

AREAS OF POTENTIAL EFFECTS and
ASSESSMENT OF EFFECT for
IRRIGATION UPGRADES at
ARLINGTON
NATIONAL CEMETERY

August 17, 2016

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Project Description

Arlington National Cemetery (ANC) proposes to install new in-ground irrigation systems at six locations and upgrading or expanding in-ground irrigation systems at four others. The irrigation system project locations are:

Location 1 – McClellan Circle (new)

Location 2 – Patton Circle

Location 3 – U.S. Coast Guard Memorial (new)

Location 4 – Tomb of the Civil War Unknowns (new)

Location 5 – Memorial Amphitheater

Location 6 – James R. Tanner (Old) Amphitheater

Location 7 – Old Administration Building Traffic Island (new)

Location 8 – Sir John Dill Monument (new)

Location 9 – President William H. Taft Monument

Location 10 – General Philip Kearney Monument (new)

The systems will consist of below and above grade pipes, valves, sprinklers and equipment.

This report addresses the parts of the systems visible above-grade. Those are irrigation controllers and backflow preventers.

Areas of Potential Effects

The Areas of Potential Effects (APE) for the locations of the proposed irrigation system upgrades are shown on satellite images which follow.

The historic properties in the APE's which contribute to Arlington National Cemetery's National Register (NR) District are:

- Old Administration Building (owned NPS)
- Custis Walk (near Schley Drive)
- Sir John Dill Monument (DHR # 000-1242. Other DHR # 000-0042-0030)
- Pan Am Flight 103 Memorial (DHR # 000-0042-0037)

- General Philip Kearney Monument (DHR # 000-1220. Other DHR # 000-0042-0032)
- Kennedy Monument Gravesites (DHR # 000-0042-0033)
- Korean War Veterans Bench Memorial
- Memorial Amphitheater and Grounds (DHR # 000-0042-0006)
- Robert E. Peary Monument (DHR # 000-0042-0039)
- Receiving Vault (DHR # 000-0042-0008)
- Roosevelt Fountain and Terrace
- President William Howard Taft Monument (DHR # 000-0042-0051)
- James Tanner (Old) Amphitheater (DHR # 000-0042-0015)
- Tomb of the Civil War Unknowns (DHR # 000-0042-0028)
- U.S. Coast Guard Memorial (DHR # 000-0042-0046)
- Woodhull Memorial Flagpole

Determination of Effect

I assessed the effects of the proposed irrigation system upgrades and determined they will have No Adverse Effect on the characteristics which qualify Arlington National Cemetery's National Register Historic District for inclusion in the National Register of Historic Places. I find the design avoids and minimizes the potential direct, indirect, and cumulative effects on both below- and above-ground historic properties.

To preserve the visual qualities of (avoid potential effects on) historic structures, landscape features, and views/vistas within the Areas of Potential Effects, Arlington National Cemetery (ANC) proposes placing equipment in out-of-the-way and remote locations away from the most significant historic resources.

To minimize the potential visual effects ANC reduced the number of backflow preventers and irrigation controllers by consolidating equipment. ANC designed the systems so one controller and one backflow preventer can serve multiple irrigation locations where reasonably possible.

Where those solutions (strategic placement and consolidation of equipment) are impractical, ANC proposes screening the above-ground equipment with trees and

shrubs. And finally ANC designed the backflow preventers and irrigation controllers to be covered with dark metal enclosures to minimize their presences in the landscape.

The irrigation system is designed with misting type sprinkler heads. The advantages of the misting type systems are lower water pressures, decreased water amounts, and reduced chances of damage to historic properties by overspray. The disadvantage is a greater number of sprinkler heads must be installed in comparison to a traditional system. The mist type heads minimizes the direct, indirect, and cummulative effects of a typical automatic irrigation system on historic properties.

ANC is reusing existing trenches in locations with existing irrigation systems to avoid new ground disturbance which could affect archeological resources. Also ANC is routing low-voltage electrical lines within the trench zone of storm water drainage lines for the same reason. Phase I archeological survey is complete for the ground disturbing work and is included in a separate attachment to this Section 106 submission package.

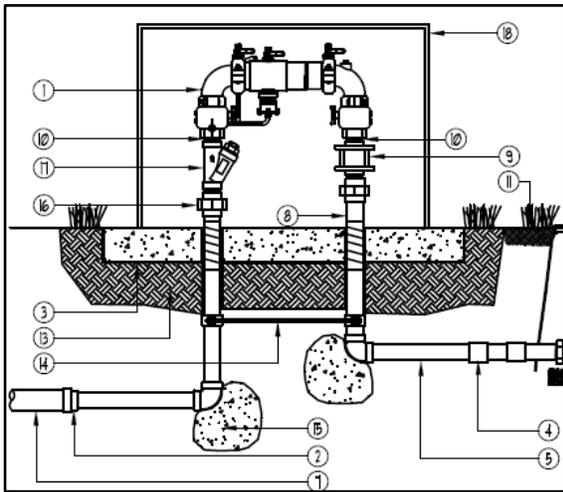
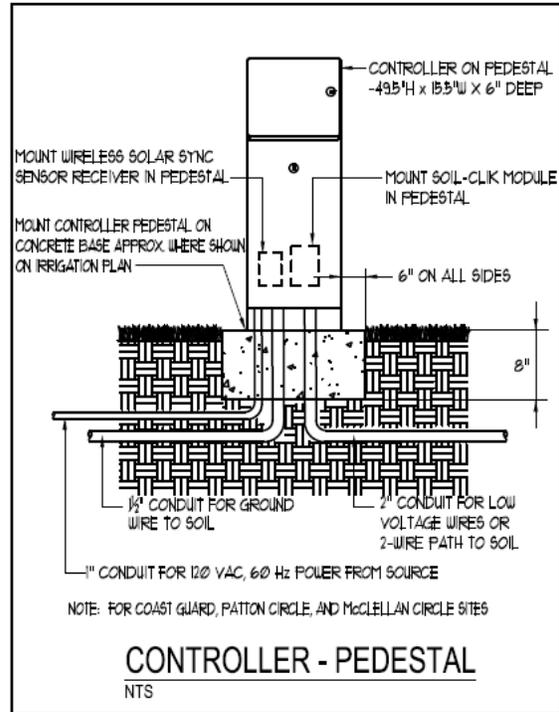
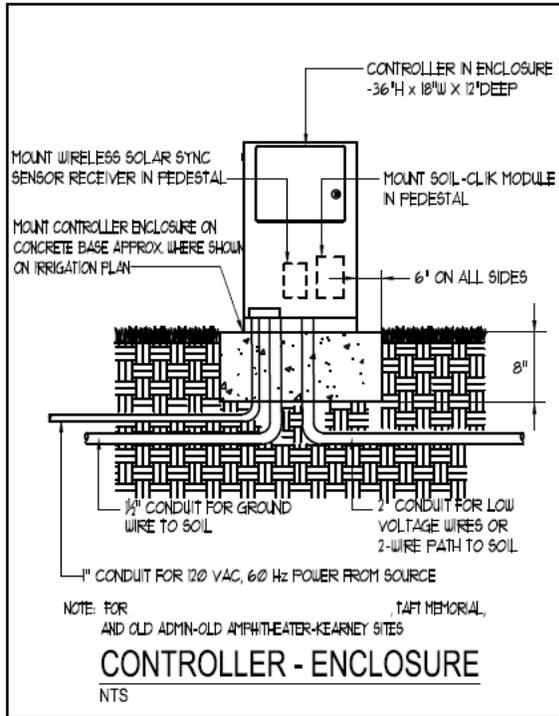
Explanation of Report

The report is organized by proposed irrigation system upgrade locations. For each location:

- an annotated satillite image shows the APE, indicates proposed above-ground equipment spots and notes the NR contributing historic properties in the APE.
- a site plan of the irrigation system layout shows sprinkler head locations, pipe routing, backflow preventer, controller, and underground valves.
- photographs present views into the APE with location of above-ground equipment noted.

Equipment Size

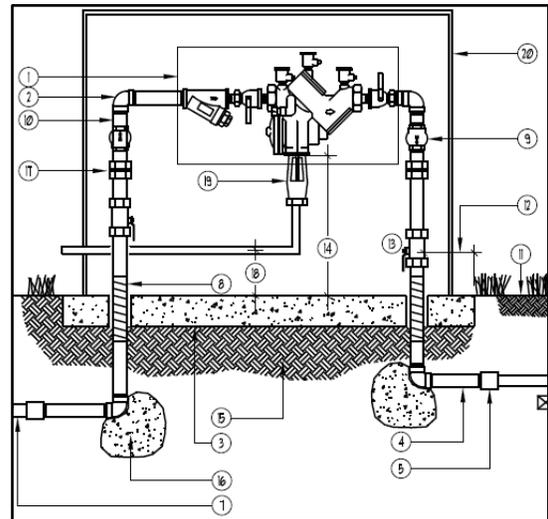
Above-ground plumbing equipment consists of backflow preventers and controllers. Both are enclosed with powder-coated black steel boxes. The backflow preventer enclosure is 40 inch in width, 24 inches in depth, and by 39 inches in height. The controller enclosures have two sizes. One is 18 inches wide by 12 inches deep by 36 inches high. The second is 15 ½ inches wide by 6 inches deep by 49 ½ inches high.



