

United States Department of the Interior
National Park Service

LISTED: 7 February 2007
NRHP Ref. No: 07000003
IHSI No: 27-5120

National Register of Historic Places Registration Form

1. Name of Property

historic name: Boise River and Canal Bridge

other name/site number: Caldwell Bridge (40GN34), IHSI #27-5120

2. Location

street & number Plymouth Street (Old Highway 30) [] not for publication

city or town Caldwell [X] vicinity

state Idaho code ID county Canyon code 027 zip code 83605

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 [X] statewide [] locally. ([] See continuation sheet for additional comments.)

Susan Pengilly Neitzel 21 Dec 2006
Signature of certifying official/Title Date
Susan Pengilly Neitzel/DEPUTY SHPO

State or Federal agency and bureau

In my opinion, the property [] meets [] does not meet the National ([] 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:	Signature of Keeper	Date of Action
[] 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): _____		

Boise River and Canal Bridge
Name of Property

Canyon County, ID
County and 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 a grave.
- D** a cemetery.
- E** a reconstructed building, object, or structure.
- F** a reconstructed building, object, or structure.
- 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.) See continuation sheet (s) for Section No. 8

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 # _____

Areas of Significance

(Enter categories from instructions)

ENGINEERING

Period of Significance

1922

Significant Dates

1922

Significant Person

(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

Architect/builder

F. H. McConnel (Engineer)

Primary location of additional data:

- State Historical Preservation Office
- Other State agency
- Federal agency
- Local government
- University
- Other

Name of repository: _____

See continuation sheet (s) for Section No. 9

Boise River and Canal Bridge
Name of Property

Canyon County, ID
County and State

10. Geographical Data

Acreeage of Property Less than 1 acre

UTM References

(Place additional UTM references on a continuation sheet).

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2	<u>11</u>	<u>5252³⁷³93</u>	<u>48371⁶⁰46</u>	4	<u> </u>	<u> </u>	<u> </u>
	NAD27						

[] See continuation sheet

Verbal Boundary Description

The Bridge is located on the Plymouth Street (Old Highway 30) crossing of the Boise River and Notus Canal on the north side of the City of Caldwell. The west side of the Bridge is adjacent to the Plymouth Street / River Drive intersection.

Boundary Justification

The nominated property includes the historic bridge, its piers and abutments.

11. Form Prepared By

name/title Dale M. Gray
organization Frontier Historical Consultants, Inc date June 30, 2006
street & number 24265 River Road telephone (208) 834-3061
city or town Grand View state ID zip code 83624

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

Photographs

Representative **black and white photographs** of the property.

Additional items

(Check with the SHPO or FPO for any additional items.)

Site form

Property Owner

name/title City of Caldwell
street & number 621 Cleveland Boulevard telephone (208) 455-3000
city or town Caldwell state ID zip code 83605

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 *et seq.*).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P. O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20503.

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Name of Property: Boise River and Canal Bridge

County and State: Canyon County, Idaho

Narrative Description:

The Boise River and Canal Bridge was designed by Caldwell City Engineer F. H. McConnel and built by the American Bridge Co. in 1922. The bridge over the Boise River and Notus Canal was associated with the Idaho Pacific Highway at the time of its construction and later with U. S. Highway 30. It continued to carry U. S. Highway 30 until the early 1960s when the nearby Interstate was constructed and the roadway was renamed Plymouth Street. Currently it provides local access across the river and canal.

The Boise River and Canal Bridge consists of a three-span Warren camelback through-truss bridge. The three-span structure stretches 390 feet across the Boise River and Notus Canal. Each span is 130 feet long. The bridge is between 5 and 15 feet above the Boise River depending upon river volume. The bridge is 23.5 feet wide out-to-out with a 19.5 foot-wide roadway with six-inch wood curbs. The bridge has a vertical traffic clearance of 14.1 feet.

The deck is anchored on the end of each span to concrete wing abutments on either bank and concrete wall piers in mid-stream. The concrete piers are 26 feet long with pointed ends to divert water and debris. The piers taper as they rise with a bearing surface of two feet in width at the top. Three steel I-beam stringers run the length of each span, supported mid-span by cross beams attached to the bottom of the vertical components of the Warren truss, which are under tension. Each stringer, in turn, supports a series of I-beam purlins. These are capped with wood joists bolted to the I-beams. Wood runners run diagonally across the bridge to provide shear strength. The wood joists provide support and anchor for the wood deck. The deck is composed of milled 2 x 6 boards placed on edge and laminated with asphalt. A historic photo from the 1930s shows the deck paved with asphalt, indicating an early date for the lamination, if not original to the bridge (Caldwell Public Library).

