STATE OF ARIZONA

# HISTORIC PROPERTY INVENTORY FORM

HISTORIC

BRIDGE

# INVENTORY

# Burro Creek Bridge

PROPERTY IDENTI	FICATION		
county milepost location city/vicinity USGS quad	Mohave 139.07 43.8 mi NW Jct SR 71 Wickieup Kaiser Spring	inventory number inventory route feature intersected structure owner UTM reference	00846 US 93; Southbound Burro Creek Arizona Department of Transportation 12.275765.3825325
STRUCTURAL INFO	RMATION		
main span number appr. span number degree of skew main span length structure length roadway width structure width	1 3 0 680.0 965.0 30.0 35.4	main span type appr. span type guardrail type superstructure substructure floor/decking other features	311 Arch-Deck 402 110 concrete deck
HISTORICAL INFOR	RMATION		
construction date project number info source:	1965 F-035-1(2) ADOT bridge records	designer/engineer builder/contractor alteration date(s) alterations	Arizona Hiahway Department
NATIONAL REGIST	ER EVALUATION		
		For additional information, see "Vehicular Bridges in Arizona 1880-1978" National Register Multiple Property Documentation Form	
inventory score	64	NRHP eligibility	eligible
interstate exemptio	n _	NRHP criteria	A <u>x</u> B <u>C x</u>
program comment	-	signif. statement	

## FORM COMPLETED BY

Clayton B. Fraser, Principal



date of photo.: March 2018 view direction: east northeast photo no.: DSCF6385 DSCF6390

This long-span bridge carries the Wickenberg-Kingman Highway (U.S. Highway 93) over the Burro Creek canyon south of Wickieup. The structure is configured as a two-hinge steel deck arch, with trussed steel arch ribs, each made up of thirty-four 20-foot panels for a span length of 680 feet. The ribs rise 135 feet from the bearing points. These carry the roadway some 370 feet above the streambed, making the bridge one of the highest in the country. The central arch is carried on steel skewbacks, which are supported by concrete spread footings. It is flanked by two steel stringer spans on one end and one on the other, for an overall length of 965 feet. The 35-foot-wide concrete deck is bounded on both sides by metal guardrails with concrete bulkheads. The Bridge Division of the Arizona Highway Department designed the bridge in 1963, designated its construction as Project F-035-1(2), and opened contractors' bids that June. The steelwork was fabricated by the American Bridge Division of U.S. Steel in Hoboken, New Jersey. U.S. Steel was also responsible for the bridge's construction. To build the structure, the contractors used a steel cable high line held aloft by cablestay towers on both ends. As had been done on the Navajo Bridge [00051] in Coconino County, the trussed arch was cantilevered on both sides from abutments set into the canyon walls. These were extended toward the center of the span, where they were joined. The spandrel columns and decking were then erected using the high line. U.S. Steel completed the Burro Creek Bridge at 5:00pm on 23 March 1966. Total cost: almost \$1.5 million. The structure was later dedicated ceremoniously. In 2005 a slightly longer twin arch span was built beside the earlier bridge. Made of Cor-Ten steel, it now carries two lanes of northbound traffic, and the 1966 bridge carries two traffic lanes heading southward.

#### SIGNIFICANCE STATEMENT

As a pivotal crossing on a regionally important route, the Burro Creek Bridge enjoys a degree of historical significance for its contribution to western Arizona transportation. The bridge's relatively late construction limits this significance, however. The structure is technologically important as a well-preserved example of large-scale bridge construction. Arizona erected a number of massive steel arches and cantilevered steel deck trusses in the 1940s, 1950s and 1960s, most of which are impressively scaled spans placed in dramatic settings. A handful of these remain: the Queen Creek Bridge [00406] in Pinal County and the Pinto Creek Bridge in Gila County representing the arches, and the Guthrie Bridge [00352], the Hell Canyon Bridge [00483] in Yavapai County, and the Cameron Bridge [00532] in Coconino County representing the trusses. These were the state's most striking bridges of post-War period. Unfortunately, the three trusses have all been replaced. A year after its completion, the Burro Creek Bridge won an award of merit from the American Institute of Steel Construction as one of the most beautiful steel bridges in the country. It now numbers among Arizona's most spectacular steel spans.

