

Smithsonian's National Museum of African American History and Culture

(NMAAHC) :

Lessons Learned – How Construction Informs Place-making

Learning Objectives

- Accessibility / ADA
- CADD/GIS/REVIT
- Green Roofs / Planting Design
- Security Design
- Site Planning
- Sustainable Development & Design

OurSpeakers



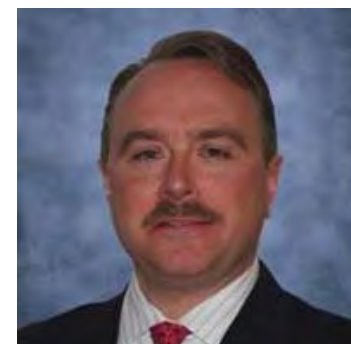
Jill Fortuna, GGN
Landscape Architecture



Chihiro Donovan, GGN
Landscape Architecture



Duane Krueger, Coldspring
Stone Quarrying / Fabrication



Brett Rugo, Rugo Stone
Stone Fabrication / Installation

Site seen from Washington Monument – 2002, Preconstruction



Timeline:

- Starting in 1988: new bills were introduced annually in the Congress by Rep. John Lewis to create a National African American Heritage Museum and Memorial within the Smithsonian Institution
- 2001: A new bipartisan coalition of Representatives John Lewis and J. C. Watts, Jr., and Senators Sam Brownback and Max Cleland renewed efforts to establish a National Museum of African American History and Culture within the Smithsonian Institution.
- 2003: December 16, Legislation PL 108-184 is passed and signed by President George W. Bush creating a NMAAHC as part of the Smithsonian Institution. At the museum opening, President Bush spoke about the importance placed on assuring a site on the National Mall.
- 2006: January 30, Site selected by the NMAAHC Board of Regents.
- 2008: Design competition announced.
- 2009: April 14, Architectural team of “FABS” Freelon / Adjaye / Bond / Smith Group and Landscape Architects GGN chosen to design the NMAAHC.
- 2012: February 22, Groundbreaking Ceremony
- 2016: September 24, Official Opening of NMAAHC

Site seen from Washington Monument – 2016



Team / Collaborators:

ARCHITECTS

The Freelon Group: Architect of Record
Adjaye Associates: Design Architect
Davis Brody Bond: Below Grade Architecture
The Smith Group: Core and Shell

LANDSCAPE ARCHITECTS

GGN

STRUCTURAL ENGINEERS

Robert Silman and Associates
Guy Nordenson & Associates

SECURITY

ARUP North America
Weidlinger Protective Design

CIVIL ENGINEERS

RKK

MEP

WSP Flack & Kurtz

FOUNTAIN CONSULTANT

CMS Collaborative

IRRIGATION DESIGN

JL Bruce

GENERAL CONTRACTOR

CMS : Clark / Smoot / Russel

STONE SUB-CONTRACTOR - SITE

Rugo Stone

STONE SOURCE – SITE

Coldspring Granite
Structural Stone, LLC







Who we are: Diligent, Confident, Creative

- 119 Years in Business
- Over 30 quarries
- 4 Fabrication Facilities and a Bronze Foundry



Agencies:

- National Capital Planning Commission (NCPC):

The National Capital Planning Commission is the federal government's planning agency for the National Capital Region. The 12-member Commission meets monthly to adopt, approve, or provide advice on plans and projects that impact the nation's capital and surrounding areas. The Commission is supported by a staff of planners, architects, urban designers, and other professionals. The National Capital Planning Commission preserves and enhances the extraordinary historical, cultural, and natural resources and federal assets of the National Capital Region to support the needs of the federal government and enrich the lives of the region's visitors, workers, and residents.

- United States Commission of Fine Arts (CFA):

The Commission of Fine Arts is an independent federal agency charged with giving expert advice to the President, the Congress and the federal and District of Columbia governments on matters of design and aesthetics, as they affect the federal interest and preserve the dignity of the nation's capital. The Commission is composed of seven presidentially appointed experts in relevant disciplines including art, architecture, landscape architecture, and urban design.

The Commission reviews designs proposed for memorials, coins, medals, and new or renovated government buildings, as well as privately owned properties in certain areas of Washington under the Shipstead-Luce and Old Georgetown Acts. In addition, the Commission supports a variety of arts institutions in Washington, DC, through the National Capital Arts and Cultural Affairs (NCACA) program.

- Advisory Council on Historic Preservation (ACHP):

The Advisory Council on Historic Preservation (ACHP) is an independent federal agency that promotes the preservation, enhancement, and productive use of our nation's historic resources, and advises the President and Congress on national historic preservation policy.

The goal of the National Historic Preservation Act (NHPA), which established the ACHP in 1966, is to have federal agencies act as responsible stewards of our nation's resources when their actions affect historic properties.

- National Park Service

The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

- National Coalition to Save Our Mall (NMC):

The mission of the National Mall Coalition (formerly National Coalition to Save Our Mall), a 501(c)(3) nonprofit organization based in Washington DC, is to provide an organized voice for the public; to advocate comprehensive, visionary planning for the National Mall in the 3rd century; and to work in collaboration with government, nonprofits, and the business sector to implement forward-looking improvements that will ensure the vitality, beauty, and continued active role of this national treasure in the capital and in American life.

