

HABS/HAER INVENTORY

U.S. Department of the Interior
National Park Service
Washington, DC 20240

FEB 4 1997

1. SITE I.D. NO				5. ORIGINAL USE highway bridge		7. CLASSIFICATION BT&A: ARCH: REINFORCED CONCRETE				7	5	9	5	9. RATING state		
2. NAME(S) OF STRUCTURE Rainbow Arch Bridge; Fort Morgan Bridge MR03 Bridge over South Platte River CDH: C-21-C														10. DATE 1922		
3. SITE ADDRESS (STREET & NO) State Highway 52 over South Platte River .8 mile north of Fort Morgan SE¼ S31, T4N, R57W				6. PRESENT USE highway bridge												
						8. UTM ZONE 13		EASTING 601975			NORTHING 4458100			11. REGION RMRO		
4. CITY/VICINITY Fort Morgan vicinity		COUNTY Morgan		STATE Colorado		SCALE 1:24 OTHER:		1:62.5			QUAD NAME Ft. Morgan					

12. OWNER/ADMIN ADDRESS
Colorado Department of Highways 4201 East Arkansas Avenue Denver Colorado 80222

13. DESCRIPTION AND BACKGROUND HISTORY INCLUDING CONSTRUCTION DATE(S), PHYSICAL DIMENSIONS, MATERIALS, MAJOR ALTERATIONS, EXTANT EQUIPMENT, AND IMPORTANT BUILDERS, ARCHITECTS, ENGINEERS, ETC

Multi-span reinforced concrete, fixed rainbow (Marsh) arch

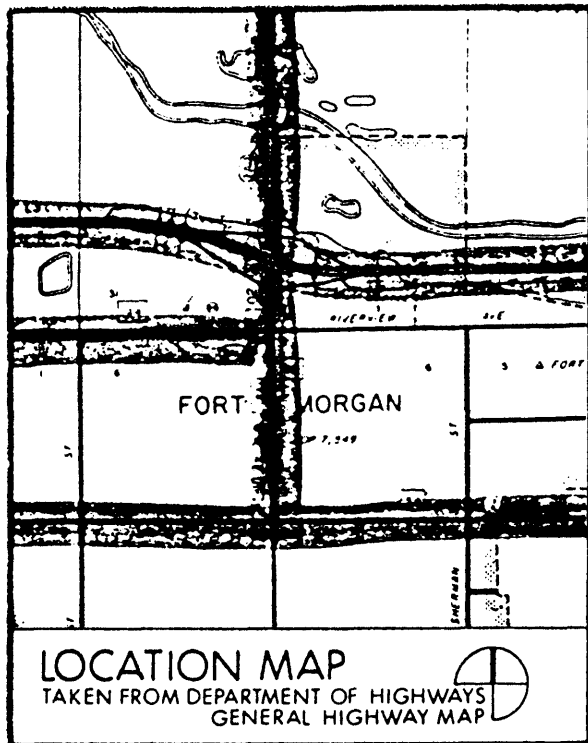
span number: 11	flr./decking: concrete slab suspended from overhead arches
span length: 90'0"	substructure: solid concrete abutments and piers on driven piles
overall length: 1110'0"	guardrails : poured-in-place concrete doghouse guardrails
roadway width : 19'0"	

In April 1922, the Colorado State Highway Department and Morgan County made an agreement: each would pay half for a major bridge to replace the existing timber one moved in 1890 to this crossing of the South Platte River just north of Fort Morgan. Designed by the Marsh Engineering Company of Des Moines, Iowa, the multi-span rainbow arch was let for bids in June; the construction contract was awarded to Charles Sheely's Colorado Bridge and Construction Company - low bidder among thirteen respondents at \$69,290. By March, the pile foundations had been completed and work begun forming and pouring the arches. Construction was marred the next month by a fatality when a car crashed at the south approach. It was later delayed by early summer flooding in 1923, but in August the bridge was completed and opened to traffic. A second bridge was built beside the narrow arch in 1963 to relieve the traffic volume. Recently steel tension rods have been added to reinforce the southernmost three spans, but the bridge remains otherwise unaltered.

14. CONDITION	<input type="checkbox"/> EXCELLENT	<input checked="" type="checkbox"/> GOOD	<input type="checkbox"/> FAIR	<input type="checkbox"/> DETERIORATED	<input type="checkbox"/> RUINS	15. DANGER OF DEMOLITION? (SPECIFY THREAT)	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> UNKNOWN
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16. SIGNIFICANCE AREA OF SIGNIFICANCE: Engineering

Iowa engineer James Marsh patented his overhead concrete arch design, called the rainbow or Marsh arch, in 1912. Graceful and innovative, albeit expensive to construct, Marsh arches were built in limited numbers across the country up until the 1930s. At the time the Fort Morgan Bridge was built, it was claimed to be the longest Marsh arch bridge, with the greatest number of spans, in the world. It still may be. The last major bridge attributable to significant in-state contractor Charles Sheely, it is the only Marsh arch built in Colorado, and a regionally important crossing of a river notorious for flooding and a source of pride for the surrounding community, it is one of Colorado's most important vehicular bridges.



18 LOCATED IN AN HISTORIC DISTRICT? YES NO NAME

19 PUBLIC ACCESSIBILITY YES, LIMITED YES, UNLIMITED NO UNKNOWN

20 EXISTING SURVEYS NR NHL HABS HAER-1 HAER NPS STATE COUNTY LOCAL OTHER

21 REFERENCES—HISTORICAL REFERENCES, PERSONAL CONTACTS, AND/OR OTHER

Structure Inventory and Appraisal: C-21-C. Colorado Department of Highways, Denver Colorado.

Morgan County Commissioners' Minutes: 28 January 1890 (Book 1, page 58), 31 January 1890 (Book 1, page 61), 4 April 1922 (Book 4, pages 599-600), 5 July 1922 (Book 4, pages 629-32), 12 July 1922 (Book 4, pages 632-33), 1 August 1922 (Book 5, page 3), 2 August 1922 (Book 5, page 5), 2 April 1923 (Book 5, pages 71-72), 2 July 1923 (Book 5, page 92), 27 August 1923 (Book 5, page 101). Morgan County Courthouse, Fort Morgan Colorado.

Leland F. James. "Fort Morgan Bridge Opened," Colorado Highways, Vol. 2, Number 8 (August 1923), pages 4-5.

Sue Spencer. "The Rainbow Bridge," undated manuscript.

Builder's plate on bridge: "Rainbow Arch Bridge Built by Charles G. Sheely Denver, Colo. 1922 Designed by Marsh Engineering Company Des Moines, Iowa".

Field inspection by Clayton Fraser and Carl Hallberg, 16 August 1983.

22 INVENTORIED BY

Clayton Fraser and Carl Hallberg

AFFILIATION

Fraserdesign Loveland Colorado

DATE

18 January 1984

MR03 Rainbow Arch Bridge

CDH: C-21-C

UTM: 13.601975.4458100