TECHNOLOGICAL SIGNIFICANCE represents the work of a master	HISTORICAL SIGNIFICANCE associated with significant per	NATIONAL REGISTER CRITERIA
possesses high artistic values	associated with significant ev	vents or patterns Criterion B
_x represents a type, period or method of construction	contributes to historical distric	t <u>x</u> Criterion C
NATIONAL REGISTER ELIGIBILITY individually eligible <u>x</u> yes <u>no</u> contributes to district <u>yes x</u> no	AREA OF SIGNIFICANCE: PERIOD OF SIGNIFICANCE: THEME(S):	Engineering 1966-1978 Transportation: Highways





LOCATION MAP

STATE OF ARIZONA

PROPERTY IDENTIFICATION

# HISTORIC PROPERTY INVENTORY FORM

HISTORIC

BRIDGE

# INVENTORY

# Boulder Dam Arizona Spillway Bridge

#### inventory number 03003 county Mohave 0.10 US 93 milepost inventory route location 0.1 MI E Nevada St feature intersected Hoover Dam Spillway Lane city/vicinity structure owner US Bureau of Reclamation Boulder USGS quad Hoover Dam 11.703950.3987960 UTM reference STRUCTURAL INFORMATION main span type 111 main span number l appr. span number 0appr. span type 0 6 degree of skew guardrail type 115.0 concrete two-rib open-spandrel arch main span length superstructure 124.0 concrete abutments set into spillway walls structure length substructure 38.0 concrete deck with asphalt overlay roadway width floor/decking 47.8 structure width steel pipe guardrails with concrete bulkheads other features HISTORICAL INFORMATION construction date 1935 US Bureau of Reclamation designer/engineer project number Six Companies, Inc. builder/contractor 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 72 listed NHL NRHP eligibility inventory score C <sub>X</sub> В A <sub>X</sub> NRHP criteria interstate exemption designated as part of Hoover Dam NHL signif. statement program comment complex

## FORM COMPLETED BY

Clayton B. Fraser, Principal



date of photo.: March 2018

view direction: northwest southwest photo no.: DSCF6395 DSCF6400

As early as 1902, California business and agricultural interests began eyeing Boulder Canyon in northwest Arizona as an impoundment site for the Colorado River. After years of agitating and maneuvering, Congress in December 1928 enacted the Swing-Johnson Act authorizing construction of Boulder Dam. While the State of Arizona fought the dam up to the Supreme Court, Bureau of Reclamation engineers moved the site 10 miles downstream to a more suitable location in Black Canyon and designed the immense curved gravity structure. One of the main components of the project was the Arizona Spillway—a tunnel blasted in the rock wall at the dam's eastern flank to discharge overflow around the dam.

To carry the dam crest highway (U.S. 93) over this spillway, the engineers designed a medium-span concrete arch. This arch featured a handsomely proportioned open spandrel design with a continuous arch rib that extended 115 feet between the spillway walls. The Art Moderne concrete detailing was delineated by Los Angeles architect Gordon Kaufmann in his first large-scale engineering project. To build the mammoth dam and its appurtenant structures, BOR awarded the largest construction contract to date in America—some \$31 million—to a consortium of major Western builders called Six Companies, Inc. Construction of the dam began in 1931. The last concrete was poured on May 29, 1935, and Boulder Dam was dedicated on September 1. Officially renamed Hoover Dam in 1947, it has functioned in place since. The Arizona Spillway is virtually unused and the bridge over it continues to carry traffic in unaltered condition.

