Executive Director's Recommendation

Commission Meeting: May 4, 2017

PROJECT
Flood Hardening at the Federal Triangle and Smithsonian Metrorail Stations
Federal Triangle and National Mall
Washington, DC

SUBMITTED BY
Washington Metropolitan Area Transit Authority

REVIEW AUTHORITY
Advisory
D.C. Code §9-1107.01, Washington Metropolitan Area Transit Authority Compact

NCPC FILE NUMBER
7466

NCPC MAP FILE NUMBER
1.23(38.00)43731

APPLICANT'S REQUEST
Approval of preliminary and final site plan

PROPOSED ACTION
Approve preliminary and final site plans

ACTION ITEM TYPE
Consent Calendar

PROJECT SUMMARY

The Washington Metropolitan Area Transit Authority (WMATA) has submitted preliminary and final site development plans for the proposed flood hardening at Federal Triangle and Smithsonian Metrorail Stations. The purpose of the project is to protect the underground Metrorail system during 500-year flood events by constructing elevated parapet walls and raising existing vent shafts. The two sites are at the Federal Triangle Metrorail Station located on 12th Street, NW, between Pennsylvania Avenue and Constitution Avenue (indicated as VD2, VD3, and P1Vx in supporting material), and the Smithsonian Metrorail Station located on the National Mall, near 12th Street, SW and Jefferson Drive, SW, and along Independence Avenue and 7th Street, SW (indicated as VD5, FF2, and VD4 in the supporting material).

At the Federal Triangle Metrorail Station location, the shaft along 12th Street, NW will be elevated with an 18-inch parapet wall covered in granite (VD2). Also at the Federal Triangle Metrorail Station location, the other existing shaft will be elevated with a 40-inch parapet wall covered in granite (VD3). Both of these are within a 100-year floodplain. The air intake vent along 12th Street, NW will be elevated with a 24-inch parapet wall covered in granite (P1Vx). At the Smithsonian Station at the National Mall location along 7th Street, SW, on both the east and west sides of the street, the shaft will be elevated with a 12-inch parapet wall covered in granite (FF2). This shaft is located within the 500-year old floodplain. An additional air vent at the Smithsonian Station that experience localized flooding will receive an elevated shaft with a 12-inch parapet wall covered in granite (VD5). Also, on the National Mall, four vent shafts will have their surface raised by four inches and backfilled against a new wall, with a new eight-foot wide aggregate concrete apron (VD4).The aggregate concrete would be tinted to match the surround gravel walk.

KEY INFORMATION

- A Memorandum of Agreement (MOA) for Section 106 purposes was signed among the Federal Transit Administration (FTA), the Washington Metropolitan Area Transit Authority (WMATA), the National Park Service (NPS), the General Services Administration (GSA), the District of Columbia State Historic Preservation Office (SHPO), and NCPC in December 2016 to address WMATA's plans to modify Metrorail vent shafts in seven locations above ground within Washington, DC that are prone to flooding and water intrusion.
- WMATA proposes to elevate the tops of the vent shafts and install concrete walls with granite-faced panels and iron grates to protect against flooding.
- The submitted proposal for flood hardening improvements at Federal Triangle and Smithsonian Metrorail systems were included in the MOA as identified locations for future improvements.
- The Federal Triangle Metrorail station is located on federal property under the jurisdiction of the U.S. General Services Administration (GSA), while the Smithsonian Metrorail station is located on federal property under the jurisdiction of the National Park Service (NPS) and on the National Mall.

RECOMMENDATION

The Commission:

Notes that the locations of the subject vents and shafts are fixed, as they relate to the existing Metro system infrastructure.

Notes that the heights of the proposed parapet walls are determined by the necessary heights required to protect the system from storm water and flood events.

Notes that the materials and parapet wall heights of the flood hardening proposals were agreed to in the Section 106 process after several years of discussion among stakeholders.

Approves the preliminary and final site development plans for flood hardening protection measures at the Federal Triangle and Smithsonian Metrorail Stations, consisting of raising the elevation of existing air vent shafts, to provide a more permanent protection for the underground Metrorail system during 500-year flood events.

Recommends that WMATA work with GSA to explore future site improvement opportunities at the Federal Triangle location, including integration of future perimeter security.

Recommends that WMATA continue to work with NPS to address any issues at the Mall location created by the new measures.

PROJECT REVIEW TIMELINE

Previous actions	**Memorandum of Agreement, signed December 2016.**

PROJECT ANALYSIS

Executive Summary

Staff has evaluated the submitted materials and finds that the proposed infrastructure improvements address the location, scale, and design conditions determined through the Section 106 process. Staff supports WMATA's efforts to protect this vital transit infrastructure which will allow it to continue to be used during rain events when localized flooding occurs. Therefore, staff recommends that the Commission **approve the flood hardening and protection measures at the Federal Triangle and Smithsonian Metrorail stations, and recommends that WMATA work with GSA to explore future site improvement opportunities at the Federal Triangle location, including integration of future perimeter security, and continue to work with NPS to address any issues at the Mall location created by the new measures.**

Analysis

Staff has reviewed the project submission and understands that these measures are intended to make the Metrorail system more resilient by preventing storm water from entering metro tunnels. Staff recognizes that the locations of the subject vents and shafts are visually obtrusive in their context; however, understands that the locations are fixed, as they relate to the existing Metro system infrastructure. In addition, the heights of the proposed parapet walls are determined by the necessary heights required to protect the system from storm water and flood events. Staff evaluated the two locations separately because each have unique conditions. The Federal Triangle Metrorail station is located on federal property under the jurisdiction of the U.S. General Services Administration (GSA), while the Smithsonian Metrorail station is located on federal property under the jurisdiction of the National Park Service (NPS).

