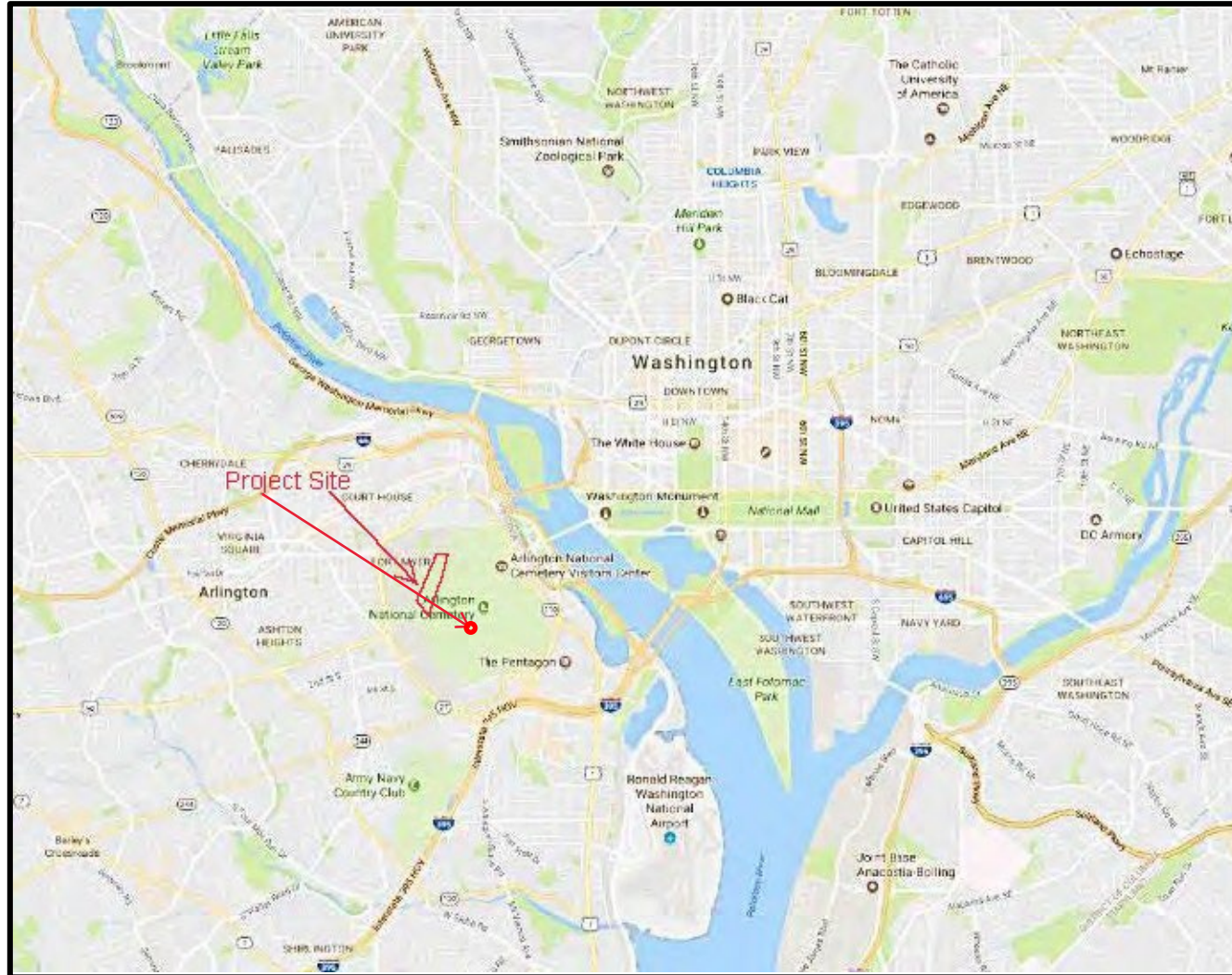


Millennium CSN Conveyance & Cabling Project



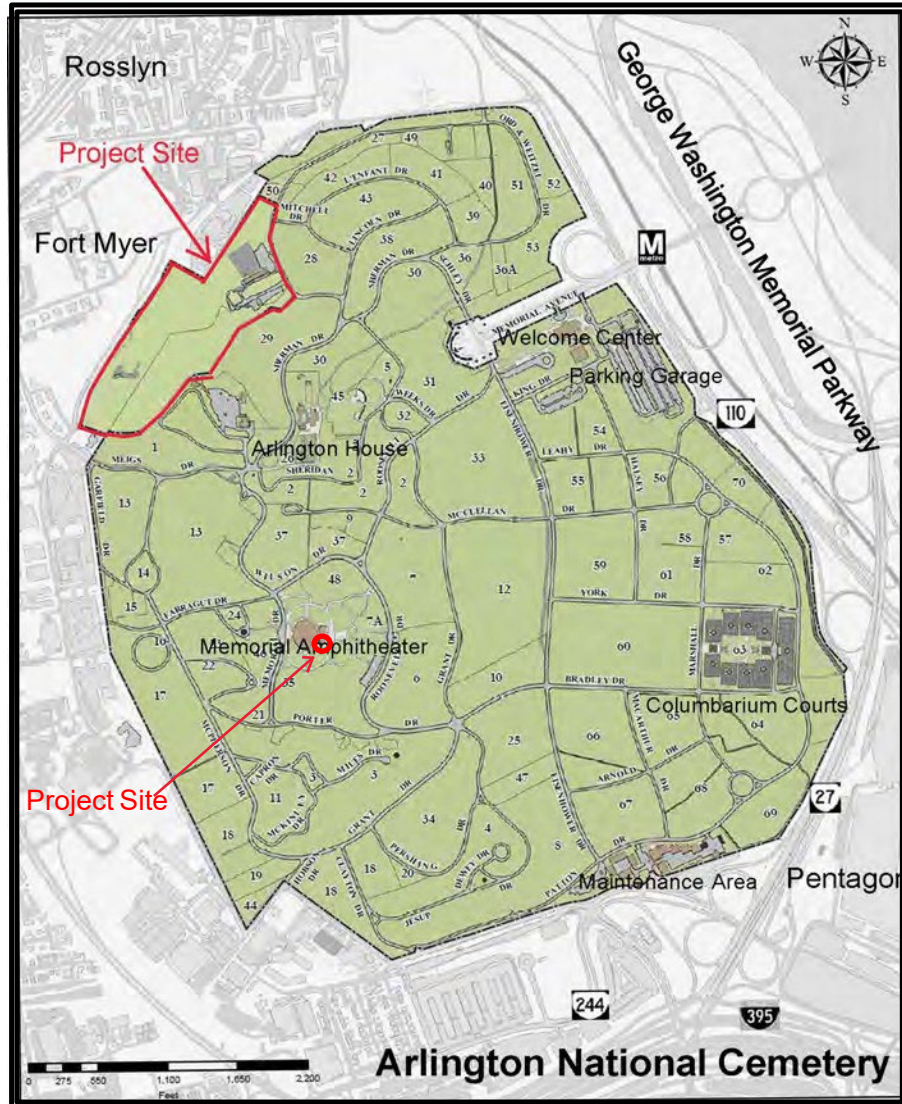
MILLENNIUM CSN CONVEYANCE &
CABLING PROJECT
Arlington National Cemetery
Arlington, Virginia

PROJECT DESCRIPTION,
AREA OF POTENTIAL EFFECTS,
& ASSESSMENT OF EFFECTS

ANC Project Point of Contact:

Caitlin Smith
Cultural Resources Program Manager
Engineering, Planning & Resources

August 17, 2022



PROJECT DESCRIPTION

Arlington National Cemetery (ANC) proposes expanding Wi-Fi network access to burial sections throughout the Millennium Property, focusing on coverage in areas of active cemetery operations.

Currently there are no conveyances or cabling throughout the Millennium Property. Conveyances for fiber optics and power will be installed as part of the Wi-Fi expansion. Nine to twelve bollard-height posts will be installed in the landscape within burial sections 80-84, as well as three to six 10-16-foot poles behind the section 79 and 85 columbaria walls. All conduit will be installed underground. All electronics and controls will be installed in the section 79 columbarium IT room. The project includes trenching and installation of conduits, handholes, cabling, concrete pads, poles, bollards, and antennas. The contractor shall trench approximately 3200 feet for the installation of 4-inch conveyance feeds from the Millennium IT room rack to handholes, and conveyance from handholes to pole and bollard CSN antennas. Handholes shall be located no more than 50 ft. from proposed pole / bollard locations. The contractor will install 1½-inch PVC conduit from handhole to each pole/ bollard location. A total of 15 pole/bollard concrete pads will be installed. Concrete bases shall be 24-inches wide by 42-inches deep. The contractor will install up to 3200 ft. of fiber power cabling.