#### SIGNIFICANCE STATEMENT

With a base thickness of 660 feet of solid concrete, Hoover Dam is far thicker than necessary to hold the Colorado River at this point and can hardly be considered a model of engineering efficiency. The modestly proportioned Arizona Spillway Arch thus stands in stark contrast with the behemoth to which it is attached. This bridge is the shortest and latest of the four open spandrel concrete arches identified in the inventory (others: Cienega Bridge [08293], Mill Avenue Bridge [09954], and Queen Creek Bridge [abd.]). In its dimensions and configuration, it is technologically undistinguished in its engineering design. Kaufmann's Art Moderne detailing is skillfully handled, distinguishing this structure among its concrete peers in Arizona. The true significance of the Arizona Spillway Bridge derives from its association with Hoover Dam as an original and integral component. One of the most technologically and historically important of America's dams, Hoover Dam has been designated a National Historic Landmark. The Arizona Spillway Bridge is listed as part of the Landmark designation.

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 <u>x</u> Criterion A  Criterion B <u>x</u> Criterion C
NATIONAL REGISTER ELIGIBILITY individually eligible <u>x</u> yes <u>no</u> contributes to district <u>x</u> yes <u>no</u>	area of significance: Transportat Period of significance: 1935-1978 Theme(s): Transportat	ion; Engineering ion: Highways





STATE OF ARIZONA

# HISTORIC PROPERTY INVENTORY FORM



BRIDGE

# INVENTORY

# Old Trails Wash Bridge

PROPERTY IDENTIF	ICATION		
county milepost location city/vicinity USGS quad	Mohave 0.00 0.2 mi S of SB 40 Kingman Kingman	inventory number inventory route feature intersected structure owner UTM reference	08594 Old Trails Highway Old Trails Wash City of Kingman 11.768303.3897547
STRUCTURAL INFC	RMATION		
main span number appr. span number degree of skew main span length structure length roadway width structure width	2 0 30 13.0 30.0 20.7 23.1	main span type appr. span type guardrail type superstructure substructure floor/decking other features	201 6 concrete rail-top slab concrete abutments, wingwalls and pier concrete deck with asphalt overlay steel pipe guardrails
HISTORICAL INFOR	RMATION		
construction date project number info source:	1917 ADOT bridge records	designer/engineer builder/contractor alteration date(s) alterations	Arizona Hiahwav Department state work force
NATIONAL REGIST	ER EVALUATION		
		For additional information, see "Vehicular Bridges in Arizona 1880-1978" National Register Multiple Property Documentation Form	
inventory score interstate exemptio program comment	64 n _ -	NRHP eligibility NRHP criteria signif. statement	eligible A _x _ B C _x well-preserved example of early standard structural type

# FORM COMPLETED BY

Clayton B. Fraser, Principal



date of photo.: March 2018

photo no.: DSCF6375 DSCF6377

This small-scale concrete bridge carries the original Old Trails Highway over Old Trails Wash in Kingman. Built from a standard design by the Arizona State Engineer dated September 21, 1917, its two-span superstructure is comprised of concrete slabs with steel railroad rails embedded at the slabs' bottom edge for reinforcing. The spans are simply supported by concrete abutments and pier, and the concrete deck is bounded on both sides by original steel pipe guardrails. The Old Trails Wash Bridge was reportedly built as part of Federal Aid Project 5. This early project entailed construction of roadway and structures on 2.2 miles of the Kingman-Oatman Highway. Completed in 1918 or 1919 by a state work force, the bridge and adjacent roadway carried mainline traffic until a subsequent rerouting of the road. Today it bears local traffic in essentially unaltered condition.

#### SIGNIFICANCE STATEMENT

Alternately known as the Santa Fe Highway (in Arizona) and the National Old Trails Highway (its national designation), this transcontinental route has served historically as the principal east-west artery across northern Arizona. Only the Ocean-to-Ocean Highway, which passed through Yuma, Phoenix and Safford, carried more traffic in the state in the 1910s and 1920s. The Old Trails Wash Bridge in Kingman formed a minor but integral link in the road and is historically significant as the earliest structure known in Arizona from the original route. The bridge is also significant as part of one of Arizona's earliest forays into the federal aid program. The first federal aid project involved building an extension onto the existing Florence Bridge. Subsequent projects included work on the Phoenix-Tempe Highway, the Holbrook-St. Johns Highway and the Phoenix-Yuma Highway. As part of only the fifth federal aid project in Arizona, the Old Trails Wash Bridge is distinguished as the oldest intact bridge in the state known to have been built with federal aid funds.

