

RICHMOND RIVERFRONT IMPROVEMENTS: PRIORITY 1

BROWN'S ISLAND DAM WALK

SCHEMATIC DESIGN

28 FEBRUARY 2013

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.



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

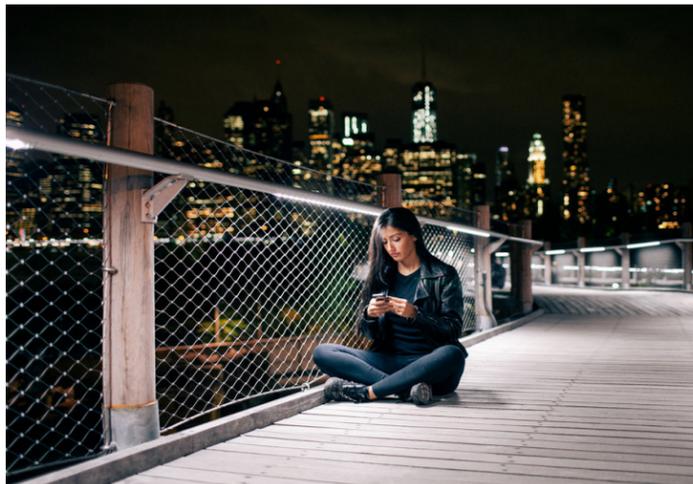
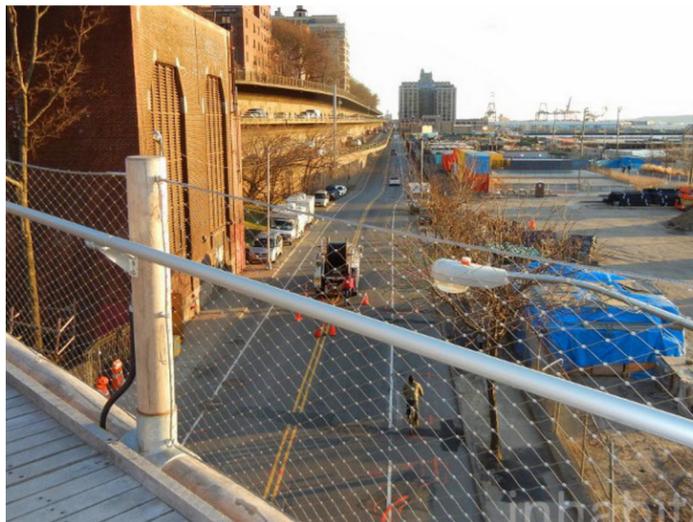


BROWN'S ISLAND DAM WALK // SITE PLAN

SCHEMATIC DESIGN
28 FEBRUARY 2014

SQUIBB PARK FOOTBRIDGE

BROOKLYN, NY
WIDTH: 8' / LENGTH: 450'



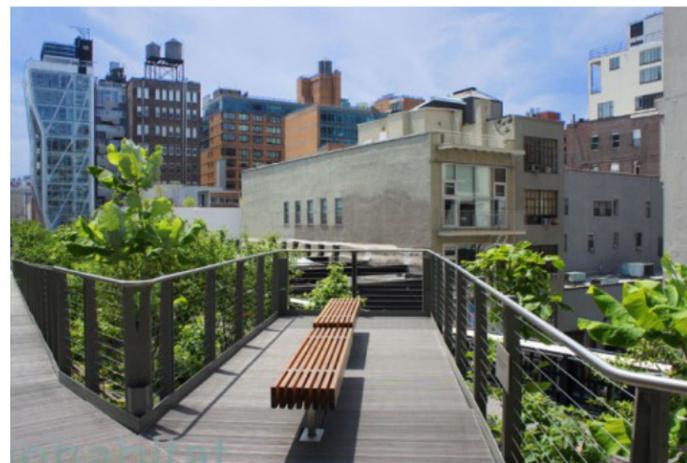
N. POINT PARK BICYCLE/PED BRIDGE

CAMBRIDGE/BOSTON, MA
WIDTH: 12' / LENGTH: 700'



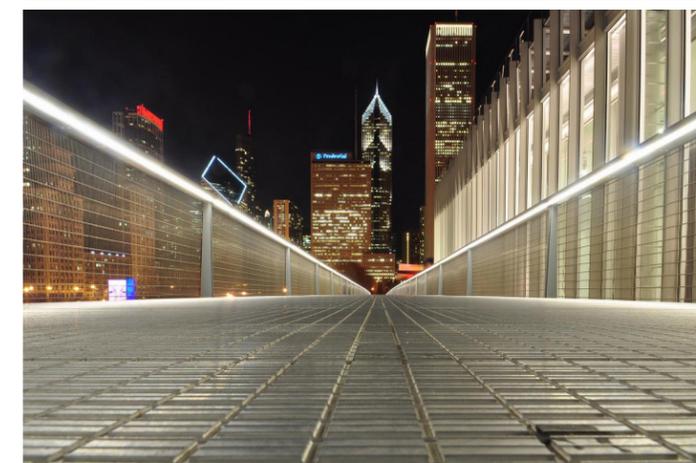
HIGHLINE

NEW YORK, NY
WIDTH: VARIES



NICHOLS BRIDGEWAY

ART INSTITUTE OF CHICAGO
WIDTH: 15' / LENGTH: 620'





OVERLOOK E
DOWNRIVER MANCHESTER
CLIMBING WALL



OVERLOOK D
DOWNRIVER MANCHESTER POND



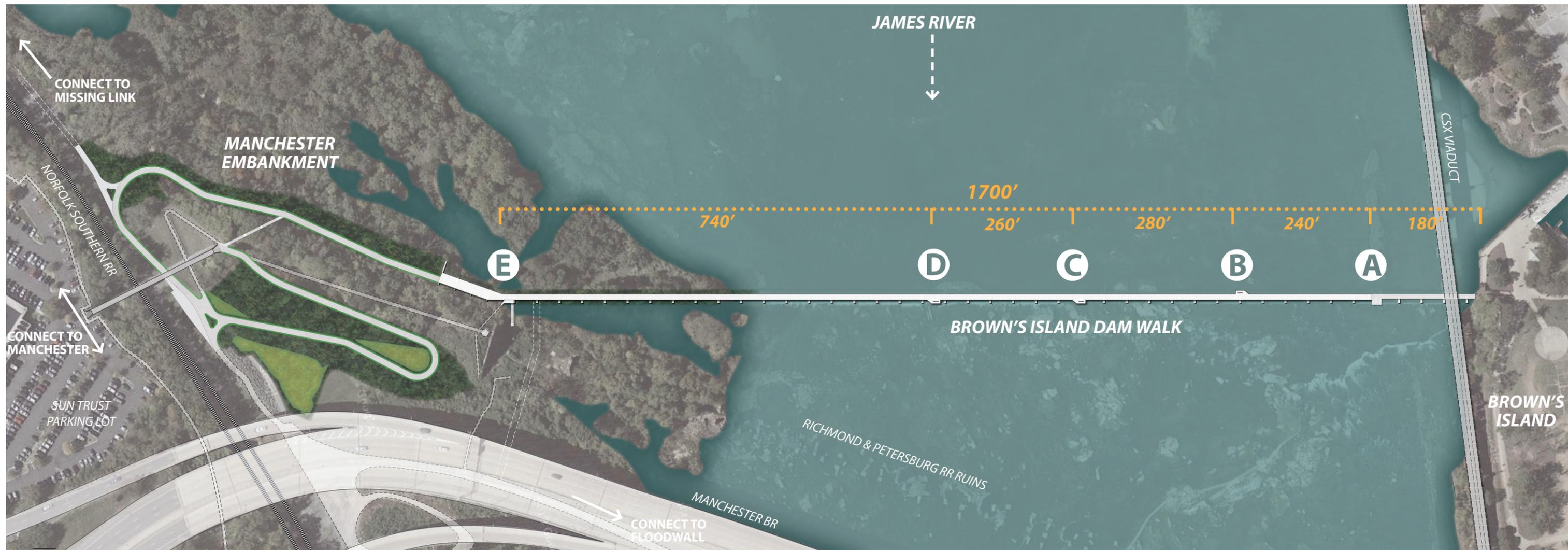
OVERLOOK C
DOWNRIVER ROCK GARDEN



OVERLOOK B
UPRIVER WATERCRAFT



OVERLOOK A (EXISTING)
DOWNRIVER '3 DAYS' MEMORIAL



0 100 200 FEET

BROWN'S ISLAND DAM WALK // OVERLOOKS

SCHEMATIC DESIGN
28 FEBRUARY 2014

6'+ CLEAR



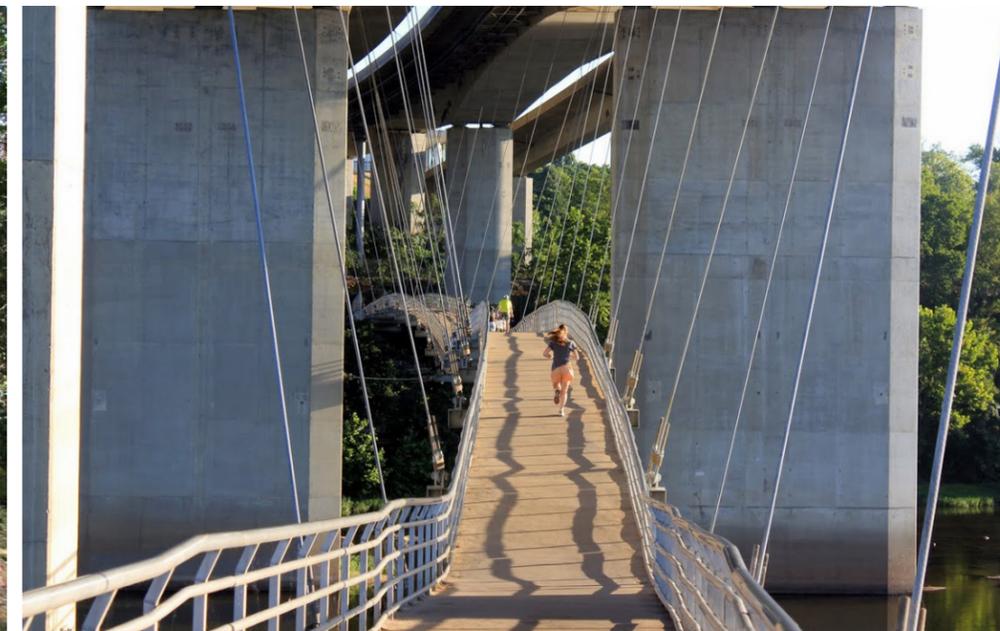
SUN TRUST PEDESTRIAN BRIDGE

6' 5'-6" CLEAR 6'



