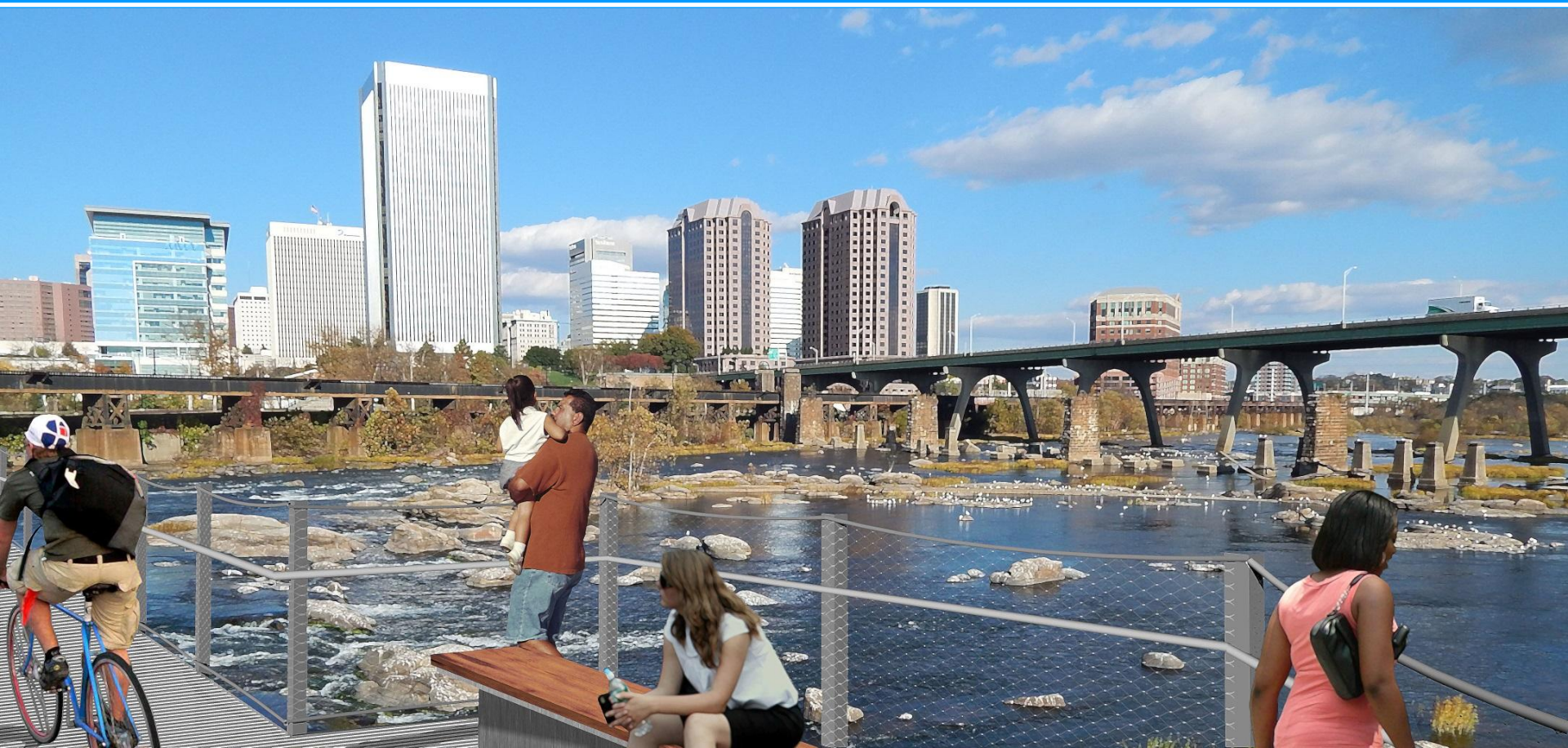


*RICHMOND RIVERFRONT PLAN IMPLEMENTATION PUBLIC FORUM*

# **BROWN'S ISLAND DAM WALK**

18 FEBRUARY 2014 // 7 PM // VA WAR MEMORIAL



***CITY OF RICHMOND, VA***

**HARGREAVES ASSOCIATES**

VHB // MOFFATT & NICHOL // HC YU & ASSOCIATES // LAM PARTNERS

1717 DESIGN // DMY INC. // ODELL



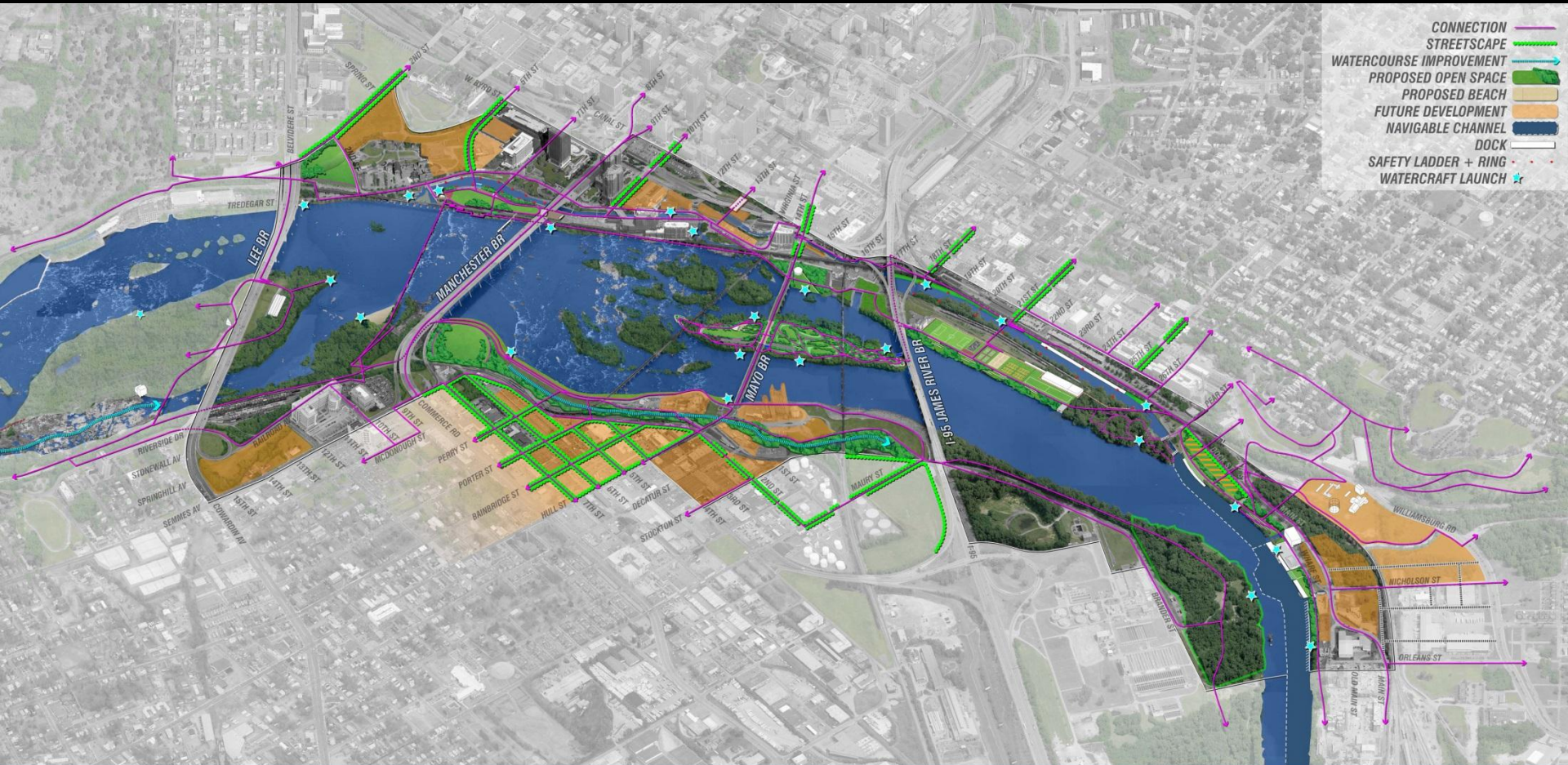
An aerial photograph of a city, likely St. Louis, Missouri, showing the Mississippi River winding through the urban landscape. The river is a prominent feature, curving through the city and surrounded by dense residential and commercial buildings. The sky is a clear, light blue, and the overall scene is captured from a high vantage point, providing a comprehensive view of the city's layout and its relationship to the river.

***IMPLEMENTATION OF THE  
RIVERFRONT PLAN  
WILL GUIDE FUTURE DIRECTION  
OF DOWNTOWN ON BOTH SIDES OF THE  
RIVER FOR YEARS TO COME***

***ONE RIVER, ONE CITY, ONE RIVERFRONT SYSTEM***

# BROWN'S ISLAND DAM WALK

18 FEBRUARY 2014

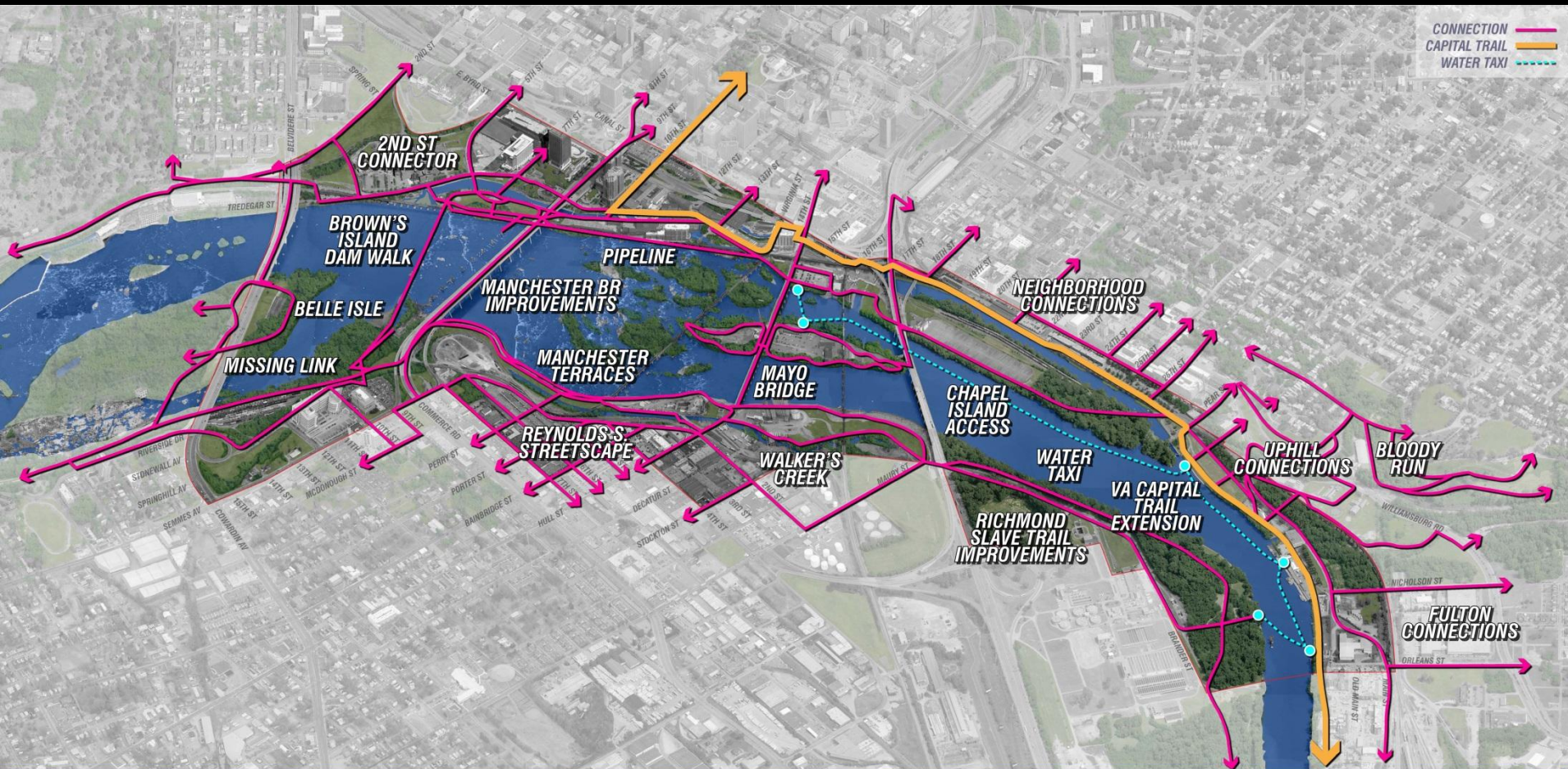


**RICHMOND RIVERFRONT PLAN** A SINGLE, UNIFIED, COHESIVE SYSTEM



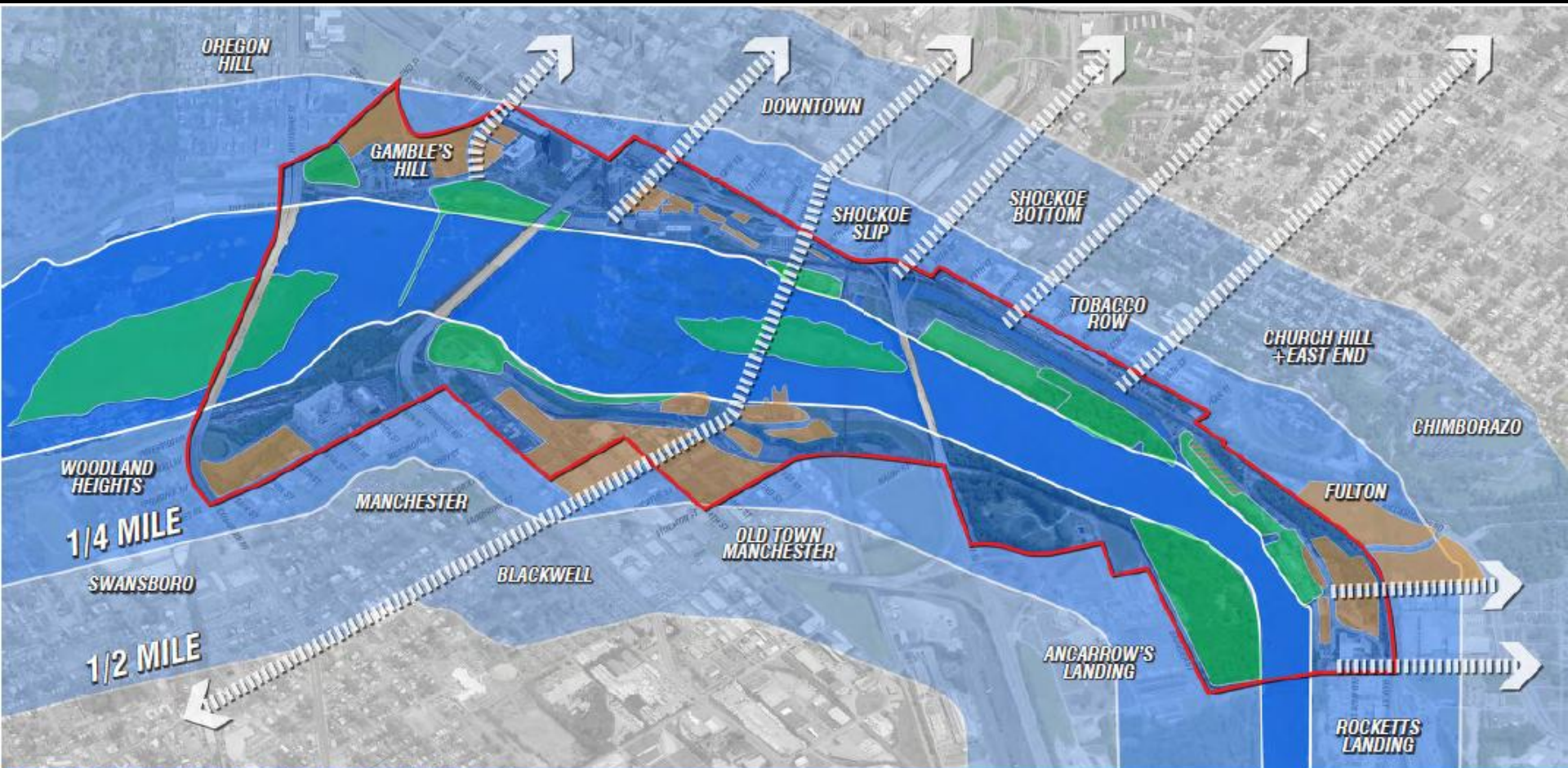
# BROWN'S ISLAND DAM WALK

18 FEBRUARY 2014



## CONNECTIONS





# REVERBERATIVE IMPACT



# BROWN'S ISLAND DAM WALK

18 FEBRUARY 2014



< Belle Isle

Climbing Wall

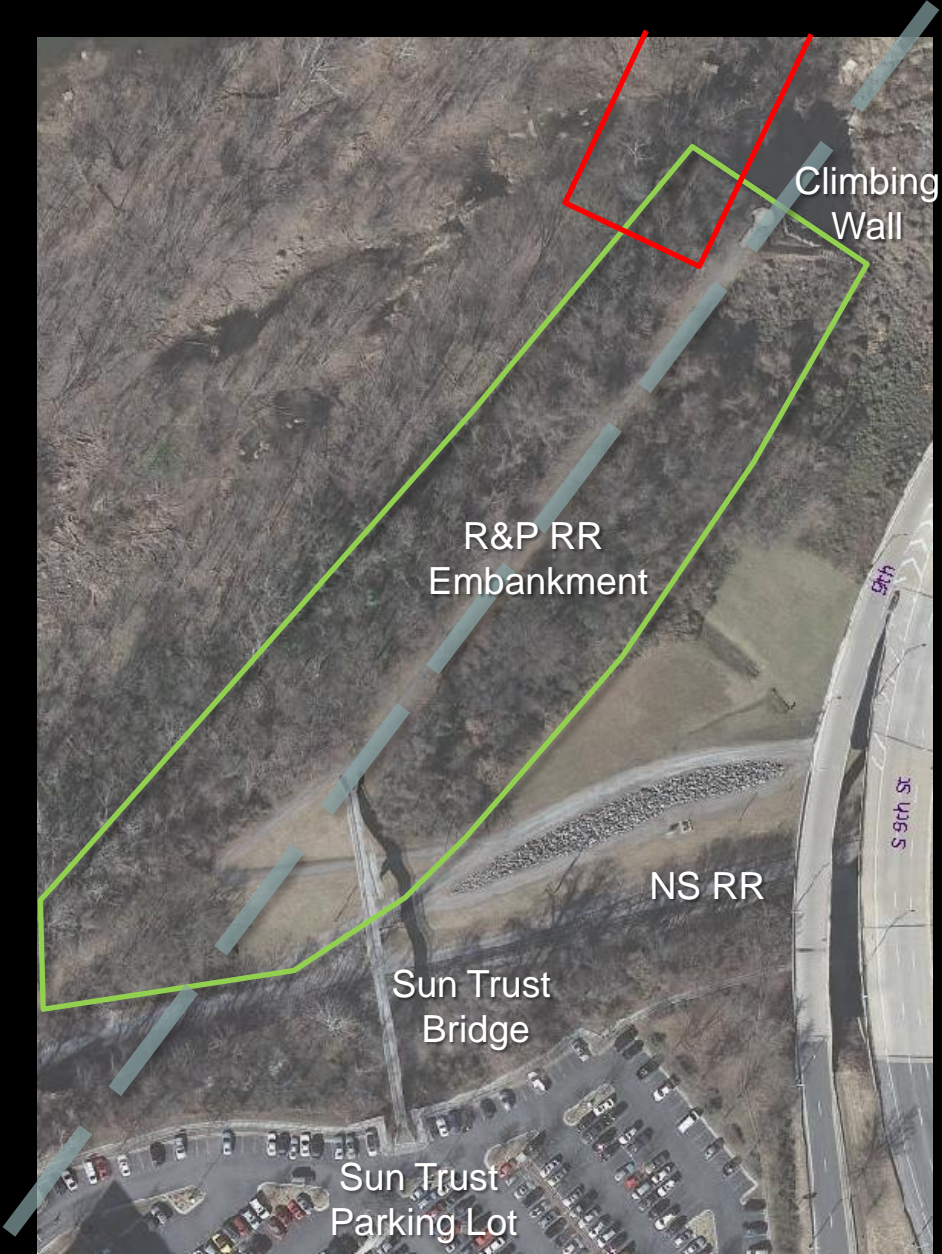
Brown's Island

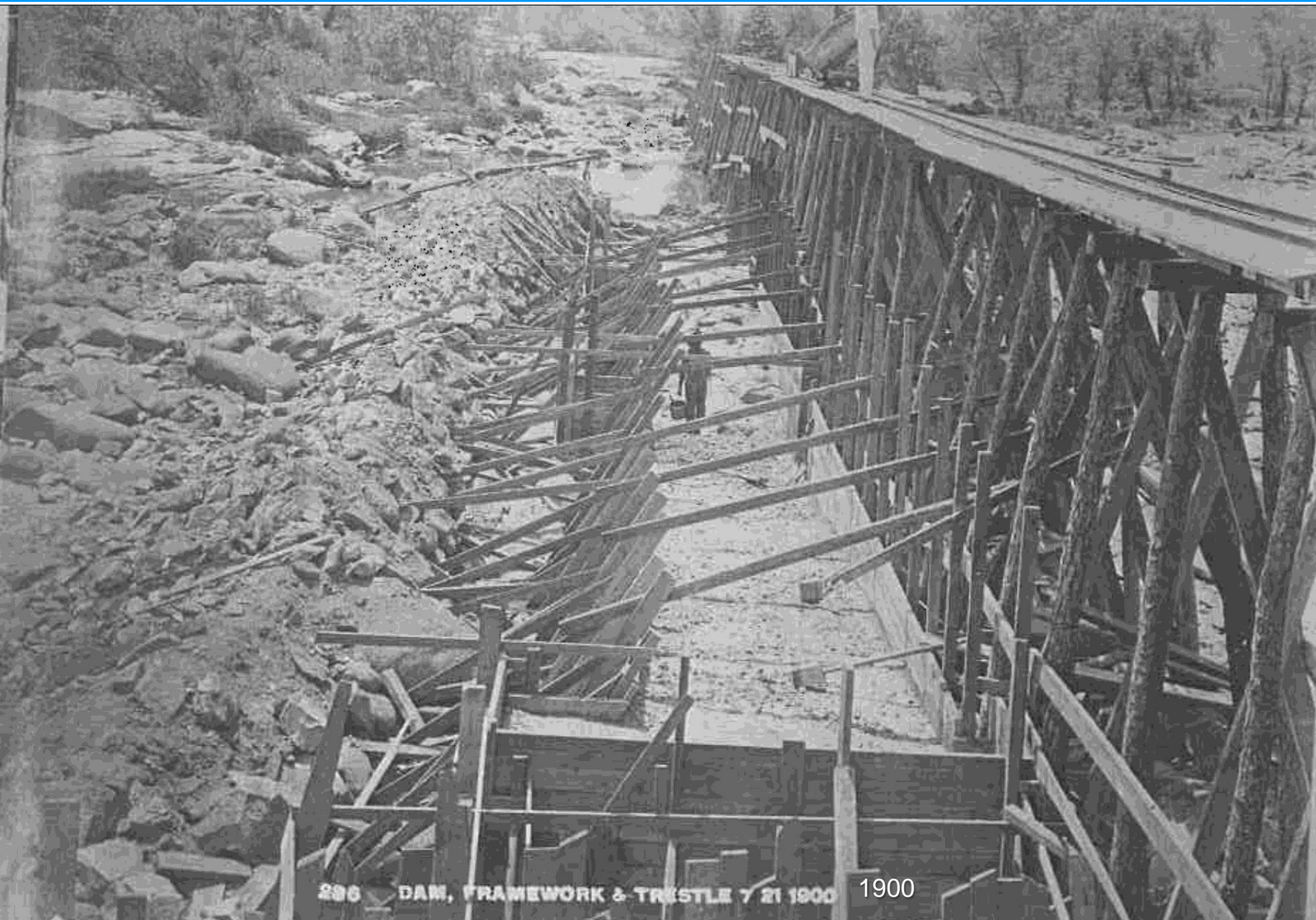
Brown's Island Park

S 9th St

S 9th St

S 9th St





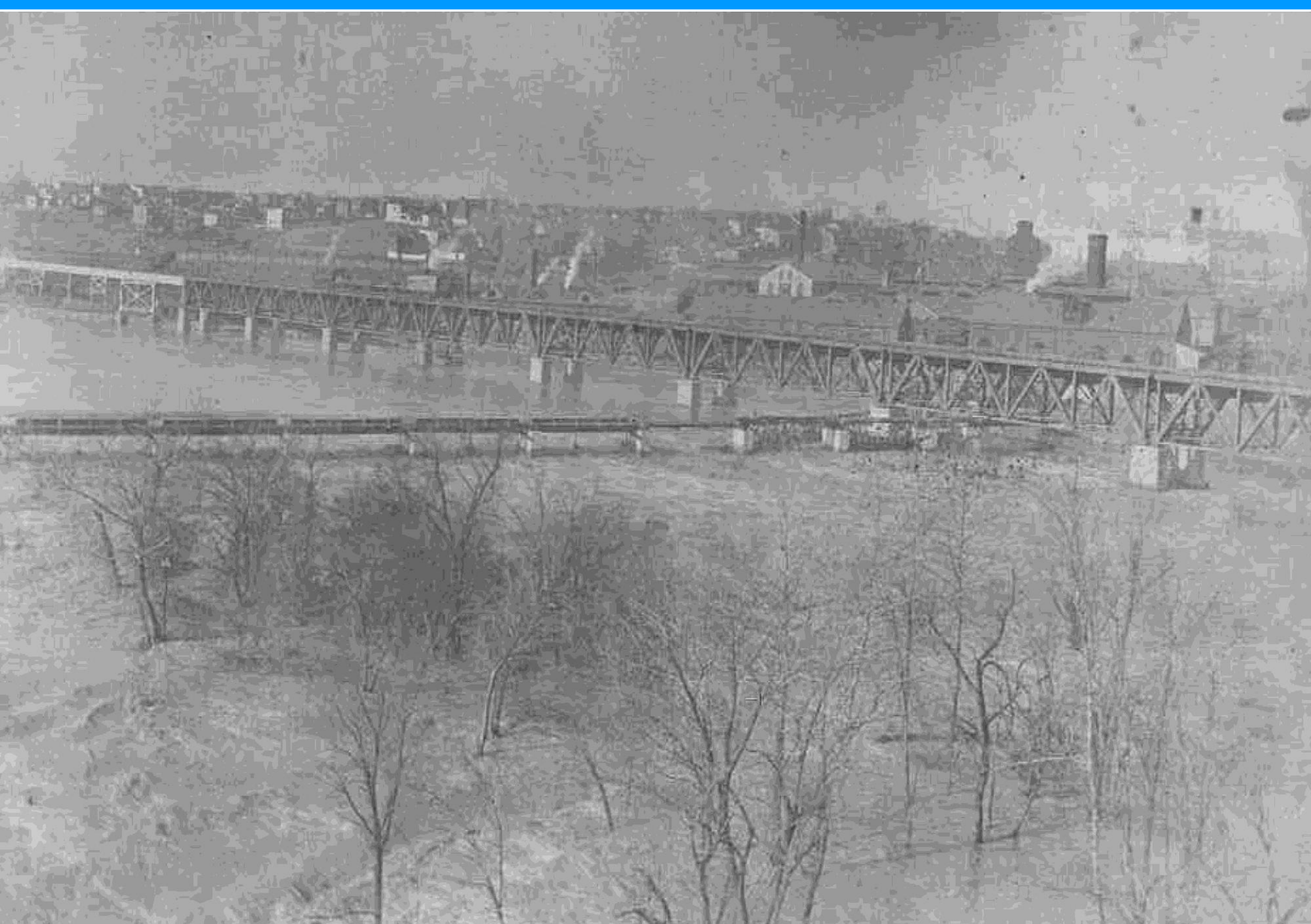
296 DAM, FRAMEWORK & TRESTLE 7 21 1900 1900