Federal Triangle Metrorail Station

At the Federal Triangle Metrorail Station location, the shaft along 12th Street, NW will be elevated with an 18-inch parapet wall covered in granite (VD2). This location is separated from the public sidewalk by large planters, and is currently surrounded by small, temporary barriers. The vent is set close to 12th Street, NW. Also at the Federal Triangle Metrorail Station location on the opposite side of the street, the other existing shaft will be elevated with a 40-inch parapet wall covered in granite (VD3). Currently, this vent is surrounded by small temporary barriers. Both of these are within a 100-year floodplain. The fresh air intake vent along 12th Street, NW will be elevated with a 24-inch parapet wall covered in granite (P1Vx). This vent is tucked between temporary planters on the sidewalk, and is currently surrounded by sandbags. Staff believes that these locations do

not impede pedestrian flow and access to the sidewalks along 12th Street, NW, or impact driver visibility.

Smithsonian Metrorail Station

At the Smithsonian Station at the National Mall location along 7th Street, SW, on both the east and west sides of the street, the shaft will be elevated with a 12-inch parapet wall covered in granite (FF2). This shaft is located within the 500-year old floodplain. An additional air vent at the Smithsonian Station that experiences localized flooding will receive an elevated shaft with a 12-inch parapet wall covered in granite (VD5). Also, on the National Mall, four vent shafts will have their surface raised by four inches and backfilled against a new wall, with a new eight-foot wide aggregate concrete apron. The aggregate concrete would be tinted to match the surround gravel walk (VD4). Staff recognizes that increased scrutiny is needed to changes that occur on the National Mall. Staff believes that the proposal provides a more permanent and visually appropriate means to address the potential of flooding issues at these location, and removes the unsightly temporary sandbags currently used. These locations do not impede pedestrian flow and access to walkways.

Based upon staff's analysis, the applicant's proposal addresses concerns for flood resilience at the Federal Triangle and Smithsonian Metrorail stations. Furthermore, the proposal appears to meet the requirements of the Memorandum of Agreement that was signed in December 2016. Therefore, staff recommends the **Commission approve the preliminary and final site plan submittal for flood hardening measures at the Federal Triangle and Smithsonian Metrorail stations, with the recommendation that WMATA work with GSA to explore future site improvement opportunities at the Federal Triangle location, including integration of future perimeter security, and continue to work with NPS to address any issues at the Mall locations created by the new measures.**

CONFORMANCE TO EXISTING PLANS, POLICIES AND RELATED GUIDANCE

Comprehensive Plan for the National Capital

NCPC staff has reviewed this proposal and determined that it is not inconsistent with the policies contained within the Elements of the Comprehensive Plan for the National Capital. The project is supported by policies in the transportation, historic preservation, and natural resources elements of the Comprehensive Plan.

National Historic Preservation Act and National Environmental Policy Act

As WMATA is not a federal agency, and NCPC's authority over WMATA projects is advisory, neither agency has NHPA or NEPA responsibilities for this project. As stated previously, a

Memorandum of Agreement for Section 106 purposes was signed in December 2016, including the DC SHPO, to address Section 106 issues.

CONSULTATION

Coordinating Committee

The Coordinating Committee reviewed the proposal at its April 12, 2017 meeting. DDOT did not coordinate at the time, however, a follow-up meeting was held to address new concerns. The participating agencies were: NCPC; the District Department of Transportation; the District of Columbia State Historic Preservation Office; the District Office of Energy and the Environment; the District Office of Planning; the National Park Service; the General Services Administration; and the Washington Metropolitan Area Transit Authority.

U.S. Commission of Fine Arts

The U.S. Commission of Fine Arts reviewed the project at their April 20, 2017 meeting. The CFA took no action, requesting revised and accurate drawings showing the proposed interventions at the Federal Triangle and Smithsonian Metrorail locations. CFA recognized that these locations are in highly visible and important locations in Washington, DC, and merit a more considered design approach that addresses the wider context and pedestrian experience of the public space. CFA encouraged WMATA to continue coordination with GSA and other agencies to explore opportunities to improve the overall design, including incorporating perimeter security and other public streetscape elements.

ONLINE REFERENCE

The following supporting documents for this project are available online:

- Submission Package

Prepared by Lee Webb
04/18/2017

POWERPOINT (ATTACHED)