Design Overview

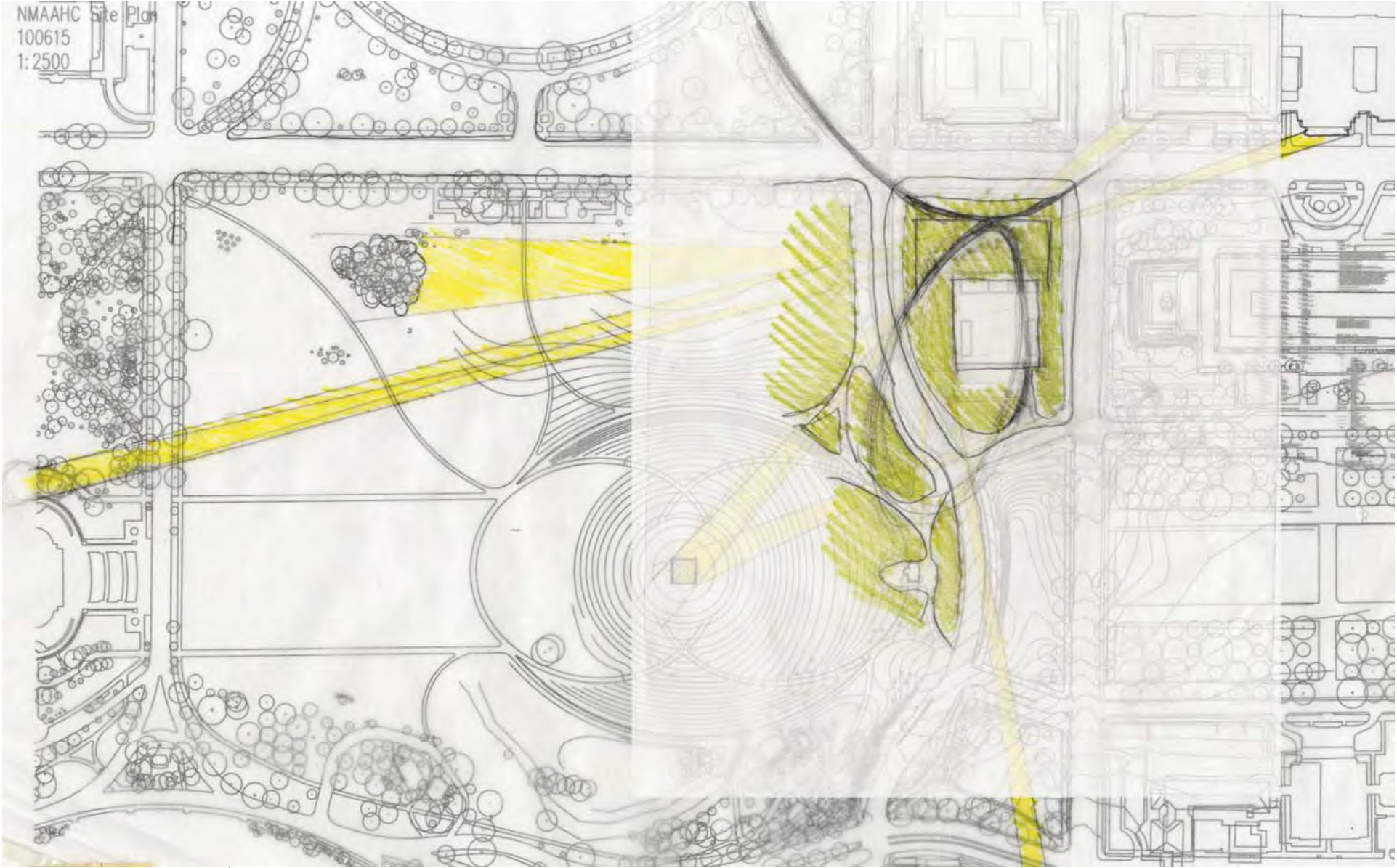
National Mall



Relating to the Geometry of the Context



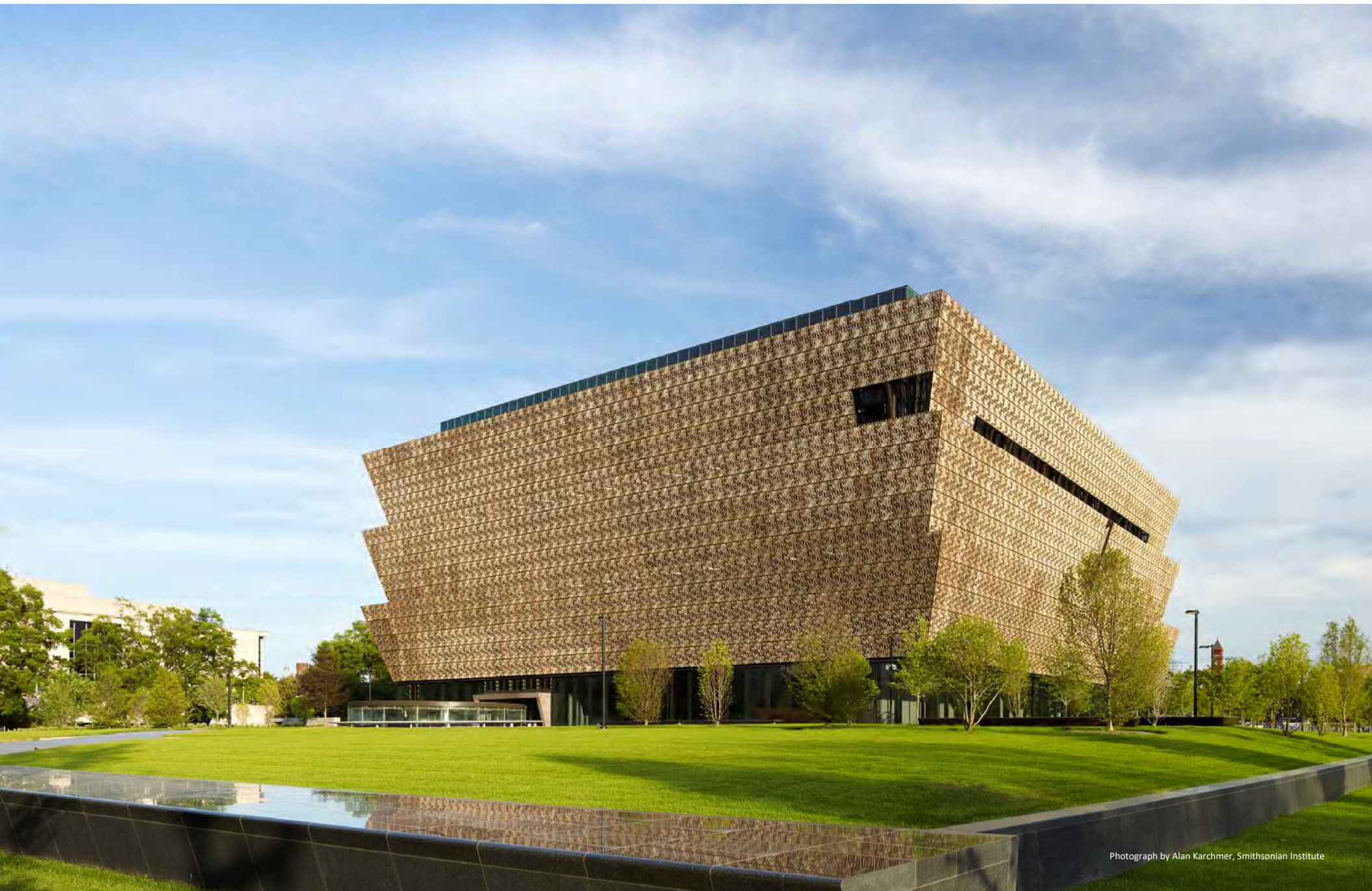
Washington Monument





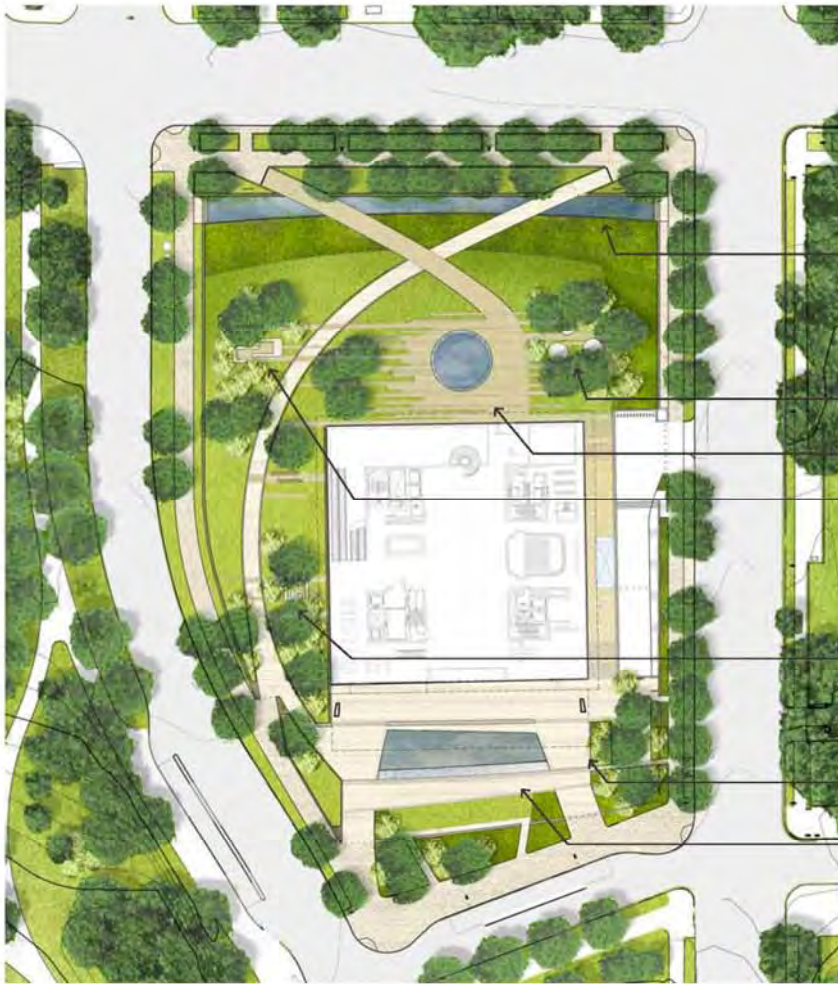
Building Inspirations





Photograph by Alan Karchmer, Smithsonian Institute

The Story of the Museum Begins Outside



North Water Feature: Site History, Threshold to Cultural History Crossing water

Reading Grove: Cultural History

Oculus and Entry Plaza: Cultural History

Reading Grove: Cultural History

Reading Grove: Cultural History

Porch: Reflection, Future

South Water Feature: Reflection, Future



Site History

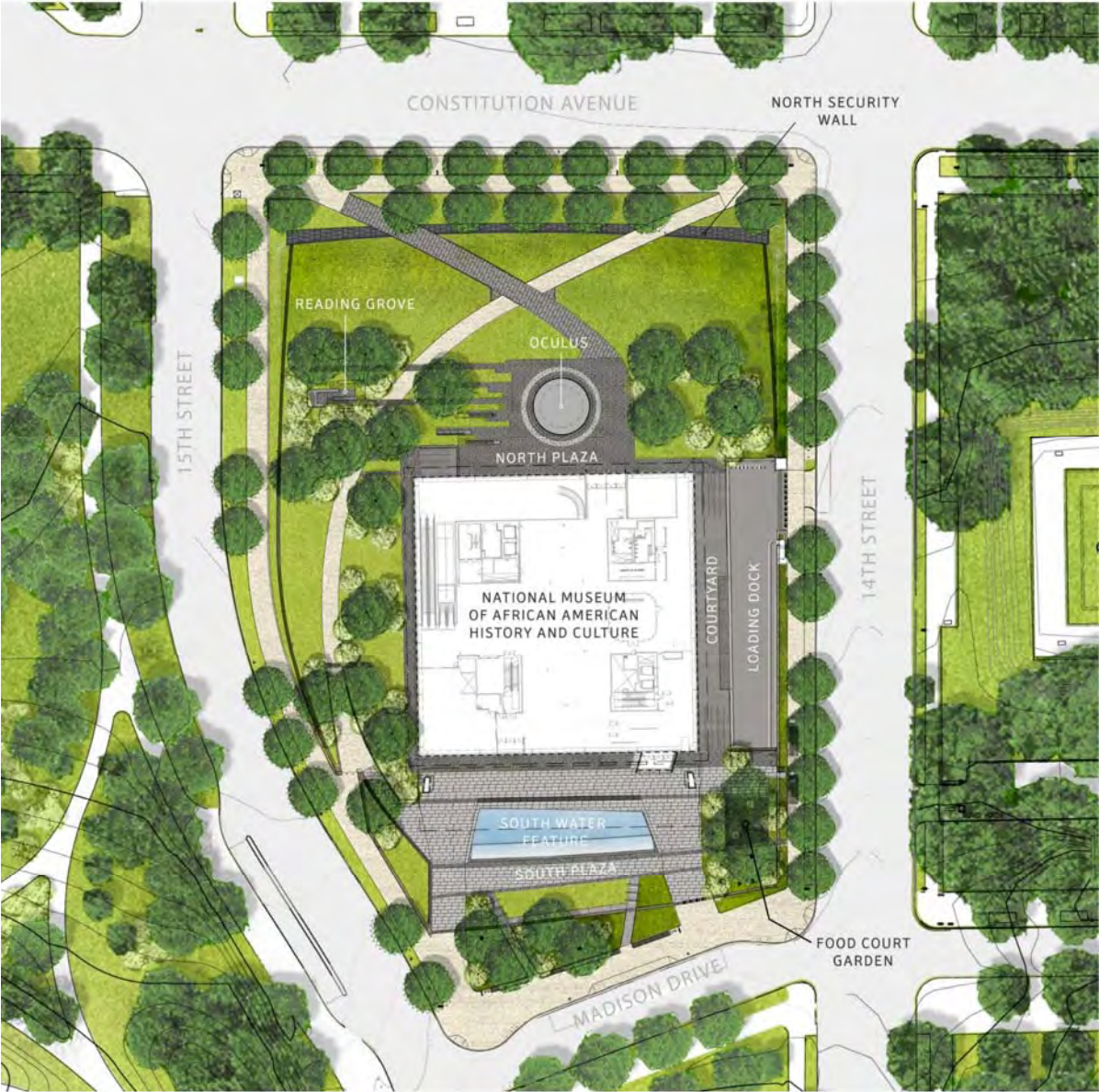


Cultural History

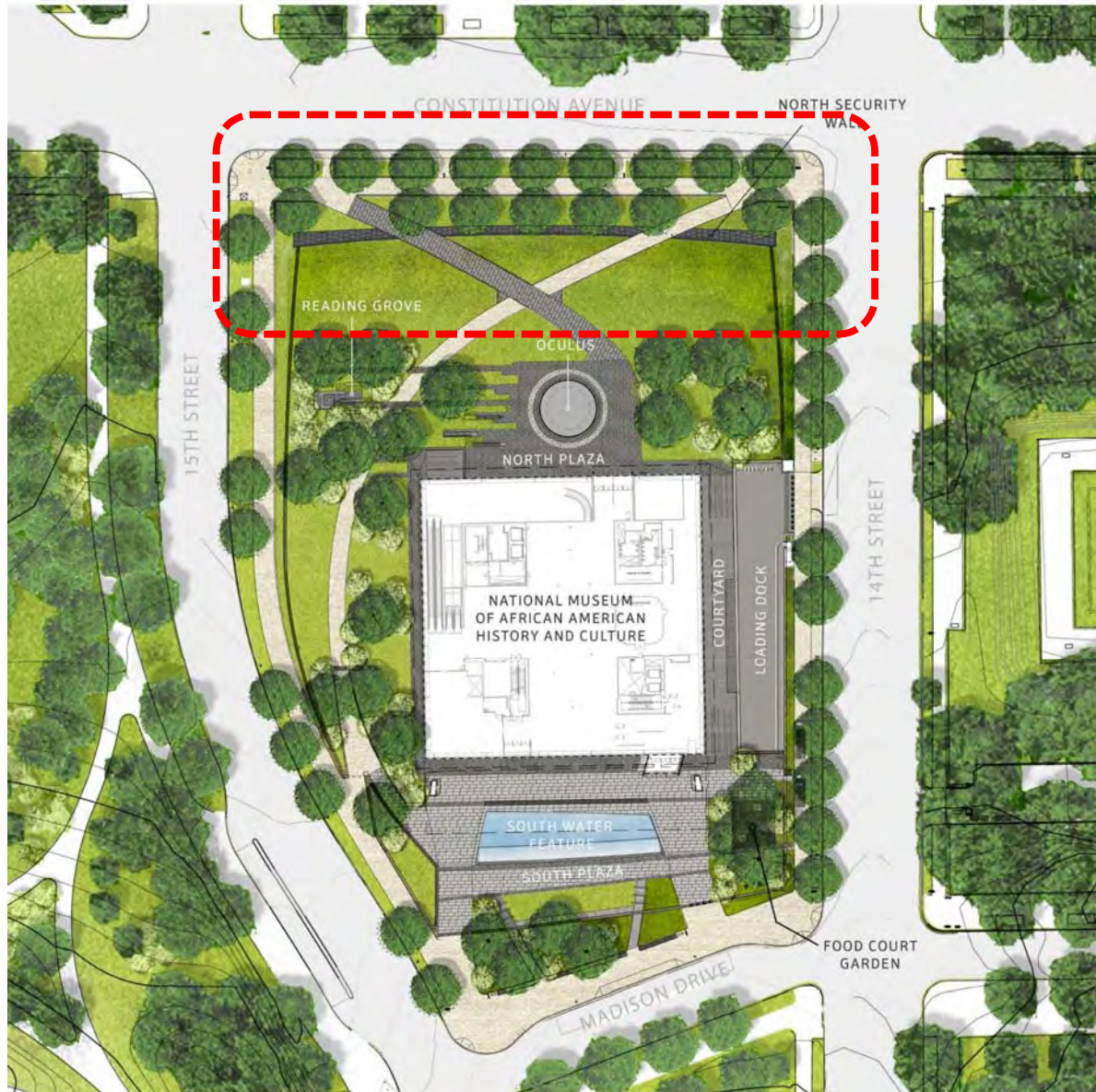


Future

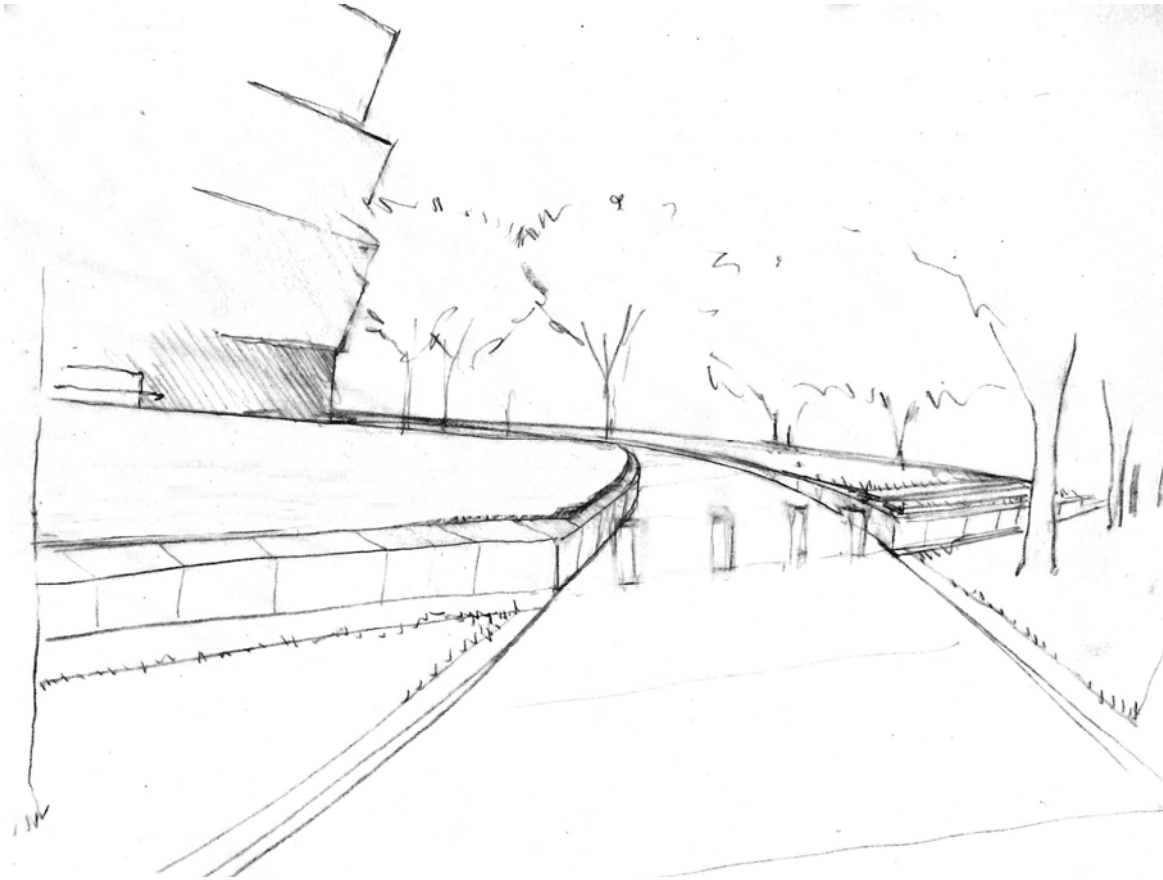
Site Plan



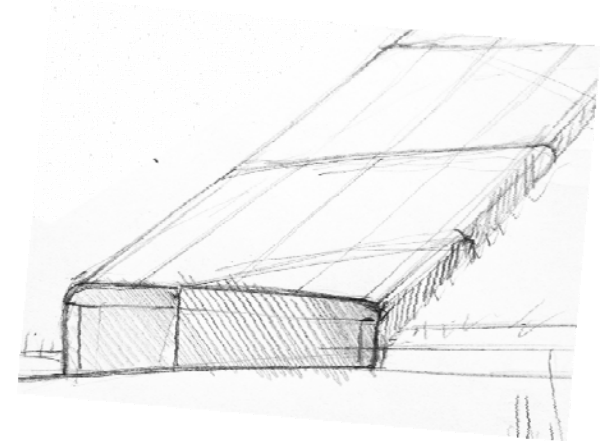
North Wall and Constitution Avenue



Monolithic Retaining Wall



The North Entry has been re-designed to reinforce the threshold to the site and enhance the experience of rising up and reflecting on history as visitors enter the site. The rising path brings visitors into the world of the museum where the Oculus acts like a beacon in the landscape signaling entry and a place of welcome. The Oculus is an allusion to similar beacons like church steeples or quilts hanging on windows that historically marked safe houses for African Americans. It also pre-figures the contemplative space found down below at the entry to the history galleries and helps to tie together the experience of the outside with the inside.



The Entry Path and the Promenade path rise up to symbolize the strength of the African American community rising up over adversity. The Corona's form is an inspiration for this uplifting justure.

Commission of Fine Arts Preliminary Submission - June 20, 2013 | FREELON ADJAYE BOND SMITHGROUP



Photograph by Roman Edwards



Washington City Canal on the Tiber Creek

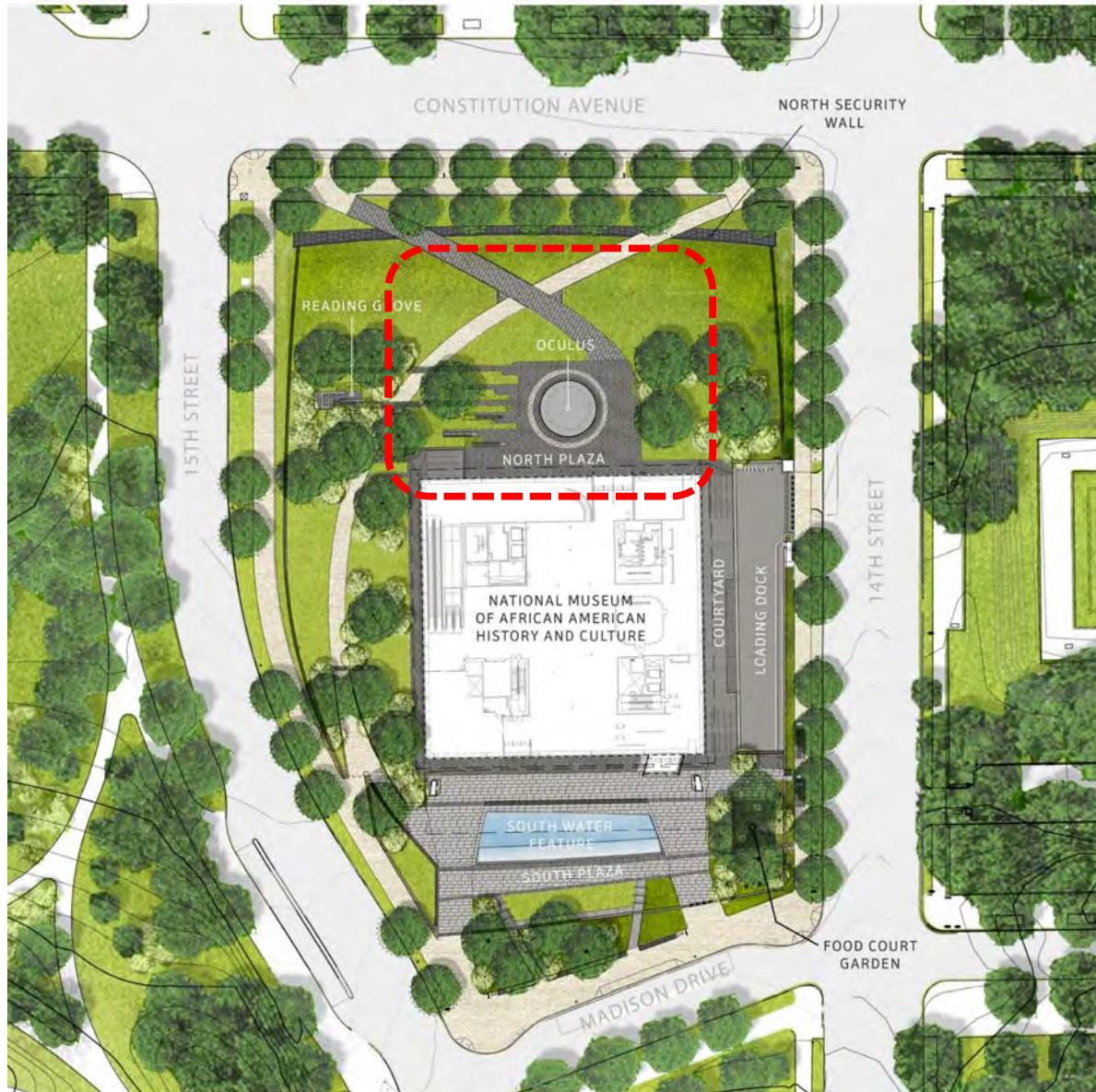
B

Washington City is a water-dependent city. The American people have long known that water is the most valuable resource in the nation. The Washington Canal project, begun in the early 1800s, was the first major water project in the United States. It was a landmark in the history of water engineering and the development of the nation's infrastructure.



Washington
City Canal
Project

North Plaza



A Beacon in the Landscape



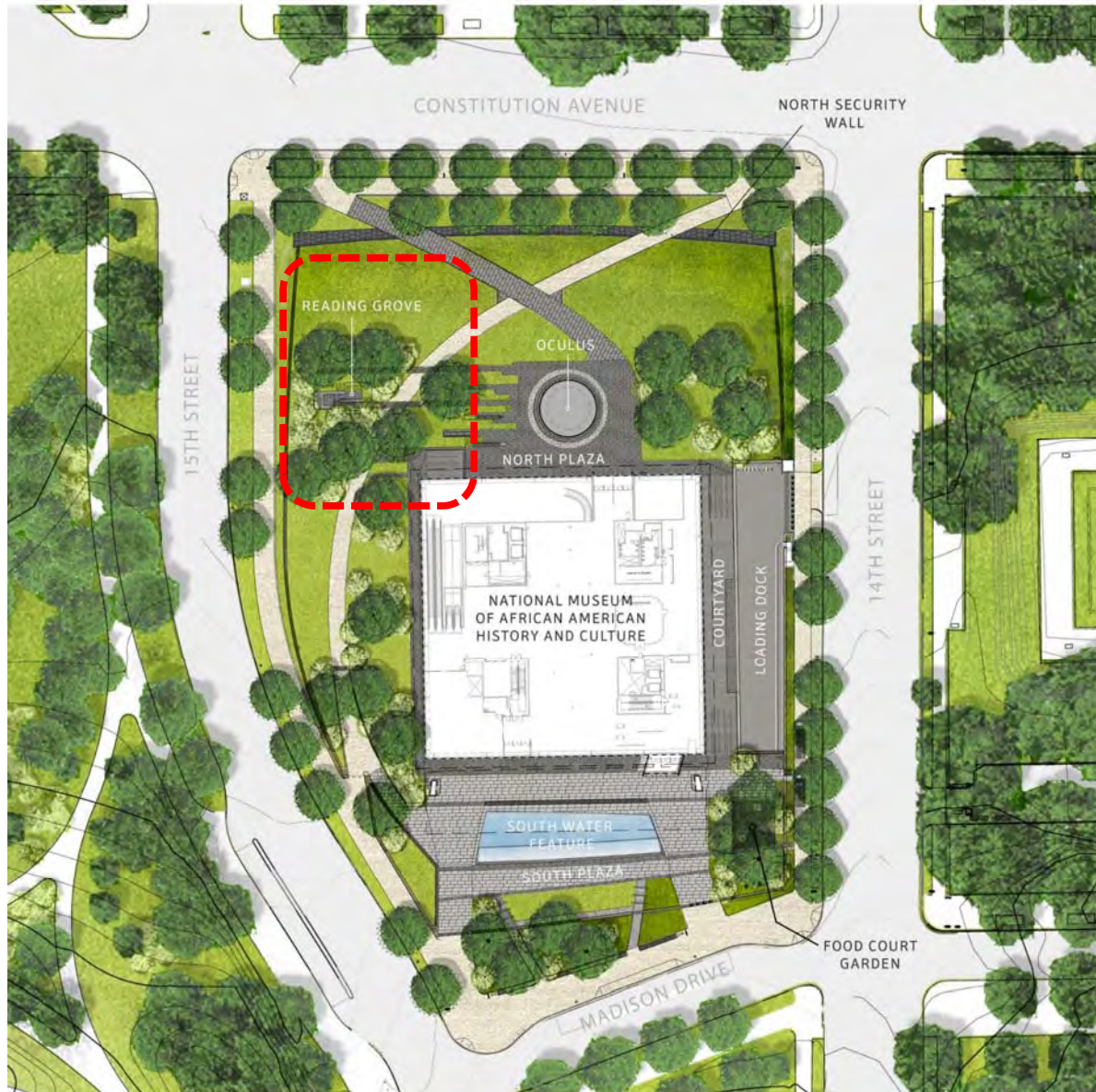


Photograph by Alan Karchmer, Smithsonian Institute

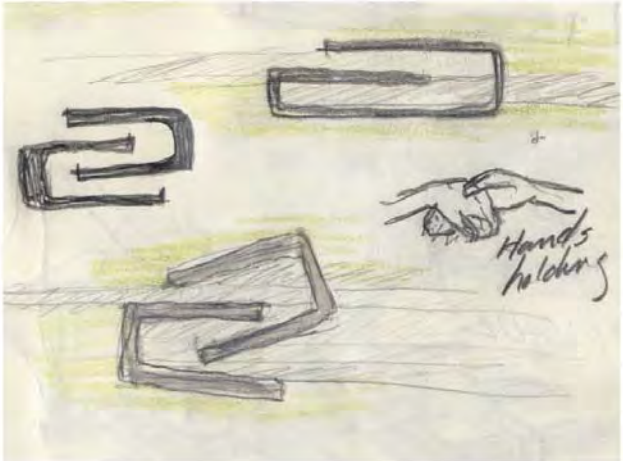
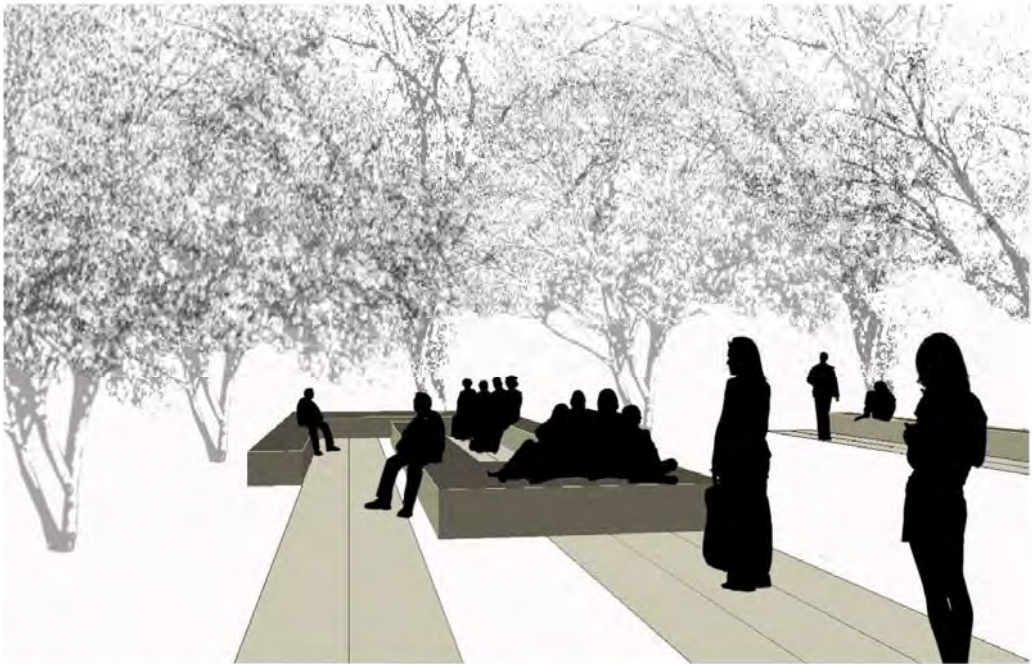
Plank Paving



Reading Groves



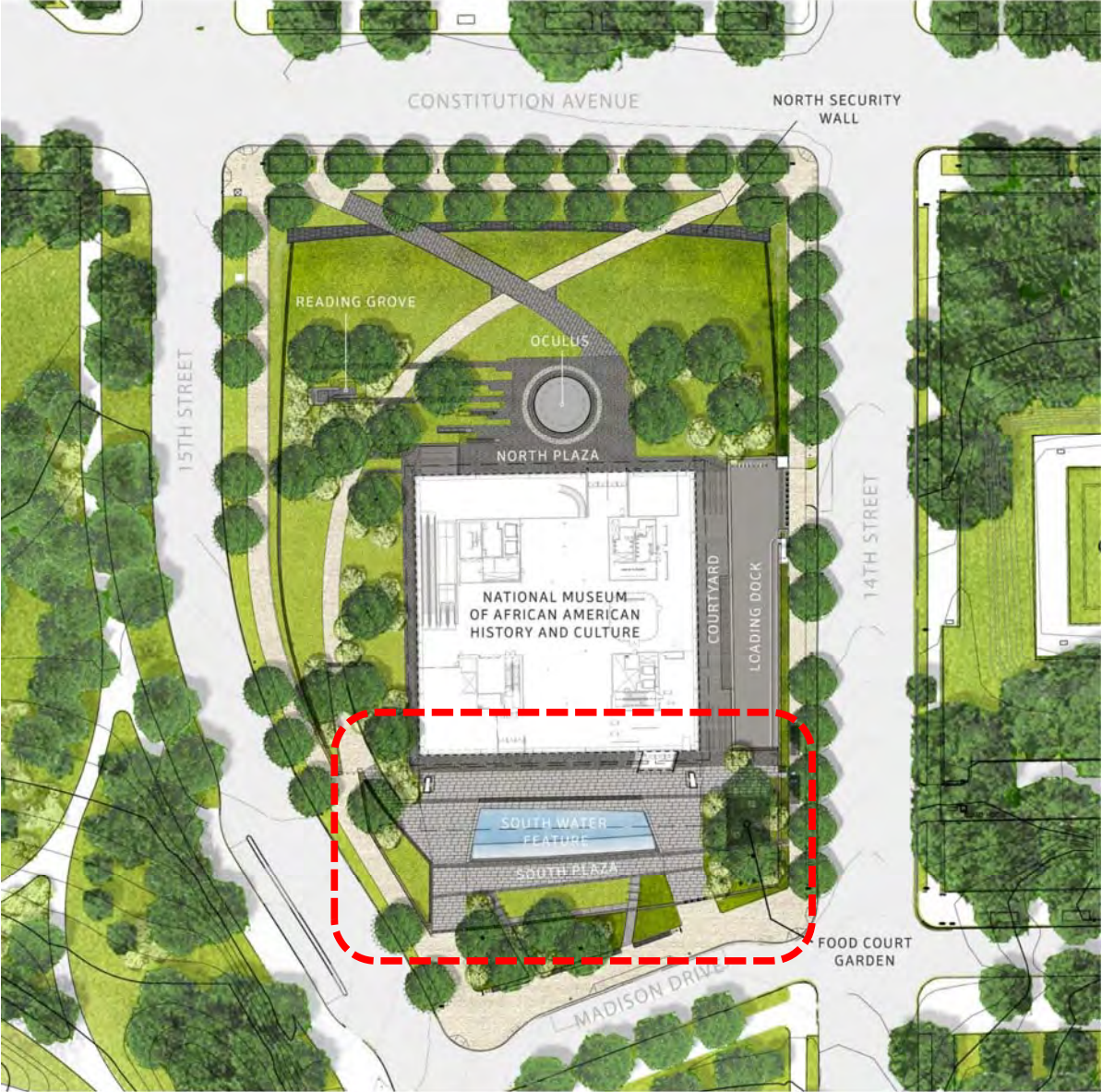
Reading Grove: Hope and Optimism







South Plaza and Water Feature



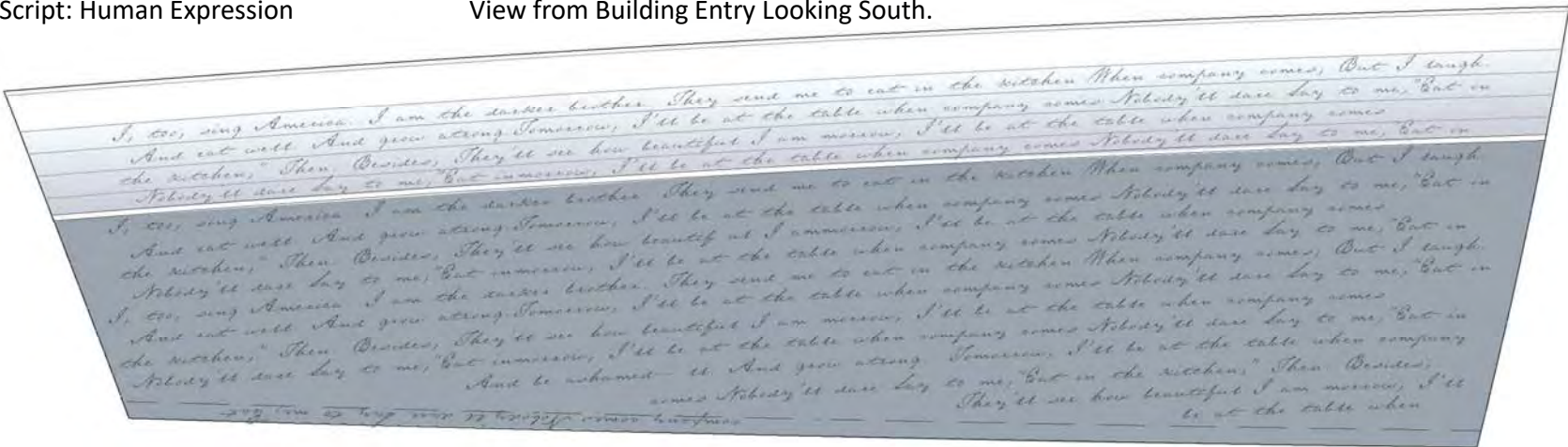
Up early took down
 everything self. Had
 Division moved to
 Stopped in woods
 Dormouse. Woke a
 President Lincoln