The bridge is technologically important as a well-preserved example of an unusual structural subtype—the rail top slab. Arizona started developing standards for concrete bridges as early as 1910, with designs for small-scale concrete slab and girder structures. One of the more esoteric of these early structural types was the rail top slab. Using railroad rails spaced at 24" o.c. as reinforcing, the rail top slab is by nature a short-span structure, used in secondary road situations. Soon superseded by more mainstream structural types, relatively few of these bridges were ever built, and only a handful has been identified by the inventory. The earliest of these is the Jacks Canyon Bridge [**abd.**], built in 1913 on the Old Trails Highway in Navajo County. Though modest in size and appearance, the Old Trails Wash Bridge is an important representative of early bridge construction in Arizona.

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 <u>x</u> yes <u>no</u> no contributes to district <u>yes x</u> no	AREA OF SIGNIFICANCE: Transportat PERIOD OF SIGNIFICANCE: 1918-1978 THEME(S): Transportat	tion; Engineering tion: Highways

LOCATION MAP



Structure No. 08594

STATE OF ARIZONA

HISTORIC

# HISTORIC PROPERTY INVENTORY FORM

# BRIDGE INVENTORY

# London Bridge

PROPERTY IDENTIF	FICATION		
county milepost location city/vicinity USGS quad	Mohave 0.00 in Lake Havasu City Lake Havasu Ci Lake Havasu City Sou	inventory number inventory route feature intersected structure owner UTM reference	08630 McCulloch Boulevard Lake Havasu Channel City of Lake Havasu City 11.743550.3817630
STRUCTURAL INFO	RMATION		
main span number appr. span number degree of skew main span length structure length roadway width structure width	3 0 152.0 952.0 32.6 35.0	main span type appr. span type guardrail type superstructure substructure floor/decking other features	111 0 concrete filled spandrel arch concrete abutments, wingwalls and piers asphalt roadway over earth fill stone masonry veneer with decorative voussoirs, copings, corbel brackets, guardrails and balusters
HISTORICAL INFOR	RMATION		
construction date project number info source:	1831 ADOT bridge records	designer/engineer builder/contractor alteration date(s) alterations	Iohn Rennie city (London) work force 1971 bridge dismantled and moved to this location
NATIONAL REGIST	ER EVALUATION		
		For additional information, see "Vehicular Bridges in Arizona 1880-1978" National Register Multiple Property Documentation Form	
inventory score interstate exemptio program comment	63 n _ -	NRHP eligibility NRHP criteria signif. statement	eligible A <u>x</u> B <u>C x</u> unique adaptation of European bridge to Western setting

## FORM COMPLETED BY

Clayton B. Fraser, Principal





date of photo.: March 2018

view direction: northeast northwest photo no.: DSCF6335 DSCF6351

The first timber bridge over the Thames River in London may have been constructed as early as the 1<sup>st</sup> Century. In 1209 the first stone bridge was completed, and by the end of the 18<sup>th</sup> Century it had aged to the point of replacement. After a design competition by the city, Scottish engineer John Rennie was retained to design the replacement bridge, an immense stone arch structure with the longest span extending some 130 feet. The first stone was laid ceremoniously on June 15, 1825, and the structure was completed seven years later by Rennie's son after the father's death. The five-span arch structure was formally dedicated on August 1, 1831.

By far the busiest among London's major bridges, this structure carried numerous royal events. The London Bridge withstood a terrorist bombing in 1834 and German air raids in World War I and World War II. In 1967 the City of London moved to replace the 133-year-old stone bridge, offering it for sale. What followed was one of the most bizarre episodes in world bridge history, as developer Robert P. McCulloch purchased the London Bridge for \$2.5 million and endeavored to move it to Arizona. Workers marked the individual face stones and crated and shipped them to the state, rebuilding the structure over a reinforced concrete armature in a desert community beside the Colorado River. Lacking a real river for the bridge to cross at Lake Havasu City, a decorative lagoon was dredged and filled with water. It took an 80-man crew some three years to reconstruct the bridge, as compared with the 800 men required to build it in the 1820s. Completed in 1971, the London Bridge has since functioned as a tourist attraction and city center at Lake Havasu. The cast metal lamp standards from the original bridge–reportedly made from cannons captured by Napoleon Bonaparte at Waterloo–had been mounted on the relocated bridge, but the lampposts were replaced in 2006, because they were causing the stone bases to crack.

