

Arlington Memorial Bridge
Adjacent to the base of the Lincoln Memorial, spanning
the Potomac River to Arlington Cemetery, VA.
Washington
District of Columbia

HAER No. DC-7

HAER,
DC,
WASH,
563-

PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, DC 20013-7127

HISTORIC AMERICAN ENGINEERING RECORD

ARLINGTON MEMORIAL BRIDGE

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Location: Adjacent to the base of the Lincoln Memorial, Washington, D.C., spanning the Potomac River to Arlington Cemetery, Arlington, VA.

UTM: 18/321680/4306600
Quad.: Washington West

Date of Construction: Designed 1929, Completed 1932

Architects: McKim, Mead and White, New York, New York; William Mitchell Kendall, Designer

Engineer: John L. Nagle,
W.J. Douglas, Consulting Engineer,
Joseph P. Strauss, Bascule Span Engineer

Contractor: Forty contractors under the supervision of the Arlington Bridge Commission

Present Owner: National Capital Region
National Park Service
Department of the Interior

Present Use: Vehicular and pedestrian bridge

Significance: As the final link in the chain of monuments which start at the Capitol building, the Arlington Memorial Bridge connects the Mall in Washington, D.C. with Arlington National Cemetery in Virginia. Designed to connect, both physically and symbolically, the North and the South, this bridge, as designed in the Neoclassical style, complements the other monumental buildings in Washington such as the White House, the Lincoln Memorial, and the Jefferson Memorial. Memorial Bridge was designed by William Mitchell Kendall while in the employ of McKim, Mead and White, a prominent architectural firm based in New York City. Although designed and built almost thirty years after the McMillan Commission had been disbanded, this structure reflects the original intention of the Commission which was to build a memorial bridge on this site which would join the North and South.

Historian: Elizabeth M. Nolin, 1988

The idea of a bridge over the Potomac spans 150 years. The idea was first conceived during President Andrew Jackson's term in office, March 1829 - March 1837. An act passed on July 14, 1832 provided for the purchase of land, the site of the bridge crossing with various acts and executive documents following in 1833, 1834 and 1836. On January 4, 1836, the Washington Globe reported that Congress had passed an act to build a bridge across the Potomac.¹ This action is most likely linked to the fact that during Jackson's second term in office, he laid the cornerstone for a community, Jackson City, on the Virginia shore of the Potomac. With the laying of the cornerstone came a large parade and much excitement regarding the soon thriving suburb of Washington. Bureaucracy plodded along, even in the 1830s. A bridge was never built despite congressional acts and executive orders. Without a bridge, Jackson City was not easily accessible to Washingtonians and within a short time, Jackson City was again a swampy grassland.²

There appears to be no further action taken on the bridge until 1851. On July fourth of that year, Daniel Webster addressed a crowd and spoke of President Jackson's dream, perhaps romanticizing it slightly. Webster describes the structure as a bridge with arches of granite stretching across the Potomac from Washington to Virginia, physically and symbolically uniting the North and South.³ Several subsequent presidents also endorsed plans for a memorial bridge. Studies for a bridge were made, design competitions were held and various factors were scrutinized, but again, no action was taken.⁴ Another movement that had also been going forward during this time period was one to beautify Washington. It was strongly influenced by the change in aesthetics that resulted from the 1876 Centennial Exhibition in Philadelphia, the 1890 Centennial of the founding of the City of Washington and the 1893 Columbian Worlds Fair in Chicago.⁵

¹ David Hoth, The Andrew Jackson Papers, Knoxville, TN. Telephone communication.

² Robert V. Remini, Andrew Jackson and the Course of American Democracy, 1833-1845. (New York: Harper and Row, Publishers, 1984), 399.

³ Bridges - Arlington Memorial 1895-1918, file, Martin Luther King Jr. Public Library, Washingtoniana Room.

⁴ Donald Beekman Myer, Bridges and the City of Washington, (Washington: U.S. Commission of Fine Arts, 1974), 17.

⁵ Connie Foley, River Port and Capital: The Architectural and Natural Landmarks of Washington, (Department of the Interior: 1965), 13.

