National Park Service
Cultural Landscapes Inventory

2009

Revised: 8/2024

Memorial Avenue Corridor

George Washington Memorial Parkway

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Introduction

The Cultural Landscape Inventory (CLI)

The Cultural Landscape Inventory (CLI) is a comprehensive inventory of all cultural landscapes in the National Park System. Landscapes that are listed, or eligible for listing, on the National Register of Historic Places, or are otherwise managed as cultural resources and in which the National Park Service has, or plans to acquire, legal interest are included in the inventory. The CLI identifies and documents each landscape's location, size, physical development, landscape characteristics, character-defining features, and condition. Cultural landscapes have approved CLIs when concurrence with the findings is obtained from the park superintendent and all required data fields are entered into the Cultural Resources Information System (CRIS-CL) database. In addition, for landscapes not currently listed on the National Register and/or without adequate documentation, concurrence is required from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or the Keeper of the National Register.

Scope of the CLI

The information contained within the CLI is compiled from primary and secondary sources and through on-site surveys of the landscape. The level of investigation is dependent upon scoping the need for information. The baseline information collected provides a comprehensive look at the historical development and significance of the landscape. Documentation and analysis of the existing landscape identifies character-defining characteristics and features and allows for an evaluation of the landscape's integrity and an assessment of the landscape's condition. The CLI also includes historic maps, drawings, and images; photographs of existing conditions; and a site plan that indicates major features. The CLI documents the existing condition of park landscape resources and identifies impacts, threats, and measures to stabilize condition. This information can be used to develop strategies for improved stewardship. Unlike a Cultural Landscape Report (CLR), the CLI does not provide management recommendations or treatment guidelines for the cultural landscape, but it may identify stabilization measures.

The Cultural Resources Information System (CRIS)

CRIS is the National Park Service's database of cultural resources on its lands, consisting of archeological sites, historic structures, ethnographic resources, and cultural landscapes. Cultural Resources Inventory System (CRIS) replaces three legacy inventory systems: ASMIS (archeology), CLI (cultural landscapes), and LCS (historic structures); and it reinstates the former ERI (ethnographic resources). This Cultural Landscape Inventory document reflects the information in a corresponding CRIS Cultural Landscape record.

Statutory and Regulatory Foundation

The legislative, regulatory, and policy directives for conducting and maintaining the CLI within CRIS are:

- National Historic Preservation Act (NHPA) of 1966 (16 USC 470h-2(a)(1)) Sec. 110
- Executive Order 13287: Preserve America, 2003. Sec. 3 (a and c)
- Secretary of the Interior's Standards and Guidelines for Federal Agency Historic Preservation Programs
- Pursuant to the National Historic Preservation Act, 1998. Std. 2
- Cultural Resource Management Guideline, 1997, Release No. 5, page 22; issued pursuant to Director's Order #28 (DO-28)

The NHPA requires the identification, evaluation, and nomination of historic properties to the National Register of Historic Places and the maintenance and expansion of an inventory of cultural resources. DO-28 requires a cyclic assessment of the current condition of cultural landscapes based on an assessment interval, with a default of six years.

Use

Beyond fulfilling legal and policy requirements, park staff can use the Cultural Landscape Inventory in the following ways:

- To learn about park cultural landscapes (all staff)
- To inform management decisions (park managers)
- To inform project planning and development (park managers, facility managers, project managers, compliance specialists)
- To monitor the condition of the cultural landscape and take measures to protect its significance and integrity (cultural resource managers, facility managers)
- To recognize the stabilization and treatment needs of landscape features and plan work within cultural landscapes to address the needs (facility managers, cultural resource managers)
- To understand the cultural value of natural systems in a cultural landscape (natural resource managers)
- To create programming and educational materials based on site history (interpretation and education specialists)
- To recognize impacts within cultural landscapes and enforce protection measures (visitor and resources protection staff)

General Information

Property Level and CLI Numbers

Inventory Unit Name: Memorial Avenue corridor

Resource Classification: Cultural Landscape

CLI Identification Number: 600247

Parent Landscape: 600247

Inventory Status: Complete

Park Information

Park Name: George Washington Memorial Parkway

Alpha Code: GWMP

Park Organization Code: 330F

Park District: GWMP

Region: National Capital

Restricted: No

Landscape Description:

Memorial Avenue corridor is a name applied to the mile-long axial composition that includes Arlington Memorial Bridge, Memorial Circle, Memorial Avenue Bridge (over Boundary Channel), Memorial Avenue, and the entrance to Arlington National Cemetery at the hemicycle. Arlington Memorial Bridge and its features were intended to be both a monumental entry to the federal city and a formal, processional route to Arlington National Cemetery. The Memorial Avenue corridor was the design of the McKim, Mead and White architectural firm, under the project architect, William Mitchell Kendall. Memorial Circle is the one exception to the composition that the firm did not design. It is attributable to Gilmore D. Clarke, a designer of early parkways and a member and later the chairman of the Commission of Fine Arts. The Watergate steps and the entrance to Rock Creek and Potomac Parkway are sections of the Arlington Memorial Bridge project that do not come within the jurisdiction of George Washington Memorial Parkway, the park unit responsible for the corridor. Therefore, they are not treated in this document. For those features, see the Cultural Landscape Report for West Potomac Park: Lincoln Memorial Grounds (DSC, 1999).

The corridor is a major element of the system of public buildings, parks, memorials, bridges, and drives that constitutes the monumental core of Washington D.C. Arlington Memorial Bridge is considered the most beautiful bridge in Washington. It crosses the Potomac River from a point at the end of the Washington Mall axis near the Lincoln Memorial. Several designs for a river crossing a little north of this location had been considered during the later decades of the nineteenth century and one was selected. But in 1901, the Senate Park Commission (McMillan Commission) proposed a different type of bridge at this site. They drew an axis between the then-proposed Lincoln Memorial and the home of Robert E. Lee, on the heights of Arlington, Virginia, as the line the bridge would take. Nearly three decades passed before the bridge was built, but the design bears the imprint of the Park Commission's work.

The two ends of Arlington Memorial Bridge stand on created land, formed from river dredgings. The resulting new land became East and West Potomac Parks, on the east side of the river, and Columbia Island (renamed Lady Bird Johnson Park in 1967) on the river's west side. The Arlington Memorial Bridge roadway turns around Memorial Circle, proceeds as Memorial Avenue Bridge (earlier called Boundary Channel Bridge), crosses the river terrace below Arlington House, and terminates at the hemicycle and entrance to Arlington National Cemetery. In early documents, the entire avenue was sometimes called the cemetery entrance. Tall pylons, topped by sculpted eagles, mark the Columbia Island ends of the two bridges. Memorial Avenue was conceived as an "Avenue of Heroes," and seven memorials have been placed along it since 1960, including the Women in Military Service for America Memorial located at the hemicycle. The avenue is partly enclosed by a hedge of American holly (Ilex opaca) and white oak trees (Quercus alba). A building to accommodate visitors to Arlington National Cemetery was completed in 1988 and lies within the original boundaries of the avenue. Transportation corridors—Highway 110 and a line of the Metro, Washington's rapid transit system—pass below grade, but are marked on the avenue by entrance and exit roads, elevators, escalators and signs.

The composite features of the Memorial Avenue corridor are significant as "important elements in the neoclassical urban design of the National Capital as it evolved during the first third of the 20th century." (Mackintosh, National Register nomination, 1980) As a whole, the corridor maintains moderate rather than high integrity because of the effects of various intrusions and losses, but many of its elements, particularly its primary architectural features, have high integrity.

Landscape Hierarchy Description:

Memorial Avenue corridor is one of more than a dozen units administered by George Washington Memorial Parkway. The corridor is an individual cultural landscape that does not include any separately identified component landscapes, but has a great many contributing features.

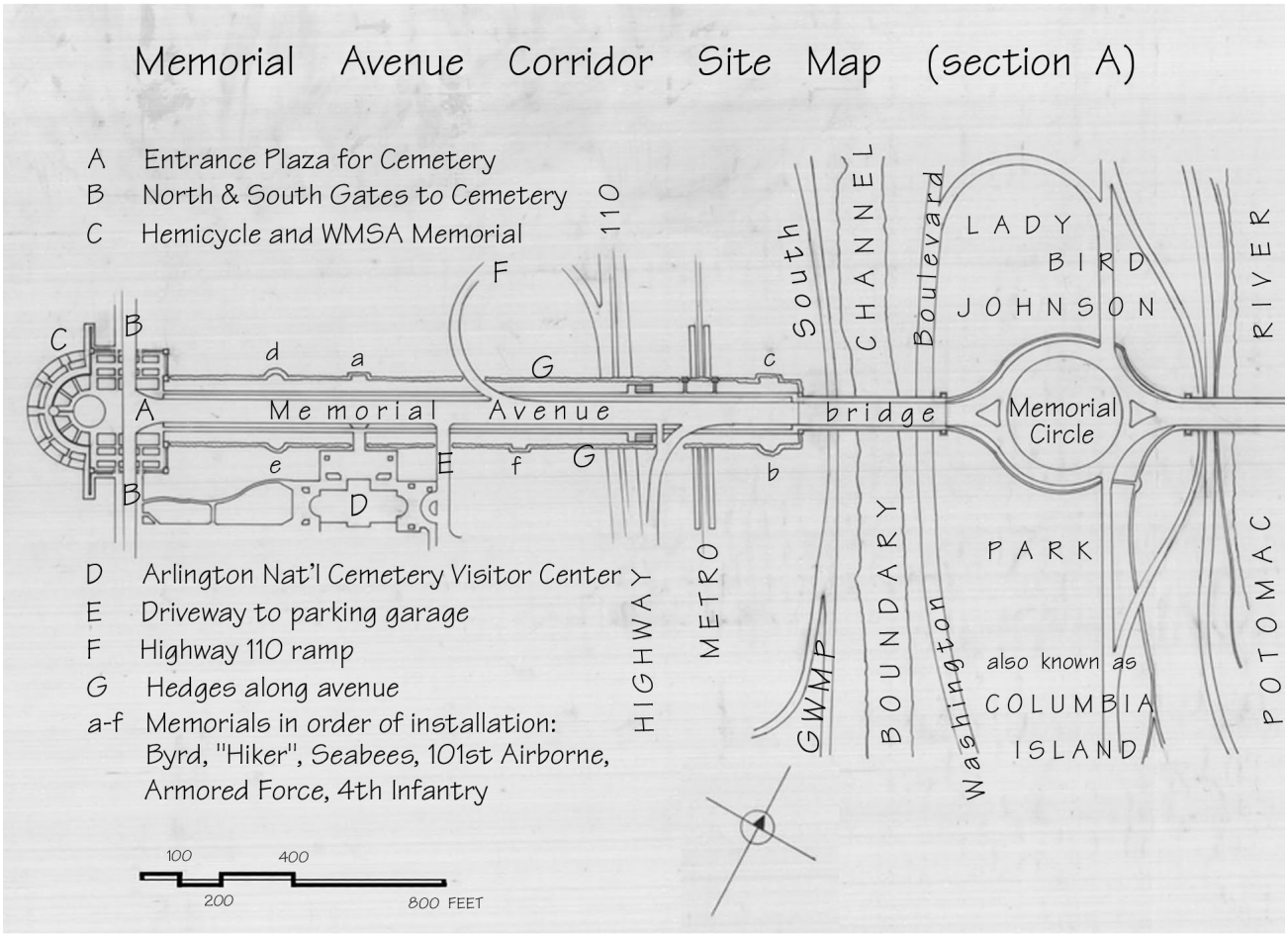
Landscape Type:

Historic Designed Landscape

Other Names:

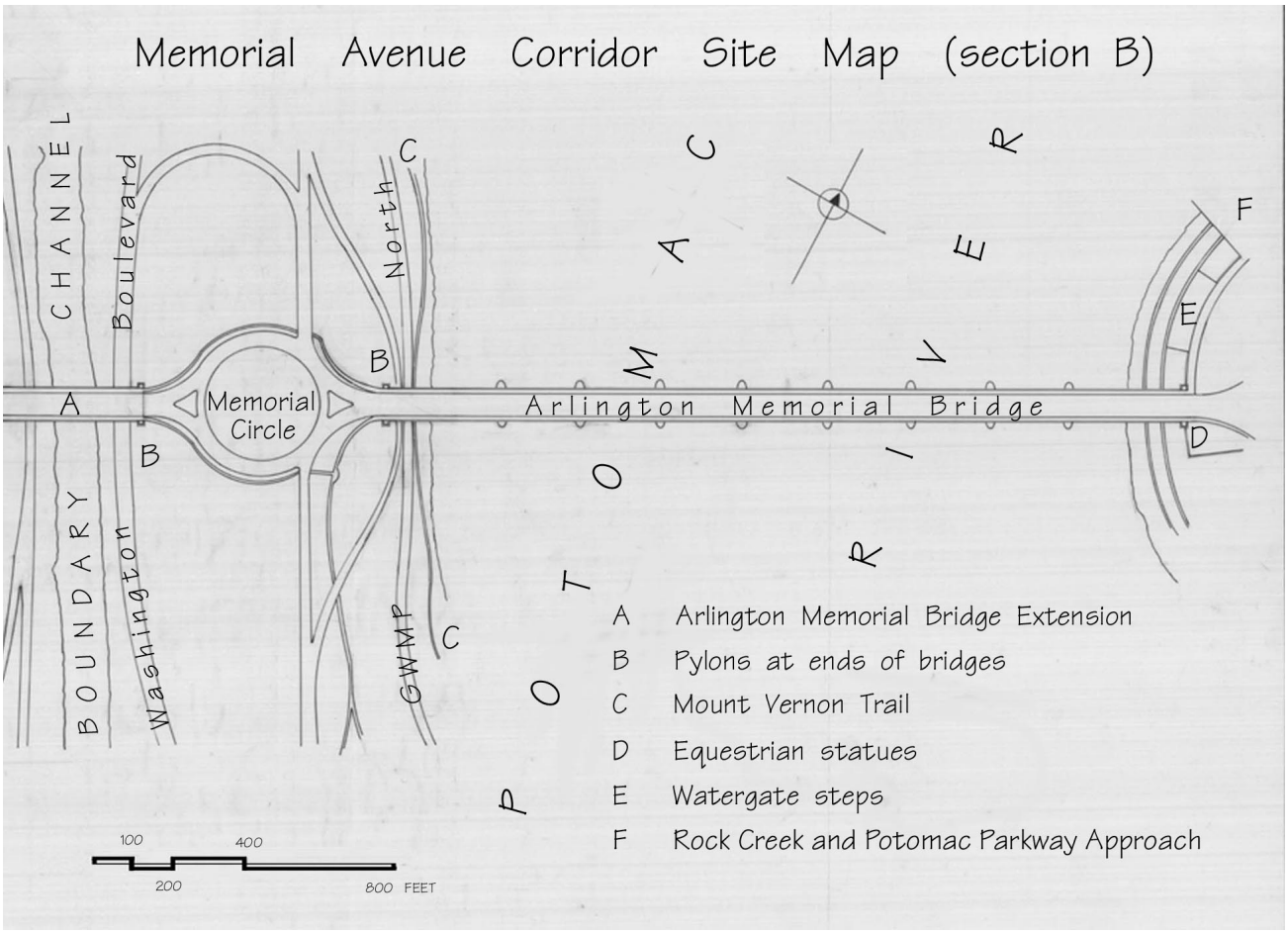
Other Name:	Arlington Memorial Bridge	**Other Name Type:**	Both Current And Historic
Other Name:	Memorial Avenue	**Other Name Type:**	Both Current And Historic
Other Name:	Memorial Avenue corridor	**Other Name Type:**	Current
Other Name:	Memorial Drive	**Other Name Type:**	Both Current And Historic

Site Plan



Section A of the site plan shows the western end of the corridor. Parts of the composition are either named or marked with a letter and identified in the legend. (Drawing by D. Guenther.)

The site plan was not revised during the FY2024 CLI update. As of 2024, there is a CLR in progress for the Memorial Avenue Corridor. Spatial information from this report should be used to create an updated site plan during the next CLI update.



Section B of the site plan shows the eastern half of the composition. Features are either named or described in the legend. (Drawing by D. Guenther)

Concurrence Information

Concurrence Status:

Park Superintendent Concurrence: Yes

Park Superintendent Date of Concurrence: 09/15/2009

Completion Status Explanatory Narrative:

The Level II CLI for the Memorial Avenue corridor was completed by Judith Earley, historical landscape architect with the National Capital Region's Cultural Landscape Program. US/ICOMOS intern Dagmar Guenther and Judith Earley conducted field research and initial document assessment during the summer of 2000. Several more field visits were conducted over the next months. Judith Earley wrote all sections of the report and Dagmar Guenther drew the site plan and historical development maps. Katarzyna Piotrowska-Nosek, another intern, assisted with data entry.

Research was conducted at GWMP headquarters (maps, reports and historic photos), GWMP maintenance division (planting plans), NPS National Capital Region headquarters (TIC library and map files), National Capital Region library and Museum Resource Center (historic photos), National Archives (Arlington Memorial Bridge Commission drawings, RG 79), the Commission of Fine Arts (minutes), Library of Congress, Geography and Maps Division (Arlington County maps).

The Memorial Avenue Corridor CLI was updated in FY2024 by Angelina Ribeiro Jones, NCR CLI Coordinator and Historical Landscape Architect. As of 2024, a Memorial Avenue Corridor CLR is in progress and information from this report should be used to revise this CLI when it is next updated. Photographs taken during fieldwork for the CLR are available in the Landscape Documents section of the Memorial Avenue Corridor CRIS-CL entry under the Bibliography & Supplemental tab.

Concurrence Graphic Information:

Attachment File Path

United States Department of the Interior

NATIONAL PARK SERVICE
National Capital Region
1100 Ohio Drive, S.W.
Washington, D.C. 20242

IN REPLY REFER TO:

July 9, 2024

Memorandum

To: Cultural Landscapes Inventory Coordinator, National Capital Region

From: Superintendent, George Washington Memorial Parkway

Subject: Statement of Concurrence, Memorial Avenue Corridor

I, Charles Cuvelier, Superintendent of George Washington Memorial Parkway, concur with the update for the Memorial Avenue Corridor Cultural Landscapes Inventory, including the following specific components:

PERIOD OF SIGNIFICANCE: The Memorial Avenue Corridor cultural landscape retains integrity to the following period of significance: 1901-2000.

INTEGRITY: The landscape displays the following aspects of integrity (location, design, setting, materials, workmanship, and association) as defined by the National Register of Historic Places.

MANAGEMENT CATEGORY: Must be Preserved and Maintained

CONDITION REASSESSMENT: Good

The Cultural Landscapes Inventory update for Memorial Avenue Corridor is hereby approved and accepted.

Charles Cuvelier — Digitally signed by Charles Cuvelier Date: 2024.07.10 15:12:12 -04'00'

Superintendent, George Washington Memorial Parkway — July 10, 2024 — Date

INTERIOR REGION 1 • NORTH ATLANTIC-APPALACHIAN
CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, VERMONT, VIRGINIA, WEST VIRGINIA

Concurrence memo signed by the George Washington Memorial Parkway superintendent on July 10, 2024.

United States Department of the Interior

NATIONAL PARK SERVICE
National Capital Region
Office of Lands, Resources and Planning
1100 Ohio Drive, SW
Washington, DC 20242

July 9, 2004

Memorandum

To: Cultural Landscape Inventory Coordinator, National Capital Region

From: State Historic Preservation Officer, Commonwealth of Virginia

Subject: Statement of Concurrence, Memorial Avenue Corridor Cultural Landscape Inventory

I, Kathleen S. Kilpatrick, Virginia State Historic Preservation Officer, concur with the findings of the Memorial Avenue Corridor Cultural Landscape Inventory as submitted on July 9, 2004.

Kathleen S. Kilpatrick
Virginia State Historic Preservation Officer

Date 7/19/04

Concurrence memo for FY2004 signed by the Virginia SHPO on 7/19/2004.

United States Department of the Interior

NATIONAL PARK SERVICE
National Capital Region
1100 Ohio Drive, S.W.
Washington, D.C. 20242

September 1, 2009

Memorandum:

To: Cultural Landscape Inventory Coordinator, National Capital Region

From: Superintendent, George Washington Memorial Parkway

Subject: Statement of Concurrence, Memorial Avenue Corridor Cultural Landscape Condition Reassessment

I, Dottie Marshall, Superintendent of George Washington Memorial Parkway, concur with the condition reassessment for the Memorial Avenue Corridor cultural landscape:

CONDITION REASSESSMENT: Good

Good: indicates the inventory unit shows no clear evidence of major negative disturbance and deterioration by natural and/or human forces. The inventory unit's cultural and natural values are as well preserved as can be expected under the given environmental conditions. No immediate corrective action is required to maintain its current condition.

Fair: indicates the inventory unit shows clear evidence of minor disturbances and deterioration by natural and/or human forces, and some degree of corrective action is needed within 3-5 years to prevent further harm to its cultural and/or natural values. If left to continue without the appropriate corrective action, the cumulative effect of the deterioration of many of the character defining elements, will cause the inventory unit to degrade to a poor condition.

Poor: indicates the inventory unit shows clear evidence of major disturbance and rapid deterioration by natural and/or human forces. Immediate corrective action is required to protect and preserve the remaining historical and natural values.

The cultural landscape condition reassessment for the Memorial Avenue Corridor is hereby approved and accepted.

D Marshall 9/15/09

Superintendent, George Washington Memorial Parkway Date

Concurrence memo for FY2009 signed by the GWMP Superintendent on 9/15/2009. This was a condition reassessment.

United States Department of the Interior

NATIONAL PARK SERVICE
National Capital Region
Office of Lands, Resources and Planning
1100 Ohio Drive, S.W.
Washington, DC 20242

February 20, 2004

Memorandum

To: Cultural Landscape Inventory Coordinator, National Capital Region

From: State Historic Preservation Officer, District of Columbia

Subject: Statement of Concurrence, Memorial Avenue Corridor Cultural Landscape Inventory

I, Lisa Burcham, District of Columbia State Historic Preservation Officer, concur with the findings of the Memorial Avenue Corridor Cultural Landscape Inventory as submitted on February 20, 2004.

Lisa Burcham
District of Columbia
State Historic Preservation Officer

Date 8/16/04

Concurrence memo for FY2004 signed by the DC SHPO on 8/16/2004.

Revision:

Revised By	Type of Revision	Revision Date	Revision Narrative
Martha Temkin	Change in Condition	09/15/2009	Cyclic Condition Reassessment.
Martha Temkin	Other	10/15/2015	Concurrence document added in FY 2016
Angelina Ribeiro Jones	Change in Condition	08/16/2024	The Memorial Avenue Corridor CLI was updated in FY2024. Through consultation with park staff, it has been determined that the Memorial Avenue Corridor landscape remains in Good condition.

Geographic Information

State and County:

State	County

Size (Acres): 40

Land Tract Number(s)

Boundary Description:

The boundary described here for Memorial Avenue corridor is a working boundary that applies to this document only. It does not supplant the boundary drawn for the National Register nomination for Arlington Memorial Bridge and Related Features (Barry Mackintosh, April 4, 1980).

Beginning on the eastern end of the corridor, the boundaries include the equestrian statues at the east end of Arlington Memorial Bridge, the bridge itself and the pylons at its western terminus. At Columbia Island (Lady Bird Johnson Park), the boundaries widen broadly, but without a mandated line, on either side of Memorial Circle. (The width of the boundary on Columbia Island can be more accurately described as a "study boundary," since there is no defined edge separating Lady Bird Johnson Park and Memorial Avenue. The width of boundary in this area is related to the corridor's cross axis that was implemented in so-scaled back a form as to have little resemblance to the design, and then existed only briefly. It is also a function of the viewshed.) From the pylons at the east end of Memorial Avenue Bridge, the boundaries narrow to about 600 feet, within which Memorial Avenue is centered. From the end of Memorial Avenue Bridge, the corridor extends about 2,000 feet to the foot of the slope. It includes the hemicycle and the terrace across the top of the hemicycle, and extends about ten feet beyond the outer edges of the terrace. The rights-of-way of Highway 110 and Metro's Huntington line pass perpendicularly beneath Memorial Avenue. A piece of the Memorial Avenue property, 2.43 acres in size, was transferred to the Department of the Army for the Arlington National Cemetery visitor center. Based on figures from the 1935 property map, subtracting the transferred land, acreage within the Memorial Avenue boundaries on the Virginia side should equal about 25 acres. (This calculation does not include any adjustment for the rights-of-way of crossing transportation corridors.) About 15 acres are pertinent to the Memorial Avenue boundaries on Columbia Island. The 25 acres west of Boundary Channel Bridge (the extension bridge) are within the jurisdiction of the state of Virginia and the 15 acres on Columbia Island are within the District of Columbia's jurisdiction. No acreage is calculated for the bridges.

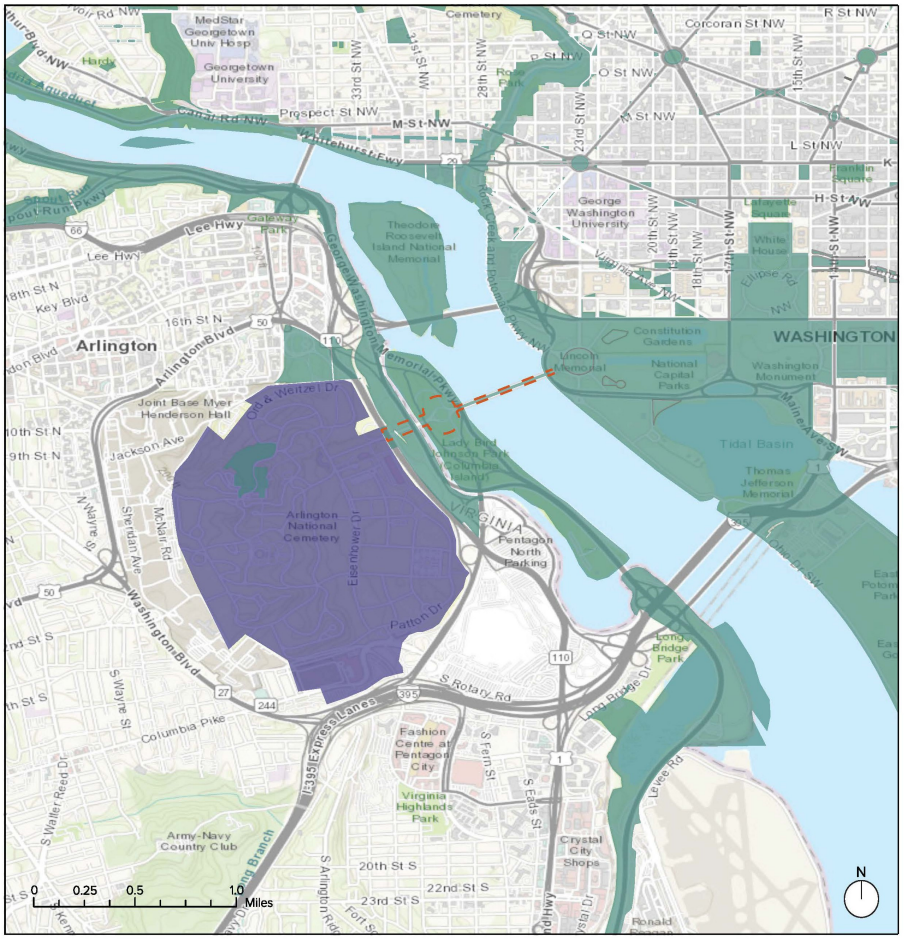
Note that in 2019 the Department of the Interior (DOI) and the Department of the Army (DOA) completed a land transfer that resulted in a decrease of the total acreage held in fee by the NPS formerly associated with the Memorial Avenue Corridor CLI (P.L. 116-92). As part of this transaction, DOI transferred 16.09 acres of land to DOA, including Memorial Avenue from the Hemicycle to the western side of the VA Highway 110 overpass. DOA transferred administrative jurisdiction over approximately 1.04 acres of land within Arlington National Cemetery near Arlington House to DOI in return.

As of 2024, a CLR for the Memorial Avenue Corridor is in progress. During the next update to the Memorial Avenue Corridor CLI, it will be necessary to review the remaining acreage of the corridor under NPS management and to remove any landscape characteristics and features from the Analysis and Evaluation that are no longer within lands managed by the NPS using information from Part 1 of the completed CLR. Lands along the Memorial Avenue Corridor that are now managed by DOA should be described in the Adjacent Lands section of the CLI. An image created for the draft Memorial Avenue CLR showing a revised boundary that reflects NPS management of the corridor, as well as a NPS Land Resources Division tract map depicting the land along the avenue owned by DOI and DOA are included below for reference.

Boundary Coordinates

Source	Type of Point	Latitude	Longitude	Narrative
USGS Map 1:24,000	Point	38.889862	-77.0518949	
USGS Map 1:24,000	Point	38.8851831	-77.0688793	
USGS Map 1:24,000	Point	38.8837442	-77.0682151	
USGS Map 1:24,000	Point	38.8908427	-77.0524881	

Location Map:



Memorial Avenue Corridor Cultural Landscape Report

George Washington Memorial Parkway

Contextual Land Ownership

SOURCES
1. Base Imagery: Fairfax County, VA, M-NCPPC, VITA, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA
2. NPS GIS Data
3. Arlington National Cemetery map, https://www.arlingtoncemetery.mil/Visit/Map-of-ANC

DRAWN BY
Meg Frisbie, University of Pennsylvania
ArcGIS Pro, Adobe Illustrator, 2023

LEGEND
- Cultural Landscape Boundary
- National Park Service
- Department of the Army

NOTES
1. Boundaries for Arlington National Cemetery (owned by the Department of the Army) were drawn in GIS based on ANC boundary maps.

Weitzman School of Design, University of Pennsylvania
Urban Heritage Project
Department of Historic Preservation | PennPraxis
www.cultural-landscapes.org

DRAWING #2

14 Memorial Avenue Corridor Cultural Landscape Report

Introduction 15

Map detailing land ownership around the Memorial Avenue Corridor, 2023. (Source: University of Pennsylvania/Meg Fris Memorial Avenue Corridor CLR Draft).

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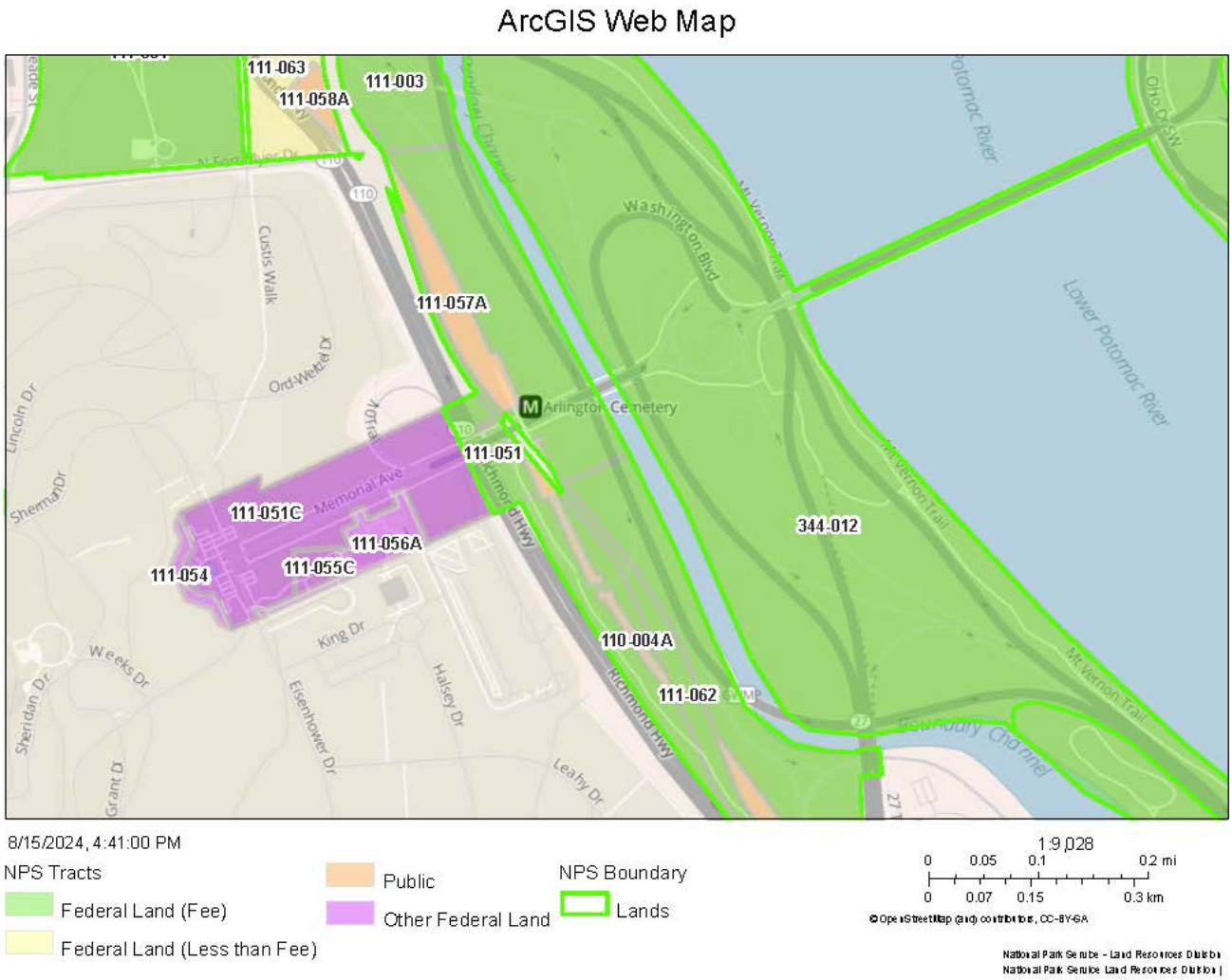
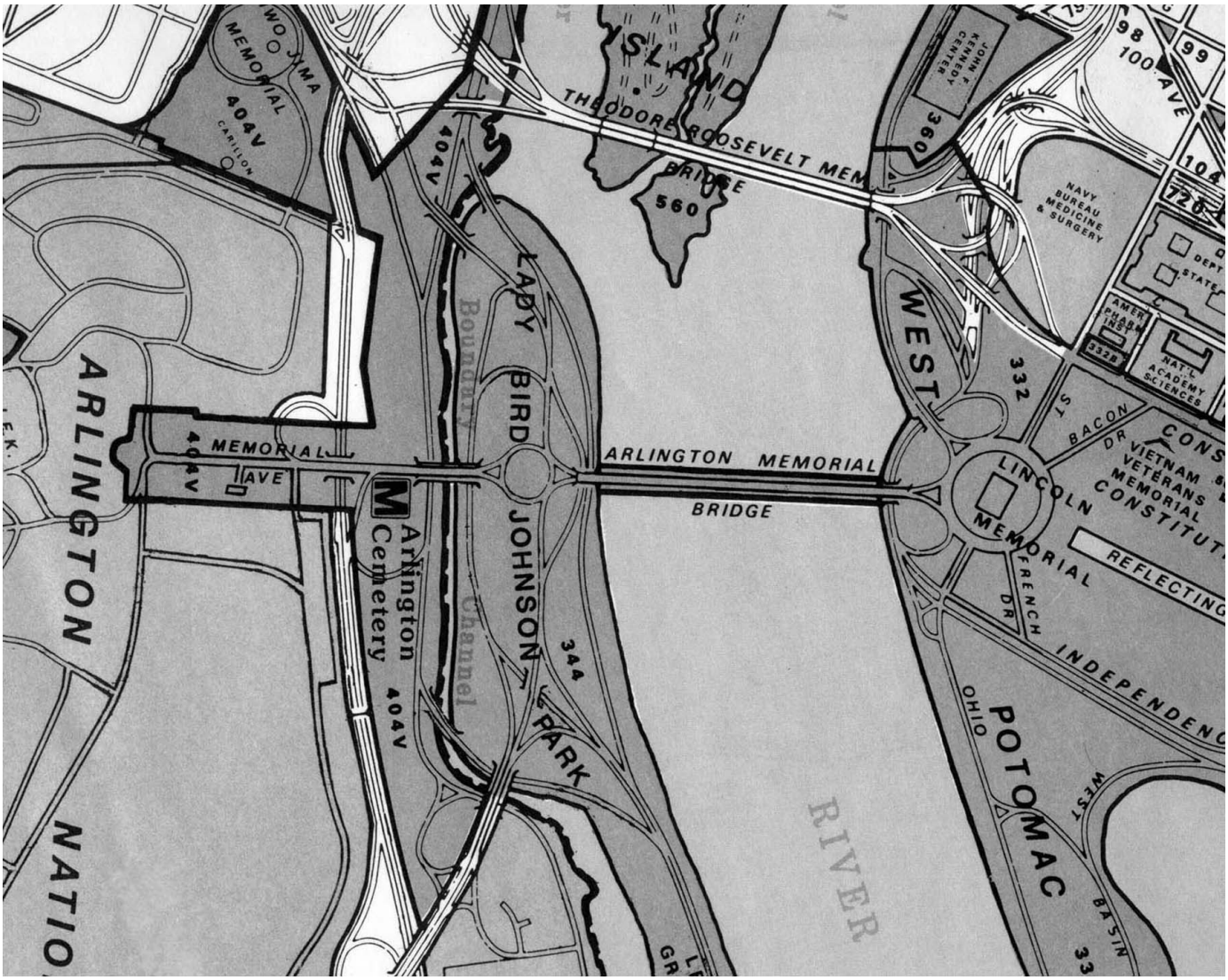


NPS NCR Land Resources Division map showing land ownership along the Memorial Avenue Corridor (green parcels managed by DOI, purple parcels managed by DOA, orange parcels managed by WMATA).

In this wider view of the area, an arrow shows location of Memorial Avenue corridor, which angles south from the Washington Mall axis. The image shows the corridor's relation to numerous roads and landmarks.



This detail of the National Capital Region's A Map shows Memorial Avenue corridor (Arlington Memorial Bridge, Memoria Circle, Memorial Avenue and Arlington Cemetery entrance) in context.

Regional Landscape Contexts:

Type of Context: Cultural

Description:

The idea of the Arlington Memorial corridor was an element in the plan for the federal city set out by the Senate Park Commission in 1901. The bridge symbolically links North and South in its alignment between the Lincoln Memorial and Arlington House, the Robert E. Lee Memorial. Along with the Lincoln Memorial and including other elements of the bridge composition (the Watergate steps, the matching Rock Creek and Potomac Parkway entrance, and the monumental equestrian statues) the bridge creates a formal western terminus of the Washington Mall. The bridge axis, angled southwesterly from the Mall axis, continues over Boundary Channel and along Memorial Avenue. It terminates at the hemicycle, the entrance to Arlington National Cemetery. Memorial Avenue was conceived as a grand entryway to Arlington Cementery, an “Avenue of Heroes." The entire composition was designed by the prominent architectural firm of McKim, Mead and White. Charles Follen McKim envisioned the design. His protege, William Mitchell Kendall, was the project architect. The composition is neoclassical in design, and the landscape features, for the most part, are also formal in style. Great quantities of granite were purchased from quarries in a number of states, primarily from Mount Airy, North Carolina. Sculptors Leo Friedlander, James Earle Fraser, C. Paul Jennewein and Alexander Phimister Proctor also contributed. (Mackintosh, National Register nomination, 1980)

Type of Context: Physiographic

Description:

The city of Washington, D.C. is one of a string of fall line cities located at the interface between the coastal plain and the piedmont plateau in states along the eastern seaboard from lower New York to Georgia. Besides the nation's capital, many cities that became state capitals also developed at the fall line. Along this line, the more resistant igneous and metamorphic rocks of the piedmont meet the unconsolidated sands, gravels and clays of the coastal plain terraces. The rocky change in elevation that marks this interface results in falls along the rivers. In the days of river commerce, the fall line represented the head of navigation. It is also the upper limit of the river influenced by ocean tide.