18 = Powder Coated Steel Enclosure
40" wide X 24" deep X 39" high
Note for areas surrounding Memorial Amphitheater

BACK-FLOW PREVENTER 3" WATER LINE

NTS



20 = Powder-coated Steel Enclosure
40" wide X 24" deep X 39" high
Note for areas at Dill Monument, Coast Guard Memorial, Patton and McClellan Circle, Taft Monument, and one near the Tomb of the Civil War Unknowns to serve Kearney, Old Administration Building traffic circle, Tanner (Old) Amphitheater and Tomb of the Civil War Unknowns. .

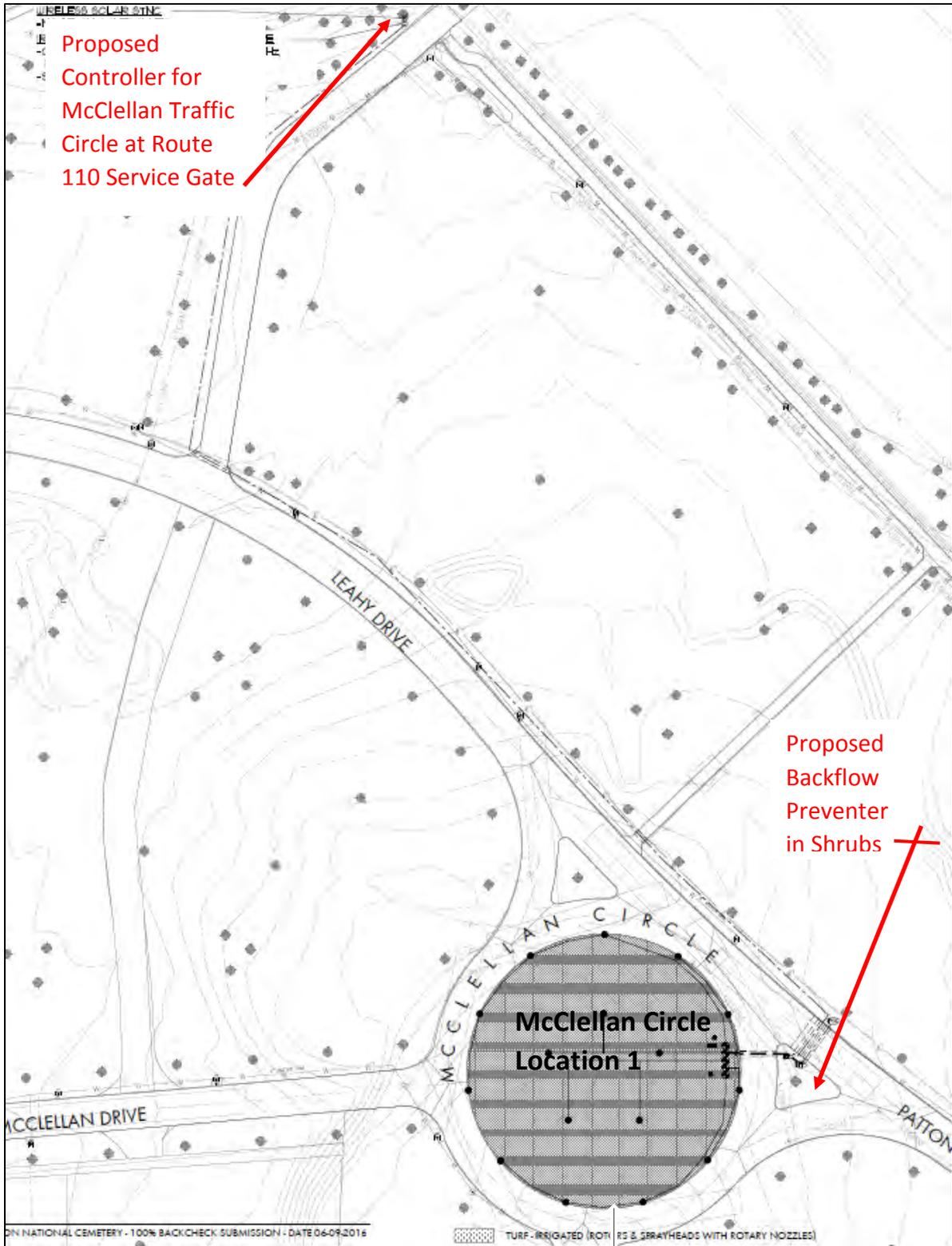
BACK-FLOW PREVENTER 1 1/2" WATER LINE

NTS

Location 1 – McClellan Circle



Area of Potential Effect No historic structures, buildings, or objects are in the APE.



Proposed Irrigation Plan No above-ground irrigation system equipment in traffic circle. Location for the proposed backflow preventer is in traffic island shrubs. Proposed irrigation controller will be located at the near the Route 110 Service Gate.



M1. View from McClellan Circle to Patton Drive looking northeast to location of proposed backflow preventer.



M2. Triangular traffic island from Patton Drive and McClellan Circle intersection looking north. McClellan Circle on the left. Burial Section 70 on the background. Traffic island is the location for the proposed backflow preventer.



M3. Burial Section 70 looking southwest to triangular traffic island and location for proposed backflow preventer.

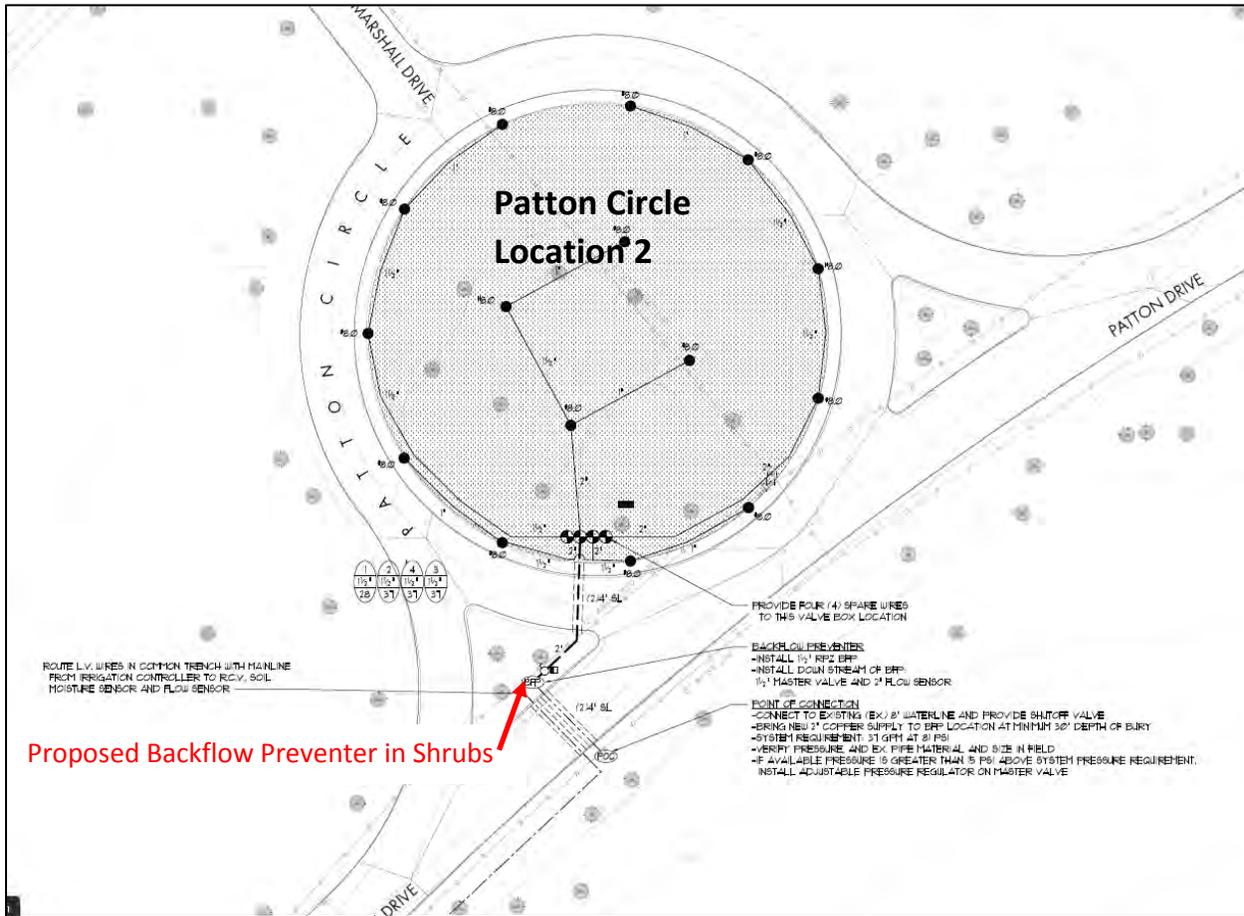


M4. Route 110 Service Gate road looking northeast to location of proposed 49 inch high controller. Location behind shrubs.

