FORT SHAW CANAL BRIDGE
Spanning the Fort Shaw Canal at Milepost 3.4, Montana Highway 21
(formerly the Simms-Augusta Road)
Simms vicinity
Cascade County
Montana

HAER MT-149
HAER MT-149

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
SOUTHWEST SYSTEM SUPPORT OFFICE
National Park Service
U.S. Department of the Interior
PO Box 728
Santa Fe, New Mexico

HISTORIC AMERICAN ENGINEERING RECORD
FORT SHAW CANAL BRIDGE

I. INTRODUCTION

Location:	Fort Shaw Canal Bridge Spanning the Fort Shaw Canal at Milepost 3.4 on Montana Highway 21(formerly the Simms-Augusta Road) Simms Vicinity Cascade County Montana
Quad:	Simms, Montana (1983)
UTM:	47.49506600, -111.981695 ~~12/426120/5260440~~ Point obtained using Google Earth on 16 March 2013
Date of Construction:	1934
Present Owner:	Montana Department of Transportation Helena, Montana
Present Use:	Highway Bridge
Significance:	The Fort Shaw Canal Bridge is significant for its association with the federal New Deal work relief programs initiated by President Franklin Delano Roosevelt to combat the effects of the Great Depression in 1933. Although the Montana Department of Transportation primarily built timber bridges during the New Deal, a substantial number of reinforced concrete were also constructed on Montana's highways where conditions warranted. The Fort Shaw Canal Bridge is an unusual example of a skewed reinforced concrete T-beam structure with the typical open guardrails and recessed concrete girders. It best represents the type of reinforced concrete T-beam bridges built on Montana's highways between 1933 and 1941.
Historian:	Jon Axline, Montana Department of Transportation December 2013

II. HISTORY

The Fort Shaw Canal Bridge is located within the aboriginal territory of the Piegan tribe of the Blackfeet Confederacy. The Blackfeet migrated to the Great Plains from the forests north of the Great Lakes. The tribe split into three distinct groups, the Piegan, Kainah and Siksika, in the late seventeenth century. The Piegans were firmly ensconced in its aboriginal territory in Montana by the late eighteenth century and had been trading with the British-Canadian Hudson Bay Company and North West Company by the early nineteenth century. By the time of the Lewis and Clark Expedition (1804-1806), the Blackfeet had a reputation as a warlike and proud people who ranged from the northern Great Plains south into today's western Wyoming and eastern Idaho, and east into the western valleys of Montana. On July 26, 1806, Meriwether Lewis and three others contacted a small party of young Piegan warriors near the Two Medicine River about sixty miles north of the present site of the Fort Shaw Canal Bridge. After spending a tense night in camp, the following morning the Piegan men attempted to steal the party's weapons and horses. The resulting scuffle left two Piegans dead. The incident, along with other violent incidents at the headwaters of the Missouri River between the Piegan and St. Louis traders the following year, created a toxic relationship between the Piegan and the Americans that excluded American traders from Piegan territory for the next two decades.[1]

Piegan contact with American traders intensified beginning in 1831 when the American Fur Company established a trading post, Fort Piegan, on the upper Missouri River. It was followed by other posts, including Fort Benton, at the head of navigation on the Missouri in 1847. The relationship between the Piegans and the Americans was mutually beneficial, but never more than cordial. The Fort Laramie Treaty council in 1851 did not include the tribes north of the Missouri River, including the Piegans. In 1854, the War Department began a survey for the route of a transcontinental railroad across the northern Great Plains and Rocky Mountains to the Pacific coast. In October 1855, Washington governor Isaac Stevens met with representatives of the Piegan, Gros Ventre, and Assiniboine tribes at the mouth of the Judith River to hammer out a treaty that would allow the presence of the railroad, if it should be built. Lame Bull represented the Piegans. After several days of negotiations, the participants agreed that, in return for annuities over a ten-year period, the tribes would approve an enormous reservation that stretched from the continental divide eastward to the mouth of the Milk River and from the Canadian border south to the Musselshell River. The treaty, which the US Senate ratified in 1856, placed the reservation agency at Fort Benton with sub-agencies on the Milk River and on the Missouri River at the Fort Peck trading post. Stevens also committed the federal government to establishing a demonstration farm from which the Piegans could learn agriculture. Agent Alfred Vaughan established the farm at Sun River Crossing on the Mullan Road in 1860; it remained in operation until 1865 when the Piegans forced its abandonment and subsequently burned it.[2]