The Millennium Wi-Fi Project is completely within Arlington National Cemetery's Historic District, and three proposed posts or bollards are in both the ANC and Arlington House Historic Districts. The Millennium Wi-Fi posts, bollards, and equipment are intended to blend in to and compliment the cemetery's surroundings. All bollards shall match previously installed bollards along Patton Drive, from the Welcome Center to Columbarium CSN Wi-Fi Expansion Project. Bollards set into the landscape shall be 4-feet tall and matte black, to recede into the greenspace. Poles shall be 10-16-foot tall and matte grey, to match the masonry exterior of the columbaria.

In addition to the Millennium Wi-Fi, the Wi-Fi contract will include the installation of conduit at the south side of the Memorial Amphitheater. The contractor will trench approximately 150-feet from an existing handhole to Camera AT02 to install new low voltage cabling.

DETERMINATION OF EFFECTS

I assessed the effects of the proposed wireless network expansion (Wi-Fi) for the Millennium area. I determined the undertaking will have **no adverse effect** on the characteristics which qualify the Arlington National Cemetery (ANC) or Arlington House Historic Districts for inclusion on the National Register of Historic Places.

ANC retains the historic views and vistas within the cemetery after construction of the proposed project. The historic location and elements within the districts are maintained. There are no irreversible changes to historic properties. Headstones and circulation patterns remain unchanged. The cemetery 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 of Arlington National Cemetery's or Arlington House's National Register districts.

All wiring, conduit, and communications equipment are either below grade, or wired inside the posts / bollards or within the columbarium IT room. The four-inch cylindrical Wi-Fi antennas are mounted on top of each pole and painted to match. The CRM worked with the IT department and contractor to minimize the size and number of Wi-Fi conveyances, posts, and bollards, while still providing adequate network coverage.

The freestanding poles are placed between the structures to avoid intrusions inside the courtyards. Poles are removable, with no damage to the Millennium structures or landscape. The limestone-colored poles blend with the surrounding walls. They are tapered from approximately six-inches at the bottom to four-inch diameter at the tops. The height of the poles vary from 10- to 16-feet above grade; each one sets 36-inches above the wall of the nearest Columbarium structure. The heights vary due to changes in grade from one Columbarium Court to another. The poles are no taller than required to provide network service over the columbaria and are designed to minimize visual intrusions within the Area of Potential Effects. The placement and height ensure unobstructed views from within the courtyards and throughout the landscape. The design and style are in keeping with the previously installed Patton Drive Wi-Fi posts.

ANC proposes installing specially designed 36-inch tall five-inch diameter Wi-Fi Access Point bollards. The matte black Wi-Fi bollards will be set three-feet from the curb edge, to be less noticeable from the roads. The short bollards should blend visually into the background of vegetation and other small-scale features that line the perimeter of the Millennium burial sections. The Wi-Fi bollards are similar in size to horse hitching posts used throughout the cemetery. As with the posts, the Wi-Fi antennas and wiring are contained inside the bollards. The design and style are in keeping with the previously installed Patton Drive Wi-Fi bollards. The posts and bollards will be visible within 100', however they are partially obstructed by the landscape, plantings, and columbaria. They may be more apparent during winter months, when leaves fall from surrounding trees and other plants are not in bloom.

The proposed undertaking would have **no adverse effect to archaeological resources**. All construction would be in areas of the APE that have been severely 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"). It is not expected that undiscovered cultural resources would be found during implementation of the undertaking. In the event of an unanticipated discovery, all work would cease, and the Cultural Resources Manager (CRM) would be contacted. The CRM would 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.

All work adheres to the Secretary of the Interior's Standards for the Treatment of Historic Properties. The project team selected materials and sited the utilities in a manner to avoid and minimize effects. I find the design avoids and/ or minimizes the direct, indirect, and cumulative effects to above- and below-ground historic properties and contributing elements in the Arlington National Cemetery and Arlington House Historic Districts.

Caitlin Smith, AIC PA
Cultural Resources Manager
Arlington National Cemetery

AREA OF POTENTIAL EFFECTS

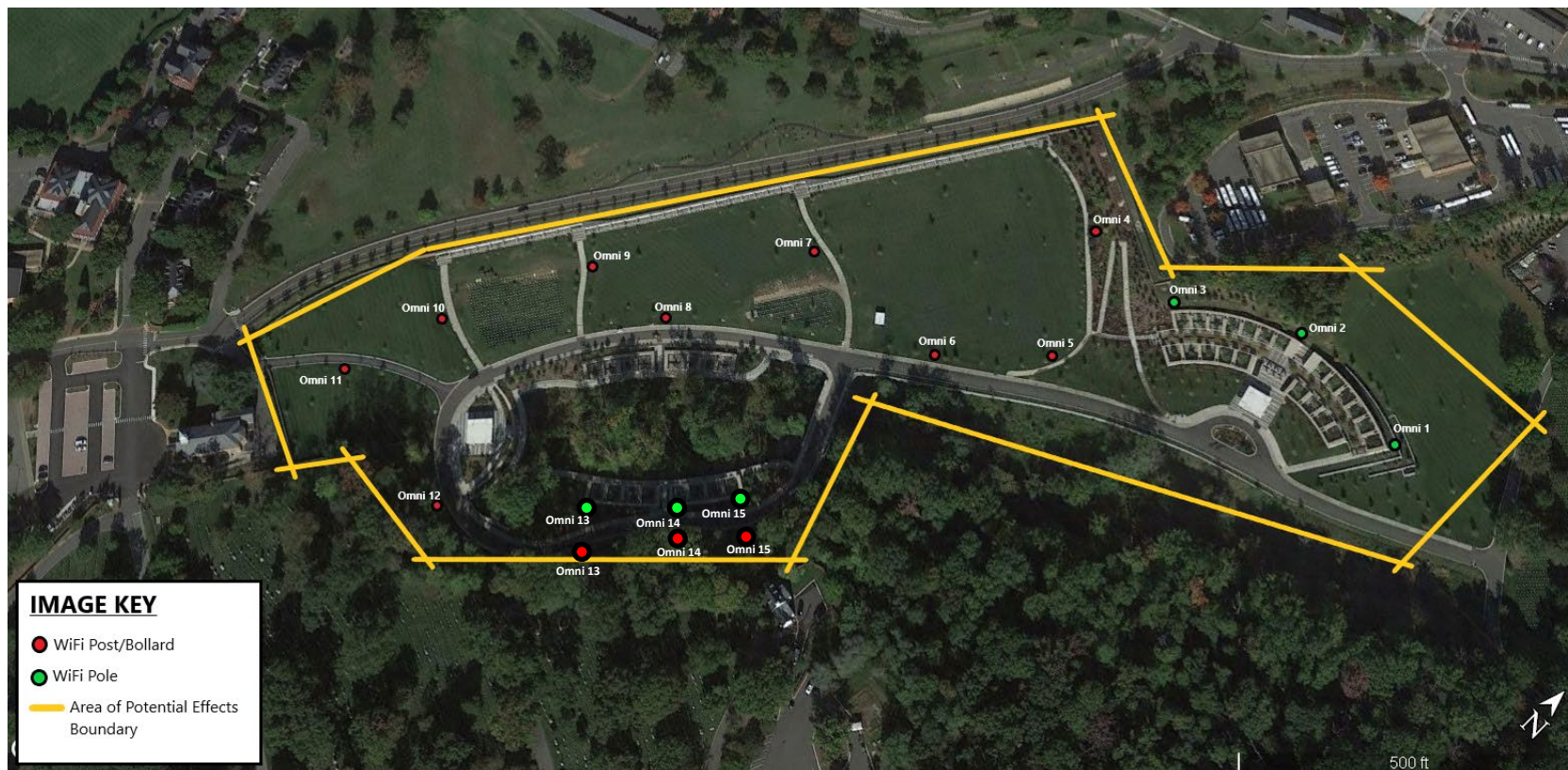
The Area of Potential Effects (APE) for the proposed Millennium Conveyance and Cabling CSN Wi-Fi Expansion project is outlined in yellow on the image to the left. The APE includes locations where the project may be visible and/or audible. The area is the boundary from which one can see the Wi-Fi posts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

The project area is located in Arlington National Cemetery Historic District (Virginia Department of Historic Resources [VDHR] #000-0042).

