

WINDY RUN BRIDGE
George Washington Memorial Parkway, spanning Windy Run
Arlington Vicinity
Arlington County
Virginia

HAER No. VA-78

HAER
VA
7-ARL.V,
19-

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

PHOTOGRAPHS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Department of the Interior
P.O. Box 37127
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1. INTRODUCTION

Location: George Washington Memorial Parkway milepost 6.95; 7.1 miles south of Interstate 495; The bridge carries the GWMP over Windy Run, a tributary of the Potomac River in Arlington County.

FHWA Structure No.: 3300-009P.

Date of Construction: 1957-1959.

Type: Steel plate girder bridge.

Designer: Bureau of Public Roads with approval from the National Park Service.

Contractor: Blackwell Engineering Co., Merrifield, VA.

Present Owner: National Capital Region, National Park Service.

Present Use: Non-commercial vehicular traffic.

Significance: Built as part of a project to extend the George Washington Memorial Parkway to the proposed terminus at Great Falls, Virginia.

Project Information: Documentation of the George Washington Memorial Parkway and Clara Barton Parkway was undertaken as a multi-year project by the Historic American Buildings Survey and the Historic American Engineering Record (HABS/HAER), a combined division of the National Park Service, Robert Kapsch, Chief. The project was sponsored by the Park Roads Program of the National Park Service, John Gingles, Deputy Chief, Engineering and Safety Services Division. The Project Supervisor was Sara Amy Leach, HABS Historian. Bridge reports were prepared by Elizabeth M. Nolin (1988); Michael P. Kucher (University of Delaware, 1993); and Jennifer P. Wentzien (University of Washington, 1994).

HABS Report No. VA-69 prepared by Timothy Davis (University of Texas) provides an overview history of the entire parkway project. Jack E. Boucher and Jet Lowe produced the large-format photographs. The Washington-based summer 1994 documentation team was headed by landscape architect Tim Mackey (Harvard University, Graduate School of Design).

II. HISTORY

The Windy Run Bridge is one of several bridges designed and built in the 1950s to carry the George Washington Memorial Parkway (GWMP) closer to its proposed terminus of Great Falls, Virginia. The bridge was built when the GWMP was extended from Spout Run to the CIA in Langley, Virginia. This section of the parkway covers terrain which Bureau of Public Roads (BPR) engineers claimed was some of the most rugged terrain in Northern Virginia. The steep rock slopes had previously deterred development of the Potomac palisades and were a challenge for the builders.¹

The architectural design of Windy Run Bridge first appears in a drawing titled "Steel and Concrete Bridge" dated March 1950. The design is credited to William Haussmann of the National Park Service, National Capital Parks, Architectural Branch. Haussmann's name appears on the architectural drawings for parkway bridge structures from the 1940s through the 1960s. The engineering design was executed by BPR engineers² in 1957. The bridge was completed in 1959. The design reflects the popular modernist aesthetic of the period.

Christopher Tunnard succinctly describes the artistic intentions of this era as "the lighter and cleaner the silhouette, the better the design." At Windy Ridge these effects are achieved in the design of metal railings, cantilevered "T" shaped piers, and absolutely minimal ornamentation.

The bridge was built under a contract which included Gulf Branch Bridge (HAER No. VA-76) and Donaldson Run Bridge (HAER No. VA-77). The three bridges are of similar design and were bid together in two contracts, one for the connecting roadway and abutments, the other for the piers and superstructure. Final construction costs on the contract for the three spans was \$1,573,449.66.³

Description

The bridge is a four span steel plate girder viaduct resting on concrete piers and abutments. The bridge is comprised of two 106' spans and two 84' spans. The total length including wing walls is 456'. Three sets of piers are between 50' and 90' high. The reinforced concrete deck is 68' wide and carries four lanes of the GWMP, separated by a 6' median strip and with room for 10' shoulders.

Counterfort type (stepped) spread footings were cast in place on the steep slopes of mica schist rock. Abutments and wing walls are built on the continuous footings. Support piers are comprised of two 7' diameter round concrete columns tied with a rectangular concrete beam at the top. The piers were poured in approximately twenty lifts using a light steel shell form. Steel girders rest on the beams. The superstructure consists of a continuous steel girder and floorbeam system. The steel superstructure was fabricated, delivered and erected by the Atlas Machine and Iron Works, Arlington, VA. The deck is made of concrete cast in place and the wearing surface is concrete. Aluminum bridge railings were altered during construction to allow for the future placement of electric light standards. The guardrails and posts,

¹U.S. Bureau of Public Roads, "Final Construction Report, Project 1A1," p. 6.

²Initial H.L.T. from Contract Drawings

³U.S. Bureau of Public Roads, "Final Construction Report, Project 1A2,1A3,1A4," 1959.

designed to afford motorists the greatest possible view of the area below, are still in use.⁴

Alterations

In 1961 drainage troughs were installed in front of the abutments. The project engineer recommended that in future designs drainage from bridge decks should be collected by pipes and channeled down piers.⁵

⁴Ibid.

⁵U.S. Bureau of Public Roads, "Final Construction Report, Project 1A23."

III. SOURCES

Tunnard, Christopher. Man-made America: Chaos or Control? Yale University Press. 1963.

U.S. Department of Commerce, Bureau of Public Roads. Plans for Proposed Project 1A2, 1A3, 1A4: Piers and Superstructures;" "Bridge over Windy Run, Plan and Elevation (sheet 5 of 42)."
Microfiche reductions of original construction drawings on file at the National Capital Region Park Headquarters, National Park Service, Washington D.C.

U.S. Department of Commerce, Bureau of Public Roads, Region 15. "Final Construction Report, Project 1A2, 1A3, 1A4, George Washington Memorial Parkway Steel Viaducts over Windy Run, Donaldson Run, and Gulf Branch, Arlington County, Virginia." Submitted by E. L. Tarwater, Division Engineer, 9/28/59. Report on Project 1A1 covers the abutments.

U.S. Department of the Interior, Historic American Buildings Survey (HABS), No. VA-69, "George Washington Memorial Parkway," 1994. Prints and Photographs Division, Library of Congress, Washington D.C.