Despite the treaty, relations between the Piegans and the Euro-Americans in northern Montana remained contentious, and occasionally, violent. Although the Piegans relied on trade goods,

they resented the increasing number of Americans in their country, especially after gold was discovered in southwestern Montana in 1862. Gold caused a stampede to the mines, which required the establishment of routes to transport people and supplies to the camps. Consequently, steamboats began to regularly dock at Fort Benton beginning in 1862. The boats brought more pressure on the Piegans. Fort Benton, moreover, was anything but a temperate community. The Indians had more access to alcohol and more exposure to other vices and diseases than ever before. Confrontations between the Indians and Americans frequently erupted in violence and death. Attempts by the Montana territorial government to broker a peace failed. In response, the US Army established a post on the Sun River, Fort Shaw, in 1867 to protect traffic on the Benton Road between Fort Benton and the mining camps. In 1869, municipal officials in Fort Benton successfully lobbied the Commissioner of Indian Affairs to relocate the agency from that community to a new agency on the Teton River about a mile north of present Choteau, Montana. The violence came to a head in January 1870, when soldiers from Fort Shaw under the command of Colonel Eugene Baker attacked a Piegan camp on the Marias River and killed at least 173 men, women, and children. The Baker Massacre broke the back of Piegan military power in northern Montana and led to a change in federal Indian policy.[3]

Pressure on the Piegans mounted after the massacre. In 1873, President Ulysses S. Grant signed an Executive Order that restructured the reservation. The reservation boundaries remained essentially the same, except the territory south of the Missouri River was ceded in anticipation of establishing a Crow Indian reservation in the Musselshell River and Judith Basin area. The following year, the southern boundary was moved north from the Sun River to the Marias River. The move was made in response to American cattlemen in southwestern Montana who were looking for new ranges for their animals.[4]

The Fort Shaw Canal Bridge is located just west of the Fort Shaw Military Reservation. Blackfeet depredations along the nearby Mullan Road, compelled the U. S. Army to establish a military post about ten miles east of the bridge in June 1867. The military reservation encompassed approximately 27,000 acres. Built as an infantry post, the fort was the base for an infantry regiment and the headquarters of the Military District of Montana. Troops from the post participated in the Baker Massacre on Marias River in January 1870, the Centennial Campaign against the Lakota and Northern Cheyenne Indians in eastern Montana, and the Nez Perce War in 1877. The Army decommissioned the post in 1891 and it functioned as an Indian boarding school from 1892 until 1910.[5]

Much of the old military reservation was incorporated into the United States Reclamation Service's Sun River Project in 1908. The Fort Shaw Canal is part of the project's Fort Shaw Irrigation District. The federal government began preliminary surveys of the district in 1905 with authorization granted to begin construction of it in February 1906. Construction of the Fort Shaw Canal was completed in December 1909. The Fort Shaw District irrigates nearly 11,000 acres of the 78,000-acre Sun River Project. The Reclamation Service was also responsible for platting towns within the district to attract settlers. One of those was Simms, located three miles

east of the bridge. Accounts of how the community got its name differ. One account states that a Reclamation Service engineer, S. B. Robbins, reportedly named the community after an early fur trapper who lived in the area. Another account holds that it was named after a supporter of the petition to establish a post office in the new town. Regardless, by the 1930s, Simms was "farmers town shaded by giant cottonwoods whose branches make vaulted corridors of the streets. Irrigation has reclaimed much barren land about the town and made grain growing as important as cattle raising."[6]

The New Deal and the Montana Highway Department

The eight-year period from March 1933 to December 1941 marked a profound change in how the Montana Highway Department financed, built and maintained roads and bridges during the Great Depression. During that time, the department reconstructed or improved 6,563 miles of primary roads and built 673 bridges, including 85 bridges in 1934 alone. The New Deal program also included the establishment of a feeder or secondary road program in 1933 to improve approximately 723 miles of farm-to-market roads that were not on the Federal Aid primary system. The Fort Shaw Canal Bridge was located on Montana Highway 20 between Augusta and Great Falls when the route became part of the Federal Aid primary system in May 1926.[7]

Because of the Great Depression, Montana, like most western states, was unable to provide matching money for federal funds to build roads. Consequently, the State Legislature had to devise a new method to provide funding to match federal allocations. Montana relied primarily on debentures to do that throughout the decade. Fortunately, much of the federal money appropriated for Montana was in the form of grants that did not require matches. To get the money, however, the highway commission had to agree to certain conditions involving employment, labor unions, and types of roads improved – all of which it was more than willing to do. By the eve of World War II, the New Deal had exhausted itself and the federal government again required state matching funds to receive federal appropriations. Despite the grants, though, the highway department struggled through much of the late 1930s to raise money to keep the highway program solvent.[8]