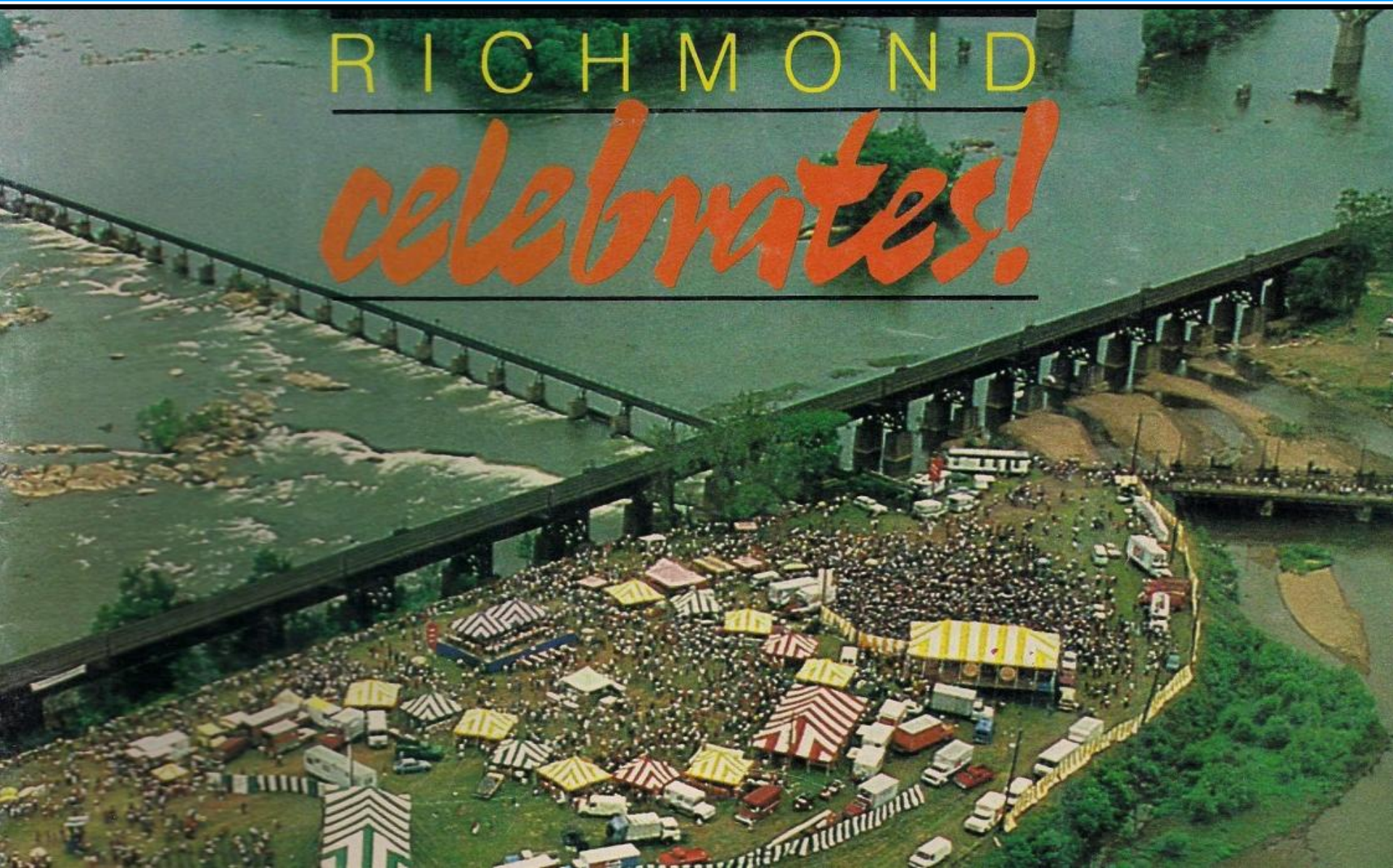


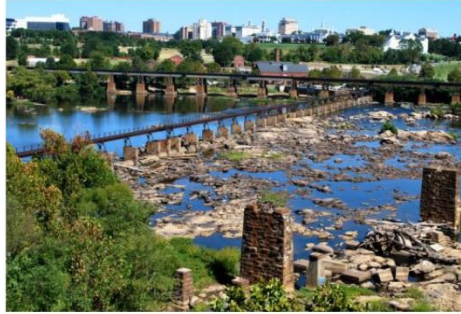
# BROWN'S ISLAND DAM WALK

18 FEBRUARY 2014

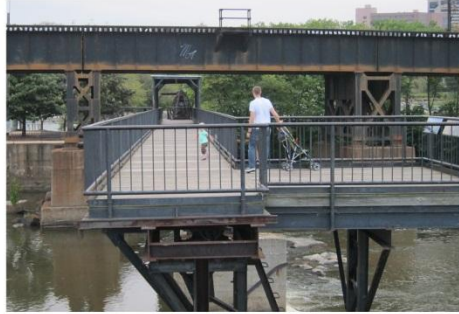


RICHMOND  
*celebrates!*





AERIAL VIEW OF BROWN'S ISLAND DAM, LOOKING NORTH



CONNECTION TO '3 DAYS' MEMORIAL



BROWN'S ISLAND DAM, VIEWED FROM '3 DAYS'



INFORMAL USE OF BROWN'S ISLAND DAM



BROWN'S ISLAND DAM, FROM SOUTH BANK



EXISTING PIERS, FROM MANCHESTER EMBANKMENT

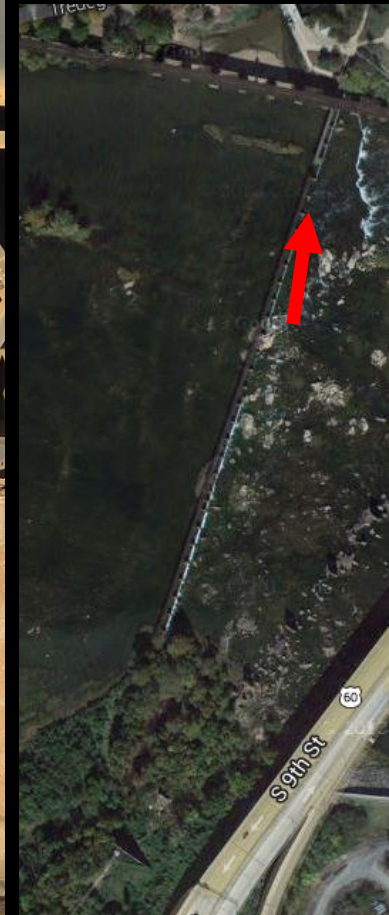


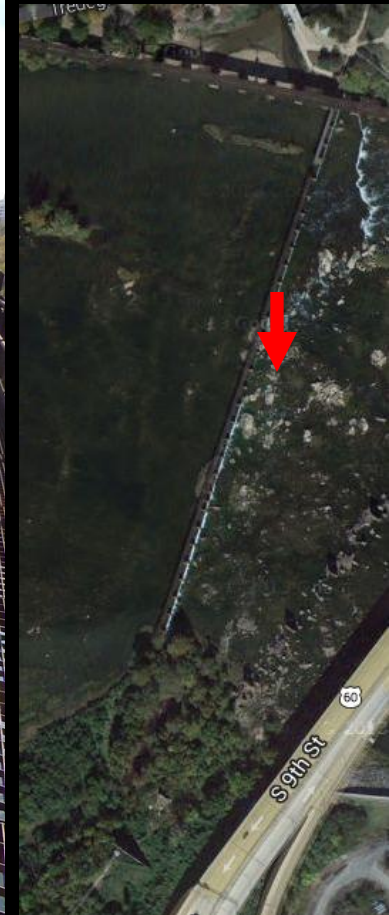
PATH ON RIDGE OF MANCHESTER EMBANKMENT



SUN TRUST BRIDGE CONNECTION TO MANCHESTER  
+ LOWER PATH TO FLOOD WALL





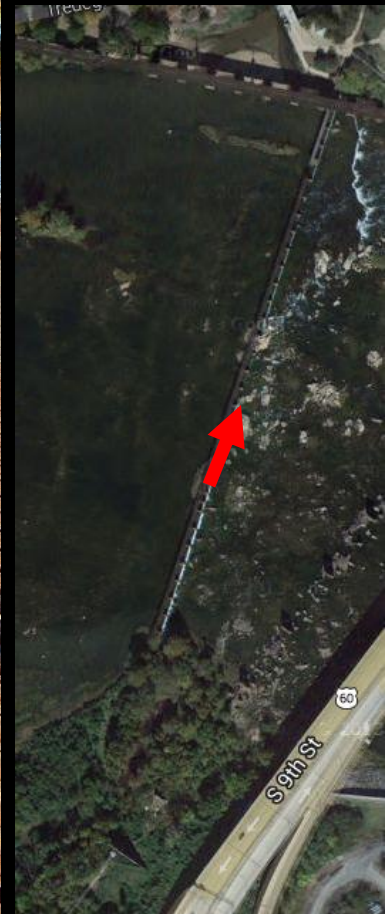




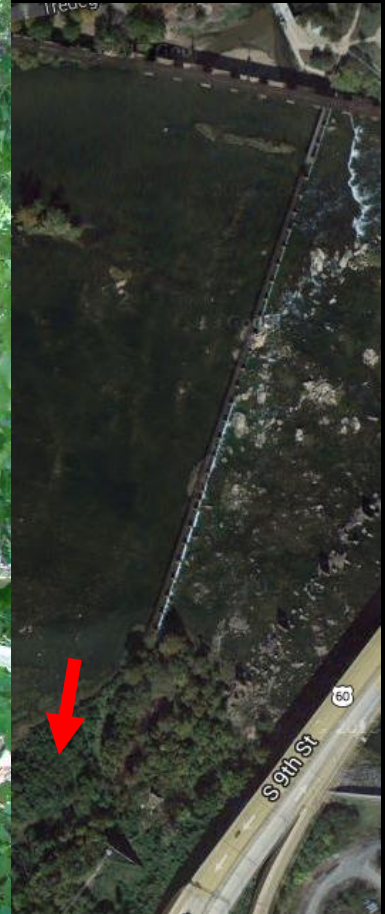


# BROWN'S ISLAND DAM WALK

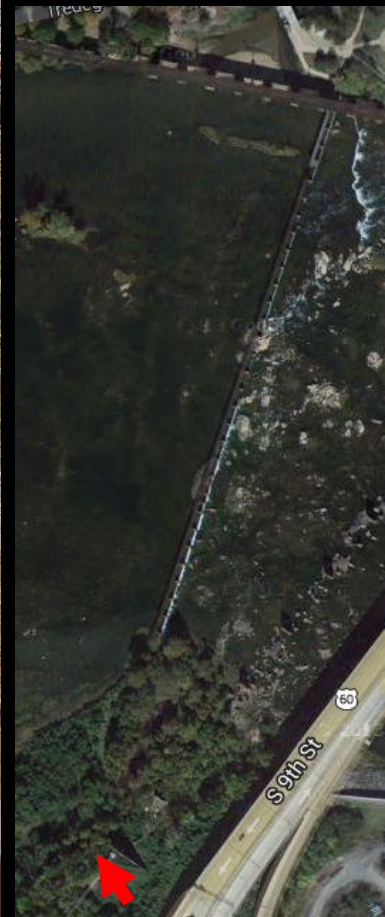
18 FEBRUARY 2014

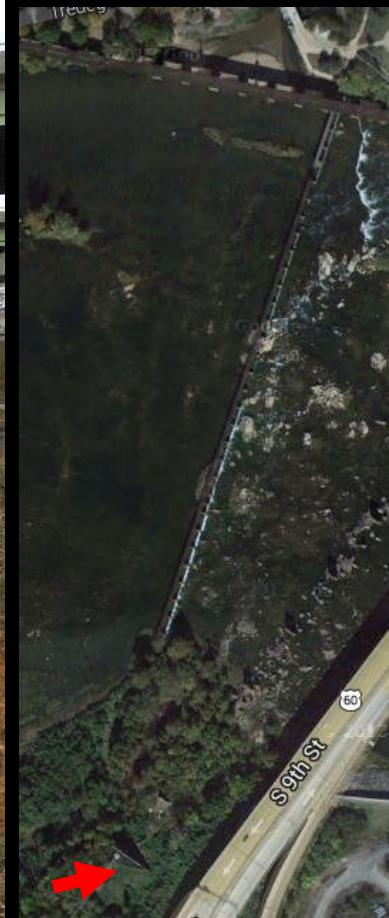




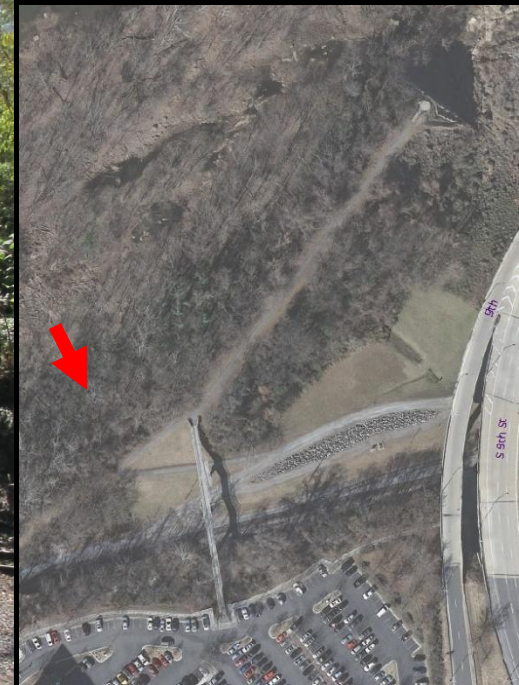




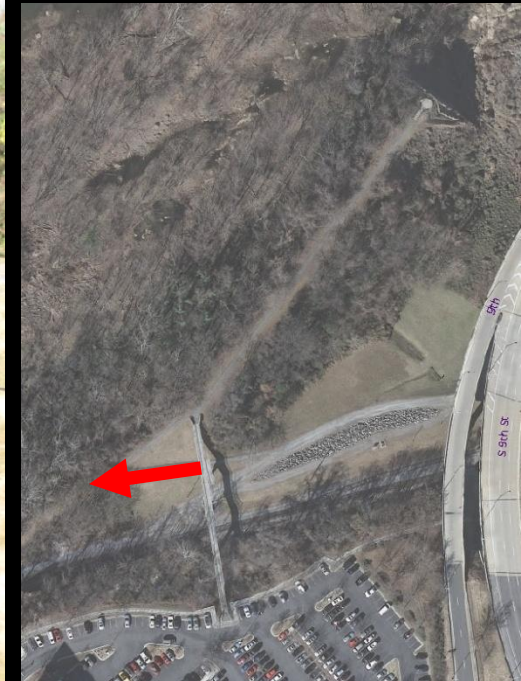


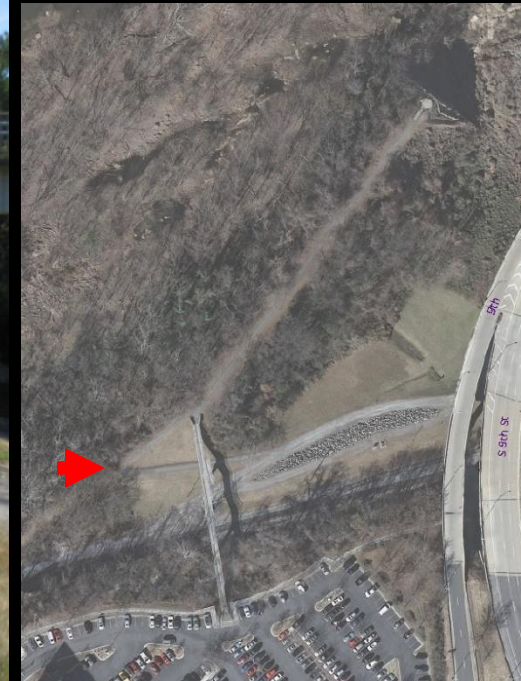


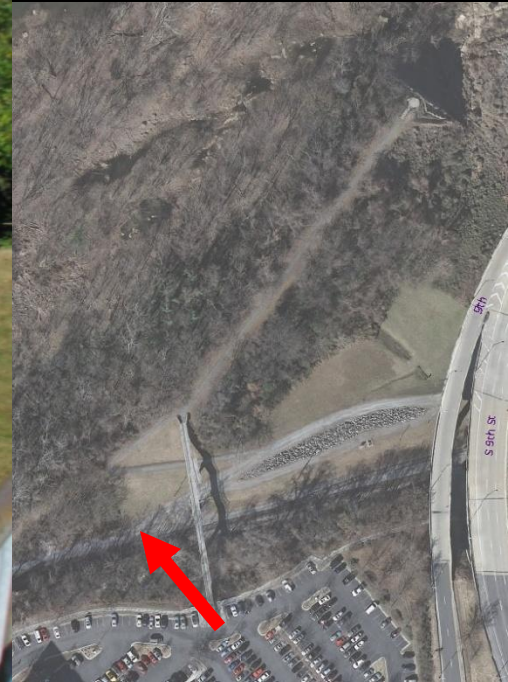


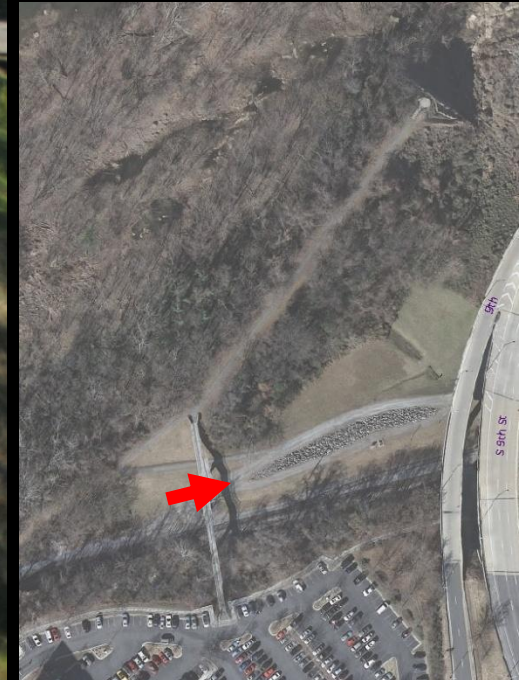












## Mission Statement

As the first step in the implementation of the Richmond Riverfront Plan, the Brown's Island Dam Walk (BIDW) will ***transform*** an industrial era structure into a ***key connection*** between both banks of the James River at the ***center of Richmond's Riverfront***.

The BIDW will expand the Riverfront circulation network – a series of connections providing access along, across, and around the river – to serve a ***diverse group of users*** – including persons with disabilities, cyclists, pedestrians, and runners – in their pursuit of alternative transportation, fitness, and the ***spectacular natural beauty*** of the Riverfront.

The project models ***ecologically-sensitive and sustainable*** trail development by minimizing runoff, removing invasive species, and extensively re-planting slopes with native species resulting in a diverse array of ***new or enhanced habitats*** for the incredible flora and fauna of the Riverfront.

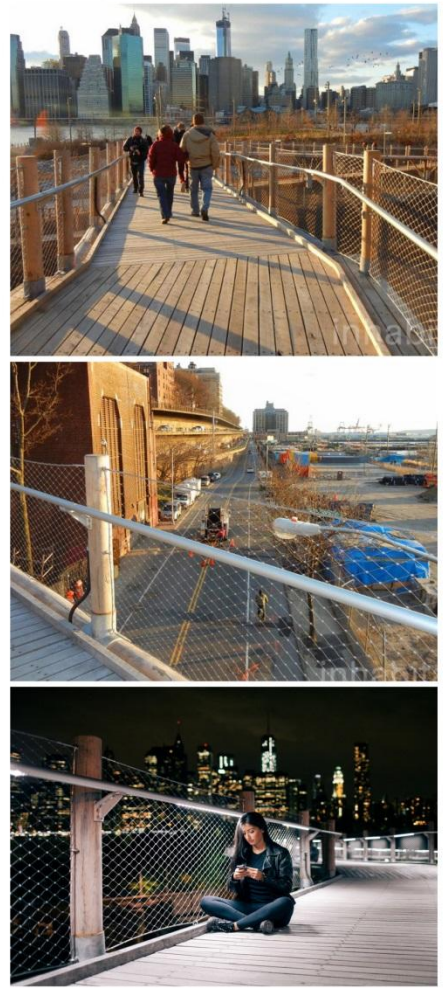


BROWN'S ISLAND DAM WALK // **SITE PLAN**

# BROWN'S ISLAND DAM WALK

18 FEBRUARY 2014

**SQUIBB PARK FOOTBRIDGE**  
BROOKLYN, NY  
WIDTH: 8' / LENGTH: 450'



**N. POINT PARK BICYCLE/PED BRIDGE**  
CAMBRIDGE/BOSTON, MA  
WIDTH: 12' / LENGTH: 700'



**HIGHLINE**  
NEW YORK, NY  
WIDTH: VARIES



**NICHOLS BRIDGEWAY**  
ART INSTITUTE OF CHICAGO  
WIDTH: 15' / LENGTH: 620'



BROWN'S ISLAND DAM WALK // **PRECEDENTS**

# BROWN'S ISLAND DAM WALK

18 FEBRUARY 2014



**OVERLOOK E**  
DOWNRIVER MANCHESTER  
CLIMBING WALL



**OVERLOOK D**  
DOWNRIVER MANCHESTER POND



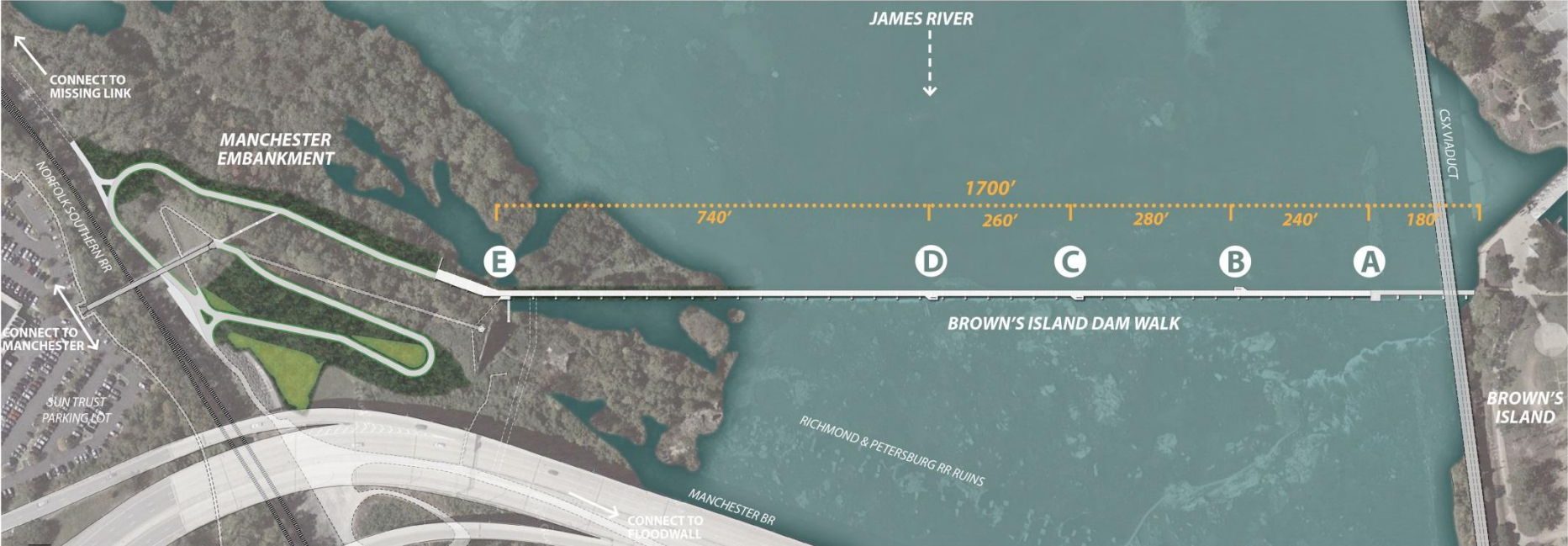
**OVERLOOK C**  
DOWNRIVER ROCK GARDEN



**OVERLOOK B**  
UPRIVER WATERCRAFT



**OVERLOOK A (EXISTING)**  
DOWNRIVER '3 DAYS' MEMORIAL



0 100 200 FEET

## BROWN'S ISLAND DAM WALK // OVERLOOKS



# BROWN'S ISLAND DAM WALK

18 FEBRUARY 2014

6'+ CLEAR



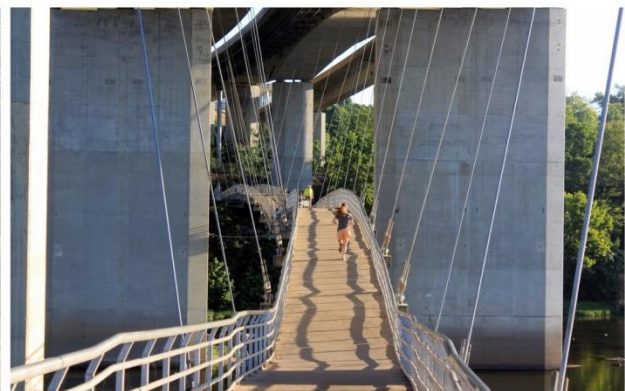
SUN TRUST PEDESTRIAN BRIDGE

6' 5'-6" CLEAR 6'



MANCHESTER EMBANKMENT

9' CLEAR



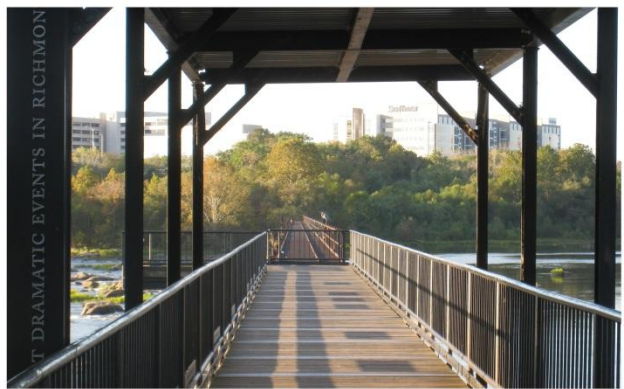
LEE BRIDGE

5' CLEAR



RAMP TO '3 DAYS' MEMORIAL

7'-7" CLEAR

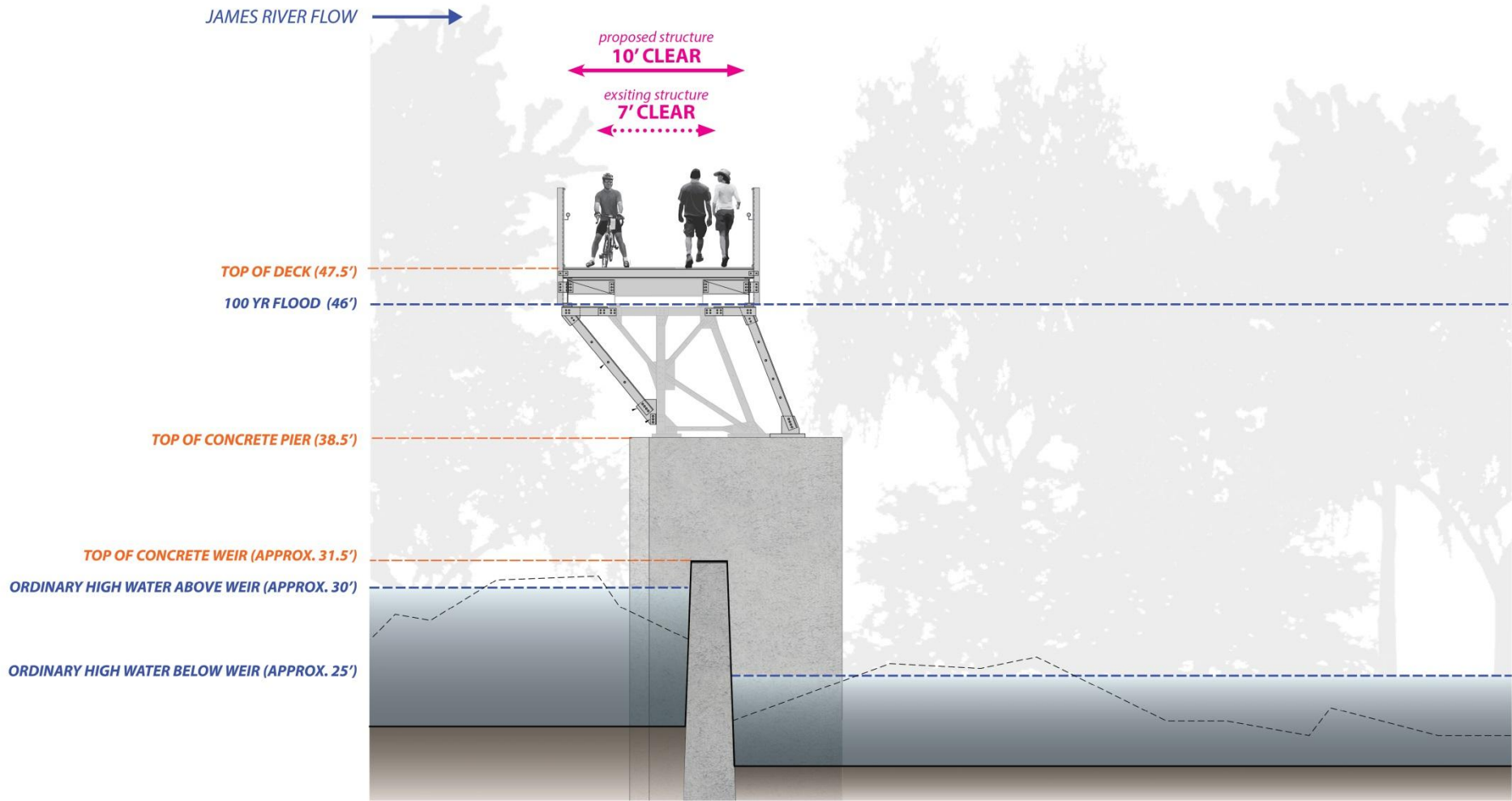


'3 DAYS' MEMORIAL

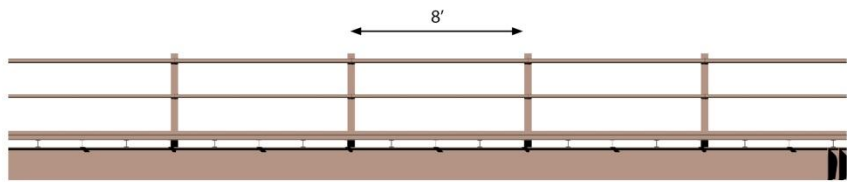
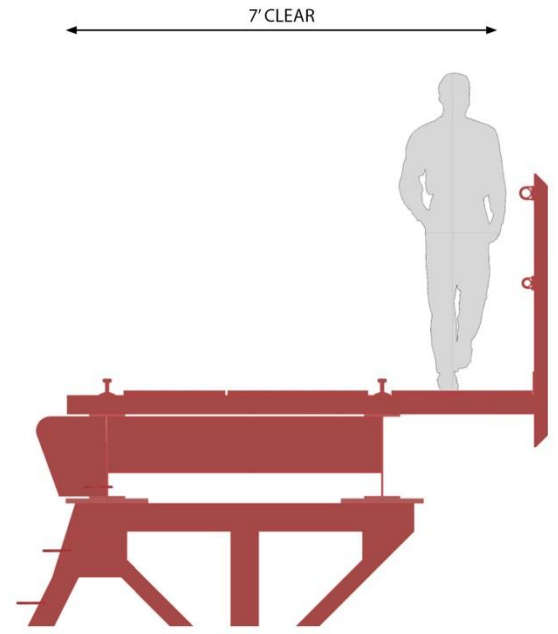
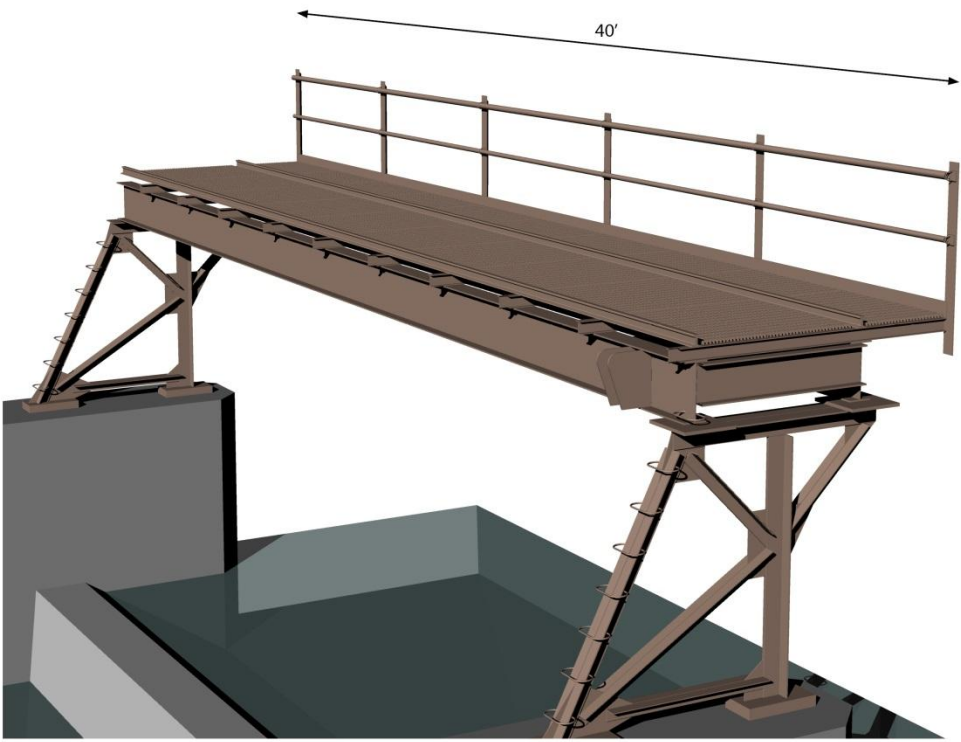
BROWN'S ISLAND DAM WALK // **SITE PRECEDENTS + CONSTRAINTS**

