Alexandra Stanley

Subject: FW: Draft Historic American Engineering Report (HAER) for review
Attachments: HAER Level II Report for Hamilton Road Bridge.docx

From: Holma, Marc (VDOT) <Marc.Holma@vdot.virginia.gov>
Sent: Monday, January 12, 2026 9:57 AM
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Subject: Draft Historic American Engineering Report (HAER) for review

Dear Stakeholders:

Attached please find the draft HAER report for the Hamilton Road Bridge for your review and comment pursuant to Stipulation I.D of the Memorandum of Agreement. Please provide comments on the draft by close of business on Wednesday, February 11, 2026.

Sincerely,
Marc Holma

Marc E. Holma
Statewide Architectural Team Leader / Environmental Division
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HISTORIC AMERICAN ENGINEERING RECORD

MORRIS FORD BRIDGE
(HAMILTON ROAD BRIDGE)
(ROUTE 695 BRIDGE)
(VIRGINIA DEPARTMENT OF TRANSPORTATION STRUCTURE NO. 6057)

HAER No. XX-##

Location:

Morris Ford Bridge is in Louisa County, Virginia.

Morris Ford Bridge is located at latitude: 38.03043195, longitude: -78.13824329. This coordinate represents the center of the bridge. This coordinate was obtained on March 13, 2013, using a "D WGS 1984" with an XY tolerance of 0.001 meters. The Morris Ford Bridge location has no restrictions on its release to the public.

Date(s) of Construction:

1917.

Architect/Engineer/ Builder:

The engineer/designer is unknown. Roanoke Iron and Bridge Works, Roanoke, Virginia, was the builder.

Original Owner/ Occupant and Use:

The original owner of Morris Ford Bridge was Louisa County. The bridge served as a safe and reliable means to cross the north branch of South Anna River.

Present Owner/ Occupant and Use:

The present owner of Morris Ford Bridge is the Virginia Department of Transportation (VDOT). Morris Ford Bridge has been closed to vehicle and pedestrian traffic since February 10, 2025, due to its deteriorating and unsafe condition.

Significance:

The Department of Historic Resources (DHR), which in Virginia is the State Historic Preservation Office, recommended Morris Ford Bridge individually eligible for listing in the National Register of Historic Places (NRHP) under Criterion C for Architecture and Craftsmanship “due to the resource being a rare surviving example

of a standard type of metal truss bridge developed for the Virginia State Highway Commission in the early twentieth century."[1] As of July 2025, there were 18 known extant metal truss bridges in Virginia dating from 1908 to 1920, the approximate time when Morris Ford Bridge was constructed.[2] This number increases to 27 when the period is extended from 1900 to 1925.[3] These surviving examples constitute a variety of truss types and engineering solutions to address their specific environments and challenges. Only a small percentage are likely Pratt pony trusses based on the same Virginia State Highway Commission standard design plan as Morris Ford Bridge. To add further context to illustrate the disappearance of what was once a ubiquitous bridge type along early twentieth century roads in Virginia, in the year that plans for Morris Ford Bridge were developed and constructed (1917), the *Annual Report* lists 96 bridges throughout the Commonwealth being built utilizing state-supplied standardized plans.[4]

The VDOT also identified Morris Ford Bridge as a contributing resource to the Green Springs Rural Historic District, a property listed in the NRHP and designated as a National Historic Landmark (NHL) in 1974.[5] The bridge remains largely unchanged from its original appearance and materials, enhancing the historic setting and feeling of its surroundings, and the larger NHL district. Morris Ford Bridge is an important element documenting the historic transportation networks which aided in the agricultural vitality and economic growth of the Green Springs community and Louisa County.

The writing of this Historic American Engineering Record (HAER) is done in partial fulfillment of the terms of a Memorandum of Agreement between VDOT and DHR for a project to replace Morris Ford Bridge.