In the late nineteenth century, Peter C. Hains of the Army Corps of Engineers described the Potomac River's change of character in the vicinity of Washington D.C. Above Theodore Roosevelt Island, the river was narrow and deep, in some places as deep as 85 feet. At Easby's Point, near what is now the east end of Theodore Roosevelt Bridge, the river suddenly changed into a tidal stream, broadening from 900 feet upstream to 5,000 feet south of Easby's Point. With its change to a tidal stream, the river bottom changed from rock and gravel to one composed of mud, sand, pebbles, shells, and decaying vegetable matter. From that point to its mouth at the Chesapeake Bay, the river typically consisted of vast expanses of shallow, shoal water, with deep channels through it. (Peter C. Hains, "Reclamation of the Potomac Flats at Washington, D.C." In Chappell 1971, 1) The basic elements of this description remains accurate today, except that the river has been greatly narrowed between Easby's Point and the confluence of the Anacostia River where new riverbanks were created from silt dredged from the river beginning in 1870. The sudden change from a narrow to a wide river is no longer apparent as the Potomac flows through the capital region.

During the eighteenth and nineteenth centuries, as land was cleared upstream by farming and logging, great quantities of soil washed off the deforested land into the creeks and streams and eventually into the river, adding to the shoals downstream. From its inception, the capital city had to deal with accumulating mud flats and blocked navigation channels, augmented by the silt that washed from its own freshly graded streets and house lots. Eventually, new frontage land was shaped from the river silt, and the footings for Arlington Memorial Bridge were built on engineered shorelines on both sides of a much-narrowed Potomac River.

The Potomac River divided the city of Washington from its opposite shore in Virginia. Besides the problems of silted navigation channels, the provision of river crossings was also part of the challenge the city faced. At first ferries were the only method of crossing. By 1797, the first river crossing, Chain Bridge, was constructed at Little Falls, north of Georgetown. Long Bridge, in the location of today's 14th Street Bridge, followed in 1807. The Aqueduct Bridge at Georgetown was completed in 1843. Many versions of these bridges were built in the years after they were first constructed. A middle crossing between Long Bridge and the Aqueduct Bridge was long-debated. Finally, in 1926, work began on Arlington Memorial Bridge.

Type of Context: Political

Description:

The Memorial Avenue corridor is administered by George Washington Memorial Parkway (GWMP), a unit of the National Park Service, National Capital Region. It straddles two political jurisdictions, the District of Columbia—which extends to the shoreline of Virginia and includes islands in the river, such as Lady Bird Johnson Park (formerly Columbia Island)—and Virginia. Various transportation corridors cross or pass beneath the corridor. GWMP roadways cross Lady Bird Johnson Park and proceed along the west bank of Boundary Channel. Washington Boulevard follows the east bank of Boundary Channel. The Metro—Washington's rapid transit system—and Highway 110 cross beneath Memorial Avenue. Arlington National Cemetery wraps around the western half of Memorial Avenue.

Management Information

General Management Information

Management Category: Must be Preserved and Maintained

Management Category Date: 06/13/2003

Management Category Explanatory Narrative:

Management of the Memorial Avenue corridor was transferred to the jurisdiction of the National Park Service under Executive Order 6166, issued by President Franklin Roosevelt on June 10, 1933, which went into effect on July 28, 1933. This order consolidated all federally-administered parks, monuments and reservations. It also abolished a variety of commissions and agencies having to do with the District of Columbia, such as the Arlington Memorial Bridge Commission. Thus, the Department of the Interior took over the capital's parks, removing them from the control of the War Department which had been the controlling agency since 1898.

The Management Category Date is the date the CLI was first approved by the park superintendent.

Management Agreements:

Type of Agreement: Concession Contract/Permit

Management Agreement Expiration Date: 01/01/2015

Management Agreement Explanatory Narrative:

Landmark Service Tourmobiles, Inc. has a contract to operate a Tourmobile bus stop located on the drive behind Arlington National Cemetery visitor center close to the cemetery's south gate.

Type of Agreement: Other

Management Agreement Expiration Date: 12/12/2011

Management Agreement Explanatory Narrative:

The park may have some agreement regarding the water line on Memorial Avenue corridor.

Type of Agreement: Other

Management Agreement Expiration Date: 12/12/2011

Management Agreement Explanatory Narrative:

The park may have an agreement with Arlington National Cemetery with regard to plantings near the visitor center and the yews around the stairs to the hemicycle terrace and edge at the hemicycle plaza.

Type of Agreement: Other

Management Agreement Expiration Date: 12/12/2011

Management Agreement Explanatory Narrative:

The park may have an agreement with the Women in Military Service for America memorial and center over the maintenance of vegetation at the hemicycle plaza.

Type of Agreement: Other

Management Agreement Expiration Date: 12/12/2011

Management Agreement Explanatory Narrative:

The park may have an agreement with each of the sponsors of the memorials along the avenue with regard to the upkeep of the memorials and any associated vegetation.

Type of Agreement: Other

Management Agreement Expiration Date: 12/12/2011

Management Agreement Explanatory Narrative:

The park has some kind of agreement with Pepco to maintain the street lights on the Memorial Avenue corridor.

Type of Agreement: Other

Management Agreement Expiration Date: 12/12/2012

Management Agreement Explanatory Narrative:

Agreement with Arlington County for access to the Potomac Interceptor Sewer, which follows the right of way of the old Arlington Ridge Road where it crosses the avenue. An upgrade of the sewer line is planned.

Legal Interests:

Type of Interest: Fee Simple

Narrative:

Located in managed wilderness?: No

Adjacent Lands Information

Do Adjacent Lands Contribute? Yes

Adjacent Lands Narrative:

Arlington Memorial Bridge spans the Potomac River from parkland on both sides of the river. The land along the shores of the river is thus protected and the views to and from the bridge take in grassy river banks dotted with trees. The Washington Mall connects to the east end of the corridor. Rock Creek and Potomac Parkway has its beginning just northwest of the Lincoln Memorial. The parkway approach is situated above the tall seawall on the other side of the Watergate steps from the Lincoln Memorial. The Watergate steps, the seawall and the parkway approach were all part of the McKim, Mead and White design for the Memorial Bridge project, but their relationship to the Memorial Avenue corridor is as contributing adjacent properties. Memorial Circle on Columbia Island is within Lady Bird Johnson Park, which is itself a section of George Washington Memorial Parkway. On the Virginia shore, the corridor is crossed by the transportation routes and rights-of-ways of Highway 110 and the Metro. Neither of these are contributing features to the the corridor. However, barring the widening of these routes (very unlikely in the case of the Metro), the degree to which they detract from the corridor is circumscribed. The western half of the corridor is surrounded by Arlington National Cemetery. Development there can detract from the corridor, as the visitor center has done. But overall, the cemetery and the Arlington House site, which is a National Park unit, contribute greatly and are the reason for the corridor. The viewshed of the Memorial Avenue corridor is discussed in more detail in the Analysis and Evaluation section under Views and Vistas.

National Register Information

National Register of Historic Places

Documentation Status: Entered Inadequately Documented

Documentation Narrative Description:

What is being called here the Memorial Avenue corridor appears on the National Register as “Arlington Memorial Bridge and related features” (Mackintosh, April 4, 1980). The Memorial Avenue corridor cultural landscape inventory (CLI) does not address two of the features that are rightfully part of the National Register nomination – the Watergate steps and the Rock Creek and Potomac Parkway approach. These fall within the jurisdiction of another park unit of the National Capital Region.

The National Register nomination gives the applicable dates for the bridge and its features as 1926 to 1932, which cover the years when the bridge was built but before many of the features associated with Memorial Avenue were completed. The dates chosen as the period of significance for the CLI begin with 1901, when the McMillan Commission outlined the general ideas for the form and location of what would be Arlington Memorial Bridge and Memorial Avenue, and end with 2000, when the most recent memorial was installed along the corridor.

The span of years designated for the period of significance is appropriate for several reasons. The opening date allows for the significant work of McMillan Commission and for commission member Charles Follen McKim, who is most responsible for the basic design concept for Memorial Bridge—that it be a “low” bridge—and for choosing its location. Both of these important decisions are articulated in the commission’s plan of 1901. The concluding date recognizes that the design of the corridor would be realized over time with the addition of memorials along its route.

The National Register nomination (1980) names the four memorials that had been installed by that date. Since then, two additional memorials have been added along the avenue and the memorial to the Women in Military Service has been incorporated into the Hemicycle. These should be added when an update to the National Register nomination for Arlington Memorial Bridge is written. In addition, though the 1980 nomination specifically mentions the holly hedges, it does not address the white oak borders, which should also be recognized in the nomination update as contributing historic features.

Eligibility: Eligible -- SHPO Consensus Determination

Concurrence Eligibility Date: 08/16/2004

Concurrence Narrative:

The State Historic Preservation Officer for the Commonwealth of Virginia concurred with the findings of the Memorial Avenue Corridor CLI on 7/19/04, in accordance with Section 110 of the National Historic Preservation Act. In addition, the State Historic Preservation Officer for the District of Columbia concurred with the findings of the report on 8/16/04. It should be noted that the Date of Eligibility Determination refers to this Section 110 Concurrence and not the date of National Register Eligibility, since that is not the purview of the Cultural Landscapes Inventory.

Significance Level: National

Contributing: Contributing

Classification: District

Statement of Significance for National Register of Historic Places:

As of FY2024, a Cultural Landscape Report (CLR) for the Memorial Avenue Corridor is in progress. During the next update to this CLI, the information in Part 1 of the completed Memorial Avenue Corridor CLR should be integrated into this inventory, including an update to the statement of significance and the period (s) of significance as applicable.

As stated in its National Register nomination “Arlington Memorial Bridge and its related architectural, engineering, sculptural and landscape features are significant as important elements in the neoclassical urban design of the National Capital as it evolved during the first third of the 20th century. Successfully integrated with Washington's grand plan, the bridge composition enhances the monumental city as well as the riverscape” (Barry Mackintosh, April 4, 1980).

The basic elements of the corridor were first articulated in the 1901 plan of the Senate Park Commission (McMillan Commission). Charles Follen McKim, a member of that commission, was chiefly responsible for the location of the bridge and its profile (a low bridge as opposed to the high bridges of previous designs). His firm, McKim, Mead and White, was selected in 1923 to design the bridge composition. Although McKim had died almost 15 years earlier, William Mitchell Kendall, the firm’s architect for the project, had been his protege. Built almost thirty years after the McMillan Commission had been disbanded, the bridge and avenue nonetheless reflect the “original intention of the Commission, which was to build a memorial bridge at this site to join the North and South.” (HAER No. DC-7)

The corridor is significant under Criterion C of the National Register for its embodiment of the ideals of City Beautiful Movement, an architectural approach to civic design, emphasizing formal and classical treatments, that had great influence during the decades around the turn of the twentieth century. The bridge and its features represent the work of several masters, particularly the architects William Mitchell Kendall and Charles Follen McKim. Also important were the sculptors Leo Friedlander, James Earle Fraser, and C. Paul Jennewein and engineers John L. Nagle and Joseph B. Strauss, who designed the bascule span. The influence of landscape architect Gilmore D. Clarke, an early parkway designer, and later a member and chairman of the District of Columbia's Commission of Fine Arts, is represented by Memorial Circle, the traffic rotary on Columbia Island.

Nearly all of the features described as the Memorial Avenue corridor in this cultural landscape inventory were listed on the National Register in 1980, under the title of “Arlington Memorial Bridge and related features.” The nomination rightfully includes the Watergate steps and the southern terminus of Rock Creek and Potomac Parkway, parts of the composition that are not discussed here because they fall outside the purview of the park for which this study was prepared. The National Register nomination does not include Memorial Circle, which is here proposed as a contributing feature. The CLI proposes a longer significance period, spanning the years 1901-2000. This period begins with the McMillan Commission’s work in 1901, when a location for the bridge was first selected and an initial composition proposed by McKim, and concludes in 2000, with the addition of the last memorial – the 4th Infantry Division Memorial – on the avenue. As originally designed, the hedge along the avenue was to have niches to accommodate memorials that would be placed there. The Commission of Fine Arts acted to prevent the incorporation of niches in the hedges in 1932, and it was not until 1960 that the first memorial was installed along the avenue and the hedge behind it replanted to create the shape of a niche. Five more memorials along the avenue and the Memorial to Women in Military Service, located at the Hemicycle, have been added since then. The last memorial was installed in 2000. This long period of significance, coming almost to the present day, is justified because it encompasses a fuller realization of the design. Though not eligible on their own, the memorials were envisioned as part of the original concept of Memorial Avenue and are significant parts of its design.

National Register Significance Criteria:

C - Embodies distinctive construction, work of master, or high artistic values

National Register Criteria Consideration:

National Register Periods of Significance (with Historic Context Themes):

Time Period: CE 1901 - CE 2000

Historic Context Theme	Subtheme	Facet	Other Facet
Expressing Cultural Values	Architecture	Period Revivals (1870-1940)	
Expressing Cultural Values	Landscape Architecture	The City Beautiful Movement	
Expressing Cultural Values	Landscape Architecture	The Revival Of Classicism	

Area of Significance:

Area of Significance Category: Architecture

Area of Significance Subcategory:

Explanatory Narrative:

Area of Significance Category: Community Planning and Development

Area of Significance Subcategory:

Explanatory Narrative:

Area of Significance Category: Engineering

Area of Significance Subcategory:

Explanatory Narrative:

Area of Significance Category: Art

Area of Significance Subcategory:

Explanatory Narrative:

Area of Significance Category: Landscape Architecture

Area of Significance Subcategory:

Explanatory Narrative:

NRIS Information:

State Register Documentation:

National Historic Landmarks:

National Historic Landmark? No

Theme:

Contributing:

NHL ID:

NHL URL:

Date:

Statement of Significance for National Historic Landmark:

World Heritage Site:

World Heritage Site? No

Category:

WHS ID:

WHS URL:

Date:

Is Resource within a designated National Natural Landscape: No

Chronology and Physical History

Chronology:

Year	Event	Major Event Narrative
CE 1608	Explored	John Smith explored the Potomac River and recorded the villages of Namoraughquend, north of present-day Alexandria, and Nacotchtank, at present-day Anacostia, on his map.
CE 1669	Land Transfer	A 6,000-acre tract, including the area that would become Arlington Estate, was granted to Robert Howsing.
CE 1669 - 1670	Purchased/Sold	Howsing sold the land to John Alexander, a surveyor and planter.
CE 1670 - 1900	Farmed/Harvested	Areas of the broad first river terrace in the vicinity of the future Arlington Estate began to be farmed, and continued to be over the next two centuries.
CE 1778	Purchased/Sold	Heirs of Alexander sold a major portion of the property to John Parke Custis—land that later would become Arlington National Cemetery and Memorial Avenue, as well as part of the site of the Pentagon.
CE 1791	Established	The new location for the nation's capital on the Potomac River was confirmed and a plan of the future city drawn by Pierre L'Enfant.
CE 1793	Built	By this date the Road to Alexandria crossed the lower river terrace of the Custis property at the foot of a higher terrace.
CE 1800	Altered	The Potomac River in the vicinity of Washington, predisposed to shoaling, began to be silted enough to impede navigation, and attempts to clear its channels began.
CE 1802 - 1818	Built	G.W P. Custis built Arlington House over a span of years on a high terrace above the Potomac River.
CE 1810	Altered	Road to Alexandria at the foot of Arlington Heights remade as a turnpike, straightened, and called the Georgetown-Alexandria Road.
CE 1831	Established	Tiber Creek straightened to form a canal from its mouth to the foot of Capitol Hill. Estuary mouth also straightened.
CE 1833 - 1843	Built	The Alexandria Canal, a seven-mile branch of the Chesapeake and Ohio Canal, crossed the Arlington Estate.
CE 1851 - 1900	Developed	Interest in building a new bridge midway between the Aqueduct and Long Bridges developed and Congress periodically received proposals.
CE 1857	Developed	Civil engineer Alfred Landon Rives made one of the first comprehensive studies of the Potomac River in the vicinity of the District.
CE 1861	Land Transfer	Union troops seized and began to fortify Arlington highlands.
CE 1864	Established	210 acres in the immediate vicinity of Arlington mansion set aside to be a national cemetery for Union soldiers and sailors.

Year	Event	Major Event Narrative
CE 1867	Established	Congress removed public buildings and grounds from the control of a civilian commissioner and established the Office of Public Buildings and Grounds under the Corps of Army Engineers.
CE 1868	Memorialized	The first Memorial Day services held on the portico of Arlington mansion in May. Memorial Day, established in 1866, became a legal holiday in 1888.
CE 1868 - 1884	Farmed/Harvested	Axis of later Memorial Avenue and surrounding land of Arlington Estate divided into about 50 farms of approximately 10 acres each and farmed by freedmen.
CE 1870 - 1910	Altered	Nearly continuous river dredging reconfigured the Washington waterfront.
CE 1883	Purchased/Sold	G.W.P. Custis Lee, heir to the Arlington estate, sold the property to the federal government.
CE 1885	Memorialized	The death of Ulysses S. Grant in this year prompted discussion of a memorial, particularly of a bridge, commemorating Grant and Lincoln and the reunification of the North and South.
CE 1886	Designed	A Senate resolution requested a report on constructing a bridge connecting the city of Washington with Arlington Cemetery. Army engineer Thomas W. Symons prepared the first bridge design.
CE 1889	Land Transfer	Congress transferred 142 additional acres to the Arlington Cemetery.
CE 1890	Designed	Col. Peter C. Hains prepared a second design for a bridge: a suspension bridge without a draw.
CE 1894	Farmed/Harvested	The Fort Myer post garden occupied the northern part of the lower terrace. Axis of the future Memorial Avenue cut through the garden's southern corner.
CE 1894	Purchased/Sold	By this date the old route of the Georgetown-Alexandria Canal owned by the Washington Southern Railway.
CE 1897	Land Transfer	Another 56 acres added to Arlington Cemetery.
CE 1897	Established	Newly created land along Washington side of river set aside for a public riverside park (East and West Potomac Parks).
CE 1898	Expanded	Office of Public Buildings and Grounds assumed responsibilities for public parks in Washington, further expanding the influence of the War Department on the development of the Nation's Capital.
CE 1899	Designed	Design of William H. Burr and Edward P. Casey for a memorial bridge across the Potomac River selected.
CE 1900	Land Transfer	The Department of Agriculture given approximately 400 acres of the former Custis-Lee estate for an experimental farm. A small part of it extended into the strip of land that would become Memorial Avenue.
CE 1901	Designed	James McMillan of Michigan, chairman of the Senate Committee on the District of Columbia, reopened the question of the bridge design at hearings.

Year	Event	Major Event Narrative
CE 1902	Designed	The report of the McMillan Commission--"The Improvement of the Park System of the District of Columbia"--issued. Among its proposals was that for a low bridge on a line from the site of the Lincoln Memorial to the Arlington mansion.
CE 1910	Established	Commission of Fine Arts (CFA) established -- one of the agencies that would oversee construction of the bridge.
CE 1911	Engineered	Reclamation of East Potomac Park was completed, extending the Mall west of the Washington Monument by more than 4,000 feet.
CE 1911 - 1940	Farmed/Harvested	Agriculture Department established the Experimental Farm on the river terrace lands at Arlington by this date.
CE 1913	Designed	Congress approved Henry Bacon's design for the Lincoln Memorial and its location at end of Mall axis.
CE 1913	Established	Arlington Memorial Bridge Commission (AMBC).
CE 1915	Altered	Material from the continuing dredging of the river began to be deposited on the flats below Analostan Island after 1915, shaping the beginnings of Columbia Island.
CE 1917	Built	Francis Scott Key Memorial Bridge from Georgetown to Rosslyn, Virginia.
CE 1921	Abandoned	The Burr-Casey bridge design and the New York Avenue location of this and previous bridge designs were both abandoned.
CE 1921	Moved	Great traffic jam on Armistice Day, November 1921, before dedication ceremony for Tomb of the Unknown Soldier precipitated a decision on the bridge.
CE 1922	Built	The Lincoln Memorial completed and officially dedicated.
CE 1922	Designed	AMBC unanimously decided in favor of a low level bridge with a draw span constructed on a line joining the Lincoln Memorial with the Lee mansion.
CE 1923	Designed	In March of this year, the architectural firm of McKim, Mead and White was selected to design the bridge.
CE 1923	Designed	William Mitchell Kendall of McKim, Mead and White presented his initial design to the Commission of Fine Arts on May 25.
CE 1924	Established	Congress created National Capital Park Commission to acquire lands for parks and playgrounds in the District of Columbia, Maryland and Virginia. Organization renamed National Capital Park and Planning Commission (NCPPC) in 1926.
CE 1924	Established	The Arlington Memorial Bridge Commission issued its report to Congress.
CE 1925	Established	Office of Public Buildings and Public Parks of the National Capital established to assume the responsibilities of the older Office of Public Buildings and Grounds.
CE 1926	Altered	The navigation channel in the Potomac River (the Virginia Channel) dredged to pass under where the bridge drawspan would be built. The northeast side of Columbia Island partially cut away to increase the flood discharge cross-section of the river.

Year	Event	Major Event Narrative
CE 1926 - 1928	Built	Arlington Memorial Bridge begun. Bridge piers and abutments constructed.
CE 1928	Designed	CFA gave its first serious attention to the proposed design of the Columbia Island plaza and cross axis, Memorial Avenue, and the cemetery entrance.
CE 1928	Designed	River route for new highway to Mount Vernon approved.
CE 1928 - 1929	Built	Steel superstructure and masonry work of the Memorial Bridge and smaller bridge over Boundary Channel completed and the pylons on Columbia Island constructed.
CE 1929	Designed	Landscape architect Gilmore Clarke and several others from the Westchester County, New York parkways hired to help guide design and construction of the Mount Vernon Memorial Highway.
CE 1929	Designed	Leo Friedlander designed sculptures of equestrian figures, called “Valor” and “Sacrifice” (collectively called "The Arts of War"), for the Washington end of Arlington Memorial Bridge.
CE 1929 - 1931	Built	The bridge plaza at the Lincoln Memorial, the Watergate steps, the matching bridgehead of the parkway approach drive, the seawall, and the bascule draw span completed.
CE 1930 - 1932	Built	Mount Vernon Memorial Highway
CE 1931	Built	The 16 low-relief eagles on the main bridge and the free-standing eagles on the pylons on Columbia Island, designed by C. Paul Jennewein, carved and in place.
CE 1931	Designed	James Earle Fraser designed sculptural groupings for the parkway entrance, to match in size and subject Leo Friedlander’s sculptures for Memorial Bridge. Fraser’s sculptures were called “The Arts of Peace” and “Music and Harvest,"
CE 1931	Designed	James Greenleaf named consulting landscape architect for the Arlington Memorial Bridge Commission. Presented ideas for Columbia Island and borders of Memorial Avenue in the same year.
CE 1932	Built	Arlington Memorial Bridge was completed except for lighting, which was installed by spring. President Herbert Hoover crossed the bridge in January and it was fully opened for day and night traffic by May.
CE 1932	Paved	Granite blocks, called “Durax,” laid in a fish scale pattern on Arlington Memorial Bridge in January.
CE 1932	Removed	CFA secretary Charles Moore persuaded CFA to leave out planned sculpture niches in the holly hedge along Memorial Avenue.
CE 1933	Built	Wrought iron gates with the insignia of the armed forces installed at cemetery entrance.
CE 1933	Established	President Roosevelt issued order consolidating all federally-administered parks, monuments and reservations under the jurisdiction of the National Park Service. On July 28, 1933 the NPS assumed responsibility for the Arlington Memorial Bridge.

Year	Event	Major Event Narrative
CE 1933	Paved	Memorial Avenue paved with concrete instead of specified material as a cost-saving measure. Further research required to determine what material was originally specified.
CE 1934	Designed	Gilmore Clarke presented a new plan for Columbia Island Plaza, containing, for the first time, a large traffic circle, which was approved by the CFA.
CE 1935	Planted	200 white oak trees planted along both sides of Memorial Avenue.
CE 1936	Planted	Holly hedges planted along two sides of Memorial Avenue.
CE 1937	Graded	Rough grading and drainage for the George Washington Memorial Parkway extension from the Arlington Memorial Bridge to Key Bridge completed.
CE 1938	Developed	Lampposts (Washington standards) installed along Memorial Avenue and the Extension Bridge at Boundary Channel.
CE 1938 - 1941	Built	President Roosevelt authorized the Civil Aeronautics Administration to coordinate the construction of the new Washington National Airport.
CE 1939	Designed	The Commission of Fine Arts (CFA) approved the casting of the equestrian statues for the Arlington Memorial Bridge bridgehead and the river parkway entrance in bronze, rather than granite.
CE 1940	Built	Memorial Circle, a traffic circle 300 feet in diameter, constructed at the western terminus of the Arlington Memorial Bridge on Columbia Island following Gilmore Clarke's design.
CE 1941	Built	Ground broken for the Pentagon. Military personnel first began to use the building by late 1942.
CE 1941 - 1942	Built	A massive network of new roads and parking areas were begun to serve the Pentagon. Columbia Island roadways were once again completely redesigned.
CE 1941 - 1942	Removed	Construction of Highway 110 required removal of a substantial sections of the young oak allee and the holly hedges along the avenue.
CE 1946 - 1964	Neglected	Plans for Memorial Circle languished.
CE 1951	Moved	Four equestrian statues cast in Italy as gift to the United States iwere carried up the Potomac River and nstalled on Memorial Bridge and matching Rock Creek and Potomac Parkway entrance. CFA had approved the designs for them in 1939.
CE 1951	Removed	The "Durax" roadbed of Arlington Memorial Bridge removed and an asphalt surface laid.
CE 1952	Established	National Capital Park and Planning Commission (NCPPC), created in 1924 and renamed in 1926, was renamed again, this time called the National Capital Planning Commission (NCPC).
CE 1960	Abandoned	Old Rosslyn branch of the Pennsylvania Railroad that crossed beneath Memorial Avenue no longer in use.

Year	Event	Major Event Narrative
CE 1960	Altered	Modern cobra-head lampposts installed around Memorial Circle and elsewhere on Columbia Island (exact date uncertain).
CE 1960 - 1964	Built	Theodore Roosevelt Bridge built north of Arlington Memorial Bridge crossing Theodore Roosevelt Island.
CE 1960 - 1965	Built	More roadways constructed on Columbia Island. A new roadway passed under the Arlington Memorial Bridge abutment.
CE 1961	Built	Memorial to Admiral Richard Evelyn Byrd sculpted by Felix deWeldon is dedicated. This was the first memorial approved for Memorial Avenue.
CE 1963 - 1965	Developed	Arlington Farms and Horse Show grounds developed on land immediately north of Memorial Avenue, following exchange of land between the Departments of the Interior and Defense.
CE 1964	Planted	Hemicycle is planted with crabapples, azaleas and flowering bulbs and annuals.
CE 1964 - 1965	Altered	The demands of vehicular traffic entering Arlington National Cemetery prompted the Army to limit private automobile access through the main gates.
CE 1964 - 1968	Developed	Beautification program initiated by First Lady Lady Bird Johnson. Columbia Island was one of the primary sites chosen for planting daffodils and dogwoods.
CE 1965	Altered	Arlington Memorial Bridge repaired by Hazelet & Erdal, consulting engineers.
CE 1965	Altered	Draw on Arlington Memorial Bridge deactivated. Drawspan had been raised for last time in 1961.
CE 1965	Built	Second memorial dedicated on Memorial Avenue. This one honored the veterans of the Spanish-American War and Philippine Insurrection (1898-1902). Sculpted by Theodore Alice Ruggles Kitson, it was nicknamed “the Hiker."
CE 1965	Stabilized	Repairs made to Arlington Memorial Bridge (sometime after this date) including the first repaving of sidewalks.
CE 1967	Designed	The landscape architect Edward Durrell Stone Jr. designed comprehensive planting plan for Columbia Island, soon renamed Lady Bird Johnson Park.
CE 1967 - 1968	Planted	Over a million daffodils planted on Columbia Island as part of the Beautification program.
CE 1968	Planted	Trees planted around Memorial Circle included 200 dogwoods, 38 white pines (near the pylons), and 18 scarlet oaks.
CE 1970 - 1971	Planted	Several thousand dogwoods planted on Columbia Island.
CE 1974	Built	Seabee Memorial sculpture by Felix deWeldon and architect Anthony Harrer built and dedicated on Memorial Avenue, which is the third memorial built.
CE 1976	Built	The Washington-area’s rapid transit system, the Metro, opened a station for Arlington National Cemetery at Memorial Avenue.

Year	Event	Major Event Narrative
CE 1977	Built	Memorial to the 101st Airborne Division erected on Memorial Avenue to commemorate the service of the division in World War II and Vietnam. Bernhard Zuckerman was the sculptor and Harold J. Schaller the architect.
CE 1977 - 2001	Planted	Tree planting occurred in phases on Columbia Island following the planting plan of E.D. Stone Jr.
CE 1985	Stabilized	More repairs to Arlington Memorial Bridge (sometime after this date). Bridge sidewalks again repaved.
CE 1986 - 1988	Built	Arlington National Cemetery Visitor Center and parking garage constructed.
CE 1986 - 1988	Removed	As many as two dozen white oak trees were removed or did not survive the construction of the visitor center.
CE 1988	Planted	About 25 trees -- swamp white oaks and white oaks -- planted in connection with Arlington National Cemetery visitor center.
CE 1990	Built	American Armored Forces Memorial added.
CE 1990	Restored	Eight lampposts (Washington standards) replaced modern highway-type lampposts around Memorial Circle, which had probably been installed c. 1960.
CE 1996 - 1998	Built	Women in Military Service for America Memorial constructed at hemicycle.
CE 1998	Planted	Little leaf linden and other plantings installed in hemicycle plaza in connection with WMSA memorial.
CE 2000	Built	4th Infantry Division Memorial added.
CE 2000	Planted	About two dozen white oaks added to avenue's borders.
CE 2001 - 2002	Preserved	Memorial Avenue Bridge (crossing Boundary Channel) repaired in order to alleviate drainage problems.
CE 2001 - 2002	Altered	In the relaying of the granite block roadway on Memorial Avenue Bridge as part of bridge repair, the pattern of the blocks has been obscured by excess mortar.
CE 2018 - 2020	Altered	The park added safety enhancements to Memorial Circle between 2018 and 2020 as a result of the Memorial Circle Safety Improvements Environmental Assessment (PEPC 51448). Changes included higher visibility crosswalks, new signage and rapid flashing beacons, new pavement striping, and raised pavement markers (PMIS 304947).
CE 2018 - 2020	Rehabilitated	GWMP completed a major rehabilitation of the Arlington Memorial Bridge in 2020 (PEPC 37120; PMIS 224626).
CE 2019	Land Transfer	The Department of the Interior (DOI) transferred 16.09 acres of land to the Department of the Army (DOA) in 2019. This parcel comprised Memorial Avenue from the Hemicycle to the western side of the VA Highway 110 overpass.
CE 2022	Restored	The park completed a holly hedge restoration on Memorial Avenue in 2022, which included removal and replanting of 146 American holly trees and 2 white oak trees (PEPC 108522).

Year	Event	Major Event Narrative
CE 2023	Removed	The park removed the black, granite Seabees Memorial panel in 2023 due to the failure of the ferrous anchors that attach it to the concrete memorial (PEPC 115122; PMIS 335022).
CE 2023 - 2025	Altered	In 2023, the Washington Metropolitan Area Transit Authority (WMATA) began a two-year project to modify the entrances to the Arlington National Cemetery Metro Station on Memorial Avenue. The project includes demolition and replacement of the north parapet wall and installation of new canopies over both the north and south metro escalators (PEPC 112438). Note that these features are on land managed by WMATA through an easement agreement with the NPS.

Physical History:

Note:

As of FY2024, a Cultural Landscape Report (CLR) for the Memorial Avenue Corridor is in progress. During the next update for this CLI, information from Part 1 of the completed CLR should be used to supplement the physical history narrative of the cultural landscape.

1650 and Before

Below the small island in the Potomac River, now called Theodore Roosevelt Island, and continuing downstream, a view from the river in the seventeenth century would have revealed expanses of level to gently sloping river terraces wherever rivers or large creeks entered the Potomac. As stated by archeologist Stephen Potter: "[I]t is no coincidence that those are the same places where Indian villages and hamlets are shown on John Smith's 1612 map and where, in many instances, late prehistoric or early prehistoric archeological components are recorded." The occurrence of these broad, open river terraces in the tidal reaches of the river may have favored agricultural groups. Silty or sandy loam soils of moderate to low natural fertility made up the riverside areas, but even soils low in natural fertility were good agricultural soils, as they are often the best for growing corn during periods of drought. (Potter 1993, 153-154) In his exploration of the Potomac River in 1608, John Smith, founder of Jamestown, took note of Indian agricultural practices along the river. Fields of twenty to two hundred acres were planted primarily with maize and less frequently with beans. Smaller gardens near individual long houses were planted with squash, pumpkins and sunflowers (Hanna 2001, draft, 10). Most of the land that could be seen along the banks, however, was forested.

Archeologists propose that around 900 AD plant husbandry diffused from adjacent Piedmont groups to those in the tidewater portions of the middle Chesapeake, which includes the area that is present-day Washington, D.C. (Potter, 143). Before that, and extending back 2000 years, temporary fishing and processing sites occupied prime locations along the river. In addition, the Potomac River Valley was a trade crossroads—a meeting place for different Native American tribes, where members of the five Iroquois nations and other Indian groups traded with Algonquian-speaking people of the tidewater Potomac and coastal plain.

Archeologists divide the long span of Native American inhabitation of eastern North America into three major periods: Paleo-Indian, Archaic and Woodland. The Paleo-Indian period is generally recognized as the years from 12,000 to 8000 BC. The long Archaic period begins in 8000 BC and extends to about 1000 BC. The Woodland period follows and extends to the beginning of contact with Europeans about 1500 AD. The Archaic and Woodland periods are subdivided into early, middle, and late sections of the timeframe. (Little 1995, 62)

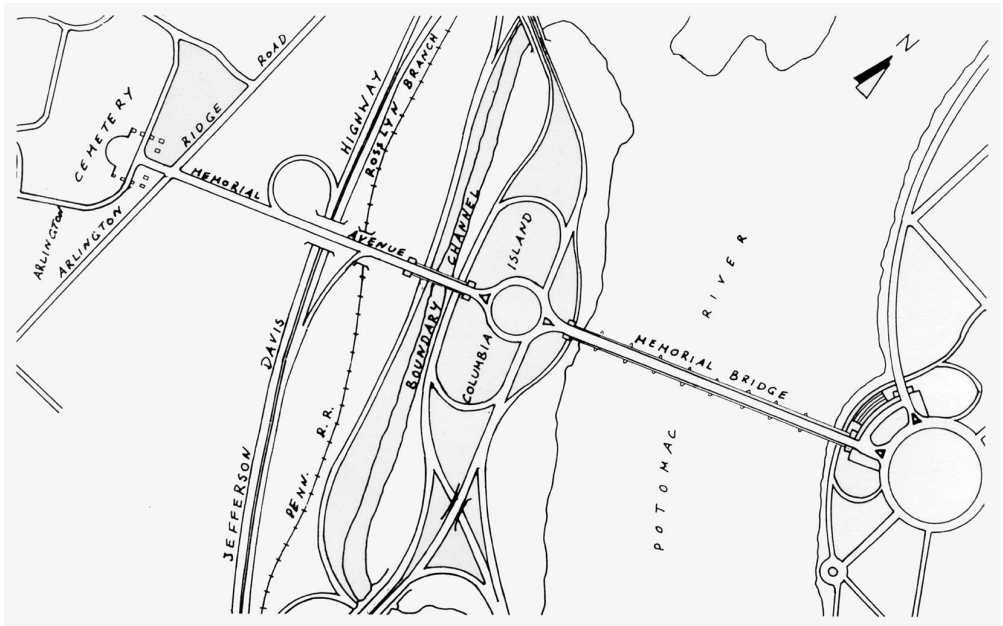
There is evidence of Native American presence in the Potomac region as early as 10,000 BC. The environment then was wetter and colder, and the forest a mix of conifers and northern hardwoods. By 4000 BC, the climate had warmed slightly and the forest was largely made up of deciduous hardwoods. By 1500 BC the forests of Maryland and Virginia were characterized by southeastern evergreens, except along the western edge (Little, 29). During the Archaic Period, the Potomac basin presented a slowly changing landscape. The general trend among native populations during the period was toward greater reliance on food gathering relative to hunting. The Chesapeake Bay, a drowned river, did not form until 5000 years ago, and the estuarine resources found there, such as shellfish, did not draw users until after that. (Little, xxii) Following the formation of the bay, anadromous fish began to swim up the rivers that fed into it to spawn in freshwater reaches. Native American groups were drawn to areas below the fall line to set up temporary fishing camps. The Late Archaic was a transitional period, during which time the broader regional interaction of tribes began to change. By the Late Woodland period, large, though often dispersed, villages with economies based on maize agriculture began to be established in the mid-Atlantic region. Territorial and social boundaries became increasingly distinct and important. A pattern of stockaded villages with outlying hamlets characterized the upper and middle Potomac after 1300-1400 AD. (Little, xxiii, xxiv, 160)

A village called Namoraughquend (translated as "fishing place"), on the west side of the Potomac River, a little south of its confluence with the Anacostia River, is depicted on John Smith's 1612 map (Cissna 1990, 27; Potter, 15). A larger village, Nacotchtank, occupied by a tribal king (werowance), was located on the south bank of the Anacostia River near the present-day town of Anacostia. Its name, meaning "at the trading town," attests to its importance in the native exchange network. Nacotchtank and another werowance village downstream straddled the great natural trade route of the Potomac River, which connected the Chesapeake Bay and the Appalachian Mountains. The

villages probably functioned something like “gateway communities” situated astride constricted exchange paths, allowing the werowances to control long-distance trade. (Potter, 160)

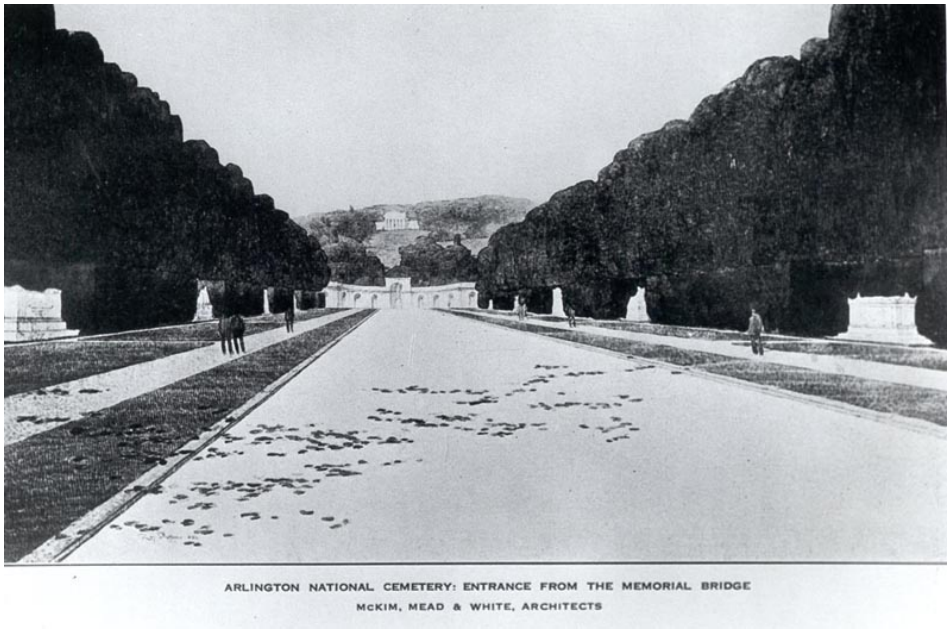
There are known Indian sites within a mile of the Memorial Avenue corridor (Cissna, 5-7). Numerous landscape features that would attract use by Native Americans—feeder streams (fresh springs), broad river terraces with views of the river, and marshland—were nearby. There may have been agricultural fields on the first terrace below Arlington Heights, which the future Memorial Avenue would cross, or on the floodplain land of Alexander’s Island nearby. (Note the location of this island in Ellicott map, page 7 of this section.) The land that became Columbia Island and West Potomac Park, the two ends of Arlington Memorial Bridge, did not exist then. This land was created by dredging the Potomac River in the late nineteenth century.

