NORTH/WEST BATTERY PARK CITY RESILIENCY PROJECT

PUBLIC DESIGN COMMISSION CONCEPTUAL SUBMISSION

MARCH 28, 2025

NEW YORK STATE OF OPPORTUNITY. | Battery Park City Authority

Turner | deCRUZ | ARCADIS | SCAPE | BIG | WSP

FOR ILLUSTRATIVE PURPOSES ONLY

CONTENTS

INTRODUCTION

Progressive Design Build (PDB) & PDC Submission

The project was split into two submissions (Reach 1: Preliminary) and (Reaches 2-7: Preliminary & Final) to reflect the level of design development and subsequent phased construction schedule of the PDB project. Reach 1 is less developed than Reaches 2-7 due to inter-agency coordination and significant utility challenges.

Overall Project Construction:

Guaranteed Maximum Price (GMP) for Reaches 2-7 is projected for late summer 2025

Construction will be phased by reach starting 1/2026 - 12/2030

Reaches 2-7 will go into construction before Reach 1

Reach 1 Development (Excluding Pump Station):

Design has been delayed due to stakeholder coordination with BMCC, NYC DOT, NYS DOT, NYCDEP, Independence Plaza, and Hudson River Park Trust (HRPT) and significant utility conflicts.

- 90% Design for all Reach 1 elements – 7/25
- Reach 1 GMP Issuance & Approval – 11/25 - 12/25
- Reach 1 Construction (Utility Work only) - 1/26
- Reach 1 Construction – 2/27/26 – 4/8/30

FBS Experience

URBAN

+

NEIGHBORHOOD

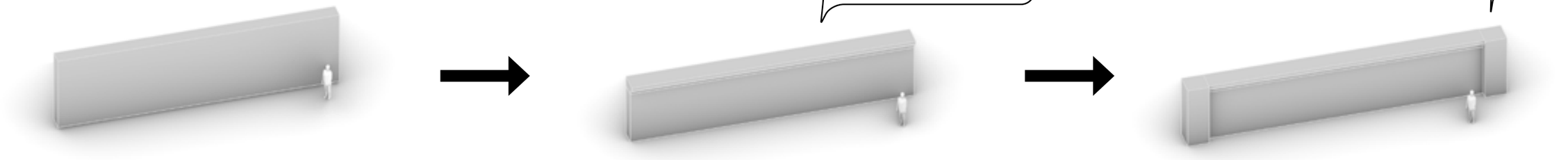
+

PEDESTRIAN

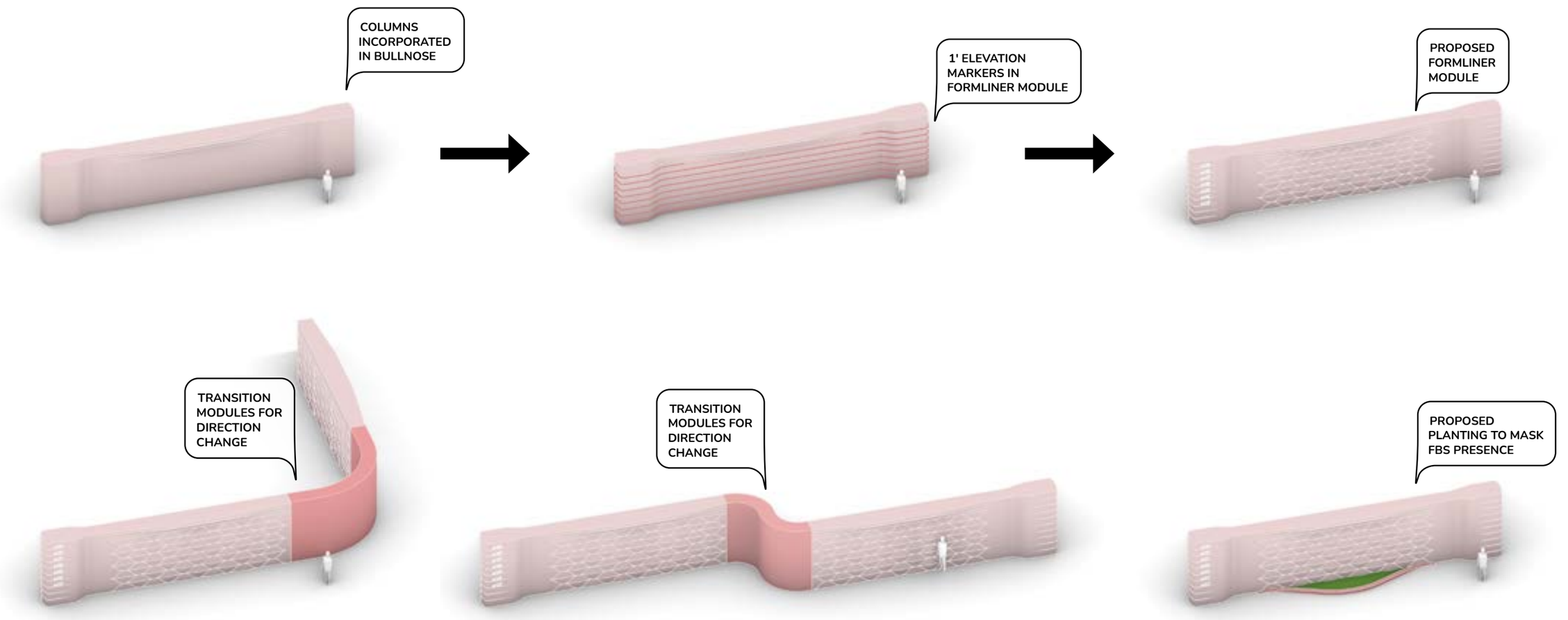
SITEWIDE DESIGN APPLICATION

The FBS system will be experience on three key levels that are integral to the experience of the system and are to be factored into the design.

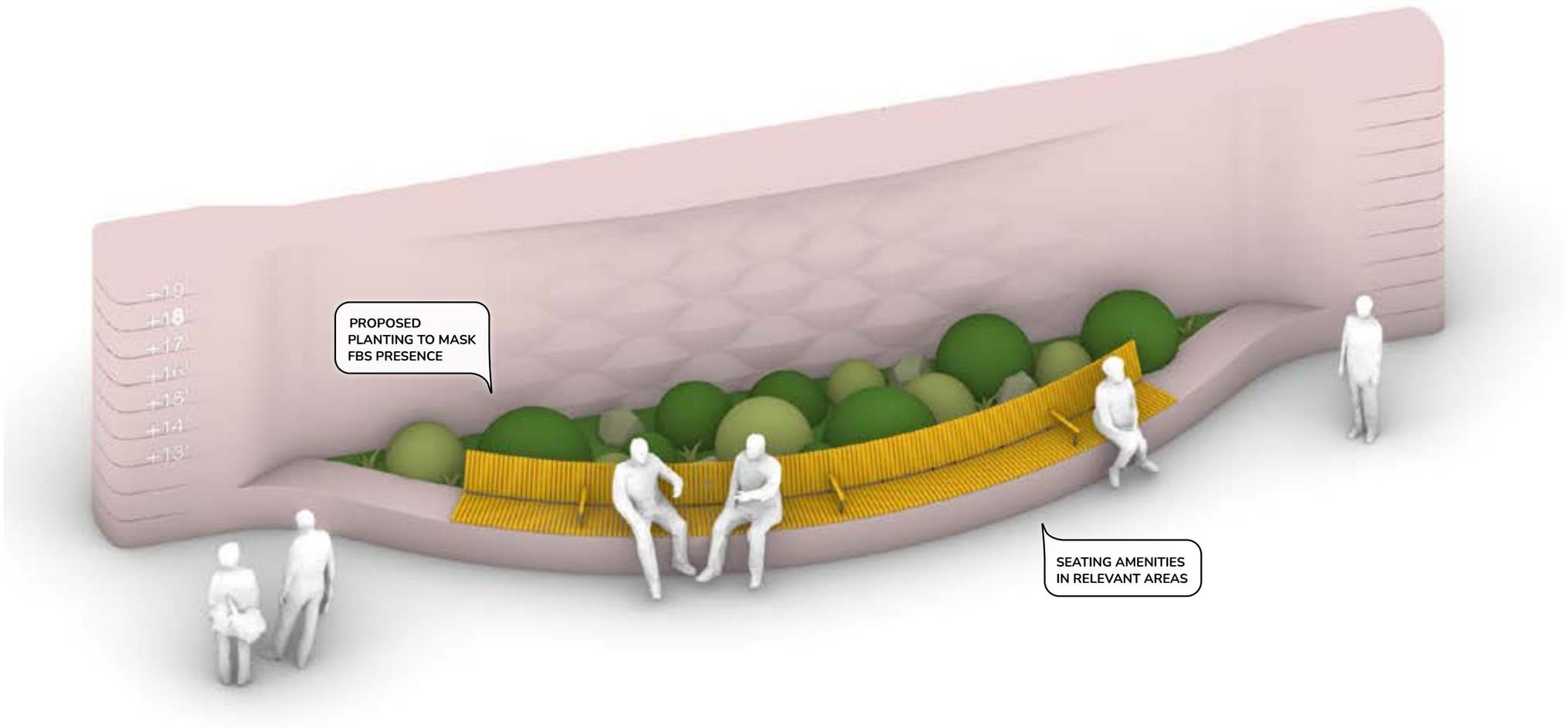
FBS | Kit of Parts



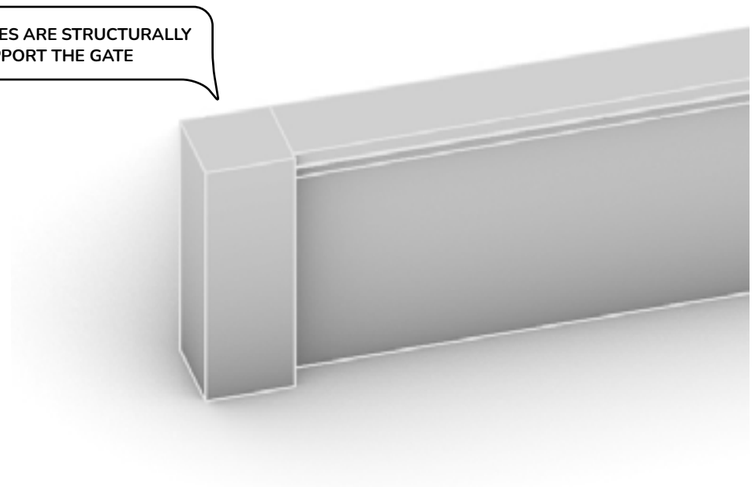
Standard FBS Wall



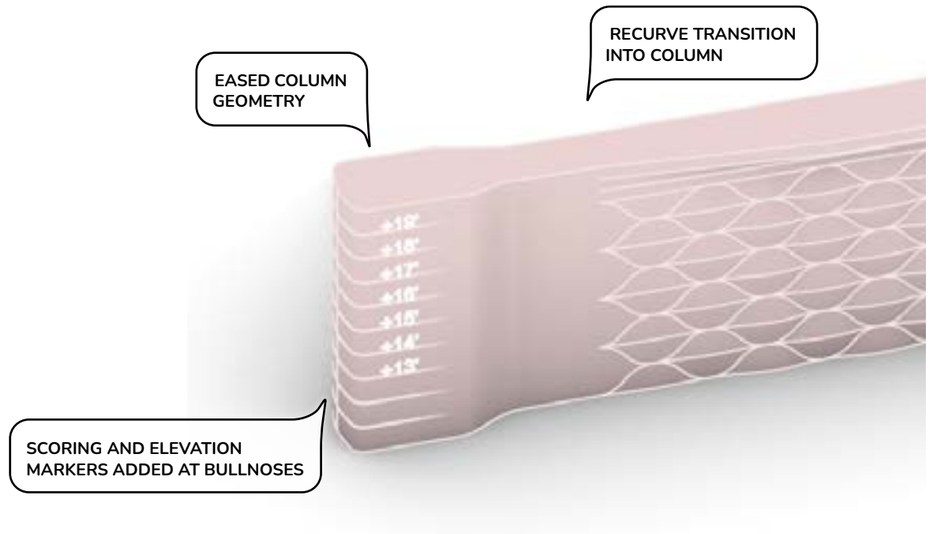
FBS | Kit of Parts



FBS | Bullnose



Column Requirement at Gate

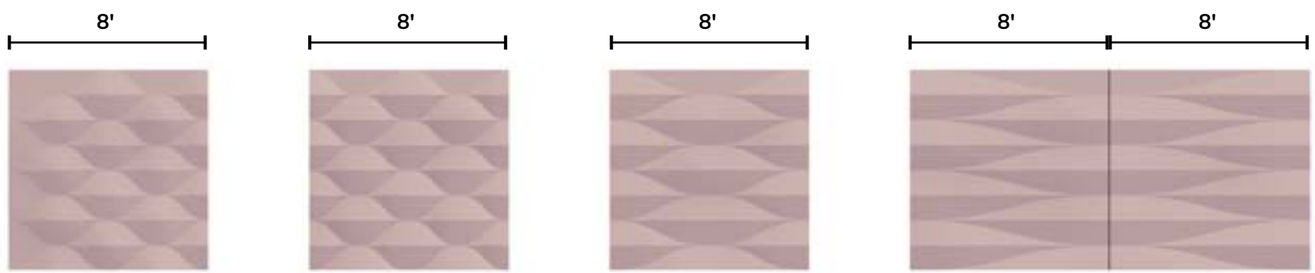


Proposed FBS Bullnose at Gate

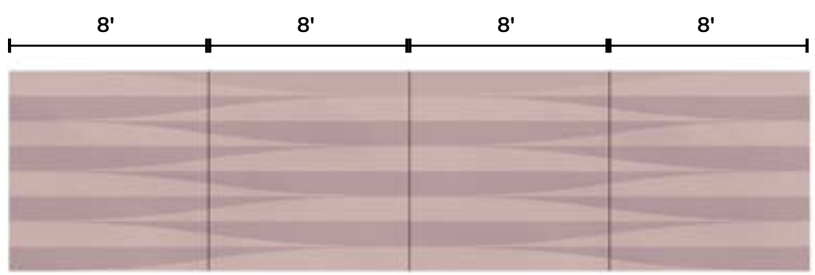
FBS | Floodwall Layout

Floodwall Modules

(CLOSEST TO FBS OPENINGS)



(FURTHEST FROM FBS OPENINGS)



SMALL M. - TRANSITION
4' PATTERN

SMALL MODULE
4' PATTERN

MEDIUM MODULE
8' PATTERN

LARGE MODULES
16' PATTERN

EXTRA LARGE MODULES
32' PATTERN

Additional Elements

LOW WALLS

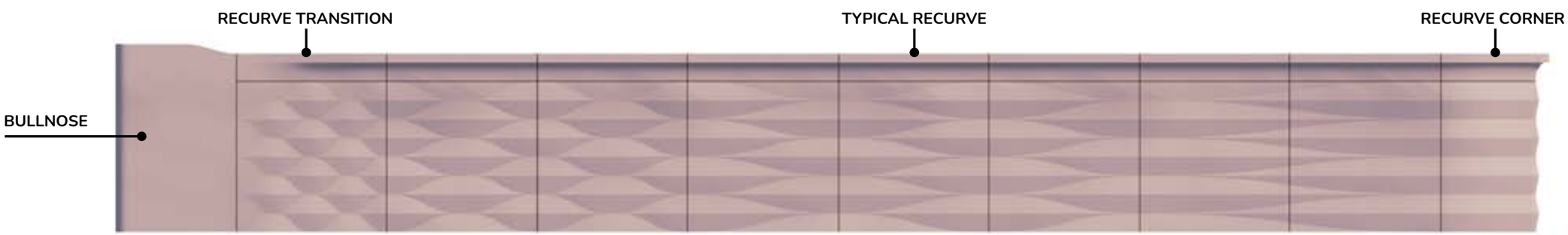
LOW WALL HEIGHTS
NO PATTERN

TURNS / ROUNDED CORNERS

SMALL CORNER
2' RADIUS

MEDIUM CORNER
5' RADIUS

LARGE CORNER
32' RADIUS

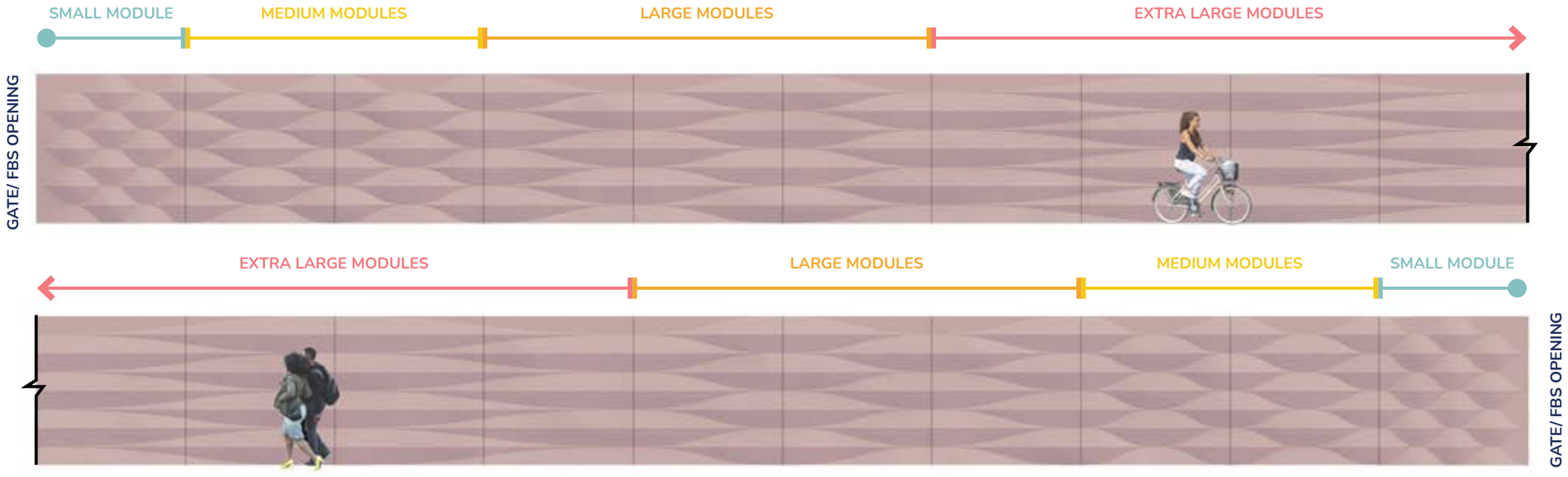


FBS | Floodwall Layout

Module variation correlates with proximity to FBS opening and acts as a form of wayfinding throughout the site. The modules are the smallest as they approach FBS opening and increase in size as the openings become farther away.

Short Wall Spans

Long Wall Spans



Design Principles

GOALS:
WHAT ARE WE TRYING TO ACHIEVE?

MINIMIZE IMPACT OF FBS ON EXISTING OPEN SPACE

MAINTAIN + ENHANCE CHARACTER OF EXISTING NEIGHBOURHOOD

ENHANCE + IMPROVE ACCESSIBILITY

STRATEGIES:
HOW ARE WE DOING IT?

Maintain views of the Hudson River & New York Habor

Utilize sustainable & resilient materials

Planting focus on coastal exposure & native ecologies

Enhance ADA seating, circulation & play equipment

Overall Materials Approach

GOALS:
WHAT ARE WE TRYING TO ACHIEVE?

PRIORITIZE MATERIAL SUSTAINABILITY

RESPECT EXISTING CHARACTER & IDENTITY

PROMOTE INNOVATION & CLIMATE ADAPTATION

STRATEGIES:
HOW ARE WE DOING IT?