Description: Morris Ford Bridge is a single-span, steel Pratt pony truss structure oriented in a roughly east-west direction. The structure's trusses

[1] Teal to Clarke, 2.
[2] Miller to Holma.
[3] Ibid.
[4] Miller, "Hamilton Road Bridge (Louisa County Structure No. 6057), Comments on draft National Register nomination (submitted to VDHR by Historic Green Springs, Inc., July 1, 2025)," 3.
[5] Ross to Kilpatrick, 3.

consist of five panels each, three central panels flanked by an end panel on each side. The end panels have full slope inclined end posts. Each panel, including the end panels, measures 16 feet long.[6] Morris Ford Bridge carries the one-lane, unpaved Hamilton Road (Route 695) over the north fork of the South Anna River. The setting is rural and heavily wooded to the north and south of the bridge. The landscape quickly opens to the south in gently rolling pastural farmland as one travels west from the structure along Hamilton Road (Route 695). Morris Ford Bridge lays within the boundary of the Green Springs Rural Historic District, a property listed in the NRHP since 1973, and designated an NHL a year later.

The span length is approximately 81 feet 9 inches.[7] The rivet-connected trusses have a height of approximately 10 feet.[8] A feature of the trusses is the inclusion of two metal pipes on the interior of each truss to serve as guardrails. On the original 1917 plans the guardrails are noted as being made from "gas pipe".[9] They are connected to the trusses at the vertical elements and the end posts with U-bolts. Although it is not known if the existing cylindrical guardrails are original to the bridge, the May 11, 1911, revised state Standard Plan L-13, which was used for the design of Morris Ford Bridge, includes the metal guardrails. The guardrails are unevenly spaced, with the lower one being 2 feet above the deck and the upper one 1 foot 6 inches above that.[10]

The bridge's deck consists of wooden planks and measures approximately 12 feet 1 inch between the trusses, with a single 11-foot travel lane.[11] It is likely the wooden decking has been replaced many times since the bridge was constructed in 1917. There is a 4-inch by 4-inch wheel guard, or curb, made of wood ties that runs the length of the bridge approximately 3 inches off the deck on the interior of each truss.[12] This feature is depicted on the 1917 plan sheet, but, as with the wooden decking, the wheel guards are

[6] Virginia State Highway Commission, "Proposed Bridge at Morris Ford, 80-foot Truss Span Over South Anna River, 5 miles from Trevillian, Louisa Co., VA."
[7] Ibid.
[8] Bonham to Holma.
[9] Virginia State Highway Commission, "Proposed Bridge at Morris Ford."
[10] Ibid.
[11] Ibid.
[12] Ibid.

likely to have been replaced numerous times. The total width of the bridge as measured from the "out to out" of the trusses is 13 feet 4 inches.[13] The substructure of the bridge is approximately 11 feet 5 inches above the mean water level of the South Anna River.[14]

The center panel of the two trusses have double diagonal bracing, with each diagonal extending from the intersection of the bottom chord and vertical post to the intersection of the opposite vertical post and top chord to form an "X". The two panels that flank the center panel of each truss have a single diagonal brace that extends from the intersection of the bottom chord and the vertical post that is shared with the center panel and terminates at the intersection of the top chord and the opposite vertical post.

Morris Ford Bridge lacks any unique design elements such as a name plate or architectural ornamentation. The closest attempt which one may construe as "decorative" is the diagonal steel latticing between the paired steel channels that make up the truss end posts and top chords. The channels are set upright, with the open ends facing one another. Thin diagonal steel lacing bars are rivetted to the channels, top and bottom, connecting them with an elongated repeating "Z" pattern to form each truss end post and the top chord.

The bridge's substructure is made up of five stringers between the floor beams and horizontal bracing. It is known that in 2023, a floor beam was replaced due to its poor condition, but little information is available to verify whether VDOT or its predecessor has changed out other members over the years.