A direct result of this wave of interest was the formation of the Senate Park Commission also known as the McMillan Commission.⁶ This Commission was established by Senator James McMillan of Michigan, Chairman of the Park Commission on the District of Columbia. Four men were selected by McMillan and assigned to study and report on the present condition of the District's parks.⁷ The four men were Frederick Law Olmsted, Jr., Daniel Burnham, Charles McKim, and Augustus St. Gaudens. To better understand the ideas of Pierre L'Enfant, city planner of Washington, and many of the great European designers, the men of the McMillan Commission traveled to Europe. Many of the impressive landscapes such as Villa d'Este, Hadrian's Villa, Piazza San Marco, Versailles, and Hampton Court were studied.⁸

"In effect, the Senate Park Commission Plan of 1901, as it came to be known, was an exact revival of L'Enfant's plan of 1791."⁹ The models and drawings of the 1901 plan included a bridge and other supporting architectural elements where the Arlington Memorial Bridge and other structures came to be built.¹⁰ Upon McMillan's death in 1902, the Park Commission ceased to exist.¹¹ In 1910, President Taft established a similar Commission through Congress, the National Commission of Fine Arts. Comprised of seven men, the Commission consisted of three architects, a landscape architect, a painter, a sculptor and an art historian/critic.¹²

The Fine Arts Commission acted as executors of the 1901 plan¹³ and in 1916 the idea of a memorial bridge came up in their meetings, but it was not until the Armistice Day celebration and dedication of the Tomb of the Unknown Soldier in 1921 that plans actually went ahead for a bridge from Washington to Virginia. Due to an unprecedented traffic jam stretching from Washington to Arlington Cemetery in Virginia, a trip that normally took twenty minutes stretched out to an hour and a half. On this day, President Harding was traveling to the cemetery with some of the members of the Commission of Fine Arts. The day following this fiasco, the Commission decided to act upon this problem by asking Congress for appropriations for a bridge in the vicinity of

⁶ Norman T. Newton, *Design on the Land*, (Cambridge, Massachusetts: Belnap/Harvard Press, 1971), 420.

⁷ Foley, 13.

⁸ Newton, 405.

⁹ *ibid*, 407.

¹⁰ *ibid*, pp. 407, 409, 410; figs. 256, 260, 261.

¹¹ *ibid*, 410.

¹² *ibid*, 411.

¹³ Foley, 13.

Arlington Cemetery.¹⁴ There were arguments presented that the bridge should be in line with New York Avenue extended but a final determination was made in 1922 when President Harding and the Commission visited the two proposed sites.¹⁵ The bridge was, according to the 1901 plan, to span the Potomac from the west end of the Mall at the base of the Lincoln Memorial to Arlington Cemetery.¹⁶

The Commission, rather than hold a competition to decide on the design team, chose the firm by direct selection. The architecture firm of McKim, Mead and White of New York City was specified to design the bridge with William Mitchell Kendall submitting a preliminary design in May of 1923. The bridge was neoclassical in style, keeping with the Lincoln Memorial and other monumental architecture in Washington. The design was well received by the Commission and work went ahead on the bridge. On May 27, 1927, Kendall submitted drawings for the Washington side of the bridge which included the parkway approach, seawall and watergate (see HAER #DC-7A); and at the same time included drawings depicting the Virginia terminus including the formal avenue from the bridge to Arlington Cemetery and the Boundary Channel extension of the Arlington Memorial Bridge (see HAER #DC-7B). Many complications regarding both termini arose, mostly concerning traffic demands but costs and aesthetics were also factors. The design for the Washington terminus was finally settled on March 15, 1928 and on the Virginia side as late as 1940.

The Arlington Memorial Bridge consists of nine arches which include a double leaf bascule span in the center with four masonry arches on either side plus two smaller spans over low level roadways which carry traffic through the abutments at each end of the bridge. The superstructure of the bridge rests on four abutments, one at each shore line and one on either side of the draw span with six piers in between the masonry arches. Between the pylons at each terminus the bridge measures 2,138 feet. The bridge deck width is ninety feet with sidewalks measuring fifteen feet and the roadway sixty feet.¹⁷ A total of forty contractors worked on the construction of the bridge, all under the supervision of the Arlington Bridge Commission. The bridge foundation was built by H.P. Converse and Company, with the superstructure by the Hunkin-

¹⁴ Sue A. Kohler, The Commission of Fine Arts: A Brief History 1910-1984, (Washington, D.C.: Commission of Fine Arts, 1984), 16.

¹⁵ Kohler, 16.

¹⁶ *ibid*, 18.