The superstructure is composed of laced channel sections connected with riveted gussets. The bottom chord runs from abutment to both piers, and then to the far abutment. It is supported mid-span by vertical laced channel sections under tension that also support the deck. The bridge's weight and traffic load is transferred outward to the abutments and piers by a series of diagonal laced channels under compression. The top chords, composed of steel I-beams, form a shallow arch and are supported on each end by inclined I-beam end posts. The portal and sway bracing are double-angle and laced-angle sections.

The original walkway guardrails are still in place on both sides of the bridge. The guardrails are composed of steel strip lattice panels flared at the bridge ends. The rails are slightly damaged at one point on the south side mid-span and near the west end on the north side.

The original dedication plaque from 1922, is in good repair and is located on the east end, north side inclined end post. The plaque reads, "Commissioners / D. C. Westcott / O. C. Reinhardt / F. M. Brown / Engineer / F. H. McConnel / Built for / Canyon County / By / American Bridge / Company / 1922."

Integrity:

The Boise River and Canal Bridge has excellent integrity. Other than minor damage to the pedestrian guardrails, the bridge appears to be little changed from its original configuration and appearance. It shows no evidence of alteration, retrofitting or any changes beyond routine maintenance. While some of the steel components show some rust, the structure is remarkably intact and would be immediately recognizable to anyone familiar with it when it was first constructed.

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Name of Property: Boise River and Canal Bridge

County and State: Canyon County, Idaho

8. Description

Narrative Description

The Boise River and Canal Bridge is significant as a good example of a Warren camelback through-truss steel bridge (Criterion C) and is significant on the state level as one of the last major bridges to be built on the Idaho state highway system using county government funds. The bridge meets the criteria established in the Multiple Property Documentation *Metal Truss Highway Bridges of Idaho*.

The Boise River and Canal Bridge is located adjacent to the Boise River crossing of the Oregon Trail. The geography of the area forced the Trail onto Canyon Hill to the east of the crossing and then down a ravine to the Boise River. The steep hill slopes and unfavorable river crossing characteristics farther downstream forced early travelers to use the relatively good river crossing at the base of Canyon Hill. Since most of the emigrants using the Trail crossed the Boise River in August and September, the Canyon Hill ford was usually not a great challenge.

When gold was discovered in the Boise Basin in 1862, the Oregon Trail was put back to use, only in reverse, as miners and their supplies moved eastward up the Columbia River and rushed to diggings in Idaho's mountains. Much of the traffic occurred in the spring months when the Boise River was high or even in flood stage, making the crossing impassable. As a result, a ferry was established to serve the influx of miners. By 1867, the newly formed Idaho Territorial Legislature stamped its approval on the Canyon Hill Ferry on the Boise River. J. W. Drury and L. A. Leavey paid \$50 for the ferry license and posted a \$1,000 bond. The next year the ferry was in the hands of Perry Munday and became known as the Munday Ferry. The ferry was next owned by D. W. Fouch in 1875, who lowered the rates. The last license to operate a ferry at Canyon Crossing was granted to Albert Fouch on April 11, 1881 (Huntley 1979).

In 1886, the first bridge at Canyon Crossing was erected using funds dedicated by the Idaho Territorial Legislature. This bridge was located a few meters upstream from the present bridge. The bridge had masonry abutments, but little else is known of the structure. The arrival of the Oregon Short Line Railroad (OSL) in Idaho in 1882, influenced the design of the first bridge. Since the railroad carried the bulk of the freight and passenger traffic, the Boise River and Canal Bridge designers needed a plan to support only local wagon and foot traffic. The result was a plan for a metal-truss bridge.

As the nation entered the 1920s, the first bridges built in Idaho were feeling their age and many could not support the change from wagons to automobiles and trucks. Highways crossing states and even the nation were being built, and bridges across rivers became major milestones for the building programs. The excitement once felt for the expansion of railroads across the continent was reborn as the automobile "craze" raced across the land.

