arch barrel widened; spandrels and guardrails replaced

NATIONAL REGISTER EVALUATION

inventory score	63	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/>
program comment	-	signif. statement	one of Arizona's earliest bridges, modified by WPA

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
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Loveland, Colorado 80537
1 October 2018

LOWELL ARCH BRIDGE

Structure No. 00130



PHOTO INFORMATION

date of photo.: March 2018

view direction: southeast northeast

photo no.: DSCF5917 DSCF5920

CONSTRUCTION HISTORY

In 1910 the Arizona Territorial Engineer's Office completed the design and survey for a 22.7-mile territorial highway between Bisbee and Douglas. The highway's most substantial structure, designed by the Territorial Engineer in June 1911, was a medium-span concrete arch over Mule Gulch about six miles east of Bisbee. Composed of over 156 cubic yards of concrete, the bridge featured a 60-foot span and 16-foot roadway. The elliptical arch sprang from reinforced concrete abutments; it was finished with concrete guardrails with chamfered square balusters and incised panels on the spandrel walls. After advertising for competitive bids, the territory awarded a contract to R. Toohey and Son on October 18, 1910. Toohey completed the roadway and the Lowell Arch Bridge over a year later, in December 1911.

The bridge functioned without alteration until the early 1930s, when the Arizona Highway Department undertook a major highway widening project on U.S. Highway 80. In May 1934 AHD contracted with William Peper and Leo Frost of Phoenix under National Recovery Highway Project 11-A to widen the Lowell Arch. The contractors extended the abutments and wingwalls and added 14 feet of width to the arch itself by extending the arch barrel on both sides. The original spandrels were thus covered up and the guardrails were replaced with the present pierced concrete guards with paneled bulkheads. Peper and Frost completed the alterations in September 1934 for \$35,559. The Lowell Arch Bridge has since carried mainline traffic on U.S. 80 without further alteration.

SIGNIFICANCE STATEMENT

Forming a vital link between the copper mines of Bisbee and the Phelps Dodge smelter at Douglas, the Bisbee-Douglas Highway was the most expensive road-building project undertaken by the Arizona Territorial Assembly, costing almost \$78,000. The Lowell Arch provided an important crossing on this early route. It was the only filled spandrel arch and one of only two concrete arches built by the Territorial Engineer (other: the open spandrel Tempe Bridge, demolished). As such this structure is a historically and technologically significant early Arizona bridge. The subsequent alteration has obscured most of the bridge's original fabric, however, diminishing its structural integrity. The fact that this alteration occurred during the bridge's period of significance and represents standard bridge detailing of the 1930s mitigates this loss. Although altered, the Lowell Arch Bridge is still one of the state's more noteworthy structures.

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

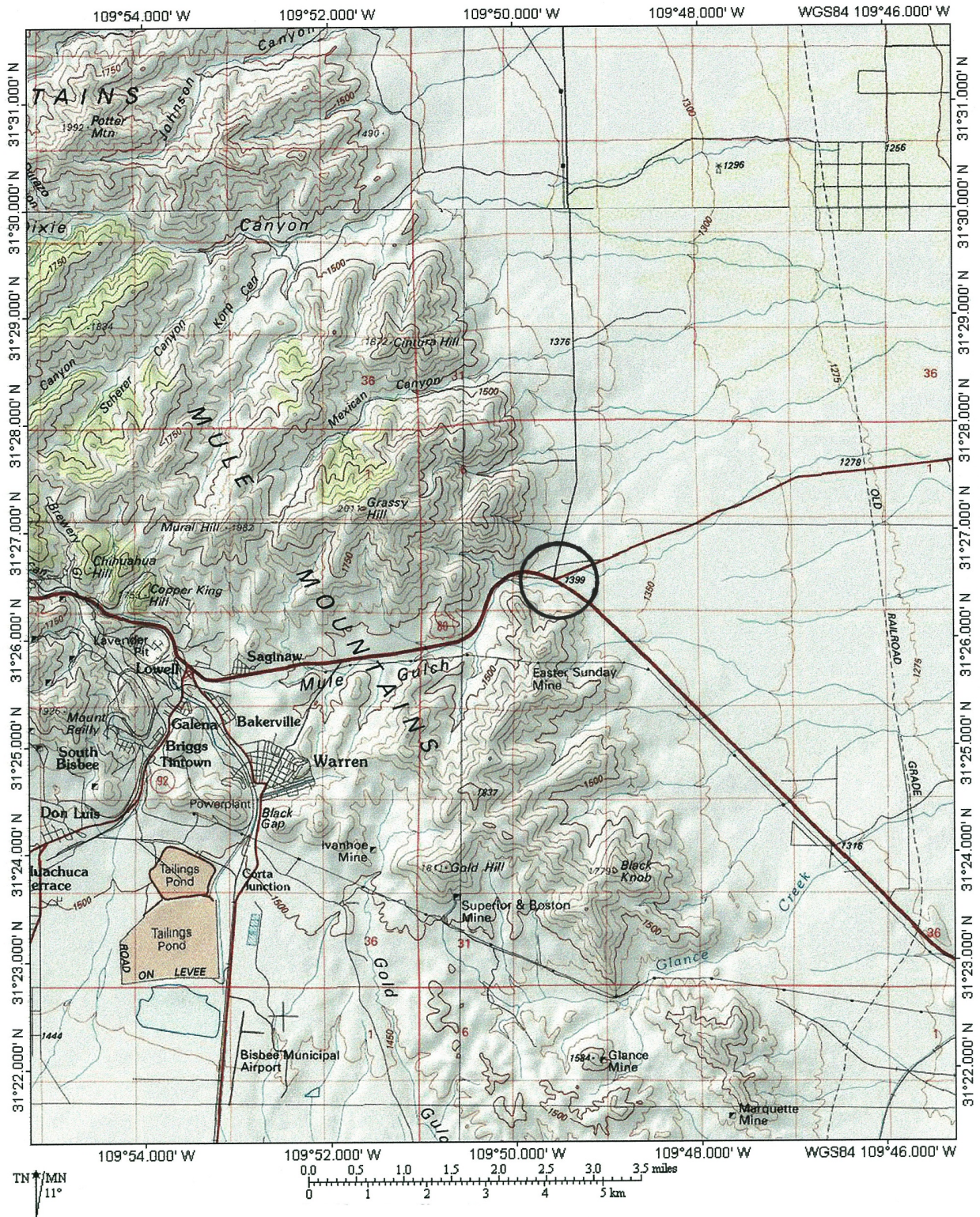
NATIONAL REGISTER ELIGIBILITY

individually eligible ☒ yes ☐ no
 contributes to district ☐ yes ☒ no

AREA OF SIGNIFICANCE: Transportation; Engineering
 PERIOD OF SIGNIFICANCE: 1911-1978
 THEME(S): Transportation: Highways

