

# **State Level Historic Documentation Report**

State Project: S350-52/56-2.64

Federal Project: N/A

## **FLEMING DECK GIRDER BRIDGE Wayne County**



**Prepared by:**

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Department of Transportation  
Division of Highways  
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Environmental Section

**April 3, 2015**

STATE LEVEL HISTORIC DOCUMENTATION  
FLEMING DECK GIRDER BRIDGE

Location: County Route 52/56, over West Fork of Twelvepole Creek  
Fleming  
Wayne County  
West Virginia  
  
USGS Radnor Quadrangle

Date of Construction: 1911

Builder: Virginia Bridge and Iron Company of Roanoke, VA

Present Owner: West Virginia Department of Transportation  
Division of Highways  
1900 Kanawha Boulevard, Building 5, Room A-110  
Charleston, WV 25305

Present Use: Vehicular Bridge

Significance: The Fleming Deck Girder Bridge is regionally significant as part of the former Norfolk & Western Railway Twelvepole Line, an important rail route and, later, automotive route associated with the economic development and continuance of West Virginia coalfields and communities in Mingo and Wayne counties.

Project Information: The project has been undertaken due to the poor condition of the bridge deck which has resulted in some corrosion to the steel structure beneath. Any future deterioration of the bridge would result in its closure. Therefore, the existing bridge deck warranted repair. This documentation was undertaken in April 2015 in accordance with a Memorandum of Agreement among the West Virginia Department of Transportation and West Virginia State Historic Preservation Office. These measures are required due to the deck replacement of this National Register eligible structure.

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Charleston, WV 25305  
April 1, 2015

The Fleming Deck Girder Bridge spans the West Fork of Twelvepole Creek and is located in Fleming, southern Wayne County, West Virginia (WV) on County Route (CO) 52/56, 2.64 miles south of the CO 52/56 northern terminus at WV 152 and 0.35 miles south of CO 52/20. CO 52/56 is also known as Old N&W Railroad Road. Twelvepole Creek is a tributary that enters into the Ohio River to the north near Huntington. The average daily traffic (ADT) for the bridge in 2012 was 70 vehicles per day.



The Fleming Deck Girder Bridge was built in 1911 on the Norfolk & Western Railway (N&W) Twelvepole Line and later converted for automotive use. The two-span bridge is 145 feet, 11 inches long overall. It is set on cut-stone abutments that were built circa 1891 for an earlier N&W bridge that spanned over this location. The mid-span cut-stone pier was added in 1911 for installation of the existing deck. The riveted steel superstructure – built by Virginia Bridge and Iron Company of Roanoke, VA – consists of six-foot-high built-up girders that, until repairs were completed in 2014, included fully intact original top and bottom lateral bracing and diaphragms between the girders and a 12-foot wide wood deck above. The deck was built of a double layer of boards. The distance between curbs was nine feet, 11 inches. The deck and curbs were built of wood boards, each of 0.7 foot width.

A March 2013 bridge inspection reported that the structure was in poor condition with the major deficiency cited as significant deterioration of the bottom flange of each girder, including advanced deterioration of rivet heads. As well, the wood decking exhibited a significant level of decay with some boards loosened and cracked.

Virginia Bridge and Iron Company (VBI) was initially formed in the late 1880s as the American Bridge Company of Roanoke and then reorganized as VBI in 1895. By 1904 VBI was considered the largest steel fabricator in the South with a product line that included bridges, turntables, warehouses, and general structural iron and steel. By the early 1930s the company had offices throughout the US. However, the Depression era took a toll on VBI. In 1936 the company was purchased into the US Steel monopoly and, in 1952, was merged with American Bridge Co. The VBI Roanoke plant serving as American Bridge's southern headquarters until the

facility closed in 1965. VBI constructed many of N&W's bridges, including girder versions which were typical railroad bridge types in the early 1900s.

The construction of the N&W's Ohio Extension in the early 1890s helped bring more remote areas of Mingo and Wayne counties into the industrial age. The Ohio Extension started from Elkhorn in McDowell County, WV. From there it headed westward along Elkhorn Creek, then northwest along Tug Fork of Big Sandy River to Naugatuck, then west along Pigeon Creek and its Laurel Fork, and finally north for about 70 miles along Twelvepole Creek to Kenova before crossing the Ohio River to end at Ironton, OH. This route was chosen for its easy grades, allowing for economy of construction and operation, and for the desire to locate the best areas for further coal and timber sources. The portion of the road from Lenore at the Pigeon Creek-Laurel Fork juncture to Kenova became known as the Twelvepole Line of the Ohio Extension.

Due to the extremely winding nature of the water routes this railroad followed, many tunnels and bridge crossings were necessary to avoid excessive curvature. For example, Twelvepole Creek was spanned 34 times. Most of the early bridges were wooden trestles and were later replaced with metal bridges, many manufactured by VBI (such as the Fleming Deck Girder Bridge) or the American Bridge Company of NY.