Three months after his inauguration, FDR pushed through the National Industrial Recovery Act, the first sweeping federal legislation to combat the effects of the Great Depression on the nation's unemployed. Title I of the Act appropriated $400 million for the construction of public highways. Unlike the usual Federal Aid Road Act, the money constituted a federal grant to the states, which did not need to provide matching funds. Importantly, FDR intended the legislation to provide work for the thousands of unemployed by putting them to work on highways. The NIRA also set minimum wage scales for unskilled and skilled labor, gave hiring preferences for veterans of World War I and local labor, stipulated a thirty-hour work week, and focused on pick and shovel work rather than the use of machinery. The Act required that 25 percent of each state's apportionment be spent on secondary or feeder (farm-to-market) roads, 25 percent on municipal roads, and 50 percent on Federal Aid highways (Forest Highways included). States could use NIRA (commonly referred to NRH – National Recovery Highway) money to finance

their unfunded matching money obligations. The formula for which NRH money was allocated to the states was based on the ratio of population and the number of acres of federally-owned lands and Indian reservations in the state. Because the federal government classified Montana as a "Public Lands State," it received a relatively high federal appropriation under NIRA guidelines.[9]

The highway commissioners awarded the first NRH-funded projects on August 23, 1933. At $1,671,543, it was the largest contract letting in the commission's history and the largest made with NRH funds in the state. The sixteen projects included the grading and surfacing of just over 147 miles of the state's primary highways and the construction of 51 bridges, including the much-anticipated Missouri River bridge at Culbertson. Over the next 22 months, until the US Supreme Court declared the NIRA unconstitutional in May 1935, the commission awarded 229 contracts that utilized $136,000 more than the state's NRH appropriation (the overrun was made up from future federal relief appropriations to Montana). In all, contractors graded and surfaced, either with oil or bituminous pavement, 721 miles of primary highway in the Treasure State. The NRH also funded the construction of 237 bridges and 322 miles of secondary highways. The commission let the first "feeder" highway contracts in November 1933 for projects near Stanford, Malta, and Harlowton in central Montana.[10]

The Fort Shaw Canal Bridge
On September 28, 1933, the Montana State Highway Commission awarded a contract to Great Falls contractors Robert Boomer and Evarts Blakeslee to construct "one concrete and five timber bridges on the Simms-Augusta Road" (now Montana Highway 21) in Lewis and Clark and Cascade counties. The men won the contract with their low bid of $15,691. The partners completed the bridge by the deadline specified by the highway commission. The bridge project was let in conjunction with a road grading and surfacing project on ten miles of the above road.[11]

III. THE BRIDGE

A. DESCRIPTION

The Fort Shaw Canal Bridge consists of a one-span reinforced concrete T-beam structure. The bridge is skewed at a 53 degree angle where the canal crosses under Montana Highway 21 about three miles west of the community of Simms. The bridge is 39 feet long and 25 feet wide with a roadway width of 22 feet. The bridge rests on concrete abutments with concrete wing walls oriented to the tangent of the irrigation canal.

Substructure
The bridge has two solid concrete abutments with wingwalls.

Abutment No. 1 (east) is 29′ 8" in length and is 29′ 8" in length and 8′ 4" in height. The abutment is 1′ 3" thick. The north wing wall extends 5 feet along the tangent of the irrigation canal. It is chamfered and narrows to 2′ 6" at the end. The wing wall on the north is 12′ 3" in

length and tapers down to 2′ 6" at the end. The abutment extends five feet below the canal bed and is supported by three concrete footings. The outside footings are 4′ x 4′ 6" x 1′ 8", while the center footing is 5′ 6" x 2′ x 6′.

Abutment No. 2 (west) is 29′ 8" in length and 8′ 4" in height. The abutment is 1′ 3" thick. The south wing wall extends 5 feet along the tangent of the irrigation canal. It is chamfered and narrows to 2′ 6" at the end. The wing wall on the north is 12′ 3" in length and tapers down to 2′ 6" at the end. The abutment extends five feet below the canal bed and is supported by three concrete footings. The outside footings are 4′ x 4′ 6" x 1′ 8", while the center footing is 5′ 6" x 2′ x 6′.

Superstructure

The Fort Shaw Canal Bridge is a one-span skewed reinforced concrete T-beam structure. The bridge is skewed at a 53 degree angle along the tangent of the irrigation canal where it crosses under Montana Highway 21 three miles west of the community of Simms. The bridge is 39 feet long and 25 feet wide with a roadway width of 22 feet. The concrete deck is 6 inches thick and currently has an asphalt overlay.

The bridge is supported by four reinforced concrete beams with the outer beams recessed 2′ 6" under the deck. The beams are woven into the deck. Consequently, the superstructure has a total depth of 2′ 11" with each beam approximately 16 inches wide and 2′ 2" deep. The beams are spaced 4′ 8" apart.

