

BURLINGTON NORTHERN SANTA FE RAILROAD,
CAJON SUBDIVISION , STRUCTURE NO. 67.5
Between Cajon Summit and Keenbrook
Devore vicinity
San Bernardino County
California

HAER CA-2259-S
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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. 67.5

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Location: BNSF Railway Company(BNSF) Railroad Structure No. 67.5, a reinforced-concrete box culvert, is located at Milepost 67.5 on Main Tracks 1 and 2, Devore vicinity, San Bernardino County, California. The culvert is bounded by the Union Pacific Railroad to the west and Cajon Boulevard (historic U.S. Highway 66) to the east.

The culvert lies within the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 19, Township 2 North, Range 5 West, on the 1966 Devore, California (photorevised 1988), 7.5-minute U.S. Geological Survey quadrangle. Universal Transverse Mercator Coordinates: Zone 11, NAD83, Geodetic Reference System 1980 ellipsoid, mN 3789389, mE 458517 (inlet); mN 3789395, mE 458531 (outlet).

Date of Construction: 1938

Architect/Engineer: unknown

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

Present Owner: BNSF

Present Use: Culvert 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. 67.5 contributes to the function and significance of the railroad line by mitigating the effects of erosion on the integrity of the system.

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Tucson, Arizona

Date: March 2008

I. ARCHITECTURAL AND ENGINEERING INFORMATION

Structure No. 67.5 is a reinforced-concrete box culvert situated on a secondary drainage that empties into Cajon Creek (Figure 1). A culvert is a structure designed to protect the roadbed from the erosive effects of storm runoff by carrying water safely under the track. Culverts are placed at points along the roadbed where the railroad intersects normally dry channels. The size of a culvert is determined by the anticipated rate of flow during periods of heavy rainfall (Hay 1953:282, 284; Webb 1932:249).

This structure consists of an inlet transition on the west side of the roadbed embankment that diverts and channels water under the track through a 8'-0"-high, 8'-0"-wide opening. The section of culvert through the roadbed is rectangular in cross section and was cast in place as a single unit. A headwall and two wing walls hold back the roadbed fill from the culvert opening, and an apron prevents scouring around the inlet. The exposed portion of the headwall is 9'-10" long and 8'-11" high. Two wings, positioned at slightly obtuse angles to the headwall, slope downward to the apron located at the base of the culvert opening. The wings are 10'-7" in length, with a maximum height of 8'-8" and a minimum height of 2'-0". Both wings have a standard 1" bevel. The apron is 14'-0" at its widest point and measures 11'-3" from its outer edge to the culvert opening. A date of 1938, signifying the year the structure was built, is stamped in the center of the headwall above the opening. The culvert barrel is 59'-0" long, with an overall length (including aprons on the upstream and downstream sides) of 81'-6". From the inlet to the outlet, the culvert barrel has a slight downward slope that corresponds to the slope of the channel it drains (Bridge List, First District, Los Angeles Division, p. 49, Structures Department, BNSF Railway Company [BNSF], Kansas City, Kansas; Br. AA-68, First District, Los Angeles Division, 8 ft. x 8 ft. Reinforced Concrete Box, drawing, 1938, Structures Department, BNSF.) Timber beams two courses high lie horizontally above the headwall and are held in place by timber posts. The beams serve as a retaining wall. The culvert outlet is essentially the same as the inlet, although there is no ballast curb above the headwall. Sediment and gravel cover the culvert aprons and floor.

II. REFERENCES CITED

Hay, William W.

1953 *Railroad Engineering, Volume One*. John Wiley & Sons, New York, and Chapman and Hall, London.

Webb, Walter L.

1932 *Railroad Construction: Theory and Practice*. 9th ed. John Wiley and Sons, New York.