Track and minimize embodied carbon of new materials

Salvage and reuse

Preserve and ensure and continuity

Foreground ecology & habitat

Explore alternative materials and technologies

AREAS FOR PDC REVIEW

PDC Jurisdiction Areas

**SOUTH ESPLANADE (REACH 6) &
SOUTH NEIGHBORHOOD (REACH 7)**

FERRY TERMINAL (REACH 4)

HUDSON RIVER

NYCDOT

NYCDOT

NYCDOT

NYCDOT

NYCDOT

S-2 VESEY ST IN FERRY TERMINAL (REACH 4) ADDED IN CURRENT SUBMISSION

S-1 RECTOR PL AND ALBANY ST IN SOUTH ESPLANADE (REACH 6) ADDED IN CURRENT SUBMISSION

NYCDOT

S-3 ROUTE 9A & TRIBECA (REACH 1) ADDED IN CURRENT SUBMISSION

LEGEND

- PDC JURISDICTION
- PROPERTY LINES
- LIMIT OF WORK

0’ 175’ 350’ 700’ 1,050’ N

NEW YORK CITY DOT | NEW YORK STATE OF OPPORTUNITY. Battery Park City Authority | Turner CRUZ ARCADIS SCAPE BIG WSP

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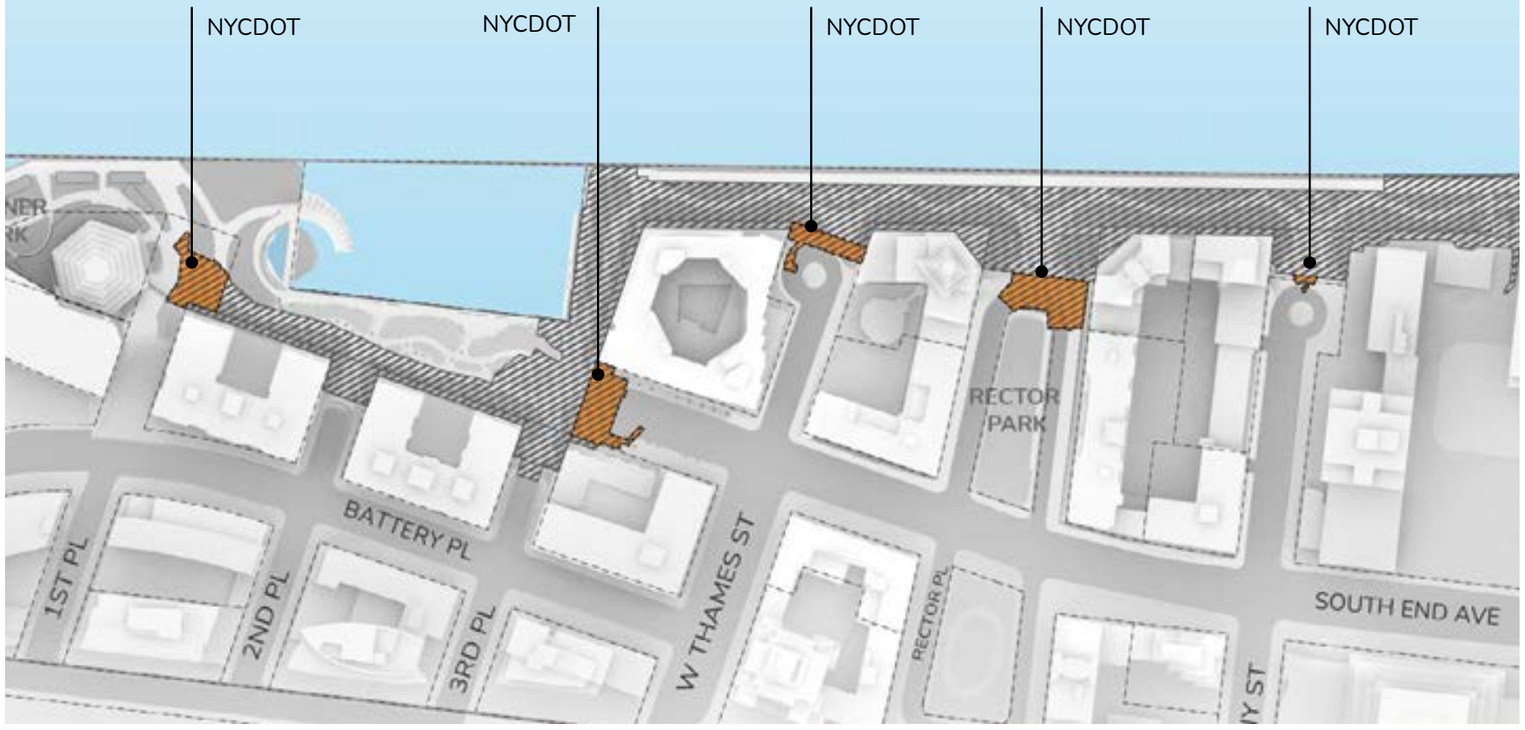
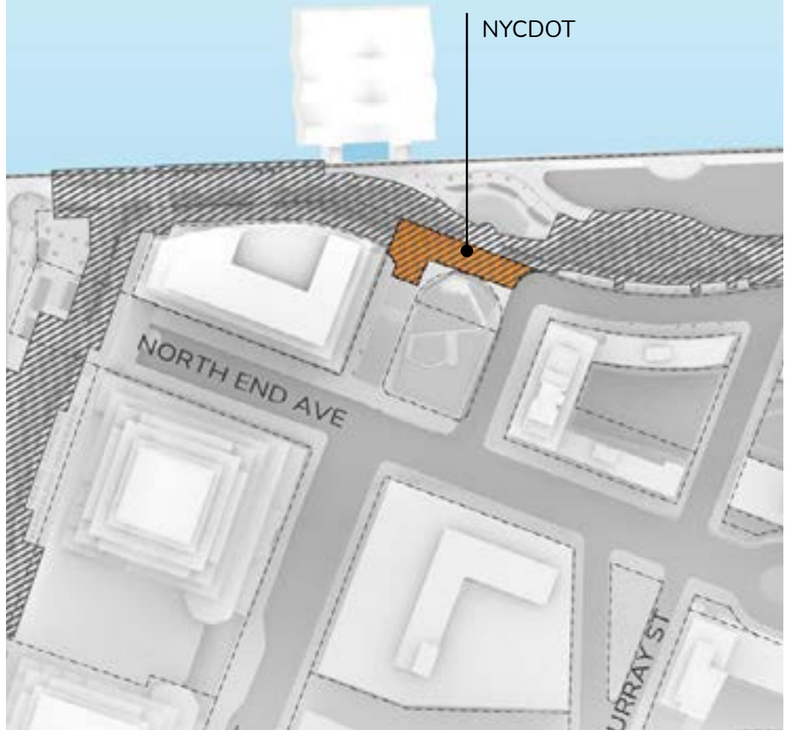
PDC Jurisdiction Areas

South Esplanade (Reach 6) & South Neighborhood (Reach 7)



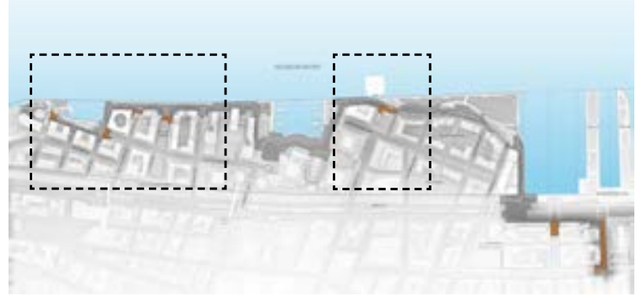
Ferry Terminal (Reach 4)



LEGEND

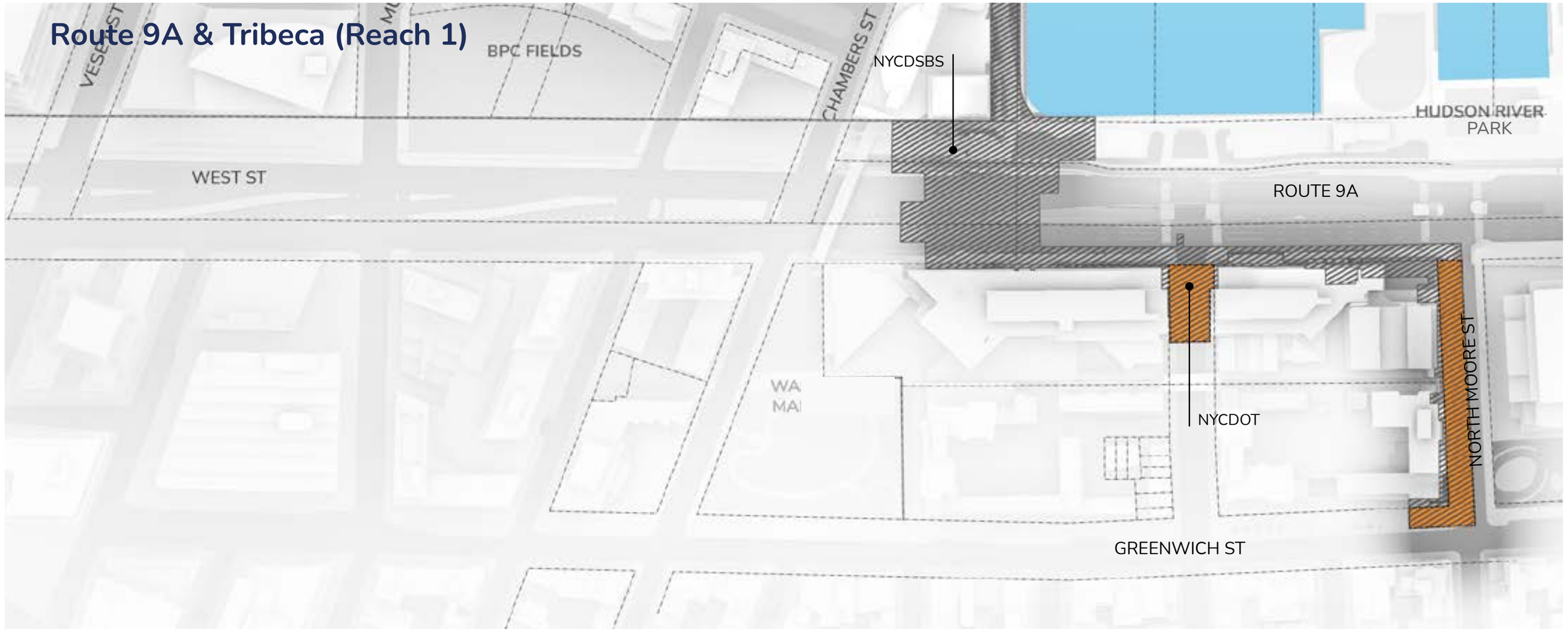
- PDC JURISDICTION
- PROPERTY LINES
- LIMIT OF WORK

0’ 100’ 200’ 400’ N



PDC Jurisdiction Areas

Route 9A & Tribeca (Reach 1)



LEGEND

- PDC JURISDICTION
- PROPERTY LINES
- LIMIT OF WORK

0’ 100’ 200’ 400’ N

REACHES 4,6,7
CONCEPTUAL PDC SUBMISSION

SOUTH NEIGHBORHOOD (REACH 7)

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South Neighborhood | Existing Site Photos

South Cove, View from South End Ave

South End Ave, View from South Cove Lower Esplanade

South End Ave, View from park near 3rd Place

1st Place, View from park

South Neighborhood | Ownership

BPCA

NYCDOT

SOUTH COVE

BPCA

REGATTA PROPERTY LLC

BPCA

1ST PLACE

DEMATTEIS BATTERY PARK ASSOCIATES

NYCDOT

2ND PLACE

NY URBAN LLC

NYCDOT

3RD PLACE

NYCDOT

SOUTH END AVE

COVE CLUB CAR PARK

LEGEND

BPCA

NYCDOT

OTHER

0’ 10’ 20’ 50’

N

South Neighborhood | PDC Jurisdiction

NYCDOT

SOUTH COVE

+9.5'

South Cove
Plaza Building

1ST PLACE

2ND PLACE

Riverwatch
Building

3RD PLACE

Regatta
Condominium

NYCDOT

SOUTH END AVE

Cove Club
Building

LEGEND

- PDC JURISDICTION
- PROPERTY LINES
- LIMIT OF WORK

0' 10' 20' 50' N

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South Neighborhood | Plan

Existing

SOUTH COVE

+9.5’

+7.0’

+11’

+12’

+12’

1ST PLACE

2ND PLACE

3RD PLACE

SOUTH END AVE

South Cove Plaza Building

Riverwatch Building

Regatta Condominium

Cove Club Building

LEGEND

- PROPERTY LINES
- EXISTING RELIEVING PLATFORM
- EXISTING TREE

0’ 10’ 20’ 50’ N

South Neighborhood | Plan

Proposed (Conceptual Submission)

Tie-In to South BPC Resilience Project

SOUTH COVE

Existing landscape, steps, and edge to remain

Pergola to partially remain

+9.5’

TOP OF WALL: +19.5’

Slide-Up Gates (No. SG705)

Slide-Up Gates (No. SG704)

+7.0’

Regatta Condominium

TOP OF WALL: +18’

1ST PLACE

South Cove Plaza Building

+12’

+13.5’

50’ Flip-Up Gate (No. SG703)

TOP OF WALL: +16.5’

24’ Roller Gate (No. SG701)

2ND PLACE

SOUTH END AVE

20’ Swing Gate (No. SG702)

+13’

Riverwatch Building

3RD PLACE

TOP OF WALL: +16.5’

Cove Club Building

LEGEND

- PROPERTY LINES
- PDC JURISDICTION
- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- EXISTING RELIEVING PLATFORM
- PLATFORM RECONSTRUCTION AREA
- EXISTING TREE TO REMAIN
- NEW TREE
- LIMIT OF WORK

0’ 10’ 20’ 50’ N

South Neighborhood | Plan

Revised Conceptual Submission

Tie-In to South BPC Resilience Project

SOUTH COVE

Existing landscape, steps, and edge to remain

Existing pergola partially preserved

+9.5’

Wall height 10’ from esplanade (DFE +19.5’)

Partial Height 8’ Openings with Slide-Up Gates (No. SG705)

Slide-Up Gates (No. SG704)

+7.0’

Regatta Condominium

PLANTING ADDED TO NAVIGATE CHANGE IN GRADE FROM EXISTING CONDITIONS TO FLIP UP GATE

R7.1

+13.5’

50’ Flip-Up Gate (No. SG703)

SOUTH END AVE

Wall height 3’ from sidewalk (DFE +16.5’)

Cove Club Building

Wall height 8’ from path (DFE +18’)

1ST PLACE

South Cove Plaza Building

+12’

24’ Opening with Roller Gate (No. SG701)

2ND PLACE

Wall height 5.5’ from path (DFE +16.5’)

20’ Opening with Swing Gate (No. SG702)

+13’

Riverwatch Building

3RD PLACE

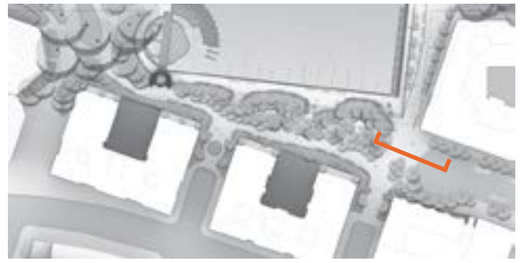
LEGEND

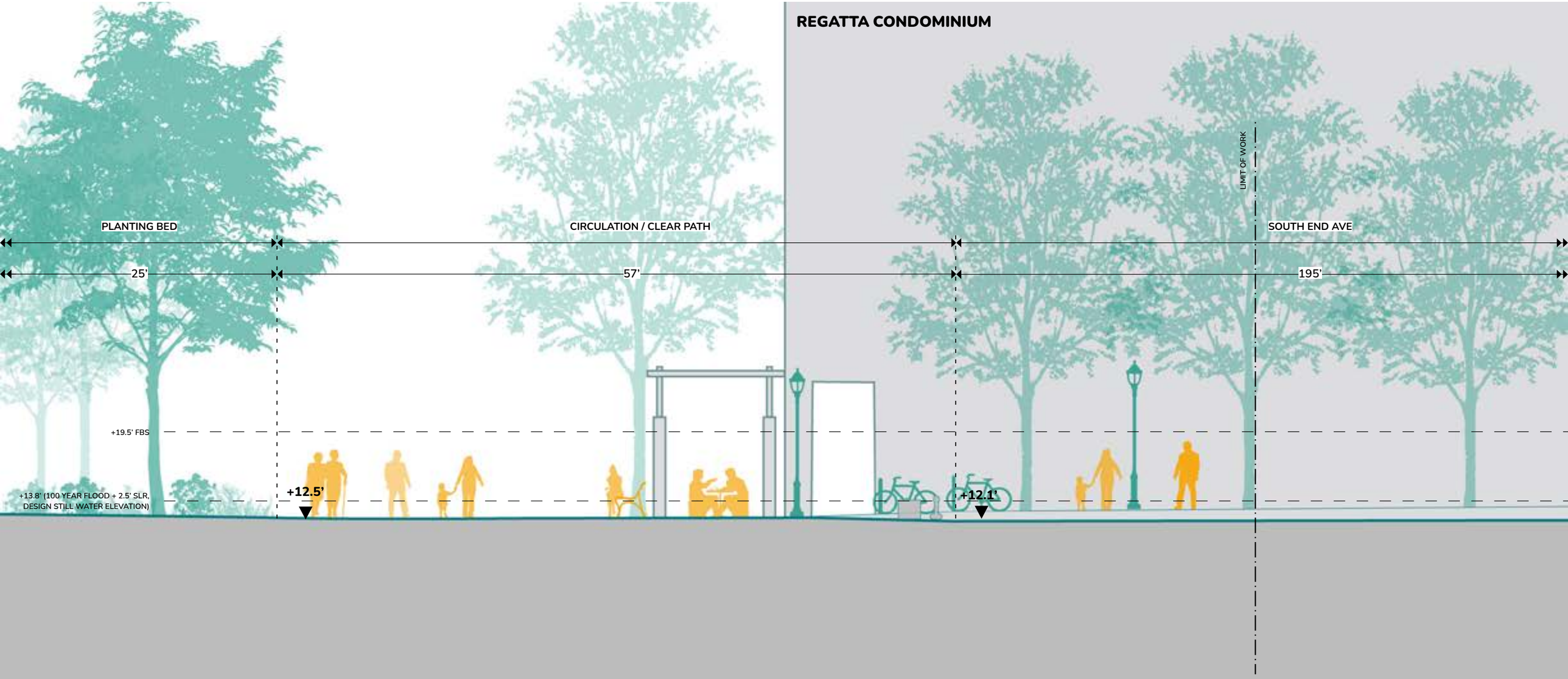
- PROPERTY LINES
- PDC JURISDICTION
- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- EXISTING RELIEVING PLATFORM
- PLATFORM RECONSTRUCTION AREA
- EXISTING TREE TO REMAIN
- NEW TREE
- LIMIT OF WORK

0’ 10’ 20’ 50’ N

South End Avenue | Section

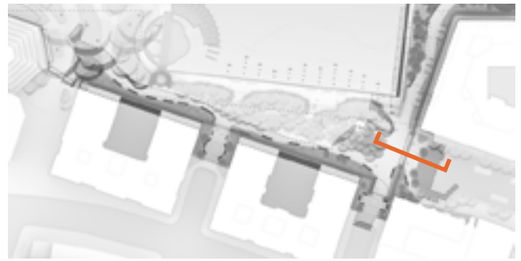
Existing

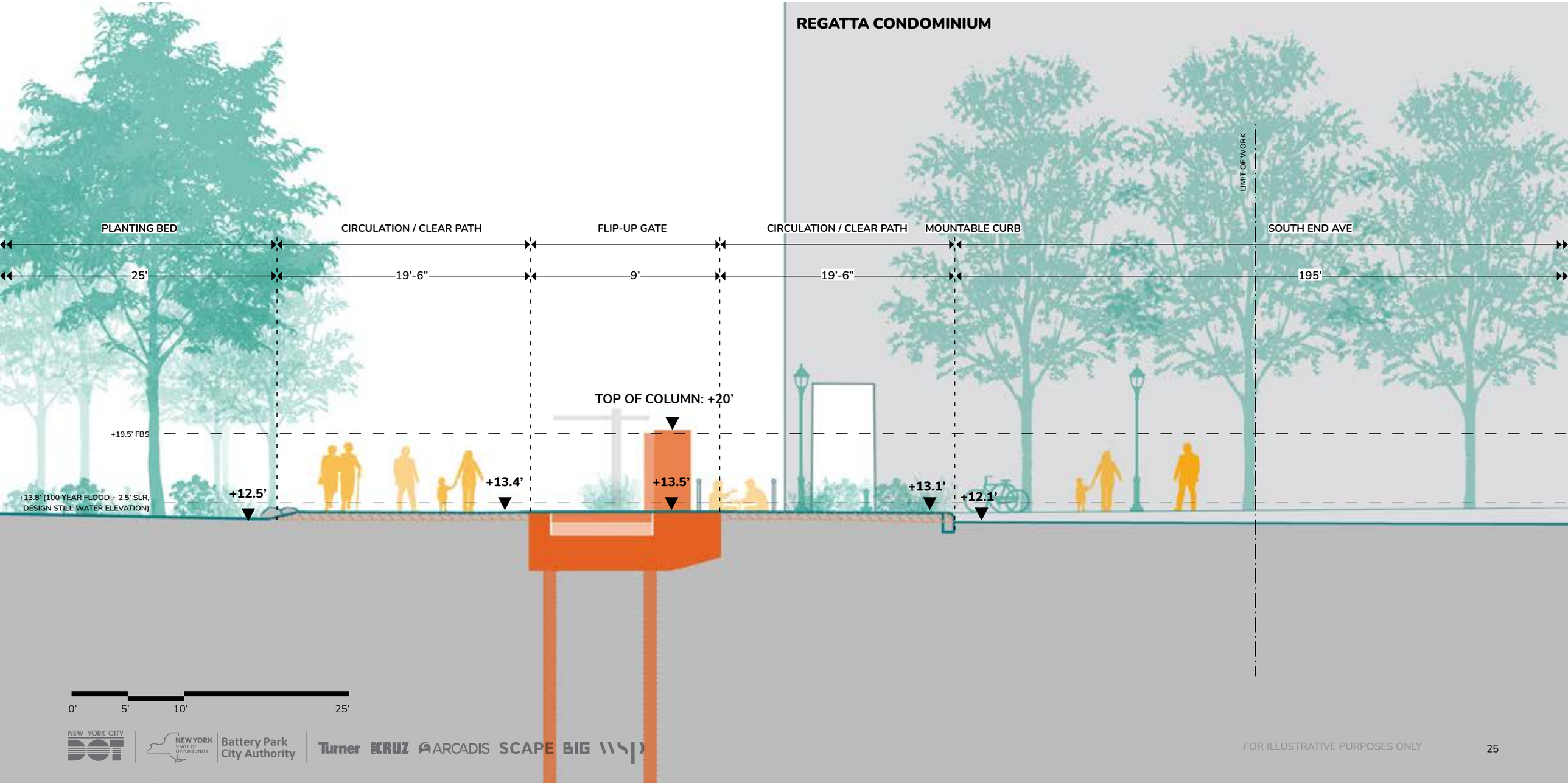




South End Avenue | Section

Proposed





South End Avenue | View from Street

Existing

+ 12.00’