In 1920, the bridge at Canyon Crossing could no longer meet the demands of vehicular traffic. The old Oregon Trail / Emigrant Road crossing the Boise River at the base of Canyon Hill had to be revitalized. The Idaho Pacific Highway, later known as Highway 30, had ever-increasing traffic volume and heavier loads. The situation called for a new steel-truss bridge such as those being built throughout the State for roads with similar problems.

Notable steel-truss bridges built in Idaho during the 1920s, included the 788-foot long Cherry Lane Bridge across the Clearwater River in Nez Perce County and the Walter's Ferry Bridge across the Snake River in Owyhee / Canyon counties, both constructed by the Security Bridge Company in 1921. The Cherry Lane Bridge is notable for its unusual combination of truss types and as a rare multi-span, pin-connected bridge. The Walter's Ferry Bridge is important as one of the earliest long-span riveted Warren truss bridges in Idaho. When the Pickle Butte Bridge near present-day Marsing southwest of Caldwell on the Idaho / California Highway was dedicated on May 25, 1921, 15,000 people attended the opening ceremonies. Perhaps the Bridge Department's most innovative

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County and State: Canyon County, Idaho

Statement of Significance

design was the 428-foot cantilever continuous through-truss Owsley Bridge built over the Snake River near Hagerman in 1921 (Herbst 1983; Erickson 1985).

While engineering solutions for the bridges were well established, funding the programs proved problematic. Toll roads of the 19th Century proved to be inadequate for funding large construction projects. As a result, highway construction and maintenance was handed over to the counties, who could levy property taxes to support the work. The County Road Act of 1881, designated free roads and established parameters for road construction and assessed work days for able-bodied men and property owners. The labor requirements were dropped by the 1885 Legislature because of a growing awareness of the need for trained road workers. The 1885 Legislature also provided the funding for three bridges, including a bridge across the Boise River near Caldwell. This bridge replaced the Canyon Hill Ferry on the old Emigrant Road. Additional state taxes and federal funds were funneled down to the county level to help fund local roads. This method of funding, while an improvement over the prior toll and labor assessment methods, resulted in inconsistent road construction and maintenance. Poor counties with major highways passing through their boundaries were at a disadvantage and relied heavily on inconsistent funding from the state and federal government to help defray cost. The Bureau of Highways, part of the Bureau of Public Works, was established in 1919, to help address the growing road problem. By the start of the 1920s, the county-based road maintenance system had reached its limits, and new legislation had to be enacted to insure the development of a quality travel infrastructure (Erickson 1985).

Federal funding for Idaho's highways continued with the passage of the Federal Highway Act of 1921, which sustained financing for postal and national forest roads. This federal funding gave the State a large part of its operating budget, and the State was able to repeal the 2 mill property tax funding the Bureau of Highways and to replace it with a 0.9 mill levy that expired after one year. In 1923, the Legislature passed a motor fuels tax of two cents per gallon. This provided \$316,487.19 in 1923, and nearly a half-million dollars in 1924. The availability of funds directly linked to increased motorized traffic meant that the State could take over almost all bridge and road construction and maintenance. From this point on, the counties had little control over the design or location of new bridges (IDPW 1936; Erickson 1985; U.S. Department of Interior 2001).

The Boise River and Canal Bridge was built by Canyon County in 1921-22 even as funding and responsibility was being shifted from the county to the state level. A state-of-the-art bridge, designed locally and built by the giant American Bridge Co., the structure met local needs while tapping into the national infrastructure of industrial bridge builders, who, in turn, were able to order quality materials to exact specifications. The bridge was designed by Caldwell City Engineer, Fred H. McConnel (1876-1943). McConnel, a lifetime resident of Caldwell, worked with the American Bridge Company of Coraopolis, Pennsylvania. They, in turn, ordered the steel from Illinois Steel. Both companies were subsidiaries of U. S. Steel. The collaborative process was typical of the time, using local knowledge to set parameters for the bridge construction company. This company then ordered the required steel for the structure and had it delivered to the construction site.

American Bridge Co. was founded in 1900, through a consolidation of 28 of the nation's largest steel fabricators. The Company is a subsidiary of United States Steel. One of the founding companies, the Keystone Bridge Co., built the Eads Bridge, the first steel bridge over the Mississippi, in 1860. The combined company had the resources to tackle giant projects, which included bridges, ships, buildings, and even superdomes and space launch complexes. The company built the Woolworth Building, the Chrysler Building, the Empire State Building,

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County and State: Canyon County, Idaho

Statement of Significance:

and the Sears Tower - each the tallest building in the world when built. The Company was famed for suspension bridges such as the San Francisco Bay Bridge and Verrazano-Narrows Bridge, and three times held the record for the longest arch bridge. The American Bridge Co. has produced at least 81 projects that are now a part of the Historic American Engineering Record (HAER).