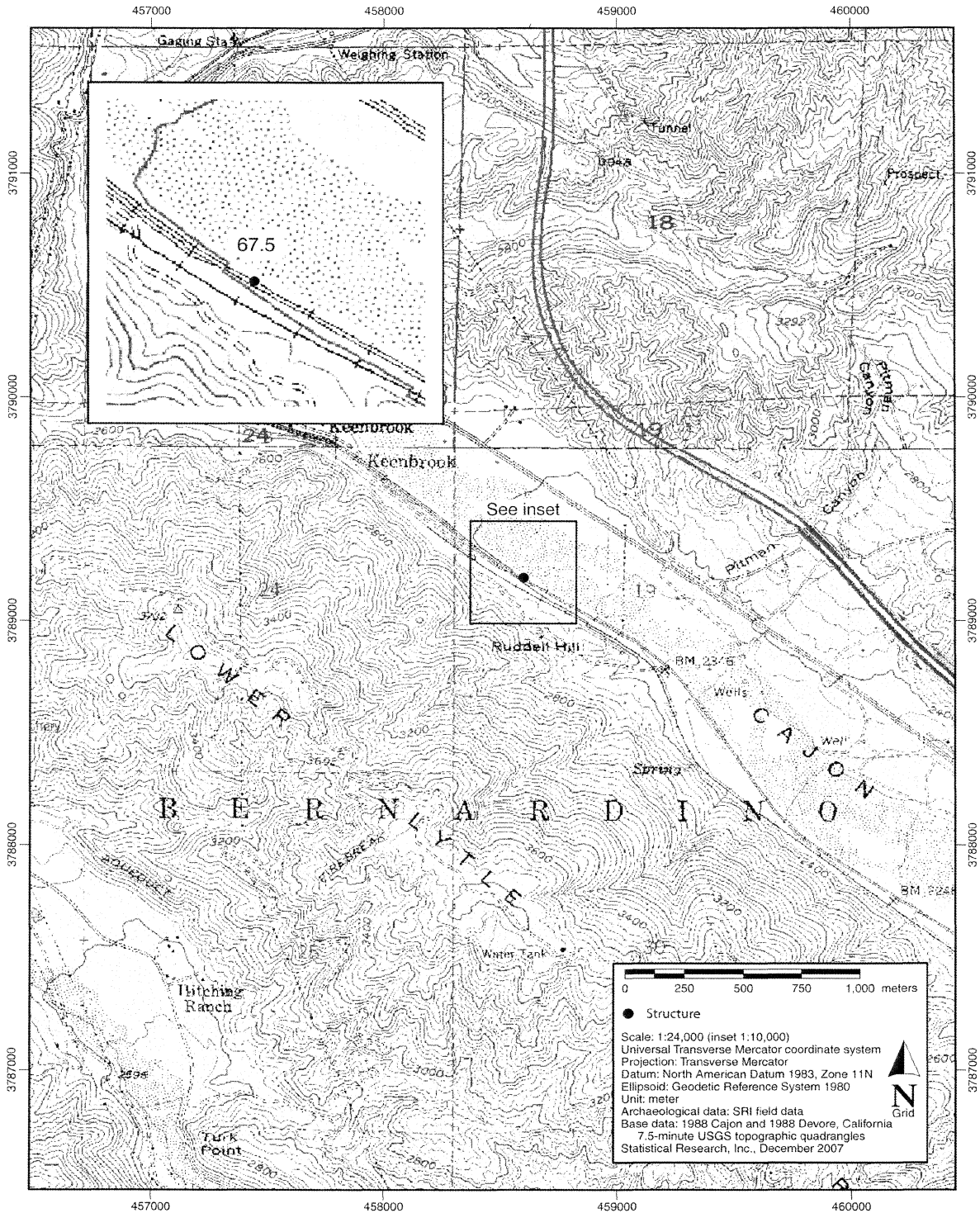


Figure 1. Project location (1966 Devore, California, 7.5-minute U.S. Geological Survey quadrangle [photorevised 1988]).

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David G. De Vries, photographer

June 2007

- CA-2259-S-1 CONTEXT VIEW, TO THE NORTHEAST FROM THE UNION PACIFIC TRACK,
WITH CAJON CREEK WASH AND INTERSTATE 15 IN BACKGROUND. [73]
- CA-2259-S-2 WEST ELEVATION (INLET). [71]
- CA-2259-S-3 EAST ELEVATION (OUTLET). [72]



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