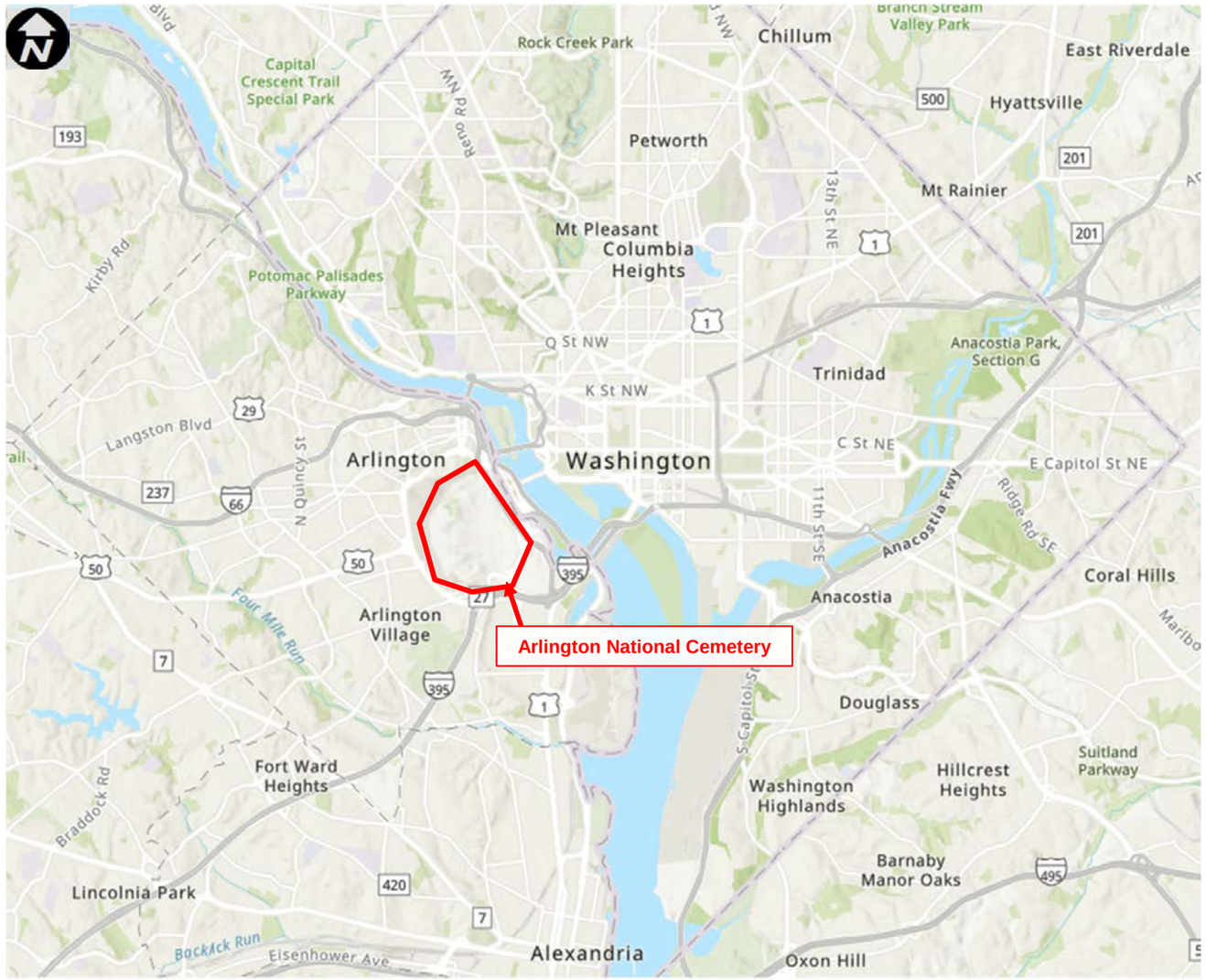


ANC Southern Expansion: Sheridan Gate
DHR Project No. 2025-

Army National Military Cemeteries
Arlington National Cemetery
Arlington, Virginia

Section 106 Process Submission:

PROJECT DESCRIPTION, IDENTIFICATION OF CONSULTING PARTIES, IDENTIFICATION OF HISTORIC PROPERTIES, AREA OF POTENTIAL EFFECTS, & ASSESSMENT OF EFFECTS

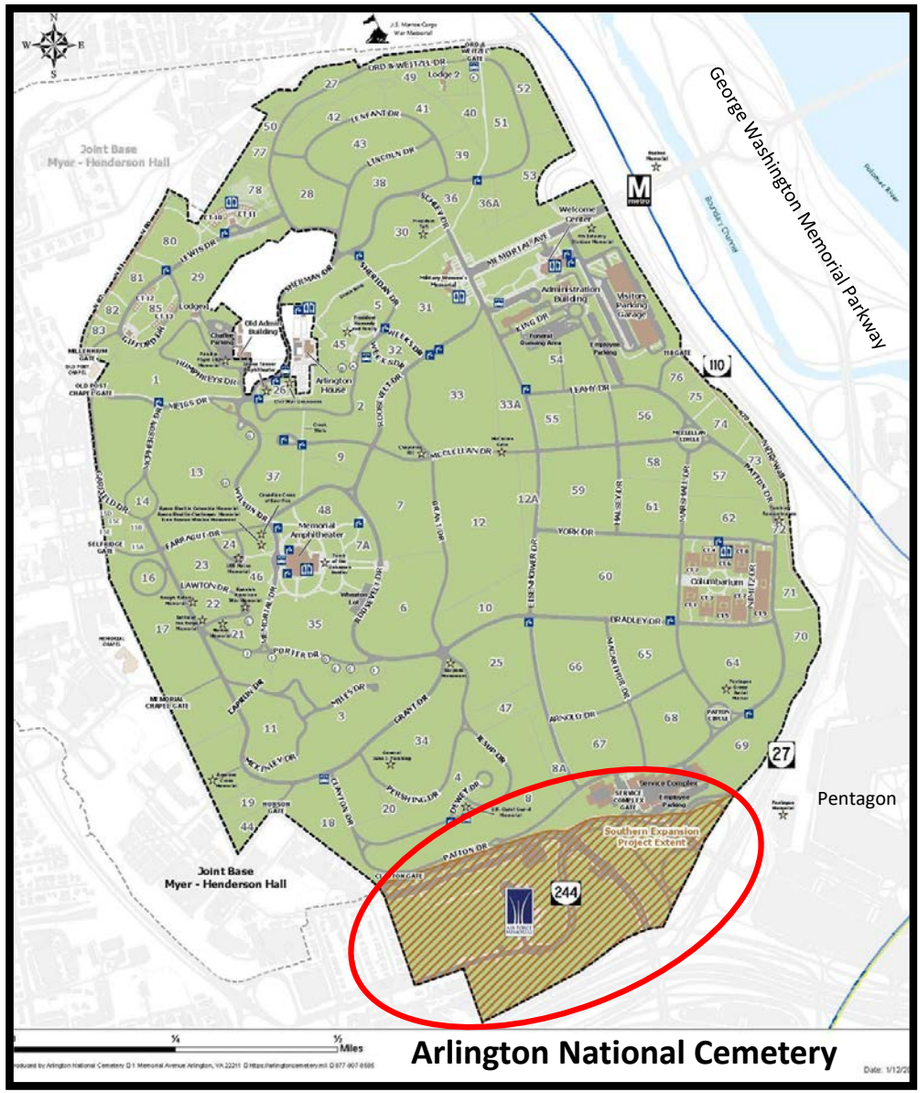
ANMC Project Points of Contact:

Christian Dvorak
Southern Expansion Project Manager
Engineering, Design & Construction

Caitlin Smith
Cultural Resources Program Manager
Engineering, Planning & Resources

Submission: February 21, 2025

Project Description



Army National Military Cemeteries (ANMC), which maintains and operates Arlington National Cemetery (ANC), proposes reconstructing the historic Sheridan Gate along the cemetery's southern boundary as part of the Southern Expansion project. The Virginia Department of Historic Resources previously reviewed the Southern Expansion Project (DHR Project Review No. 2014-1094), which resulted in the execution of a Memorandum of Agreement (MOA).

PROJECT MAP KEY

Southern Expansion Project

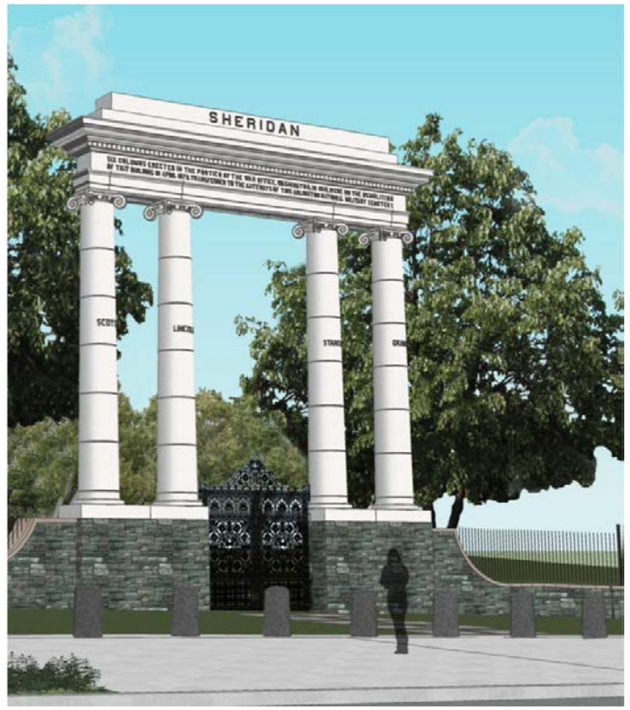


Illustration of the reconstructed Sheridan Gate

Section 106 Process Initiation

Sheridan Gate, between 1900 and 1920, Library of Congress

Army National Military Cemeteries (ANMC) initiates the section 106 process for the proposed Sheridan Gate reconstruction within Arlington National Cemetery (ANC). The proposed project is considered a federal undertaking, as defined in 36 CFR § 800.16(y), and is the type of activity that has the potential to cause effects on historic properties pursuant to 36 CFR § 800.3(a).

Per 36 CFR § 800.3(c), ANMC identifies the Virginia Department of Historic Resources (DHR) as the appropriate State Historic Preservation Office (SHPO) to be involved in the section 106 process.

Per 36 CFR § 800.3(c), ANMC plans to involve the public in the section 106 process. After initiating consultation with the DHR, ANMC will notify potential consulting parties and the public of the undertaking via email, social media, and the ANC website, inviting them to participate in the consultation process. ANMC will work in consultation with the DHR to develop the plan for involving the public in the section 106 process.

Concurrent with this submission to the DHR, ANMC is initiating the design review process with the U.S. Commission of Fine Arts (CFA). The Commission approved the concept design on 20 February 2025 (CFA 20/FEB/25-c). The Commission previously approved the Southern Expansion Project design in 2020 (CFA 19/NOV/20-1).

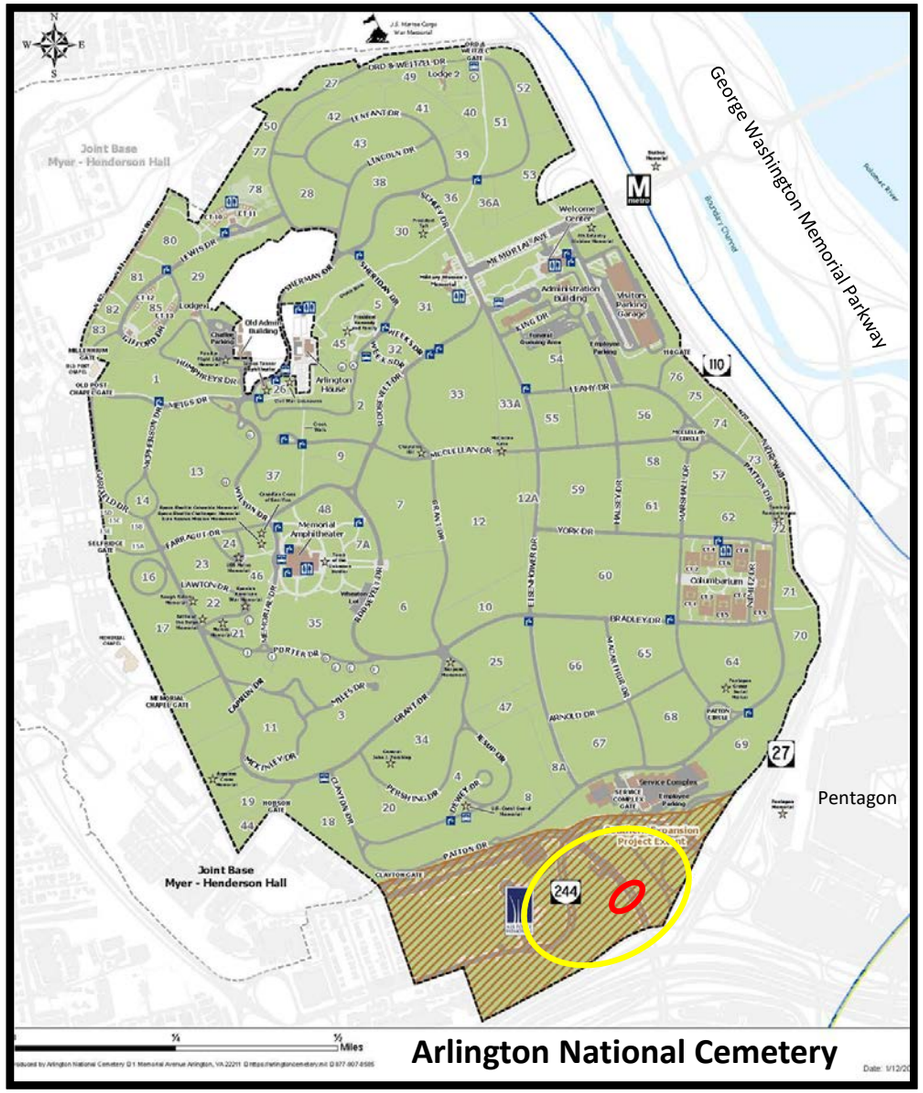
Consulting Parties

In accordance with 36 CFR § 800.3(f) and § 800.2(c), ANMC developed an initial list of other parties entitled to be consulting parties. These parties previously expressed an interest in consulting on the Southern Expansion project. This list will be further developed in consultation with the DHR.

ANMC identified the following other consulting parties:

- Air Force Washington District (AFDW)
- Arlington County Government
- Arlington Historical Society
- National Association of American Veterans
- United States Commission of Fine Arts

Area of Potential Effects



Per 36 CFR § 800.4 & § 800.16, ANMC identified the Area of Potential Effects (APE) for the proposed project, the full extent of which will be determined in consultation with the DHR. The project APE is outlined in yellow on the map to the left.

The APE is the geographic area(s) within which an undertaking may directly or indirectly cause changes in the character or use of historic properties. The APE is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking. This includes locations where the project may be visible and/or audible.

VDHR guidelines recommend that the APE includes:

- all locations where the project will cause ground disturbance;
- all locations from which the project may be visible or audible; and
- all locations where the project may result in changes to land use, public access, traffic patterns, viewsheds, etc.

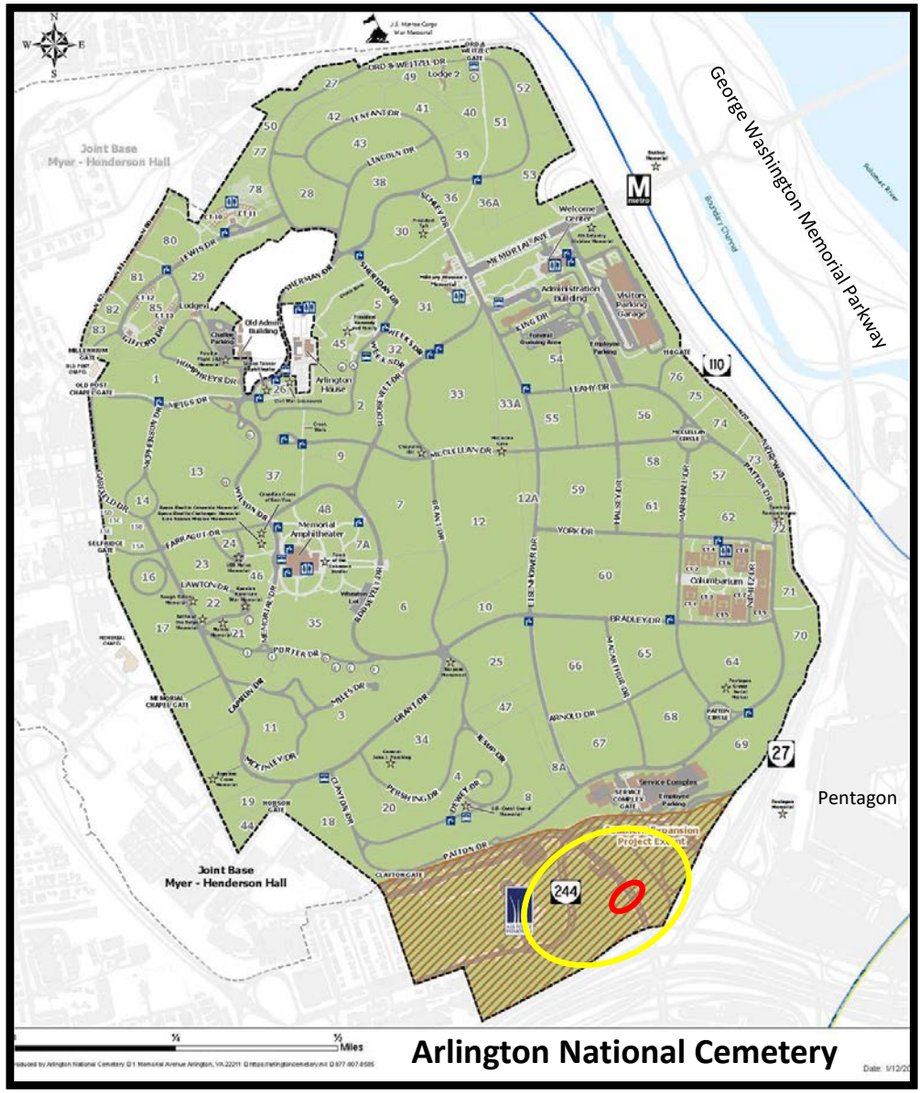
For this undertaking, the project area is located south of the Arlington National Cemetery Historic District (Virginia Department of Historic Resources [VDHR] #000-0042) and west of the Pentagon Office Building Complex (VDHR #000-0072). All the work would occur within the bounds of the Southern Expansion Project at Arlington National Cemetery (DHR Project Review No. 2014-1094).