Each end of the structure rests on unreinforced ("plain") poured concrete abutments. The west abutment measures approximately 18 feet 9 inches in height and approximately 7 feet 6 inches deep at the base, tapering roughly to 2 feet 9 inches where it cradles the bridge's bottom chord.[15] On the eastern side, the abutment is approximately 22 feet 9 inches in height,, with a base that is

[13] Bonham to Holma.
[14] Virginia State Highway Commission, "Proposed Bridge at Morris Ford."
[15] Ibid.

approximately 9 feet 1-inch-deep and tapers, again, to about 2 feet 9 inches at the top.[16]

History:

The low water crossing at what would become known as Morris Ford had been utilized by travelers to transit from one bank of the north branch of the South Anna River to the other for centuries. English explorers into the interior of the Virginia colony used it as they expanded westward to settle what is now Louisa County. Before them, Native American hunters splashed through the stream's cool waters as they stalked game. By the early twentieth century, however, the Louisa County government recognized the need to provide the citizens of the Green Springs community with a more safe and reliable means to cross the river. This was particularly important for the farmers of the area whose crops raised in the Piedmont's fertile soils generated a substantial economic benefit to the region. They required a way to get their produce from their fields to local markets and transportation hubs without costly delays caused by a river ford made impassable by seasonal flooding.

In 1906, Virginia established the State Highway Commission in response to the growing good roads movement.[17] At the time, except for a few surviving turnpikes, nearly all the roads in Virginia were the responsibility of the individual counties. This system resulted in a widely varied quality of public road building and maintenance throughout the Commonwealth and even within each county. The legislation creating the State Highway Commission also empowered the governor to appoint a commissioner to head the commission, with the requirement that the commissioner be a Virginia citizen and a "civil engineer and a person well-versed in road-building."[18] Legislation also mandated the selection of three civil engineering professors, one each from the University of Virginia, Virginia Military Institute, and what was then the Virginia Agricultural and Mechanical College and Polytechnic Institution, now Virginia Tech, to compose the

[16] Ibid.
[17] *A History of Roads in Virginia, "The Most Convenient Wayes,"* 19.
[18] Ibid.

membership of the Commission.[19] The three Commission members were chosen by the boards of visitors from their respective institutions.[20]

Initially, the State Highway Commission served as an advisory body, but also provided some financial assistance through state aid matching funds to localities for road construction and improvements. Beginning in 1909, the commission extended state aid funds to include bridge construction.[21] The matching grants were contingent on localities agreeing to adopt the standardized plans developed by the State Highway Commission for both metal truss and concrete bridges, and to follow state standards for road construction.[22]

To address the need for a reliable and safe crossing at Morris Ford, Louisa County utilized the matching state grants offered by the State Highway Commission to construct a metal truss bridge at the location. The locality, no doubt advised by the commission, selected an 80-foot-long Pratt pony steel truss structure using the state Standard Plan L-13 [1909, revised 1911, 1912] to span the river.[23] The evidence is that the bridge at Morris Ford was constructed in 1917. This date is based on the stamp on the original plan sheet, which survives, showing that the State Bridge Engineer, William R. Glidden, approved the design on March 24, 1917. Additionally, The *Annual Report of the State Highway Commissioner* for the year ending September 30, 1917, notes that the Morris Ford Bridge was "under construction" at the time covered by the report.[24]

The plan sheet describes Morris Ford Bridge as a "Standard 80'-0" foot structure. Although Glidden, as the State Bridge Engineer, signed the plans approving the design, this was a standard practice for all bridges in Virginia and does not equate to his signing as the designer.[25] The original designer or draftsman is not credited and

[19] Ibid.
[20] Ibid.
[21] Miller, "Hamilton Road Bridge (Louisa County Structure No. 6057)," 3.
[22] Ibid.
[23] Ibid, 1.
[24] Ibid, 5.
[25] Ibid, 1 and 6.

would have been a member of the Bridge Office staff. Following customary practice, the initials of the relevant office staff members who worked on the drawing are noted.