MANCHESTER EMBANKMENT

9' CLEAR



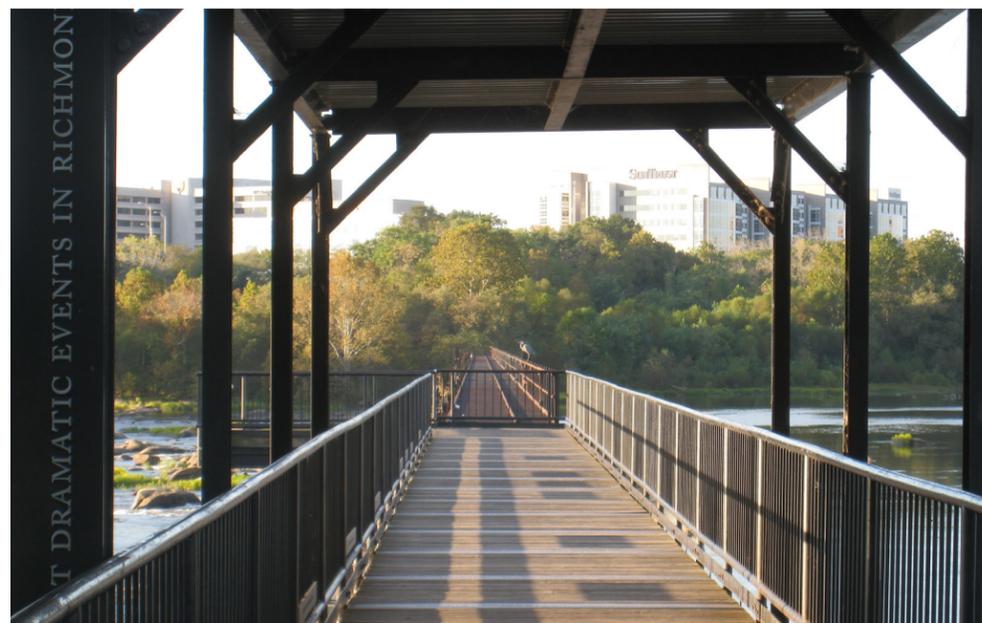
LEE BRIDGE

5' CLEAR

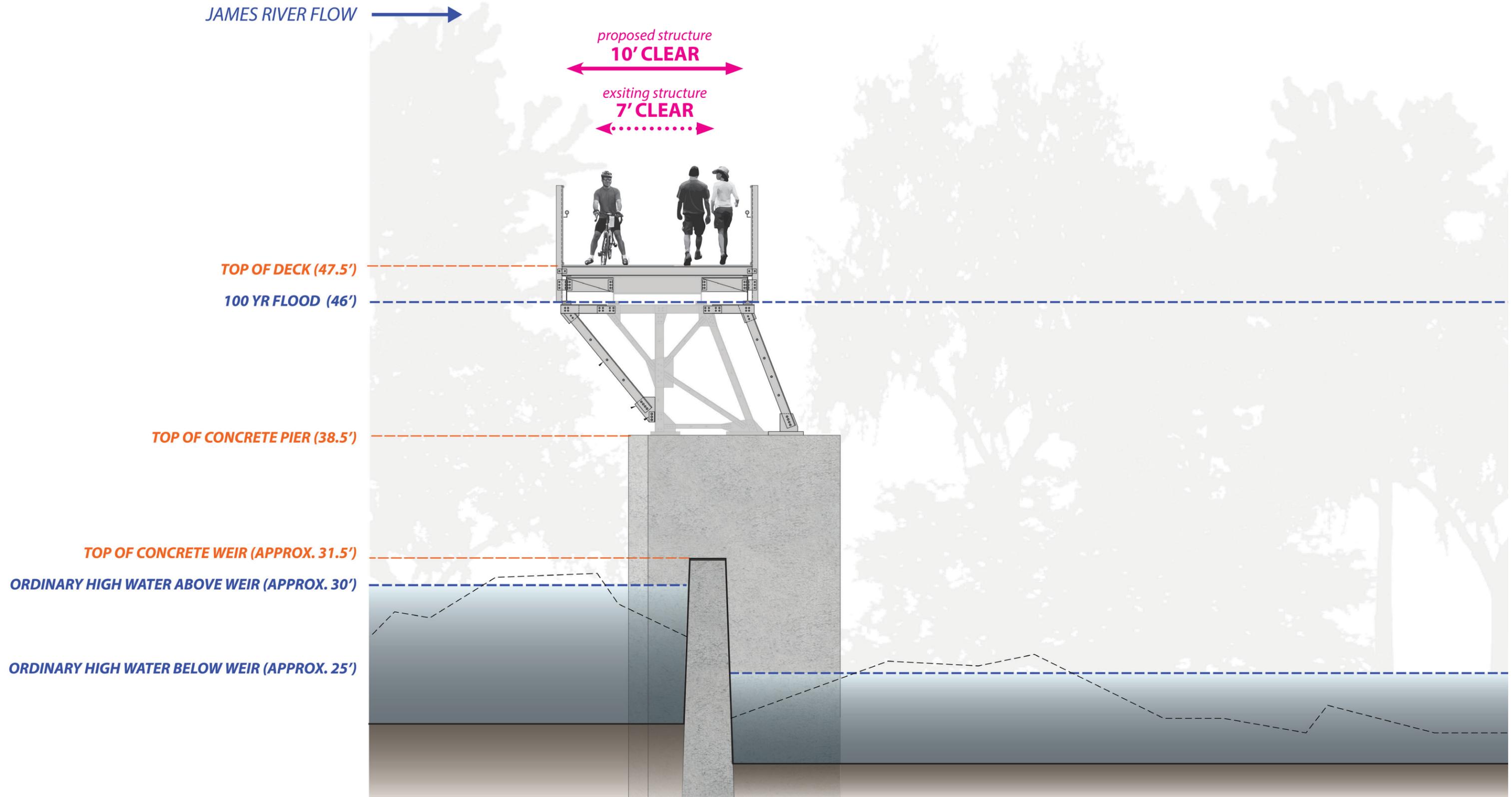


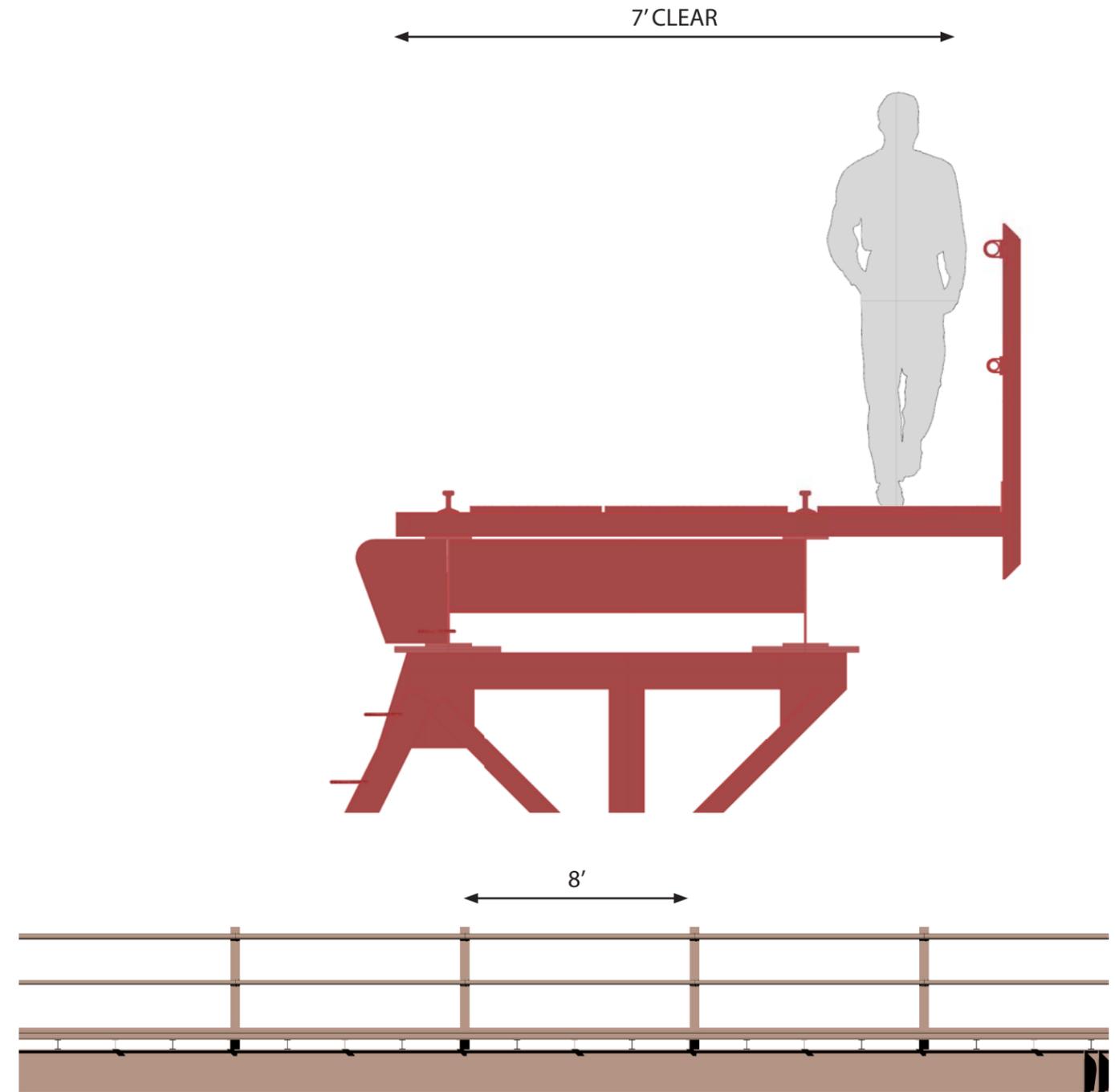
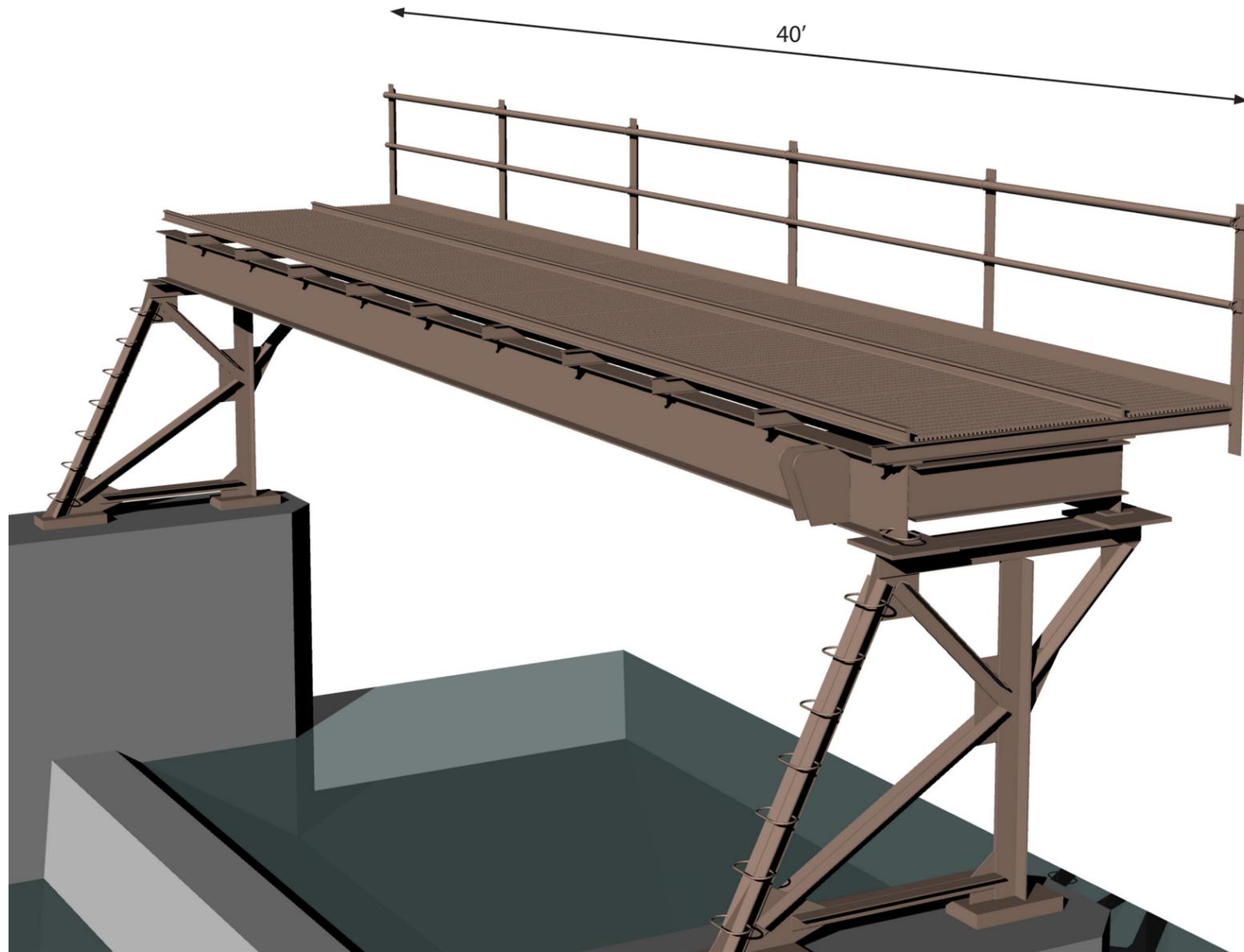
RAMP TO '3 DAYS' MEMORIAL

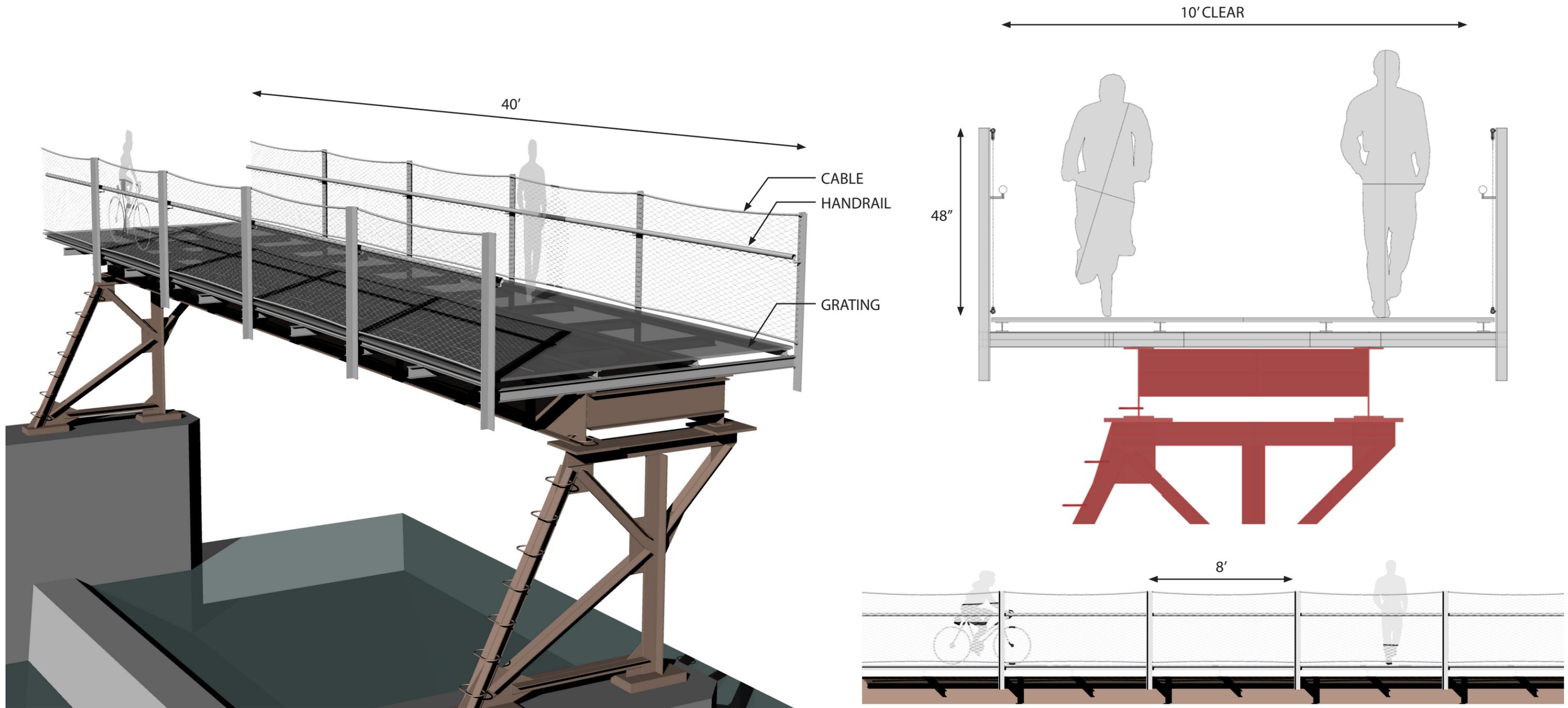
7'-7" CLEAR

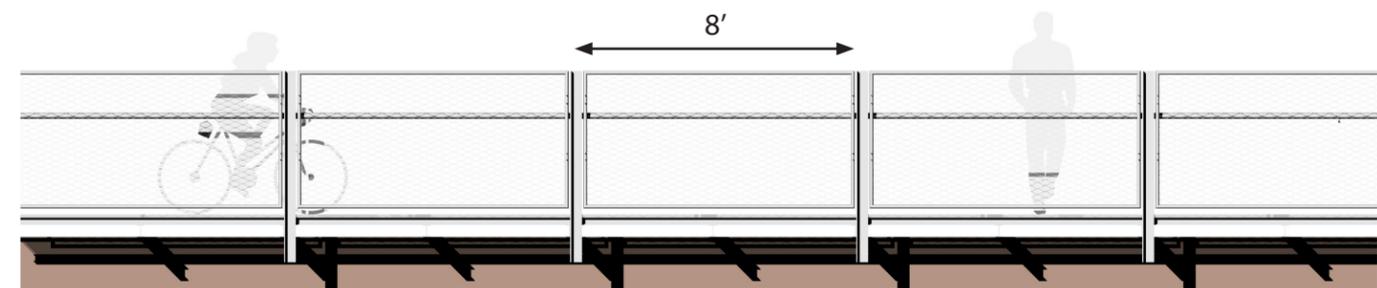
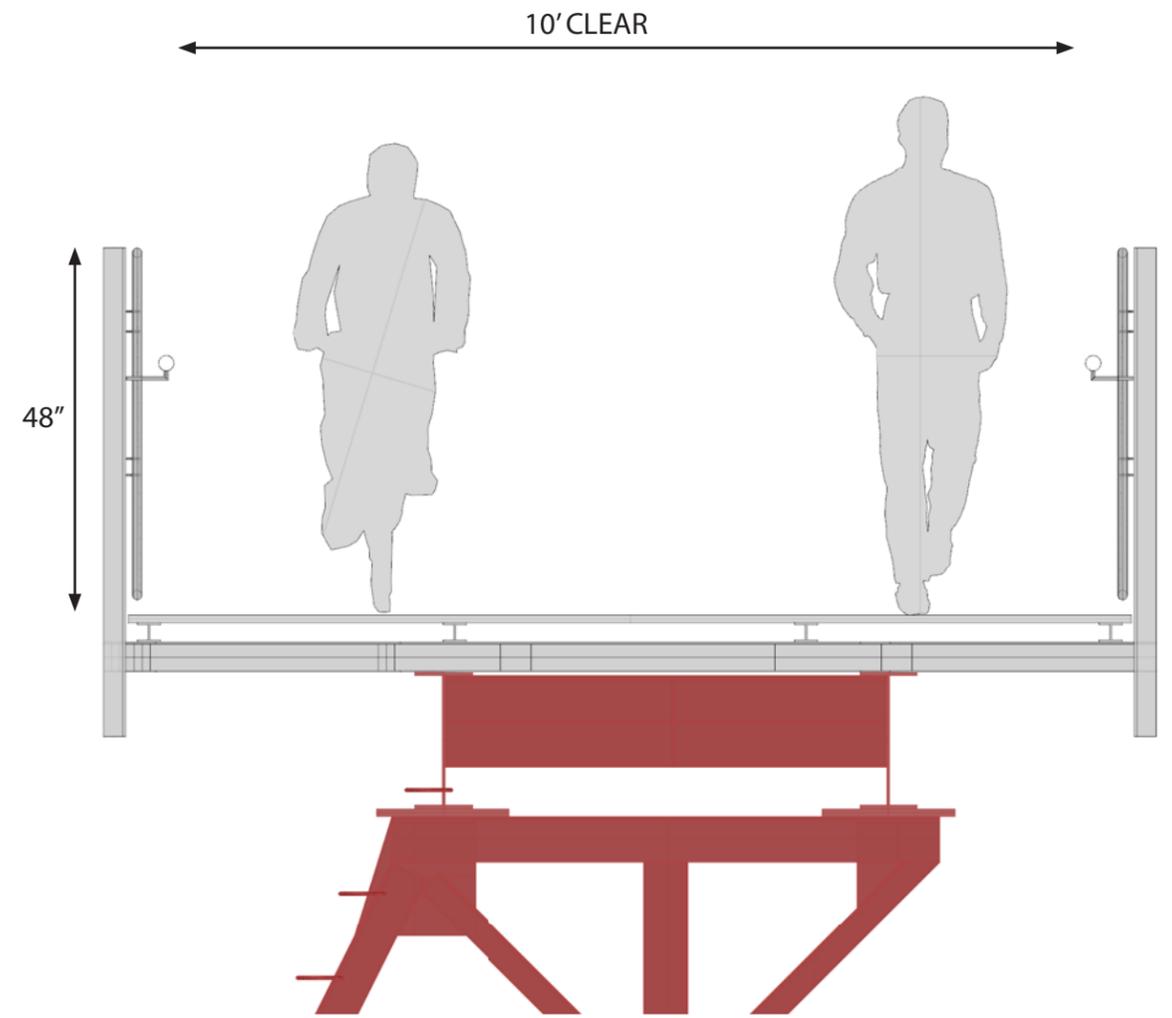
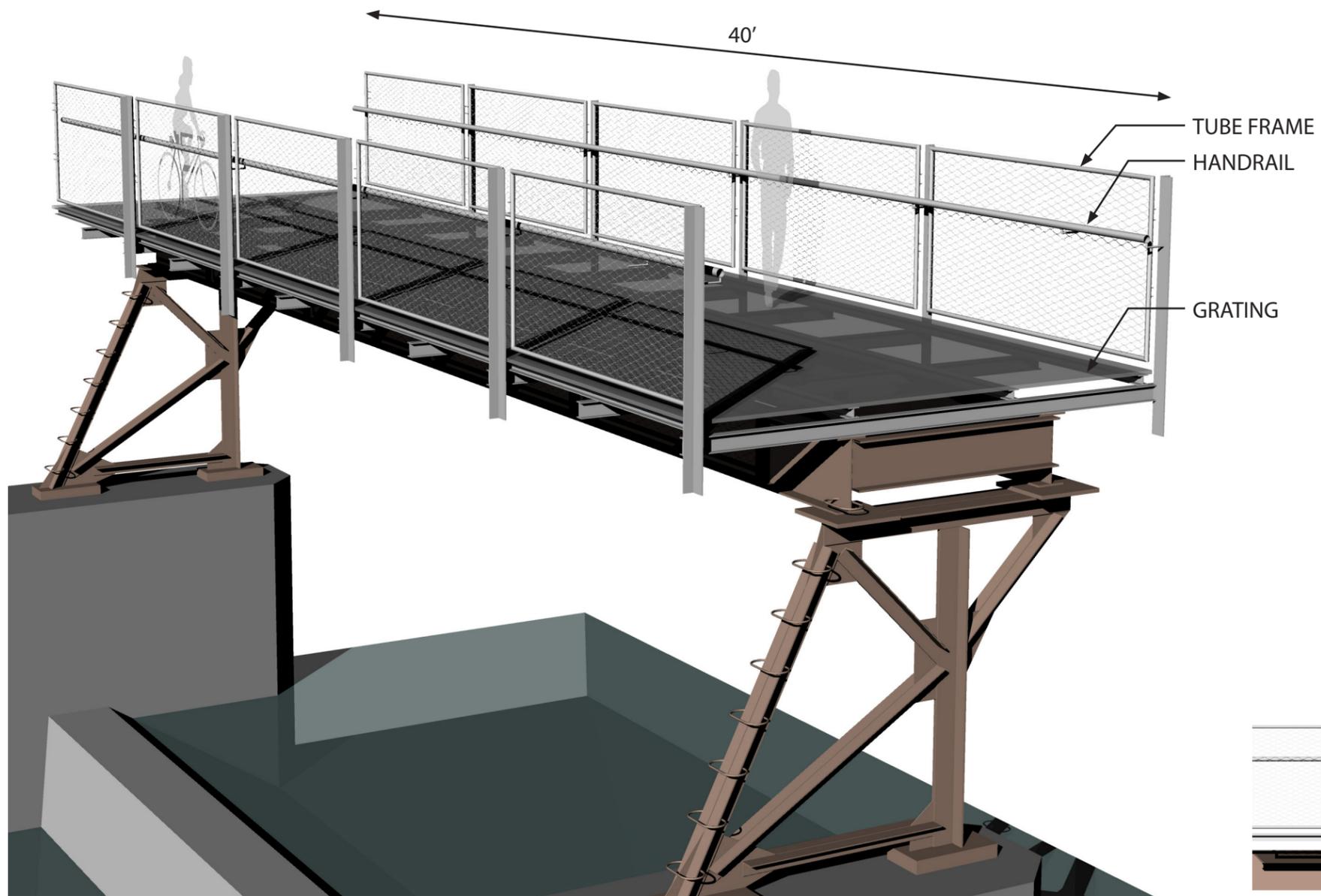