AREA OF POTENTIAL EFFECTS MAP

APE outlined in **YELLOW**.

Proposed project location in **RED**.

Area of Potential Effects



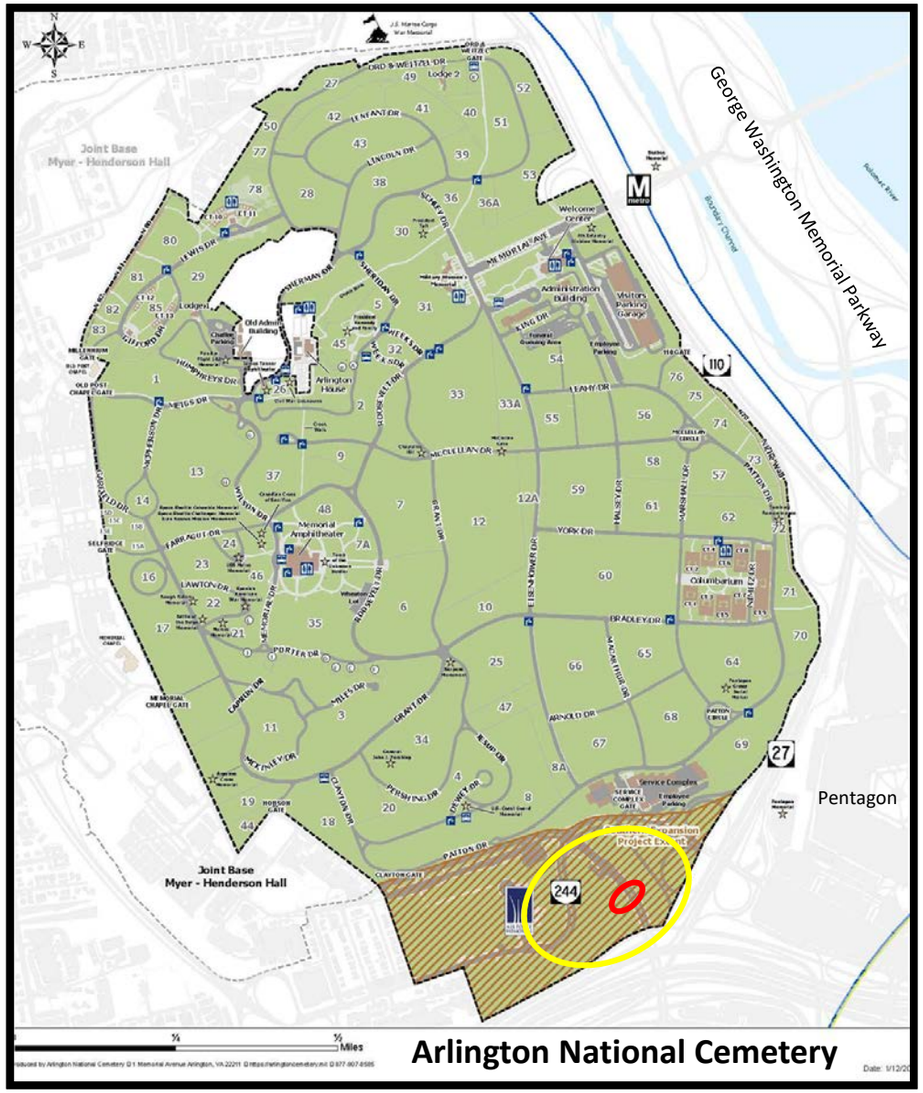
During construction, temporary sound and visual effects are expected within 100 yards of the project area. These effects are contained within the bounds of the Southern Expansion Project at Arlington National Cemetery (DHR Project Review No. 2014-1094). The temporary sound and visual effects are partially contained and minimized by the bordering roadways: Washington Blvd. (SR 27) and the Henry G. Shirley Memorial Hwy. (I-95 and I-395). During construction, there will be temporary, localized impacts to traffic patterns adjacent to the cemetery, primarily along the adjacent Columbia Pike and Joyce Street.

Installation of the Sheridan Gate foundations and pilings involves ground disturbing activities in previously disturbed areas. This ground disturbance is within the bounds of the previously reviewed Southern Expansion Project at Arlington National Cemetery (DHR Project Review No. 2014-1094).

Area of Potential Effects Map

- APE outlined in **YELLOW**.
- Proposed project location in **RED**.

IDENTIFICATION OF HISTORIC PROPERTIES



Historic Properties within the APE

Per 36 CFR § 800.4, the following is a list of historic resources within / adjacent to the APE:

- Arlington National Cemetery Historic District (DHR ID #000-0042)
- The Pentagon / Pentagon Office Building Complex (DHR ID #000-0072)
- Air Force Memorial (DHR ID #000-9821)

National Register Historic Properties within the APE

The following is a list of historic properties on, or eligible for listing on, the National Register of Historic Places (IAW 36 CFR part 63) within the APE:

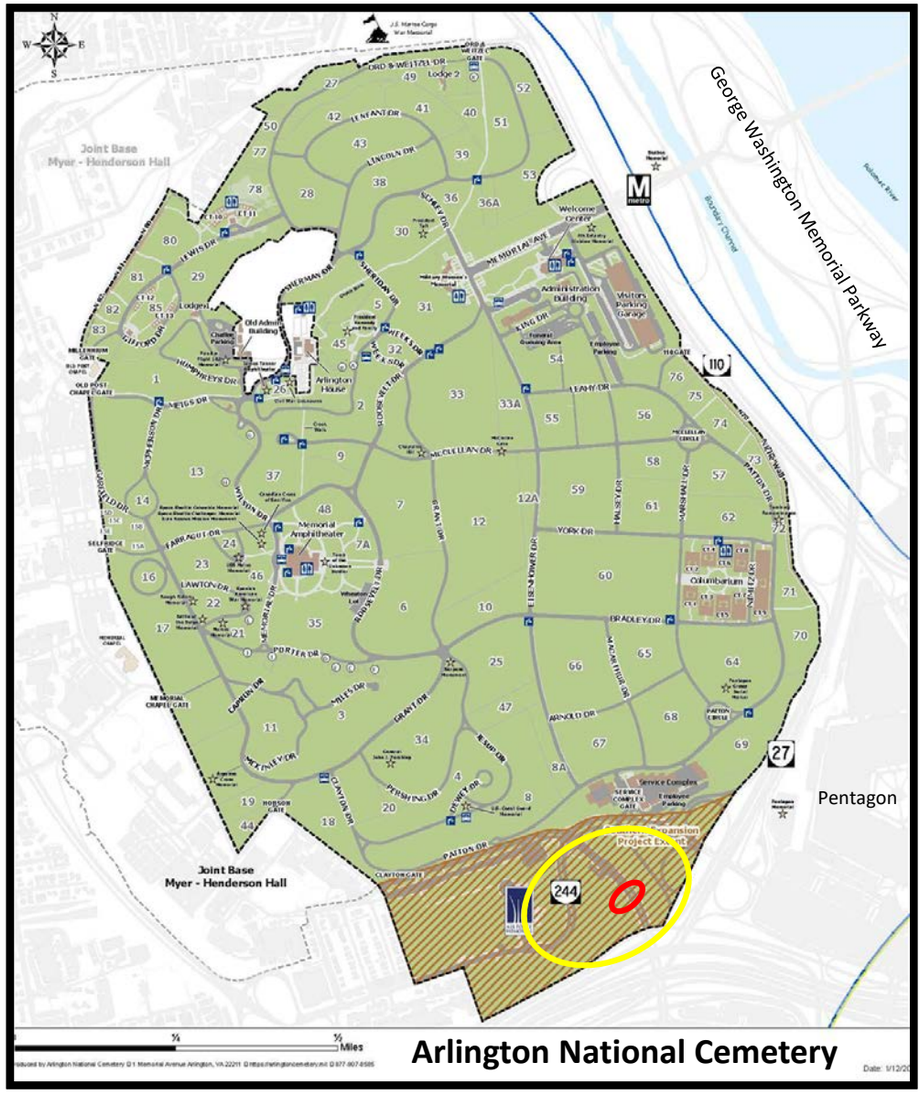
- Arlington National Cemetery Historic District (DHR ID #000-0042)
  https://www.dhr.virginia.gov/historic-registers/000-0042/
- The Pentagon (DHR ID #000-0072)
  https://www.dhr.virginia.gov/historic-registers/000-0072/
- Air Force Memorial Evaluation of Eligibility for the National Register (DHR ID #000-9821)
  https://www.arlingtoncemetery.mil/Portals/0/Docs/Public-Notices/20190212-AFM-Draft-Determination-of-Eligibility-for-National-Register.pdf

AREA OF POTENTIAL EFFECTS MAP

APE outlined in **YELLOW**.

Proposed project location in **RED**.

IDENTIFICATION OF HISTORIC PROPERTIES



Results of Identification & Evaluation:
Historic Properties Affected

Per 36 CFR § 800.4(d)(2), ANMC found that there are historic properties which may be affected by the undertaking. As a result, ANMC will notify the DHR, potential consulting parties, and the public, inviting their views on:

1. The agency's finding that there is an undertaking that affects historic properties;
2. The agency's identification agency's identification of historic properties;
3. The agency's identification of the area of potential effects (APE);
4. The agency's assessment of no adverse effects to historic properties.

AREA OF POTENTIAL EFFECTS MAP

APE outlined in **YELLOW**.

Proposed project location in **RED**.

Determination of Effects

Sheridan Gate, between 1900 and 1920, Library of Congress

Assessment of Adverse Effects

By applying the criteria of adverse effects (36 C.F.R. § 800.5[a][1]), ANMC finds that the proposed undertaking – the Sheridan Gate reconstruction project – will result in **no adverse effects to historic properties** listed on the National Register within and adjacent to the undertaking's APE:

- Arlington National Cemetery Historic District (DHR ID # 000-0042)
- The Pentagon (DHR ID #000-0072)
- Air Force Memorial (DHR ID #000-9821)

The Sheridan Gate reconstruction project is a small component of the larger Southern Expansion Project at Arlington National Cemetery (DHR Project Review No. 2014-1094). The Southern Expansion Section 106 review resulted in a Memorandum of Agreement that stipulates mitigation measures to resolve adverse effects. Therefore, this assessment of effects for the Sheridan Gate reconstruction is restricted to those impacts to the historic gate and its components, which could not be fully determined until the agency completed the reconstruction design. After extensive assessment of the gate components, including their current condition and structural strength, ANMC proposes rehabilitating most of the masonry and metal components, replacing components that are not structurally sound, and rebuilding the gateway with a new internal support structure. This requires drilling into the masonry to install stainless steel rods, couplers, and mesh. Utilizing an internal support system will require the loss of some original material, however, it will restore the historic appearance of the gate, which was originally a load-bearing masonry structure with no visible external bracing or supports. As much original material will be reused as possible, while restoring the operability of Sheridan Gate and meeting current building code and engineering requirements.

Determination of Effects

Illustration of the reconstructed Sheridan Gate

Assessment of Adverse Effects, continued

A 2016 report titled “Archaeological and Historic Evaluations for the Arlington National Cemetery Southern Expansion, Arlington County, Virginia” examined the history of the project site, past land uses, and analyzed data from test borings, remote sensing, and excavation done for site evaluation. There are no archaeological resources recorded in the APE for direct physical disturbances. The project area had repeated disturbances from cycles of construction and demolition, and as a result have a very low potential for intact archaeological sites. In a letter dated 5 April 2017, the Virginia Department of Historic Resources concurred with the findings of that evaluation that intact archaeological deposits are unlikely within the APE, and no further survey is warranted.

Therefore, ANMC finds that the project design avoids and/or minimizes the direct, indirect, and cumulative effects to above- and below- ground historic properties and contributing elements in the undertaking’s APE. There will be no adverse effects to the integrity of the historic properties that would diminish their historical and architectural significance. There are no adverse impacts to the characteristics that qualify the historic properties for inclusion in or eligibility for the National Register of Historic Places (NRHP). The historic location and elements of the historic properties listed above are maintained. The sites continue to convey their historic significance for both their landscape architecture and architecture. There are no changes to the integrity of location, workmanship, feeling or associations for Arlington National Cemetery, the Pentagon, or the Air Force Memorial.

Agency Request for Response to Findings

ANMC Request to DHR

Illustration of the reconstructed Sheridan Gate

ANMC requests that the DHR:

1. Respond to ANMC's request for review of finding of effect on historic properties.
2. Provide concurrence or comments on the determined APE.
3. Provide concurrence or comments on the identified historic properties.

In support of this request, ANMC submits the following documents to the DHR:

- Electronic Project Information Exchange (ePIX) system submission
- Section 106 Initiation Letter
- Section 106 Documentation: Project Description, Identification of Consulting Parties, Identification of Historic Properties, Area of Potential Effects, and Assessment of Effects

Consultation & Public Comment

Public tour of the Arlington National Cemetery, Arlington, Virginia, June 21, 2019

Concurrent with this submission, ANMC sends notifications to consulting parties and the public of the initiation of a 30-day comment period. The notices and Section 106 documentation are posted on the ANC website:

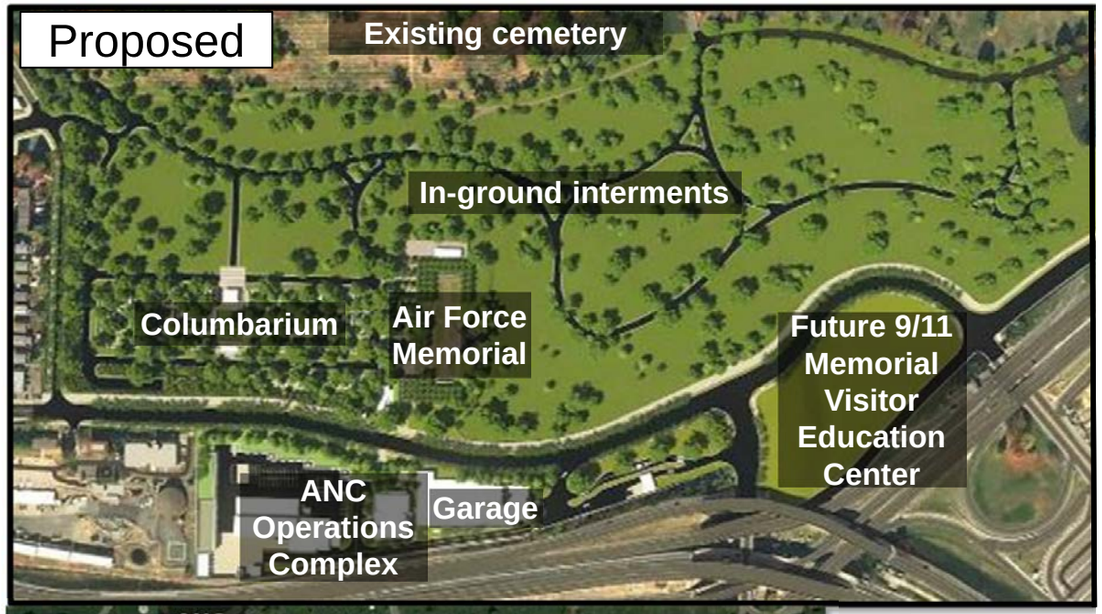
https://www.arlingtoncemetery.mil/About/Policies-and-Public-Notices/Public-Notices

This submission to potential consulting parties and the public includes:

- Section 106 Initiation Letter
- Section 106 Documentation: Project Description, Identification of Consulting Parties, Identification of Historic Properties, Area of Potential Effects, and Assessment of Effects
- Consulting Party Notification Letter
- Public Notification Letter

SUPPORTING DOCUMENTATION: SOUTHERN EXPANSION DESIGN

SOUTHERN EXPANSION PROJECT



- **Adds 80K(+) burial opportunities**
- **Air Force Memorial is the centerpiece of Southern Expansion**
- **Pedestrian access to ANC/AFM via Columbia Pike**
- **Operations (Ops) Complex moves south of Columbia Pike**
- **Ops Complex (SE Ph II) & Cemetery Expansion (SE Ph III) separated into two contracts due to inflation and material cost risk**

Program Milestones

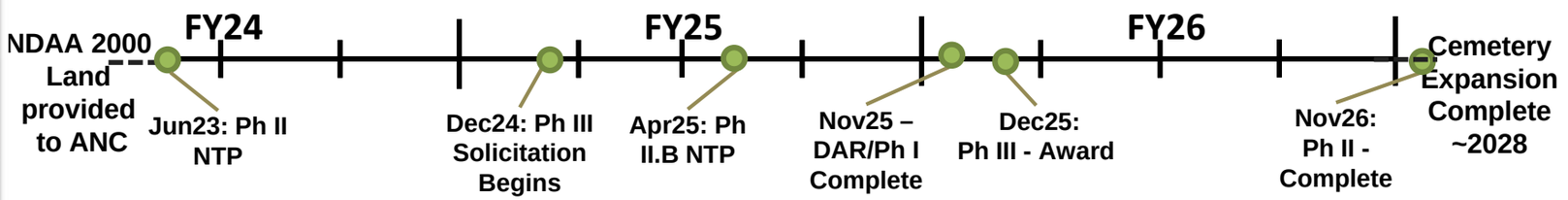
Defense Access Roads / Ph I (Horizontal): Sep 2021 – Nov 2025

Ph II (Operations Complex): Apr 2023 – Nov 2026

Ph III (Cemetery Expansion): Award in Dec 2025; Complete 2028 (est.)