Although his association with Morris Ford Bridge was tangential, Glidden had a long and distinguished career under the Virginia State Highway Commission and later with the Virginia Department of Highways when it was created by the General Assembly in 1927. William Roy Glidden was a native of Somerville, Massachusetts, and a 1912 graduate of the Massachusetts Institute of Technology with a Bachelor of Science degree in civil engineering. He began his career in Virginia as the state bridge engineer in January 1917 and served in that position for 35 years until being promoted to assistant chief engineer for the Department of Highways upon the death of Lewis E. Akers. In this position, Glidden shared joint supervisory responsibilities with Burton Marye, Jr., who had been an assistant chief engineer since 1948. Glidden remained in that job until retiring from state service in June 1959. During the period 1954-1955, he acted as the president of the American Society of Civil Engineers. Glidden died on August 20, 1969, at his home in Geneva, Illinois.[26]

The Roanoke Iron and Bridge Works constructed the Morris Ford Bridge at a cost of $4,867.75.[27] Originally called Virginia Bridge Works when it was founded in 1888, the Roanoke, Virginia-based company erected several bridges throughout the state. Following World War II, the company was purchased by American Steel Company and closed in the 1960s.[28] Several of the company's bridges in Arkansas, Mississippi, Texas, and at least two in Virginia have been listed in the NRHP.[29]

For over a century, Morris Ford Bridge served the Green Springs community as an important link in the east-west traffic of agricultural produce, goods, and citizens across Louisa County. The span survived countless flooding of the South Anna River, including that caused by the remnants of Hurricane Camille in 1969. However, by 2012 Louisa County recognized the need to replace the structure with a modern bridge that could more reliably

[26] *Bulletin*, "Obituaries," 37.
[27] Miller, "Hamilton Road Bridge (Louisa County Structure No. 6057)," 7.
[28] Lee, "Roanoke, VA: 1888-1960s Roanoke Iron and Bridgeworks/Virginia Bridge and Iron Co."
[29] "Wikipedia: Virginia Bridge and Iron Company."

carry the weight of modern farm equipment, school buses, and emergency vehicles. Consultation among county, state, and federal government agencies, residents, and historic preservation organizations failed to reach a consensus regarding the best way forward on the future of the bridge in 2016, resulting in plans to replace the span being shelved.[30]

Although Morris Ford Bridge remained in place and functioning as a vehicular crossing, issues with its condition remained. The Louisa County Board of Supervisors passed a resolution on March 6, 2023, requesting VDOT to "undertake a project to address the structure at Hamilton Road over the South Anna River" that will "deliver a structure that can safely convey vehicular traffic including but not limited to emergency vehicles and equipment."[31] From May 24, 2023, to August 21, 2023, the bridge was closed to traffic to replace a deteriorated floor beam. However, despite this repair, the bridge's structural deficiencies identified in 2012 remained. This was shown on February 10, 2025, when Morris Ford Bridge was closed again after an inspection revealed continuing deterioration to several floor beams supporting the deck.

In the summer of 2024, VDOT began a series of three stakeholder meetings with the purpose of receiving input and developing a plan to comply with Lousia County's March 6, 2023, resolution. The meetings were held on July 10, 2024, January 30, 2025, and March 26, 2025. The result was a decision to replace the Morris Ford Bridge with a modern steel Warren truss that resembles the appearance of the existing span. A Memorandum of Agreement (MOA) was signed between VDOT and DHR on September 29, 2025, detailing the mitigation for the removal of the historic bridge. This HAER report is in partial fulfillment of the terms of the MOA.

Sources: Bonham, Victor S. Teams message to Marc Holma, October 29, 2025.

[30] Ross to Henderson.
[31] Louisa County Board of Supervisors, RES-2023-57, 1.

Brady, Ellen and DeChard, Sandra. “An Architectural Survey for the Hamilton Road Bridge Replacement, Louisa County, Virginia.” Cultural Resources, Inc. Glen Allen, Virginia. April 4, 2013.