#### SIGNIFICANCE STATEMENT

As a pivotal crossing of the Thames in the heart of London, the historical significance of the London Bridge can hardly be overstated. Although its present function in Lake Havasu City is substantially less important, the bridge does serve as a focal point for this thriving western Arizona community and as a well-known tourist attraction in America. Technologically, the London Bridge represented a conservative engineering approach, even for its relatively early date. Its monumental nature, however, made it a showcase of 19th century stonemasonry. The dismantling, shipping and reconstruction of the bridge in the 1960s presented a tremendous exercise in logistics and engineering. Celebrated in literature, history and song, the London Bridge is unquestionably the most famous bridge in the world. In London, it would be considered internationally significant. In Arizona, where it is in a far different setting, it is significant for different reasons.

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 p contributes to historical district	NATIONAL REGISTER CRITERIA          x       Criterion A         coatterns       Criterion B         Criterion C
NATIONAL REGISTER ELIGIBILITY	AREA OF SIGNIFICANCE: Tran	sportation; Engineering
individually eligible <u>x</u> yes <u>no</u>	PERIOD OF SIGNIFICANCE: 1971-	-1978
contributes to district <u>yes x</u> no	THEME(S): Tran	sportation: Highways



# LONDON BRIDGE

# HISTORIC PROPERTY INVENTORY FORM



BRIDGE

# INVENTORY

# Sand Hollow Wash Bridge

FICATION			
Mohave 0.00 2.9 mi E of Az State Ln Littlefield Mesquite	inventory number inventory route feature intersected structure owner UTM reference	08662 Old Hwy 91 Sand Hollow Wash Mohave County 11.767027.4080110	
RMATION			
2	main span type	3 09	
4	appr. span type	303	
0	guardrail type	6	
80.0	superstructure	steel rigid-connected Warren deck truss	
370.0	substructure	four-bent steel piers on concrete spread footings	
20.0	floor/decking	concrete deck over steel stringers	
21.0	other features	upper / lower chord: 2 channels w/ cover plate and lacing or batten plates; vertical / diagonal wide flange; strut / lateral: l angle; floor beam I-beam; steel lattice guardrails	
RMATION			
1930	designer/engineer	r Arizona Highway Department	
FAP 92-A	builder/contractor	James J. Burke & Company, Salt Lake City U'I'	
ADOT bridge records	alteration date(s) alterations		
ER EVALUATION			
	For additional information, see "Vehicular Bridges in Arizona 1880-1978" National Register Multiple Property Documentation Form		
77	NRHP eligibility	listed	
n _	NRHP criteria	A <u>x</u> B C <u>x</u>	
ram comment _ signif. statement well-preserved example of us structural type, on regionally highway		well-preserved example of uncommon structural type, on regionally important highway	
	Mohave         0.00         2.9 mi E of Az State Ln         Littlefield         Mesquite         RMATION         2         4         0         80.0         370.0         20.0         21.0	HCATION       inventory number inventory number inventory route         0.00       inventory route         2.9 mi E of Az State Ln       feature intersected         Littlefield       structure owner         Mesquite       UTM reference         RMATION       guardrail type         2       main span type         4       appr. span type         0       substructure         370.0       substructure         20.0       floor/decking         21.0       floor/decking         1930       designer/engineer         FAP 92-A       builder/contractor         ADOT bridge records       alteration date(s)         alterations       alteration         ER EVALUATION       For additional infor         77       NRHP eligibility         n       -         27       NRHP criteria         alteration       signif. statement	