Script: Human Expression

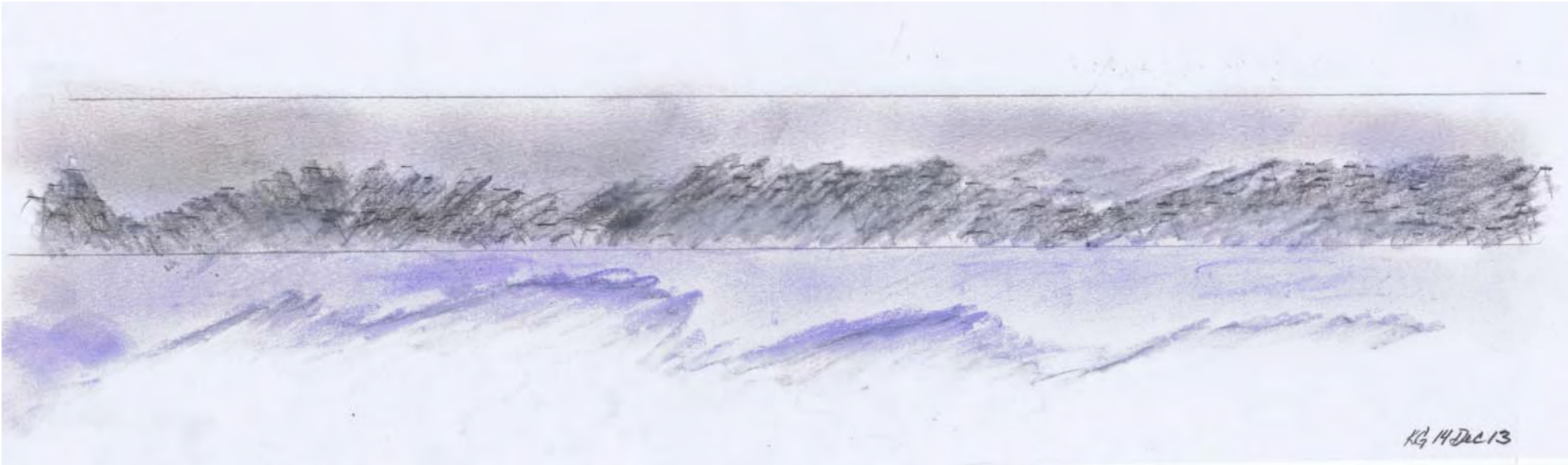


View from Building Entry Looking South.



South Water Feature: Words

Movement and Reflection

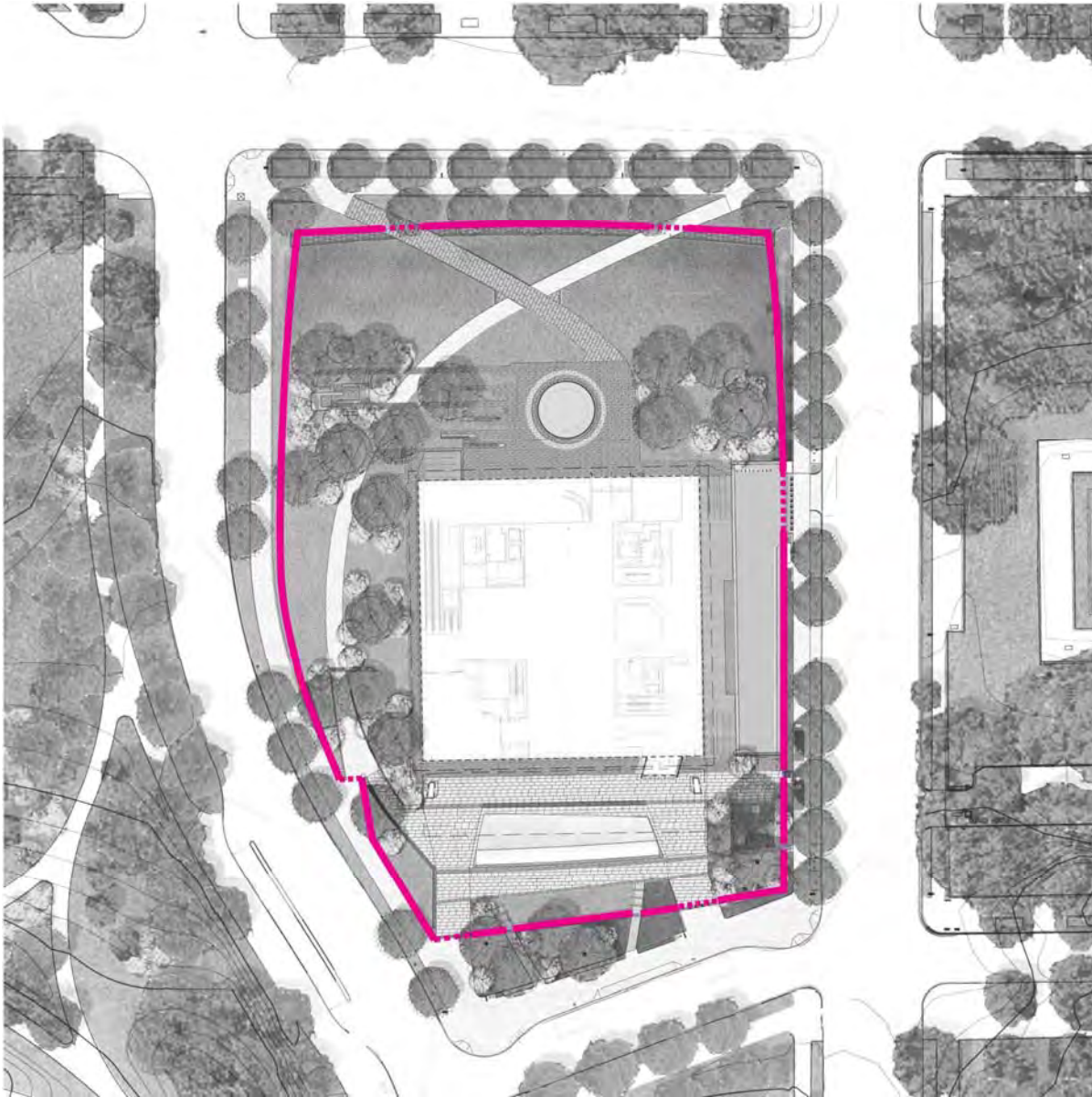




Perimeter Walls



Security Parameters and Perimeter



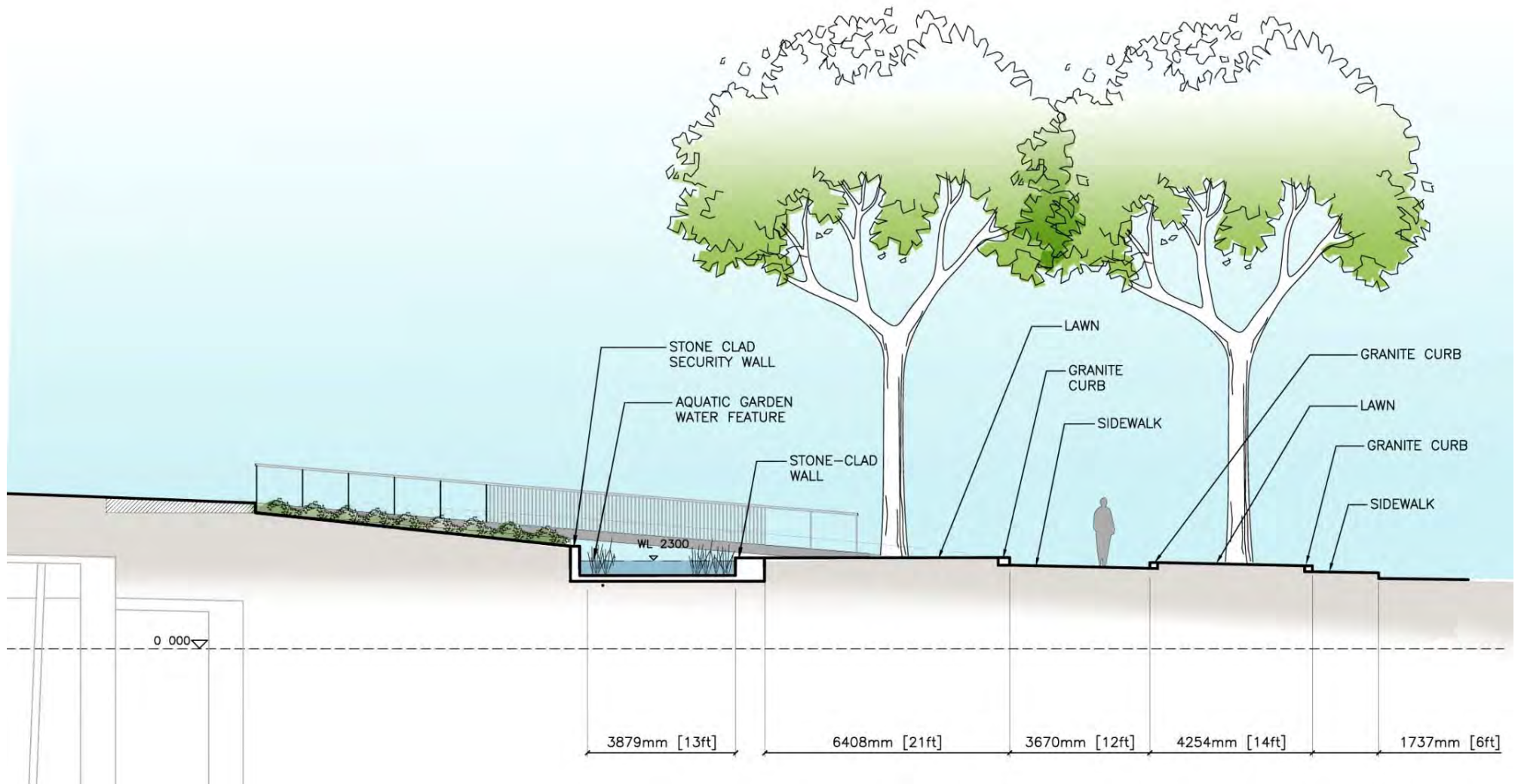
Things to Consider:

- Wall Height
- Wall Width
- Cladding Thickness
- Opening Size
- Angles
- Fall Height

CONSTRUCTION AND DETAILING: North Water Feature Inspiration and Concept



North Water Feature: Section



Washington Monument





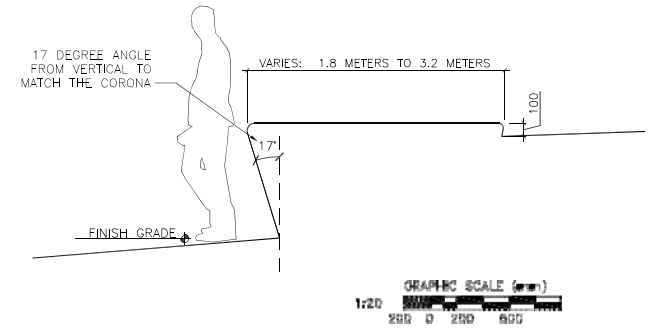
View from Promenade Path Looking West



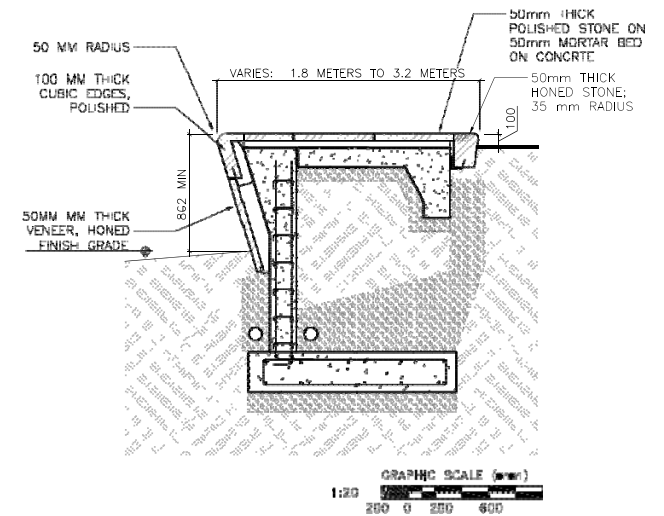
Integration of Security and Design



Proposed Site Plan.



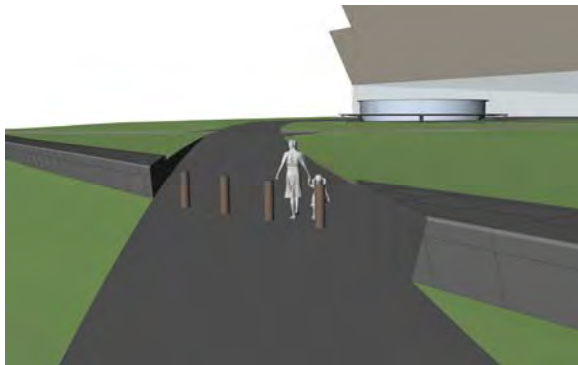
The north angle of the profile matches the 17 degree angle of the Corona.



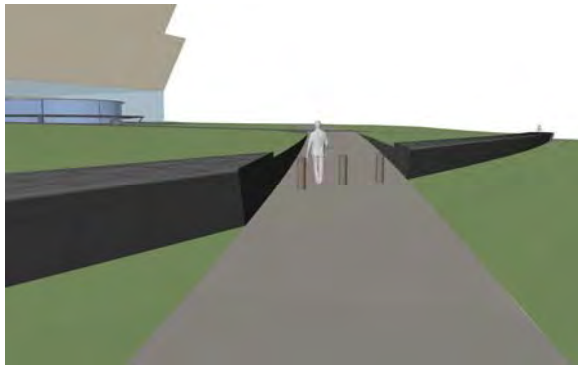
Section

Bollards

At the north entries, the security requirement for a row of bollards is a 1200 millimeter (3'-11 1/4") clear maximum spacing, which is determined by the total impact a row of bollards can resist when placed in a series or row. Bollards are placed on a diagonal in relation to the security wall to keep the number of bollards at a minimum across both the east and west entries. This placement was also designed to accommodate the easiest path of travel for visitors. The bollards have a bronze sleeve finish and have a security requirement of 760 mm high minimum, which is roughly 30" tall.

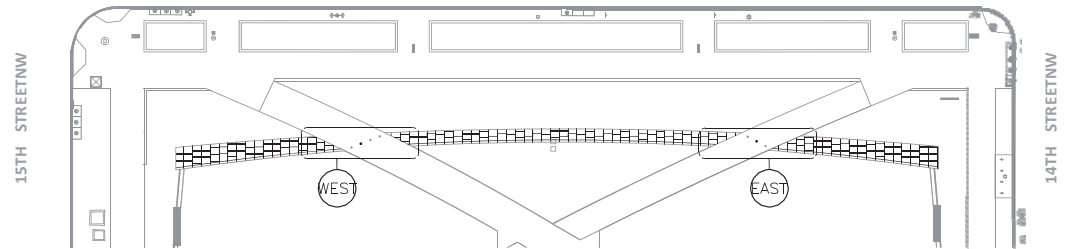


West Entry Path



East Entry Path

CONSTITUTION AVENUE NW

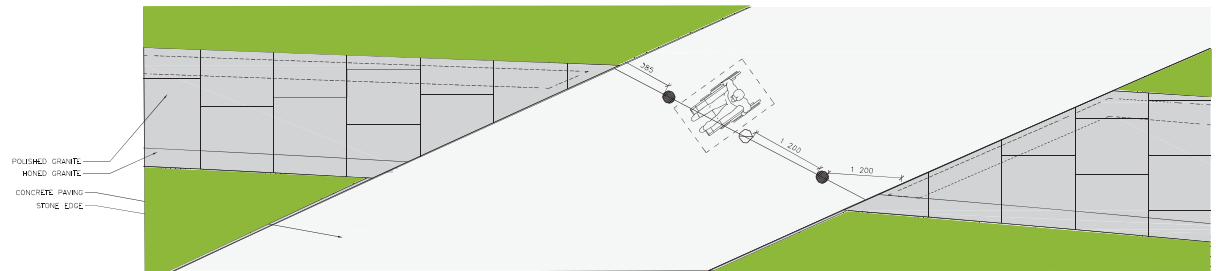


KEY PLAN: North Entries to the site



West Entry Path - bollards at 1200mm clear maximum spacing: plan.