LOWELL ARCH BRIDGE

Structure No. 00130



LOCATION MAP

HISTORIC BRIDGE INVENTORY

Benson Highway Underpass

PROPERTY IDENTIFICATION

county	Cochise	inventory number	00262
milepost	305.79	inventory route	SR 80
location	3.4 mi East Jct I 10	feature intersected	SR B 10
city/vicinity	Benson	structure owner	Arizona Department of Transportation
USGS quad	Benson	UTM reference	12.567050.3536933

STRUCTURAL INFORMATION

main span number	4	main span type	201
appr. span number	0	appr. span type	
degree of skew	45	guardrail type	4
main span length	43.0	superstructure	concrete slab
structure length	135.0	substructure	concrete abutments, wingwalls and piers
roadway width	24.0	floor/decking	concrete deck
structure width	26.8	other features	solid concrete guardrails with Art Moderne scoring

HISTORICAL INFORMATION

construction date	1942	designer/engineer	Arizona Highway Department
project number	FAP 79-D(3)41	builder/contractor	Pearson & Dickerson, Prescott AZ
info source:	ADOT bridge records	alteration date(s)	
		alterations	

NATIONAL REGISTER EVALUATION

For additional information, see "Vehicular Bridges in Arizona 1880-1978" National Register Multiple Property Documentation Form			
inventory score	46	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A _____ B _____ C <u>x</u>
program comment	-	signif. statement	well-preserved example of ASHD architectural treatment on urban grade separation

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
5700 Jackdaw Drive
Loveland, Colorado 80537
1 October 2018

BENSON HIGHWAY UNDERPASS

Structure No. 00262



PHOTO INFORMATION

date of photo.: March 2018

view direction: west southeast

photo no.: DSCF5736 DSCF5739

CONSTRUCTION HISTORY

In 1940 the Arizona Highway Department began planning an interchange on the eastern periphery of Benson that would separate the traffic from a highway, a city street and a railroad. The project was part of a broader effort then underway by the department to improve the Benson-Douglas Highway (U.S. 80) across southeastern Arizona. The project included two adjacent underpasses to carry U.S. 80 under the double tracks of the Southern Pacific Railroad and the other street. As delineated by the department, the highway underpass was configured as a concrete slab structure, with four spans—the longest of which extended 43 feet—supported by concrete piers and abutments. It featured minimalistic proportions and Art Moderne architectural detailing, with slightly arched concrete slab spans, bullnosed piers and scored parallel lines on the concrete parapets.

AHD designated the highway underpass construction as Federal Aid Project 79-D(3)41, and the bridge department engineers completed drawings for the highways and structures late in 1940. In the spring of 1941 AHD awarded separate construction contracts to Pearson & Dickerson for the two structures and adjacent highway. Under the direction of AHD Resident Engineer P.F. Glendenning, the Prescott-based contractors worked through the rest of 1941. Pearson & Dickerson completed the structures and approaches the following January. Since its completion, the Benson Highway Underpass has carried mainline highway traffic in essentially unaltered condition.

SIGNIFICANCE STATEMENT

The Benson Highway Underpass is one of several structures built by the Arizona Highway Department during the Great Depression in an extensive program to eliminate on-grade highway crossings. Like many other grade separations designed by AHD at the time, this structure featured a distinctive architectural treatment. Rather than use a classical revival idiom as it had for the Stone Avenue Underpass [07987] in Tucson, the Casa Grande Underpass [00143] and the Winslow Underpass [00194], AHD instead used a simpler, more modern treatment. The Benson Underpass is one of a handful of such structures to trade on the Art Moderne style (others: Peoria Underpass [00160], Gila Bend Overpass [00618] and the 17th Avenue Underpass [07770], all in Maricopa County). Its carefully considered proportions and scored concrete detailing distinguish it among the state's urban grade separations. An integral part of an important transcontinental highway, the Benson Highway Underpass is a well-preserved example of Depression-era bridge construction.