The feature that defined the standard MDT-designed reinforced concrete bridges between 1929 and 1941 was the guardrails. The curbs and guardrails were precast units that were added to the structure once the concrete had cured on the superstructure. The curbs are nine inches in height and 1′ 7" wide. Each curb on this bridge has five openings that function as drains. Each drain is 3′ 3" in length and four inches in height; they are spaced 1′ 7" apart. The curbs are surmounted by the guardrails. They are post-and-beam type rails that are anchored at the ends by flared reinforced concrete endposts. Each endpost is two feet in height, 2′ 2" in length, and 4′ 6" inches wide. Each has a 1′ x 1′ 6" recessed panel with decorative bush hammering. There are four guardrail posts on each side of the bridge; each is spaced four feet apart. The posts are 2′ 8" in height and one foot wide at the base, tapering to eleven inches at the top. The beams are cast with the posts. Each of the two beams are canted at 45° angles. Each beam is 5" x 5" and spaced 2′ 6" apart.

Material

The contractor, Robert Boomer and Evarts Blakeslee, utilized 100 cubic yards of concrete for the structure and nine tons of reinforcing steel. The cement used for the bridge likely came from the Three Forks Portland Cement Company in Trident, Montana. The Pacific Coast Steel Company of Seattle supplied the reinforcing steel for the bridge.[12]

B. MODIFICATIONS

Other than occasional asphalt overlays of the concrete deck, there have been no significant modifications made to the Fort Shaw Canal Bridge since its construction. The bridge is situated at its original location and the setting of the site is intact.

C. OWNERSHIP AND FUTURE

The Fort Shaw Canal Bridge is currently owned and maintained by the Montana Department of Transportation (MDT). The MDT programmed the bridge for rehabilitation in 2012. The proposed work would involve the removal of the original concrete guardrails and their replacement with non-historic rails to accommodate the widening of the bridge. The MDT has mitigated the bridge under the terms of a Programmatic Agreement (PA) that was implemented in 2007. The Fort Shaw Canal Bridge will be widened sometime after 2015.

IV. BIOGRAPHICAL MATERIAL

Robert Boomer and Evarts Blakeslee

Born in 1883 in Lake Geneva, Wisconsin, Evarts H. "Blake" Blakeslee was long associated with the Montana Highway Department, both as an employee and as an independent contractor. After obtaining a degree in engineering from the University of Wisconsin about 1906, Blakeslee relocated to the Bitterroot Valley of western Montana in 1906 or 1907. There, he worked as a surveyor and contractor on the Bitterroot Valley Irrigation District, a reclamation project designed to promote the cultivation of apple orchards in the valley. After the Apple Boom collapsed in 1917, Blakeslee moved to Helena and began work as a Resident Engineer for the Montana State Highway Commission in 1918. Between 1915 and 1926, the Commission assigned Resident Engineers to supervise the construction of large bridge projects in the state. In 1919, the Commission assigned Blakeslee to supervise the construction of the First Avenue North and Tenth Street (HAER no. MT-8) bridge projects in Great Falls. New job opportunities in the Electric City, however, compelled Blakeslee to permanently relocate to Great Falls after the bridge projects were completed in 1921. He resigned from the highway commission in 1921 and began work as an independent bridge contractor. Blakeslee's experience with the use of reinforced concrete on the two Great Falls bridges had a profound impact on his subsequent career as an independent contractor.[13]

While still employed by the highway commission in 1920, Blakeslee purchased the seven truss spans of the old First Avenue North Bridge in Great Falls for use at other sites. By 1922, he had gone into business with Angus McGuire, whom he met in the Bitterroot Valley when both men were employed on an irrigation project. The business partnership lasted until 1932. From 1933 until 1936, Blakeslee was in partnership with Anaconda Copper Mining Company employee Robert Boomer. The company operated under the name of Boomer & Blakeslee. The company built bridges on U.S. Highway 91 between Great Falls and Helena, including the Sheep Creek

Bridge (24LC1157) in 1934 and the Prewitt Creek Bridge (24CA0642) in 1931. In 1936, Blakeslee dissolved his association with Robert Boomer and formed a partnership with Great Falls area rancher Thomas Staunton to construct road and bridge projects in Montana. The partnership endured as Staunton & Blakeslee until about 1945 when Staunton retired to devote full-time attention to his cattle ranch. In all his incarnations, Blakeslee was best known for his knowledge and use of reinforced concrete for bridge construction. After the Second World War ended in 1945, Blakeslee formed the Utility Builders Company, a family business that specialized in the construction of curbs, gutters, and pavement in the Great Falls area. Blakeslee remained active in the business until his death in October, 1967 at the age of 84.[14]