National Capital Planning Commission

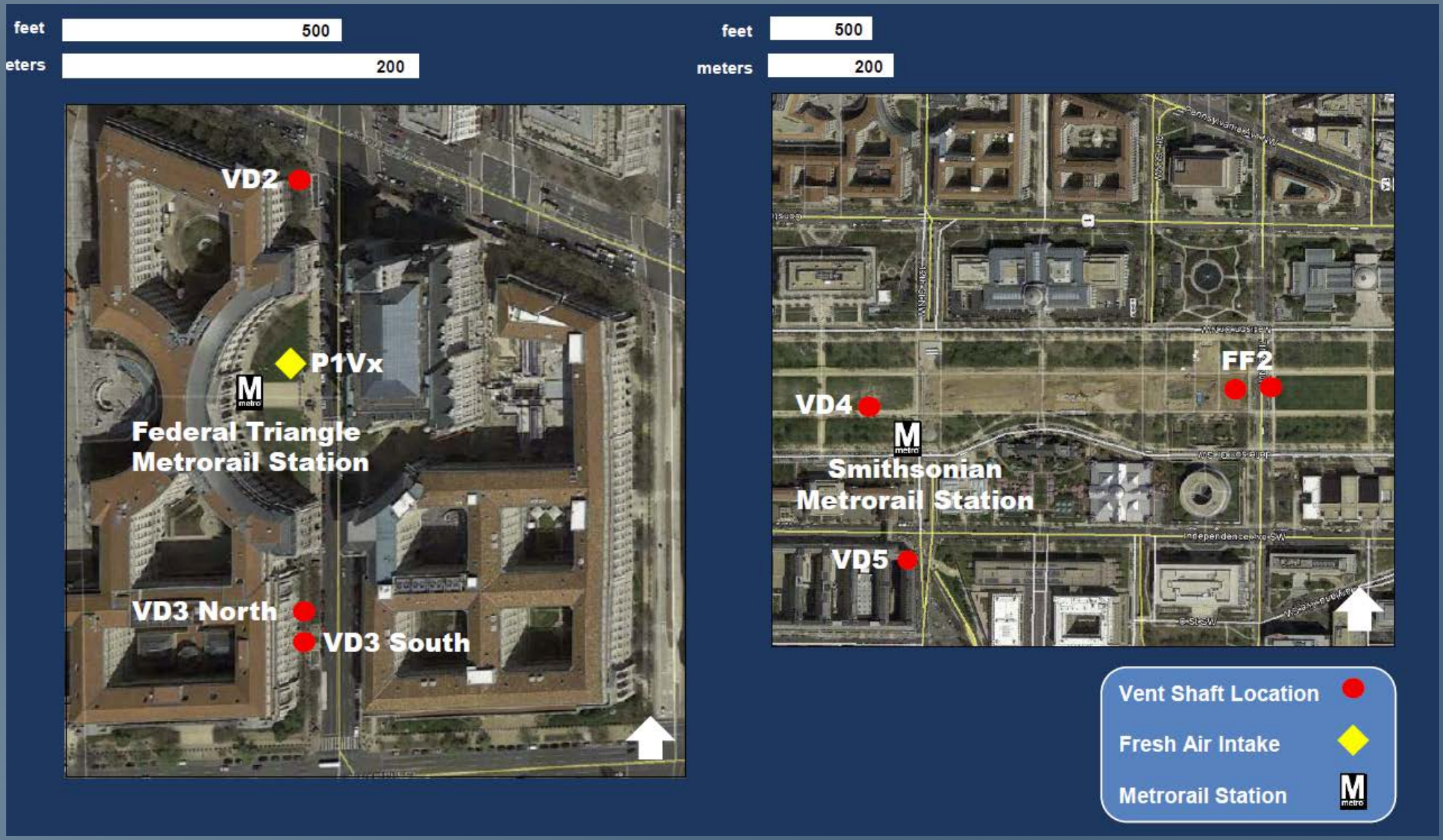
NCPC File #: 7466
Flood Hardening at the Federal Triangle and Smithsonian Metrorail Stations

Washington, DC

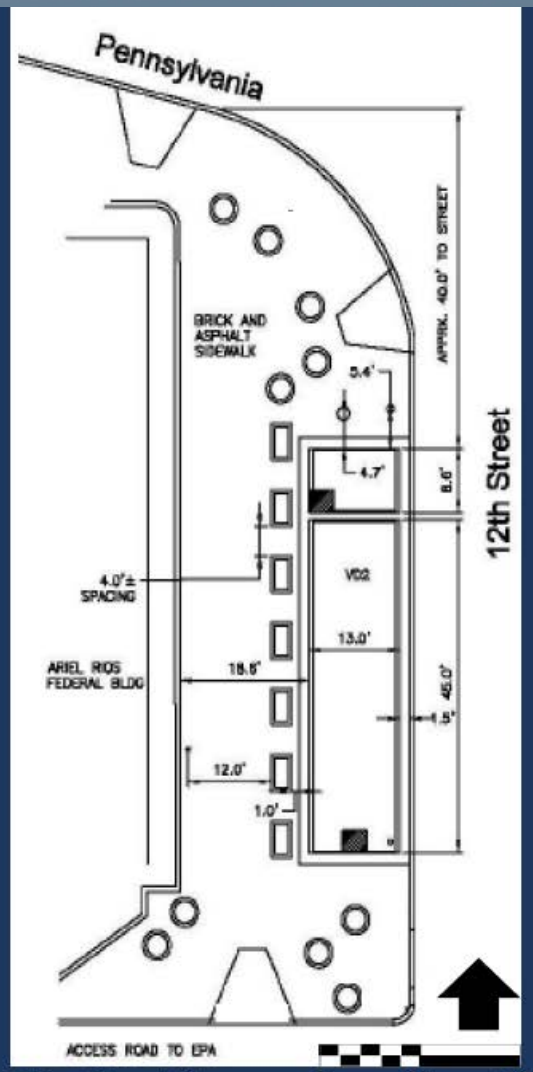
Washington Metropolitan Area Transit Authority

