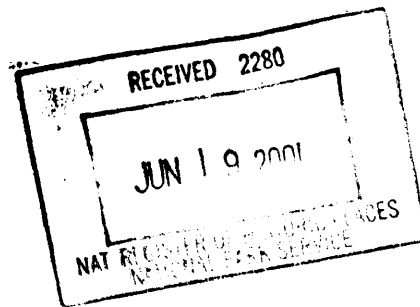


(Oct. 1990)

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM**



771

1. NAME OF PROPERTY

HISTORIC NAME: El Puente de Los Hidalgos
OTHER NAME/SITE NUMBER: Bridge of the Hidalgos; Mascaras Bridge

2. LOCATION

STREET & NUMBER: Grant Avenue, app. 50 yards N. of junction with Paseo de Peralta
CITY OR TOWN: Santa Fe
STATE: New Mexico **CODE:** NM **COUNTY:** Santa Fe **CODE:** 049
NOT FOR PUBLICATION: N/A
VICINITY: N/A
ZIP CODE: 87501

3. STATE/FEDERAL AGENCY CERTIFICATION

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register criteria. I recommend that this property be considered significant nationally statewide locally. (See continuation sheet for additional comments.)

Signature of certifying official

6/12/2001
Date

State Historic Preservation Officer

State or Federal agency and bureau

In my opinion, the property meets does not meet the National Register criteria.
(See continuation sheet for additional comments.)

Signature of commenting or other official

Date

State or Federal agency and bureau

4. NATIONAL PARK SERVICE CERTIFICATION

I hereby certify that this property is:

- entered in the National Register
 See continuation sheet.
- determined eligible for the National Register
 See continuation sheet.
- determined not eligible for the National Register
- removed from the National Register
- other (explain): _____

Signature of the Keeper

Date of Action

7.25.01

5. CLASSIFICATION

OWNERSHIP OF PROPERTY: Public-local

CATEGORY OF PROPERTY: STRUCTURE

NUMBER OF RESOURCES WITHIN PROPERTY:	CONTRIBUTING	NONCONTRIBUTING
	0	0 BUILDINGS
	0	0 SITES
	0	1 STRUCTURES
	0	0 OBJECTS
	0	1 TOTAL

NUMBER OF CONTRIBUTING RESOURCES PREVIOUSLY LISTED IN THE NATIONAL REGISTER: N/A

NAME OF RELATED MULTIPLE PROPERTY LISTING:

6. FUNCTION OR USE

HISTORIC FUNCTIONS: TRANSPORTATION: road-related

CURRENT FUNCTIONS: TRANSPORTATION: road-related

7. DESCRIPTION

ARCHITECTURAL CLASSIFICATION: N/A

MATERIALS: FOUNDATION CONCRETE
WALLS N/A
ROOF N/A
OTHER CONCRETE; ASPHALT

NARRATIVE DESCRIPTION (see continuation sheets 7-5 through 7-6).

8. STATEMENT OF SIGNIFICANCE

APPLICABLE NATIONAL REGISTER CRITERIA

- A** PROPERTY IS ASSOCIATED WITH EVENTS THAT HAVE MADE A SIGNIFICANT CONTRIBUTION TO THE BROAD PATTERNS OF OUR HISTORY.
- B** PROPERTY IS ASSOCIATED WITH THE LIVES OF PERSONS SIGNIFICANT IN OUR PAST.
- C** PROPERTY EMBODIES THE DISTINCTIVE CHARACTERISTICS OF A TYPE, PERIOD, OR METHOD OF CONSTRUCTION OR REPRESENTS THE WORK OF A MASTER, OR POSSESSES HIGH ARTISTIC VALUE, OR REPRESENTS A SIGNIFICANT AND DISTINGUISHABLE ENTITY WHOSE COMPONENTS LACK INDIVIDUAL DISTINCTION.
- D** PROPERTY HAS YIELDED, OR IS LIKELY TO YIELD, INFORMATION IMPORTANT IN PREHISTORY OR HISTORY.