Proposed (Conceptual Submission)

Top of Column: +20’

Flip up deployable concealed in paving

FBS Wall

Top of Wall: +19.5’

Top of Wall: +16.5’

6.5’

+ 13.50’

NEW YORK CITY | NEW YORK STATE OF OPPORTUNITY | Battery Park City Authority | COOPER ROBERTSON | CRUZ | ARCADIS | SCAPE | BIG | WSP

South End Avenue | View from Street

Existing

+ 12.00’

Revised Conceptual Submission

Wall height 6.5’ from sidewalk (DFE +20’)

Wall height 3’ from sidewalk (DFE +16.5’)

6.5’

Flip up deployable concealed in paving

+ 13.50’

BOLLARDS RELOCATED TO ACCOMMODATE CURB CUT

R7.3

FBS Wall

Wall height varies 6’-10’ from esplanade (DFE +19.5’)

PLANTING ADDED

R7.1

BIKE RACKS ADDED

R7.2

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South End Avenue | Material Palette

Proposed

A Asphalt Hex Pavers

B Concrete Wall (FBS)

C Bollard Sleeve

D Bike Rack

E Cobblestone (salvaged to match existing)

F Black Powder coated stainless steel plant rail

1st Place | View from Park

Existing

Proposed (Conceptual Submission)

NORTH/WEST BATTERY PARK CITY RESILIENCY PROJECT

SOUTH BATTERY PARK CITY RESILIENCY PROJECT

FBS Wall

Top of Wall: +18’

6.8’

LIMIT OF WORK

1st Place | View from Park

Existing

Revised Conceptual Submission

NORTH/WEST BATTERY PARK CITY RESILIENCY PROJECT

SOUTH BATTERY PARK CITY RESILIENCY PROJECT

LIMIT OF WORK

FBS Wall

Wall height 6.8’ from path (DFE +18’)

6.8’

+ 12.2’

1st Place | Material Palette

Proposed

A Asphalt Hex Pavers

B Concrete Wall (FBS)

C Salvaged Stone Planter Wall

South Neighborhood (Reach 7) | Proposed Planting Palette

PRIMEVAL FOREST

BALD CYPRESS
Taxodium distichum

SWEETBAY MAGNOLIA
Magnolia virginiana

NORTHERN BAYBERRY
Myrica pensylvanica

SWITCHGRASS
Panicum virgatum

WHITE HEATH ASTER
Aster ericoides

PALM SEDGE
Carex muskingumensis

PLANTED BUFFER

GOATSBEARD
Aruncus dioicus

OSTRICH FERN
Matteuccia struthiopteris

INLAND SEA OATS
Chasmanthium latifolium

AUTUMN BRIDE HAIRY ALUMROOT
Heuchera villosa ‘Autumn Bride’

WILD GERANIUM
Geranium maculatum

JAPANESE SPURGE
Pachysandra terminalis

South End Ave and 1st Place | PDC Jurisdiction Plants

TUPELO
Nyssa Sylvatica

SWEETBAY MAGNOLIA
Magnolia virginiana

GOATSBEARD
Aruncus dioicus

OSTRICH FERN
Matteuccia struthiopteris

EASTERN REDBUD
Cercis Canadensis

SWITCHGRASS
Panicum virgatum

BOTTLE ROCKET LIGULARIA
Ligularia x ‘Bottle Rocket’

SOLOMON’S SEAL
Polygonatum Odoratum

SWAMP AZALEA
Rhododendron viscosum

PALM SEDGE
Carex muskingumensis

SPOTTED GERANIUM
Geranium maculatum

COMMON YARROW
Achillea millefolium

MJH + 1ST PLACE | REVISED STRUCTURAL ENGINEERING

NEW YORK STATE OF OPPORTUNITY. Battery Park City Authority | AECOM

PUBLIC DESIGN COMMISSION - 1st PLACE **06/17/2022** **8**

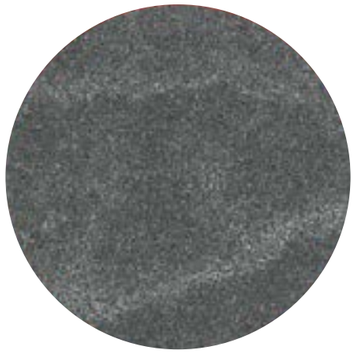
MJH + 1ST PLACE | ELEVATIONS

EXISTING CONDITIONS

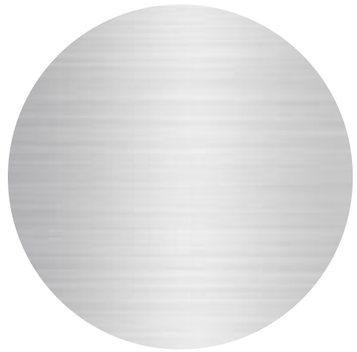
REVISED DESING

MJH + 1ST PLACE | MATERIALS

PAVING
PARK STANDARD
8”X8” ASPHALT HEX
TO MATCH SURROUNDING HEX PAVING

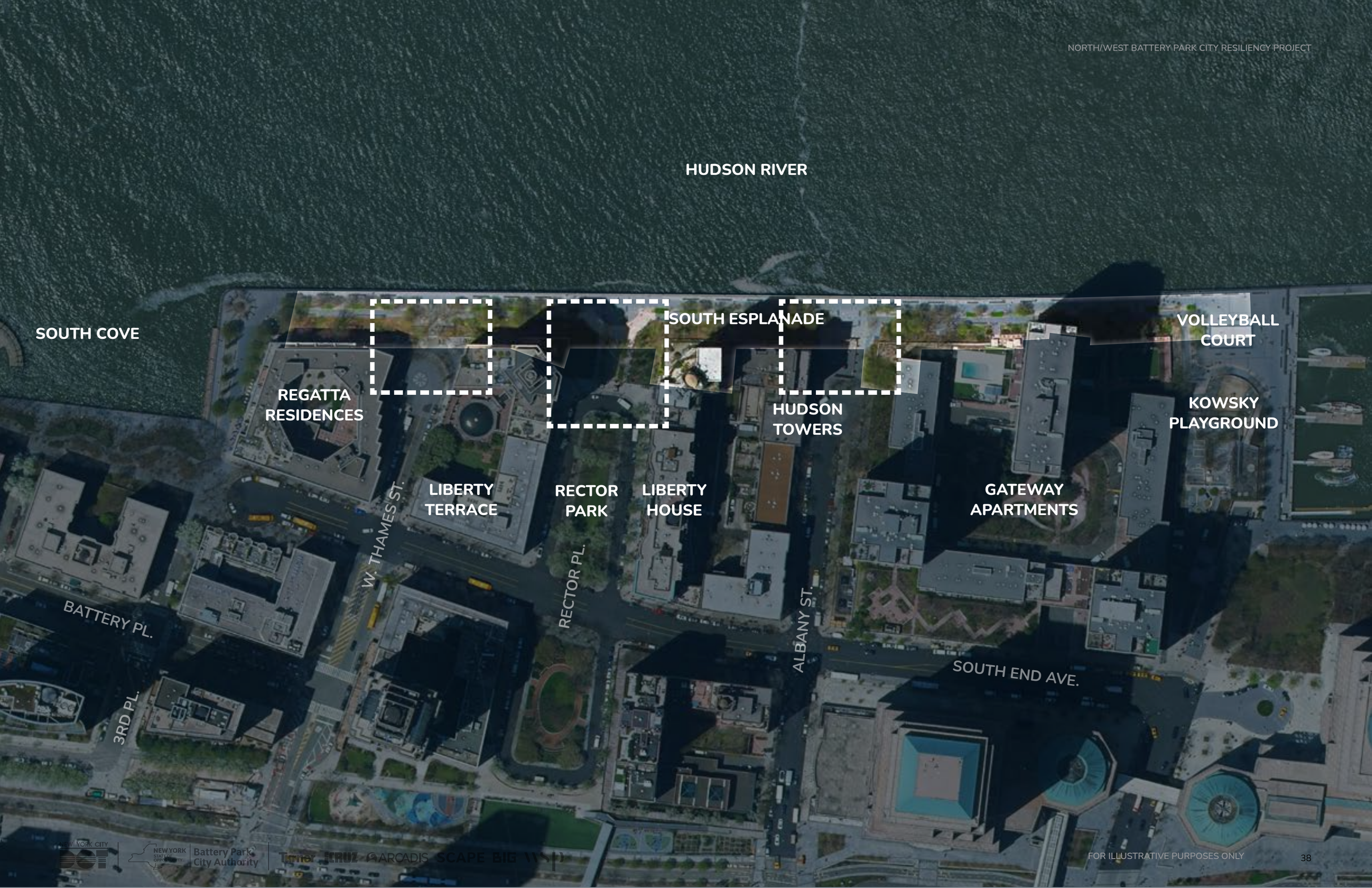


PLANTER EDGE
GRANITE STONE
SALVAGE STONE PLANTER FLUSHED
TO THE GROUND



MOVABLE PLANTER
STAINLESS STEEL

SOUTH ESPLANADE (REACH 6)

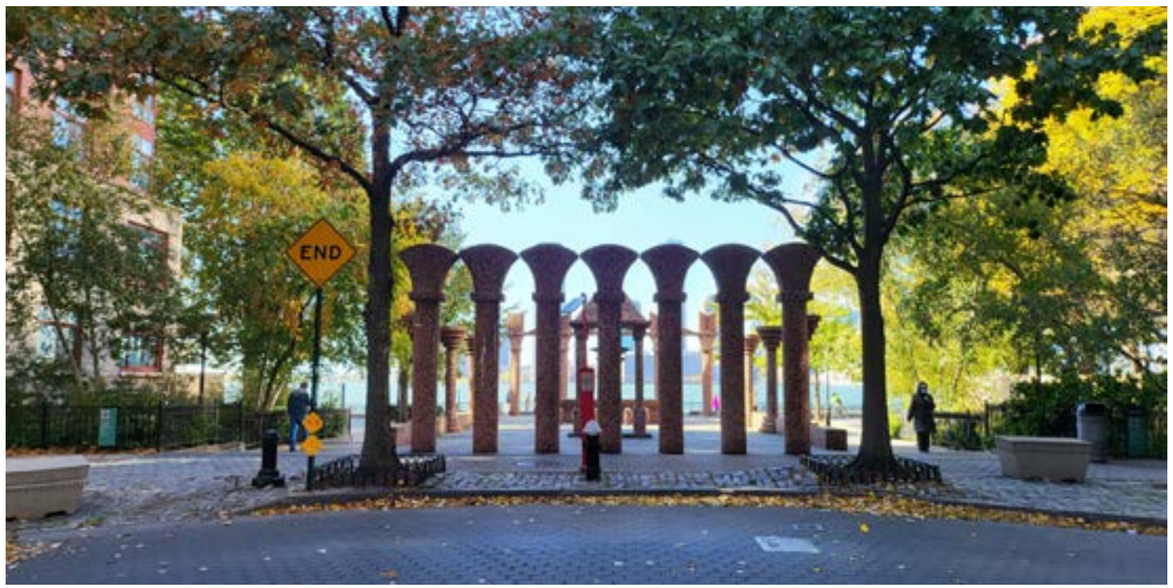

HUDSON RIVER
SOUTH COVE
REGATTA RESIDENCES
SOUTH ESPLANADE
HUDSON TOWERS
VOLLEYBALL COURT
KOWSKY PLAYGROUND
LIBERTY TERRACE
RECTOR PARK
LIBERTY HOUSE
GATEWAY APARTMENTS
W. THAMES ST.
RECTOR PL.
ALBANY ST.
BATTERY PL.
3RD PL.
SOUTH END AVE.

South Esplanade | Existing Site Photos

W. Thames St, View from Street End

Rector Pl, View from Street End

View from South Corner of Regatta Bldg



Albany St, View from Street End

South Esplanade | Plan

Ownership

LEGEND

- BPCA
- NYCDOT
- OTHER PRIVATE OWNERS
- PROPERTY LINE

0’ 20’ 50’ 100’ 200’ N

Hudson River

BPCA

REGATTA PROPERTY LLC

LIBERTY TERRACE CONDO

RECTOR PLACE LLC

NYCDOT W THAMES ST.

NYCDOT RECTOR PL.

RECTOR PARK

MARINER’S COVE SITE J ASSOCIATES

HUDSON TOWER

RECTOR ALBANY LLC

HUDSON VIEW TOWER

NYCDOT ALBANY ST.

MARINA TOWERS ASSOCIATES, L.P.

COVE CLUB CAR PARK

RECTOR PARK A ASSOCIATION L.P.

NYCDOT SOUTH END AVE.

South Esplanade | Plan

PDC Jurisdiction

LEGEND

- LIMIT OF WORK
- PDC JURISDICTION
- PROPERTY LINE

0’ 20’ 50’ 100’ 200’ N

NYCDOT

NYCDOT

NYCDOT

Hudson River

Esplanade Plaza

Regatta Residences

Liberty Terrace Residences

Hudson Tower Residences

Kowsky Plaza

W Thames St.

Rector Park

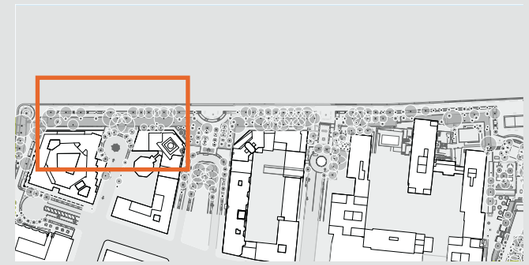
Albany St.

Gateway Apartments

South End Ave

W. Thames St. | Plan

Ownership



Hudson River

Regatta Property LLC

Liberty Terrace Condo

NYC DOT W Thames St.

LEGEND

- BPCA
- NYCDOT
- OTHER PRIVATE OWNERS
- PROPERTY LINE

0’ 25’ 50’ 100’

N

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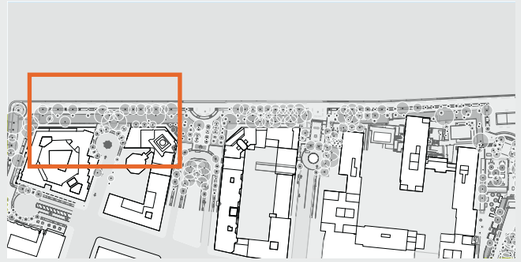
W. Thames St. | Plan

PDC Jurisdiction



Hudson River

NYCDOT

Regatta Residences

Liberty Terrace Residences

W Thames St.

LEGEND

BPCA

PDC JURISDICTION

PROPERTY LINE

0’ 25’ 50’ 100’

N

NEW YORK CITY DOT | NEW YORK STATE OF OPPORTUNITY. Battery Park City Authority | Turner | CRUZ | ARCADIS | SCAPE | BIG | WSP

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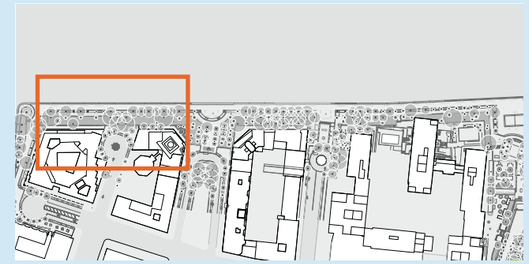
W. Thames St. | Plan

Existing



Hudson River

Sitting Stance

Regatta Residences

Liberty Terrace Residences

W Thames St.

LEGEND

EXISTING TREES

PROPERTY LINE

0’ 25’ 50’ 100’

N

NEW YORK CITY DOT | NEW YORK STATE OF OPPORTUNITY. Battery Park City Authority | Turner | EDUZ | ARCADIS | SCAPE | BIG | WSP

FOR ILLUSTRATIVE PURPOSES ONLY

W. Thames St. | Plan

Proposed (Conceptual Submission)

Sitting Stance Relocated

Hudson River

Roller Gate (No. SG601)

+9.5’

+9.92’

+10’

+11.5’

+9.62’

+9.62’

+9.5’

+11.5’

+9.54’

+9.54’

+9.54’

Wall Height: 8’ from path (DFE +19.5')

Regatta Residences

Liberty Terrace Residences

W Thames St.

LEGEND

- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- PDC JURISDICTION
- EXISTING RELIEVING PLATFORM
- EXISTING TREES
- NEW TREES
- LIMIT OF WORK
- PROPERTY LINE

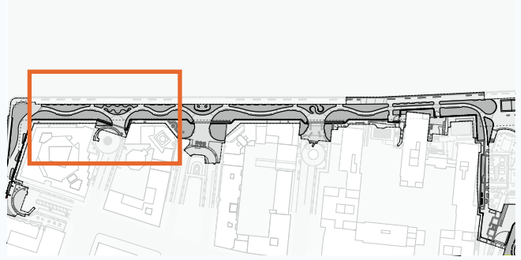
0’ 25’ 50’ 100’ N

NEW YORK CITY DOT | NEW YORK STATE OF OPPORTUNITY. Battery Park City Authority | Turner | CRUZ | ARCADIS | SCAPE | BIG | WSP

FOR ILLUSTRATIVE PURPOSES ONLY

W. Thames St. | Plan

Revised Conceptual Submission



Hudson River

Roller Gate
(No. SG601)

+9.51’

+9.62’

R6.3 BOLLARDS RELOCATED

+9.54’

+9.8’

+11.33’

+9.95’

Wall Height:
8’ from path
(DFE +19.5')

+11.50’

Regatta Residences

Liberty Terrace Residences

LEGEND
- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- PDC JURISDICTION
- EXISTING RELIEVING PLATFORM
- EXISTING TREES
- NEW TREES
- LIMIT OF WORK
- PROPERTY LINE

0’ 25’ 50’ 100’ N

R6.4 PLANTER ADJUSTED TO NAVIGATE CHANGE IN FBS ALIGNMENT

R6.1 LIMIT OF WORK ADJUSTED

R6.2 FBS ALIGNMENT REVISED

W Thames St.