Development of the Pocahontas Coalfield to the south and the resulting increased freight traffic along the N&W's Ohio Extension in the 1890s led to the construction of an additional rail line along the Big Sandy River which furnished a better grade for heavy traffic. This new line from Naugatuck to Kenova, completed in 1904, largely supplanted the Twelvepole Line. Even though upgrades were made to the Twelvepole Line, including the replacement of several of its bridges in and around 1911, the use of this line was further decreased after a second track along the Big Sandy alignment was completed in 1925.

Overall the Twelvepole Line had not fulfilled the expectations of the railroad, never producing substantial volumes of coal in the locales it traveled through. In 1933 the Interstate Commerce Commission granted approval to abandon the Twelvepole Line from Lenore to Wayne, a 54-mile distance, and the tracks were removed by the end of that year. Over time the abandoned right of way was rehabilitated for automotive use as primary and secondary highway routes. Some present day routes that make use of the former Twelvepole railroad alignment appear to be WV 152 and WV 37 (both part of Old US 52), county routes 52/55, 52/16 and 52/56 in Wayne County and CO 3/5 in Mingo County. The remaining northern portion of the Twelvepole Line from Wayne to Kenova was combined with a short line from Wayne to East Lynn to become the Wayne Branch of the N&W (which later became Norfolk Southern Railway).

Although the Twelvepole Line was abandoned, its legacy lives on in extant towns and small enclaves that were established or otherwise grew due to the N&W along Laurel Fork and Twelvepole Creek. The following locales along the line had N&W stations and/or post offices established during the railroad era: Lenore, Rapp, Canterbury, Parsley (Hale Station), Dingess, Trace, Kirk (Buttercup), Breeden and Lowney in Mingo County; and Wilsondale, Doane, Missouri Branch (Wells Branch/Preston), Dunlow, Quaker, Ferguson, Radnor, Fleming, Genoa, Sidney, Coleman, Echo and Wayne in Wayne County. The rehabilitation of the former rail alignment for automotive use, utilizing its bridges and tunnels, was likely important to the continuance of industries, including coal mining, that would sustain these locales to the present.

The Fleming Deck Girder Bridge on CO 52/56 is within the locale of Fleming in Wayne County. The town was named for Robert Fleming (1845-1933), a Scottish financier and one of the major stockholders of the N&W. The village had its own N&W station in 1891 (but no longer existed by 1903) and its own post office from 1892 until 1901. One of the early coal mining operations in the Twelvepole region was in Fleming by 1891 and was initially managed by Henry J. Toudy. There are three former N&W bridges still existing on four-mile-long CO 52/56 – the subject bridge, Fleming Thru Girder and Genoa Thru Girder. All of these bridges required removal of original rails and likely timber ties for the placement of wooden decking for automotive use.

The Fleming Deck Girder Bridge has been determined eligible for listing in the National Register of Historic Places as part of the Former N&W Twelvepole Line Transportation Route from Lenore to Wayne. The route is significant as a unique railroad-turned-automotive alignment and for its role in the economic development and continuance of WV's coalfields and communities in Mingo and Wayne counties from 1891 to the present. As well, the former Twelvepole Line is within the federally-designated National Coal Heritage Area established in 1996.

Repairs to the Fleming Deck Girder Bridge were completed in 2014 to meet current design standards and better protect the superstructure from corrosion. The wood decking was removed and replaced with an asphalt deck. Top lateral bracing and some diaphragm components were removed and replaced with a continuous central steel stringer and steel floor beams that were bolted to the existing girders. Guardrails were affixed to the bridge via steel extenders (posts) bolted to the outer sides of the existing girders.



BIBLIOGRAPHY

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---. Bridge Inspection Report, Engineering Division, Building 5, Capital Complex, Charleston, West Virginia, March 2013.

---. Bridge Inspection Report, Engineering Division, Building 5, Capital Complex, Charleston, West Virginia, July 2014.

STATE LEVEL HISTORIC DOCUMENTATION  
INDEX TO PHOTOGRAPHS

Fleming Deck Girder Bridge  
County Route 52/56, over West Fork of Twelvepole Creek  
Fleming, Wayne County, West Virginia

Photographer(s): Sondra L. Mullins	October 18, 2013
Danny Vaughn	November 5, 2013
Tracy D. Bakic	March 21, 2014

FLEMING DECK -1	View Northeast, Taken from South Side of Bridge (taken Oct. 18, 2013)
FLEMING DECK -2	View Southwest, Taken from North Side of Bridge (taken Oct. 18, 2013)
FLEMING DECK -3	West (Upstream) Side of Bridge, View East/NE (taken Oct. 18, 2013)
FLEMING DECK -4	East (Downstream) Side of Bridge, View North (taken Oct. 18, 2013)
FLEMING DECK -5	South End of Bridge, Highlighting Bottom Lateral Bracing (taken March 21, 2014)
FLEMING DECK -6	Mid-Span Pier, View North (taken March 21, 2014)
FLEMING DECK -7	Plaque – West/Upstream Side at North End/Abutment, View East (taken Nov. 5, 2013)
FLEMING DECK -8	Close-up of Plaque, View Southeast (taken Nov. 5, 2013); reads “BUILT BY / VIRGINIA BRIDGE / AND IRON CO. / ROANOKE, VA / 1911”

Original plans of the bridge substructure are attached with this documentation. No other original plans exist for this bridge.