The new Boise River and Canal Bridge was funded through Canyon County, which in 1921, funded their road program through a 8.15 mill levy property tax. In November 1921, the Canyon County Commissioners announced a big road-building program. With a budget of \$80,000, they reported that they would be building 0.8 miles of first-class highway between Nampa and Caldwell and 10.4 miles of Pacific Highway to the Payette County line. For every two dollars of county money, the State contributed one dollar. The Commissioners also stated that the State might also aid in the financing of the new bridge across the Boise River. A special line-item appearing in the 1921 Canyon County budget provided \$21,435.43 for the bridge with an additional \$41,026.20 in the 1922 budget (*The Caldwell Tribune* 1921; 1922a).

Construction on the bridge began in late-summer or early fall of 1921. The bridge abutments were poured on September 28, 1921. The date and "S. C. Co." were written on the top surface. The two wall piers located mid-stream in the Boise River were poured the next spring. The date "March 14, 1922" was written on the top surface of each pier. The bridge was completed the summer of 1922. Because it was a replacement bridge on an established route, it was largely overshadowed by the dedication of the Walter's Ferry and Pickle Butte bridges the prior year. None of the three county newspapers covered the construction or even the opening of the Bridge. The bridge appears briefly in published Commissioner budgets and in connection with a historical marker. The Bridge was apparently in use in October when the local chapter of the Daughters of the American Revolution (DAR) announced plans to build a historical marker at the new bridge to commemorate the Oregon Trail crossing of the river. The Secretary of the local DAR chapter was none other than Mrs. Fred McConnel, wife of the bridge engineer (*The Caldwell Tribune* 1922b).

Summary Statement of Significance:

The Boise River and Canal Bridge is eligible for the National Register of Historic Places under the Multiple Property Documentation: Metal Truss Highway Bridges of Idaho. Nearly unchanged from its 1922 appearance and function, the Bridge retains a high degree of integrity, and, therefore, meets the criteria for an individually eligible property listed under the *Metal Truss Highway Bridges of Idaho* Multiple Property Documentation.

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County and State: Canyon County, Idaho

Bibliography

Ancestry.com

- 1920 "Fred H. McConnel," Caldwell, Idaho US Census.
- 1930 "Fred H. McConnel," Caldwell, Idaho US Census.
- 1943 "Fred Homer McConnel," Idaho Death Notice.

Caldwell Public Library

- n.d. Historic photo of west end of Boise River and Canal Bridge. The photo, donated by the Caldwell Chamber of Commerce, has no date, but contains 1920s- and 1930s-era vehicles. Transportation Folder: Vertical Files.

The Caldwell Tribune

- 1921 "Canyon County to Launch Big Road Program," November 8, 1921. p. 1.
- 1922a "County Budget," May 19, 1922. p. 5.
- 1922b "DAR to Mark Oregon Trail Ford," October 17, 1922. p. 1.

Egleston, Elizabeth

- 1989 "Boise River and Canal Bridge," Idaho State Historic Preservation Office Reconnaissance Site Form.

Erickson, Leif

- 1985 "Idaho's Highway History: 1863-1975," Idaho Transportation Department, Boise, Idaho.

Gray, Dale M.

- 2004 "Idaho Historic Bridge Context," prepared for the Idaho Transportation Department and Idaho State Historical Society, Boise, Idaho.

Herbst, Rebecca

- 1982 "Boise River and Canal Bridge," National Park Service, Inventory Site Form.

Huntley, James L.

- 1979 Ferryboats in Idaho, Caxton Printers, Caldwell, Idaho.

Watts, Don

- 2000 "Metal Truss Highway Bridges in Idaho." National Register of Historic Places Multiple Property Documentation Form. Prepared by the Idaho State Historic Preservation Office.