# BROWN'S ISLAND DAM WALK

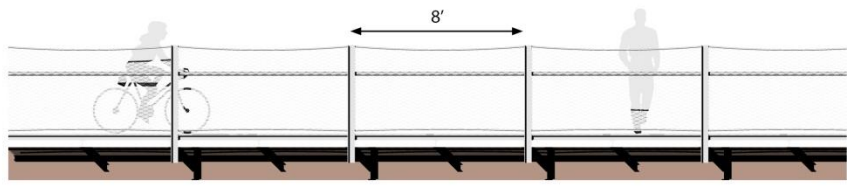
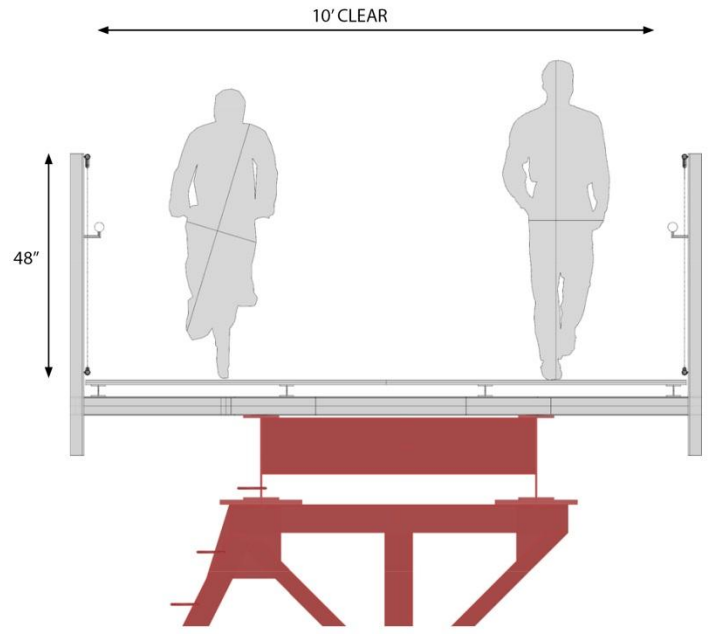
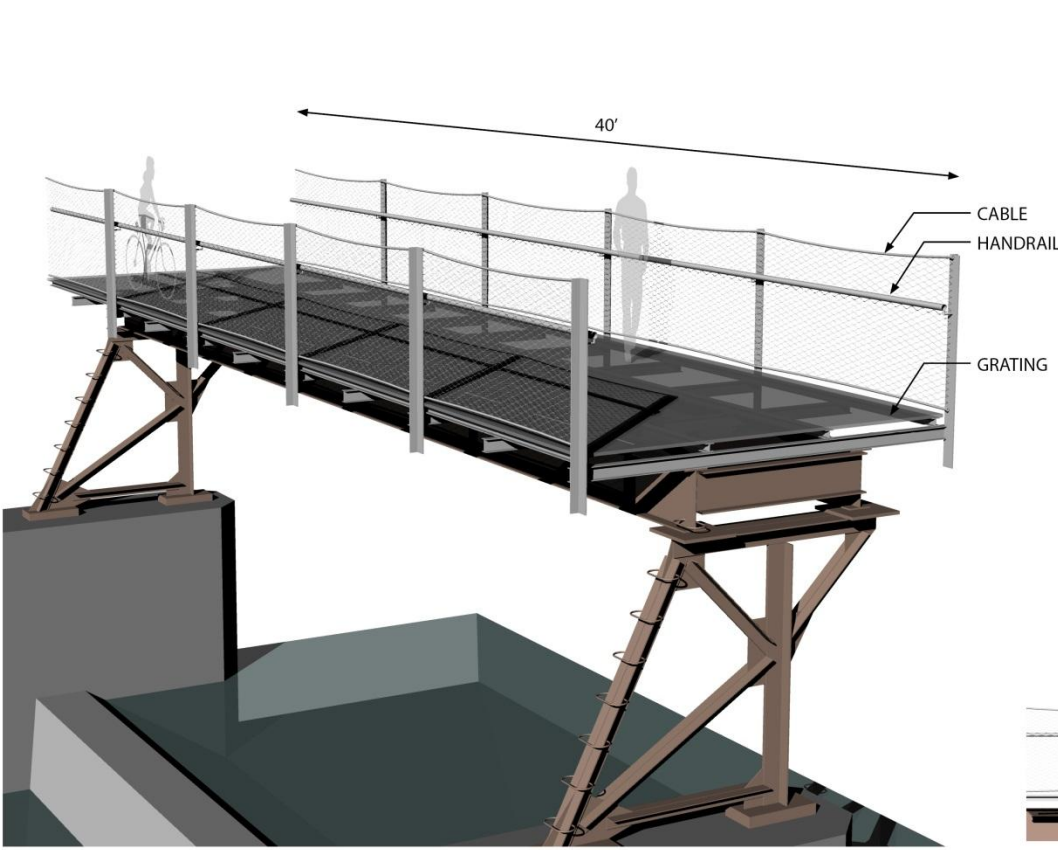
18 FEBRUARY 2014



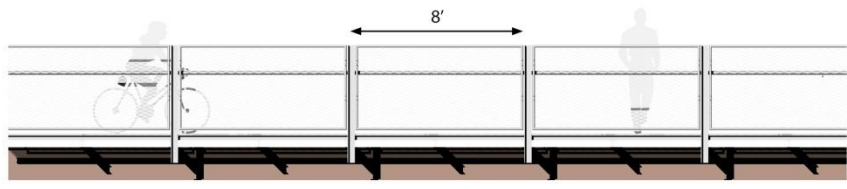
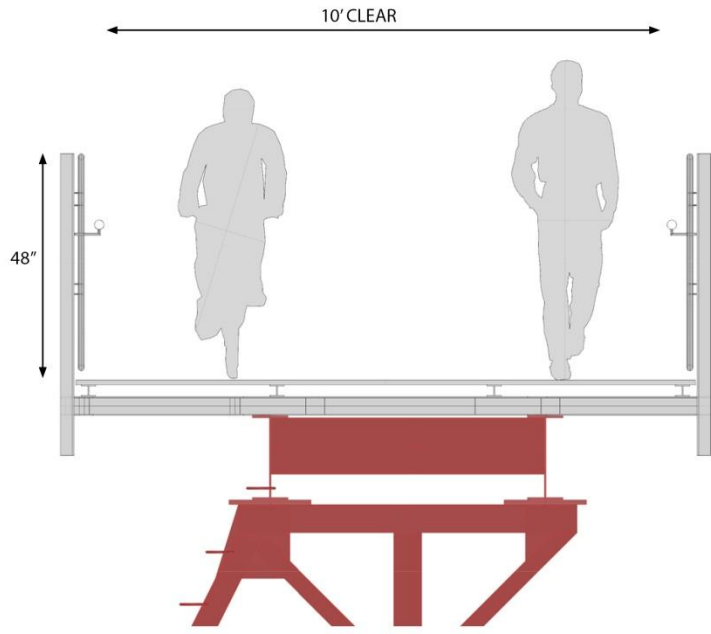
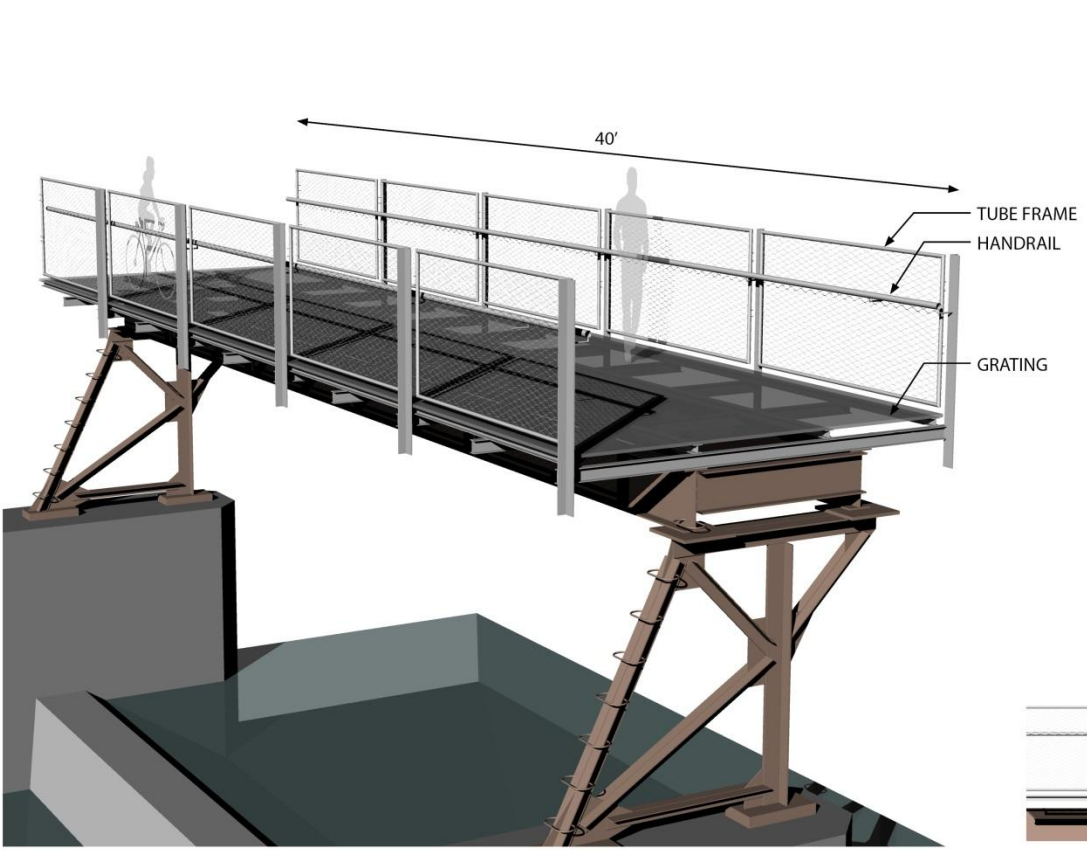
BROWN'S ISLAND DAM WALK // SECTION -TYPICAL



BROWN'S ISLAND DAM WALK // **EXISTING STRUCTURE**



BROWN'S ISLAND DAM WALK // **RAIL OPT 1: CABLE - PREFERRED OPTION**

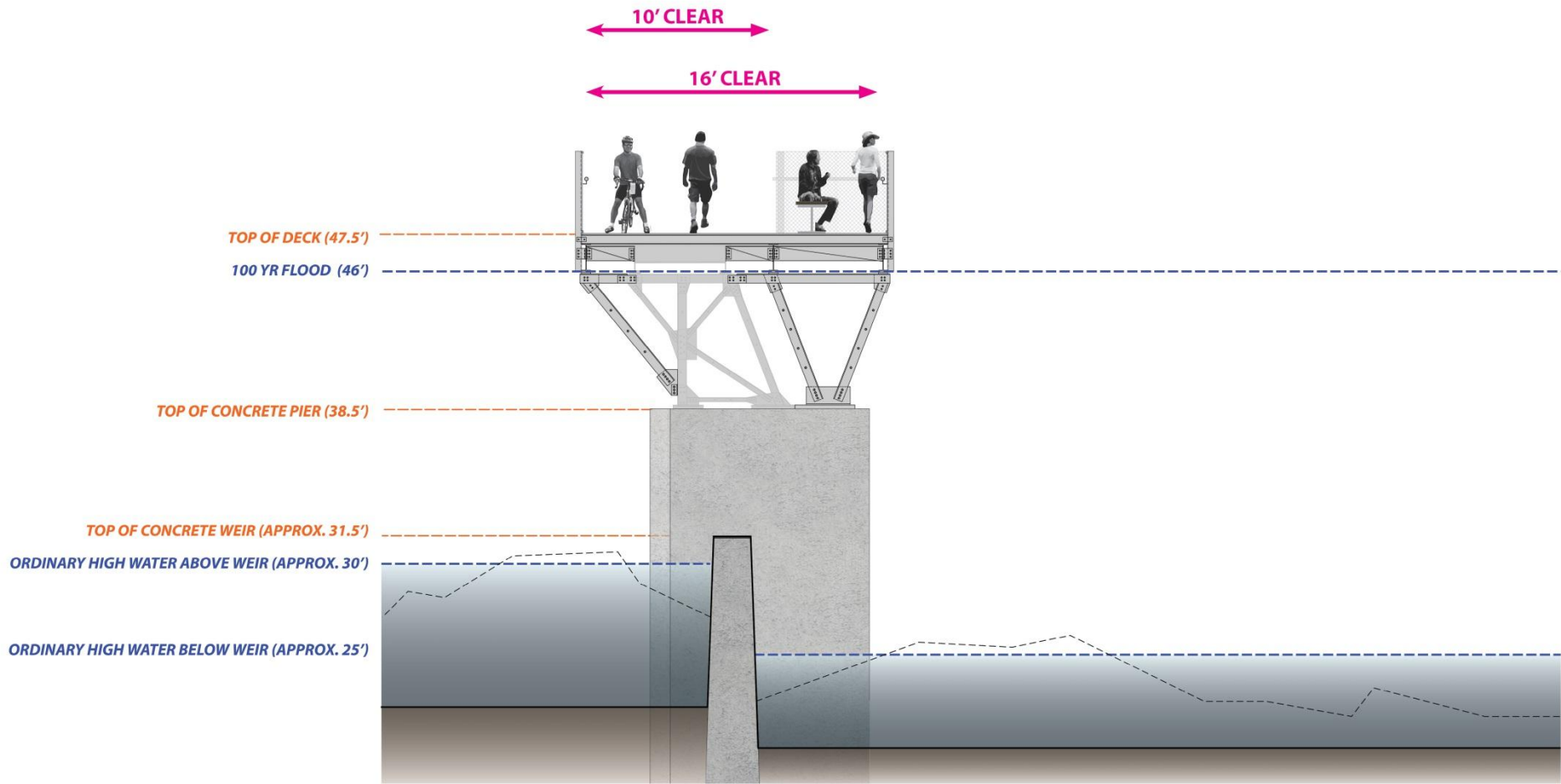


BROWN'S ISLAND DAM WALK // **RAIL OPT 2: TUBE FRAME**

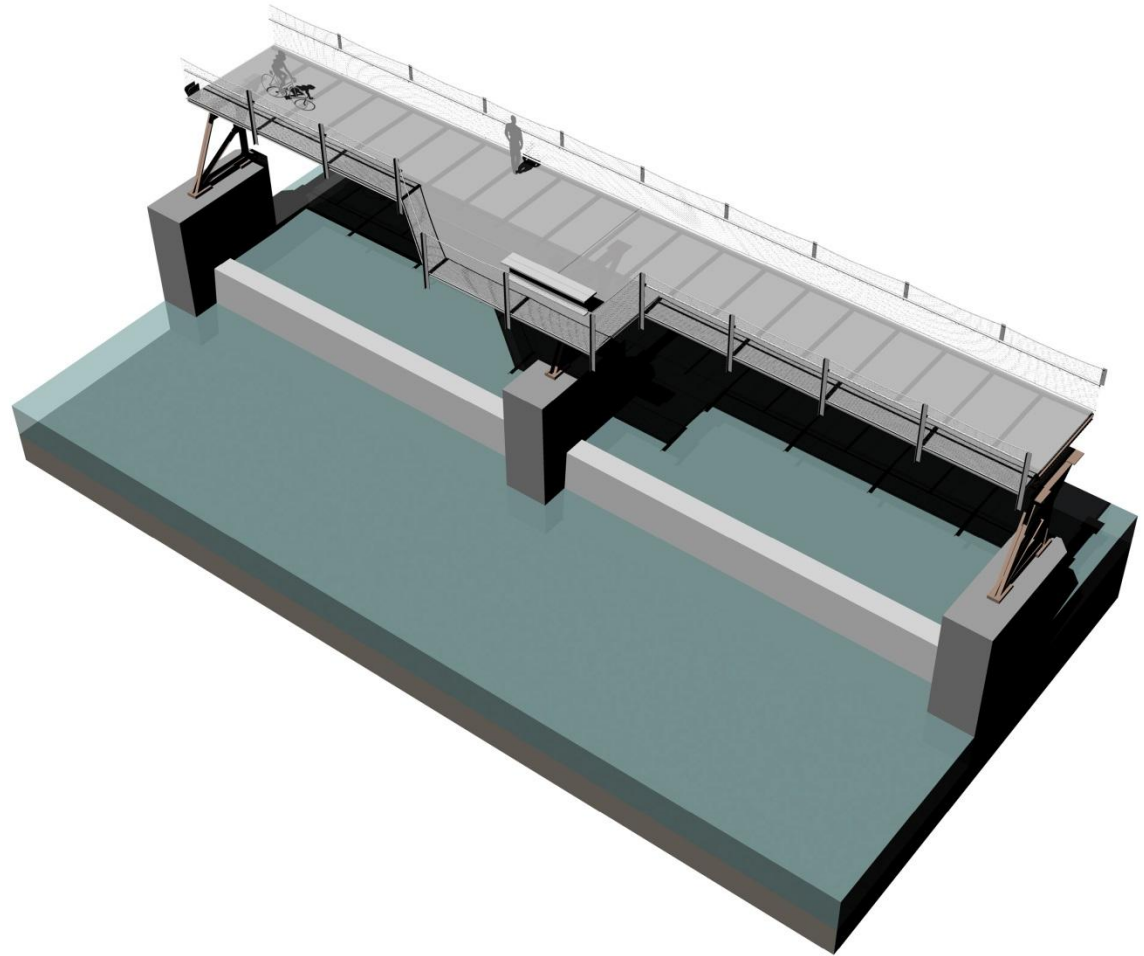
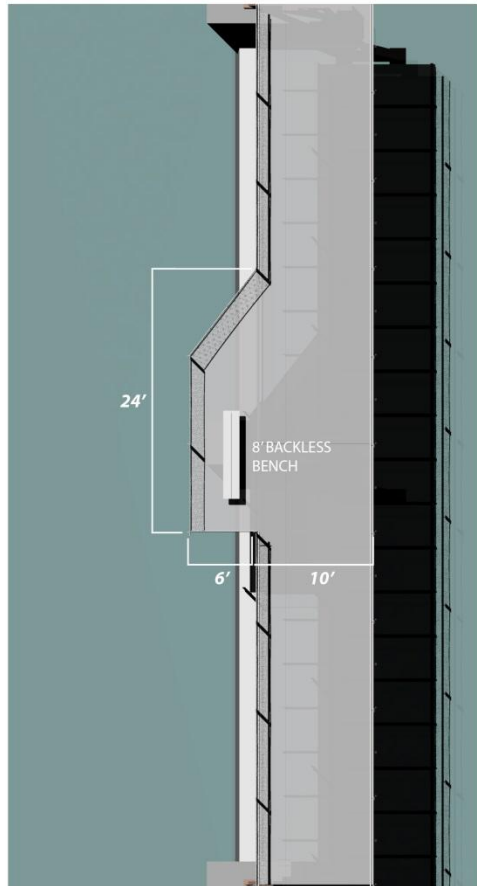
# BROWN'S ISLAND DAM WALK

18 FEBRUARY 2014

JAMES RIVER FLOW →



BROWN'S ISLAND DAM WALK // SECTION - OVERLOOK







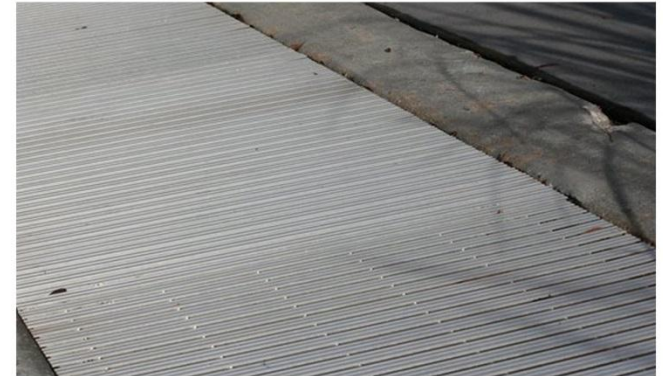
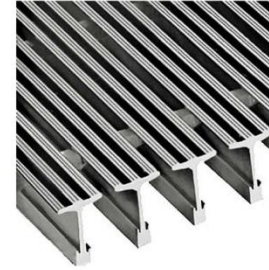
## **CABLE + MESH**