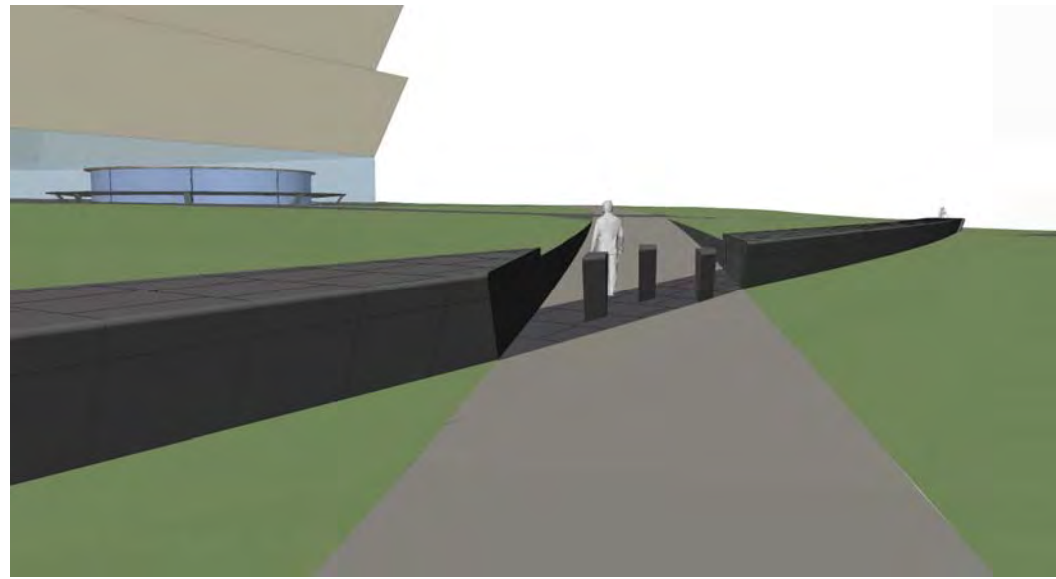
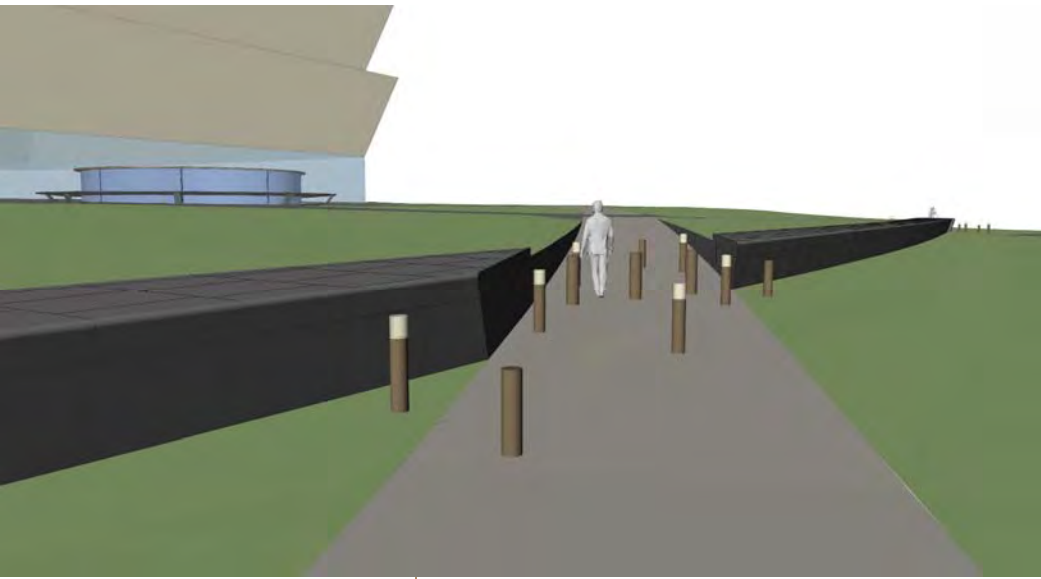
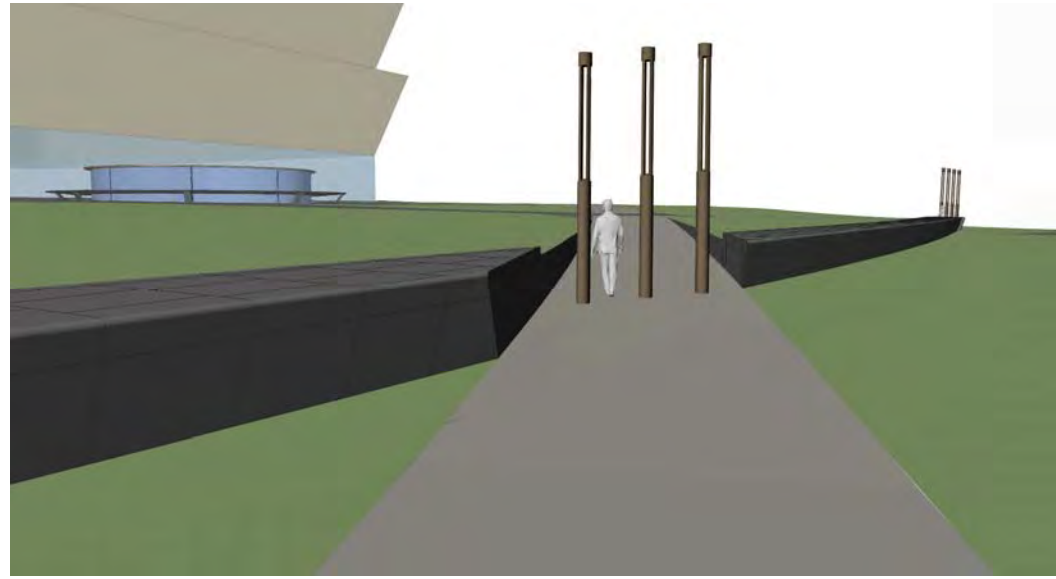
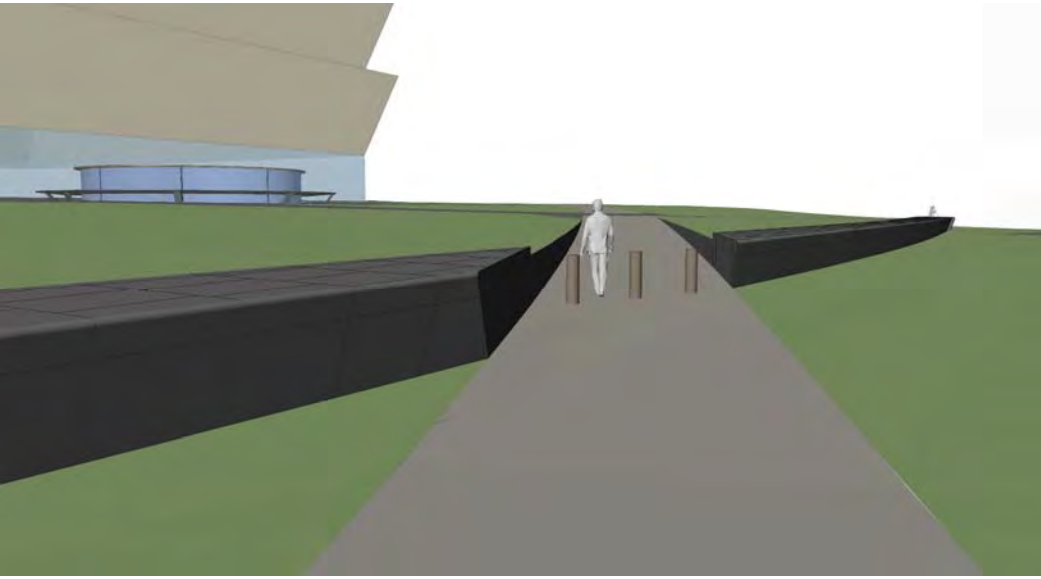
NOTE: 1200 mm = 3'-11 1/4"



East Entry Path - bollards at 1200mm maximum spacing.

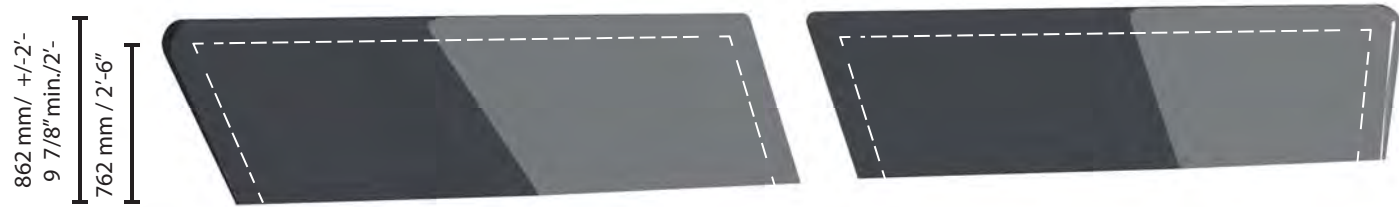
NOTE: 1200 mm = 3'-11 1/4"

Bollards

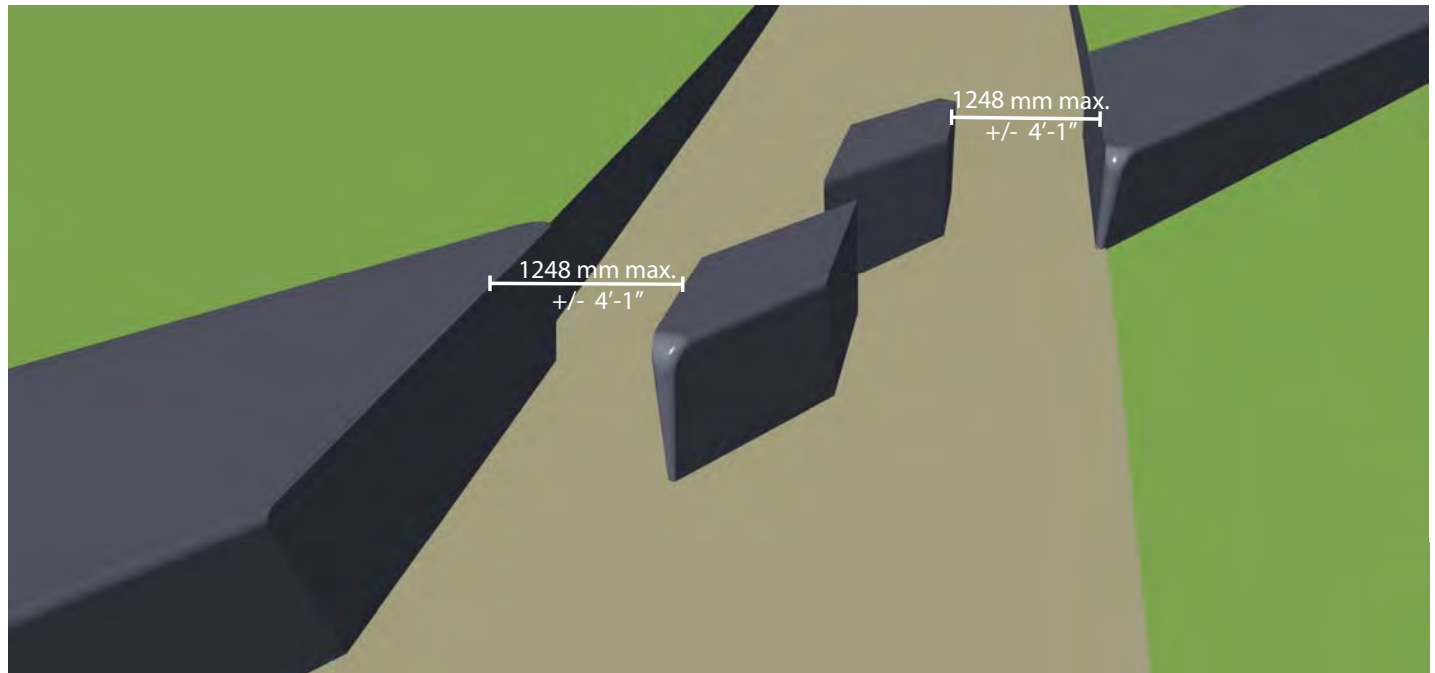


Security and Accessibility

Elevation and perspective showing spacing for security requirements



Elevation



Perspective





View from 14th Street Sidewalk Looking North





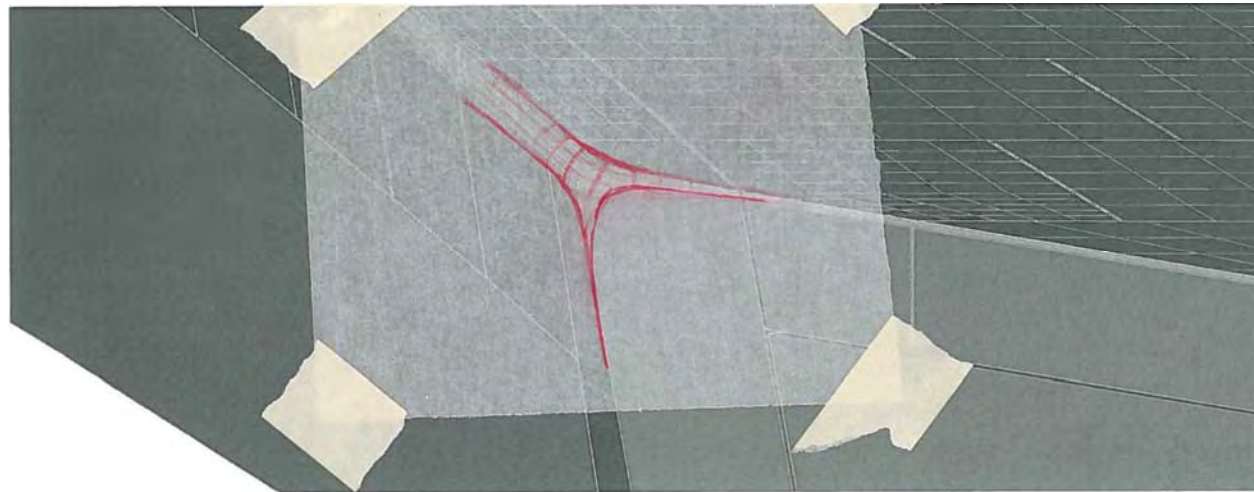
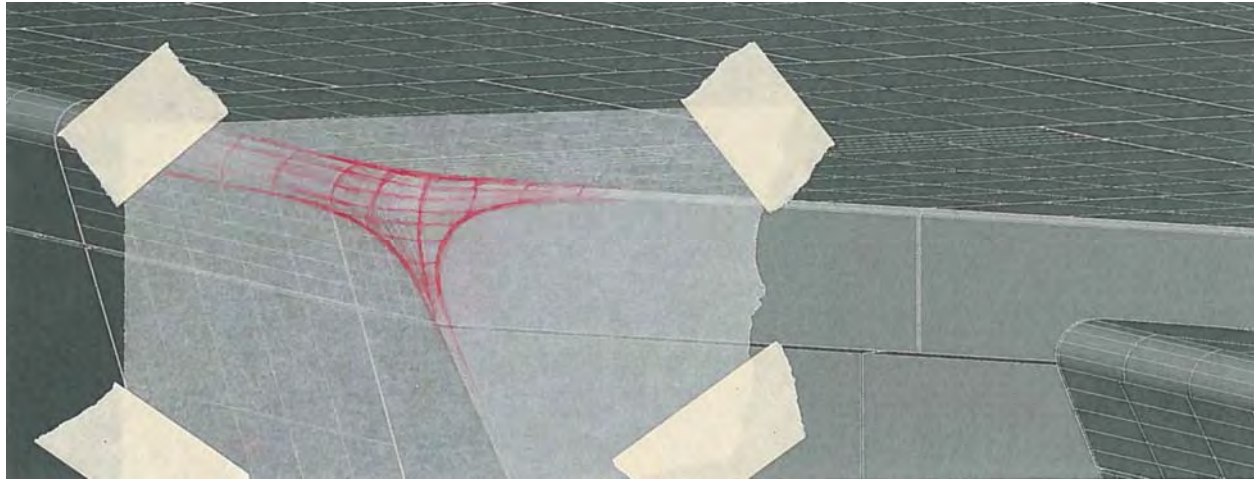


