

Medicine Bow Bridge WYOMING HISTORIC TRUSS BRIDGE SURVEY
Spanning Medicine Bow River,
on Carbon County Road No. 120-1
Elk Mountain vicinity
Carbon County
Wyoming

HAER No. WY-~~170~~⁴¹

HAER
WYO,
4-ELMD.V,
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
Rocky Mountain Regional Office
National Park Service
U. S. Department of the Interior
P. O. Box 25287
Denver, Colorado 80225

HISTORIC AMERICAN ENGINEERING RECORD

HAER
WYO.
4-ELMO. V,
1-

Medicine Bow Bridge

HAER No. WY-~~17-0~~¹⁶¹

Location: Spanning Medicine Bow River, on Carbon County Road No. 120-1, 0.1 mile south of Elk Mountain, in Carbon County, Wyoming

UTM: 13.382700.4615735

Quad: Elk Mountain

Date of Construction: 1923-1924

Builder/Designer: D. B. Miller of Cheyenne and Denver

Present Owner: Carbon County
Third and Pine Streets
Rawlins, Wyoming 82801

Present Use: Vehicular Bridge

Significance: The Medicine Bow Bridge is an interesting hybrid pony truss with Warren diagonals and verticals at alternating panel points and a Parker-like top chord. As the longest of this type on the County Road System, this bridge is an important representative of an engineering anomaly.

Historians: Clayton B. Fraser and Richard G. Ewig
November 1981

~~NOTE: For more general information, see Wyoming Truss Bridges Survey,
HAER No. WY-17~~

I. HISTORY

In August 1923, Carbon County awarded the construction contract for three trusses (over Pass Creek southeast of Walcott, over Medicine Bow River at Elk Mountain, and over Mill Creek just north of Elk Mountain) to D. B. Miller of Cheyenne and Denver. With a proposal of \$42,970, Miller had underbid three other bridge contractors, the Midland Bridge Company, the Monarch Engineering Company, and the Colorado Bridge and Construction Company, all national bridge erectors.¹

II. DESCRIPTION

The Medicine Bow Bridge is a single span, steel rigid connected Warren Pony truss with polygonal top chords and verticals at alternating panel points, with a span of 102 feet. The roadway is 16 feet wide and constructed of steel strings with a timber deck.

The abutments are concrete. Top chords are channels connected with cover plates and lacing; bottom chords are angles connected with tie bars; verticals are angles connected with cover plates; and the diagonals are angles connected with tie bars.²

¹ Carbon County Commissioners' Minutes, July 1, 1923, August 7, 1923, and September 4, 1923.

² Historical Bridge Survey and Inventory Form. Wyoming State Highway Department.

ADDENDUM TO:
MEDICINE BOW BRIDGE
Spanning Medicine Bow River on County Road 3
Elk Mountain
Carbon County
Wyoming

HAER WY-61
HAER WYO,4-ELMO.V,1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
INTERMOUNTAIN REGIONAL OFFICE
National Park Service
U.S. Department of the Interior
12795 West Alameda Parkway
Denver, CO 80228

HISTORIC AMERICAN ENGINEERING RECORD

ADDENDUM TO

MEDICINE BOW BRIDGE

HAER No. WY-61

(page 3)

Two pages were previously transmitted to the Library of Congress.

Location: Spanning the Medicine Bow River at County Road 3. Prior documentation of the Medicine Bow Bridge referred to the road as County Road 120-1; roads within Carbon County were renumbered sometime in the late 1980s.

The bridge is located at latitude: 41.686933, longitude: -106.412861. The coordinate represents the southeast abutment of the bridge. This coordinate was obtained June 30th, 2015, using a GPS unit accurate to within +/- 3 meters. The coordinate's datum is North American Datum 1983. The Medicine Bow Bridge location has no restriction on its release to the public.

Present Owner: Carbon County

Present Use: Vehicular Bridge

Significance: Medicine Bow Bridge is a hybrid pony truss with Warren diagonals and verticals at alternating panel points and a Parker-like top chord. This bridge is also important in its role in the history and development of Elk Mountain, Wyoming.

Historian: Jason Bogstie, Wyoming Department of Transportation, Summer 2015

Project Information: Documentation of the Medicine Bow Bridge was undertaken by the Wyoming Department of Transportation as part of the mitigation of adverse effects caused by its replacement. HAER photography was completed in December 2014 by the Wyoming SHPO photographer Richard Collier.