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FOR ILLUSTRATIVE PURPOSES ONLY

W Thames St. | Section

Existing

W Thames St. | Section

Conceptual Submission

W. Thames St. | View from Street

Existing

W. Thames St. | View from Street

Proposed (Conceptual Submission)

Enlarged Planting Buffer

Increased Seating Opportunities

FBS Wall

Top of Wall: +19.5’

8'

W. Thames St. | View from Street

Revised Conceptual Submission

Enlarged Planting Buffer

FBS Wall

Wall Height: 8' from Path (DFE +19.5')

8'

+ 11.50'

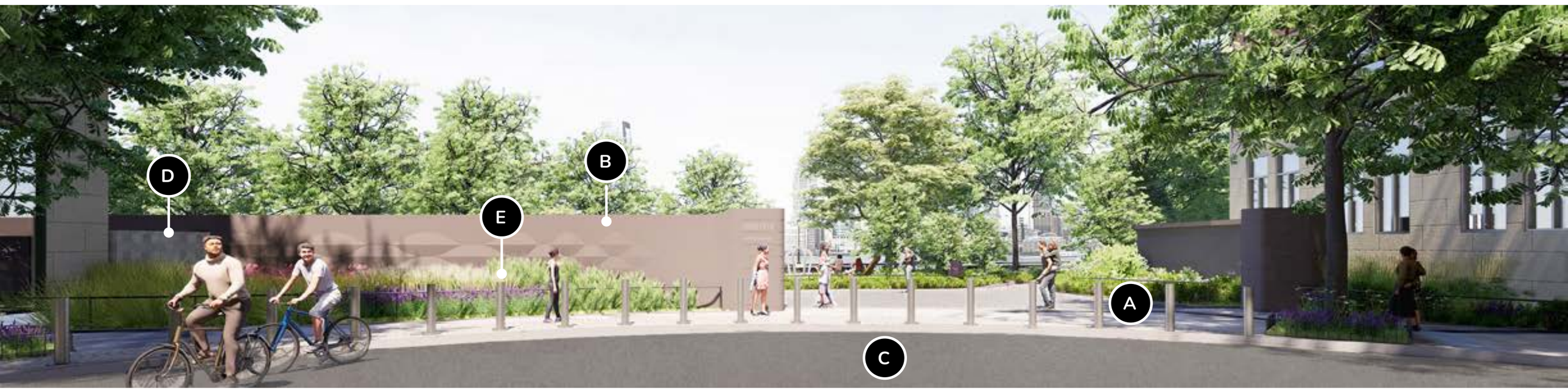
R6.3 BOLLARDS RELOCATED

PLANTER ADJUSTED R6.4

R6.2 FBS ALIGNMENT REVISED

W. Thames St. | Material Palette

Conceptual Submission



A Asphalt Hex Pavers

B Formliner Concrete

C NYDOT Concrete Sidewalk Paving

D Stone Cladding

E Bollards

Rector Pl. | Plan

Ownership

Hudson River

Liberty Terrace Condo

Mariner's Cove Site J Associates

NYC DOT Rector Pl

Rector Park

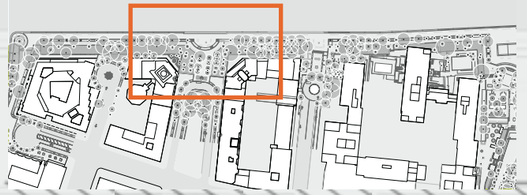
LEGEND

- BPCA
- NYCDOT
- OTHER PRIVATE OWNERS
- PROPERTY LINE

0’ 25’ 50’ 100’ N

Rector Pl. | Plan

PDC Jurisdiction



Hudson River

Liberty Terrace Residences

NYCDOT

Hudson Tower Residences

Rector Pl

Rector Park

LEGEND

BPCA

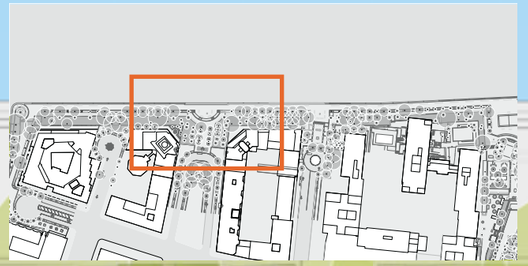
PDC JURISDICTION

PROPERTY LINE

0’ 25’ 50’ 100’ N

Rector Pl. | Plan

Existing



Hudson River

Liberty Terrace Residences

Rector Park

Rector Pl

Rector Park

Hudson Tower Residences

LEGEND

EXISTING TREES

PROPERTY LINE

0’ 25’ 50’ 100’

N

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Rector Pl. | Plan

Conceptual Submission

Hudson River

Roller Gate
(No. SG602)

+9.68’

+9.52’

+9.57’

+9.68’

+9.57’

+9.54’

+11.3’

+11.5’

Wall Height:
8’ from path
(DFE +19.5')

Liberty Terrace Residences

Hudson Tower Residences

Rector Pl

Rector Park

LEGEND

- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- PDC JURISDICTION
- EXISTING RELIEVING PLATFORM
- EXISTING TREES
- NEW TREES
- LIMIT OF WORK
- PROPERTY LINE

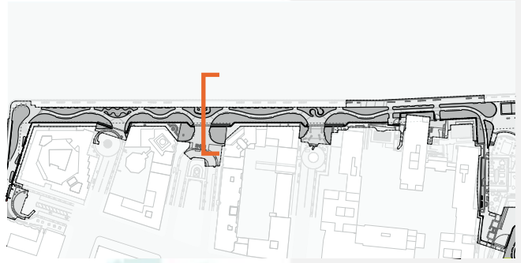
0’ 25’ 50’ 100’ N

NEW YORK CITY DOT | NEW YORK STATE OF OPPORTUNITY. Battery Park City Authority | Turner CRUZ ARCADIS SCAPE BIG WSP

FOR ILLUSTRATIVE PURPOSES ONLY

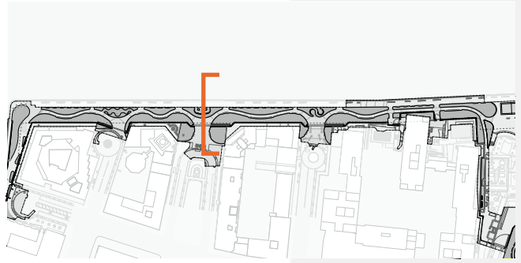
Rector Pl. | Section

Existing



Rector Pl. | Section

Proposed



Rector Pl. | View from Street end

Existing

+ 11.50’

Rector Pl. "Conversation Room" | View from Street end

Conceptual Submission

FBS Wall

Wall Height:
8' from Path
(DFE +19.5')

8'

+ 11.50'

Rector Pl. | Material Palette

Conceptual Submission

A Granite Unit Paving

B 1939 World's Fair Bench

C Asphalt Block Paving

D Concrete

Albany St. | Plan

Ownership

Hudson River

Hudson Towers

Marina Towers Associates

NYC DOT Albany St

LEGEND

- BPCA
- NYCDOT
- OTHER PRIVATE OWNERS
- PROPERTY LINE

0’ 25’ 50’ 100’

N

Albany St. | Plan

PDC Jurisdiction

Hudson River

Hudson Towers

Gateway Apartments

NYCDOT

Albany St

LEGEND

BPCA

PDC JURISDICTION

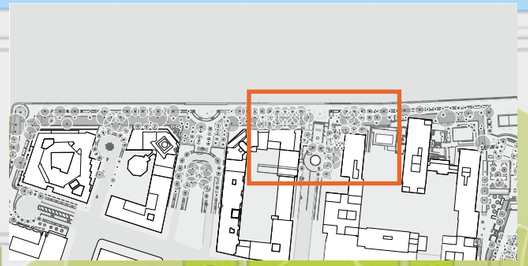
PROPERTY LINE

0’ 25’ 50’ 100’

N

Albany St. | Plan

Existing



Hudson River

Hudson Towers

Gateway Apartments

Albany St

LEGEND

EXISTING TREES

PROPERTY LINE

0’ 25’ 50’ 100’

N

Albany St. | Plan

Conceptual Submission

Hudson River

Roller Gate
(No. SG603)

+9.72’

+9.34’

+10’

+10’

+11.5’

Wall Height:
8’ from path
(DFE +19.5')

Hudson Towers

Gateway Apartments

Albany St

LEGEND

- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- PDC JURISDICTION
- EXISTING RELIEVING PLATFORM
- EXISTING TREES
- NEW TREES
- LIMIT OF WORK
- PROPERTY LINE

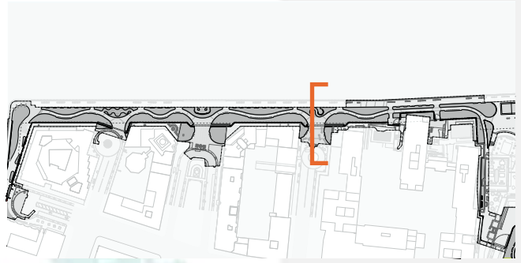
0’ 25’ 50’ 100’

N

NEW YORK CITY DOT | NEW YORK STATE OF OPPORTUNITY. Battery Park City Authority | Turner CRUZ ARCADIS SCAPE BIG WSP

Albany St. | Section

Existing



LIMIT OF WORK

PROMENADE

19'-5"

PLAZA

42'-8"

THE UPPER ROOM SCULPTURE

ALBANY ST.

+13.8' (100 YEAR FLOOD +2.5' SLR, DESIGN STILL WATER ELEVATION)

+9.5'

+12.5'

+2.28 (MHHW)

-2.77 (MLLW)

Albany St. | Section

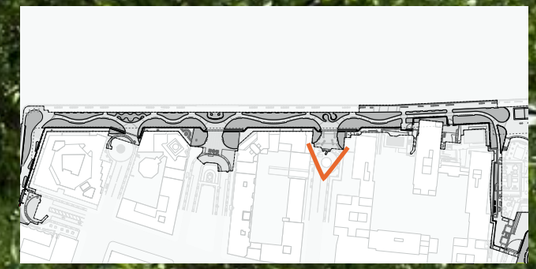
Conceptual Submission

Albany St. | View from Street

Existing

Albany St. | View from Street

Conceptual Submission



integrated Wheelchair Spaces

Relocated Brookfield Place Art Pieces

Waterfront View Preserved

FBS Wall

Wall Height: 8' from Path (DFE +19.5')

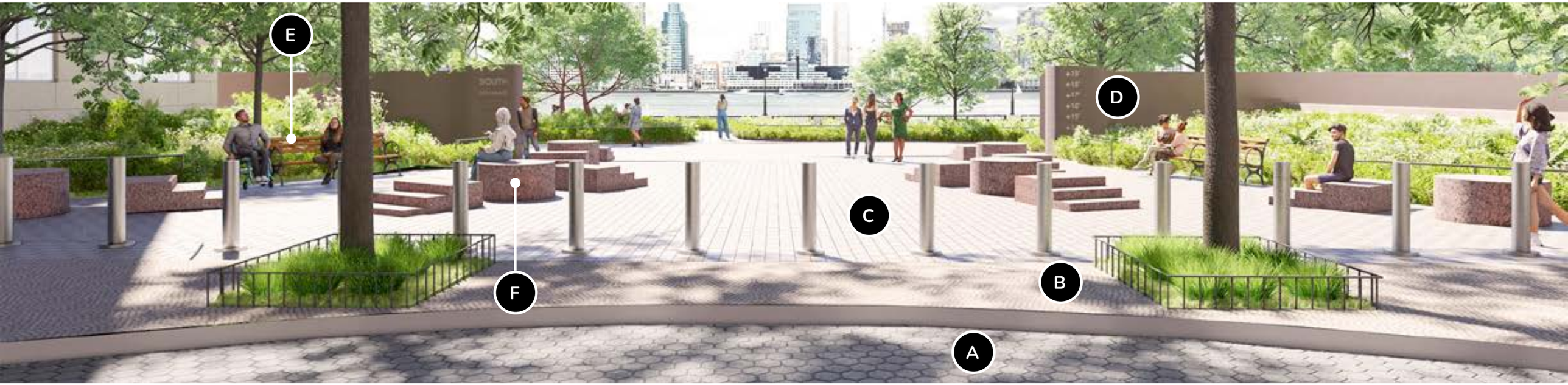
8'

+ 11.83'

+ 12.53'

Albany St. | Material Palette

Conceptual Submission



A Asphalt Hex Pavers

B Cobblestone

C Asphalt Block Paving

D Concrete

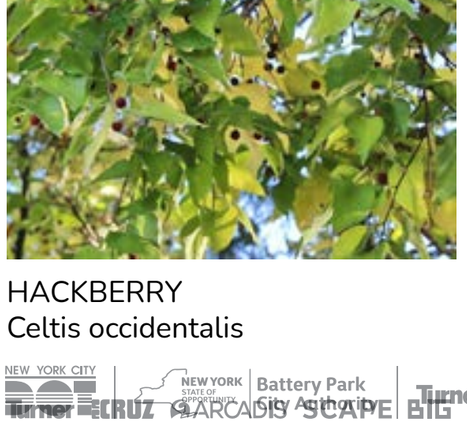
E 1939 World's Fair Bench

F Salvaged Granite Art Pieces

South Esplanade | Proposed Planting Palette

CANOPY TREES

SWAMP WHITE OAK
Quercus bicolor



BLACK TUPELO
Nyssa sylvatica

HACKBERRY
Celtis occidentalis

MAGNOLIA GROVE

SWEETBAY MAGNOLIA
Magnolia virginiana

SWAMP AZALEA
Rhododendron viscosum

COASTAL MALLOW
Kosteletzkya pentacarpos

BIRCH GROVE

GRAY BIRCH
Betula populifolia

RED OSIER DOGWOOD
Cornus sericea

EASTERN HAYSCENTED FERN
Dennstaedtia punctilobula

SMOKETREE GROVE

AMERICAN SMOKETREE
Cotinus obovatus

VIRGINIA SWEETSPIRE
Itea virginica

PINK MUHLY GRASS
Muhlenbergia capillaris

SPRING GARDEN

CANADIAN SERVICEBERRY
Amelanchier canadensis

NEW JERSEY TEA
Ceanonthus americanus

AUTUMN BRIDE HAIRY ALUMROOT
Heuchera villosa 'Autumn Bride'

W Thames and Rector Place | PDC Jurisdiction Plants

WILLOW OAK
Quercus phellos

INKBERRY HOLLY
Ilex glabra

HOFER BLUE ADAM'S NEEDLE
Yucca filamentosa 'Hofer Blue'

STORM CLOUD E. BLUESTAR
Amsonia tabernaemontana

SILKY DOGWOOD
Cornus amomum

GRAY'S SEDGE
Carex grayi

COMMON IRONWEED
Vernonia noveboracensis

VIRGINIA SPIDERWORT
Tradescantia virginiana

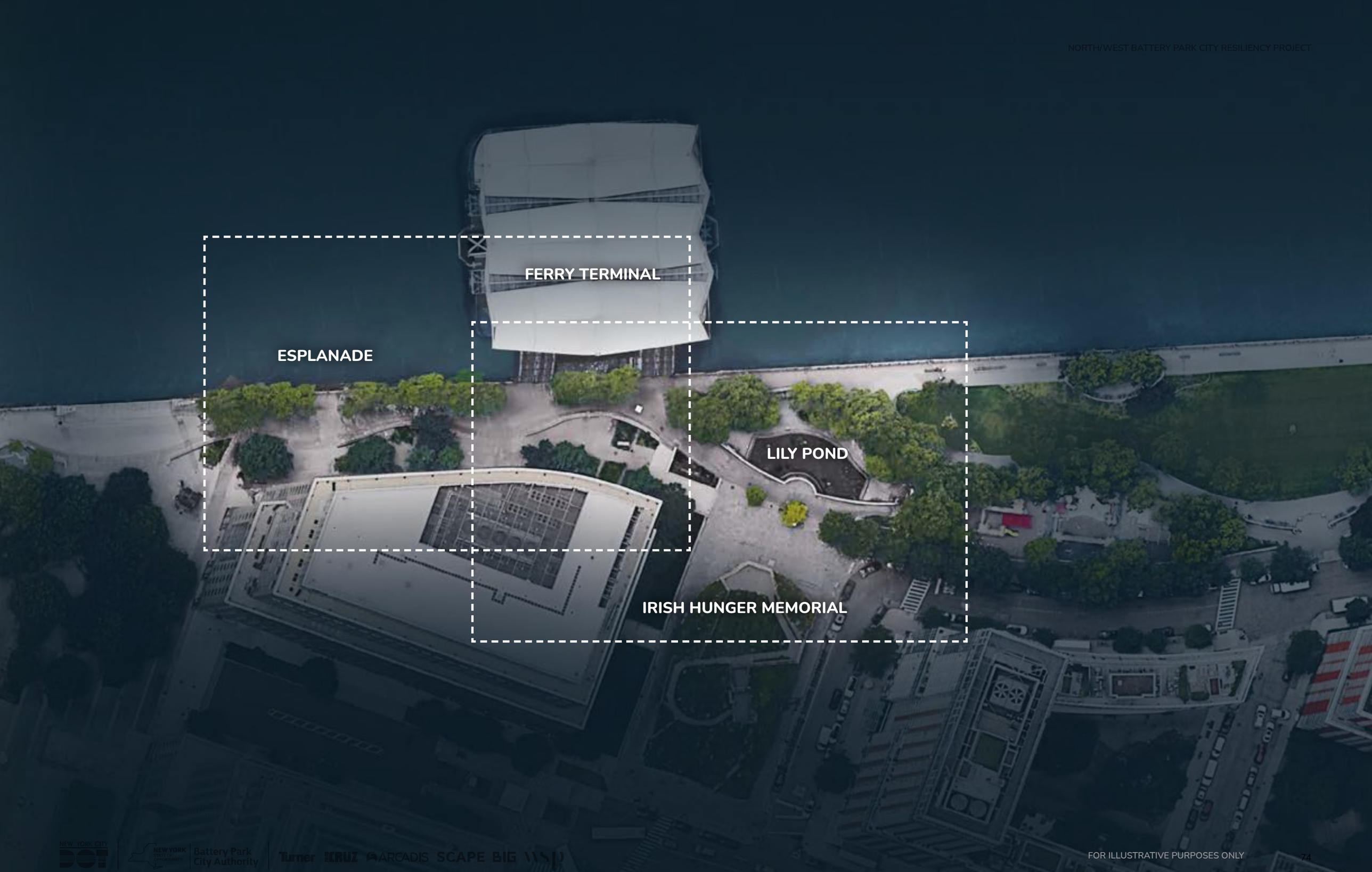
EASTERN HAYSCENTED FERN
Dennstaedtia punctilobula

CHEROKEE SEDGE
Carex grayi

PINK MUHLY GRASS
Muhlenbergia capillaris

AUTUMN BRIDE HAIRY ALUMROOT
Heuchera villosa 'Autumn Bride'

FERRY TERMINAL (REACH 4)


FERRY TERMINAL
ESPLANADE
LILY POND
IRISH HUNGER MEMORIAL

Ferry Terminal (Reach 4) | Existing Site Photos

Upper Esplanade Path at 300 Vesey St, View looking South

Ferry Terminal and Lily Pond, View from the Irish Hunger Memorial

Irish Hunger Memorial, View from Vesey St

Lily Pond, View looking North

Irish Hunger Memorial | Plan

Ownership

BPCA

NYCDOT

VESEY STREET

BPCA

RIVER TERRACE

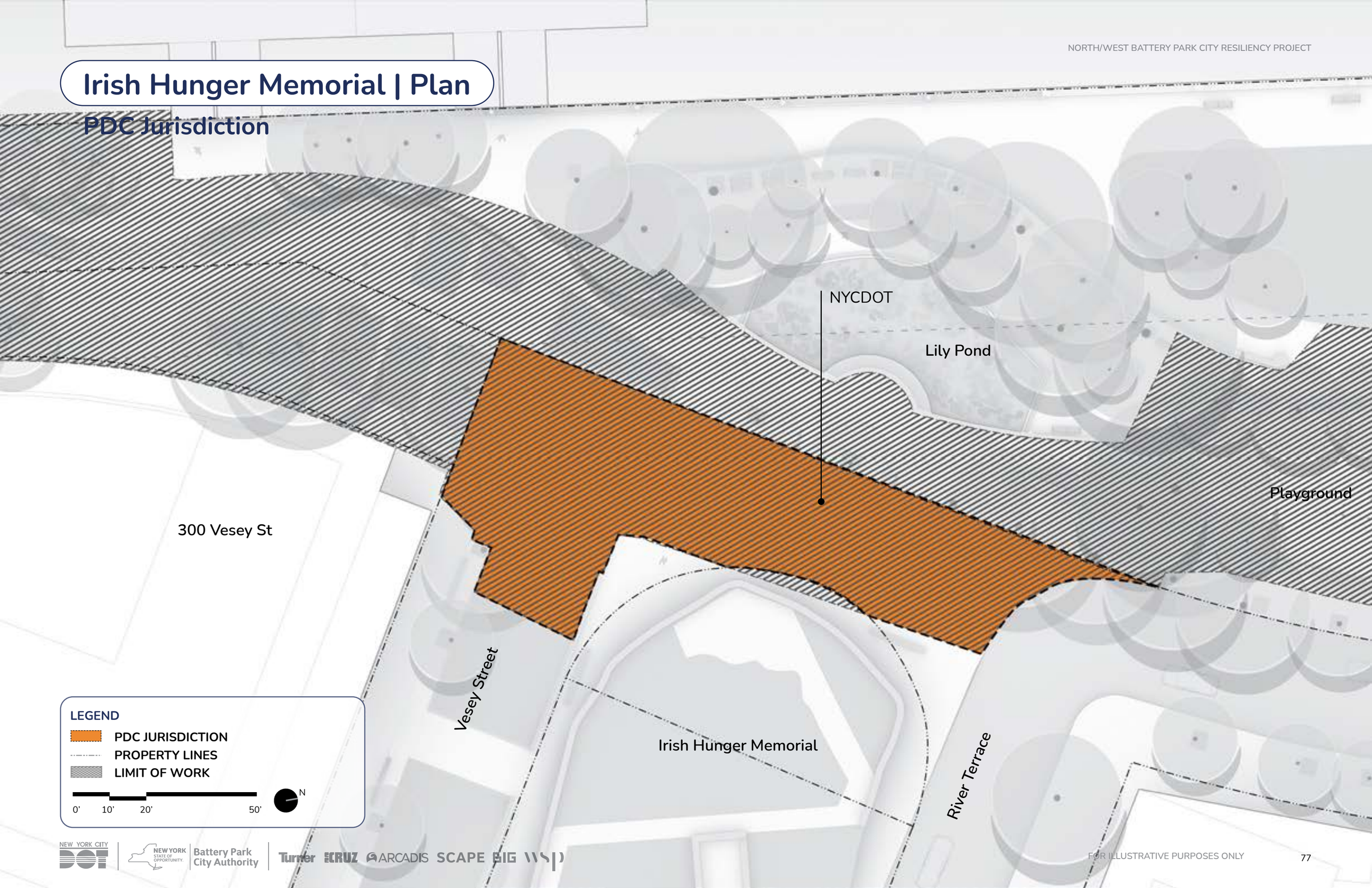
LEGEND

- BPCA
- NYCDOT
- OTHER

0’ 10’ 20’ 50’ N

Irish Hunger Memorial | Plan

PDC Jurisdiction



Irish Hunger Memorial | Plan

Existing

+9.5’

+10’

+12.5’

+13’

+12’

+10’

Lily Pond

Playground

300 Vesey St

Vesey Street

Irish Hunger Memorial

River Terrace

LEGEND

- PROPERTY LINES
- EXISTING RELIEVING PLATFORM
- EXISTING TREE

0’ 10’ 20’ 50’

N

Irish Hunger Memorial | Plan

Conceptual Submission

+10’

+9.5’

New immersive landscape with seating areas

Existing Lily Pond remains

Wall height 4’ from esplanade (DFE +16.5’)

+12.5’

Wall height 3.5’ from plaza (DFE +16.5’)

Lily Pond

+10’

+13’