Location 2 – Patton Circle



Area of Potential Effect No historic structures, buildings, or objects are in the APE.



Proposed Irrigation Plan No above-ground irrigation system equipment in traffic circle. Location for the proposed backflow preventer is in the traffic island shrubs. Proposed irrigation controller will be located outside Maintenance Service Building 123.



P1. View towards Patton Circle from Patton Drive looking northeast. Traffic island selected as the location for the proposed backflow preventer is the right center of the image.



P2. View towards triangular traffic island and location for proposed backflow preventer from Burial Section 68.

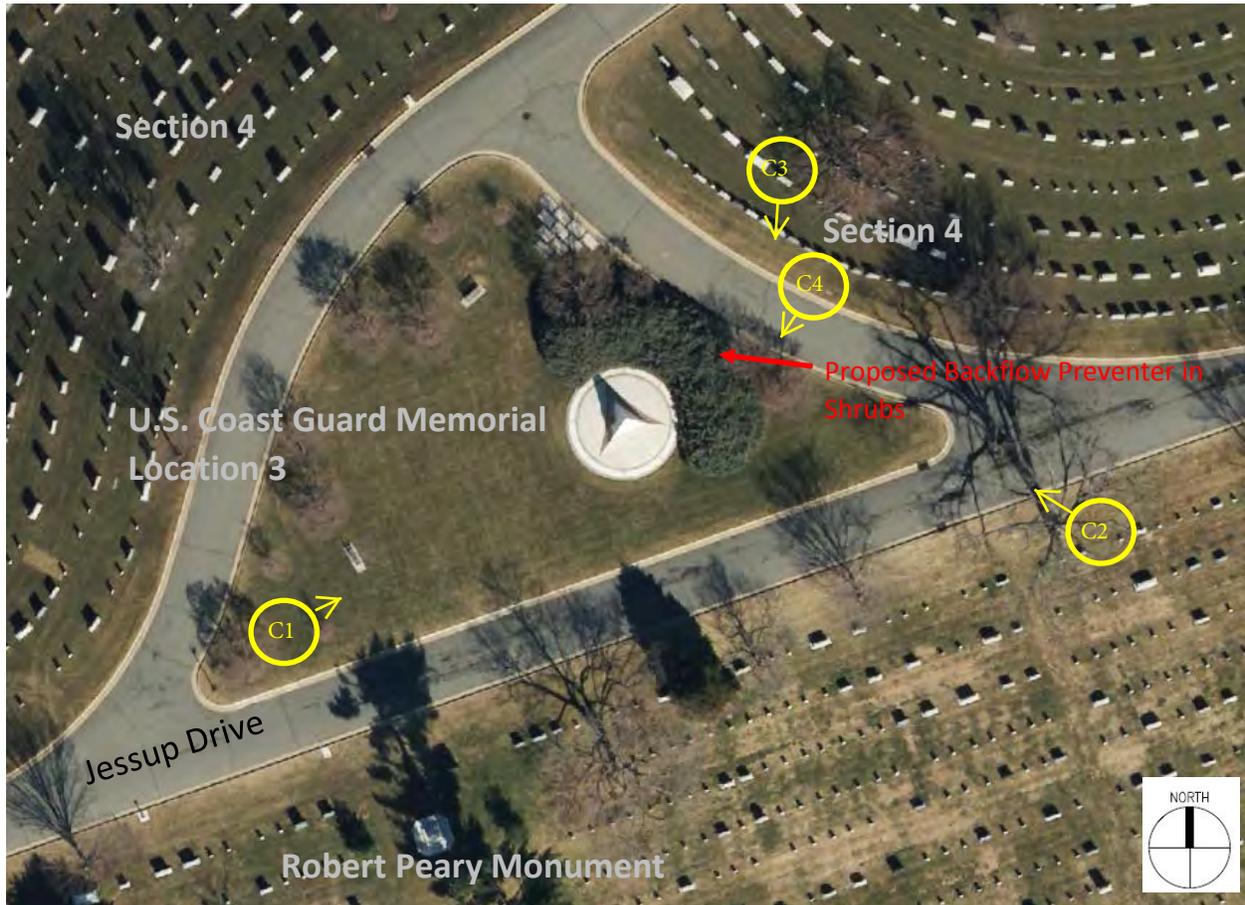


P3. Patton Drive looking southwest . The traffic island in the center background to the far left is the selected location for the proposed backflow preventer.

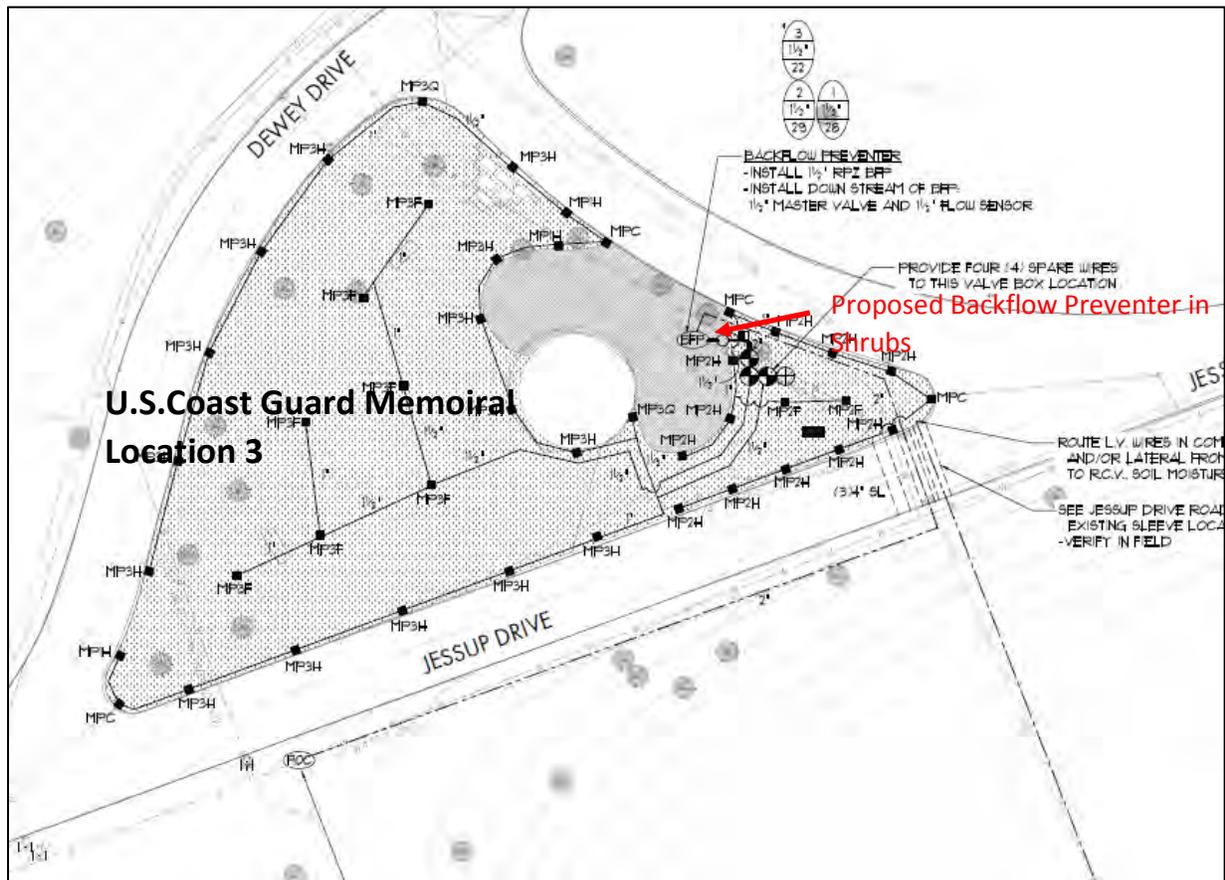


P4. View towards traffic island from burial Section 69 across Patton Drive. The selected location for the proposed backflow preventer in the traffic island.

Location 3 – U.S. Coast Guard Memorial



Area of Potential Effect U.S. Coast Guard Memorial and Robert Peary Monument are in the APE.



Proposed Irrigation Plan Location for the proposed backflow preventer is in the shrubs. Irrigation controller will be located outside Maintenance Service Building 117.



C1. U.S. Coast Guard Memorial looking east from turf area west of the memorial. The tree and shrub area to the right and behind (east of) the memorial is the location selected for the proposed backflow preventer.



C2. Looking toward the U.S. Coast Guard Memorial (hidden behind shrubs) from Jessup Drive. Location for the proposed backflow preventer is in the tree and shrub area in the center of the photograph.