Part I. Historical Information

A. Physical History:

1. **Date of Construction:** 1923-1924
2. **Architect/Engineer:** D. B. Miller
3. **Builder/Contractor/Supplier:** D.B. Miller of Cheyenne and Denver

B. Historical Context:

In August 1923, Carbon County awarded a construction contract for three truss bridges to D. B. Miller of Cheyenne and Denver.¹ These three truss bridges were located on Pass Creek (southeast of Walcott), Mill Creek (north of Elk Mountain) and Medicine Bow (at Elk Mountain). Miller's bid of \$42,970 underbid three national bridge companies: Midland Bridge Company, Monarch Engineering Company, and the Colorado Bridge and Construction Company. Miller's designs called for a hybrid pony truss with Warren diagonals and verticals at alternating panel points with a Parker-like top chord. This design style was unusual and made these three bridges interesting engineering anomalies.²

As of August 2015, Medicine Bow Bridge is the last survivor of Miller's trio of bridges. The Pass Creek Bridge (48CR4540) was replaced in 1985. The Mill Creek Bridge had already been replaced by 1981 when Fraser and Ewig had completed their historical research on the Medicine Bow Bridge.³ The Medicine Bow Bridge (48CR4295) was listed on the National Register of Historic Places (NRHP), under Criterion C, in 1985, as an example of this unusual hybrid design.⁴

Since its original evaluation under Criterion C 34 years ago, Medicine Bow Bridge has acquired significance under Criterion A of the NRHP for its important role in the history and development of the town of Elk Mountain. Elk Mountain is a small rural community located at the base of its namesake, the 11,156-foot Elk Mountain in Carbon County, Wyoming.⁵

¹ Clayton Fraser and Richard G. Ewig, *Site Form for 48CR4295* (Laramie: Wyoming State Historic Preservation Office, 1981), 1-2.

² Ibid.

³ Julie Francis, *Alternatives Analysis, WYDOT Project CN06062, Medicine Bow River Bridge, Elk Mountain, Carbon County, WY* (Cheyenne: Wyoming Department of Transportation, January 2013).

⁴ Fraser and Ewig, *Site Form for 48CR4295*, 7.

⁵ Town of Elk Mountain, *Elk Mountain History in Brief*, <http://www.elkmountainwyoming.com>. Accessed June 10, 2015.

Elk Mountain had its beginnings in 1862 as a stage station on the Overland Trail on the east side of the river (Martin et al. 1985)⁶, either on or very near the site of the present day Elk Mountain Hotel. The owners of the stage station operated a toll bridge across the Medicine Bow River up until about 1875, and the dispersed rural community of Elk Mountain began to develop. In 1880, John S. Jones constructed a large building which housed a store, saloon and post office on station property on the east side of the river. The dance hall served as the social center for the area and drew people from miles around.

By 1902, a permanent mercantile was built west of the river. In 1905, John Evans, who then owned the dance hall, constructed a hotel catering to loggers working on the recently created Medicine Bow National Forest. This was on the site of the old stage station on the east side of the river (Martin et al. 1985).⁷ As a result, the two facilities (the hotel/dance hall and mercantile) that formed the social and economic core of the Elk Mountain area, were on opposite sides of the river. With the exception of the hotel and dance hall, the town of Elk Mountain, including schools, churches and homes, has been built entirely on the west side of the river.

Beginning in 1912, when Elk Mountain first became accessible by automobile, (Martin et al. 1985),⁸ the hotel and dance hall also began to cater to tourists, fishermen, hunters, and vacationers. This recreational use of the area preceded the opening of the Medicine Bow National Forest for recreational use in the 1920s. Construction of the steel truss in 1923-24 was likely spurred by increased automobile usage and opening of the surrounding forest to recreational users, as well as loggers, miners, and ranchers.

By 1948, the hotel and dance hall had been renamed the Grandview Hotel and Garden Spot Pavilion. Until 1958, the facility served as one of the premier dance halls in Wyoming. The Pavilion featured both local and nationally known musicians and bands. Charlie Barnet, Tommy Dorsey, Gene Krupa, Les Brown, Lawrence Welk, Louis Armstrong, Tex Williams, and Bob Wills

⁶ Martin et al., *National Register Nomination Form, Elk Mountain Hotel, 48CR2231*. (Laramie: Wyoming State Historic Preservation Office, 1985).

⁷ Ibid.

⁸ Ibid.

and the Texas Playboys all played gigs at the Garden Spot Pavilion. The weekly dances drew people from hundreds of miles. In 1985, what is now known as the Elk Mountain Hotel and Garden Spot Pavilion were listed on the National Register of Historic Places for their importance to permanent settlement of the region, the evolution of local commerce, and their role as the social and cultural center. The hotel is still open today, but the Pavilion has been removed.