NATIONAL REGISTER PROPERTIES IN THE APE

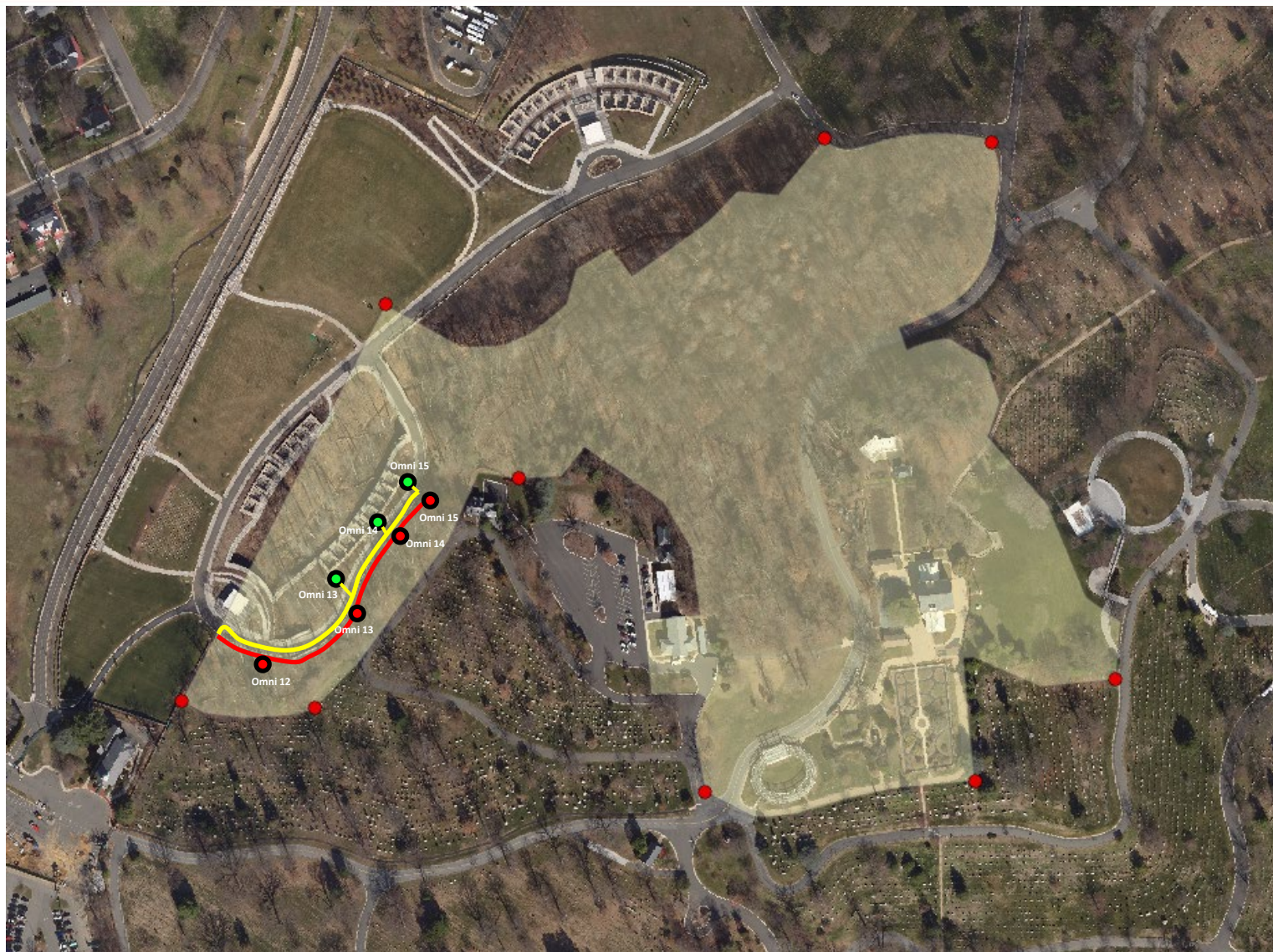
Following is a list of historic structures and features contributing to Arlington National Cemetery's and Arlington House's historic districts, which are located within/adjacent to the APE.

- Arlington National Cemetery Historic District (DHR #000-0042)
- Arlington House Historic District (DHR # 000-0001)
- Headstones and Grave Markers (DHR #000-0042-0021)
- Columbarium Courts (DHR # 000-0042-0016)
- Burial Sections 1, 28, 29, 78, 79, 80, 81, 82, 83, 84, 85
- Superintendent's House, Lodge #1 (DHR ID#: 000-0042-0001)



Satellite View of Project Area with APE outlined in yellow.





Arlington House Historic District Overlay:

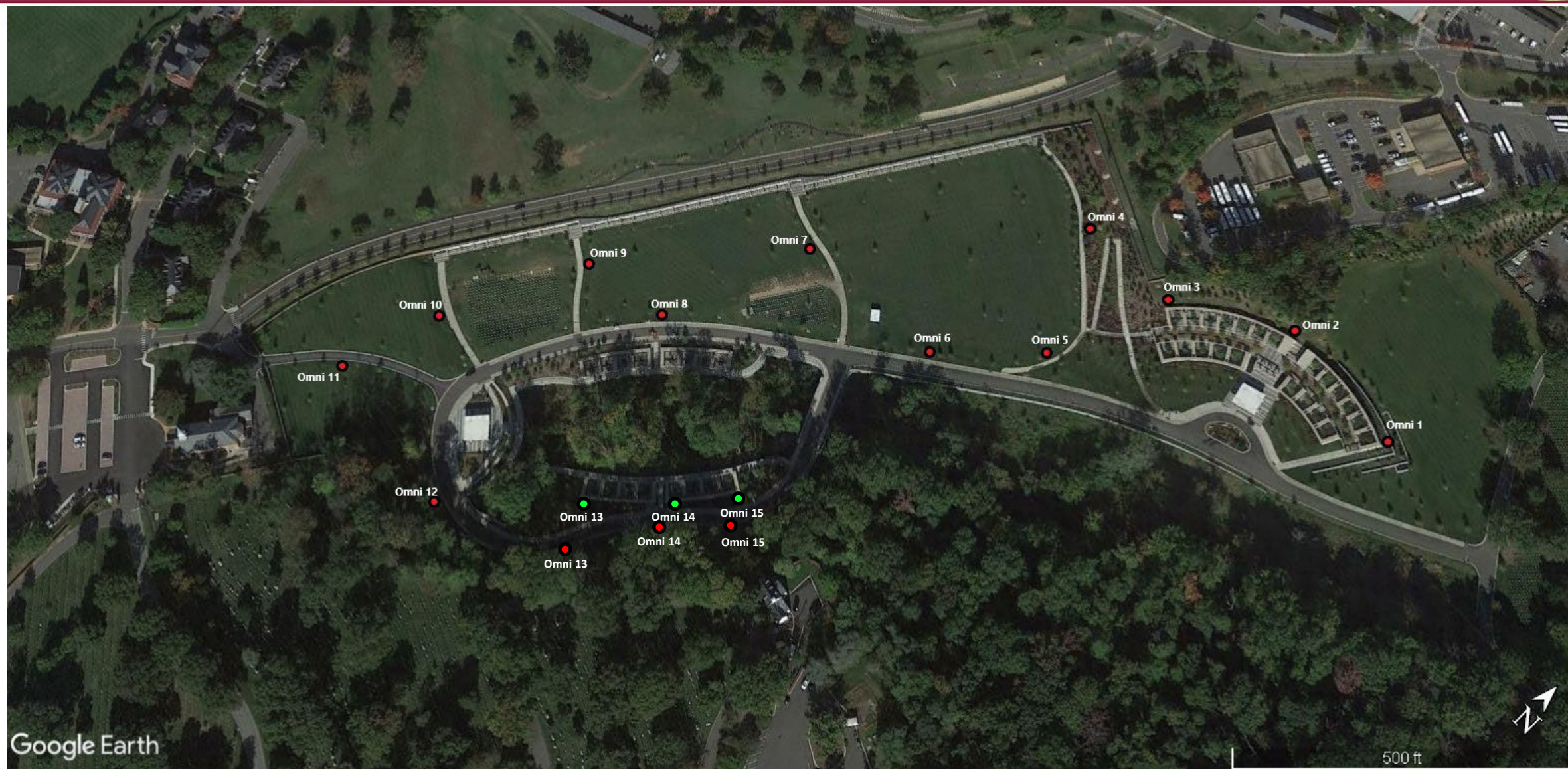
The Area of Potential Effects (APE) for the proposed Millennium Conveyance and Cabling CSN Wi-Fi Expansion is located in both the Arlington National Cemetery Historic District (DHR #000-0042) and the Arlington House Historic District (DHR # 000-0001).