General Plan for Arlington Memorial Bridge prepared for the Arlington Memorial Bridge Commission by McKim, Mead and White and published in the Commission's 1924 report. (AMB Commission Report)



Memorial Avenue corridor c. 1943. Many new roads were built in connection with the construction of the Pentagon, changing the earlier alignments on Columbia Island and adding a new road under Memorial Avenue. (D. Guenther)

Memorial Avenue c. 1950. There was nothing but grass planted at this date in front of the hemicycle wall. (MRCE: Arlington National Cemetery Entrance folder, R-91)



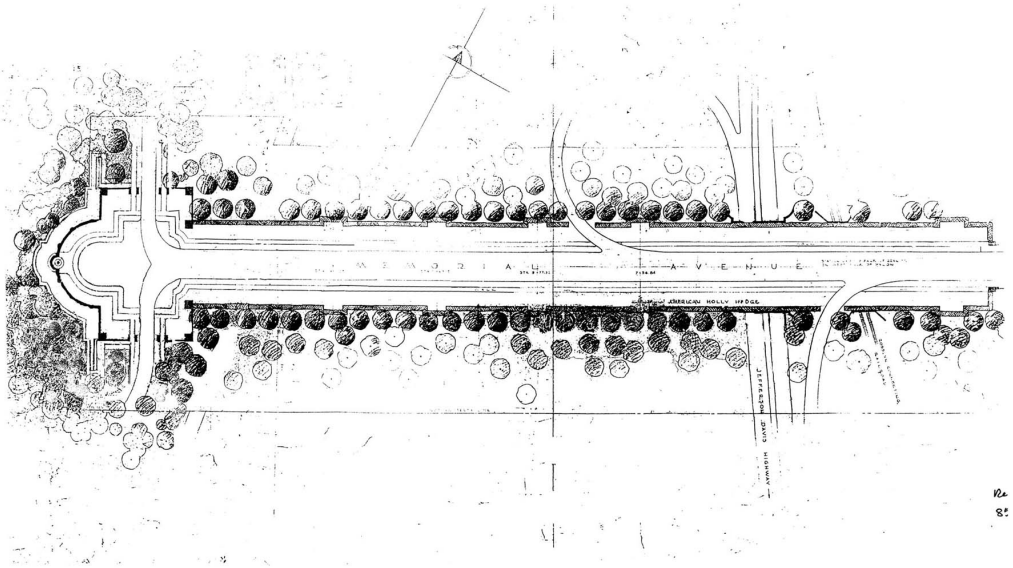
McKIm, Mead and White perspective drawing of proposed Memorial Avenue entitled "Arlington National Cemetery: Entrance from the Memorial Bridge" c. 1929. (MRCE: Arlington National Cemetery folder, 5584-F)

Air view dated Aug. 14, 1950 shows single row of trees with others scattered on Avenue's south side, and a single row and swath of trees along drainage ditch on north. (MRCE: Columbia Island folder 1, Abbie Rowe, 1325-G)

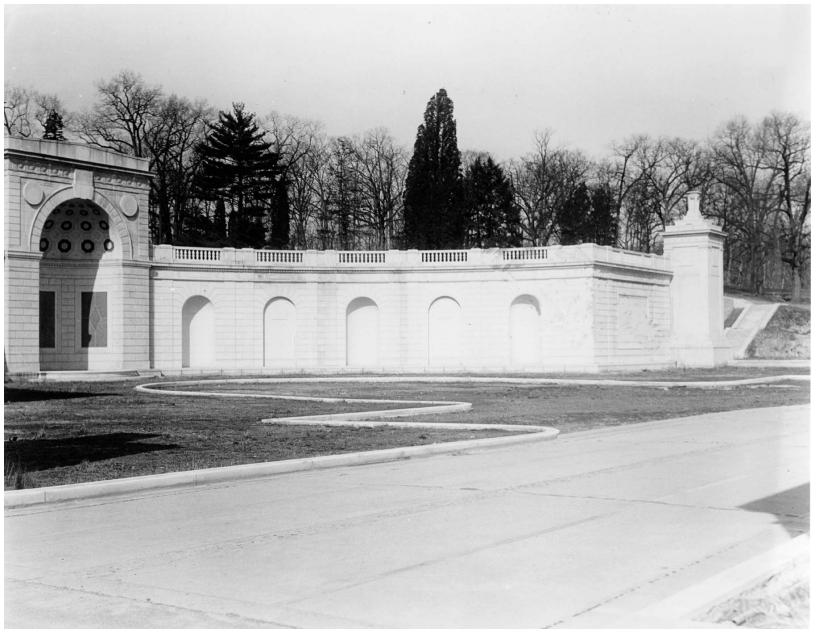
Cemetery entrance and avenue under construction, June 13, 1931. Boundary Channel Bridge nearly completed. Line of trees in middle range mark former railroad/canal. (NPS/NCR: Fairchild Aerial, 17665)

Photo marked "Study for Memorials" and dated Aug. 3, 1950 shows height of hedges and trees at this date. (MRCE: Arlington National Cemetery folder, Abbie Rowe, 5584-A)

Federal Public Works project no. 648, under the direction of the National Park Service, to plant trees and holly border of Memorial Avenue. May 19, 1936 (MERC: Arlington Drive folder)

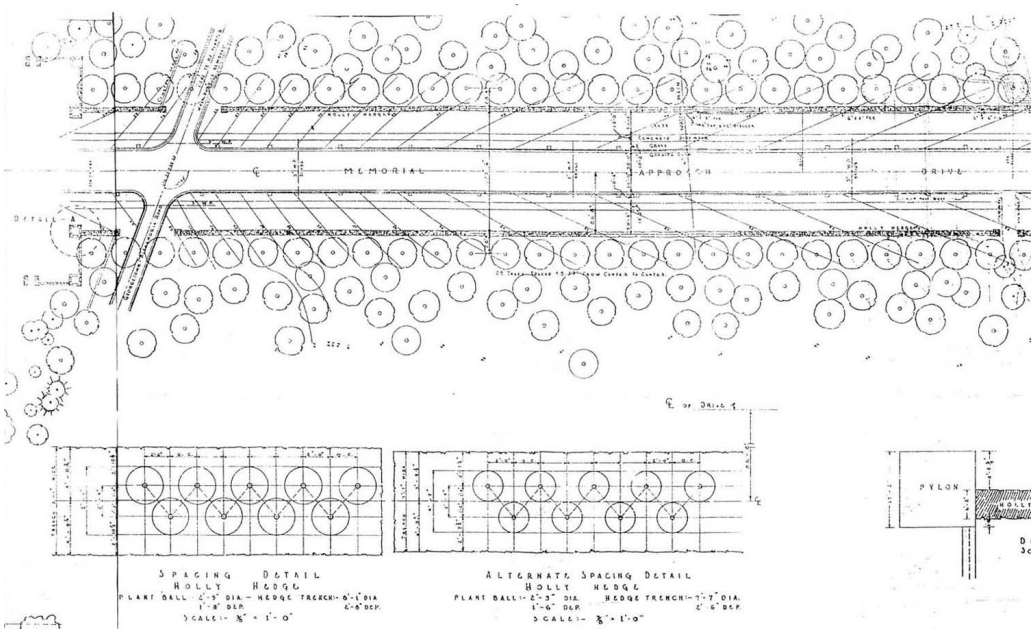


Memorial Avenue Planting Plan from June 3, 1960 shows niches. Also shows trees in generally same places as the 1935 plan except around Highway 110. Change in elevation near new highway not hinted at. (NPS 855/81100A)



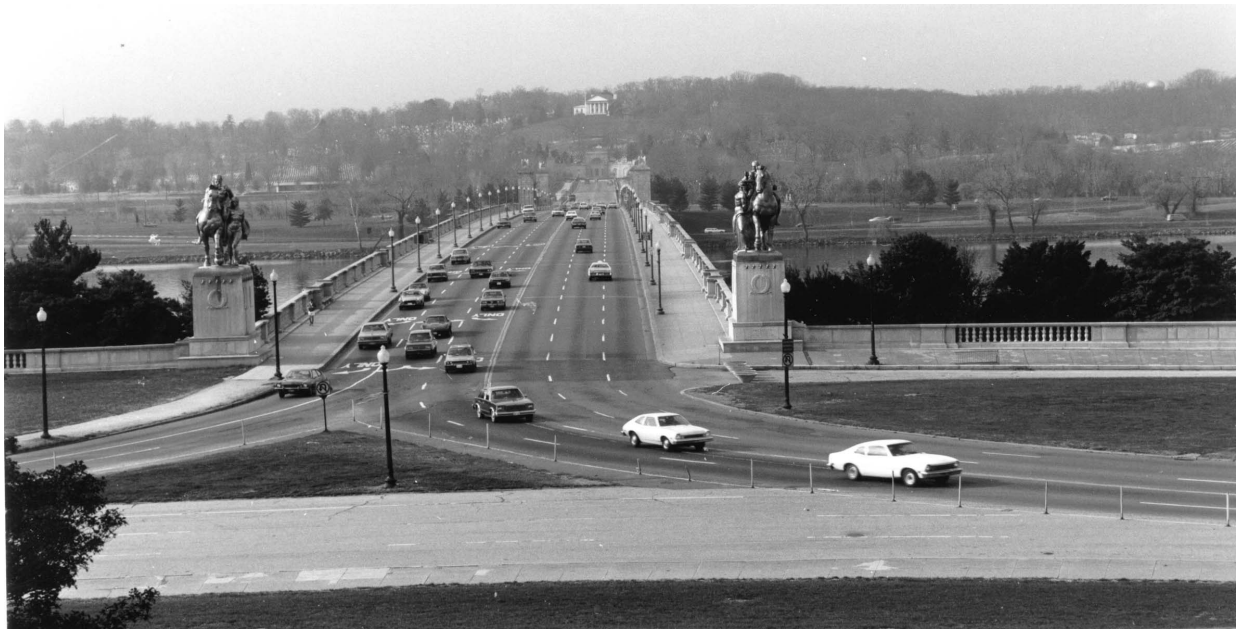
North side of hemicycle, March 15, 1935. Wrought iron fence of cemetery entrance not yet in place. Note dark forms of cedars and plaza's decorative curb (soon removed). (NPS/NCR: National Capital Parks, 2.12-38/30)

Cemetery entrance and hemicycle wall, Oct. 19, 1964. Memorial Avenue divides to enter gates. Sidewalk flanks hemicycle wall edged by new planting. Note fountain in central niche. (MRCE: Airviews folder, Abbie Rowe, 8883-B)



Planting plan for "Memorial Approach Drive" dated May 21, 1935, shows first trees on each side of avenue evenly spaced and more random beyond. Graphic at bottom shows way to plant holly hedge. (NPS-TIC: 8-135)

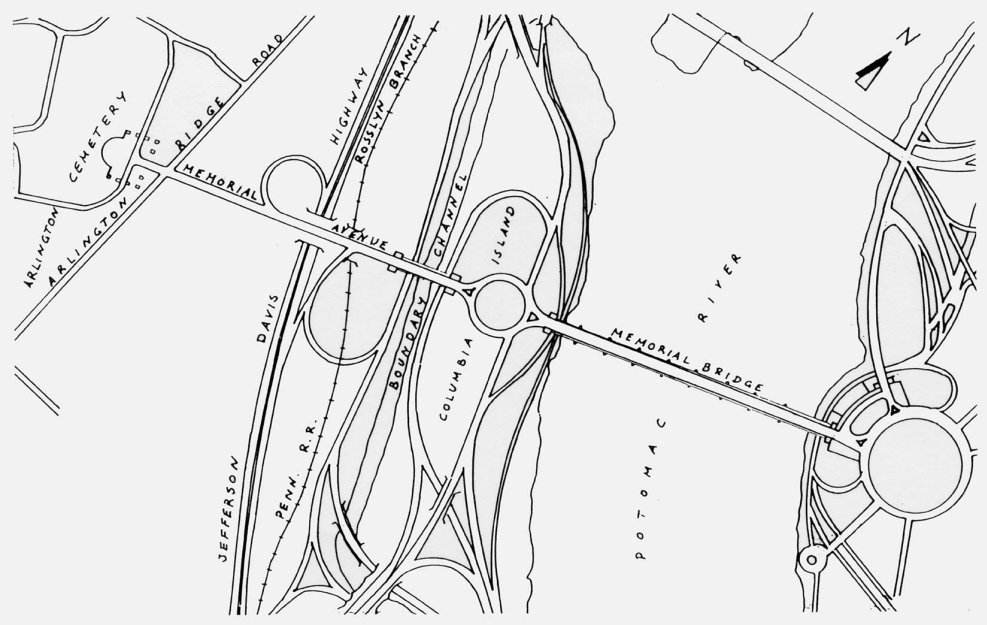
Hemicycle wall with crabapples and tulips, April 20, 1967. Also note spires of cedars above wall. (NPS/NCR: National Capital Parks East, 9942-H)



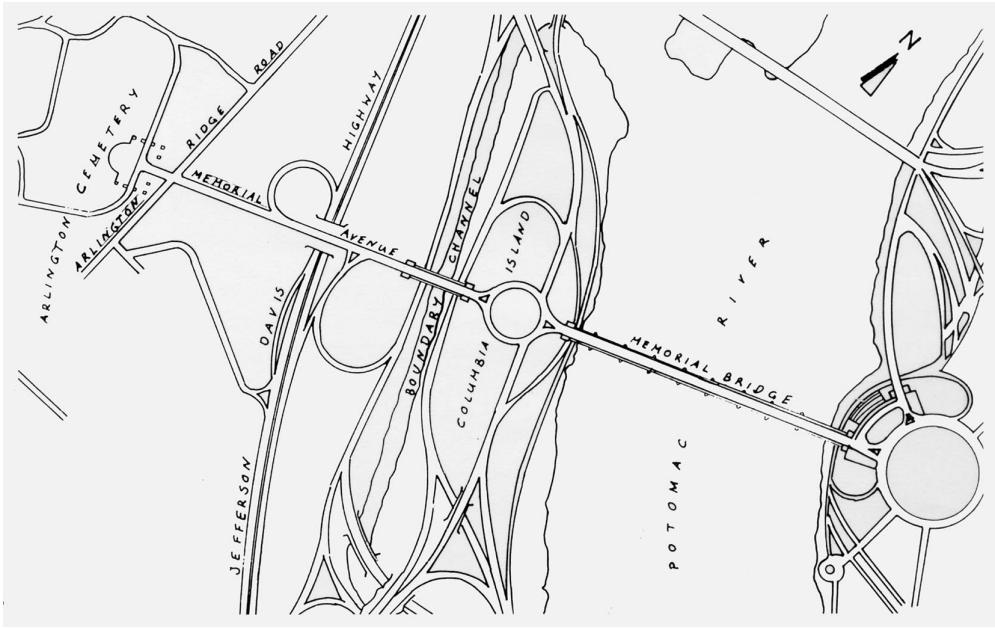
View from Lincoln Memorial of Arlington Memorial Bridge with Memorial Avenue, hemicycle and Arlington House in distance. December 1979. (National Register)

Memorial Avenue c. 1938. Hedge has begun to be shaped, trees are young, and lampposts are in place. Note Arlington Ridge Road crossing and light-colored pavement. (NPS/NCR: National Capital Region, 2.12-42/41)

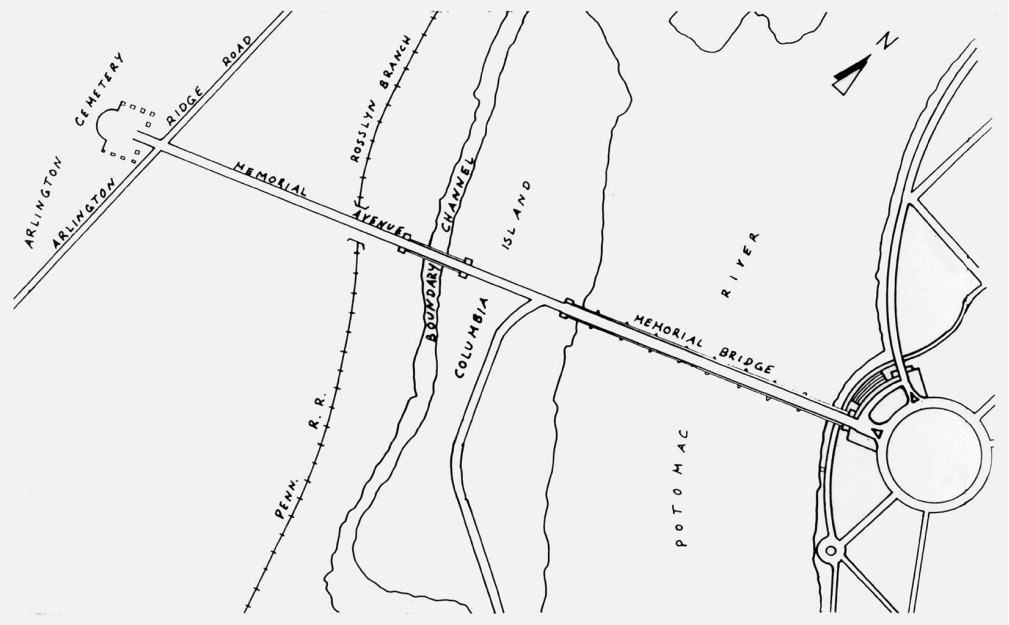
West end of Memorial Bridge c. 1938-39, with Durax roadway. Memorial Circle not yet constructed. Washington standards line "temporary" roadway on Columbia Island. (NPS/NCR: National Capital Parks, 2.12-42/11)



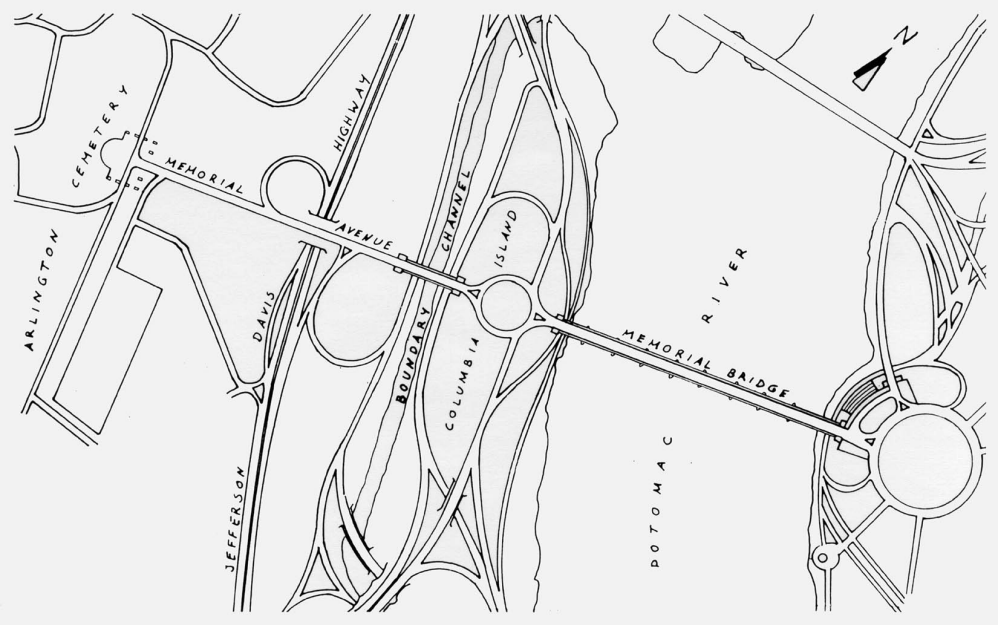
Development of roads c. 1966. Changes since 1943 include new roadways and elimination of others related to MVMH and GWMP. (Drawing adapted from Arlington County map by Dagmar Guenther, 2000.)



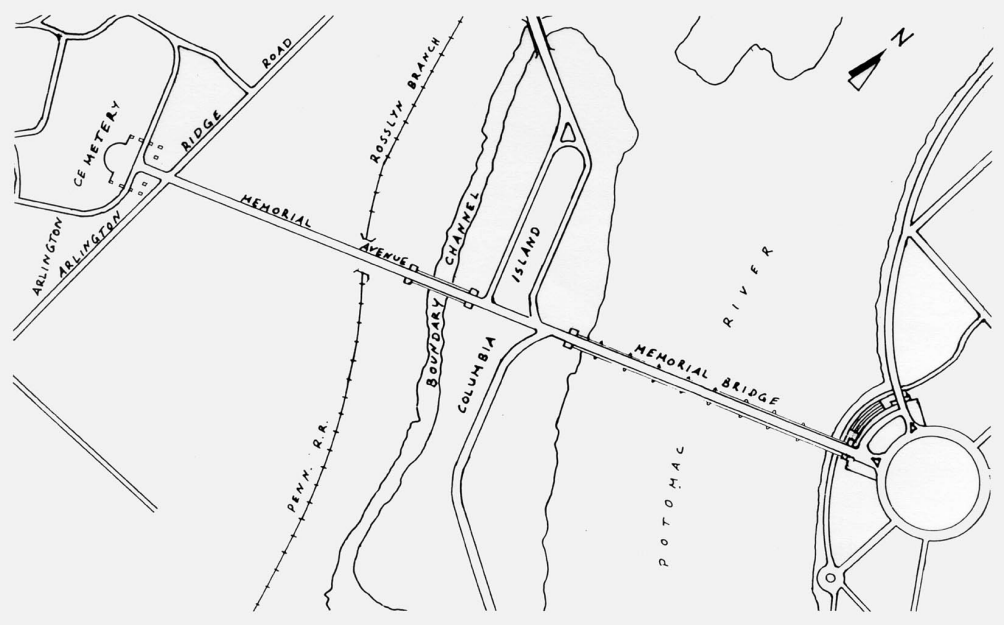
Changes in vicinity of the corridor c. 1968. Arlington Ridge Road appears closed to south and Rosslyn Branch of the Pennsylvania Railroad shown on the 1966 map seems no longer in operation. (D. Guenther, 2000)



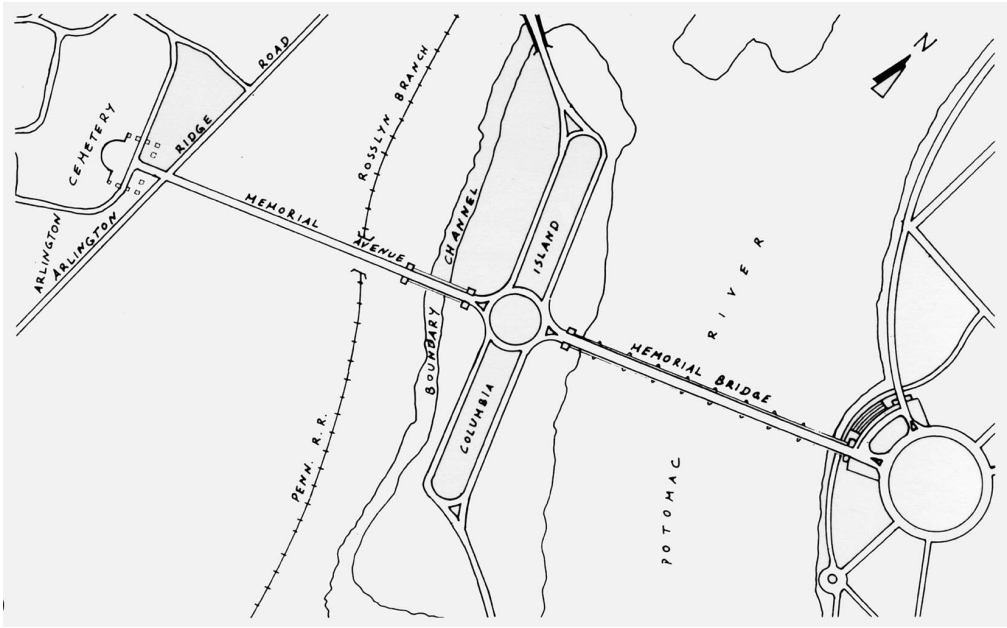
Memorial Avenue corridor as it was in 1932. The road connection from Mount Vernon Memorial Highway was considered temporary. (Drawing adapted from Arlington County map by Dagmar Guenther, 2000.)



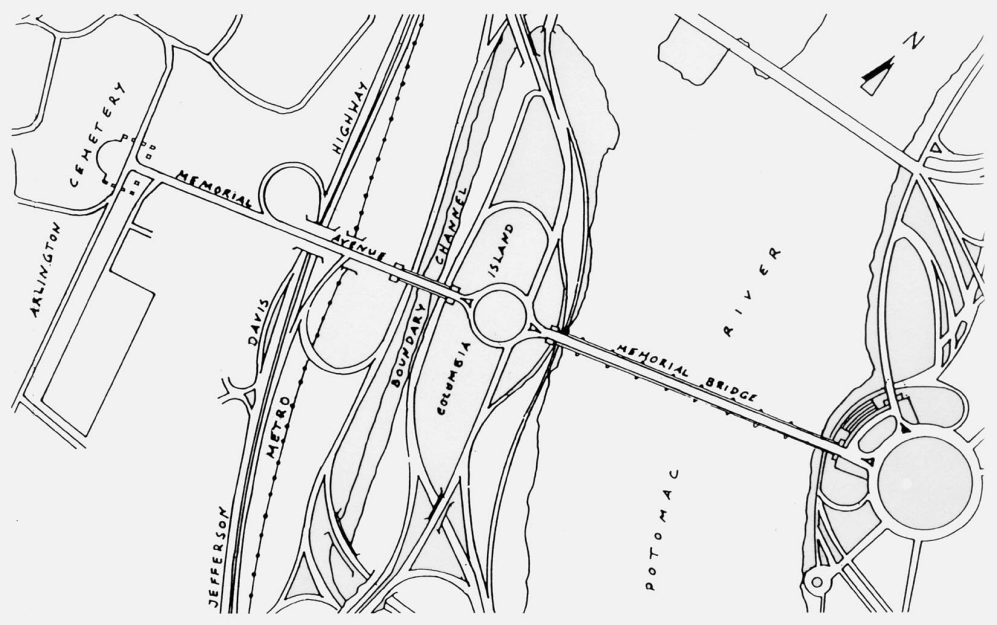
Further changes in vicinity of Memorial Avenue corridor c. 1972 include new cemetery parking lot to south side of avenue, still using old Arlington Ridge Road entrance. (D. Guenther, 2000)



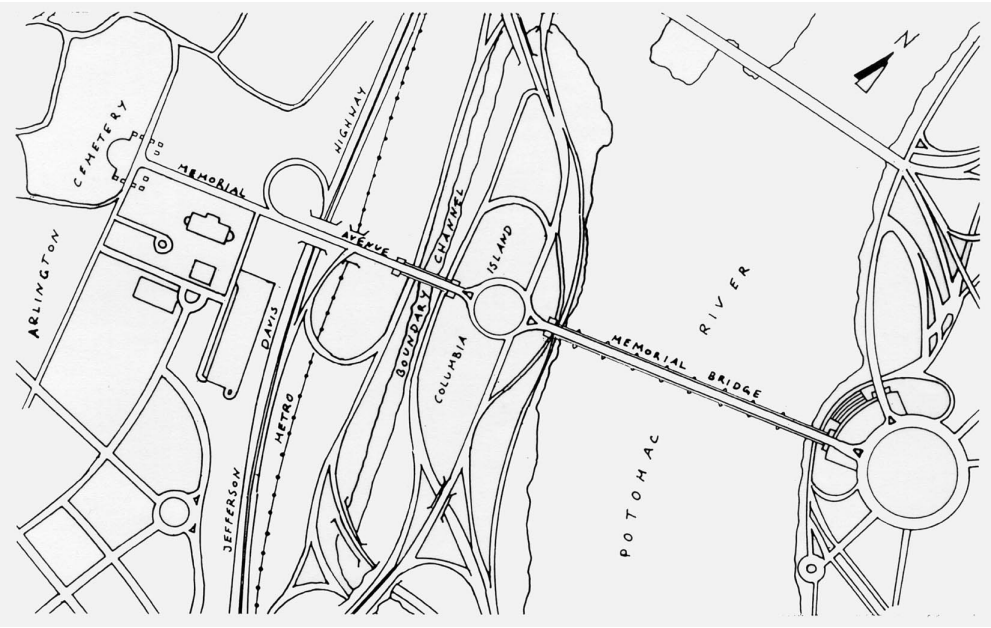
Memorial Avenue corridor as it looked in 1938. New roadways and bridge on north side of island were part of first section of George Washington Memorial Parkway and connected to Hwy 50. (D. Guenther, 2000)



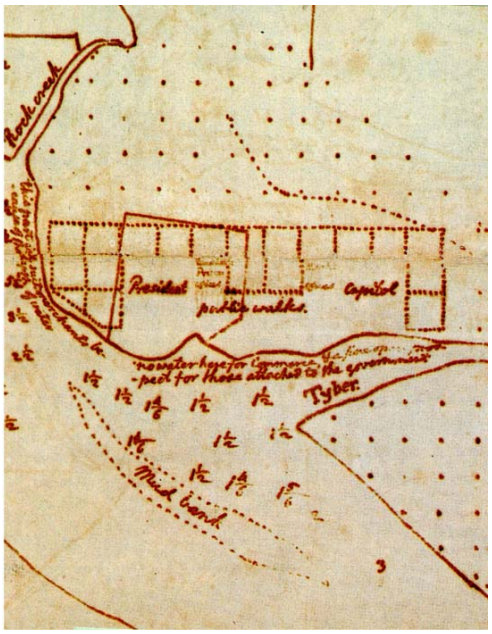
Memorial Avenue corridor as it appeared c. 1940. The rotary circle was built in 1940. Parallel roadways north and south continue the cross axial idea of the original plan. (D. Guenther, 2000)



The main change in the vicinity of Memorial Avenue by 1977 was the introduction of the Arlington National Cemetery station of the Metro. (D. Guenther, 2000)

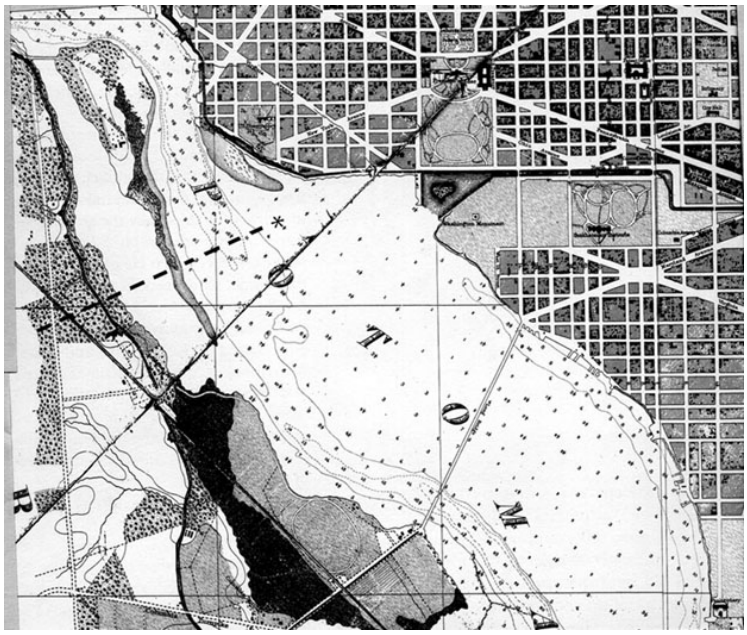


By 1988, the Arlington National Cemetery Visitory Center had been constructed. The building is shown on the south side of Memorial Avenue along with the driveway leading to the parking garage. (D. Guenther, 2000)

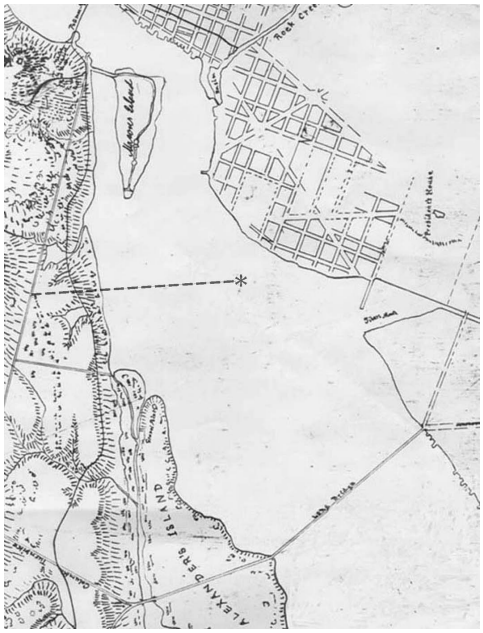


Section of 1791 sketch by Thomas Jefferson, a cursory plan for the Capital. Of particular note is Tiber Creek (spelled Tyber) and the mud bank in the river. Actual location of the White House, Capitol and Mall would be somewhat different. (Reps, 17)

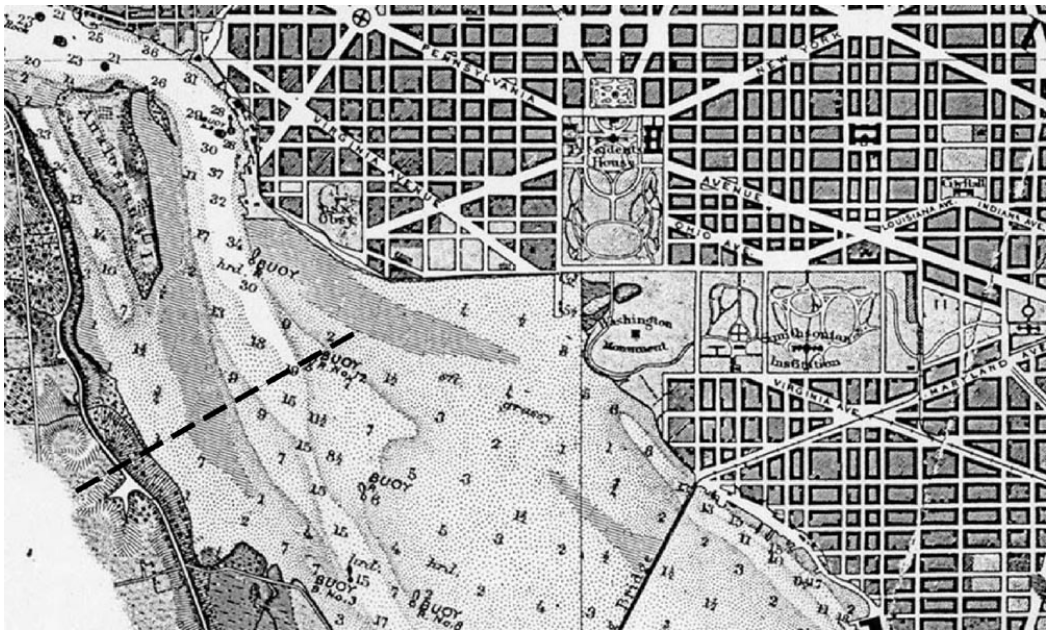
Section of survey map by Andrew Ellicott, 1793. Larger map shows relation of L'Enfant's plan to the topography of the planned capital city. This section shows roads to Leesburg and Alexandria on the Virginia side of the Potomac River. (Reps, 15)



Section of a survey map by Albert Boschke for Coast Guard, 1861. Dashed line shows the axis of the future Memorial Avenue corridor and star at end of line is where the Lincoln Memorial now stands. (Reps, 139)



Section of 1862 Army Corps of Engineers map of "Eastern Virginia and Vicinity of Washington" showing Alexandria Canal near river and Georgetown-Alexandria Road, a straight line to left of frame. (National Archives)



Detail of Survey of U.S. Coast, Potomac River from Indian Head to Georgetown, 1883. Numbers in river are depth of water. Note also silted bars and "grassy" area in river. (National Archives)

Drawing of the Burr-Casey design for a bridge that was the accepted design for more than 20 years. The McMillan Commission plan prevailed and Arlington Memorial Bridge was built instead. ((NPS/NCR)

1650 to 1860: The Colonial and Federal Periods

The Virginia Side of River

The land from which Arlington Estate was formed was a 6,000-acre tract granted in 1669 by the governor of the Virginia province to Robert Howsing (Howson), a ship captain, for his service in

bringing a boatload of settlers to the region. Within six months, Howsing sold the land to John Alexander, a surveyor and planter. The tract extended from a northern point near Theodore Roosevelt Island (called Mason's Island for its owner, John Mason, in the eighteenth and early-nineteenth centuries, and thereafter called Analostan Island until renamed in the 1930s) to Hunting Creek (within today's Alexandria). Securing ownership of land required that it be lived on and planted within three years of the grant. As a result, most of the Northern Neck (the land between the Potomac and Rappahannock Rivers) was occupied and farmed by slaves or tenant farmers during the seventeenth century (Hanna 2001, 14). Alexander established a plantation on his land. Given its location along the river, the width of the river terrace and floodplain, and its agriculturally-adaptable alluvial soil, it is likely some of this land had been previously cleared and planted by Indians. John Alexander willed his estate to his sons Robert and Philip in 1690. Robert came to own most of it, and left 4,930 acres to his children in 1735. His two sons divided the land between them in 1745, and Gerrard Alexander took the piece that extended from Four Mile Run (just south of today's Ronald Reagan National Airport) to its northern boundary near Theodore Roosevelt Island. Gerrard built a home in the floodplain near the mouth of Four Mile Run. Slave quarters were located on Alexander's (earlier Holmes) Island to the north, which was not really an island but a gravelly floodplain, separated from the mainland by a marshy stream. (Alexander's Island is the land mass just southeast of today's Lady Bird Johnshon Park, also called Columbia Island.) (See Ellicott map at end of this section.) One more generation of Alexanders inherited this property before selling a major portion of it in 1778 to John Parke Custis, the son of Martha Washington by her first marriage. Custis settled his family in the Alexander house and renamed it Abington. John Custis' son, George Washington Parke Custis, raised by George and Martha Washington after his father's death, returned to the property as a young man and built the mansion that became known as Arlington Mansion (today called Arlington House) in stages beginning in 1802 (Hanna, 15-16, 22-34). The grand house was sited on the brow of the inland terrace, less than a mile from the river and a couple of miles northwest of Abington.

