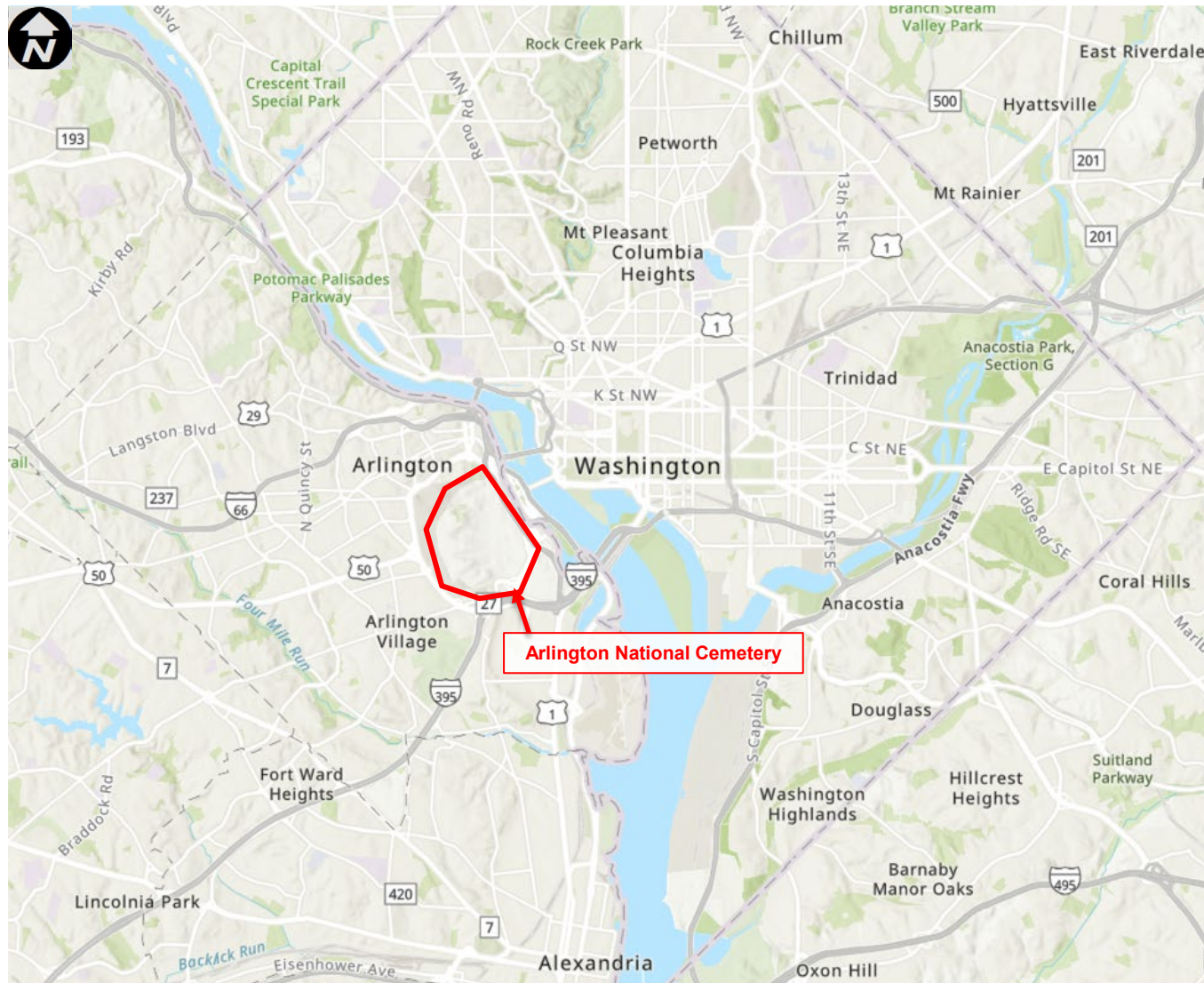




ARLINGTON NATIONAL CEMETERY

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ARLINGTON NATIONAL CEMETERY Wi-Fi CSN CONVEYANCE AND CABLING PHASE II

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:

Angela Pedersen
Project Manager
Engineering, Design & Construction

Caitlin Smith
Cultural Resources Program Manager
Engineering, Planning & Resources

Submission: July 22, 2024



ARLINGTON
NATIONAL CEMETERY
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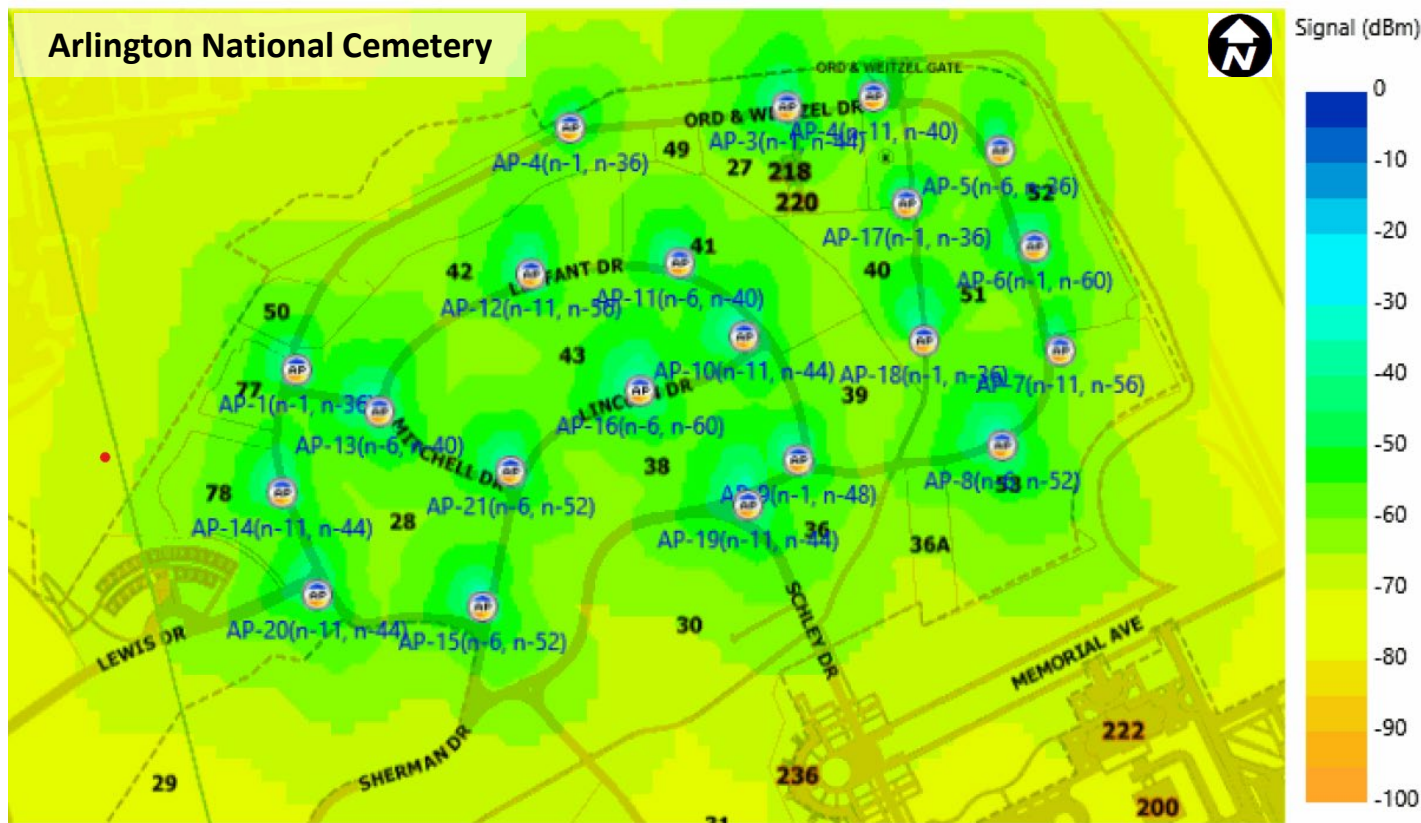
INITIATION OF THE SECTION 106 PROCESS



ARLINGTON NATIONAL CEMETERY

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SECTION 106 PROCESS INITIATION



Planner Wi-Fi Signal Coverage Map

Army National Military Cemeteries (ANMC) initiates the section 106 process for the proposed Phase II Wi-Fi CSN Conveyance and Cabling project 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.



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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. This list will be further developed in consultation with the DHR.

ANMC identified the following other consulting parties:

- Arlington County government, including the Historic Preservation Program & the Historical Affairs and Landmark Review Board (HALRB)
- Catawba Indian Nation
- Chickahominy Indian Tribe-Eastern Division
- Delaware Nation, Oklahoma
- Nansemond Indian Nation
- National Park Service, George Washington Memorial Parkway (GWMP)
- Pamunkey Indian Tribe
- Rappahannock Tribe, Inc.
- The United States Commission of Fine Arts
- Upper Mattaponi Tribe

CONSULTING PARTIES



Aerial photography of the northern end of Arlington National Cemetery, in the general location of the proposed Wi-Fi project, Arlington, Virginia, April 18, 2018. (U.S. Army photo by Elizabeth Fraser / Arlington National Cemetery / released)