Preliminary and Final Site Design

Site Location



Federal Triangle Metrorail Station – VD2



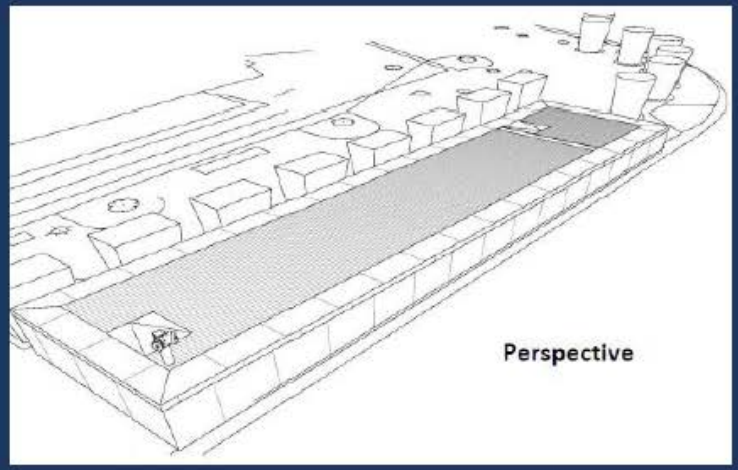
Site Plan View

Federal Triangle Metrorail Station –VD2

Rendering

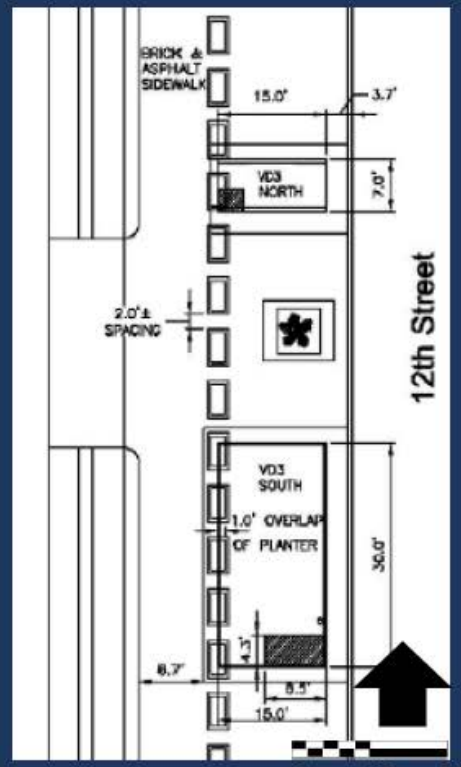
Elevate shaft with a 18-inch parapet wall covered in granite.
This shaft is located within the 100-year floodplain.

Proposed Undertaking

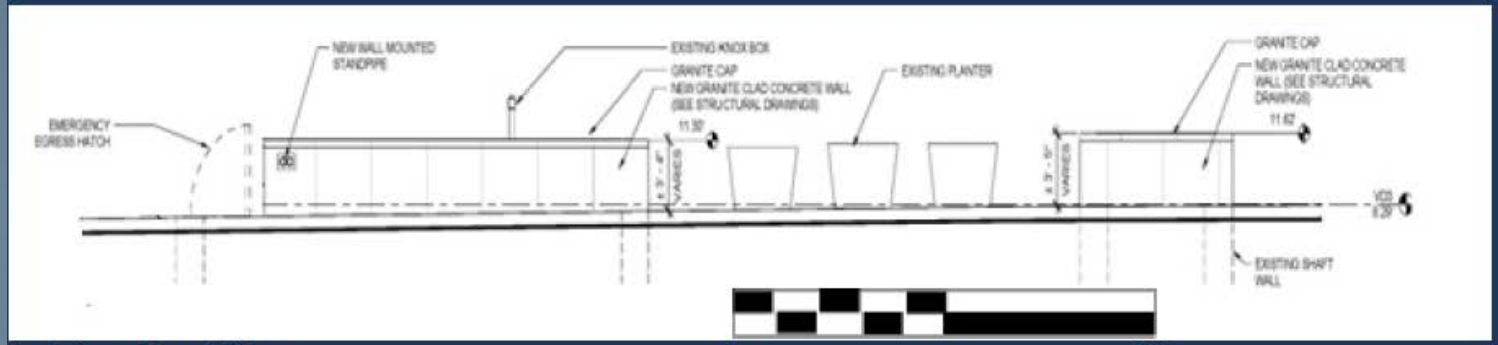


Existing Condition

Federal Triangle Metrorail Station - VD3



Site Plan View



Elevation View

Vent Shaft Location

Metrorail Station

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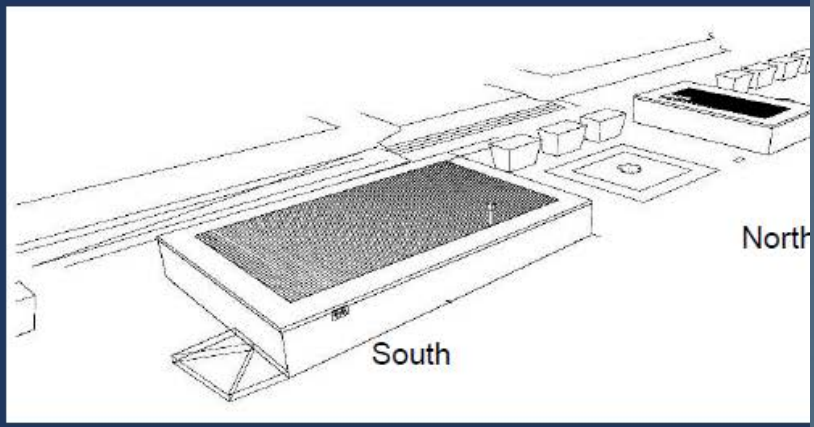
National Capital Planning Commission

Federal Triangle Metrorail Station – VD3

Rendering

Elevate shaft with a 40-inch parapet wall covered in granite.
This shaft is located within the 100-year floodplain.

Proposed Undertaking



Existing Condition

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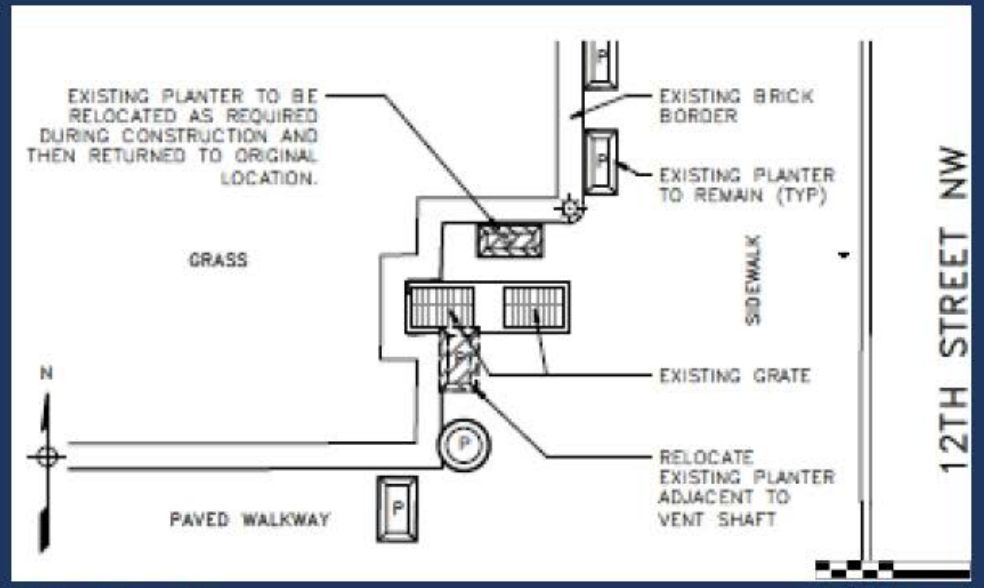
Federal Triangle Metrorail Station – P1Vx