CRITERIA CONSIDERATIONS: N/A

AREAS OF SIGNIFICANCE: TRANSPORTATION; ENGINEERING

PERIOD OF SIGNIFICANCE: 1920-1950

SIGNIFICANT DATES: 1920

SIGNIFICANT PERSON: N/A

CULTURAL AFFILIATION: N/A

ARCHITECT/BUILDER: French, James A. and Turley, Walter G., engineers; Midland Bridge Company, builder.

NARRATIVE STATEMENT OF SIGNIFICANCE (see continuation sheets 8-6 through 8-11).

9. MAJOR BIBLIOGRAPHIC REFERENCES

BIBLIOGRAPHY (see continuation sheet 9-12).

PREVIOUS DOCUMENTATION ON FILE (NPS): N/A

- preliminary determination of individual listing (36 CFR 67) has been requested.
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey #
- recorded by Historic American Engineering Record #

PRIMARY LOCATION OF ADDITIONAL DATA:

- State historic preservation office (*Historic Preservation Division, Office of Cultural Affairs*)
- Other state agency
- Federal agency
- Local government
- University
- Other -- Specify Repository:

10. GEOGRAPHICAL DATA

ACREAGE OF PROPERTY: less than one acre

UTM REFERENCES Zone Easting Northing
 1 13 415056 3950086

VERBAL BOUNDARY DESCRIPTION The nomination encompasses the structure, El Puente de Los Hidalgos, from the extreme limit of the north hand railing, to the extreme limit of the south hand railing.

BOUNDARY JUSTIFICATION The boundary includes all of the elements of the bridge of the 1920 construction.

11. FORM PREPARED BY

NAME/TITLE: David Kammer, Ph.D., and John W. Murphey, HPD Historian

ORGANIZATION: N/A

DATE: March 2000

STREET & NUMBER: 521 Aliso Drive

TELEPHONE: 505-266-0586

CITY OR TOWN: Albuquerque

STATE: NM

ZIP CODE: 87108

ADDITIONAL DOCUMENTATION

CONTINUATION SHEETS

MAPS Santa Fe, N. Mex., 7.5-minute series map indicating the property's location (see attached).

PHOTOGRAPHS (see continuation sheet Photo-13)

ADDITIONAL ITEMS

PROPERTY OWNER

NAME: City of Santa Fe, Public Works Department

STREET & NUMBER: P.O. Box 909

TELEPHONE: 505-955-6621

CITY OR TOWN: Santa Fe

STATE: NM

ZIP CODE: 87501

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section 7 Page 5

El Puente de Los Hidalgos
Santa Fe, Santa Fe County, New Mexico

El Puente de Los Hidalgos, also known as the Bridge of the Hidalgos, is located on Grant Avenue in the Santa Fe Historic District as it crosses Arroyo de las Mascaras, just north of the Federal Oval. The 54-foot long bridge is composed of a single reinforced concrete bowstring truss 52 feet in length. The span rests on reinforced concrete abutments and carries one lane of traffic over a 14-foot-wide, asphalt-surfaced roadway. The total width of the bridge is 16 feet, which includes four-foot-wide cantilevered sidewalks on both sides of the structure. The sidewalks are bordered by decorative concrete balustrade hand railing accented with a pebbled finish. Built in 1920, the bridge retains a good degree of integrity of design, materials, workmanship, location, setting, feeling, and association.

The Bridge of the Hidalgos is located on Grant Avenue, between Rosario Boulevard and Paseo de Peralta, in the north-central section of Santa Fe. The bridge crosses Arroyo de las Mascaras, a dry tributary of the Santa Fe River originating in the foothills northeast of the city. The bridge spans the arroyo without a skew and is surrounded by light commercial development to the south and an historic residential area to the north.

The bridge consists of a single reinforced concrete bowstring truss span rising to approximately eight feet above the deck. The bowstring consists of two parallel reinforced concrete panels, each with five vertical members of varying height (see Figure 7-1). The curved arch panels terminate with heavy posts inscribed with the name of the bridge, the name of the construction company, and the name of the designer and members of the Santa Fe County Commission at the time of construction. Carrying the roadway is a girder system composed of two outer longitudinal beams and horizontal floor beams under the concrete deck slab. Supporting the superstructure are simple gravity type abutments located at each end of the bridge.

