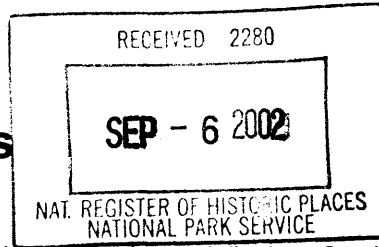


United States Department of the Interior
National Park Service



1140

National Register of Historic Places
Registration Form

This form is for use in nominating or requesting determination for individual properties and districts. See instruction in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Big Thompson River Bridge IV

other names/site number CDOT No. C-16-Z; 5LR9533

2. Location

street & number US Highway 34 at milepost 86.04 [N/A] not for publication

city or town Loveland [X] vicinity

state Colorado code CO county Larimer code 069 zip code

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this [X] 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 [X] meets [] does not meet the National Register criteria. I recommend that this property be considered significant [] nationally [] statewide [X] locally. ([] See continuation sheet for additional comments.)
Gloriana Couteglia State Historic Preservation Officer *August 19, 2002* Date
Signature of certifying official/Title
State Historic Preservation Office, Colorado Historical Society
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 certifying official/Title Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the 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 [] See continuation sheet.

Edson A. Beall Signature of the Keeper *10/15/02* Date of Action

Big Thompson River Bridge IV
Name of Property

Larimer County, Colorado
County/State

5. Classification

Ownership of Property

(Check as many boxes as apply)

- private
- public-local
- public-State
- public-Federal

Category of Property

(Check only one box)

- building(s)
- district
- site
- structure
- object

Number of Resources within Property

(Do not count previously listed resources.)

Contributing Noncontributing

0	0	buildings
0	0	sites
1	0	structures
0	0	objects
1	0	Total

Name of related multiple property listing.

(Enter "N/A" if property is not part of a multiple property listing.)

Highway Bridges in Colorado

Number of contributing resources previously listed in the National Register.

0

6. Function or Use

Historic Function

(Enter categories from instructions)

Road-related

Current Functions

(Enter categories from instructions)

Road-related

7. Description

Architectural Classification

(Enter categories from instructions)

Other: Steel rigid-connected camelback pony
truss

Materials

(Enter categories from instructions)

foundation _____
walls _____
roof _____
other Concrete
Steel
Asphalt

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Big Thompson River Bridge IV
Larimer County, Colorado
Highway Bridges in Colorado, MPS

Section number 7 Page 1

DESCRIPTION

Location: US Highway 34 at milepost 86.04, two miles west of Loveland.

Setting: The bridge crosses the Big Thompson River in the rolling hills at the western edge of the Front Range. The area is surrounded by deciduous trees and bushes.

Structure length: 164 feet

Structure width: 31.2 feet

Roadway width: 30 feet

Main span number: 1

Approach span number: 2

Main span length: 100 feet

Superstructure: Steel, rigid-connected camelback pony truss

Substructure: Concrete abutments, wingwalls and piers

Floor/decking: Concrete deck with asphalt overlay

Other features: Upper chord – 2 channels with cover plate and double lacing

Lower chord – 2 channels with batten plates

Vertical and diagonal – wide flange

Floor beams and stringers – steel I-beam

Steel lattice guardrails

Erected: 1933

Designer: Colorado Department of Highways

Fabricator: Midwest Steel & Iron Works

Contractor: Lawrence Construction Company

Alterations: None

Big Thompson River Bridge IV
Name of Property

Larimer County, Colorado
County/State

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- 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 values, 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
(Mark "x" in all the boxes that apply.)

Property is:

- A** owned by a religious institution or used for religious purposes.
- B** removed from its original location.
- C** a birthplace or grave.
- D** a cemetery.
- E** a reconstructed building, object, or structure.
- F** a commemorative property.
- G** less than 50 years of age or achieved significance within the past 50 years.

Narrative Statement of Significance
(Explain the significance of the property on one or more continuation sheets.)