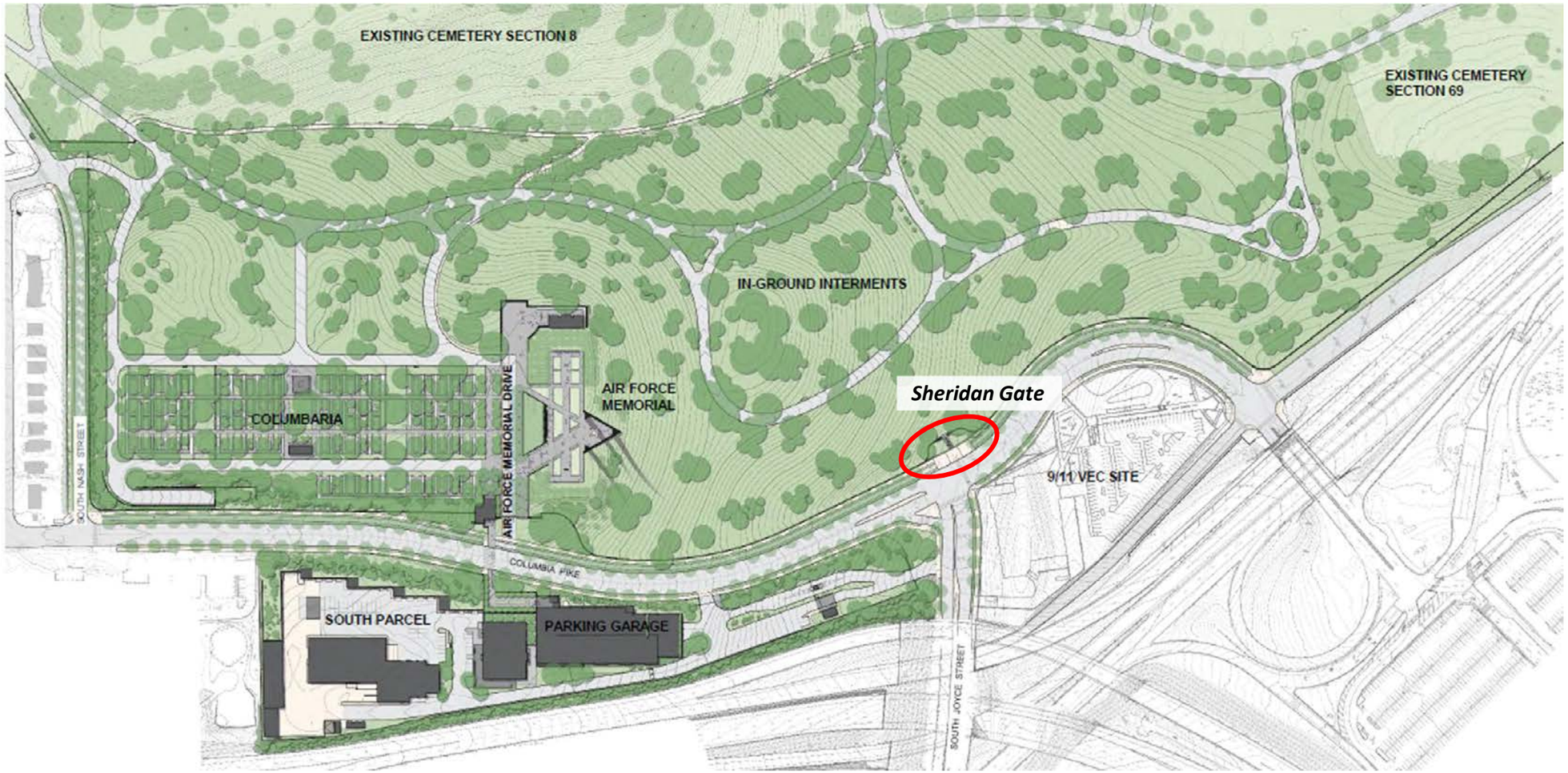
Road Realignment Project – Total appropriation: $74.6M (MILCON funded)

Southern Expansion- Total appropriation: $508.7M (CEA funded)



Southern Expansion Project Site Plan

Reconstruction of the gate is a component of the final Southern Expansion design; it is not a new design element. However, the design documents did not specify the method of reconstruction.



Southern Expansion Site Illustration

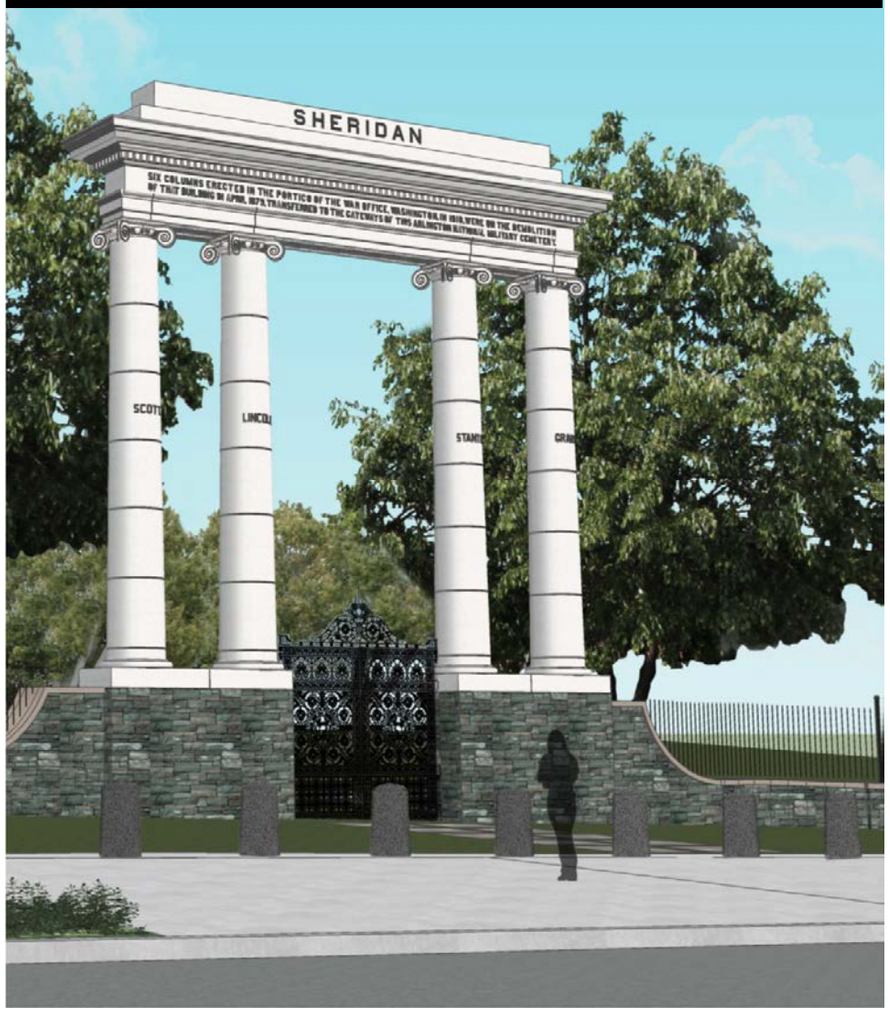
Southern Expansion Aerial View Looking Northwest

Southern Expansion Site Illustration

S. Joyce Street Entrance Looking North

Sheridan Gate Reconstruction

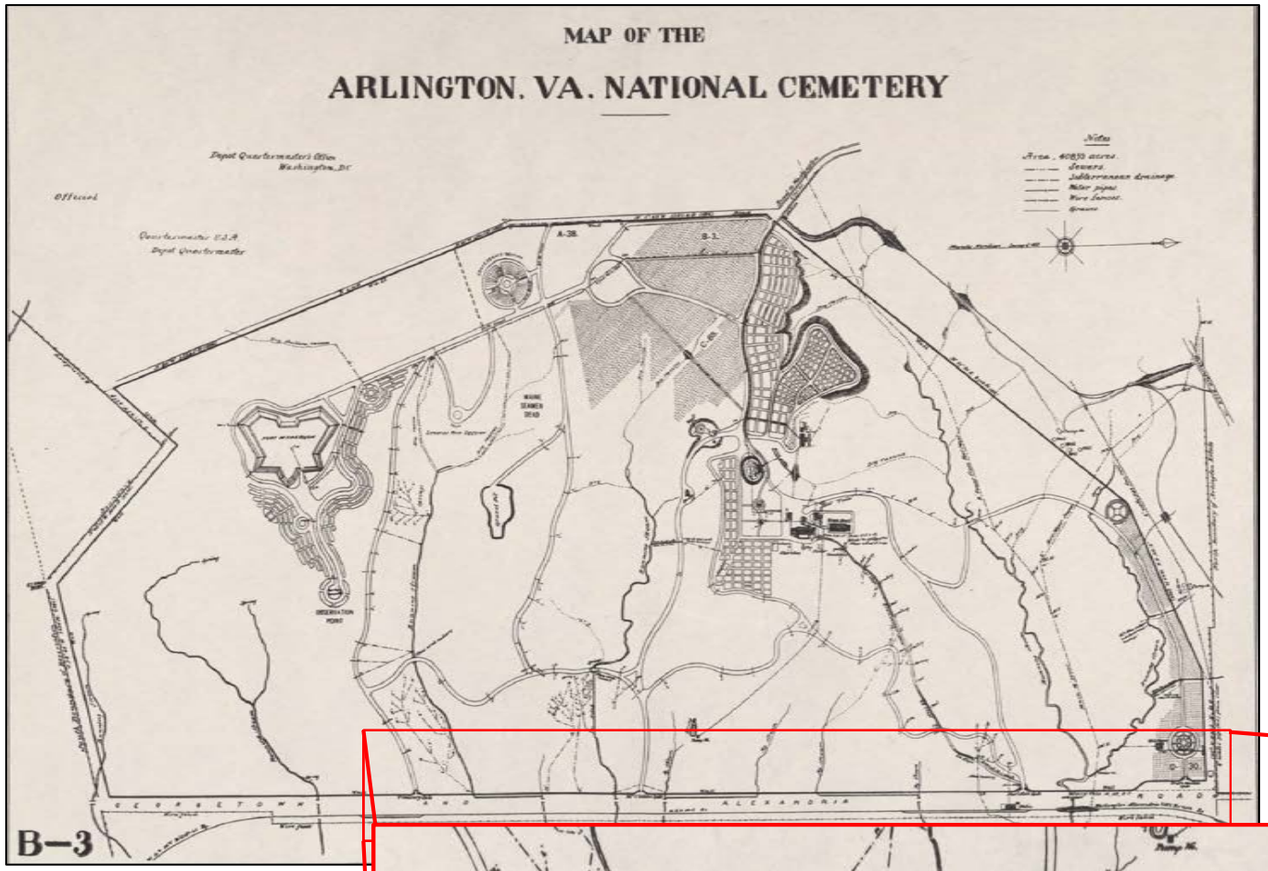
Sheridan Gate Front Elevation Illustration



As ANMC prepares for this next phase of the Southern Expansion project, the design team is reexamining the current condition of the historic gate components and how best to balance the preservation of original material with the necessity of meeting current code and engineering requirements. The preferred design utilizes a system of internal pinning and stainless-steel supports to reinforce the historic masonry and restore the original design, which was a self-supporting masonry structure.

SHERIDAN GATE:
HISTORICAL CONTEXT

SHERIDAN GATE: HISTORICAL CONTEXT

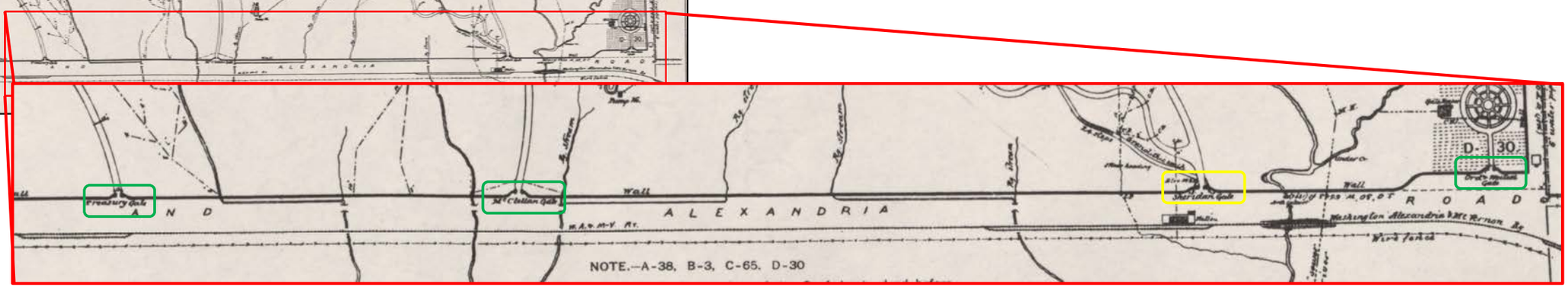


ANC Map, 1901

For much of Arlington National Cemetery's history, four (4) gates defined the cemetery's eastern boundary. In this map from 1901, the gates are depicted in their original positions along the Georgetown and Alexandria Road.