50’ Opening with Roller Gate (No. SG403)

Expanded planting area and reduced hardscape

Playground

300 Vesey St

+12’

Vesey Street

Irish Hunger Memorial

River Terrace

LEGEND

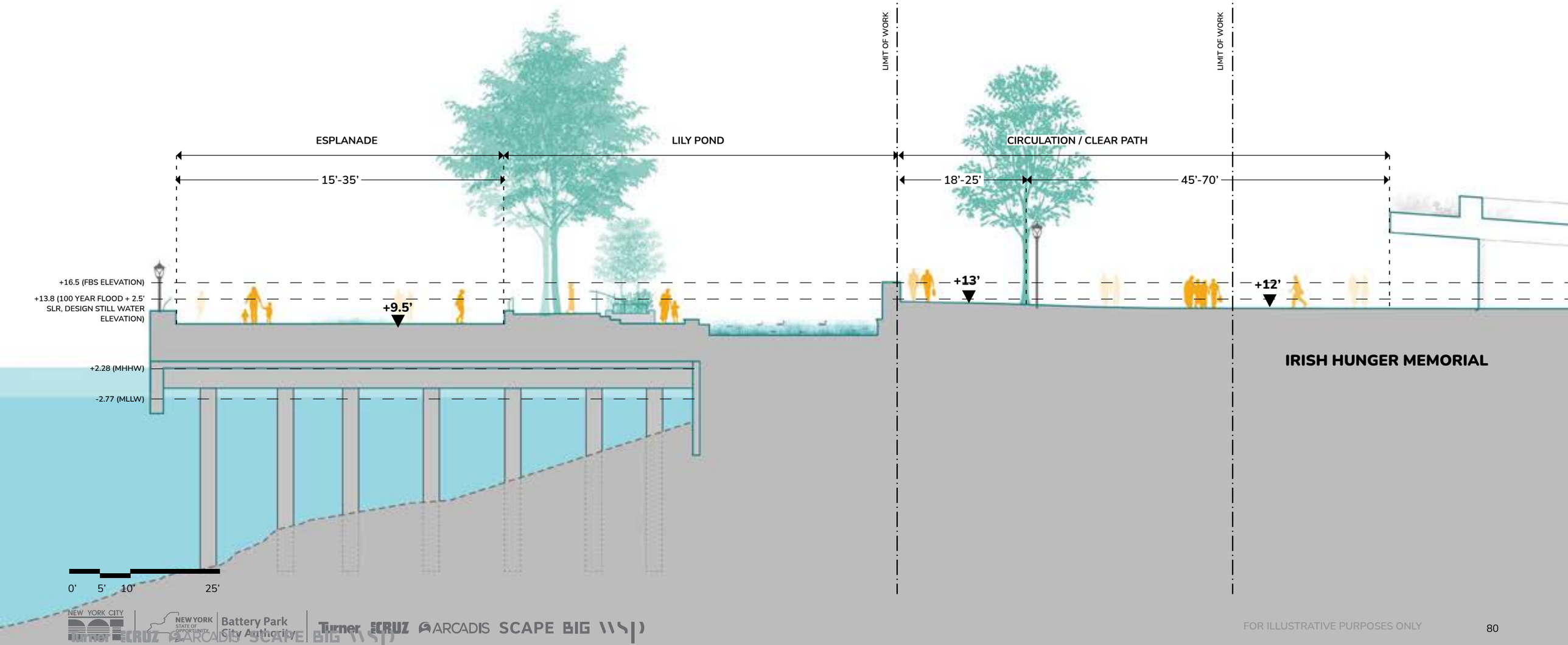
- PROPERTY LINES
- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- EXISTING RELIEVING PLATFORM
- PLATFORM RECONSTRUCTION AREA
- EXISTING TREE TO REMAIN
- NEW TREE
- LIMIT OF WORK

0’ 10’ 20’ 50’

N

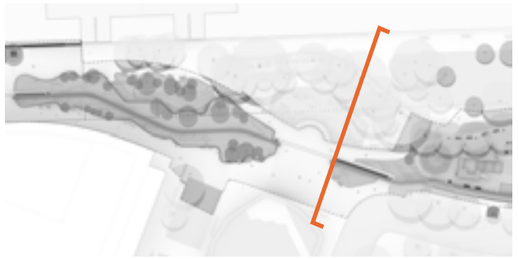
Lily Pond | Section

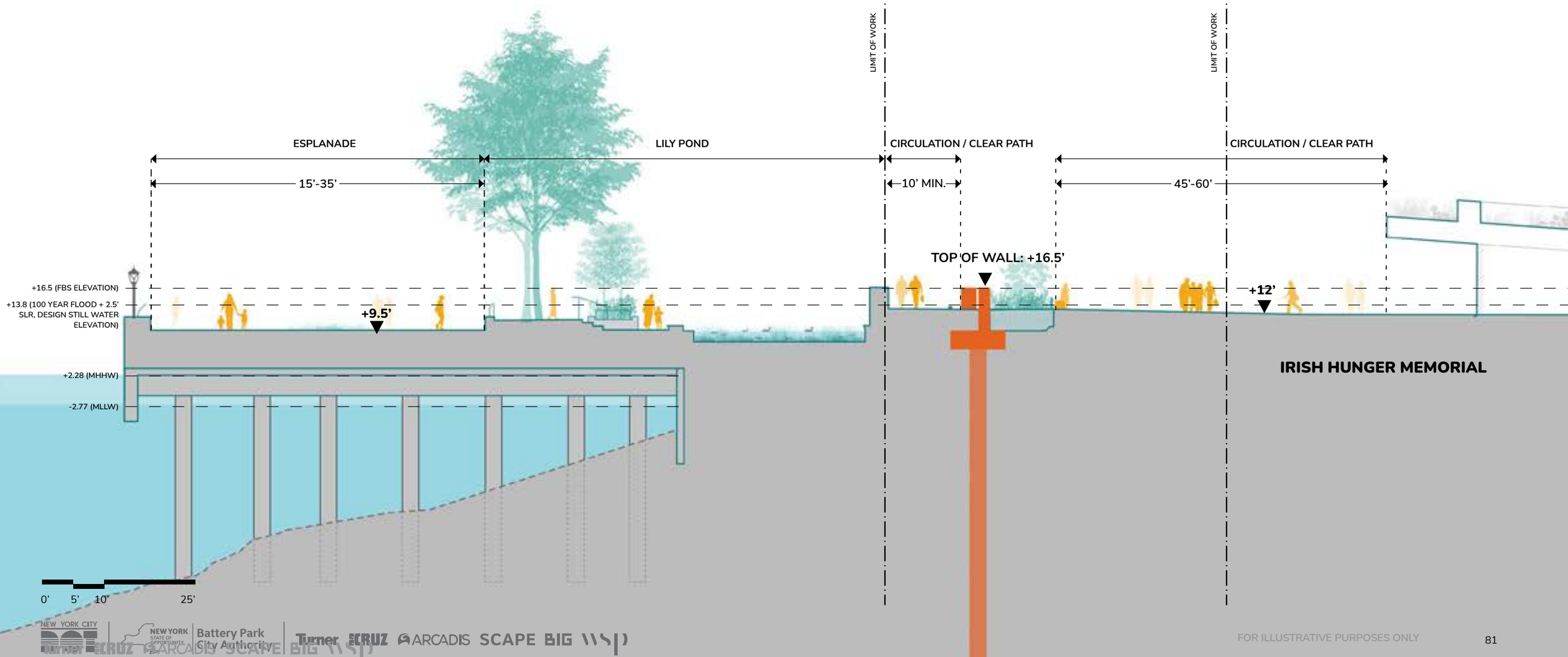
Existing



Lily Pond | Section

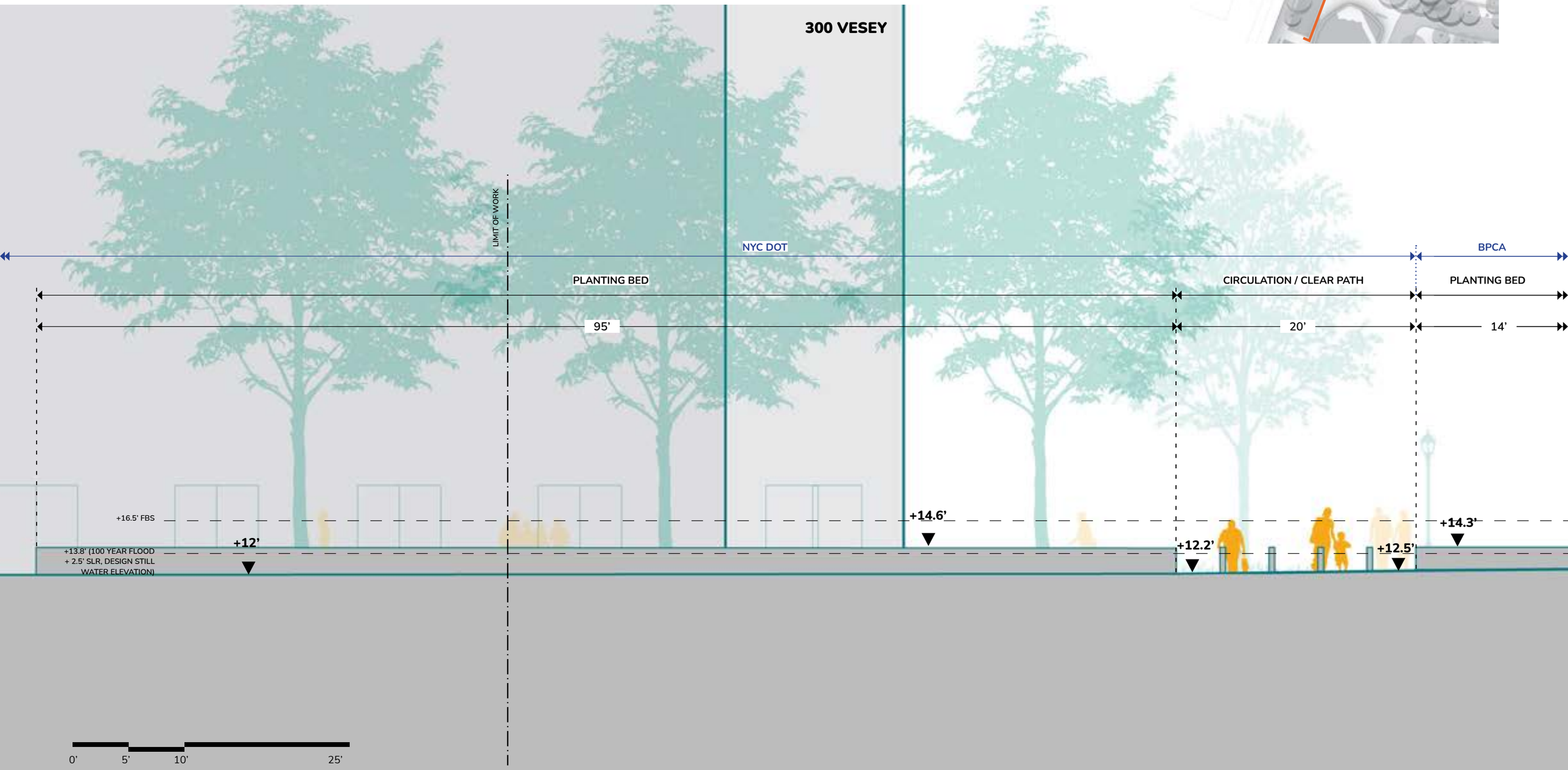
Conceptual Submission





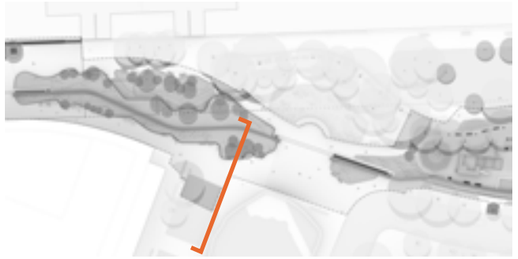
Vesey Street | Section

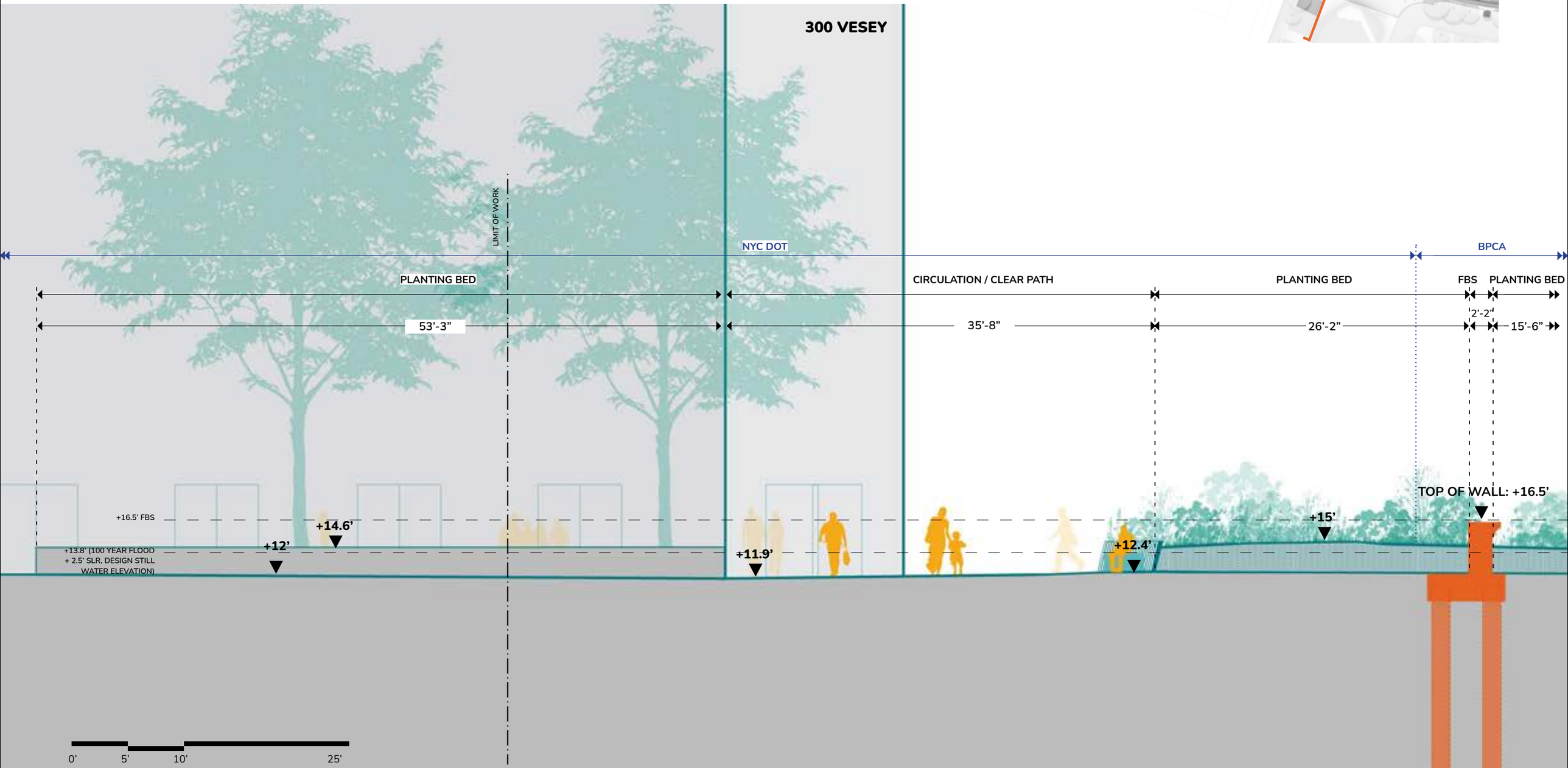
Existing



Vesey Street | Section

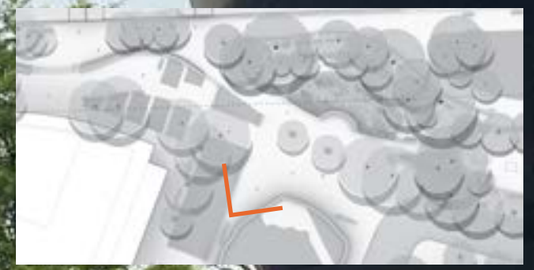
Conceptual Submission





View from Irish Hunger Memorial

Existing

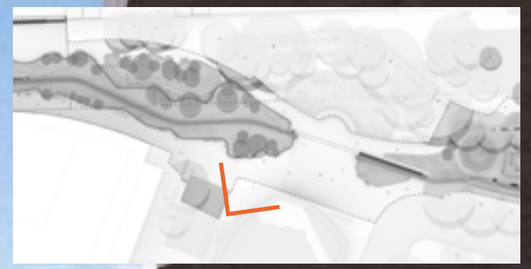


Wall height 3.5’ from plaza (el. +16.5’)

+ 13.00’

View from Irish Hunger Memorial

Conceptual Submission



Lush planting and seating along FBS wall

FBS Wall

Wall height 3.5’ from plaza (DFE +16.5’)

+ 13.00’

+ 12.00’

Irish Hunger Memorial Plaza | Material Palette

Conceptual Submission

A Asphalt Hex Pavers

B IHM Special Paving

C Wood Clad Planter Wall

D Concrete Wall (FBS)

E Cast Stone Clad Wall

F WOOD BENCH

Ferry Terminal | Proposed Planting Palette

DUNE

PITCH PINE
Pinus rigida

EASTERN RED CEDAR
Juniperus virginiana

SWAMP WHITE OAK
Quercus bicolor

PUSSY WILLOW
Salix discolor

ESPLANADE

RED OAK
Quercus rubra

NORTHERN BAYBERRY
Myrica pensylvanica

CAROLINA ROSE
Rosa carolina

SHRUBBY ST. JOHN'S WORT
Hypericum prolificum

SMOOTH SUMAC
Rhus glabra

INDIAN GRASS
Sorghastrum nutans

SWITCHGRASS
Panicum virgatum

BLUE GRAMA
Bouteloua gracilis

PINK MUHLY GRASS
Muhlenbergia capillaris

Ferry Terminal | PDC Jurisdiction Plants

PITCH PINE
Pinus rigida

SWAMP WHITE OAK
Quercus bicolor

GROUNDSEL BUSH
Baccharis halmifolia

AMETHYST WITCH HAZEL
Hamamelis vernaliz ‘amethyst’

INKBERRY HOLLY
Ilex glabra

NORTHERN BAYBERRY
Myrica pensylvanica

CAROLINA ROSE
Rosa carolina

SUMMERSWEET
Clethra alnifolia ‘Hummingbird’

SMOOTH SUMAC
Rhus glabra

GOLDENROD
Slidago rugosa ‘Fireworks’

INDIAN GRASS
Sorghastrum nutans

SWITCHGRASS
Panicum virgatum

BLUE GRAMA
Bouteloua gracilis

LITTLE BLUESTEM
Schizachyrium scoparium

PALM SEDGE
Carex muskingumensis

Irish Hunger Memorial FBS Color Studies

OPTION 1: CONTEXT MATCH

OPTION 2: GREY PINK GRADIENT

OPTION 3: PINK FBS

View from River Terrace

Existing

View from River Terrace - Context Match

Proposed

**OPTION 1:
CONTEXT MATCH**

FOR ILLUSTRATIVE PURPOSES ONLY

View from River Terrace - Grey-Pink Gradient

Proposed

OPTION 2:
GREY PINK GRADIENT

FOR ILLUSTRATIVE PURPOSES ONLY

View from River Terrace - Pink FBS

Proposed

OPTION 3:
PINK FBS

FOR ILLUSTRATIVE PURPOSES ONLY

Irish Hunger Memorial FBS Color Studies

OPTION 1: CONTEXT MATCH

- Difficulty in matching surrounding colors exactly
- Transition point between different colors may be jarring
- Dark gray similar to existing paving and memorial structure may read as if it is trying to become part of the memorial environment

OPTION 2: GREY PINK GRADIENT

- Light color emphasizes the wall's presence in the landscape
- Transition point between different colors may be jarring

SELECTED

OPTION 3: PINK FBS

- Distinction from cool gray tones of the memorial maintains it's identity and distinguishes it from the flood barrier system
- Darker, warmer tone works well with surrounding planting and wood elements
- Continuity with the rest of the project supports legibility of resilience strategies in the landscape

REACH 1

PRELIMINARY PDC SUBMISSION

North Moore St.

Independence Plaza

Borough of Manhattan Community College

West St. / 9a

Hudson River Park

N

NEW YORK CITY DOT | NEW YORK STATE OF OPPORTUNITY. Battery Park City Authority | Turner ECRUZ ARCADIS SCAPE BIG

North Moore and Route 9a / West St. | Existing Site Photos

Intersection of West St. and N Moore St.

Intersection of West St. and Harrison St.

View looking South on West St.

View looking North on West St.

North Moore St. | Ownership

Ownership

CITI HEADQUARTERS

NYSDOT

NYCDOT N. MOORE ST.

FRANKLIN ST.

BMCC

INDEPENDENCE PLAZA

NYCDOT GREENWICH ST.