Construction Detailing and Administration

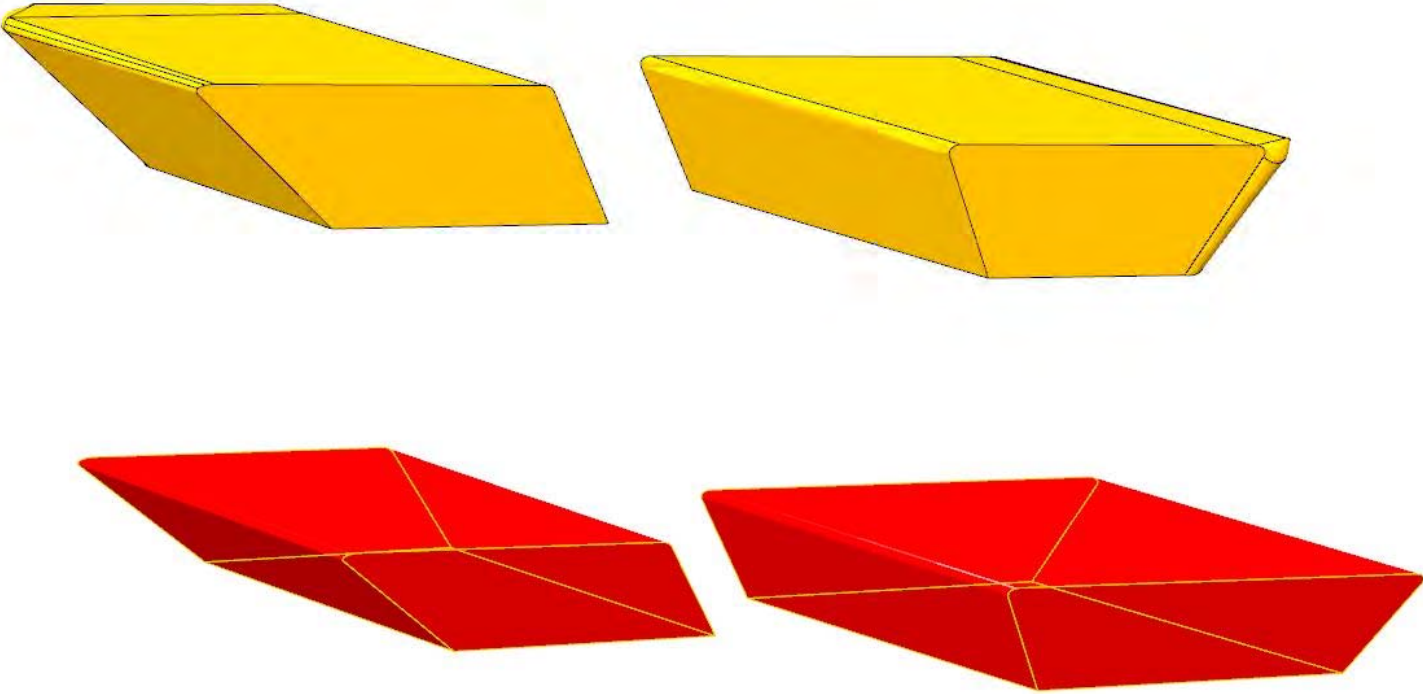
Digital and Manual Processes



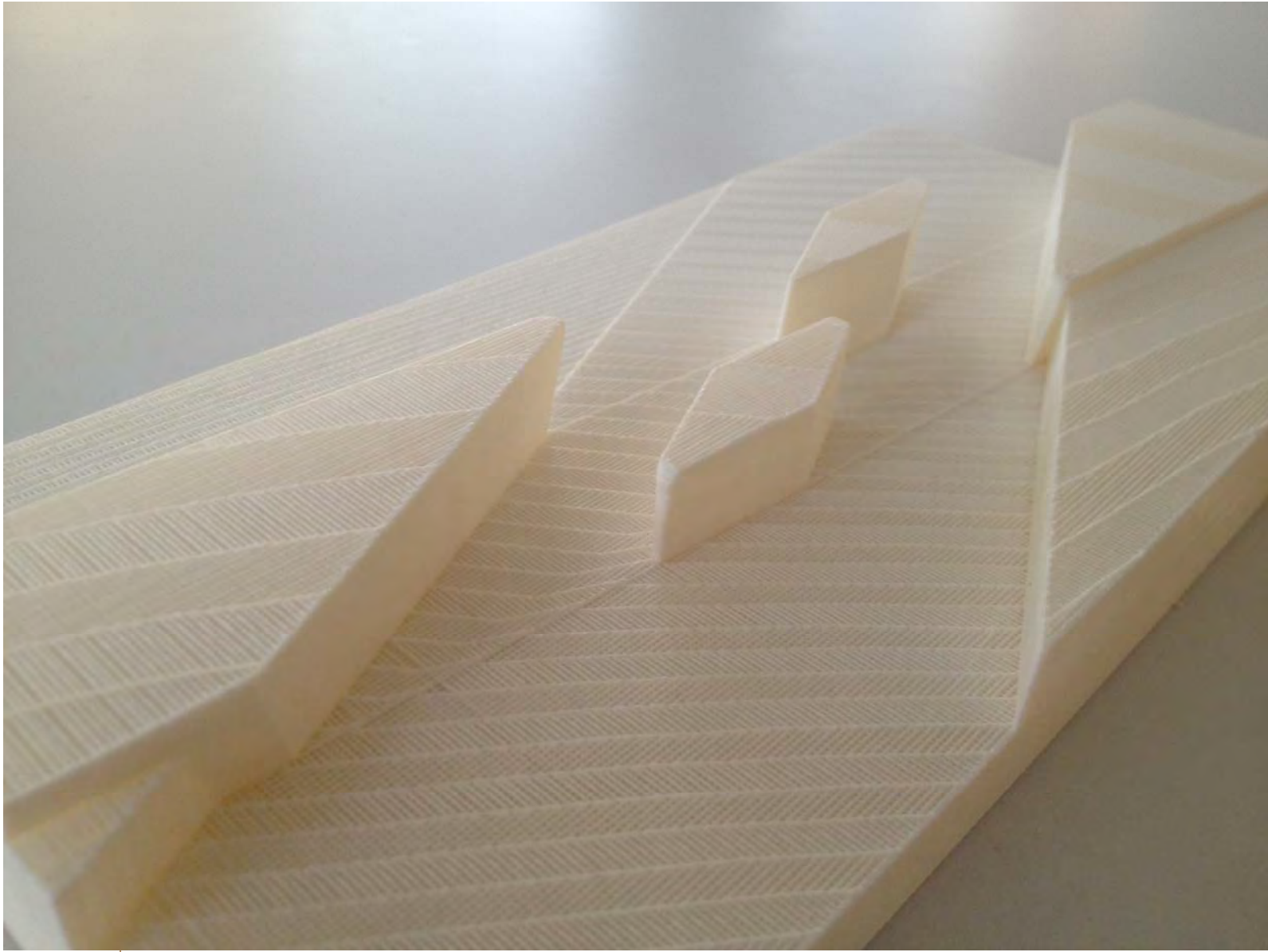
Digital and Manual Processes



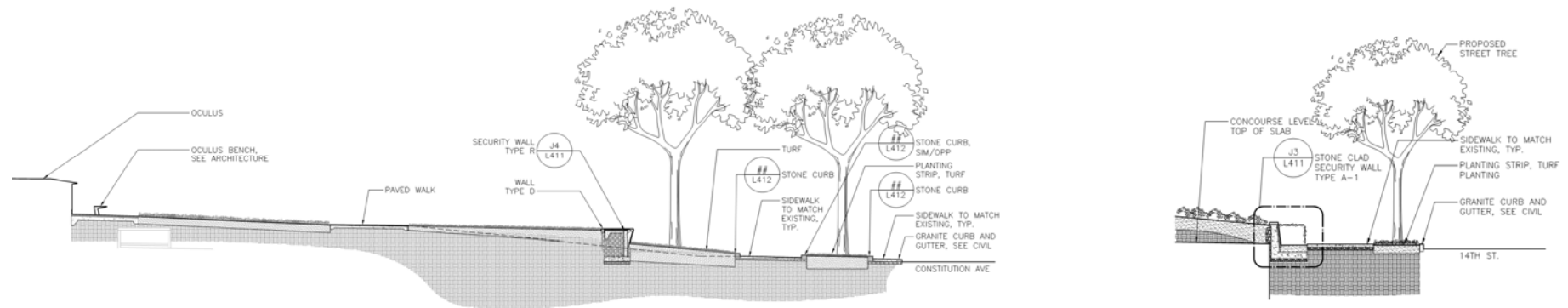
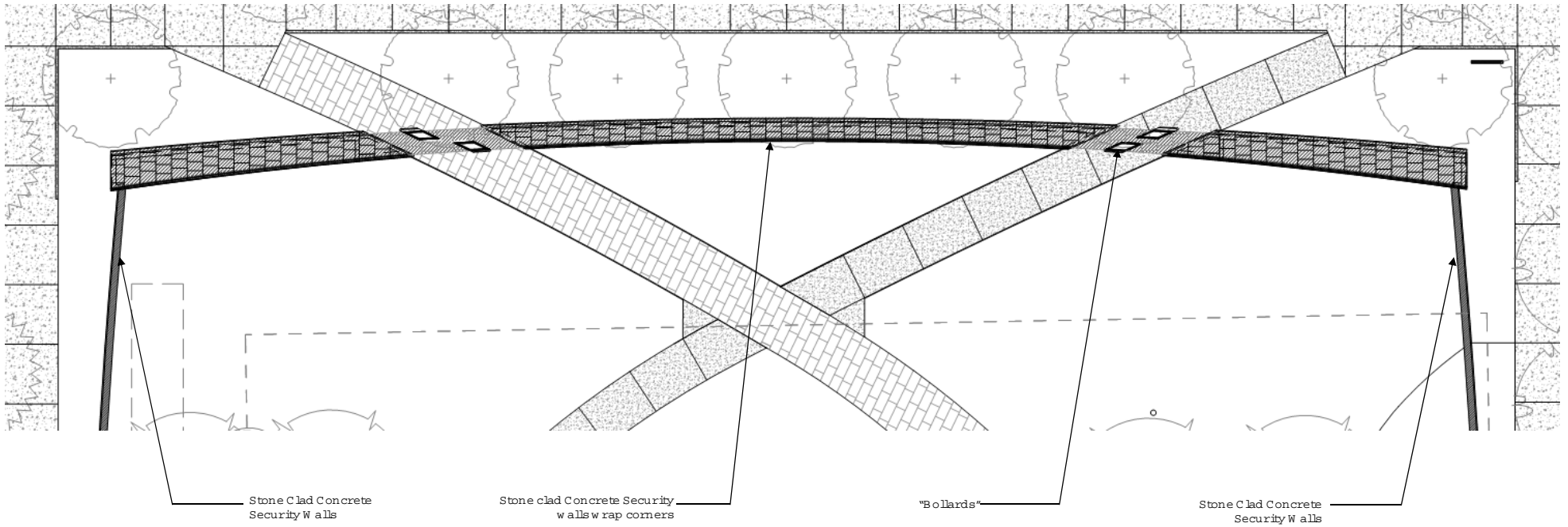
Digital and Manual Processes



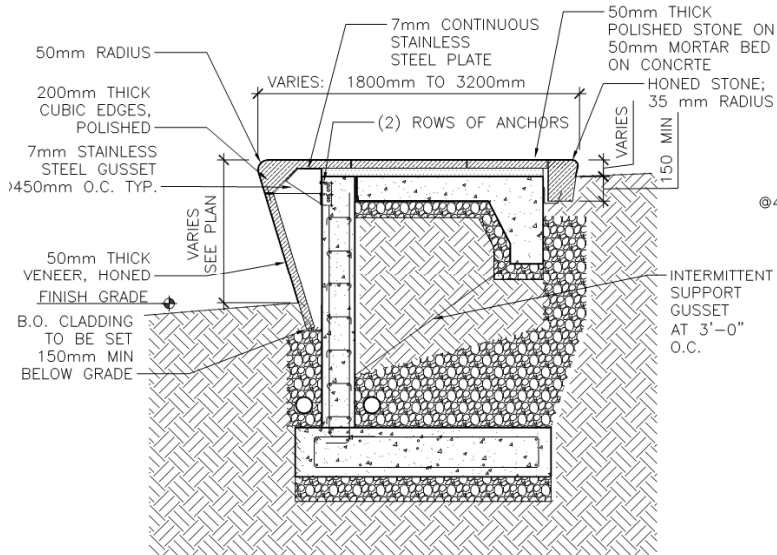
Digital and Manual Processes



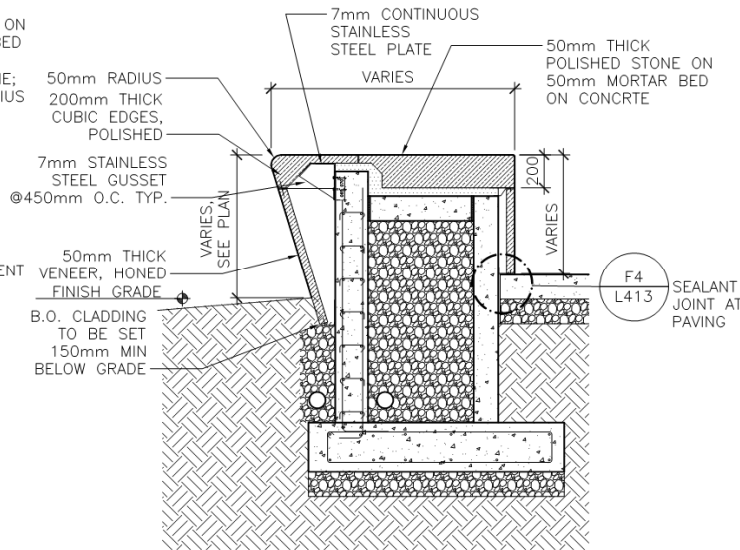
North Security Perimeter



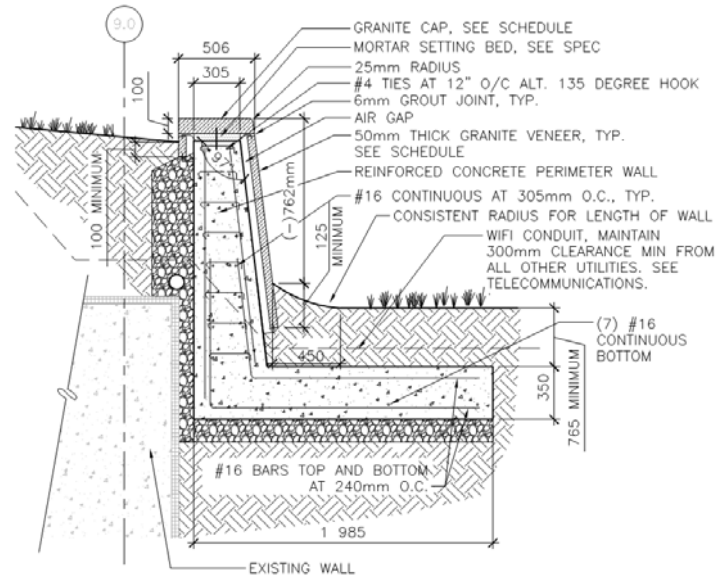
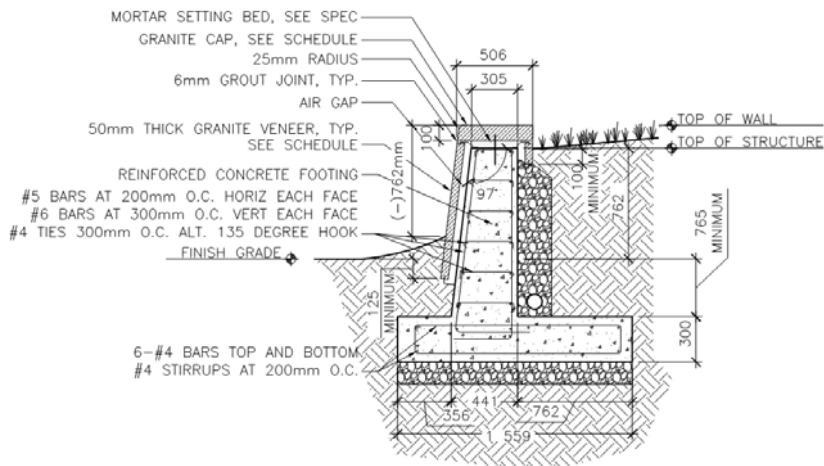
North and Security Walls



TYPICAL WALL SECTION



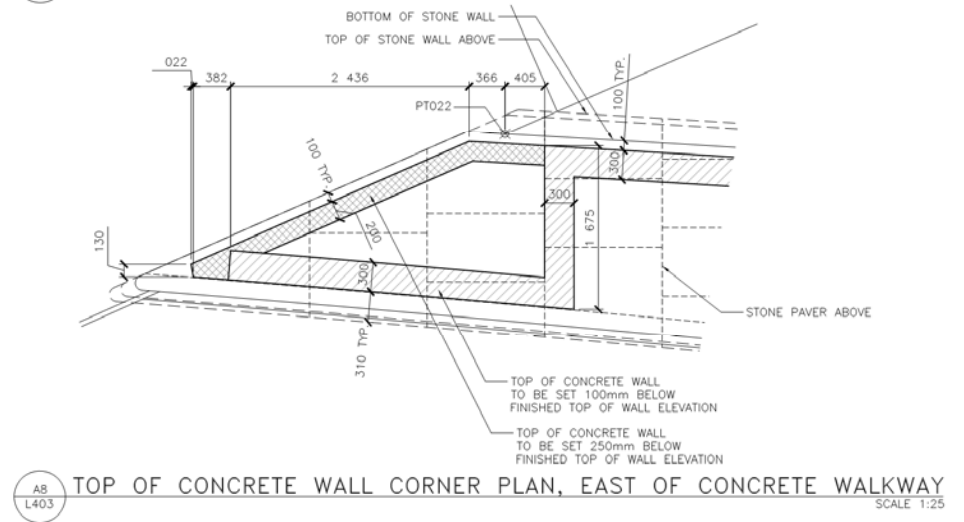
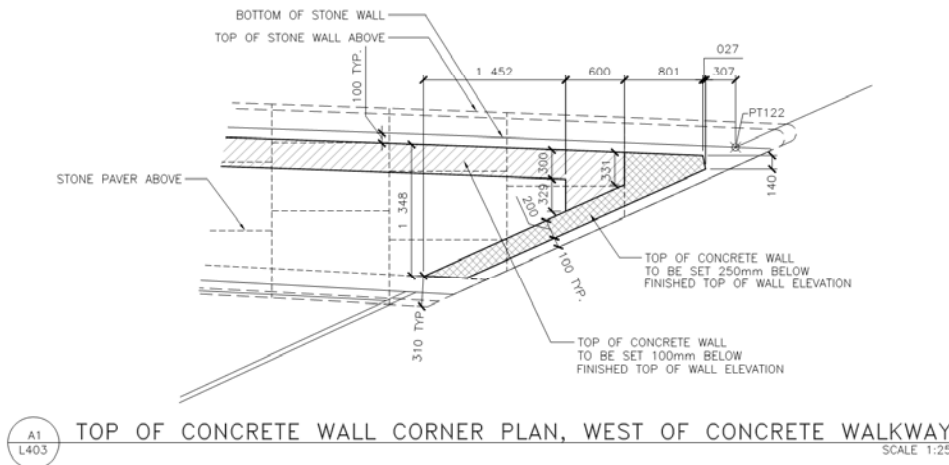
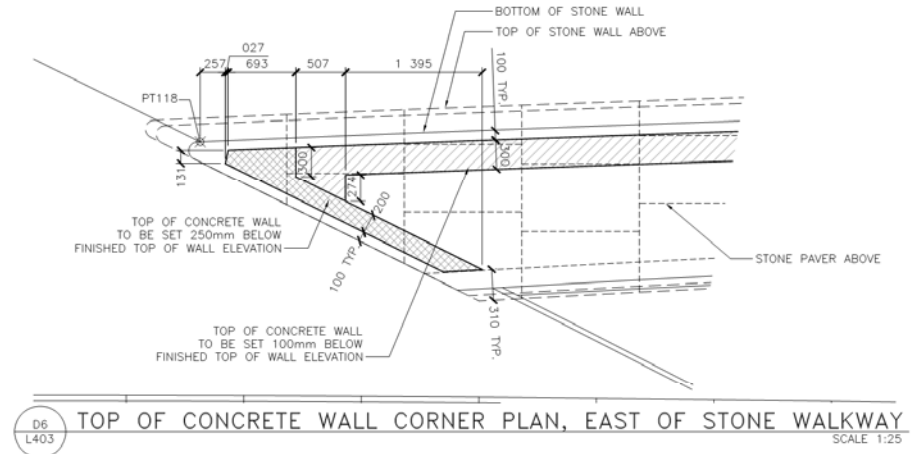
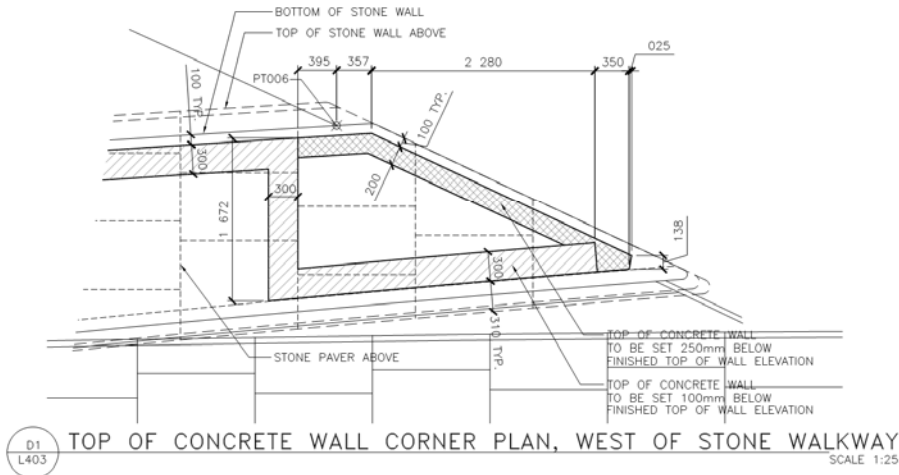
AT WALKWAY INTERSECTION



- Main security wall is along north edge and is at a perfect 90 degree angle from footing
- Wall Section width changes along entire length of wall because of arc
- Depending on distance from grade, concrete stem wall along south edge was required in some locations

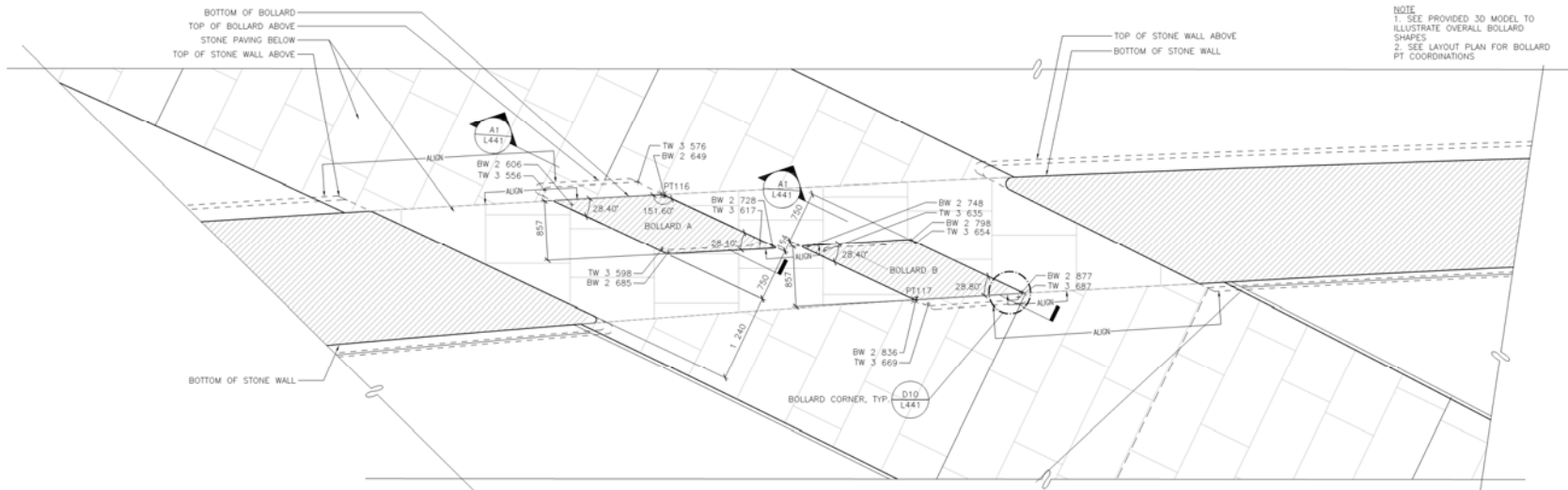
- East West walls have an angled face which matches the angle of the building façade
- East walls have adjacency to the site flood wall
- All walls have an arc, and had to be carefully measured on site to achieve this arc

Concrete Structure



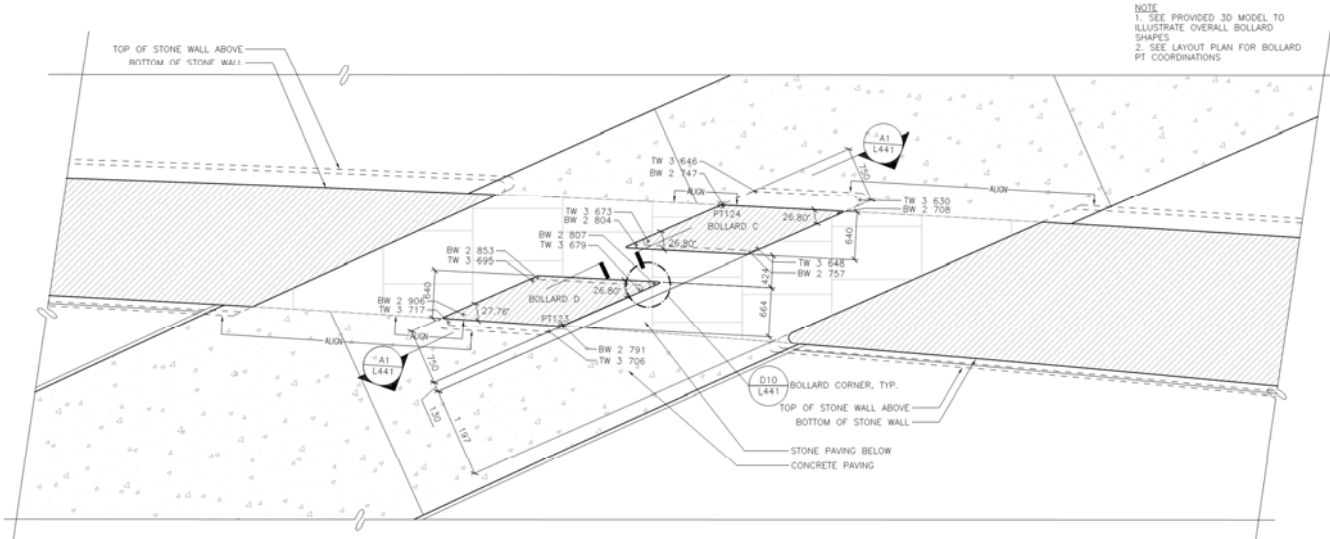
- Concrete follows security minimum distances required
- Wall plan width changes along entire length of wall because of arc
- Two concrete wall heights were required due to sloping grade