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

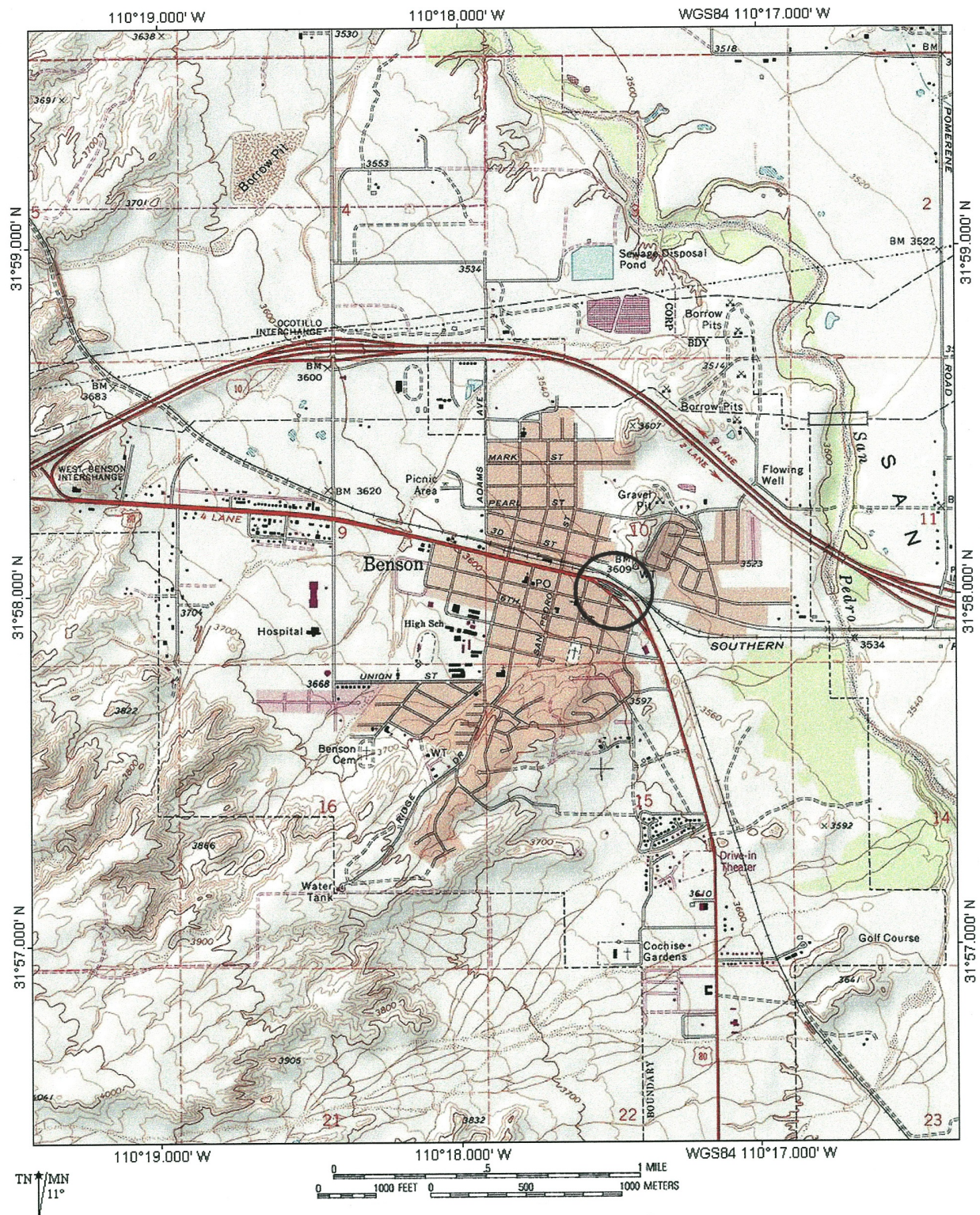
NATIONAL REGISTER ELIGIBILITY

individually eligible ☒ yes ☐ no
 contributes to district ☐ yes ☒ no

AREA OF SIGNIFICANCE: Transportation; Engineering
 PERIOD OF SIGNIFICANCE: 1942-1978
 THEME(S): Transportation: Highways

BENSON HIGHWAY UNDERPASS

Structure No. 00262



LOCATION MAP

HISTORIC BRIDGE INVENTORY

Benson Railroad Underpass

PROPERTY IDENTIFICATION

county	Cochise	inventory number	00264
milepost	305.85	inventory route	Southern Pacific Railroad
location	2.1 mi E Jct I 10	feature intersected	SR B 10
city/vicinity	Benson	structure owner	Union Pacific Railroad
USGS quad	Benson	UTM reference	12.567103.3536922

STRUCTURAL INFORMATION

main span number	2	main span type	207
appr. span number	0	appr. span type	
degree of skew	54	guardrail type	4
main span length	27.0	superstructure	concrete rigid frame
structure length	66.0	substructure	concrete abutments, wingwalls and pier
roadway width	0.0	floor/decking	ballasted railroad deck
structure width	0.0	other features	

HISTORICAL INFORMATION

construction date	1942	designer/engineer	Arizona Highway Department
project number	FAGH 137-E(1)41	builder/contractor	Pearson & Dickerson, Prescott AZ
info source:	ADOT bridge records	alteration date(s)	
		alterations	

NATIONAL REGISTER EVALUATION

inventory score	51	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A _____ B _____ C <u>x</u>
program comment	-	signif. statement	well-preserved example of ASHD architectural treatment on urban grade separation

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
5700 Jackdaw Drive
Loveland, Colorado 80537
1 October 2018

BENSON RAILROAD UNDERPASS

Structure No. 00264



PHOTO INFORMATION

date of photo.: March 2018

view direction: southwest east

photo no.: DSCF5742 DSCF5748

CONSTRUCTION HISTORY

In 1940 the Arizona Highway Department began planning an interchange on the eastern periphery of the town of Benson that would separate the traffic from a highway, a city street and a railroad. The project was part of a broader effort then underway by the department to improve the Benson-Douglas Highway (U.S. 80) across southeastern Arizona. The project included two adjacent underpasses to carry U.S. 80 under the double tracks of the Southern Pacific Railroad and the other street. As delineated by the department that year, the railroad underpass was configured as a concrete rigid frame structure, with two 27-foot spans staggered to accommodate the skewed angle of the highway-railroad intersection. It featured minimalistic proportions and Art Moderne architectural detailing, with scored parallel lines in the concrete spandrel walls, radiused corners in the concrete parapets and the words "Benson 1941" rendered in Art Moderne aluminum letters applied to both portals.

AHD designated the railroad underpass project as Project SN-FAGH 137-E(1), and the bridge department engineers completed drawings for the highways and structures late in 1940. In the spring of 1941 AHD awarded separate construction contracts to Pearson & Dickerson for the two structures and adjacent highway. Under the direction of AHD Resident Engineer P.F. Glendenning, the Prescott-based contractors worked through the rest of 1941. Pearson & Dickerson completed the structures and approaches the following January. Since its completion, the Benson Railroad Underpass has carried highway traffic in essentially unaltered condition.