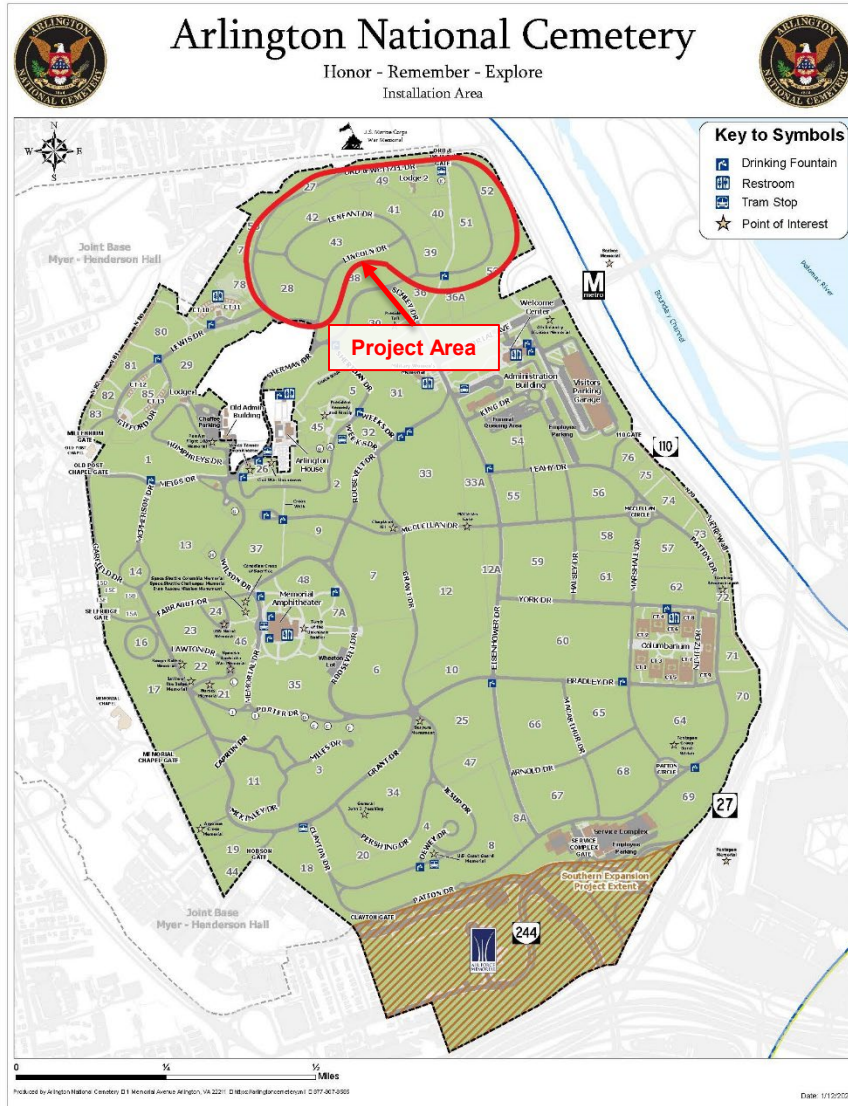




ARLINGTON NATIONAL CEMETERY

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PROJECT DESCRIPTION



Army National Military Cemeteries (ANMC) proposes expanding wireless (Wi-Fi) network access to the burial sections throughout the cemetery property, concentrating on coverage in areas of active cemetery operations. Phase II focuses on the northernmost sections of ANC.

The project will utilize a combination of existing conduits and boring for new conduit. To minimize ground disturbance, as much as possible, the project will utilize existing 4-inch duct bank conveyances. Boring and directional drilling will only occur in locations where no existing duct banks are available. The project includes installation of eighteen (18) bollard-height Wi-Fi posts, predominantly along roadways and Custis Walk, where conveyances are accessible. All communication equipment will be installed hidden below grade. Wiring to the Wi-Fi Access Points (Aps) will run inside the posts. The project also includes the addition of three (3) CSN antennas to the top of existing camera and light poles.

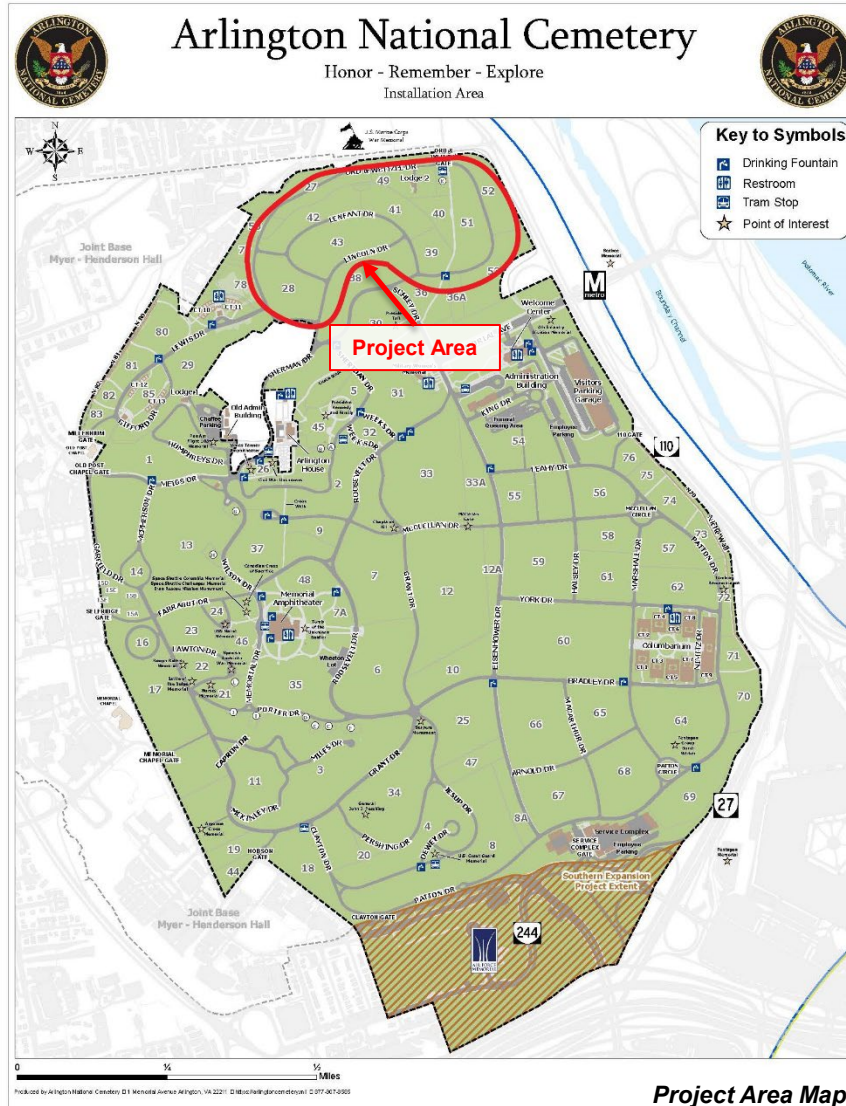
The project includes boring and installation of conduits, handholes, cabling, concrete pads, poles, bollards, and antennas. All conduit will be installed underground. All electronics and controls will be installed in the columbarium court 11 IT room. Within the project area, the contractor anticipates thirty-five (35) instances of ground disturbance at each hand hole and access point. There will be approximately 200 SF of ground disturbance at each location, for a total of 7,000 SF. Handholes shall be no more than 20-feet from each proposed pole / bollard location. The contractor will install 1½-inch PVC conduit from the handholes to each pole/ bollard location. A total of eighteen (18) bollard concrete pads will be installed. Concrete bases will be a square 18-inches by 18-inches wide, stand 2-inches proud of ground level, then extend down another 34-inches in depth.



ARLINGTON NATIONAL CEMETERY

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PROJECT DESCRIPTION



The project is completely within Arlington National Cemetery's Historic District. The Wi-Fi antennas, bollards, and equipment are intended to blend in to and compliment the cemetery's surroundings. All bollards shall match previously installed bollards along roadway from the Welcome Center to Columbarium CSN Wi-Fi Expansion Project as well as the Millennium CSN Wi-Fi Expansion Project. Bollards set into the landscape shall be 47-inches tall and matte black, to recede into the greenspace.




Existing Wi-Fi bollard and handhole in Section 80, installed as part of the Millennium CSN Wi-Fi Expansion Project



ARLINGTON NATIONAL CEMETERY

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PREVIOUS PROJECTS


COMMONWEALTH of VIRGINIA
Department of Historic Resources
2801 Kensington Avenue, Richmond, Virginia 23221

Matt Strickler
Secretary of Natural Resources

Julie V. Langan
Director
Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

MEMORANDUM

DATE: 27 April 2018 **DHR File #** 2018-3460

TO: Ms Rebecca Stevens
ARMY

FROM: Marc E. Holma, Architectural Historian (804) 482-6090
Office of Review and Compliance

PROJECT: Wireless Network Expansion
ANC

☒ This project will have an effect on historic resources. Based on the information provided, the effect will not be adverse.

☐ This project will have an adverse effect on historic properties. Further consultation with DHR is needed under Section 106 of the NHPA.

☐ Additional information is needed before we will be able to determine the effect of the project on historic resources. **Please see below.**

☐ No further identification efforts are warranted. No historic properties will be affected by the project. Should unidentified historic properties be discovered during implementation of the project, please notify DHR.

☐ We have previously reviewed this project. Attached is a copy of our correspondence.

☐ Other (Please see comments below)

COMMENTS: ANC is listed in the NRHP. The proposed wireless poles will have No Adverse Effect to the historic resource.

Administrative Services
10 Courthouse Ave.
Petersburg, VA 23803
Tel: (804) 862-6408
Fax: (804) 862-6196

Eastern Region Office
2801 Kensington Avenue
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5443
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7029
Fax: (540) 868-7033

The Virginia Department of Historic Resources (DHR) reviewed and approved Phase I of the wireless network expansion in 2018 (DHR File #: 2018-3460). Phase II utilizes the same design guidelines.

COMMENTS: ANC is listed in the NRHP. The proposed wireless poles will have No Adverse Effect to the historic resource.



ARLINGTON NATIONAL CEMETERY

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PREVIOUS PROJECTS

U.S. COMMISSION OF FINE ARTS

ESTABLISHED BY CONGRESS 17 MAY 1910
401 F STREET NW SUITE 312 WASHINGTON DC 20001-2728 202-504-2280 FAX 202-504-2195 WWW.CFA.GOV

16 March 2018

Dear Ms. Durham-Aguilera:

In its meeting of 15 March 2018, the Commission of Fine Arts reviewed and approved the following project on the Consent Calendar, with accompanying staff recommendation:

CFA 15/MAR/18-a
U.S. Department of the Army
Arlington National Cemetery
Arlington, VA
Wireless network (WiFi) expansion
Final

RECOMMENDATION: No objection to the final design for the installation of a series of small ground-mounted field pole antennas to expand the Cemetery's existing wireless network bringing WiFi access to the main columbarium complex, Sections 54 to 63, and to Sections 72 to 75 of the Cemetery, as shown in materials received and dated 1 March 2018. This project will serve as the model for future expansions of the wireless network into other areas of the Cemetery.