Site Plan View

feet 500

meters 200

Fresh Air Intake

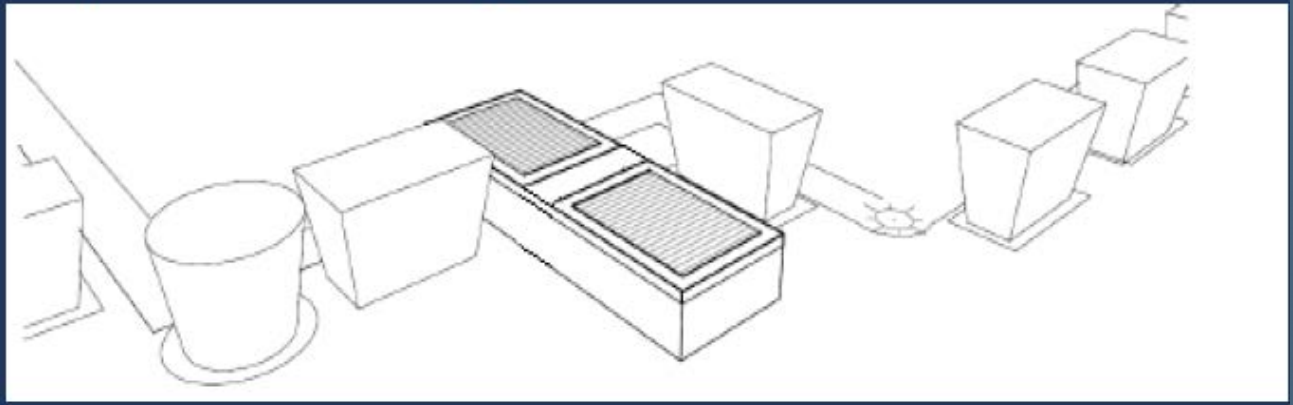
Metrorail Station

7

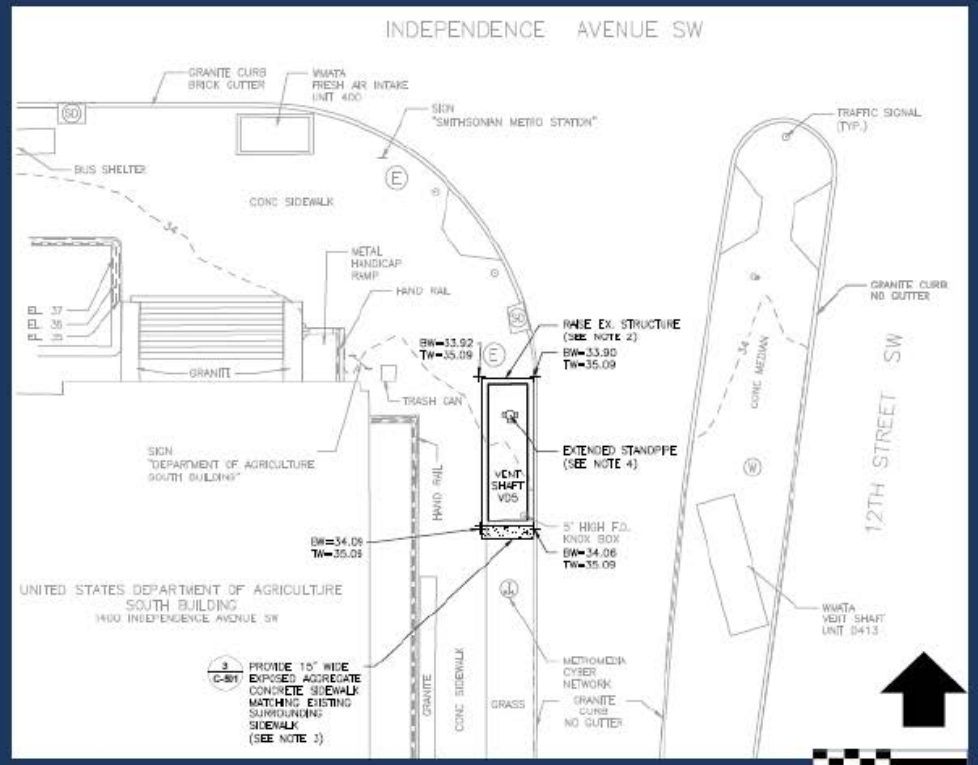
Federal Triangle Metrorail Station – P1Vx