STAINLESS STEEL  
JAKOB ROPE SYSTEMS



## **GRATING**

SAFE-T-GRID ALUMINUM GRATING



## LINEAR LED LIGHTING

VERTICAL LIGHTS BETWEEN POSTS



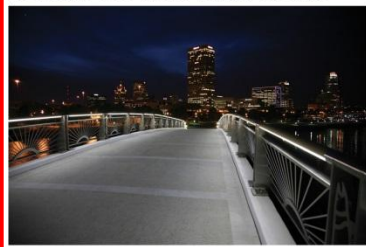
LOW-LEVEL STEP LIGHTS



EXPOSED DISCREET PATHWAY LIGHTS



CONTINUOUS HORIZONTAL LIGHTS



EXPOSED VERTICAL LIGHTS



## OVERLOOK LIGHTING

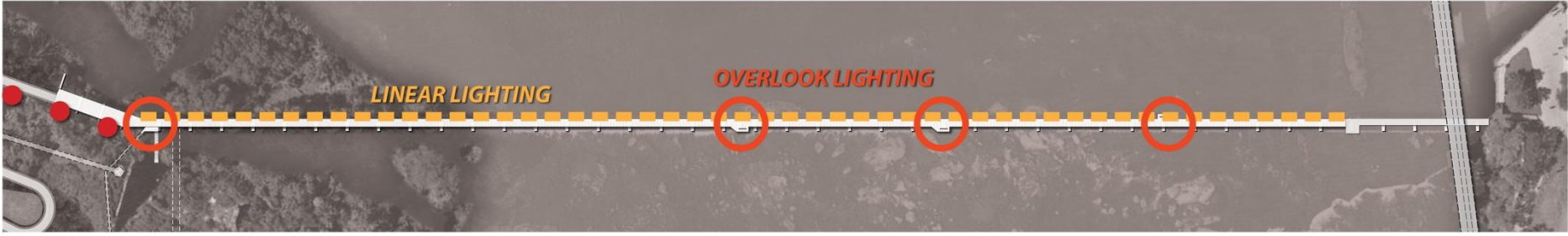
LIGHTING IN BENCH

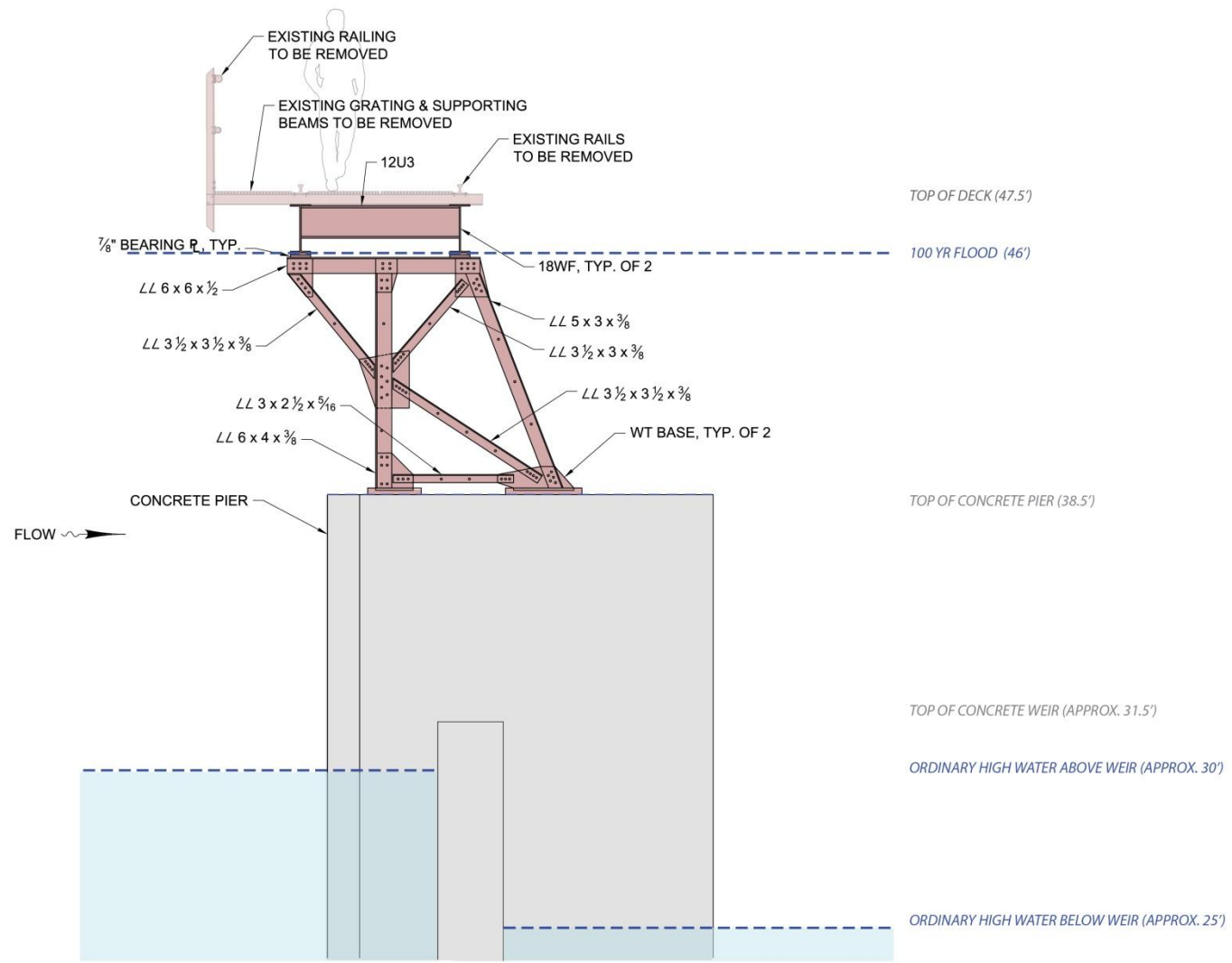


COLORLED LIGHTING

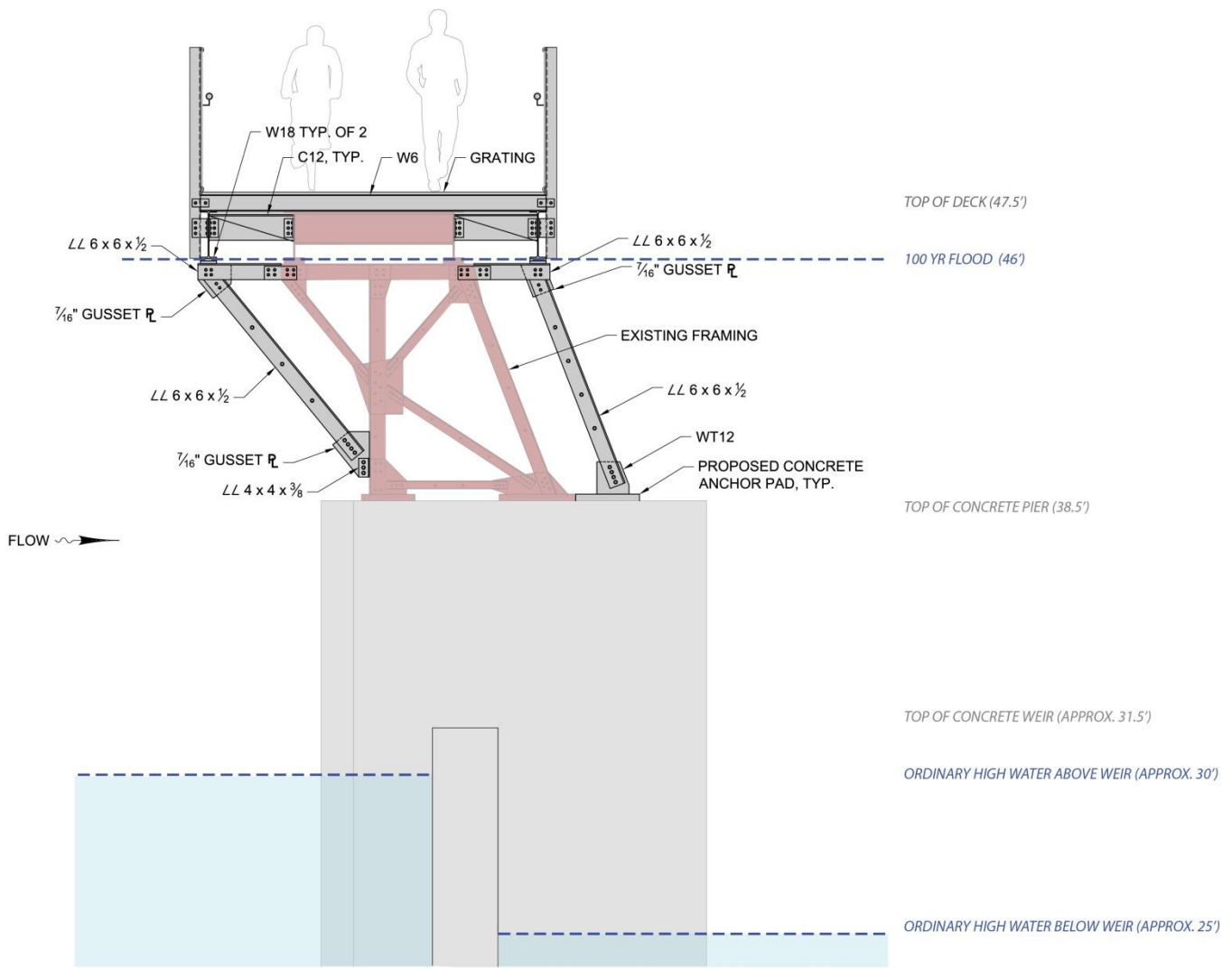


DECORATIVE LIGHTED GUARDRAIL PLATES

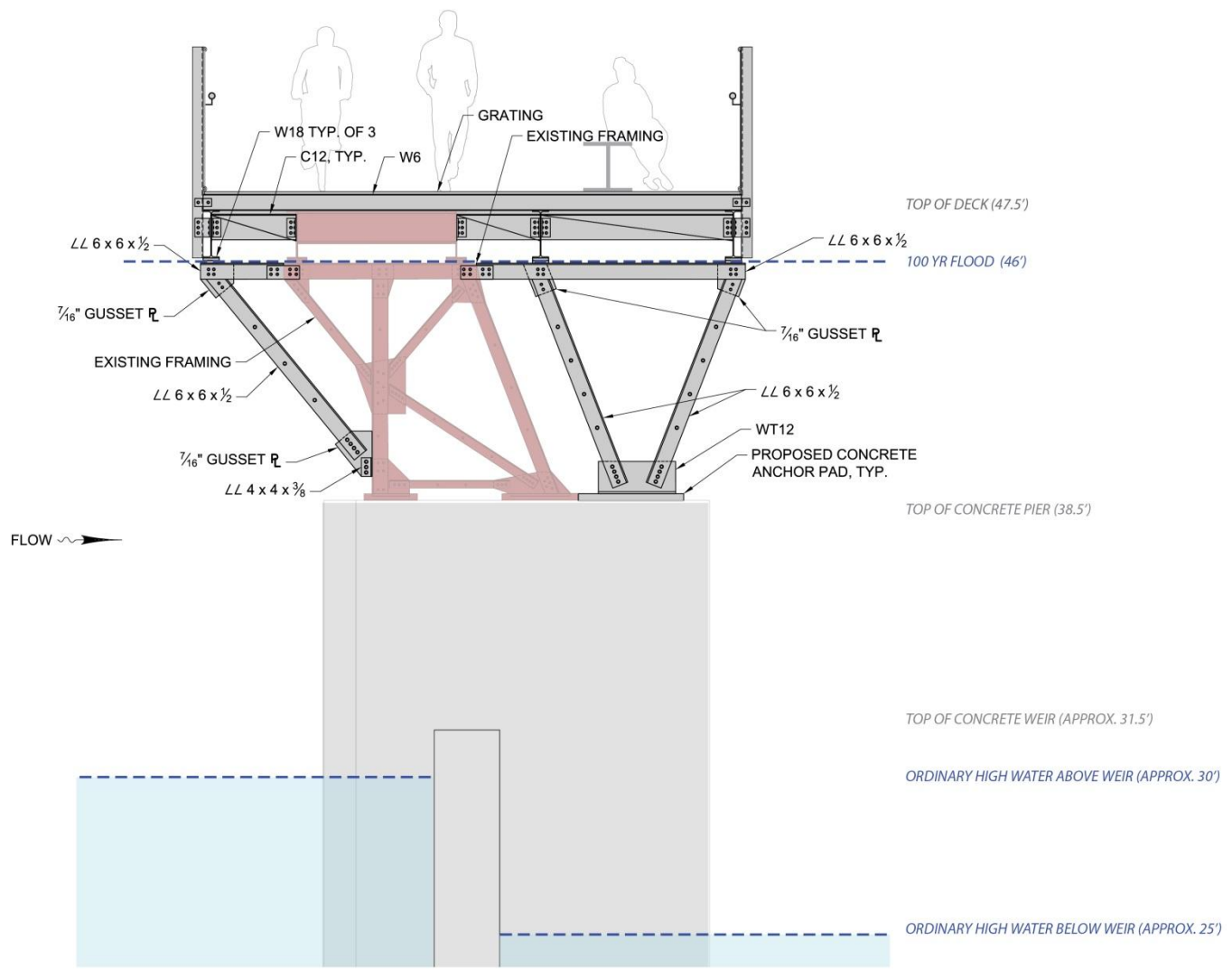




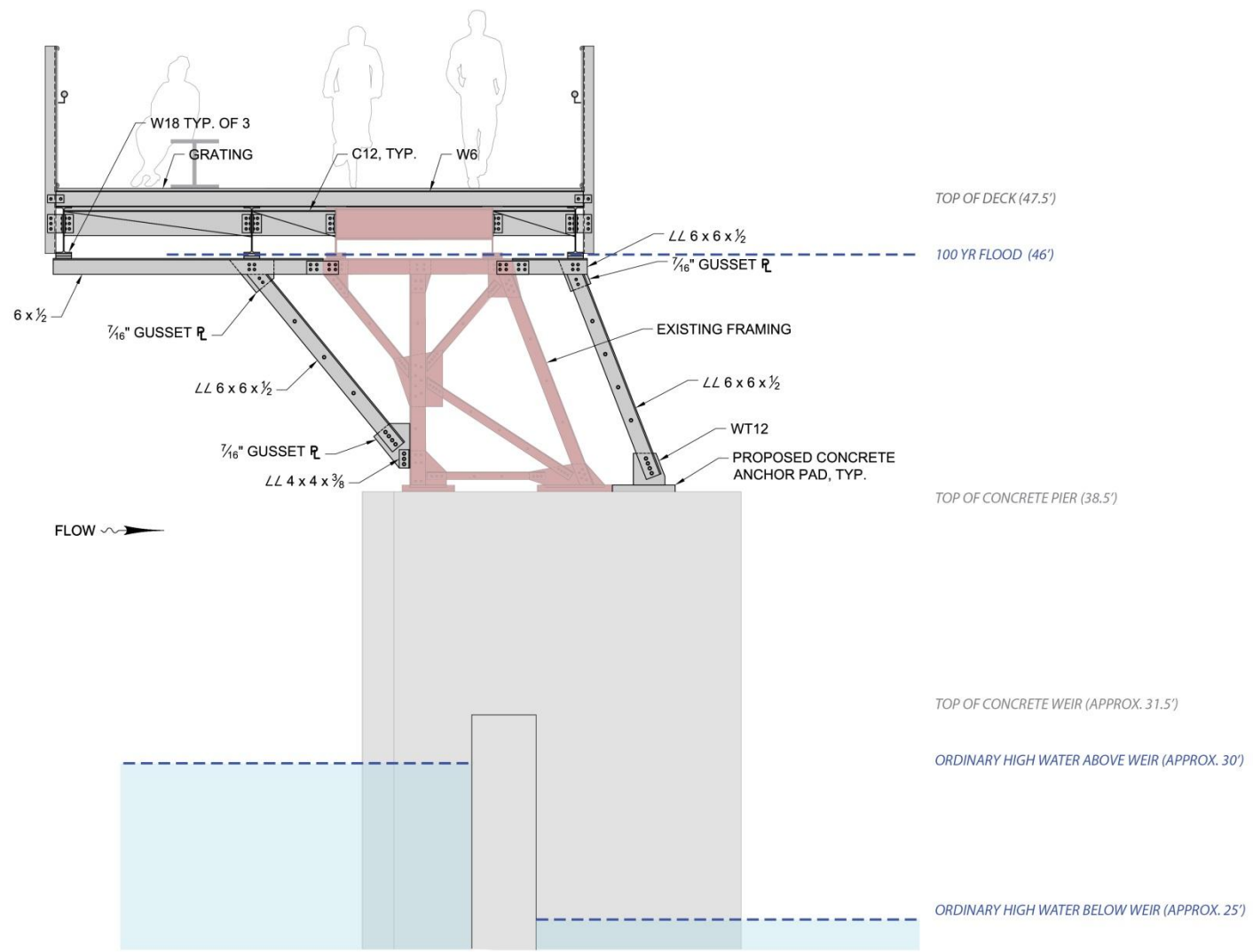
BROWN'S ISLAND DAM WALK // **STRUCTURAL - EXISTING TYPICAL SECTION**



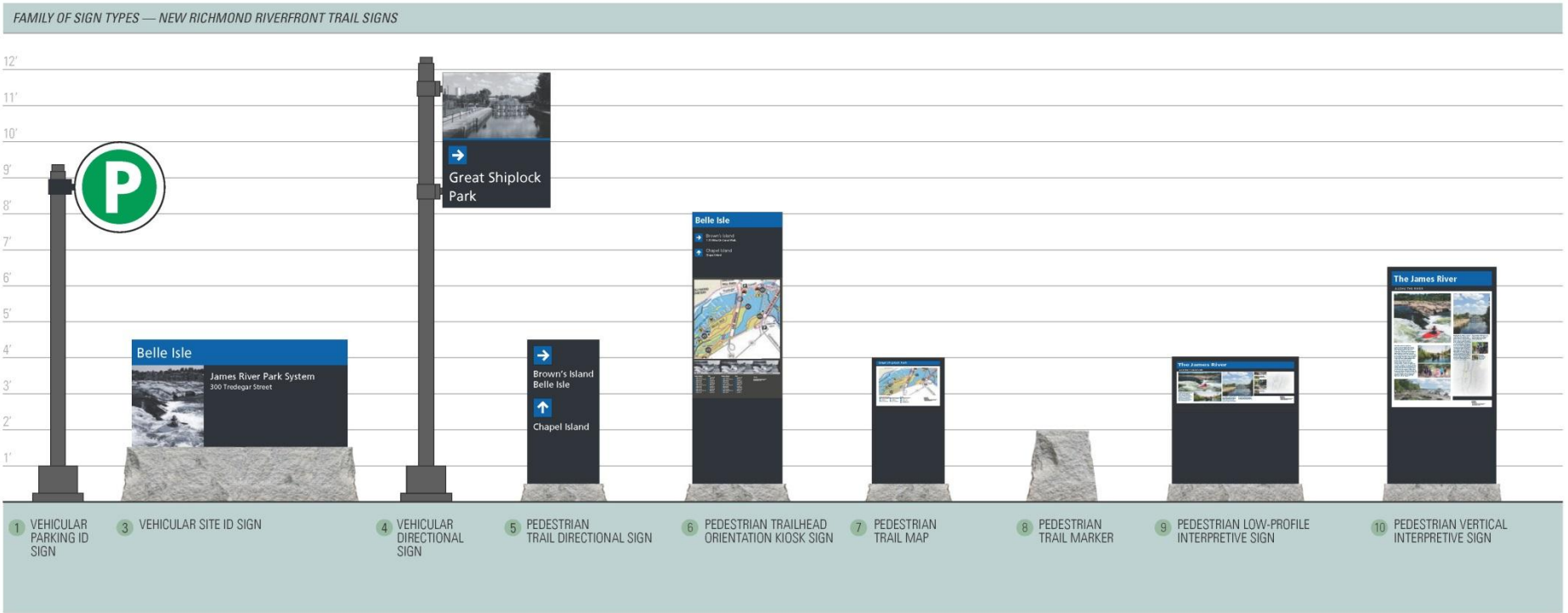
BROWN'S ISLAND DAM WALK // **STRUCTURAL - PROPOSED TYPICAL SECTION**



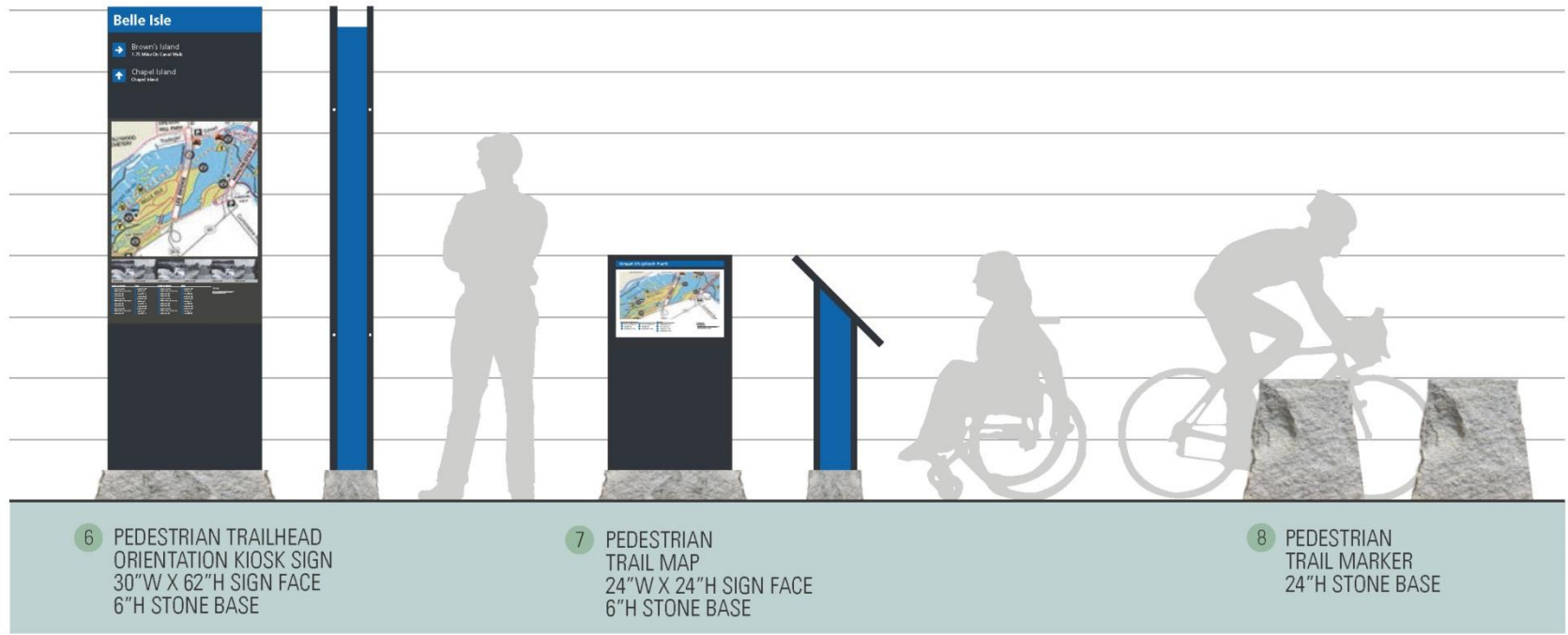
BROWN'S ISLAND DAM WALK // **STRUCTURAL - PROPOSED SECTION DOWNRIVER OVERLOOKS**



BROWN'S ISLAND DAM WALK // **STRUCTURAL - PROPOSED SECTION UPRIVER OVERLOOK**



## ORIENTATION / INFORMATION SIGNS







# BROWN'S ISLAND DAM WALK

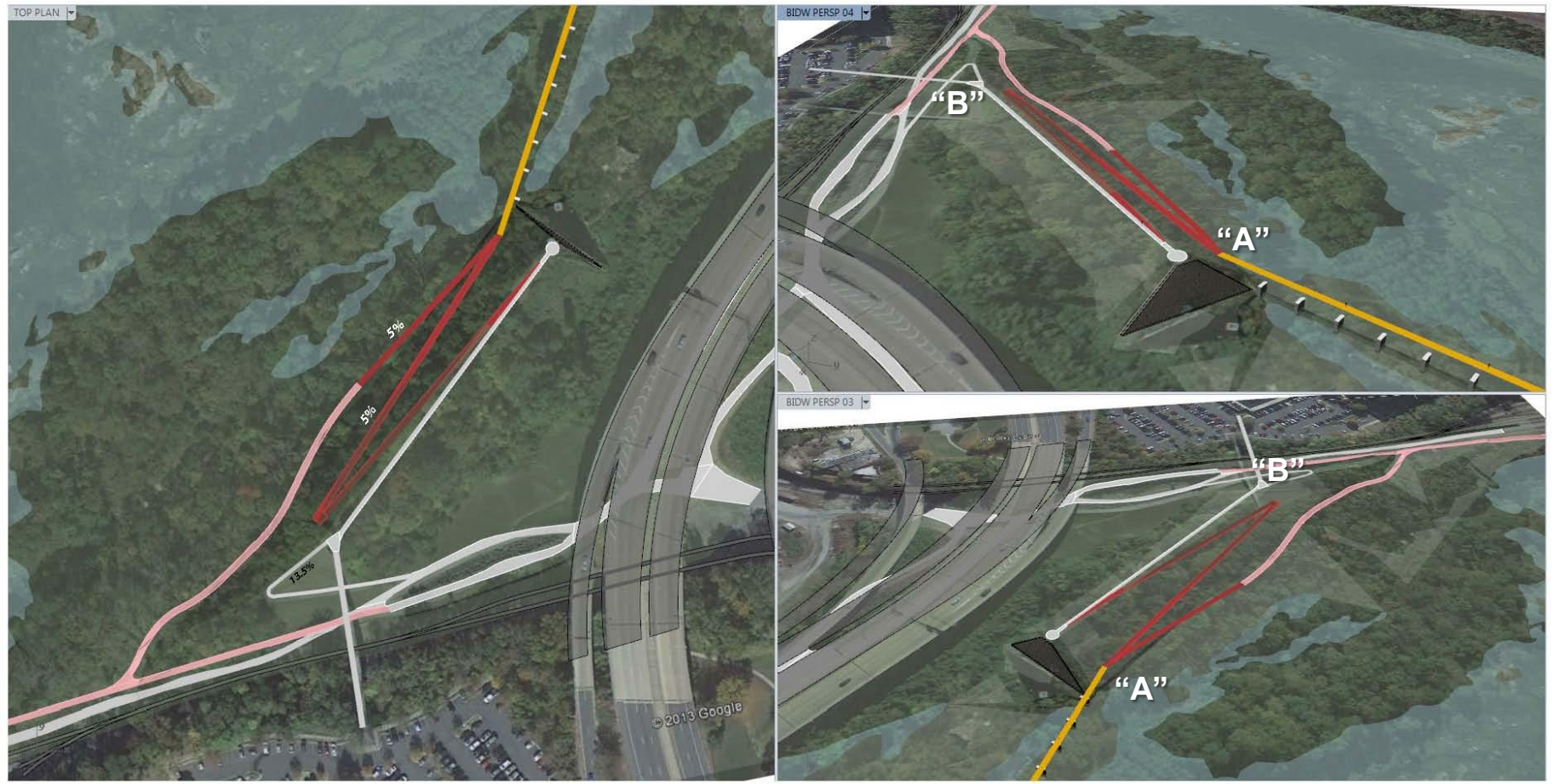
18 FEBRUARY 2014

- A** ID SIGN
- B** TRAILHEAD
- C** REGULATORY
- D** DIRECTIONAL
- E** INTERPRETIVE



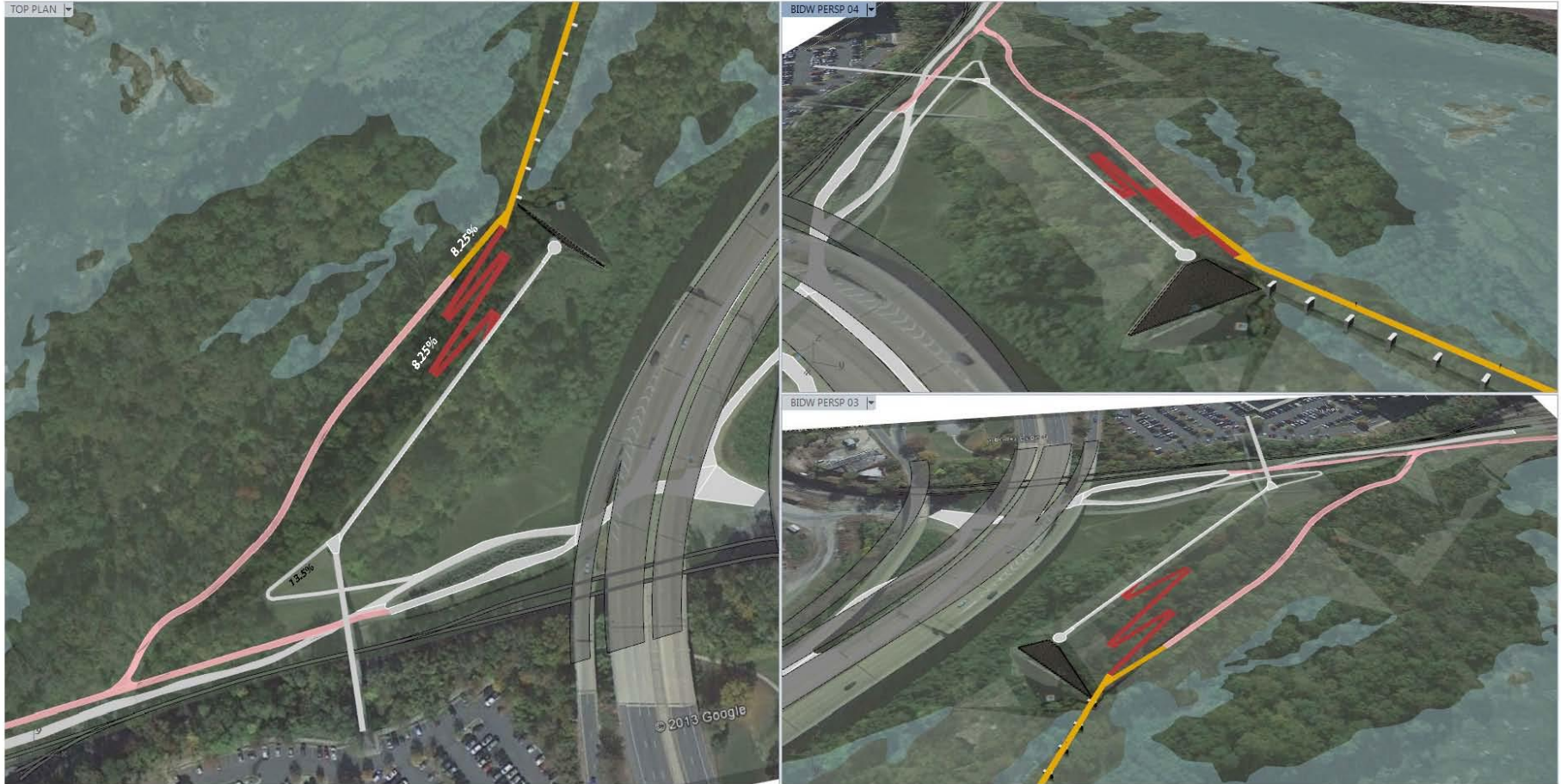
BROWN'S ISLAND DAM WALK // **SIGNAGE**

## OPT 2 switchback



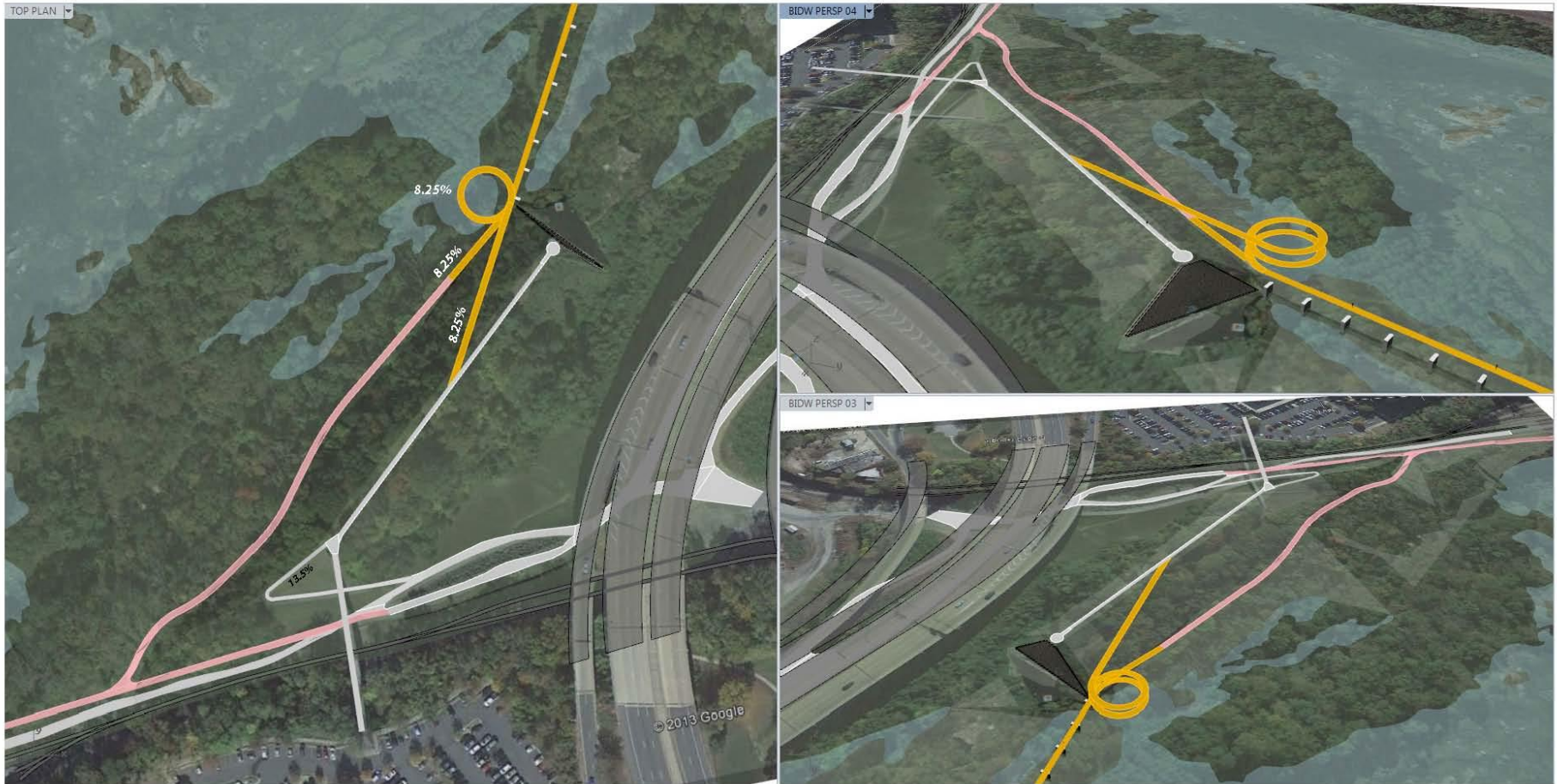
- existing — grey line
- @ grade — pink line
- on fill — red line
- structure — yellow line

