

BURLINGTON NORTHERN SANTA FE RAILROAD,
CAJON SUBDIVISION , STRUCTURE NO. 62.7
between Cajon Summit and Keenbrook
Devore vicinity
San Bernardino County
California

HAER CA-2259-K
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
PACIFIC WEST REGIONAL OFFICE
National Park Service
U.S. Department of the Interior
1111 Jackson Street, Suite 700
Oakland, CA 94607

HISTORIC AMERICAN ENGINEERING RECORD

Burlington Northern Santa Fe Railroad, Cajon Subdivision,
Structure No. 62.7

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Location: BNSF Railway Company (BNSF) Railroad Structure No. 62.7, an I-beam bridge with two spans, is located at Milepost 62.7 on Main Tracks 1 and 2, Devore vicinity, San Bernardino County, California. The bridge crosses a drainage tributary of Cajon Creek and is bounded by the Union Pacific Railroad to the west and Interstate 15 to the east.

The bridge lies within the NE ¼ of the NW ¼ of the NE ¼ of Section 1, Township 2 North, Range 6 West, on the 1956 Cajon, California, 7.5-minute U.S. Geological Survey quadrangle (photorevised 1988). Universal Transverse Mercator Coordinates: Zone 11, NAD83, Geodetic Reference System 1980 ellipsoid, 3795061 mN, 457808 mE (south abutment); 3795078 mN, 457800 mE (north abutment).

Date of Construction: 1913, modified 1939 and 1950

Architect/Engineer: unknown

Builder: Atchison, Topeka and Santa Fe Railway (AT&SF)

Present Owner: BNSF

Present Use: Bridge on Main Tracks 1 and 2.

Significance: The section of railroad through Cajon Pass provided a vital link between the greater Los Angeles area and distant markets. In 1998, the California State Historic Preservation Office determined the historic route of the AT&SF (now BNSF) railroad alignment through Cajon Pass to be eligible for listing in the National Register of Historic Places under Criteria a and c. By connecting Los Angeles and San Bernardino to markets throughout the United States, the railroad dramatically affected demographic, commercial, and cultural trends in Southern California. Furthermore, construction of the long, winding alignment through rugged and often steep terrain represents a significant engineering feat for its time. Structure No. 62.7 contributes to the function and significance of the railroad line by carrying rail traffic across a substantial drainage channel.

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Date: March 2008

Architectural and Engineering Information

Structure No. 62.7 is a two-span I-beam bridge that carries Main Tracks 1 and 2 over Brush Creek, a major tributary of Cajon Creek. The bridge is located at Milepost 62.7, immediately southeast of the now-abandoned Cajon Station (Figure 1). Each span is 30'-0", and the bridge has a total length of 60'-0". The width of the bridge is 60'-0" from one handrail (located on the deck) to the other, and the distance from the top of the deck to the creek bed is approximately 10'. As originally constructed in 1913, the bridge supported four tracks—the eastbound and westbound main tracks and two sidings (Bridge List, First District, Los Angeles Division, p. 48, Structures Department, BNSF Railway Company [BNSF], Kansas City, Kansas). The sidings have since been removed, leaving only Main Tracks 1 and 2. A maintenance road for carrying service vehicles over the drainage parallels Main Track 2 on the bridge's east side.

A reinforced-concrete substructure consisting of two abutments and one pier bears the concentrated vertical load of the bridge. The north abutment has a length of 62'-0". In the upper area of the abutment is an approximately 4' step-down that supports the I-beams. A 15'-0"-long flared and tapered wing wall joins the abutment on the upstream side of the bridge, and a tapered wing wall with a length of 14'-0" is in place on the downstream side. The south abutment has a length of 68'-6" and incorporates an upper step-down to support the I-beams. The upstream and downstream wing walls are tapered, with lengths of 11'-0" and 10'-0", respectively. On the downstream side of the south abutment is a date stamp that reads "1939." This date refers to the year the Atchison, Topeka and Santa Fe Railway (AT&SF) repaired the abutment, damaged in the flood of 1938. Flood waters may have caused extensive spalling, which necessitated the repairs. The new concrete (1939 repairs) has a color and texture different from that of the old concrete (1913 construction).

A hexagonally shaped center pier with upward-sloping sides supports the bridge deck spans. The pier has a top width of 3'-6", a top length of 62'-0", and a true height of 10'-4-1/2" (although the base of the pier is beneath the creek bed) (Bridge No. B-63, on Mile 63, First District, Los Angeles Division, Plan and Detail of Concrete Abutments and Pier for 2-30 Foot I-Beams, Ballast Deck, for 4 Tracks, C. E. C. L. No. 197-10240, drawing, 25 February 1913, Structures Department, BNSF). The pier is located equidistant to the north and south abutments. A date of 1939 is stamped on the northwest side of the pier. Like the date stamp on the south abutment, the 1939 date indicates the year significant repairs were made to the bridge following a major flooding episode.

Each 30'-0" span incorporates thirty-two I-beam girders in four sets of eight, or eight girders for each of the four original tracks. The I-beams have a web height of 24" and a width of 8". Fastened atop and lying perpendicular to the girders are 6" x 8" lengths of treated timber that form the bridge deck. The timber deck supports the ballast, ties, and rails. The ballast curbs that run along the outer edges of the spans are constructed of 6" x 10" lengths of treated timber. Hand rails on both sides of the bridge consist of 2" x 6" timber rails on 4" x 4" timber posts.