Existing Condition

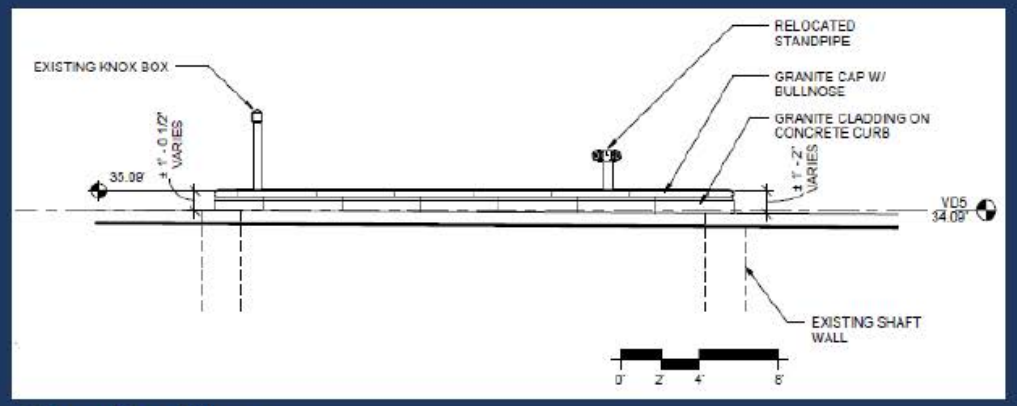
Proposed Undertaking



Smithsonian Metrorail Station – VD5



Site Plan View



Elevation View

feet 500

meters 200

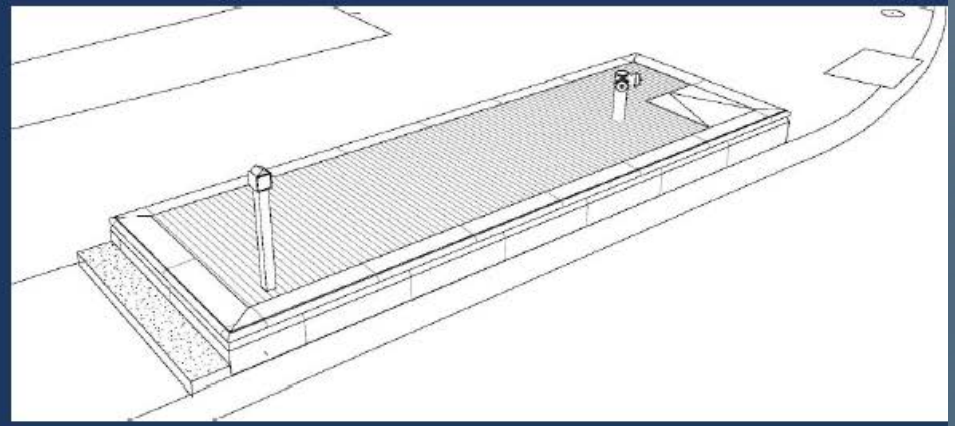
9

Smithsonian Metrorail Station – VD5

Rendering

Elevate shaft with a 12-inch parapet wall covered in granite. This vent experiences localized flooding.