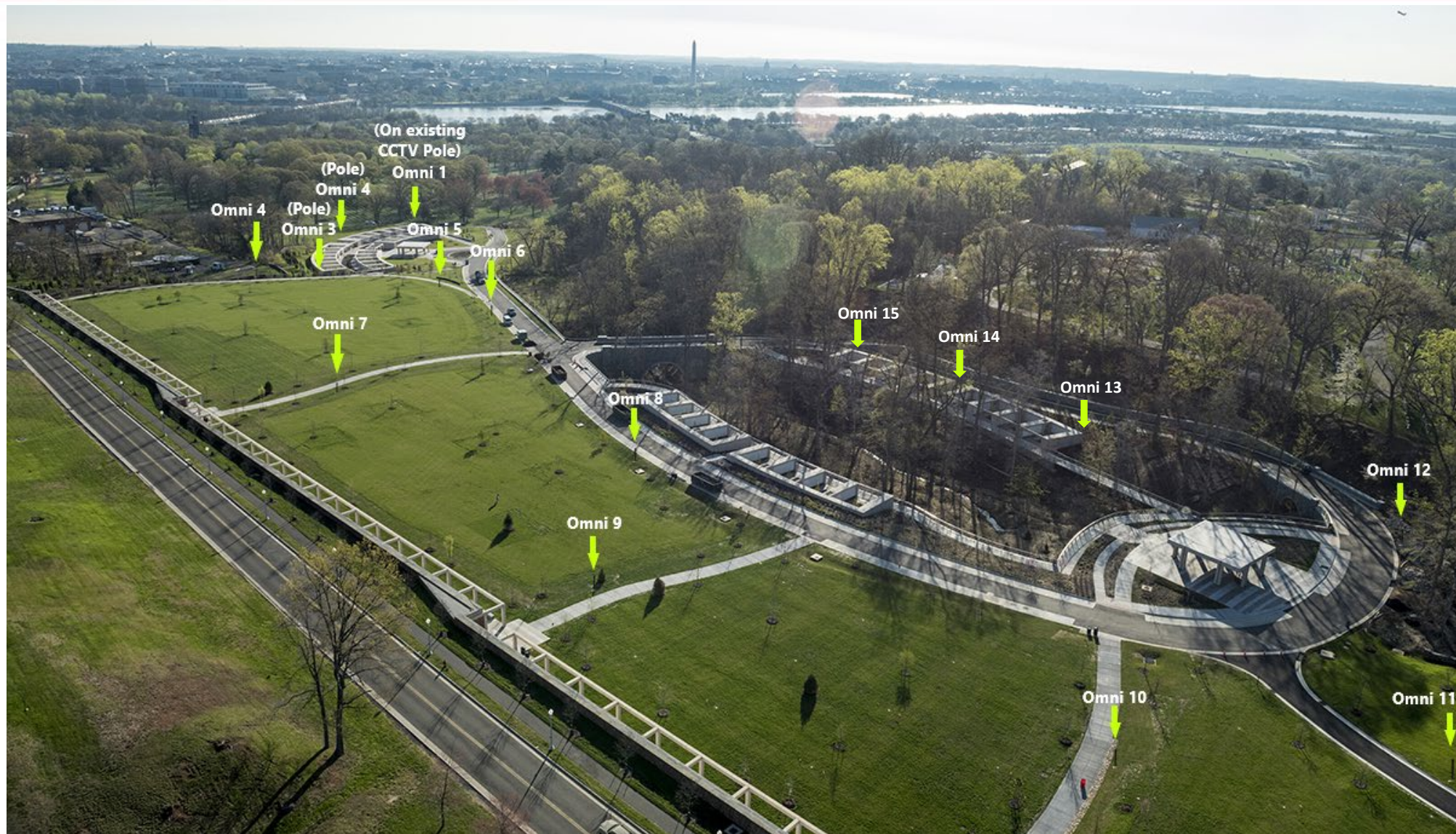
Proposed posts, bollards, and trenching located in the Arlington House Historic District are highlighted in the image to the left. At least four (4) of the proposed Wi-Fi posts/bollards/poles are located within both districts.

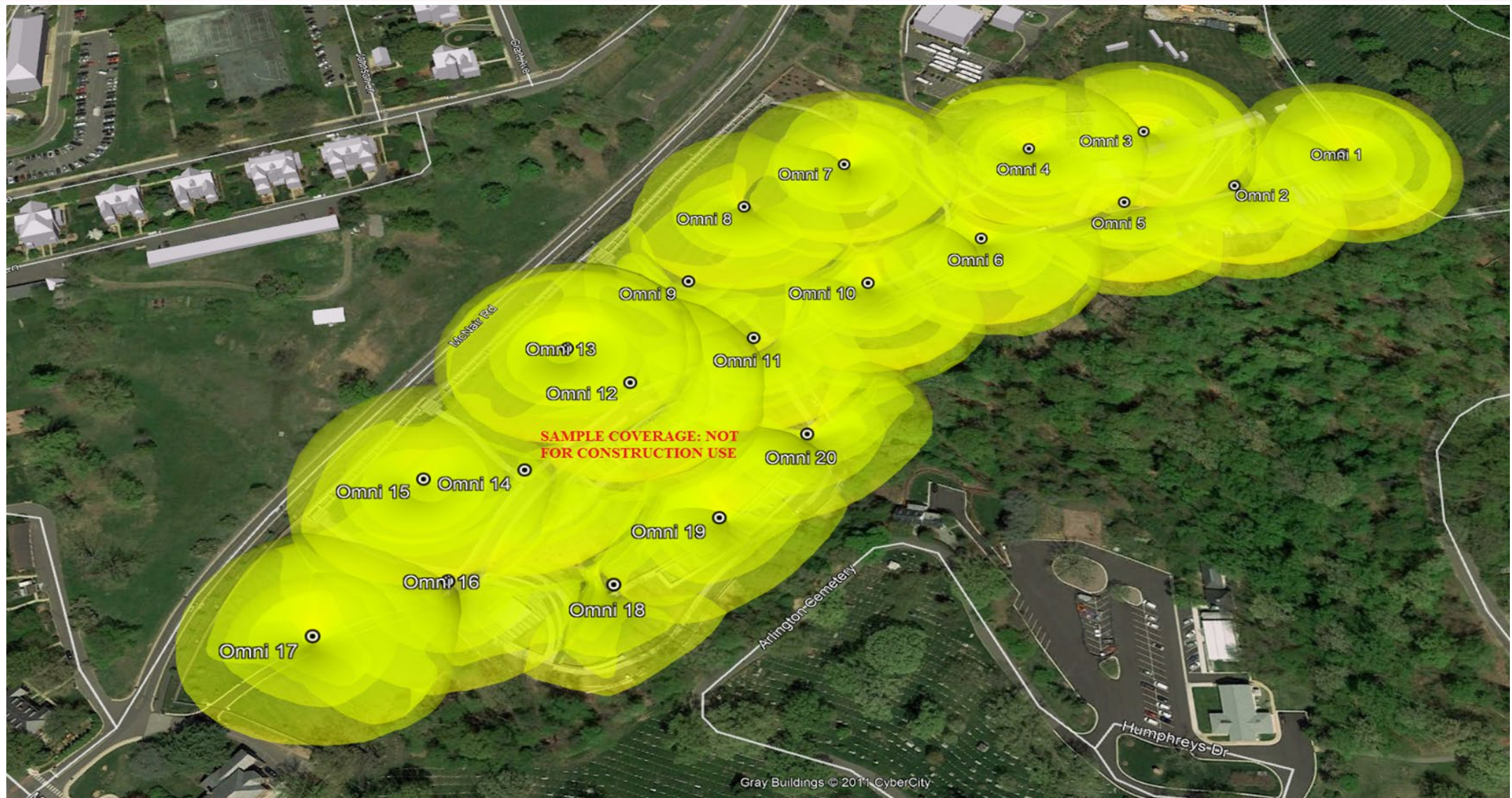
Note: Omni 13-15 are shown in two locations because ANC is presenting two possible design options (see pages 18 - 22). The Option 1 trenching and conduit route runs under the stream/drainage area and landscaping behind the retaining wall in the Arlington Woods. The Option 2 trenching and conduit route runs under the roadway.