Many spring-fed short runs and longer creeks crossed the Alexander (and later the Custis) property and flowed into the Potomac. The longer streams descended from the inland terrace and the shorter ones arose as springs along the terrace slope. Two of these frame the axis of the future Arlington Memorial Bridge and its extension along Memorial Avenue. The longer one, the Wampakan Branch (so-named on Daniel Jenings [or Jennings] 1750 survey of the Alexander tract), flowed out of the hills north of Arlington House. It formerly emptied into the Potomac south of Theodore Roosevelt Island, but now empties into the man-made Boundary Channel. The other, an unnamed run, appears to have originated as a spring below Arlington House. In 1750, William Griffin, a tenant of Gerrard Alexander, occupied a house on the level top of the first river terrace. His farmstead was bounded on the north by the Wampakan drainage and on the south by the smaller stream (Daniel Jenings survey 1750). One-hundred-and-seventy-five years later, the Arlington Memorial Bridge axis would cross the site of Griffins's farmstead, and the bridge across Boundary Channel would have its west footing on an earthen ramp built out from the brow of the river terrace. North of Griffin's house and close to the river was the house and property of John Awbry. Awbry operated a ferry between Virginia and Georgetown which may have predated John Mason's ferry. The Awbry ferry landing was probably located just north of Mason's Island. Mason's ferry landing was located on Mason's Island, which after 1807 was connected to the Virginia shore by a causeway.

No early road marked the axis of the future Memorial Avenue, but there were other roads in the vicinity of the Alexander (later the Custis) property in the seventeenth, eighteenth and nineteenth centuries. Two roads diverged near the ferry connection on the Virginia shore. One of them, the Road from Leesburg, followed a western route that skirted the north side of the Custis property. The east section of this road corresponds roughly with Wilson Boulevard today. Another, called the Road to Alexandria, crossed the lower terrace of the Alexander (Custis) property in a north/south direction, just below the heights. (Ellicott map 1793) Around 1810, the Georgetown and Alexandria Turnpike was built along this second route, superceding the earlier road and following a straighter course, at least in this section. South of the Custis property, the turnpike crossed roads that radiated from Long Bridge, the predecessor of today's 14th Street Bridge, built in 1809. An older road along the shore of Alexander's Island connected Long Bridge with the Custis house.

By 1843, the Alexandria Canal, a seven-mile branch of the Chesapeake and Ohio Canal, connected

Alexandria with the canal at Georgetown via the Aqueduct Bridge. The bridge reached the Virginia side at the old meeting of roads north of Mason's Island. The Alexandria Canal crossed the Custis property east of the turnpike and west of the brow of the first river terrace, following a broadly curving line. The canal proved immediately unprofitable. Fifty years later, its bed was filled and the tracks of the Washington Southern Railway built upon it, varying slightly here and there from the canal's center line.

The farm fields of George Washington Parke (G.W.P.) Custis spread across the lower terrace where the land sloped gently from north to south, changing in elevation from about 50 to about 20 feet. The broadest area of farm fields, described on one map as a "flat valley," occupied the southern section of the property where the first terrace widened and sloped toward the river (Depot Quartermaster Office, in Washington of Arlington Military Reservation, Fort Myer and the National Cemetery [map] 1894). Custis also farmed Alexander's Island. By 1843, the Alexandria Canal separated the fields of the "flat valley" and those to the north from the river and Alexander's Island. In some places, such as where the future Memorial Avenue would cross, the canal and towpath may have been level with the existing grade. But any changes in topography had to be compensated for, and an earthen embankment (or berm) carried large segments of the canal and towpath. For instance, the small stream just south of the future Memorial Avenue was impounded behind the canal berm, and the old road from Alexander's Island had to pass under the canal in an arched culvert before crossing the fields and climbing the hill to the Custis mansion. The embankment presented a visual as well as a physical barrier to the river's edge. On the slope below the mansion and above what would be the terminus to the yet-unimagined Memorial Avenue, Custis developed a park in which he preserved and added more deciduous and evergreen trees; these trees had grown large by the mid-nineteenth century (Hanna, 49).

Robert E. Lee married G.W.P. Custis' daughter, Mary, in 1831. He and Mary set up their home at Arlington and raised their family there. As a military officer, he was often stationed away from Arlington even before the Civil War, and had relatively minor influence on the development of the estate. However, because it was Lee's home and because of its strategic location to the city of Washington's defenses, the property assumed much of its future significance.

The Potomac River

The Potomac River's propensity to develop shoals below the fall line, combined with an increased quantity of silt coming into the river as the land in the watershed was opened up to farming and logging in the eighteenth and nineteenth centuries, eventually forced a nearly constant effort to keep a navigation channel open to the port of Georgetown, just below the fall line. At first, no plan directed the clearing of navigation channels, but as the work became organized under the Army Corps of Engineers, new riverfront land began to emerge where before there had been a sea of mudflats. Toward the end of the nineteenth century, grander ideas for the federal city began to proliferate, and the new land by the river was to be a key part of the canvas over which these plans would be drawn.

Between Georgetown and the Anacostia River, the Potomac originally had three channels: the Virginia Channel ran from Alexandria upstream between Analostan Island (until c. 1850 called Mason's Island) and the Virginia shore, terminating in the harbor in front of Georgetown. The Georgetown Channel ran from Georgetown's harbor midstream down the north (or river) side of Analostan Island, merging below it with the Virginia Channel. Along the north shore of the Potomac River lay the Washington or City Channel, where docks and wharves stretched for several miles above the confluence of the Potomac and the Anacostia rivers (Chappell 1973, 4).

Silting in the river affected navigation in the vicinity of Washington as early as 1800, resulting in frequent efforts to remove the buildup. A causeway was built from the Virginia shore to the northern end of Analostan Island in 1807 to deflect the current from the Virginia Channel on the Virginia side of the island into the central or Georgetown Channel, with the hope that the increased volume of water would scour the river bottom, and thus deepen the channel. But storms continued to bring heavy loads of silt, which were deposited as bars and shoals in the river—sometimes in layers six feet deep. From time to time the channels were closed. By 1823, citizens of Georgetown were using a "mud machine" to keep the channel open (Chappell, 6). Congressional involvement in river improvement

occurred as early as 1833, when money was appropriated to deepen and enlarge the channel below Georgetown (Chappell, 6). During these years, a long tail of mud flats began to develop south of Analostan Island, merging with the north end Alexander's Island (Environs of Washington prepared from original Surveys in the Engineer Department 1864-1866, Sheet 5). Custis' ferry landing and wharves were often blocked by silt, particularly during low tide.

The Washington Side of the River

On the northeast side of the river, the city of Washington, D.C., only confirmed in 1790 as the capital of the young republic, grew slowly along the lines laid out in 1791 by Pierre Charles L'Enfant, hired by George Washington to design a layout for the streets and major buildings of the capital. The port of Georgetown, northwest of Rock Creek, was the only settlement in the vicinity in 1791, although the small grids of Hamburg and Carrolltown existed on paper (Washington in Embryo, viz. Previous to the Survey of Major L'Enfant, compiled by Faehtz and Pratt from research by Joseph M. Toner, 1876. In Reps 1991, 13).

The place where the Lincoln Memorial would later stand and where the Arlington Memorial Bridge would begin its span across the Potomac was a point in the river in 1791. Immediately west of the future Washington Monument was an estuary that formed the mouth of Tiber Creek. A promontory, later called Naval Observatory Hill, rose to the northwest of the estuary, and below it was a rocky outcrop, Easby's Point, which protruded into the river. From there, one looked across to Analostan Island (Mason's Island). Above Easby's Point, the river was 900 feet wide, but it spread out to almost 5,000 feet south of the point, and remained a wide, tidal river to its mouth on the Chesapeake Bay. By 1815, Tiber Creek had been straightened to form a canal from the estuary to the foot of Capitol Hill, where it turned to the southeast and continued to the Anacostia River. Called the Washington City Canal or simply the City Canal, its builders planned that it would carry goods along this short cut to the city's better port on the Anacostia River. Maps of the mid- and later-nineteenth century depict the marshy estuary at the mouth of Tiber Creek straightened into a triangular opening (Reps 1991, maps on pp. 79 and 139, for example).

The City Canal's use for transport never materialized because Washington did not become a manufacturing or commercial center, and even the Anacostia River began to silt in. As city streets and lots were cut and graded, especially during the building boom in the years after the Civil War, tons of loosened soil were carried into the creek and canal in every rainstorm. Some of this silt settled near the canal's mouth on the Potomac, where a mud bank already existed (see detail of Thomas Jefferson's map of Washington at end of this section). The increasing muddy bars and shoals eventually closed the upper end of the Washington Channel, which was never very deep (Chappell, 5). The shoals in this location formed the beginnings of West Potomac Park. Sewers emptied into the canal after water lines from the new aqueduct along the Potomac brought water into the city. Combined with the runoff from horse-trafficked streets, this turned the canal, passing only a few hundred yards south of the White House, into a fetid quagmire. The unhealthy stream was sometimes flushed by the rising tide, but the growing mudflats at its mouth resulted in stagnant conditions much of the time.

Slightly south of the growing deposits near the mouth of the canal was a larger sea of shoals in the center of the Potomac River. When Long Bridge (at the location of today's 14th Street Bridge) was built in 1809, the nearly mile-long structure crossed more than 2,500 feet of shoals. At either end of it there were drawbridges that spanned the navigation channels close to each shore—one deep enough for large vessels on the Virginia side and a minor channel near the Washington shore. Straddling the shoals, the central part of the bridge originally sat on 39 piers, each 25 feet wide. After it was destroyed by a flood in 1831, the central section was rebuilt as a solid causeway, which blocked more than half the width of the river and caused more rapid growth of the shoals. Floods frequently damaged Long Bridge and it was often unusable. The bridge gained new importance during the Civil War when it was used to transport troops and supplies. Railroad tracks were laid across it early in the war, and in 1863, a parallel bridge exclusively for rail was built 75 feet downstream with a similar superstructure and causeway (Chappell, 7-9; Myer 1974, 26-31).

Washington continued to grow during the decades of the 1840s and 1850s, and eventually surpassed

in size the now-declining port cities of Georgetown and Alexandria. By mid-century, great federal projects were in progress: the Washington Monument was begun in 1848; the Smithsonian in 1849; and Andrew Jackson Downing prepared a landscape plan for the Mall in 1850-51. Still a small town at the beginning of the Civil War, Washington's population nearly doubled between 1860 and 1870, growing from 75,080 to 131,700.

Beginning in 1851, Congress periodically received proposals for a new bridge mid-way between Aqueduct Bridge and Long Bridge to provide a better and more direct river crossing. In 1857, civil engineer Alfred L. Rives was commissioned by the Secretary of the Interior to prepare designs and estimates for such a bridge. Rives made one of the first comprehensive studies of the Potomac River within the limits of the District. In it he stated that the bridge and river improvements were so intertwined that one could not be accomplished without consideration of the other (KressCox 1986, 23).

1861 to 1900: The Civil War and the Post-War Years

In April 1861, Virginia seceded from the Union. Soon afterward, Robert E. Lee resigned from the Union Army to lead Virginia's military forces. By May of that year, Union troops had seized and begun to fortify the Arlington highlands, an act of both "strategic and symbolic significance, protecting the Capital at one of its most vulnerable spots and asserting federal jurisdiction over the family home of the commander of the Confederate forces" (KressCox 1986, 19). As part of the Custis-Lee property, the land that Memorial Avenue would cross came into federal hands at this time. In 1864, 210 acres in the immediate vicinity of Arlington mansion were set aside to be a national cemetery for Union soldiers and sailors. Following the Civil War, the question of legitimate title to the Arlington estate arose and was finally settled when Robert E. Lee's son, G.W.P. Custis Lee, sold the property to the federal government in 1883. A village of freed slaves had occupied the southern end of the property during the war. By 1868, fifty farmsteads of about ten acres each, tenanted by freedmen, were spread across the lower terrace and the southern and western sections of the estate. The axis of the future Memorial Avenue crossed three of these farmsteads on the lower terrace, two of which had a number of buildings (Map of the Arlington Estate, VA, January 1888).

The creation of Arlington National Cemetery extended the monumental core of Washington, D.C. to Virginia. The "reciprocal views between the historic and memorial sites constituting monumental Washington took on a new scale" with its development (KressCox, 19). As a public reservation and the resting place of national heroes, the site began to attract local residents and visitors from across the nation and abroad after the war. "This was the century in which cemeteries served as popular sites for strolling and picnicking, and Arlington was no exception." (KressCox, 19)

The Potomac River and the Beginnings of its Riverside Parks

Although the Arlington slopes and highland had been shaped and protected as park, garden, and woodland in the years that G.W.P. Custis guided the development of his estate, the capital city had few embellished public spaces in 1870. During the mid-nineteenth century, when the movement for public parks in America was finding its first expression in cities like New York and Chicago, there was little concerted effort in the capital city to set aside reservations of natural scenery or to improve or maintain the squares, circles, and triangles of public space that were part of the city's original plan. Such activity did not occur until the last decade of the nineteenth century, and its delay may have been related to the fact that, unlike those other cities, Washington had not experienced the impacts of the industrial revolution with cramped working-class districts that inspired the parks movement. Its pattern of development was still a relatively open one. "Instead, it was the Potomac River, its periodic flooding, and its growing 'flats' which prompted several decades of intense civic improvement efforts with both utilitarian and aesthetic goals." (KressCox, 15-17) One of the results of this focus on the river was to give the Army Corps of Engineers a central role in shaping the late-nineteenth and early-twentieth-century federal city, made official by Congress in 1867 when it removed public buildings and grounds from the control of a civilian commissioner and established the Office of Public Buildings and Grounds under the Engineer Corps.

By 1870, silting below the Long Bridge causeway was so far advanced "that it would seemingly not take much more to finish the job." The Potomac Flats, as the area was sometimes called, were sufficiently silted to be above water, in the form of mud flats, at low tide. By the 1860s, salt water grass was growing on them, and by 1870 the vegetation had "increased very rapidly." The flats eventually extended over more than three hundred acres. An even larger area was covered with only one to three feet of water. Aquatic grasses accelerated the sedimentation. As quickly as silt was removed from the bar across the main channel, a storm would bring in a fresh supply. The 1877 flood deposited six feet of silt in places on the bar. (Chappell 1973, 15- 21)

Almost continuous river dredging between 1870 and 1895 reconfigured the Washington waterfront. The elevation of the reconfigured land continued to be raised through 1911. The dredged material was piled on the silty bars and shoals at the mouth of Tiber Creek and south of it. Mounded up to 12 feet above the high-water mark of former floods and secured by stone and concrete seawalls, the new land would eventually become East and West Potomac Parks. A single navigation channel was

created from Georgetown south to Alexandria, past Gravelly Point and Alexander's Island, and the minor Washington Channel was partly retained.

Initially, the dredging was carried out to improve navigation on the river and in response to immediate needs, rather than in accord with any overall plan, but a plan was settled on by the mid-1880s. The filled area would extend from Easby's Point to the north "in a graceful curve" as far as the Potomac River's confluence with the Anacostia River. (Chappell, 26-28) The Washington Channel would be retained along the old Washington shoreline, though separated from the Potomac by the new park land, and the idea of sluicing gates to flush the channel was elaborated to become the Tidal Basin. When completed, reclamation extended the Mall axis more than four thousand feet west of the Washington Monument which had stood a few hundred feet from the old river's edge. The Tiber estuary, which had suffered many changes over the years, was completely filled in. By 1922, the new land on which the Lincoln Memorial stood, at the end of the Mall axis, reached an elevation of more than 30 feet above the river.

The use to which the new land would be put was not a foregone decision. Proposals for commercial and agricultural use of the reclaimed land were made, but in 1897 President Grover Cleveland signed a congressional act that designated the land a park. East and West Potomac Park, as the new land was known, was added to the jurisdiction of the Office of Public Buildings and Grounds, renamed Office of Public Buildings and Public Parks, under the Washington Office of the Army Corps of Engineers. (Chappell, 16-21, 66)

Bridge Designs that Predated the McMillan Commission

A patriotic sentiment calling for the commemoration of the recent war between the states and the heroes of the conflict arose in the years after the Civil War. Proponents also urged that the capital be made more attractive as a symbol of the restored federal Union. At the same time, Arlington Cemetery became the site of more and more ceremonial, patriotic functions. The Grand Army of the Republic, organized in 1866 and politically the most powerful of the associations of Union veterans, held the first official Memorial Day services on May 30, 1868 on the portico of Arlington mansion. By the time Memorial Day became a national holiday in 1888, annual Memorial Day gatherings at Arlington Cemetery had grown to the point where an amphitheater had to be constructed. Problems of travel to the cemetery were acute from the outset, and attendees took roundabout routes via Aqueduct Bridge or Long Bridge. (KressCox, 17-19)

The death of Ulysses S. Grant in 1885 precipitated a discussion of a memorial bridge commemorating Grant and Abraham Lincoln and the reunification of North and South. The idea of symbolizing the connection between the North and South with a bridge across the Potomac River predated the Civil War. In 1851 Daniel Webster attributed the idea to Andrew Jackson during his presidency (1829 to 1837). (KressCox, 20-21) By 1900, Grant's name was no longer mentioned in connection with the bridge, and for a time there was discussion of a specific memorial to Robert E. Lee as part of the bridge composition. As finally built, the connection of North and South and of Lee and Lincoln was expressed in the symbolism of the bridge axis drawn between the Lincoln Memorial and Arlington House, Robert E. Lee's home.

A Senate Resolution of May 24, 1886 directed the Secretary of War "to examine and report on the expediency of constructing a Government bridge" connecting the City of Washington with Arlington Cemetery (KressCox, 30). Determining what sort of bridge to build—primarily for traffic or ceremony—remained a point of argument for decades. In 1886, army engineer Thomas W. Symons prepared the first of the bridge designs that would be considered over the next almost 40 years. He described his bridge as a memorial to Lincoln and Grant and a ceremonial route from the capital to Arlington Cemetery. Symons proposed a bridge with four main steel-arch spans 300 feet wide and seven subsidiary spans, all on solid masonry piers. The main span would have a 90-foot clearance above the water. Architect Paul J. Pelz modified Symons' design to have massive and more articulated masonry piers surmounted by Romanesque towers and a double-leaf draw span. The overall length of the proposed bridge was 4,650 feet. Objection to the draw span arose, and in 1890 Col. Peter C. Hains prepared another design—this one for a suspension bridge without a draw, clearing the water at midchannel by 105 feet on a single span of 1,100 feet, with two shore spans of

652 feet. Steel suspension cables would pass over two granite towers, each 210 feet high. (KressCox, 33-41)

Money was appropriated for soundings and borings of the river conducted by Army engineers. Their subsequent report called for a design competition for the bridge described as a "Memorial to American Patriotism." The competition was held in 1899, and the design of William H. Burr and Edward P. Casey was selected from among four entries. Burr and Casey proposed a 3,400-foot-long masonry bridge that would span the river on six arches, each 192 feet long, with three spans on each side of a steel bascule-draw span. A series of 60-foot arches would support the approach road on each side of the river—twelve arches forming the Washington approach and eighteen on the Virginia side. Monumental towers would mark each end of the bascule span. The river arches had clear head-room of about 51 feet. This bridge and all those previously proposed would have spanned the river from a location at the end of New York Avenue, near Naval Observatory Hill. The Burr-Casey design remained the adopted one until 1916, and a final decision to abandon that design was not arrived at until 1921. (KressCox, 56, 88) (See drawing of proposed bridge is at end of chapter.)

The Virginia Shore

After the legal settlement of the Custis-Lee property in 1883, the Army took control of all of the former estate, and by 1888 the freedmen's village began to be disbanded and the ten-acre farms removed (Hanna 2001). In 1894, the imaginary line of the future Memorial Avenue could be drawn through the southern corner of a vegetable garden serving Fort Myer. The two streams described previously continued as north and south brackets to the future avenue. By this date, the route of the Alexandria Canal was owned by the Washington Southern Railway. Sometime after its purchase by the railway in the early 1890s, the canal bed was filled and railroad tracks laid along its course. Slightly inland from that corridor, the turnpike—the Georgetown-Alexandria Road—still crossed at the foot of the second terrace, and an electric trolley—the Washington, Alexandria and Mount Vernon Railway—ran along the east side of it. The construction of a wall of Seneca sandstone, enclosing the original 210 acres of the cemetery, was begun in 1873 (Rhodes 1930). The eastern wall ran alongside the Georgetown-Alexandria Road, broken by four entrance gates to the cemetery. In 1889, the cemetery reservation was enlarged by 142 acres, and in 1897, by 56 acres (KressCox, 19). The army proposed a rifle range along the face of the river bluffs in 1894, but this use may never have occurred because nearly all of the lower terrace, from the river to the turnpike, was soon turned over to the Agriculture Department for experimental plots. (Arlington National Cemetery Military Reservation, Fort Myer and the National Cemetery, January 10, 1894)

Extending from the Virginia shoreline several hundred feet into the river were "flats covered at ordinary high water." Through them ran a tidal stream that was 1½ to 2½ feet deep. Farther into the river, a long, narrow shoal, permanently above water, had accumulated off the southern tip of Analostan Island. This would become the nucleus of the future Columbia Island. (Arlington Va. Military Reservation, Fort Myer and the National Cemetery, Depot Quartermaster Office [map] 1894; Environs of Washington [map] 1866, Sheet 5)

1901 to 1941: The Memorial Bridge Project from Conception to Completion

McMillan Commission

The decades around the turn of the century were a time of aesthetic controversy between utilitarian engineering or early modern architecture and classicism (KressCox 1986, 51). The debate emerged as concepts of academic classicism entered into the practice of American designers who were increasingly trained at the Ecole des Beaux-Arts in Paris. "In the years since the Chicago World's Columbian Exposition of 1893, a revivified classical vocabulary for public and commercial structures, applied on a monumental scale, transformed the appearance of American cities and towns" (KressCox 1986, 62). The federal city was ripe for such transformation as the hundredth anniversary of the seating of the government in Washington neared. In addition, the 1791 plan of the city by Pierre Charles L'Enfant had recently become the object of new interest. The American Institute of Architects (AIA), which met in Washington in 1900, recommended the restoration of the axial relationships of that plan as well as adherence to the principles of classicism in shaping the future of the federal city. The desire to commemorate figures from the Civil War and the Union that it bequeathed was another influence, and the need for a plan for the newly created riverfront park yet another. These factors and others set the stage for the creation of the McMillan Commission, whose concepts would become the blueprint for the development of Washington's monumental core.

Critics of the Burr-Casey bridge design stated that it lacked the appropriate simplicity and dignity (KressCox, 59). Persuaded by these arguments, James McMillan of Michigan, chairman of the Senate Committee on the District of Columbia, reopened the question of the bridge at hearings in January 1901, where the monumental towers of the design were especially criticized. Later that year, the Senate Committee engaged four of the nation's most distinguished designers to study and recommend improvements to Washington's park system including the federal grounds at the heart of the city (KressCox, 60-71). Forming the Senate Park Commission (also known as the McMillan Commission) were the architects Daniel H. Burnham and Charles F. McKim, landscape architect Frederick Law Olmsted, Jr., and sculptor Augustus Saint-Gaudens. All of these men had collaborated on the Columbian Exposition, except Olmsted, whose father had. Charles Moore, clerk of the Senate District Committee and instrumental in many of these developments, served as commission secretary.

The group looked extensively at Washington and took a seven-week trip to look at European cities for inspiration. One of their firm conclusions on this trip was that the memorial bridge should be "a low structure on a line from the site of the [planned] Lincoln Memorial to the Arlington Mansion, and that it should be a monumental rather than a traffic bridge and a significant element in an extensive park scheme" (KressCox, 75). To strengthen the axial relationships of L'Enfant's city plan, the Lincoln Memorial was to be sited at the western terminus of the Mall axis on new land which was then nearing completion as West Potomac Park. From that point it would cross the river to Arlington Cemetery, deflecting from the Mall axis by about 20 degrees. Placement of the bridge in this location differed from all previous designs, which had the Washington bridgehead about a third of a mile to the north.

The 1902 report of the Senate Park Commission, "The Improvement of the Park System of the District of Columbia," laid out the principle elements of the bridge and related features that would ultimately be built. These consisted of the main bridge and a secondary bridge over the west channel of the river, the Watergate steps and parkway entrance, some sort of formal treatment of Columbia Island (shown as a southern extension of Analostan Island not yet called Columbia Island), and a broad ceremonial avenue to the cemetery culminating in a plaza and a new cemetery entrance at the abrupt change in grade (Fisher 1991, 3). Although the document said nothing specific about the memorial qualities of the Arlington bridge composition—other than a brief reference to a "memorial concourse" on Analostan Island—it had long been implicitly understood that the proposed bridge to Arlington would serve a memorial function (KressCox, 78). The report's text clearly indicated the importance of the Arlington mansion as the "Virginia focal point of the bridge composition" (Fisher, 5).

Among the Senate Park Commission members, it was Charles Follen McKim who had the primary role in finding the proper sites for and designing the public buildings and memorials that were to be part of the expanding park system. He was assisted by William Mitchell Kendall, who later represented the McKim, Mead and White firm in the design of the Arlington Memorial Bridge composition. It was essentially McKim's design for the bridge that was fleshed out twenty years later by William Kendall (Brownell et al 1992, 352). The publication of the McMillan Commission report, however, did not settle the question of the bridge. The Burr-Casey design remained the official bridge design until 1921, when the Commission of Fine Arts voted to abandon it (KressCox, 76).

Arlington Memorial Bridge Commission

Several oversight commissions were set up at this time. The first was the Commission of Fine Arts (CFA), established in 1910 to serve as a permanent review board essentially to safeguard the McMillan Plan. The Lincoln Memorial Commission was established in 1911, and the Arlington Memorial Bridge Commission in 1913. In 1924, the National Capital Park Commission—renamed the National Capital Park and Planning Commission (NCPPC) in 1926—was created and authorized to prepare a city and regional plan. Parkways to and through the city were the primary focus of this agency's work. (KressCox, 120-121) Besides the bridge commission, both the CFA and the NCPPC would review and make decisions about plans for the bridge project.

In 1912, the Lincoln Memorial Commission recommended that Congress adopt and build Henry Bacon's design for the Lincoln Memorial above the river at the end of the Mall's east-west axis. In style and location, Bacon's Doric temple was in general accord with the conception of the McMillan Commission. Congress approved it in 1913, and work began in 1914. World War I delayed its completion. The war also slowed decision on the proposed bridge. (KressCox, 83) The Frances Scott Key Memorial Bridge was begun in 1917 as a replacement for the Aqueduct Bridge spanning the river from Georgetown to Rosslyn, Virginia. Its construction relieved some pressure to construct a bridge primarily to handle traffic at the Arlington location. (KressCox, 86)

During these years the Commission of Fine Arts fended off proposals to build the Burr-Casey design and finally voted against the design in September 1921. On the heels of this decision, the great traffic jam along the route to Arlington Cemetery on Armistice Day in November 1921, propelled Congress into appropriating funds for a bridge, although there was at this point no design. The following May, those attending the dedication of the Lincoln Memorial had an opportunity to contemplate the "logic and beauty" of the McMillan Commission's proposed bridge location (KressCox, 89). In December 1922, the CFA and the Arlington Memorial Bridge Commission jointly decided in favor of the McMillan Commission's suggested bridge type and location.

In February 1923 the Arlington Memorial Bridge Commission selected the architectural firm of McKim, Mead and White to design the bridge composition. William Mitchell Kendall, who had been an assistant to the late Charles McKim (dec. 1909), was the firm's architect. A few months later, in May 1923, Kendall presented his initial drawings to the bridge commission. His plan was accepted and published in 1924 as "The Report of the Arlington Memorial Bridge Commission" (68th Congress, 1st Session, Sen. Doc. No. 95).

Kendall designed a Roman-arched bridge (like McKim's), with reinforced concrete construction faced with granite. It had a central bascule (vertical lift) draw span. He first proposed seven spans but increased the number to nine to give each arch sufficient curve to allow the masonry facades to be self-supporting (KressCox, 93). On Columbia Island, where the process of reclamation was then just beginning, there was to be a great plaza joining the Lee Highway from the north and a highway from the south. Tall columns representing the reconciliation of North and South were to mark the crossing. From there the bridge axis would continue across a smaller bridge to a tree-lined boulevard, called the "Avenue of Heroes," terminating at a plaza referred to as the "Great Entrance" to Arlington Cemetery. Though simple in its broad outlines, Kendall's design was embellished with statuary, pylons, columns and small temples.

Land crossed by the Bridge Axis

When the McMillan Commission drew the axis of its proposed bridge in 1902, the line crossed a mixture of sites. West Potomac Park on the Washington side of the river, from which the bridge would begin, was still being shaped by the Army Engineers. On the Virginia side of the river, the mudflats and shoal that became Columbia Island did not begin to be reclaimed until 1915 or after. The long bar below Analostan Island that became the eastern edge of Columbia Island had been above water for some time and supported a growth of trees.

Proceeding west onto the Virginia shore, the axis of the bridge crossed the first river terrace. Four hundred acres of the Custis-Lee estate, located on the first river terrace and floodplain, had been transferred by the War Department to the Department of Agriculture in 1900 (Hanna 2001). The terrace was primarily agricultural land and the slope up to the terrace from the river was wooded. Not far from the brow of the first terrace, the Rosslyn branch of the Pennsylvania Railway crossed along the route of the former Alexandria Canal (Airview c. 1922, NPS/NCR Museum Resources Center [hereafter MRCE]; Longstreth 1991, Plate CVI, 230). (The Washington Southern Railway, as the rail line is shown on early maps, at some point became, or perhaps was from the outset, a line of the Pennsylvania Railroad.) A little to the west and generally parallel to the railroad, the Georgetown-Alexandria Turnpike also crossed the lower terrace, flanked by a trolley line. South of the imaginary axis of the future Memorial Avenue, the land was divided by 1911 into long plots for the testing of various crops and pesticide experiments. Fort Myer's vegetable garden lay north of the axis. (Plan for Arlington Farm, U.S. Dept of Agriculture 1911; Office of the Depot Quartermaster in Washington D.C. for Arlington Cemetery 1912) Agriculture Department plans to build structures on the experimental farm property caused concern among the bridge planners, but in 1924 the cemetery grounds were further enlarged to include some of the experimental farm. Beginning in 1933, farm operations moved to a new facility in Beltsville, Maryland, although some agricultural uses continued at Arlington into the early-1940s. (Fisher, chronology, 8)

Columbia Island

As already described, the accumulation of silt below Analostan Island is visible on maps as early as 1861. A photo taken from a plane c. 1922 shows tall trees growing on a long "tail" of land below Analostan Island (Airview c. 1922). Between this long narrow bar and the Virginia shore was an area of mudflats covered by water at ordinary high tide, through which a shallow tidal stream flowed (Environs of Washington prepared from original Surveys in the Engineer Department 1864-1866, Sheet 5; Boschke 1861; Hains April 17, 1890). Silting along the Virginia shore had been accentuated by the construction of the causeway to Analostan Island in 1807. In 1892, a training dike was built along the west side of the Virginia Channel, the river's deep navigation channel, in order to force more water into the channel to scour it (Chappell 1973, 56). The dike marked the initial eastern edge of Columbia Island.

The island that was eventually created is much different in shape than one depicted in the conceptual renderings prepared for the McMillan Commission. Those drawings show the west footing of Memorial Bridge located on an extension of Analostan Island, with a wide river channel between the island and the Virginia shore. By 1923, the combined mudflats, shoal, and accumulated dredgings, referred to as "Columbia Island," were located much closer to the Virginia shore than the 1902 drawing. The island was narrowed between 1925 and 1927 to improve the river's hydraulics, removing the northern part of the old silted bar with its stand of trees, and creating a greater separation between the new island and Analostan Island (Chappell, 130-31). The object of this task was to reposition the river's navigation channel (Virginia Channel) so it would pass between the abutments of the bridge's draw span. Dredged material brought Columbia Island to an approximate 20-foot elevation (KressCox, 176). When the Rosslyn Connecting Railway was lowered in 1931 in order to pass under Memorial Avenue, the excavated material was deposited on Columbia Island in the vicinity of the plaza and bridge axis (KressCox, 102, 175). By then, the ground on that part of Columbia Island reached an elevation of 32 feet—the highest point on the island (Arlington Memorial Bridge Commission [hereafter AMBC]: 1E7, 3E2-1, 3E2-2, and 6E2-1).

The island that came into being through these various manipulations was about 900 feet wide at its northern end, much narrower to the south, and about a mile and a half long. It paralleled the Virginia shoreline, separated by the approximately 100-foot-wide and ten-foot-deep Boundary Channel. At

the island's southern end, past the small cove along the shore where G.W.P. Custis' wharves had been located in the nineteenth century, Boundary Channel widened into a lagoon.

Building the Bridge, Watergate, Bridge Pylons, and Bridge Extension

Work on the bridge began in 1926 when the first contracts were let for the construction of the eight bridge piers in the river (the draw span piers are actually abutments) and the abutments on either side of the river. Concrete for the foundations was poured in September. In 1926, the Rosslyn Connecting Railway built sidetracks just north of the bridge axis, where the granite for the project was delivered. Six quarries in the states of North Carolina, Georgia, Vermont, New Hampshire, and Maine supplied the granite, with the North Carolina Granite Corporation of Mount Airy, North Carolina the major supplier. The light-colored North Carolina granite formed the superstructure of the main bridge, the pedestals of the equestrian statues, the four pylons on Columbia Island, and portions of the Boundary Channel Bridge, cemetery entrance, bridge plaza and Watergate. So large was the quantity of granite used in the Arlington Memorial Bridge project that procurement was one of the project's most difficult construction problems. (Chappell, 130; KressCox, 212-214)

Initial questions from the AMBC and CFA dealt with the bridge itself and the eastern terminus near the Lincoln Memorial. The greatest controversy with regard to this section had to do with the river parkway road that the bridge commission wanted to pass under the bridge abutment, thereby crossing the Watergate steps. Kendall was opposed, but a solution that narrowed the steps was accepted in 1928 (Chappell, 131). Rectangular pedestals were substituted for the proposed pylons at the east bridgehead and the parkway entrance. It was decided these would form the bases for sculptures. Leo Friedlander submitted preliminary drawings for sculpted equestrian groups for the bridge entrance in 1928, which were approved in 1929. James Earle Fraser designed similar groups for the parkway approach in 1931 (Kohler 1995, 24).

Construction of the spans for the bridge began in April 1928, followed by construction of the bascule. The subsidiary bridge over Boundary Channel was also begun. (The smaller bridge was called Boundary Channel Bridge when it was built, and is often still referred to by that name. However, later bridges over the channel were also called Boundary Channel Bridge, and today the official name of the smaller bridge is Arlington Memorial Bridge: Boundary Channel Extension. This long name is not generally used. In this history the bridge is called Boundary Channel Bridge, because that is how it was known. Later in the history and in sections discussing existing conditions, it is called Memorial Avenue Bridge, as it is now commonly referred to.)

Boundary Channel Bridge complemented the main bridge in its architectural details and materials. It spanned Boundary Channel on one semicircular arch and had a segmental arch within the abutment on each side, through which roadways eventually passed. The east bridge plaza, Watergate, and the bascule draw span were completed in February 1931. By November 1929, most of the masonry work for Arlington Memorial Bridge, Boundary Channel Bridge, and the four pylons was completed. By June 1931, the 16 low-relief eagles on the main bridge and the free-standing eagles on the pylons on Columbia Island, designed by C. Paul Jennewein, had been carved and were in place (Chappell, 131-133). The granite block roadways of both bridges, laid in a traditional pattern of interlocking arcs, were completed by January 1932.

The Plaza and Cross Axis on Columbia Island

It was not until February 1928 that Kendall presented the CFA with more fully developed drawings for the Virginia side of the bridge. These showed the bridge roadway meeting an ellipse at Columbia Island. Cross arms, extended north and south, each ending in a circle within which was a small, circular Greek temple. Lee Highway was to connect at the northern circle and Mount Vernon Memorial Highway at the southern circle. Two columns, 166 feet high, topped by winged victory figures, were to be located at the plaza. The ellipse was to be a paved plaza containing the columns and accommodating the meeting of the roadways. A granite balustrade outlining the ellipse within a rectangle and ornamented with statues representing allegorical figures and urns would surround it and connect to the pylons at the ends of the two bridges. The bridge axis continued on the smaller bridge over Boundary Channel. From there a long avenue on the axis of the bridge continued to the

foot of the slope below Arlington House and terminated with a grand entrance to the cemetery comprised of pylons, gates and a large retaining wall shaped as a half circle or hemicycle. Hedges and formal rows of trees were to line the avenue, as well as the cross axis roadways on Columbia Island. (KressCox, 116; Kohler, 24)

The design for the Columbia Island section of the project met with immediate opposition and requests for changes, and occupied the Commission of Fine Arts for many years. Involved in the debate were questions of where to terminate the composition of the Mall and "how to reconcile its formal monumental character with the informal, parklike treatments of Arlington Cemetery and the Virginia shore of the Potomac" (Kohler, 24). With the Depression, cost cutting also entered the picture.

One parklike development on the Virginia shore was the Mount Vernon Memorial Highway, a 15½ - mile road between Mount Vernon and the Memorial Bridge which began to be planned the same year that the McKim, Mead and White firm presented its design for the bridge. Though the road had been discussed for decades, new interest in it developed with plans to celebrate the two-hundredth anniversary of George Washington's birth in 1932.

A river route for the highway was selected in 1928. The design of the memorial highway owed much to the parkways of Westchester County, New York that preceded it. As the consulting landscape architect for the highway, and eventually a member and then chairman of the Commission of Fine Arts, Gilmore Clarke would have a profound influence on the Columbia Island section of the bridge project. Work on the memorial highway, under the direction of the Bureau of Public Roads, began in the spring of 1930. It followed an accelerated schedule so that the road would be finished for the Washington birthday celebration. The highway was to conclude on Columbia Island at the southern circle of the Memorial Bridge cross axis. Since there still was no accord by early 1932 on which elements of the cross axis and plaza would be built, a "temporary connection" between the bridge and highway was constructed in time for the celebration. That temporary roadway remained the only Columbia Island connection to the bridge for the next six years. The road that followed the bridge axis across Columbia Island was also temporary, though it remained in use for the next eight years, pending a final decision about the plaza. (See drawings at end of this section depicting how the roads looked at this time.)

In 1930, U.S. Grant III, chairman of the Arlington Memorial Bridge Commission, was looking for ways to simplify and economize on the bridge project. He specifically wanted authorization to omit the parapet statues on the Arlington and Boundary Channel Bridges, the Columbia Island statuary; and to substitute a hedge of plant material for the elaborate balustrade on Columbia Island. (KressCox, 117) In January 1931, Frederick Law Olmsted Jr., a member of the NCPPC, also voiced opposition to the elaborate architectural development of the Columbia Island cross axis. The Commission of Fine Arts concurred, but still recommended that the columns be built. Later that year, the question of safety for airplanes using the new Hoover Airfield, just south of Columbia Island, furnished the rationale for eliminating the columns from the plan, and Kendall was asked to prepare other studies for the treatment of Columbia Island without the colossal columns. (KressCox, 117-118)

In 1932 and again in 1933, Kendall submitted plans for Columbia Island. Each was an architectural treatment, but with different elements. The first replaced the columns with two pavilions 65 feet high and 49 feet in diameter, surrounded by basins of water 160 feet in diameter. Again the height was questioned. Broad fountains with bands of sculpture and possibly an exedra were suggested by the committee.

In May 1932, Gilmore Clarke, newly appointed as landscape architect member of the Commission of Fine Arts, presented his ideas for the treatment of Columbia Island Plaza. He suggested closing the straight roadway across the plaza with movable posts and chains, requiring cars to go around the ends of the ellipse (CFA Minutes 5/27/32). This was the first suggestion of a rotary-like traffic arrangement. As the debate continued, Charles Moore, CFA chairman, reminded the bridge commission that Columbia Island should be treated "as a constituent part of one large composition . . . [and] should not be suffered to fall from this intended high estate into a mere thoroughfare. . . . [T]he center of the island is to be treated in monumental fashion," he said (CFA Minutes 5/27/32). At the CFA meeting in January 1933, Clarke presented a sketch of two large pools, presumably still

within an elliptically-shaped plaza. Soon after, McKim, Mead and White submitted a design for the plaza with the two pools with peristyles (Fisher, 35). The peristyles were again rejected but the two "large fountain pools with low coping and high perpetual sprays of water, placed in the center of circles having a diameter of 200 feet" were approved (CFA Minutes 5/6/33).