Sincerely,

Thomas E. Luebke, FAIA
Secretary

Karen Durham-Aguilera, Executive Director
Department of the Army
Army National Military Cemeteries
Arlington National Cemetery
Arlington, VA 22211

cc: ✓ Michael Peloguin, Department of the Army
David A. Fedroff, Department of the Army

The U.S. Commission of Fine Arts (CFA) reviewed and approved Phase I of the wireless network expansion in 2018 (CFA 15/MAR/18-a). Phase II utilizes the same design guidelines.

RECOMMENDATION: No objection to the final design for the installation of a series of small ground-mounted field pole antennas to expand the Cemetery's existing wireless network bringing WiFi access to the main columbarium complex, Sections 54 to 63, and to Sections 72 to 75 of the Cemetery, as shown in materials received and dated 1 March 2018. This project will serve as the model for future expansions of the wireless network into other areas of the Cemetery.

CFA Final Design Approval for Phase I



[ABOUT CFA](#)[PROJECT REVIEW](#)[UPCOMING MEETINGS](#)[RECORDS & RESEARCH](#)

● AGENCY OPERATIONS & MEETINGS

The Commission is continuing to review projects via virtual public meeting. For the latest information and to REGISTER for public meetings, [click here](#). For general inquiries, email cfastaff@cfa.gov or call (202) 504-2200.

COMMISSION OF FINE ARTS » RECORDS & RESEARCH » PROJECT SEARCH » CFA 18/JUL/24-d

Print this page

RECORDS & RESEARCH

RECORD OF CFA ACTIONS

PROJECT SEARCH

RESEARCH COLLECTIONS

ACCESSING CFA RECORDS

RESEARCH POLICY & COSTS

CFA 18/JUL/24-d

LOCATION:
Arlington, VA

OWNER:
U.S. Department of the Army

PROPERTY:
Arlington National Cemetery

DESCRIPTION:
Wi-fi phase II

REVIEW TYPE:
Final

Recommendation

No objection to the final design for the installation of 18 small ground-mounted field pole antennas to expand the existing wireless network bringing public wi-fi access to the Custis Walk and other parts in the north area of Arlington National Cemetery, as shown in materials received and dated 3 July 2024. This is the second phase of this wireless network and the first phase was approved in 2018.

« Consent Calendar (Government Projects)

RELATED MEETINGS

CFA Meeting — 18 July 2024

CFA ACTIONS

Year

Format: 2018

FIND

PROJECT SEARCH

Search By:

Keyword

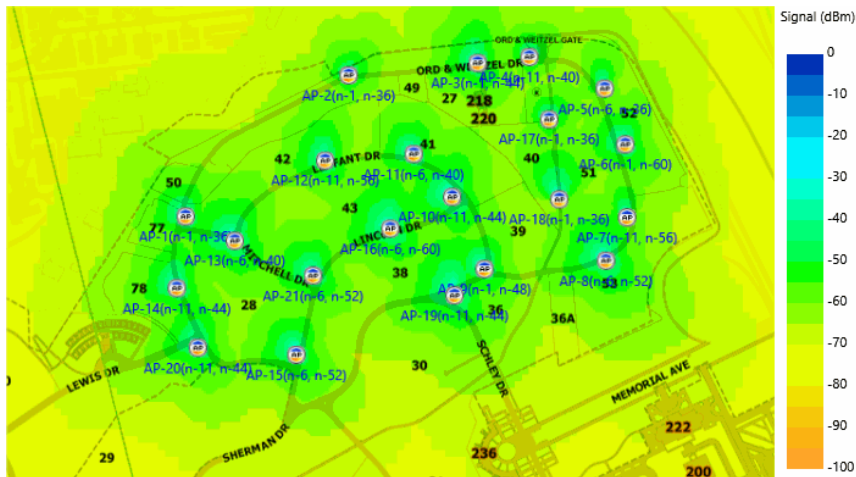
e.g. property name, address, or owner

SEARCH

The U.S. Commission of Fine Arts (CFA) reviewed and approved the Wi-Fi CSN Conveyance and Cabling Phase II project (CFA 18/JUL/24-d) at its 18 July 2024 meeting.

The CFA stated there was, “No objection to the final design for the installation of 18 small ground-mounted field pole antennas to expand the existing wireless network bringing public wi-fi access to the Custis Walk and other parts in the north area of Arlington National Cemetery, as shown in materials received and dated 3 July 2024. This is the second phase of this wireless network and the first phase was approved in 2018.”

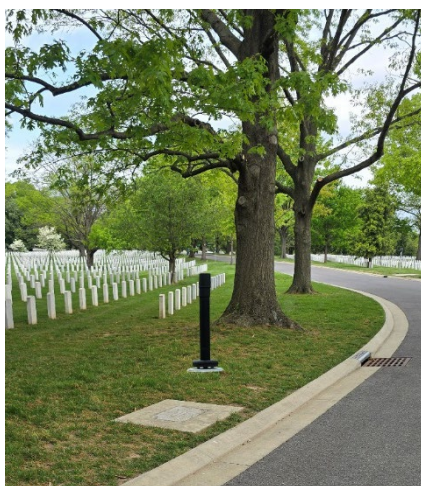
9



Planner Wi-Fi Signal Coverage Map



Existing Utility Map

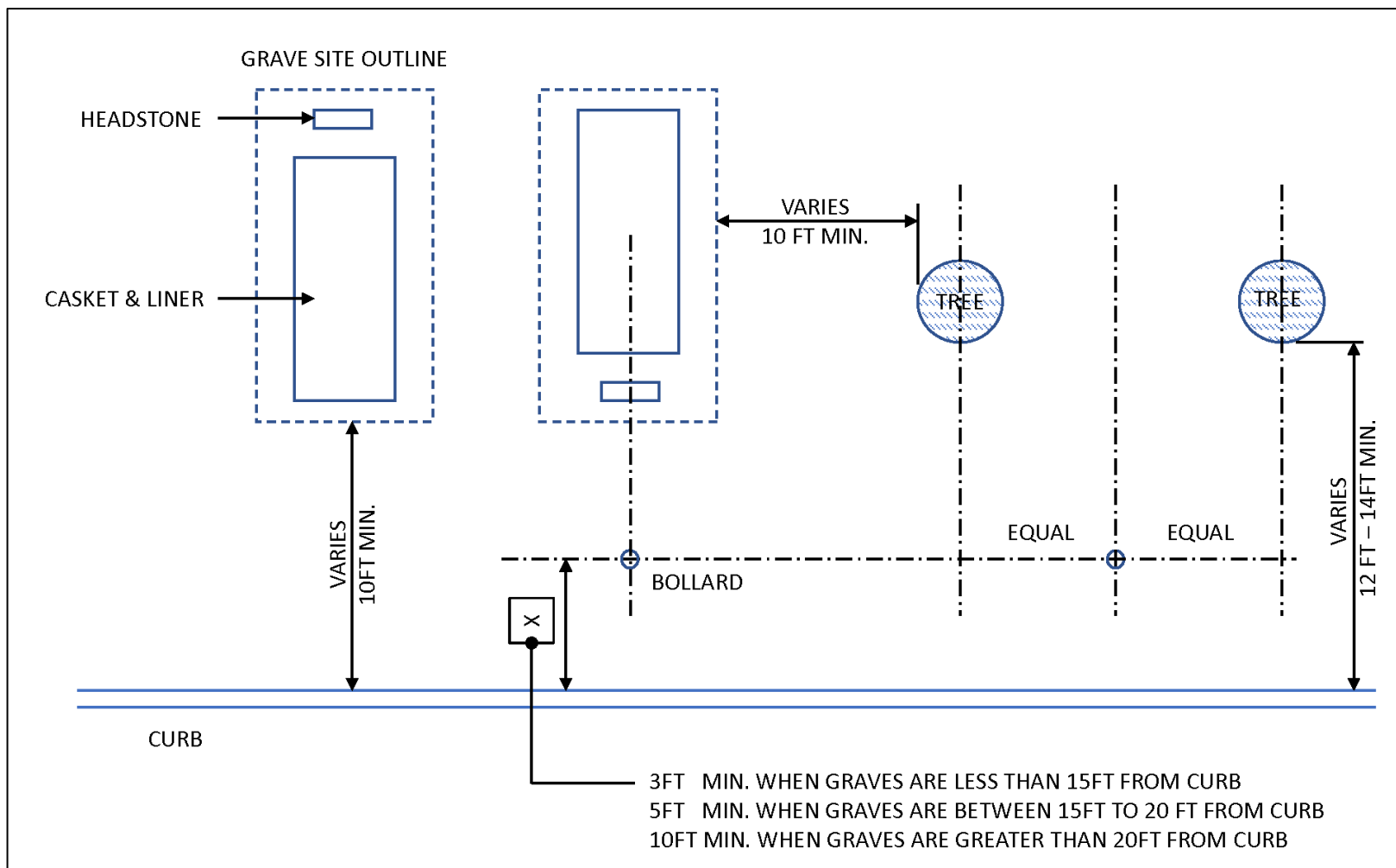


Wi-Fi Bollard Photo Illustration

Through a deliberative design process, ANMC developed the following project criteria for determining potential locations for wi-fi poles and antennas.