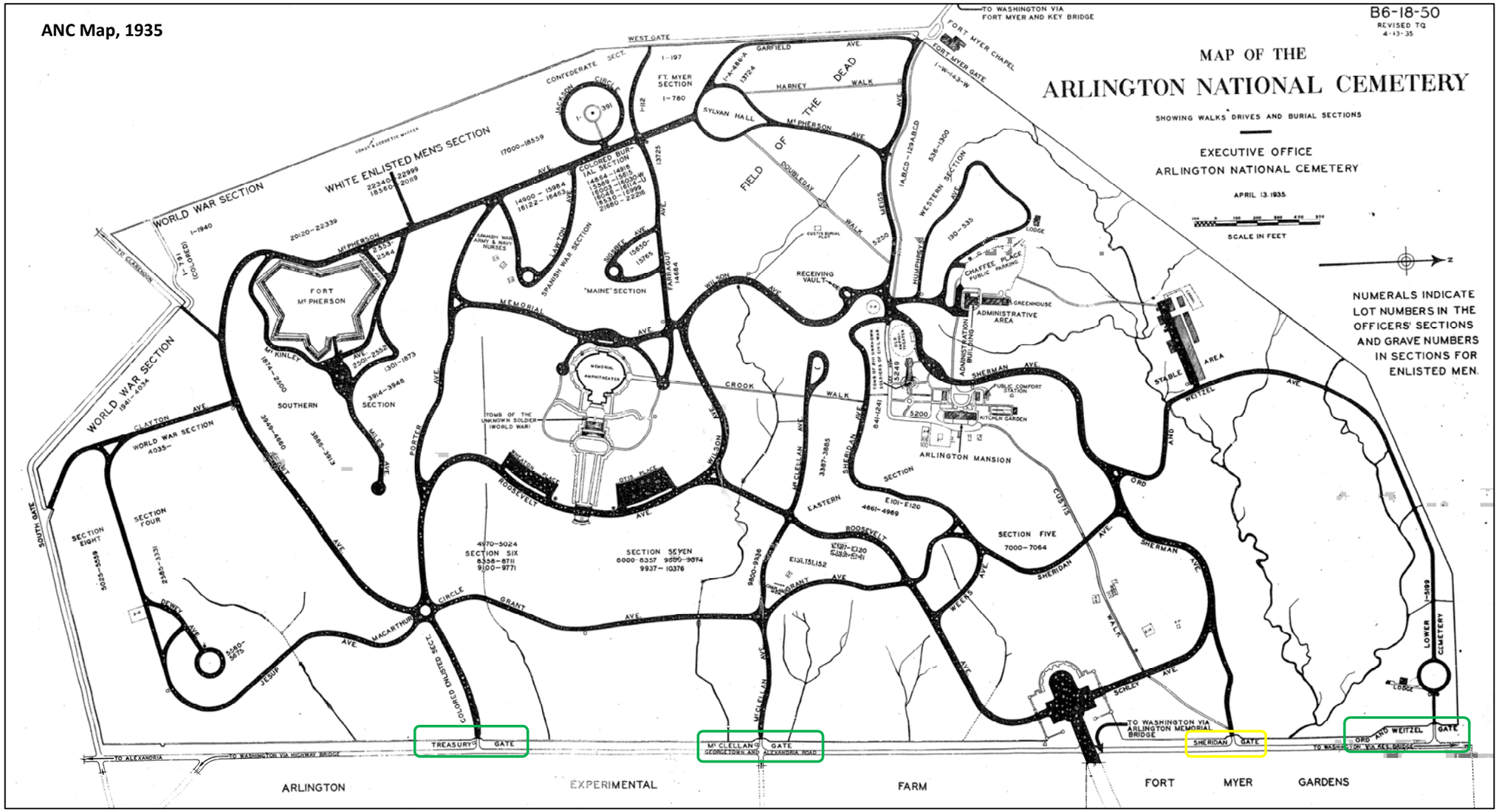
The gates, highlighted in green and yellow, running from south to north, left to right below:

- Treasury Gate
- McClellan Gate
- Sheridan Gate
- Ord & Weitzel Gate



SHERIDAN GATE: HISTORICAL CONTEXT

ANC Map, 1935



SHERIDAN GATE: HISTORICAL CONTEXT

After the War of 1812, architect James Hoban designed the Northwest Executive Building, also known as the Old War Department Building, located west of the White House in Washington, DC. The building had a north-facing portico with six columns. When the building was dismantled in 1879 to be replaced with the larger State, War, and Navy Building, Quartermaster General Montgomery C. Meigs petitioned to save the sandstone columns and entablature. Under his direction and design, the six columns and portions of the portico were salvaged and reconstructed on the grounds of Arlington National Cemetery (ANC) as two eastern entrance gates. Two columns became the Ord-Weitzel gate, which was rebuilt in 2022. The other four columns and the entablature became the Sheridan Gate.

Old War Building Portico, 1870, Library of Congress

Sheridan Gate

The Sheridan Gate was installed on two rough-hewn stone wingwalls with ornate iron gates installed between them. The names of prominent Civil War U.S. Military leaders Abraham Lincoln, Edwin M. Stanton, Winfield Scott, and later Ulysses S. Grant were inscribed into the columns.

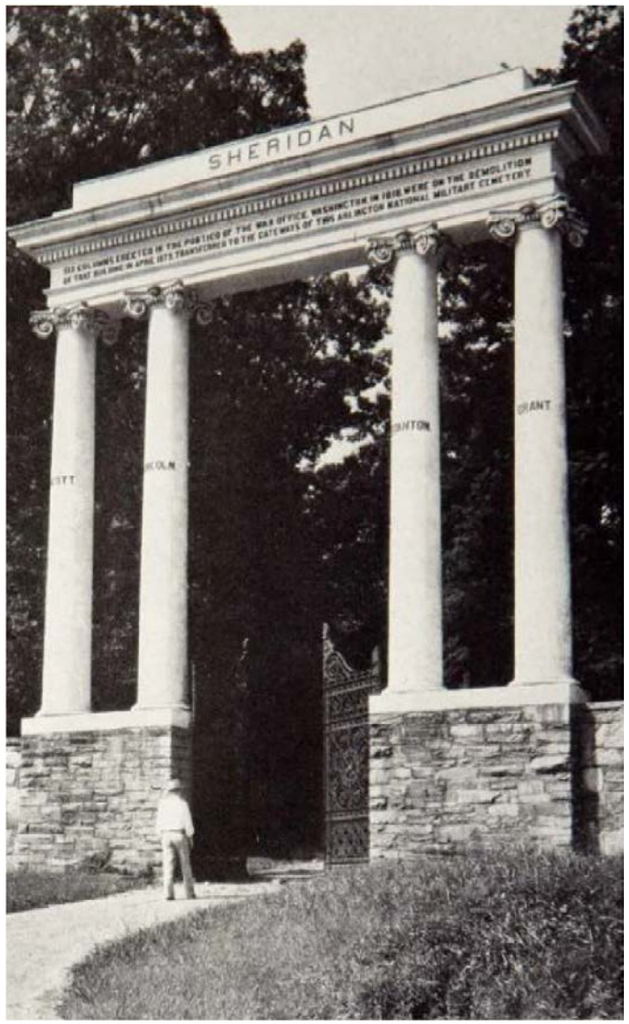
Shortly after the construction of the gate, the gate collapsed at its central span. It was re-erected with a wrought iron beam installed inside the architrave level.

In 1888, following the death of General Philip Sheridan, his name was inscribed onto the entablature, giving the gate its namesake and a history of the gate's columns and subsequent reconstruction was inscribed on the frieze.

In 1971 the gate was dismantled as part of the cemetery's expansion. The Sheridan Gate's narrow opening conflicted with modern vehicles and maintenance needs of the cemetery, and the gate was disassembled and stored on cemetery grounds. The disassembly process caused extensive damage to the stone gate, most notably in the frieze, which was broken into fragments.

Sheridan Gate, between 1900 and 1920, Library of Congress

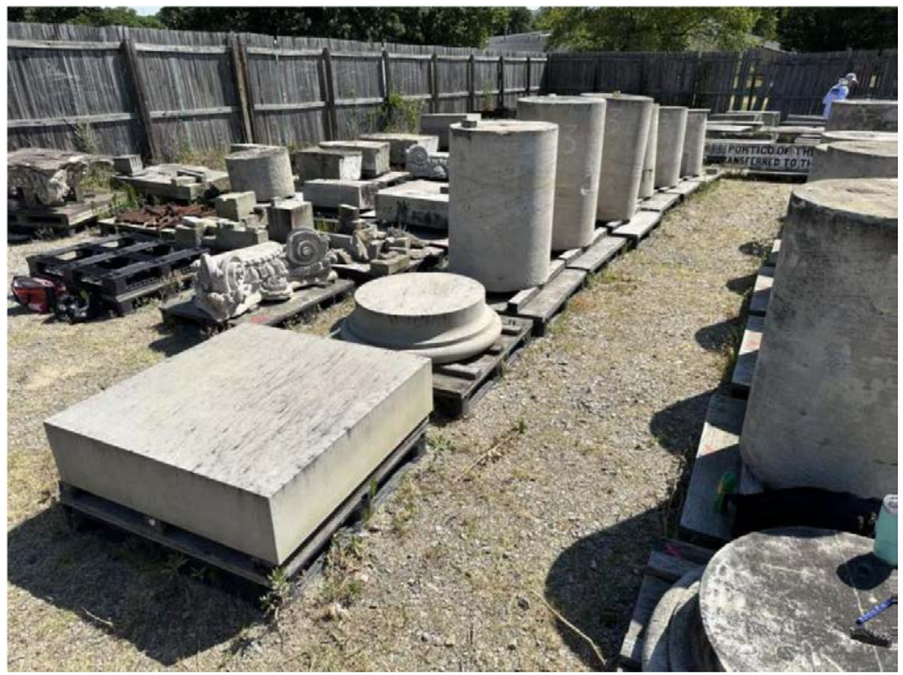
Sheridan Gate



Sheridan Gate historical images from the Library of Congress

Sheridan Gate: Current Conditions

Since their disassembly, the Sheridan Gate stones have been moved multiple times. In 2012, as the cemetery began the Millennium expansion project, the stones were removed from their wooded location, organized onto pallets, and relocated to a storage yard in the south end of the cemetery. In 2018, a sinkhole opened at the storage location facility, requiring the stones to be temporarily relocated. Several pieces of stone incurred more damage during this relocation. From 2016-2018, Speweik Preservation Consultations Inc. undertook cleaning, repair, and replacement of the gate's masonry components.

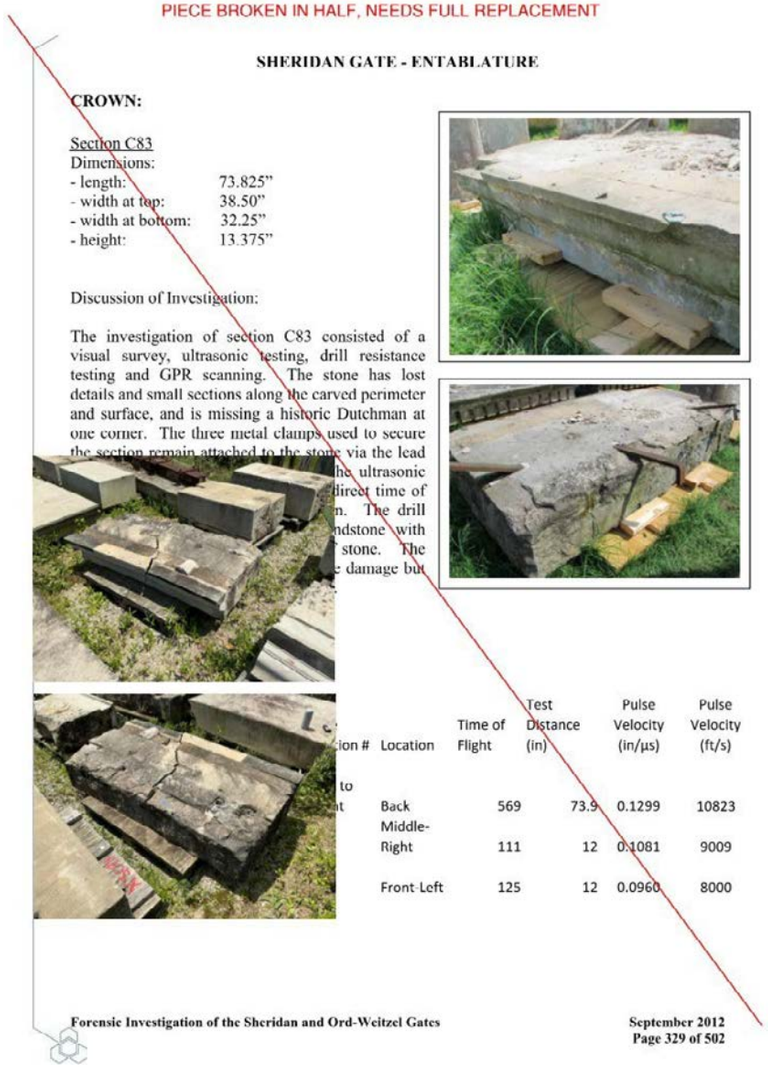


SHERIDAN GATE: CURRENT CONDITIONS

The Southern Expansion design team, in reassessing the current condition of the Sheridan Gate components, have identified several deterioration conditions and reconstruction challenges:

- Masonry surface deterioration: erosion, sugaring, spalling, cracking
- Masonry structural deterioration: cracking, failure of prior repairs
- Reassembled frieze consisting of many individual, damaged components
- Replacement stones carved to replace pieces missing or damaged beyond repair
- Corroded iron internal support embedded in the architrave
- Remains of leaded iron cramp anchors
- Sheet metal roofing requires replacement
- Removal of 1900s lead paint remnants required before applying historically accurate and safer masonry paint or limewash
- General soiling
- Many more repairs to the component pieces are required; all recent dutchman need to be redone

The 2024-2025 assessment resulted in a reexamination of the engineering and design requirements for the reconstruction and the development of a new reconstruction option. This new, preferred option relies more on internal pinning and supports. It also replaces stones damaged since the last 2018 repair campaign, which have been identified as not strong or stable enough for use in a loadbearing masonry structure.



PIECE BROKEN IN HALF, NEEDS FULL REPLACEMENT

SHERIDAN GATE - ENTABLATURE

CROWN:

Section C83
Dimensions:
- length: 73.825"
- width at top: 38.50"
- width at bottom: 32.25"
- height: 13.375"

Discussion of Investigation:

The investigation of section C83 consisted of a visual survey, ultrasonic testing, drill resistance testing and GPR scanning. The stone has lost details and small sections along the carved perimeter and surface, and is missing a historic Dutchman at one corner. The three metal clamps used to secure the section remain attached to the stone via the lead

ion #	Location	Time of Flight	Test Distance (in)	Pulse Velocity (in/µs)	Pulse Velocity (ft/s)
to	Back	569	73.9	0.1299	10823
	Middle-Right	111	12	0.1081	9009
	Front-Left	125	12	0.0960	8000

Forensic Investigation of the Sheridan and Ord-Weitzel Gates — September 2012 Page 329 of 502

Sheridan Gate: Current Conditions

Sheridan Gate: Current Conditions

Sheridan Gate: Current Conditions

Sheridan Gate: Current Conditions

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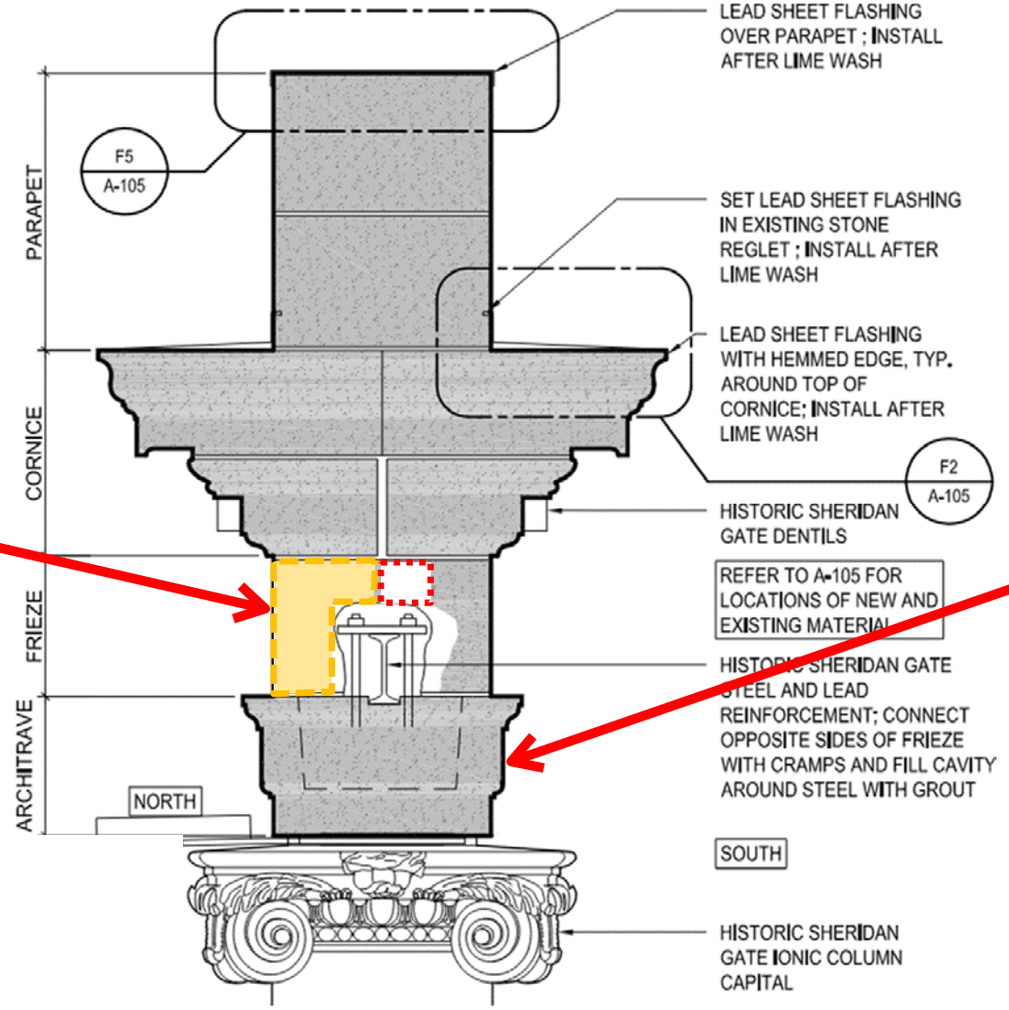
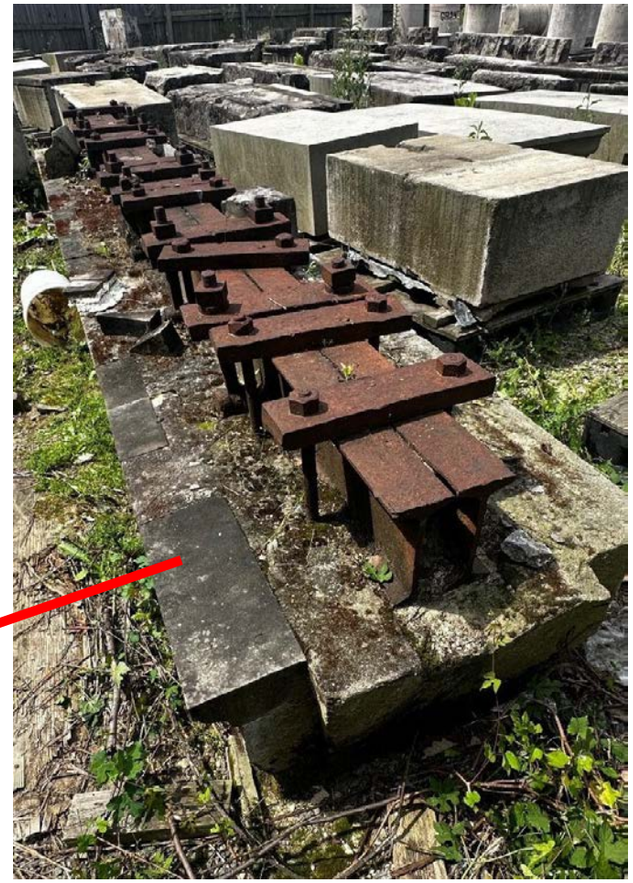
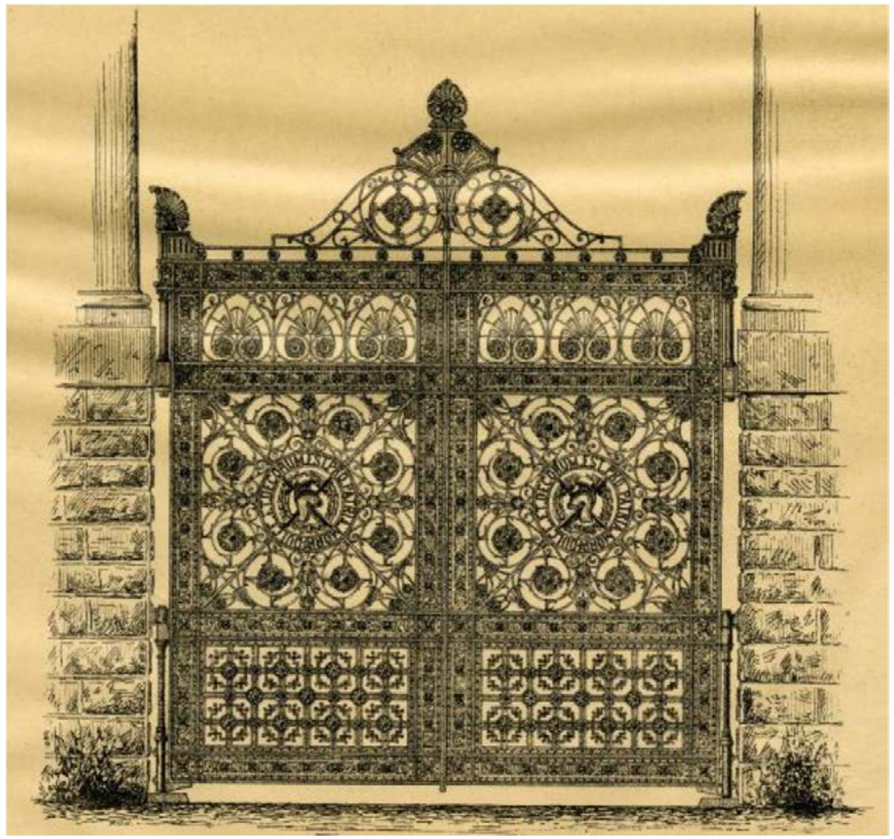