Areas of Significance
(Enter categories from instructions)

Transportation
Engineering

Periods of Significance
1933-1952

Significant Dates
N/A

Significant Person(s)
(Complete if Criterion B is marked above.)
N/A

Cultural Affiliation
N/A

Architect/Builder
Colorado Department of Highways
Midwest Steel & Iron Works
Lawrence Construction Company

9. Major Bibliographical References

Bibliography
(Cite the books, articles and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- 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
- Other State Agency
- Federal Agency
- Local Government
- University
- Other

Name of repository:
Colorado Historical Society
Colorado Dept. of Transportation

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Big Thompson River Bridge IV
Larimer County, Colorado
Highway Bridges in Colorado, MPS

Section number 8 Page 2

SIGNIFICANCE

The 1933 Big Thompson River Bridge VI on US Highway 34, two miles west of Loveland, meets the registration requirements under Criteria A and C as set forth in *Highway Bridges in Colorado*, Multiple Property Documentation Form. The bridge is eligible in the area of transportation for its association with the development and operation of an important automobile tourism route. Long before the establishment of Rocky Mountain National Park in 1915, the road from Loveland to Estes Park served as the primary entrance into the area from the east. Although not a transcontinental route like US Highways 40 or 50, US 34 was regionally important as the "Gateway to the Rockies." The period of significance begins in 1933 with the completion of the bridge and extends through its historic use to 1952, a date fifty-years-of-age in keeping with National Register criteria.

The Big Thompson River Bridge IV is also eligible in the area of engineering. The truss design that the Colorado Highway Department (CHD) used for the bridge was a decade-old standard state design. The Big Thompson River Bridge IV is one of four steel rigid-connected camelback pony trusses on the upper Big Thompson River which constitute the last surviving group of such trusses in the state. In structurally unaltered condition, each of the four is an important engineering and transportation-related resources.

BRIDGE ENGINEERING

The camelback truss had been developed during the late 19th century by the railroad industry and later adapted to roadway use. With the upper chords, endposts and verticals of its webs acting in compression and lower chords and diagonals acting in compression, the camelback was a sub-type of the venerable Pratt design. Structurally, it was defined as a Parker truss with exactly five facets in its upper chord. The camelback's distinctive profile was initially disdained by many engineers for its ungainly appearance and its tendency under certain conditions to reverse compressive and tensile forces acting on individual members. As a result, pin-connected versions of camelback truss never gained widespread acceptance in the 19th and early 20th centuries.

Rigid connections, which eliminated the truss's negative structural proclivities, made the camelback more palatable for highway engineers of the 1920s. The Colorado Highway Department and its predecessors had been using Pratts and their sub-types since the 1880s, and the camelback was a logical choice for its standard long-span pony truss. CHD delineated camelback ponies in 80-foot, 100-foot and 125-foot span lengths, with a range of roadway widths, and built hundreds of them around the state during the 1920s, 1930s and 1940s. Bridge attrition in Colorado has been such that today relatively few remain in use.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Big Thompson River Bridge IV
Larimer County, Colorado
Highway Bridges in Colorado, MPS

Section number 8 Page 3

The bridge that CHD delineated for the Big Thompson River crossing was configured as a rigid-connected camelback pony truss, supported by reinforced concrete abutments. The truss spanned 100 feet, subdivided into six 16 ft.-8 in. panels. The upper chords and inclined endposts consisted of two back-to-back 12-inch steel channels, covered by a continuous 3/8-inch steel plate on top and joined by double bar lacing underneath. The verticals and diagonals were 10-inch wide flanges, the lower chords two channels with batten plates. Wide flange floor beams were riveted to the verticals at the panel points; these were reinforced beneath the deck by steel angle lateral braces. The floor beams supported wide flange stringers, on which the 30-foot wide concrete slab deck rested. This deck was flanked on each side by an integrally poured concrete curb and steel lattice guardrail with steel plate hub rail.