¹⁷ John L. Nagle, "The Arlington Memorial Bridge," The Military Engineer. (1928): 155.

Conkey Construction Company.¹⁸ To obtain greater quality control, the granite for the bridge was purchased by the government and supplied to the contractor free.¹⁹ The ring stones in the arch are load bearing, all other granite is used as veneer or ornamentation. The bridge is white in color to match the Lincoln Memorial and has a bush-hammered finish. The granite below the spring line is from the Stone Mountain Quarry in Georgia with all other granite coming from the Mount Airy Quarry in North Carolina. Most of the ornamentation on the bridge is made of granite. At each arch, except the bascule, there are bas relief eagles which face into each arch and are surrounded with a wave border. These discs measure twelve feet across and have fasces on each side. The keystone in each arch which is over water, not including the bascule span, is a six foot bison head. At the Arlington terminus of the bridge are two pair of pylons with eight foot eagles on top. The sculptor for all of this ornamentation was Paul C. Jennewein.

The bascule span was designed to blend with the style of the bridge. The fascia is built of ornamental pressed metal and, until recently was painted to match the granite; creating the illusion that the draw span did not exist. Out of six companies who entered into a design competition for the bascule span, Strauss Engineering Corporation was selected to design the structure with the Phoenix Bridge Company as builder.²⁰ The span is 216 feet long, with each of the counterweights weighing 5,000 tons.²¹ Due to space constraints in the interior of the bridge, the counterweights could not be made of ordinary concrete. The weight of the concrete was raised to 271 pounds per cubic foot, which was done by adding steel punchings and swedish iron ore to the concrete mixture.²² The span was able to open in sixty to ninety seconds.²³ Due to decreased shipping traffic on the Potomac, and the later down river construction of a fixed, low-clearance bridge, the bascule span has been permanently fastened in the closed position.

Most of the decisions regarding the bridge, design and otherwise, went smoothly. However, the lighting of the bridge was one of the topics that remained undecided for a period of almost four years. Aesthetics and engineering were in conflict over the subject of light standards for the

¹⁸ Commission of Fine Arts, Arlington Memorial Bridge, Parkway Approach, Inscription for First Panel. Drawing Number 2A3-15.

¹⁹ Drawing, 2E3-19

²⁰ Nagle, 156.

²¹ D.H. Gillette, "The Arlington Memorial Bridge," American Civic Annual, 83.

²² C.C. Keyser, "Designing Concrete for Weight of 271 Pounds Per Cubic Foot," Journal of the American Concrete Institute, Volume 3, April 1932.

²³ Myer, 20.

bridge. Many different styles and heights of light posts were tried but between the architect, the engineer, and the Commission a common decision could not be made. William Kendall had designed a lighting standard but due to economic conditions at the time these were never constructed. Kendall's design came amidst several other suggestions and proposals regarding the lighting on the bridge; with the subject of neon being brought up twice! As a temporary measure it was decided to use light standards that were typical to the streets of Washington to light the bridge. Although temporary, these lights, designed by Frances D. Millet still light the Memorial bridge today.²⁴

The Washington terminus of the Arlington Bridge is concluded with a pair of statues designed by Leo Friedlander which depict the Arts of War, namely Valor and Sacrifice. Coordinating with this pair are the Arts of Peace which punctuate the Rock Creek and Potomac Parkway at the Memorial Circle. Originally to be carved of granite, then of marble, these four statues were cast in Italy of bronze and then flame gilded with mercury and gold. Standing nineteen feet high these statues were set atop pedestals ornamented with carved wreaths and thirty six stars which represent the states of the Union at the end of the Civil War. These statues cost two hundred thousand dollars and were presented to the United States by the people of Italy. Their dedication on September 26, 1951 brought work on the Memorial Bridge to a conclusion.

²⁴ Kress-Cox Associates, P.C., Historic Structures Report Arlington Memorial Bridge, (Washington, D.C.: 1986), 119-126.

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Addendum To
ARLINGTON MEMORIAL BRIDGE
(Memorial Bridge)
Spanning Potomac River between
Lincoln Memorial and Arlington
Cemetery
Washington
District of Columbia

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ADDENDUM TO:
ARLINGTON MEMORIAL BRIDGE
(Memorial Bridge)
George Washington Memorial Parkway
Spanning Potomac River between Lincoln Memorial & Arlington
National Cemetery
Washington
District of Columbia

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