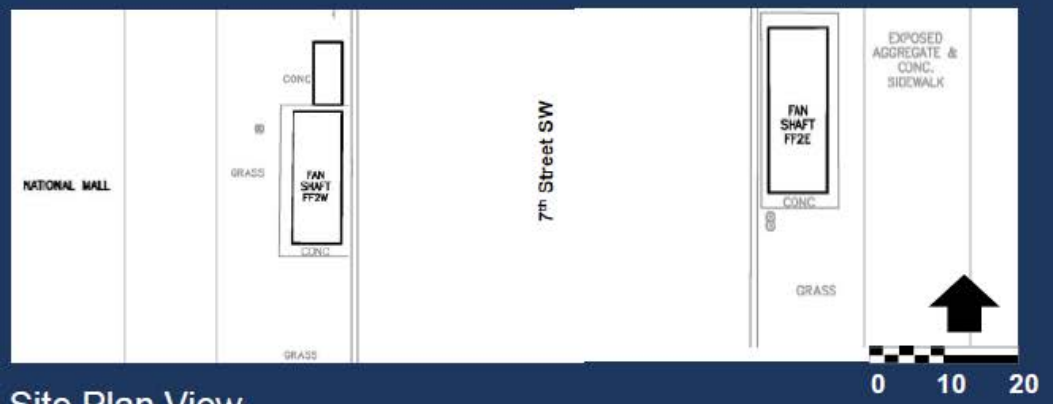
Proposed Undertaking



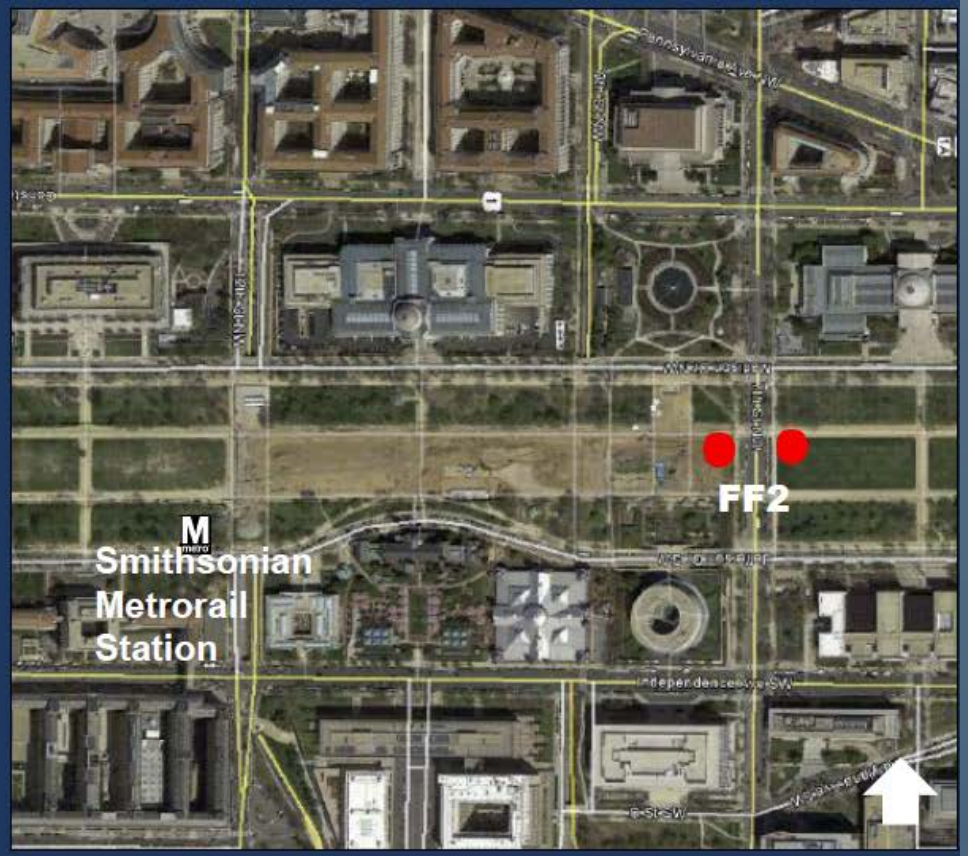
Existing Condition

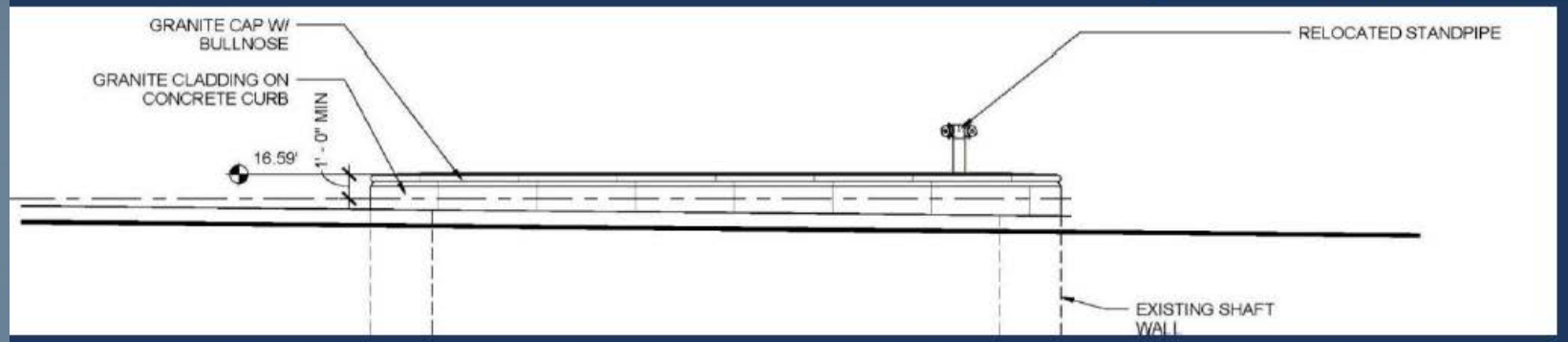
10

Smithsonian Metrorail Station, 7th Street at the Mall – FF2



Site Plan View





Elevation View

feet 500

meters 200

Vent Shaft Location

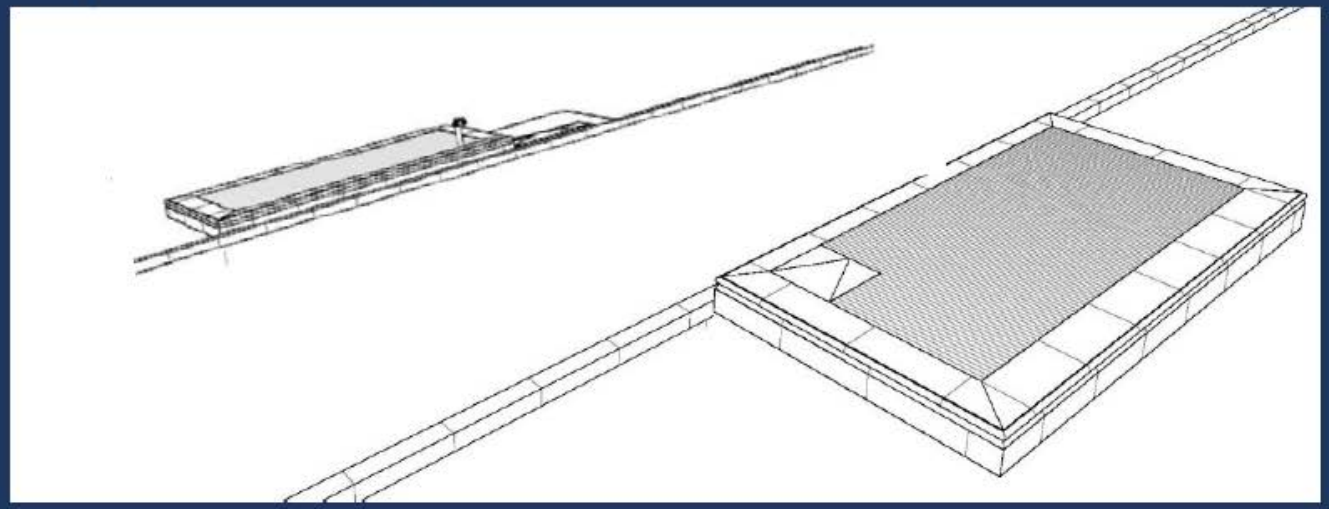
Metrorail Station

11

Smithsonian Metrorail Station, 7th Street at the Mall – FF2

Rendering

Proposed Undertaking



(west)