LEGEND

- BPCA
- NYCDOT
- NYC PARKS
- NYC DOE
- NYCDSBS
- NYSDOT
- DASNY
- HRPT
- OTHER PRIVATE OWNERS
- PROPERTY LINE

0’ 20’ 40’ 100’

N

North Moore St. | PDC Jurisdiction

PDC Jurisdiction

CITI
HEADQUARTERS

LEGEND
- LIMIT OF WORK
- PDC JURISDICTION
- PROPERTY LINE

N

0' 20' 40' 100'

NYSDOT

NYCDOT
N. MOORE ST.

FRANKLIN ST.

NYCDOT
WEST STREET

BMCC

INDEPENDENCE
PLAZA

NYCDOT
GREENWICH ST.

N Moore St. | Plan

Existing

LEGEND

EXISTING TREES

PROPERTY LINE

N

0’ 25’ 50’ 100’

West St.

Citi Headquarters

Citi Headquarters Park

N. Moore St.

+7'6"

+10'

+12'

+14'

Borough of Manhattan Community College

Independence Plaza

Greenwich St.

North Moore St. | Constraints

Constraints

CITI HEADQUARTERS

LEGEND
- GAS
- SEWAGE
- ELECTRICAL
- PROPERTY LINE
- TELECOM
- WATER
- STEAM

0’ 20’ 40’ 100’ N

ONGOING TEST PITS ARE BEING CONDUCTED TO VERIFY UTILITY LOCATIONS WITHIN VAULTS AND DETERMINE THEIR EXACT EXTENTS

CERTAIN VAULTS REQUIRE WORKAROUNDS TO ACCOMMODATE EXISTING CONDITIONS

THE FBS ALIGNMENT MUST BE ADJUSTED TO AVOID EXISTING SIDEWALK AND THE EXISTING WATER MAIN

NYSDOT

NYCDOT N. MOORE ST.

FRANKLIN ST.

8'

PEDESTRIAN PINCH POINT WHERE GATE CROSS PRIMARY PATH OF TRAVEL

THE IPN STAKEHOLDER REQUESTS THAT THE ALIGNMENT BE ADJUSTED TO ENSURE IT DOES NOT OBSTRUCT THEIR NEWLY RENOVATED LOBBY FACADE

NYCDOT WEST STREET

BMCC

INDEPENDENCE PLAZA

NYCDOT GREENWICH ST.

North Moore St. | Plan

Proposed (Preliminary Submittal)

CITI HEADQUARTERS

LEGEND
- PDC JURISDICTION
- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- EXISTING RELIEVING PLATFORM
- EXISTING TREES
- NEW TREES
- LIMIT OF WORK
- PROPERTY LINE

0' 20' 40' 100' N

NYSDOT

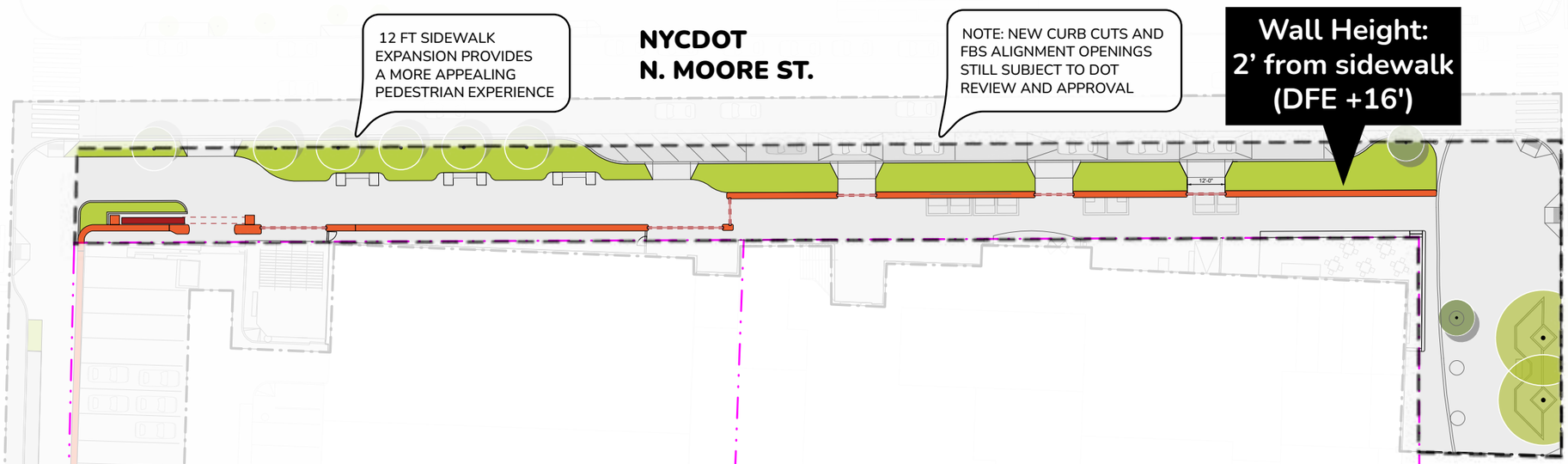
12 FT SIDEWALK EXPANSION PROVIDES A MORE APPEALING PEDESTRIAN EXPERIENCE

NYCDOT N. MOORE ST.

NOTE: NEW CURB CUTS AND FBS ALIGNMENT OPENINGS STILL SUBJECT TO DOT REVIEW AND APPROVAL

Wall Height: 2' from sidewalk (DFE +16')

FRANKLIN ST.



BMCC

INDEPENDENCE PLAZA

GREENWICH ST.

North Moore St. | Axonometric

Proposed (Preliminary Submittal)

Independence Plaza

Borough of Manhattan Community College

+ 8.0

North Moore St

FBS Wall

Top of Wall: +16’

+ 14

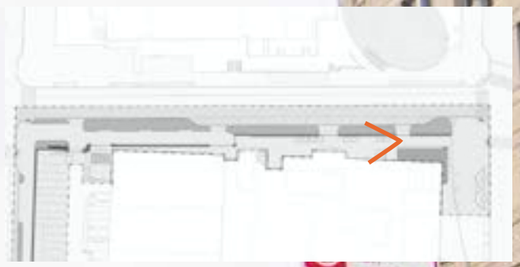
GREENWICH ST.

Note: New Curb Cuts and FBS Alignment Openings Still Subject to DOT Review and Approval

CITI HEADQUARTERS

N Moore St. | View toward HRP

Existing

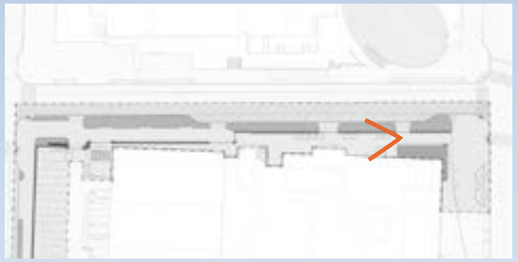


Independence Plaza

+ 13.00’

N Moore St. | View toward HRP

Proposed (Preliminary Submittal)



Independence Plaza

+ 13.00’

N Moore St. | Material Palette

Proposed (Preliminary Submittal)

A FBS Concrete

B BMCC Brick

C NYCDOT Sidewalk Concrete

D Glassdoor

E Planting Palette

Route 9A & Tribeca | Proposed Planting Palette

LITTLE BLUESTEM
Schizachyrium scoparium ‘Standing Ovation’

COMMON YARROW
Achillea millefolium

BLUE INDIGO
Baptisia australis

ORANGE CONEFLOWER
Rudbeckia fulgida

PURPLE PRAIRIE CLOVER
Dalea purpurea

ST JOHN’S WORT
Hypericum Prolifcum

GRO-LOW
Rhus Aromatica

BLUE GRAMA
Bouteloua gracilis

Route 9a / West St. | Ownership

Ownership

NYC DEPT OF EDUCATION

BPCA

HRPT

NYSDOT

BMCC

NYCDOT HARRISON ST.

BMCC

NYCDOT N. MOORE ST.

CITI HEADQUARTERS

LEGEND

- BPCA
- NYCDOT
- NYC PARKS
- NYC DOE
- NYCDSBS
- NYSDOT
- DASNY
- HRPT
- OTHER PRIVATE OWNERS
- PROPERTY LINE

0’ 25’ 50’ 100’

N

Route 9a / West St. | PDC Jurisdiction

PDC Jurisdiction

Pier 25

NORTH/WEST BATTERY PARK CITY RESILIENCY PROJECT

LEGEND

LIMIT OF WORK

PDC JURISDICTION

PROPERTY LINE

N

0’ 25’ 50’ 100’

Hudson River

Hudson River Park

Manhattan Greenway

West St. (South-Bound)

West St. (North-Bound)

Borough of Manhattan Community College

Harrison St.

N. Moore St.

Route 9a / West St. | Plan

Existing

Pier 25

NORTH/WEST BATTERY PARK CITY RESILIENCY PROJECT

LEGEND

EXISTING TREES

PROPERTY LINE

N

0’ 25’ 50’ 100’

Hudson River

Hudson River Park

Manhattan Greenway

West St. (South-Bound)

West St. (North-Bound)

+8’10"

+8’8"

+8’6"

+8’6"

+8’3"

+8’0"

Harrison St.

Borough of Manhattan Community College

N. Moore St.

NEW YORK CITY DOT | NEW YORK STATE OF OPPORTUNITY. Battery Park City Authority | Turner | CRUZ | ARCADIS | SCAPE | BIG | WSP

FOR ILLUSTRATIVE PURPOSES ONLY

Route 9a / West St. | Plan

Proposed (Preliminary Submittal)

Pier 25

NORTH/WEST BATTERY PARK CITY RESILIENCY PROJECT

LEGEND

- PDC JURISDICTION
- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- EXISTING RELIEVING PLATFORM
- EXISTING TREES
- NEW TREES
- LIMIT OF WORK
- PROPERTY LINE

N

0’ 25’ 50’ 100’

Hudson River

Hudson River Park

Manhattan Greenway

63’6" Flip Up Gate (No. SG103)

West St. (South-Bound)

West St. (North-Bound)

IN THE 9A AREA OF THE PROJECT, THE WALL IS PARTICULARLY HIGH. THE DESIGN PROPOSES RAISED PLANTERS IN FRONT OF THE WALL TO REDUCE THE PERCEIVED HEIGHT AND ADD VISUAL INTEREST.

Wall Height: 9.6’ from sidewalk (DFE +18')

+8’8"

+8’6"

+8’6"

+8’3"

+8’0"

Borough of Manhattan Community College

Harrison St.

N. Moore St.

NEW YORK CITY DOT | NEW YORK STATE OF OPPORTUNITY. Battery Park City Authority | Turner | CRUZ | ARCADIS | SCAPE | BIG | WSP

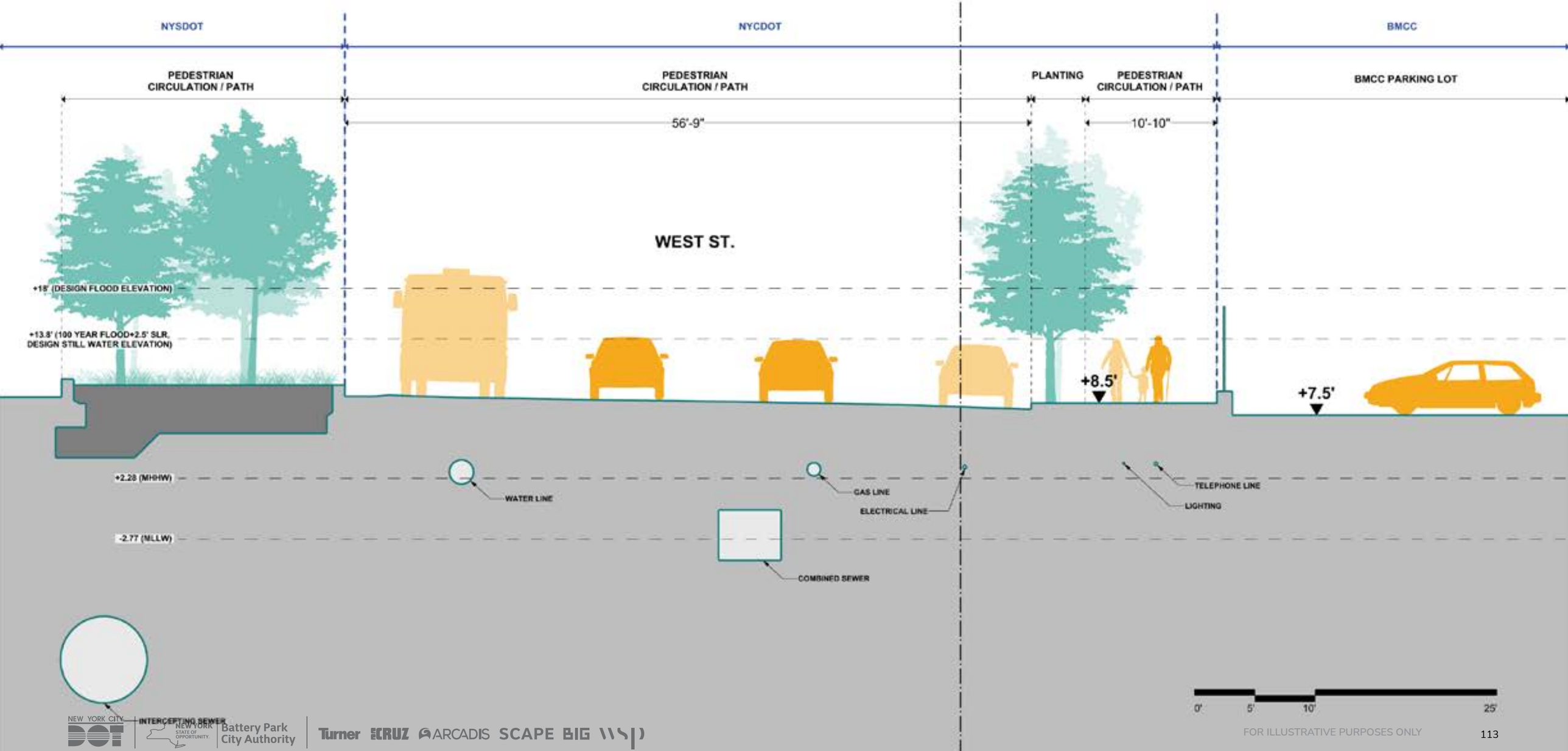
FOR ILLUSTRATIVE PURPOSES ONLY

Route 9a / West St. | Axonometric

Proposed (Preliminary Submittal)

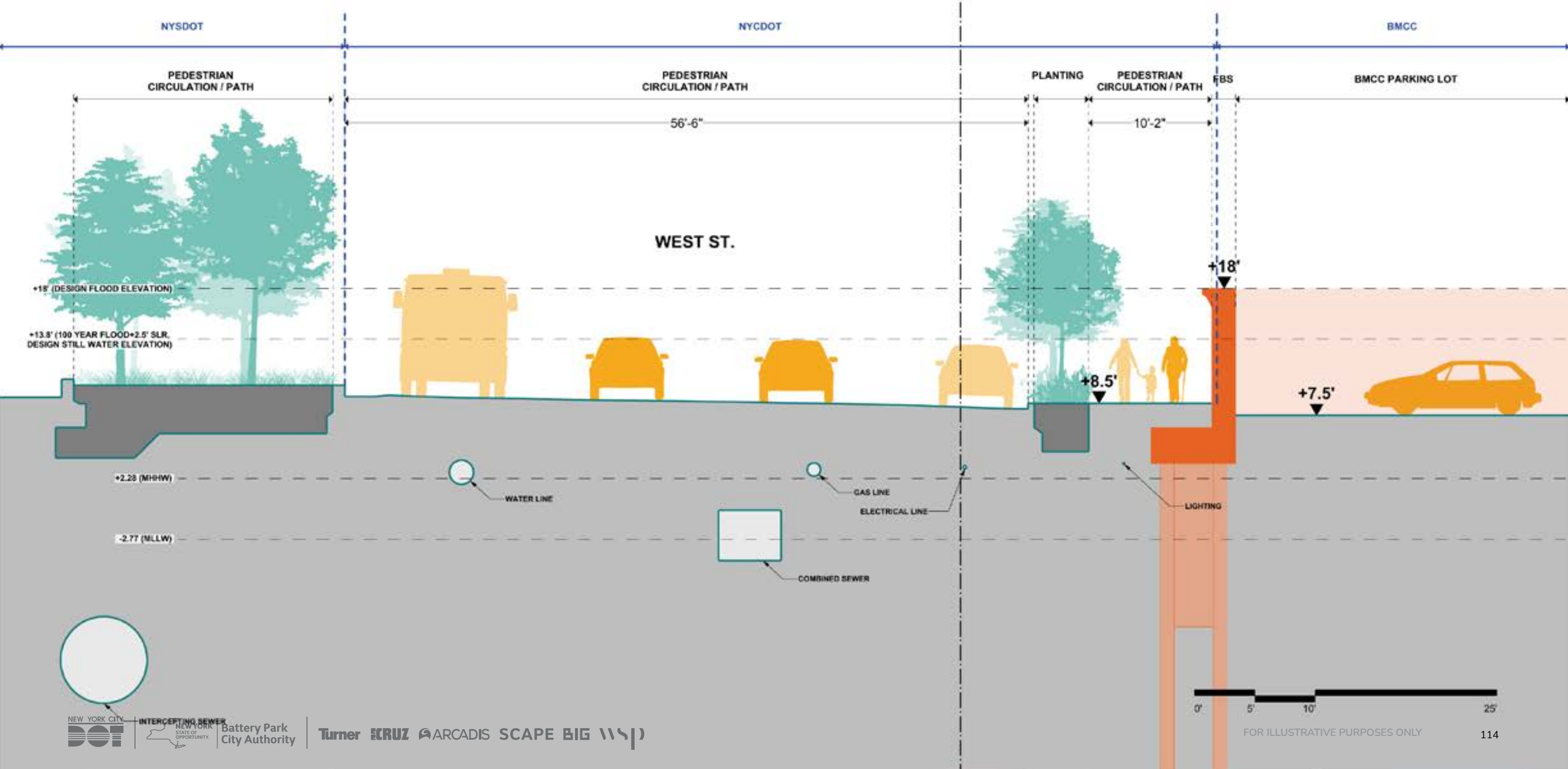
Route 9a / West St. | Section

Existing



Route 9a / West St. | Section

Proposed (Preliminary Submittal)



Route 9a / West St. | Streetscape

Existing

+ 8.5

+ 8.42

Route 9a / West St. | Streetscape

Proposed (Preliminary Submittal)

FBS Wall

Top of Wall: +18’

FBS Offset 8 Ft Off of BMCC Facade

New BMCC Egress Stair

Trees and Planting Along Street Edge Provides Protected Pedestrian Experience

NYCDOT Bench and Companion Seating

9.5'

+ 8.5

Route 9a / West St. | View looking South

Existing

+ 8.2

+ 8.42

Route 9a / West St. | View looking South

Proposed (Preliminary Submittal)

FBS Wall

Top of Wall: +18'

FBS Runs Along BMCC Perimeter

Trees and Planting Along Street Edge Provides Protected Pedestrian Experience

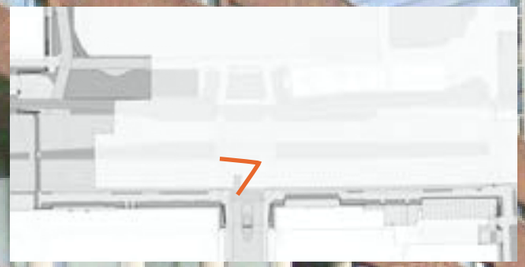
M20 Bus Stop Protected in Place

9.5'

+ 8.2

Route 9a / West St. | Intersection of West St. and Harrison St.

Existing



+ 8.4

Route 9a / West St. | Intersection of West St. and Harrison St.

Proposed (Preliminary Submittal)

Borough of Manhattan Community College

New Planters and Integrated Seating Along FBS

FBS Wall

Top of Wall: +18’

9.6'

+ 8.4

Harrison St.

West St.

Route 9a / West St. | Tree Impacts

Pier 25

NORTH/WEST BATTERY PARK CITY RESILIENCY PROJECT

LEGEND

- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- EXISTING RELIEVING PLATFORM
- EXISTING TREE TO REMAIN
- CONDITIONS TREE REMOVAL
- CONSTRUCTION TREE REMOVAL
- TREE TO BE TRANSPLANTED
- LIMIT OF WORK

N

0’ 25’ 50’ 100’

Hudson River

Hudson River Park

Manhattan Greenway

West St. (South-Bound)

West St. (North-Bound)

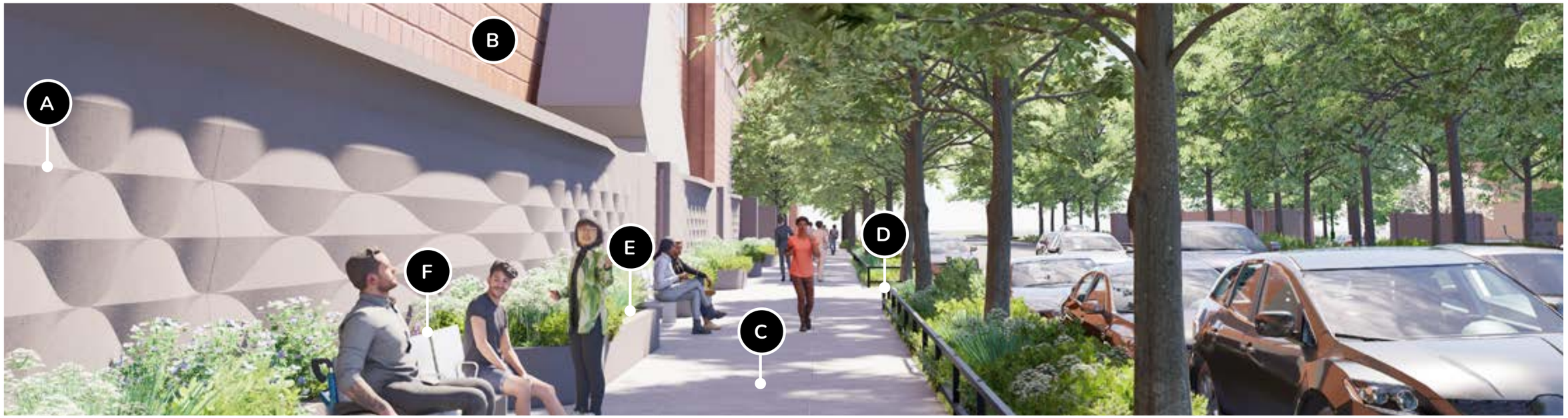
Harrison St.