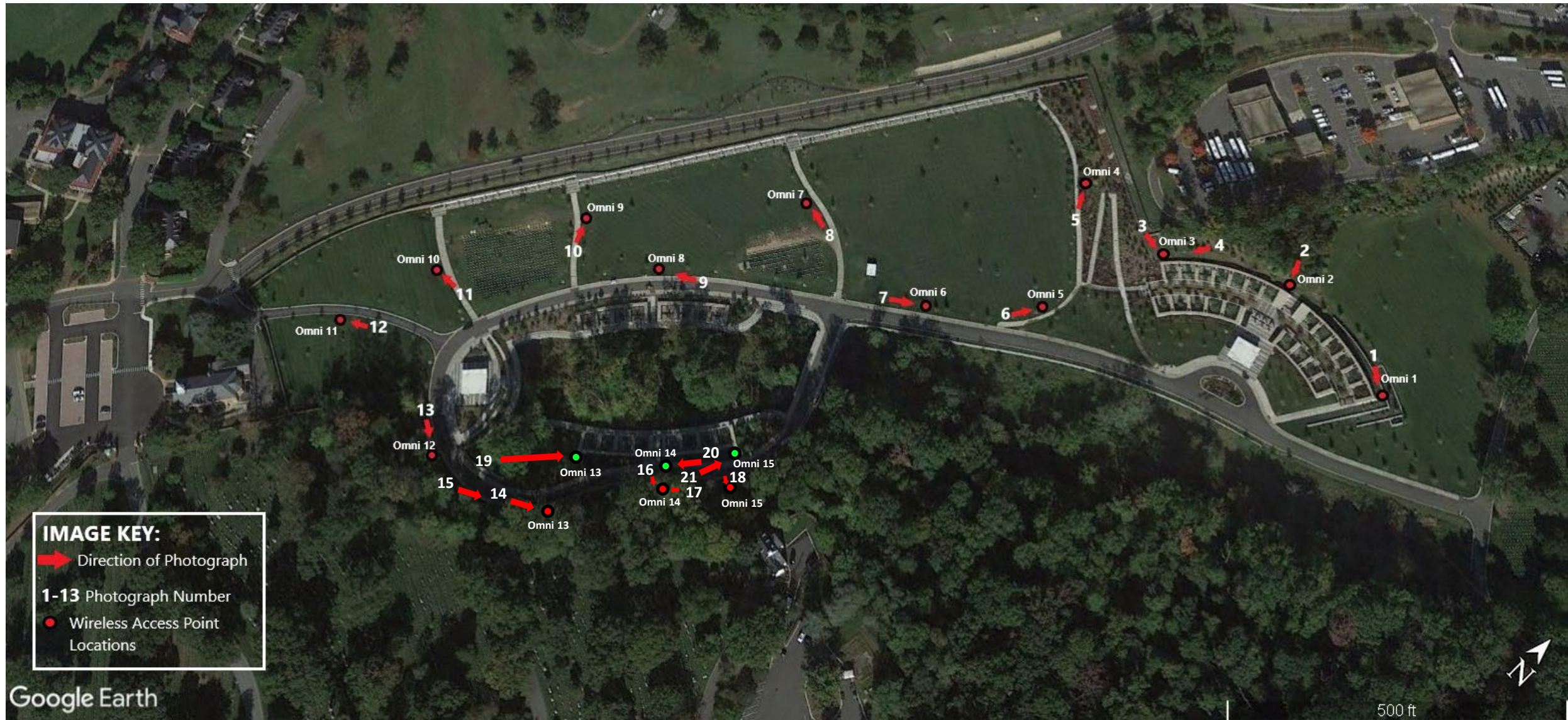
Image Key:

-  Wi-Fi Post/Bollard
-  Wi-Fi Pole
-  Option 1 Trenching & Conduit Route
-  Option 2 Trenching & Conduit Route









PROPOSED Wi-Fi POLE DESIGN AT MILLENNIUM

Omni1



1 Illustration of the proposed combined Wi-Fi and CCTV camera pole looking Southeast. The pole is two feet taller than the existing pole to achieve proper distribution of coverage. Omni 1 Wi-Fi/CCTV Pole located at the far East Corner of the Millennium Columbarium off of Lewis Drive.



Detail Section through the proposed Wi-Fi Pole.
Proposed Poles are 144" tall.

Omni2



2 Illustration of Omni 2 located on the back side of the Millennium Columbarium off of Lewis Drive. Pole to be three foot taller than Columbarium wall for proper distribution of coverage.

Omni 3- Close Up



3 Illustration of Omni 3 close up located on the far West corner behind the Millennium Columbarium off of Lewis Drive looking Southeast. Pole to be three foot taller than Columbarium wall for proper distribution of coverage.

Omni 3- From Afar



4 Illustration of Omni 3 from afar located on the far West corner behind the Millennium Columbarium off of Lewis Drive looking . Pole to be three foot taller than Columbarium wall for proper distribution of coverage.

PROPOSED Wi-Fi BOLLARD DESIGN AT MILLENNIUM

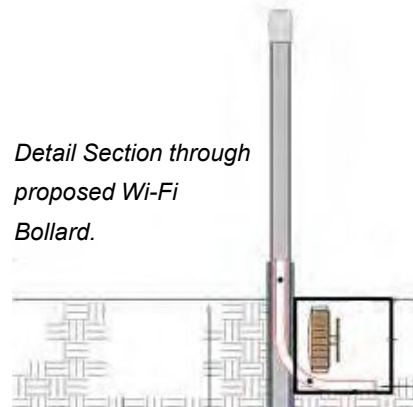
Omni 4



5 Illustration of Omni 4 looking to the Northwest. Illustrated along East side (right) of walkway



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



Detail Section through proposed Wi-Fi Bollard.

Omni 5



6 View of Omni 5 close up looking to the Northwest. Illustrated along West side (left) of walkway.

Omni 6



7 Illustration of Omni 6 located along the Northwest side of Lewis Drive looking Northeast.

Omni 7



8 Illustration of Omni 7 looking to the West. Illustrated along West side (left) of walkway

Omni 8



9 View of Omni 8 looking to the Southwest. Illustrated along Northwest side of Lewis Drive.

Omni 9



10 Illustration of Omni 9 looking to the North. Illustrated along East side (right) of walkway.

Omni 10



11 Illustration of Omni 10 looking Northwest located along the Northeast side (left) of walkway.

Omni 11



12 View of Omni 11 located along the South side of pathway leading to Ft. McNair Road looking West.

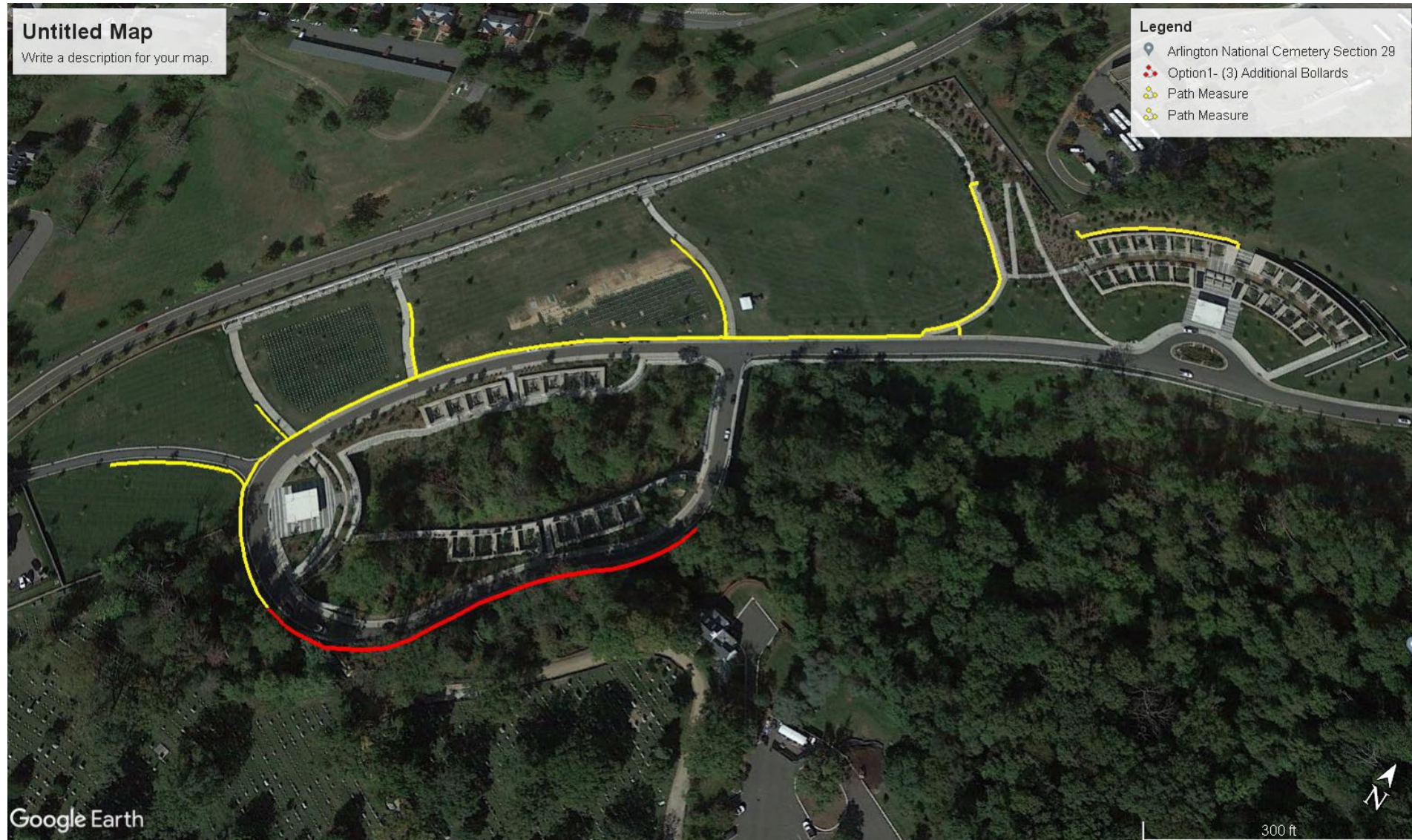
PROPOSED Wi-Fi BOLLARD DESIGN AT MILLENNIUM

Omni 12



13 View from where Gifford Drive and Lewis Drive converge looking Southeast down Gifford Drive at Omni 12 located along the Southwest side of Gifford Drive before bend.