What type of bridge or bridges crossed the Medicine Bow River at this spot prior to the 1924 steel truss are unknown. Any older bridges would likely have been made of wood, would not have been designed for automobiles or heavy loads, and were probably not particularly safe for heavier automobiles. The construction of the steel truss enabled the safe automobile access across the Medicine Bow River and provided a reliable link between a regional social center and the remainder of Elk Mountain. The bridge has been used by countless residents, ranchers, hunters, fishermen, loggers, miners, tourists, and musicians. It is part of the historic fabric of the community; and is considered eligible to the National Register of Historic Places under criterion A.⁹

Part II. Structural/Design Information

A. General Statement:

1. Character:

Medicine Bow Bridge is a steel hybrid pony truss with Warren diagonals and verticals at alternating panel points and a Parker-like top chord. This was one of three truss bridges designed under contract in 1923-1924 by D. B. Miller with these engineering characteristics and is the sole survivor of those three bridges.

2. Condition of Fabric:

The original historic fabric of the bridge is intact, as the bridge has seen no alteration. Presently, the bridge a number of structural issues; of the 10 timber stringers which support the wooden plank deck, eight are split, one is broken, one is broken with signs of repair in the west bay. There is minor section loss at the truss panel points where soil has built up. The inside bottom flange is torn up to the web. Portions of the north truss are bent out of alignment. Freckled rust is present on the trusses. Abutment concrete is spalling under the

⁹ Francis, *Alternatives Analysis*, 1-2.

bearings as well on the wingwall. Numerous bolts are misaligned and not properly tightened. There is minor vehicular collision damage to the trusses at numerous locations.¹⁰

B. Description:

Medicine Bow Bridge (48CR4295) is a hybrid Warren pony truss with a span of 102', a back-to-back abutment length of 106', and a clear roadway width of 15.58'.

The bridge deck consists of two lines of timber runners on timber deck planking. Timber stringers support the deck and steel I-section floor beams support the stringers. The floor beams are supported at their ends by steel trusses. The steel truss members are connected with gusset plates and steel rivets. The top chord consists of two steel channels connected at the top with a single cover plate, and connected at the bottom with weaving diagonal bars. The plate and bars are riveted to the steel channels. The rivets are spaced approximately every 6 inches. The diagonal members and bottom chord consist of two angles connected with steel bars spaced approximately every 3 ft. The vertical truss members consist of two angles connected with a cover plate. The cover plate is riveted to the steel angles. The rivets are spaced approximately every 6 inches on both sides of the plate.¹¹

D. Site Information:

Medicine Bow Bridge is situated on County Road 3 in the Town of Elk Mountain in Carbon County, Wyoming. The bridge spans the Medicine Bow River. The heart of the Town of Elk Mountain lies to the immediate west of the bridge with the Historic Elk Mountain Hotel (48CR2231) to the immediate east. Medicine Bow Bridge on County Road 3 is one of two driving routes into Elk Mountain.