SIGNIFICANCE STATEMENT

The Benson Underpass is one of several structures built by the Arizona Highway Department during the Great Depression in an extensive program to eliminate on-grade highway crossings. Like many other grade separations designed by AHD at the time, this structure featured a distinctive architectural treatment. Rather than use a classical revival idiom as it had for the Stone Avenue Underpass [07987] in Tucson, the Casa Grande Underpass [00143] and the Winslow Underpass [00194], AHD instead used a simpler, more modern treatment. The Benson Underpass is one of a handful of such structures to trade on the Art Moderne style (others: Peoria Underpass [00160], Gila Bend Overpass [00618] and the 17th Avenue Underpass [07770], all in Maricopa County). Its carefully considered proportions and scored concrete detailing distinguish it among the state's urban grade separations. An integral part of an important transcontinental highway, the Benson Highway Underpass is a well-preserved example of Depression-era bridge construction.

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

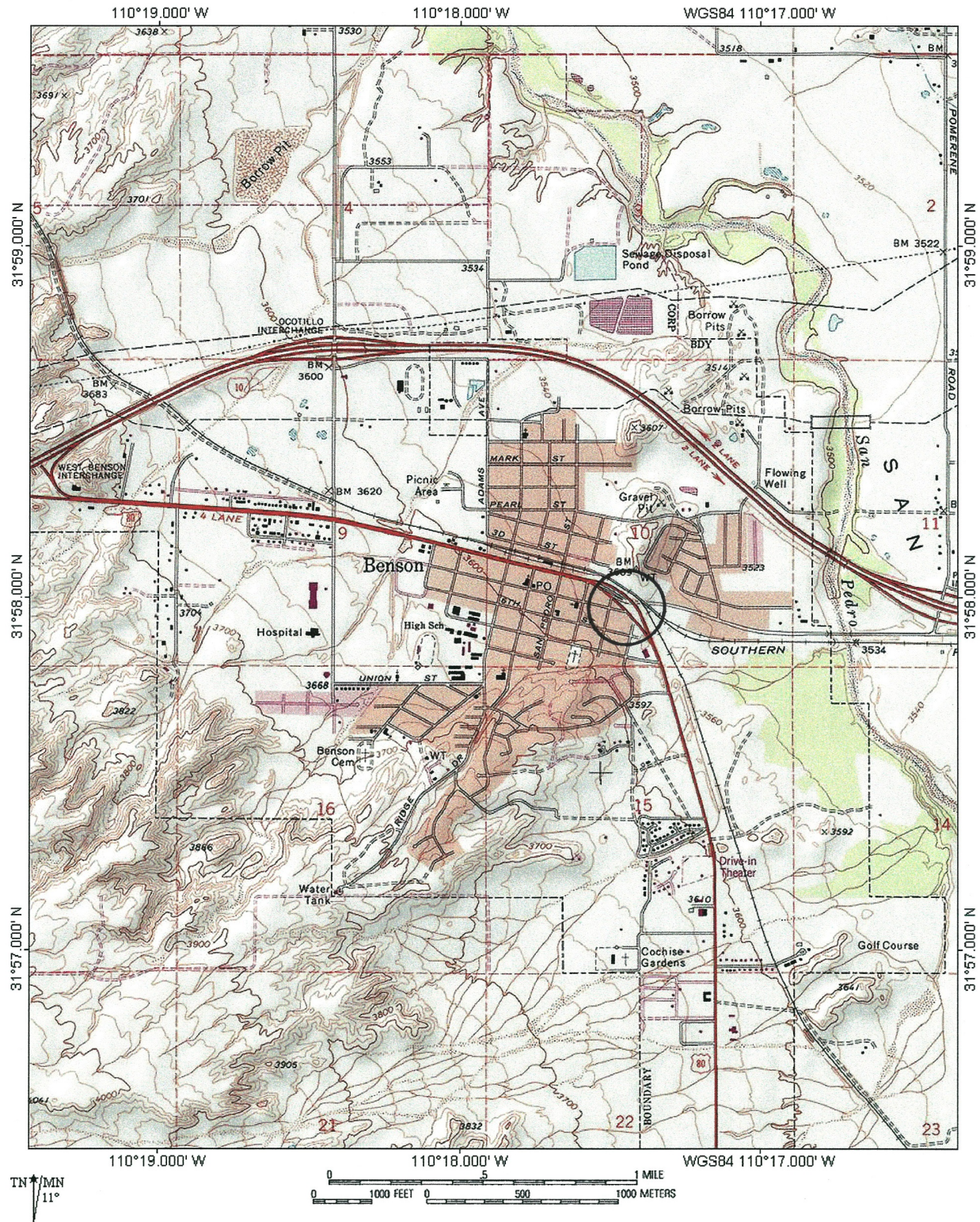
NATIONAL REGISTER ELIGIBILITY

individually eligible ☒ yes ☐ no
 contributes to district ☐ yes ☒ no

AREA OF SIGNIFICANCE: Transportation; Engineering
 PERIOD OF SIGNIFICANCE: 1942-1978
 THEME(S): Transportation: Highways

BENSON RAILROAD UNDERPASS

Structure No. 00264



LOCATION MAP

HISTORIC BRIDGE INVENTORY

Benson Bridge

PROPERTY IDENTIFICATION

county	Cochise	inventory number	00350
milepost	306.45	inventory route	SR B 10
location	0.7 mi East Jct SR 80	feature intersected	San Pedro River
city/vicinity	Benson	structure owner	Arizona Department of Transportation
USGS quad	Benson	UTM reference	12.568155.3536778

STRUCTURAL INFORMATION

main span number	3	main span type	403
appr. span number	0	appr. span type	
degree of skew	12	guardrail type	9
main span length	160.0	superstructure	steel cantilever plate deck girder
structure length	402.0	substructure	concrete abutments, wingwalls and piers
roadway width	30.0	floor/decking	concrete deck
structure width	35.0	other features	concrete Jersey barrier guardrails with Thrie beams at approaches