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County and State: Canyon County, Idaho

Photographs:

Boise River and Canal Bridge
Canyon County, Idaho

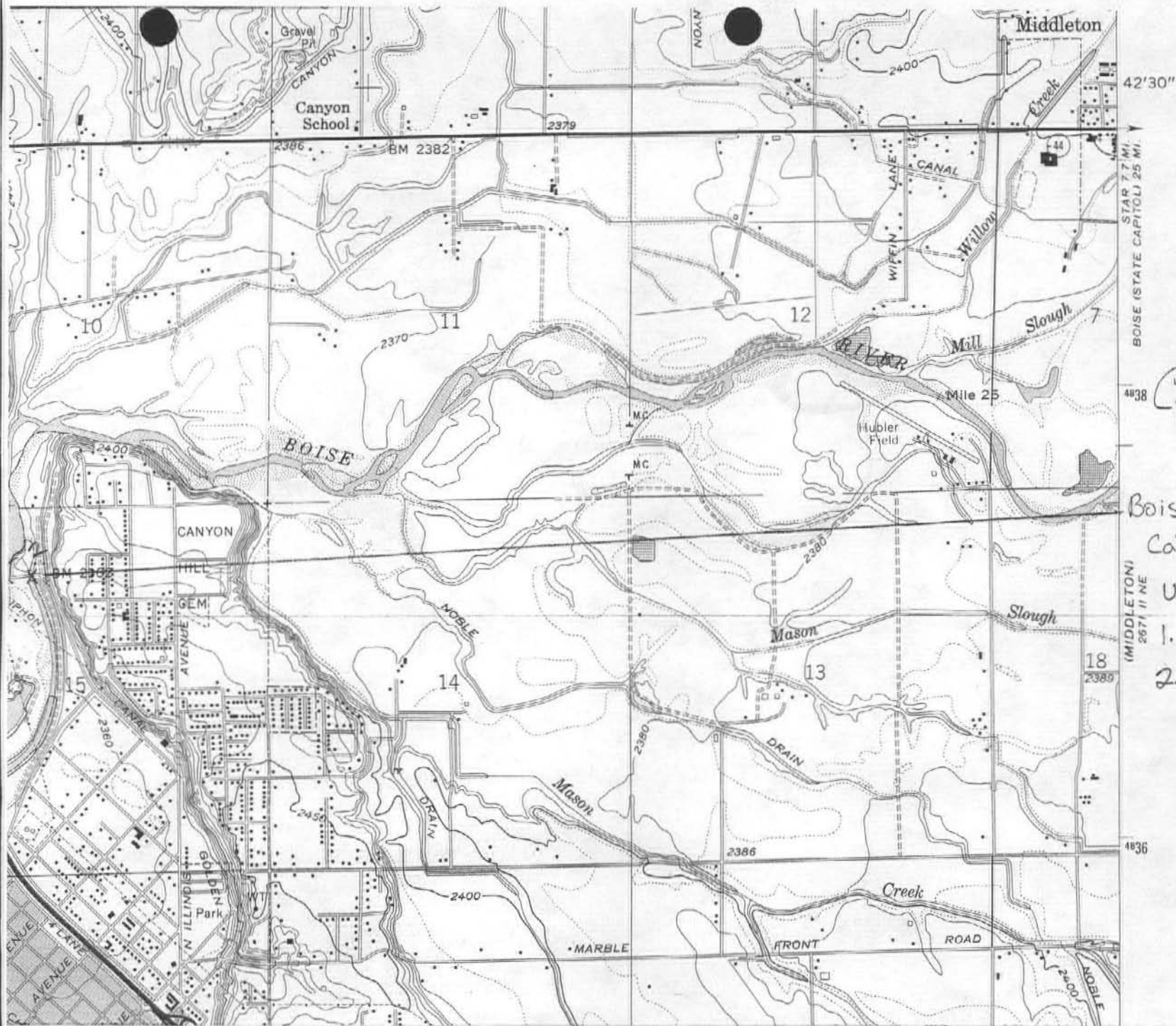
Photographer: Dale Gray
April 6, 2005

Photos taken with a Nikon 8800 QuickPix 8 megapixel camera.

Photos were printed on HP Premium Paper Plus, using an HP Photo 8450 Photosmart printer with archival HP Vivera inks (95, 99 and 100 cartridges).

Digital Photos: Electronic Image File CD submitted to NPS and on file at Idaho SHPO

Photo 1 of 4	View looking northeast
Photo 2 of 4	View looking southwest
Photo 3 of 4	View looking south
Photo 4 of	View looking south



42'30"
 STAR 7.7 MI.
 BOISE (STATE CAPITOL) 25 MI.