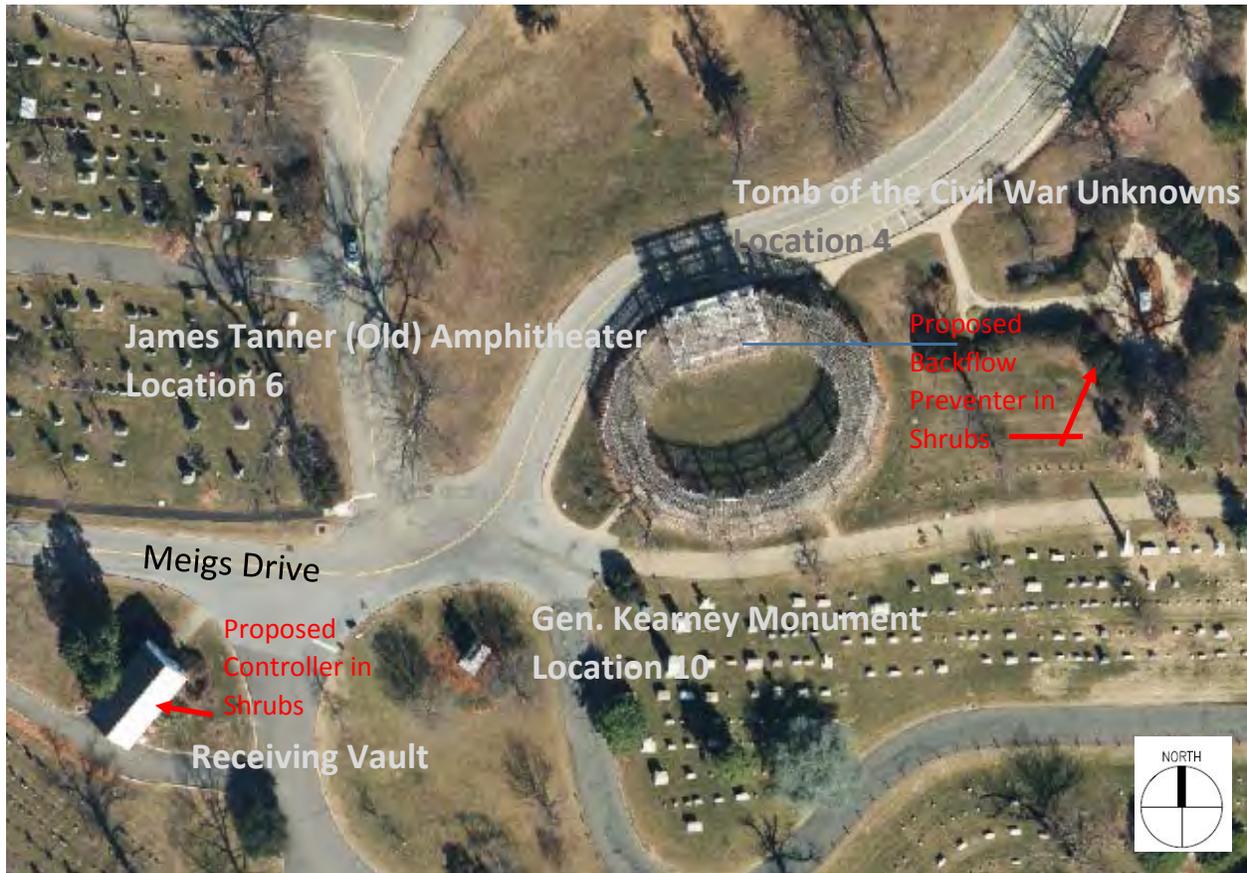


C3. View from Section 4 southwest to the location for the proposed backflow preventer. U.S. Coast Guard Memorial hidden behind shrubs.



C4. Image taken from the spur drive between Jessup and Dewey Drives looking into the tree and shrub area selected for the proposed backflow preventer.

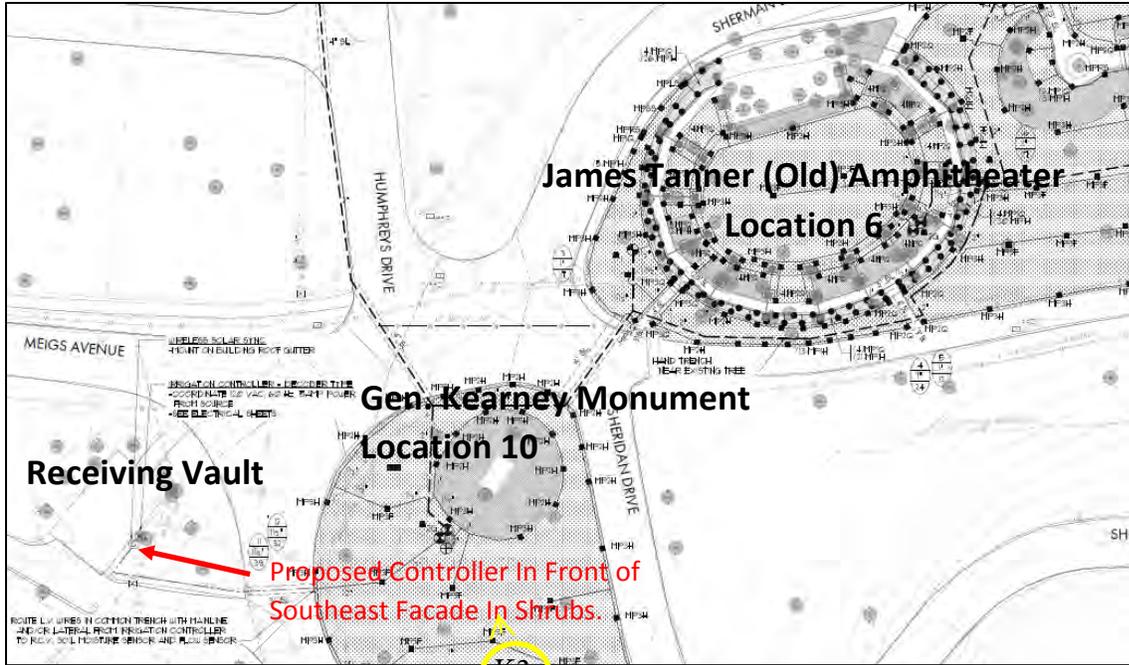
Locations 4, 6, & 10 - Tomb of the Civil War Unknowns, James Tanner Amphitheater, and General Philip Kearney Monument



Area of Potential Effect James Tanner (Old) Amphitheater, Tomb of the Civil War Unknowns, General Philip Kearney Monument, Receiving Vault are in the APE.



Area of Potential Effect Enlarged image of the location selected for the proposed irrigation controller for Locations 4, 6, 7, and 10 (Tomb of the Civil War Unknowns, James Tanner Amphitheater, Old Administration Building Traffic Island, and General Kearney Monument).



Proposed Partial Irrigation Plan Location for the proposed irrigation controller for Locations 4, 6, 7, and 10. The selected location for the backflow preventer is between James Tanner Amphitheater and Tomb of the Civil War Unknowns.



RV1. Receiving Vault looking north northwest from Wilson Drive. The location selected for the proposed irrigation controller for Locations 4, 6, 7, and 10 is next to the building and to the right of the electrical box



RV2. Receiving Vault looking southwest from Tanner Amphitheater. The location of the proposed irrigation controller for Locations 4, 6, 7, and 10 is behind the shrubs that screen the lower part of the building.



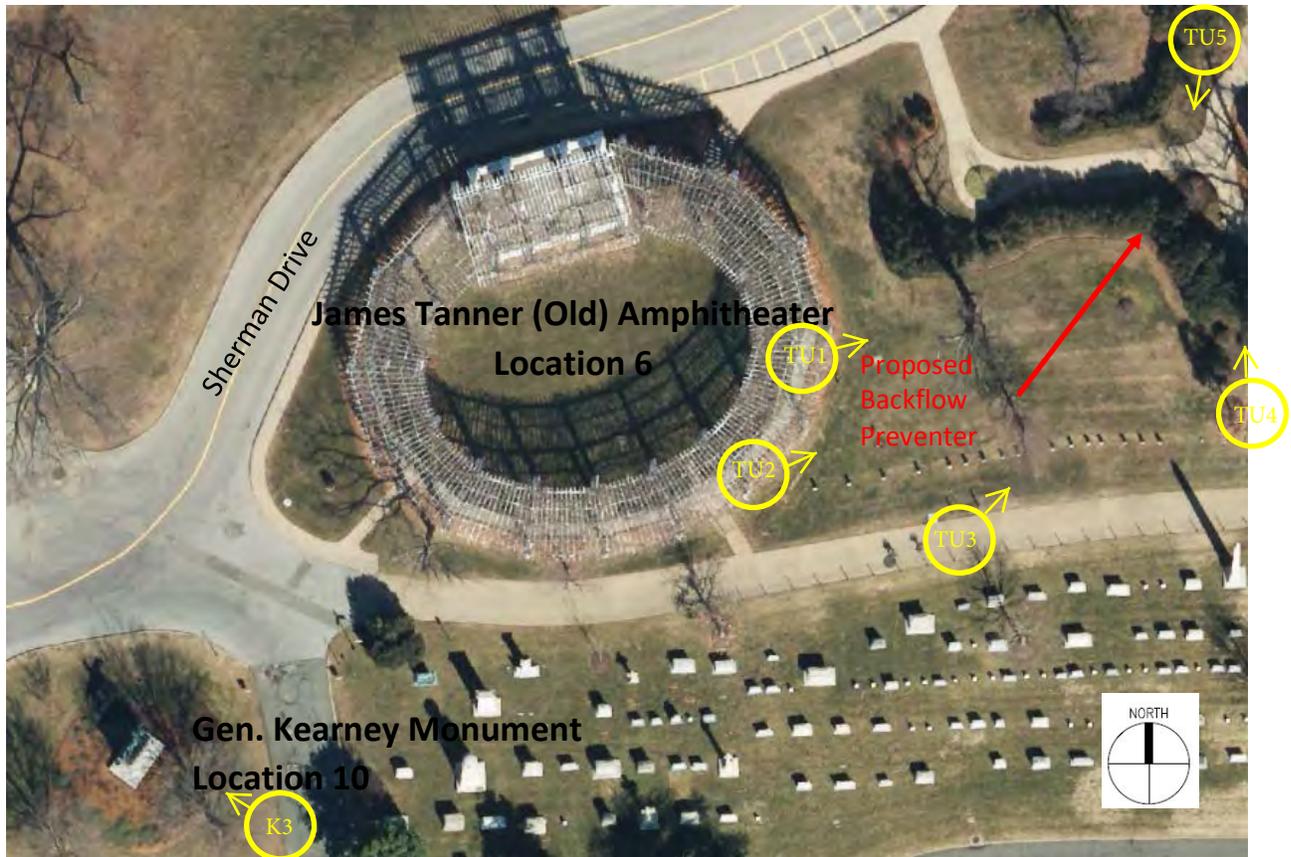
K1. Gen. Kearney Monument (right background) and Tanner Amphitheater (left background)) view east from the intersection of Meigs and Wilson Drives. No above ground equipment is proposed for the ground around Gen. Kearney Monument. Installation is limited to sprinkler heads.