HISTORICAL INFORMATION

construction date	1950	designer/engineer	Arizona Highway Department
project number	FAP 137(6)	builder/contractor	R.H. Martin Contracting Company, Tucson AZ
info source:	ADOT bridge records	alteration date(s)	ca1990
		alterations	guardrails replaced with Jersey barriers

NATIONAL REGISTER EVALUATION

For additional information, see "Vehicular Bridges in Arizona 1880-1978"
National Register Multiple Property Documentation Form

inventory score	58	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A _____ B _____ C <u>x</u> _____
program comment	-	signif. statement	long-span example of uncommon structural type, altered

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
5700 Jackdaw Drive
Loveland, Colorado 80537
1 October 2018

BENSON BRIDGE

Structure No. 00350



PHOTO INFORMATION

date of photo.: March 2018

view direction: east north

photo no.: DESCF5753 DSCF5777

BENSON BRIDGE

Structure No. 00350

CONSTRUCTION HISTORY

Early in 1949 the Arizona Highway Department began planning for the replacement of the existing multiple-span bridge over the San Pedro River on the eastern periphery of Benson. The steel truss structure here had formed a regionally important crossing for decades, but its narrow roadway was creating a bottleneck for traffic. As delineated by AHD engineers, the replacement structure would be comprised of three long steel girder spans—a 160-foot center span flanked by a 105-foot approach on each end—supported continuously by reinforced concrete abutments and piers over concrete piles. Each span was made up of two deep deck girders, steel angle lateral braces and with riveted angle flanges and web stiffeners. The central span cantilevered over the piers, tapering slightly to the smaller depth of the approach spans. This effectively increased its allowable span length and simplified the bearing conditions by reducing the number of cast steel bearing shoes at each pier to two. The girders carried a 30-foot-wide reinforced concrete deck, which was bounded on both sides by aluminum guardrails.

On May 20, 1949, AHD awarded the contract for the bridge to the R.H. Martin Contracting Company of Tucson. A Martin crew first dismantled the existing bridge and stored the pieces nearby before beginning sub-structural excavation for the replacement structure. Martin used a steel superstructure fabricated in Phoenix by the Allison Steel Manufacturing Company, and, once the girders were in place, laid the concrete deck and installed the guardrails. In 1950 the bridge was completed. The Benson Bridge consumed almost 600,000 pounds of structural steel and cost \$217,290. It carried mainline traffic on U.S. Highway 80, until construction of Interstate 10 in 1971. More recently the bridge's guardrails were replaced with concrete Jersey barriers, as it now carries a business loop through Benson as part of the interstate highway system.

SIGNIFICANCE STATEMENT

The San Pedro River presented one of the most formidable obstacles to transcontinental traffic across Arizona on the Ocean-to-Ocean Highway (U.S. Highway 80). This crossing east of Benson is thus one of the more important on links along the highway's length. With three deck girder spans and an overall length of 400 feet, the Benson Bridge features one of the larger span lengths in the inventory. And its cantilevered construction has become something of a hallmark for Arizona highway bridges.