CONSTRUCTION HISTORY

In 1913 the Colorado Highway Commission established State Primary Road No. 51 across Larimer and Grand counties. The old stage route started at the western edge of Loveland and ran westward along the Big Thompson River to Estes Park, and from there over the Continental Divide to Granby. The following year the Commission and Larimer County erected two steel trusses over the Big Thompson River just west of Loveland. In 1922 the US Bureau of Public Roads approved Colorado's first Federal Aid Highway system. Under the new system, the Loveland-Estes Park road was redesignated as State Highway 16. Three years later it was incorporated into US Highway 34. The Highway Department made incremental improvements to the route during the 1910s and 1920s. Federal Aid Project No. 9, undertaken in 1919, involved improvement to nineteen miles of the route through the Big Thompson Canyon between Loveland and Estes Park. The construction that year entailed widening the roadway and improving the highway's surface. "The state highway commission has finished the construction of what is considered to be the best mountain road in the country," contractor Frank Hoffman stated at the dedication ceremony in May 1920, "affording a highway which links every part of the state of Colorado with the most popular federal playground in the United States – our Rocky Mountain National Park."

The Big Thompson Canyon Highway carried traffic with only maintenance-related work through the 1920s. In 1923 Larimer County Road Supervisor James Edwards could state, "The Big Thompson canon road leading to North Park and Salt Lake City are both eighteen-foot boulevards, blasted from solid rock nearly their entire length, reaching from the valley on the east to the Continental Divide, which is the west boundary of the county." Late in 1932 the Highway Department began planning another major improvement project on the route. In December CHD reported that its engineers were working on drawings for Federal Aid Project 9-B, involving the improvement of some ten miles of highway west of Loveland. The project included the construction of two major truss bridges to replace the 1914 structures. One of the new bridges was Big Thompson River Bridge IV.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Big Thompson River Bridge IV
Larimer County, Colorado
Highway Bridges in Colorado, MPS

Section number 8-9 Page 4

Early in 1933 the Highway Department awarded the construction contract to the Lawrence Construction Company. Using steel superstructures fabricated in Denver by the Midwest Steel & Iron Works, Lawrence completed the two trusses later that year. The Big Thompson River Bridge IV has since carried vehicular traffic, surviving the disastrous 1976 flood on the Big Thompson, and today functions in place without alteration.

BIBLIOGRAPHY

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- "Road Building in Larimer County." *Colorado Highways* 2:12 (December 1923).
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- "Through Big Thompson Canon." *Rocky Mountain News*, 11 June 1938.
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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Big Thompson River Bridge IV
Larimer County, Colorado
Highway Bridges in Colorado, MPS

Section number 10 Page 5

GEOGRAPHICAL DATA

VERBAL BOUNDARY DESCRIPTION

The Big Thompson River Bride IV is located on US Highway 34 at milepost 86.04. The boundaries of this nomination consist of a rectangle of land 10 feet out in each direction from the footprint of the bridge.

BOUNDARY JUSTIFICATION

The nomination includes all the land directly and historically associated with the bridge.

PHOTOGRAPH LOG

The following information pertains to photograph numbers 1-2:

Name of Property: Big Thompson River Bridge IV
Location: Larimer County, Colorado
Photographer: Clayton Fraser
Date of Photographs: September 1999
Negatives: Colorado Department of Transportation

Photo No. Photographic Information

- 1 Looking through bridge and down highway; view to the east.
- 2 View to the north from the east bank of the Big Thompson River.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Big Thompson River Bridge IV
Larimer County, Colorado
Highway Bridges in Colorado, MPS

Section number ___ Page 6

USGS TOPOGRAPHIC MAP
Masonville Quadrangle, Colorado
7.5 Minute Series, 1978

UTM: Zone 13 / 484754E / 4474022N
PLSS: 6th PM, T5N, R70W, Sec.12, SE NW NE Qtr.
Elevation: 5,080 feet