Bollards



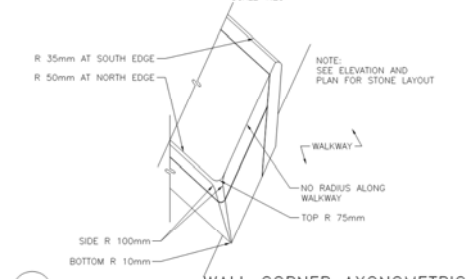
BOLLARD AT STONE PATH GROUND LEVEL PLAN
SCALE 1:25

H1
L441

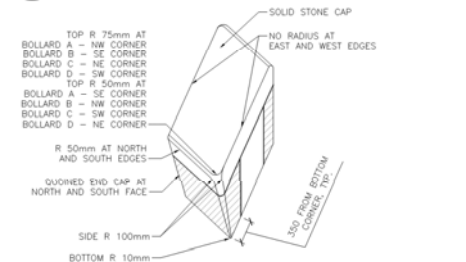


BOLLARD AT CONCRETE PATH GROUND LEVEL PLAN
SCALE 1:25

D1
L441



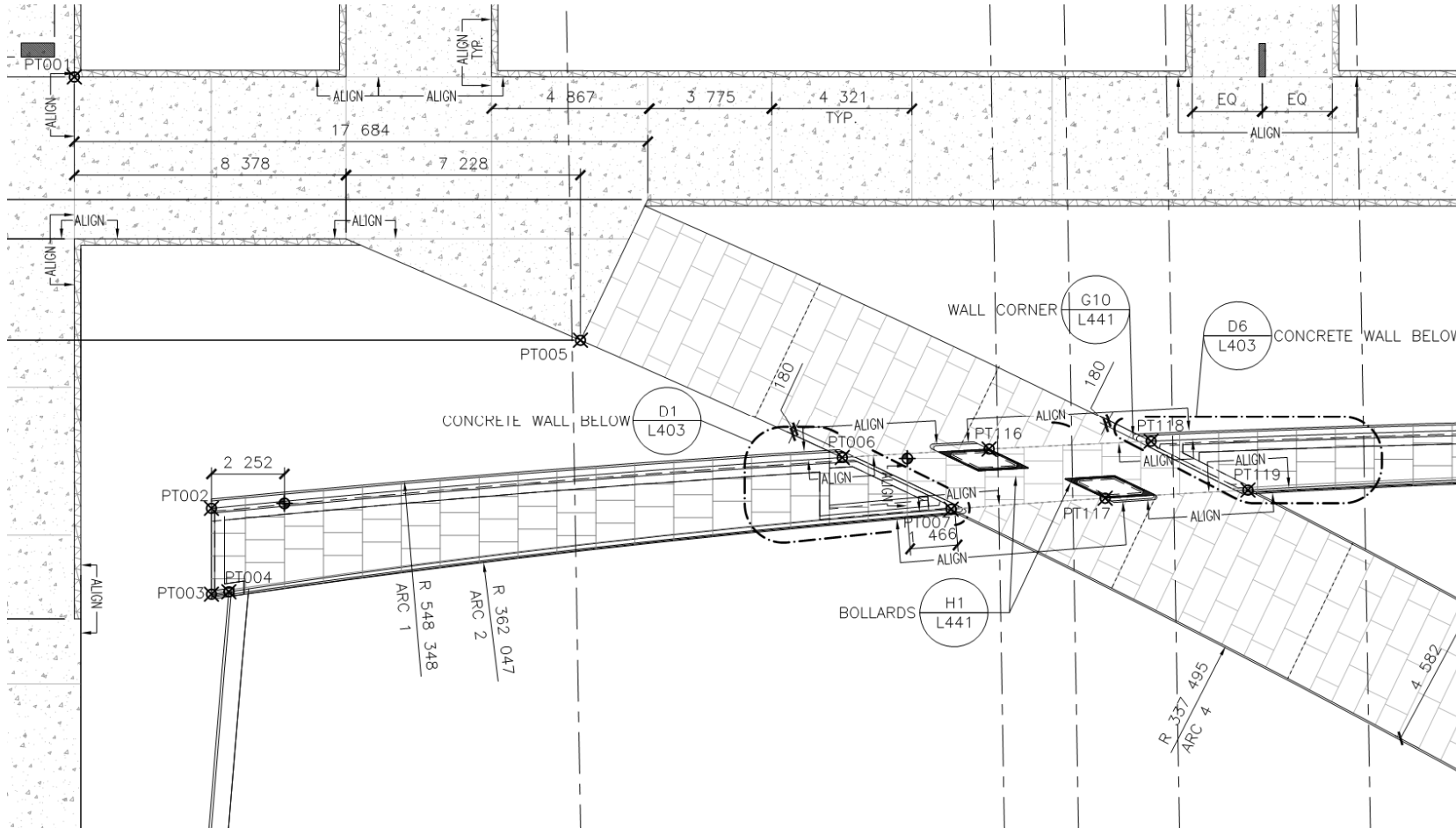
WALL CORNER AXONOMETRIC
SCALE 1:25



BOLLARD CORNER AXONOMETRIC
SCALE 1:25

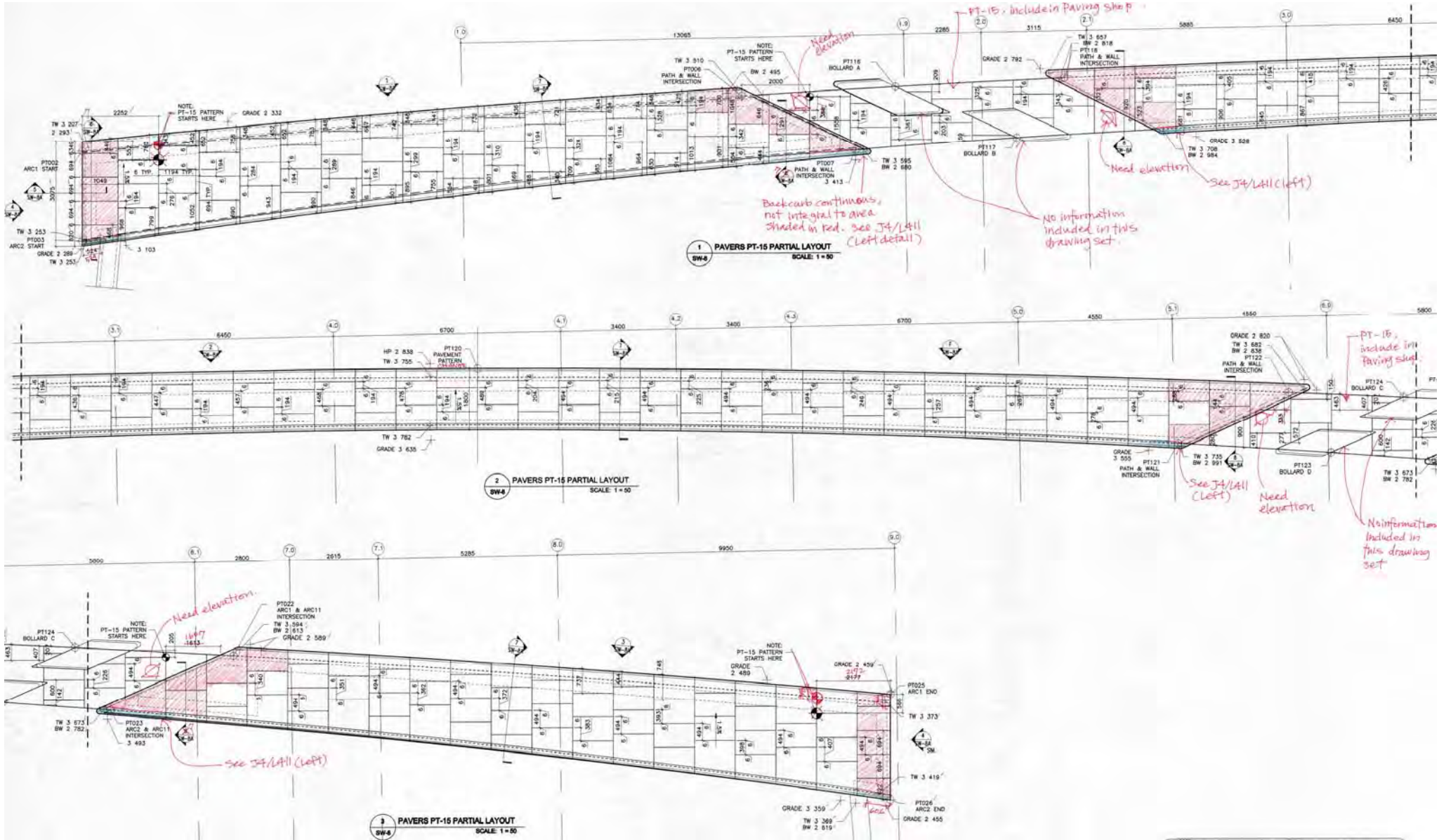
D10
L441

Layout by Coordinate Points

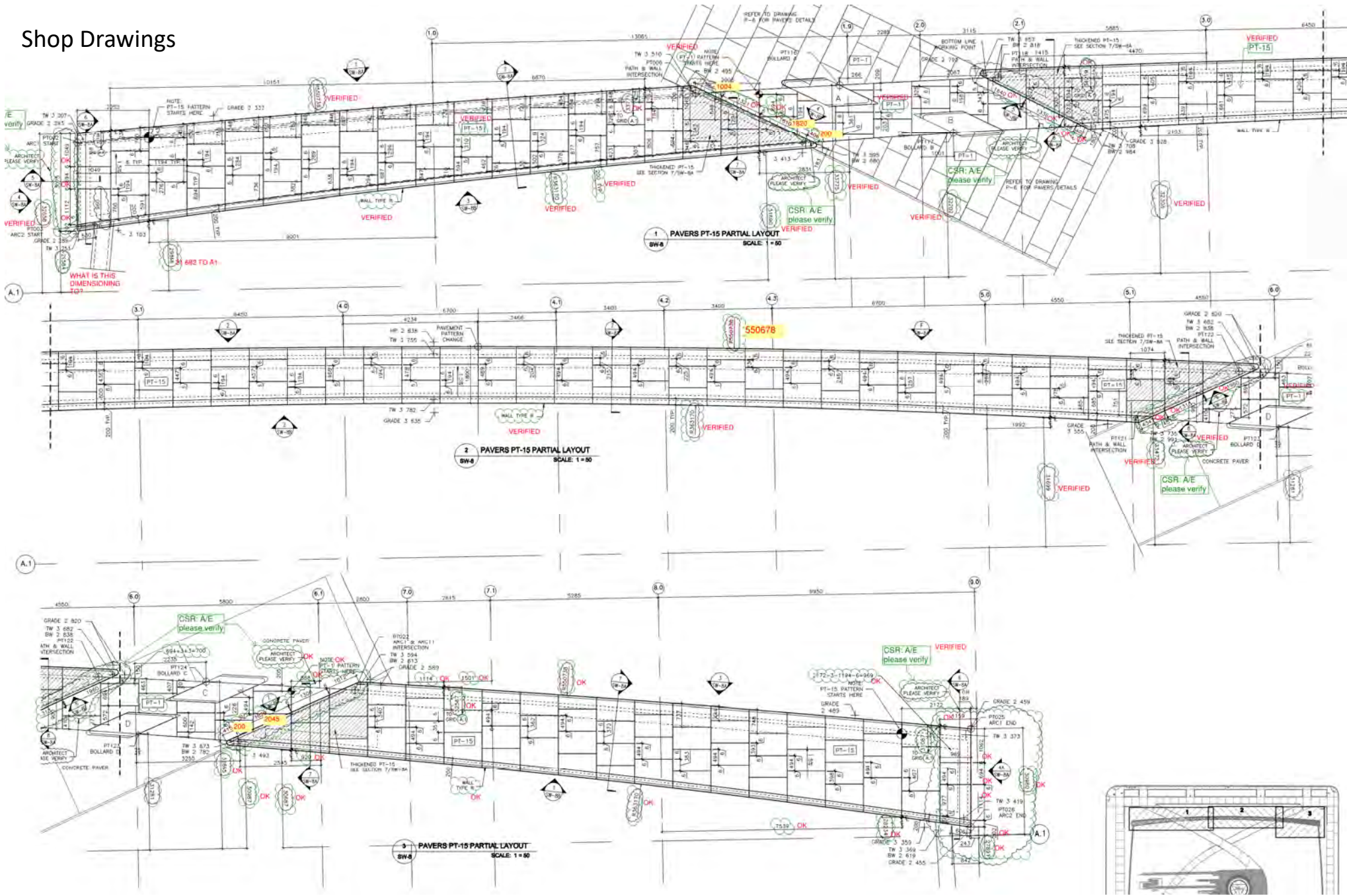


COORDINATE TABLE			
PT	NOTES	NORTHING	EASTING
PT001		136009 746	397099 211
PT002	ARC1 START	135996 436	397103 438
PT003	ARC2 START	135993 797	397103 438
PT004	ARC3 START	135993 872	397103 976
PT005	ARC4 START	136001 636	397114 817
PT006	PATH & WALL INTERSECTION	135997 999	397122 890
PT007	PATH & WALL INTERSECTION	135996 410	397126 247
PT008	ARC6 END	135968 746	397130 032
PT009	ARC7 START	135967 543	397128 909
PT010		135961 150	397123 700
PT011		135959 925	397122 844
PT012		135958 045	397152 075
PT013		135969 143	397151 879
PT014	ARC4 END, ARC6 START	135983 816	397150 014
PT015	ARC5 START	135981 630	397153 732
PT016		135986 314	397154 830
PT017	ARC11 END, ARC8 START	135984 126	397158 587
PT018		135976 531	397169 309
PT019	ARC5 END	135971 714	397166 991
PT020		136009 746	397211 357
PT021	ARC11 START	136002 389	397198 212
PT022	ARC1 & ARC11 INTERSECTION	135998 068	397188 088
PT023	ARC2 & ARC11 INTERSECTION	135996 465	397184 464
PT024	ARC13 START	135993 865	397206 790
PT025	ARC1 END	135996 860	397207 467
PT026	ARC2 END	135993 768	397207 467
PT027	ARC12 START	135981 642	397207 253
PT028	ARC38 START, ARC12 END	135977 143	397202 233
PT029	ARC8 END, ARC9 START	135971 638	397174 566
PT030	ARC9 END, ARC10 START	135968 666	397176 473
PT031	ARC10 END	135962 102	397178 223
PT032	HAND HOLE	135955 459	397179 676
PT033		135948 304	397178 464
PT034	OCULUS CENTER	135959 692	397162 648
PT035	GROUND HYDRANT	135946 051	397191 611
PT036	ARC13 END	135948 550	397209 391
PT037	FDC PIPE	135949 858	397210 969
PT038	FDC PIPE	135949 012	397210 978
PT039		135945 828	397211 463
PT040		135880 268	397209 191
PT041	ARC15 START	135865 741	397211 462
PT042		135857 154	397209 222
PT043		135855 478	397209 110
PT044	ARC17 START	135856 079	397211 463
PT045	ARC17 END	135854 953	397210 669
PT046	ARC18 START	135855 846	397215 120
PT047	ARC18 END	135851 473	397211 175
PT048	ARC19 START	135849 831	397197 178