# FORM COMPLETED BY

Clayton B. Fraser, Principal



date of photo.: March 2018

view direction: southwest northeast photo no.: DSCF6404 DSCF6407

In 1929 the Arizona Highway Department undertook construction of the Utah-Nevada State Line Highway, a 30-mile-long road that cut across the extreme northwest corner of the state. The work was designated Federal Aid Project 92-A and was divided into three intermediate sections, or schedules. Schedules 1 and 3 involved grading and surfacing; Schedule 2 entailed the construction of several bridges. Largest of these was the structure over Sand Hollow Wash, a wide ravine about seven miles northeast of Littlefield. For this, AHD designed a steel trestle comprised of rigid-connected deck trusses supported by braced steel piers. The trusses used a Warren configuration, with built-up box beams for the upper and lower chords. These trusses carried a 20-foot-wide concrete deck, which was carried by steel I-beams and bounded by steel lattice guardrails. The four-bent, braced steel piers that supported the trusses bore on tapered concrete pedestals with spread footings.

In February 1929 the highway department contracted with Salt Lake City bridge builder James J. Burke for the Sand Hollow Wash Bridge and others along the route for about \$44,000. Burke's crew began excavation for the concrete abutments and piers on March 31. Though scheduled for completion in September, construction problems delayed the work, and Burke had completed less than 25 percent at the deadline. In February 1930 he finally finished the Sand Hollow Wash Bridge. As built, the bridge used some 306,000 pounds of superstructural steel, 47,000 pounds of reinforcing steel and 411 cubic yards of concrete. The highway and bridge carried mainline traffic until they were superseded by Interstate 15 in 1962. The Nevada-Utah Highway has now been reduced to a county road, carrying local traffic near Littlefield. The roadway is today in deteriorated condition, but the Sand Hollow Wash Bridge remains essentially intact.

#### SIGNIFICANCE STATEMENT

Although its impact on Arizona settlement was minimal, the Nevada-Utah Highway (U.S. Highway 91) was a major thoroughfare in the Southwest, connecting Las Vegas with the East. The Sand Hollow Wash Bridge is historically important as the major feature on that route in Arizona. It is technologically significant as one of four multiple-span, deck-trussed trestles identified in the inventory (others: Querino Canyon Bridge [08071], Dead Indian Canyon Bridge [00032], and Black River Bridge [03128]). All were erected within a five-year period at rural crossings in the northern half of the state, all featured moderate span lengths and all were designed either by AHD or the Bureau of Public Roads using industry-standard truss detailing. The Sand Hollow Wash Bridge is disting uished as a well-preserved example of this noteworthy bridge-building trend.

TECHNOLOGICAL SIGNIFICANCE	HISTORICAL SIGNIFICANCE	NATIONAL REGISTER CRITERIA
represents the work of a master possesses high artistic values	associated with significant persons           x         associated with significant events or patterns	Criterion A
_x _ represents a type, period or method of construction	contributes to historical district	x Criterion C
NATIONAL REGISTER ELIGIBILITY individually eligible x yes no	area of significance: Transporta period of significance: 1930-1978	tion; Engineering
contributes to district yesx no	THEME(S): Transporta	tion: Highways