'3 DAYS' MEMORIAL









JAMES RIVER FLOW →

10' CLEAR
16' CLEAR

TOP OF DECK (47.5')

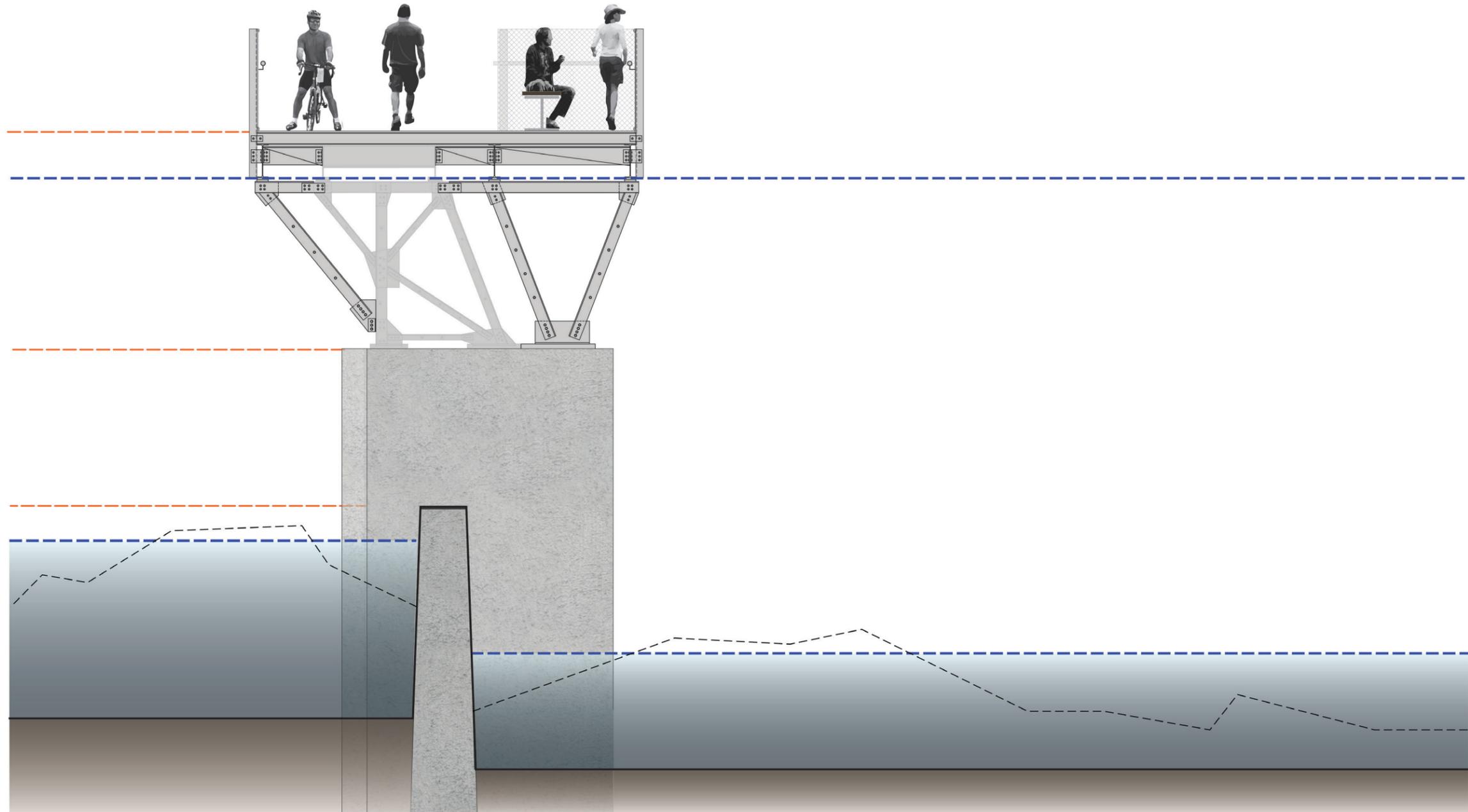
100 YR FLOOD (46')

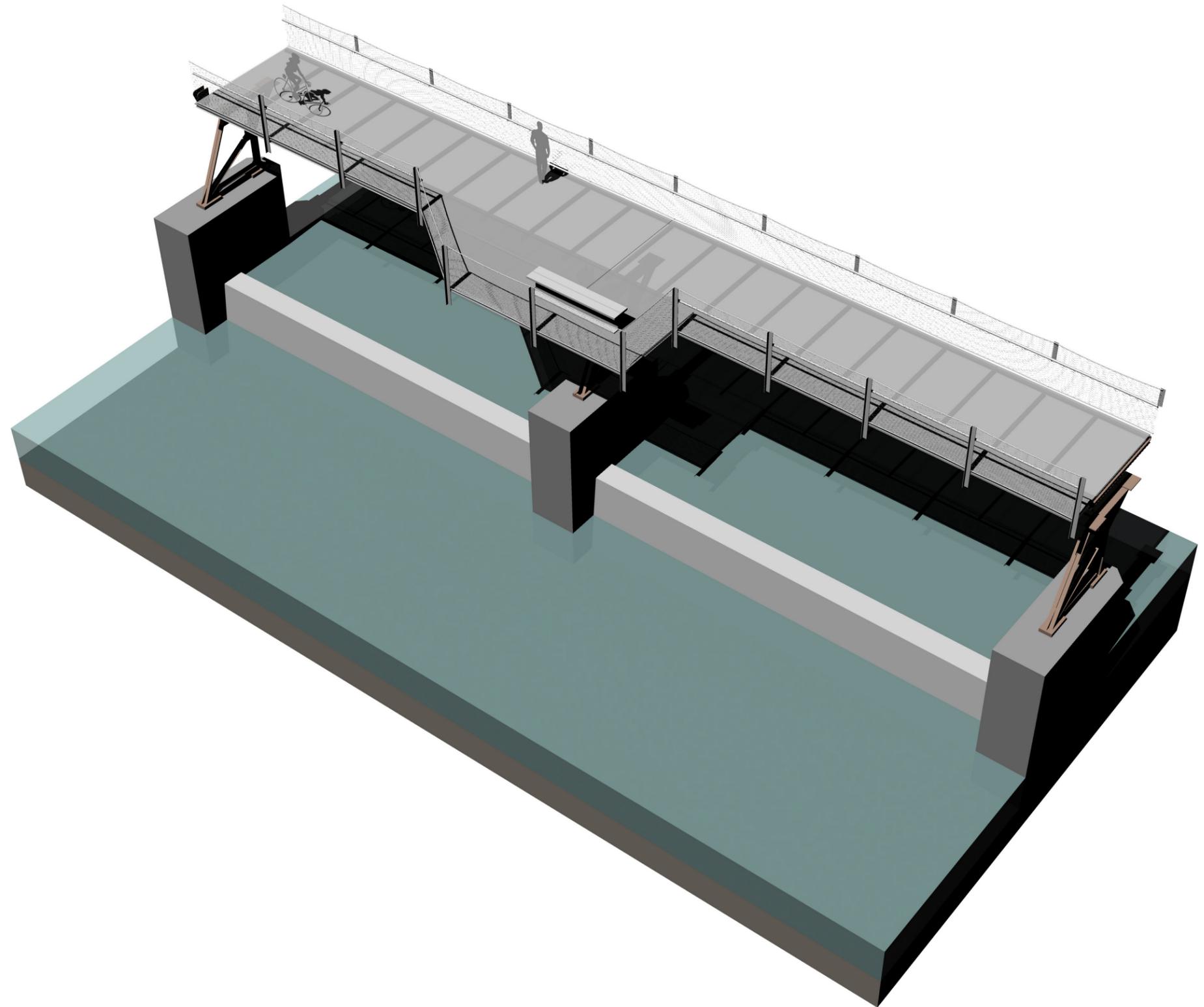
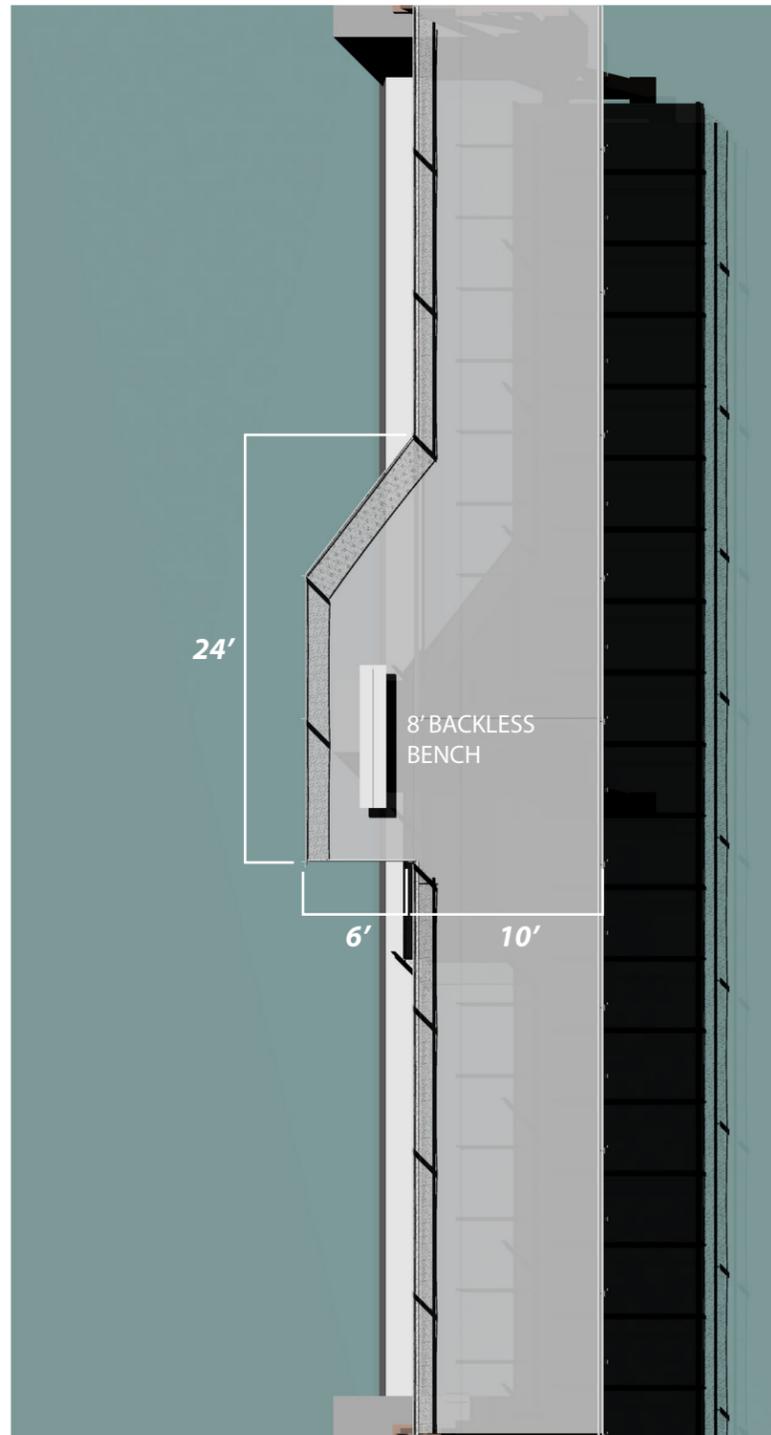
TOP OF CONCRETE PIER (38.5')

TOP OF CONCRETE WEIR (APPROX. 31.5')

ORDINARY HIGH WATER ABOVE WEIR (APPROX. 30')

ORDINARY HIGH WATER BELOW WEIR (APPROX. 25')

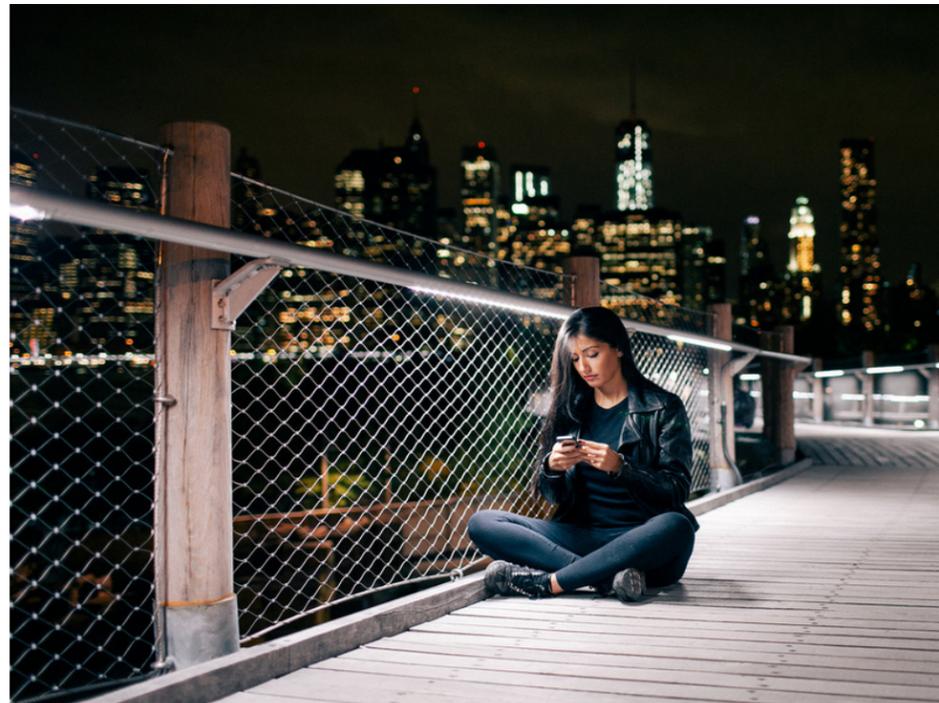
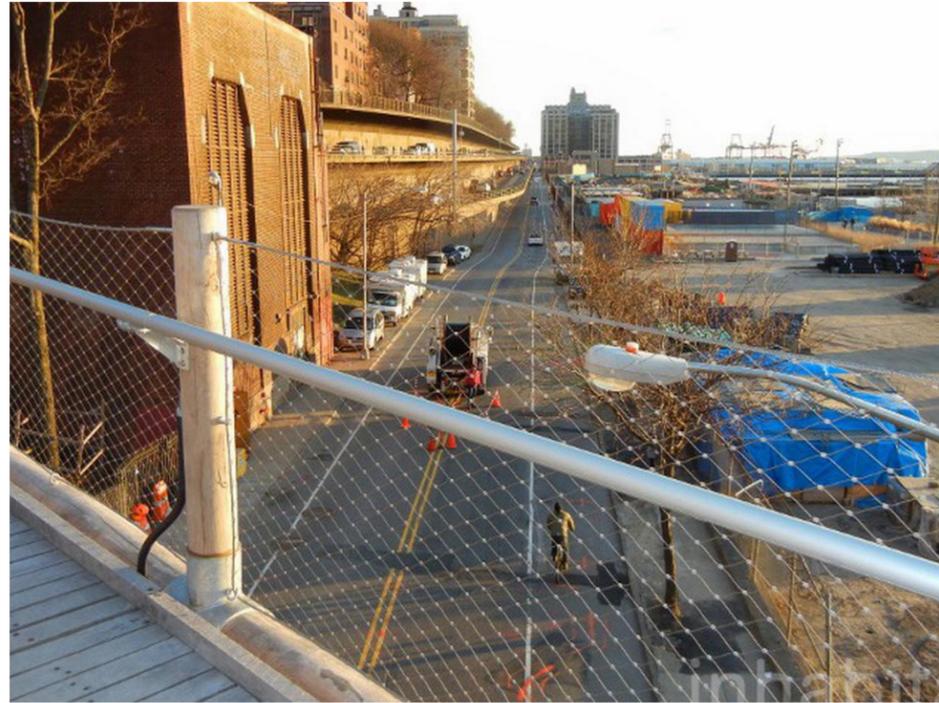






CABLE + MESH

STAINLESS STEEL
JAKOB ROPE SYSTEMS



GRATING

SAFE-T-GRID ALUMINUM GRATING
MCNICHOLS CO.