A54

SHERIDAN GATE: CURRENT CONDITIONS

The decorative iron gates have been fully restored. They are crated and in storage.



Sheridan Gate iron gates, historical drawing

Sheridan Gate iron gates after restoration, including recreation of gilding identified in paint analyses and historical images

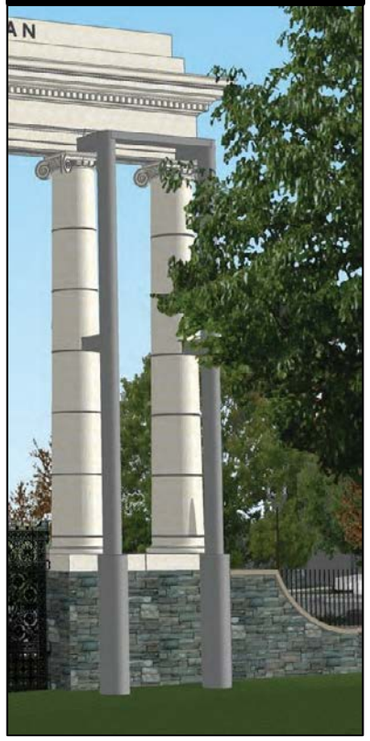
SHERIDAN GATE:
RECONSTRUCTION DESIGN

Reconstruction Options

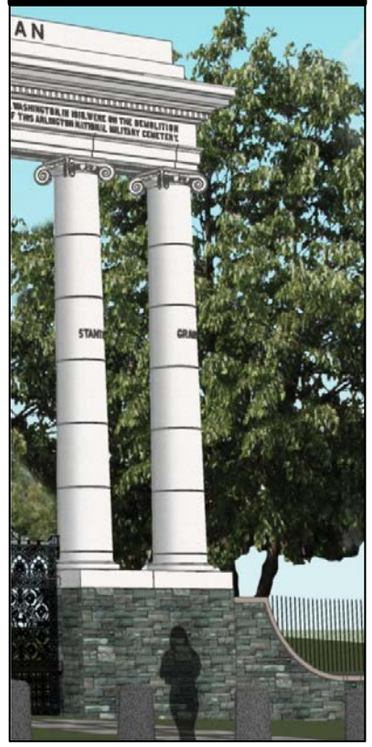
From 2021 through 2025, the Southern Expansion design team have developed three (3) different reconstruction options for the Sheridan Gate. Each finds different ways to successfully and safely restore the Sheridan Gate to its historical position as an ornate ceremonial entrance to Arlington National Cemetery. These design approaches balance the preservation of original material, in its current deteriorated condition, with the requirement to meet current building code and engineering standards. This top-heavy structure must be engineered to withstand potential seismic and wind loads. The iron gates must be operable, though the intention is for this gate to remain locked and only opened on limited, special occasions. The gate would stand at the intersection of a public road and adjacent to a public sidewalk.

Option 1: Angled Bracing

Option 2: Vertical Bracing



Option 3: Internal Pinning



OPTION 1: ANGLED BRACING

Pros:

- Minimizes loss of original masonry material.
- Stainless steel braces connect to columns by inserting a stainless steel plate into the mortar joint between two stone drums, making the design partially reversible.

Cons:

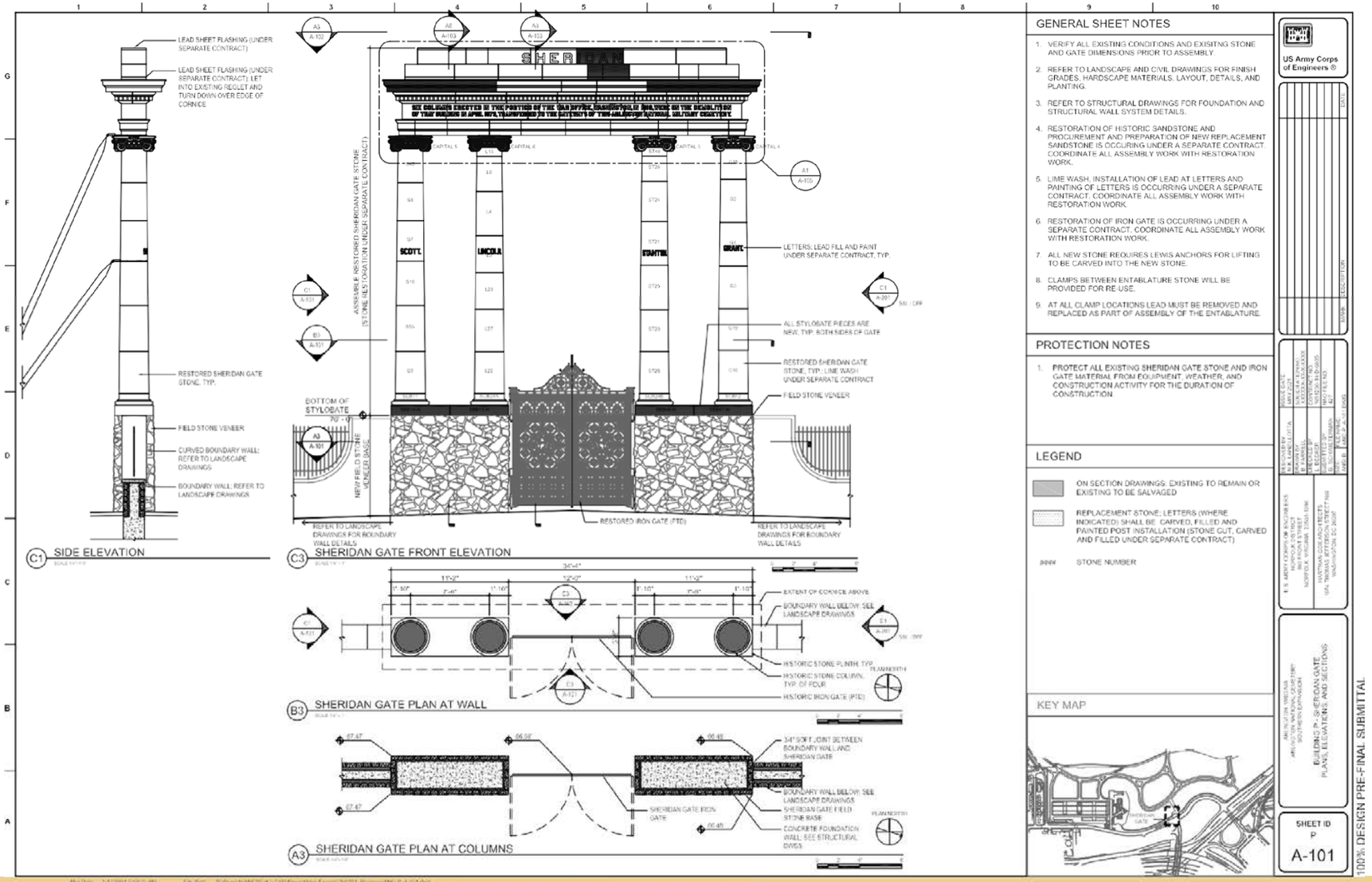
- Highly visible external supports disrupt views of the historic gate and adversely effects its aesthetic.
- Concerns over differential expansion coefficients between the extremely hard stainless steel bracing inserted into softer stone that will expand and contract at a higher rate.
- Developed in May 2021, before the 2024-2025 condition and engineering assessment.

Reconstruction Option 1

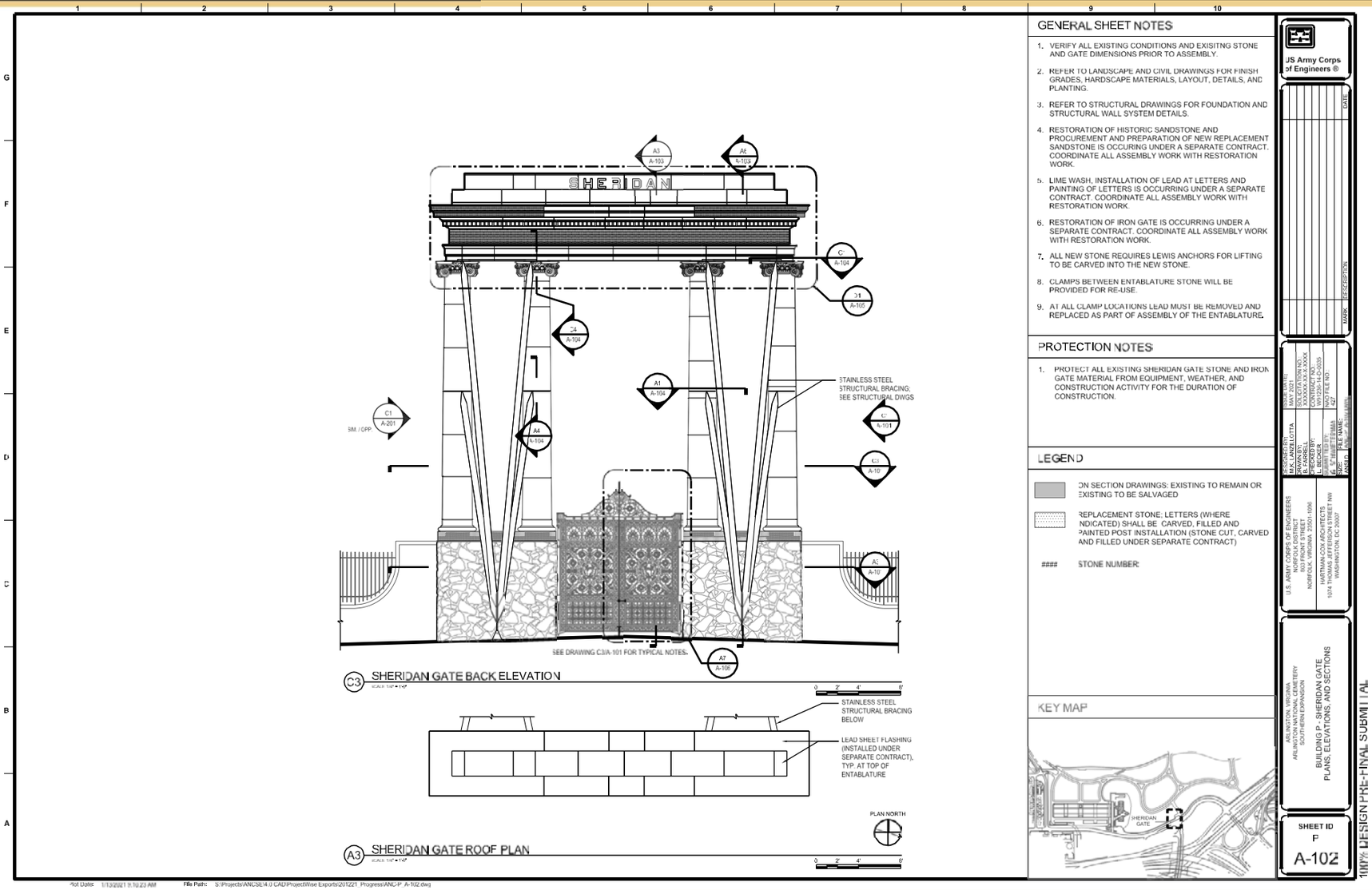
Reconstruction Option 1

Reconstruction Option 1

RECONSTRUCTION OPTION 1



RECONSTRUCTION OPTION 1



GENERAL SHEET NOTES

1. VERIFY ALL EXISTING CONDITIONS AND EXISITNG STONE AND GATE DIMENSIONS PRIOR TO ASSEMBLY.
2. REFER TO LANDSCAPE AND CIVIL DRAWINGS FOR FINISH GRADES, HARDSCAPE MATERIALS, LAYOUT, DETAILS, AND PLANTING.
3. REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION AND STRUCTURAL WALL SYSTEM DETAILS.
4. RESTORATION OF HISTORIC SANDSTONE AND PROCUREMENT AND PREPARATION OF NEW REPLACEMENT SANDSTONE IS OCCURING UNDER A SEPARATE CONTRACT. COORDINATE ALL ASSEMBLY WORK WITH RESTORATION WORK.
5. LIME WASH, INSTALLATION OF LEAD AT LETTERS AND PAINTING OF LETTERS IS OCCURRING UNDER A SEPARATE CONTRACT. COORDINATE ALL ASSEMBLY WORK WITH RESTORATION WORK.
6. RESTORATION OF IRON GATE IS OCCURRING UNDER A SEPARATE CONTRACT. COORDINATE ALL ASSEMBLY WORK WITH RESTORATION WORK.
7. ALL NEW STONE REQUIRES LEWIS ANCHORS FOR LIFTING TO BE CARVED INTO THE NEW STONE.
8. CLAMPS BETWEEN ENTABLATURE STONE WILL BE PROVIDED FOR RE-USE.
9. AT ALL CLAMP LOCATIONS LEAD MUST BE REMOVED AND REPLACED AS PART OF ASSEMBLY OF THE ENTABLATURE.

PROTECTION NOTES

1. PROTECT ALL EXISTING SHERIDAN GATE STONE AND IRON GATE MATERIAL FROM EQUIPMENT, WEATHER, AND CONSTRUCTION ACTIVITY FOR THE DURATION OF CONSTRUCTION.