HISTORIC

# HISTORIC PROPERTY INVENTORY FORM

INVENTORY

# Old Trails Bridge

BRIDGE

PROPERTY IDENTIF	FICATION		
county milepost location city/vicinity USGS quad STRUCTURAL INFC	Mohave 0.00 at Topock Topock Topock RMATION	inventory number inventory route feature intersected structure owner UTM reference	private Natural Gas Pipeline Colorado River El Paso Natural Gas Company 11.730340.3844340
main span number appr. span number degree of skew main span length structure length	1 0 0 592.0 832.0	main span type appr. span type guardrail type superstructure substructure	312 0 steel three-hinge spandrel-braced through arch concrete abutments, wingwalls and arch pedestals
roadway width structure width HISTORICAL INFOR	17.0 20.0 RMATION	floor/decking other features	steel grid walkways upper/lower arch chord: 2/4 channels w/ cover plate and double lacing; arch post: 2 angles w/ lacing; suspender: round rod; lateral brace: 2 angles; floor beam: plate girder
construction date project number info source:	1916 ADOT bridge records	designer/engineer builder/contractor alteration date(s) alterations	San Bernardino County Enar. Kansas City Structural Steel Co., Kansas City 1948 deck removed and gas pipeline installed
NATIONAL REGIST	EREVALUATION	<b>F</b> 11:0 1:0	· · · · · · · · · · · · · · · · · · ·
inventory score interstate exemptio program comment	94 n _ -	National Register M NRHP eligibility NRHP criteria signif. statement	A _ X B _ C _ X _ outstanding early large-scale bridge, located at major interstate crossing

# FORM COMPLETED BY

Clayton B. Fraser, Principal





date of photo.: March 2018

view direction: southwest south photo no.: DSCF6362 DSCF6364

FRASERDESIGN 2018

As the Ocean-to-Ocean Bridge [**08533**] was under construction in Yuma in 1914, the states of Arizona and California and the U.S. Bureau of Indian Affairs sought to erect another substantial span over the Colorado River to carry the Old Trails Highway further north. Topock, Arizona—halfway between Yuma and the Utah border—was chosen as the crossing site. The new structure would be situated just south of the existing Red Rock Bridge, J.A.L. Waddell's famous cantilevered truss that was built in 1890 to carry the Santa Fe Railroad over the Colorado. Each government entity contributed \$25,000 to construction of the Topock Bridge, and San Bernadino County agreed to design the structure and pay for any cost overruns. County Surveyor S.A. Sourwine engineered this long-span steel arch. Whether he received consulting help or not, his design for the Topock Bridge bore more than a passing resemblance to the Bellows Falls (Vermont) Arch Bridge, completed in 1905.

On June 30, 1915, the contract for fabrication and erection of the bridge was let to the Kansas City Structural Steel Company of Missouri. Under the direction of company construction superintendent Thomas McCurnin and county construction engineer J.P. Kimmerer, a Kansas City Steel crew poured the concrete footings for the arch pedestals and erected the sinnewy arch using a unique cantilever technique in 1915. The Old Trails Bridge was completed on February 20, 1916. It carried interstate traffic for U.S. Highway 66 until 1947, when traffic was transferred to the Red Rock Bridge. Two years later the bridge was sold to El Paso Natural Gas Company, and the deck of the 1916 arch was removed to accommodate a natural gas pipeline, which it still carries. Other than this, the Old Trails Bridge stands in essentially unaltered condition.

#### SIGNIFICANCE STATEMENT

The Old Trails Bridge is historically significant in the Southwest as a pivotal crossing on the transcontinental National Old Trails Highway. Technologically, the structure is nationally important as an outstanding example of steel arch construction. Upon its completion, it was praised by *Engineering Record* as "exceptionally daring and successful for work of such magnitude." Taking a cue from the difficulties experienced erecting the Ocean-to-Ocean Bridge at Yuma, engineers for Kansas City Steel erected this bridge using a novel cantilever system, in which the bridge halves were assembled on their sides on either side of the river and hoisted into place using a unique ball-and-socket center hinge. At its completion the longest arch bridge in America, the 360-ton Old Trails Bridge was also distinguished as the country's lightest and longest three-hinged arch. The removal of the deck has done little to compromise the structure's integrity, and it remains a landmark in American civil engineering.

TECHNOLOGICAL SIGNIFICANCE represents the work of a master possesses high artistic values represents a type, period or method of construction	HISTORICAL SIGNIFICANCEassociated with significant personsassociated with significant events or patternscontributes to historical district	NATIONAL REGISTER CRITERIA          x       Criterion A         Criterion B         Criterion C
NATIONAL REGISTER ELIGIBILITY individually eligible <u>x</u> yes <u>no</u> contributes to district <u>yes x</u> no	area of significance: Transporte period of significance: 1916-1978 theme(s): Transporte	ation; Engineering ation: Highways



LOCATION MAP