Flanking the deck are four-foot-wide sidewalks resting on cantilevered floor beams that are embellished with corbel-like ends. The sidewalks are outlined with concrete hand railing composed of uniform length panels of precast balustrade arranged into sections by rail posts above each floor beam. The last panel of hand railing follows the skew of the sidewalk and terminates with a concrete light standard. The tapered light standards are cast of a different concrete composition and reveal flaked shell and bits of mica at the surface. The railing, arches, and posts are coated with a fine $\frac{3}{4}$ inch pebbled aggregate finish.

Listed on the State Register of Cultural Properties in 1977, El Puente de Los Hidalgos exhibits moderate damage and deterioration but retains a high degree of historic integrity. The northwest corner of the bridge's concrete railing was seriously damaged in September of 1999 as a result of a car accident. Despite this damage, the Bridge of the Hidalgos is generally well preserved in terms of setting, design, materials, workmanship, feeling, and association.

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El Puente de Los Hidalgos
Santa Fe, Santa Fe County, New Mexico

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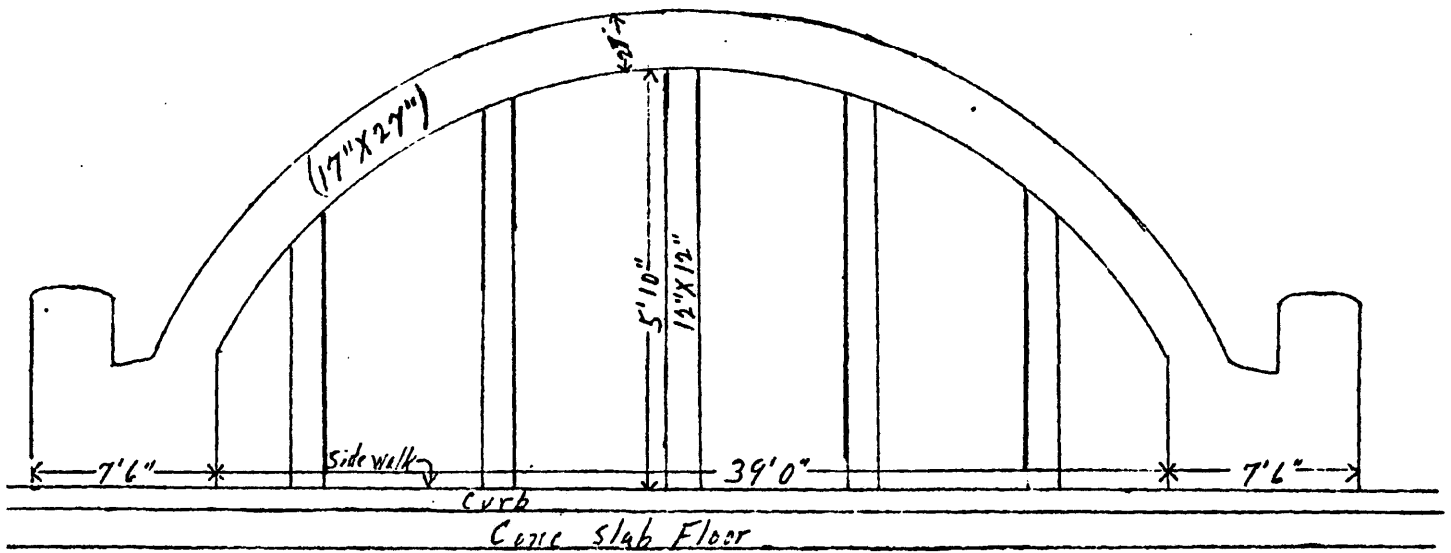
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El Puente de Los Hidalgos
Santa Fe, Santa Fe County, New Mexico

Figure 7-1 Elevation Sketch of Superstructure (not drawn to scale)



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El Puente de Los Hidalgos
Santa Fe, Santa Fe County, New Mexico

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El Puente de Los Hidalgos is significant as an excellent example of a virtually unaltered, reinforced concrete bowstring arch in New Mexico. Constructed in 1920, the bridge is the only known example of its type in the state and is significant for its association with highway transportation in New Mexico. The bridge is also distinguished for its design, most notably its rendered concrete finish and sidewalk brackets, which are indicative of the Pueblo Revival manner for which Santa Fe Historic is so well known. El Puente de Los Hidalgos meets eligibility at the state level of significance under Criterion C, Engineering and Criterion A, Transportation.