V. FOOTNOTES

1. John C, Ewers, *The Blackfeet: Raiders on the Northwestern Plains* (Norman: University of Oklahoma Press, 1958), 6-7.

2. Merrill G. Burlingame, *The Montana Frontier* (Helena: State Publishing, 1942), 47; Michael P. Malone, Richard B. Roeder, and William L. Lang, *Montana: A History of Two Centuries* Rev. ed (Seattle: University of Washington Press, 1991), 116-117; Ewers, *The Blackfeet*, 221-222, 241; Stephen E. Ambrose, *Undaunted Courage: Meriwether Lewis, Thomas Jefferson, and the Opening of the American West* (New York: Simon & Schuster, 1996), 377-378; Bernard DeVoto, ed., *The Journals of Lewis and Clark* (Boston: Houghton Mifflin, 1953), 437-439.

3. Malone, et al., *Montana*, 117, 119-120; Ewers, *The Blackfeet*, 245.

4. Malone, et al., *Montana*, 120-121; Ewers, *The Blackfeet*, 275, 276, 280, 288-289.

5. *Montana Place Names from Alzada to Zortman: A Montana Historical Society Guide* (Helena: Montana Historical Society Press, 2009), 93-94; Don Spritzer, *Roadside History of Montana* (Missoula: Mountain Press Publishing, 1999), 273-74; Burlingame, *The Montana Frontier*, 199-200.

6. Spritzer, *Roadside History of Montana*, 273; *Water Resources Survey: Cascade County, Montana* (Helena: State Engineer's Office, 1961), 30-31; *Montana Place Names*, 243; Roberta Carkeek Cheney, *Names on the Face of Montana: The Story of Montana's Place Names* Missoula: Mountain Press Publishing Company, 1990), 248; Federal Writers' Project, *Montana: A State Guide Book* (Helena: Montana Department of Agriculture, Labor and Industry, 1939), 268.

7. Statewide Highway Planning Survey, *History of the Montana State Highway Department, 1913-1942* (Helena: Montana State Highway Commission, 1943), 49, 54D, 55; Malone, et al, *Montana*, 296.

8. Malone, et al., *Ibid*, 296.

9. Carl F. Wohlgenant, Jr., "Development of the Federal-Aid System Highway System in Montana" (Master's thesis, University of Montana, 1954), 60; Statewide Highway Planning Survey, *History of the Montana State Highway Department*, 30, 137-39; T. H. Watkins, *The Great Depression: America in the 1930s* (Boston: Little, Brown and Company, 1993), 142-43; Federal Highway Administration, *America's Highways, 1776-1976* (Washington DC: Government Printing Office, 1976), 125, 246-47; Montana State Highway Commission Meeting Minutes [hereafter MSHC], book 5, pp. 298-99 (13 June 1933).

10. MSHC, Book 5, pp. 347-48 (23 August 1033), Book 6, pp. 8, 10 (27 November 1933).

11. MSHC, Book5, pp. 373, 375 (September 28, 1933).

9. Bridge Plans & Quantities: Federal Aid Project No. 176-D, Unit 2, Augusta-Sun River Highway. Drawing No. 1104Q (August 19, 1933); Montana Highway Planning Survey, Bridge Condition Survey: Bridge No. 207-0210-0022, Montana Department of Transportation, Helena, Montana.

10. "Great Falls Contractor E. H. Blakeslee Dies," *Great Falls Tribune*, 18 October 1967; Robert Blakeslee Interview by Mitzi Rossillon, 3 March 1992; R. L. Polk & Company, *Polk Directory for Helena and Lewis and Clark County* (Helena: R.L. Polk, 1918); *Water Resources Survey: Ravalli County, Montana* (Helena: State Engineers Office 1958), 45.

11. "$6842 Offered for Iron in Old Bridge Across Missouri," *Great Falls Tribune*, 11 September 1920; *Polk Directory for Great Falls* (Great Falls: R.L. Polk, 1918-1967); "Great Falls Contractor," *Great Falls Tribune*, 18 October 1967; Blakeslee Interview; Great Falls City Directories 1949-1967; "T. Staunton, Rancher and Businessman, Dies," *Great Falls Tribune*, 9 April 1956.