Bulletin. "Obituaries", Vol. 35, No. 9, September 1969.

Bulletin. "Promoted", Vol. 18, No. 8, June 1952.

“Hamilton Road Bridge Survey Form, DHR ID. 054-5010”. Department of Historic Resources, Virginia Cultural Resource Information System. https://vcris.dhr.virginia.gov/VCRIS/Mapviewer/

A History of Roads in Virginia, “The Most Convenient Wayes.” Virginia Department of Transportation, Office of Public Affairs. Richmond, Virginia. 2006.

Lee, Mike. “Roanoke, VA: 1888-1960s Roanoke Iron and Bridgeworks/Virginia Bridge and Iron Co.” accessed October 24, 2025. https://towns-and-nature.blogspot.com/2023/04/roanoke-va-1888-1960s-roanoke-iron-and.html.

Louisa County Board of Supervisors, “A Resolution Requesting that the Virginia Department of Transportation Initiate a Project to Address Needs Associated with the Bridge on Hamilton Road Over the South Anna River,” RES-2023-57, March 6, 2023.

McCulley, Meredith, Maisano, Francesca, and van Opstal, Laura E. “Architectural Survey Management Summary for the Hamilton Road Bridge Replacement Project, Louisa County, Virginia”. Rummel, Klepper & Kahl, LLP. Fairfax, Virginia. July 2025.

Miller, Ann. Email to Marc Holma, July 28, 2025.

Miller, Ann. “Hamilton Road Bridge (Louisa County Structure No. 6057), Comments on draft National Register nomination (submitted to VDHR by Historic Green Springs, Inc., July 1, 2025)”. Virginia Transportation Research Council. July 2025.

Ross, Helen. Letter to Kathleen Kilpatrick. “Determination of Eligibility. Hamilton Road Bridge Replacement.” Fredericksburg, Virginia. April 12, 2013.

Ross, Helen. Letter to Kitty Henderson. “Hamilton Road Bridge Replacement Project. VDOT Project No. 0695-054-0812, Louisa County, Virginia. VDHR File No. 2012-1571.” Fredericksburg, Virginia. June 13, 2016.

Teal, Sherry. Letter to Sarah Clarke. “Eligibility and Effects Clarification.” Richmond, Virginia. August 15, 2025.

Tennant, Sean. Email to Marc Holma, October 21, 2025.

Unknown, “SR001 Virginia Bridge & Iron,” *Virginia Room Digital Collection*, accessed October 24, 2025, https://www.virginiaroom.org/digital/document/city001.

Virginia State Highway Commission. “Proposed Bridge at Morris Ford, 80-foot Truss Span Over South Anna River, 5 miles from Trevillian, Louisa Co., VA.” Richmond, Virginia. March 24, 1917.

“Wikipedia: Virginia Bridge and Iron Company,” Wikipedia Foundation. Last modified July 27, 2023, 00:14 (UTC).

In addition to those sources listed above which the author referenced in the writing of this report, there are further materials and repositories one could explore that may add to the narrative. Examples of primary resources worthy of investigation are meeting minutes and other documents from the Louisa County Board of Supervisors that reference Morris Ford or the bridge there, particularly those discussions justifying the need for the structure, and any materials associated with the 1917 bridge construction such as budgetary documents and correspondence with the State Highway Commission or the manufacturer, Roanoke Iron and Bridge Works.

Another avenue worth exploring is local Louisa County newspapers from 1917, when the county erected Morris Ford Bridge. These newspapers may have articles describing the

structure's dedication or could contain added context as to the need for the span at that location. Contemporary newspaper reports may also give insight into public sentiment concerning why the bridge was important to the community.

Also recommended for further consideration is a search for historic photographs of Morris Ford prior to the construction of the bridge and of the structure itself. The earliest photographs that VDOT is known to have are from a 1974 bridge inspection. A deeper dive into the archives at VDOT or the Virginia Transportation Research Council may uncover older depictions of Morris Ford Bridge, but it is unlikely. One would need to do research at the local Louisa County newspaper's photographic collection, Louisa Historical Society or Library of Virginia to attempt to find older photographs of the bridge.