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

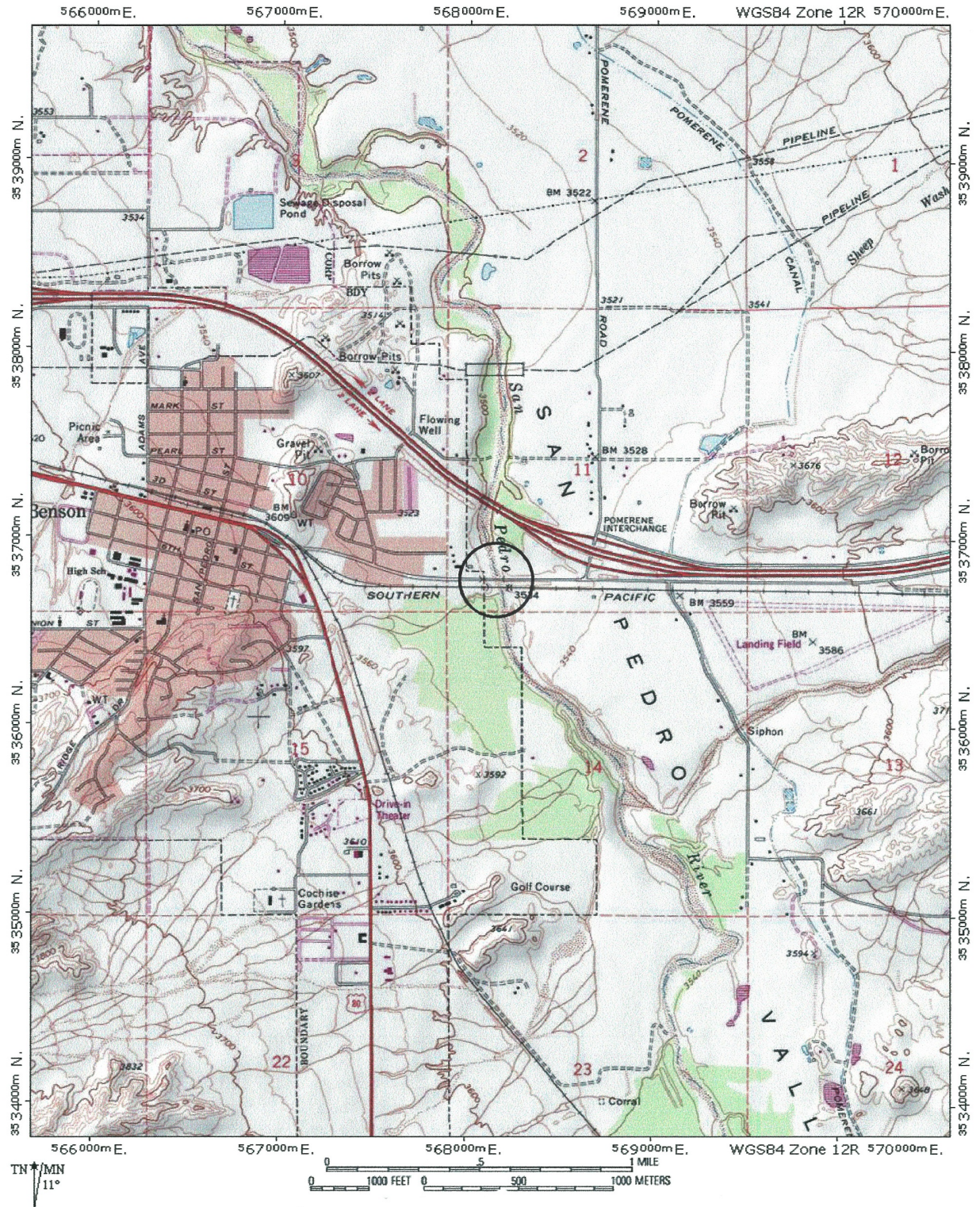
NATIONAL REGISTER ELIGIBILITY

individually eligible ☒ yes ☐ no
contributes to district ☐ yes ☒ no

AREA OF SIGNIFICANCE: Transportation; Engineering
PERIOD OF SIGNIFICANCE: 1950-1978
THEME(S): Transportation: Highways

BENSON BRIDGE

Structure No. 00350



LOCATION MAP

HISTORIC BRIDGE INVENTORY

Lowell Underpass

PROPERTY IDENTIFICATION

county	Cochise	inventory number	01033
milepost	343.57	inventory route	Lowell SPRR
location	0.1 mi West of Jct SR 92	feature intersected	Erie Street
city/vicinity	Lowell	structure owner	Union Pacific Railroad
USGS quad	Bisbee	UTM reference	12.605220.3477788

STRUCTURAL INFORMATION

main span number	1	main span type	403
appr. span number	0	appr. span type	
degree of skew	0	guardrail type	0
main span length	45.0	superstructure	steel plate through girder
structure length	45.0	substructure	concrete abutments and wingwalls
roadway width	0.0	floor/decking	ballast railroad deck
structure width	0.0	other features	modest Art Moderne scoring on concrete pylons

HISTORICAL INFORMATION

construction date	1942	designer/engineer	Arizona Highway Department
project number	FAGH 791-4(4)	builder/contractor	James S. Maffeo, Bisbee AZ
info source:	ADOT bridge records	alteration date(s)	ca1990
		alterations	

NATIONAL REGISTER EVALUATION

For additional information, see "Vehicular Bridges in Arizona 1880-1978"
National Register Multiple Property Documentation Form

inventory score	55	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A <u>x</u> B <u> </u> C <u>x</u>
program comment	-	signif. statement	well-preserved example of Depression-era architectural treatment on railroad grade separation

FORM COMPLETED BY

Clayton B. Fraser, Principal

FRASERdesign
5700 Jackdaw Drive
Loveland, Colorado 80537
1 October 2018

LOWELL UNDERPASS

Structure Nos. 01033 and 00269



PHOTO INFORMATION

date of photo.: March 2018

view direction: west northeast

photo no.: DSCF5812 DSCF5818

LOWELL UNDERPASS

Structure Nos. 01033 and 00269



PHOTO INFORMATION

date of photo.: April 2018

view direction: east northeast

photo no.: 03.02.94 03.02.96

CONSTRUCTION HISTORY

In 1940 the Arizona Highway Department began planning the replacement for an existing underpass that carried U.S. Highway 80 under the Southern Pacific Railroad in the center of Lowell. Designed by the railroad and AHD, the underpass would be comprised of a single 45-foot steel through girder superstructure, carried on a skew by concrete piers over Erie Street. The street tunnel was to be flanked on both sides by pedestrian walks. The structure featured minimalistic proportions and Art Moderne architectural detailing, with vertical lines grooved into the concrete faces. On 18 February 1941, AHD received competitive proposals from four Arizona contractors and awarded the contract to James S. Maffeo of Bisbee for \$12,936.00. Maffeo commenced with the construction soon thereafter, with an aim to complete the project by mid-June. Work was delayed that spring due to steel shortages, though, and it wasn't until February 1942 that the structure was complete. During the mid-1950s, AHD began planning to re-route U.S. 80 away from Erie Street and further to the east. The existing grade separation at Erie Street would still function in place, and a new structure would be built immediately east. As delineated, this would be configured as two skewed 40-foot-span steel through girders. The two spans would be supported – and separated – by a concrete pier. This structure resembled the 1942 underpass in scale and materials, though it lacked the architectural features of its predecessor. In 1958 the construction contract for the new structure was awarded to Western Constructors Inc., of Phoenix. Western completed the underpass that year. Both underpasses still function, the 1942 structure [01033] at Erie Street into downtown Lowell and the 1958 structure [00269] at U.S. 80 east toward Douglas. Although the railroad tracks have been removed, the structures themselves remain unaltered.

SIGNIFICANCE STATEMENT

The older of the two Lowell Underpasses is one of several structures built by the Arizona Highway Department during the Great Depression and WWII in an extensive program to eliminate on-grade highway crossings. Like many other grade separations designed by AHD at the time, this structure featured a distinctive architectural treatment. Rather than use a classical revival idiom as it had for the Stone Avenue Underpass [07987] in Tucson, the Casa Grande Underpass [00143] and the Winslow Underpass [00194], AHD instead used a simpler, more modern treatment. The Lowell Underpass is one of a handful of such structures to trade on the Art Moderne style (others: Peoria Underpass [00160], Gila Bend Overpass [00618] and the 17th Avenue Underpass [07770], all in Maricopa County). Its carefully considered proportions and scored concrete detailing distinguish it among the state's urban grade separations. The 1958 structure, although more plain-faced than its predecessor, shares the other's scale and materials. An integral part of an important transcontinental highway, the Lowell Highway Underpass is a well-preserved example of early Arizona bridge construction.