LINEAR LED LIGHTING

OPT. 1:
VERTICAL LIGHTS BETWEEN POSTS



OPT. 2:
LOW-LEVEL STEP LIGHTS



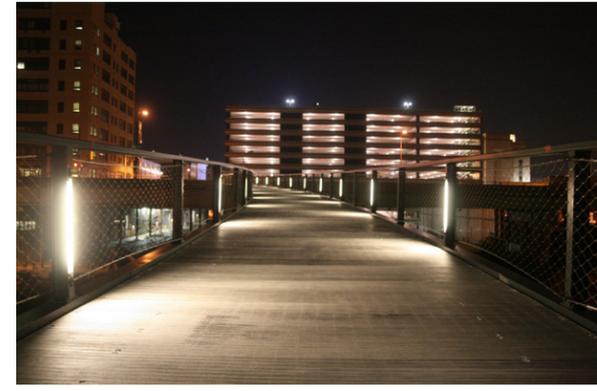
OPT. 5:
EXPOSED DISCREET PATHWAY LIGHTS



OPT. 3:
CONTINUOUS HORIZONTAL LIGHTS



OPT. 4:
EXPOSED VERTICAL LIGHTS



OVERLOOK LIGHTING

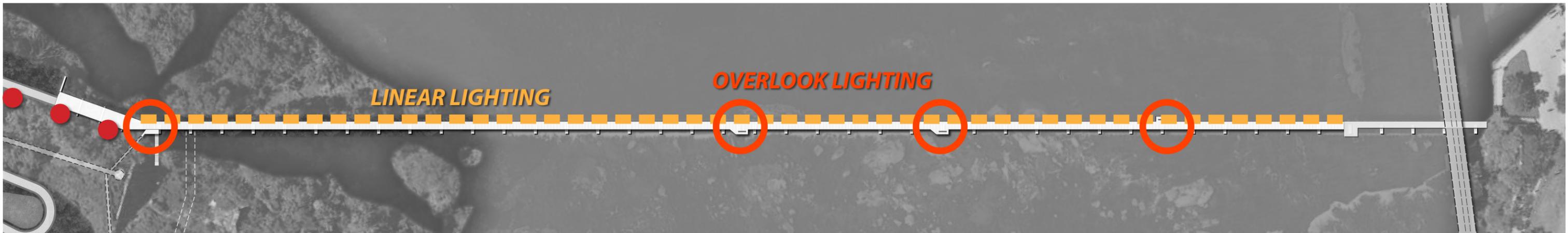
OPT. 1:
LIGHTING IN BENCH

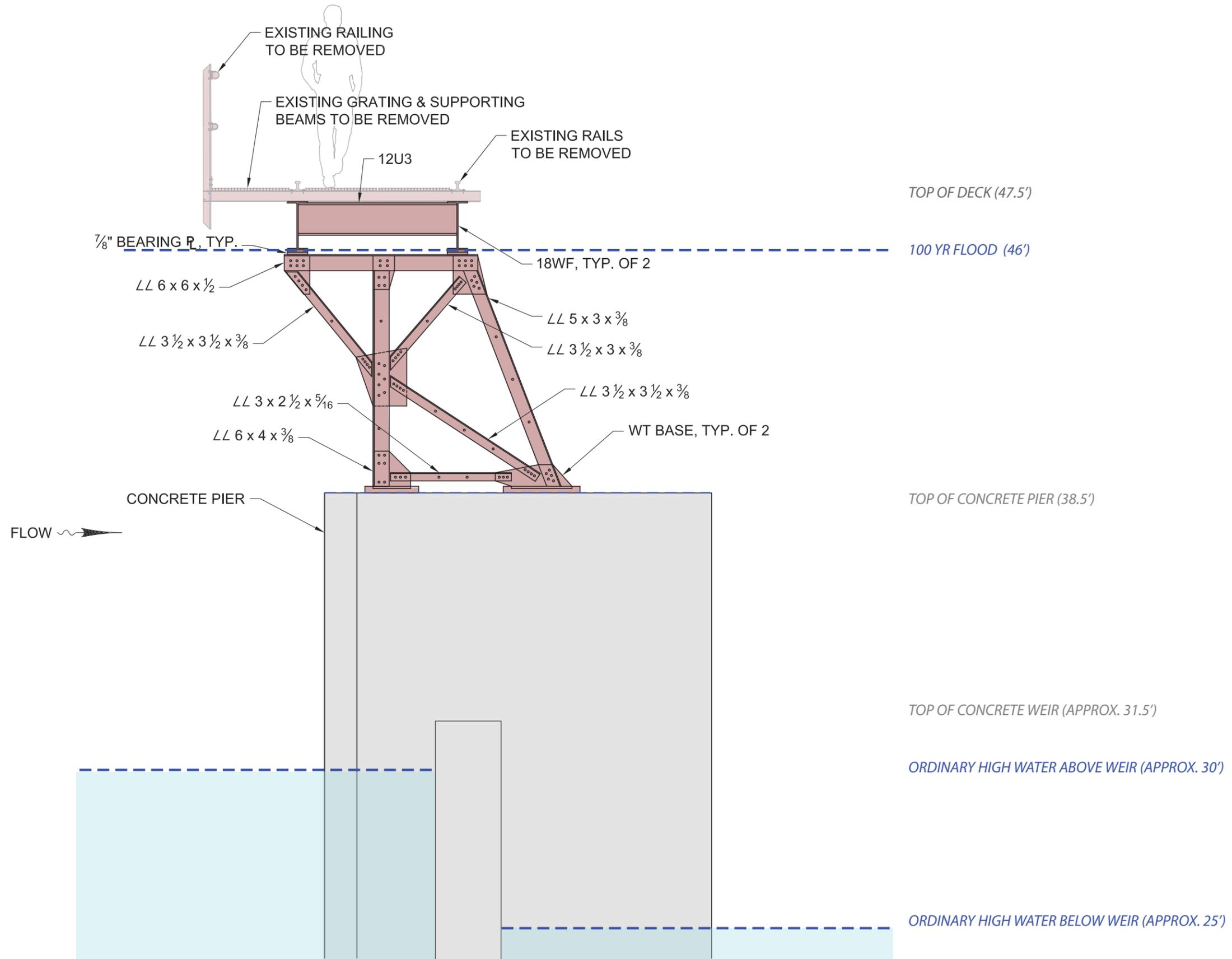


OPT. 2:
COLORED LIGHTING

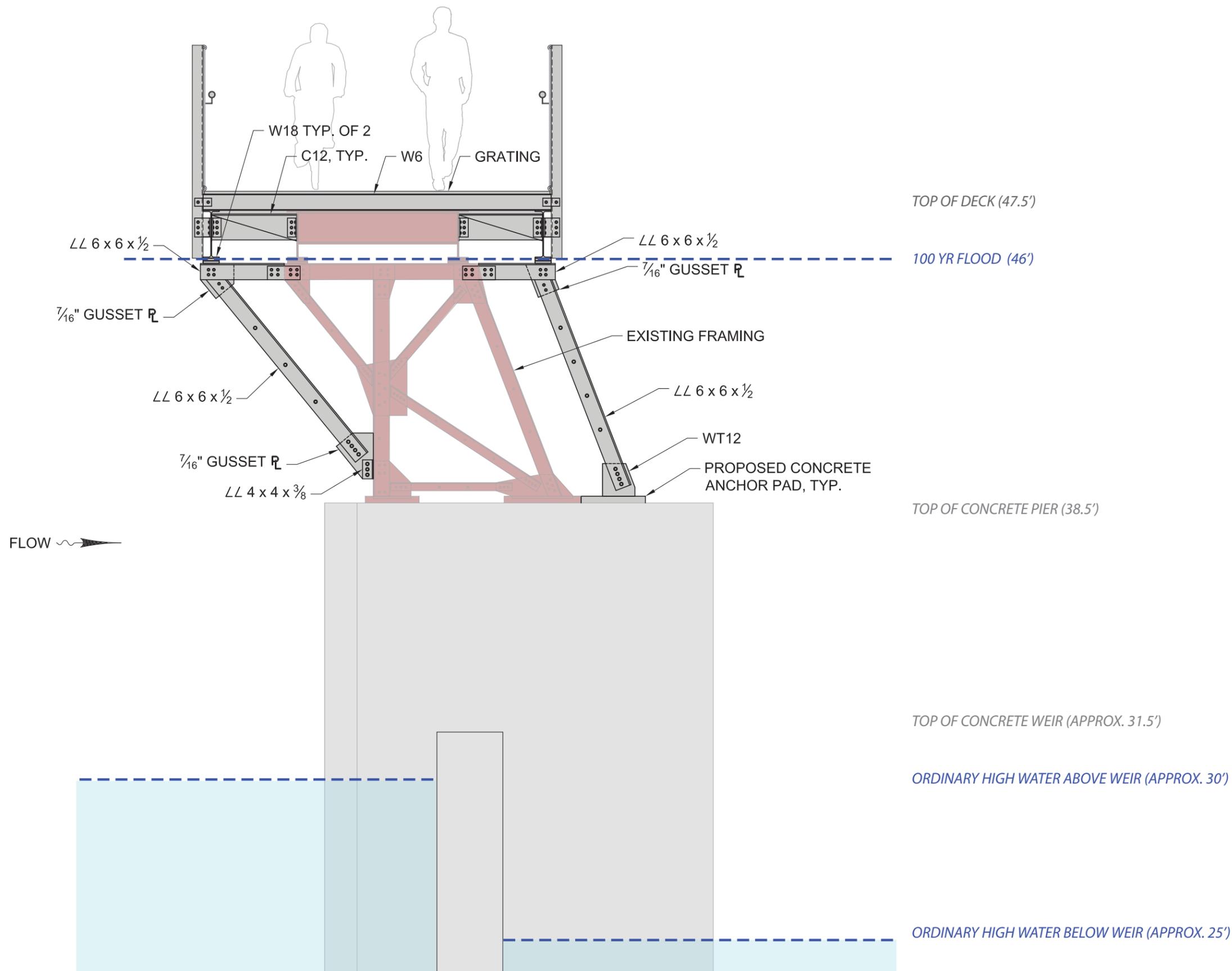


OPT. 3:
DECORATIVE LIGHTED GUARDRAIL PLATES