Historian(s):

Author: Marc E. Holma
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Environmental Division
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XX YY, 2026

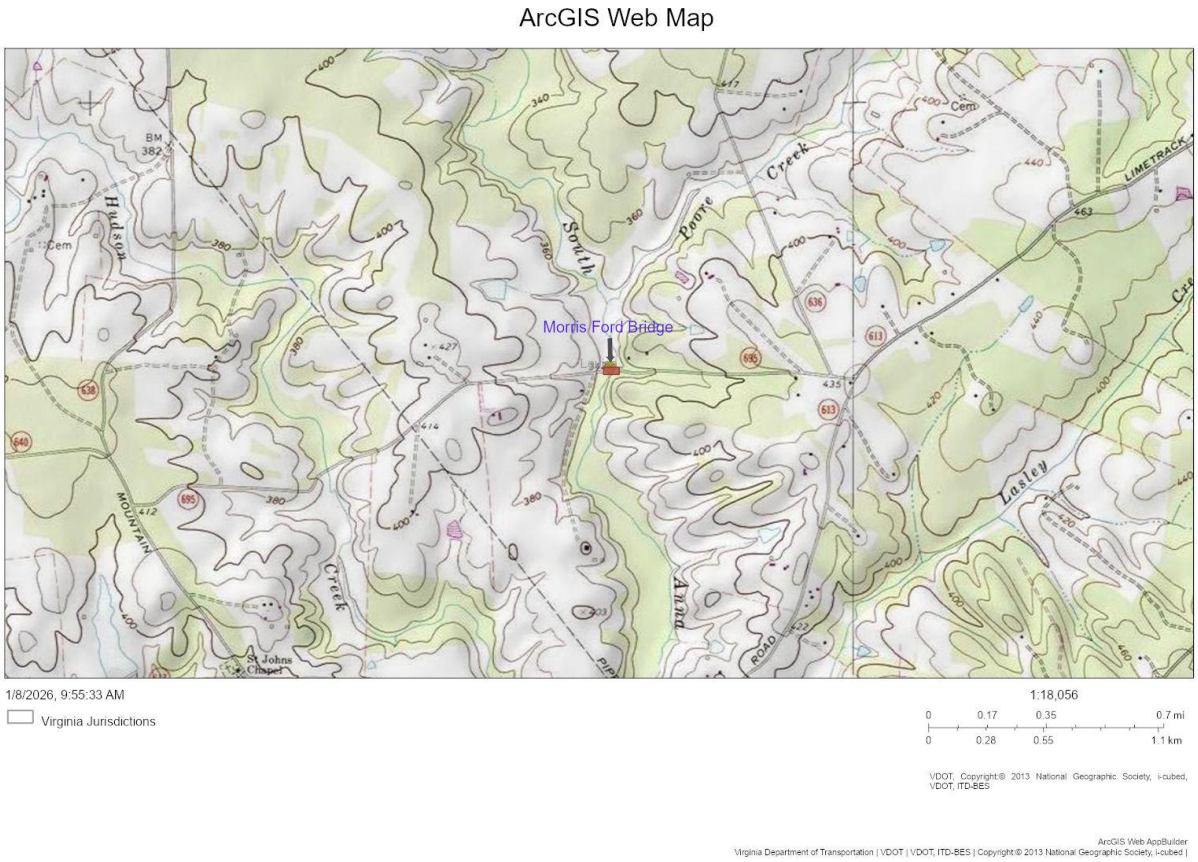
Photographer: David Diener
Graphics and GIS Specialist/HABS Photographer
New South Associates, Inc.

Field Assistant: Katherine Mitchell
Architectural Historian
New South Associates, Inc.