El Puente de Los Hidalgos was constructed in 1920 to provide a direct and efficient connection from the central city to State Highway 485, the main road to Taos and the northern precincts of Santa Fe County. Despite its closeness to the Federal Oval and the commercial district, Arroyo de las Mascaras, a small canyon that had historically curtailed development at the city's northern end, physically separated the two. A push for a new bridge began in 1919 when 400 citizens delivered a petition to the Board of County Commissioners on May 17 asking for a secure crossing over the arroyo. Responding to the petition, the Board passed a resolution on July 19 to construct a permanent bridge, with plans to be prepared by the State Highway Engineer, then James A. French.¹ The proposal for the new bridge was highlighted in a June 5, 1919 article in the *Santa Fe New Mexican* that claimed the span would reconnect Santa Fe with an historic road dating back to early Spanish settlement and used by General DeVargas during the re-conquest of the pueblos in 1696.²

Bids opened for the contract in August with three companies submitting proposals: the Midland Bridge Company of Kansas City, Missouri, the Missouri Valley Bridge & Construction Company of Leavenworth, Kansas, and August Reingardt, a local contractor. The notice to the contractors specified that the "bidders are requested to feature distinctive characteristics of what is known as the SANTA FE TYPE of architecture." On October 16, the Board, on the final approval by the State Highway Engineer, accepted the bid submitted by the Midland Bridge Company. The design of the bridge was based on photographs of a bowstring arch presented at a Board of County Commissioners' meeting earlier that year. Estimated to cost \$8,000, the Board ordered that all money of the city's Special Bridge Fund be transferred to a new fund to be used exclusively for the bridge. City Engineer, Walter G. Turley, supervised the construction of the bridge, which was completed and accepted by the Board of County Commissioners on June 18, 1920 (see Figures 8-1 & 8-2).

The bridge had its ceremonial opening during the city's September Fiesta, when it served as the crossing for the grand memorial parade marching from the Plaza to the dedication of the Cross of the Martyrs, a concrete cross located on the hill north of the arroyo and also constructed by the Midland Bridge Company. The bridge served as the main crossing over the arroyo, providing service to both State Highway 485 and US 64 and

¹ *Journal of Board of County Commissioners No. 4, Santa Fe County, 1909-1921*. June 4, 1919, pp. 521-522.

² "New \$8000 Bridge Across the Arroyo Mascaras; Grant Avenue Resumes Place in Famous Road." *Santa Fe New Mexican*. June 5, 1919, p. 3.

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El Puente de Los Hidalgos
Santa Fe, Santa Fe County, New Mexico

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connecting Santa Fe with cities to the north, until a new reinforced concrete girder was constructed several hundred yards upstream in 1932.

Unlike New Mexico cities that grew as commercial centers, such as Las Vegas and Albuquerque, Santa Fe's economy in the early 1920's was almost entirely dependent on its role as the state capitol and its growing tourism industry. Already proclaiming itself "the City Different," Santa Fe promoted its past, relying on its historic architecture as a distinguishing feature and attraction. In an article published in *Concrete Highway Magazine*, Turley attempted to equate the modern use of concrete to the historic use of historic adobe plaster, noting that the finish of the buildings in Santa Fe was "either of natural mud plaster or cement stucco." This connection between old and new materials was manifested in the rough, plaster-like concrete coating of the Bridge of the Hidalgos.