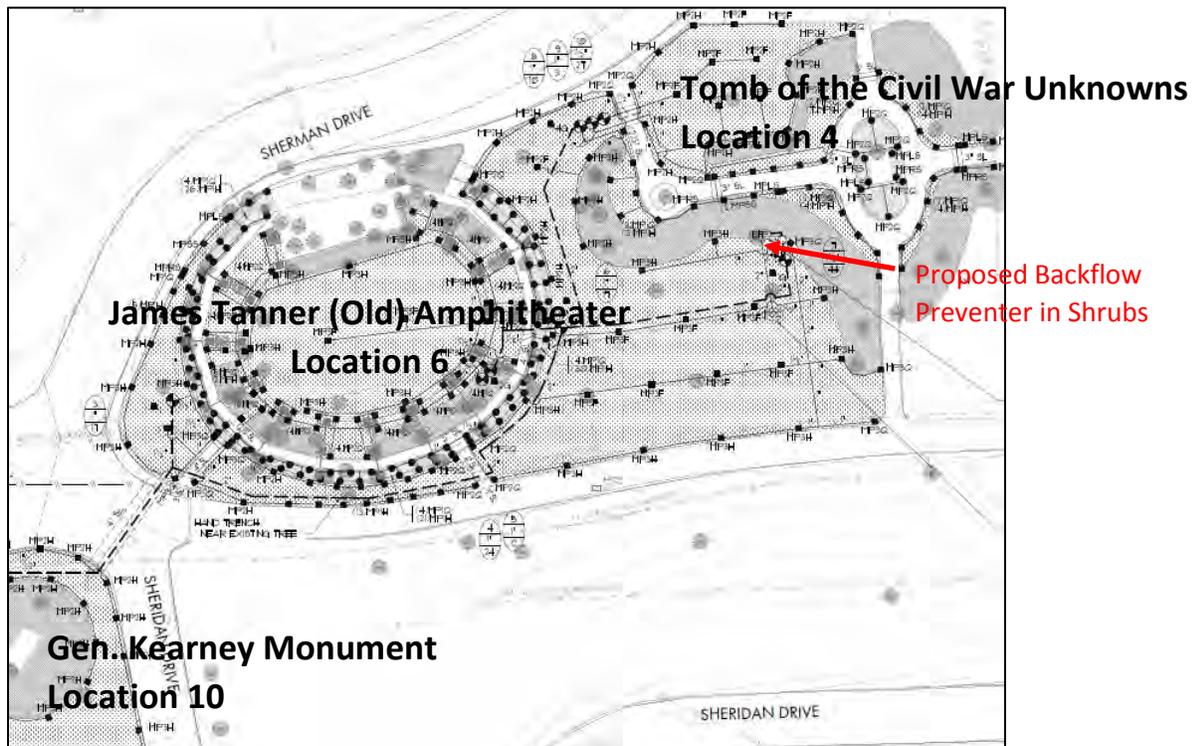
K2. Gen. Kearney Monument and surrounding landscape view to northeast from Wilson Drive. No above ground equipment is proposed for this area. Installation is limited to sprinkler heads.



K3. Gen. Kearney Monument and surrounding landscape view northeast from Sheridan Drive. No above ground equipment is proposed for this area. Installation is limited to sprinkler heads.



Area of Potential Effect James Tanner (Old) Amphitheater, Tomb of the Civil War Unknowns, General Philip Kearney Monument, Receiving Vault are in the APE.



Proposed Irrigation Plan Location for the proposed backflow preventer is in the shrubs between James Tanner Amphitheater and the Tomb of the Civil War Unknowns.



TU1. View from east ambulatory of the Tanner (Old) Amphitheater east towards proposed backflow preventer location against shrubs.



TU2. View from southeast ambulatory of the Tanner (Old) Amphitheater east towards proposed backflow preventer location against shrubs.



TU3. View northeast to proposed backflow preventer location from Custis Walk which runs south of Arlington House Rose Garden and Tanner Amphitheater.

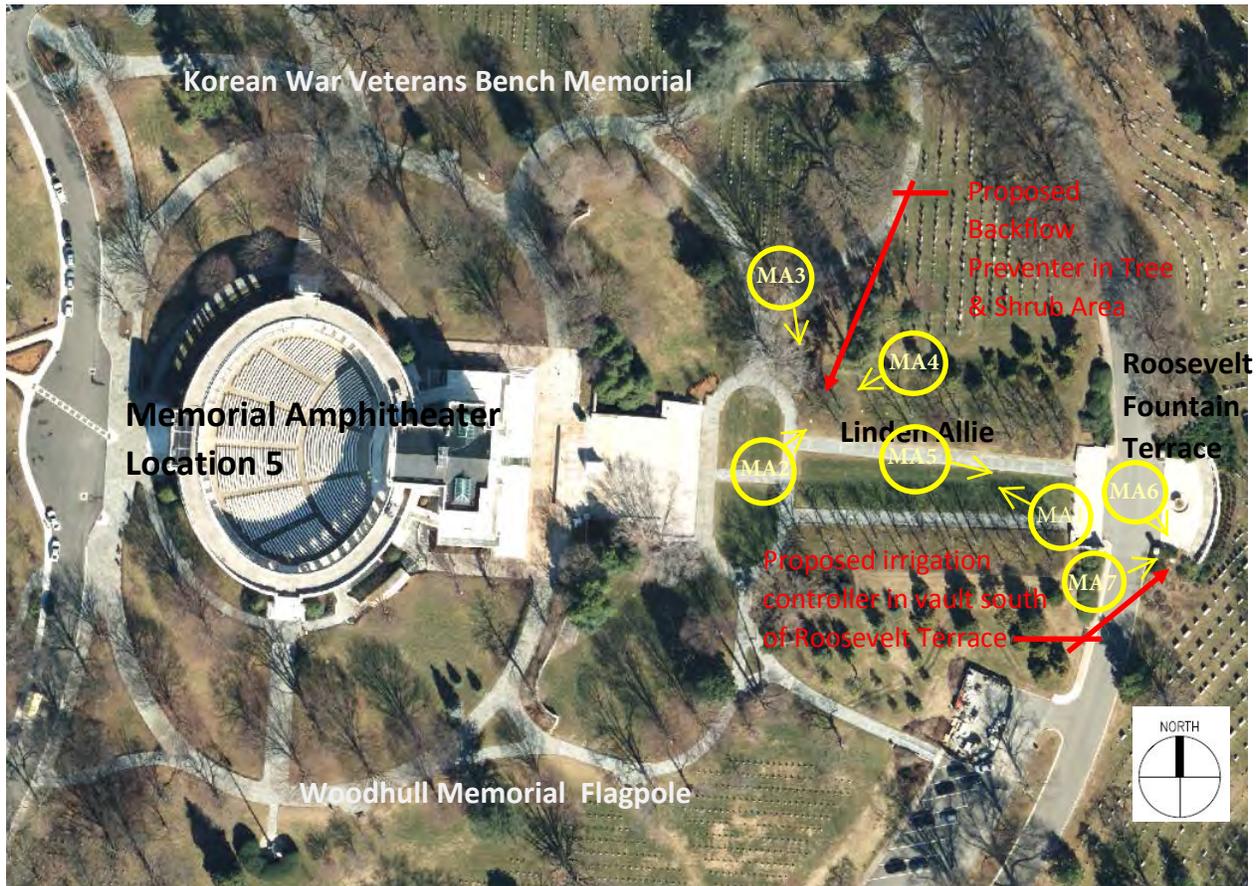


TU4. View north from Custis Walk along the path to the Tomb of the Civil War Unknowns. Location for the proposed backflow preventer is on the left (west) side of the walk in the shrubs.

