1676

HABS/HAER INVENTORY

See "HABS/HAER Inventory Guidelines" before filling out this card.

1. NAME(S) OF STRUCTURE
Old Trails Bridge (Topock Bridge, Needles Bridge)

2. LOCATION
Abandoned U.S. 66 over the Colorado River
Topock; NW1/4 S2 T15N R21W
Mohave County, Arizona

3. DATE(S) OF CONSTRUCTION
1915-16

4. USE (ORIGINAL/CURRENT)
highway bridge / pipeline bridge

5. RATING
NRHP eligible: national significance

6. CONDITION
excellent

owner: El Paso Natural Gas Company

7. DESCRIPTION

span number : 1
span length : 592.0'
total length: 832.0'
roadway wdt.: 17.0'

superstructure: riveted steel 3-hinge brace-ribbed through arch w/steel girder approach spans
substructure : concrete abutments, wingwalls and arch pedestals
floor/decking : steel grid walkways
other features: upper arch chord: 2 channels w/ cover plate and double lacing; lower arch chord: 2 channels w/ double webbing; diagonal: 4 angles w/ webbing; arch post: 2 angles w/ webbing; lateral bracing: 2 angles; floor tie: riveted steel plate girder; suspender: round steel rod

8. HISTORICAL DATA

As the Ocean-to-Ocean Bridge (8533) was under construction 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 serve the Old Trails Highway further north. Topock, Arizona - halfway between Yuma and the Utah Border - was chosen as the crossing site. Each entity contributed $25,000, and San Bernadino County agreed to design the bridge and pay for any cost overruns. County surveyor S.A. Sourwine engineered this long-span steel arch. On June 30, 1915, the contract for fabrication and erection was let to the Kansas City Structural Steel Company. Under the direction of company construction superintendent Thomas McCurnin and county construction engineer J.P. Kimmerer, Kansas City poured the footings and erected the arch using a unique cantilever technique in 1915. The bridge was completed on February 20, 1916. The Topock Bridge carried interstate traffic for U.S. 66 until 1947, when traffic was transferred to the nearby Red Rock Bridge. In 1948, its deck was removed to accomodate a natural gas pipeline, which it still carries.

9. SIGNIFICANCE

The Topock Bridge is historically significant in the Southwest as a pivotal crossing on the transcontinental Old Trails Highway. Technologically, the structure is nationally significant as an outstanding example of steel arch construction, called by the Engineering Record, "exceptionally daring and successful for work of such magnitude." Taking a cue from the difficulties experienced 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 the ground and hoisted into place using a unique ball-and-socket center hinge. At its completion the longest arch bridge in America, the 360-ton Topock Bridge was also distinguished as the lightest and longest three-hinged arch. The removal of the deck has done little to compromise the bridge, and it remains a landmark in American civil engineering.

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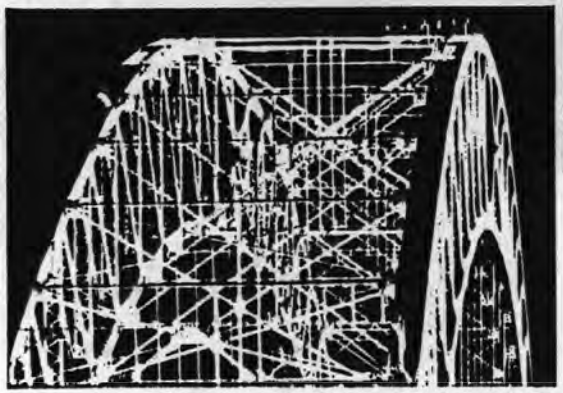
Old Trails Bridge (Topock Bridge; Needles Bridge)

11. PHOTOS (W/ FILM ROLL & FRAME NO.) AND SKETCH MAP OF LOCATION

LOCATION MAP
TAKEN FROM DEPARTMENT OF TRANSPORTATION
GENERAL HIGHWAY MAP



12. SOURCES

Don Abbee & Roger Brevoort, "Draft nomination to National Register of Historic Places," n.d.

David Plowden, Bridges: The Spans of North America, (New York: The Viking Press, 1974), page 178.

Field inspection by Clayton Fraser, 9 December 1986.

13. INVENTORIED BY:	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign Loveland Colorado	1 April 1987