This was more or less the final plan for the plaza that involved William Kendall and McKim, Mead and White (Fisher, 35). With Gilmore Clarke's guidance, alternatives to the McKim Mead and White plan for the island were sketched in 1934 (KressCox, 146). A preliminary drawing was presented to the CFA in July and a more complete drawing in September showing a rectangular plaza, a shape formed either by the balustrade of Kendall's design or the hedge proposed by Grant. Clarke said this was a shape Kendall wanted. Within the rectangular shape he proposed a large circle that would have a basin and fountain. (CFA Minutes 7/26/34) This is the first reference to a single circle for the bridge and highway crossing. It seems that it was in this plan that the double fountains approved in 1933 became one fountain within a large circle. The 1934 plan also eliminated the circles at the ends of the cross-axis arms; instead there were "simply to be roadway connections." (CFA Minutes 9/17/34) The Kendall design for a single roadway in each direction was also changed, possibly at this time, to become parallel roadways with 200-foot-wide grass panels between them. Construction of these elements—the large circle and the double cross axis—did not proceed until almost four years later. By then the work was carried out as part of the George Washington Memorial Parkway construction under the direction of the Bureau of Public Roads and the National Park Service. The circle, variously called Memorial Circle, Columbia Island Circle, Memorial Bridge Circle and so on, appears to have been built early in 1940. In the end, the four great pylons on Columbia Island were the only elements of the original design for the island that were ever built.

The National Park Service (NPS) took over the National Capital Parks in 1933 under an executive order of President Franklin D. Roosevelt that consolidated all federally-administered parks, monuments and reservations under the jurisdiction of the Department of the Interior. This order removed the capital parks from the control of the War Department, which had been the controlling agency since 1898 (KressCox, 120, 134-135). The same action abolished the Office of Public Buildings and Parks of the National Capital, the Rock Creek and Potomac Parkway Commission, and the Arlington Memorial Bridge Commission. Thereafter, all actions affecting the Arlington Memorial corridor would be directed by the NPS, although the CFA and NCPPC would continue to have oversight.

Bridge Paving and Lampposts

Early in 1932, in time for the Washington celebration, the Memorial Bridge roadway was paved with 3½ inch square granite blocks called by the trade name "Durax." The pink-toned granite block was laid in a pattern of interlocking arcs reminiscent of fishscales (also described as a tulip or fan pattern). The sidewalks were paved with an exposed aggregate concrete. The roadway of the subsidiary bridge was also surfaced with Durax in 1932 and its sidewalks paved.

Numerous proposals for lighting the bridge had been studied, tested and rejected in the years between 1929 and 1932. Drawings for specially-designed 15-foot bronze standards were introduced by the architects in mid-1930. When the bridge was ready for traffic in early 1932, there was still no lighting and the Washington standards used elsewhere in the city were "temporarily" placed on the bridge. (This lamppost was first designed by Francis Millet, but variations in the design introduced in subsequent productions make attribution to Millet not always correct. The lampposts installed at this time probably were the Millet design.)

On January 16, 1932, members of the bridge commission crossed the bridge and traveled to Mount Vernon on the new highway. The George Washington bicentennial celebration began in February 1932 and lasted through Thanksgiving. At first, the bridge was only open to traffic on Saturday afternoons and on Sundays. By mid-March, it was opened for daily traffic, and on May 6, 1932, with lighting installed, it was opened to night traffic (Chappell, 133). The highway to Mount Vernon was formally dedicated in November 1932.

The Ceremonial Avenue and Memorial Entrance to Arlington Cemetery

William Kendall's presentation to the Arlington Memorial Bridge Commission in January 1928 included the design for the avenue to the Arlington Cemetery leading to a plaza or "Court of Honor" at the cemetery's entrance. After passing over Boundary Channel, the drive or esplanade extended about 1,700 feet to the cemetery entrance. It was to be bordered by rows of trees and evergreen hedges to emphasize the axial relationships of the bridge composition (Fisher, 12). The most prominent feature of the cemetery entrance was a 30-foot high granite retaining wall shaped as a half circle with straight walls flanking each side (together referred to as the hemicycle). A large recess or apse was centered in the hemicycle wall and on either side were shallower niches. Stairways at each end of the retaining wall led to a terrace along the top of it. Six pylons, three on each side, marked the corners of a tall wrought iron fence that partly enclosed the "Court of Honor." On the north and south sides, smaller granite structures with arched passageways for pedestrians supported massive iron gates through which the divided avenue continued to north and south sections of the cemetery.

These sections of the plan did not provoke the debate that the Columbia Island section had. Kendall was persuaded to reduce the overall width of the esplanade from 200 to 150 feet (the avenue between hedges is actually about 160 feet wide) and to remove the central panel of grass (tapis vert) that separated the two directions of traffic (Fisher, 15). By March 1928, he had staked out the avenue (Fisher, 17). Grading began by mid-1930, and the slope below Arlington mansion was excavated in preparation for the hemicycle (Fisher, 22). The axis of the avenue cut at an angle across the boundary between War Department land and the Experimental Farm. The tributary stream to the north of the avenue was probably rerouted, since it now runs in a ditch parallel to the avenue. The impounded stream on the south side had been drained since at least 1911 (Plan of Arlington Farm 1911). The old Georgetown-Alexandria Road (later renamed Arlington Ridge Road) at the toe of the slope was still in use, bounded on the east side by the defunct electric trolley from Washington to Mount Vernon. Telephone poles marked every hundred feet or so of the road. On the road's west side was the red Seneca sandstone wall of the cemetery built c. 1873. About 300 feet of the cemetery wall would be demolished when the avenue was constructed. Memorial Avenue crossed the Georgetown-Alexandria Road at an oblique angle. The cemetery entrance was located just west of that intersection. On the slope above the terminus of the avenue, trees planted or preserved by G.W.P. Custis were still in evidence.

Grading for the avenue was not excessive, except where the Rosslyn Connecting Railway had to be lowered to pass under the avenue. Doing so required that the railroad's alignment be shifted in that section 50 to 100 feet east of the existing line, formerly occupied by the Alexandria Canal. The axis of the avenue crossed land that rises gradually from about 30 feet at the brow of the first terrace to about 60 feet at the toe of the inland terrace. There was one "unfortunate" dip in this gradual ascent, which CFA chairman Charles Moore asked the National Park Service to correct in 1934 (Fisher, 25). This dip seems to still exist. To create the western footing for Boundary Channel Bridge, a prow of land was built out from the first terrace (Aerial photo: June 13, 1931, MRCE).

Construction of Memorial Avenue began in the summer of 1931. Grading for the relocated Rosslyn Branch was completed in October, and the underpass structure for the lowered tracks completed in January. (Chappell, 132-33) Perhaps for cost-cutting reasons, the avenue was paved with a different material than called for in the design (AMBC: Memorial Avenue to Cemetery, Temporary Paving, 6E7-4). The original plans must have called for a dark-colored paving because Kendall and the members of the Commission of Fine Arts were very unhappy with the effect of the light-colored concrete scored by dark expansion joints. Temporary curbs (presumably concrete) were also installed instead of the granite curbs specified. (Fisher, 23) The granite curbs were installed a few years later—perhaps in 1936 at the same time curbs were laid along the straight roadway of the bridge axis that still crossed Columbia Island, or at least by the time the lampposts were installed on the avenue c. 1938 (Photo: 2.12-42/8, NPS-NCR; AMBC: Street Curbs from Boundary Channel Bridge to Cemetery Entrance, June 16, 1931, 7A5-60). The Durax centerline of the Memorial Avenue roadway appears to have been part of the original design, and it was in place by 1935 (Photo: 2.12-38/35, NPS-NCR).

Designs for the cemetery gate were presented in the fall of 1931, and construction of the cemetery entrance began in the summer of 1932. By 1933, the wrought iron gates with the insignia of the

armed forces were installed (KressCox, 131-134). William Kendall wanted a sculpted figure for the central niche and sculpted figures representing the virtues of heroes for the flanking niches (Fisher, 22). By 1930, McKim, Mead and White had designed a fountain for the central niche, consisting of a broad shallow bowl on a sculpted pedestal. In 1935, the CFA approved a sculpture by Adolph A. Weinman that combined the figure of a warrior with a fountain. Although Weinman's design remained in the plans until the 1950s, it was never commissioned. The fountain that was to serve as the base for the sculpture was built, and photos from the 1940s until the late-1960s—and probably later—show a single spray of water rising about ten feet from a low basin (for example, Photo 2.12-38, April 23, 1942, NCR photos, temporary box 33, MRCE).

The design of McKim, Mead and White for the plaza in front of the hemicycle was comprised of only a few elements: sidewalks with flanking panels of grass, a decorative curb and lampposts. The sidewalks, curb and grass panels repeated the half-circle shape of the hemicycle and the rectangular shape of the courtyard. In the first drawings for the avenue and cemetery entrance, the designers left out the crossing of the Georgetown-Alexandria Road as if it was to be eliminated, but subsequent drawings provided details about how the two roads would intersect.

Changes to the plaza design occurred between 1931 and 1933, and even after parts of it were installed there were changes to the curbs and sidewalks. (AMBC: Memorial Entrance to Cemetery, General Plan and Elevations, February 2, 193l, 7A5-1) A drawing for the cemetery entrance from 1933 shows the dividing lanes of Memorial Avenue turning on an arc, rather than entering a somewhat undifferentiated plaza, as shown in an earlier plan. The divided avenue forms a wide "V" at the point where the lanes diverged. (AMBC: Memorial Avenue to Cemetery, General Plan, January 1933, 6E7-13) The "V" can be seen in photos from 1935 until the late-1980s. The decorative curb repeating the shape of the hemicycle and rectangular plaza can be seen in photos from 1935, but not after 1940. It was probably executed in concrete, like the other temporary curbs. (Photo: 2.12-38/28, March 15, 1935, NPS-NCR, reproduced at end of this section). The sidewalk was installed immediately adjacent to the hemicycle wall, instead of being separated from it by a grass panel as in the drawings (Photo: 1656-C, n.d. [c. 1943], Arlington National Cemetery Entrance folder, MRCE). Six Washington standard lampposts were positioned within the cemetery entrance plaza along the walkways. In a photo from 1988, a small guard kiosk is seen at the "V" of the dividing Memorial Avenue roadway, but it is not seen in photos taken in 1967 or before.

When built, Memorial Avenue was crossed by one road—the Georgetown-Alexandria Road—and was joined by two small roads. One of these, located west of the railroad underpass, led to the Experimental Farm. The other, probably an unpaved road, was located on the north side of the avenue and led to the granite storage yard and later to a CCC camp. Gilmore Clarke suggested in 1932 that the Georgetown-Alexandria Road be moved east near the railroad right-of-way and put in an underpass (CFA Minutes 5/27/32). In 1942, the Jefferson Davis Highway (Highway 110) was built to serve the Pentagon near the alignment Clarke had earlier suggested.

Planting Plans for the Project

William Kendall planned rows of deciduous trees to frame the long approach to the cemetery, inside of which would be clipped hedges of evergreen shrubs. Rows of trees were also to be planted along the Columbia Island cross-axis arms and around the elliptical plaza and the two circles at the ends of the cross axis. The hedge was to have eight or ten half-circle niches, where sarcophagi and similar memorials could be placed (AMBC: Cemetery Approach Plan showing Location of Lamp Post Bases and Niches, June 19, 1931, 7A5-12A). Kendall's design mentioned elm trees, possibly because those were the trees being planted in formal rows along the roadway that surrounded the Lincoln Memorial and on the Mall. Panels of grass were to edge both sides of the avenue's sidewalks. (See reproduction of McKim, Mead and White perspective drawing of Memorial Avenue at the end of this section.)

James L. Greenleaf was named consulting landscape architect for the Arlington Memorial Bridge Commission in the summer of 1931. He had earlier supervised the development of plantings for the Lincoln Memorial. He presented his landscape plan to the Commission of Fine Arts on August 5, 1931, suggesting dark evergreens (box, hollies, yews and pines) for the eastern bridge terminus to

match the planting scheme of the Lincoln Memorial. Greenleaf was a staunch supporter of Kendall's plans, but he nevertheless suggested the substitution of properly-scaled concrete walls covered in ivy for the evergreen hedges along each side of Memorial Avenue. Greenleaf thought the hedges would compete too heavily with the tree roots. Kendall and Grant liked his suggestion, but the next year the commission returned to the plan for the evergreen hedges. At a meeting of the CFA in October 1932, over Kendall's objections, Charles Moore argued against including niches in the holly hedges, saying that "if needed" they could be put in later. His expressed reason was to prevent unwelcome sculptures and memorials. (Fisher, 20-21)

Initially, U.S. Grant III, who headed the Arlington Memorial Bridge Commission, opposed rows of trees of any kind for Columbia Island, stating that they would be too dense and would block views. Eventually he must have relented, for the rows of trees along the cross axis roadways remained in the plan through 1940, though they were never planted (KressCox, 145). Rather than elms, Greenleaf and Grant preferred oaks for both the avenue and Columbia Island. Again, Kendall had no objection. Greenleaf was particularly adamant about the use of native plant species, and said he would be pleased if Columbia Island was completely planted in native oaks of various kinds, with no ornamental trees, not even native trees that might be mistaken for ornamentals (KressCox, 158). Whether Greenleaf ever suggested a particular species of oak for the avenue is unclear. In 1932, Gilmore Clarke named white oaks for planting on Memorial Avenue and red oaks for the formal rows bordering the cross axis roadways and their terminal circles on Columbia Island. He noted that "[t]here are many fine white oaks on the slope of Arlington Cemetery and it is thought that this species will make a fine, dignified, formal avenue of approach." (CFA Minutes 5/27/32)

Funds for about 200 oak trees and the holly hedge were appropriated in April 1934 (Fisher, 25). The white oaks (Quercus alba) were planted in the winter of 1935 and the American hollies (Ilex opaca) in 1936 (Photos: 2.12-38, nos. 28-35, March 15, 1935; [no numbers] May 5 and 27, 1936; and 2.12-42, no. 37, December 15, 1936, NPS-NCR). The 1935 planting plan for the avenue shows an evenly spaced row of trees approximately 40 feet apart behind the hedge on each side of the avenue. (See plan at end of this time period.) Trees in back of the first row are more randomly placed, although not scattered. This would give a formal appearance to the avenue and a more naturalistic one behind. Only about 140 trees are shown on this plan--less than the 200 for which there were funds. The plan does not show the area east of the railroad cut, where current evidence suggests that trees were not planted. Some of the remaining number of white oaks were likely planted near the cemetery gates, and a dozen white oaks appear in a planting plan of the same year for the area surrounding the hemicycle (described below). The avenue planting plan also shows how the hollies were to be spaced—in two rows, with the back row shifted to fill in the spaces visible through the first row. (National Park Service, Memorial Approach Drive Planting Plan, May 21, 1935, NPS 850/80459)

In October 1935, a planting contract for the area above the hemicycle (the terrace) and along the stairways leading to it was awarded to a Pennsylvania nursery. The plan included dogwoods (Cornus florida), hawthorns (Crataegus sp.), the dozen white oaks mentioned above, about 70 red cedars (Juniperus virginiana), and large numbers of shrubs—cotoneaster (five kinds), pyracantha (P. coccinea) and yew (Taxus cuspidata). (Fisher, 38, 40. NPS: 855/81063 or 2.1-63.) The cotoneaster was to be massed irregularly around the outer edge of the terrace, with cedars and some of the flowering trees mixed within the planting. More cedars and oaks were to be planted on the slope above. The yews were to be planted as a hedge lining the west side of the terrace, the stairs, and the fence up to the two cemetery entrance gates. In the late-1930s, Gilmore Clarke, by then the CFA chairman, began to guide decisions to lessen what he saw as "the excessive formality" of the McKim, Mead and White design. One of his first efforts was a plan to screen the hemicycle. He had an ally in the person of Frederic A. Delano, the chairman of the National Capital Park and Planning Commission and uncle of President Franklin D. Roosevelt. Plans were submitted by the National Park Service and approved by the CFA to plant red oaks in front of the hemicycle and ivy to grow up the walls (Fisher, 38). This plan was not reviewed for the current report. However, another undated NPS planting plan for the cemetery entrance from about the same period shows elms centered within the plaza in front of the hemicycle, swamp white oaks (Quercus bicolor) around the edges, and dwarf boxwoods alongside the main set of piers and at the central niche (NPS: 855/81099). Period photographs give no evidence that any of the trees or shrubs on either plan were ever planted. They show no vegetation other than grass in the area in front of the hemicycle until the 1960s. The yew

hedge can be made out in aerial photos from 1950, and the dark shapes of the cedars were prominent rising above the light granite hemicycle wall until construction of the Women in Military Memorial in the 1990s. Judging by the size of the cedars in photos from the 1930s, many of them probably already existed before Memorial Avenue. That slope had been part of the "park" cultivated by G.W.P. Custis in the nineteenth century.

Lighting for Memorial Avenue and Columbia Island

In April 1934, Charles Moore, still the chairman of the CFA, wrote to the National Park Service expressing his regret that the manufacture and installation of 40 bronze lighting standards for Memorial Avenue would have to be postponed, but urged the agency not to resort to the same expedient of using the ordinary District of Columbia street lights (Washington standards) as had been done on the bridge (Fisher, 25). At this time, depending on the plan consulted, there were either to be 32 or 34 lampposts installed on the avenue between the cemetery entrance and Boundary Channel Bridge. Photographs indicate that Memorial Avenue still did not have lighting in 1936. A plan from 1938 shows eighteen lampposts along Memorial Avenue (nine on each side), eight on Boundary Channel Bridge and ten on Columbia Island, where the bridge axis still crossed the island as a straight roadway (AMBC/NPS Branch of Engineering: Memorial Avenue to Cemetery, Installation of Street Lights, Jan. 8, 1938, 3E8-1, National Archives RG 79). The type of streetlight is not stated in the plan, but the size is given as No. 16 (16 feet high). The plan noted that ten No. 16 lampposts were "in operation" around the hemicycle and in the short section of the avenue above the crossing of the Georgetown-Alexandria Road, and 36 No. 17 lampposts were "in operation" on Memorial Bridge. The plan shows the lampposts between Boundary Channel Bridge and Georgetown-Alexandria Road in a staggered arrangement, not in parallel ranks, as they are everywhere else on the plan. It notes that the location of the lights is "indicated by the granite bases in place." Although it is difficult to be certain, photographic evidence seems to corroborate that the lampposts on Memorial Avenue were originally installed in the staggered arrangement shown in the 1938 plan (Photo: 2.12-42/ 41, NPS-NCR).

Originally, the light standards installed along the Columbia Island section of the bridge axis were the metal lampposts with "teardrop" globes used on the northern section of Mount Vernon Memorial Highway (Photo: 2.12-43/13, NPS-NCR). By 1938, Washington standards replaced the Mount Vernon Highway type of lamppost along the bridge axis (Photo: 2.12-42/11, NPS-NCR). When the straight roadway was taken out and the traffic circle on Columbia Island substituted in early 1940, NPS landscape architect Donald Kline asked the CFA whether the Mount Vernon Highway light posts should be carried around the circle. The commission advised that "the location demands the same formal treatment as the Memorial Bridge and Memorial Avenue, and the type of lamp standard used there should also be used on the cross axis of Columbia Island Plaza" (CFA minutes 1/19/40). A photograph from the mid-1940s shows the Washington standards in place around the circle (Photo: 886A/46, NPS-NCR).

George Washington Memorial Parkway

In May 1930, the Capper-Cramton Act authorized federal acquisition of additional lands on both sides of the Potomac for the development of the George Washington Memorial Parkway extending to Great Falls. The completed Mount Vernon Highway was to become a component of the larger parkway under the authority of the Office of Public Buildings and Parks. Authority for the parkways was transferred to the National Park Service in 1933.

The 1¼ mile section of the parkway from Columbia Island north to Key Bridge was the first section constructed. Taking up the argument for the practical use of Memorial Bridge as a traffic-carrier, NPS Director Arno Cammerer said the new parkway section was an immediate priority in order to reduce heavy traffic and congestion along M Street in Georgetown where cars lined up for the Key Bridge (Krakow 1990, 65). With a connection to northern roadways, more traffic would use the Memorial Bridge. By the summer of 1937, the Bureau of Public Roads had completed the rough grading and drainage for that part of the parkway, including the parallel roadways just north of the Arlington Memorial Bridge axis.

The Bridge Composition Between 1938 and 1941

The roads constructed on Columbia Island went through a rapid succession of changes between 1938 and 1943. By 1940, a cross axis of parallel roadways and a rotary circle had been constructed, which remained in place only until 1941. The parallel roadways were an effort to build Kendall's cross axis, but they only lasted a couple of years before being modified. The sequence is described below and the changes that were made are especially clear in the drawings found at the end of this section.

Parallel roadways to the north of the Memorial Bridge axis on Columbia Island were built by 1938 as a part of the George Washington Memorial Parkway project (Arlington County [map] 1938). They were about 800 feet long and were separated by a 200-foot-wide grass panel. Toward the northern end of the island, the roadways joined together and crossed Boundary Channel on a new bridge that connected them to the Lee Highway and the George Washington Memorial Parkway (GWMP), then in progress. In September 1938, the Bureau of Public Roads submitted to the CFA a design for a rotary circle of slightly more than 300 feet in diameter for Columbia Island Plaza. The design differed from Gilmore Clarke's 1934 submission in that the new design was simply a traffic rotary without a fountain, and it differed from the last McKim, Mead and White design by being a circle instead of an ellipse with two fountains. The new design was approved by the commission (CFA Minutes 9/29/38). A year later, in December 1939, the National Park Service presented a plan for two parallel roadways to the south of the circle, similar to the ones to the north. The rotary circle and the parallel roadways south of it were built in 1940 (KressCox, 157-158; Arlington County [map] 1940).

In a 1940 presentation to the Commission of Fine Arts, Donald Kline, the NPS landscape architect, suggested planting trees near the pylons on Columbia Island to bind the composition together as a simpler solution to the more expensive architectural treatment with the balustrade. He was advised by Gilmore Clarke, the commission chairman, to square the ends of the plaza (as Clarke had done in his 1934 plan) in order to make it "more monumental" (CFA Minutes 7/8/40; Longstreth 1991, Plates XCIV and XCV, 225). The planting of oaks along the cross axis roadways was still in the plans at this time, but when submitted for approval there was no money for the trees.

In September 1938, President Roosevelt authorized the Civil Aeronautics Administration to coordinate the construction of the new Washington National Airport, which would bring more traffic across Columbia Island. Five hundred acres were to be created by dredging and filling the Potomac River at Gravelly Point, between the 14th Street Bridge and Alexandria. The airport was fully operational by July 1941, and use of the older Hoover Field just south of Arlington National Cemetery was discontinued. (Fisher, 42)

For a brief time between 1940 and late 1941 a cross axis of roadways existed on Columbia Island. World War II, and the emergency construction of buildings and roads that the war generated, brought an end to this arrangement and greatly affected the landscape of Columbia Island and Memorial Avenue. The parallel roadways north and south of the rotary circle were redesigned. One roadway joined the circle on north and south sides, and its parallel twin was realigned as a curving road and routed along a lower grade to pass through small east span of Boundary Channel Bridge (Arlington County [map] 1943). A new roadway also ran along the west side of Boundary Channel, passing through the small west span in the bridge. On the east side of Columbia Island, north-bound traffic could bypass the rotary circle by following a new road through a span in the Arlington Memorial Bridge abutment.

1941 to 1951: World War II and the Immediate Post-War Years

One of the roads constructed to serve the Pentagon was the so-called "Heavy-Duty Road," the Jefferson Davis Highway (Highway 110), begun in late 1941. Generally a north/south four-lane road, it crossed Memorial Avenue just west of the railroad and, like the railroad, it was depressed in a tunnel under Memorial Avenue. Architect Paul Cret designed the grade-separation structure. The width of the road cut and its side slopes, especially on the south side of the tunnel, required the removal of a substantial number of the recently-planted oak trees and sections of the holly hedge. A photograph dated November 25, 1941 shows the hedge being removed (Photo: 2.12-42/44, NPS-NCR). The CFA and NCPPC argued in November 1941 against any roadway connections between Memorial Avenue and the Heavy Duty Road "in order to preserve the dignity of the approach to the Cemetery." But north and south connections were constructed, further interrupting the line of the oaks and holly hedges. (Fisher, 43) By 1943, a beltway surrounded Arlington Cemetery, lessening the use of the old Georgetown-Alexandria Road (Arlington Ridge Road), although it continued to carry through-traffic for at least another twenty years.

On the north side of Memorial Avenue close to Boundary Channel, in generally the same location where granite for the Memorial Bridge project was stored, and where later a CCC camp was housed in long wooden barracks, an army recreation tent camp was set up in 1941 (Photo: NPS 2.12-28/43, September 8 1941). On the opposite side of the avenue, in the former Experimental Farm fields, the Army began to build what became a small city of barracks-like buildings, called Fort Myer South Post. These were built to the edge of the Memorial Avenue boundary, about 200 feet behind the hedge. Streets and barracks for the South Post can be seen in two photographic airviews of Columbia Island and its surroundings (Photo: 1325-G, 1.10, August 14, 1950, Columbia Island, PH-6, PF-19, folder 1, MRCE). One of the buildings served the Bureau of Docks and Yards and had an entrance off of Highway 110 (in the present location of the parking garage for Arlington Cemetery Visitor Center).

In the years after World War II, U.S. Grant III, then affiliated with the NCPPC, lamented the condition of Columbia Island, describing its appearance as a "temporary road with an informal circle." He reminded the National Park Service and Commission of Fine Arts that "the central plaza on Columbia Island had never been undertaken and seems to be absolutely essential to link together the two parts of the project, namely the main bridge itself and the entrance to Arlington Cemetery." He also pressed for a suitable monument to occupy the niche of the hemicycle. In late 1947, Gilmore Clarke also pressed for the "restoration" of Memorial Avenue, "by which he meant at the very least the re-establishment of the principal landscape features: continuous rows of oaks behind a tall holly hedge." (Fisher, 44-45) Fisher states that 188 white oaks were presented to the United States by the Christopher Columbus Memorial Foundation after the war, and that they were planted along Memorial Avenue by the National Park Service (Fisher, 45). No planting plan for these later trees has been seen during research for this report. Where exactly they were planted, or if they were planted, is unclear. Two aerial photographs from 1950 show the trees along Memorial Avenue in fairly clear detail. Trees in the locations one would expect based on the 1935 planting plan appear to be no more than about 100 in number, and many of them seem similar in size.

The Equestrian statues on Memorial Bridge and the Parkway Entrance

The designs of Leo Friedlander and James Earle Fraser for the equestrian sculptures for the bridge and parkway entrance on the Washington side of the river had been selected by 1931. In 1938, it was decided to fabricate them in bronze rather than granite. However, bronze became a strategic metal during World War II, and the casting of the statues was delayed. At the Italian government's behest, the four statues were cast and gilded at foundries in Italy as "a gift from the people of Italy to the people of the United States" (plaque inscription on statues). In 1951, the massive sculptures were transported by barge up the Potomac River and placed on their pedestals. A formal dedication ceremony was held in September of that year. This marked the completion of the last unfinished element of the modified McKim, Mead and White design of 1923. (KressCox, 136-137)

Durax block roadway

1951 also saw the removal of the Durax block roadway from Arlington Memorial Bridge. It is not clear from this research why the granite blocks were removed; the action might have been related to problems of cleaning the roadway. Photographs from 1950 show cleaning of the bridge roadway being demonstrated (Photos: 2.12-32/45 and 1248-C/26, April 5 and 6, 1950, NPS-NCR). More likely, as suggested elsewhere, the granite surface may have slowed traffic—desirable for funeral processions but not for the daily commute across the bridge (KressCox, 221).

Buried granite

Variously-sized blocks of granite (some quite large) left over from the bridge project were buried in an area identified as “between Boundary Channel and the railroad about 772 feet north of Memorial Drive.” For “railroad” substitute the Metro alignment, which follows the approximate line of the older railroad tracks in this location. Most likely, this was the location of the project's stone storage yard, which was followed by the CCC camp, and in turn the army recreation camp. The size of the blocks and the configuration in which they were laid is shown in drawing NCP 8.3-38, dated August 2, 1941 (Photographic film, NPS-NCR Cartography Room).

1952 to 2002: Continuity and Change along the Memorial Avenue Corridor

The intended effect of the evergreen hedges and rows of white oaks planted in the 1930s was that they would frame Memorial Avenue and focus attention on the termini—the hemicycle on the Virginia side, with the Arlington mansion on the brow of the slope above it, and the Lincoln Memorial on the District side (see McKim, Mead and White perspective drawing, last section). This effect depended on the fullness and completeness of the planting.

The number of trees from the 1935 planting still standing in 1950 can be estimated by looking at two aerial photographs taken that year (Airviews of Columbia Island, August 14, 1950, 1325-G, 1.10, Abbie Rowe, Columbia Island, PH-6-PF-191, folder 1, MRCE). The photographs are clear enough that individual trees can be counted. In the section of Memorial Avenue between the cemetery gates and the Highway 110 cut, the aerials show approximately 60 trees on the south side and fewer than 50 on the north side. The construction of the highway left a long stretch on the avenue where there were no trees and none could be planted. Perhaps a few planted trees had survived the roadwork and could be found between the highway cut and the railroad cut. The area east of the railroad appears on the two aerials to be wooded rather than planted.

Although the American holly hedges were disrupted by the construction of Highway 110, the 1950 aerials do not reveal any gaps in the hedge except where the two ramps to the highway connect with the avenue, suggesting that the hedges had been replanted by that time. Where the avenue passes over the highway and railroad tracks, the hedges line up along the outer edges of the overpass as they do today. The aerials do not reveal any obvious differences in the size of the hedges from one end of the avenue to the other.

A 1963 survey of the trees along Memorial Avenue shows a slightly smaller number than were counted in the 1950 aerials (Arlington Farms Area and Horse Show July 17, 1963, NPS 850/80836). There is the conspicuous absence of six consecutive trees on the south side just west of the Highway 110 cut, leaving a total of only nine trees in the first row behind the hedge. The first row on the north side of the avenue was more like its appearance in 1950, missing only a couple of trees since the earlier count. Behind the first row, many trees were in the same locations on both sides of the avenue as in the 1950 aerials. The 1963 survey shows that some trees had a smaller dbh (diameter at breast height) than others. The smaller diameter trees may represent a later planting. Based on the 1950 aerials and the 1963 tree survey the number of trees along Memorial Avenue is clearly less than the 200 funded for planting in 1935.

In 1959, the National Park Service prepared a new planting plan for Memorial Avenue to show where niches for future memorials should be located in the holly hedges (NPS 855/81100, Revised 6/3/1960). The plan provided ten alternately semicircular or rectangular recesses in the hedge. Each niche would be created at the time a memorial was installed. The CFA adopted the NPS plan at its meeting in October 1959, emphasizing that the provision of niches for sculpture expressed the original wishes of William Kendall for a grand esplanade punctuated by monuments and memorials. The CFA added a stipulation limiting the depth of the recesses to ten feet. (Fisher 1991, 47) The 1959 plan depicts the rows of trees behind the hedges as they ideally would be—the first row evenly-spaced, without missing trees, and Highway 110 creating only a small gap. The plan, which does not have contour lines, does not make it clear that trees planted on the slope of the depressed highway would not register as equal in height with the trees planted at the same grade as the avenue. Other variations in topography, such the ditch behind the hedge on the north side, also seem to be ignored or minimized in the drawing.

Photographs suggest that the plaza in front of the hemicycle was replanted sometime around 1964 (Photo: 9169-A and others from 1964 to 1967, NPS-NCR). The main elements of this planting were crabapples underplanted with azaleas and edged with tulips in the spring and annuals in other seasons. These were planted within a wide planting bed that paralleled the walkway at the base of the retaining wall. This appears to have been the first time anything other than grass was planted in the plaza area.

Roads

Probably the main change affecting circulation on Memorial Avenue in the last 50 years has been the redirection of vehicular traffic to parking areas behind the south hedge—first to a parking lot and later to the visitor center parking garage—thus nearly eliminating vehicular passage through the cemetery gates, except for official use. The closing up of the old Georgetown-Alexandria Road (by then known as Arlington Ridge Road) is another important change. Running along the foot of the Arlington Heights slope, this road was older even than its 1810 incorporation into the Georgetown-Alexandria Turnpike. It remained in use for through traffic until sometime in the 1960s. The Army began to limit private automobile access via the main cemetery gates in the mid-1960s, when visitation increased dramatically following the assassination of President John F. Kennedy and his burial at Arlington. Visitors were directed to a temporary parking lot on the south side of the avenue, reached by a section of Arlington Ridge Road, which now terminated at the parking lot. Cemetery roads were redesigned and plans for a permanent visitor center proposed. By 1972, the section of Arlington Ridge Road on the north side of the avenue was closed and hollies were planted to fill the break in the hedge where the road had been. A new road from the cemetery's south gate, Eisenhower Drive, proceeded along the toe of the slope, perpendicular to Memorial Avenue rather than angled as Arlington Ridge Road had been. The small remaining section of Arlington Ridge Road, which led to the parking lot and the south section of the cemetery, remained in use until the construction of the visitor center and new parking garage in 1986-1988. (Fisher 1991, 47; Keyes, Lethbridge & Condon, Architects and Sasaki, Dawson and De May, Landscape Architects, n.d. [c. 1968]; also see drawings at end of this section.)

Road construction in the early 1960s in connection with the beltway (Interstate 495) encircling Washington, DC also affected roads in the vicinity of the Memorial Avenue corridor. By 1964, a ramp connected southbound GWMP—running along the west side of Boundary Channel—to the south side of Memorial Avenue. It merged with an exist lane from the northbound side of Highway 110. On Columbia Island, new roadways included another spur from Mount Vernon Memorial Highway that passed through the span in the Memorial Bridge abutment, and new lanes and a bridge—Boundary Channel Bridge, New—crossing from southbound GWMP onto Columbia Island. The latter change is outside the boundaries of this study. (See drawings at end of this section.) Just west of Highway 110, the small road that had originally provided access from Memorial Avenue to the Experimental Farm and later to the south post of Fort Myer was probably not closed until the cemetery expanded into that area sometime after 1968.

The construction of Theodore Roosevelt Bridge between 1960 and 1964 constituted another major change in the vicinity of Memorial Bridge, affecting many nearby roads, particularly those just north of the Lincoln Memorial. The new bridge spanned the Potomac River from a point at the foot of what had been known in the nineteenth century as Naval Observatory Hill—the location often proposed for Memorial Bridge before its location was finally decided in 1922. The new bridge crossed Theodore Roosevelt Island, as Analostan Island had been called since 1933.

In the mid-1970s, Washington's new rapid transit system, the Metro, was extended to Huntington, Virginia, passing through Alexandria. Its route went through government-owned land in the vicinity of the cemetery and Memorial Avenue, following the right-of-way of the old southern branch of the Pennsylvania Railroad. The Metro tunnel passed under Memorial Avenue in the same location as the old railroad tunnel, though the new tunnel is more perpendicular to the avenue. (The alignment of the Metro tracks just south of Memorial Avenue also follows a straighter course than the earlier rail line.) Metro's Arlington Cemetery station opened in 1976. Street level escalators and elevators to the underground station were inserted along Memorial Avenue (the elevators are contained within the line of each hedge). Oak trees (though not white oaks) were planted behind the hedge as part of the Metro construction.

Repairs and Changes to Arlington Memorial Bridge

The draw span on Memorial Bridge was raised for the last time on February 18, 1961. In 1964, emergency repair of the bridge deck revealed the urgency of a thorough inspection which was completed by the Washington engineering firm, Hazelet and Erdal, in February 1965 (Hazelet and

Erdal 1965, 4). The engineers' report described deterioration of both structural and non-structural elements of the bridge. Much of the deterioration was the result of moisture. The list of affected areas included cracks in the concrete slabs under the roadway and sidewalk, deterioration around expansion joints, settlement of fill at the east bridgehead, separation of some of the stones of the structure and their temporary repair with caulking instead of mortar, wearing of the already-replaced roadway surface; and sidewalk concrete that was badly eroding. Drawings for the work were approved in May 1965. As far as can be determined by this research, the repairs occurred over the next couple of years. The draw span was deactivated in 1965.

The bridge sidewalks were replaced following the 1965 inspection (Hazelet and Erdal 1965, 42). The report noted that the curbstones were nearly all intact, as were the inlet castings (frames and grates) of the bridge drainage system. There was mention of one curbstone broken on an arch span and one on the bascule span that was cracked (Hazelet and Erdal 1965, 11, 24). The report stated that light standards had never been installed on the moving leaves of the bascule span. Since the draw was to be permanently closed, it was recommended that four light standards be installed on the span. Apparently this was done, because a subsequent inspection in 1972 noted the absence of one light standard on the bascule (Hazelet and Erdal, July 1972). When the Durax granite block paving was removed from the bridge in 1951 and the roadway repaved with asphalt, the one-foot-wide centerline of darker-colored Durax block was reinstalled. During roadway repairs following the 1965 inspection, the Durax strip was continued over the bascule span. The L-shaped sidewalks along the Watergate wingwalls were replaced by a set of curving walkways in 1973, as part of sidewalk repair that apparently also included work on the matching parkway approach (Joseph et al, Lincoln Memorial Grounds: Cultural Landscape Report 1999, 63). In that year, concerts held on a barge moored at the Watergate steps were discontinued.

In 1985 the NPS embarked on another repair project for Arlington Memorial Bridge which also included work on the matching parkway approach. A major focus of this project was the installation of an impermeable barrier on the bridge deck and the approach road to prevent damage from de-icing salts. New asphalt was laid on the roadways, sidewalks were poured to match the previous sidewalks on the bridge and those in adjacent areas, and the granite curbs, removed for the project, were reinstalled. This project also provided for final deactivation of the draw span by shutting off the electrical mechanism. The wooden and concrete fenders that protected the draw span abutments from the impact of boats were removed at this time. The Special Provisions document for the project states that two steel light posts were to be fabricated and erected as replacements for missing ones and the existing posts cleaned and painted. Work also included removal of the access road along the top of the Watergate steps and planting the area with grass, installation of handicapped ramps, and widening the sidewalks on Columbia Island near the bridge from six to nine feet. (Documents in files at GWMP; KressCox 1986; Special Provisions, Project 154A, Arlington Memorial Bridge)

Planting around Memorial Circle: the Beautification Program and Planting Plan of Edward D. Stone Jr.

The Beautification Program initiated by First Lady Lady Bird Johnson in 1964 provided the impetus for the first large-scale planting of Columbia Island. Until then, Columbia Island was largely untouched by planting. The vegetation in the vicinity of Memorial Circle was comprised primarily of native willows and cottonwoods along the shoreline and a large stand of cottonwoods on higher ground south of the circle. Other native trees and shrubs had sprung up along Boundary Channel. Otherwise, there was mowed grass. The main features of the "Beautification" project as it affected the island were the planting of nearly a million daffodils and thousands of dogwoods beginning in 1967. The landscape architect Edward Durrell Stone Jr. was commissioned to draw up a master planting plan for Columbia Island. Carried out in phases, the planting was still being completed as of 2001. In the first phase which addressed the area around Memorial Circle, two hundred dogwoods, 38 pines and 18 scarlet oaks were planted. More pines were added in subsequent years, bolstering the original grouping beside each pylon and spreading north and south from the circle. More oaks and other deciduous trees were also added. Unfortunately, many of the dogwoods died, partly because of sun exposure. The park has recently replanted hundreds of dogwoods, many of them in locations around the circle. (See Cultural Landscape Inventory [CLI] for Lady Bird Johnson Park for full discussion of the Stone planting plan.)