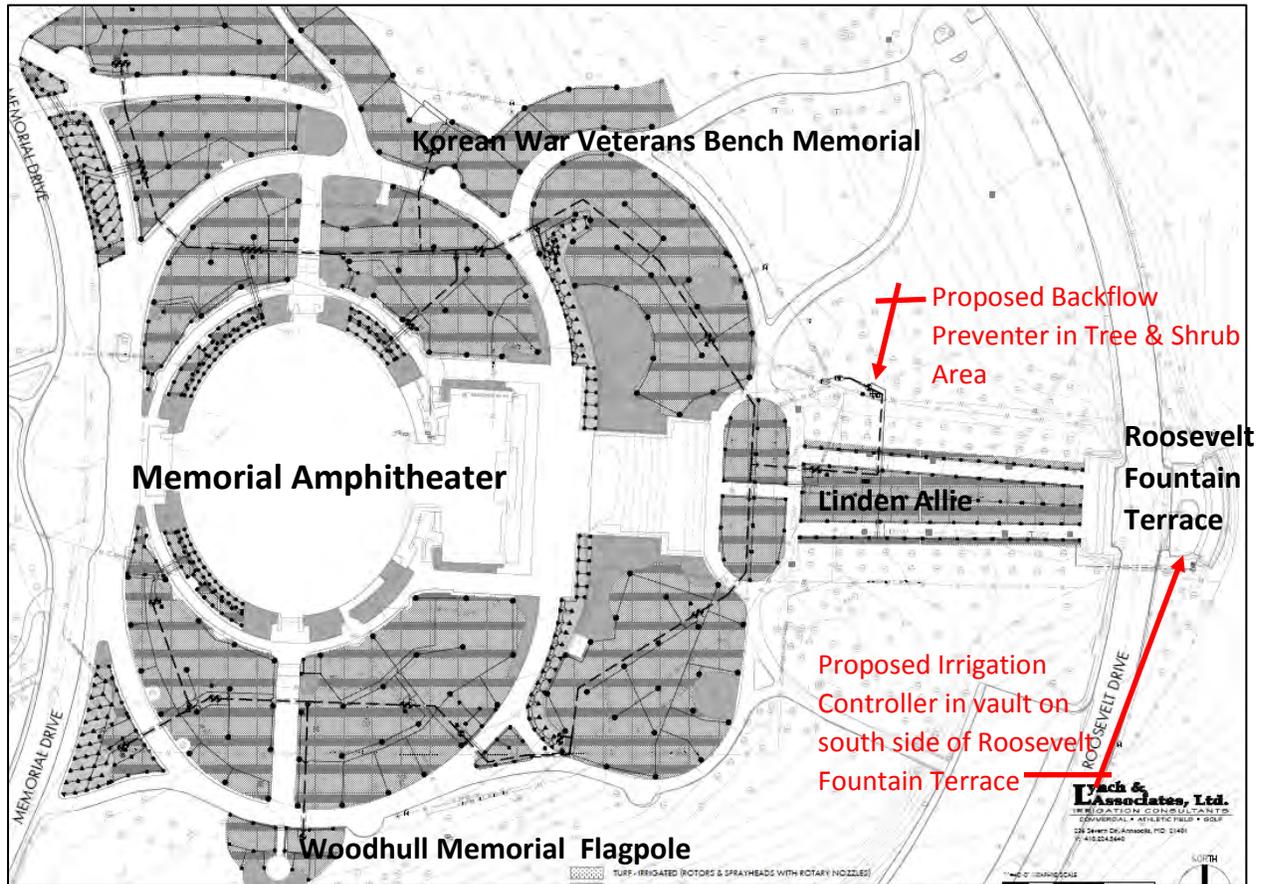


TU5. View from the Tomb of the Civil War Unknowns to location of the proposed backflow preventer. Equipment will be behind these shrubs.

Locations 5 – Memorial Amphitheater



Area of Potential Effect Historic properties in the APE are Memorial Amphitheater, Woodhull Memorial Flagpole, Roosevelt Fountain Terrace, the Korean War Veterans Bench Memorial along with the Amphitheater's designed landscape and hardscape features.



Proposed Irrigation Plan The Memorial Amphitheater’s proposed irrigation system has two above-ground pieces of equipment. One backflow preventer proposed for placement in the tree- and shrub-filled lower terrace area north of the Linden Allie and one irrigation controller proposed for installation in the vault south of Roosevelt Fountain Terrace .



MA1. View to Memorial Amphitheater from Roosevelt Drive. Location for the proposed backflow preventer is behind the north side linden allie.



MA2. View into location selected for the proposed backflow preventer from the north side linden allie walk at the west terrace.



MA3. View from the walkway north and west of the linden allie into the tree and shrub screening location selected for the proposed backflow preventer .



MA4. Close-up view looking from the northeast to southwest. (Note Memorial Amphitheater steps in distance.) The location for the proposed backflow preventer is beside an underground vault seen in the center of the image.



MA5. View east from the north side of Memorial Amphitheater's linden allie to Roosevelt Terrace. Location for the proposed irrigation controller is at the base of the terrace's retaining wall (south and east of the terrace).



MA6. View south from Roosevelt Fountain Terrace to the vault location selected for the proposed irrigation controller.



MA7. View from south to the vault location selected for the proposed irrigation controller to south of Roosevelt Fountain Terrace.

Locations 7 - Old Administration Building Traffic Island



Area of Potential Effect Pan Am Fight 103 Memoiral, Old Administration Building and a number of historic headstones are in the APE.



OA1. View is looking north along Humphreys Drive. Pan American Flight 103 Memorial is on the left in the image. The Old Administration Building (NPS property) is in the on the right. Old Administration Building traffic island is in front of the Old Administration Building. No above ground irrigation equipment is proposed for the area.

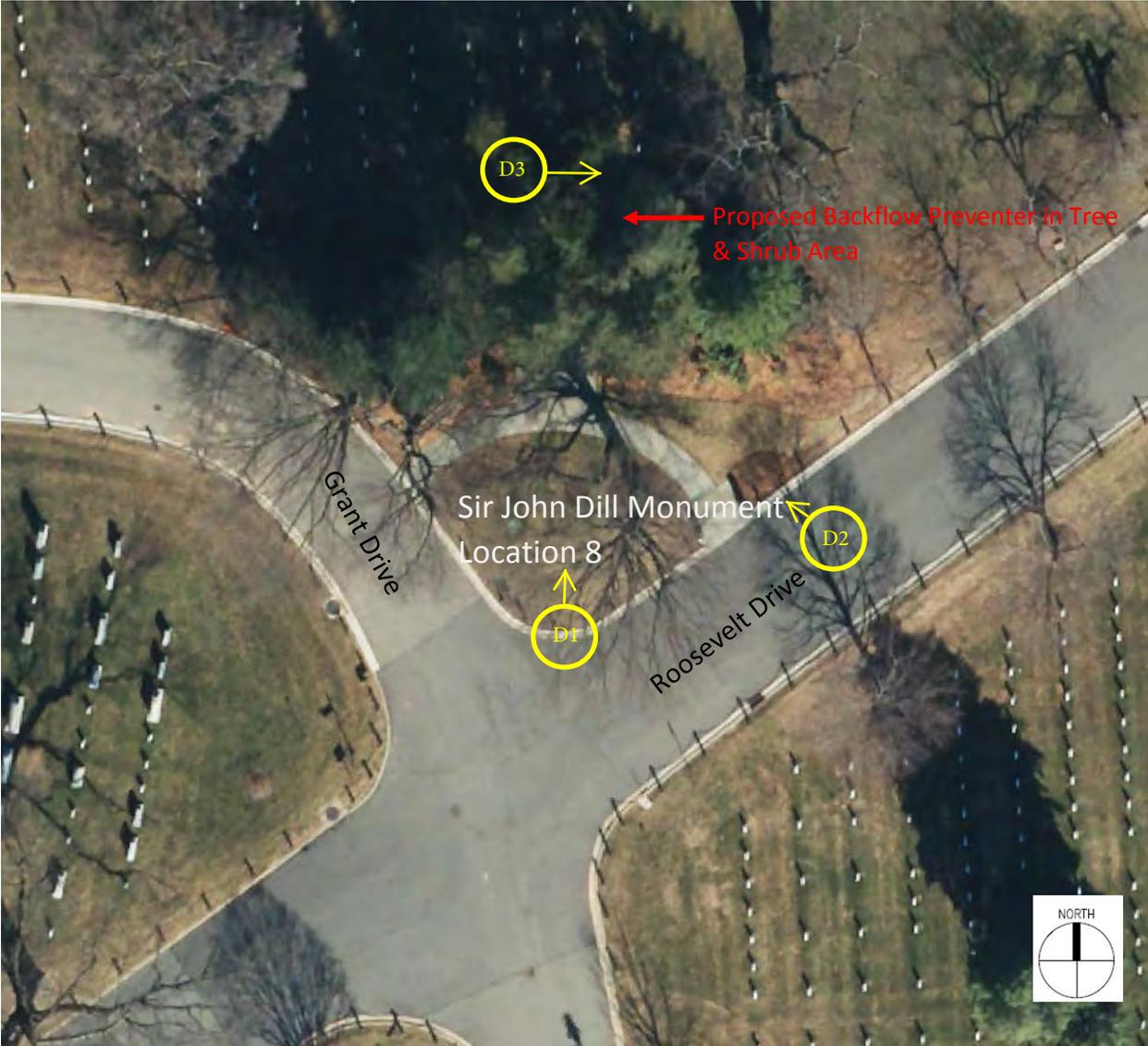


OA2. View from east to west of the Old Administration Building traffic island with Pan American Flight 103 Memorial in the center background of the image. No above ground irrigation equipment is proposed for the traffic island.