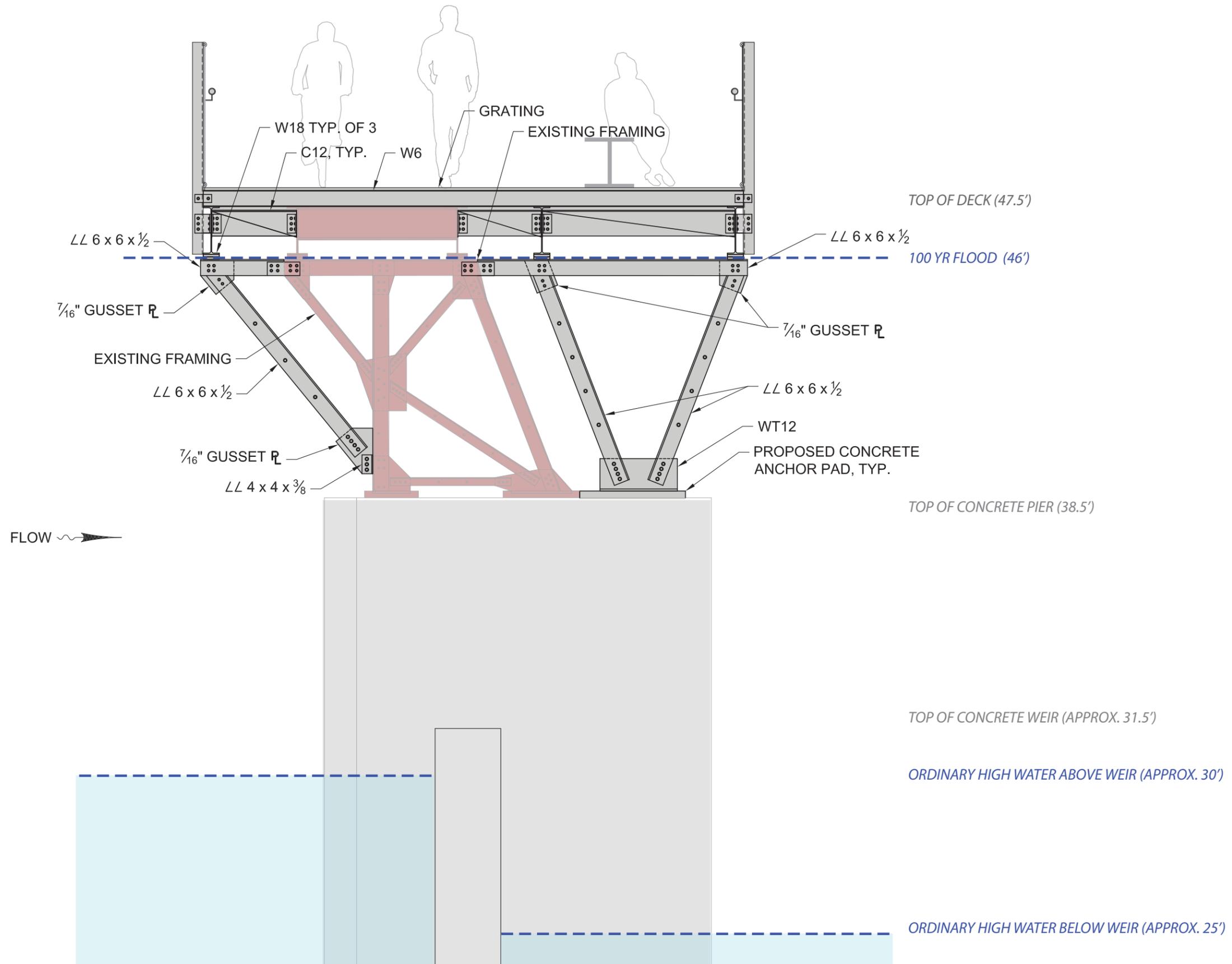


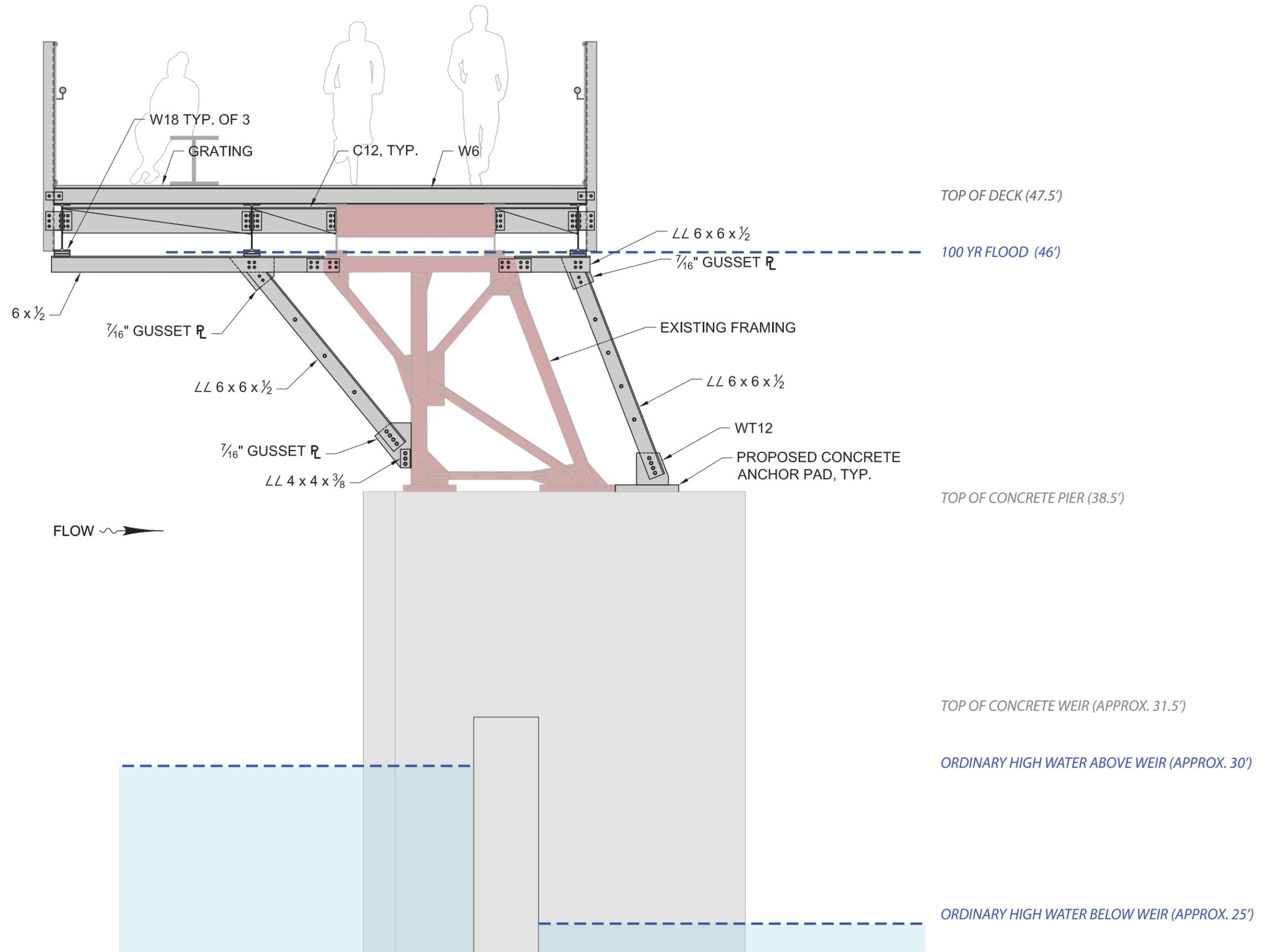


BROWN'S ISLAND DAM WALK // STRUCTURAL - EXISTING TYPICAL SECTION

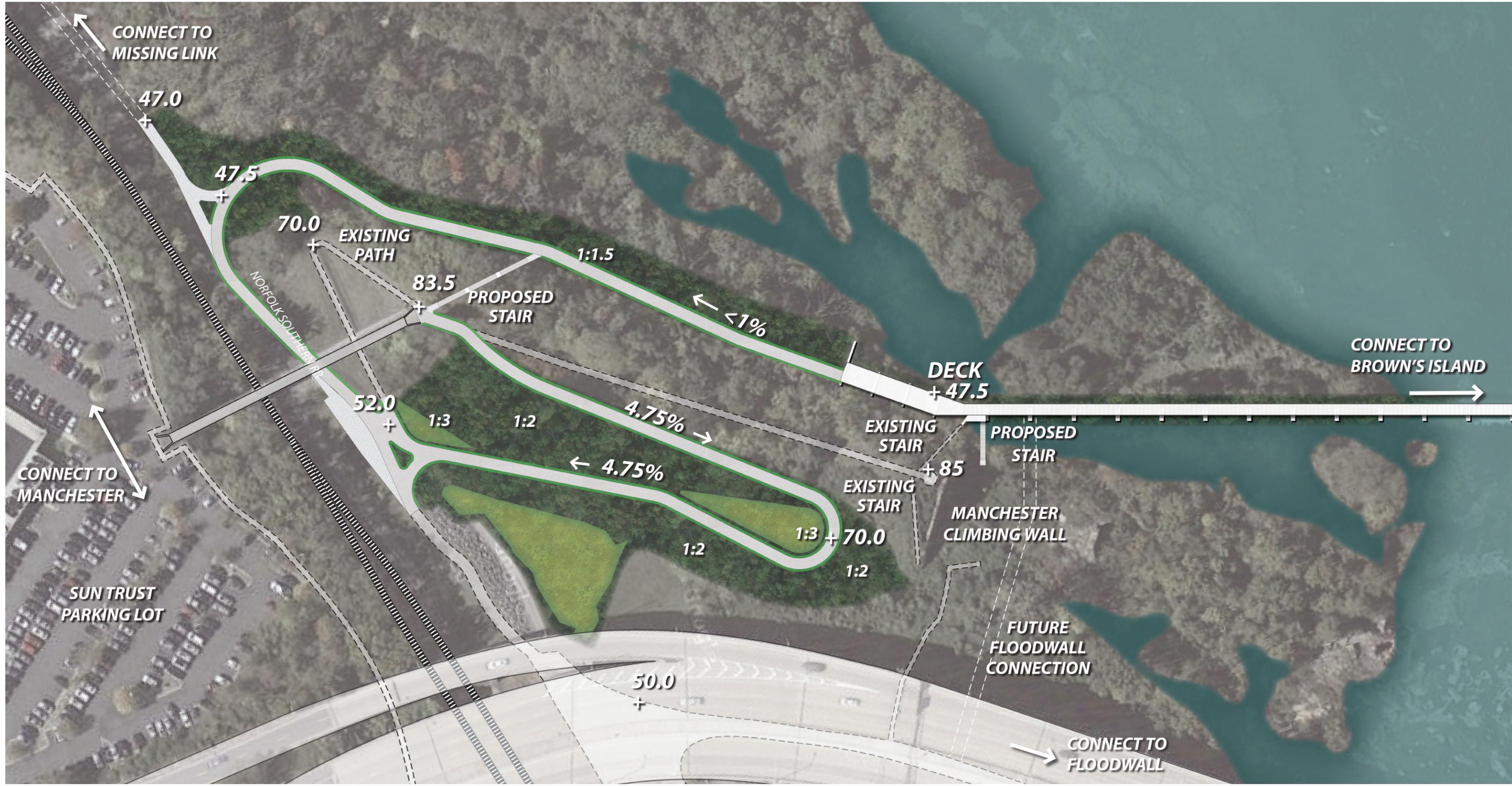


BROWN'S ISLAND DAM WALK // STRUCTURAL - PROPOSED TYPICAL SECTION



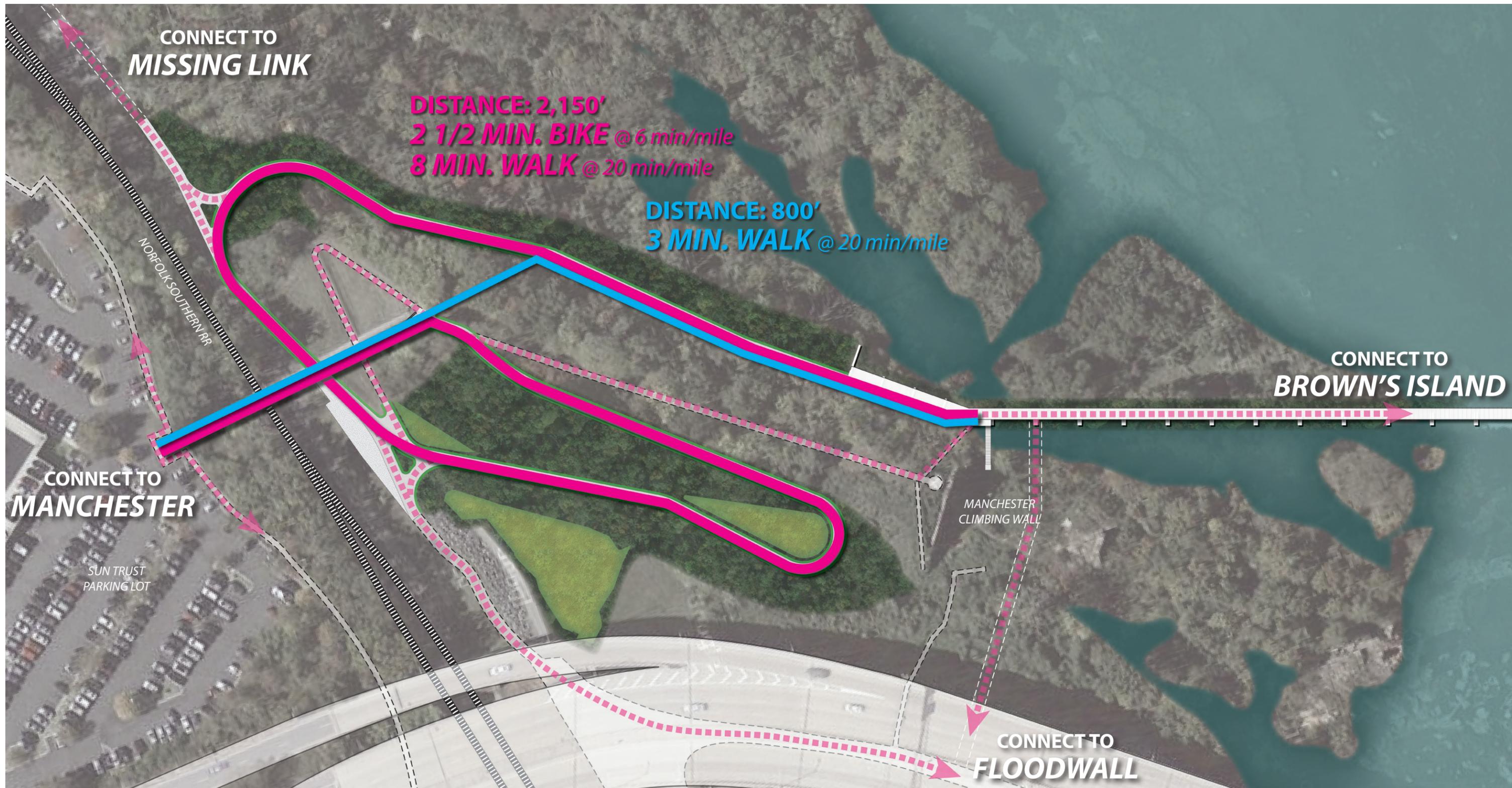


BROWN'S ISLAND DAM WALK // **STRUCTURAL - PROPOSED SECTION UPRIVER OVERLOOK**



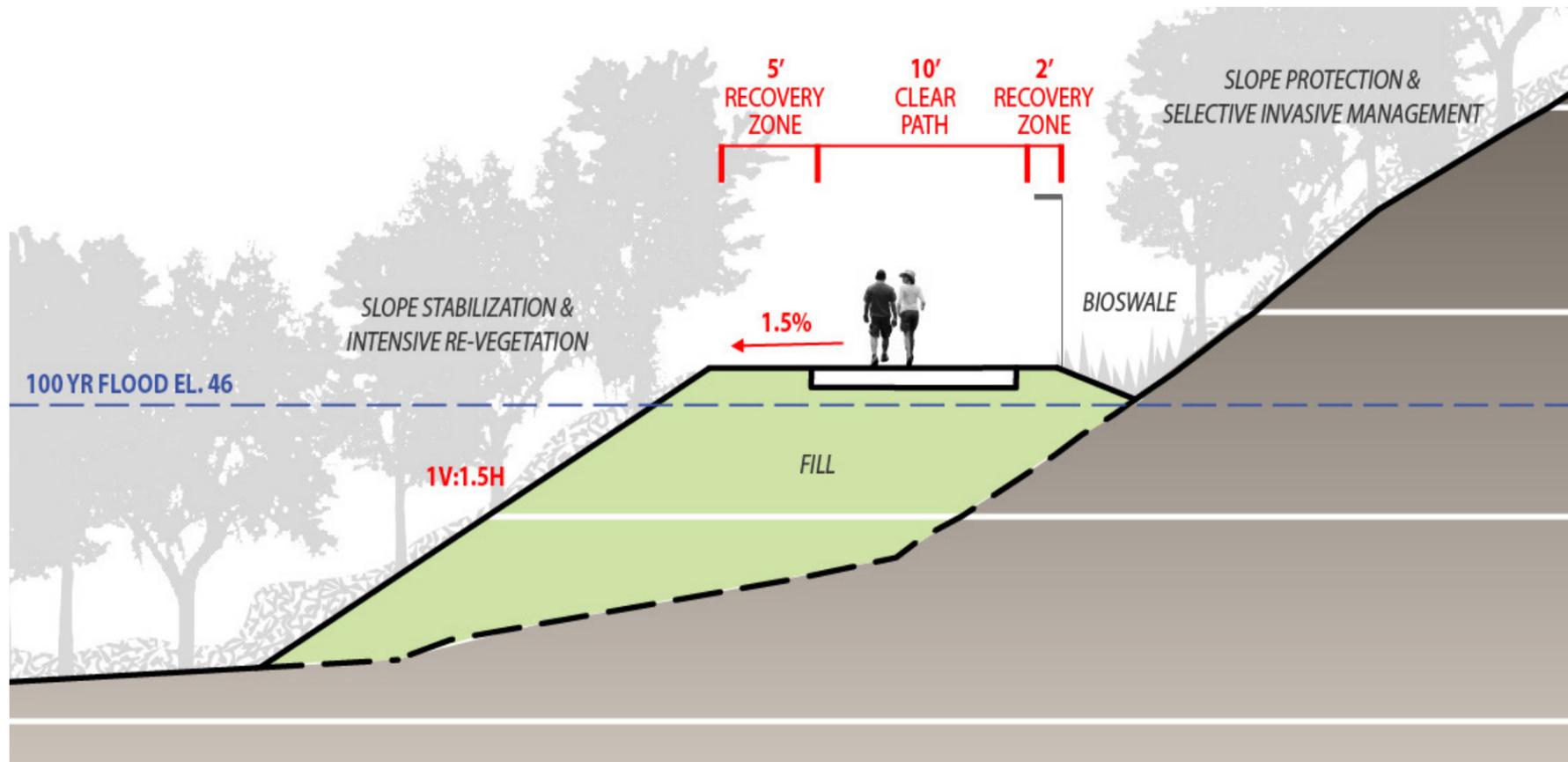
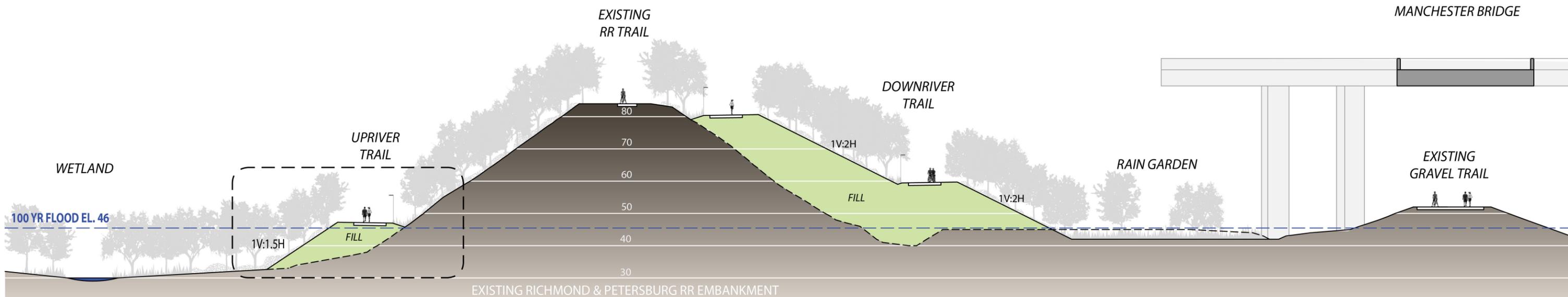
BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT

SCHEMATIC DESIGN
28 FEBRUARY 2014

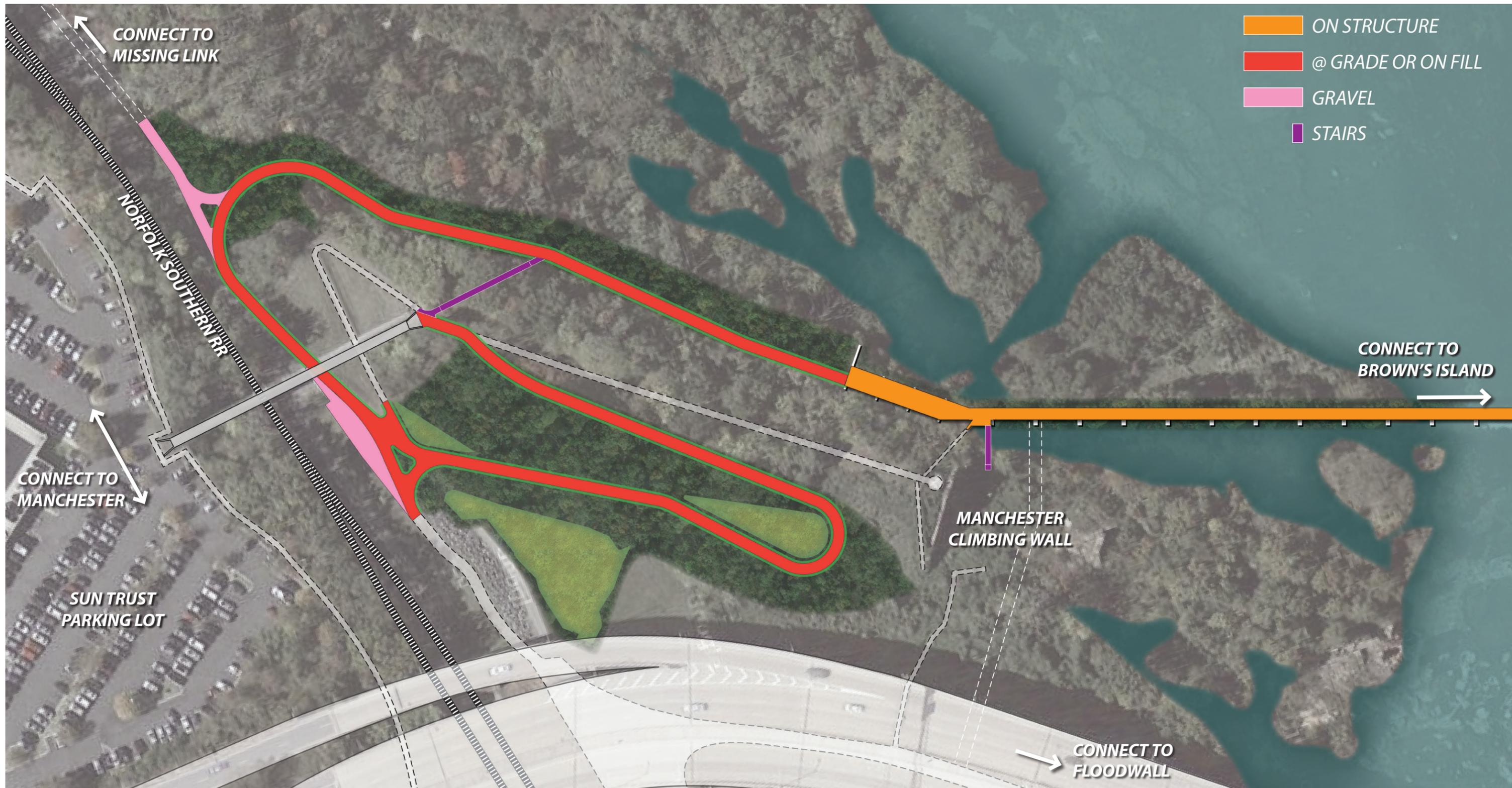


BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - CONNECTIONS

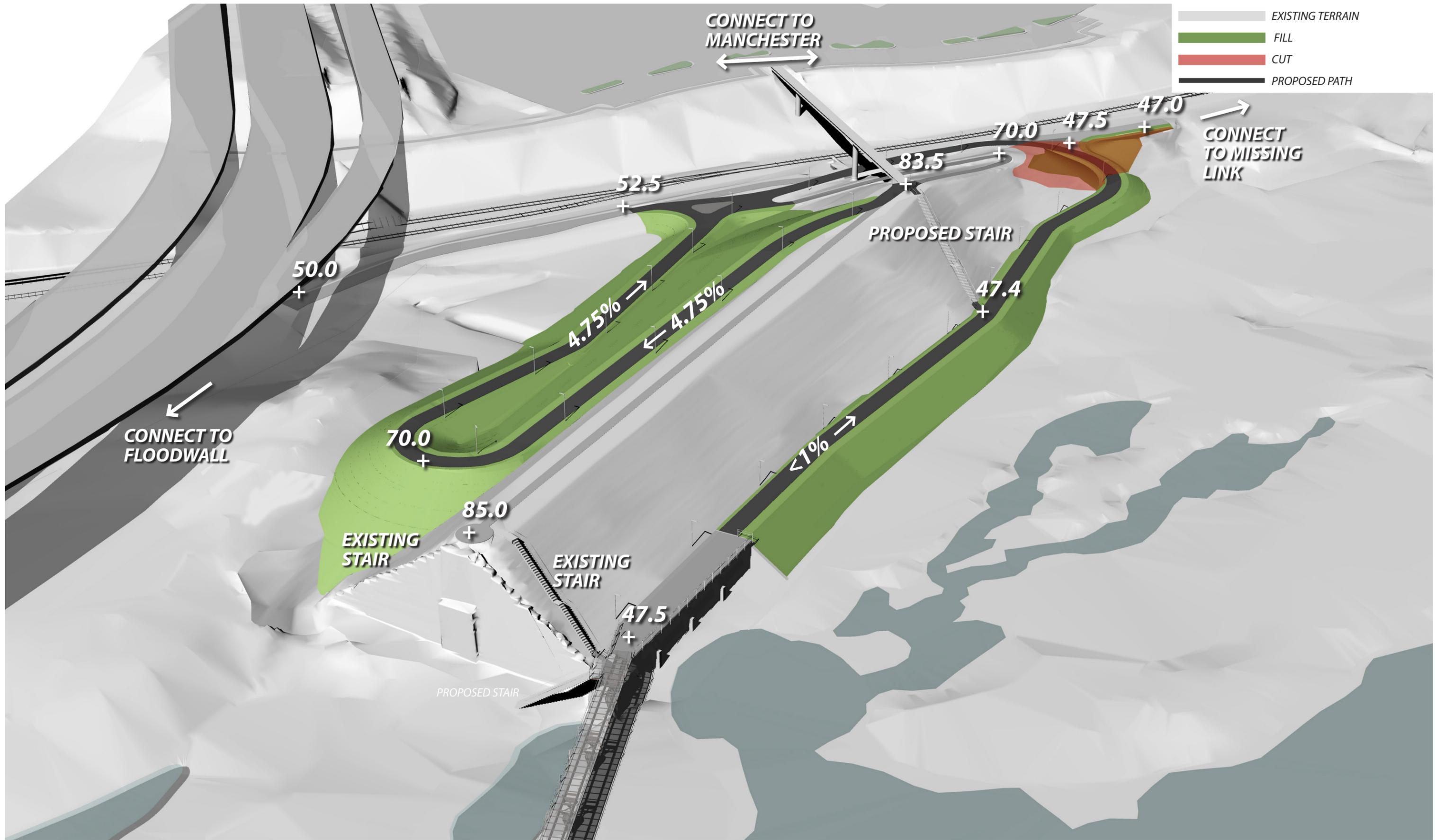
SCHEMATIC DESIGN
 28 FEBRUARY 2014

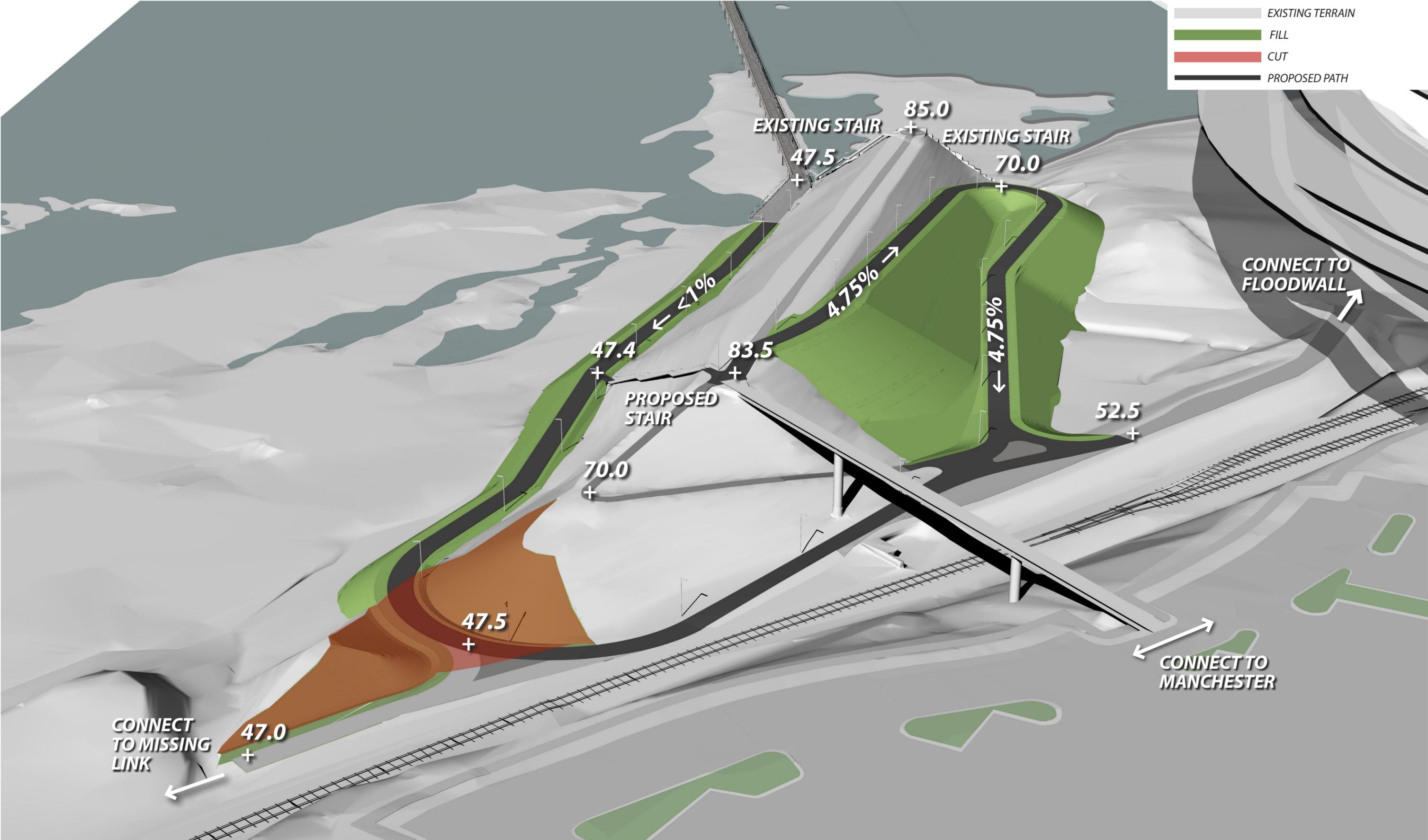


BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - SECTION

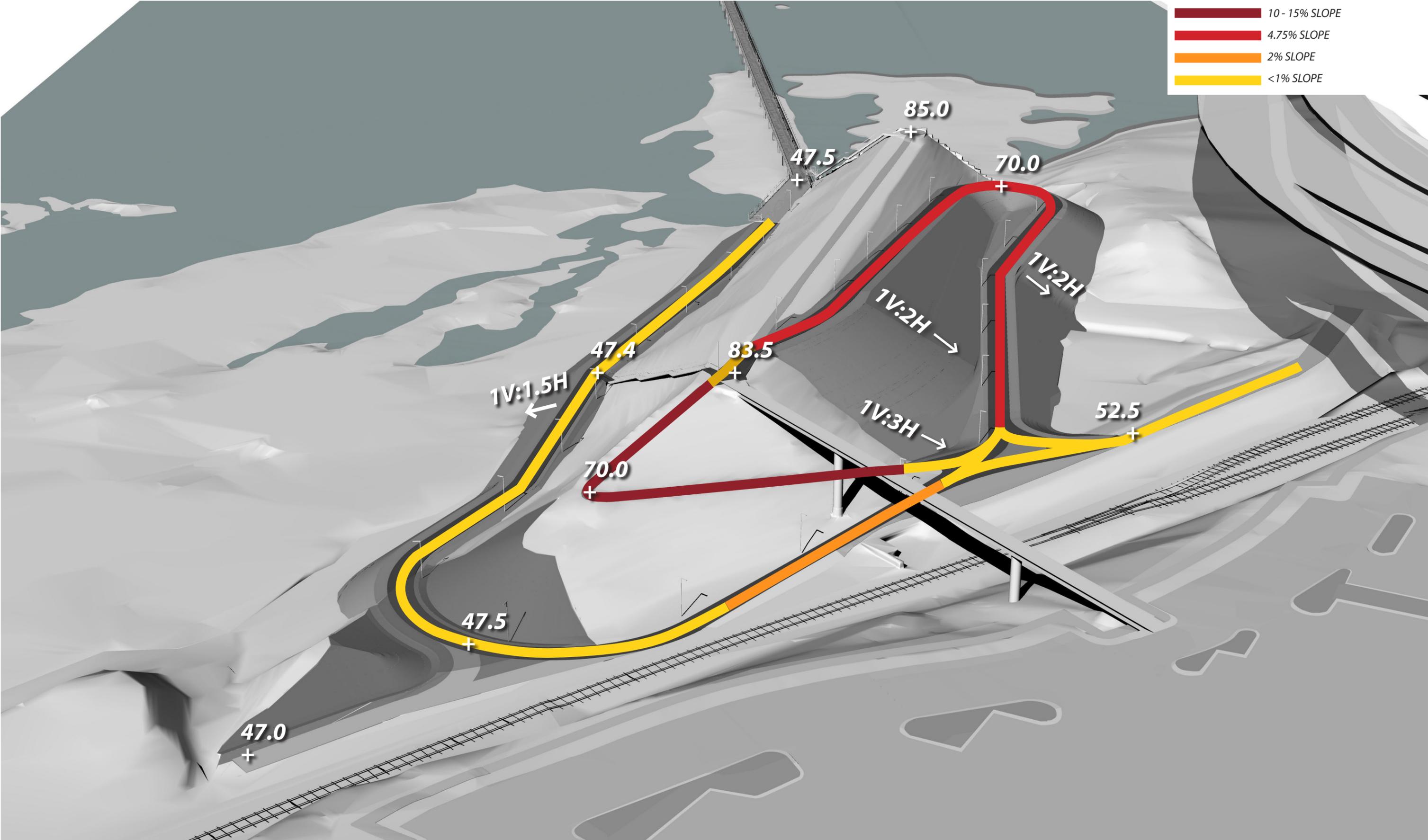


BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - MATERIALS

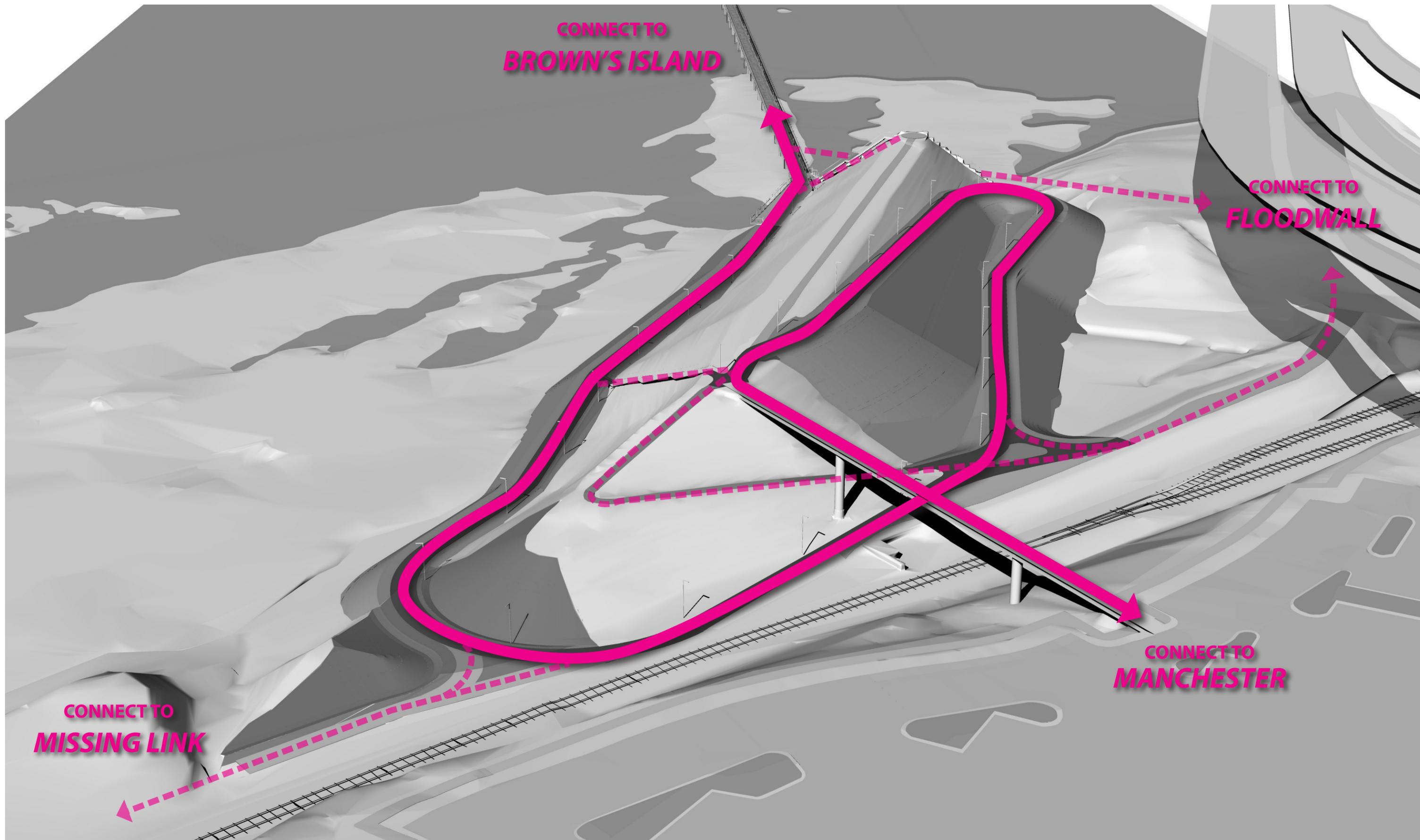




BROWN'S ISLAND DAM WALK // MANCHESTER EMBANKMENT - CUT/FILL



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

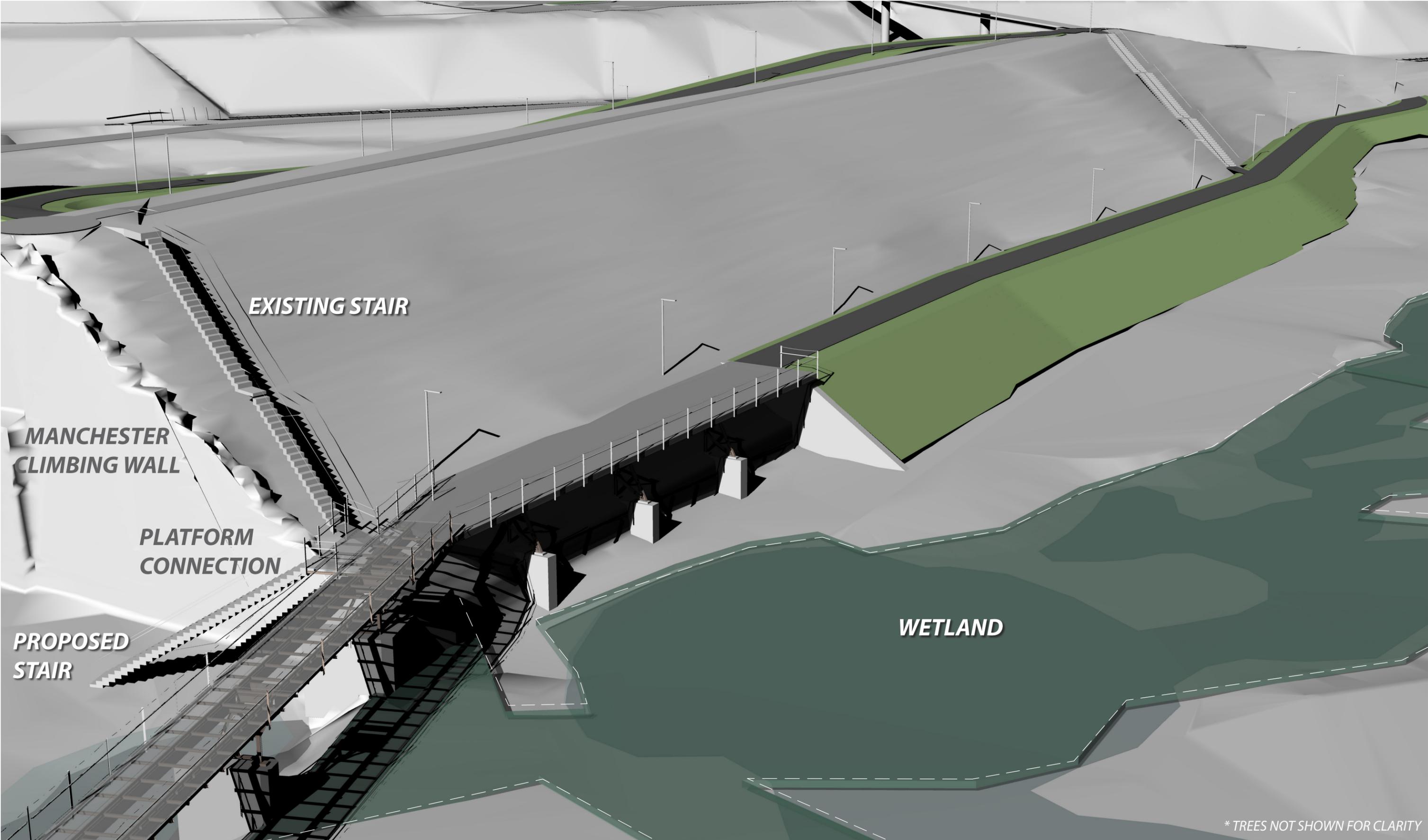


**CONNECT TO
BROWN'S ISLAND**

**CONNECT TO
FLOODWALL**

**CONNECT TO
MANCHESTER**

**CONNECT TO
MISSING LINK**



EXISTING STAIR

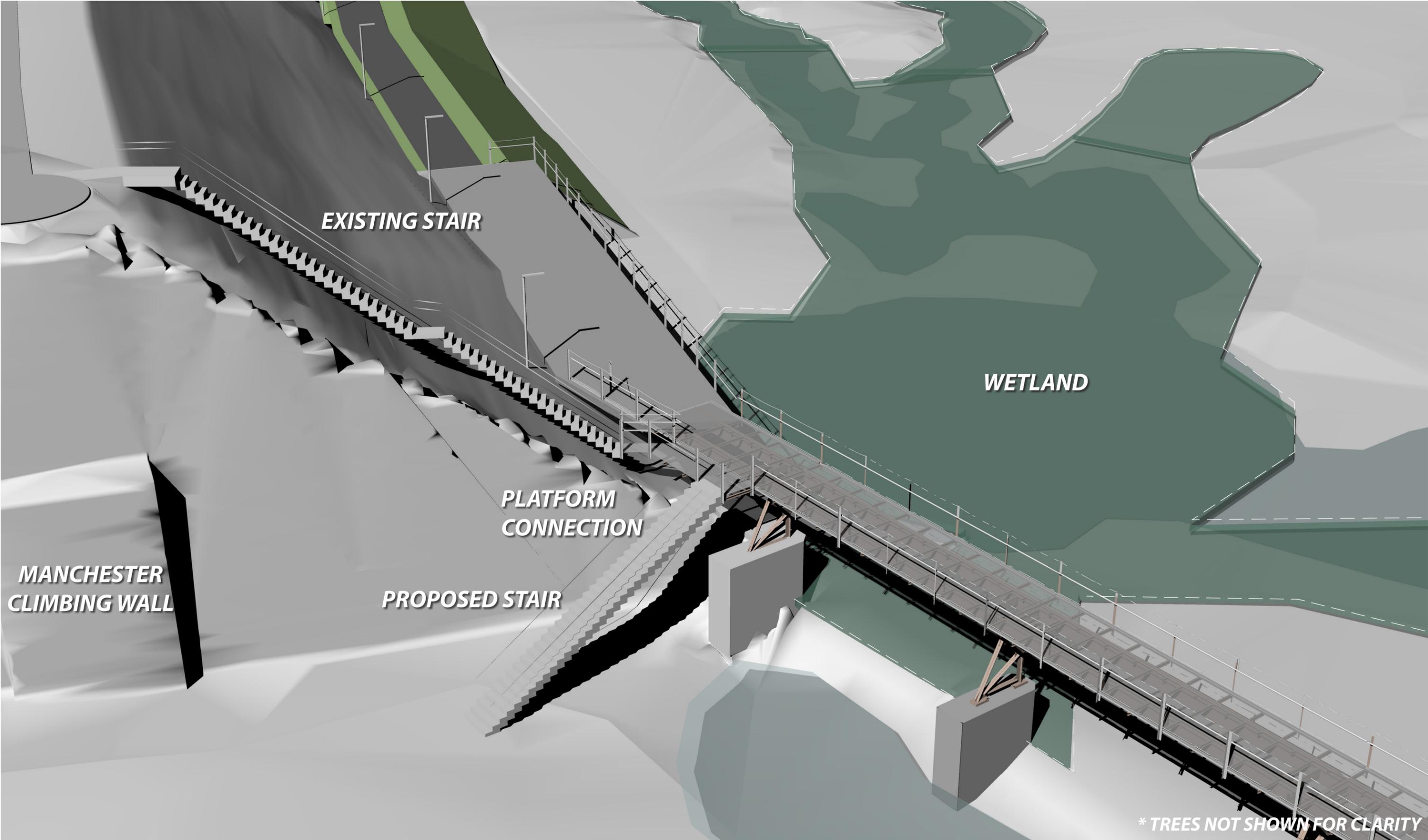
MANCHESTER CLIMBING WALL

PLATFORM CONNECTION

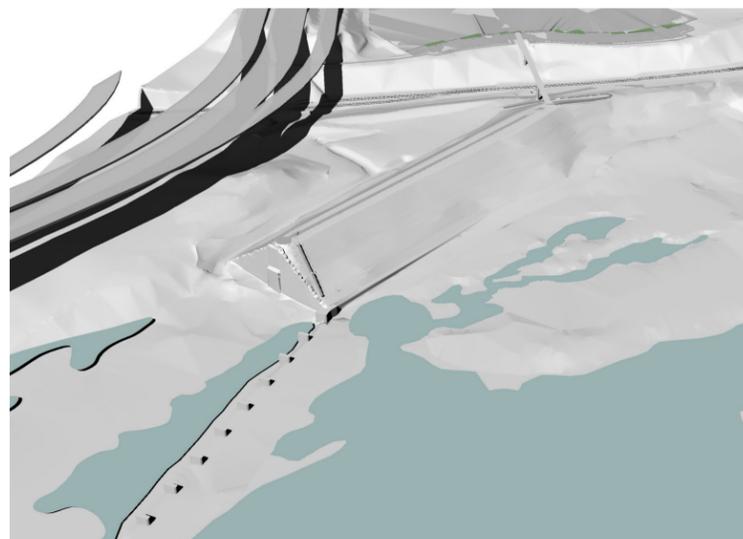
PROPOSED STAIR

WETLAND

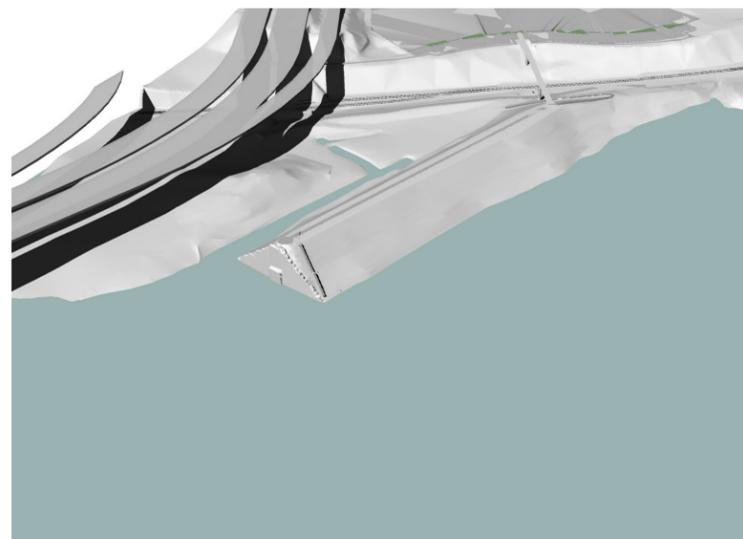
** TREES NOT SHOWN FOR CLARITY*



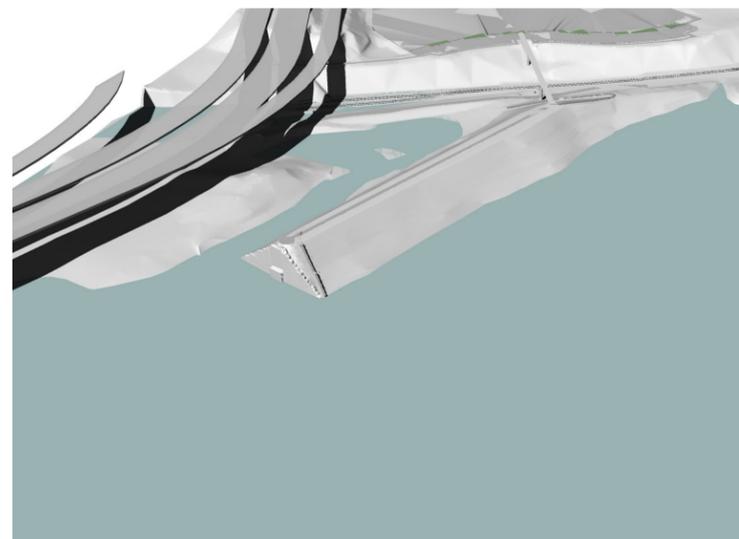