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D. MISCELLANEOUS

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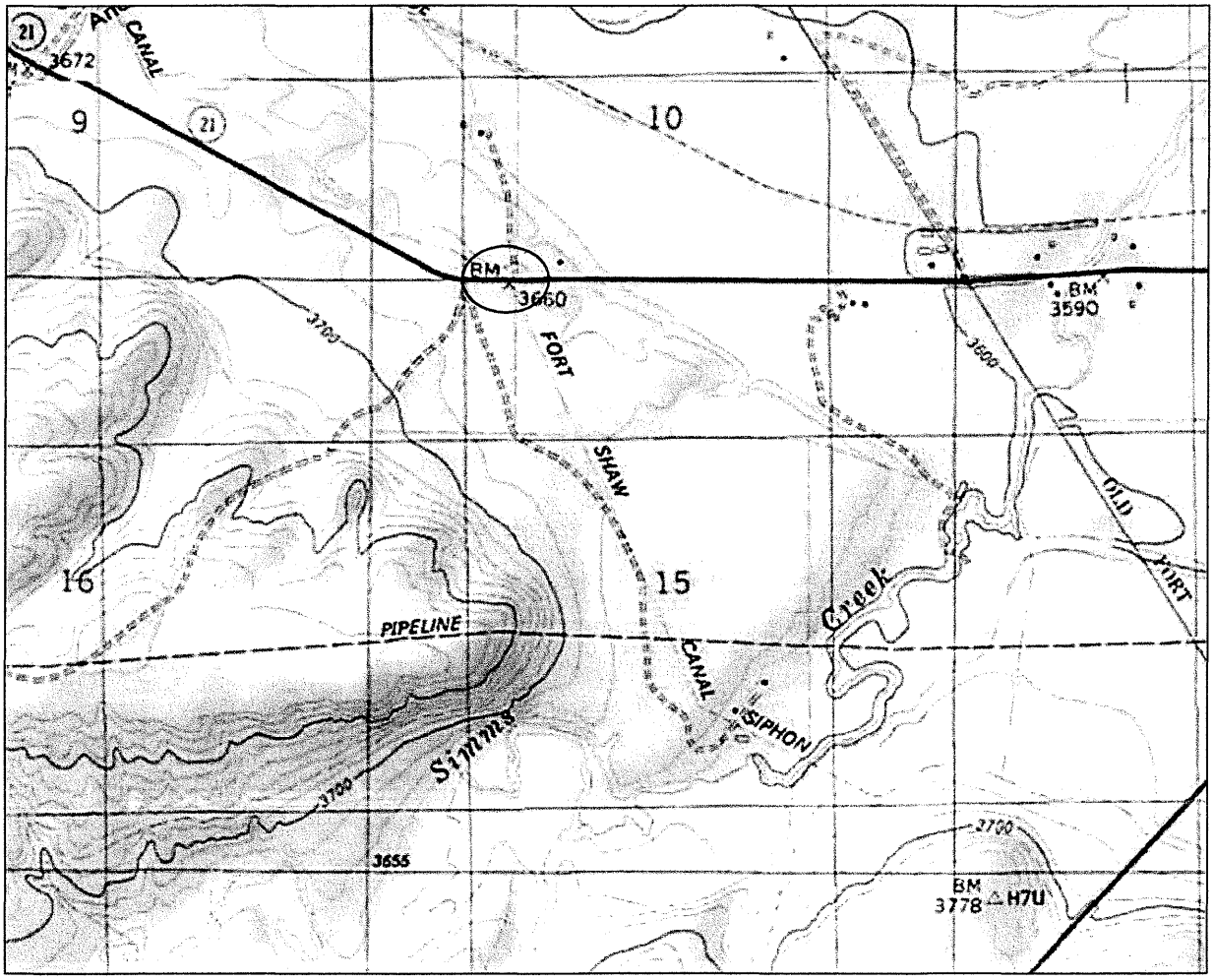
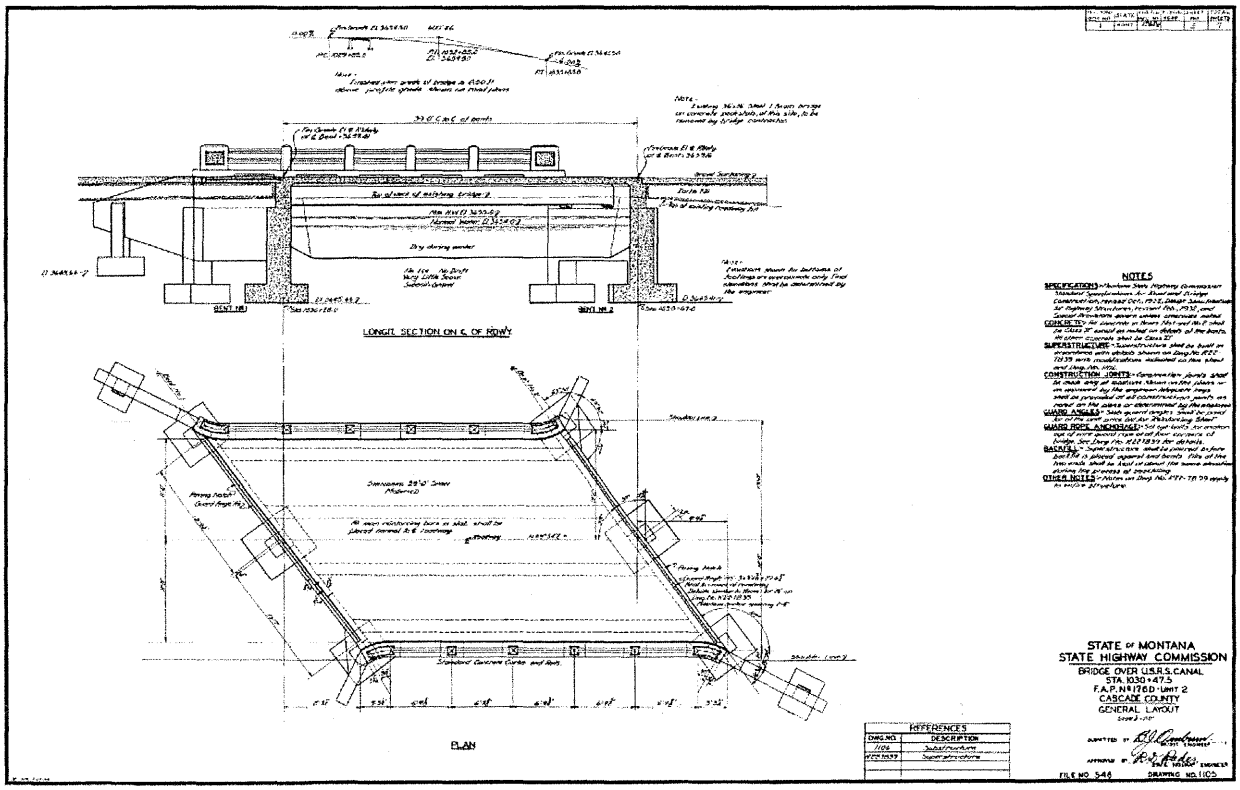
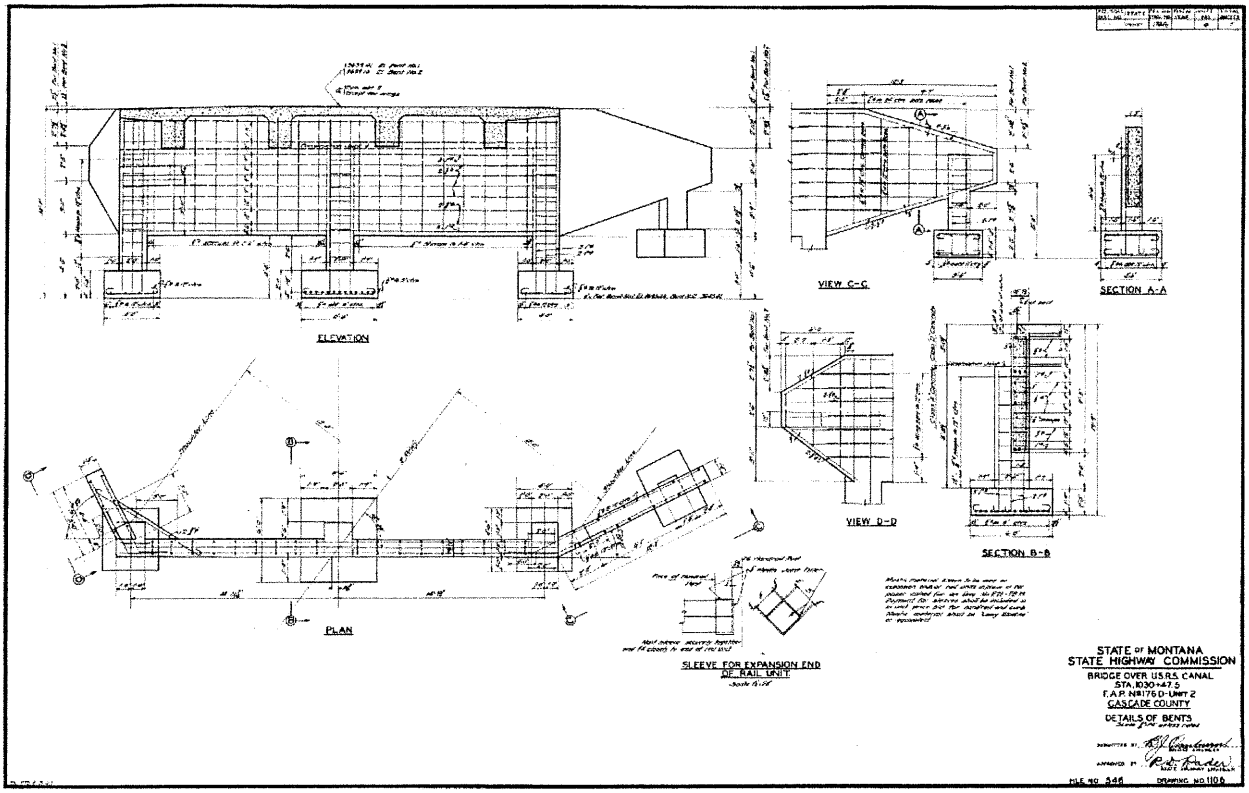