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

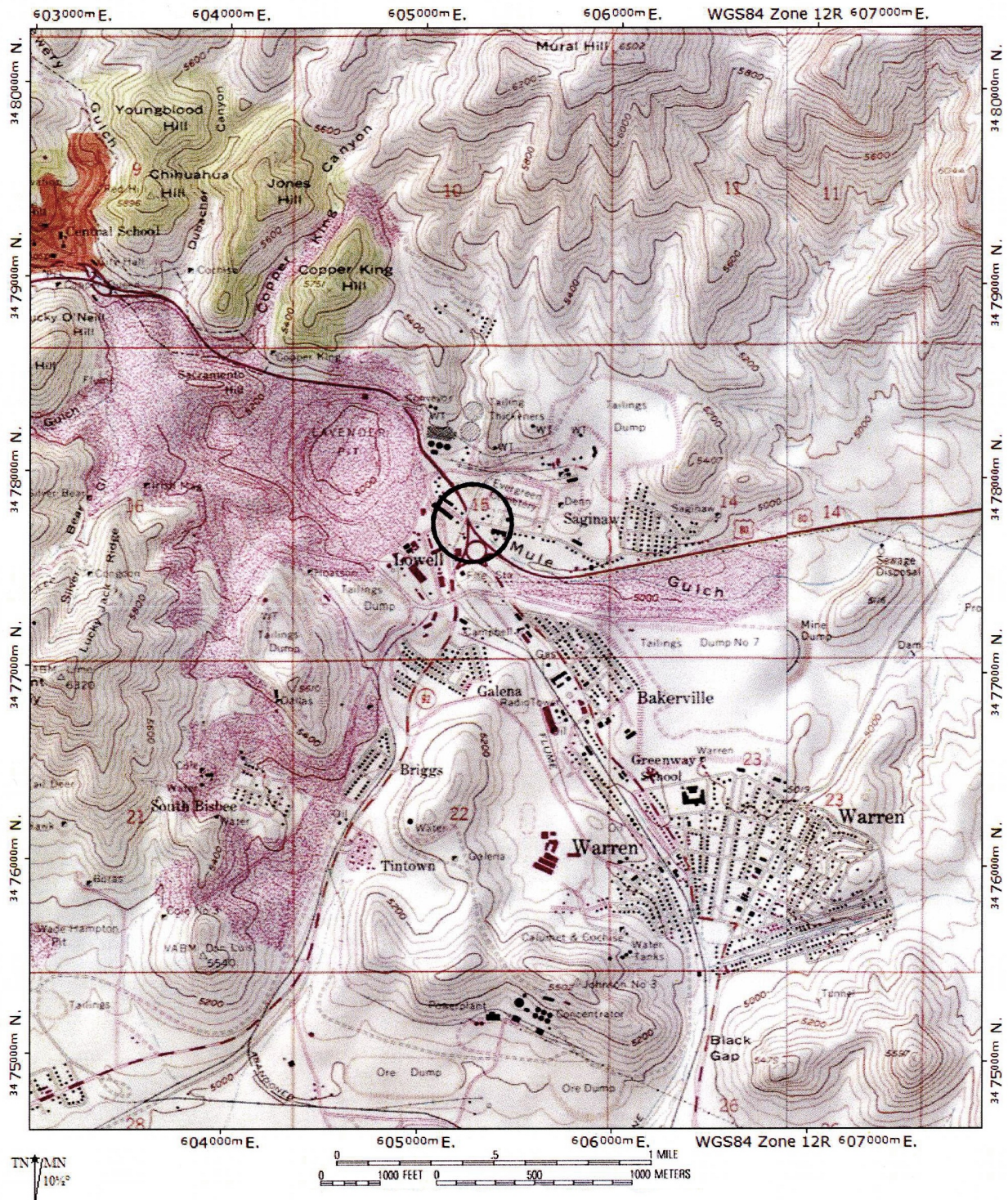
NATIONAL REGISTER ELIGIBILITY

individually eligible ☒ yes ☐ no
 contributes to district ☐ yes ☒ no

AREA OF SIGNIFICANCE: Transportation; Engineering
 PERIOD OF SIGNIFICANCE: 1942-1978
 THEME(S): Transportation: Highways

LOWELL UNDERPASS

Structure Nos. 01033 and 00269



LOCATION MAP

HISTORIC BRIDGE INVENTORY

Leslie Creek Bridge

PROPERTY IDENTIFICATION

county	Cochise	inventory number	08115
milepost	0.00	inventory route	Leslie Canyon Road
location	17 mi N of SR 80	feature intersected	Leslie Creek
city/vicinity	McNeal	structure owner	Cochise County
USGS quad	Leslie Canyon	UTM reference	12.639925.3494752

STRUCTURAL INFORMATION

main span number	1	main span type	310
appr. span number	0	appr. span type	
degree of skew	0	guardrail type	6
main span length	70.0	superstructure	steel rigid-connected Warren pony truss
structure length	71.0	substructure	concrete abutments and wingwalls
roadway width	17.4	floor/decking	timber deck with earth overburden
structure width	18.3	other features	upper chord: 2 channels w/ cover plate and lacing; lower chord: 2-4 angles w/ batten plates; vertical/diagonal: 2 angles w/ batten plates; floor beam: I-beam; steel lattice guardrails

HISTORICAL INFORMATION

construction date	1928	designer/engineer	Virginia Bridge & Iron Company
project number		builder/contractor	county work force
info source:	ADOT bridge records	alteration date(s)	
		alterations	

NATIONAL REGISTER EVALUATION

For additional information, see "Vehicular Bridges in Arizona 1880-1978" National Register Multiple Property Documentation Form

inventory score	47	NRHP eligibility	eligible
interstate exemption	-	NRHP criteria	A _____ B _____ C <u>x</u>
program comment	-	signif. statement	well-preserved example of now-rare standard structural type

FORM COMPLETED BY

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Loveland, Colorado 80537
1 October 2018