Criteria for Determining Pole Locations:

- Utilize existing communication lines, to the greatest extent possible;
- Minimize the need for boring in new locations;
- Utilize existing poles, including light and camera poles, to the greatest extent possible, as their higher elevation increases the signal range, and it reduces the need for new bollards in their vicinity;
- Minimize impacts to NPS property, including the Arlington Woods and potential archaeological sites;
- Minimize impacts to ANC property, including mature trees and burial spaces;
- Install wi-fi bollards, poles, and antennas in such a way that they provide continuous coverage in the project area; particularly along pedestrian routes;
- Do not install wi-fi bollards or poles directly in front of historic properties, such as the Ord-Weitzel gate;
- Install wi-fi bollards as close to existing utility conduit and the edge of roadways as possible, to preserve burial space;



Wi-Fi Bollard Location Parameters Diagram

Criteria for Determining Pole Locations:

- Alignment in relation to other objects:
 - Bollards near grave markers should align with the row of markers, to facilitate access into the burial section for maintenance equipment;
 - Bollards near a row of street trees should be centered between the trees to minimize impacts to roots;
- Offset from grave sites:
 - 10 ft. minimum offset when graves are greater than 20 ft. from curb edge
 - 5 ft. minimum offset when graves are between 15 ft. to 20 ft. from curb edge
 - 3 ft. minimum offset when graves are less than 15 ft. from edge of curb edge



Section Markers and Street Signs

ANMC determined it was inconsistent with the National Register criteria and preservation standards to replace or modify the existing section markers and street signs by adding antennas to them or converting them into wi-fi poles. These small landscape features are identified in ANC's historic resources inventory as contributing resources under the National Register of Historic Places (NRHP) National Cemeteries Policy, under criterion A.



ANC section markers and street signs are contributing features to the National Register historic district



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NEW WI-FI ACCESS POINT LOCATIONS

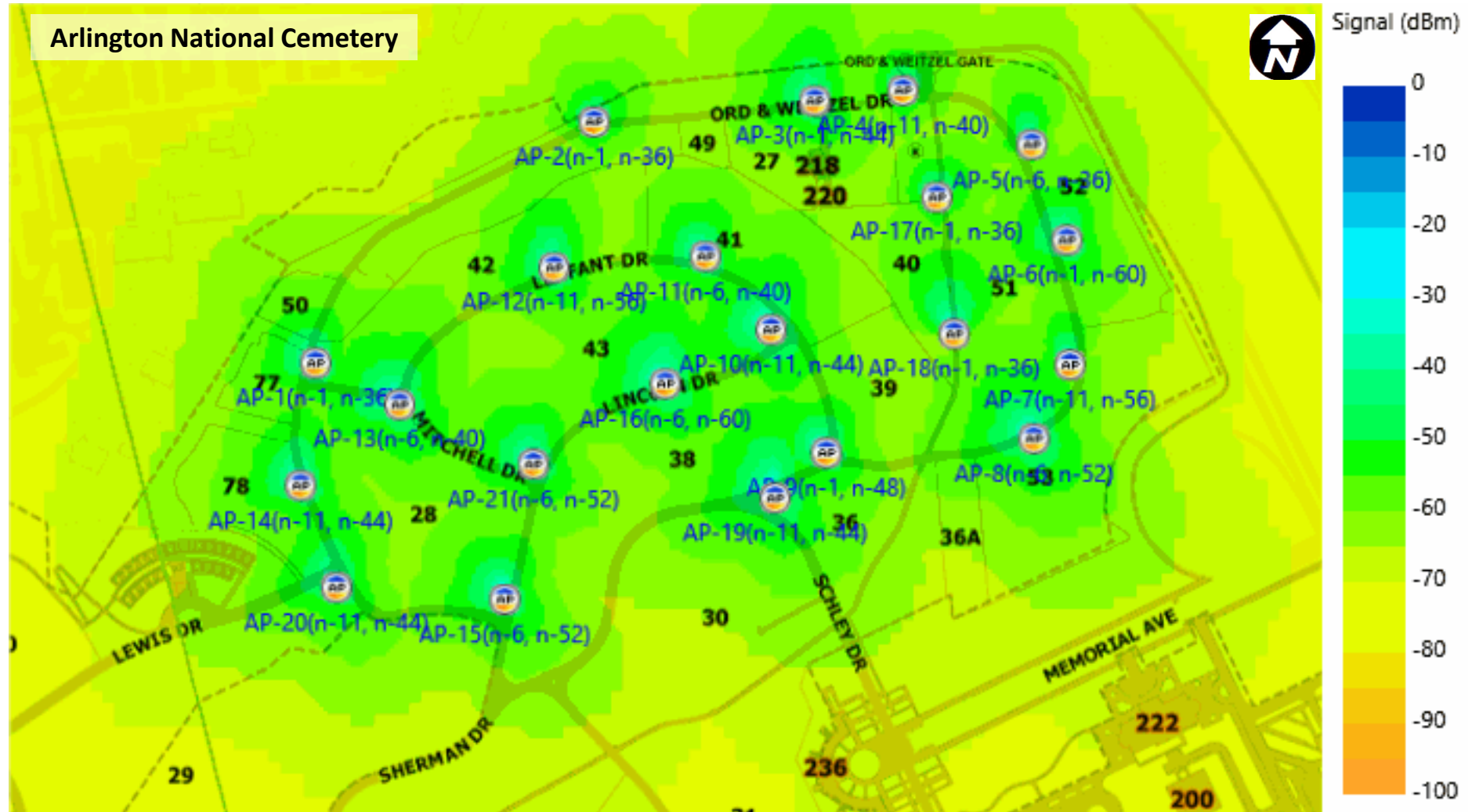




Planner Wi-Fi Signal Coverage Map

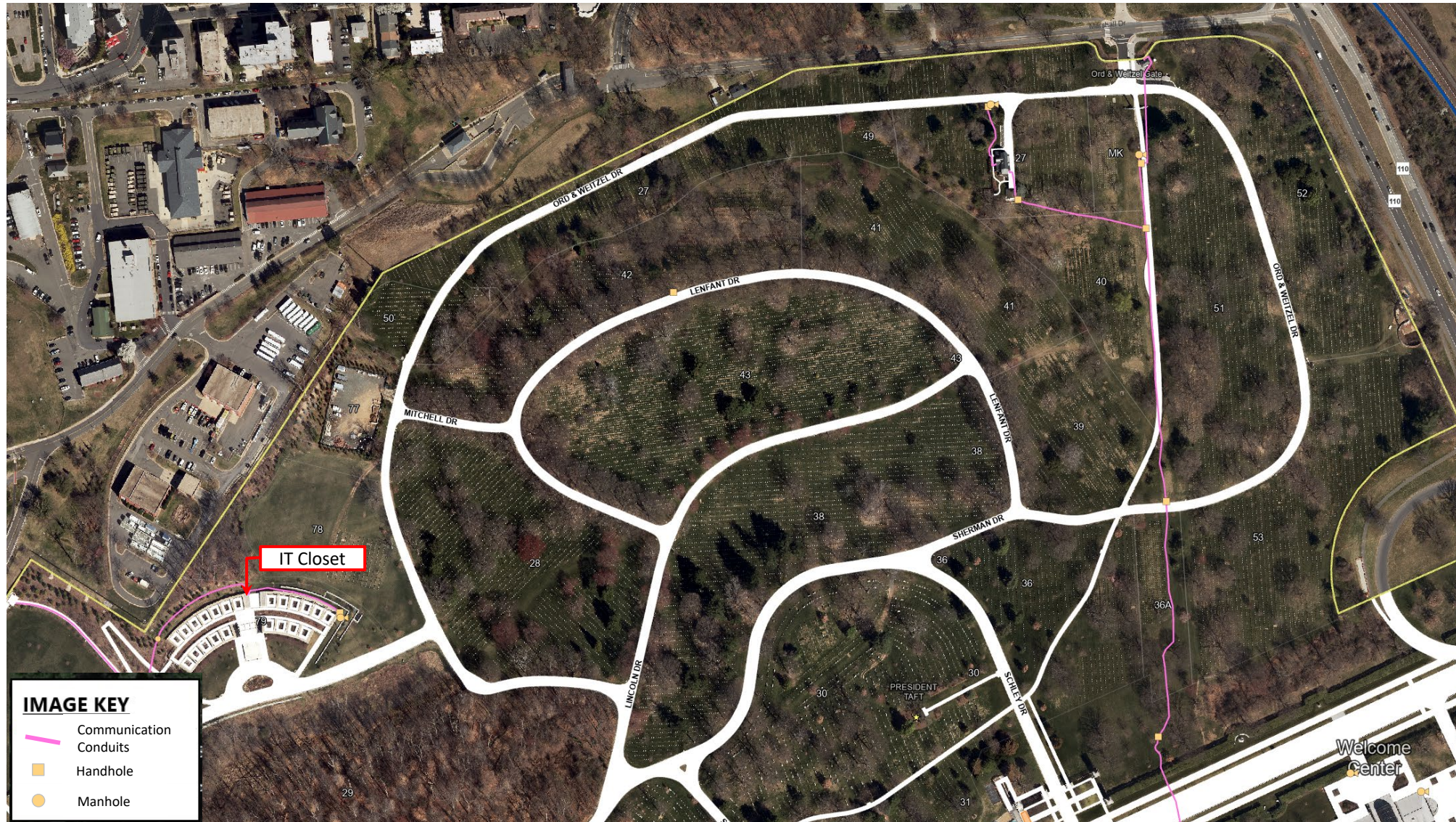
AirMagnet Planner simulates Access Points (APs) as well as antenna and building characteristics to predict different kinds of coverage heatmaps for APs placed on different floors in the Building (or different levels in a landscape). For each kind of data type, the Floor-level report shows coverage in a two-dimensional floor-level view for the selected floor (or elevation).

The image displays signal coverage (in dBm) at each point in the map layout. Refer to the legend on the right side for the dBm values corresponding to each color region. Generally, regions with signal strengths below -67 dBm provide insufficient coverage for standard use. APs are displayed in their planned locations and reflect the specified power and antenna properties.