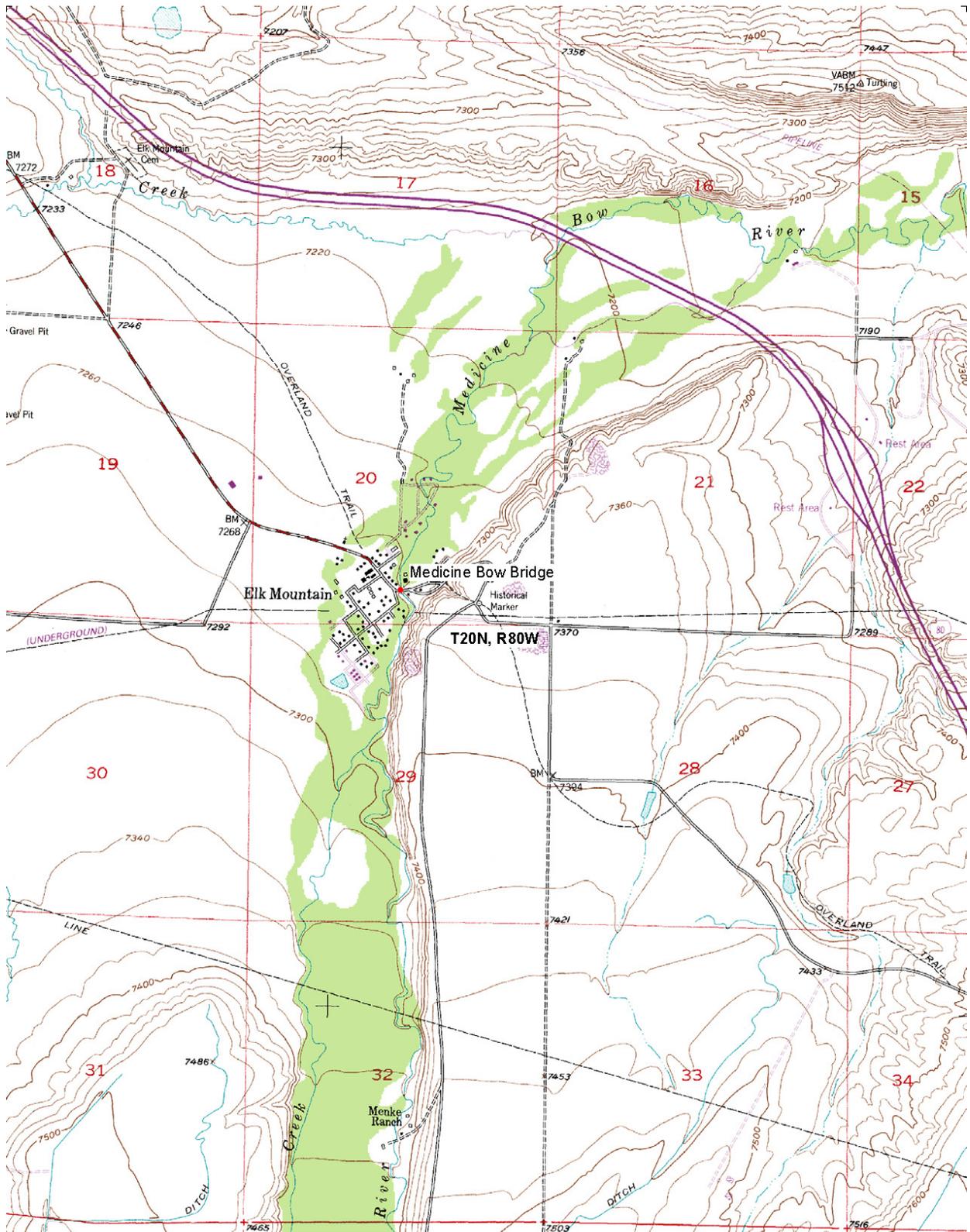
¹⁰ Jeffrey R. Booher, *Final Reconnaissance Report, BROS-CN06062, Bridge Over Medicine Bow River (Str. No. DFU) and Bridge over Savery Creek (Str. No. FRR)* (Cheyenne: Wyoming Department of Transportation, May 2009).

¹¹ Jeffrey R. Booher, *Rehabilitation of Bridge Over Medicine Bow River, Structure No. DFU* (Cheyenne: Wyoming Department of Transportation, January 2013).

Part III. Sources of Information

- Booher, Jeffrey R. "Final Reconnaissance Report, BROS-CN06062, Bridge Over Medicine Bow River (Str. No. DFU) and Bridge over Savery Creek (Str. No. FRR)." Cheyenne: Wyoming Department of Transportation, May 2009.
- . "Rehabilitation of Bridge Over Medicine Bow River, Structure No. DFU." Cheyenne: Wyoming Department of Transportation, January 2013.
- "Elk Mountain History in Brief." Town of Elk Mountain, accessed June 10, 2015, <http://www.elkmountainwyoming.com>.
- Francis, Julie. "Alternatives Analysis, WYDOT Project CN06062, Medicine Bow River Bridge, Elk Mountain, Carbon County, WY." Cheyenne: Wyoming Department of Transportation, January 2013.
- Fraser, Clayton and Richard G. Ewig. "Site Form for 48CR4295." Laramie: Wyoming State Historic Preservation Office, 1981.
- Martin, C. H., Z. P. Martin, and Hugh Davidson. "National Register Nomination Form, Elk Mountain Hotel, 48CR2231." Laramie: Wyoming State Historic Preservation Office, 1985.

Appendix A



Elk Mountain, WY' Scale: 1" = 0.379Mi 610Mt 2,000Ft, 1 Mi = 2,640" , 1 cm = 240Mt
Figure 1: A U.S.G.S. Topographic Map Showing the Location of the Medicine Bow Bridge. Source: Wyoming Department of Transportation, June 8, 2015.