## OPT 3 stacked switchback



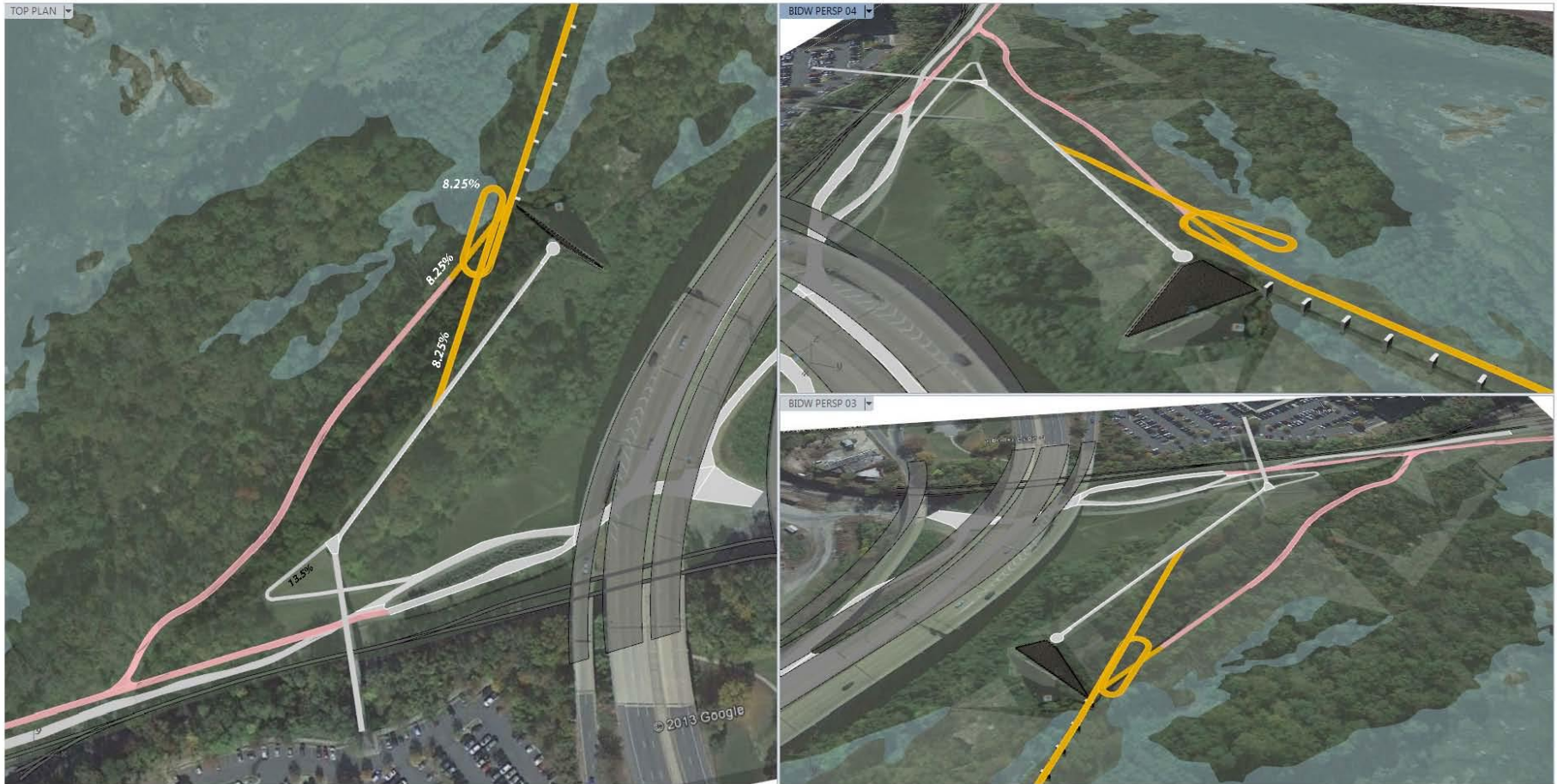
- existing
- @ grade
- on fill
- structure

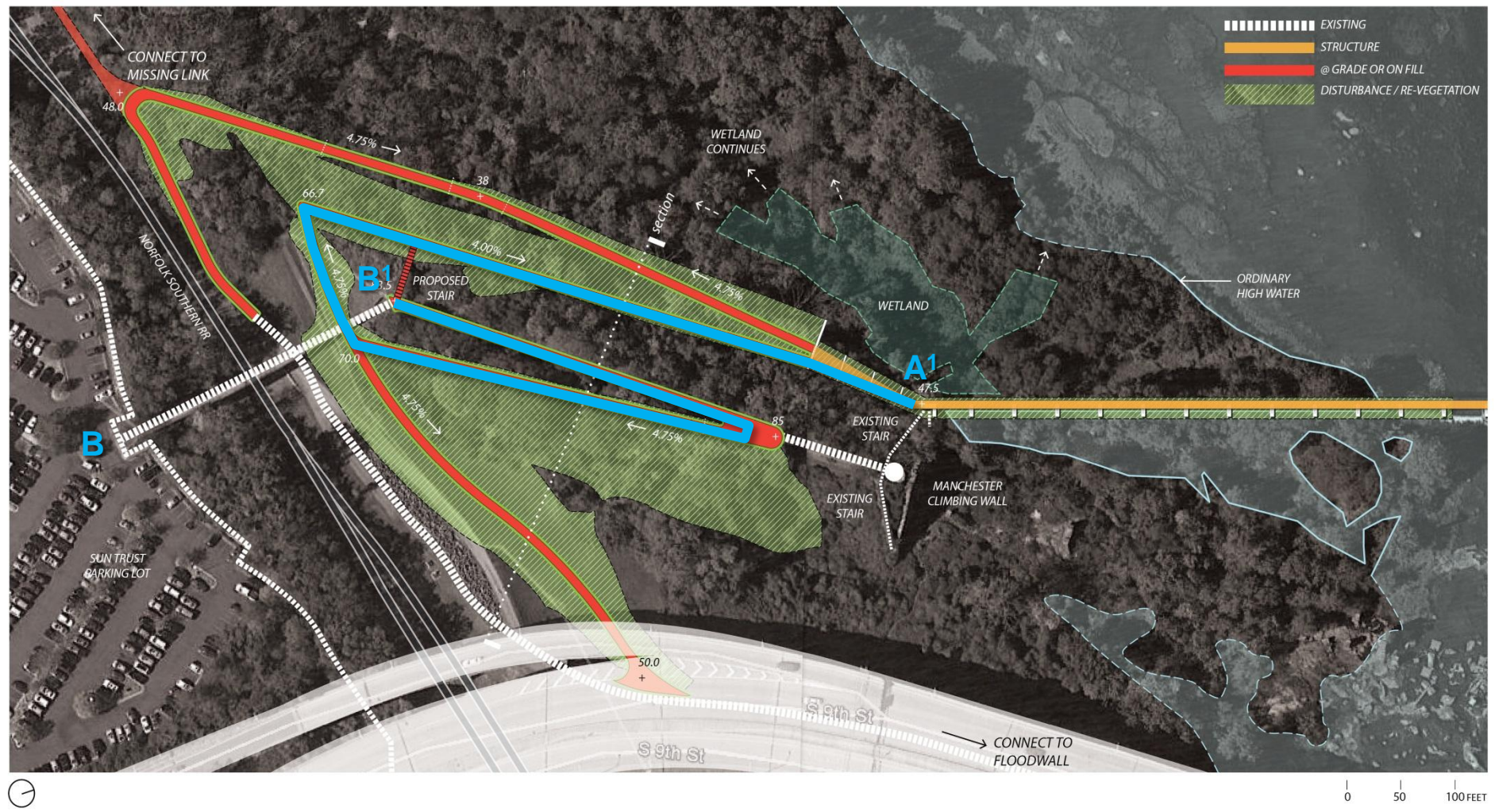
## OPT 5 helix

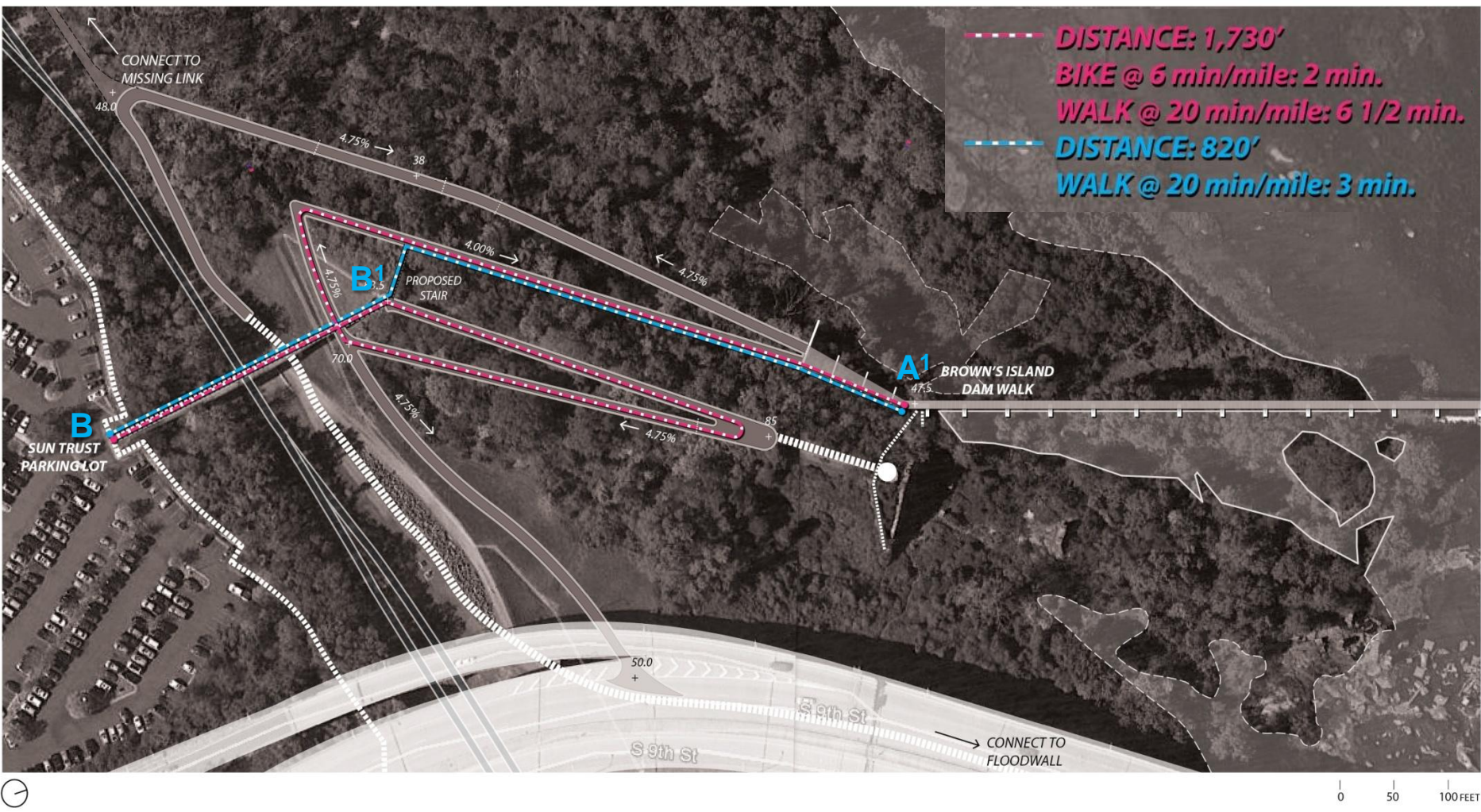


- existing
- @ grade
- on fill
- structure

## OPT 7 racetrack



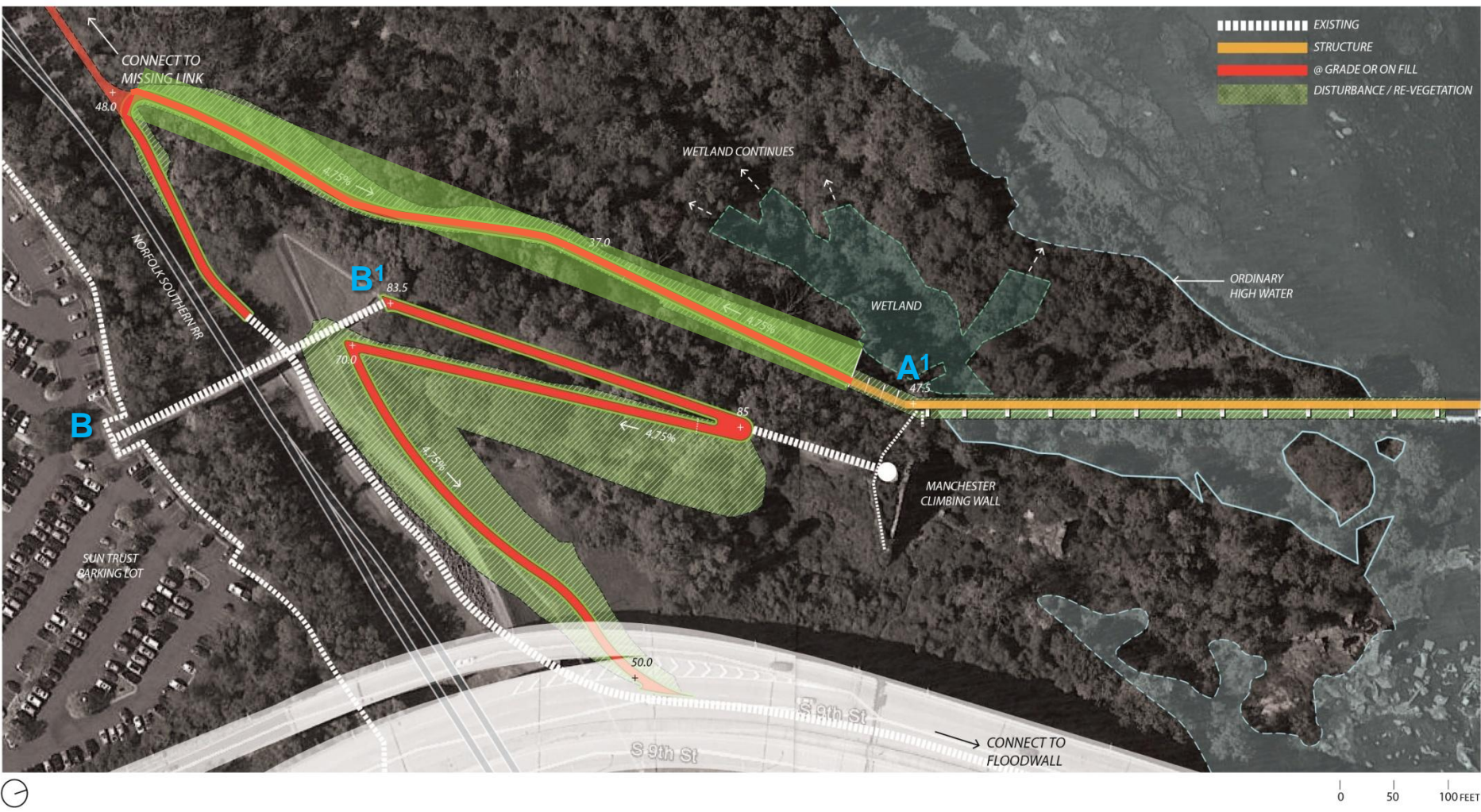




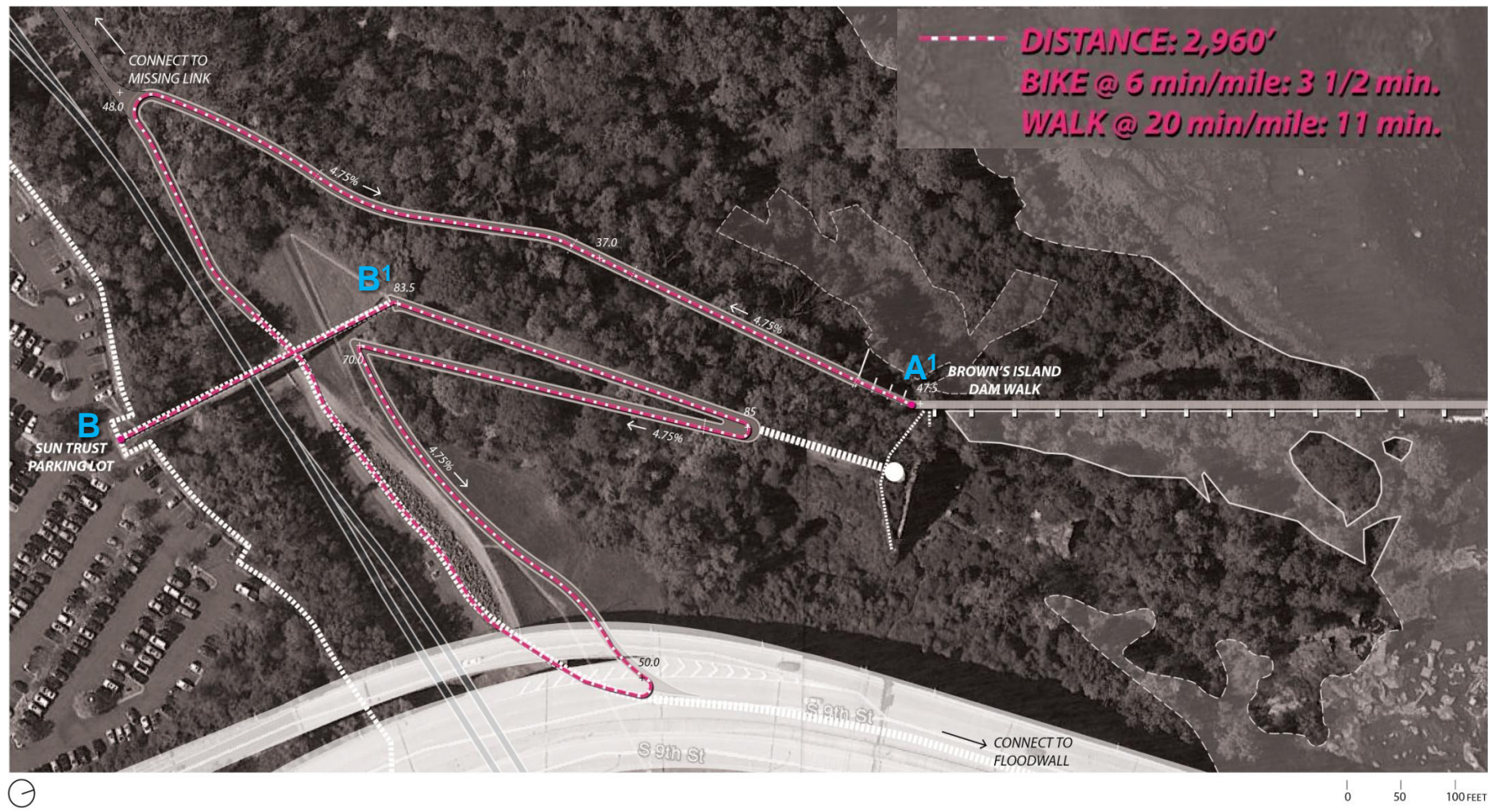
**DISTANCE: 1,730'**  
**BIKE @ 6 min/mile: 2 min.**  
**WALK @ 20 min/mile: 6 1/2 min.**

**DISTANCE: 820'**  
**WALK @ 20 min/mile: 3 min.**

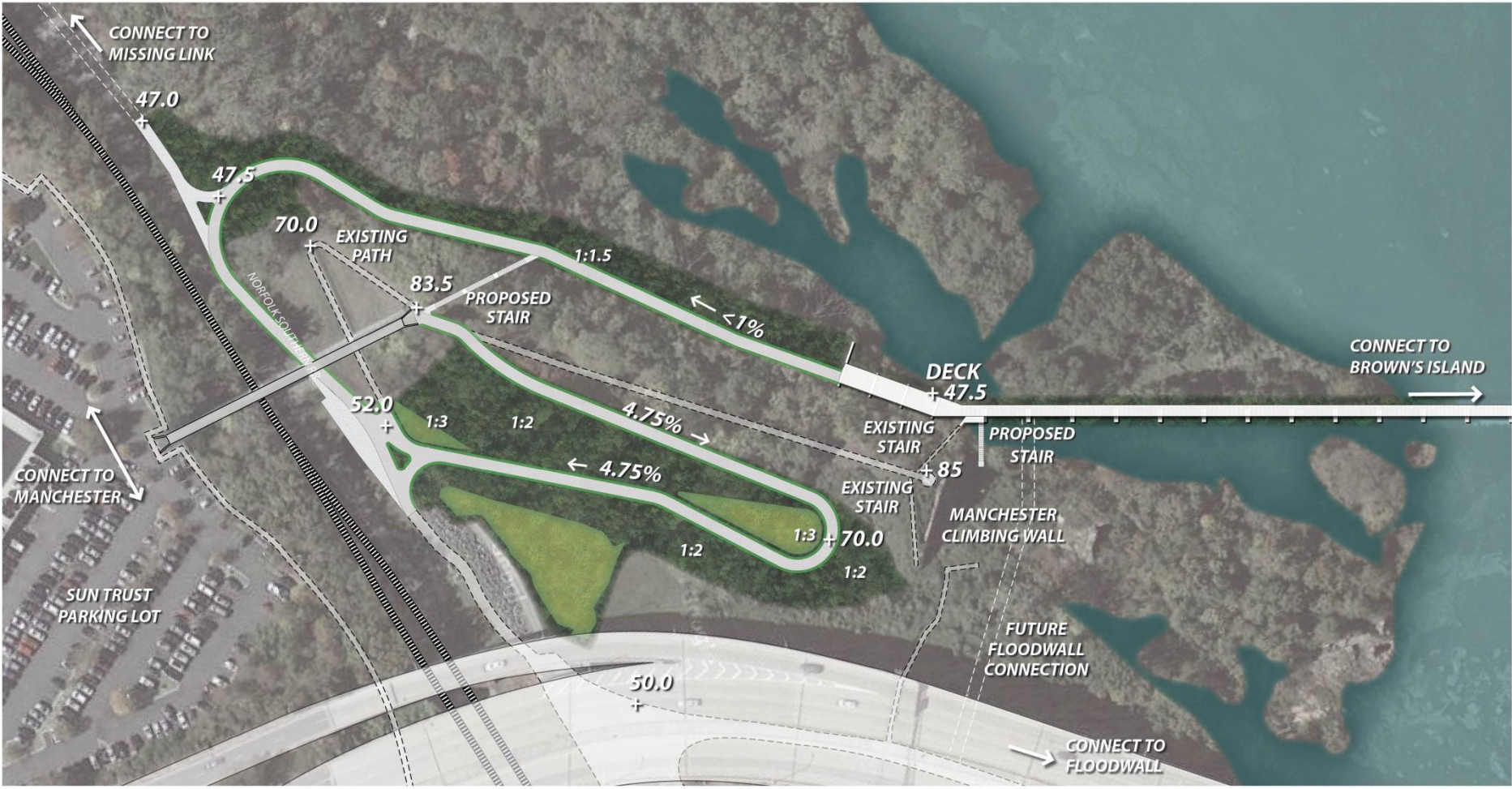




BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - ALTERNATE 'LOW OPTION'

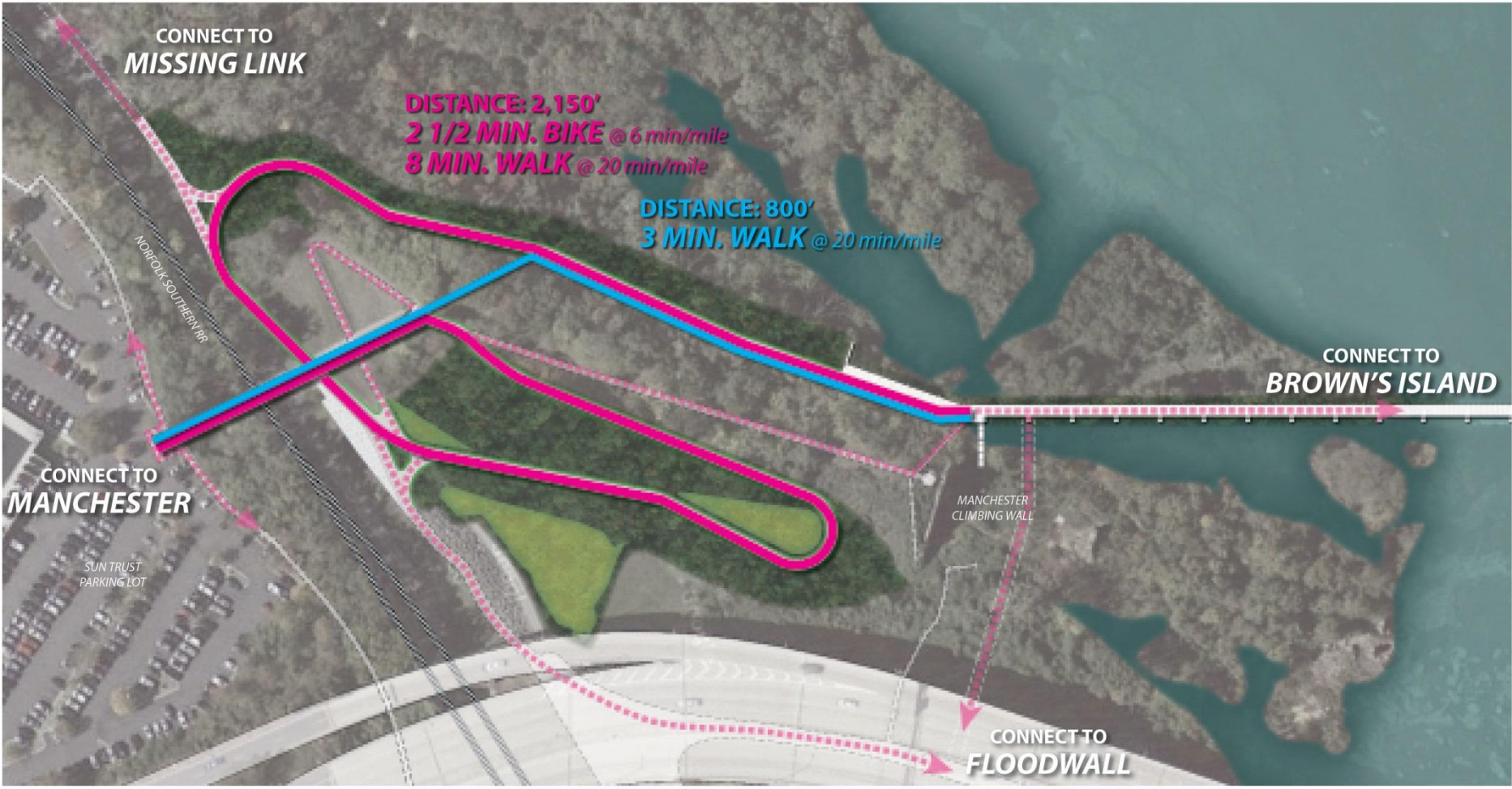


BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - ALTERNATE 'LOW OPTION'



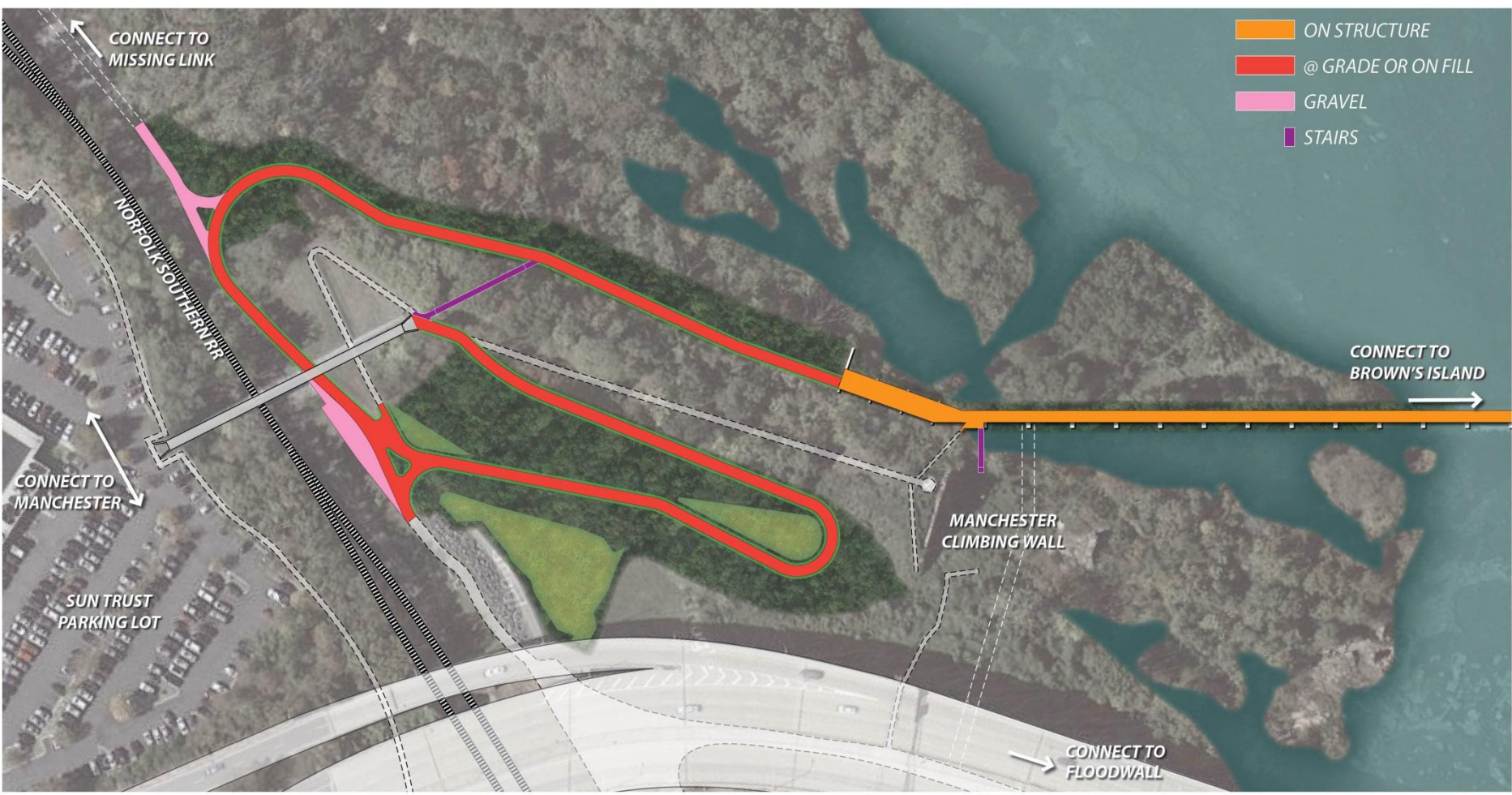
BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT





BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - CONNECTIONS



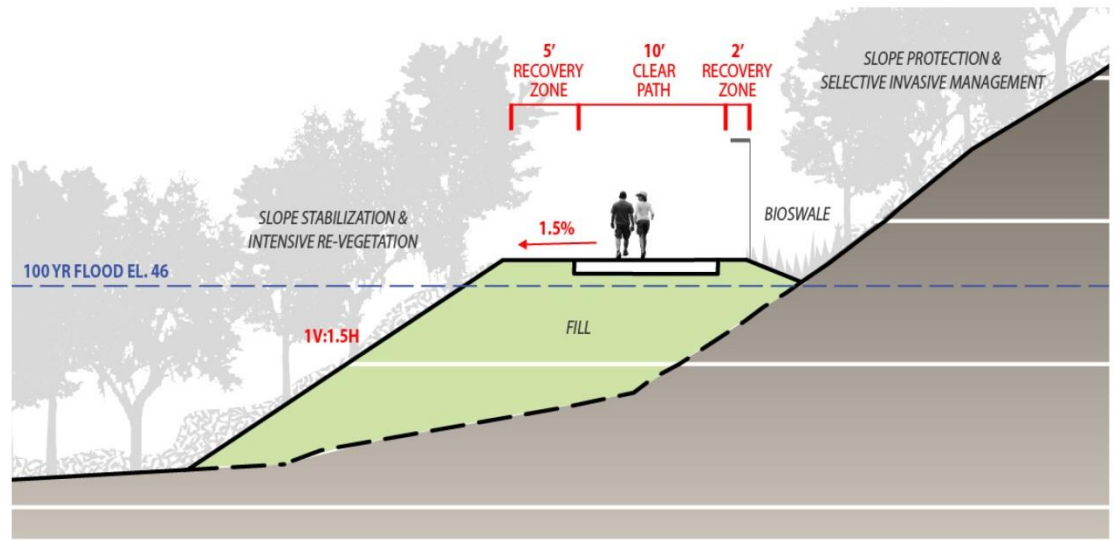
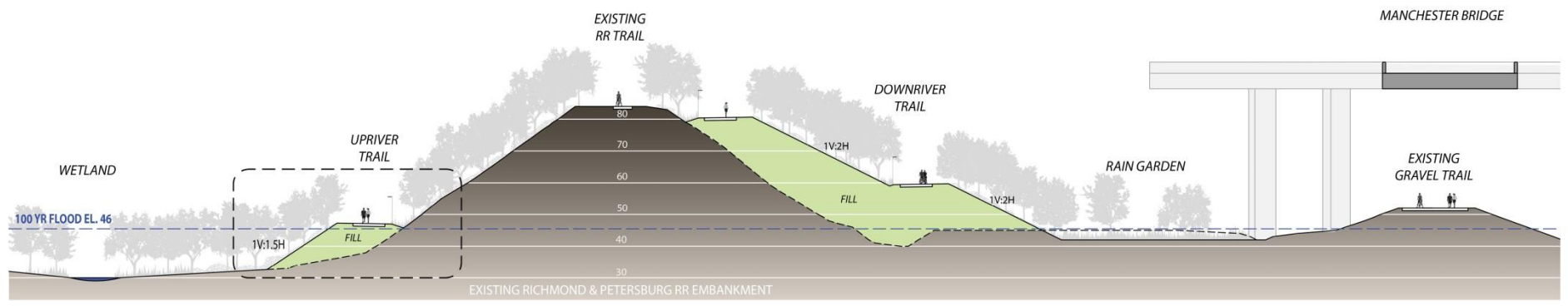


BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - MATERIALS



# BROWN'S ISLAND DAM WALK

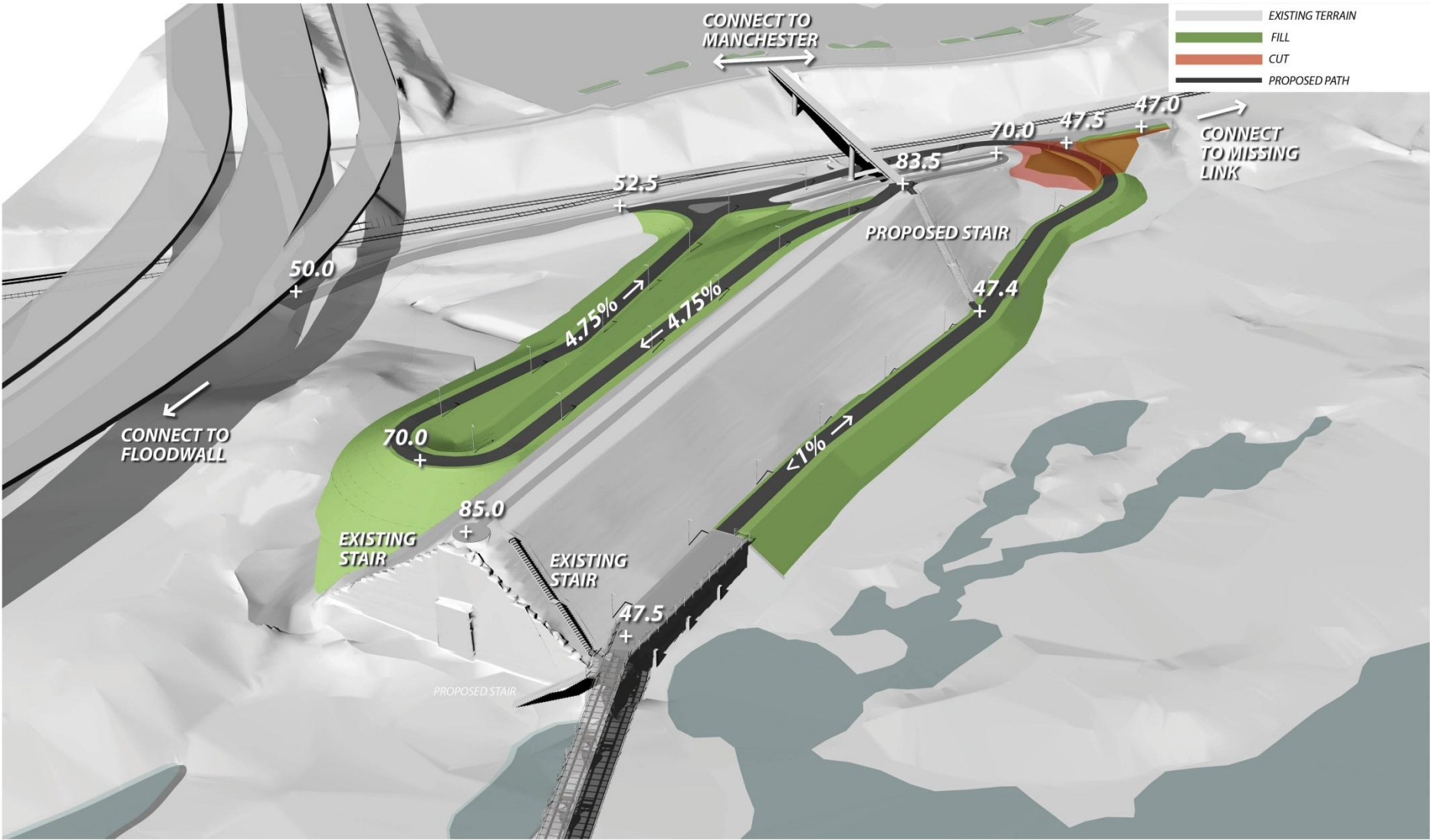
18 FEBRUARY 2014



BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - SECTION

# BROWN'S ISLAND DAM WALK

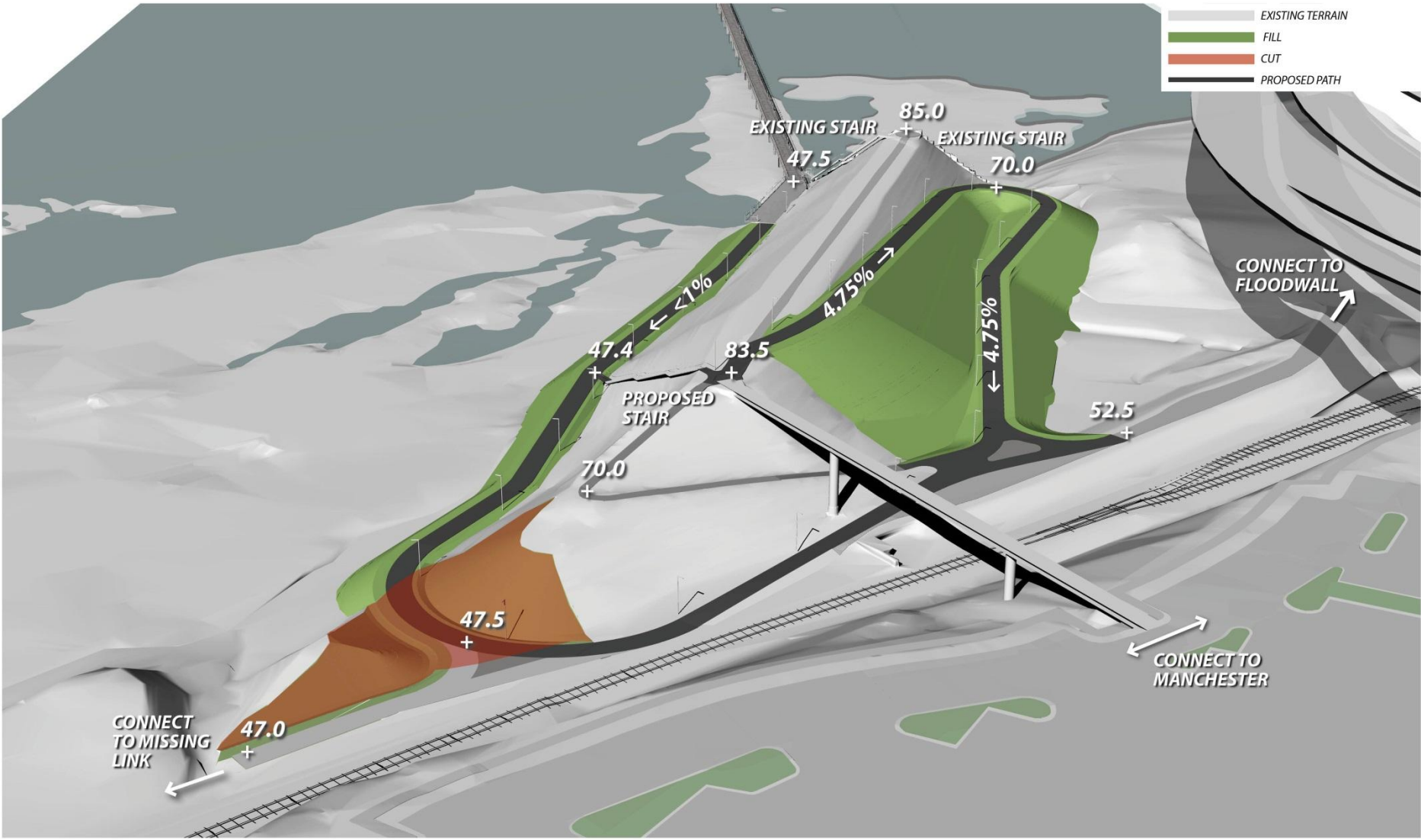
18 FEBRUARY 2014



BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - CUT/FILL

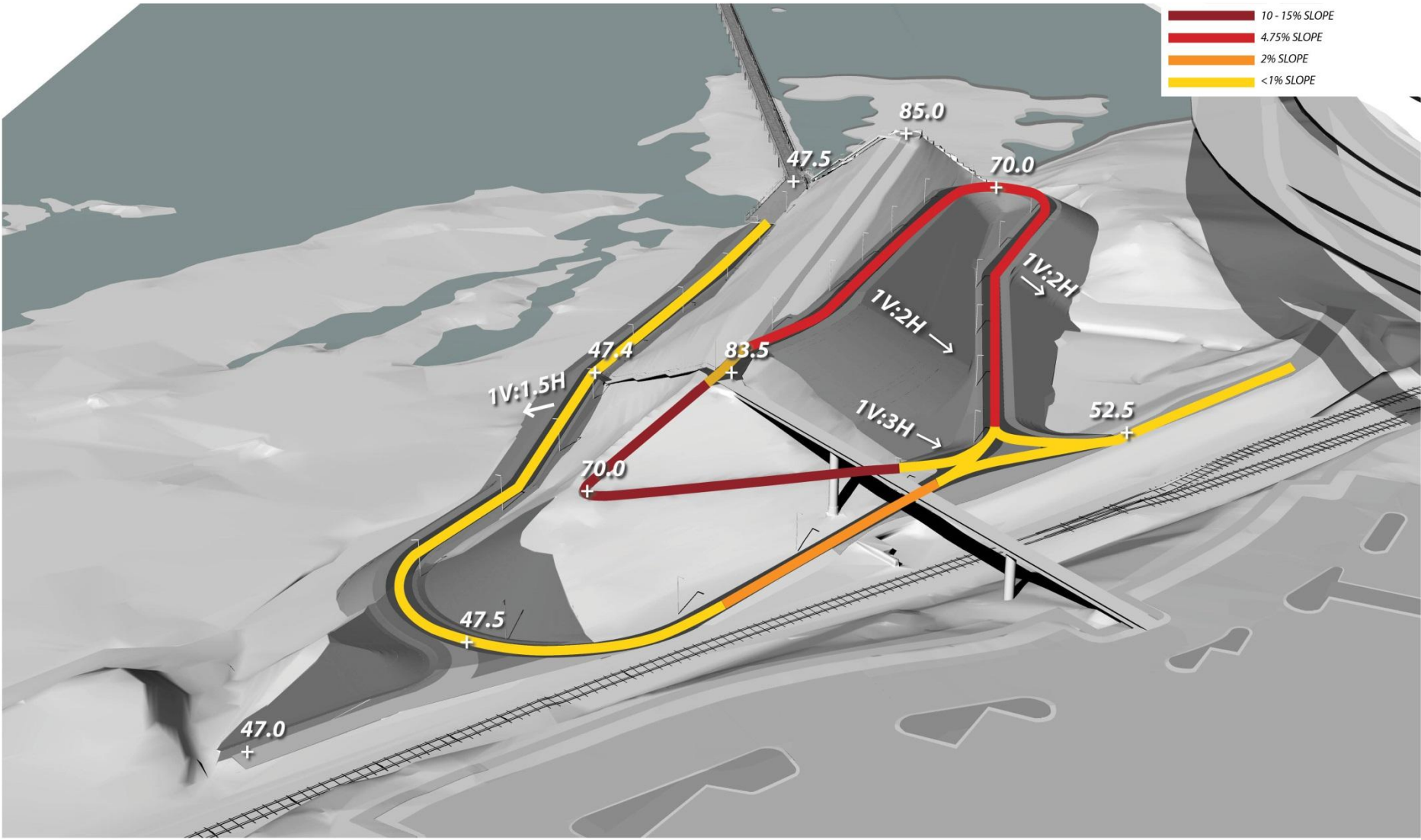
# BROWN'S ISLAND DAM WALK

18 FEBRUARY 2014

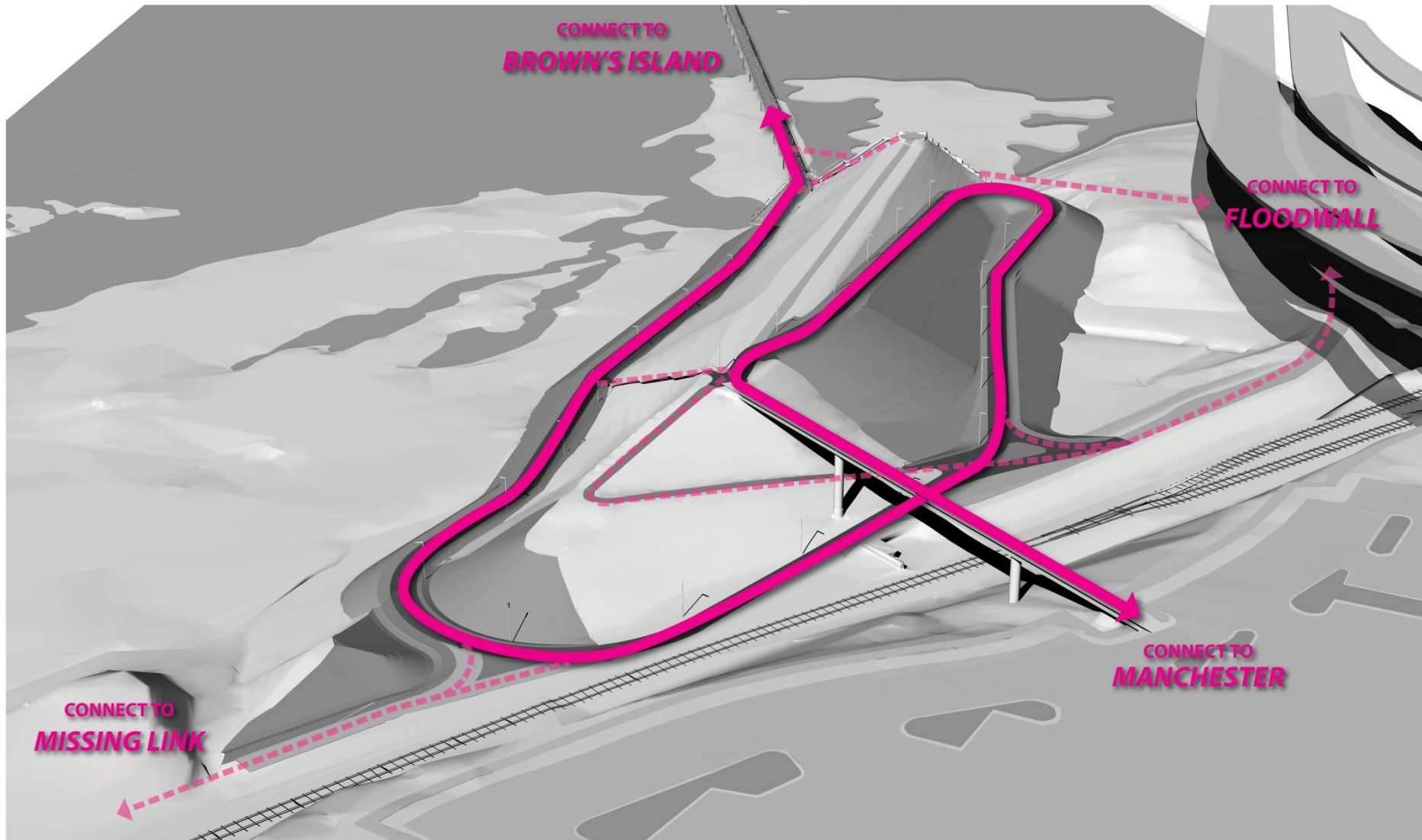


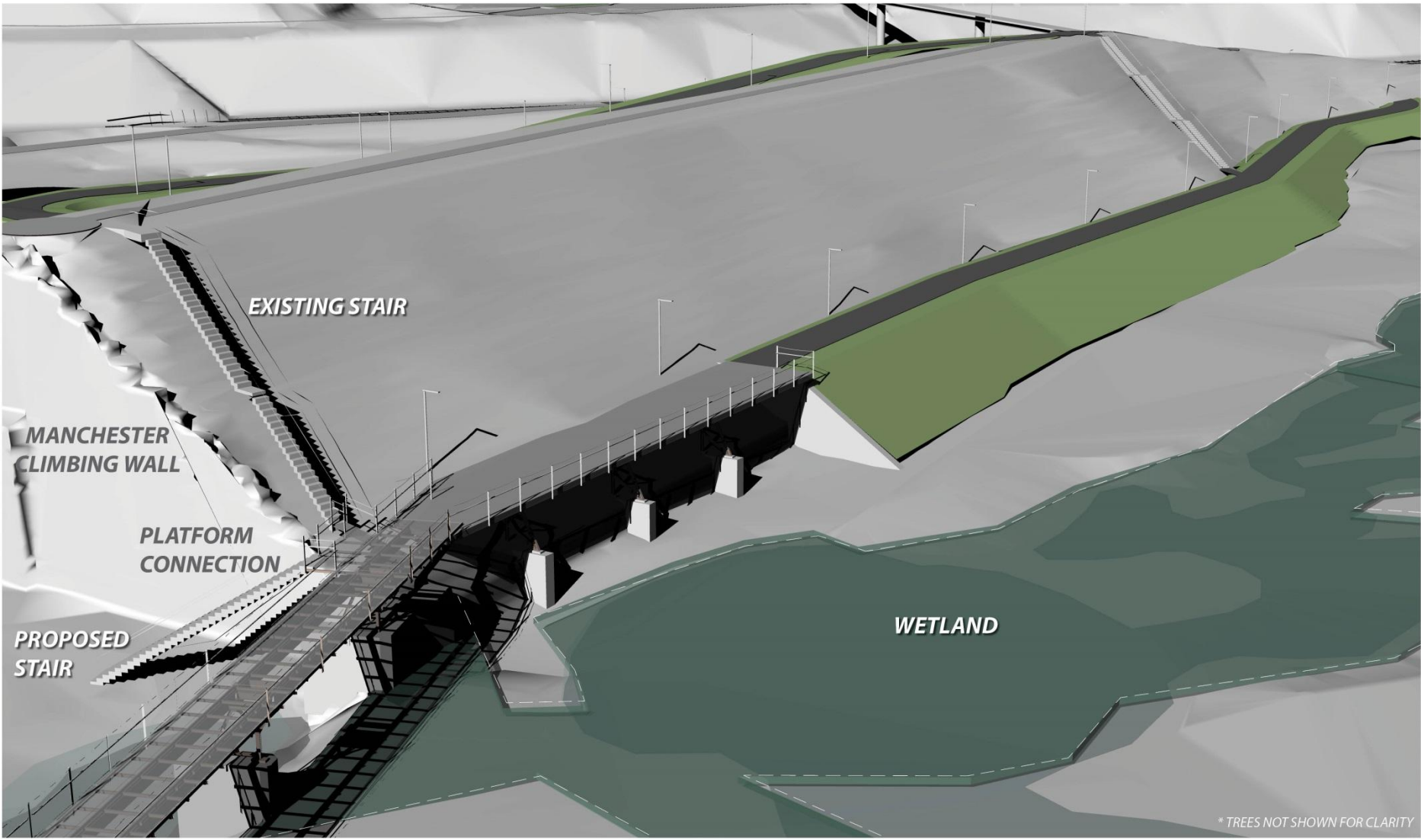
BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - CUT/FILL