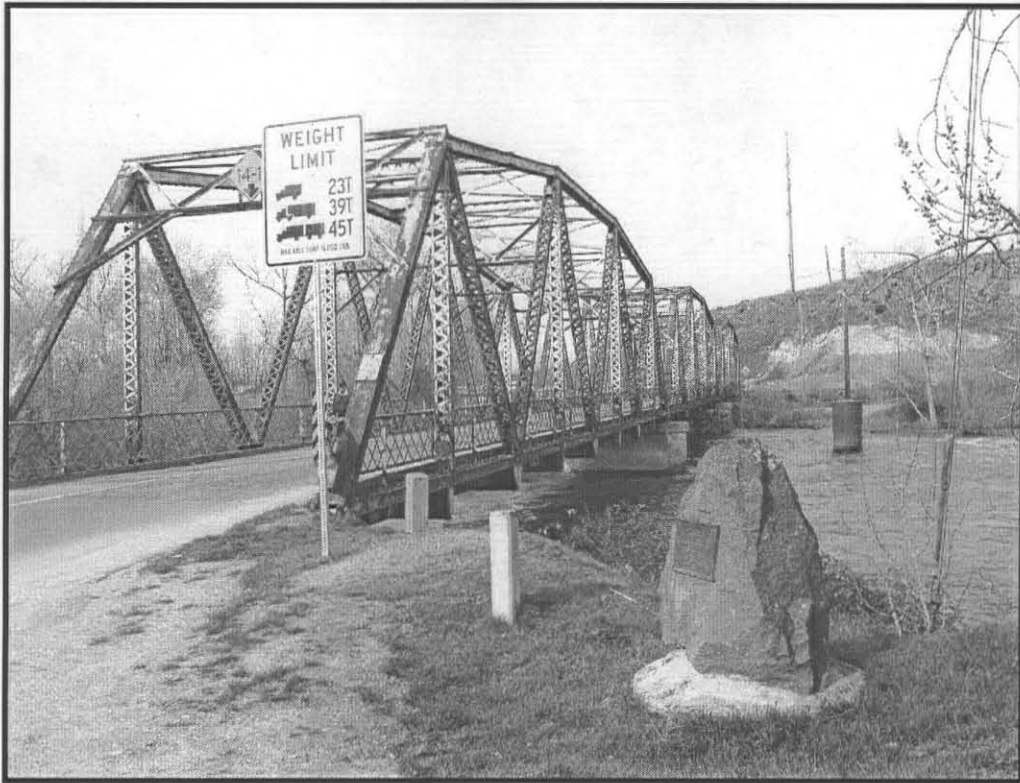
Caldwell, ID (1958)
 Photorevised 1971

Boise River and Canal Bridge
 Caldwell, Canyon Co., ID

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UNITED STATES
 DEPARTMENT OF THE INTERIOR

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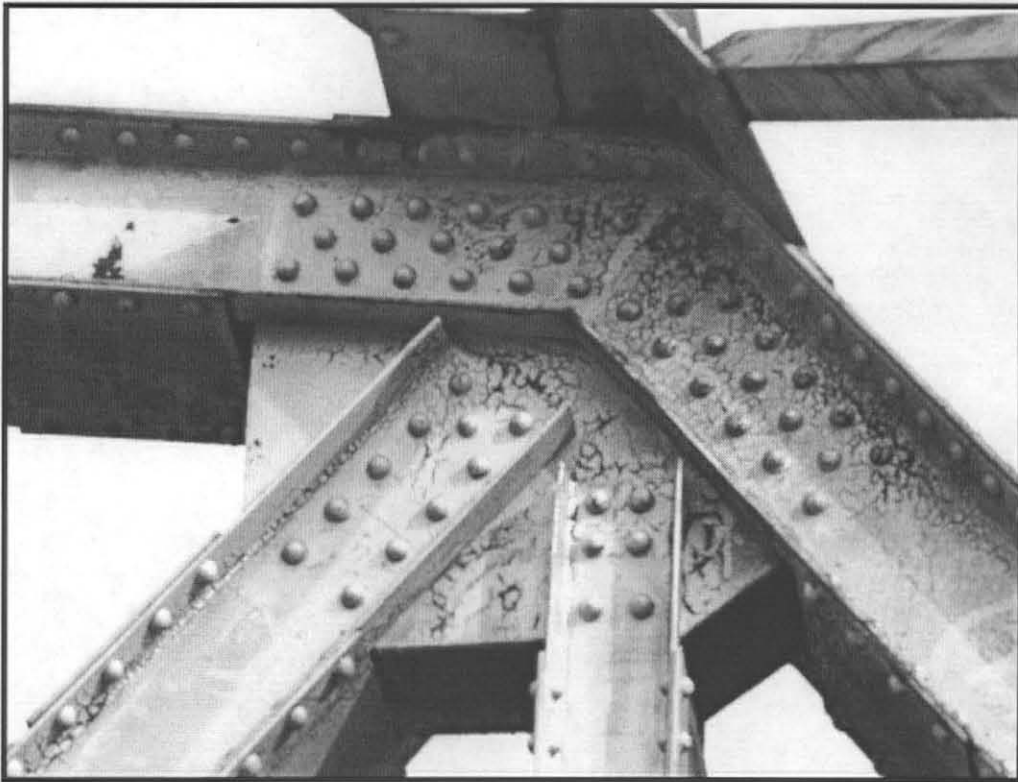
East side of Bridge viewed to southwest.
Note 1922 Oregon Trail crossing monument in foreground and former bridge pier in river to right.