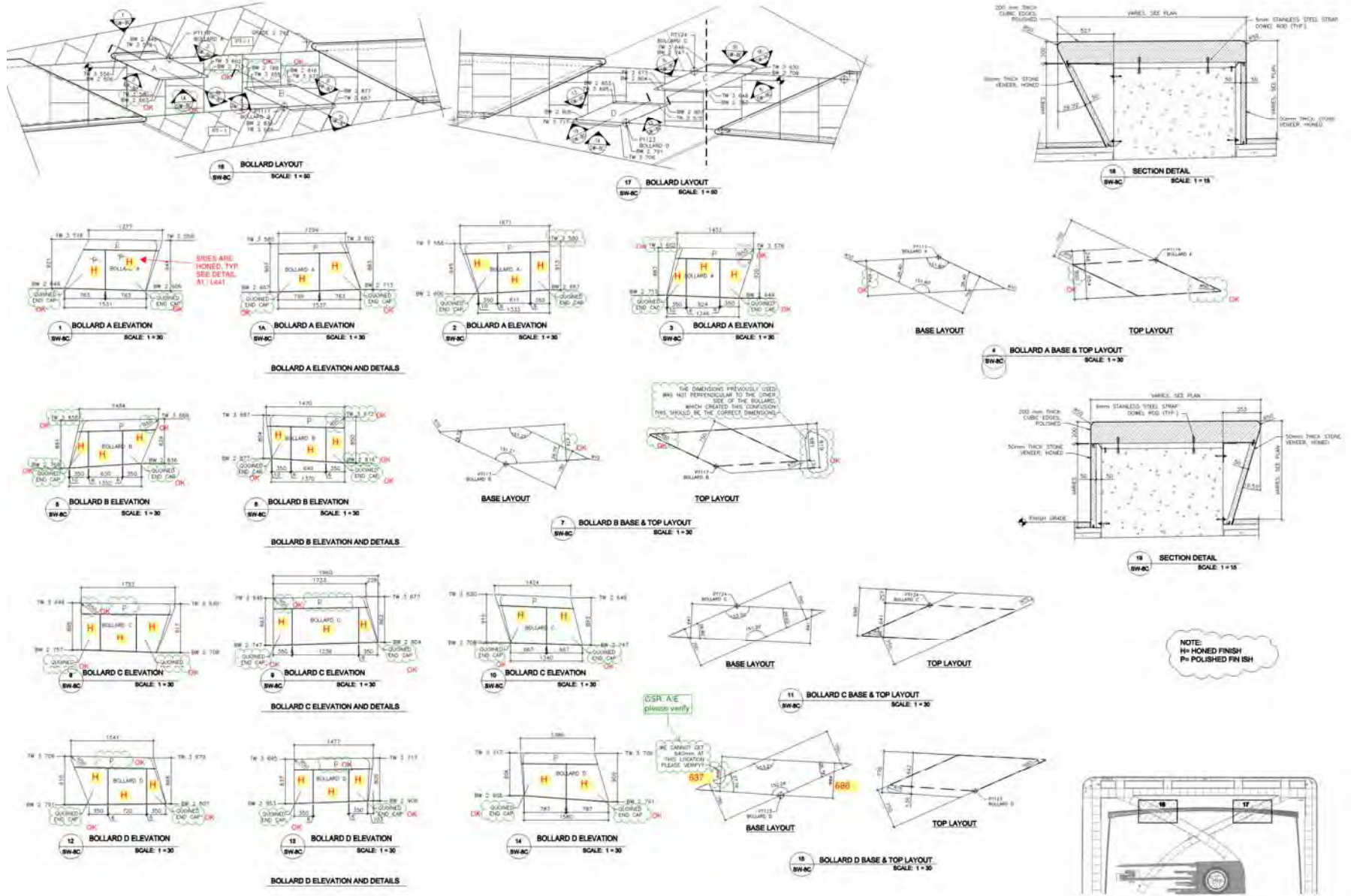
Shop Drawings



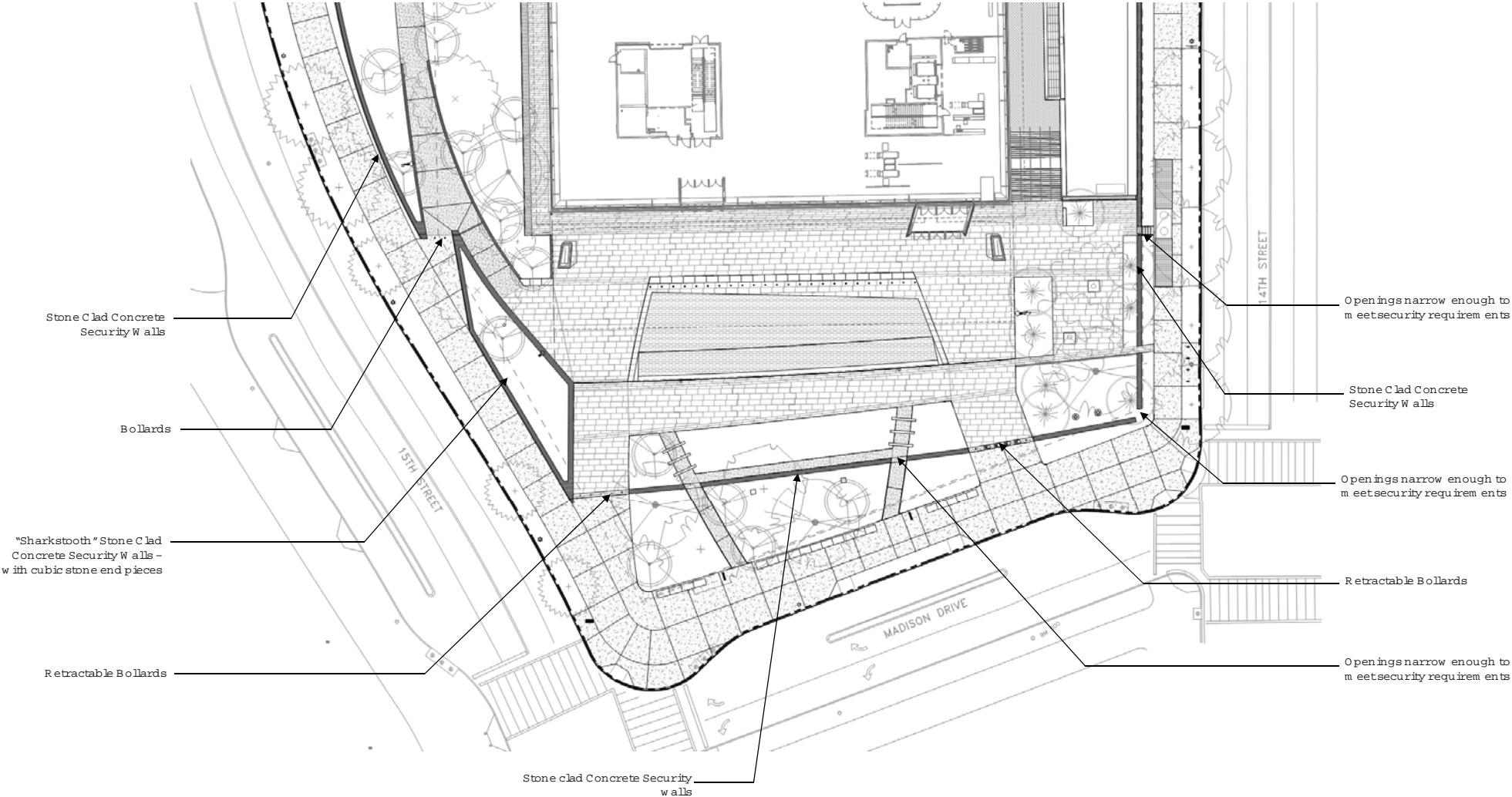
Shop Drawings



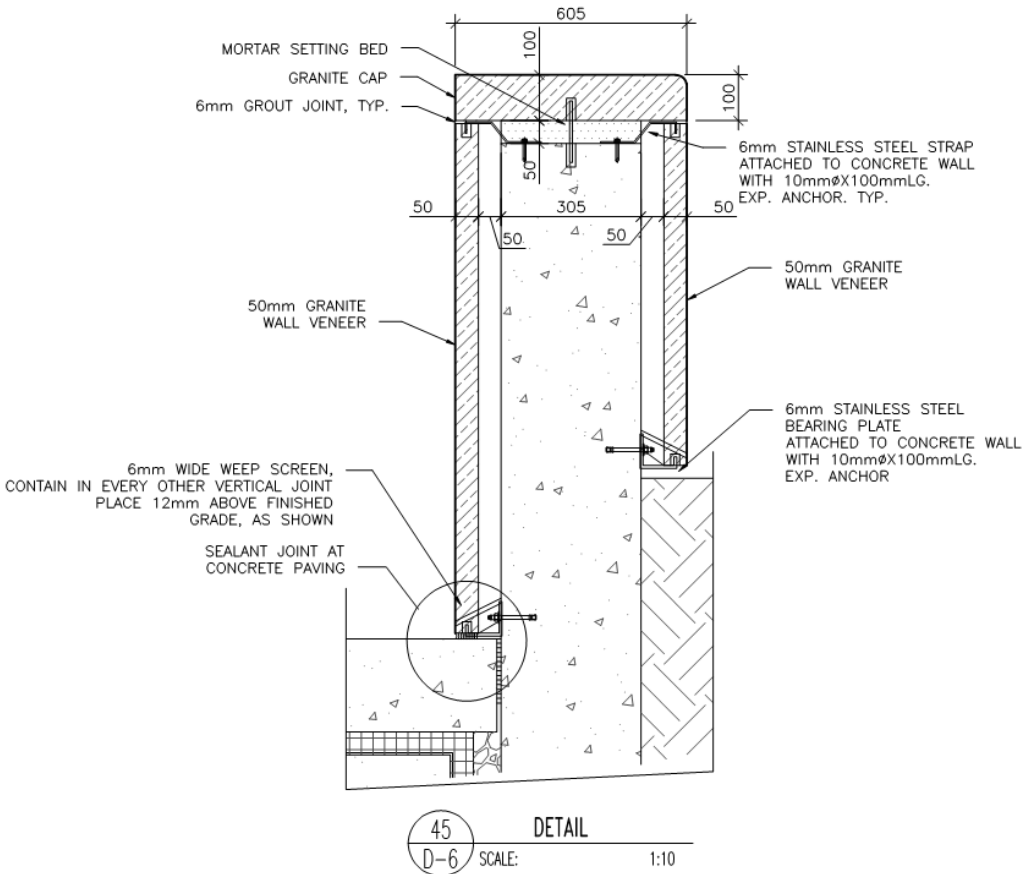
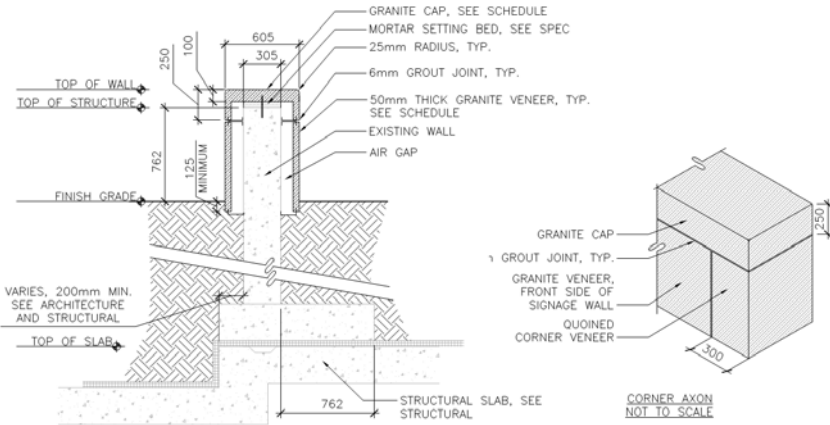
Shop Drawings



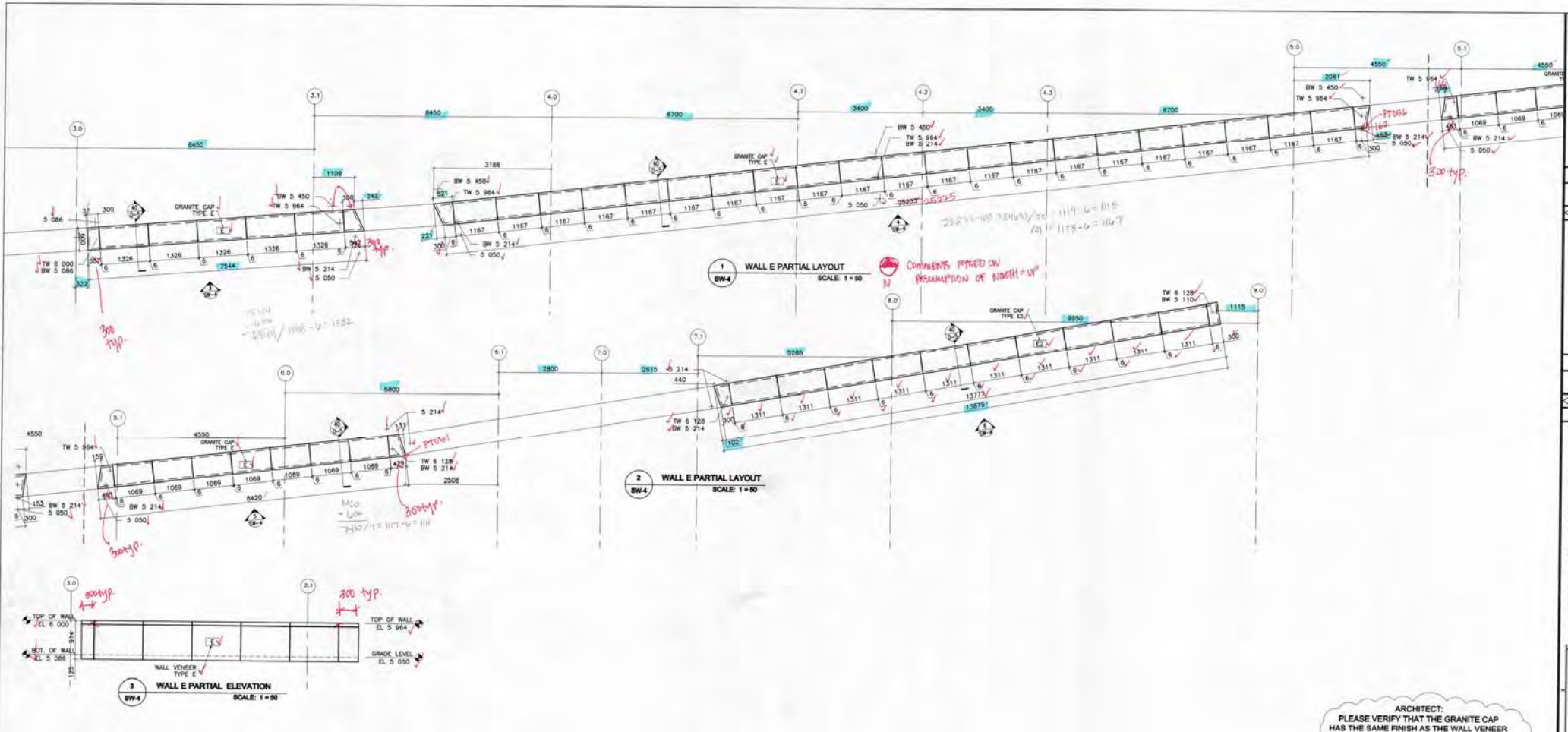
South Security Perimeter



South and East Freestanding Security Walls – Details and Shop Drawings

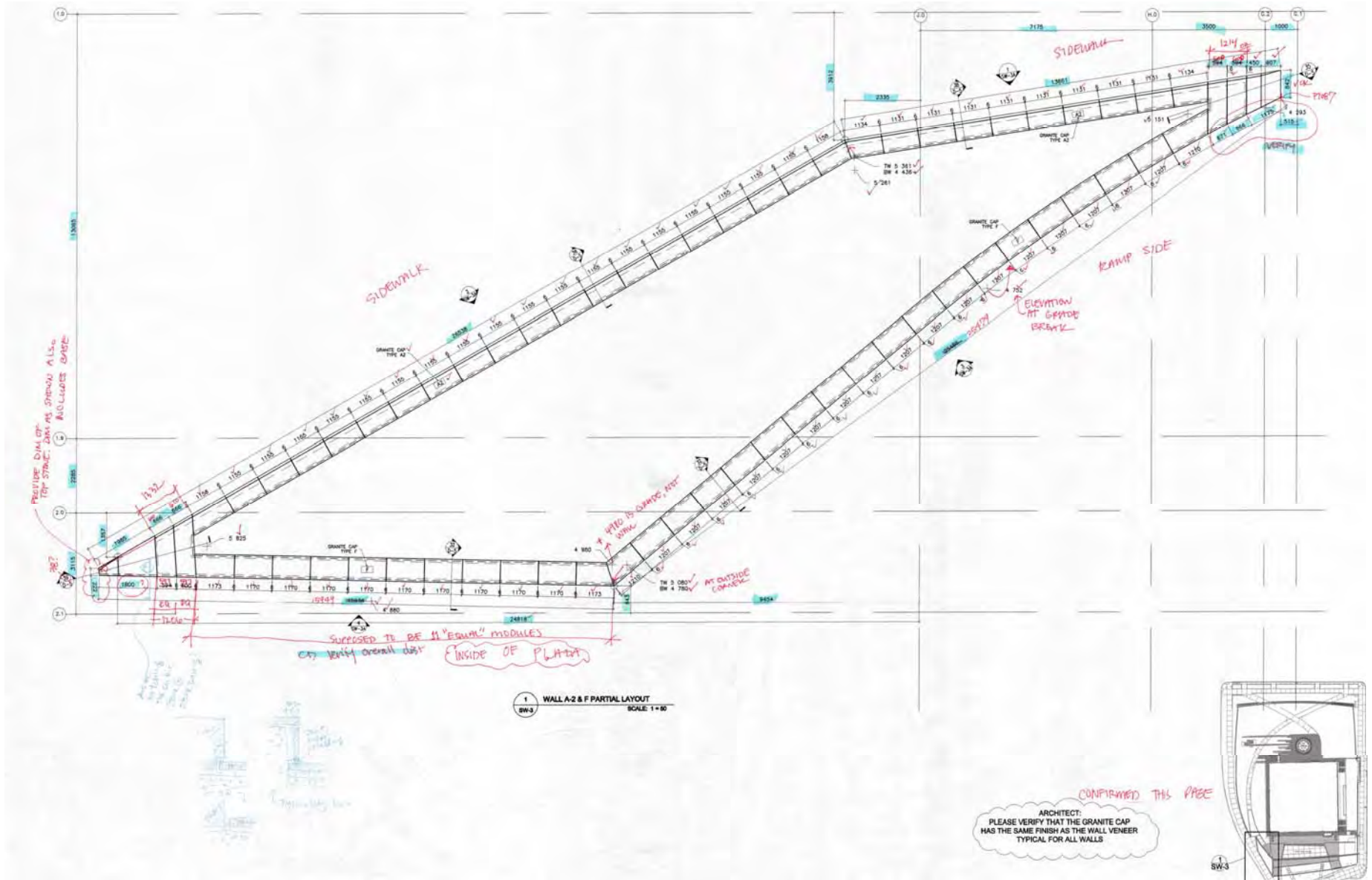


South Security Walls – Shop Drawings – Review 01 of 03

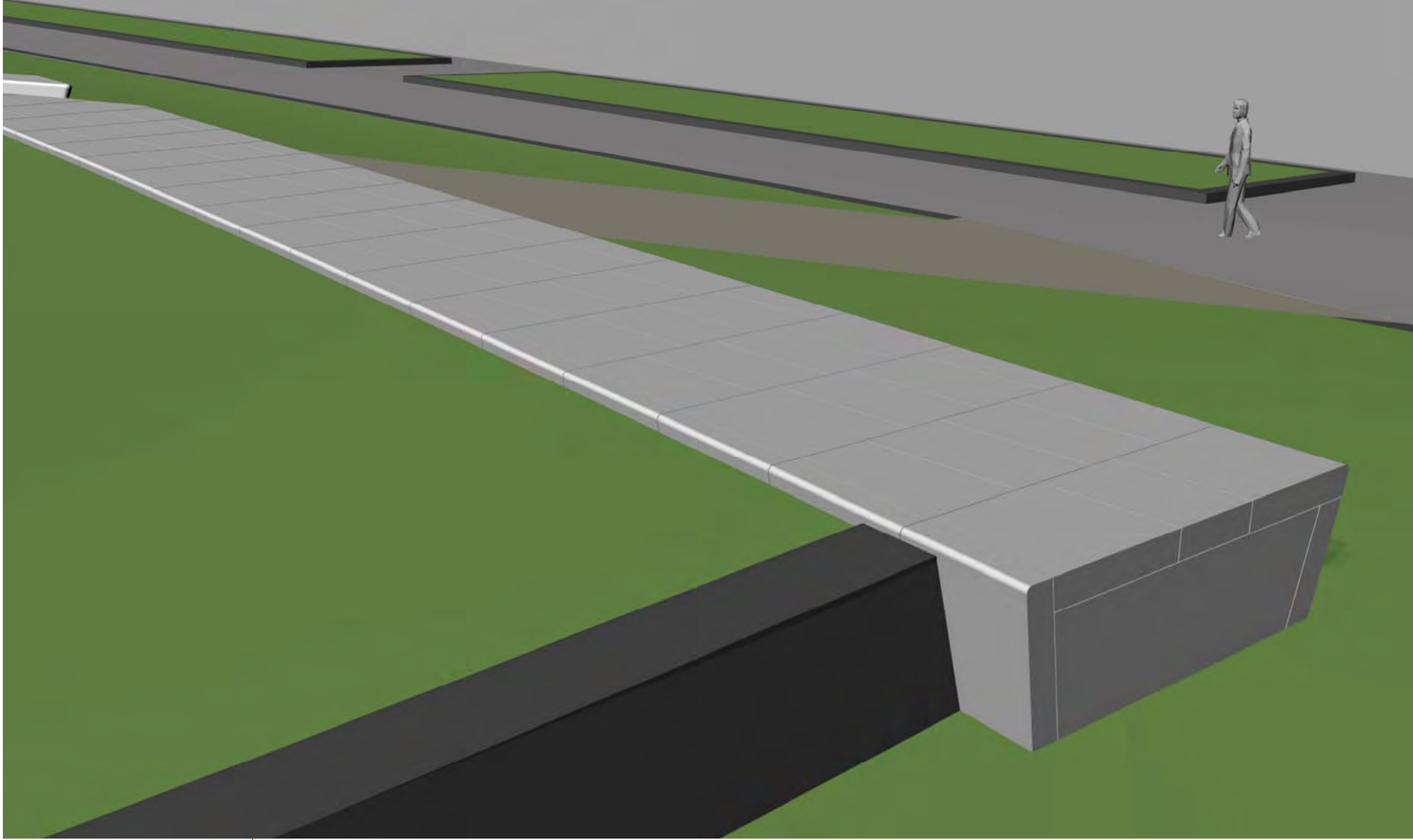


ARCHITECT:
PLEASE VERIFY THAT THE GRANITE CAP
HAS THE SAME FINISH AS THE WALL VENEER

Sharkstooth Planter Shop Drawings – Review 01



3D Model by Coldspring



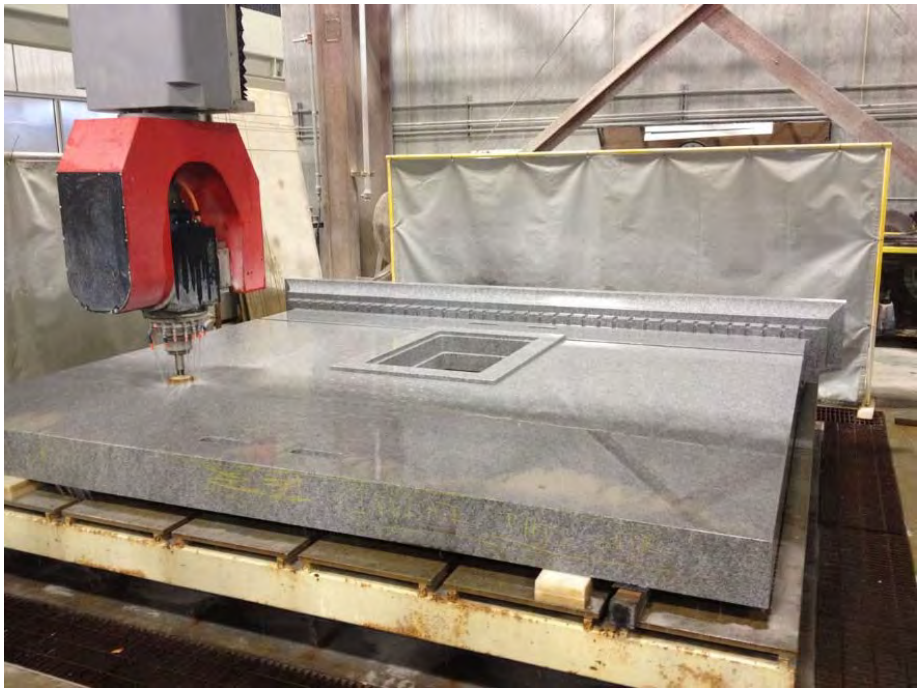




Coldspring



Coldspring



Coldspring



Coldspring

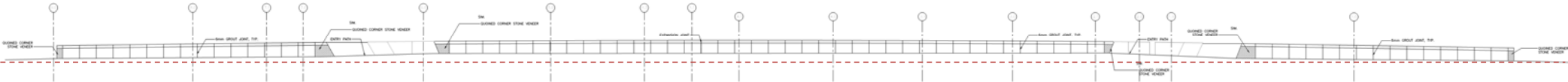
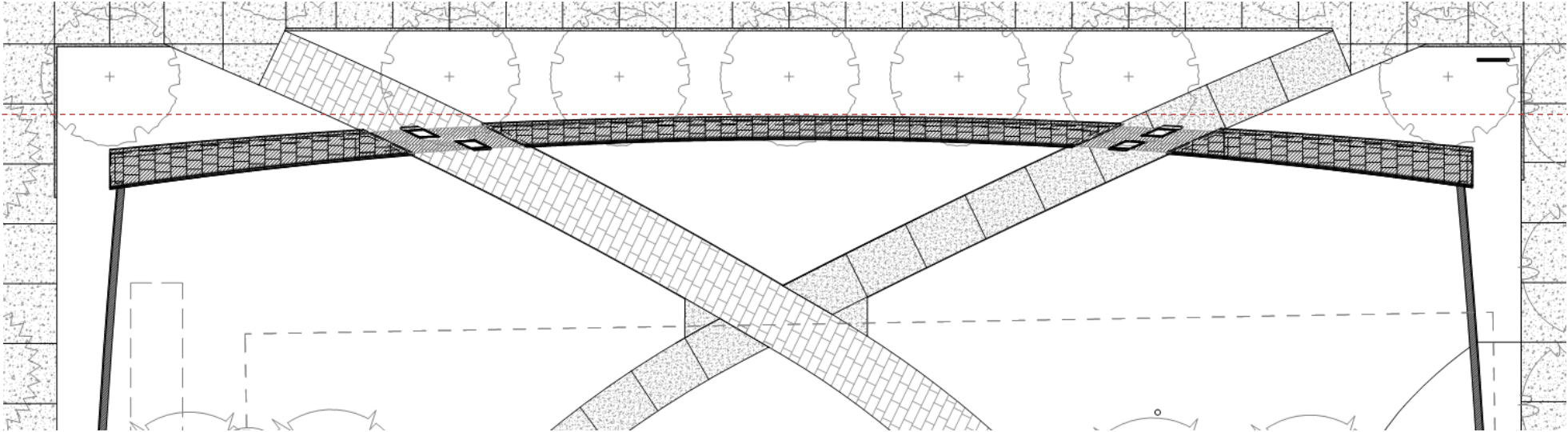