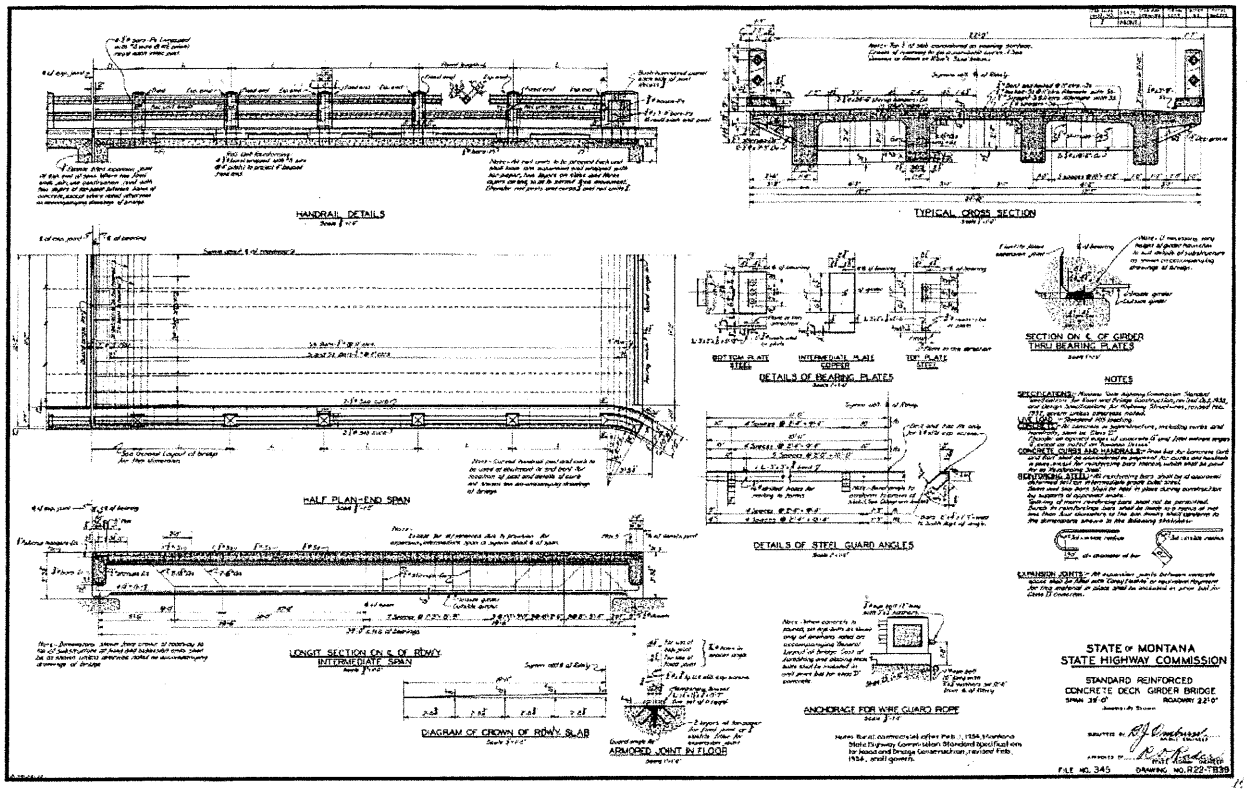
Simms, Montana USGS Quadrangle Map, 1983



Drawing No. 1105. Bridge Plans & Quantities: Federal Aid Project No. 176-D, Unit 2. Augusta-Sun River Highway. Lewis & Clark and Cascade Counties, Montana.



Drawing No. 1106. Bridge Plans & Quantities: Federal Aid Project No. 176-D, Unit 2. Augusta-Sun River Highway. Lewis & Clark and Cascade Counties, Montana.



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