Borough of Manhattan Community College

N. Moore St.

Route 9a / West St. | Material Palette

Proposed (Preliminary Submittal)



A FBS Concrete

B BMCC Brick

C NYCDOT Sidewalk Concrete

D Salvaged Cobble Stone

E Concrete Planter

F NYCDOT Bench

Route 9A & Tribeca | Proposed Planting Palette

LITTLE BLUESTEM
Schizachyrium scoparium ‘Standing Ovation’

COMMON YARROW
Achillea millefolium

BLUE INDIGO
Baptisia australis

ORANGE CONEFLOWER
Rudbeckia fulgida

PURPLE PRAIRIE CLOVER
Dalea purpurea

ST JOHN’S WORT
Hypericum Prolifcum

GRO-LOW
Rhus Aromatica

BLUE GRAMA
Bouteloua gracilis

Route 9A & Tribeca | PDC Jurisdiction Plants

SCHUBERT CHERRY
Prunus virginiana ‘Sucker Punch’

BLUE GRAMA
Bouteloua gracilis

LITTLE BLUESTEM
Schizachyrium scoparium

REDMOND AMERICAN LINDEN
Tilia americana ‘Redmond’

PURPLE PRAIRIE CLOVER
Dalea purpurea

FALL ASTER
Aster dumosus

ARKANSAS BLUESTAR
Amsonia hubrichtii

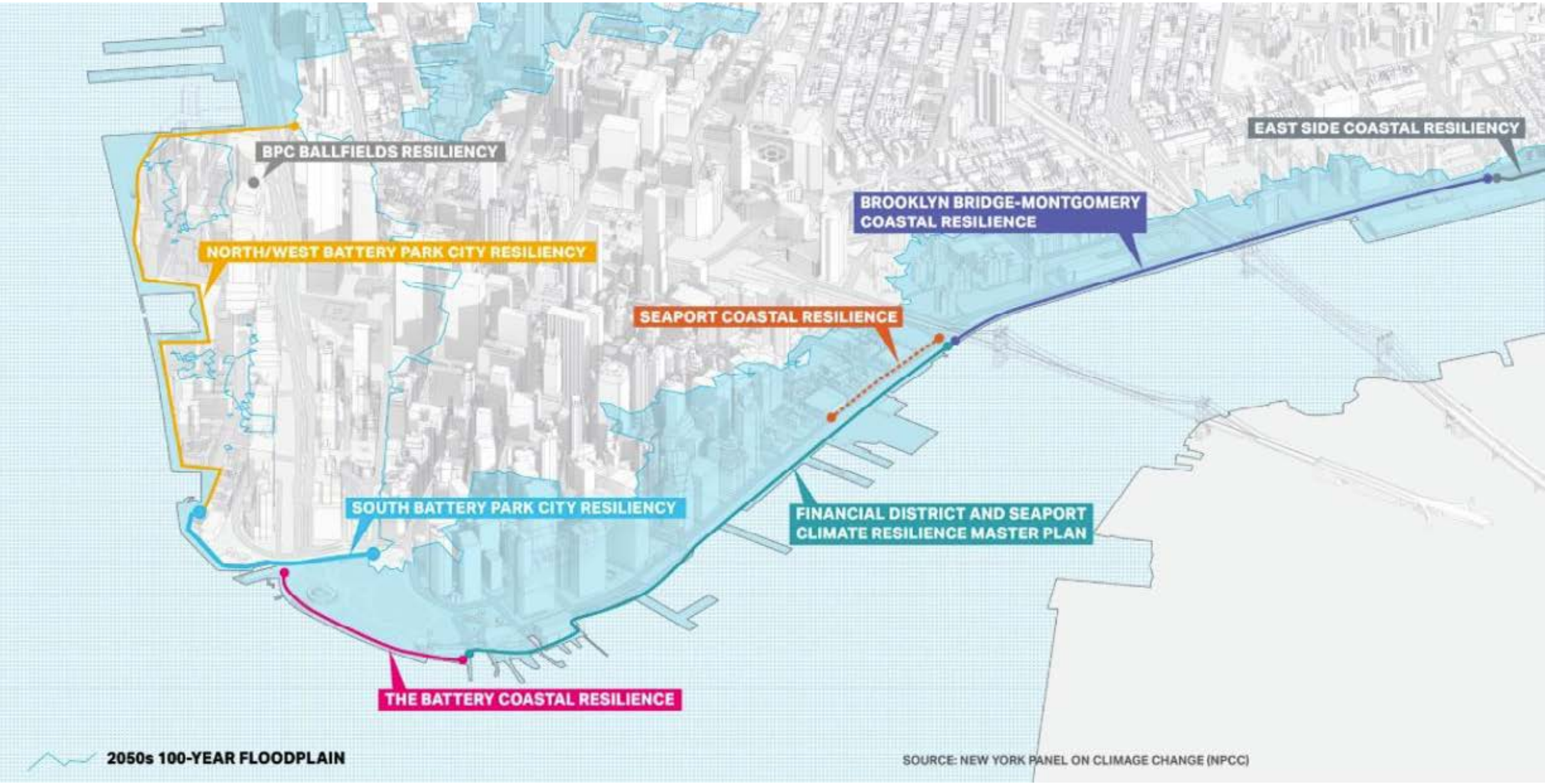
ORANGE CONEFLOWER
Rudbeckia fulgida

COMMON YARROW
Achillea millefolium

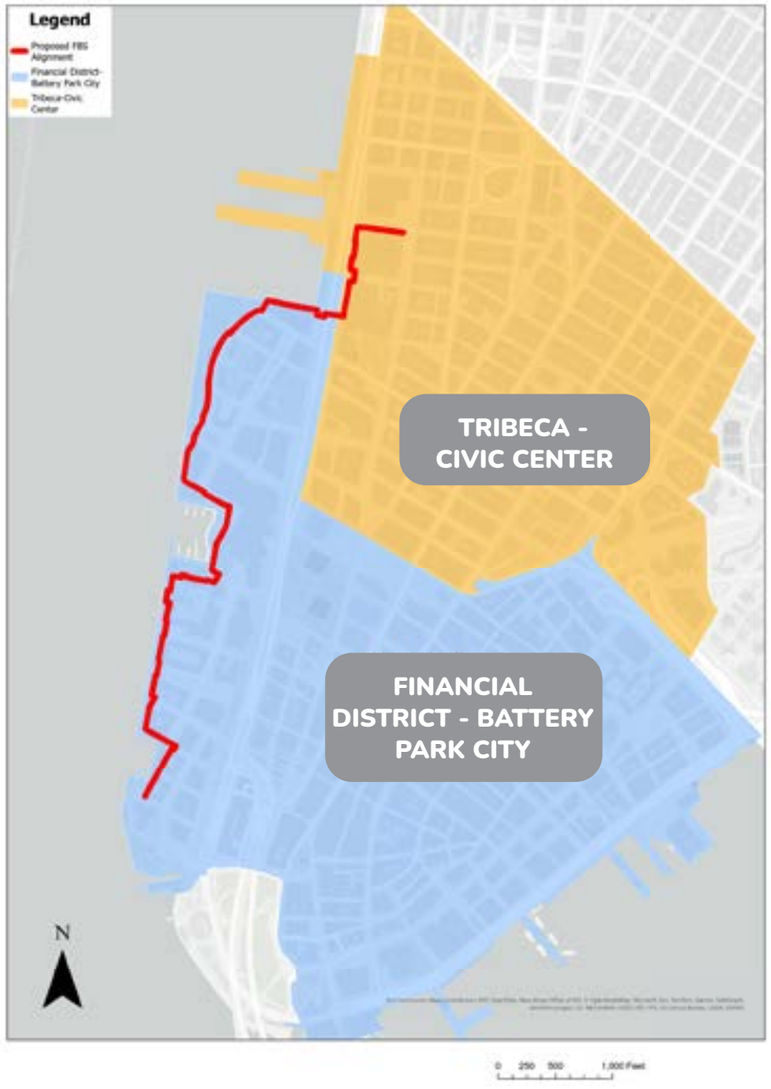
APPENDIX

SITEWIDE CONTEXT

Future Coastal Flood Risk in Lower Manhattan



Project Location



Project Site

Future Coastal Flood Risk

Existing Tidal Datums are as follows:

(Based on NOAA Station 8518750, The Battery, NY, 1983-2001 Tidal Epoch)

DATUM	EL. NAVD88, FT
Highest Astronomical Tide (HAT)	+3.56
Mean Higher High Water (MHHW)	+2.28
Mean High Water (MHW)	+1.96
NAVD88	0
Mean Low Water (MLW)	-2.57
Mean Lower Low Water (MLLW)	-2.77
Lowest Astronomical Tide (LAT)	-4.16

Note: All Elevations in the document are in NAVD88, FT.

Flood Barrier System Alignment and Design Flood Elevations

Proposed

LEGEND

- PDC JURISDICTION AREAS
- FLOOD BARRIER SYSTEM (WALL)
- DFE + X.X’ DESIGN FLOOD ELEVATION (DFE)

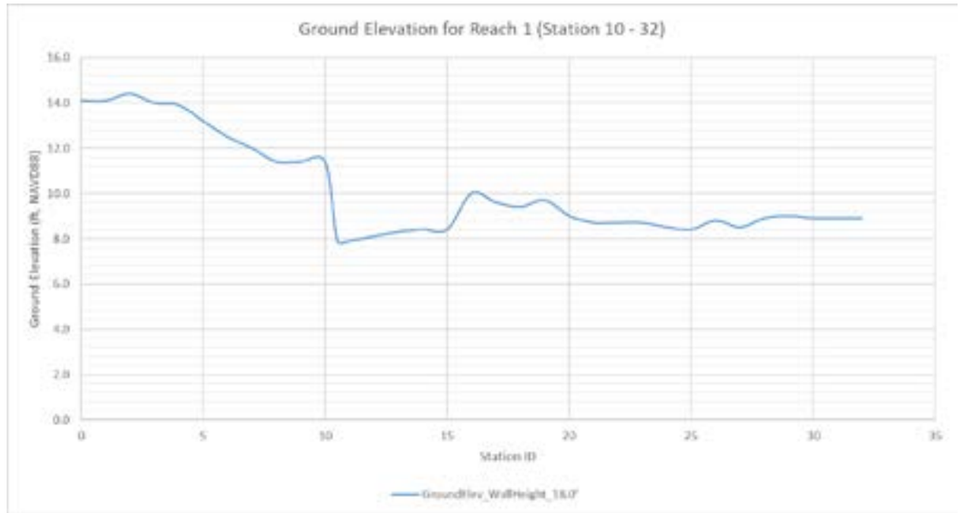
0’ 175’ 350’ 700’ 1,050’ N

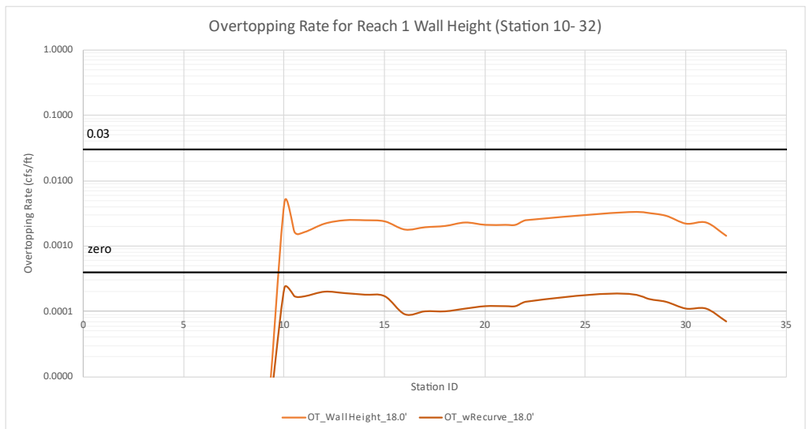
NEW YORK CITY DOT | NEW YORK STATE OF OPPORTUNITY. Battery Park City Authority | Turner CRUZ ARCADIS SCAPE BIG WSP

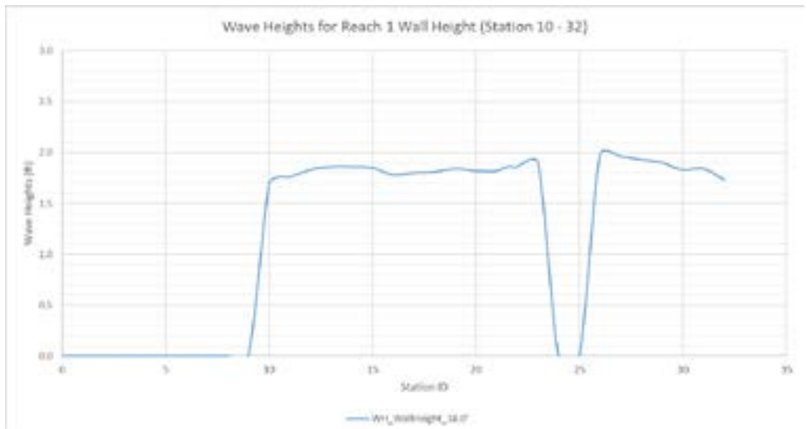
FOR ILLUSTRATIVE PURPOSES ONLY

Determining FBS Elevations | Rt 9A Example

- Ground elevation is approximately 8 - 14 ft NAVD88
- Wave Height is around 2 ft
- **Top of flood wall is at 18 ft**, meeting FEMA requirements and no impact on interior drainage system

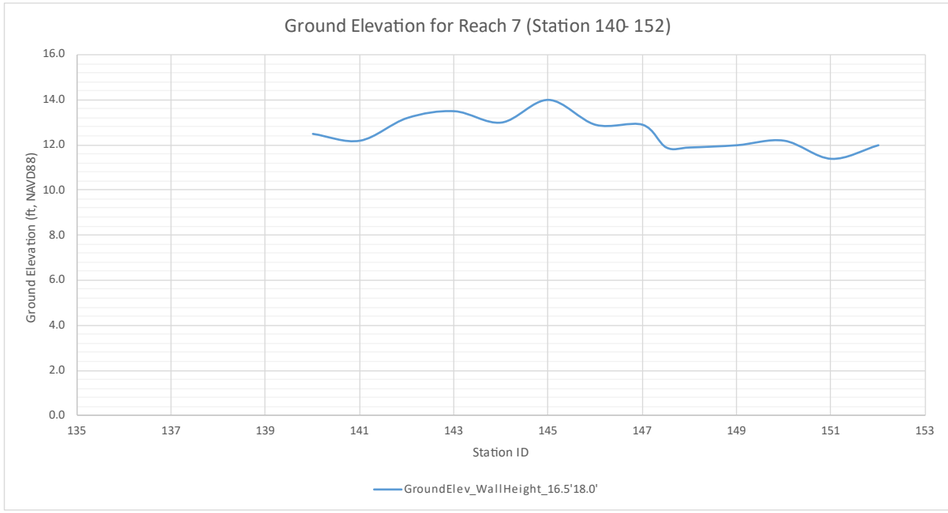


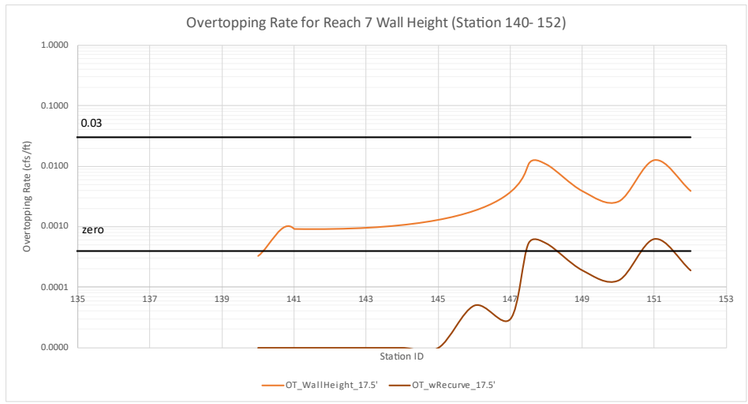


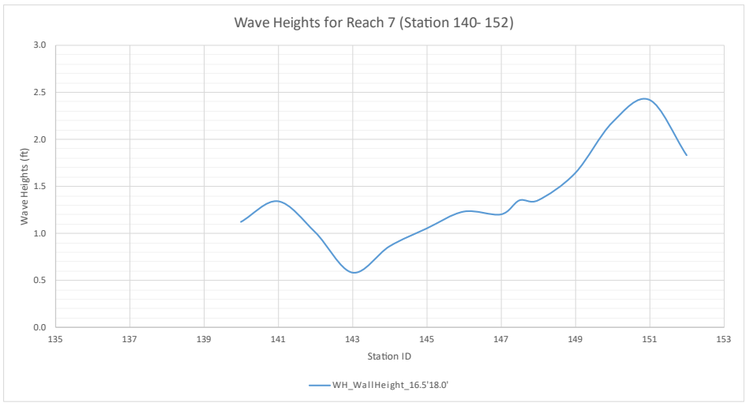


Determining FBS Elevations | South Neighborhood

- Ground elevation is approximately 12 - 14 ft NAVD88
- Wave Height is around 0.5 -2.5 ft
- **Top of flood wall is at 16.5 and18 ft**, meeting FEMA requirements and no impact on interior drainage system







Scope of Work

Flood Barrier System (FBS) including:

- Pile-supported flood wall
- Sheet pile seepage barrier below wall foundations
- Deployable gates at road crossings, street ends, and building/parking access points
- A permanent pump station with CSO connecting chambers, associated underground elements, and an above-ground electrical room

Streetscape and public realm improvements including:

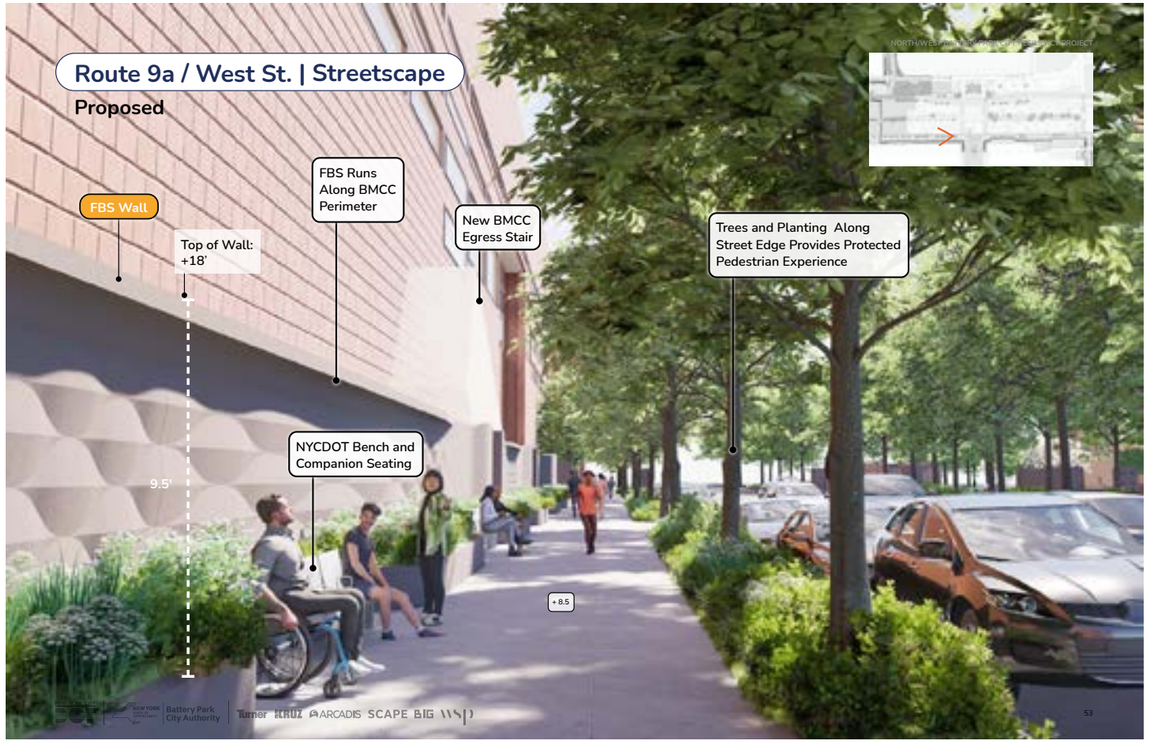
- Curbside planting and canopy trees where possible
- Street and street-end furnishing (seating, bike racks, bollards, lighting, etc.)
- Potential public art at street ends

East Side Coastal Resiliency Project at Asser Levy Playground (Source: NYC.gov)

NYC DOT Standard Design in South Bronx (Source: NYC DOT)

Streetscape Design Principles

- Maintain universal accessibility and sight lines
- Prioritize pedestrian experience and safety
- Distinguish primary circulation area from sidewalk planting and amenity zones
- Maximize tree planting and canopy cover within project parameters
- Provide shrub and groundcover planting to soften streetscape experience and mask FBS presence where possible
- Locate seating amenities in relevant areas



FLOOD BARRIER SYSTEM (FBS) DESIGN

FBS Experience

URBAN

NEIGHBORHOOD

PEDESTRIAN

SITEWIDE DESIGN APPLICATION

The FBS system will be experience on three key levels that are integral to the experience of the system and are to be factored into the design.