Changes to the Lampposts around Memorial Circle

The lighting in the vicinity of Memorial Circle was changed for a second time, probably in the late 1950s. Washington standards were replaced with steel posts of a modern design with a hanging teardrop-shaped globe (Photo: MRCE: Columbia Island, PH-6, PF-19, folder 1, "Memorial Circle looking up Columbia Island, 9060-13F, Oct. 12, 1967). In 1990, these lampposts were removed and Washington standards reinstalled around the circle (GWMP files). Washington standards were also placed along the first approximately 200 feet of the roads—remnants of the old cross axis—that connect to the circle on north and south sides. A total of ten Washington standards (five on each roadway) were installed.

Memorials along Memorial Avenue

Almost immediately upon the approval in 1959 of space along Memorial Avenue for commemorative works, there was a candidate for one of the niches, a memorial to Admiral Richard Evelyn Byrd. The memorial is a heroic bronze portrait statue of Byrd sculpted by Felix deWeldon. Each of the memorials is described in detail in the Buildings and Structures section in Part 3 of this report, therefore the descriptions here are minimal. The hedges were replanted for each new memorial as either a rectangular or semi-circular niche.

After the Byrd memorial came the Veterans of the Spanish-American War and Philippine Insurrection (1898-1902), called "the Hiker," which was dedicated in 1965. Following that, a memorial to the Seabees, the construction battalion of the Navy, was dedicated in 1974. A memorial commemorating the service of the 101st Airborne Division in World War II and Vietnam was dedicated in 1977. The fifth memorial was dedicated in 1990 to the American Armored Force. The Women in Military Service for America Memorial, constructed in 1996 and dedicated in October 1997, was the next built. This memorial is discussed under its own heading in this section because of its prominent location at the hemicycle. The most recent memorial to be constructed on the avenue is the 4th Infantry (Ivy) Division Memorial, built in 2000. There are two other possible locations for future memorials on the avenue. These are near the hemicycle on opposite sides of the avenue. In addition, there is a site that has been selected in the area between the Metro line and Memorial Avenue Bridge. The site is located some distance behind the hedge, but could potentially encompass an area behind the hedges on both sides of the avenue.

The Visitor Center and Parking Garage for Arlington National Cemetery

Department of Army plans for a new visitor center for Arlington National Cemetery and a visitor parking facility were approved by the National Capital Planning Commission (NCPC) on October 2, 1986 (NCPC Report to the Dept. of the Army and NPS, NCPC File No. 2548 GWMP files). Construction of the two structures was completed in 1988. The visitor center is located on the south side of Memorial Avenue, about halfway between the hemicycle and Highway 110. It is sited about 60 to 80 feet behind the hedge, within the original Memorial Avenue boundary. The parking garage is located southeast of the visitor center, built into the slope above Highway 110, and is accessible only from Memorial Avenue. It sits in approximately the location formerly occupied by buildings of the Bureau of Yards and Docks. Only the driveway to the garage falls within the boundaries of Memorial Avenue. The National Park Service transferred 2.43 acres to the Department of Army for the visitor center, its surrounding courtyard, and the driveway to the garage.

Construction of the visitor center affected the avenue in a number of ways. By directing vehicles to the parking garage and drawing visitors through the center, it diminished the functional and historical roles of the of the memorial entrance, or "Great Entrance," to the cemetery (Fisher 1991, 47). The building, plaza, and driveway required the removal of at least a dozen white oak trees and resulted in the loss of other trees between the building and the north gate. Some trees planted as replacements, particularly on the plaza, are not white oaks but swamp white oaks. An approximate 30-foot-wide opening was made in the hedge for the entrance to the building and a similar size opening for the driveway to the parking garage. Along with these openings in the hedge, the grass panel along the south side of Memorial Avenue was also further interrupted with paving. Short barberry (Berberis sp.)

hedges line the pedestrian entrance. Gates built for both of these entries are comprised of tall, painted steel picket gates attached to granite-faced pylons. Signs for the visitor center are also new elements on the avenue. The positioning of the entrance to the visitor center required the relocation of the Admiral Byrd Memorial and removal of one of the lampposts. Lights installed for the project are on short posts. On the paved plaza around the building, the lampposts are eight-feet high, and along the walk from the visitor center to the cemetery, the posts are only two feet high. The army agreed to shut off these lights when the cemetery closes for the night, presumably so as not to compete with the avenue's lighting scheme. Another change was the removal of the guard kiosk at the hemicycle entrance. Today, movable metal barricades are positioned midway down Memorial Avenue where guards direct traffic into the parking facility.

Construction of Women in Military Service for America Memorial at the Hemicycle

In 1988, the hemicycle was selected as the site for the proposed memorial to commemorate the military contributions of women. The design of Marion Weiss and Michael Manfredi was selected from a competition in 1989 and construction of the memorial began in 1996. The area behind the hemicycle wall was excavated to create room for an exhibition space and a 200-seat theater. The hemicycle's façade was changed only in minor ways. Two of the five niches on each side were cut through to become stairways to the terrace along the top of the wall. The terrace is broader than the original one and forms the roof of the new center. Part of it is glass and bears etched inscriptions that throw shadows inside the building. The new terrace merges in a smoothly-graded arc of grass with the slope of the cemetery behind.

The redesign of the plaza in front of the hemicycle, which is part of the memorial, introduced a large circular pool fed by a fountain and rill. Formal double rows of little leaf linden trees (Tilia cordata) are planted on each side of the plaza and underplanted with periwinkle (Vinca sp.). When the trees are larger, they will be clipped into an aerial hedge. The grass panels along each side of Memorial Avenue are carried through the plaza and around the base of the hemicycle. Walkways of granite-like pavers divide the ground plane into squares and arc segments. The same pavers are used for the central part of the plaza. Stout granite bollards mark where the Memorial Avenue roadway divides to enter the north and south gates of the cemetery.

Recent work on the Memorial Avenue Bridge (Boundary Channel Bridge)

Memorial Avenue Bridge (Boundary Channel Bridge) underwent repair of its roadway and cleaning of stonework in 2001 and 2002, under the direction of the Federal Highway Administration (NPS 850/41957). The Durax roadway, curbs and sidewalks had to be temporarily removed in order to seal the deck and other areas from moisture. Following the installation of a waterproofing membrane, the Durax blocks were relaid to approximate the original fishscale pattern. Problems were encountered with the mortar mix with the result that the appearance of the roadway now diverges significantly from its historic appearance. In the historic roadway, spaces between the Durax blocks created a shadowed effect, which made the pattern legible. In the repaired roadway, the mortar is flush with the top of the granite blocks and the pattern is obscured. The granite curbs and header stones were also relaid (some of these may be replacements) and the aggregate sidewalks of the bridge were repaved. No reference to a prior repaving of these sidewalks has been found in this research. It is very likely that, except for numerous spot repairs with asphalt, this was the only time that the sidewalks on Memorial Avenue Bridge were repaved since they were originally installed. This project will also include repair of the west approach to Arlington Memorial Bridge.

2018 - Present: Changes to the Memorial Avenue Corridor

In 2019, DOI transferred 16.09 acres of land to DOA that included Memorial Avenue from the Hemicycle to the western side of the VA Highway 110 overpass. Note that as of FY2024, a CLR is in progress for the Memorial Avenue Corridor and that during the next update to this CLI the full impact of this land transfer needs to be evaluated and the CLI needs to be revised to reflect the impact of this action, using information from Part 1 of the completed CLR. Following the execution of this land transfer, Arlington Nation Cemetery renovated the west end of Memorial Avenue. This work included installing holly plantings, a new irrigation system, turf installation, curb-line repair, and repaving the roadway. In 2022, GWMP restored the holly hedge along the portion of the avenue under NPS management, which included removal and replanting of 146 American holly trees and 2 white oak trees (PEPC 108522).

During this same period, the park completed rehabilitation activities along other portions of the corridor, as well. Between 2018 and 2020, GWMP added safety enhancements to Memorial Circle as a result of the Memorial Circle Safety Improvements Environmental Assessment (PEPC 51448). Changes included higher visibility crosswalks, new signage and rapid flashing beacons, new pavement striping, and raised pavement markers (PMIS 304947). In 2020, the park completed a project to rehabilitate Arlington Memorial Bridge, which included permanently removing the bascule span and replacing it with a fixed span of variable depth steel girders (PEPC 37120, PMIS 224626). Two sections of railing at Arlington Memorial Bridge were damaged due to vehicular impact following completion of the rehabilitation (PEPC 112804; PMIS 327179). The park will repair the damage in FY2024, by installing new or salvaged balustrades, plinths, and railings that will match the adjacent materials.

In 2023, WMATA began a two-year project to modify the entrances to the Arlington National Cemetery Metro Station on Memorial Avenue, which includes demolition and replacement of the north parapet wall and installation of new canopies over both the north and south metro escalators (PEPC 112438). Also in 2023, GWMP removed the black, granite Seabees Memorial panel due to the failure of the ferrous anchors that attach it to the concrete memorial (PEPC 115122; PMIS 335022). As of 2024, restoration of the memorial is ongoing.

Uses

Functions and Uses:

Major Category	Category	Use/Function	Historic	Current	Primary
Funerary	Funerary-Other	Funerary-Other	Yes	Yes	No
Government	Monument (Building)	Monument (Building)	Yes	Yes	No
Landscape	Esplanade	Esplanade	Yes	Yes	No
Landscape	Parkway (Landscape)	Parkway (Landscape)	Yes	Yes	No
Recreation/Culture	Outdoor Sculpture (Statuary)	Outdoor Sculpture (Statuary)	Yes	Yes	No
Recreation/Culture	Recreation/Culture-Other	Recreation/Culture-Other	Yes	Yes	No
Transportation	Road-Related	NPS Class VII Urban Parkway	Yes	Yes	No

Public Access:

Public Access: Other Restrictions

Public Access Narrative:

Public Access: With Permission

Public Access Narrative:

Associated Ethnographic Group

Ethnographic Study Status: No Survey Conducted

Ethnographic Narrative:

Analysis & Evaluation of Integrity

Analysis and Evaluation of Integrity Narrative Summary:

Certain features of the Memorial Avenue corridor have greater integrity than others. For instance, Arlington Memorial Bridge, the smaller bridge over Boundary Channel, the associated pylons and statuary, and the hemicycle and cemetery entrance have high integrity, while some of the small-scale features and the vegetation are more compromised. In its use, too, though largely a commuter thoroughfare, the corridor continues to function as a formal route to Arlington National Cemetery and a gateway to the capital city, which were among its main purposes. A property's integrity is usually discussed with reference to the following seven aspects.

Location: The major features that shaped the choice of location for the corridor are intact. The Washington Mall, Lincoln Memorial, Potomac River, Columbia Island (Lady Bird Johnson Park), Boundary Channel, the broad first terrace on the Virginia side of the river, and Arlington House are all in the places they were.

Design: The site and its structures reflect the original design. There has been some loss of integrity as a result of the construction of a highway through the corridor, albeit tunneled below it, and the accompanying changes to the white oak borders. A cross axis of roadways existed at Memorial Circle briefly, faintly resembling one part of the original design that was never built, but even these were soon changed.

Setting: The Potomac River setting of the Memorial Avenue corridor is recognizably like the setting during the period of significance, with some important differences. The addition of various highways, a succession of changes to the surrounding Department of Army lands, and the urban development associated with the Pentagon and Rosslyn are the most significant of these.

Materials: The materials from which the Memorial Avenue corridor was constructed have a high degree of integrity. There are losses, particularly of a large segment of the white oak border and the granite block roadway of Arlington Memorial Bridge.

Workmanship: The workmanship of the site retains high integrity with some exceptions.

Feeling: The intrusion of Highway 110 under Memorial Avenue, with roadways joining the avenue, the heavy commuter traffic that affects much of the corridor, and the creation of a Metro station, with elevators and escalators on Memorial Avenue, create breaks in the design and lessen the feeling of solemnity intended for the Memorial Avenue corridor. Arlington Memorial Bridge, with its massive statues and pylons and the visual terminus of the Lincoln Memorial, still has the feeling of a special entry to Washington, D.C. Memorial Avenue Bridge does not have the volume of traffic affecting the circle and the main bridge, and the grand cemetery entrance draws one along as intended.

Association: The corridor retains its association with Abraham Lincoln and Robert E. Lee via the memorials at either end of it. The fact that the axis was drawn to symbolically connect these two figures and convey a reconciliation of the North and South is probably not a general understanding, although it was at the time of the corridor's construction. Nevertheless, because these features are intact, the associations can be understood and appreciated.

As of FY2024, a Cultural Landscape Report (CLR) for the Memorial Avenue Corridor is in progress. During the next update to this CLI, information from Part 1 of the completed CLR should be used to revise the Analysis and Evaluation of the cultural landscape. This will include removing landscape characteristics and features as appropriate to reflect the change in management from DOI to DOA of 16.09 acres formerly within the Memorial Avenue Corridor CLI boundary as part of a 2019 land swap between the two departments (see the Geographic Information section of this report for additional information).

Landscape Characteristic: **Archeological Sites**

There are no known archeological sites within the Memorial Avenue corridor. Archeological sites are located less than a mile from the avenue, both north and south of it. The created land that is the base from which Arlington Memorial Bridge begins its span on either side of the river is an unlikely location for archeological deposits, but the natural river terrace that Memorial Avenue crosses could possibly contain resources. (See prehistory discussion in the first section of the history in this report.)

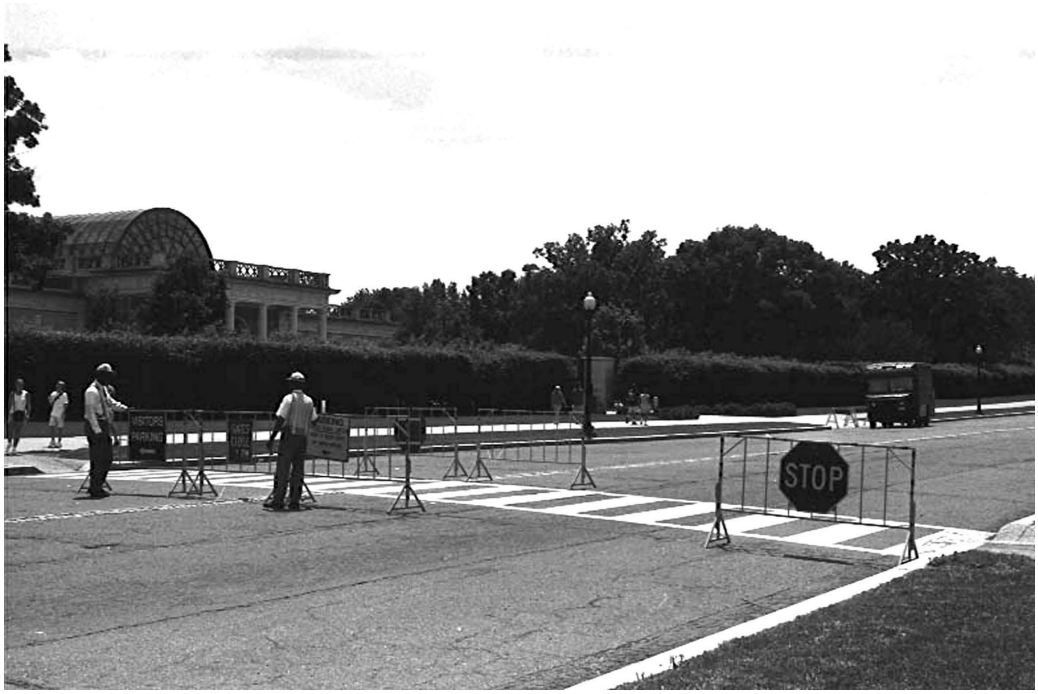
Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
	100850	Undetermined					No

Landscape Characteristic Graphics:

Memorial Circle seen from the north. White pines are massed near pylon. (CLI team, winter 2001)

Memorial Avenue Bridge leading to Memorial Circle. Arlington Memorial Bridge and Lincoln Memorial in distance. New sidewalk was laid after this photo. (CLI team, winter 2001)



Movable barricades in Memorial Avenue roadway help direct traffic to parking garage for Arlington National Cemeber. The cemetery visitor center is visible behind the hedge. (CLI team, summer 2000)

Visitor Center walkways. On right, looking east, wide walk leads from tourmobile stop to visitor center. On left, looking west, a serpentine path leads to cemetery and tour beginning point. (CLI team, summer 2000)

Equestrian statues by Leo Friedlander, "Valor" in foreground and "Sacrifice" across the road, are together called The Arts of War. At the east end of Arlington Memorial Bridge, looking north. (LCS team, 2001)

Arlington Memorial Bridge south elevation, looking west. (HAER DC 7-6, December 1988)

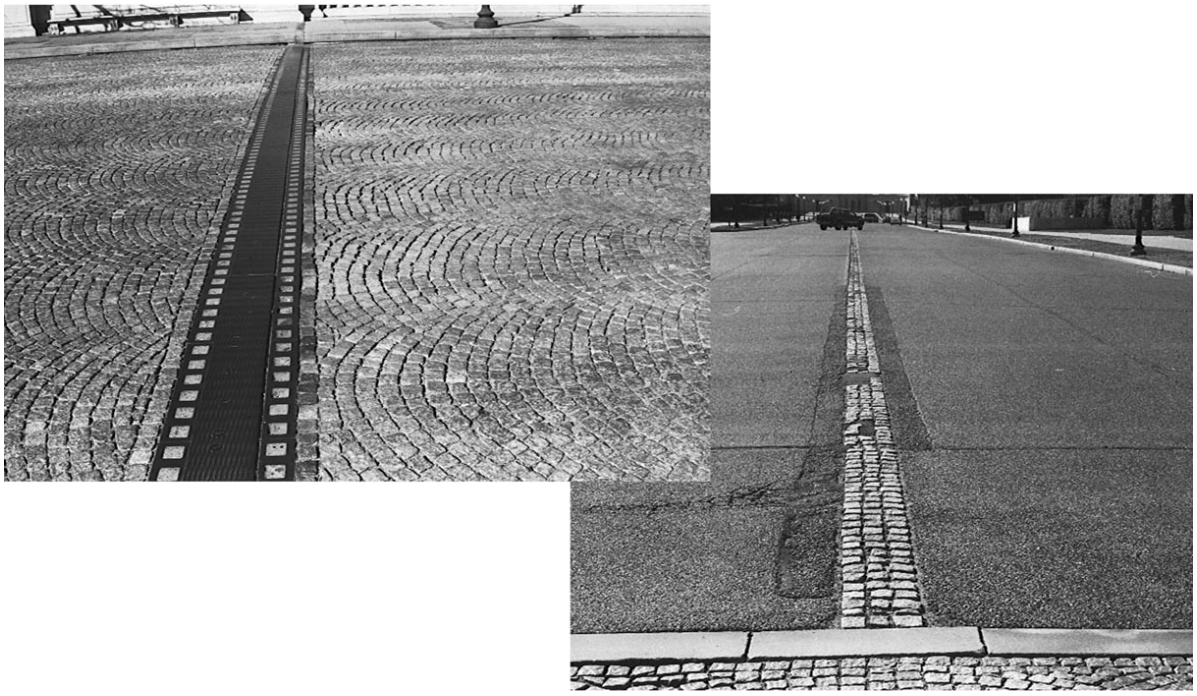
Memorial Avenue Bridge (Boundary Channel Bridge) looking east past Memorial Circle to Lincoln Memorial. Granite block surface of bridge is visible. Sidewalk condition is before recent repair. (CLI team, winter 2001)

Hemicycle at Arlington National Cemetery Great Entrance. Plaza has been redesigned as part of the Women in Military Service Memorial. Large pool at center of plaza is part of the new design. (LCS team, summer 2001)

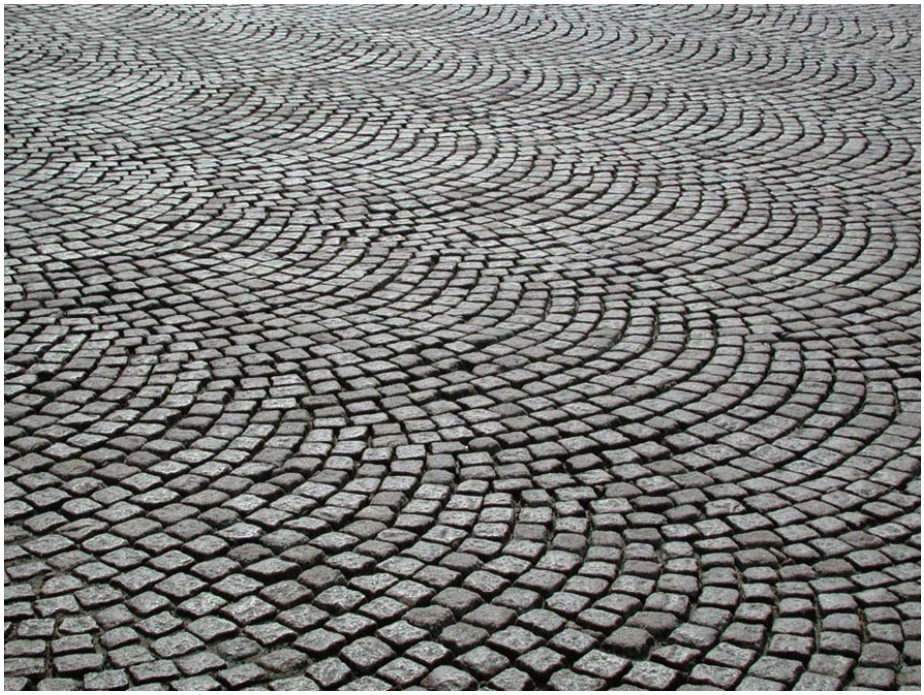
North gate of Arlington National Cemetery with pedestrian passage through gatehouse, looking south. Hemicycle is on the right. (CLI team, fall 2000)

Elevator on Memorial Avenue to the Metro station below ground. (CLI team, summer 2000)

Lampposts known as Washington standards, with single globe, line Memorial Avenue, both bridges and surround the circle. Roadway asphalt is cracked along scoring in underlying bituminous concrete. (CLI team, winter 2001)



"Durax" roadway of Memorial Avenue Bridge with metal expansion joint, left photo. Photo on right shows granite headers at west end of bridge with "Durax" centerline of Memorial Avenue. (CLI team, winter, 2001)



Intricacy of fishscale pattern is readily apparent in this photo taken before bridge repair. Now mortar completely fills spaces between granite blocks. (CLI team, summer 2000)

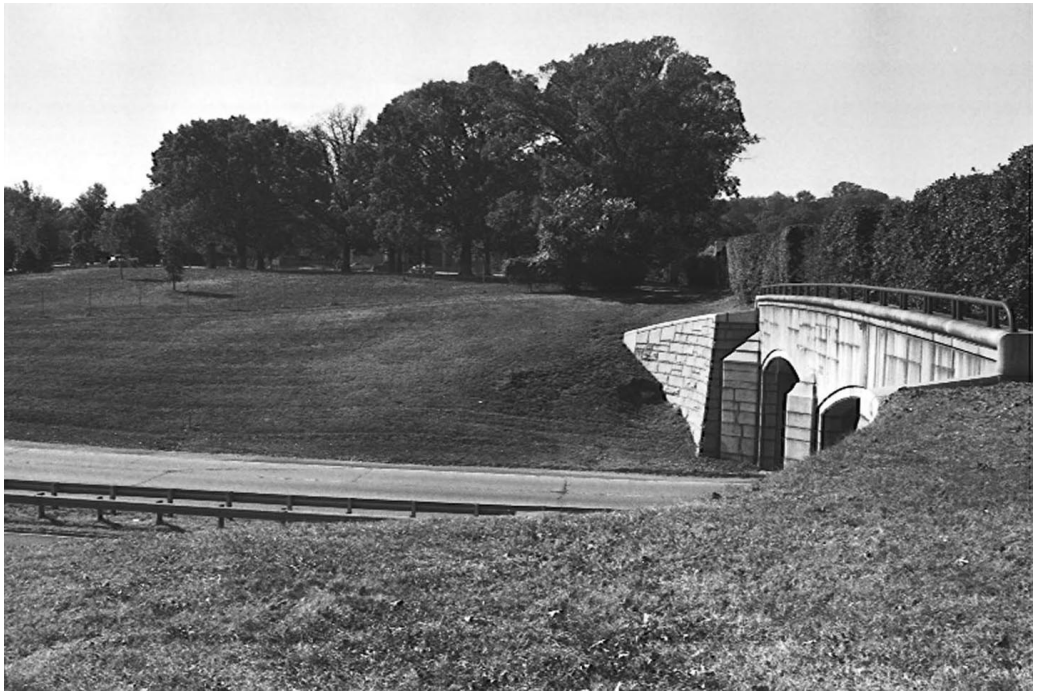
Signs on Memorial Avenue lead traffic to Highway 110 ramp (leading south to US 1). Larger sign on grass panel directs cars to Arlington National Cemetery parking garage. (CLI team, summer 2000)

Closer view of sign for Arlington National Cemetery visitor parking. (CLI team, fall 2000)

Catch basins along Memorial Avenue. Convex shape of grate to left is evidence that it is the original designed by McKim, Mead and White. (LCS team, summer 2001)

Trash can at left is found on Memorial Avenue near Metro escalator. Similar cans are found at entrance to cemetery visitor center. Trash can on right is at plaza of hemicycle. (LCS team, summer 2001)

The axial spatial organization of Memorial Avenue is depicted in this photo. In foreground is plaza at hemicycle and in distance is curved profile of Arlington Memorial Bridge with the Lincoln Memorial terminating the axis. (LCS team, summer 2001)



Highway 110, which passes below the avenue, interrupts the "walls" of the avenue provided by white oak trees. View from behind hedge on the south side of the avenue looking west. (CLI team, fall 2000)

Fall color of white oaks along Memorial Avenue, from a point about midway down the avenue. (CLI team, fall 2000)

View of holly hedge and white oaks from Arlington National Cemetery visitor center. Admiral Byrd Memorial is not quite opposite visitor center entrance. Low barberry has been planted at corners of entrance walkway. (CLI team, fall 2000)

Line of white oaks on north side of avenue as seen from behind the hedge. Vegetation on right is part of thicket that lines a drainage ditch. Hemicycle is faintly visible in distance. (CLI team, fall 2000)

Two newly-planted white oaks in lawn west of visitor center, looking north. Thin section of hedge toward center of image is where Arlington Ridge Road formerly crossed. (CLI team, summer 2000)

Full planting of white oaks, much like what was planned in mid-1930s, is found east of driveway to visitor center parking and continues for about 400 feet to the Highway 110 slope. (CLI team, fall 2000)

Oaks in fall color from plaza of Arlington National Cemetery visitor center. Swamp white oak in foreground has tan leaves rather than bluish red of white oaks. Spaces are visible in the white oak canopy. (CLI team, fall 2000)

View of gap in "wall" of white oaks along Memorial Avenue, looking south. Ground behind hedge where trees are absent slopes down to Highway 110. (CLI team, fall 2000)

View of Memorial Avenue from hemicycle plaza east to Lincoln Memorial. Pool of redesigned hemicycle plaza is in foreground. Pylon on south side is missing tripod vase. (CLI team, fall 2000)

Looking north from Memorial Avenue, City of Rosslyn can be seen in distance. Highway 110 passes in tunnel below avenue at this point. (CLI team, summer 2000)

Another view of Rosslyn from approximate midpoint of avenue, where missing trees in second and third rows result in openings in the "wall" of trees. (CLI team, summer 2000)

Landscape Characteristic: Buildings and Structures

The Memorial Avenue corridor is primarily an architectural/engineering work and a roadway

bordered by formal plantings. There are a number of individual but related structures within the composition. Nearly all were designed by McKim, Mead and White. Memorial Avenue's contributing buildings and structures have high integrity both as a group and individually. Each of these structures and their contribution to the overall integrity of the corridor is discussed below.

Arlington Memorial Bridge

The Arlington Memorial Bridge spans the Potomac River on an axis drawn from the Lincoln Memorial in Washington to Robert E. Lee's home (Arlington House) in Virginia. It is the main part of the composition connecting the Lincoln Memorial and the memorial core of Washington with Arlington National Cemetery. William Mitchell Kendall of McKim, Mead and White designed the bridge, closely following the conception of Charles Follen McKim.

The bridge consists of nine broad arches, which include a double leaf bascule span in the center and four masonry arches on either side, plus an underpass arch in each abutment. The span lengths and rise of the arches increase progressively from the shore to the center of the river to create the pleasing overall profile. From the equestrian sculptures at the east end of the bridge to the pylons at the west terminus, the bridge measures 2,138 feet. (This figure is recorded in the HAER record; the National Register nomination cites 2,163 feet.) The bridge deck is 90 feet wide with a 60-foot-wide roadway and 15-foot-wide sidewalks on either side. Reinforced concrete, which forms the substructure of the bridge, is dressed with granite from the Mount Airy Quarry in North Carolina, a light-colored stone with a bush-hammered finish. The ring stones of the arches are load-bearing and the rest of the granite is veneer or ornamentation (HAER). The piers have bas relief eagles in 12-foot discs designed by C. Paul Jennewein. Jennewein also sculpted the 8-foot eagles that top the four pylons on Columbia Island—two at the west end of Arlington Memorial Bridge and two and the east end of the subsidiary bridge over Boundary Channel (Memorial Avenue Bridge). Alexander Phimister Proctor designed the bison head keystones of the bridge spans. Granite balustrades with recessed benches on top of each pier delineate the upper edges of the bridge. A pair of monumental neoclassical equestrian sculptures on identical pedestals adorns the east end of the bridge. The sculptures are referred to as "The Arts of War" and were designed by Leo Friedlander. A matching pair of statues called "The Arts of Peace," designed by James Earle Fraser, flank the approach to Rock Creek and Potomac Parkway on the north side of the Watergate steps.

The bascule (vertical lift draw span)—now permanently fastened and inoperable—is of the double leaf, underneath counterweight type, faced with pressed ornamental molybdenum steel to blend with the masonry spans. It was one of the longest (216 feet), heaviest (3,000 tons), and fastest (one minute) such draw spans in the world (Mackintosh, National Register Nomination). Because of decreased shipping traffic on the Potomac and the construction of a fixed, low-clearance bridge down river, the bascule span was permanently fastened in the closed position in 1965. Further work to fasten the bascule seems to have been carried out in the mid- to-late 1980s (KressCox 1986).

The roadway of the bridge is surfaced with asphalt. When it was first built, it was paved with 3½-inch granite blocks called "Durax," laid in a pattern of interlocking arcs, described as fishscale- or fan-shaped, similar to the paving that still exists on Memorial Avenue Bridge. Only the original Durax block median (center line) remains of this paving on the larger bridge. Special lampposts were designed for the bridge but never manufactured. Instead, Washington standards (possibly the style designed by Francis Millet) were installed on the bridge in 1932 so the bridge could be opened in time for the celebration of George Washington's 200th birthday.

Repairs, including deactivation of the bascule, were made to the bridge in the 1960s and the 1980s. These included sealing of the roadway deck with an impermeable membrane to prevent corrosion from de-icing salts. When the vertical lift drawspan was made inoperable, four lampposts were added to that section of the bridge. The metal bascule span, which is shaped like the granite spans, was repainted in the late 1980s to more closely resemble the color of the granite arches and balustrades. GWMP completed a project to rehabilitate Arlington Memorial Bridge in 2020, which included permanently removing the bascule span and replacing it with a fixed span of variable depth

steel girders (PEPC 37120, PMIS 224626).

The removal of the granite block paving in 1951 from the bridge roadway detracts from its integrity, but the number of other features that are intact overweighs this so that the bridge still retains high integrity.

Memorial Avenue Bridge

Memorial Avenue Bridge, originally called Boundary Channel Bridge, carries the roadway of the corridor across the narrow channel between Columbia Island and the Virginia shore. The bridge is officially called Arlington Memorial Bridge: Boundary Channel Extension, but that name is not heard in general speech. The bridge's central semicircular arch spans the channel. Segmental-arched openings on either side of the central arch allow the passage of roadways parallel to the channel. The bridge complements the main bridge in its various design elements. Like the main bridge, it is faced with North Carolina granite, and has similar balustrades, benches, lampposts, and bison keystones in the central arch. Two 35-foot tall pylons (matching the pair on the west side of Arlington Memorial Bridge) mark the Columbia Island entrance to the bridge. Like the pylons of the main bridge, the pylons conclude with a shallow stepped pyramid and are capped by the 8-foot-high sculpted eagles. At the west end of the bridge are low pylons with minimal sculptural decoration. The roadway is surfaced with granite block in the interlocking arc pattern. Like the main bridge, the smaller bridge carries a 60-foot roadway and wide sidewalks edged with light-colored granite curbstones. During 2001-2002, this bridge was repaired to correct for moisture damage. The roadway blocks, curbs and sidewalk were taken up and later replaced. However, in the process, the superior workmanship exhibited by the original Durax paving has been lost. Because this is only one of many elements of the bridge, nearly all of which are intact, integrity for Memorial Avenue Bridge, like the main bridge, remains high.

The Hemicycle and Cemetery Entrance Plaza

Memorial Avenue ends at a plaza framed by the large neoclassical composition of hemicycle, pylons and gates. The plaza was called the "Court of Honor" in early documents. Together all these element formed one "Great Entrance" to Arlington Cemetery, as titled in the architect's drawings. The granite-faced hemicycle, comprised of a semi-circular exedra-like structure with flanking straight walls, rises 30 feet. Behind the wall, at the top, is a terrace which originally was reached only by staircases at the ends of the straight walls. Since its adaptation as the memorial for Women in Military Service, there are two other staircases as well. All of the features of the "Great Entrance" serve as the terminus to Memorial Avenue. The half-circular section is 180 feet across with a radius of 90 feet. (As shown on drawings, the diameter of the hemicycle lines up with back of the holly hedges that line the avenue.) The flanking walls are 60 feet long. Within the hemicycle are 11 niches, five on each side, with a larger central niche or apse. Above the central niche, the wall of the hemicycle projects above the rest of the retaining wall approximately ten feet.

Some features of the hemicycle were altered as called for in the design of the Women in Military Service Memorial. Space was created behind the hemicycle wall to house various rooms. New staircases utilize two of the hemicycle's niches and lead to the rooms within the memorial and to the terrace.

An equestrian figure was first proposed for the central niche, but the design that was presented by McKim, Mead and White shows a fountain comprised of a shallow basin on a pedestal and no sculpted figure. The architect for the project, William Kendall, had also planned that the smaller niches would hold sculpted figures, but this idea was never pursued by the overseeing agencies. By 1935 a sculpted figure by Adolph Weinman had been approved for the central niche. It remained in the plans for almost 20 years, but eventually was abandoned. His design was for a low basin which was to hold a fountain and sculpture. Only the basin was executed. From it, a single jet of water rising about 10 feet can be seen in photos from the early 1940s through the 1960s. This water feature may or may not have continued in operation after the 1960s.

When the entrance plaza was first built, a decorative curb paralleled the footprint of the hemicycle

about 20 feet from the wall and continued parallel to the other sides of the plaza to connect with the curbs of Memorial Avenue. Sidewalks were installed around the base of the hemicycle, c. 1940, and the curb was removed. The very simple treatment of the space in front of the hemicycle, comprised of grass, walkways, lampposts, the jet of water, and the divided roadway of Memorial Avenue, was embellished c. 1964 with crabapple trees, azaleas, tulips, and annuals. This arrangement remained largely unchanged until 1996, when the Memorial for Women in the Military was constructed. The existing plaza was redesigned as part of the new memorial. The new plaza design features a large circular pool that fits partly within the arc of the hemicycle wall. A rill feeds water from a smaller basin located in the central niche. Plantings, walkways, and new paving are other elements. Granite bollards define the roadway. Formal, double rows of little leaf linden trees (Tilia cordata) are planted on both sides of the plaza. The grass panels along each side of Memorial Avenue are carried through the plaza and around the hemicycle. Walkways of granite-like pavers divide the grass panels and ground beneath the trees into squares and segments of an arc along the hemicycle wall. The same pavers are used throughout the rest of the plaza.

Though the plaza has gone through a number of changes, it retains many of its original features—in particular the framing elements of hemicycle, pylons, wrought iron fence and gates. The changes that the Women in Military Service Memorial has brought to the plaza recapture some parts of the original design, i.e. the continuation of the grass panels from the avenue around the hemicycle wall. Changes to the hemicycle wall, such as opening up stairwells through some of the niches, do not detract from its integrity either, and come within the rubric of adaptive reuse. A notable loss is the tall spires of cedar trees (Juniperus virginiana) that used to rise above the wall. The hemicycle and entrance plaza are contributing features and retain high integrity.

Cemetery Entrance Gates, Pylons, Gatehouses and wrought iron fence

Massive wrought iron gates with the insignia of the armed forces are located on the north and south sides of the cemetery entrance plaza at the hemicycle. Each gate is framed by a set of gatehouse-like structures, shorter than the pylons, made of granite, and capped with shallow stepped pyramids and sculpted eagles. Arched passages through the structures are pedestrian walkways. Pylons mark the corners of the plaza and support the 14-foot-high wrought iron fence that partly encloses it on north, south and east sides. Tripod vases, executed in granite, cap these pylons, as opposed to those on Columbia Island which are capped by sculpted eagles.

These features remain largely unchanged. One change is that the pylon at the north end of the hemicycle wall now contains an elevator to reach the terrace, installed in connection with the Women in Military Service Memorial. Another pylon is missing its tripod vase; the entire pylon fell over during construction of the memorial. Replacement is planned.

The Equestrian Statues

The 1923 design for the Arlington Memorial Bridge called for pylons at both ends of the bridge. Within a short time, rectangular pedestals were substituted for the proposed pylons at the east bridgehead and the parkway entrance, and it was decided these would form the bases for sculptures. Leo Friedlander's preliminary drawings for sculptures of equestrian groups for the bridge entrance were approved in 1929. In 1931, a pair of sculptures with similar figural groupings and of complementary theme was designed by James Earle Fraser for the parkway entrance to the bridge plaza (Kohler 1995, 24). In 1938, it was decided to cast the massive statues in bronze rather than sculpt them in granite. However, because bronze was a strategic metal during World War II, their fabrication was delayed. At the Italian government's behest, the four statues were cast and gilded at foundries in four Italian cities as a gift to the people of the United States. They were gilded with an ancient mercury firing process. In 1951, the sculptures were transported by barge up the Potomac River and placed on their pedestals.

Friedlander's sculptures, called "Sacrifice" and "Valor" (the Arts of War), which mark the entrance to Arlington Memorial Bridge, symbolize the defensive strength of the nation. The similarly heroic statues by Fraser, called "Music and Harvest" and "Aspiration and Literature" (The Arts of Peace), that mark the approach to Rock Creek and Potomac Parkway, signify the nourishment of the people

of the country through its culture and the richness of the land. Each of the statues is of a horse and rider being led by a standing figure. Fraser's horses are winged. The statues with their pedestals are 17 feet tall. They were regilded in 1971. The equestrian statues retain high integrity.

Because the equestrian statures (The Arts of Peace) at the parkway approach fall within the purview of another park, they are not listed here as contributing features.