Option 1: 3 Retaining Wall Bollards



Option 1: 3 Retaining Wall Bollards

Omni 13 (Bollard) View 1



14 View Northeast along Gifford Drive viewing Omni 13 located in foliage atop the retaining wall across the street from the Millennium Columbarium Wall on the Northeast side of Gifford Drive.

Omni 13 (Bollard) View 2



15 View Northeast along Gifford Drive viewing Omni 13 through the foliage located across the street from the Millennium Columbarium Wall on the Northeast side of Gifford Drive.

Option 1: 3 Retaining Wall Bollards

Omni 14 (Bollard)



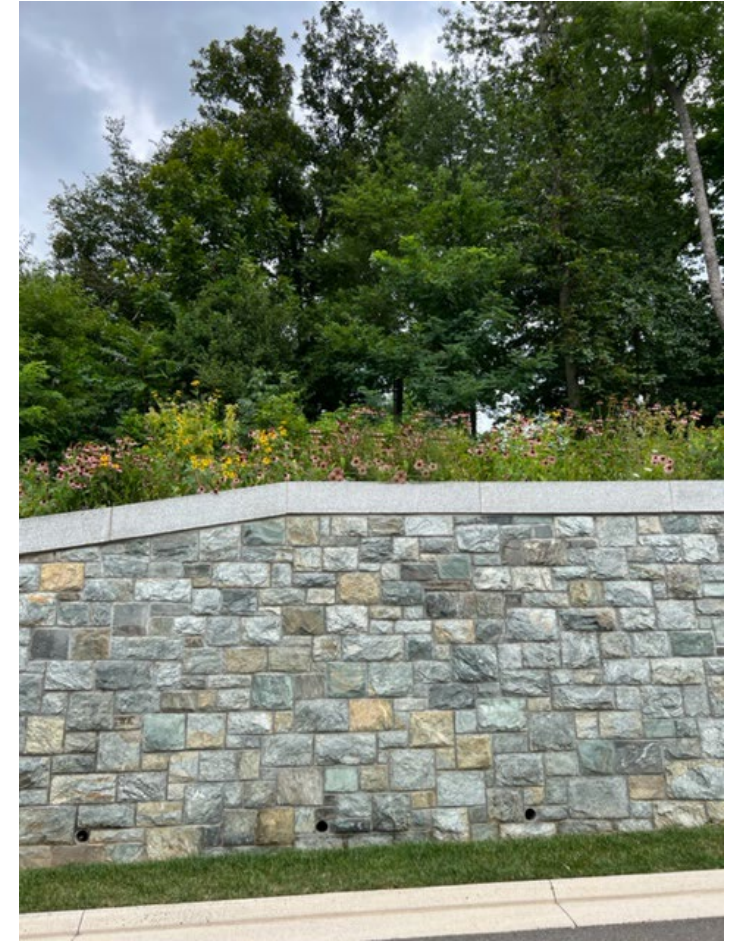
16 View along the East side of Gifford Drive viewing Omni 14 located in foliage atop the retaining wall across the street from the Millennium Columbarium Wall.

Omni 15 (Bollard) View 1

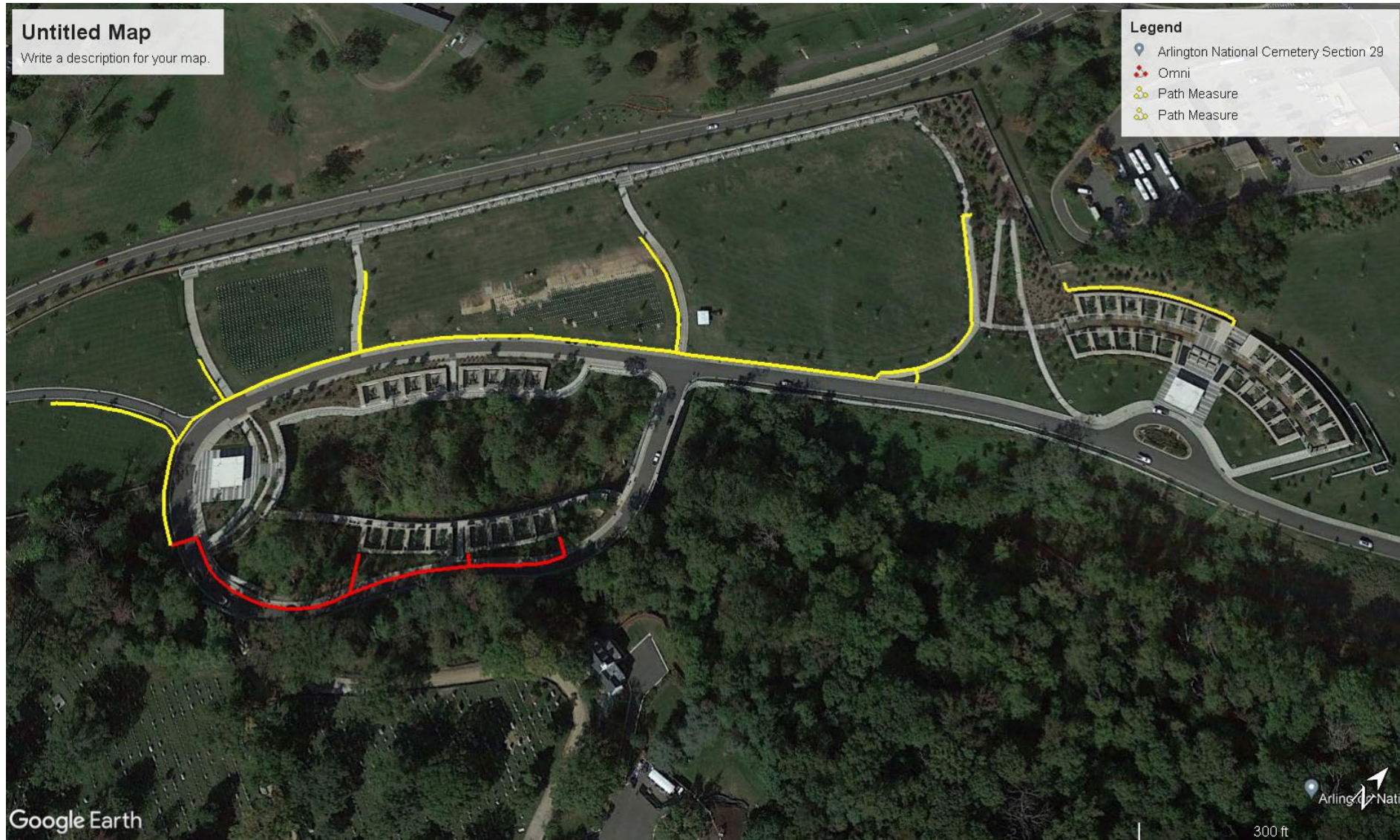


17 View Southwest along Gifford Drive viewing Omni 15 located in foliage atop the retaining wall across the street from the Millennium Columbarium Wall. Bollard shall be located on the East side of Gifford Drive.

Omni 15 (Bollard) View 2



18 View along the East side of Gifford Drive viewing Omni 15 located in foliage atop the retaining wall across the street from the Millennium Columbarium Wall. Bollard shall be located on the East side of Gifford Drive.