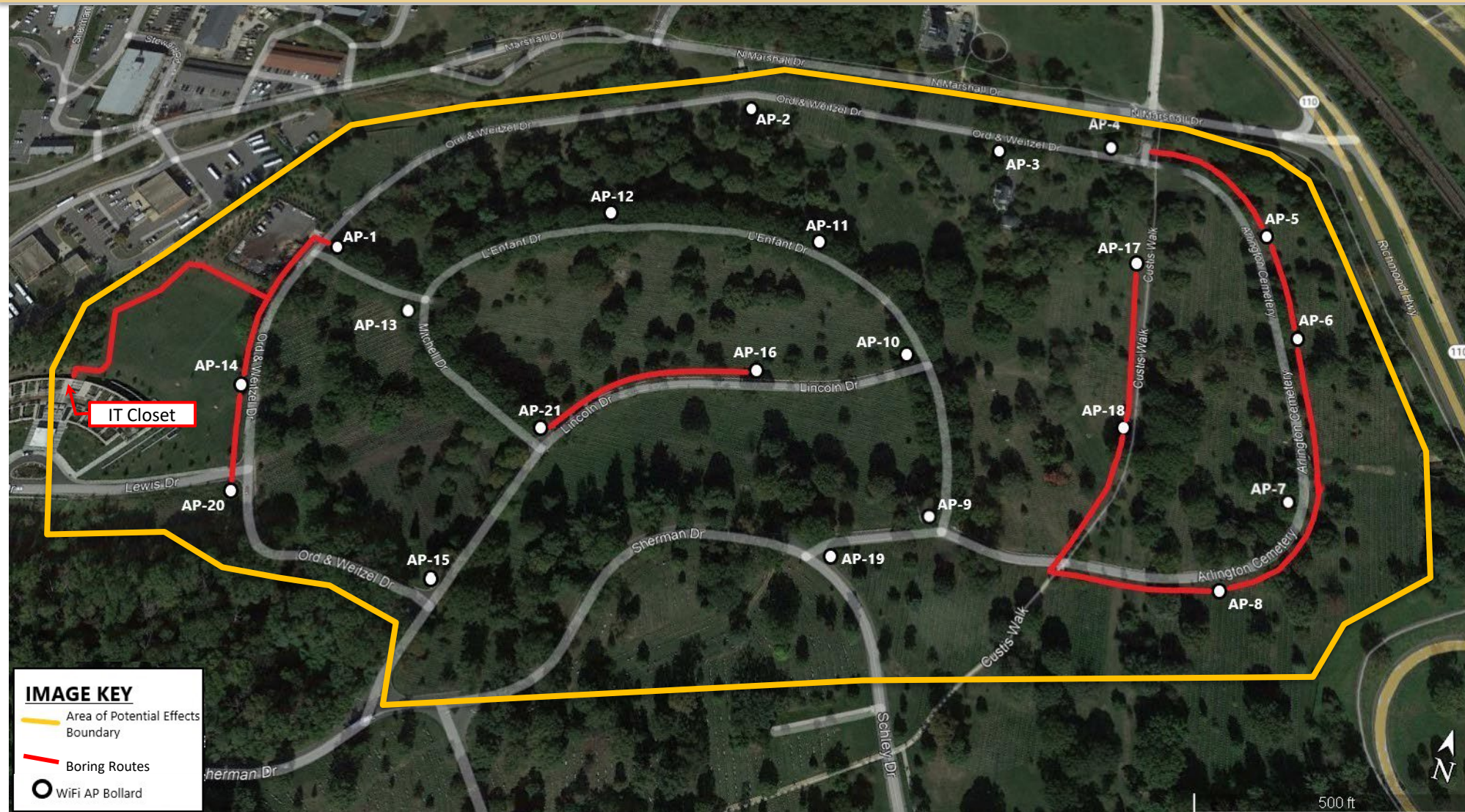
EXISTING COMMUNICATION CONDUITS



The proposed project will utilize existing communication conduits as much as possible to minimize ground disturbance to only those locations that require new conduit.

New communication conduit will run from the Millennium IT closet in Columbarium Court 11.

*Satellite View of Project Area
Utility Map Illustrating Existing
Communication Conduit*

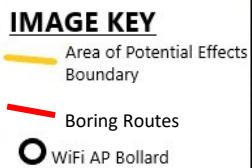
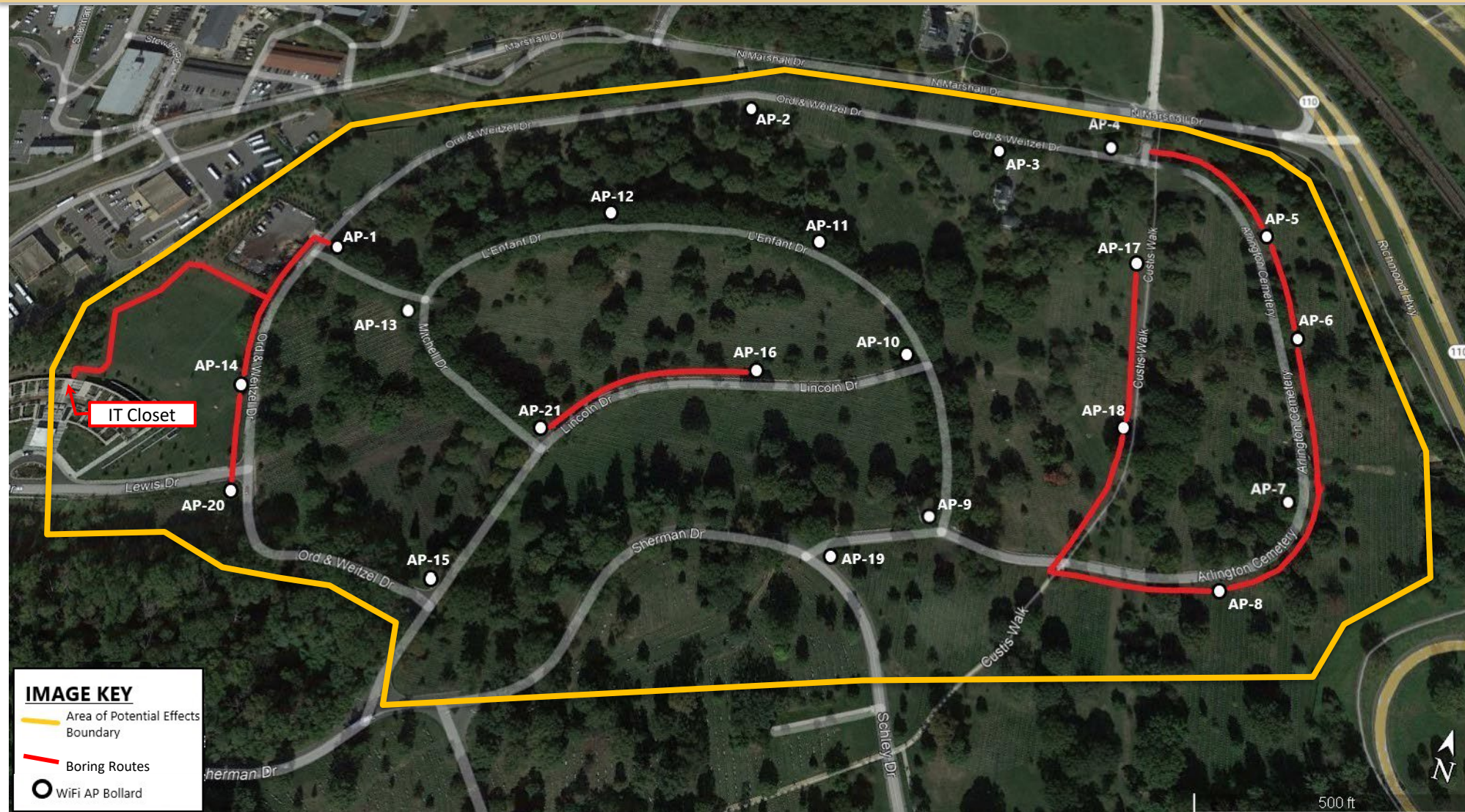


The proposed boring routes are shown in red on the map to the left. Boring, rather than trenching, is being utilized to minimize the amount of ground and sod disturbance.

Conduit conveyance will be extended from the Millennium IT closet in Columbarium Court 11, along the section 78 western and northern border, then will run approximately 700' along Ord & Weitzel Drive.

The Access Point (AP) locations shown here are located within 250-feet of either existing or new handhole conveyances. This in turn means that most bollards are approximately 250' apart. This distance is shorter in areas where large objects in the landscape cause interference (e.g., monuments, concrete walls, trees, etc.). The maximum distance a bollard can be from a power source is 3,500-feet.

Satellite View of Project Area with Proposed Boring Routes Outlined in Red



Total area of land disturbance:
7,000 sq ft or 0.16 acres
(35 locations x 200 sq ft average disturbance per location)

Volume of land disturbance:
21,000 cu ft
(7,000 sq ft x 3-ft average depth)

Total boring length:
4,000 lft
(3,700 lft of main lines + 300 lft secondary lines)