In design, the bridge represents an experimental phase in the development of reinforced concrete during the first decades of the twentieth century, when bridge engineers employed essentially steel truss bridge forms to create concrete spans. The concrete bowstring truss, popularly referred to as the "rainbow" arch, is generally attributed to James Barney Marsh, although examples of the bridge type were constructed earlier in Europe. Born in 1856, at North Lake, Wisconsin, Barney graduated in 1882 from Iowa State College of Agriculture and Mechanical Arts in Ames with a Bachelor of Mechanical Arts degree. Soon after he began practice at the Des Moines office of the King Bridge Company of Cleveland, Ohio, one of the largest bridge companies of the time, with one of its popular patents being the metal bowstring truss.

In 1896, Marsh left the King Bridge Company and started his own firm, the Marsh Bridge Company, later incorporated as the Marsh Engineering Company in 1904. During this period, Marsh experimented with the concrete bowstring form, eventually patenting the technology in 1911. The bridge type was commonly employed in the late teens, with the highest concentration of historic bridges found today in Kansas. The bridge design reached its peak in the 1920s, and was generally not used as a spanning technology after 1930. The typical concrete bowstring of the period consisted of a single span, although longer bridges, including the eleven-span Rainbow Bridge in Fort Morgan, Colorado, are known to exist.

Because it essentially imitated the metal truss, the concrete bowstring presented inherent structural limitations, especially as the design of the outside load-bearing beams precluded any widening of roadway. The bowstring's most suitable application was a crossing where a roadway could not be feasibly raised above the waterway to permit adequate clearance. In this limited situation, the bowstring could substitute for a concrete arch, which required a higher clearance. In the end, the concrete bowstring arch proved too limited in its application and too costly in its construction, because of the large amount of steel needed to reinforce the curved and vertical members of the arch.

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El Puente de Los Hidalgos
Santa Fe, Santa Fe County, New Mexico

With the crossing of the Arroyo de las Mascaras, a shallow waterway with an under clearance of less than five feet, the concrete bowstring arch, presented an ideal span. The bowstring could in this situation substitute for a concrete arch and still present a harmonious and aesthetic design. It also permitted a community, such as Santa Fe, which may have felt uncomfortable with the more stark and utilitarian steel truss bridge, to embrace a bridge design that appeared modern, yet was sympathetic to the city's architectural past. Using the relatively new material of reinforced concrete, Turley sought to embellish the bridge with reminders of Santa Fe's past, by employing ornamental corbel-like forms at the ends of the floor beams.

Until only recently El Puente de Los Hidalgos was owned and maintained by the New Mexico Highway and Transportation Department. The bridge is now owned by the Public Works Department of the City of Santa Fe, and continues to function as the main crossing between downtown Santa Fe and the historic Rosario neighborhood north of the arroyo. With the recent damage to the bridge's railing, the city plans to appropriately repair all areas of deterioration and damage.

El Puente de Los Hidalgos is important for its type and design. As an example of a concrete bowstring, the bridge represents a transitional period of reinforced concrete bridge construction during the first decades of the 1900s, when steel truss designs were experimented with to build concrete bridges. As the limitations of these early experiments became apparent, concrete bridge design moved away from influence of the truss to steel bar reinforcement that eventually became the standard for concrete bridge design. As the only example of its type in New Mexico, the bridge meets Criterion C, Engineering, at the state level of significance for its type and harmonious design reflecting elements of Santa Fe's architectural past. The bridge is also important for its role as the first permanent crossing over Arroyo de las Mascaras, connecting the city of Santa Fe, by the way of State Highway 485 and US 64, to Taos and other towns of the north-central part of the state. For this reason, the bridge additionally meets Criterion A, Transportation, at the state level of significance.