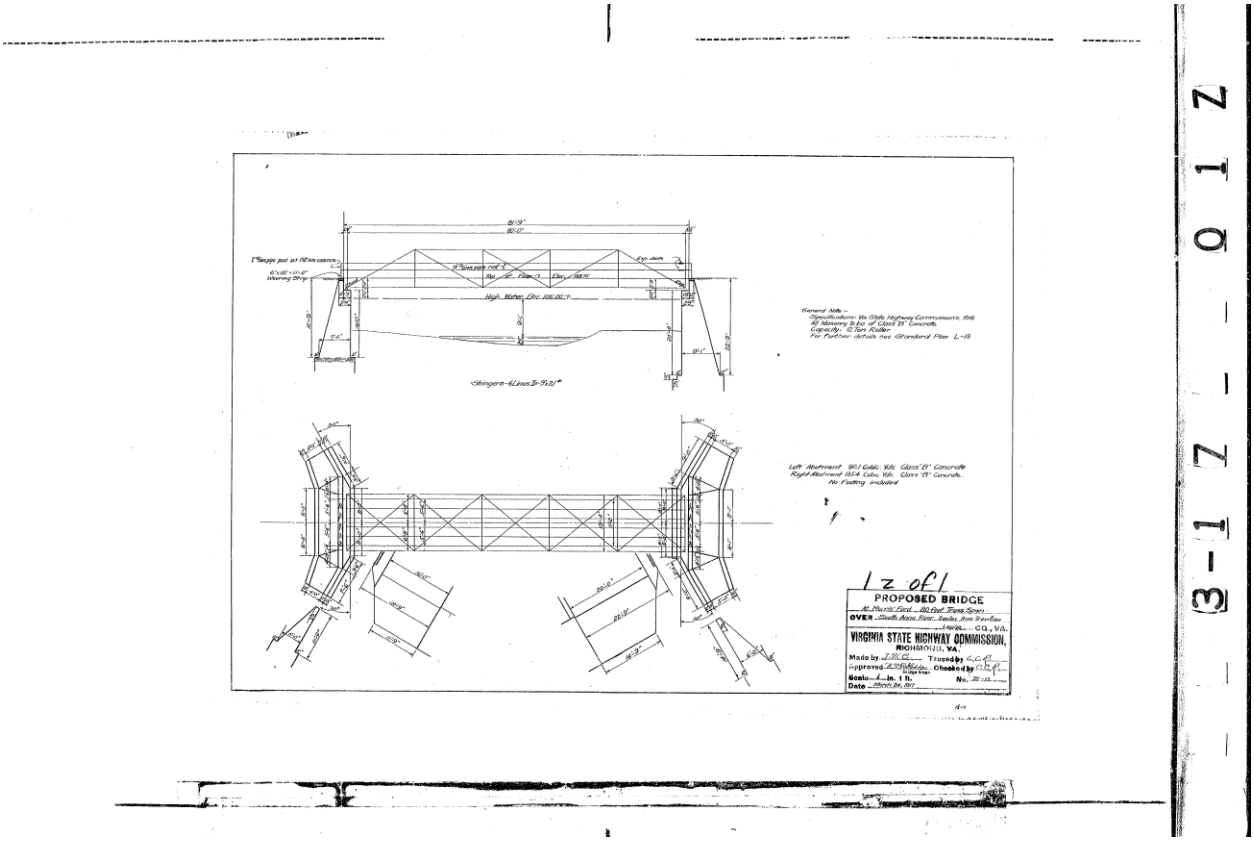
Project Information:

The historical report peer reviewed by Ann Miller, Senior Research Scientist, Historian, Virginia Transportation Research Council (VTRC). Ms. Miller also provided valuable source materials from the VTRC collection included in the bibliography.