Satellite View of Project Area with Proposed Boring Routes Outlined in Red



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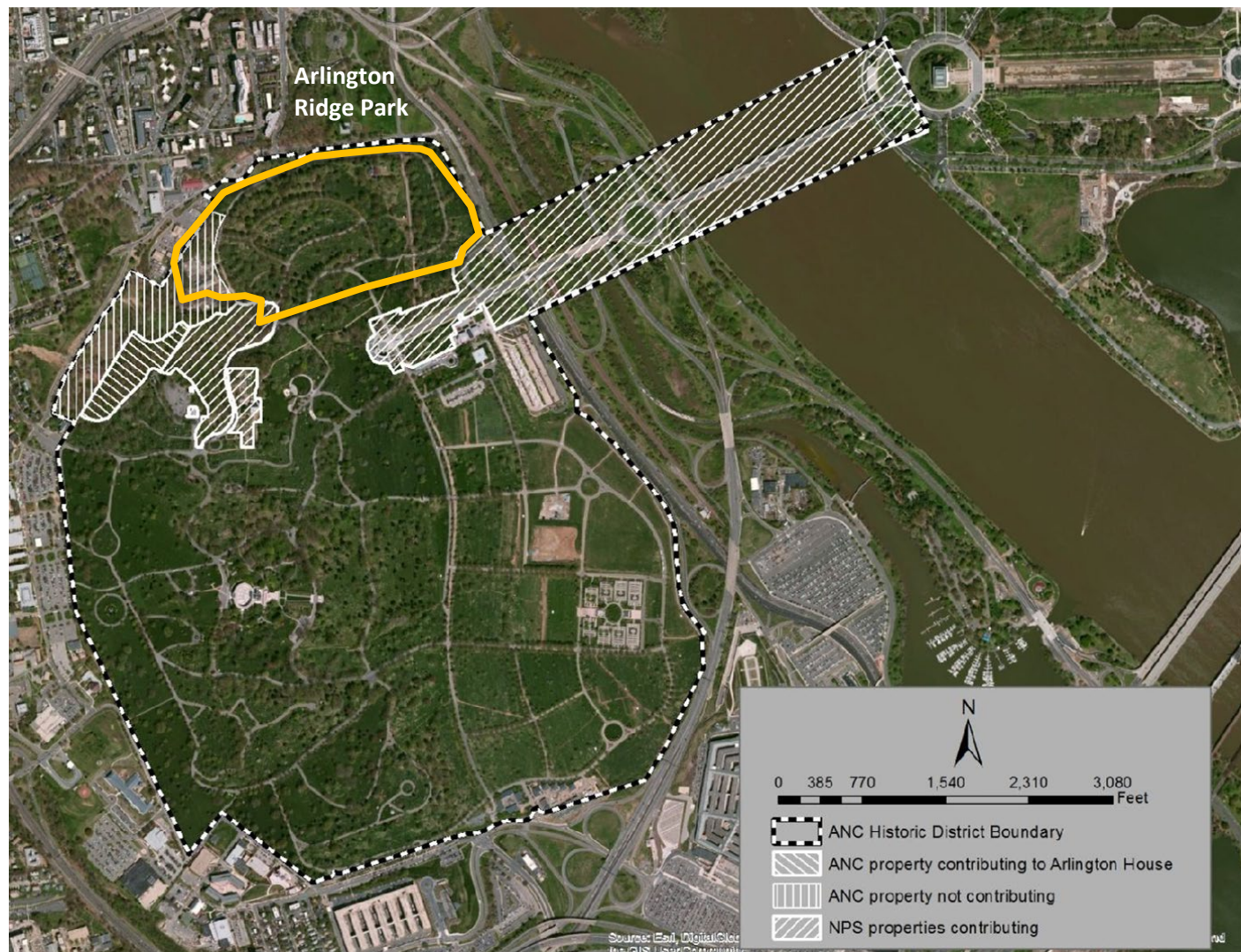
IDENTIFICATION OF HISTORIC PROPERTIES



ARLINGTON NATIONAL CEMETERY

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AREA OF POTENTIAL EFFECTS



Per 36 CFR § 800.4 & § 800.16, ANMC identifies the following area of potential effects (APE), the full extent of which will be determined in consultation with the DHR.

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.

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.

National Register Historic Districts

From ANC's National Register Nomination Form (2014)

APE outlined in yellow



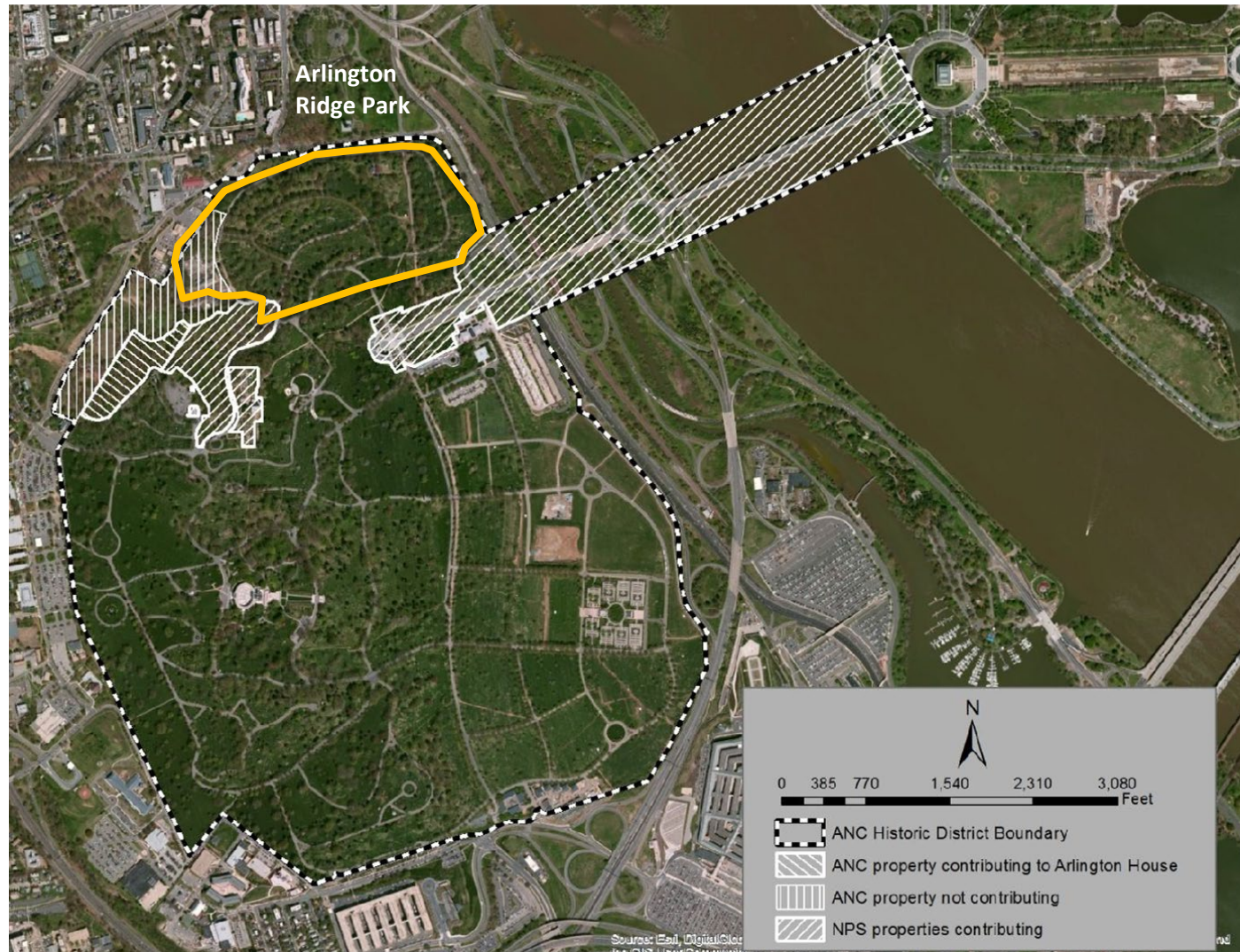
AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) for the proposed Wi-Fi CSN Conveyance and Cabling Expansion Project is outlined in yellow on the image to the left. The APE includes locations where the project may be visible and/ or audible. The area is the boundary from which one can see the Wi-Fi bollards and antenna poles. The project involves ground disturbing activities in previously disturbed areas.

*Satellite View of Project Area
with APE outlined in yellow.*



IDENTIFICATION OF HISTORIC PROPERTIES



The project area is within the Arlington National Cemetery Historic District (DHR # 000-0042) and a portion of the Arlington House Historic District (DHR # 000-0001). The proposed project is bordered by the Arlington Ridge Park Historic District (DHR #000-9707) to the north.

HISTORIC PROPERTIES IN THE APE

Following is a list of historic structures and features contributing to Arlington National Cemetery's and Arlington House's historic districts, which are located within/adjacent to the APE.

- Arlington House Cultural Landscape (CLI #600049)
- Boundary walls and gates (DHR # 000-0042-0017)
- Lodge 2 (DHR # 000-0042-0002)
- Headstones and Grave Markers (DHR #000-0042-0021)
- Columbarium Courts (DHR # 000-0042-0016)
- Headstones and Grave Markers (DHR #000-0042-0021)
- Burial Sections 5, 27-29, 30, 35-36, 38-43, 45, 50-53, and 77-78

NATIONAL REGISTER PROPERTIES IN THE APE

Following is a list of historic properties on or eligible for listing on the National Register (IAW 36 CFR part 63) within/adjacent to the APE.

- Arlington National Cemetery Historic District (DHR #000-0042)
- Arlington Ridge Park (DHR #000-9707)
- Arlington House (DHR # 000-0001)

National Register Historic Districts

From ANC's National Register Nomination Form (2014)

APE outlined in yellow



ARLINGTON NATIONAL CEMETERY

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IDENTIFICATION OF HISTORIC PROPERTIES



The Ord and Weitzel Gate, looking from Section 51 toward Section 27 at Arlington National Cemetery, Arlington, Va., Nov. 7, 2022. (U.S. Army photo by Elizabeth Fraser / Arlington National Cemetery / released)

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 notifies the DHR, potential consulting parties, including Indian tribes or organizations, 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 of historic properties.
3. The agency's identification of the area of potential effects (APE).
4. The agency's assessment of adverse effects.



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ASSESSMENT OF ADVERSE EFFECTS



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 Phase II Wi-Fi CSN Conveyance and Cabling 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 (000-0042)
- Arlington Ridge Park (DHR #000-9707)
- Arlington House (DHR # 000-0001)

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 proposed wi-fi bollards and antennas are designed to complement and recede into the landscape. This approach prioritizes the preservation of viewsheds and character-defining features of the three historic districts. The materials, color, design and finishes all draw from existing site features in the ANC landscape and match existing Wi-Fi Bollards installed throughout the cemetery in 2018 and 2022. The exterior finishes are matte black, which helps them to blend in with surrounding vegetation and similar landscape features (i.e., signposts, camera poles, etc.) that already line the roadways and perimeters of burial sections. The bollards and antennas are intended to be reversible; while the construction does involve potential impacts to below-grade resources, the above-ground features can be removed with minimal impacts to the landscape. Communication conduit and equipment are set below-grade and wiring runs inside the bollards. By selecting appropriate materials, minimizing the quantity of installations, and siting the wi-fi bollards and antennas carefully in the landscape, I find that the design avoids and/ or minimizes the direct, indirect, and cumulative effects to above- and below-ground historic properties and contributing elements within and adjacent to the APE.

The historic properties retain their historic views and vistas after construction of the proposed project. The historic location and elements within the districts are maintained. There are no permanent or irreversible changes to the landscape. ANC continues to convey its historic significance as a military cemetery, and for its landscape architecture and architecture. There are no changes to the integrity of location, workmanship, feeling or associations for any of the National Register historic districts.