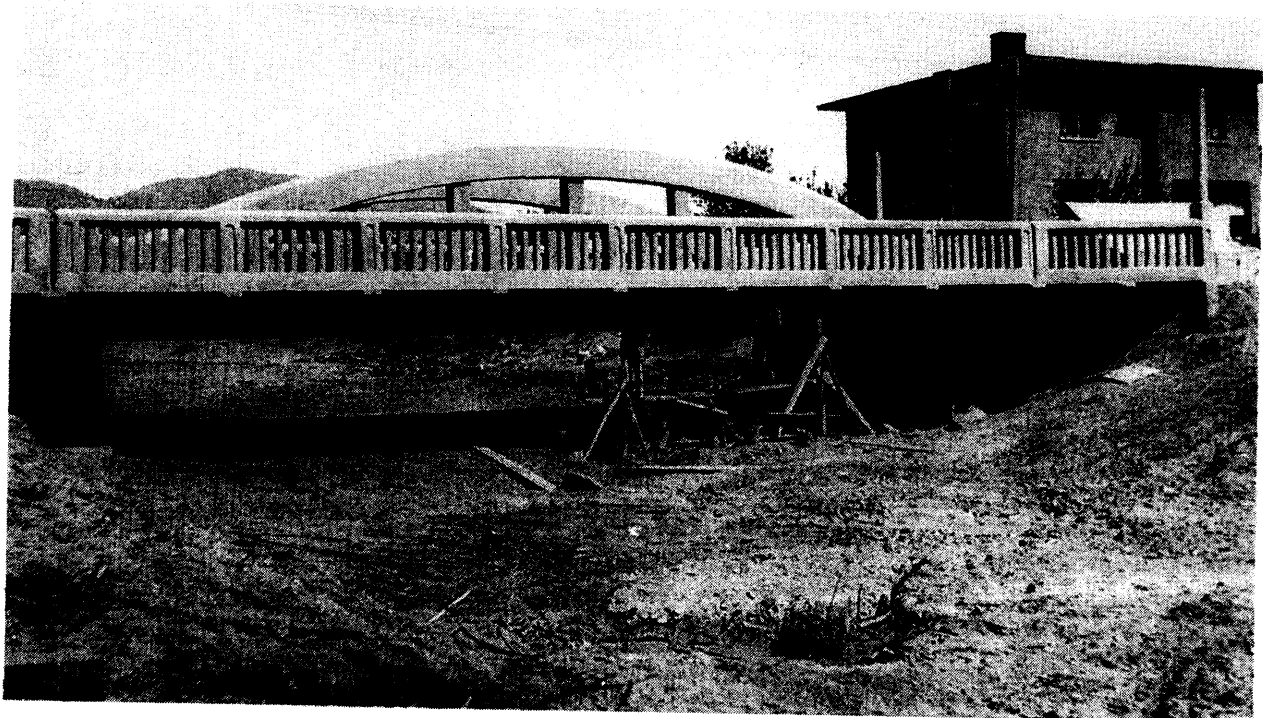
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El Puente de Los Hidalgos
Santa Fe, Santa Fe County, New Mexico

Figure 8-1 Work on El Puente de Los Hidalgos c. May 1920 (courtesy Museum of New Mexico)