In 1950, AT&SF constructed an underground, reinforced-concrete cutoff wall on the west (downstream)

side of the bridge to prevent scouring around the abutment and pier foundations. The wall is joined to the downstream ends of the north and south abutments and has a length of 72'-6", a width of 7'-0", and a height of 9'-0" (mostly underground) (Bridge B-63 Cut-off Wall, C. E. C. L. No. 88-25432, drawing, 25 January 1950, Structures Department, BNSF). Currently, an approximately 3' section of the wall is exposed in the streambed rubble. As designed and constructed, the structure lifts the streambed to its original elevation, thus reducing water seepage that would otherwise undermine the bridge's substructure on the downstream side.

A reinforced-concrete retaining wall extends from the southeast abutment of the railroad bridge and joins the abutment of a highway bridge located approximately 55' upstream. The upstream bridge is a relatively elaborate, reinforced-concrete structure that was built in 1930 as part of U.S. Highway 66.

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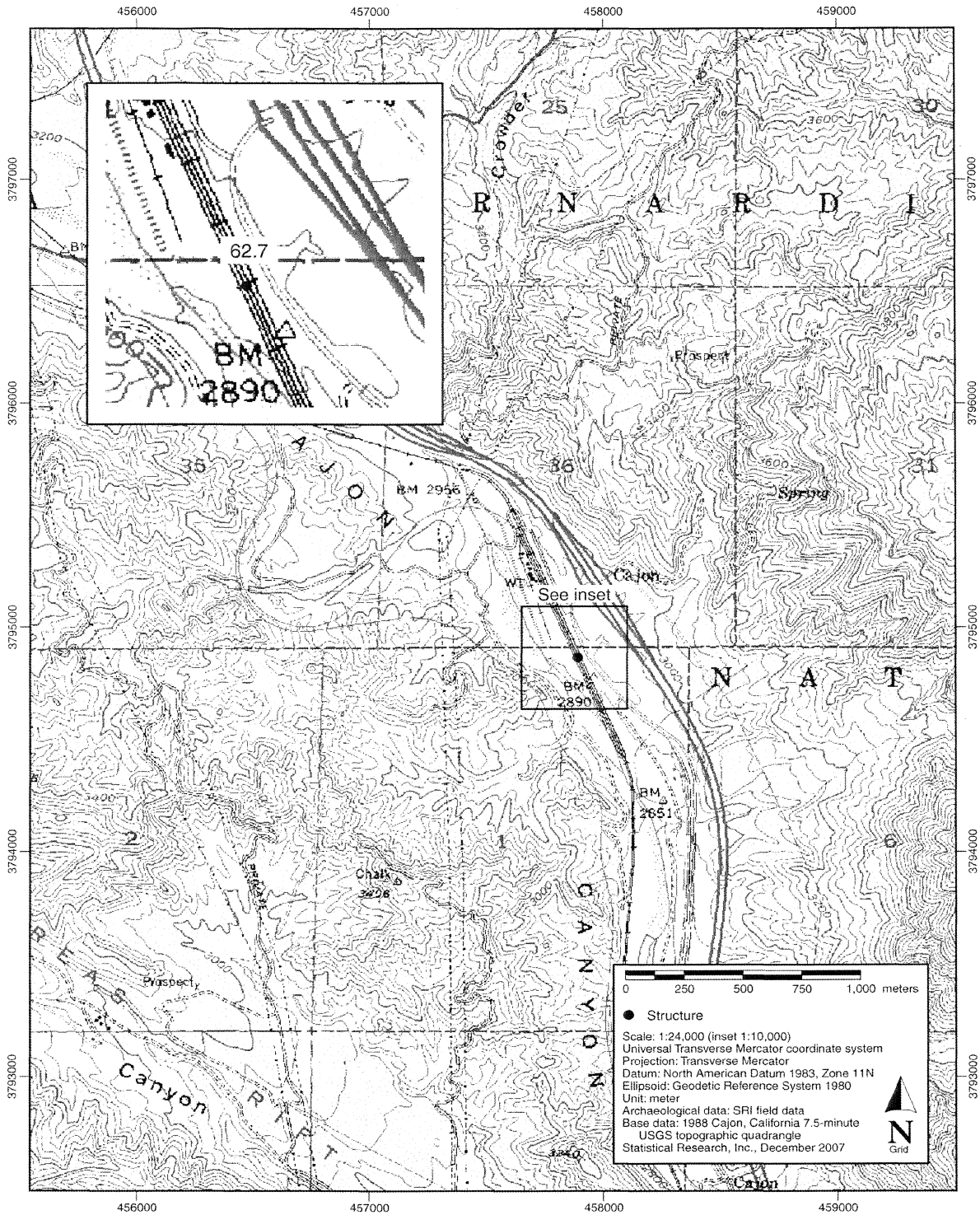


Figure 1. Project location (1956 Cajon, California, 7.5-minute U.S. Geological Survey quadrangle [photorevised 1988]).

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David G. De Vries, photographer

May 2007

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KODAK 400TMY

HAER No. CA-2254-K-1



KODAK 400TMY

TRAIL NO. CA - 2259 - K. 2



KODAK 400TMY

HAER NO. CA - 4439 - K - 3



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KODAK 400TMY

HAER NO. CA-2254-K-5



KODAK 400TMY

FRAME NO. 08 - 2159 - R-6



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HAER No. CA-2254-K-8