LEGEND

ON SECTION DRAWINGS: EXISTING TO REMAIN OR EXISTING TO BE SALVAGED

REPLACEMENT STONE: LETTERS (WHERE NDICATED) SHALL BE CARVED, FILLED AND PAINTED POST INSTALLATION (STONE CUT, CARVED AND FILLED UNDER SEPARATE CONTRACT)

STONE NUMBER

KEY MAP

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VIRGINIA 23510-1096

HARTMAN-COX ARCHITECTS
1074 THOMAS JEFFERSON STREET NW
WASHINGTON, DC 20007

ARLINGTON, VIRGINIA
ARLINGTON NATIONAL CEMETERY
SOUTHERN EXPANSION

BUILDING P - SHERIDAN GATE
PLANS, ELEVATIONS, AND SECTIONS

SHEET ID
P
A-102

100% DESIGN PRE-FINAL SUBMITTAL

RECONSTRUCTION OPTION 1

1. VERIFY ALL EXISTING CONDITIONS AND EXISITNG STONE AND GATE DIMENSIONS PRIOR TO ASSEMBLY.
2. REFER TO LANDSCAPE AND CIVIL DRAWINGS FOR FINISH GRADES, HARDSCAPE MATERIALS, LAYOUT, DETAILS, AND PLANTING.
3. REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION AND STRUCTURAL WALL SYSTEM DETAILS.
4. RESTORATION OF HISTORIC SANDSTONE AND PROCUREMENT AND PREPARATION OF NEW REPLACEMENT SANDSTONE IS OCCURING UNDER A SEPARATE CONTRACT. COORDINATE ALL ASSEMBLY WORK WITH RESTORATION WORK.
5. LIME WASH, INSTALLATION OF LEAD AT LETTERS AND PAINTING OF LETTERS IS OCCURRING UNDER A SEPARATE CONTRACT. COORDINATE ALL ASSEMBLY WORK WITH RESTORATION WORK.
6. RESTORATION OF IRON GATE IS OCCURRING UNDER A SEPARATE CONTRACT. COORDINATE ALL ASSEMBLY WORK WITH RESTORATION WORK.
7. ALL NEW STONE REQUIRES LEWIS ANCHORS FOR LIFTING TO BE CARVED INTO THE NEW STONE.
8. CLAMPS BETWEEN ENTABLATURE STONE WILL BE PROVIDED FOR RE-USE.
9. AT ALL CLAMP LOCATIONS LEAD MUST BE REMOVED AND REPLACED AS PART OF ASSEMBLY OF THE ENTABLATURE.

PROTECTION NOTES

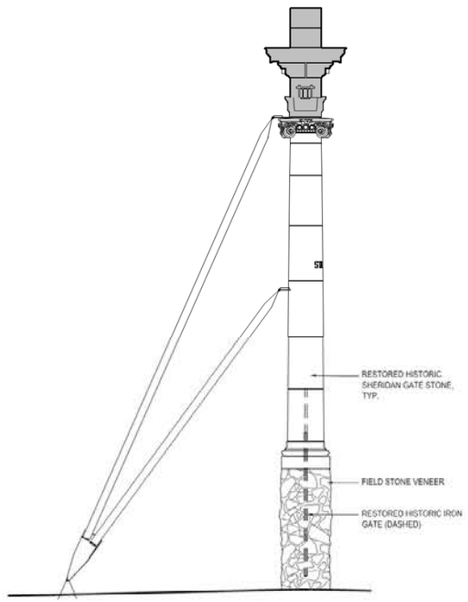
1. PROTECT ALL EXISTING SHERIDAN GATE STONE AND IRON GATE MATERIAL FROM EQUIPMENT, WEATHER, AND CONSTRUCTION ACTIVITY FOR THE DURATION OF CONSTRUCTION.

LEGEND

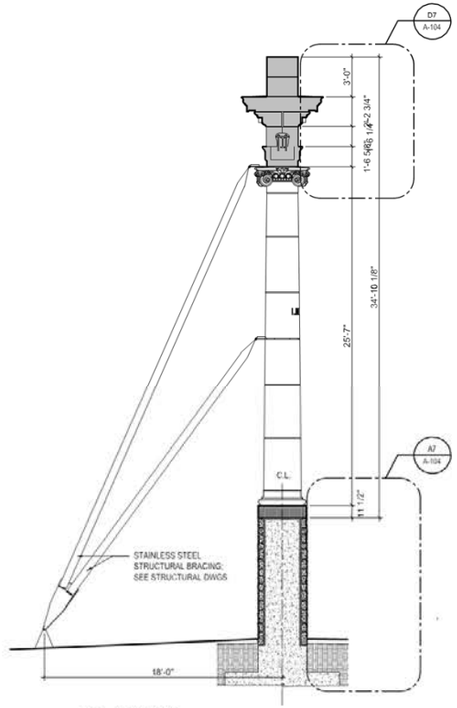
ON SECTION DRAWINGS: EXISTING TO REMAIN OR EXISTING TO BE SALVAGED

REPLACEMENT STONE; LETTERS (WHERE INDICATED) SHALL BE CARVED, FILLED AND PAINTED POST INSTALLATION (STONE CUT, CARVED AND FILLED UNDER SEPARATE CONTRACT)

STONE NUMBER



A3 SECTION



A6 SECTION

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VIRGINIA 23501-1096

HARTMAN-COX ARCHITECTS
1274 THOMAS JEFFERSON STREET NW
WASHINGTON, DC 20007

DESIGNED BY: M.M. LASCELOTTA
DRAWN BY: B. FARRELL
PROJECT MGR: T. BECKER
PROJECT ENGINEER: C. SCHUETERMANN
SIZE: ARCH D
ISSUE DATE: 1/13/2021
SOLICITATION NO.: XXXXXX-XX-X-XXXX
CONTRACT NO.: W912391-14-D-0005
NAVY FILE NO.:
FILE NAME: ANC-P_A-103.DWG

ARLINGTON, VIRGINIA
ARLINGTON NATIONAL CEMETERY
SOUTHERN EXPANSION

BUILDING P - SHERIDAN GATE
SECTIONS AND ELEVATIONS

SHEET ID
P
A-103

100% DESIGN PRE-FINAL SUBMITTAL

Plot Date: 1/13/2021 8:59:20 AM File Path: S:\Projects\ANC\SE\4.0 CAD\Project\Wee Exports\201221_Progress\ANC-P_A-103.dwg

OPTION 2: VERTICAL BRACING

Pros:

- Minimizes loss of original masonry material.
- Stainless steel braces connect to columns by inserting a stainless steel plate into the mortar joint between two stone drums, making the design partially reversible.
- Compared to option 1, option 2's slimmer, vertical design better hides the bracing from the front of the gate.

Cons:

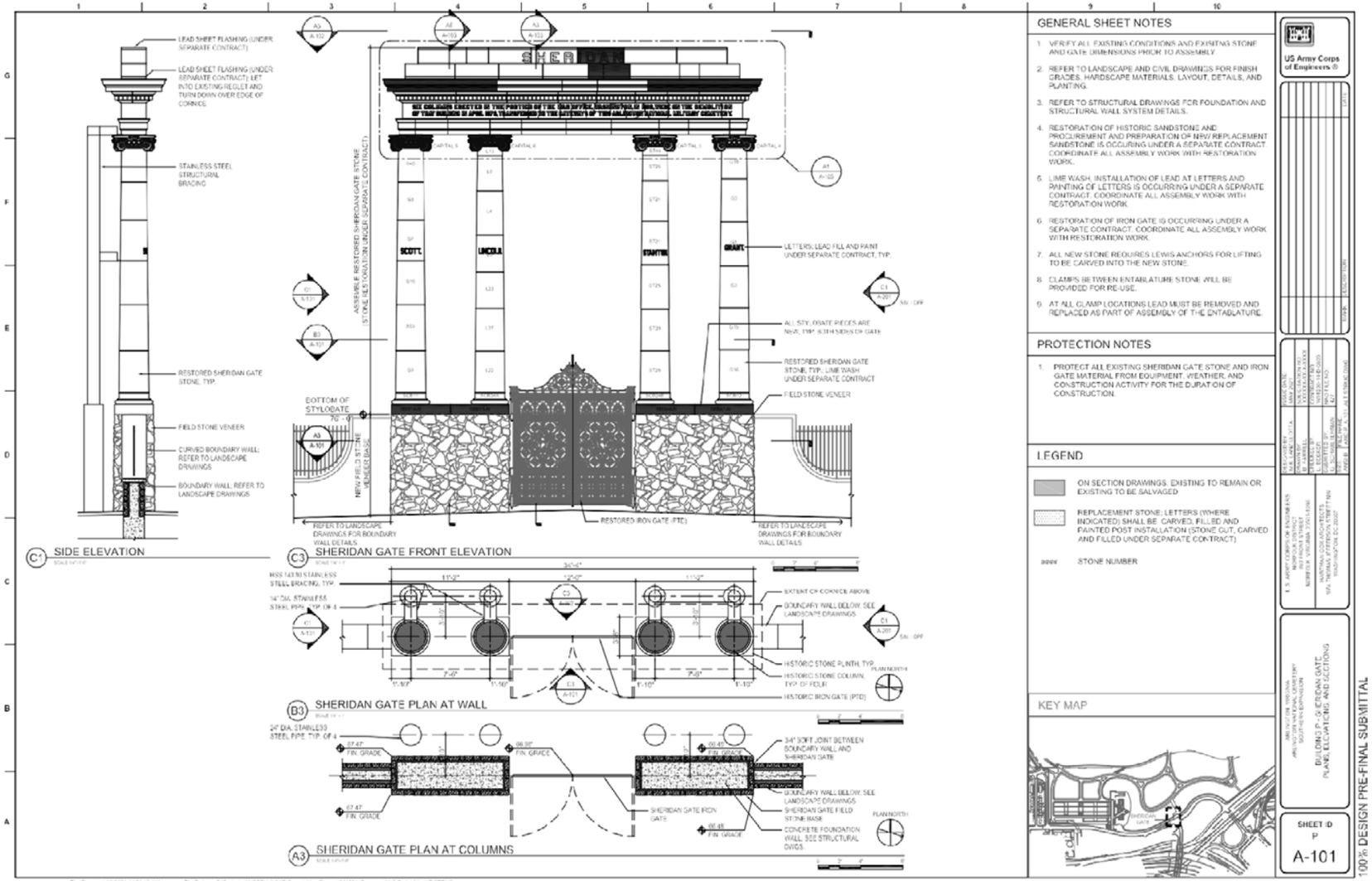
- Highly visible external supports disrupt views of the historic gate and adversely effects its aesthetic.
- Size of the bracing increases in option 2, compared with option 1.
- Concerns over differential expansion coefficients between the extremely hard stainless steel bracing inserted into softer stone that will expand and contract at a higher rate.
- Developed in June 2021, before the 2024-2025 condition and engineering assessment.

Reconstruction Option 2

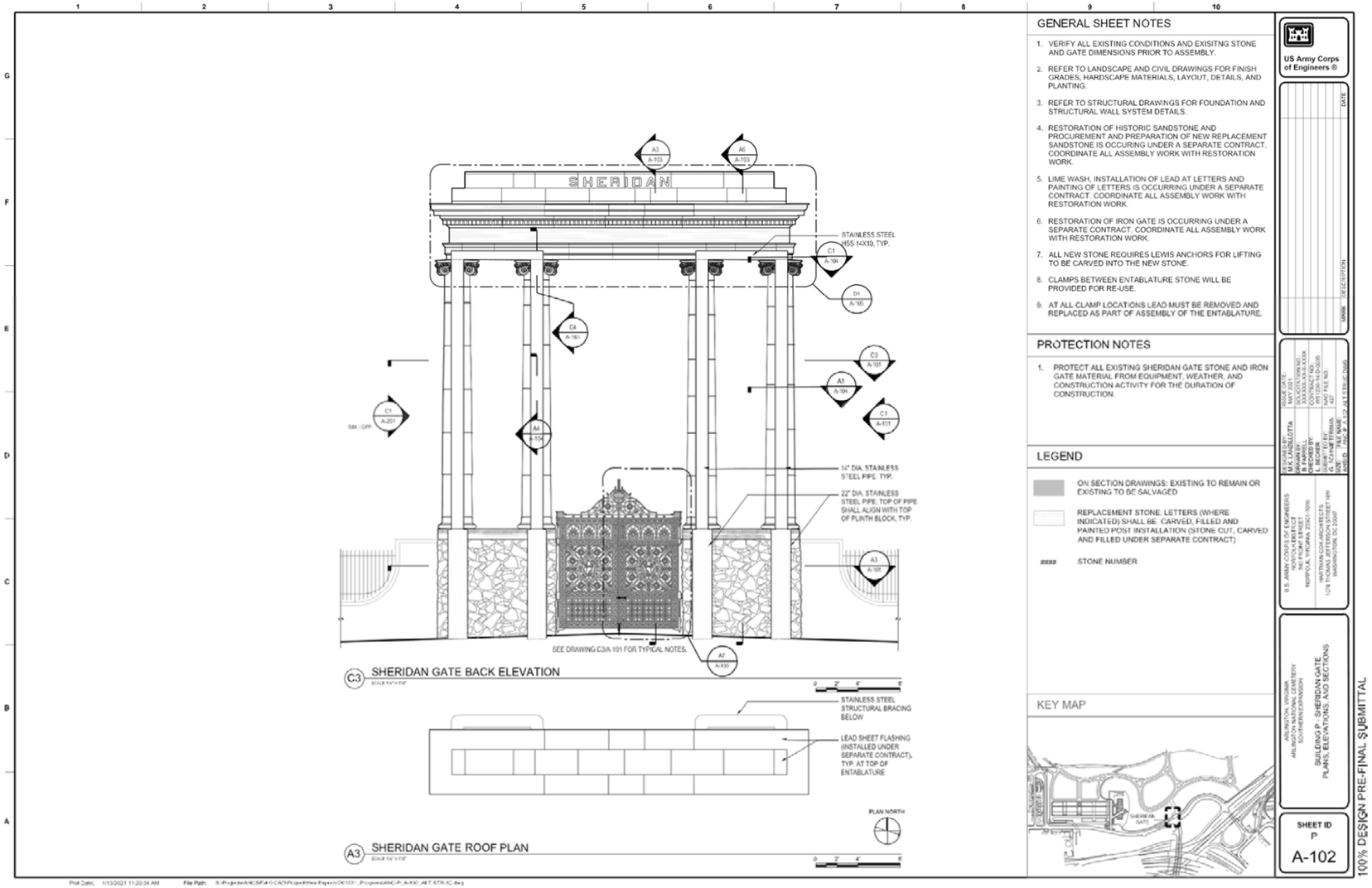
Reconstruction Option 2

Reconstruction Option 2

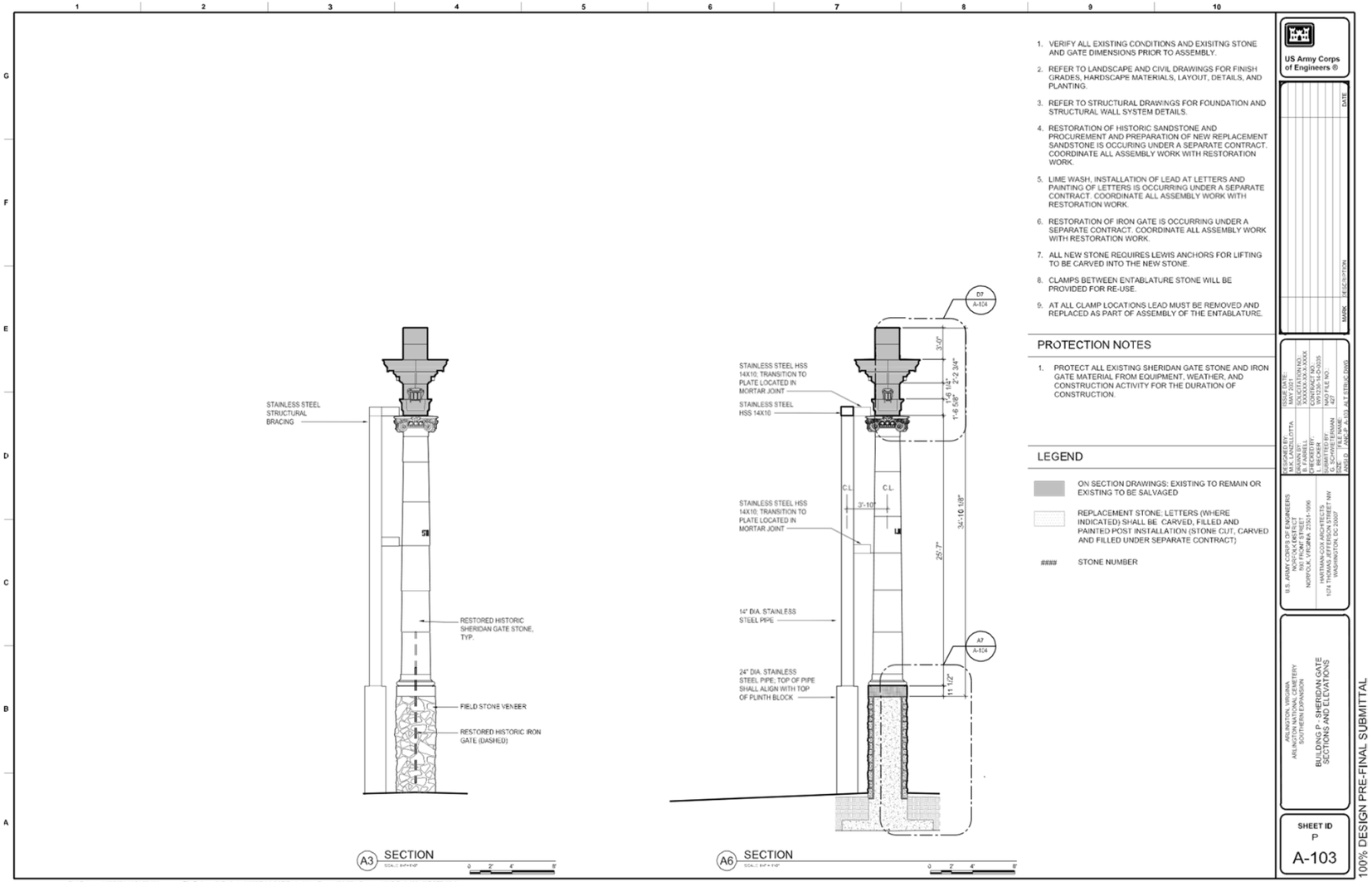
RECONSTRUCTION OPTION 2



RECONSTRUCTION OPTION 2



RECONSTRUCTION OPTION 2



Option 3: Internal Pinning
(Final Design & Preferred Option)