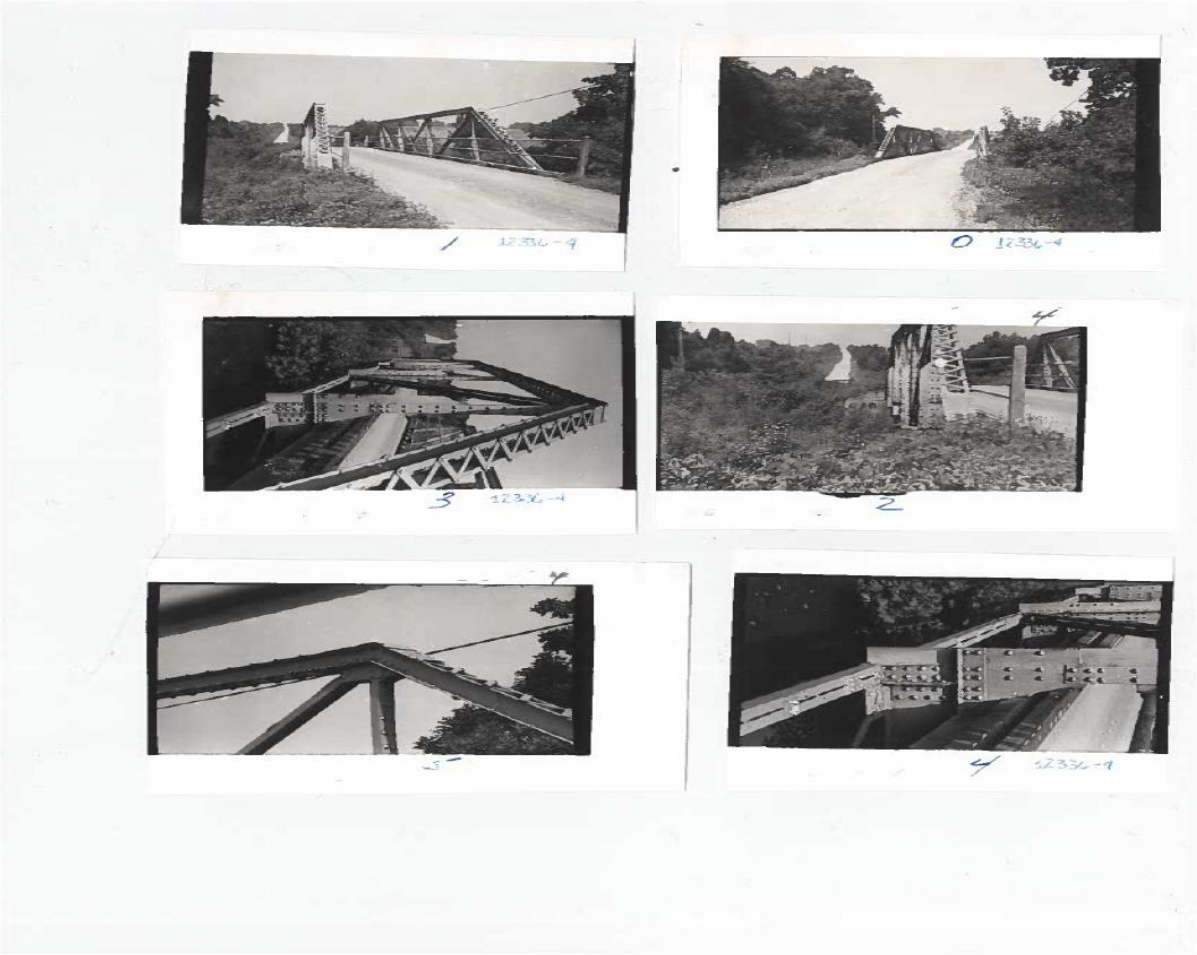
Illustrations:



Location of Morris Ford Bridge, Louisa County, Virginia (latitude: 38.03043195, longitude: -78.13824329)



Morris Ford Bridge design plans dated March 24, 1917 (Courtesy Virginia Department of Transportation)



Morris Ford Bridge, 1974 (Courtesy Virginia Transportation Research Council)

Morris Ford Bridge, 1974 (Courtesy Virginia Transportation Research Council)