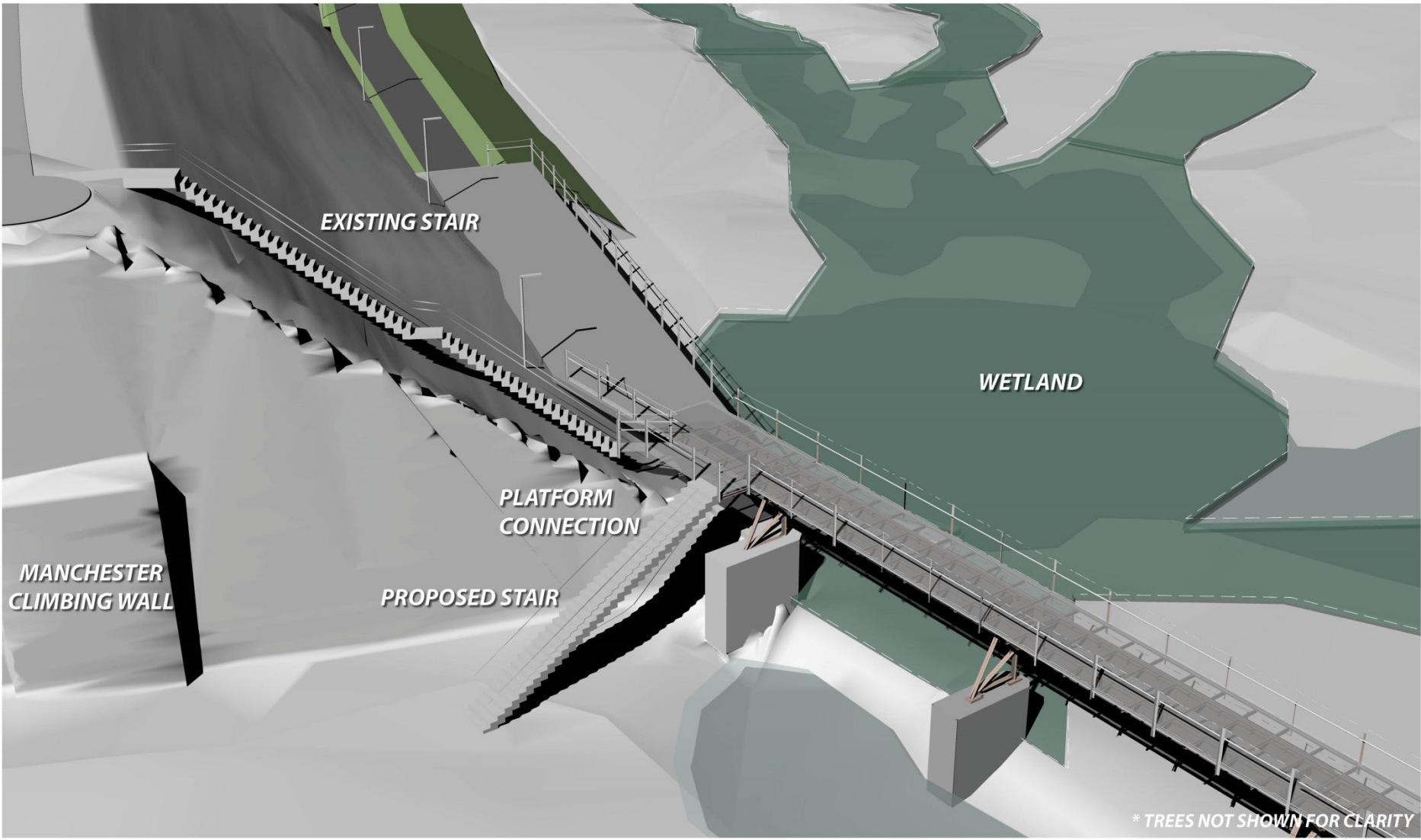


BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - SLOPES

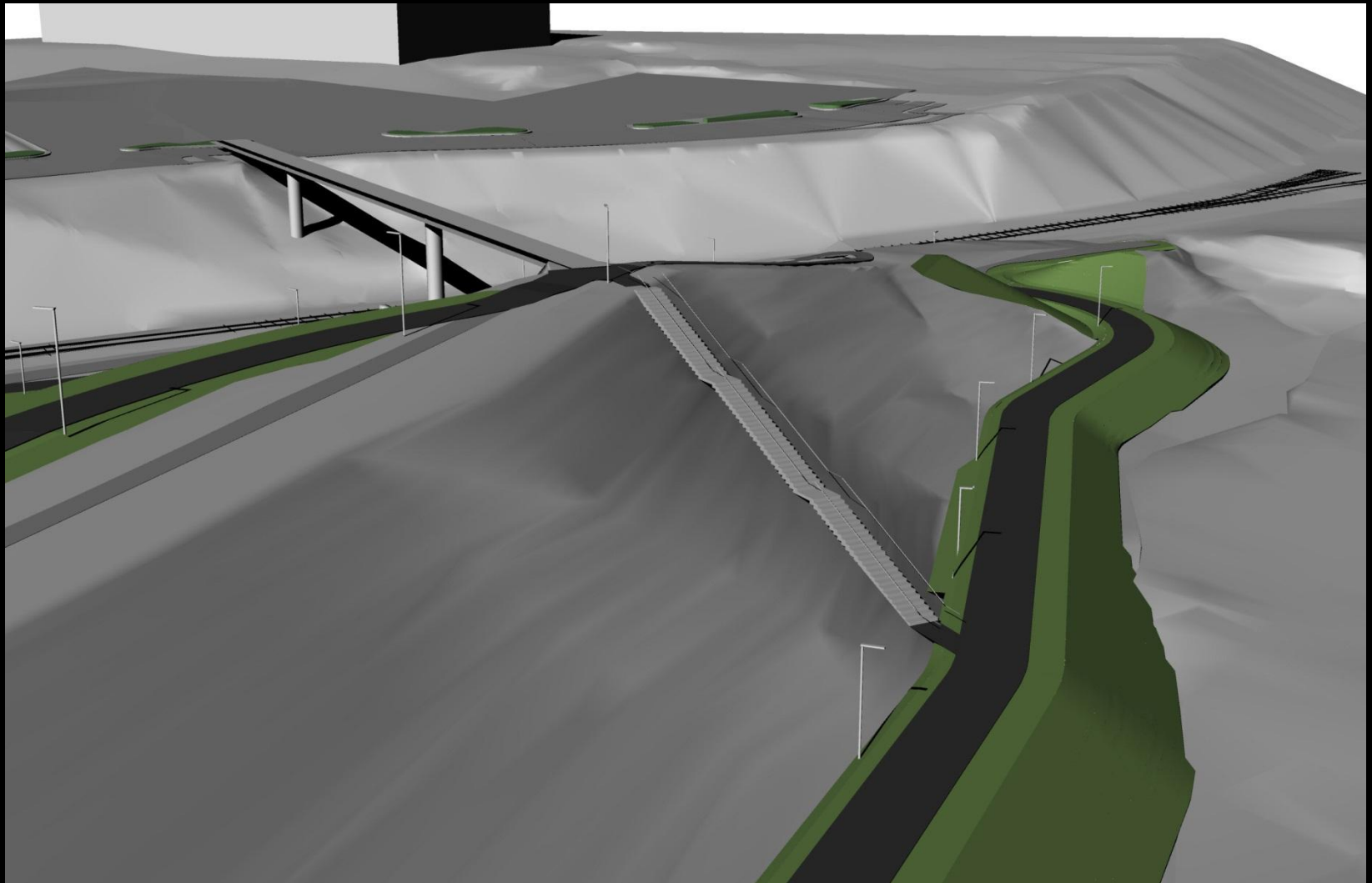


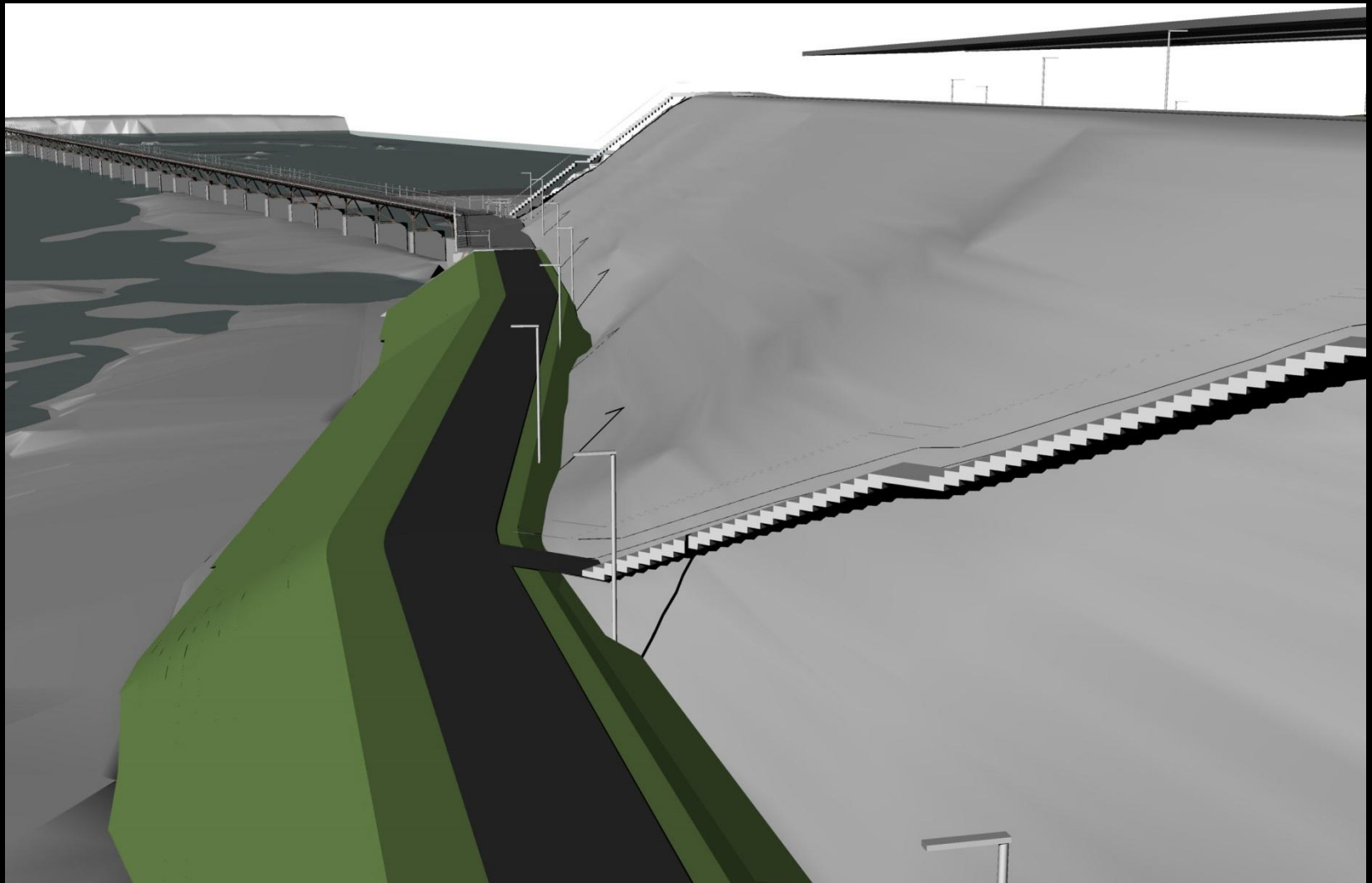


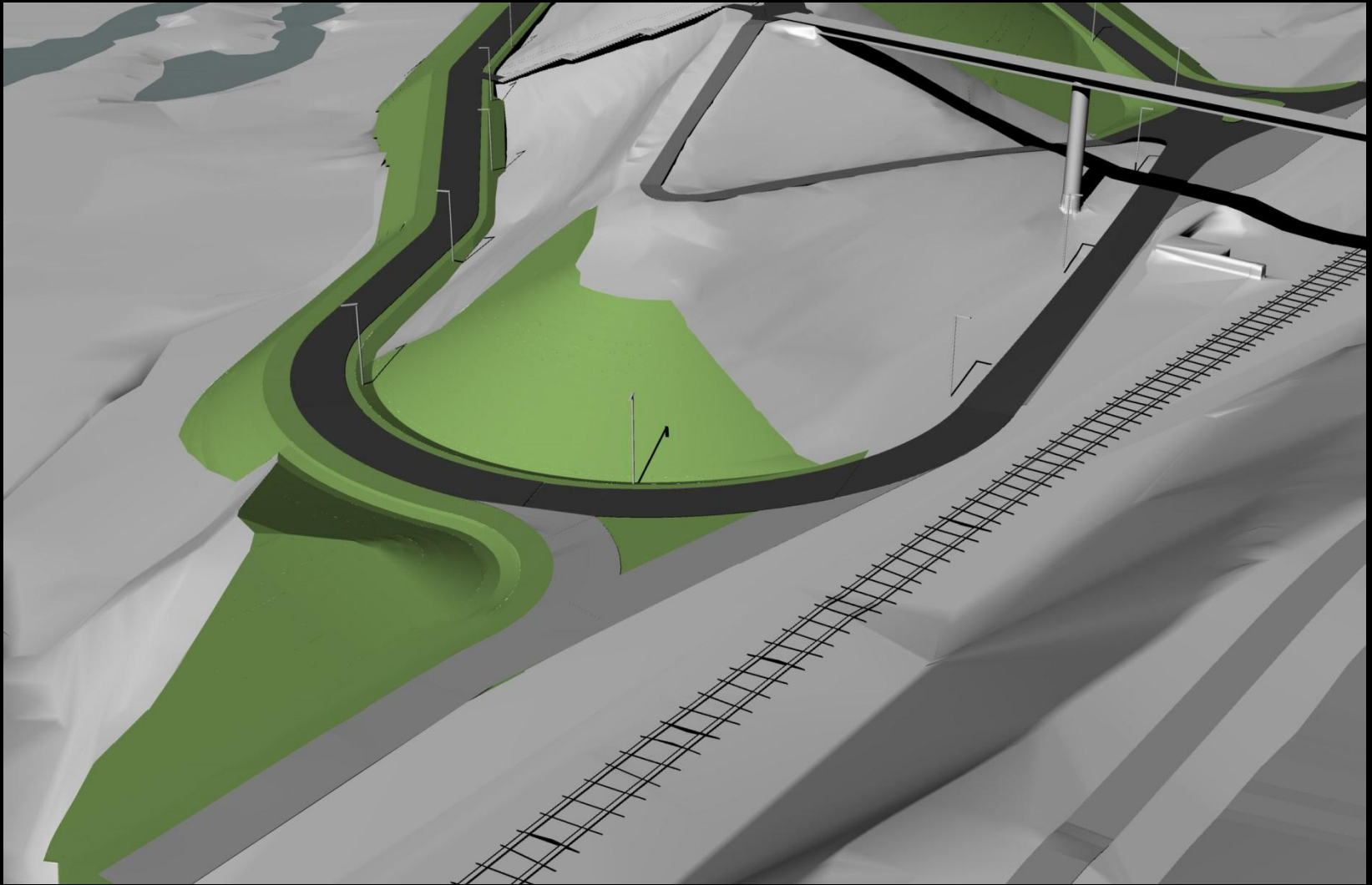
**BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - DAM WALK CONNECTION**

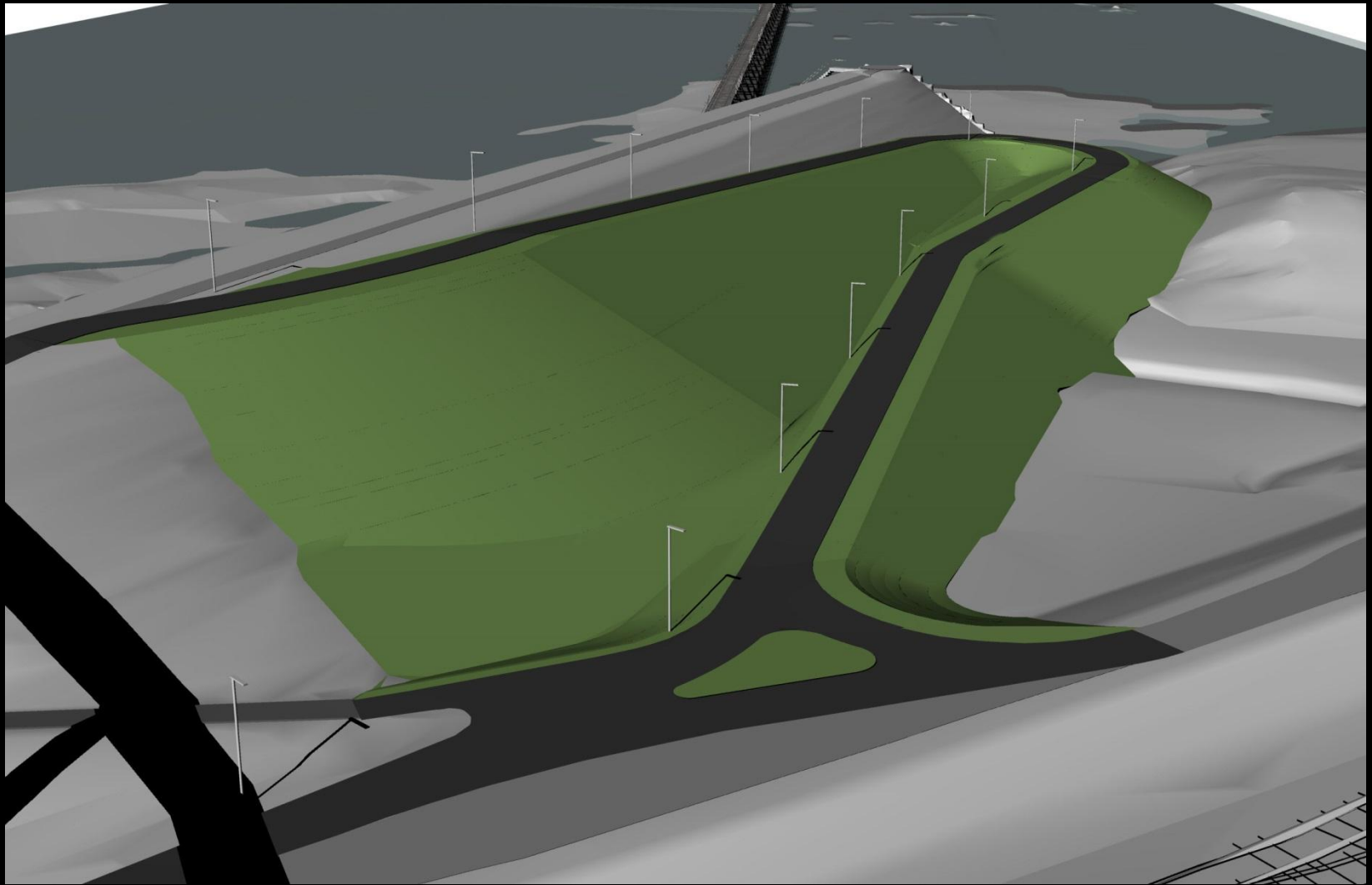


BROWN'S ISLAND DAM WALK // **MANCHESTER EMBANKMENT - DAM WALK CONNECTION**

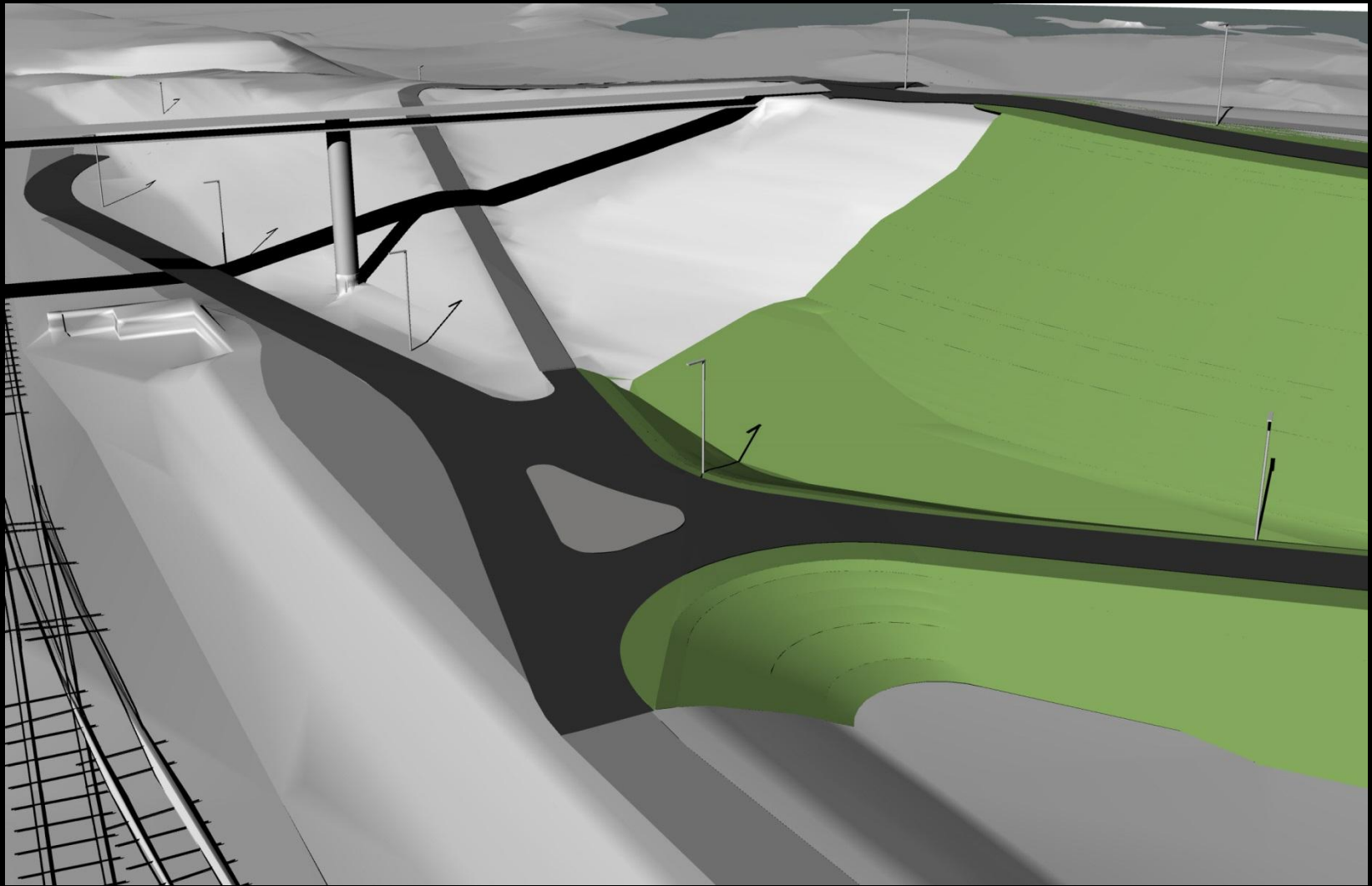


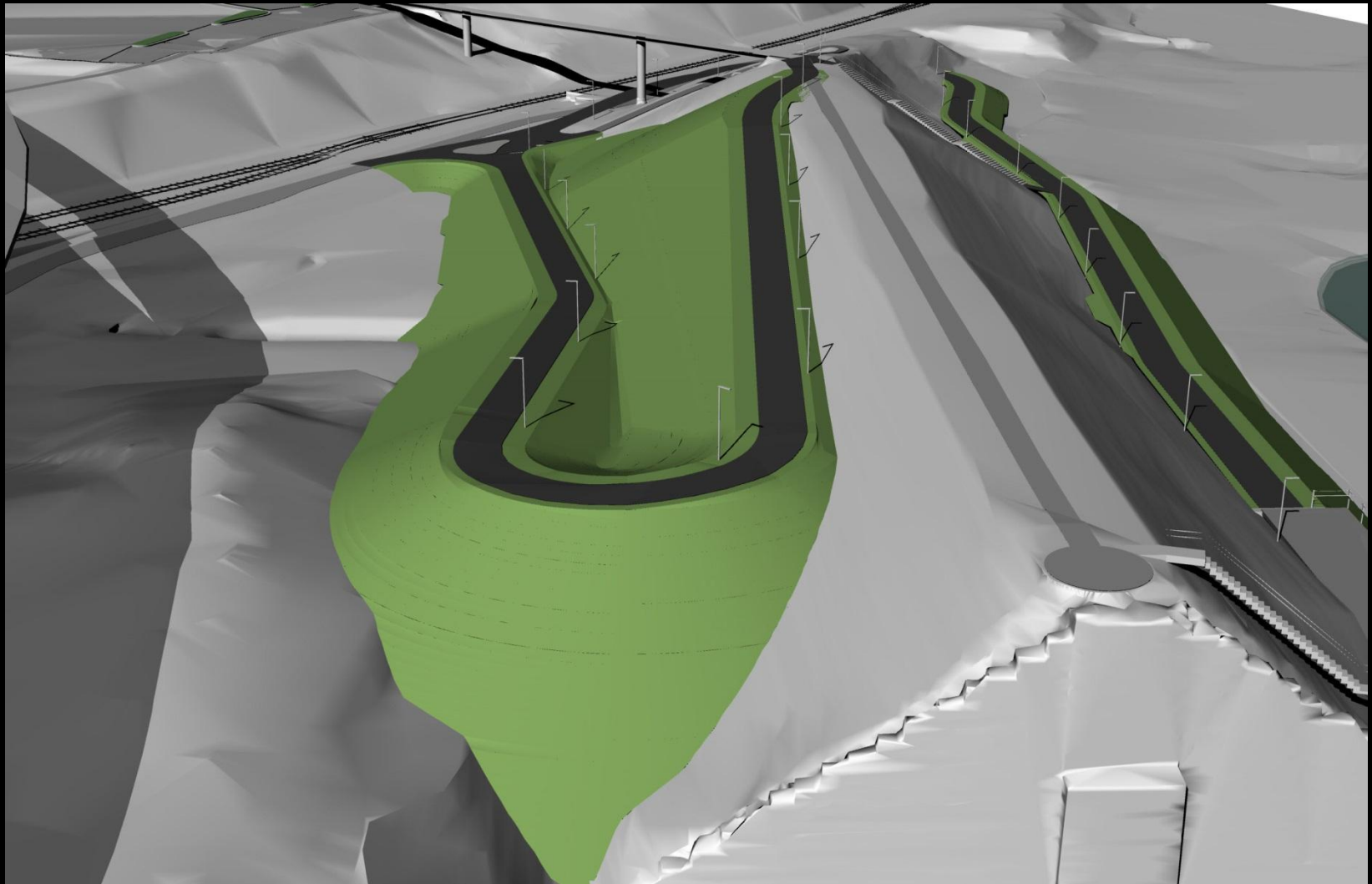


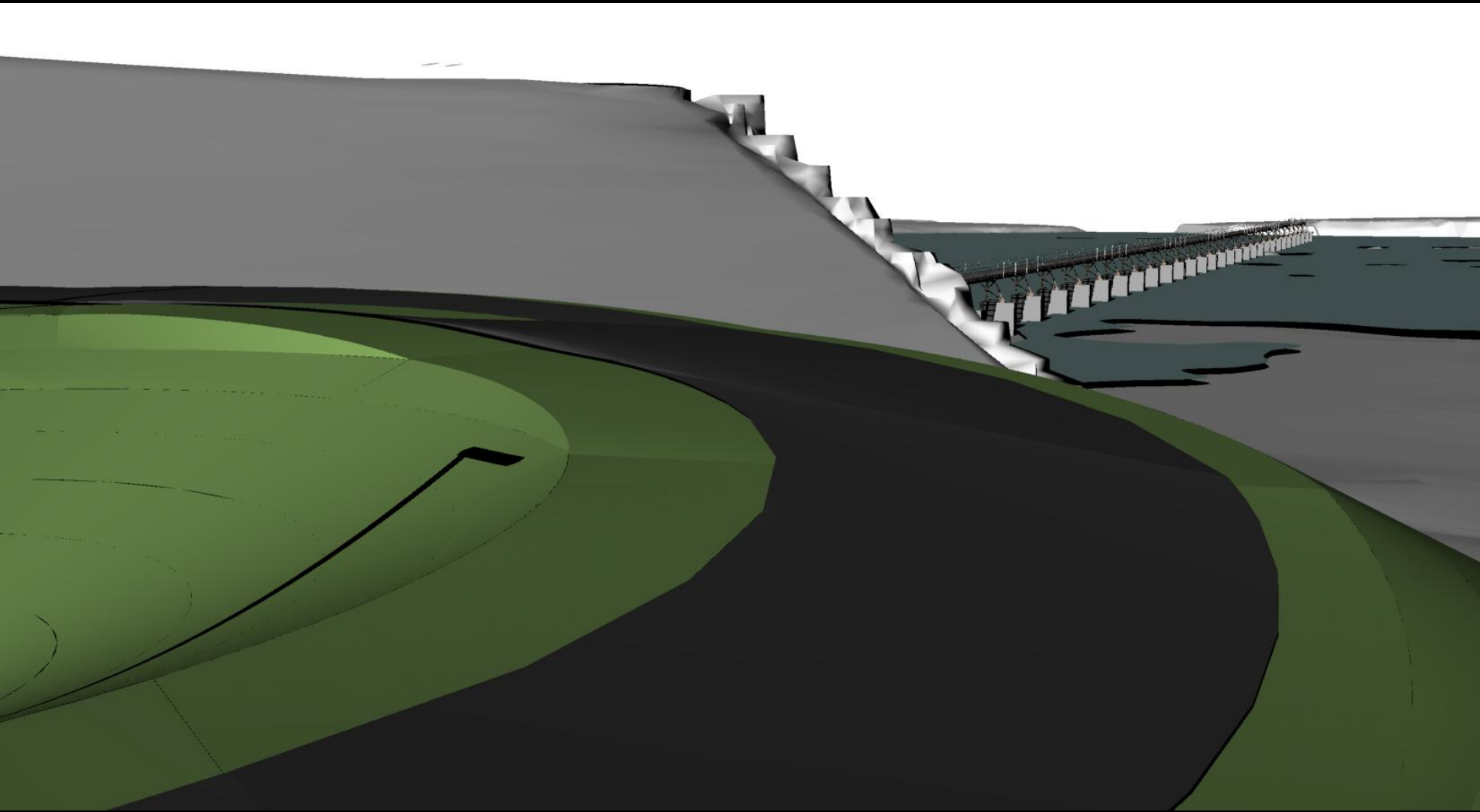


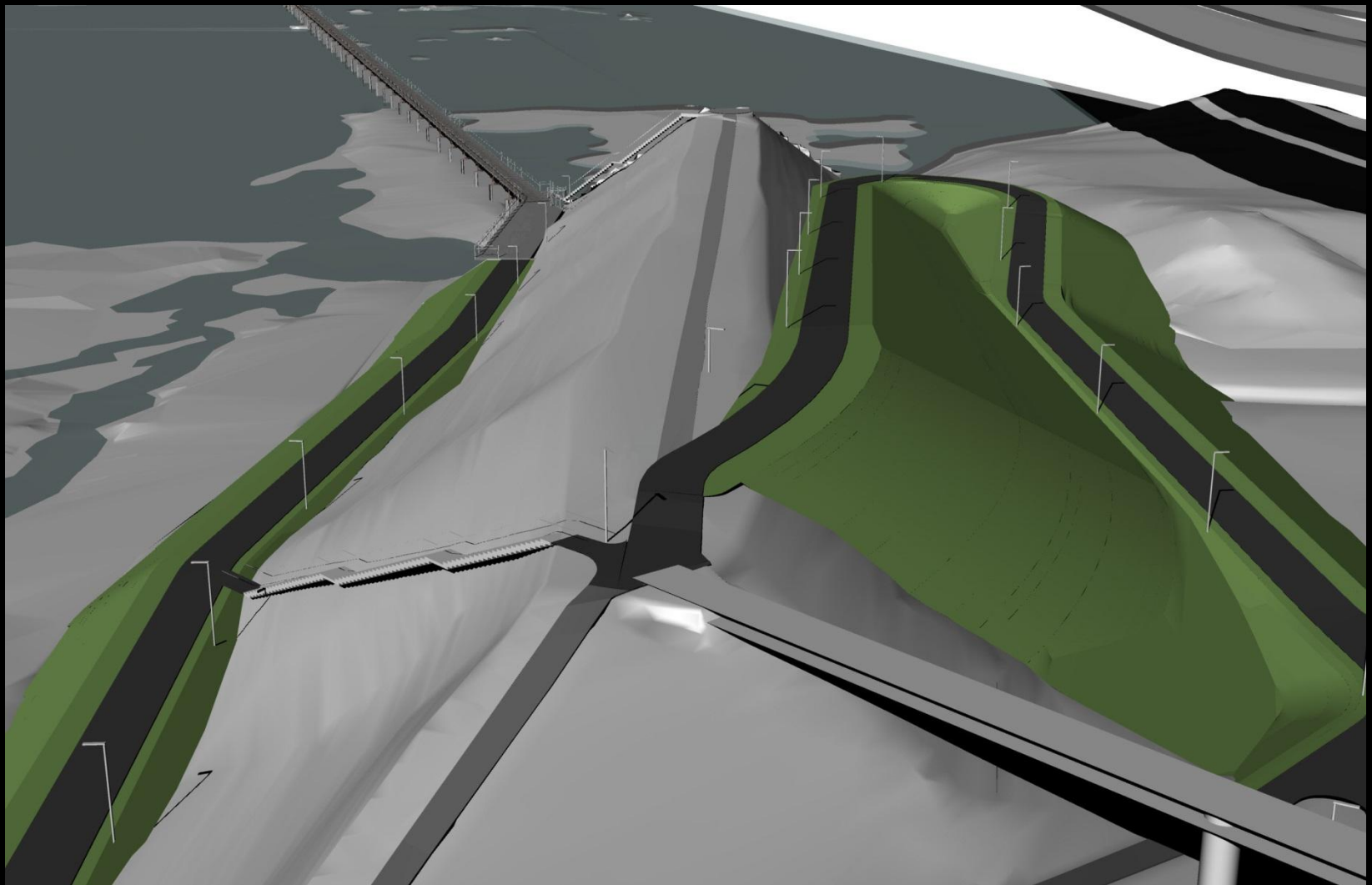






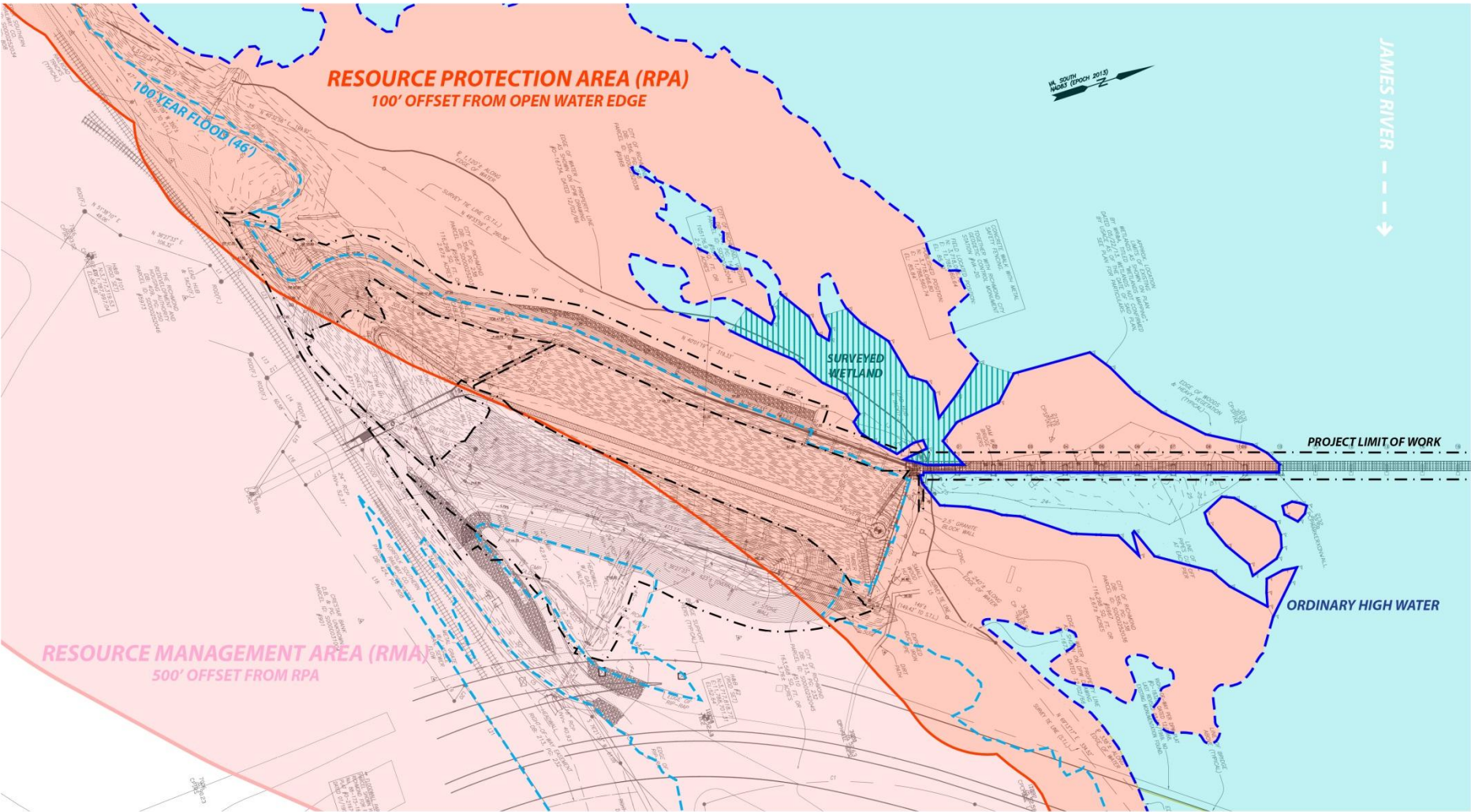






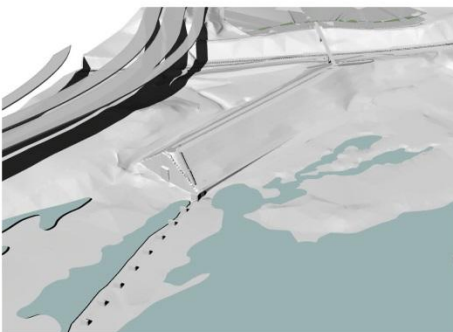
# BROWN'S ISLAND DAM WALK

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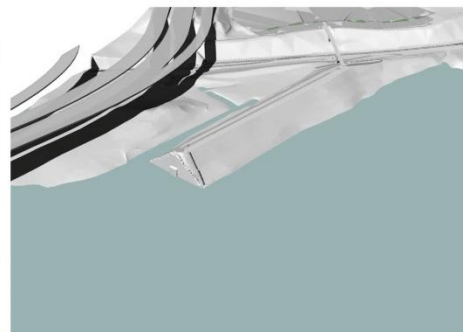