OPTION 3: INTERNAL PINNING (PREFERRED OPTION)

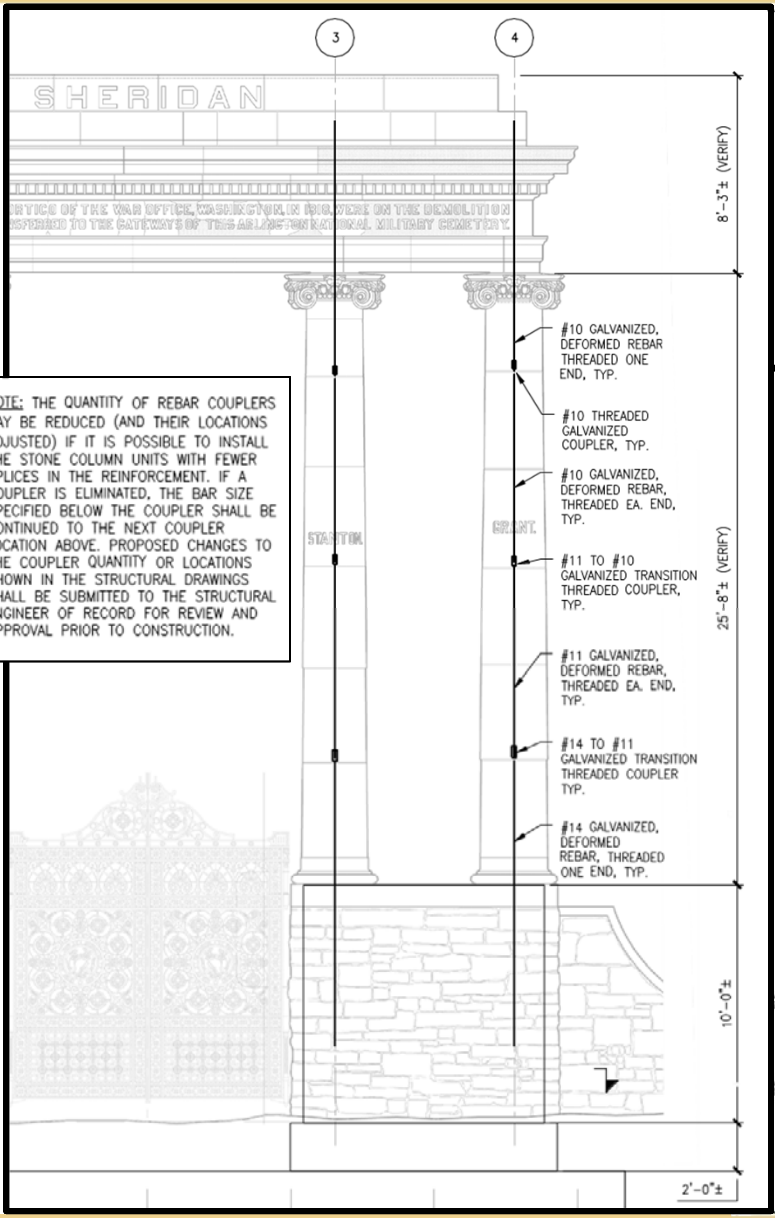
Pros:

- No external supports or bracing, means no disrupted views of the historic gate and no adverse effects to the aesthetic design.
- Restores appearance of loadbearing masonry structure.
- No compromise on gate's appearance from inside or outside the cemetery; gate looks as historically intended from all elevations.
- Developed in 2024-2025, after conducting additional condition and engineering assessments.

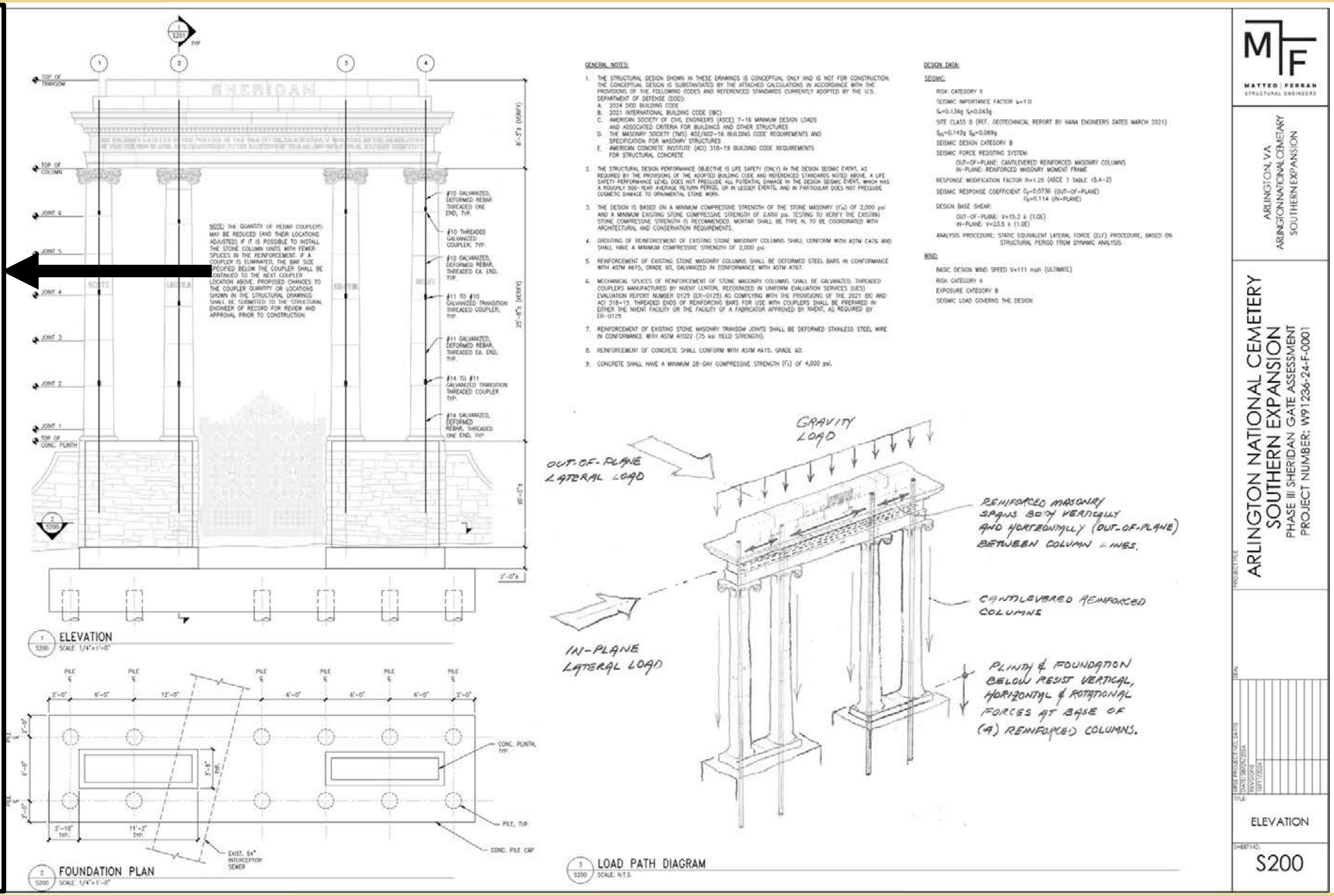
Cons:

- Selective loss of original masonry material.
- Construction design is not reversible.
- While all reconstruction contains an element of risk, risks increase when drilling and modifying historic material.

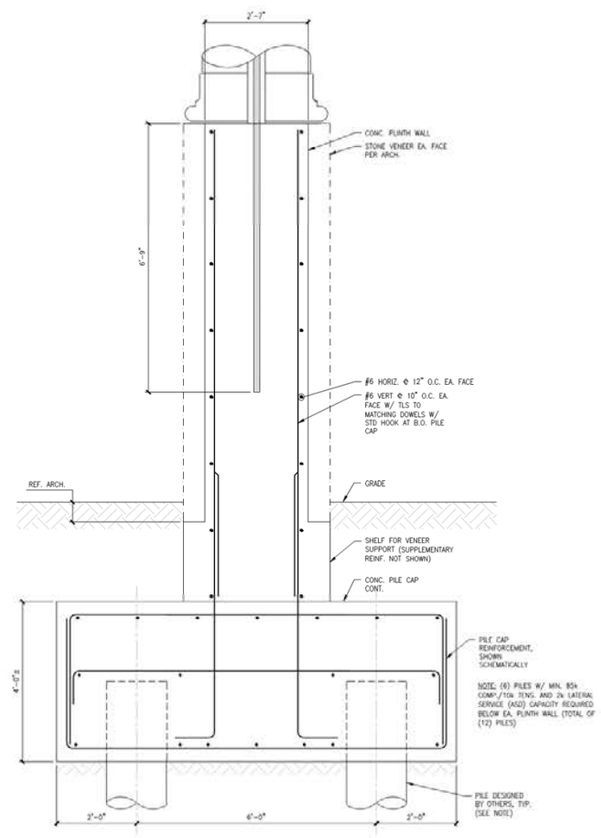
Reconstruction Option 3



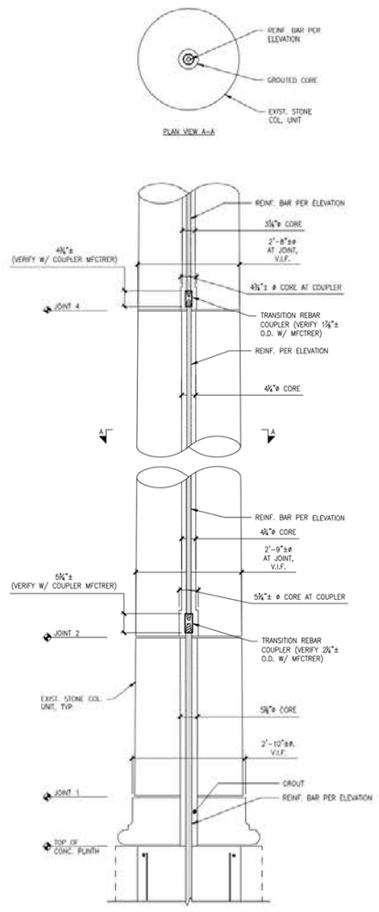
NOTE: THE QUANTITY OF REBAR COUPLERS MAY BE REDUCED (AND THEIR LOCATIONS ADJUSTED) IF IT IS POSSIBLE TO INSTALL THE STONE COLUMN UNITS WITH FEWER SPLICES IN THE REINFORCEMENT. IF A COUPLER IS ELIMINATED, THE BAR SIZE SPECIFIED BELOW THE COUPLER SHALL BE CONTINUED TO THE NEXT COUPLER LOCATION ABOVE. PROPOSED CHANGES TO THE COUPLER QUANTITY OR LOCATIONS SHOWN IN THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.



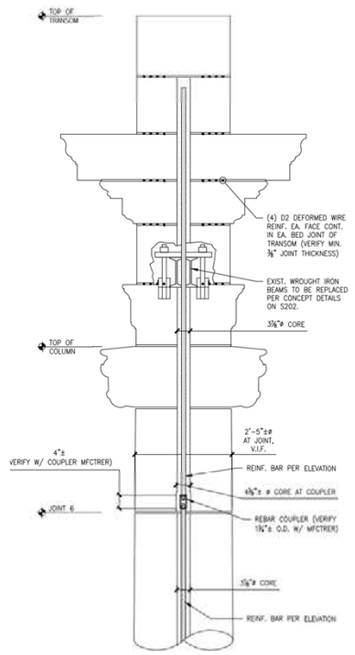
RECONSTRUCTION OPTION 3



1 / S201 SECTION – FOUNDATION TO TOP OF CONCRETE PLINTH
SCALE: 3/4"=1'-0"



LOWER COLUMN SECTION – JOINTS 2 THROUGH 4
SCALE: 3/4"=1'-0"



UPPER COLUMN SECTION – JOINT 6 AND TRANSOM
SCALE: 3/4"=1'-0"

MATTEO | FERRAN STRUCTURAL ENGINEERS

ARLINGTON, VA
ARLINGTON NATIONAL CEMETARY
SOUTHERN EXPANSION

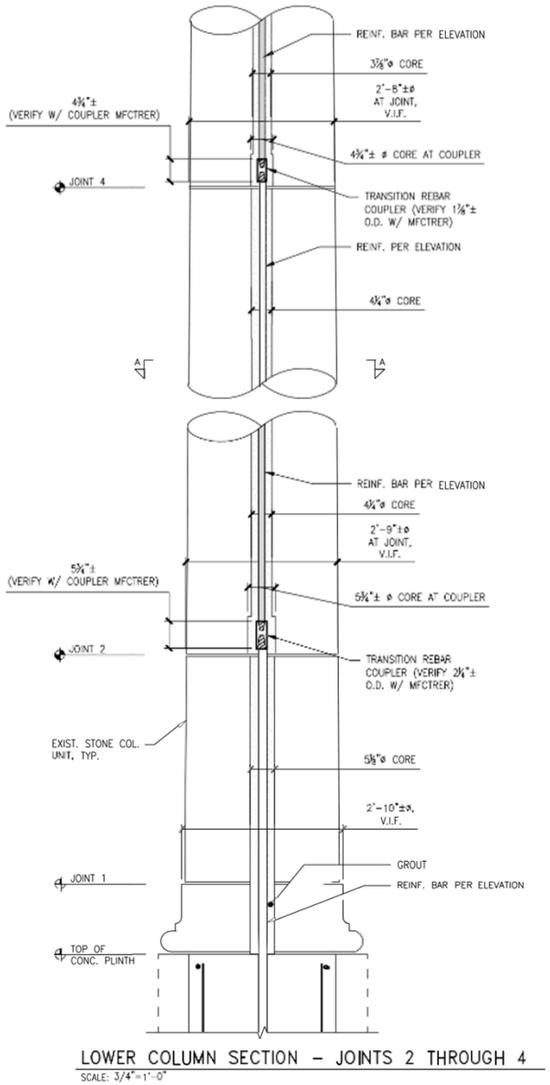
PROJECT TITLE
ARLINGTON NATIONAL CEMETERY
SOUTHERN EXPANSION
PHASE III SHERIDAN GATE ASSESSMENT
PROJECT NUMBER: W91236-24-F-0001

DRAWN
PROJECT NO. 24-13
DATE 09/13/2024
REVISIONS
10/17/2024

TITLE
SECTIONS

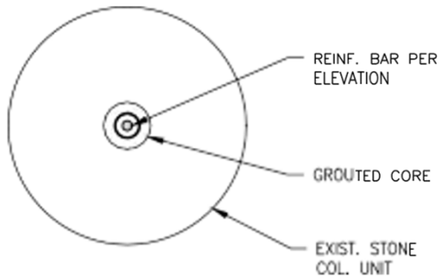
SHEET NO.
S201

RECONSTRUCTION OPTION 3



LOWER COLUMN SECTION – JOINTS 2 THROUGH 4

SCALE: 3/4"=1'-0"



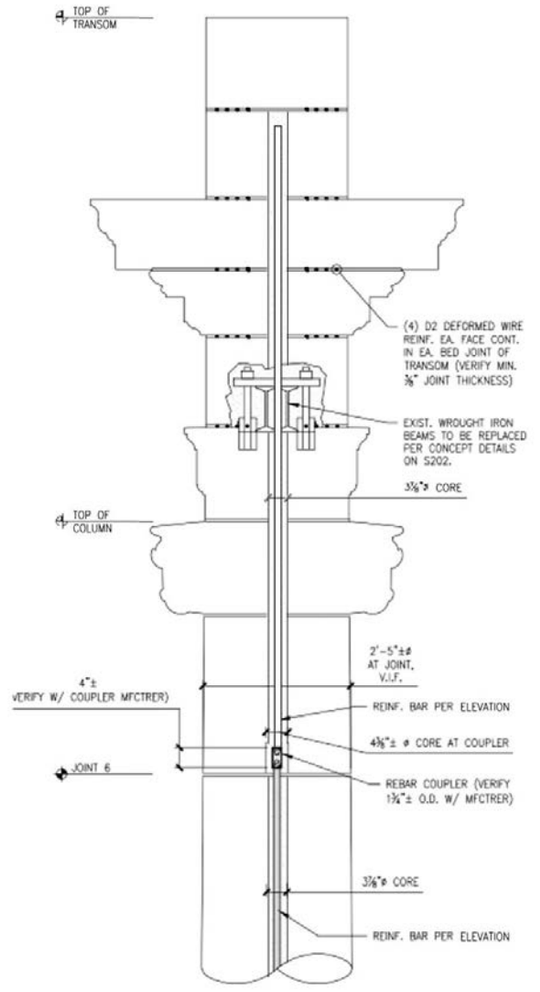
PLAN VIEW A–A

These drawings show stainless steel reinforcing bars inserted through the center of the column drums. This requires the sandstone drums to each be cored drilled centrally to make space for the reinforcement, which will transfer loads from the entablature down into the new foundations.