LESLIE CREEK BRIDGE

Structure No. 08115



PHOTO INFORMATION

date of photo.: March 2018

view direction: north east

photo no.: DSCF5929 DSCF5935

LESLIE CREEK BRIDGE

Structure No. 08115

CONSTRUCTION HISTORY

Early in 1928 the Cochise County Board of Supervisors moved to construct a bridge over Leslie Creek on the Leslie Canyon Road north of Douglas. For the superstructure, the board ordered a standard medium-span pony truss from the Virginia Bridge & Iron Company of Roanoke, Virginia. Virginia B&I put together a rigid-connected Warren truss, comprised of built-up box beams for the upper chords and paired angles for the lower. Extending 70 feet in length, the truss was comprised of 10 equal-length panels, with verticals at the panel points. The nationally active bridge company fabricated this structure using steel rolled by the Tennessee Steel Company and shipped it by rail to Arizona in May. Under the direction of Cochise County Engineer Syd Smith, a crew of force account laborers poured the reinforced concrete abutments and wingwalls, built the timber falseworks for the truss and erected this span that summer. Located on a sparsely traveled road in this remote region, the Leslie Creek Bridge has functioned in place since that time, essentially unaltered.

SIGNIFICANCE STATEMENT

Although the Arizona Highway Department had taken the principal responsibility for bridge construction on primary and secondary routes in the state by the time this bridge was built in 1928, the individual counties continued to erect small-scale structures of their own, as they had in the late 19th and early 20th centuries. The Leslie Creek Bridge is an example of this historical trend—an unaltered county-built structure, comprised of prefabricated steel truss superstructure purchased from a national bridge company and erected by a local work crew. It is one of seven such straight-chorded Warren pony trusses identified in the inventory—a typical later representative of short-span vehicular truss design.

NATIONAL REGISTER EVALUATION

TECHNOLOGICAL SIGNIFICANCE

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☐ 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

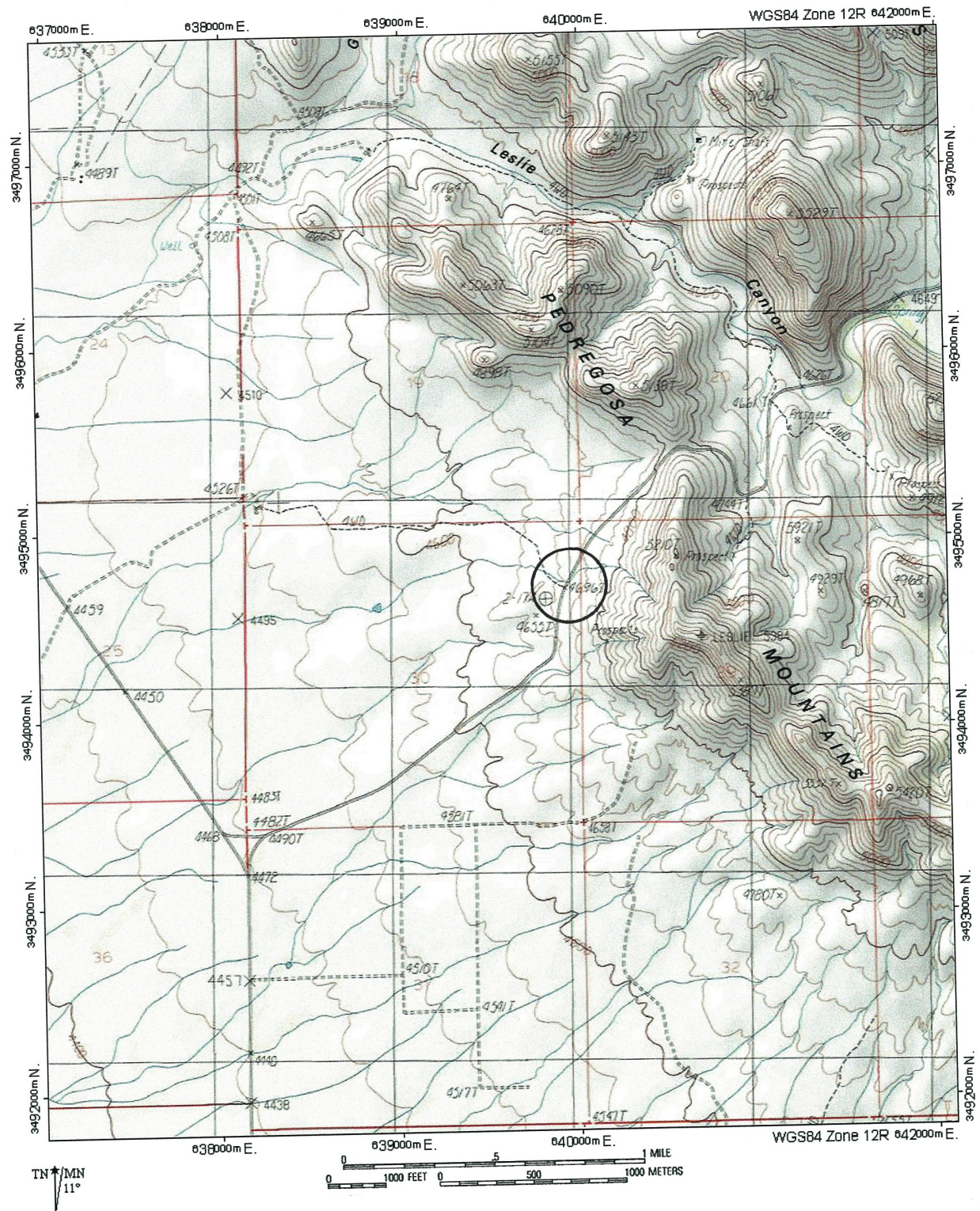
AREA OF SIGNIFICANCE: Engineering

PERIOD OF SIGNIFICANCE: 1928-1978

THEME(S): Transportation: Highways

LESLIE CREEK BRIDGE

Structure No. 08115



LOCATION MAP