EXISTING



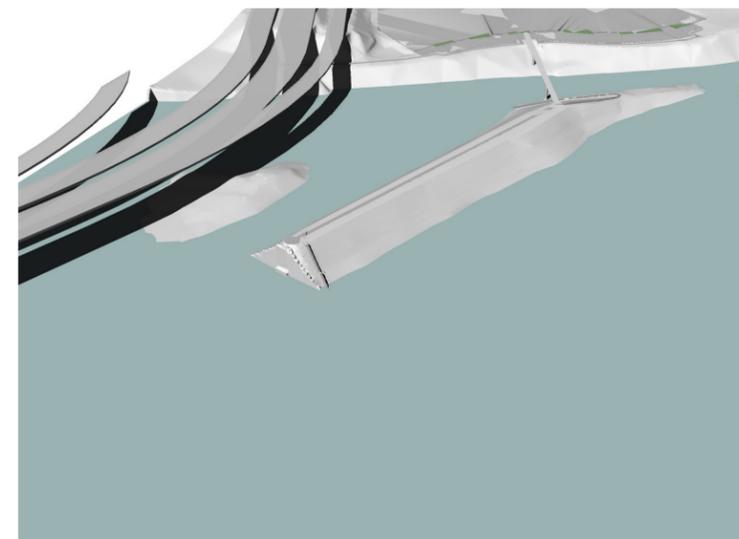
ORDINARY HIGH WATER



50 YR FLOOD (43')

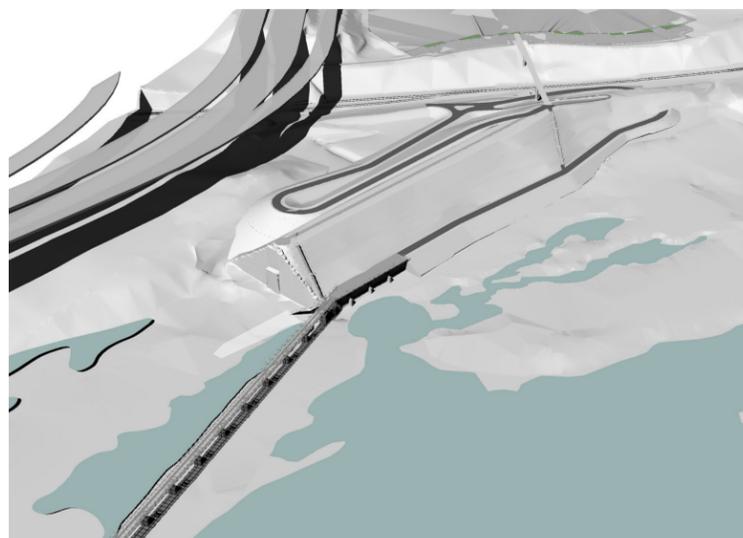


100 YR FLOOD (46')

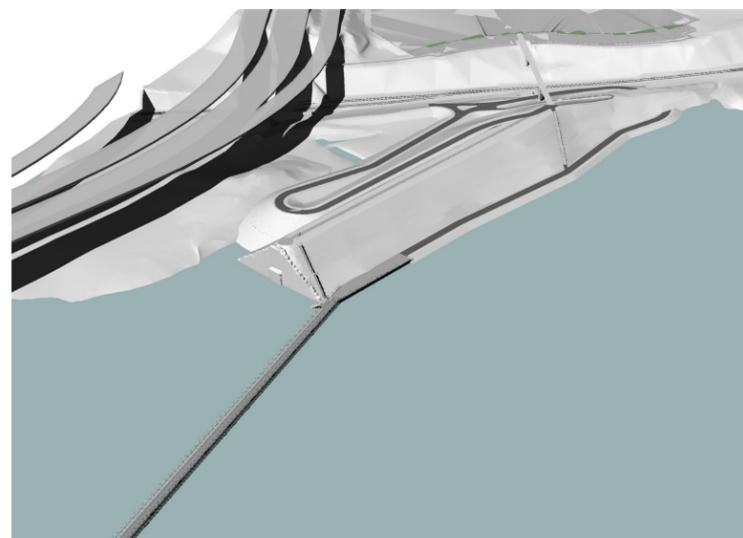


500 YR FLOOD (56')

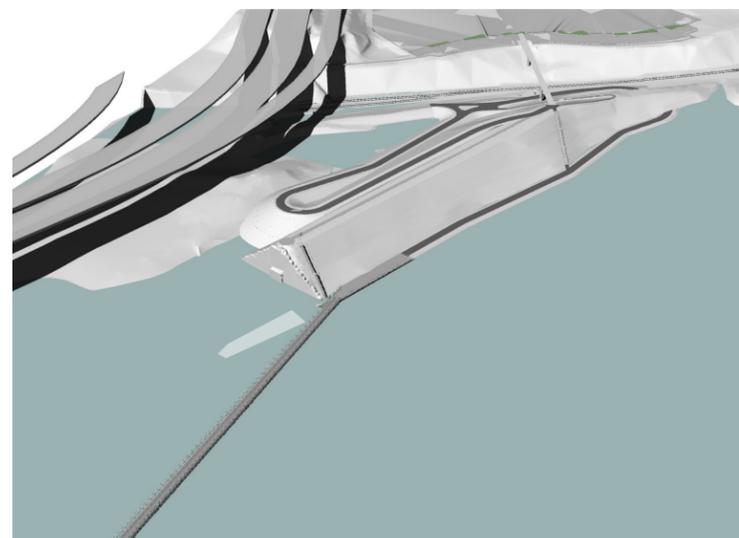
PROPOSED



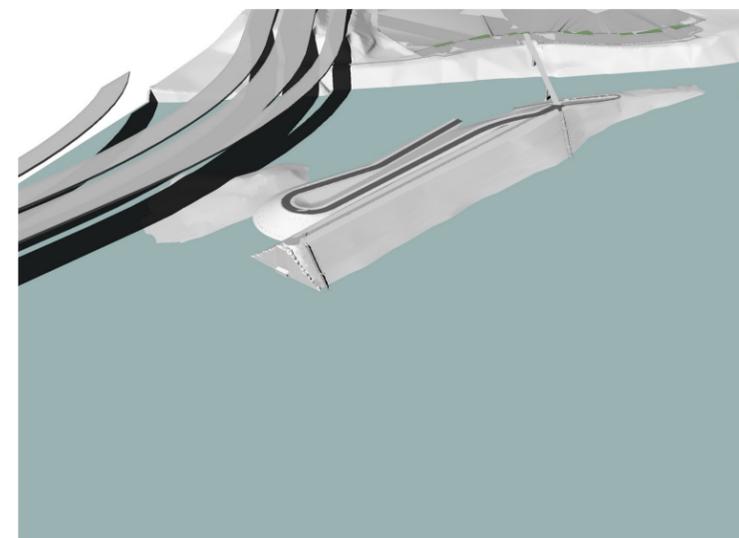
ORDINARY HIGH WATER



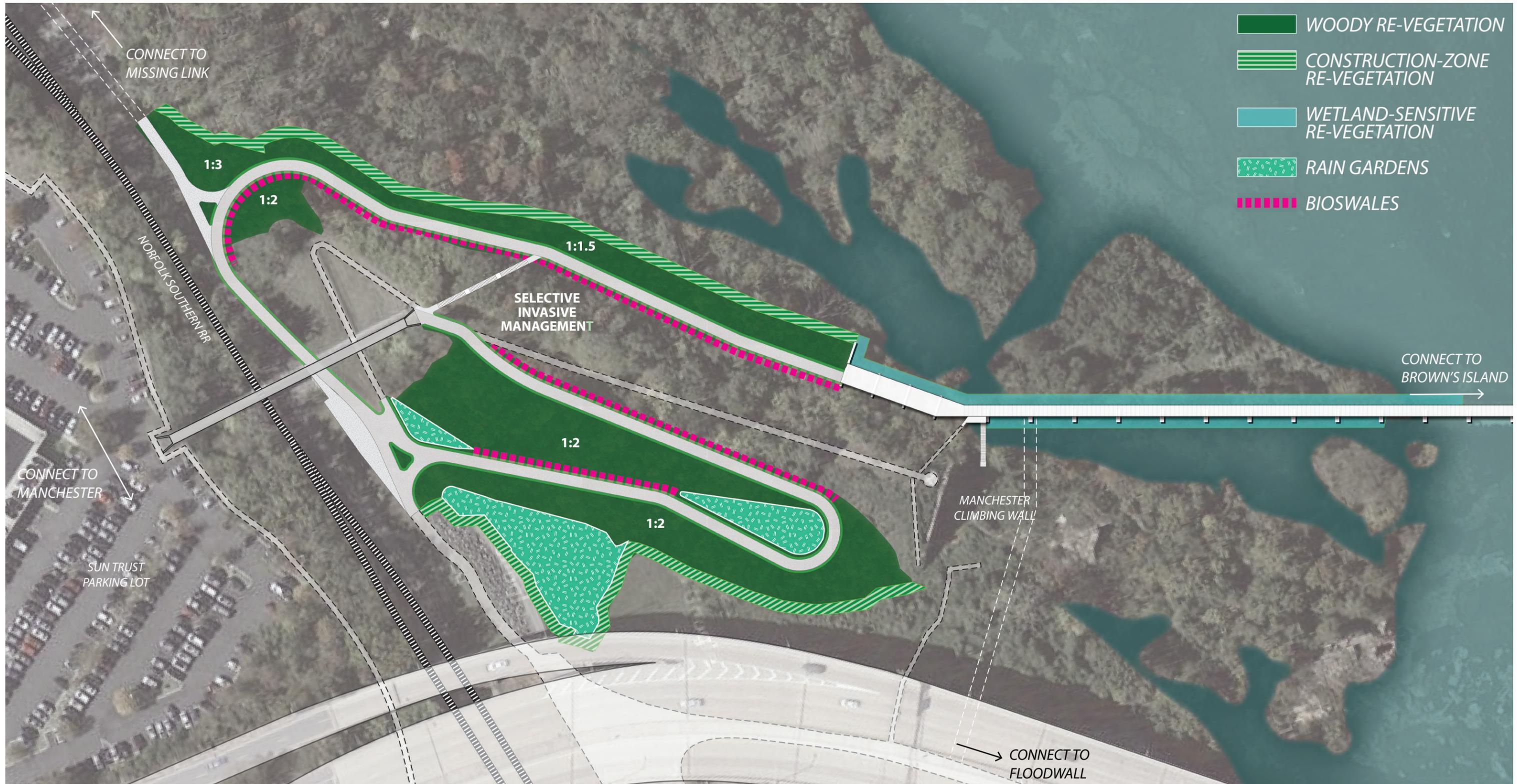
50 YR FLOOD (43')



100 YR FLOOD (46')



500 YR FLOOD (56')



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

- Re-vegetate with native and adaptive upland and wetland 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



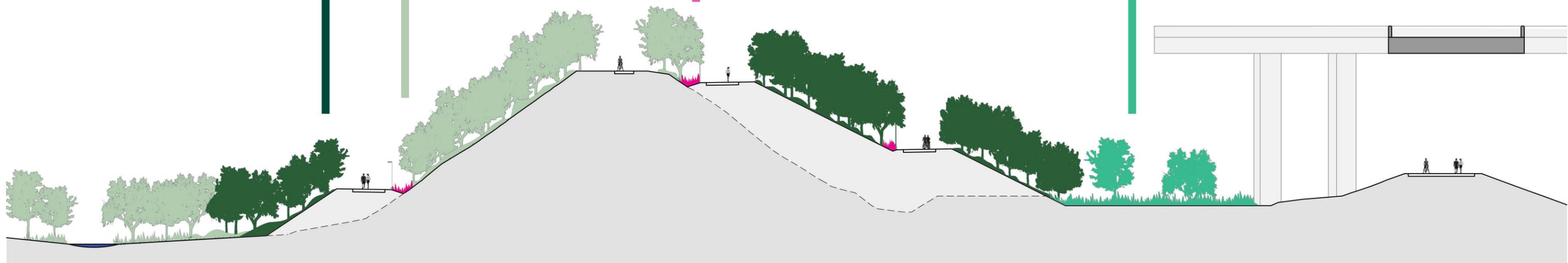
EXISTING VEGETATION
SELECTIVE INVASIVE
MANAGEMENT



BIOSWALES
GREEN INFRASTRUCTURE /
HABITAT



RAIN GARDENS
GREEN INFRASTRUCTURE /
HABITAT



AGENCY

CITY OF RICHMOND

JAMES RIVER PARK SYSTEM

U.S. ARMY CORPS OF ENGINEERS (USACE)

VA DEPT. OF CONSERVATION + RECREATION (DCR)

VA DEPT. OF ENVIRONMENTAL QUALITY (DEQ)

VA DEPT. OF GAME AND INLAND FISHERIES (DGIF)