Boise River and Canal Bridge west side viewed to the northeast.



Boise River and Canal Bridge east side abutment and former bridge masonry abutment.
Viewed to the south.



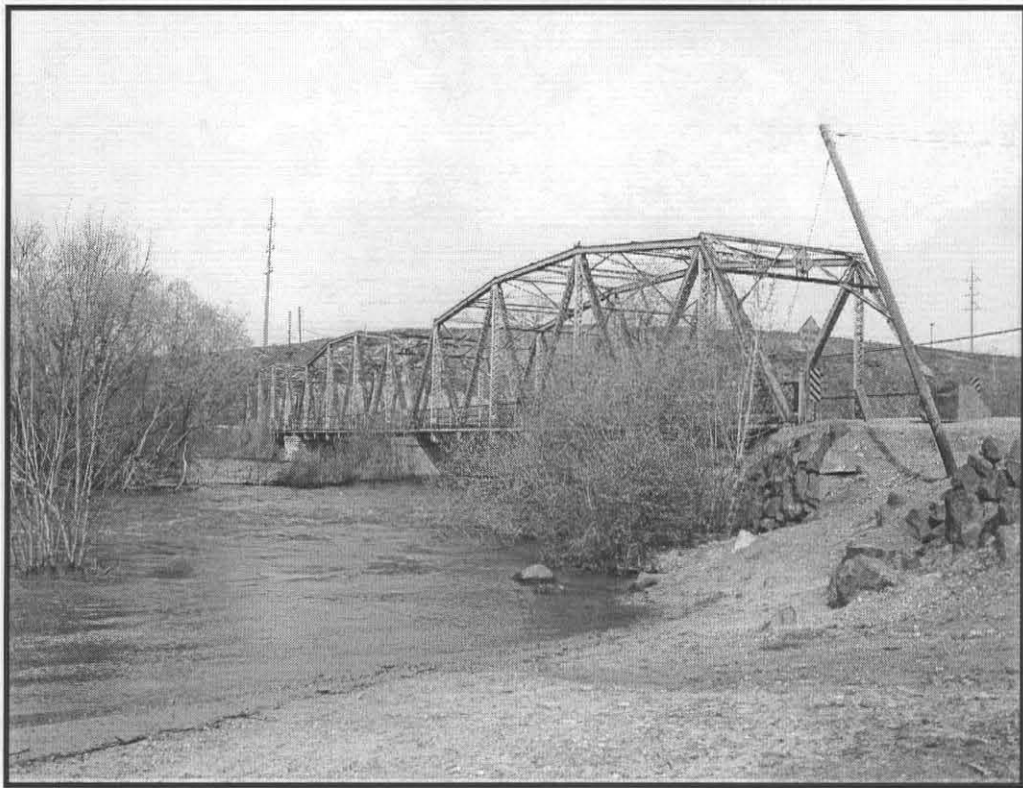
Riveted gusset detail.



Original guard rail detail on east end of bridge.



Webbed truss detail adjacent to wood deck and bottom of guard rail.



Boise River and Canal Bridge east side viewed to the northwest.