

COLONIAL PARKWAY,
HALFWAY CREEK BRIDGE
spanning Halfway Creek
Yorktown vicinity
York County
Virginia

HAER No. VA-48-K

HAER.
VA
100-YORK,
18K-

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Department of the Interior
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HISTORIC AMERICAN ENGINEERING RECORD

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HALFWAY CREEK BRIDGE
Colonial National Historical Park
HAER No. VA-48-K

Location: Spanning Halfway Creek, about 2.5 miles south of Williamsburg along the Colonial Parkway, Williamsburg vicinity, James City County, Virginia
Quad: Hog Island, Virginia
UTM: 18/349425/4121950

Date of Construction: 1941-1942

Type of Structure: Reinforced concrete slab bridge on concrete bents and piers.

FHWA Structure No.: 4290-022P

Use: Vehicular crossing

Designer/Engineer: National Park Service, Branch of Plans and Designs, Washington Office; and the Engineering Division of the Bureau of Public Roads

Builder: Frank T. Westcott, North Attleboro, Massachusetts.

Owner: National Park Service

Significance: Halfway Creek Bridge is the longest structures located along the Colonial Parkway, measuring 850'. The reinforced concrete slab bridge was completed in December 1942, and marked the first extension of the parkway south of Williamsburg toward Jamestown island. Since the roadway was not completed to Jamestown until the 1950s, Halfway Creek Bridge was an isolated structure with no approach road for thirteen years.

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Project Information: Documentation of Halfway Creek Bridge is part of the Colonial National Historical Park Roads and Bridges Project, conducted in the summer of 1995 by the Historic American Engineering Record.

Historian: Michael G. Bennett, HAER Historian, 1995

INTRODUCTION

Along with photographs, measured drawings, and an overview history of the Colonial National Historical Park roads and bridges (HAER No. VA-115), individual reports on certain bridges, park tour roads (Jamestown Island Tour Road HAER No. VA-116, and the Yorktown Battlefield Roads HAER No. VA-117), and other structural features of the Colonial Parkway are part of this documentation. These reports provide a more detailed history of a structure's design and construction. Similar documentation for Colonial National Historical Park was completed by HAER in 1988 for the Colonial Parkway (HAER No. VA-48), the Navy Mine Depot Overpass (HAER No. VA-48-A), Capitol Landing Underpass (HAER No. VA-48-B), the C & O Railroad Underpass (HAER No. VA-48-C), and the Williamsburg Tunnel (HAER No. VA-48-D).

CONTEXT

Constructed between 1931 and 1957, the Colonial Parkway is the key transportation feature of Colonial National Historical Park. Crossing the Tidewater peninsula, the road is a scenic link between the "historic triangle" of Jamestown, Williamsburg, and Yorktown--a distance of about 23 miles--designed to provide continuity in the transition from one historical era to another. The Colonial Parkway represents one of the first attempts of the National Park Service to integrate parkway design principles standardized in Westchester County, New York during the 1920s with its own traditions of landscape architecture. Under the initial direction of Charles E. Peterson, chief landscape architect for the Eastern Division of the Branch of Plans and Design, the parkway was constructed to harmonize the scenic qualities of the Tidewater environment with the region's colonial material culture.

Modern highway design and engineering practices were utilized in the construction of the parkway. The alignment of the road is comprised of a variation of spiral and single-centered curves with limited tangents, set in a right-of-way averaging 500' with broad landscaped slopes. Commercial development is prohibited,

and access to the road is limited to provide motorists an uninterrupted flow through the landscape thought to be essential to the historic experience of the park. Extensive "cut and fill" operations were used to create a road with maximum curves of 5° and grades no greater than 5 percent.

The decision to align the parkway along both the York and the James Rivers required the use of hydraulic fill to create a road embankment. Low level concrete slab bridges blend with the sandy areas of fill, providing open views of the rivers and marshes. In the vicinity of Williamsburg, filled spandrel concrete arch bridges with colonial style brick veneer provide separated grade underpasses for federal, state, and county roads. To simulate the character of a "country road," the parkway's pavement was limited to a width of 30' and specially treated to expose the extra large aggregate in the concrete. All of these features, along with interpretive markers, create a roadscape with unity, variety, and character, three common elements of NPS landscape design tradition.

HALFWAY CREEK BRIDGE

The construction of Halfway Creek bridge marked the first extension of the Colonial Parkway south of Williamsburg. In October 1939, a declaration of taking was initiated for certain tracts of land between Scotland Street in Williamsburg and College Creek. By this time, the parkway's alignment had been established as far as State Route 31, following a variation of Charles Peterson's original route south from Williamsburg through Kingsmill Neck, then westward along the James River toward Glasshouse Point. On 17 November, title for the right-of-way between Williamsburg and College Creek was transferred to the United States by the Eastern District Court of Virginia.¹

Halfway Creek is a small tributary of College Creek with exten-

¹Elbert Cox, Superintendent's Monthly Narrative Reports, October-November 1939, file 207.02.3, collection of the Colonial National Historical Park.

sive freshwater wetlands located at its intersection with the Colonial Parkway. In July 1940, plans for a bridge across the creek and marshlands were prepared by the District Bridge Division of the Public Roads Administration (formerly Bureau of Public Roads). By November, Civilian Conservation Corps crews were actively clearing the parkway's right-of-way between Papermill Creek, just south of Williamsburg, and Halfway Creek in preparation for the continuation of the road and the construction of the bridge.² In December 1940, the plans for the new bridge were approved by Thomas Vint, Chief of the NPS Branch of Plans and Design.