Coldspring

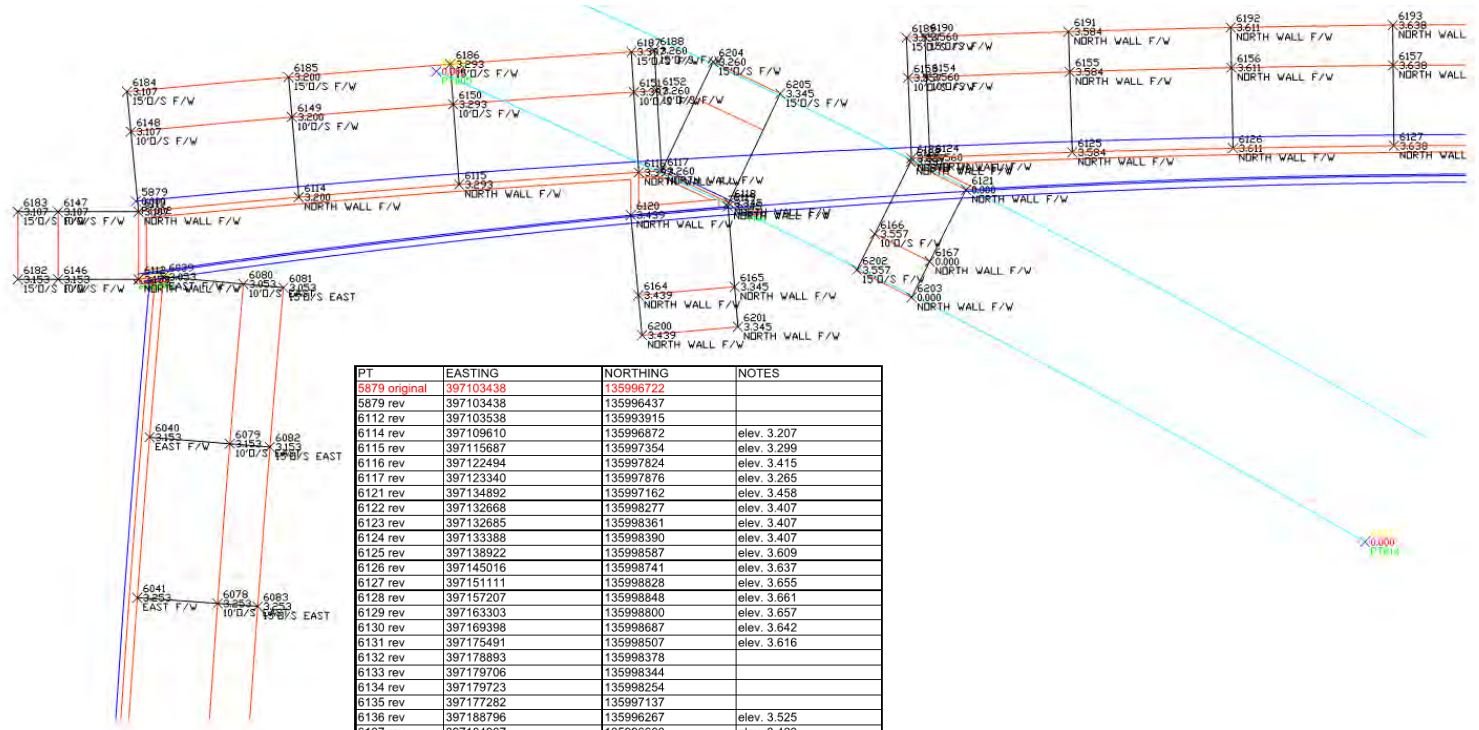
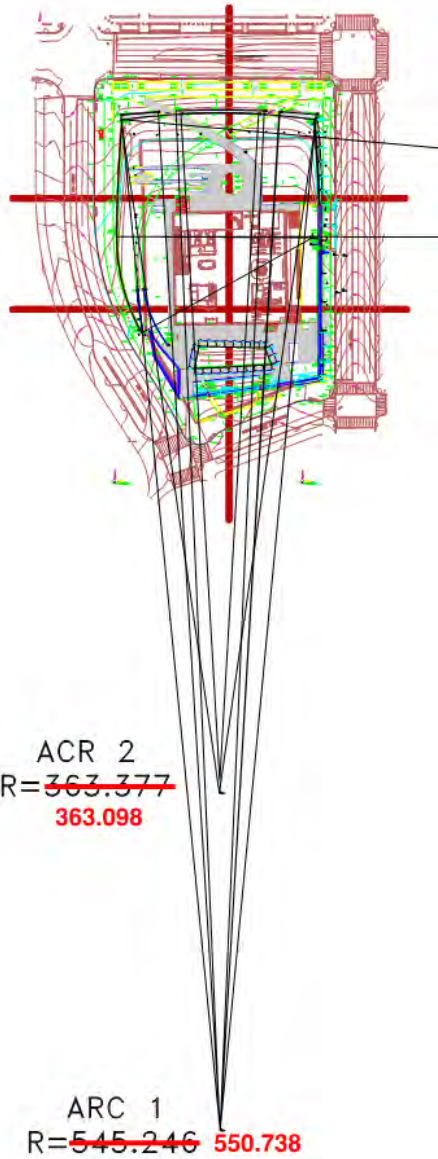




Horizontal and Vertical Locations



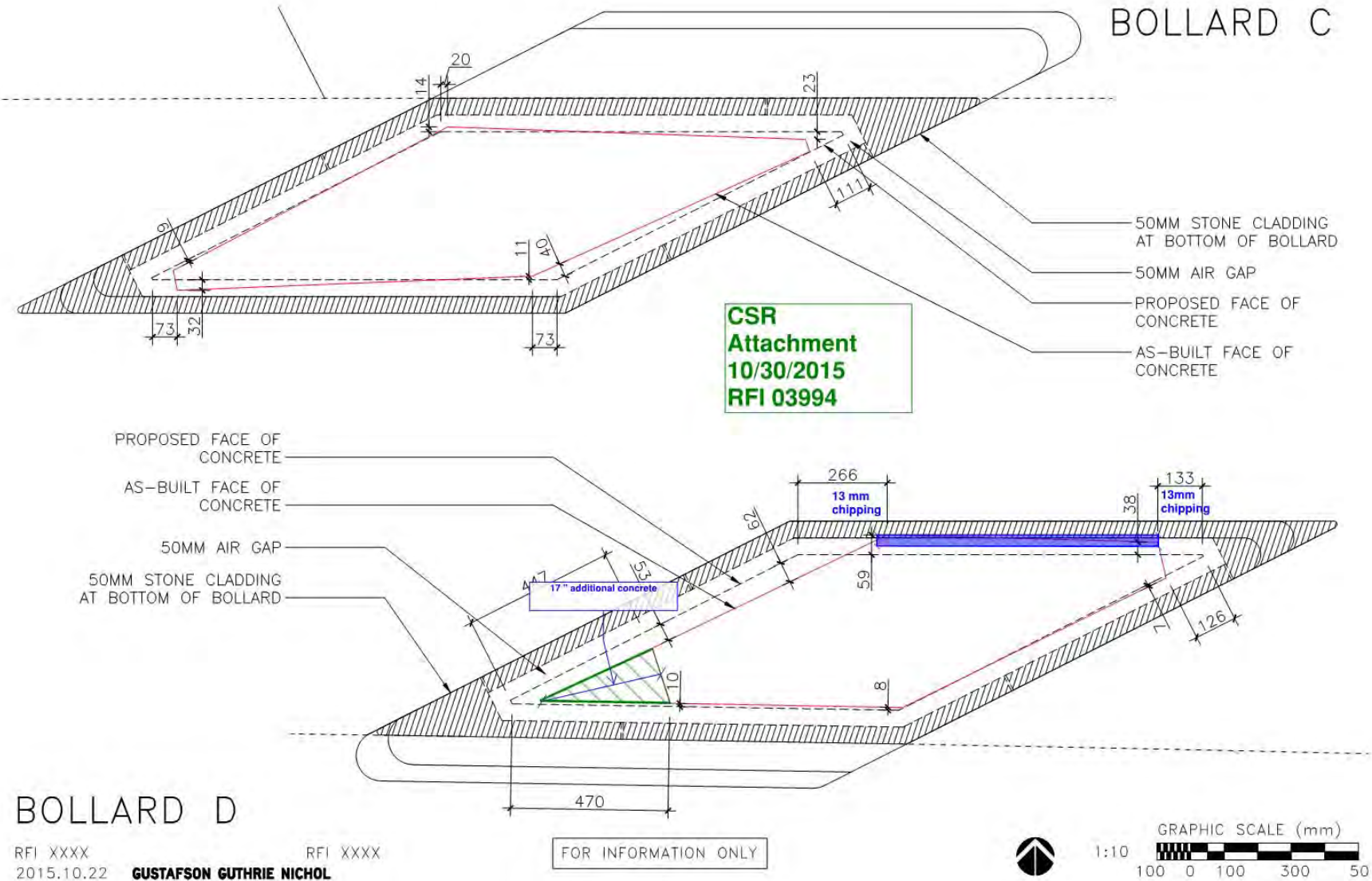
Continuous coordination and confirmation



PT	EASTING	NORTHING	NOTES
5879 original	397103438	135996722	
5879 rev	397103438	135996437	
6112 rev	397103538	135993915	
6114 rev	397109610	135996872	elev. 3.207
6115 rev	397115687	135997354	elev. 3.289
6116 rev	397122494	135997824	elev. 3.415
6117 rev	397123340	135997876	elev. 3.265
6121 rev	397134892	135997162	elev. 3.458
6122 rev	397132668	135998277	elev. 3.407
6123 rev	397132685	135998361	elev. 3.407
6124 rev	397133388	135998390	elev. 3.407
6125 rev	397138922	135998587	elev. 3.609
6126 rev	397145016	135998741	elev. 3.637
6127 rev	397151111	135998828	elev. 3.655
6128 rev	397157207	135998848	elev. 3.661
6129 rev	397163303	135998800	elev. 3.657
6130 rev	397169398	135998687	elev. 3.642
6131 rev	397175491	135998507	elev. 3.616
6132 rev	397178893	135998378	
6133 rev	397179706	135998344	
6134 rev	397179723	135998254	
6135 rev	397177282	135997137	
6136 rev	397188796	135996267	elev. 3.525
6137 rev	397184907	135996600	elev. 3.423
6138 rev	397184884	135996735	elev. 3.423
6139 rev	397187624	135997947	elev. 3.348
6143 rev	397206730	135996513	elev. 3.285
6144 original	397207367	135996460	
6144 rev	397207367	135996453	elev. 3.278
6145 rev	397207367	135994034	
GGN1	397103538	135996296	elev. 3.112
GGN2	397104137	135994002	elev. 3.163
GGN3	397206690	135994133	elev. 3.325



Field Adjustments



RFI XXXX 2015.10.22 **GUSTAFSON GUTHRIE NICHOL** RFI XXXX



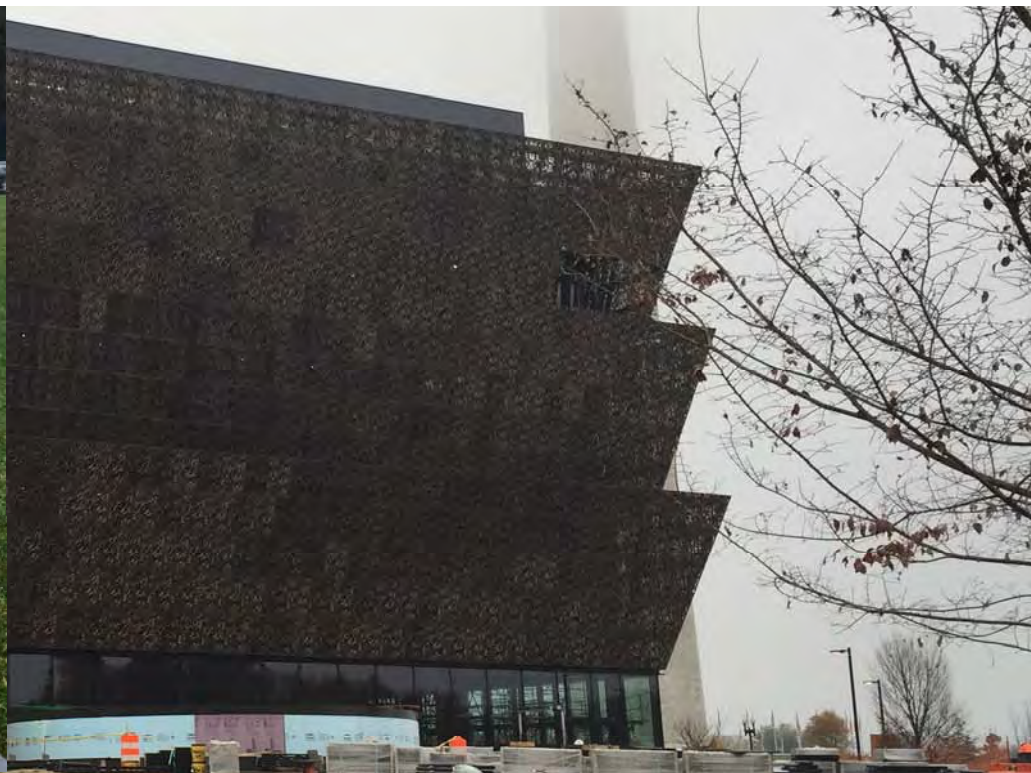




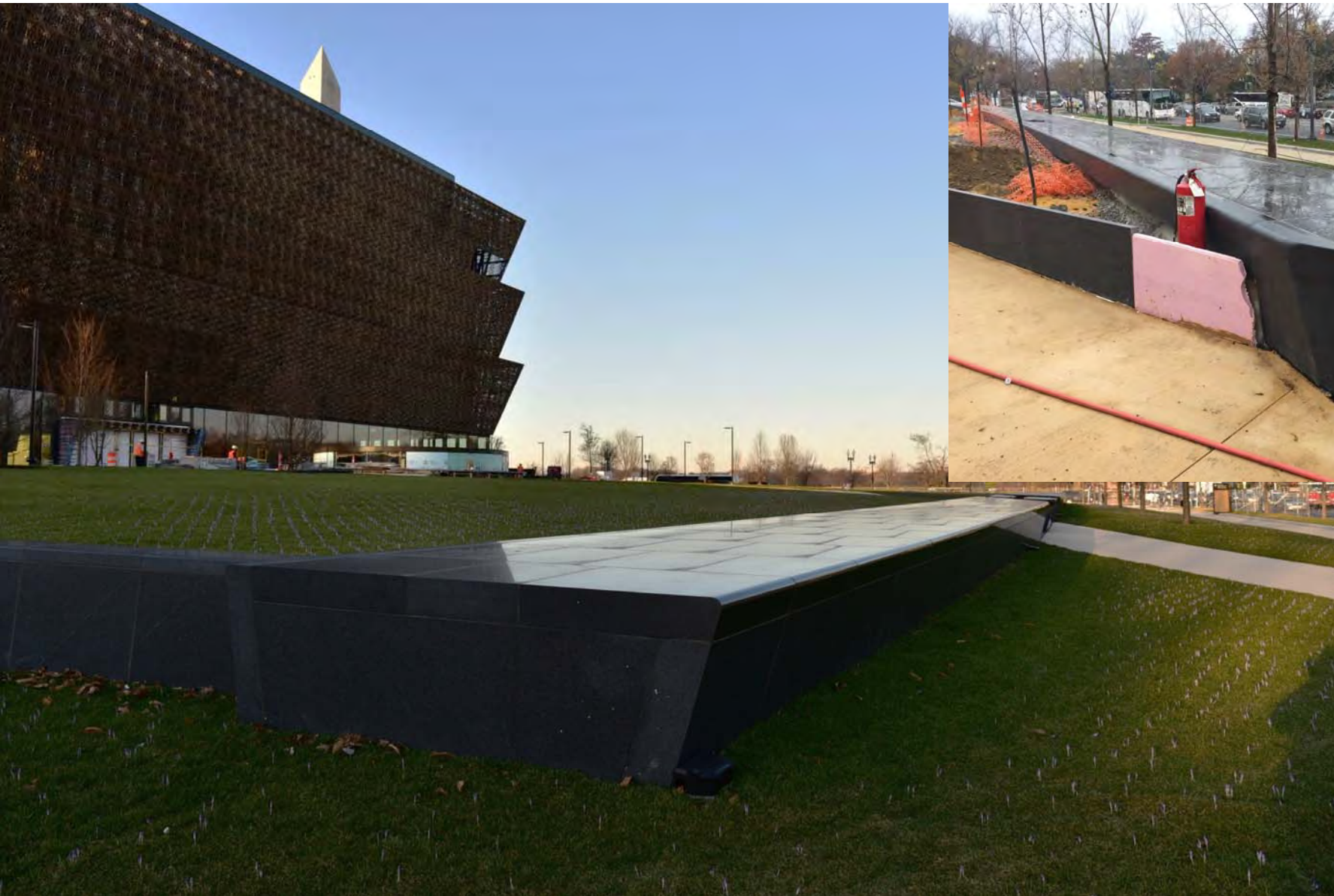




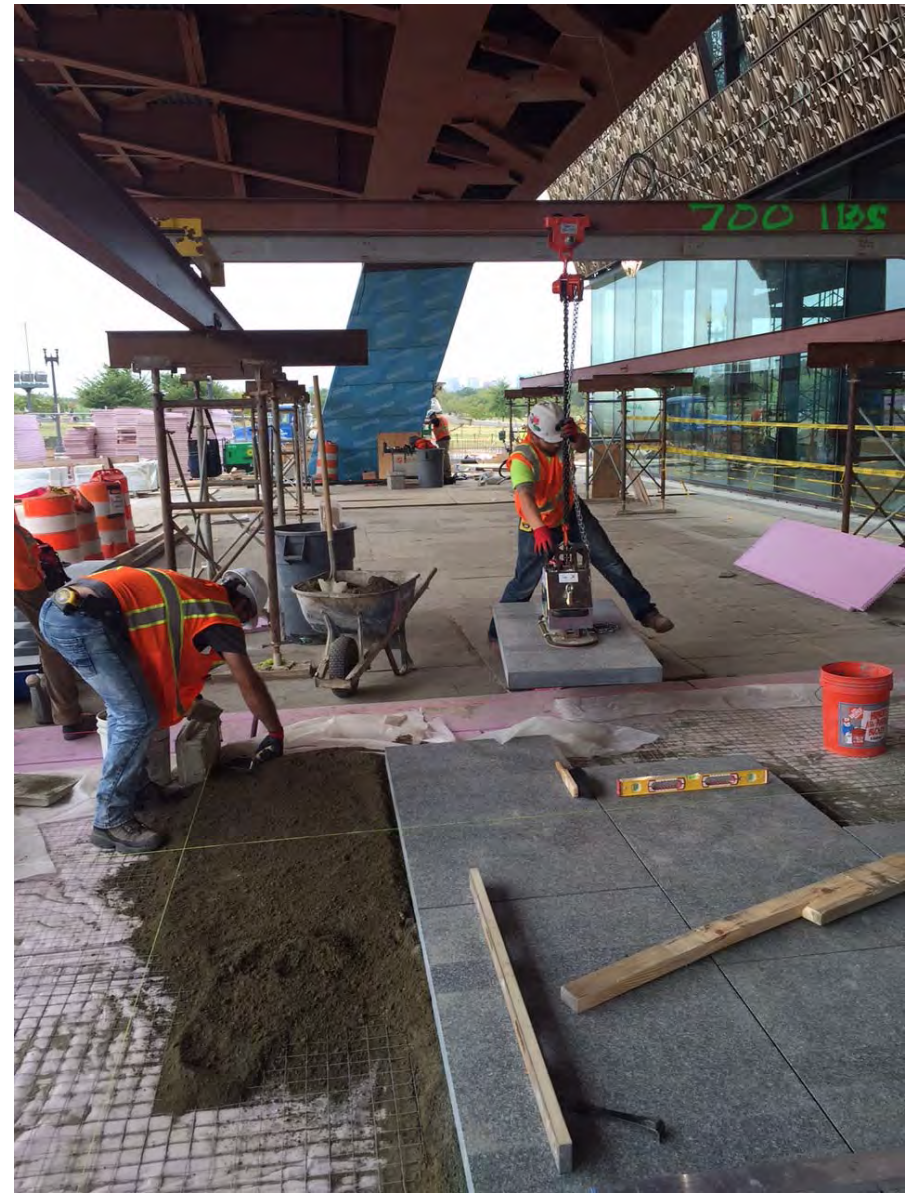














NT
PRES E









From Design to Placemaking

Concept Sketch – View from Promenade Entry at Constitution and 14th Street



View from Promenade Entry at Constitution and 14th Street



View from Promenade Entry at Constitution and 14th Street



View from Promenade Entry at Constitution and 14th Street





When you want to visit the Smithsonian Institution's NMAAHC:

<https://nmaahc.si.edu/visit/passes>

Our next release for August 2017 passes is on May 3rd at 9 a.m. ET

To ensure the safety, security, and comfort of our visitors, the National Museum of African American History and Culture requires a timed entry pass to visit the museum.

*You will receive a confirmation email when you reserve your passes. Please be sure to **check your junk email folder** just in case the confirmation email is delivered there.*

To obtain a pass

To improve your chances of receiving passes, be prepared with multiple dates that will work for your schedule and aim for a weekday visit.

Click on the date you wish to visit the museum.

Click the drop down menu to view and select available times.

Click on "Confirm Time Slot" to advance to the next page.

You will then be prompted to provide the following information to complete your reservation:

- o Full Name*
- o Number of passes desired*
- o Email Address*

Once you complete the online reservation, the passes will be emailed to the email address you provided. Passes will be sent from Etix.

The end...