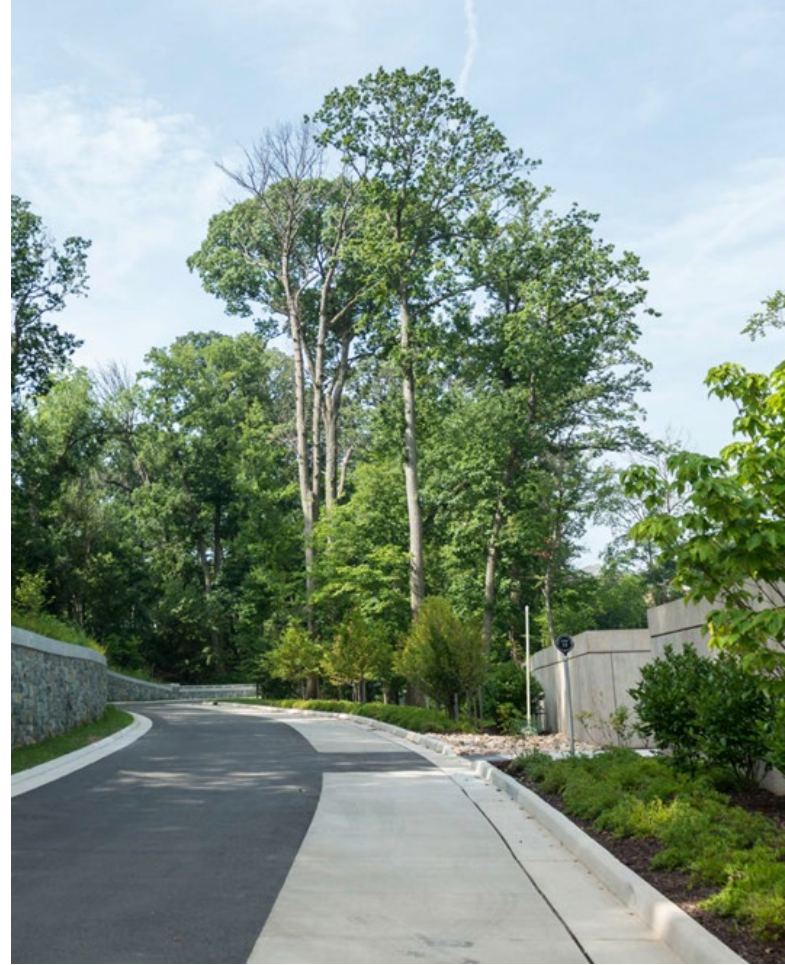
Option 2: 3 Columbarium Poles

Omni 13 (Pole)



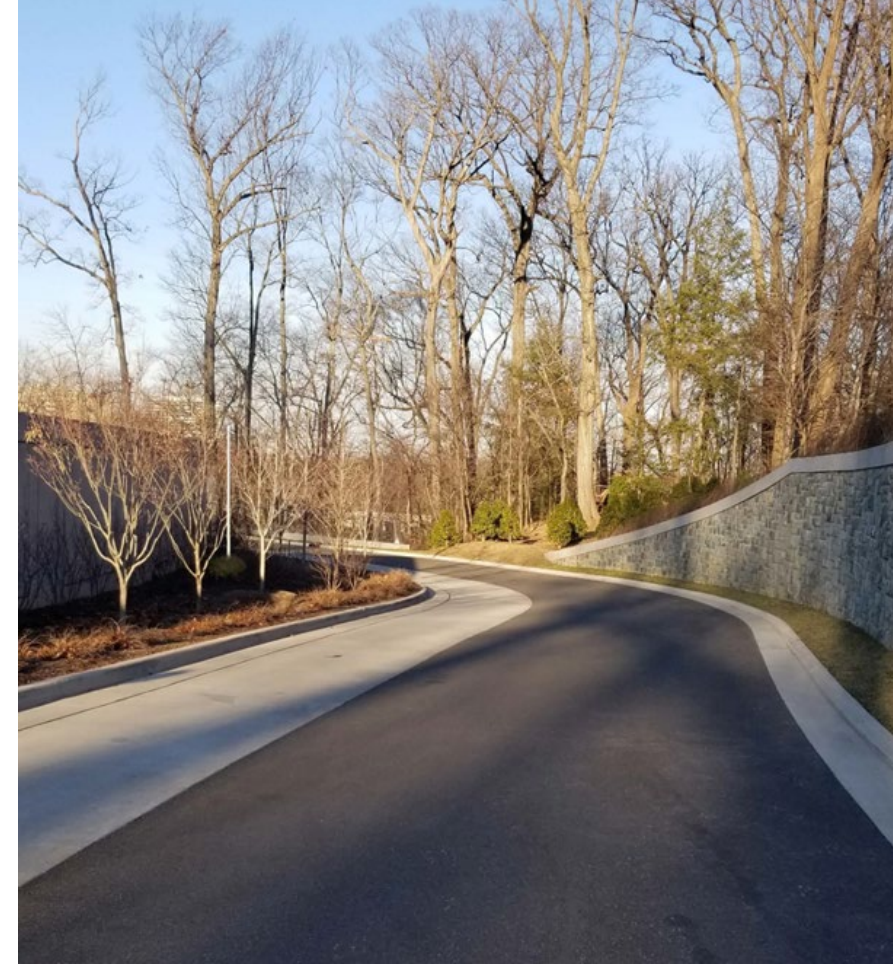
19 View Northeast along Gifford Drive viewing Omni 13 through the trees located near the Millennium Columbarium Wall on the Northwest side of Gifford Drive. Pole to be three foot taller than Columbarium wall for proper distribution of coverage.

Omni 14 (Pole)

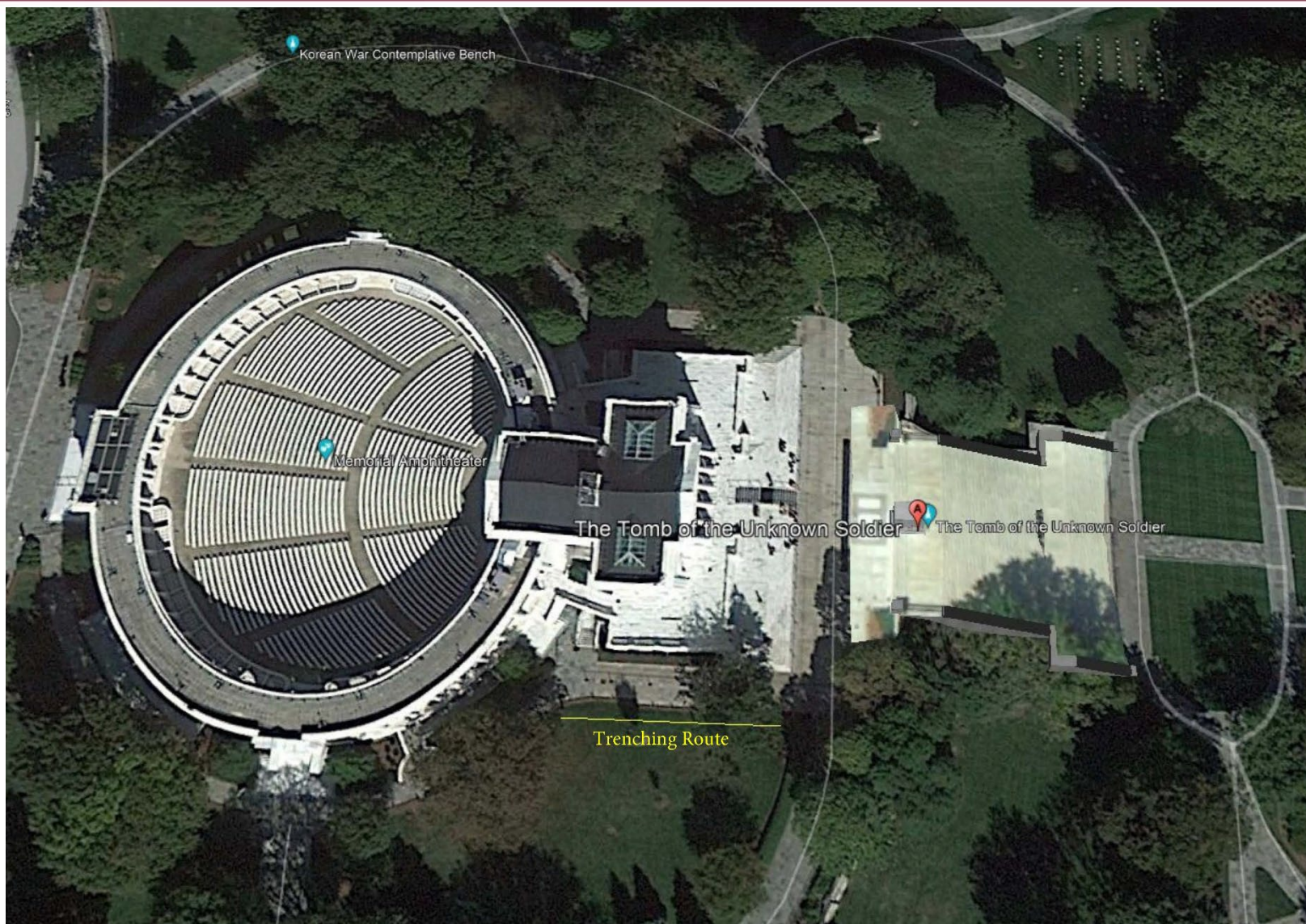


20 View looking Southwest along Gifford Drive viewing Omni 14 adjacent to the Millennium Columbarium wall located on the Northwest side of Gifford Drive. Pole to be three foot taller than Columbarium wall for proper distribution of coverage.