VA DEPT. OF HISTORIC RESOURCES (DHR)

VA MARINE RESOURCES COMMISSION (MRC)

COORDINATION

clearing of vegetation within the RPA

review of conformance with JRPS Conservation Easement

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

confirming if additional coordination is required

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

confirming if additional coordination is required

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

PAVING

ASPHALT



CRUSHED STONE



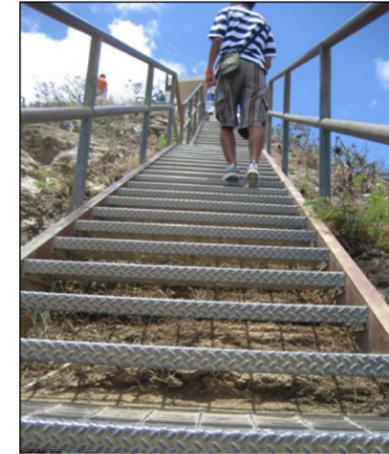
GUARDRAIL

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



LED GROUND-MOUNTED POLE

CREE SLM SERIES



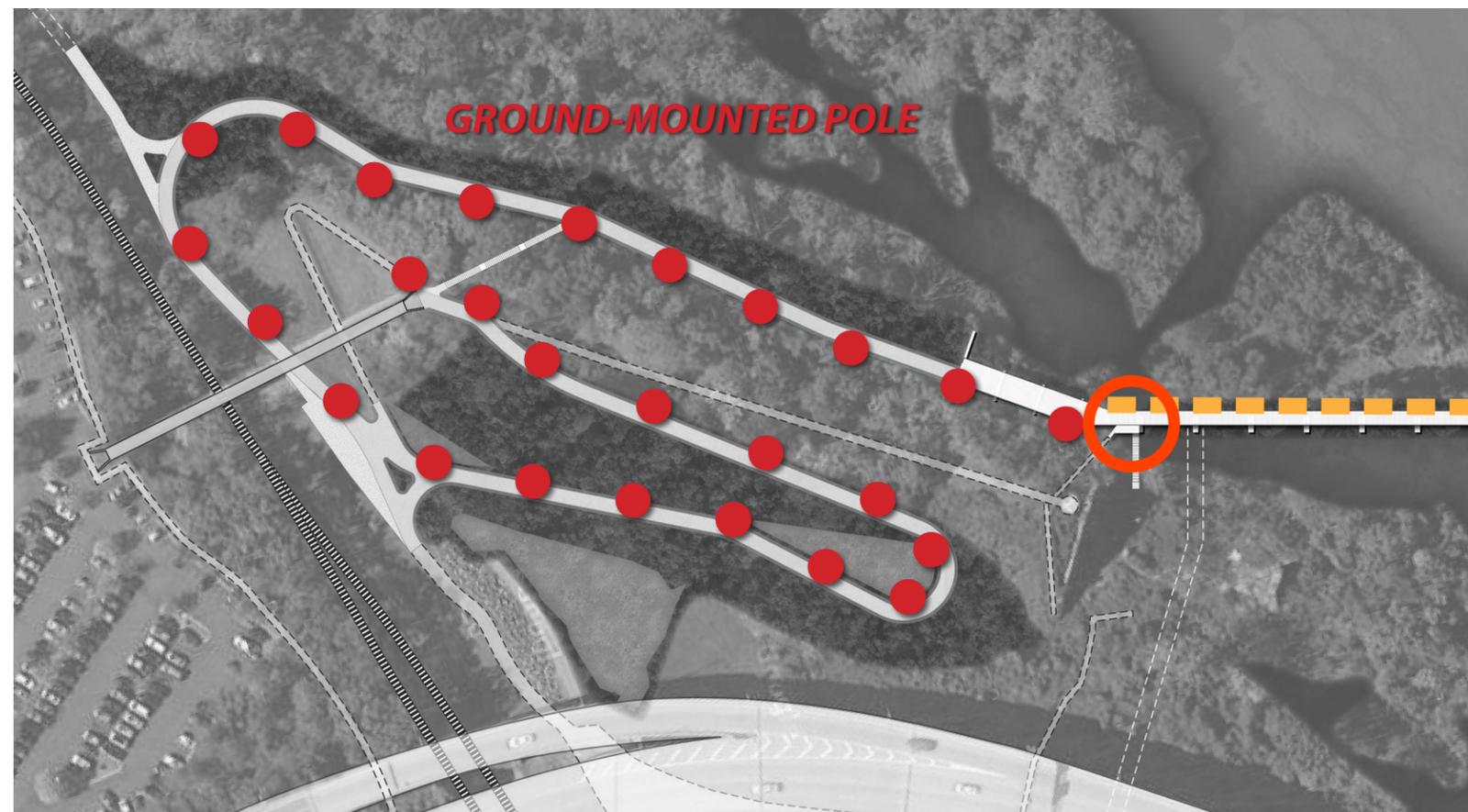
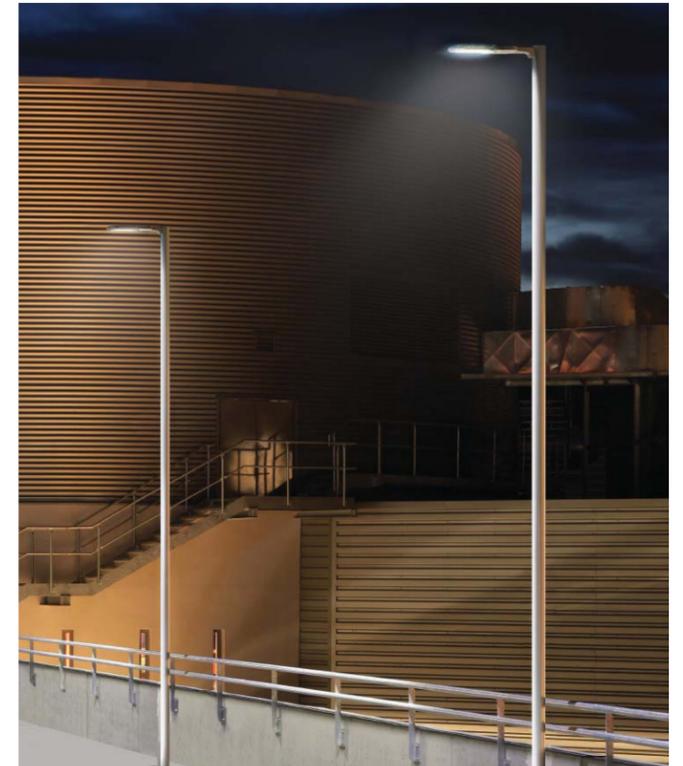
PIL USA SYSTEMPARK LINE



GARDCO - PUREFORM



GARDCO - ECOFORM

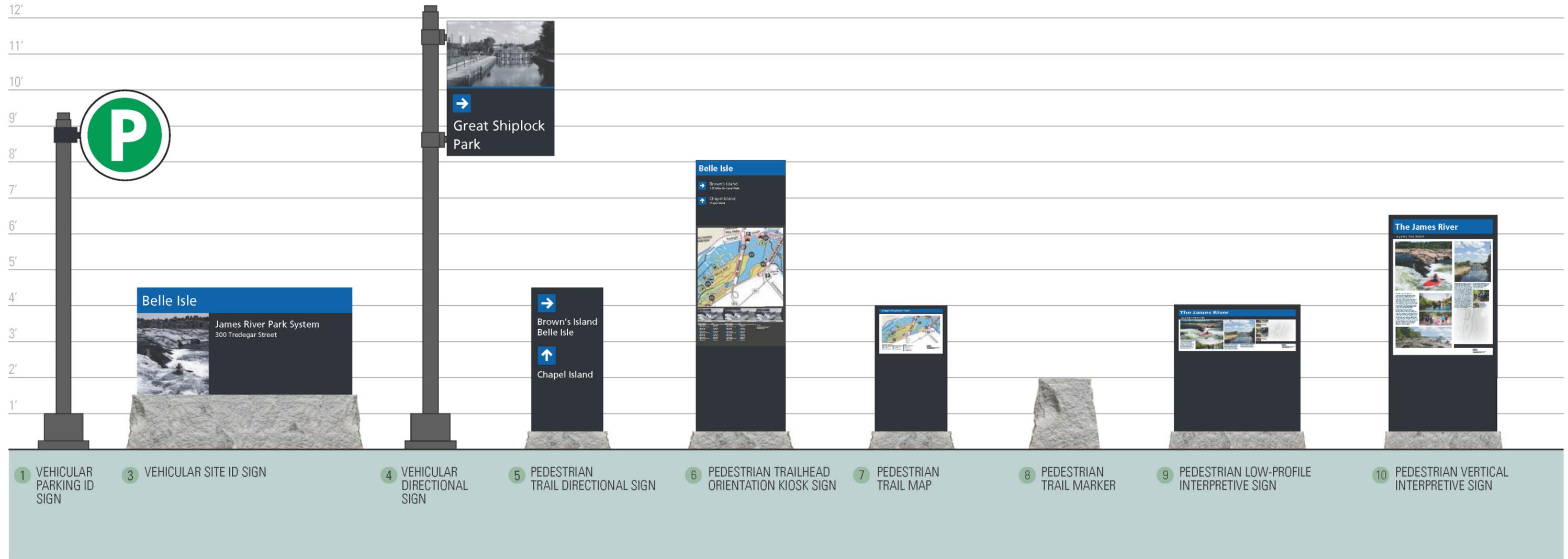


BROWN'S ISLAND DAM WALK // LIGHTING

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



FAMILY OF SIGN TYPES — NEW RICHMOND RIVERFRONT TRAIL SIGNS



ORIENTATION / INFORMATION SIGNS