The proposed undertaking would have **no adverse effect to archaeological resources**. All construction would be located in areas of the APE that have been disturbed through prior development of the cemetery or adjacent infrastructure (reference "Archaeological Potential & Past Ground Disturbance Map from Attachment D, Application of National Register of Historic Places Criteria"). All construction is to occur in areas of moderate or severe prior ground disturbance, along the edge of roadways and burial sections, in locations with existing utilities and conduit. It is not expected that undiscovered cultural resources would be found during implementation of the undertaking. However, in the event of an unanticipated discovery during ground-disturbing activities, all work would cease, and the ANMC Cultural Resources Program Manager (CRM) would be contacted. The CRM would immediately notify the Virginia Department of Historic Resources and other appropriate agencies, and standard procedures would be followed to protect the artifacts and determine their significance.

In accordance with Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470f, and its implementing regulations, 36 C.F.R. Part 800, ANMC invites comments from the Virginia Department of Historic Resources, consulting parties, and the public.

Caitlin Smith, AIC PA
Cultural Resources Program Manager
Army National Military Cemeteries



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AGENCY REQUEST FOR RESPONSE TO FINDINGS



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ANMC REQUEST TO DHR

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 potential consulting parties.
4. Respond to ANMC's finding of:
 - a) No adverse effects to the Arlington National Cemetery Historic District (000-0042)
 - b) No adverse effects to the Arlington Ridge Park (DHR #000-9707)
 - c) No adverse effects to the Arlington House (DHR # 000-0001)



*Modified Military Funeral Honors with Funeral Escort Conducted in Section 75, with wi-fi bollard circled in red
U.S. Army photo by Elizabeth Fraser / Arlington National Cemetery / released)*



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CONSULTATION & PUBLIC COMMENT

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 the DHR, consulting parties, and the public includes:

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



*Modified Military Funeral Honors with Funeral Escort Conducted in Section 75, with wi-fi bollard circled in red
U.S. Army photo by Elizabeth Fraser / Arlington National Cemetery / released)*



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AERIAL VIEWS OF PROJECT LOCATION



ARLINGTON NATIONAL CEMETERY

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AERIAL VIEWS



Aerial photography of Arlington National Cemetery looking south, towards Sections 27, 51, and 52, with Arlington Ridge Park in the foreground and the Netherlands Carillon on the right, Arlington, Virginia, April 18, 2018. (U.S. Army photo by Elizabeth Fraser / Arlington National Cemetery / released)



ARLINGTON NATIONAL CEMETERY

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AERIAL VIEWS



Aerial photography of Arlington National Cemetery looking southeast, towards Sections 27 and 49, with Arlington Ridge Park in the foreground and the Netherlands Carillon on the left, Arlington, Virginia, April 18, 2018. (U.S. Army photo by Elizabeth Fraser / Arlington National Cemetery / released)



ARLINGTON NATIONAL CEMETERY

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AERIAL VIEWS



Aerial photography of Arlington National Cemetery looking southeast, towards Sections 27 and 49, with Lodge 2 center left and the Memorial Avenue entry gates center right, Arlington, Virginia, April 18, 2018. (U.S. Army photo by Elizabeth Fraser / Arlington National Cemetery / released)



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**PHOTO ILLUSTRATIONS OF
POTENTIAL WI-FI BOLLARD &
ANTENNA LOCATIONS**



PHOTO ILLUSTRATION KEY





NEW BOLLARD LOCATIONS

AP-1: View from Mitchell Drive looking north



1. Illustration of proposed Wi-Fi Bollard AP-1 looking north. Located on the Northeast Corner of the intersection of Ord & Weitzel Drive and Mitchell Drive.

AP-1: View from Ord & Weitzel Drive looking east



2. Illustration of proposed Wi-Fi Bollard AP-1 looking east. Located on the Northeast Corner of the intersection of Ord & Weitzel Drive and Mitchell Drive.



NEW BOLLARD LOCATIONS

AP-2: Close-up view from Ord & Weitzel Drive



3. Illustration of AP-2 close-up view along the south side of Ord & Weitzel Drive.

AP-2: Distant view from Ord & Weitzel Drive



4. Illustration of AP-2 distant view along the South side of Ord & Weitzel Drive.



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NEW ANTENNA LOCATIONS

AP-3: View looking east from Ord & Weitzel Drive



5. Illustration of AP-3 (looking east) located on the top of an existing Camera Pole located along the South side of Ord & Weitzel Drive, adjacent to the Lodge 2 driveway.

AP-3: View looking west from Ord & Weitzel Drive



6. Illustration of AP-3 (looking west) located on the top of an existing Camera Pole located along the South side of Ord & Weitzel Drive, adjacent to the Lodge 2 driveway.



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NEW ANTENNA LOCATIONS

AP-4: View looking south from Ord & Weitzel Drive



7. Illustration of AP-4 located on the top of the existing light and camera pole at the corner of Ord & Weitzel Drive, near Ord & Weitzel Gate.

AP-4: View looking west from Ord & Weitzel Drive



8. Illustration of AP-4 located on the top of the existing light and camera pole at the corner of Ord & Weitzel Drive, near Ord & Weitzel Gate, looking west.



AP-5



9. Illustration of AP-5 adjacent eastern curb, view from Ord & Weitzel Drive looking to the southeast.

AP-6: Close-up view



10. Illustration of AP-6 adjacent eastern curb, view from Ord & Weitzel Drive looking to the southeast.

AP-6: Distant view



11. Illustration of AP-6 from a distance, view from Ord & Weitzel Drive looking southeast.



NEW BOLLARD LOCATIONS

AP-7: View looking northeast



12. Illustration of AP-7 along the west side of Ord & Weitzel Drive looking northeast.

AP-7: View looking southwest



13. Illustration of AP-7 along the west side of Ord & Weitzel Drive looking southwest.



NEW BOLLARD LOCATIONS

AP-8: Close-up view along Ord & Weitzel Drive



14. Illustration of AP-8 looking west along the south side of Ord & Weitzel Drive.

AP-8: Distant view from Ord & Weitzel Drive



15. Illustration of AP-8 looking southwest along the south side of Ord & Weitzel Drive.



NEW BOLLARD LOCATIONS

AP-9: Close-up view along Ord & Weitzel Drive



16. Illustration of AP-9 located on the west corner of intersection of Ord & Weitzel Drive and L'Enfant Drive, view looking northwest across Ord & Weitzel Drive.

AP-9: Distant view along Ord & Weitzel Drive



17. Illustration of AP-9 located on the west corner of intersection of Ord & Weitzel Drive and L'Enfant Drive, view looking west across the intersection.



NEW BOLLARD LOCATIONS

AP-10: Close-up view looking west



18. Illustration of AP-10 looking west across L'Enfant Drive, inside the northwest corner of intersection between Lincoln Drive and L'Enfant Drive.

AP-10: Distant view looking north



19. Illustration of AP-10 looking north across the intersection of Lincoln Drive and L'Enfant Drive, showing the bollard located in the northwest corner of the intersection.



AP-11: Distant view looking northwest



20. Illustration of AP-11 looking northwest along the north side of L'Enfant Drive.

AP-11: Close-up view looking northwest



21. Illustration of AP-11 looking northwest at along the north side of L'Enfant Drive.



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NEW BOLLARD LOCATIONS

AP-12: View looking west



22. Illustration of AP-12 looking west along the north side of L'Enfant Drive.

AP-12: View looking northwest



23. Illustration of AP-12 looking northwest along the north side of L'Enfant Drive.



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NEW BOLLARD LOCATIONS

AP-13: Close-up view looking south



24. Illustration of AP-13 looking south along L'Enfant Drive toward Mitchell Drive.

AP-13: Distant view looking southwest



25. Illustration of AP-13 looking southwest from L'Enfant Drive toward the curve of Mitchell Drive toward section 28.



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NEW BOLLARD LOCATIONS

AP-14: Distant view looking northeast



26. Illustration looking northeast along Ord & Weitzel Drive toward AP-14, located on the west side of Ord & Weitzel Drive.

AP-14: Close-up view looking north



27. Illustration looking north across Ord & Weitzel Drive toward AP-14, located on the west side of Ord & Weitzel Drive.



NEW BOLLARD LOCATIONS

AP-15: Close-up view looking northeast



28. Illustration of AP-15 looking northeast across the intersection of Ord & Weitzel Drive and Lincoln Drive, which is located at the corner of the intersection.

AP-15: Distant view looking northwest



29. Illustration of AP-15 looking northwest across Lincoln Drive toward section 28.



NEW BOLLARD & ANTENNA LOCATIONS

AP-16: View looking west



30. Illustration of AP-16 located on the North side of Lincoln Drive looking west.

AP-17: View looking south



31. Illustration of AP-17 along the west side of Custis Walk looking south toward the existing camera pole.

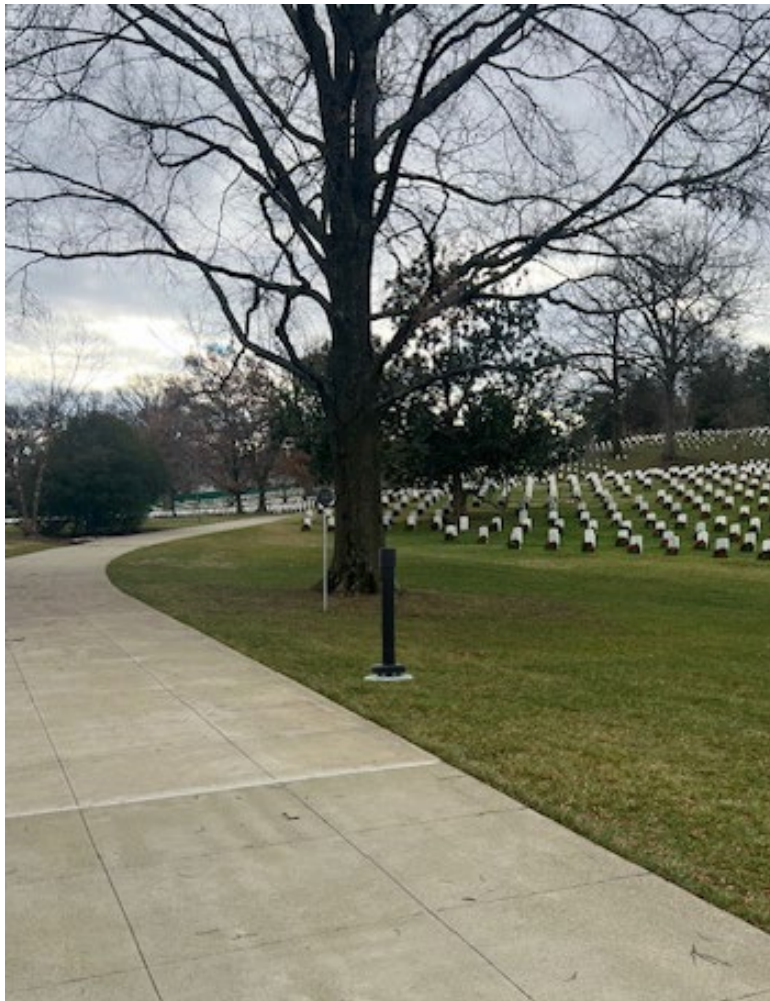


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NEW BOLLARD LOCATIONS

AP-18



32. Illustration of AP-18 located on the west side of Custis Walk looking south.

AP-19



33. Illustration of AP-19 looking southwest along Sherman Drive toward the intersection of Schley Drive and Sherman Drive.