Omni 15 (Pole)



21 View looking Northeast along Gifford Drive viewing Omni 15 about the South East corner of the Millennium Columbarium located along the Northwest side of Gifford Drive before the bend. Pole to be three foot taller than Columbarium wall for proper distribution of coverage.



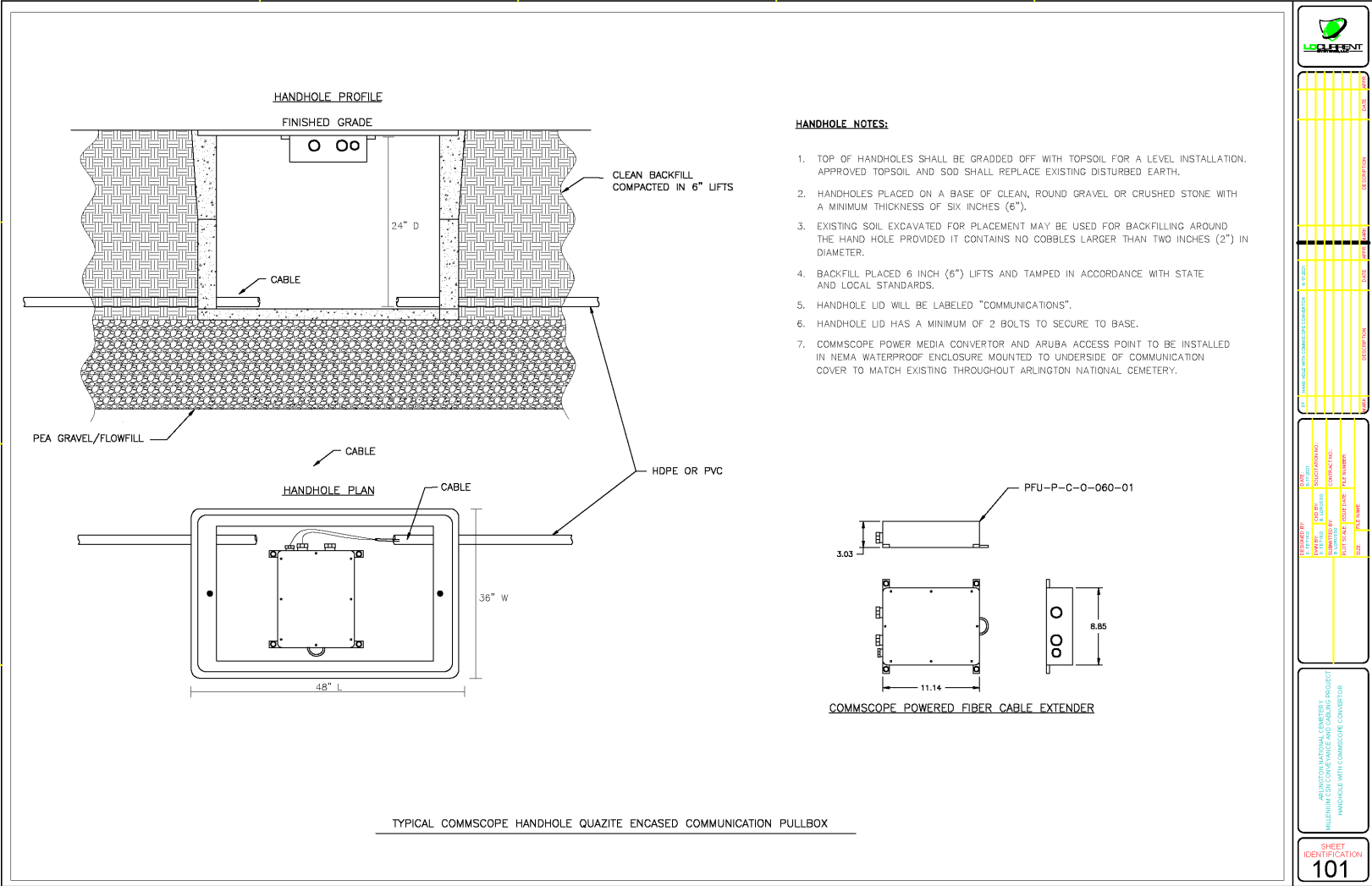
South side of Amphitheater, trench from hand hole to Camera AT02, install new low voltage cabling, patch to match. Trenching route outlined in yellow; distance of approximately 150-feet.

HONOR • REMEMBER • EXPLORE

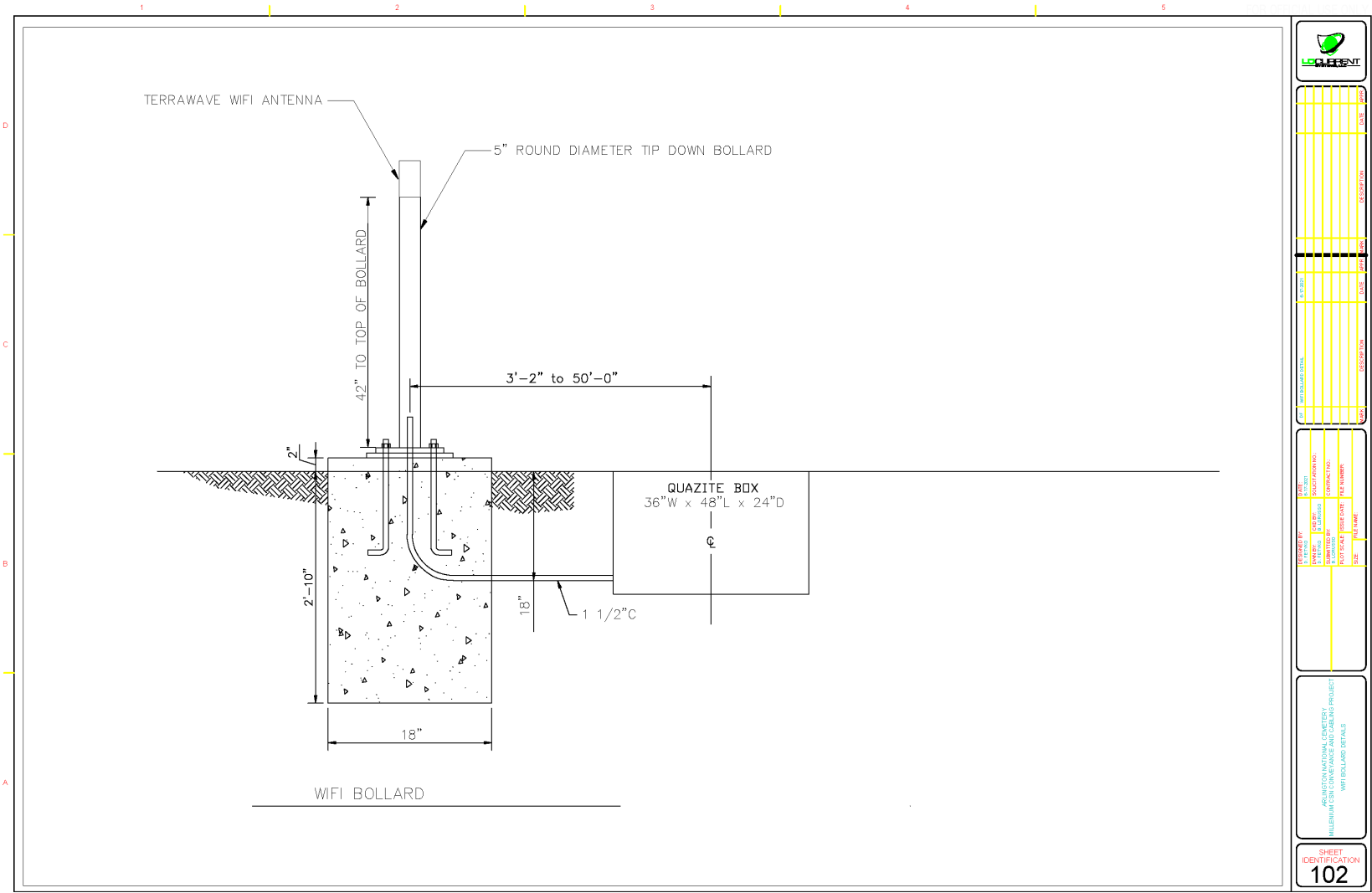
HONOR • REMEMBER • EXPLORE



DETAIL DRAWINGS



Detail Section & Plan
Drawings of
Commscope Handhole



Detail Section
Drawing of Bollard
with Wi-Fi Antenna