To keep the reinforcing bars as small as possible, the bars will be broken into sections connected by coupler. Thus, the rod at the top of the column, where the drums are narrowest, can have a smaller diameter than the rod at the base of the column, where the drums are widest.

The entablature, which is top heavy and at most risk from wind and seismic forces, will be further reinforced with deformed stainless steel wire embedded in the masonry joints between stones, and the existing corroded iron beams will be replaced with a new stainless steel beam.

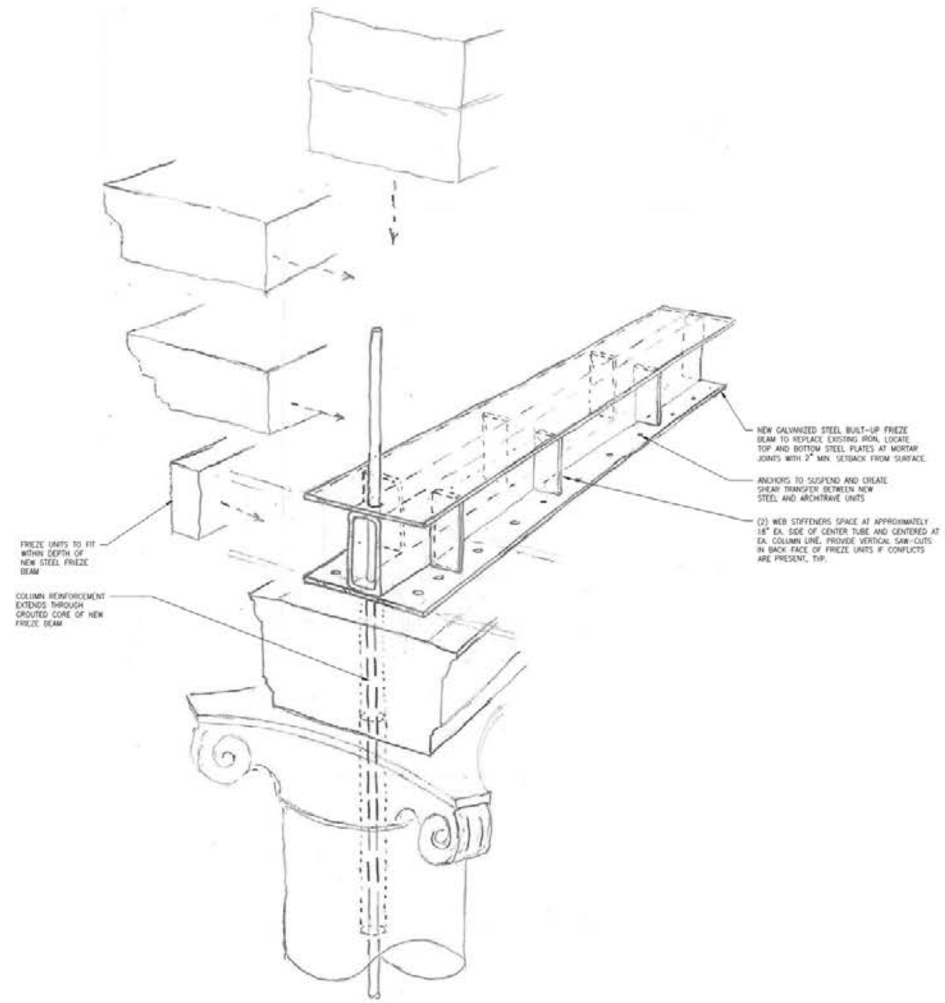
Furthermore, the damaged spandrel, which currently consists of four (4) separate and damaged masonry units, will be replaced with a single stone that mimics the historic appearance by adding false joints as a decorative detail.



UPPER COLUMN SECTION – JOINT 6 AND TRANSOM

SCALE: 3/4"=1'-0"

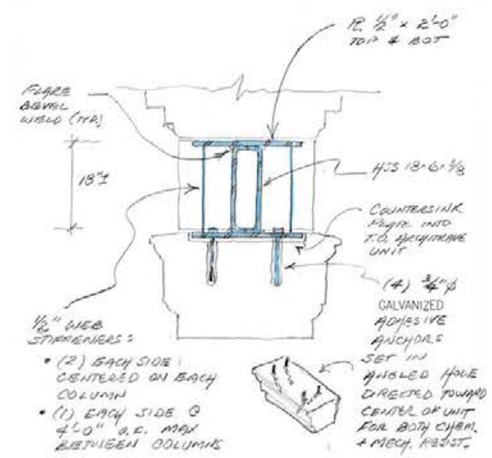
Reconstruction Option 3



1 / S202 — FRIEZE BEAM REPLACEMENT CONCEPT DESIGN
SCALE: N.T.S.

FRIEZE BEAM REPLACEMENT

1. THE STONE-BY-STONE CONDITION ASSESSMENT OF THE SHERIDAN GATE REVEALED THAT THE FRIEZE UNITS, WHICH BEAR THE HISTORIC INSCRIPTION, ARE PHYSICALLY FRAGILE AND IT IS QUESTIONABLE WHETHER THEY CAN ADEQUATELY BEAR THE WEIGHT OF STONE MASONRY SET ABOVE THEM. AS SUCH, AN OPTION TO RELIEVE THESE UNITS OF ANY LOAD-BEARING FUNCTION IS PRESENTED HEREIN.
2. THE RECOMMENDED APPROACH LOCATES A STEEL PLATE AT THE MORTAR JOINT LEVEL ABOVE THE FRIEZE UNITS. THE PLATE CANTILEVERS OFF OF A CENTRAL FRIEZE BEAM. GIVEN THE VARIABLE CONDITION OF THE EXISTING IRON BEAMS, INCLUDING THEIR IRREGULAR LAYOUT OF TOP PLATES AND HANGERS INTO THE ARCHITRAVE UNITS BELOW, THE EXISTING IRON BEAMS ARE TO BE REMOVED AND SALVAGED AS HISTORIC RECORD. THE IRON HANGER RODS ARE TO BE CUT BACK TO JUST BELOW THE TOP OF THE ARCHITRAVE UNITS. THIS WILL ALLOW INSTALLATION OF A NEW GALVANIZED STEEL FRIEZE BEAM AS ILLUSTRATED IN 1 / S202.
3. THE NEW FRIEZE BEAM WILL BE DESIGNED TO SUPPORT VERTICAL GRAVITY LOADS, WITH PLATE EXTENSIONS AND WEB STIFFENERS TO RELIEVE THE HISTORIC FRIEZE UNITS OF THEIR PRIOR LOAD-BEARING FUNCTION. THE DESIGN WILL BE FULLY INTEGRATED INTO THE COMBINED MASONRY OF THE HISTORIC ENTABLATURE AND, AS SUCH, DOES NOT CHANGE THE OVERALL DESIGN AND LOAD PATH FOR THE 15% PROOF OF CONCEPT SUBMISSION. THE DESIGN INTENT WILL MINIMIZE IMPACT ON THE HISTORIC FRIEZE UNITS, BUT WILL LIKELY REQUIRE SOME LOCALIZED VERTICAL CUTS AND SMALL MODIFICATIONS TO THE BACK FACE TO ALLOW INSTALLATION AND LATERAL ANCHORAGE TO THE NEW FRIEZE BEAM.
4. AFTER EXISTING WROUGHT IRON (OR OTHER METALLIC) COMPONENTS ARE CUT/REMOVED, ANY REMAINING SURFACES SHALL BE COATED WITH A ZINC-RICH, CORROSION-INHIBITING PAINT TO CREATE A BARRIER BETWEEN REMAINING SURFACES AND ANY NEW STEEL ELEMENTS THAT WILL BE IN CLOSE CONTACT.



MATTEO | FERRAN
STRUCTURAL ENGINEERS

ARLINGTON, VA
ARLINGTON NATIONAL CEMETARY
SOUTHERN EXPANSION

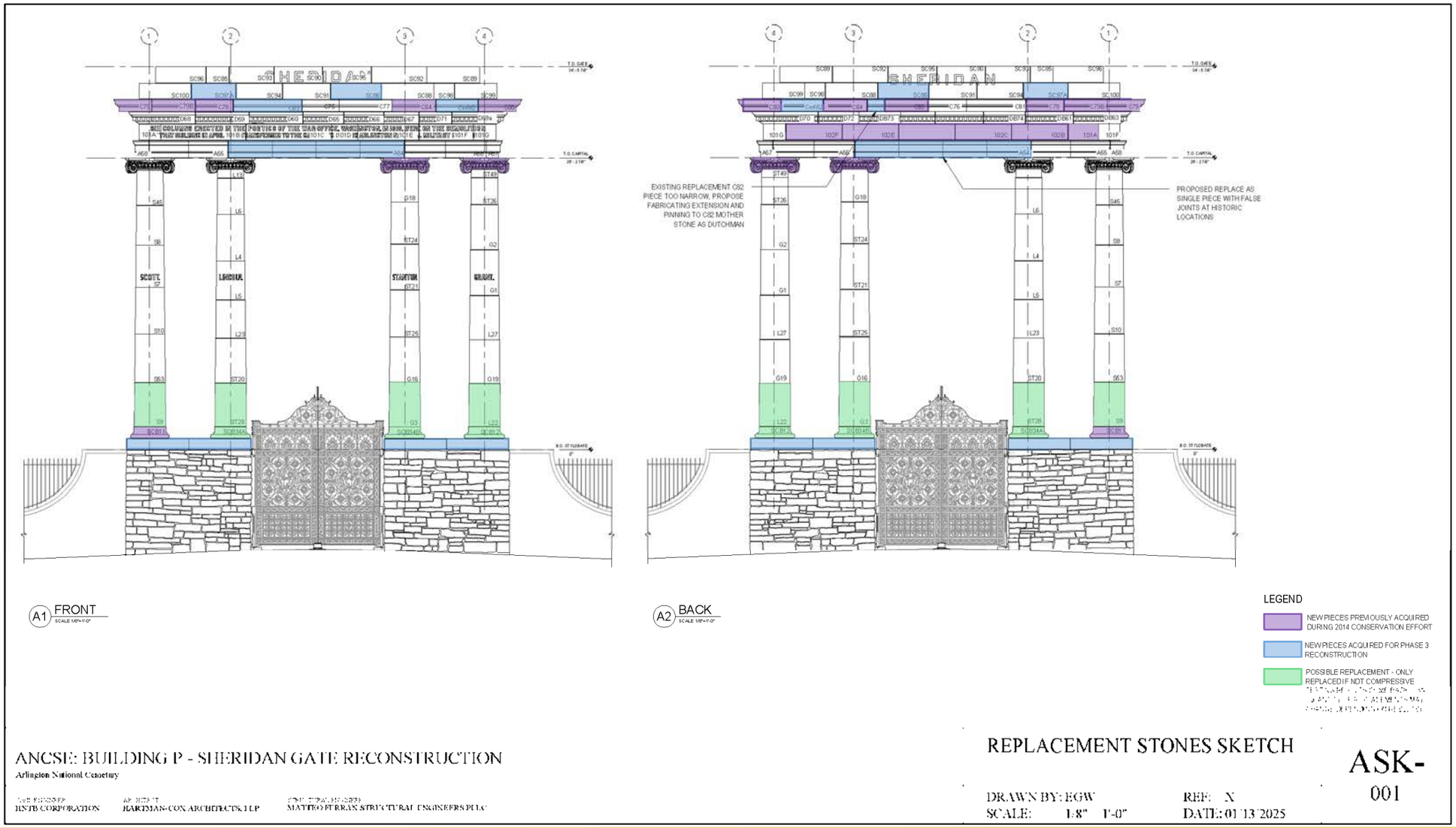
PROJECT TITLE
ARLINGTON NATIONAL CEMETERY
SOUTHERN EXPANSION
PHASE III SHERIDAN GATE ASSESSMENT
PROJECT NUMBER: W91236-24-F-0001

SEAL

TITLE
FRIEZE BEAM REPLACEMENT CONCEPT

SHEET NO.
S202

RECONSTRUCTION OPTION 3



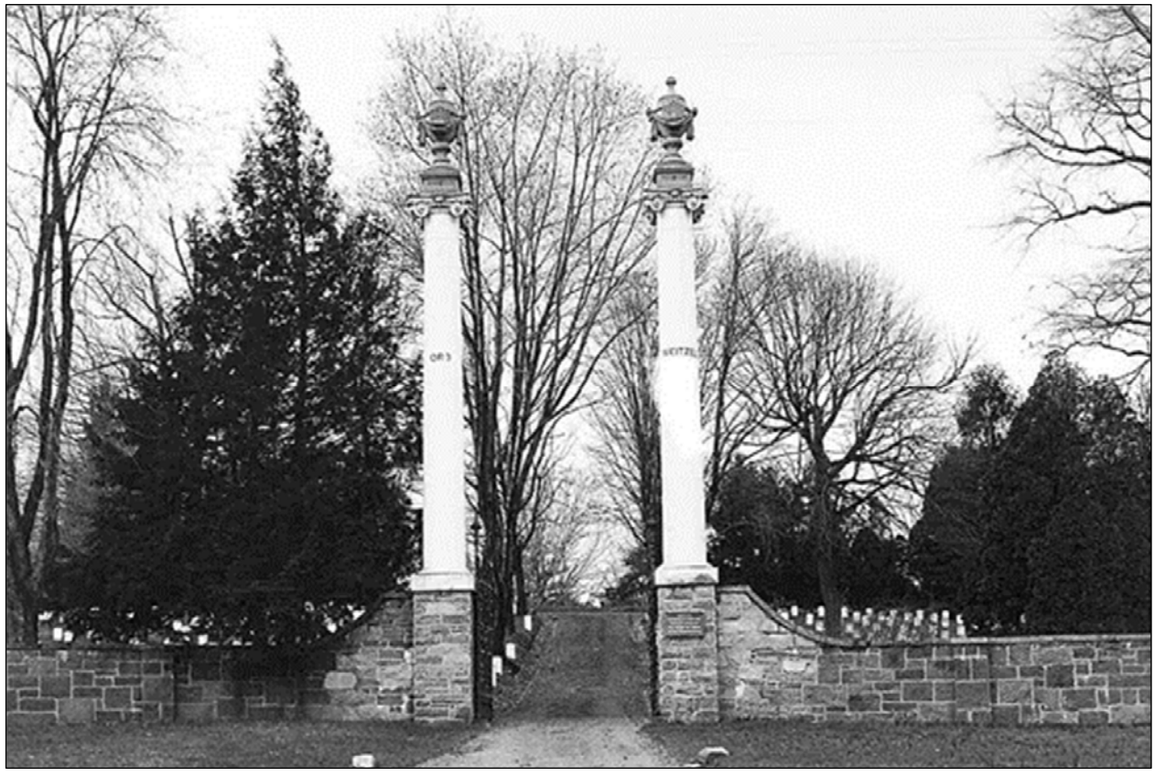
This drawing illustrates which masonry components:

- were replaced with newly carved stones in the prior conservation effort (purple);
- were identified in the 2024-2025 design assessment as requiring replacement (blue);
- require additional testing to confirm they can carry the load of the reconstructed gateway (green).

Most of the historic gate, including the ironwork, is reusable. Priority has been given to saving character-defining features, such as the font inscriptions, and replacing loadbearing components that are damaged and could cause structural failure, such as the spandrel, which currently consists of four (4) separate stones and supports the steel beam and frieze above.

Reconstruction Option 3

This reconstruction option is similar to the method used to reconstruct the Ord & Weitzel Gate in 2022.



Reconstruction Option 3

When the Ord & Weitzel gate was reconstructed, some masonry components were replaced, and the columns were partially pinned. Replacement components matched the size and shape of the unweathered originals. They appear sharper in form and were not artificially weathered to match the extant, historic masonry components.

Original column drums sit next to new column drums

Images of Ord & Weitzel gate components with pins installed

ARLINGTON
NATIONAL CEMETERY
HONOR • REMEMBER • EXPLORE

Please Direct Questions & Comments to

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