The Pylons on Columbia Island

Four identical pylons on Columbia Island mark the ends of the two bridges—the west end of Memorial Bridge and the east end of the bridge over Boundary Channel. Like the pylons at the cemetery entrance, each is a simple granite structure, ornamented with corner pilasters, a bas-relief wreath, crowned by a shallow stepped pyramid and a freestanding eight-foot granite eagle with wings partly open. They were designed by sculptor C. Paul Jennewein. At 35 feet tall (the eagles add eight more feet to this), they may be shorter than those at the cemetery entrance, although this has been difficult to confirm. The pylons are the only built elements of the McKim, Mead and White design for the Columbia Island section of the composition. They are unchanged.

Memorials on Memorial Avenue

Almost immediately following the approval in 1959 of space along Memorial Avenue for commemorative works, there was a candidate for one of the niches—a memorial to Rear Admiral Richard Evelyn Byrd. A heroic bronze portrait statue of Byrd, sculpted by Felix deWeldon and standing on a Carrera marble base designed by Elbert Peets, was built in 1960 and dedicated in 1961. It is sited on the north side of Memorial Avenue, midway between the cemetery entrance plaza and the loop drive down to Highway 110. In 1988, in connection with the construction of the new visitor center for Arlington Cemetery, the Byrd memorial was moved slightly west of its original location.

The veterans of the Spanish-American War and Philippine Insurrection (1898-1902) were the next to have a memorial built and dedicated. The eight-foot high, standing bronze figure of an American soldier dressed for tropical warfare, called "the Hiker," was sculpted by Theodore Alice Ruggles Kitson. Its official name is the United Spanish War Veterans Memorial. It is located just west of Memorial Avenue Bridge on the south side of the avenue and was dedicated in 1965.

In 1974, a memorial to the Seabees, the construction battalion of the Navy, was dedicated. It is sited west of Memorial Avenue Bridge on the north side of the avenue, opposite "the Hiker." Felix deWeldon is the sculptor and Anthony Harrer (National Register says Elbert Peets) the architect. It is comprised of several elements. There is a nine-foot standing bronze figure of a Seabee greeting a three-foot child. Behind the figures is a curved black granite wall with a bronze relief depicting Seabees working at their various naval construction trades. Two more freestanding granite blocks of the same height flank the rear wall and bear various inscriptions. The Seabees is a very large memorial, taking up the full width of the niche.

The fourth memorial to be placed on the avenue commemorated the service of the 101st Airborne Division in World War II and Vietnam. It was dedicated in 1977 and is sited just west of the Byrd memorial. The sculpture is a bronze eagle with wings lifted standing on a gray granite plinth tapering outward toward the top. Behind it is a low curving granite wall containing inscriptions associated with the division. Bernhard Zuckerman was the sculptor and Harold J. Schaller, the architect.

In 1990 a fifth memorial, this one dedicated to the American Armored Force, was built on the south side of Memorial Avenue directly across from the 101st Army Airborne Division Memorial. It was dedicated in 1991. Harold J. Schaller was the architect of the design, which includes a low, gray granite, elliptically-shaped wall within which is an eight-foot high, ten-foot long polished black granite stone etched with a mural portraying the history of the Armored Force. It is not clear if he also designed the etching.

The Women in Military Service for America Memorial was the next to be built. It incorporates both the hemicycle and its plaza, and functions both as a memorial and a center to document the history of women's service in the United States military. The hemicycle was selected as the site for the proposed memorial in 1988. Following a design competition, the design of Marion Weiss and Michael Manfredi was selected. Construction of the memorial and center began in 1996, and it was dedicated in October 1997. The center was designed to fit behind the hemicycle wall, changing the hemicycle's facade only in minor ways. The building contains exhibition space, a 200-seat theater, and a computer registry of women veterans. Two of the five niches on each side of the hemicycle's central apse were cut through to become stairways that lead both to the interior of the building and the terrace above. The new terrace is about 60 feet wide, broader than the original 25-foot-wide terrace. Glass panels along the terrace have been designed to receive etched inscriptions that throw shadows inside the building. The new terrace merges in a smoothly graded arc of grass with the slope of the cemetery behind.

The most recent memorial to be constructed on the avenue is the 4th Infantry (Ivy) Division Memorial, built in 2000. It is located on the south side of the avenue east of the driveway to Arlington National Cemetery Visitor Center. The metal sculpture is a depiction of the symbol of the 4th Infantry: four ivy leaves arranged in a cross pattern within a diamond. This is set in a bed of ivy planted in soil from various battlefields and surrounded by a low curb. Across the street is the location for a future memorial. There are two other locations for memorials close to the hemicycle on opposite sides of Memorial Avenue.

In 2001, the National Capital Planning Commission, with the advice of other agencies including NPS, approved two sites behind the hedges on of the avenue between Memorial Avenue Bridge and the Metro as places for future memorials.

All the memorials are contributing features inasmuch as memorials along the avenue were planned for in the McKim, Mead and White design for Memorial Avenue.

Visitor Center and Parking Garage for Arlington National Cemetery

The visitor center and associated parking facility for Arlington National Cemetery were approved in late 1986 and opened in 1988. They are located on the south side of Memorial Avenue; the visitor center is about halfway between Highway 110 and the cemetery entrance, and the parking facility, though reached from the avenue, is closer to Highway 110. The visitor center is sited a short distance behind the holly hedge and surrounded by a paved plaza. Two approximately 30-foot-wide openings were made in the hedge as driveway and entrance to the center. The building and plaza come within the former boundaries of Memorial Avenue, but the parking facility is well outside of them. The National Park Service transferred the 2.43 acres that the visitor center and plaza stand on to the Department of Army at the time of this project. The visitor center is visible from the avenue, both at its entrances and above the hedge, thus breaking the continuity of the vegetation, particularly the line of white oaks. It has reduced the integrity of the avenue and is not a contributing structure.

The Metro Station

The Huntington, Virginia line of the Metro, with a stop at Arlington National Cemetery, opened in 1976. In part, it follows the old alignment for the Rosslyn Connecting Railway (a branch of the Pennsylvania Railroad). The construction of a Metro station serving the cemetery added escalators, elevators and small-scale features to the avenue. The escalators are the typical Metro escalator—enclosed on three sides by light-colored granite walls that are about three feet high, about 40 feet long and 20 feet wide. There is one escalator on each side of the avenue. They are sited within the grass panels between the pedestrian walk and the hedge, thus leaving the sidewalk clear. The elevators, which are dark-colored metal-like structures, are inserted into the hedge on the avenue's north side. Paved areas in front of the escalators and elevators remove more sections of the grass panel. The escalators and elevators are not contributing structures.

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
101st Airborne Memorial	100852	Contributing	17228		Location	26810	Yes
4th Infantry Division Memorial	100853	Contributing					No
American Armored Force Memorial	100854	Contributing					No
Arlington Hemicycle	100855	Contributing	11999		Location	26815	Yes
Arlington Hemicycle Pylons	100856	Contributing	45309		Asset	1039790	Yes
Arlington Memorial Bridge	100857	Contributing	05360		Location	26813	Yes
Arlington National Cemetery Gates and Gate Pylons (Gatehouses)	100858	Contributing	05383		Location	26812	Yes
Arlington National Cemetery Visitor Center	100859	Non contributing					No
Arts of War-Sacrifice	100860	Contributing	12909		Location	99362	Yes
Arts of War-Valor	100861	Contributing	12911		Location	99359	Yes
Memorial Avenue Bridge	100862	Contributing	05383		Location	26812	Yes
Memorial Circle Pylons	100863	Contributing	45308		Asset	1039791	Yes
Metro escalators and elevators	100864	Non contributing					No
Rear Admiral Richard Evelyn Byrd Monument	100865	Contributing	092494				No
Seabee Memorial	100866	Contributing	06442		Location	26807	Yes
Spanish War Veterans Memorial (The Hiker)	100867	Contributing	06462		Location	26808	Yes
Women in Military Service for America Memorial	100868	Contributing					No
	100851	Undetermined					No

Landscape Characteristic: **Circulation**

The corridor is an axial roadway that crosses the Potomac River on Memorial Bridge, swells out to become a circle at Columbia Island, and then resumes its axial character as it proceeds as Memorial Avenue Bridge and Memorial Avenue. Besides its function as a grand entrance to Arlington National Cemetery, the bridges and circle act as a gateway to the Nation's capital. The original design included a formal cross axis on Columbia Island which connected to highways to the north and south. This was the most contested section of any in the design and its original conception was never achieved. Walkways line both sides of the bridges, the avenue and the outer edge of the circle. Official trails and unofficial "social" trails also cross the corridor in places.

Memorial Avenue and Memorial Circle are listed here in circulation as contributing features.

Separating the various parts of the corridor from one another -- for instance, the avenue from Memorial Avenue Bridge -- is done only because the bridge is discussed as a structure, and the avenue and circle are not structures but more clearly circulation features. The highways that connect to the circle are not discussed as contributing features to the Memorial Avenue corridor.

As a design, the formal drive of Memorial Avenue continues the axis of the bridge and terminates at the entrance to Arlington National Cemetery. The focal point of the axis includes both the hemicycle at its terminus and Arlington House on the hillside above. The idea of a long esplanade was set out in the McMillan Commission Plan in 1901. The esplanade, as depicted in the McKim, Mead and White design, was made up of both the avenue and the bridge over Boundary Channel. It was often referred to as the “Avenue of Heroes,” a ceremonial approach along which funeral processions and visitors would travel to the cemetery. The design called for memorials, located at intervals, to mark the route. At the hemicycle, the roadway divided to pass through the north and south cemetery gates.

The Memorial Avenue roadway maintains its historic dimensions. It is 60 feet wide, edged on both sides by a one-foot-wide granite curb, followed by an approximate 10-foot-wide grass panel, a 15-foot-wide sidewalk of exposed aggregate and another grass panel about 20 feet in width. Between the hedges on either side of the avenue, the total width of the space is about 150 feet.

The first proposal for a circle (rather than an ellipse) at the intersection of the roads on Columbia Island came after McKim, Mead and White’s last involvement with the bridge design, and was apparently the idea of Commission of Fine Arts member and former Mount Vernon Memorial Highway consultant Gilmore D. Clarke. Clarke was of a different generation and without the neoclassical bent of the designers of the bridge and its features. His interest was parkway design and how traffic could be moved most efficiently on well-engineered roads that were naturalistically landscaped

Memorial Circle today is the same approximately 300-foot-diameter circle of lawn surrounded by several lanes of roadway that was constructed in 1940. The road around the north side of it takes traffic from Arlington Memorial Bridge to the cemetery or part of the way along the avenue to the Highway 110 entrance. Traffic coming from Arlington Cemetery and from Highway 110 feeds into the south side of the circle. Traffic from the main bridge, continuing north or turning south for Washington Boulevard or Mount Vernon Memorial Highway, briefly enters the circle. On the south side, traffic feeds from Mount Vernon Memorial Highway and Washington Boulevard. There are small triangular islands of Durax block at east and west ends of the circle that are contemporary with the circle.

Memorial Circle fits within the period of significance, 1901-1941. Even though it was a substitute for the architectural plaza of the original design, it is a contributing feature of the corridor. When the circle was constructed, those involved were still trying to meld elements of the original and alternate designs into one that they thought could better handle traffic. They were also constrained by limited funds. The design they succeeded in building had a central feature in the form of the circle and straight roadways to the north and south that were a version of the proposed cross axis. The circle is largely unchanged since first constructed. Though the pairs of roadways to north and south are gone, the connecting roads on the east side of the circle are vestiges of one side of the pair. Where the west part of the pair would be, the roadway is now more curved and lies at a lower elevation so as to pass beneath Memorial Avenue Bridge. GWMP completed safety enhancements to Memorial Circle in 2020, which included the addition of new pavement striping and raised pavement markers (PMIS 304947).

When the corridor was first built, the former Georgetown-Alexandria Road (Arlington Ridge Road) crossed it near the Arlington Cemetery entrance. The part of this road that passed through the military reservation and the cemetery was removed in increments. One of the last sections of it—by then simply a driveway to a parking lot—connected to the south side of the avenue. In the mid-1990s that drive was removed, the alignment planted with grass and the gap in the holly hedge closed. Though this was an historic road, it was not significant to the corridor and its closure was intended in the design.

There have been other changes to the corridor's circulation pattern, however, that do affect its integrity. The construction of Highway 110, with entrance and exit ramps onto the avenue, changed the use of the lower end of the avenue to one of everyday commuter traffic and created a break in the processional focus of the avenue. The later diversion of visitor traffic off the avenue to a parking garage for cemetery visitors—the need for which is not disputed—nevertheless cuts short the experience of movement along the route to the cemetery that the design intended. There is also the visual impact of barricades positioned across the roadway at the driveway to the garage. Today only funerals, those on official business, and tour buses can drive the full length of Memorial Avenue and enter through the cemetery gates. Visitors on foot can do so, but most go first to the visitor center and use the walkway behind the hedge to begin their tour of the cemetery.

Pedestrian walks on both bridges and along Memorial Avenue have high integrity. There is some small question about whether the sidewalk surrounding Memorial Circle ever looked like the one depicted in a 1940 drawing, where the sidewalks are shown in an ellipse-like alignment around Memorial Circle, the long ends connecting with the two bridges (NPS Drawing 3E-8-2, March 11, 1940, National Archives, RG 79). It does not seem likely that this design was ever executed. The sidewalks around Memorial Circle, as they exist today and as documents dating to at least the 1960s show them, closely follow the circular alignment of the roadway, except on the southeast side where the alignment pulls away from the circle to connect with the Mount Vernon Trail. Minor changes to walkways around the circle, especially at certain road crossings, were made in the late 1980s, following a safety study (Bellomo-McGee, September 1986). In 2000-2001, various changes were made to walkway alignments, pedestrian crossway markings and other signage in the vicinity of the circle (Robert Peccia & Assoc., 1998). Walks that approached roadways at acute or oblique angles were slightly re-aligned at right angles to the roadway to give the pedestrian a better view of oncoming traffic. Curb cuts were added and improved.

Summary

The circulation of Memorial Avenue corridor has moderate integrity. The axial composition of the corridor is still strongly evident and Arlington Memorial Bridge still provides an impressive entrance to Washington D.C. What lessens integrity for this characteristic is the intrusion onto the avenue made by roads connecting to Highway 110 and the overall diminishing of the corridor's memorial function in contrast to its almost unceasing commercial use. By directing circulation off the avenue, the construction of the cemetery visitor center and parking facility has also altered the historic circulation pattern.

The location of pedestrian circulation throughout most of the corridor is historic. It is very likely that, since the construction of the cemetery visitor center, fewer people traverse the last part of the avenue by foot. This change probably began with the earlier cemetery parking lot. The original alignment of the sidewalks around Memorial Circle has not been definitively determined, and over the years there have been some minor changes. Pedestrian circulation is today very difficult around the circle because of the amount and speed of traffic.

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
Memorial Circle	100871	Contributing	006461		Location	26805	Yes
Memorial Avenue	100870	Contributing	006463		Location	26805	Yes
Route 110 off and on ramps	100875	Non contributing					No
Pedestrian system on two bridges and avenue	100873	Contributing					No
Pedestrian system for cemetery visitor center	100872	Non contributing					No
Driveway to Arlington National Center visitor center garage	100869	Non contributing					No
Pedestrian walks around Memorial Circle	100874	Undetermined					No

Landscape Characteristic: **Constructed Water Features**

There are two constructed water features within this landscape. One is the large circular pool at the hemicycle, a feature which also includes the fountain within the hemicycle's central niche. The other is Boundary Channel. The large circular pool, constructed in connection with the Women in Military Service for America Memorial, is a recent addition. Water is fed to it via a narrow channel or rill from a small low basin that fits within the central niche of the hemicycle, and from which a number of jets of water rise. The smaller basin is part of the hemicycle as originally constructed. It was to be the base of a fountain, or a sculpture and fountain combination. Though the full composition was never built, the basin was ornamented with a single jet of water at least from the 1940s through the 1960s, and probably longer.

In that it is a humanly created, although naturalistic in design, Boundary Channel, which lies between Columbia Island (Lady Bird Johnson Park) and the Virginia shore, is also a constructed water feature. In the nineteenth century, a tidal stream ran through the mudflats near the shoreline, but it was not this channel. Boundary Channel was created at the same time as Columbia Island as a way to drain the adjacent slopes of Virginia and the west side of the new island. It would also carry some of the water flowing from Little River, the river channel west of Analostan (Theodore Roosevelt) Island. The channel was envisioned as a destination for boating and picnicking. The natural deposit of silt is one of the causes of change within this channel over the years. Other modifications are more fully described in the Lady Bird Johnson Park cultural landscape inventory.

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
Boundary Channel	100877	Contributing					No
Circular pool at hemicycle (including basin in central niche)	100878	Contributing					No
	100876	Undetermined					No

Landscape Characteristic: Land Use

The Memorial Avenue corridor is both a formal, commemorative roadway and the normal route of commuter and commercial traffic used by large numbers of vehicles on a daily basis. It has had this dual role since it was first built. Traffic across Arlington Memorial Bridge increased dramatically with the construction of the Pentagon and the new roads that led to it during World War II. As an entrance to the city and as a connection from the city to the parkways along the Virginia side of the Potomac River and to other roads, the use of the corridor is consistent with the original intent. As the approach to Arlington National Cemetery, the long, solemn passage to the cemetery gates has become for many a more abbreviated experience because of changes such as arriving by Metro and entering the cemetery via the visitor center.

Recreational trails cross the corridor in several places. These are primarily officially designated and constructed trails used by bikers, walkers or joggers, but also include unauthorized “social” trails.

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
	95934	Undetermined					No

Landscape Characteristic: Natural Systems and Features

The Potomac River is the defining natural system of the Memorial Avenue corridor. Ocean tides influence the river’s depth on a daily basis. When a high tide combines with a storm surge there is danger of flooding on low-lying land. Most of the time, however, the Potomac is a shallow, slow-moving river in this location. Silt still enters the river from its watershed, but not in the quantities that washed off the land during the nineteenth century. A massive reshaping of the river banks took place in the late nineteenth century in an effort to keep river channels clear for shipping. The Arlington Memorial Bridge spans the Potomac River from positions on these new shores. The bridge was designed with a central bascule draw to accommodate the height of ships, but it is now permanently shut since ships no longer come this far up the river. Memorial Avenue crosses the natural lay of the land on the Virginia shore; this is a river terrace that ascends gradually to the foot of a more inland terrace. Drainage across this landscape is largely an engineered system today. Water that is not directed elsewhere to be filtered drains to the constructed Boundary Channel, which follows the somewhat altered original shoreline of Virginia. Native vegetation continues to grow along Boundary Channel and on the slope above it on the Virginia side. A deep drainage ditch on the north side of Memorial Avenue (within the boundaries of the corridor) is the reformed shape of a tributary to what once was known as Wampakan Branch. Thickets of mostly native trees, shrubs and herbaceous plants line the steep sides of the ditch.

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
	95935	Undetermined					No

Landscape Characteristic: Small Scale Features

Many of the small scale features associated with the Memorial Avenue corridor are historic and have a high degree of integrity. They are described in detail below.

Roadway Surfaces

A 3½-inch square granite block, referred to as "Durax," somewhat pinkish in color, originally surfaced the roadways of Arlington Memorial Bridge and Memorial Avenue Bridge. The block was laid in an interlocking pattern described by several names—fishscale, fan, and tulip. It is believed that the granite block was chosen for the sound it would produce as horse-drawn funeral corteges filed across it. The granite block roadway on the main bridge was replaced in 1951 with asphalt paving. Memorial Avenue Bridge kept its granite block surface, but its appearance has changed during repair work in 2002. The block was taken up so that an impervious membrane could be laid over the bridge deck to prevent water damage to the structure. Though the pattern of the relaid blocks approximates the original, there is now greater distance between blocks and a much heavier use of mortar between the blocks has changed the appearance of the roadway substantially. Granite header stones that mark both ends of the Durax roadway on the bridge were removed for the repair work and have been reinstalled.

Memorial Avenue itself was originally paved with a light-colored bituminous concrete, which remained in place at least through the 1940s. This surface was later covered in asphalt. The badly worn road surface was paved with new asphalt in 2002.

The center line dividing the two directions of traffic on both bridges and along Memorial Avenue is a one-foot-wide strip, created by laying three blocks of a darker-colored Durax side by side. This historic element has been retained, although, as on the bridge, the use of a different mortar has changed its appearance on Memorial Avenue. It also appears to be a little sunken in relation to the asphalt.

Sidewalk Pavements

Sidewalks along both sides of the two bridges, Arlington Memorial Bridge and Memorial Avenue Bridge (Boundary Channel Bridge), were paved in 1932 probably using the same concrete aggregate formula. The pavement is described in an early drawing as "reinforced concrete, scrubbed surface, exposed aggregate" (NPS 2E6-126). The sidewalks for Memorial Avenue were paved c. 1936. Subsequent repaving of the sidewalks on the main bridge (c. 1965 and c. 1985) has resulted in a slightly different colored pavement than that on Memorial Avenue Bridge. In addition, the sidewalk paving of related parts of the composition—the top of the Watergate steps and the Rock Creek and Potomac Parkway approach—is different than that on either of the bridges. The sidewalks on Memorial Avenue show changes of color and aggregate size along its length. The colors among all the sidewalks vary from faintly yellow (Memorial Avenue, walk at top of Watergate steps, and parkway approach sidewalks) to brownish-pink (Memorial Avenue Bridge). The size of the aggregate differs too, though it is all below three-quarters of an inch. The aggregate of Memorial Avenue Bridge—which may still have its original sidewalk—is the smallest (probably less than three eighths of an inch, with finer stones mixed in). The sidewalk on this bridge was replaced while the final version of this report was being prepared. The aggregate of the new sidewalk is larger than the original, with pieces as large as three quarters of an inch. In color it is fairly close to what was there and as a result different than the lighter toned Memorial Avenue. The sidewalk of the two bridges is scored into squares that are approximately four feet square. (The curb and balustrade take up the rest of the 15 feet allotted for the sidewalk in the design.) Memorial Avenue's 15-foot-wide sidewalk is scored into squares of five feet.

There are two areas of the composition where the sidewalk paving should not be compared with the rest of the corridor: at the hemicycle and around Memorial Circle. The hemicycle's paving was specified by the recent redesign of the plaza for the Women in Military Service for America

Memorial. It is a light-gray, granite-like paver that is used throughout the plaza for the roadway and the sidewalks. The sidewalks around Memorial Circle were paved later than other sidewalks that are part of the composition, and probably were never an exposed aggregate pavement. Today, the sidewalks around the circle are an amalgam of various paving, including asphalt; a few stretches are aggregate concrete of relatively recent origin. The width and scoring of the sidewalk around the circle are also different than the rest of the corridor.

Curbstones

The original curbstones for the two bridges and Memorial Avenue are 12 inches wide and eight inches high, and have a rounded nose at the exposed edge. They are generally of different lengths. As specified on one of the drawings for Memorial Avenue, no curbstone was to be under nine feet or over ten feet in length (McKim, Mead and White: Cemetery Approach-Plan showing location of Lamp Post Bases and Niches, 6/29/31, 7A5-72A). Another drawing of curbstones (called “roadway blocks”) for Arlington Memorial Bridge, Memorial Avenue Bridge and the parkway approach road (entrance to Rock Creek Park) describes the blocks as sawed Concord (New Hampshire) granite, six to ten feet in length (McKim, Mead and White: 10/26/31, 1A5-53). The granite curbs for the various sections of the project may have come from different quarries.

The first curbs installed on Memorial Avenue (c. 1933) were temporary concrete. The specified granite curbstones were installed at least by 1940, possibly as early as the winter of 1936-1937, when granite curbstones were installed on the bridge axis roadway on Columbia Island (Photo: National Capital Parks 2.12-42/8, Nov. 9, 1936, NPS Regional Library).

About 90 percent of the original curbstones along the corridor are still in place. Nearly every curbstone on Arlington Memorial Bridge appears to be the original. This was also true when the inventory was taken of Memorial Avenue Bridge before the 2002 repair work. Some replacement probably occurred as there no longer are any broken curbstones which there were previously. There are a couple of areas on Memorial Avenue where curbstones have been changed; these include where the roadways to and from Highway 110 join the avenue and where the old Georgetown-Alexandria Road was closed. Replacement curbs are generally of concrete, although there are also some new granite curbs. On the north side of the avenue, the concrete curb that closes up the old cut for Arlington Ridge Road has been handled particularly well and has the same proportions as the granite curbstones. The curbs of Memorial Circle are of various profiles, mostly short, and executed in concrete. Since Memorial Circle was not part of the original McKim, Mead and White design, it is not surprising that its details are different than those on the rest of the corridor.

Lampposts

Lampposts historically:
Lampposts were an element of the corridor that drew much comment from the first. Not only were there many proposals for bridge lighting from various sources (including a proposal for neon!), but in the end the design of the architects was never fabricated. In 1930, the designers proposed special 15-foot bronze standards. When the bridge was ready for traffic in early 1932, there was still no lighting and the Washington standards used elsewhere in the city were “temporarily” placed on the bridge. (The early example of this lamppost was designed by Francis Millet, but the type underwent modifications over the years. Further research is needed to clarify the differences between the Millet and later designs.) The lampposts that were installed at this time are described in one document as 15 feet tall. The Commission of Fine Arts (CFA) felt these were too tall, and in June 1932, McKim, Mead and White submitted a design for a more slender, 14-foot bronze standard. The design was adopted but the standards were never manufactured. (Fisher 1991, 25) The 1938 plan for lamppost installation on Memorial Avenue noted that 36 street lights on No.17 posts (17 feet tall) were “in operation” on Arlington Memorial Bridge (NPS Branch of Engineering, Jan. 8, 1938, 3E8-1, National Archives RG 79).

The lampposts on Memorial Avenue were not installed until sometime c. 1938. Memorial Avenue and Memorial Avenue Bridge were also originally to have the lampposts designed by McKim, Mead

and White; instead Washington standards were installed (Fisher, 25). The original plans called for 40 lampposts (32 for the avenue and eight for Boundary Channel Bridge). In 1938, only 18 lampposts were installed on Memorial Avenue (nine on each side), and according to the plan, they were positioned in a staggered arrangement, not in symmetrical pairs on opposite sides of the street. In all other parts of the corridor, the lampposts are shown symmetrically positioned. The lampposts for Memorial Avenue are described in the plan as No. 16 (16 feet). The plan also notes that eight lampposts were to be installed on Memorial Avenue Bridge, and that ten of the same lampposts had already been installed on Columbia Island. The bridge axis still crossed the island as a straight roadway in 1938. (NPS Branch of Engineering, Jan. 8, 1938, 3E8-1, National Archives RG 79) The plan noted that ten of the No. 16 light standards were already “in operation” around at the cemetery entrance plaza and showed their locations.

Metal lampposts with "teardrop" globes, of the type used on the northern section of Mount Vernon Memorial Highway, had been installed on the straight roadway on Columbia Island between the two bridges in 1932 (Photo: 2.12-43/13, NPS-NCR). By 1938, these lampposts had been replaced by the Washington standards (Photo: 2.12-42/11, NPS-NCR). When Memorial Circle was built in 1940, Washington standards were placed around the circle (Photo: 886A/46, NPS-NCR). Yet a third type of lamppost was introduced, probably in the late 1950s, when a modern steel lamppost with a pendant globe was installed (Photo: MRCE: Columbia Island, PH-6, PF-19, folder 1, Memorial Circle looking up Columbia Island, 9060-13F, Oct. 12, 1967). In 1990, these lampposts, in turn, were removed, and Washington standards were reinstalled around the circle (GWMP files).

Lampposts today:
As originally specified, the lampposts across Arlington Memorial Bridge are spaced at slightly different intervals to line up correctly with each span. The spans decrease in size slightly from the center of the bridge to the shoreline, and the distance between lampposts vary from 110 to 102 feet. There are two lampposts per span and an additional lamppost at each end of the bridge. (Arlington Memorial Bridge Commission [hereinafter AMBC]: 2E6-126; 1E7-30) Lampposts were probably not installed on the bascule span until it was sealed in the late 1980s.

Two slightly different versions of the Washington standard lamppost on are found on Arlington Memorial Bridge. One is more slender and has a wider dish for the globe and a flange just below it. Most of the lampposts on the bridge are this type, which is the one found on all other parts of the corridor as well. The original lampposts on the bridge were slightly heavier, with a narrow collar rather than a flange. They can be seen in a photo entitled "Columbia Island planting," June 23, 1932. NPS-NCR: 16.23-5A-4. All of the lampposts that are part of the Memorial Avenue corridor are cast metal painted black. None are fiberglass, as are some reproductions used in other parts of the city. Today there are 40 lampposts on the bridge; four were added on the bascule span after it was made permanently inoperable. Recent measurement of the lampposts on the bridge and avenue for the List of Classified Structures sizes them at 16 feet.

There are four lampposts on each side of Memorial Avenue Bridge. The interval between them is narrower than on the main bridge, 88 feet at the ends of the bridge and 75 feet between the two closest to the center. Thirty-one lampposts are symmetrically positioned on Memorial Avenue. It is not clear from this research when the avenue was outfitted with the full number of lampposts originally specified—rather than the 18 installed in 1936. One lamppost was removed where it conflicted with the entrance to the Arlington National Cemetery Visitor Center. No Washington standards remain at the cemetery entrance plaza. Two lamps of more ornate design, part of the wrought iron north and south cemetery gates, are a feature of the gates. There are 14 Washington standards around Memorial Circle. Another ten line about 200 feet of the two roads that connect with the circle in north and south directions, five on each side. Two modern, bronze-colored lampposts are positioned at each Metro escalator. They are set close to the hedge in order not to interfere with the line of historic lampposts.

Lamppost bases

Each lamppost is mounted on a square block of granite. These are described in the original drawings as 2 feet 2 inches on a side, and set flush with the grade of the sidewalk (AMBC, 2E3-

22a). Nearly all the lampposts continue to have the granite block beneath them; perhaps one on Memorial Avenue is missing.

Inlets

McKim, Mead and White designed the various elements of the drainage system for both bridges and Memorial Avenue. The system appears to still be in place. For this report it is only the parts of the drainage system that are visible that are evaluated. Most of the grates and frames for the catchbasins on the bridges and along Memorial Avenue are the originals, recognizable by having 11 holes and by their slightly convex profile. A drawing notes that the frame for the catch basin grate is cast iron and the grate is “semi steel” (AMBC: 6E7-4). Another drawing shows the convex grate in profile (AMBC: Memorial Bridge Arches, Arch Drainage, Oct. 1, 1927, 2E5-6. In Hazelet and Erdal, 1965, Plate 8).

Arlington Memorial Bridge has 40 inlets on each side; 30 grates on each side have the convex shape. The other ten have the same frame, but the grate is flat and has ten holes. Memorial Avenue Bridge has ten inlets—five on each side; all the grates have the convex profile. The grates on this bridge have become severely rusted during the repair work in 2002; although there was some rusting before, their surfaces now appear to be lacking any protective veneer. Memorial Avenue has fewer inlets in total—only eight on each side of the road. Of these, nine inlet grates have convex profiles; two of the inlets are missing grates, but appear to have original frames; three are flat; and two are new frames and grates, in original locations, possibly with the original catch basins, installed in connection with the Women in Military Service memorial.

Barricades and other vehicular controls

Movable barricades with stop signs are positioned across the Memorial Avenue roadway at the driveway to the Arlington Cemetery parking garage. Their purpose is to divert all but official vehicles or funerals to the parking facility. Wooden saw horses sometimes are positioned along the street edge at the pedestrian entrance to the visitor center.

Waste receptacles, signs and benches

A small number of several types of waste receptacles are positioned along the Memorial Avenue corridor. A brown plastic can is located at each Metro escalator. Similar trash cans are found at the cemetery visitor center entrance, along with two concrete trash cans and containers in which to extinguish cigarettes. More decorative trash cans of painted black metal are found at the hemicycle plaza.

Various signs are found along the corridor. Some are directional signs, such as can be seen on the bridge and around the circle. Two of the larger signs on the avenue mark the cemetery visitor center and the parking facility. A cluster of signs on one pole points to the loop roadway to Highway 110 southbound and U.S. 1, which can be reached from Highway 110. Numerous “no parking” signs are attached to lampposts. All of these signs appear to be necessary and no discussion of how they impact the integrity of the corridor is presented. One comment is that the Arlington Cemetery Visitor Center signs seem less substantial than they could be. The one by the pedestrian entrance has a chipped corner, it presses into the hedge and its letters are faintly misaligned.

The only benches along the corridor are those that are part of the architecture of the two bridges. Benches at the hemicycle plaza are part of the new design and benches at the cemetery visitor center are on land that is no longer within NPS purview.

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
All waste receptacles	95937	Non contributing					No
Cast iron inlet grates (only the original) along both bridges and Memorial Avenue	95938	Contributing					No
Washington standard lampposts. (See discussion)	95948	Contributing					No
"Durax" centerline of Memorial Avenue and both bridges	95936	Contributing					No
Granite block "Durax" surface of Memorial Avenue Bridge	95939	Contributing					No
Granite curbstones	95940	Contributing					No
Granite header stones at ends of bridges	95941	Contributing					No
Granite lamppost bases	95942	Contributing					No
Metro lampposts	95943	Non contributing					No
Paving of sidewalks on two bridges and avenue	95946	Contributing					No
Paving of sidewalks around Memorial Circle	95945	Non contributing					No
Triangular "islands" of granite blocks at east and west ends of Memorial Circle	95947	Contributing					No
Movable barricades on avenue by visitor center	95944	Non contributing					No

Landscape Characteristic: **Spatial Organization**

The Memorial Avenue corridor is a linear space—an axis—that extends between two points or termini, the Lincoln Memorial and the entrance to Arlington National Cemetery, with the hemicycle wall as the focal point of that terminus. Symbolically, the axis connects the Lincoln Memorial and Arlington House, the Robert E. Lee Memorial, on the brow of the slope above the hemicycle. The inherent meaning of this connection was the reconciliation between the North and South, much on the minds of the people of the country at the time the bridge was being contemplated. Such linear spatial arrangements as axes are design forms that are intended to produce the experience of progression along an important route—they are ceremonial and sequential in nature.

The Memorial Avenue corridor, with its main structure of Arlington Memorial Bridge, is also part of a larger landscape plan for the Capital as set forth by the Senate Park Commission in 1901. It extends the grand composition of the Washington Mall across the Potomac River to the important federal landscape of Arlington National Cemetery. It was not intended that the composition be experienced only by traversing its full length. The bridge, which was to have a grand plaza and cross axis at Columbia Island, was also to be an impressive gateway to the capital and a connection between parkland lining both sides of the river. The grand plaza at Columbia Island was never built and the cross axis existed only briefly. Nevertheless, the bridge remains a singularly beautiful entrance to Washington where it meets the green space of West Potomac Park and the Mall.

The avenue's spatial organization is also shaped by the holly hedges and white oak borders. These elements reinforce the axial character of the avenue and, in their verticality, create green enclosing walls. Because there are gaps in the tree border, there is less enclosure along the avenue than was intended.

Conclusion

The historic spatial organization for the Memorial Avenue corridor has a good degree of integrity overall: the linear composition is absolutely readable. The change from linearity at Memorial Circle may have occurred even had the designed Columbia Island plaza been built. However, there are places where the focussing strength of the axis has been diluted, particularly where Highway 110 crosses beneath it, in effect dividing Memorial Avenue into east and west ends. The wide gap in the white oak borders where the land was excavated for the highway can never be mended, although perhaps a few more trees on each side would mitigate the problem somewhat. The gap is particularly wide on the south side. The structures added to Memorial Avenue as a part of the Metro station, especially the escalators, have interrupted the avenue's processional character as well. Finally, the construction of the Arlington National Cemetery Visitor Center has diminished the experience of the monumental entry to the cemetery by creating an alternate entry through the visitor center some distance from the hemicycle.

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
	95949	Undetermined					No

Landscape Characteristic: Topography

The Memorial Avenue corridor has a fairly uniform elevation along its length, rising gently toward the west. The bridgeheads of both Arlington Memorial Bridge and Memorial Avenue Bridge are at an elevation of about 30 feet. The land has a slightly higher profile of 35 feet at the center of Memorial Circle. All of these elevations are engineered and much of the land is created. The topography of Columbia Island in the vicinity of the corridor and on the Virginia shore has been altered since the road and bridge first opened to accommodate roadways that pass through spans in the bridge abutments on both sides of the channel and, on the river side, through a span in the abutment of Arlington Memorial Bridge. These roadways have an elevation of about ten feet. On the Virginia shore, there is a sharp rise from the roadway flanking the channel to the crest of the river terrace. Memorial Avenue Bridge spans the channel at the higher elevation obscuring this change in topography. Memorial Avenue crosses the first terrace, following a mostly-natural land profile -- graded only moderately when the avenue was constructed. The land rises at a slight grade from about 30 feet to 60 feet at the plaza in front of the hemicycle. Here there is an abrupt change in elevation as the land rises to a second, inland river terrace. The hemicycle is built into this slope. Deep cuts below the natural grade of Memorial Avenue were made for Highway 110 and for the old railroad line, whose alignment the Metro follows where it passes below the avenue. The cut for Highway 110 is the one significant change to the topography that existed during the period of significance. Otherwise, the corridor has maintained a high degree of integrity in terms of topography.

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
	95950	Undetermined					No

Landscape Characteristic: Vegetation

The white oak border and holly hedges are the primary historical vegetation of the Memorial Avenue corridor. There is also historically significant vegetation in the vicinity of the hemicycle. The plantings around Memorial Circle are elements of a later plan for the whole of Columbia Island (Lady Bird Johnson Park) and their significance is discussed most fully in the cultural landscape inventory for that property. Each area of the corridor is discussed below. The plantings at the east end of Arlington Memorial Bridge will not be discussed as they belong within the boundaries of another park unit.

Memorial Avenue

The planting of white oaks (Quercus alba) and holly hedges (Ilex opaca) along Memorial Avenue was a critical design element used to focus views and frame the axial composition. As drawn in the 1935 planting plan, the tree border would be a row of evenly-spaced trees followed by more randomly spaced trees. This manner of planting would give a formal face to the avenue and a more informal, naturalistic aspect when viewed from behind.

Various documents, including two aerial photographs from 1950, a tree survey from 1963, plans showing existing trees and proposed plantings for the Metro and the Arlington National Cemetery Visitor Center, and photographs, provide evidence for determining how much the vegetation along Memorial Avenue today reflects the historic pattern. Study of the documents suggests that the number of trees that frame Memorial Avenue, at least in the section west of Highway 110, has remained fairly constant since 1950 (the 1950 aerial provides the first true picture.) It also shows

that there have been gaps present in parts of the tree borders at different times—not always the same places—and there has been replanting of trees (or self seeding of trees) at different times.

As noted in the CLI history, 200 white oak trees were to be planted along Memorial Avenue in 1935 (Fisher 1991, 25). The initial planting probably extended from the hemicycle to the railroad cut (Rosslyn branch of the Pennsylvania Railroad), as the area east of the cut is not included on the 1935 planting plan. It is also likely that the number of trees planted along the avenue itself was less than the 200 approved. In fact, the 1935 planting plan shows only about 140 trees marked for planting. No documents were reviewed for this report that prove that the plan was followed, but indications are that it probably was. In late 1941, not very long after the trees and hedges were planted, a large number of them were removed for the construction of Highway 110. How many were removed is unclear—perhaps 25 percent. By 1950, only a little more than 100 trees could be counted on both sides of the avenue between the highway cut and the crossing of Arlington Ridge Road (Aerials 1950). A 1963 survey of the area from Arlington Ridge Road to Highway 110 shows a total of about 90 trees within the tree border—60 on the south side of the avenue and 30 on the north side (Arlington Farms Area and Horse Show Grounds [general layout including tree cover] 1963).