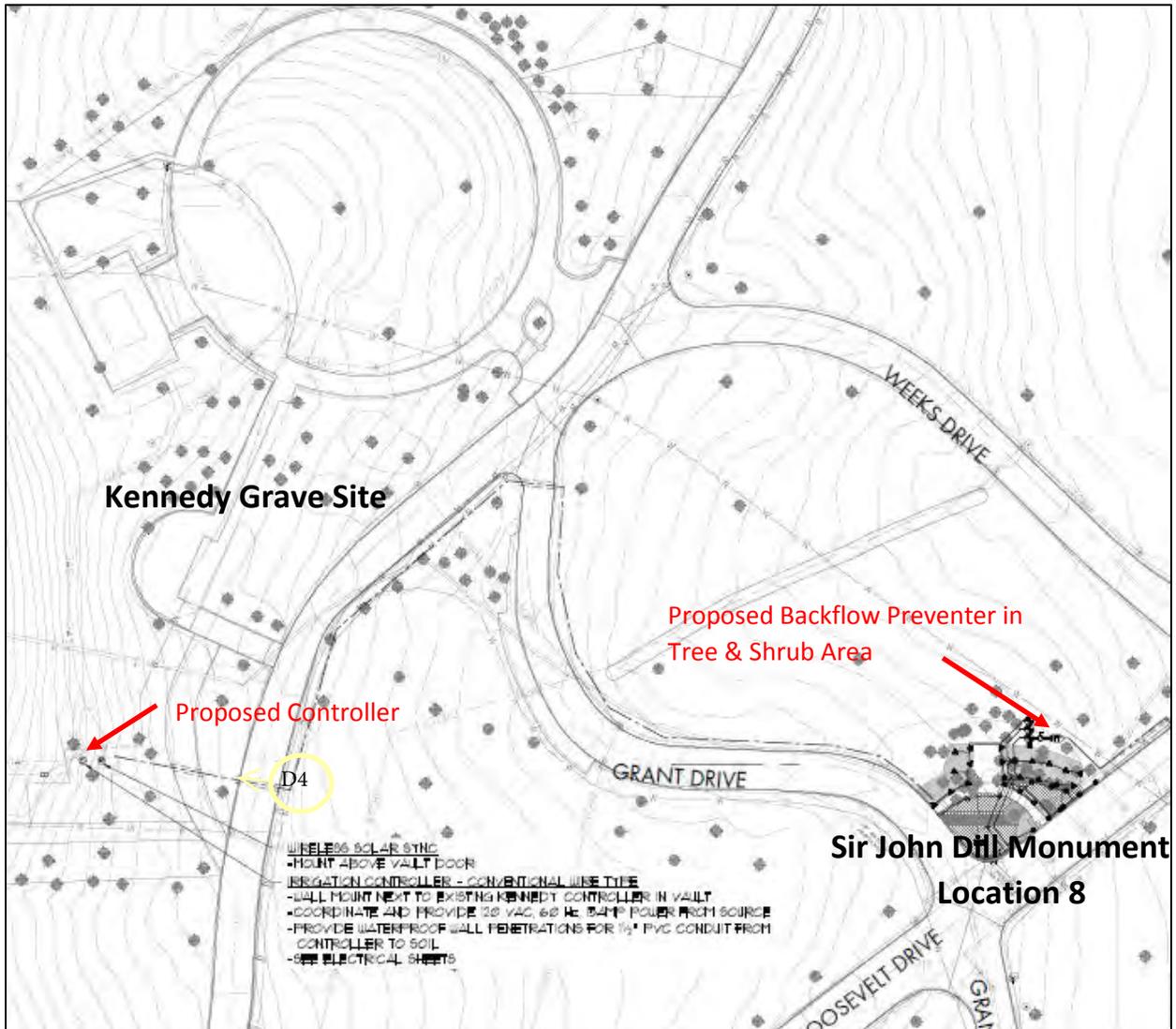


OA3. View from the Old Administration Building traffic island looking east towards Tanner Amphitheater (in the background on right). The turf area is proposed for an in-ground irrigation system.

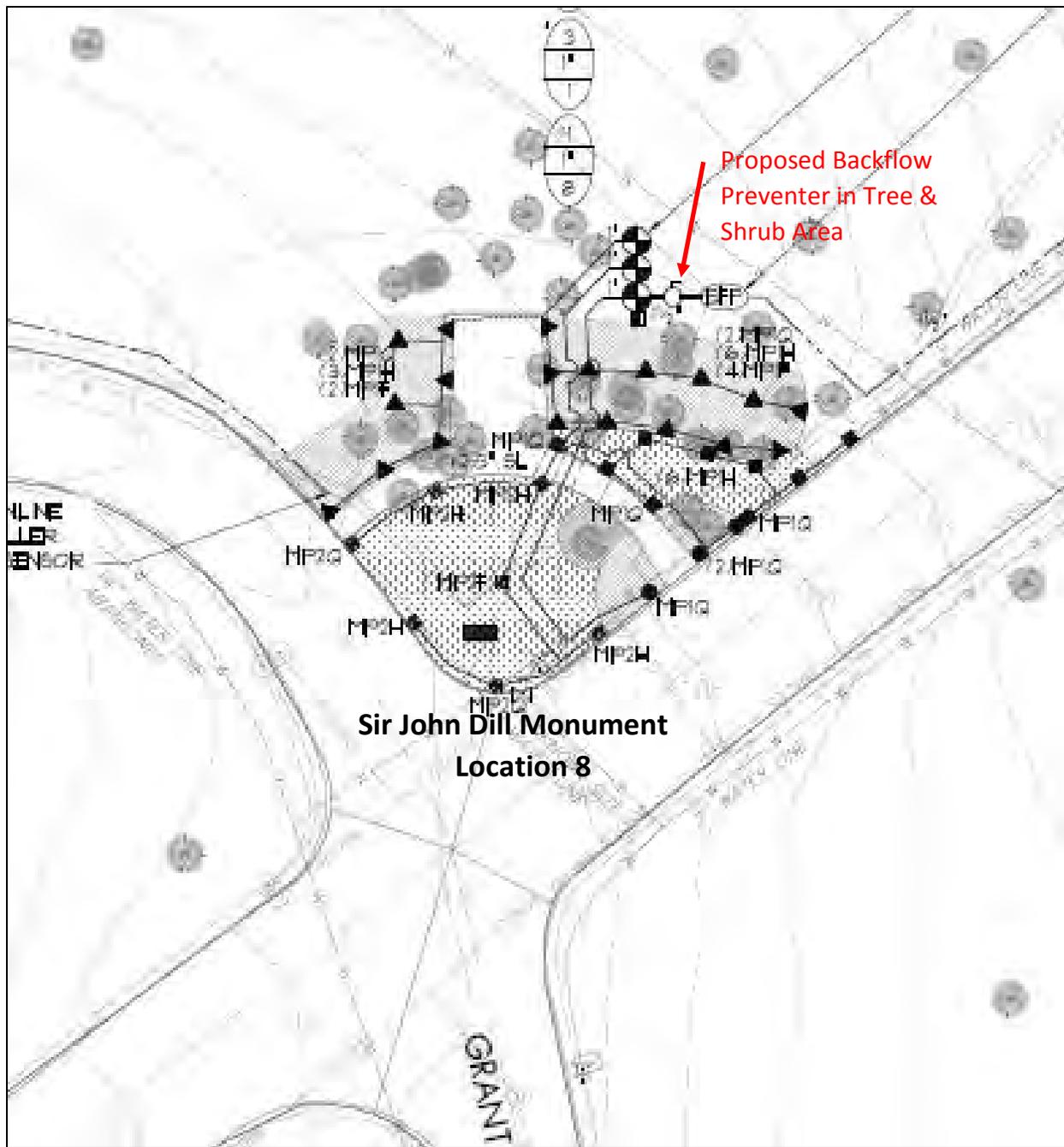
Locations 8 - Sir John Dill Monument



Area of Potential Effect Sir John Dill Monument and Kennedy Grave Sites are in the APE.



Proposed Irrigation Plan Controller is outside the Kennedy Gravesites equipment vault. The backflow preventer is in scrubs northeast of Sir John Dill Monument/gravesite.



Enlarged Plan of proposed location for the backflow preventer



D1. Sir John Dill Monument from the intersection of Grant and Roosevelt Drives looking north. Location for the proposed backflow preventer is to the right of the equestrian statue - north and east beyond the trees and shrubs.