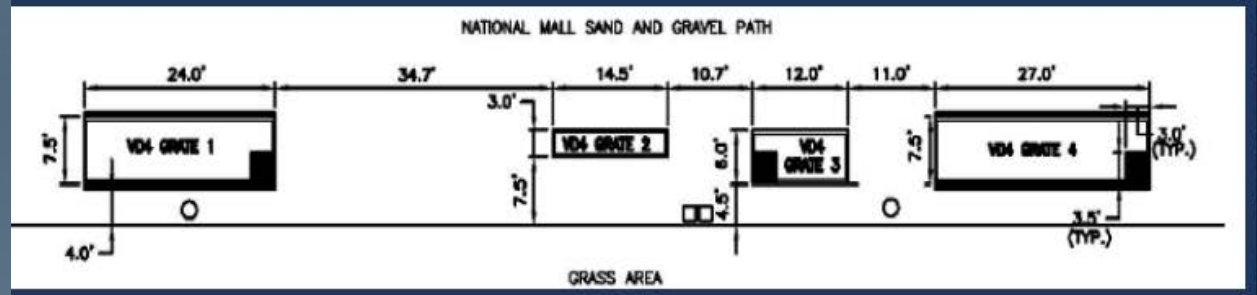
(east)

East and West sides - Elevate shaft with a 12-inch parapet wall covered in granite. This shaft is located within the 500-year floodplain.

Existing Conditions

12

Smithsonian Metrorail Station at the Mall – VD4



Site Plan View

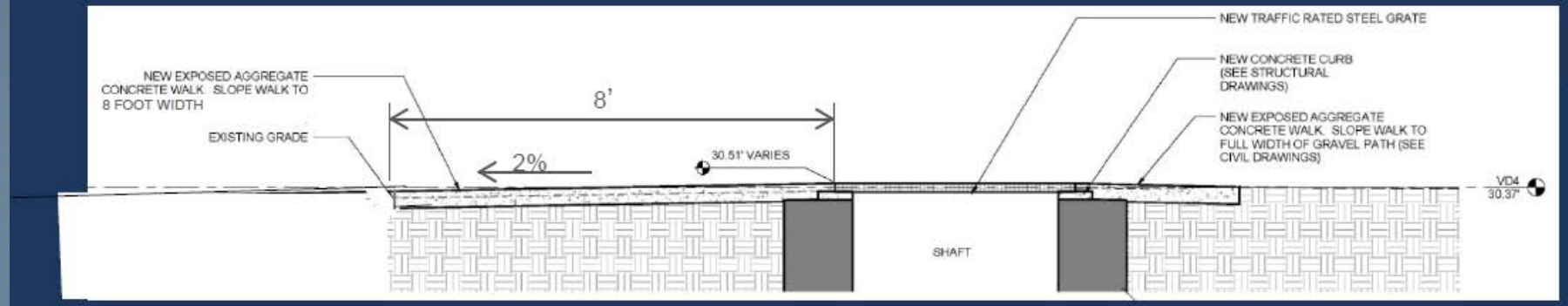
0 10 20

feet 500

meters 200

Vent Shaft Location

Metrorail Station



Elevation

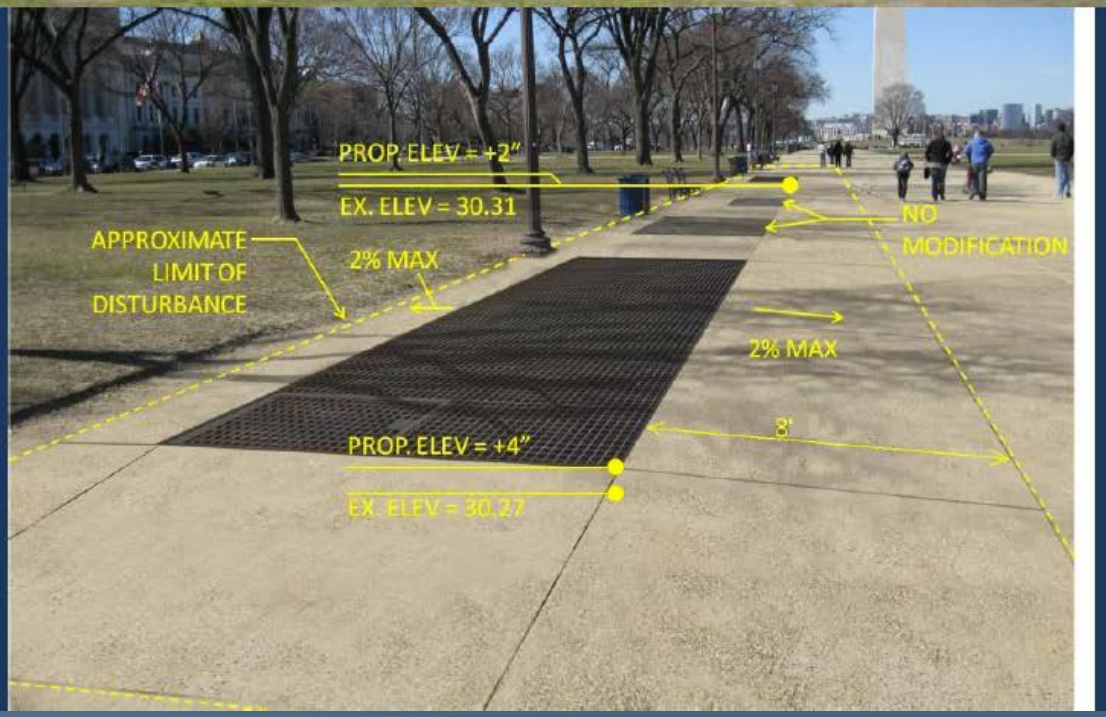
13

Smithsonian Metrorail Station, at the Mall – VD4

Four Vent Shafts on Gravel
Existing Condition

Proposed Undertaking
Aggregate Concrete

Proposed Action: Raise surface 4 inches and backfill against the new wall. Add an 8-foot wide aggregate concrete apron. Aggregate concrete would be tinted to match the surrounding gravel walk.



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