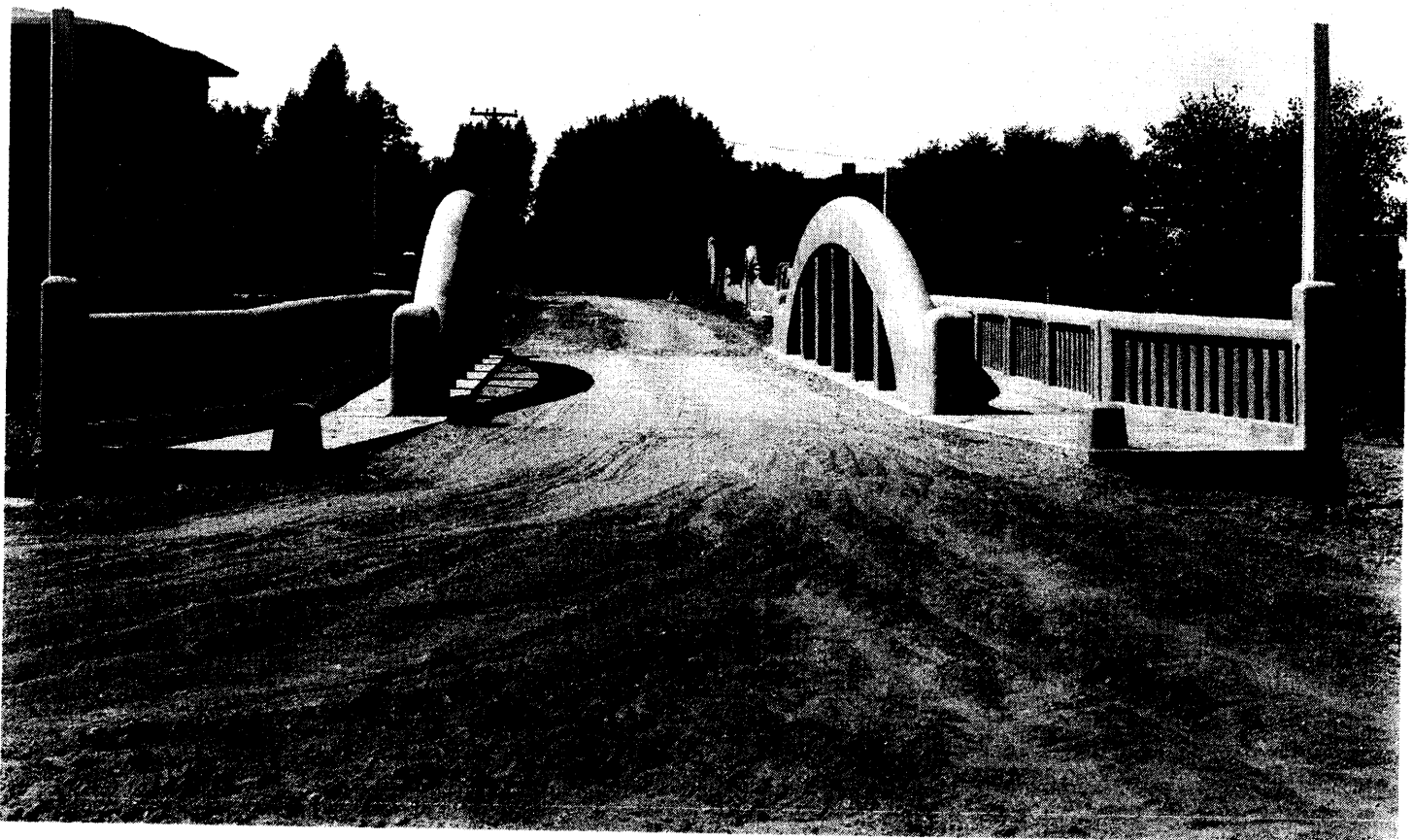
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El Puente de Los Hidalgos
Santa Fe, Santa Fe County, New Mexico

Figure 8-2 Completed Bridge, Looking South (courtesy Museum of New Mexico)



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El Puente de Los Hidalgos
Santa Fe, Santa Fe County, New Mexico

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- . _____ August 8, 1919, p. 536.
 - . _____ August 15, 1919, p. 539.
 - . _____ October 16, 1919, p. 545.
 - . _____ April 12, 1920, p. 567.
 - . _____ June 18, 1920, p. 574.
 - . _____ July 7, 1920, p. 577.
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Section PHOTO Page 13

El Puente de Los Hidalgos
Santa Fe, Santa Fe County, New Mexico

Photographs

El Puente de Los Hidalgos

Grant Avenue, app. 50 yards north of junction with Paseo de Peralta
Santa Fe, Santa Fe County, New Mexico

David Kammer, Ph.D.

March 2000

Negatives on file with Historic Preservation Division, New Mexico Office of Cultural Affairs

Photo No. 1 of 6

Approaches and roadway
Camera facing northeast

Photo No. 2 of 6

West elevation
Camera facing northeast

Photo No. 3 of 6

Detail of end post of west arch
Camera facing northeast

Photo No. 4 of 6

Detail of floor beam ends
Camera facing northeast

Photo No. 5 of 6

Detail of bridge inscription
Camera facing south

Photo No. 6 of 6

Detail of damage to hand railing
Camera facing southwest