There is a reference to another 188 trees presented by the Christopher Columbus Memorial Foundation for planting along the avenue after World War II (Fisher, 45). Documentation for these trees or indication of where they were planted has not been uncovered in this research. There is no indication from any of the graphic documents looked at that there was a sudden large increase in the number of trees along the avenue, unless there had been an almost total mortality of trees from the first planting in 1935, which is improbable.

South side of the avenue:
In 1986, before the visitor center was built, there were 60 trees on the south side of the avenue (Volkert, Landscape and Grading Plan). Fifteen of them—presumably white oaks—were removed in the immediate footprint of the visitor center building, plaza, and driveway to the parking garage. Sometime after 1986, trees were planted as part of the visitor center project. Ten trees were planted in large pockets within the paved plaza around the visitor center—seven swamp white oaks (Quercus bicolor) and three white oaks. Another white oak was probably planted at the same time in the small lawn between the driveway and the visitor center entrance. Additional white oaks have been planted more recently.

In field survey conducted for this report, 30 large-trunked white oaks, i.e. older trees, were counted on the south side of the avenue between the south cemetery gate and Highway 110. Thirteen are in the lawn between the cemetery gate and the visitor center, two are in a small lawn between the visitor center plaza and driveway to the parking garage, and 15 are in the lawn east of the driveway. This last area most closely realizes the original plan for the trees of the avenue; large trees arranged in a row without gaps, backed by rows of trees that are less strictly on-center. Nearly all of the trees in this lawn are white oaks; one may be a hickory (Carya sp.) or ash (Fraxinus sp.). Six young white oaks have recently been planted here.

The lawn between the south cemetery gate and the visitor center was not affected in the immediate construction of the visitor center. But sometime afterward, ten of the 25 trees in that location were lost. Of the 15 that remain, two are not white oaks, but a red maple (Acer rubrum) and a locust (Robinia psuedoacacia). Other trees have been planted as replacements—four in conjunction with the visitor center (three white oaks and one swamp white oak), and six white oaks more recently. The white oak canopy in this area has gaps when viewed from the avenue. The addition of the six new trees will help close the openings, but there are places where several more white oaks could be planted.

North side of the avenue:
On the north side of the avenue, the number of trees was always smaller than on the south side because of the presence of a drainage ditch about 60 feet behind the hedge, which limits space for tree planting. Today about 40 older trees belonging to the tree border can be counted in this location. Most are white oaks, five are water oaks (Quercus nigra), and a couple are red and silver

maples (Acer saccharinum). The water oaks, which cluster in one area, mark the trace of Arlington Ridge Road and probably sprouted alongside it or in its trace after the road was removed. Some of the white oaks behind the first row may have come up as seedlings, as they have a different, straighter branching pattern than the others and appear to be younger. The red and silver maples sprang up naturally along the drainage. The north side of the avenue has also recently been planted with 11 young white oaks. These are located primarily on the piece of land within the loop road that feeds traffic from Memorial Avenue onto Highway 110 going south.

East end of the avenue and Metro planting:
On the east end of the avenue there are no living white oak trees today. Most of the trees that border the avenue in that section were planted as part of the Metro project, although there are also self-seeded trees. A 1972 Metro drawing shows at least a dozen existing but unidentified trees in the fields on either side of the avenue west of Memorial Avenue Bridge (Washington Metropolitan Area Transit Authority, Route C, Huntington Route, Landscape General Plan, 11/8/72). It is likely that these were some of the same trees that made up a naturalized wooded area on the 1950 aerials. A later Metro landscape plan (1975) does not show any of these trees (Washington Metropolitan Area Transit Authority, Huntington Route, Landscape Planting Plan, 10/25/75). Instead, it shows where trees were to be planted, lined up in even ranks behind the hedge, unlike the 1935 planting plan with its formal and naturalistic approach. The two Metro drawings also show a few trees (possibly from the original planting) located on the south side of the avenue near the top of the ramp from Highway 110 that do not exist today.

Field survey shows that both planted trees and self-seeded trees can be found within the tree borders on the east end of the avenue. The planted trees (by Metro) are primarily red oaks (Quercus rubra) and pin oaks (Q. palustris), and not white oaks. Behind the hedge on the avenue's south side is one row of red oaks, behind which is a several-acre field fenced in with chain link. A few trees grow in the field. On the north side of the avenue two volunteer trees—a locust and a mulberry (Morus sp.)—are located immediately behind the hedge and a half dozen pin oaks are planted in parallel lines.

Slope above Boundary Channel and channel edges:
The land drops quickly from its elevation at the west end of Memorial Avenue Bridge to the channel, and the slopes are clad with trees. Overhanging the bridge are branches of large older trees that grow on the slope between the channel and southbound lanes of GWMP. These include a silver maple on the south and a walnut on the north. Farther back along the slopes and west bank of the channel, there are silver maples, elms (Ulmus sp.), sycamores, mulberries, and other trees.

Hedges along the avenue:
The holly hedges were envisioned in the original design to be about eight feet tall and six feet eight inches wide. They have achieved approximately these proportions. A large segment of each hedge was torn out when the underpass for the new Highway 110 was cut in 1941, but replacements seem to have been replanted by 1950 along the two outer edges of the grade separation structure. Today that section and the section above the Metro tunnel are places where the hedge has its greatest problems, due probably to the more limited root space and exposure to drying winds and sun. The thickness of the hedge and the degree to which it prevents views through it varies along the length of the avenue, but the eastern end is the most variable. Some sections have been replanted, primarily behind the newer memorials. The hedge behind the Spanish-American War Memorial was replanted recently when park staff installed the cyclone fence around the field mentioned above. There are several places where social trails cut through the hedges creating openings. On the south side of Memorial Avenue, the last remaining section of Arlington Ridge Road, by then only a driveway, was closed c. 1986. The gap in the hedges left by the road was closed with new hollies planted in conjunction with the construction of the Women in Military Service Memorial. The interceptor sewer now planned along the route of the old Arlington Ridge Road will open new gaps in the hedges on both sides of the avenue. The park restored portions of the holly hedge on NPS managed lands in 2022 (PEPC 108522).

Grass Panels along the avenue:
An integral part of the vegetative scheme for Memorial Avenue was the grass panels that line the

sidewalks and frame the roadway. The grass verge adjacent to the roadway is about ten feet wide and the panel between the sidewalk and hedge about 20 feet wide. The grass panels echo the much larger central grass lawn of the Washington Mall.

Short Japanese barberry (berberis thunbergii) have been planted at the pedestrian entrance to the Arlington Cemetery visitor center, apparently to prevent cutting across the grass. However, the bushes interrupt the flow of the grass panel and become another, although small, intrusion on the corridor.

Hemicycle and cemetery entrance

The cemetery entrance plaza was redesigned in the mid-1990s as part of the Women in Military Service for America (WMSA) Memorial. Plantings from the 1960s (crabapples, azaleas, and flowering bulbs and annuals) were removed and a more formal planting installed. The new design incorporates a panel of grass that continues the line of the avenue's grass panels, connecting them in an arc at the base of the hemicycle wall. This panel is divided into segments by a number of sidewalks. Two rows of little leaf lindens (Tilia cordata) are planted at north and south ends of the plaza allowing a clear view of the hemicycle wall from the avenue. The trees, which will be pruned to form an aerial hedge when large enough, are underplanted with vinca. The WMSA memorial is listed as a contributing structure to the overall historic significance of the corridor, but the memorial's parts (which include the vegetation) are not singled out for separate mention.

Yews (Taxus cuspidata) planted in 1935 along the outer edge of the terrace walk above the hemicycle were removed and new ones planted in the late 1990s along the edge of the now-wider terrace, which is part of the WMSA memorial. Yews also line the stairs at each end of the hemicycle and probably are replacements for the older yew hedges. A half dozen pyracanthas and viburnum that remain from 1935 are found in clumps near the stairs. Several dogwoods (Cornus florida) and two large white oaks are from the same period.

In widening the terrace of the hemicycle, trees that ringed the old terrace had to be removed. Most of these were red cedars (Juniperus virginiana); some were part of the 1935 planting of the hemicycle and some predated the hemicycle. The dark conical shapes of the cedars contributed to the historic view from the avenue to the hemicycle and Arlington Mansion.

Memorial Circle

The McKim, Mead and White plan showed an elaborate cross axis perpendicular to the bridge axis on Columbia Island. As the landscape architect for the Arlington Memorial Bridge Commission, James L. Greenleaf developed a planting scheme c. 1930 for the island, however it was never implemented. Its basic idea was for formal planting along the straight cross axis and naturalistic planting beyond. In 1968, a new planting plan for Columbia Island —that of Edward D. Stone Jr.— began to be implemented, concentrating first on the area around Memorial Circle. Scarlet and white oaks (Quercus coccinea and alba), a great quantity of dogwoods, and masses of daffodils were planted around the outside of the circle, and a dozen or so white pines (pinus strobus) were planted alongside each of the four pylons. As funds permitted, additional planting following the Stone plan was carried out across the island in subsequent years up until recently.

Treatment of the Columbia Island section of Memorial Avenue corridor was contested from the first presentation of plans for it. Because of that, and with the country's engagement in World War II, no planting was undertaken there until the 1968 landscape plan by Stone. The comparison of existing vegetative conditions with a plan that was never implemented (the Greenleaf plan) is not very meaningful or valid from a preservation standpoint, although it can lend some insight. It might be said that the naturalistic aspects of Greenleaf's plan for the island have been partly realized in the Stone plan, but that doesn't mean that Stone knew of Greenleaf's ideas or attempted to fulfill them. The vegetation at Memorial Circle today differs from the character it had when the project assumed its most complete and intact form in 1941 (the end date of the period of significance), and also from how it developed between 1941 and 1968, when the area still remained very open with some naturalizing trees here and there, particularly along the water's edge.

Of the Stone planting plan, it is only the white pines alongside the pylons that are singled out here as contributing elements to the Memorial Avenue corridor. In their massing and color, they have a similar character to the historic planting of evergreens at the east end of Arlington Memorial Bridge and around the Lincoln Memorial, plantings which were also designed by Greenleaf. They bolster the pylons and provide additional framing to the axial views. Because of their proximity to the pylons, these pines seem inextricable from the landscape of the Memorial Avenue corridor, and therefore must be addressed here. Although the pines have introduced a very different look to Memorial Circle, they are by most measures a positive contribution. The rest of the plantings surrounding the circle are not evaluated for their contribution to the corridor. This is not because they are determined to be non-contributing—they are pleasing elements within view as one passes around the circle—but they are rightfully part of the landscape of Lady Bird Johnson Park, and discussion of the significance of the Stone plan for the island in general, and as it relates to Memorial Circle, can be better and more fully discussed within that CLI. They are discussed a bit more in Views and Vistas because of the affect they have on views.

The circle itself remains an open grassed space, surrounded by the roadway and a wide swath of lawn (broader on the south than the north). In the spring there are beds of daffodils in some of the open areas along the outside of the circle. Planting beds are located at the bases of the pylons; red cannas are usually planted in summer. Extending from the circle in north and south directions there are about two dozen large deciduous trees (scarlet and white oaks) which provide a backdrop for the mostly young dogwoods that have recently replaced ones planted between 1968 and 1970. Masses of white pines of different ages and more deciduous trees intermingle behind the older deciduous trees in the foreground. These plantings extend into the distance as groves and individual specimens, intermixed with groups of dogwoods. One place where these plantings raise some question with regard to their effect on the historic views from the corridor, is where young trees threaten to block more of the view of the river and landmarks on the opposite side of it.

Conclusion

The integrity of the vegetation of Memorial Avenue corridor is moderate, primarily because of repeated impacts to the white oak borders, which have prevented them from fully developing to the extent they could, even within the constraints dictated by such events as the construction of Highway 110. There is still question whether the swamp white oaks that were planted c. 1988 in connection with the cemetery visitor center will be acceptable substitutes for white oaks. The recent planting of new white oak trees on both sides of the avenue west of Highway 110 is very commendable and a necessary step toward restoration where that is possible. According to park staff, there is difficulty getting white oaks established, and the question of whether there is sufficient reason to use a substitute for them is one that cannot be fully treated within the scope of a cultural landscape inventory. The holly hedges form complete lines along the avenue except where interrupted by roads to and from Highway 110, the driveway, and the pedestrian entrance to the visitor center. The yews along the outer stairs to the terrace atop the hemicycle and lining the fence near the gates continue the historic character of vegetation in that part of the corridor. Red cedars have been lost above the hemicycle wall and the possibility of adding new ones should be considered.

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
Barberries planted at entrance to cemetery visitor center	95951	Non contributing					No
Grass panels along Memorial Avenue	95952	Contributing					No
Holly hedge along Memorial Avenue	95953	Contributing					No
White oak border of Memorial Avenue	95954	Contributing					No
White oaks near cemetery gates and hemicycle stairways	95955	Contributing					No
White pines at four pylons near Memorial Circle	95956	Contributing					No
Yews along hemicycle stairways and wrought iron fence	95957	Contributing					No

Landscape Characteristic: Views and Vistas

As an axial composition, the Memorial Avenue corridor was designed to focus views on the two termini—the Lincoln Memorial and the entrance to Arlington National Cemetery, where the hemicycle closes that end of the axis. The McMillan Commission drew the axis slightly deflected from the axis of the Mall to line up with Robert E. Lee's home on the Arlington slopes. The pylons on Columbia Island (Lady Bird Johnson Park) and the hedges and white oak planting on Memorial Avenue enhance the focus on the terminal features. From various points along the route, one can also see the monuments of the Capital, particularly the Washington Monument. The enclosure that the tree borders were designed to provide along Memorial Avenue is broken where Highway 110 tunnels beneath the avenue, opening views above the hedges. Today the view to the north takes in the buildings of Rosslyn. Highway 110 itself can also be seen from a particular location along the avenue. In winter, Rosslyn's buildings can be seen through the bare trees on the north side of the avenue. The cemetery's visitor center can be seen behind the hedge on the south side of the avenue. Its roofline is not unsympathetic to the line of the trees, and in time, as the younger trees grow, the building may become a little more hidden.

Besides the framed views along the Memorial Avenue corridor, and the inadvertent views not intended by the design, there are also more expansive views from around Memorial Circle and Arlington Memorial Bridge. Going west across the bridge there are views of the tree-covered Arlington ridge, parkland along the river, and a very prominent Rosslyn to the north. A wide vista along both shores of the river to the north and south is visible from the bridge, mostly to pedestrians. One other view is that from the terrace above the hemicycle, where the focussing strength of the vegetation on either side of the avenue is experienced from a different perspective.

There were very few trees in the vicinity of Memorial Circle until 1968—only a single tree or two, some stands of cottonwoods, and a mix of native willows and other trees along the river and channel edges. Views from Memorial Circle at that time were very open, and whatever trees there were were deciduous,. If they blocked a view, in winter it opened up again. Today, the cluster of white pines adjacent to the four pylons at the ends of the bridges close up some of the views across the river to various monuments, as well as view of the river itself. The Washington Monument is generally visible because it reaches above the tops of the pine trees. As white pines get older, they tend to lose their lower branches, so that in time, they may not present as solid a screen as they do today. The pines only extend a certain distance from the pylons, and beyond that, to north and south, the views are a little more open. However, that openness and the availability of some views may be threatened by young trees that will grow larger. In some cases the trees soften and screen views, as of Rosslyn's skyscrapers. The view toward the hemicycle has changed in a small way. Before the construction of the Women in Military Service Memorial, red cedars could be seen above the hemicycle wall, but they were removed for that project and today it is mostly deciduous trees that can be seen above the wall.

Even with such changes as the sprouting of highrises in Rosslyn and the break in the tree enclosure caused by Highway 110, integrity of historic views for the Memorial Avenue corridor is high. The important views directed along the axis remain very much intact, and views up and down the river from the bridge are primarily of vegetated shoreline

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
View of Highway 110 from Memorial Avenue	95959	Non contributing					No
View of the Washington Monument from various locations along corridor	95960	Contributing					No
View to hemicycle and Arlington House	95961	Contributing					No
View to Lincoln Memorial	95962	Contributing					No
Views of green parkland along both sides of Potomac from Arlington Memorial Bridge	95963	Contributing					No
Views of tall buildings of Rosslyn	95964	Non contributing					No
Views to river, the Capitol dome, and other landmarks of the Capital from Memorial Circle	95965	Contributing					No
	95958	Undetermined					No

Condition

Assessment Interval (Years): 8

Next Assessment Due Date: 07/10/2032

Condition Assessment and Impacts

Condition Assessment: Good

Assessment Date: 07/10/2024

Condition Assessment Explanatory Narrative:

Since 2015, the park has completed a number of preservation, rehabilitation, and restoration activities within the Memorial Avenue Corridor cultural landscape. This work includes: 1) restoration of the holly hedge (CLI Feature ID 95953) along the avenue in 2022 (PEPC 108522), 2) rehabilitation of the Arlington Memorial Bridge (CLI Feature ID 100857) completed in 2020 (PEPC 37120; PMIS 224626), and 3) safety enhancements to Memorial Circle (CLI Feature ID 100871) in 2020, including new pavement striping and raised pavement markers (PMIS 304947).

Impacts GWMP cultural resources staff observed on site include: 1) improper pruning on the NPS managed portion of the holly hedge that contributes to an uneven look along the corridor, 2) mature vegetation, much of it invasive, behind the holly hedge contributes to the hedge's poor condition, and 3) the removal of the black granite Seabees Memorial (CLI Feature ID 100866) panel due to the failure of the ferrous anchors that attach it to the concrete memorial (PEPC 115122; PMIS 335022). Restoration of the Seabees Memorial is currently underway.

Note that NCR staff did not visit the cultural landscape as part of this update and the condition status was provided by park staff.

Condition Assessment: Good

Assessment Date: 10/16/2015

Condition Assessment Explanatory Narrative:

A site visit with park staff determined the condition of this landscape remains Good.

The Assessment Date refers to the date that the park superintendent concurred with the Condition Assessment.

Condition Assessment: Good

Assessment Date: 09/15/2009

Condition Assessment Explanatory Narrative:

Site visits and meetings with park staff in 2009 informed a condition reassessment for this Cultural Landscape Inventory. Accordingly, updates were made to the Condition chapter of this document. The Assessment Date refers to the date that the park superintendent concurred with the Condition Assessment.

At the time of reassessment, the condition determined for the site is unchanged, and remains Good.

Condition Assessment: Good

Assessment Date: 06/13/2003

Condition Assessment Explanatory Narrative:

The Assessment Date refers to the date that the park superintendent concurred with the Condition Assessment. The Date Recorded information refers to the date when condition was first assessed by the author of the report.

Impacts

Type of Impact: Adjacent Lands

Other Impact:

External or Internal: Both Internal and External

Impact Narrative: A large segment of the avenue's tree border was removed to construct Highway 110. As a result, views are more open than they would have been and take in the skyline of buildings in Rosslyn to the north and the highway itself to the south.

Construction of the Arlington National Cemetery Visitor Center on land within the boundaries of the Memorial Avenue corridor resulted in the loss of many white oaks. Trees have been replanted, but gaps are still present, particularly at the entrance to the visitor center and more generally throughout the entire western section of Memorial Avenue. Tree planting is an ongoing activity that addresses this impact.

Date Identified: 07/29/2005

Type of Impact: Exposure to Elements

Other Impact:

External or Internal: Both Internal and External

Impact Narrative: Sidewalks eventually erode, especially because of exposure to acid rain and de-icing salts. Minor settling of the bridges may cause cracks in the sidewalk. Projects sometimes require that the avenue's sidewalk be torn up. As a result, the sidewalks along the corridor will be repaved any number of times. Research could be undertaken to compare the formulations of the aggregate sidewalks along the corridor, as well as those of adjacent areas such as at the top of the Watergate steps and on the parkway approach road. The original 1932 formula (for the bridges) and 1936 formula (for the avenue) might also be found. Based on this information, an "ideal" formula could be kept on file for all future repairs. Sources of aggregate material change over time, and the exact replication of an older formula may not be possible. The "ideal" formula could serve as a baseline, and requirements with regard to it could be spelled out for contractors on future projects.

Date Identified: 07/29/2005

Type of Impact: Microclimate

Other Impact:

External or Internal: Both Internal and External

Impact Narrative: Certain sections of the hedges on Memorial Avenue, such as the stretch on the south side of the avenue above the Highway 110 underpass, are very vulnerable to drying out because they lack shade, are exposed to wind, and have more limited soil space. There is little that can be done about this except watering and feeding, which is already being done as part of regular maintenance.

Date Identified: 07/29/2005

Type of Impact: Operations On Site

Other Impact:

External or Internal: Both Internal and External

Impact Narrative: Driving heavy vehicles over the curbs and onto the lawns of the avenue by maintenance crews for the Metro or by NPS workers has the potential to pull the curbstones out of alignment, or chip or crack them. The sidewalks are also endangered by these practices. In some cases this may be unavoidable, as when clipping the hedges. But frequent parking by Metro crews near the escalator on the north side of the avenue should be discouraged, and an alternative (brief on-street parking?) considered.

The granite for all parts of the design was carefully selected and important historic material. Thus, the curbstones should be protected from all impacts. Repairs were made to the section of curbstones on the north side of the avenue just west of the bridge that were pulled out alignment during the 2001 bridge repair. Further repairs were made to other damaged sections in 2006-2007.

Metro's use of de-icing salts on the sidewalk around the escalators wears out those parts of the sidewalk quicker than other parts. This sidewalk has recently been repaired, but this situation should be monitored.

Date Identified: 07/29/2005

Type of Impact: Other

Other Impact: Street furnishing materials

External or Internal: Both Internal and External

Impact Narrative: Site furnishings in some instances are not sympathetic with this highly designed space. Brown plastic garbage cans at the Metro escalators and at the entrance walk to the cemetery visitor center are not in character with the avenue.

Date Identified: 07/29/2005

Type of Impact: Planting Practices

Other Impact:

External or Internal: Internal

Impact Narrative: It is possible that white oaks planned for the whole avenue were never planted east of the old railroad cut (now the Metro cut). Nevertheless, since the design was clear about the placement of trees and the species to be planted, it is desirable that new trees planted anywhere along the avenue be white oaks, unless there is some compelling horticultural reason for not planting them. (In the Metro work, red oaks were planted.) Positioning of the trees should follow the original plan, where the trees behind the first row were slightly more random and did not line up with the first row.

In certain areas, such as the north side of the avenue west of the ramp to Highway 110, the branching of the white oaks is very high, resulting in openings in the canopy. There are not enough trees behind some of these first-row trees to create the desired fullness or sense of enclosure. It may not be possible to fill these gaps because of the topography or other impediments, but efforts should be made to plant trees wherever possible to mitigate gaps. The recent planting of about 12 white oaks on each side of the avenue will help.

Low-growing barberries, planted at the entrance to Arlington National Cemetery Visitor Center to keep visitors from taking a short cut across the grass, are inappropriate. The grass panels were supposed to be free of other vegetation. Black painted posts and chains might be a better solution.

Date Identified: 07/29/2005

Type of Impact: Removal/Replacement

Other Impact:

External or Internal: Both Internal and External

Impact Narrative: About seven swamp white oaks (Quercus bicolor) have been substituted for white oaks (Quercus alba) in plantings around the plaza of the visitor center for Arlington National Cemetery. Some of these are part of the row of oaks closest to the avenue. In field visits in the fall, it was observed that the leaves of the swamp white oaks hung dry and tan-colored, while the surrounding older white oaks had deep purple tones. Whether this is a characteristic that will change as the trees mature is uncertain. Substitution of a different species of oak (with different characteristics) in this highly visible location may in time lessen the desired uniformity of the avenue.

Date Identified: 07/29/2005

Type of Impact: Removal/Replacement

Other Impact:

External or Internal: Both Internal and External

Impact Narrative: The relaid granite block roadway on Boundary Channel Bridge does not duplicate the original in a number of ways. The new mortar has partly obscured the pattern of the stones. A replication of the original mortar mix might have avoided this problem.

Date Identified: 07/29/2005

Type of Impact: Removal/Replacement

Other Impact:

External or Internal: Both Internal and External

Impact Narrative: The hedges have had to be replaced in certain sections at various times because of failure of some of the plants, in order to create a niche for a memorial, or to close up roads such as the old Arlington Ridge Road. In addition, there are simply some sections of the hedges that are less robust. As a result, the hedges do not have a single vertical plane, but in some sections are alternately thick and thin. This is particularly true in the areas of the avenue that have suffered the most impact—at the Highway 110 cut and near the Metro access points. Hedges are long-growing and long-tended landscape elements. The hedges appear to be very well cared for and efforts to minimize their variable appearance are undoubtedly made. On the whole, they are in good shape.

Date Identified: 07/29/2005

Type of Impact: Structural Deterioration

Other Impact:

External or Internal: External

Impact Narrative: The repair of the roadway surface has been finished correctly (2015)

The asphalt roadway surface of Memorial Avenue has been repaired since the last assessment. It is important in repaving the avenue that the new paving be applied so it is level with the Durax centerline and not higher. (2009)

The sidewalk pavement of Arlington Memorial Bridge is beginning to deteriorate in few areas and should be repaired.

Date Identified: 07/29/2005

Type of Impact: Vegetation/Invasive Plants

Other Impact:

External or Internal: Internal

Impact Narrative: Ailanthus trees, a difficult invasive plant to eradicate, have become established near the Metro stop and can be seen over the top of the hedgethere and in at least one other location. Undoubtedly, landscape maintenance is aware of this problem and attending to it.

Date Identified: 07/29/2005

Type of Impact: Visitation

Other Impact:

External or Internal: External

Impact Narrative: Areas of lawn near the Metro escalators are worn, as are places on the north side of the avenue where joggers cut through the hedge.

Buses park on the avenue, particularly during heavy visitation of the cemetery in springtime, causing a great deal of congestion.

Date Identified: 07/29/2005

Type of Impact: Deferred Maintenance

Other Impact:

External or Internal: Both Internal and External

Impact Narrative: With two different managers of the Memorial Avenue Corridor, there is an abrupt break of continuity at the property line. Minimal maintenance on the NPS portion of avenue contributes to an uneven look along the formal corridor, this includes the holly hedge that runs through both DOI and DOA managed lands.

Date Identified: 02/22/2024

Type of Impact: Pests/Diseases

Other Impact:

External or Internal: Both Internal and External

Impact Narrative: The holly hedge suffers in areas from a scale infestation.

Date Identified: 02/22/2024

Type of Impact: Removal/Replacement

Other Impact:

External or Internal: Internal

Impact Narrative: The park removed the black granite Seabees Memorial panel in 2023 due to the failure of the ferrous anchors that attach it to the concrete memorial (PEPC 115122 and PMIS 335022). As of 2024, restoration of the Seabees Memorial is ongoing.

Date Identified: 02/22/2024

Type of Impact: Soil Compaction

Other Impact:

External or Internal: Both Internal and External

Impact Narrative: Staging for construction projects and other construction related use contributes to soil compaction along the NPS managed portion of Memorial Avenue.

Date Identified: 02/22/2024

Type of Impact: Vegetation/Invasive Plants

Other Impact:

External or Internal: Both Internal and External

Impact Narrative: Mature vegetation, much of it invasive, behind the holly hedge contributes to the hedge’s poor condition.

Date Identified: 02/22/2024

Treatment

Stabilization Measures

Stabilization Measure Narrative:

Stabilization Cost:	$2,000.00
Stabilization Cost Date:	10/15/2002
Estimate Level:	C - Similar Facilities
Cost Estimator:	Other Center

Cost Narrative:

The $118,500 figure has been taken from the LCS. It is a combination of two costs. There is an "ultimate treatment" cost of $110,000 and an "interim treatment" cost of $8,500. The $110,000 is reported by Federal Highways Administration for repairs to deteriorated concrete, cleaning and spot painting, resetting railing blocks and replacing a missing rail post. The $8,500 amount would be used to repair a damaged seawall, repair access ladders, and post clearance for the right lane of GWMP as it passes through the span in the west abutment of Arlington Memorial Bridge. Other Stablization Costs of $2,000 were calculated in September 2001 by the NCR cultural landscape office. This amount is for initial work to remove ailanthus trees, particularly on the south side of the avenue above the slope to Highway 110 and near the boundary of the Metro corridor where they are within view of Memorial Avenue (Note: this information is out of date-it was added in 2003).

Treatment Documents

Treatment Type: Undetermined

Treatment Completed: No

Document Type: Historic Structure Report

Document Date: 1986-05-02

Title:

IRMA Link:

Narrative:

This document gives a history of the development of the corridor and describes repairs to Arlington Memorial Bridge. It does not appear to spell out a particular treatment alternative for the corridor.

The LCS gives the General Management Plan (1/31/1991) as the ultimate treatment document for Memorial Avenue, Memorial Circle and Memorial Avenue Bridge, and states that the ultimate treatment has not been approved or completed. Last year the Historic Structure Report (May, 1986) was listed in the LCS as the "Ultimate Treatmment Document" for Arlington Memorial Bridge, with rehabilitation as the approved treatment. That document is crossed out in this year's LCS update. There appears to be some confusion about whether there is a treatment document.

Approved Treatment Costs

Cost Narrative:

Treatment Type: Undetermined

Treatment Completed: No

Document Type: Cultural Landscape Report Parts 1 and 2

Title:

IRMA Link:

Narrative:

As of FY2024, a Memorial Avenue Corridor CLR is in progress.

Approved Treatment Costs

Cost Narrative:

Bibliography and Supplemental Information

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Supplemental Information Narrative:

Viz. Previous to the Survey of Major L'Enfant, compiled by Faehtz and Pratt from research by Joseph M. Toner. [In Reps 1991, 13]

Supplemental Information:

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Supplemental Information Narrative:

Boschke, A[lbert]. Published by D. McClelland, Blanchard and Mohun. Washington D.C. 1861. [National Archives, RG 77, also in Reps 1991, 139]

Supplemental Information:

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Supplemental Information Narrative:

NCPPC. 1928, 1929, 1937. [In Longstreth 1991, 132, 222, 228]

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Supplemental Information Narrative:

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Supplemental Information Narrative:

Supplemental Information:

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Supplemental Information Narrative:

Daniel Jenings (Jennings) Surveyor. [copy GWMP Natural Resource Files]

Supplemental Information:

Supplemental Information Title: Revised Entrance Plaza and Planting, Arlington National Cemetery, Entrance Plaza and Hemicycle

Supplemental Information Narrative:

NPS, Branch of Plans and Design, National Captial Region, 855/81099, n.d.

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Supplemental Information Narrative:

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Supplemental Information Narrative:

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Supplemental Information:

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Supplemental Information Narrative:

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Supplemental Information:

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Supplemental Information Narrative:

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Supplemental Information:

Supplemental Information Title: Memorial Avenue to Cemetery, Pavement at Memorial Entrance. Plan of Curbs, Details of Gutter & "Durax" Strip. November 16, 1933?

Supplemental Information Narrative:

Arlington Memorial Bridge Commission (drawings primarily by McKim, Mead & White, to 1933). File 6E7-11. [GWMP files]

Supplemental Information:

Supplemental Information Title: Memorial Avenue to Cemetery, General Plan. January 1933.

Supplemental Information Narrative:

Arlington Memorial Bridge Commission. (Drawings primarily by McKim, Mead & White, to 1933). File 6E7-13. [GWMP files]

Supplemental Information:

Supplemental Information Title: Memorial Approach Drive, Planting Plan. May 21, 1935.

Supplemental Information Narrative:

National Park Service, National Capital Parks. [NPS-TIC: 8-135]

Supplemental Information:

Supplemental Information Title: Map showing location of the Bridge to connect the Public Lands of the District of Columbia with those of Arlington, VA. April 17, 1890.

Supplemental Information Narrative:

Lt. Col. Peter C. Hains, Engineer in charge of the Washington District. [National Archives, RG 77]

Supplemental Information:

Supplemental Information Title: Map of the Arlington Estate, VA. January 1888.

Supplemental Information Narrative:

Map Showing All Buildings Occupied by Citizens Outside of Fort Meyer and the National Cemetery. U.S. Congress, Washington, DC. [copy Arlington House Archives]

Supplemental Information:

Supplemental Information Title: Map of Eastern Virginia and Vicinity of Washington. 1862.

Supplemental Information Narrative:

U.S. Army Corps of Engineers. [National Archives, RG 77 - G 484]

Supplemental Information:

Supplemental Information Title: Map drawn by Thomas Jefferson.

Supplemental Information Narrative:

Untitled & undated map drawn by Thomas Jefferson, probably March 1791. Library of Congress. [In Reps 1991, 17]

Supplemental Information:

Supplemental Information Title: Huntington Route, Landscape Planting Plan. Sheet 16 of 25. Rev. December 2, 1975.

Supplemental Information Narrative:

Washington Metropolitan Area Transit Authority. NPS-TIC: 850/80074.

Supplemental Information:

Supplemental Information Title: Historic Memories of Arlington National Cemetery by D.H. Rhodes, Landscape Gardener at Arlington. Where he has been employed since 1873.

Supplemental Information Narrative:

David H. Rhodes, War Department, Office of the Quartermaster Supply Officer, c. 1930. (Arlington House Archives)

Supplemental Information:

Supplemental Information Title: General Plan of the Mall System.

Supplemental Information Narrative:

Unsigned rendering, first published in 1902. U.S. Commission of Fine Arts. [In Reps 1991, 252]

Supplemental Information:

Supplemental Information Title: General Landscape Plan, Camp No 8, Washington D.C. May 22, 1935.

Supplemental Information Narrative:

National Park Service, National Capital Parks. Army camp landscape plan of Memorial Avenue. NPS-TIC: 850/80382.

Supplemental Information:

Supplemental Information Title: Files 1E7, 3E2-1, 3E2-2, and 6E2-1.

Supplemental Information Narrative:

Arlington Memorial Bridge Commission. (Drawings primarily by McKim, Mead & White, to 1933.)

Supplemental Information:

Supplemental Information Title: Environs of Washington Prepared from Original Surveys of the Engineer Department 1864-1866. Sheet 5.

Supplemental Information Narrative:

National Archives, RG 77

Supplemental Information:

Supplemental Information Title: County of Arlington, Virginia. Engineering Department.

Supplemental Information Narrative:

County maps for the years 1935, 1938, 1940, 1943, 1948, 1952, 1964, 1965, 1966, 1968, 1972, 1973, 1974, 1975, 1978, 1979.

Supplemental Information:

Supplemental Information Title: Arlington VA. Military Reservation Fort Myer and the National Cemetery. January 10, 1894.

Supplemental Information Narrative:

Office of the Depot Quartermaster. [Map files GWMP Headquarters]

Supplemental Information:

Supplemental Information Title: Arlington National Cemetery, Visitor Center. Site Layout Plan. Plate 78, sheet C-6. 1986.

Supplemental Information Narrative:

David Volkert & Associates, Engineers – Architects. NPS-TIC: 850/81943.

Supplemental Information:

Supplemental Information Title: Arlington National Cemetery, Visitor Center. Parking Facility, Site Plan. Sheet 84 of 88. 1986.

Supplemental Information Narrative:

David Volkert & Associates, Engineers – Architects. NPS-TIC: 850/81943.

Supplemental Information:

Supplemental Information Title: Arlington National Cemetery, Visitor Center. Parking Facility, Landscape and Grading Plan. Sheet 89 of 89. 1986.

Supplemental Information Narrative:

David Volkert & Associates, Engineers – Architects. NPS-TIC: 850/81943.

Supplemental Information:

Supplemental Information Title: Arlington National Cemetery, Visitor Center. Building Location, Site Demolition Plan and Boring Locations. Plate 5, sheet C-3. 1986.

Supplemental Information Narrative:

David Volkert & Associates, Engineers – Architects. NPS-TIC: 850/81943.

Supplemental Information:

Supplemental Information Title: Arlington National Cemetery, Arlington County, VA. September 8, 1955.

Supplemental Information Narrative:

NPS-TIC: 850/80811

Supplemental Information:

Supplemental Information Title: Arlington Memorial Bridge, Location and Vicinity. 1923.

Supplemental Information Narrative:

Report of Arlington Memorial Bridge Commission 1924, 68th Cong. 1st Session, Senate Doc. 95.

Supplemental Information:

Supplemental Information Title: Arlington Memorial Bridge, Cemetery Approach – Plan Showing Location of Lamp Post Bases and Niches. June 29, 1931.

Supplemental Information Narrative:

Arlington Memorial Bridge Commission. (Drawings primarily by McKim, Mead & White, to 1933). File 7A5-72A. [GWMP files]

Supplemental Information:

Supplemental Information Title: Arlington Memorial Bridge, Borings for Bedrock. 1923.

Supplemental Information Narrative:

Report of Arlington Memorial Bridge Commission 1924, 68th Cong. 1st Session, Senate Doc. 95.

Supplemental Information:

Supplemental Information Title: Arlington Farms Area & Horse Show Grounds, Arlington, Virginia. July 17, 1963.

Supplemental Information Narrative:

Detail Sectional Map, Area I. Plate 3, sheet 3 of 18. (Survey of trees on both sides of Memorial Avenue). NPS-TIC: 850/80836.

General Layout – Existing Utilities, General Tree Cover Map. Plate 10, sheet 10 of 18. NPS-TIC: 850/80836.

Supplemental Information:

Supplemental Information Title: A Plan of Arlington Estate on the Potomack River. 1931.

Supplemental Information Narrative:

Handdrawn map made in US Quartermaster's Office representing 1850.

Landscape Documents:

File Name	Date	Attachment Type
_GWMP_FY24 CLI Update Form_Memorial Avenue Corridor.pdf	02/22/2024	Other Report
20220307_GWMP_MemorialAvenueCorridor CLR_120.jpg	03/07/2022	
20220307_GWMP_MemorialAvenueCorridor CLR_127.jpg	03/07/2022	
20220307_GWMP_MemorialAvenueCorridor CLR_134.jpg	03/07/2022	
20220307_GWMP_MemorialAvenueCorridor CLR_141.jpg	03/07/2022	
20220307_GWMP_MemorialAvenueCorridor CLR_148.jpg	03/07/2022	
20220307_GWMP_MemorialAvenueCorridor CLR_149.jpg	03/07/2022	
20220307_GWMP_MemorialAvenueCorridor CLR_153.jpg	03/07/2022	
20220307_GWMP_MemorialAvenueCorridor CLR_162.jpg	03/07/2022	
20220307_GWMP_MemorialAvenueCorridor CLR_208.jpg	03/07/2022	
20220502_GWMP_MemorialAvenueCorridor CLR_068.jpg	05/02/2022	
20220502_GWMP_MemorialAvenueCorridor CLR_167.jpg	05/02/2022	
20220502_GWMP_MemorialAvenueCorridor CLR_185.jpg	05/02/2022	
20220502_GWMP_MemorialAvenueCorridor CLR_232.jpg	05/02/2022	
20220502_GWMP_MemorialAvenueCorridor CLR_242.jpg	05/02/2022	
20220613_GWMP_MemorialAvenueCorridor CLR_101.jpg	06/13/2022	
20220613_GWMP_MemorialAvenueCorridor CLR_143.jpg	06/13/2022	
20220613_GWMP_MemorialAvenueCorridor CLR_144.jpg	06/13/2022	
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20220614_GWMP_MemorialAvenueCorridor CLR_128.jpg	06/14/2022	

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20220614_GWMP_MemorialAvenueCorridorCLR_216.jpg	06/14/2022	
20220614_GWMP_MemorialAvenueCorridorCLR_222.jpg	06/14/2022	