AP-19



34. Illustration of AP-19 looking northeast from Schley Drive toward the inside eastern corner of the intersection between Schley Drive and Sherman Drive.



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NEW BOLLARD LOCATIONS

AP-20: Close-up view looking southeast



35. Illustration of AP-20 at the southern side of the intersection of Lewis Drive and Ord & Weitzel Drive looking southeast toward section 29.

AP-20: Distant view looking south



36. Illustration of AP-20 at the southern side of the intersection of Lewis Drive and Ord & Weitzel Drive looking south across Lewis Drive toward section 29.



NEW BOLLARD LOCATIONS

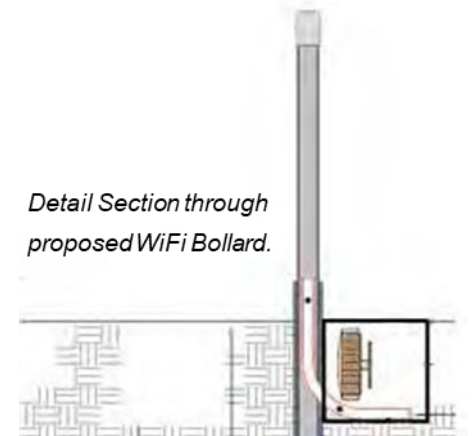
AP-21



37. Illustration of AP-21 at the north side of the intersection of Mitchell Drive and Lincoln Drive looking northwest toward section 43.



Existing horse hitching post for comparison to the proposed WiFi posts. Proposed Bollards are 36" tall.



Detail Section through proposed WiFi Bollard.



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EQUIPMENT DETAIL DRAWINGS



24"

12"

4"

LOW VOLTAGE HYBRID COMMSCOPE CABLE
(IN CONDUIT)

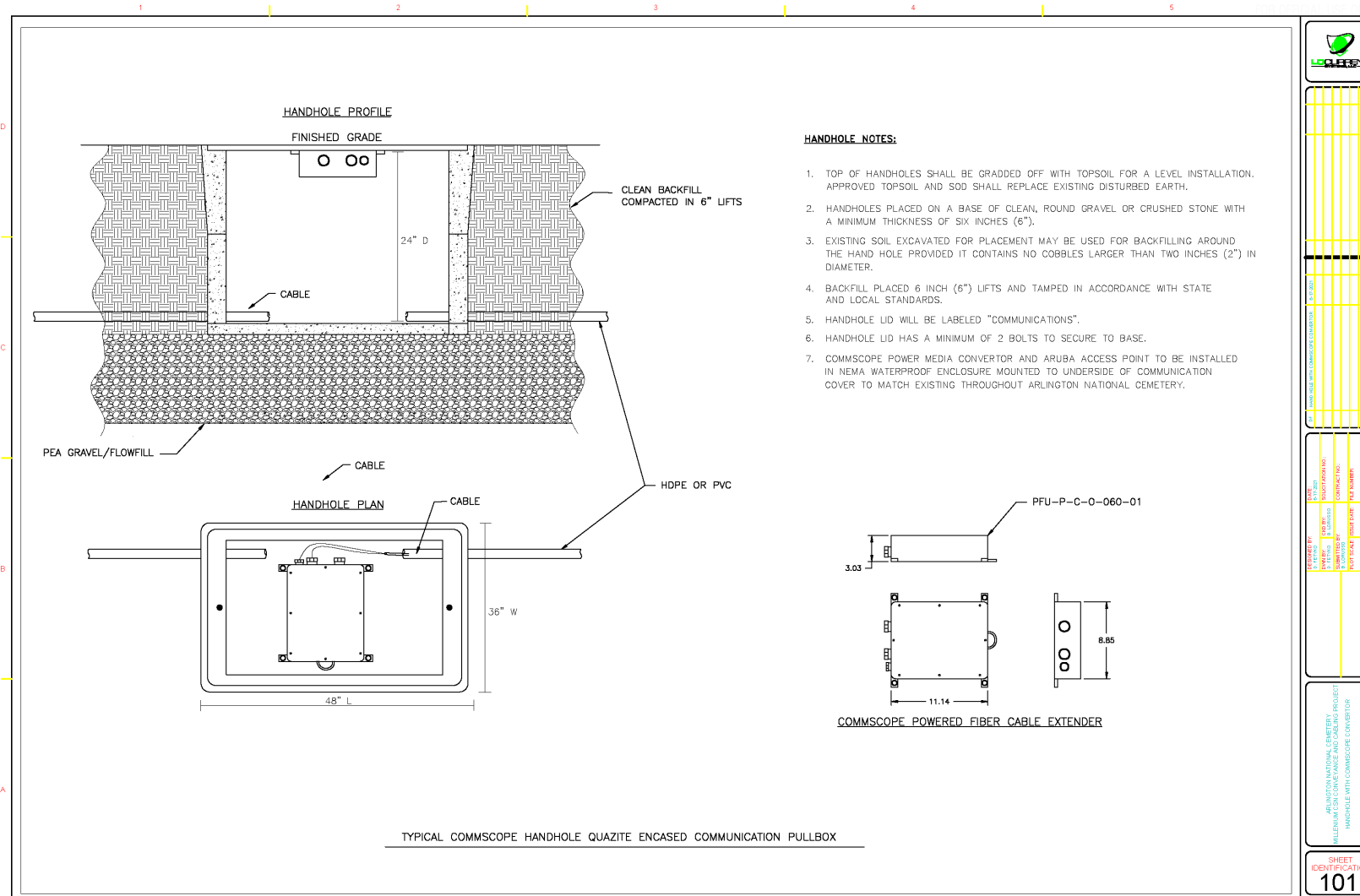
TRENCH/CONDUIT DETAIL

<p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p>	<p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p> <p>27</p> <p>28</p> <p>29</p> <p>30</p> <p>31</p> <p>32</p> <p>33</p> <p>34</p> <p>35</p> <p>36</p> <p>37</p> <p>38</p> <p>39</p> <p>40</p> <p>41</p> <p>42</p> <p>43</p> <p>44</p> <p>45</p> <p>46</p> <p>47</p> <p>48</p> <p>49</p> <p>50</p> <p>51</p> <p>52</p> <p>53</p> <p>54</p> <p>55</p> <p>56</p> <p>57</p> <p>58</p> <p>59</p> <p>60</p> <p>61</p> <p>62</p> <p>63</p> <p>64</p> <p>65</p> <p>66</p> <p>67</p> <p>68</p> <p>69</p> <p>70</p> <p>71</p> <p>72</p> <p>73</p> <p>74</p> <p>75</p> <p>76</p> <p>77</p> <p>78</p> <p>79</p> <p>80</p> <p>81</p> <p>82</p> <p>83</p> <p>84</p> <p>85</p> <p>86</p> <p>87</p> <p>88</p> <p>89</p> <p>90</p> <p>91</p> <p>92</p> <p>93</p> <p>94</p> <p>95</p> <p>96</p> <p>97</p> <p>98</p> <p>99</p> <p>100</p>	<p>101</p> <p>102</p> <p>103</p> <p>104</p> <p>105</p> <p>106</p> <p>107</p> <p>108</p> <p>109</p> <p>110</p> <p>111</p> <p>112</p> <p>113</p> <p>114</p> <p>115</p> <p>116</p> <p>117</p> <p>118</p> <p>119</p> <p>120</p> <p>121</p> <p>122</p> <p>123</p> <p>124</p> <p>125</p> <p>126</p> <p>127</p> <p>128</p> <p>129</p> <p>130</p> <p>131</p> <p>132</p> <p>133</p> <p>134</p> <p>135</p> <p>136</p> <p>137</p> <p>138</p> <p>139</p> <p>140</p> <p>141</p> <p>142</p> <p>143</p> <p>144</p> <p>145</p> <p>146</p> <p>147</p> <p>148</p> <p>149</p> <p>150</p> <p>151</p> <p>152</p> <p>153</p> <p>154</p> <p>155</p> <p>156</p> <p>157</p> <p>158</p> <p>159</p> <p>160</p> <p>161</p> <p>162</p> <p>163</p> <p>164</p> <p>165</p> <p>166</p> <p>167</p> <p>168</p> <p>169</p> <p>170</p> <p>171</p> <p>172</p> <p>173</p> <p>174</p> <p>175</p> <p>176</p> <p>177</p> <p>178</p> <p>179</p> <p>180</p> <p>181</p> <p>182</p> <p>183</p> <p>184</p> <p>185</p> <p>186</p> <p>187</p> <p>188</p> <p>189</p> <p>190</p> <p>191</p> <p>192</p> <p>193</p> <p>194</p> <p>195</p> <p>196</p> <p>197</p> <p>198</p> <p>199</p> <p>200</p>
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Detail Section Drawing of Trench with Conduit

[illegible]

*Detail Section & Plan
Drawings of Handhole*



*Detail Section & Plan
Drawings of
Commscope Handhole*