Clearing and grading between Papermill and Halfway creeks was completed by February 1940 and the contract for the construction of the bridge was awarded to Frank T. Westcott of North Attleboro, Massachusetts. Construction began on 4 April 1941, and by May piles were driven for the north abutment. The bridge was built as a nearly complete unit from the north bank southward. To compensate for a variation of soil compositions encountered around the site, piles were driven to depths of between 24' and 77' to obtain adequate bearing. The contractor experienced difficulty in fixing the pier footings as the sheet metal coffer dams could not prevent the marsh material from seeping between the individual pier footings and cracking them before the final set of the concrete. A decision to place the piers on full width foundations reinforced with steel bars proved successful.³

As soon as piles were driven and foundations set, concrete for the piers, the deck and the pavement was poured so that a

²Cox, Superintendent's Monthly Narrative Reports, July-November 1940.

³William H. Smith, U.S. Department of Agriculture, Bureau of Public Roads, "Final Construction Report, Project 1D4, Colonial National Historical Park, Halfway Creek Bridge, James City County, Virginia," 5-6, collection of the Colonial National Historical Park, Engineer's office, Maintenance Division, Yorktown, Virginia.

partially finished structure extended over the wetlands before all the piles were driven (This method of construction was standard for most work along the Colonial Parkway).⁴ Granite sections measuring 5 1/2' long were placed on all piers from 2' below the waterline, to 3 1/2' above the waterline. Despite good progress on the bridge during much of 1941, America's entry into World War II in December slowed work considerably. The scarcity of materials and labor effected all facets of work for the Colonial National Historical Park. Many of the CCC camps were reduced to skeleton crews, and even park superintendent Elbert Cox left his post to enter the Navy in July 1942.⁵

By August, concrete was poured to bent 14, the post and lintel guardrails were being poured, and excavations began on the south abutment. Finishing work, including grading around both abutments was completed in November and December, and final inspection of the bridge was made by federal highway engineer William H. Smith, associate landscape architect Walter H. Sheffield, and assistant park engineer William G. Fyfe. On 22 December 1942, Thomas Vint, chief of Planning for the Branch of Plans and Design, notified PRA district engineer H. J. Spelman of the acceptance of the landscaping and architectural treatment of the bridge.⁶ The bridge, however, became known as the "bridge to nowhere" as it had to wait until the 1950s for the parkway to be extended over its deck.

Halfway Creek bridge is a continuous 850' reinforced concrete girder structure with thirteen 50' clear spans and two approach spans of 50' at each end. There are five concrete girders along

⁴Cox, Superintendent's Monthly Narrative Reports, April-December 1941.

⁵For the effects of the war on Colonial see the Superintendent's Monthly Narrative Reports; see also "Final Construction Report, Project 1D4," 7.

⁶Cox, Superintendent's Monthly Narrative Reports, August-December 1942; Vint's letter is attached to the "Final Construction Report, Project 1D4."

the length of the bridge, supported by fourteen concrete bents on three 3' piers set 13'-6" apart. The bridge is 36' wide and has 6" concrete curbs on both sides of a 30' roadway with a 3'-1" sidewalk along the western side of the structure. A 28" reinforced concrete post and lintel guardrail lines both sides of the bridge. Different classes of concrete were used, including class S for underwater use, class D for girders and deck, and class A for guardrails. Cork was used as a filler for expansion joints and all exposed concrete members were rounded to 1/8".⁷

In 1988, Phase II of the reconstruction of the Colonial Parkway began. Phase II included the rehabilitation of the reinforced concrete between Miller's Crossing and the Jamestown island entrance, and restorative work on the bridges over Halfway, College, Mill and Powhatan creeks. As with all bridges along the parkway, the parapet of Halfway Creek Bridge was modified to accept the connection with new timber guardrails installed along the road. Basic repairs and additional reinforcement was made to the concrete around the abutment walls, beams, pier caps and pier columns. All joints were inspected, cleaned and resealed as necessary, and any cracks, spalling, or other defects in the curbs and rails along the bridge were corrected. A coat of concrete sealer (Pen Seal 50), and a coat of a cementacious material (Thoroseal) was applied to certain parts of the bridge.⁸

⁷U.S. Department of the Interior, National Park Service, Branch of Plans and Design, Drawing No. NHP-COL 2005-A, "Bridge over Halfway Creek;" and Public Roads Administration, Federal Works Agency, Drawings No. G-806 PF, G-807 PF, G-808 PF, G-809 PF, G-810 PF, and G-811 PF, "Bridge over Halfway Creek," collection of Colonial National Historical Park, Nelson House.

⁸U.S. Department of Transportation, Federal Highway Administration, "Plans for Proposed Project PRA COLO 1D39, E12, Colonial Parkway," 1 August 1988, collection of Colonial National Historical Park, Engineer's office, Maintenance Division.

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