D2. Sir John Dill Monument viewed from Roosevelt Drive. Location for the proposed backflow preventer is to the right of the equestrian statue - north and east beyond the trees and shrubs.



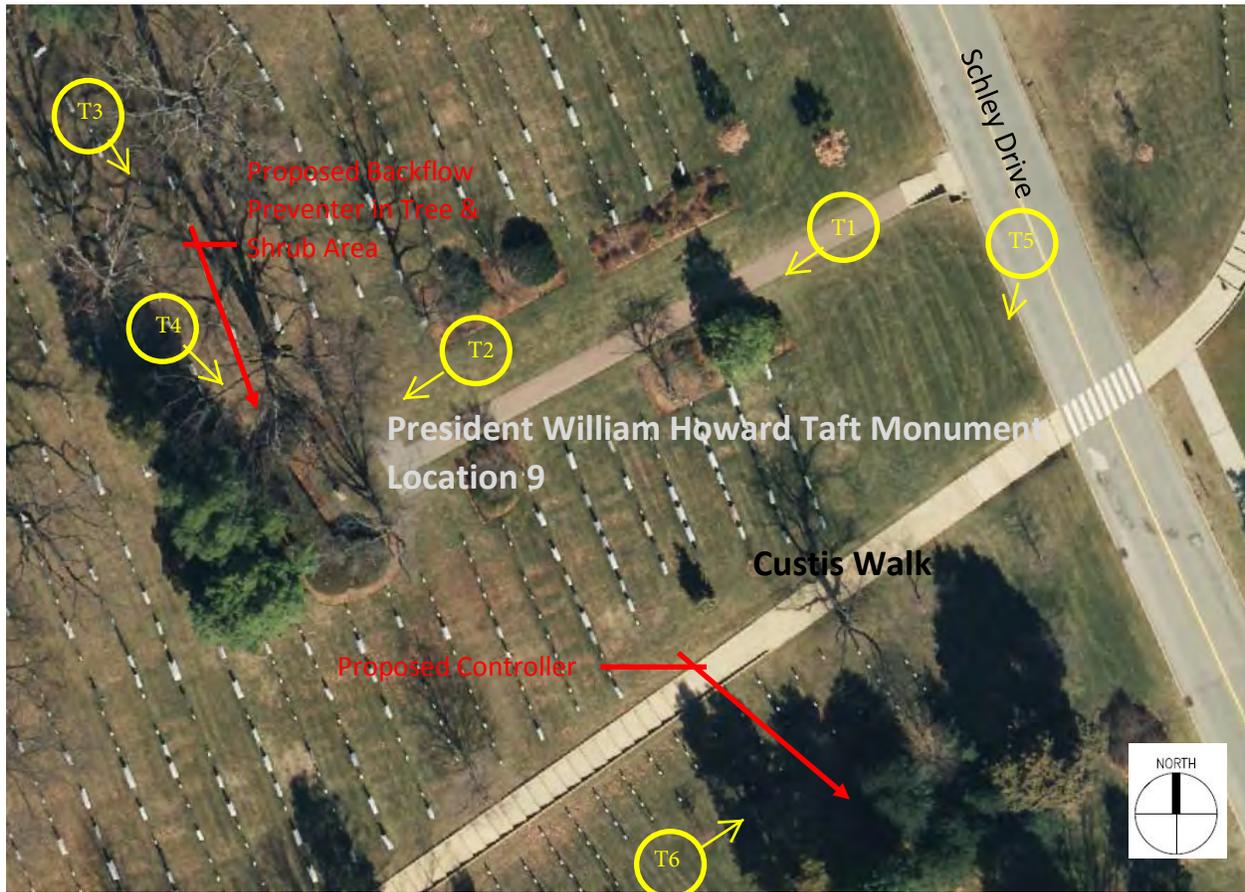
D3. View of the tree and shrub area selected for the proposed backflow preventer at Sir John Dill Monument. Proposed location is north and east of the equestrian statue.



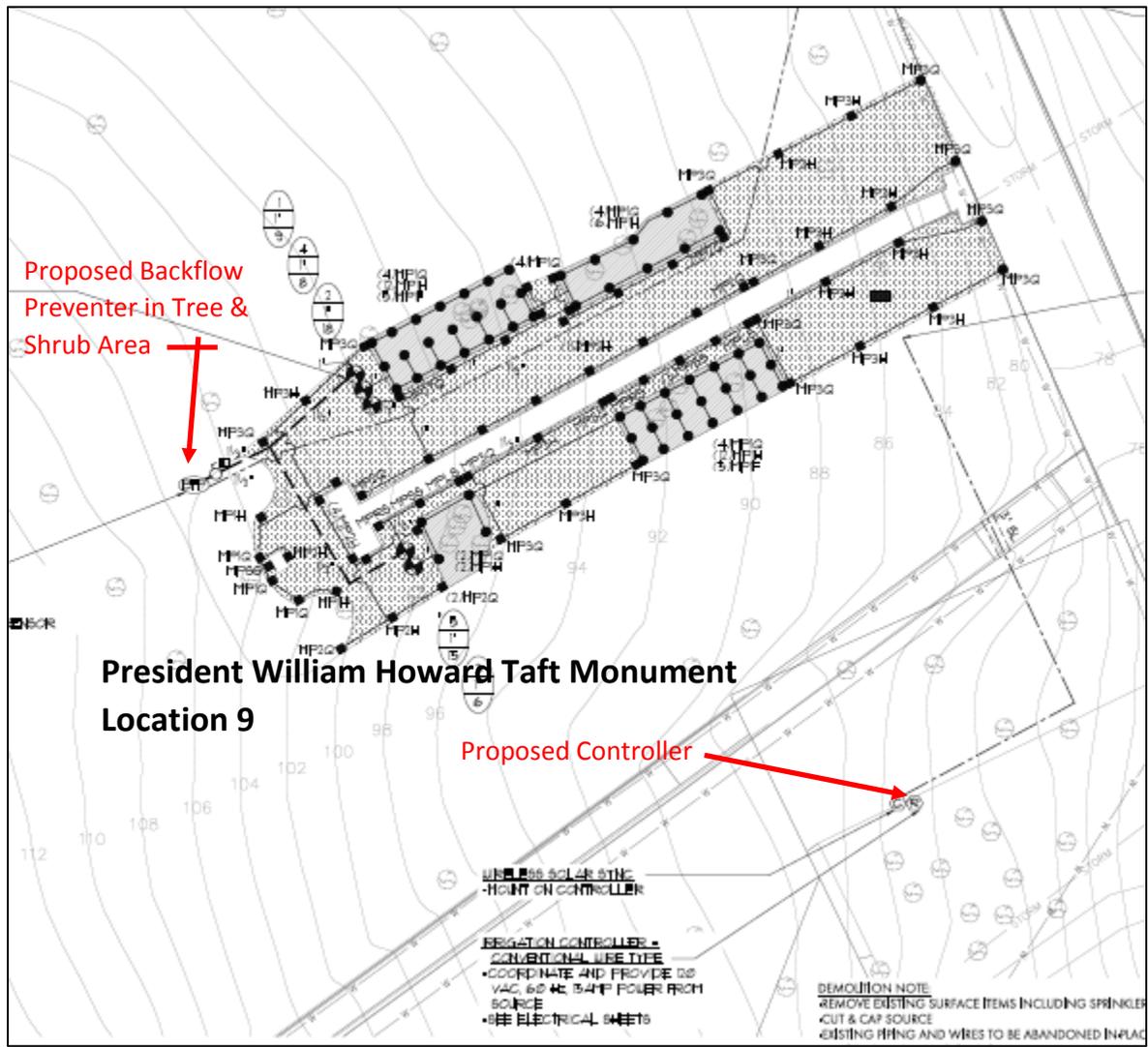
D4. View to the Kennedy area equipment vault (surrounded by shrubs) from Sheridan Drive. Proposed irrigation controller for the Sir John Dill irrigation system is on the equipment vault.

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Locations 9 – President William Howard Taft



Area of Potential President William Howard Taft Monument, landscape features associated with the gravesite are in the APE.



Proposed Irrigation Plan The backflow preventer is in the shrubs northwest President W.H. Taft Monument grave marker. The irrigation controller is located outside the monument area and in the trees and shrub area to the south of Custis Walk.



T1. View west to President William Howard Taft Monument from walk between Schley Drive and the monument. Location of the proposed backflow preventer is behind the shrubs north of the monument.



T2. View west to the location of the proposed backflow preventer behind the shrubs to the north of the President William Howard Taft Monument



T3. View south to President William Howard Taft Monument from burial Section 30. Location of the proposed backflow preventer from this view is in front of the shrubs.



T4. Close-up view south to President William Howard Taft Monument from burial Section 30. Location of the proposed backflow preventer from this view is in front of the shrubs.



T5. View from Schley Drive to the southwest and the proposed location for the irrigation controller for President William Howard Taft Monument.



T6. View taken just south of Custis Walk looking east to Schley Drive and the shrub area north and west of the Schley (Memorial Avenue) gateway. Area selected for the irrigation system controller for President William Howard Taft Monument is at the edge of the shrub area.