BROWN'S ISLAND DAM WALK // **SIGNIFICANT REGULATORY WATERS + WETLANDS**

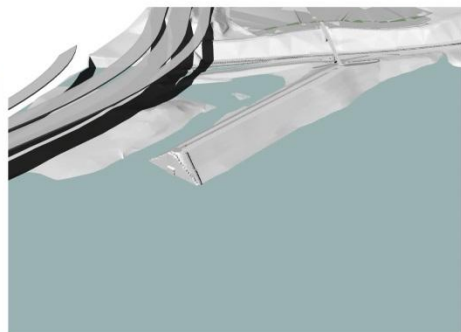
*EXISTING*



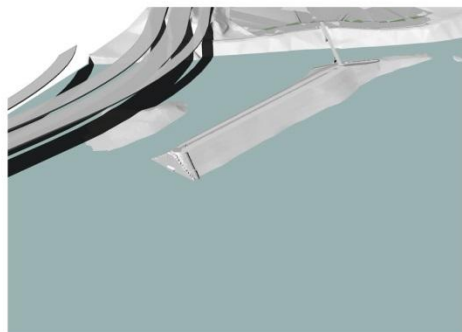
ORDINARY HIGH WATER



50 YR FLOOD (43')

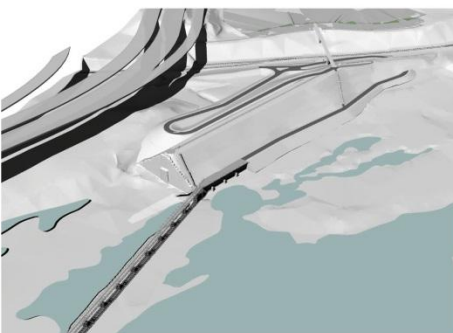


100 YR FLOOD (46')

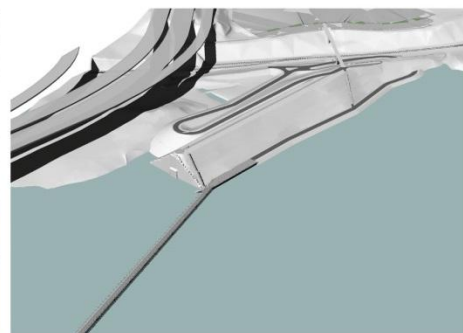


500 YR FLOOD (56')

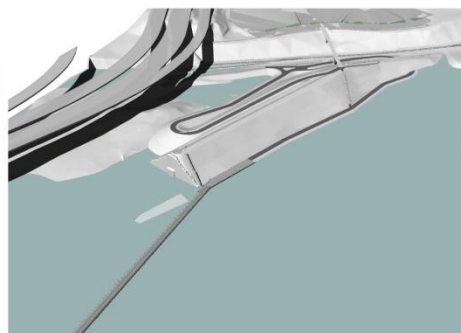
*PROPOSED*



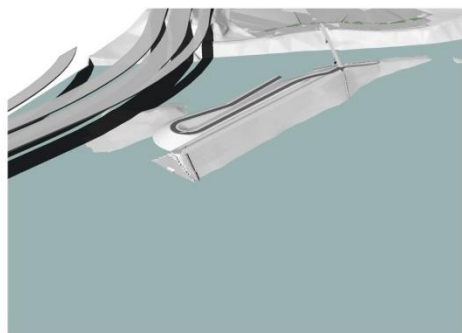
ORDINARY HIGH WATER



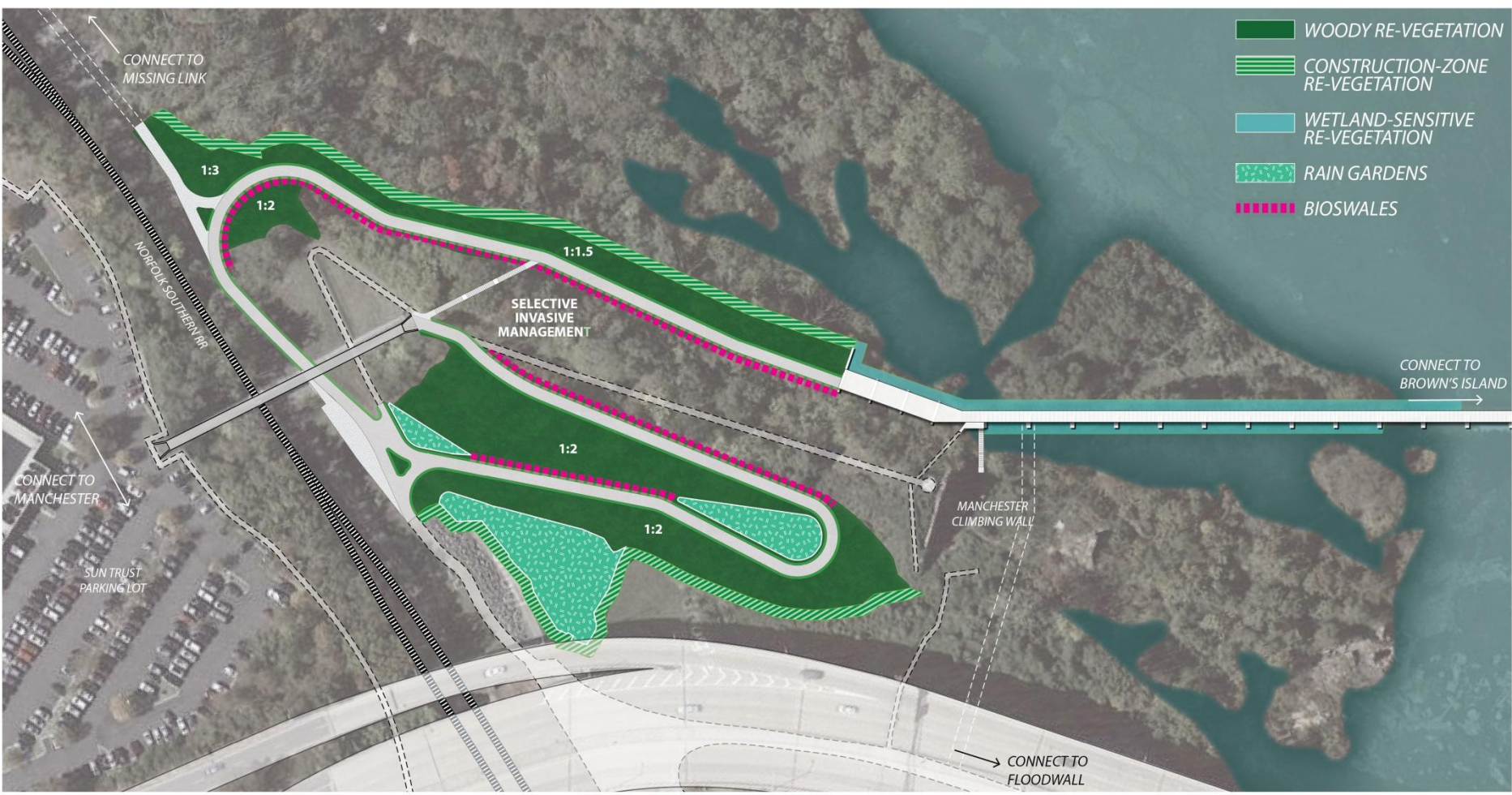
50 YR FLOOD (43')



100 YR FLOOD (46')



500 YR FLOOD (56')



BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - VEGETATION

## Re-vegetation of Manchester Embankment

- Re-vegetate with native and adaptive upland and wetland woody species

### Existing Condition



### Invasive Species

*Pueraria Montana* (Kudzu)

*Lonicera japonica* (Japanese honeysuckle)

*Stellaria media* (Chickweed)

*Setaria faberi* (Nodding foxtail)

*Microstegium vimineum* (Nepalese browntop)

*Ailanthus altissima* (Tree-of-heaven)

*Albizia julibrissin* (Silktree)

*Ligustrum sinense* (Chinese privet)

*Ligustrum japonicum* (Japanese privet)

*Hedera helix* (English ivy)

*Glechoma hederacea* (Ground ivy)



## Re-vegetation of Manchester Embankment

- Slope Stabilization Study by geotechnical consultant
- Existing Tree Survey
- *Slope stabilization product (geoweb / geogrid / turfgrids) soil & vegetation*
- **Re-vegetate slope with native and adaptive woody species**  
 – *look for volunteer opportunities*



Scientific Name	Common Name	Growth Form
<i>Alnus serrulata</i> (Aiton) Willd.	hazel alder	Shrub
<i>Amelanchier canadensis</i> (L.) Medik.	Canadian serviceberry	Shrub
<i>Cornus amomum</i> Mill.	silky dogwood	Shrub
<i>Hamamelis virginiana</i> L.	American witchhazel	Shrub
<i>Lindera benzoin</i> (L.) Blume	northern spicebush	Shrub
<i>Sambucus nigra</i> L. ssp. <i>canadensis</i> (L.) R.	American black elderberry	Shrub
<i>Symphoricarpos orbiculatus</i> Moench	coralberry	Shrub
<i>Viburnum dentatum</i> L.	southern arrowwood	Shrub
<i>Viburnum prunifolium</i> L.	blackhaw	Shrub
<i>Acer negundo</i> L.	boxelder	Tree
<i>Acer rubrum</i> L.	red maple	Tree
<i>Betula nigra</i> L.	river birch	Tree
<i>Celtis occidentalis</i> L.	common hackberry	Tree
<i>Cercis canadensis</i> L.	eastern redbud	Tree
<i>Chionanthus virginicus</i> L.	white fringetree	Tree
<i>Cornus florida</i> L.	flowering dogwood	Tree
<i>Diospyros virginiana</i> L.	common persimmon	Tree
<i>Fagus grandifolia</i> Ehrh.	American beech	Tree
<i>Fraxinus pennsylvanica</i> Marsh.	green ash	Tree
<i>Ilex opaca</i> Aiton	American holly	Tree
<i>Liquidambar styraciflua</i> L.	sweetgum	Tree
<i>Liriodendron tulipifera</i> L.	tuliptree	Tree
<i>Nyssa sylvatica</i> Marsh.	blackgum	Tree
<i>Platanus occidentalis</i> L.	American sycamore	Tree
<i>Prunus serotina</i> Ehrh.	black cherry	Tree
<i>Quercus alba</i> L.	white oak	Tree
<i>Quercus phellos</i> L.	willow oak	Tree
<i>Quercus rubra</i> L.	northern red oak	Tree
<i>Sassafras albidum</i> (Nutt.) Nees	sassafras	Tree
<i>Ulmus americana</i> L.	American elm	Tree

- *Improve and expand native and adaptive habitat*
- *Green infrastructure to manage stormwater on site*
- *Provide public access to enhanced Richmond riverfront environment*

**WOODY UPLAND RE-VEGETATION**  
SLOPE STABILIZATION / HABITAT



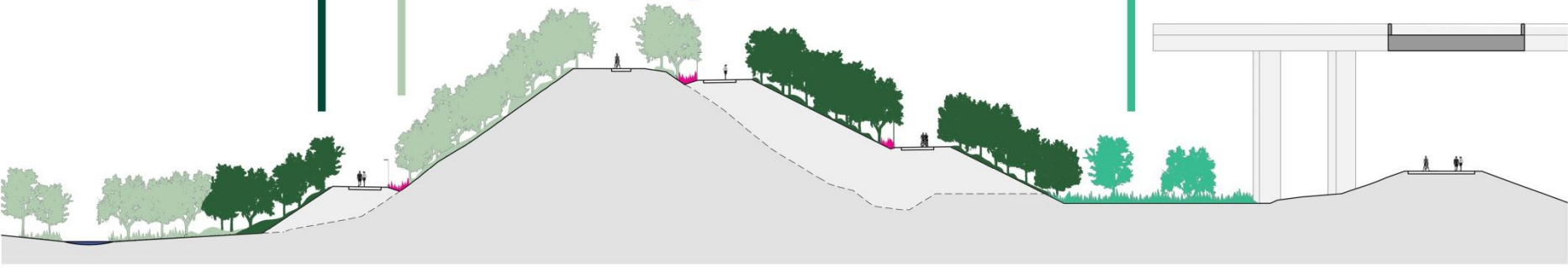
**EXISTING VEGETATION**  
SELECTIVE INVASIVE MANAGEMENT



**BIOSWALES**  
GREEN INFRASTRUCTURE / HABITAT



**RAIN GARDENS**  
GREEN INFRASTRUCTURE / HABITAT



BROWN'S ISLAND DAM WALK // **MANCHESTER EMBANKMENT - RE-VEGETATION**

## **AGENCY**

***VIRGINIA MARINE RESOURCES COMMISSION (MRC)***

***CITY OF RICHMOND***

***U.S. ARMY CORPS OF ENGINEERS (USACE)***

***VA DEPT. OF ENVIRONMENTAL QUALITY (DEQ)***

***VA DEPT. OF HISTORIC RESOURCES (DHR)***

***VA DEPT. OF CONSERVATION + RECREATION (DCR)***

***VA DEPT. OF GAME AND INLAND FISHERIES (DGIF)***

## **COORDINATION**

work conducted "on", "in", or "under" subaqueous bottoms, i.e., James River

clearing of vegetation within the RPA

temporary and/or permanent impacts to Waters of the U.S., including wetlands, if applicable

temporary and/or permanent impacts to Waters of the U.S., including wetlands, if applicable

confirming if additional coordination is required

confirming if additional coordination is required

confirming if additional coordination is required

## LED GROUND-MOUNTED POLE

CREE SLM SERIES



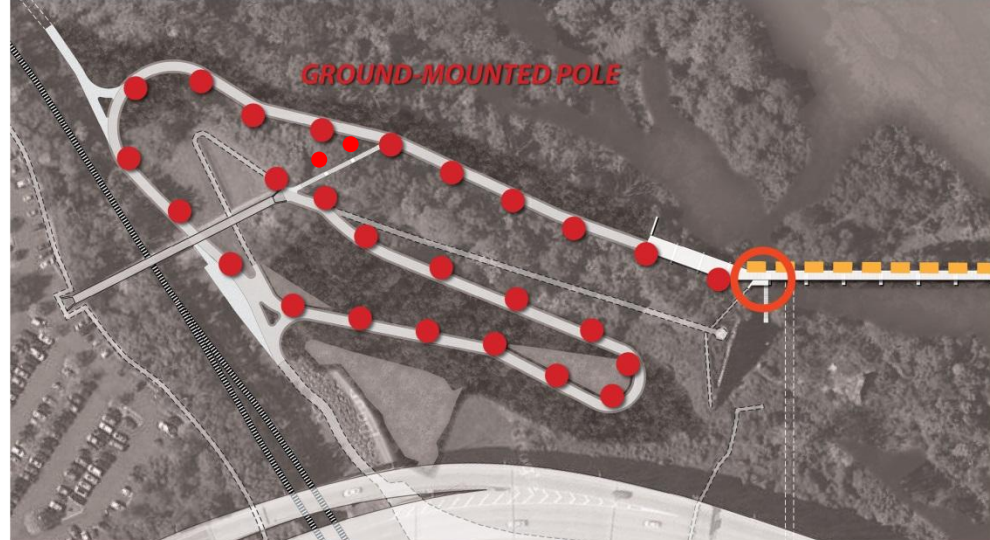
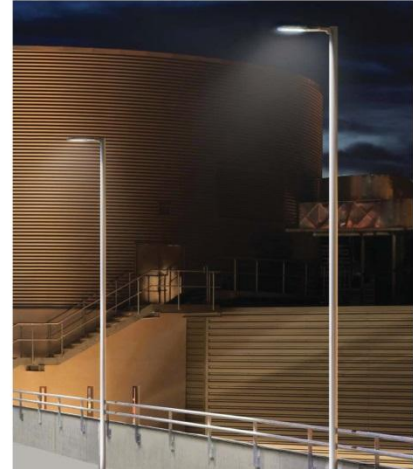
PIL USA SYSTEMPARK LINE



GARDCO - PUREFORM



GARDCO - ECOFORM



## PAVING

ASPHALT  
COLD MIX



CRUSHED STONE



## GUARDRAIL

POST & CABLE  
OPPORTUNITY FOR MATERIAL REUSE



## STAIRS

TEXTURED STEEL



## SLOPES + VEGETATION

SOIL-FILLED RIP RAP



SLOPE STABILIZATION  
GEOGRID



BIOSWALES  
COIR MAT



PLANTINGS  
NATIVE RIPARIAN & UPLAND SPECIES



## Mission Statement

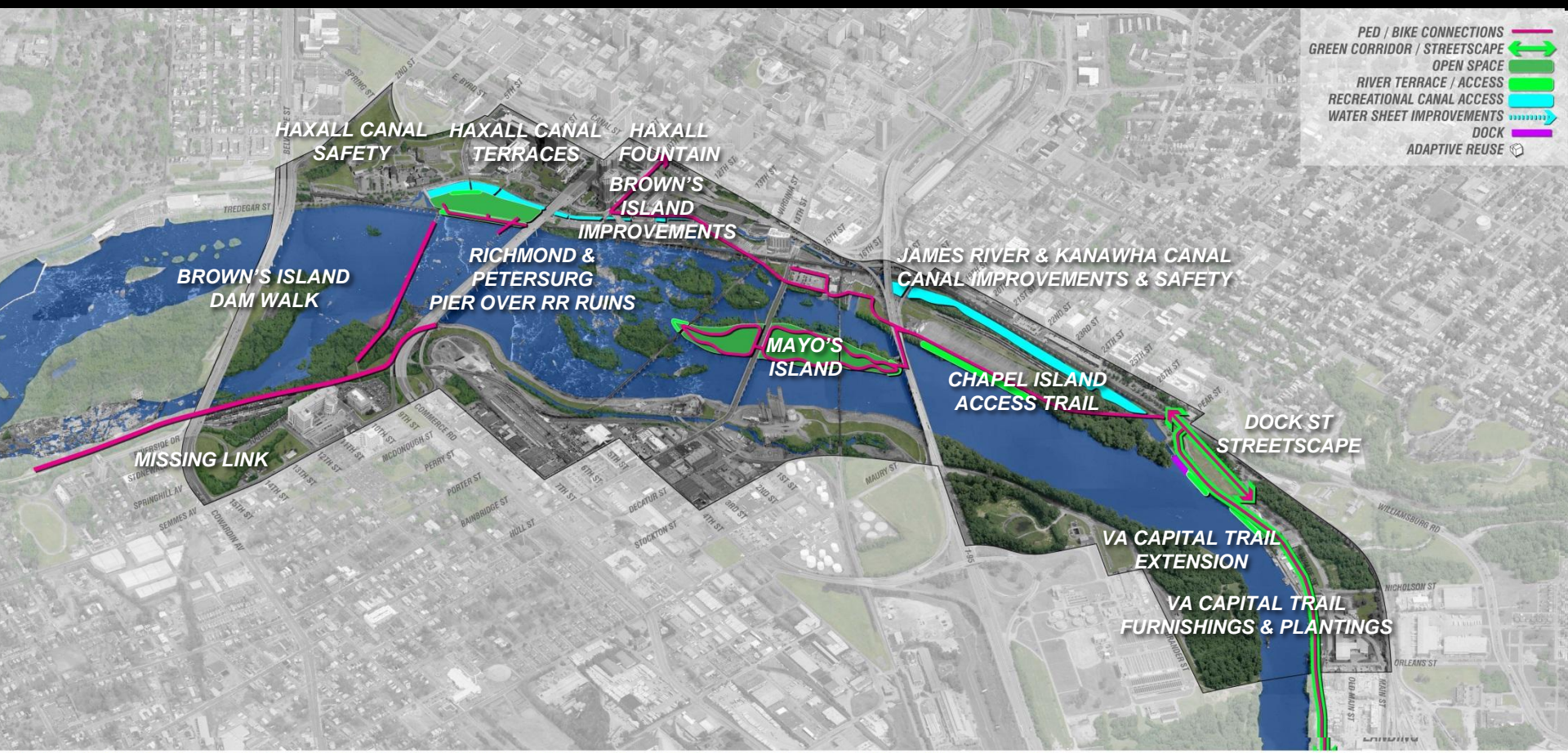
As the first step in the implementation of the Richmond Riverfront Plan, the Brown's Island Dam Walk (BIDW) will **transform** an industrial era structure into a **key connection** between both banks of the James River at the **center of Richmond's Riverfront**.

The BIDW will expand the Riverfront circulation network – a series of connections providing access along, across, and around the river – to serve a **diverse group of users** – including persons with disabilities, cyclists, pedestrians, and runners – in their pursuit of alternative transportation, fitness, and the **spectacular natural beauty** of the Riverfront.

The project models **ecologically-sensitive and sustainable** trail development by minimizing runoff, removing invasive species, and extensively re-planting slopes with native species resulting in a diverse array of **new or enhanced habitats** for the incredible flora and fauna of the Riverfront.

# BROWN'S ISLAND DAM WALK

18 FEBRUARY 2014



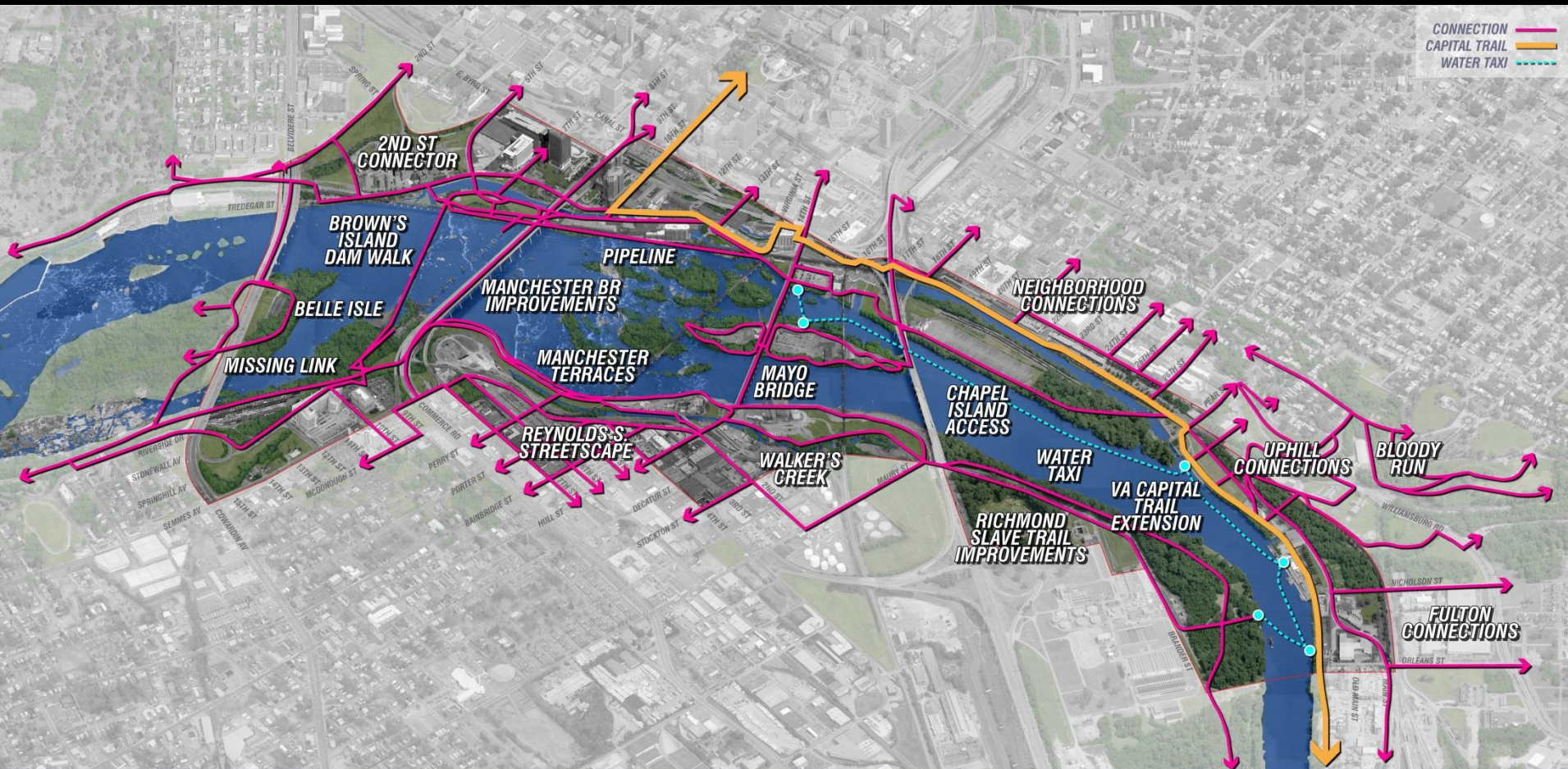
*NOTE: hard costs in 2012 dollars; excludes land acquisition, significant demolition or stabilization, contamination/remediation, escalation of costs, and soft costs.*

## PRIORITY 1



# BROWN'S ISLAND DAM WALK

18 FEBRUARY 2014



## CONNECTIONS

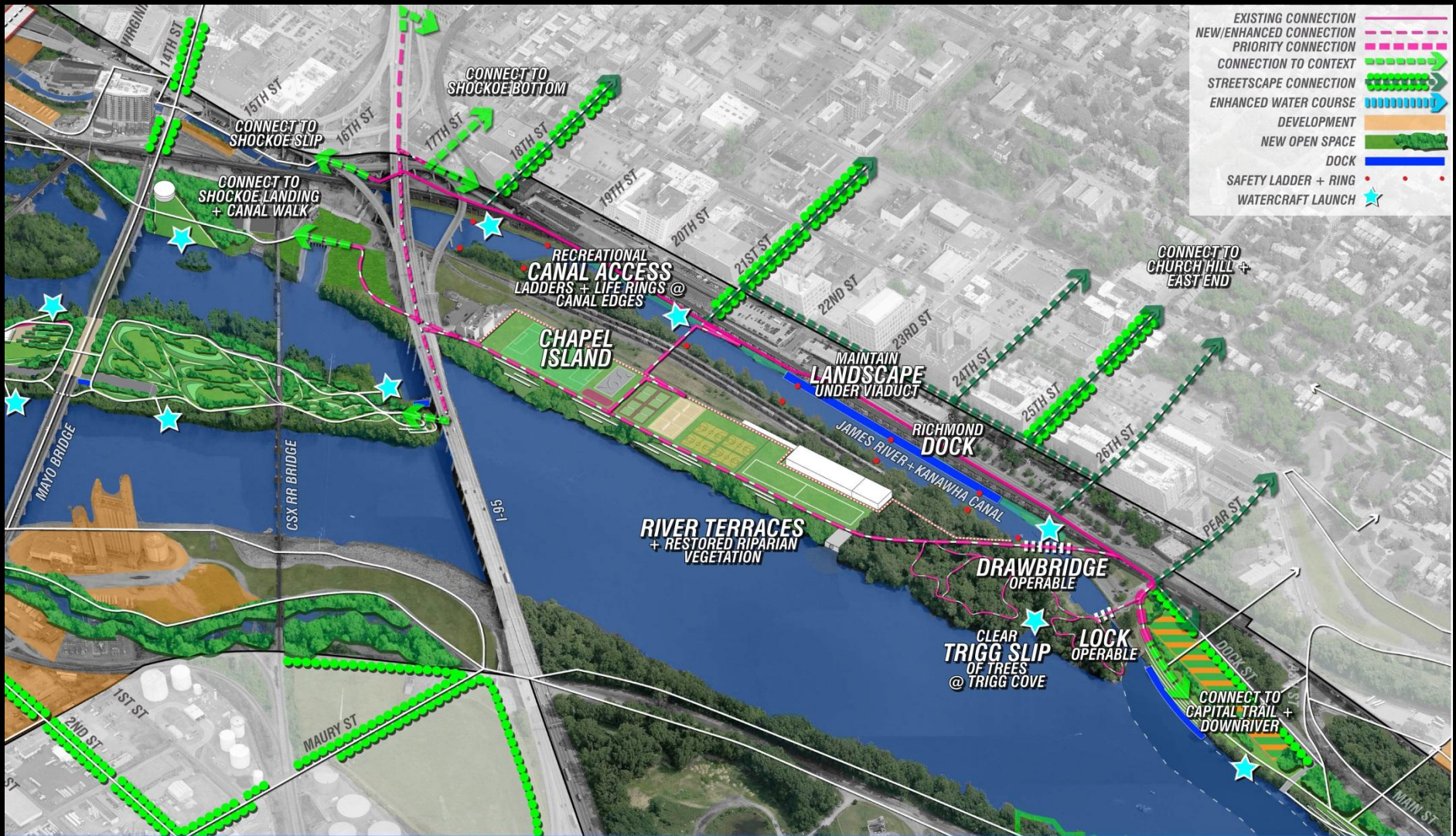






# BROWN'S ISLAND DAM WALK

18 FEBRUARY 2014



**CHAPEL ISLAND**





*DOWNRIVER:  
LEHIGH CEMENT PROPERTY*





BROWN'S ISLAND DAM WALK // **SITE PLAN**