Recurve Wall

- Recurve design and overtopping rates are determined using the EurOtop Manual bullnose/ recurve wall formula. The overtopping rate formula is derived from physical experiments, summarized in Figure 2. T**he Formula has been verified by physical experiments and actual designs.**

In many instances, the recurve **allows the flood wall to be 1.5 to 2 feet lower** and have the same overtopping rate

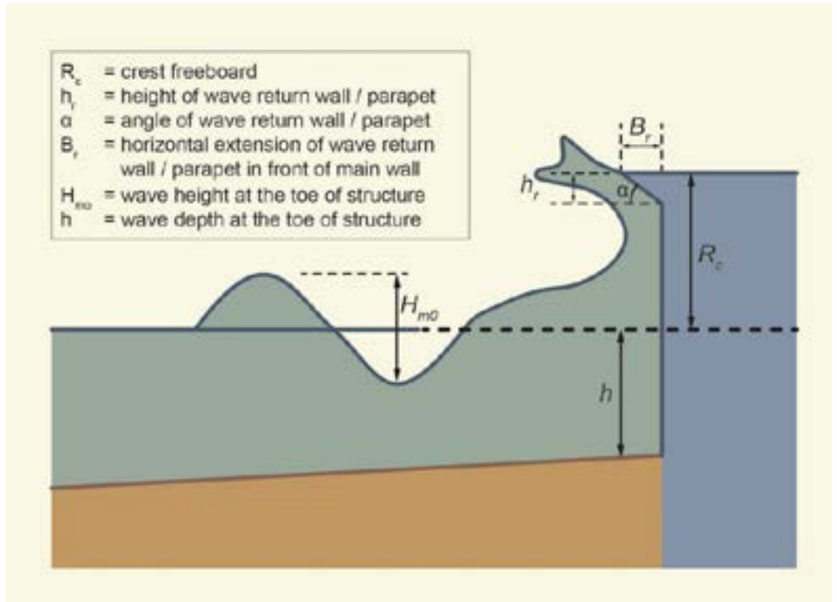


Figure 1: Parameter definitions for structures with bullnose

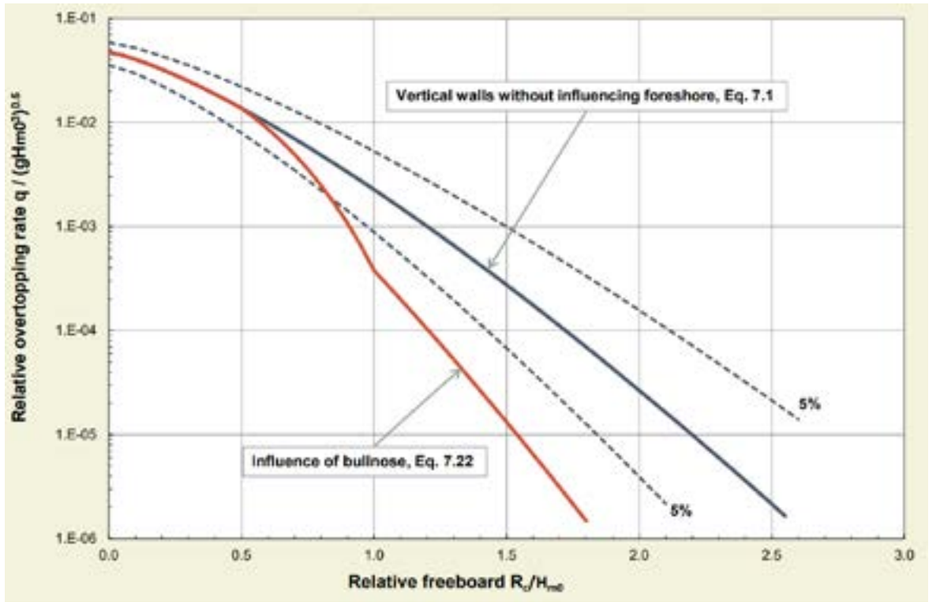


Figure 2: Three regimes of effectiveness of a bullnose wall

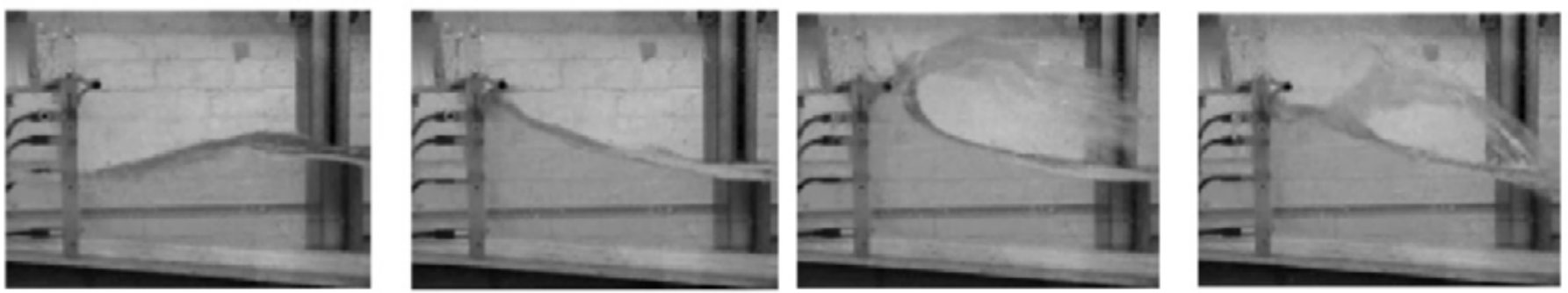
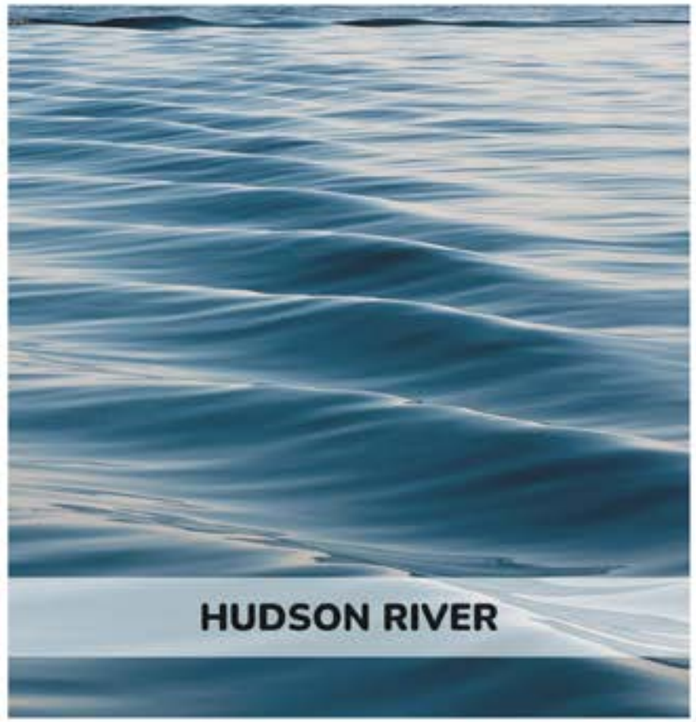
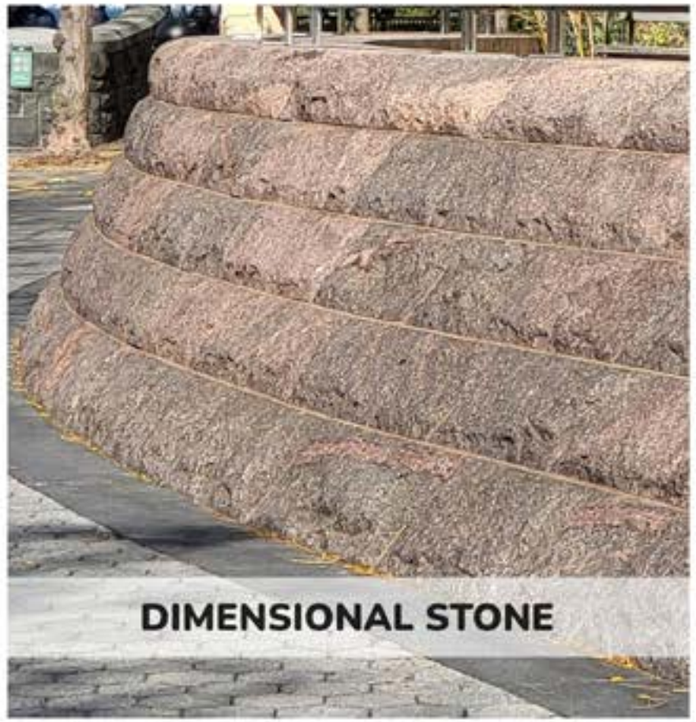


Figure 3: Function of a bullnose wall in reducing overtopping by redirecting the up-rushing water seaward

Site Inspiration



PATTERN



MODULARITY

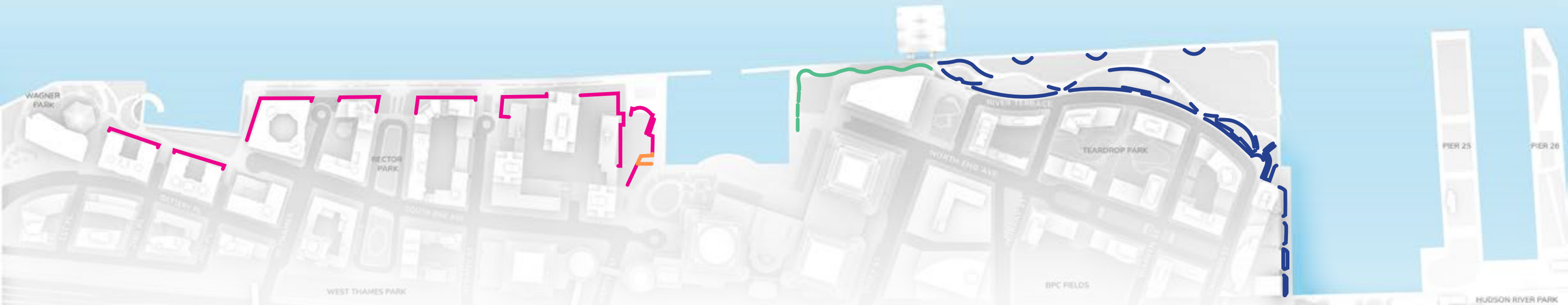
COLOR AND HUE

COMBINATION OF EXISTING AND NEW

The adjacent Hudson River, the dimensional stones on the existing flood wall, the local pink granite that is promenantly used across the site drove the inspiration of the wall pattern, forming a new language.

Materials | Existing Wall Treatments

Plan



STONE PRIVACY WALLS
ASHLAR RUNNING-BOND PATTERN

ROUGH-FACED STONE WALL
IN RUNNING-BOND PATTERN

ROUGH-FACED GRANITE WALL
RUNNING-BOND PATTERN

STONE WITH COURSED ASHLAR PATTERN
AND HONED COPING STONE

STONE WITH COURSED ASHLAR PATTERN

FBS | NYC FBS Wall Precedents

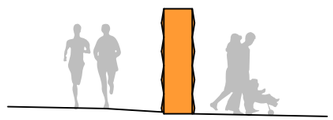
BMCR FLOOD WALL, UNDER THE FDR, NEW YORK, NY

ESCR FLOOD WALL, EAST RIVER PARK, NEW YORK, NY

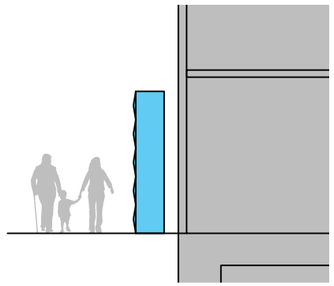
ESCR WALL DETAIL, EAST RIVER PARK, NEW YORK, NY

FBS | Floodwall Types

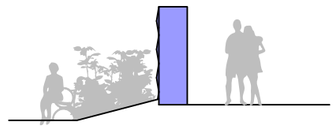
Section Profiles



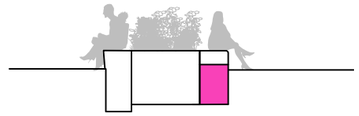
TYPICAL



BUILDING

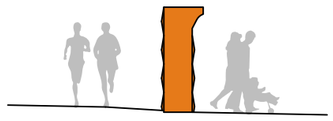


PRIVATE TERRACE

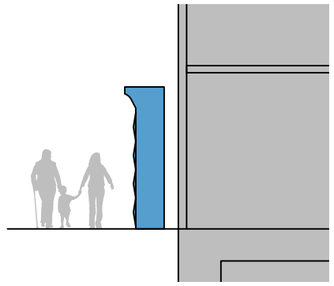


SEATING

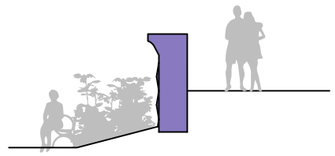
RETAINING WALL



TYPICAL RECURVE



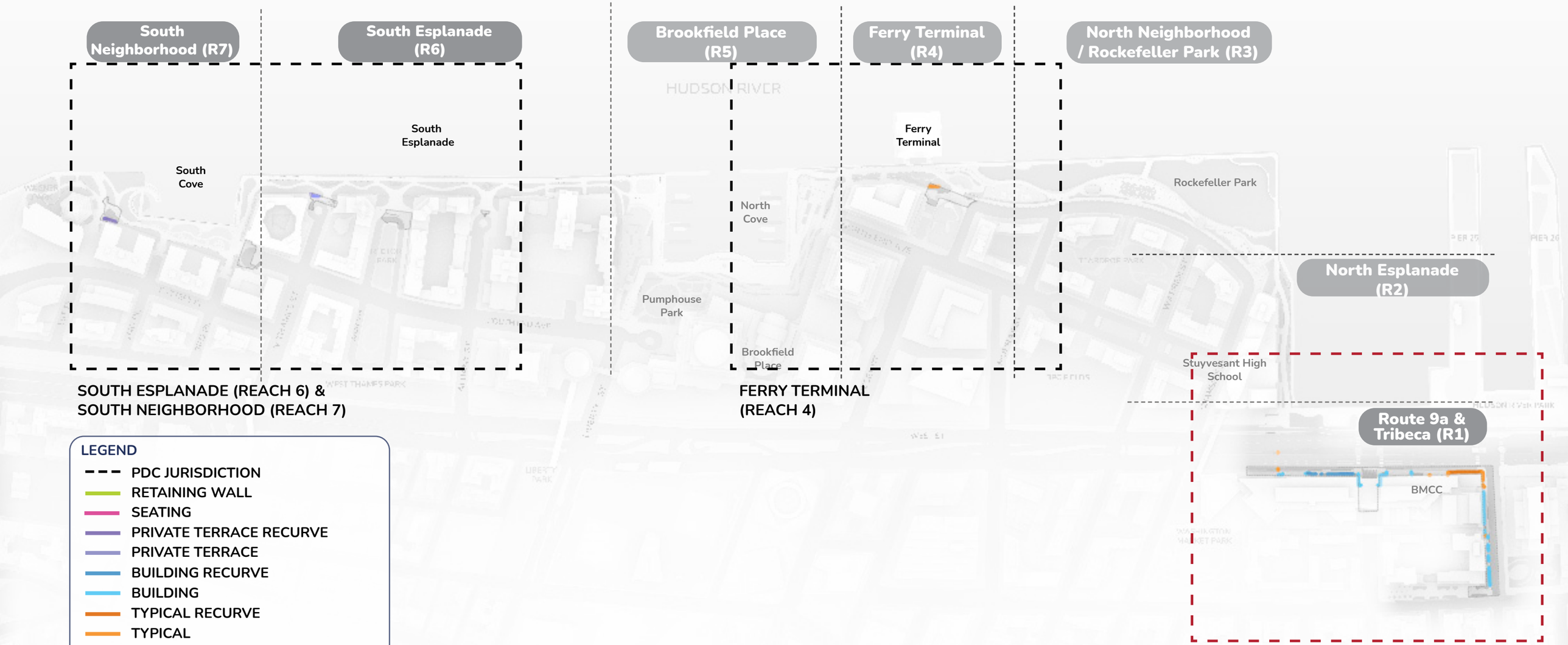
BUILDING RECURVE



PRIVATE TERRACE RECURVE

FBS | Floodwall Types

Plan



FBS | Floodwall Types

Plan

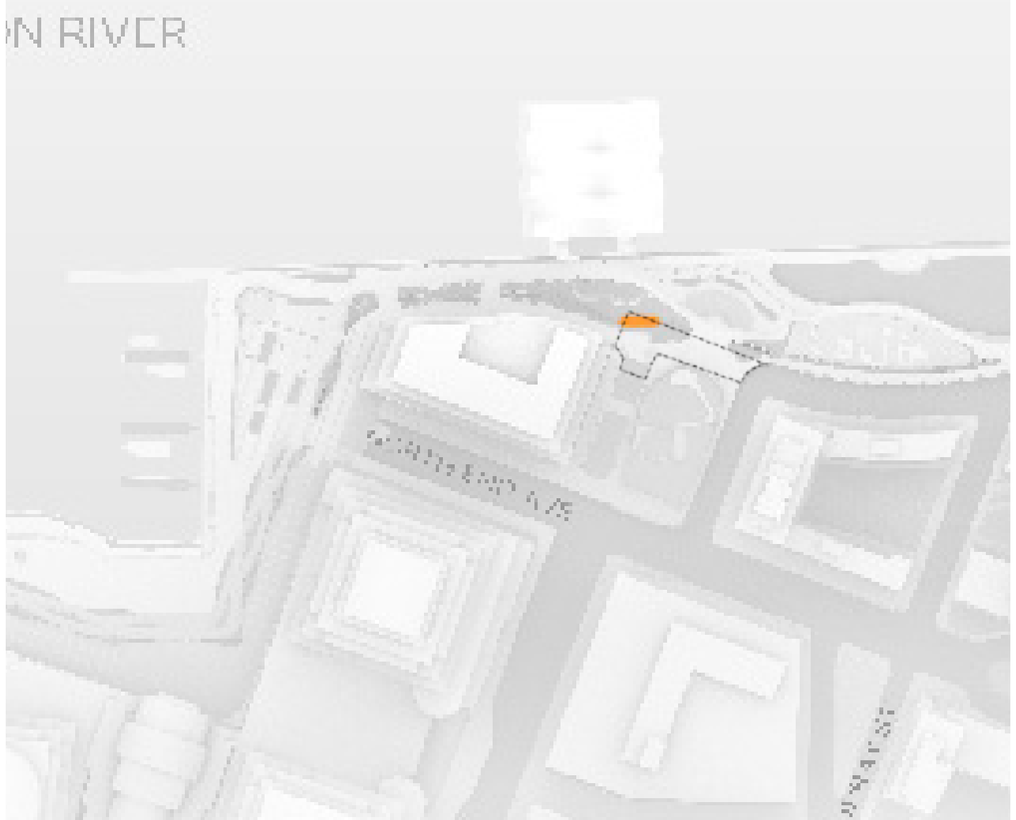
South Esplanade (Reach 6) & South Neighborhood (Reach 7)

LEGEND

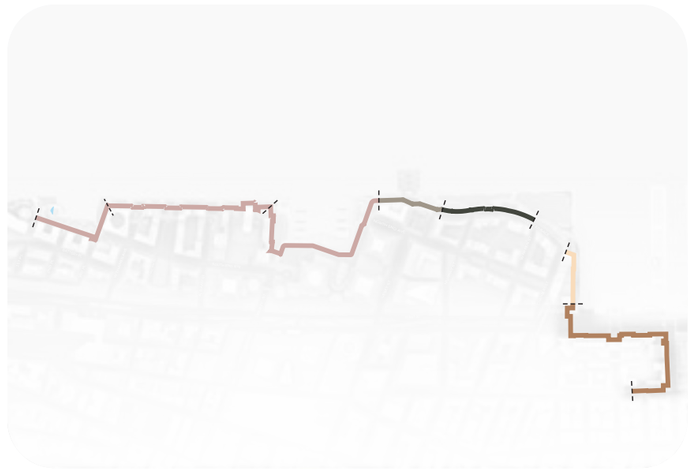
- PDC JURISDICTION
- RETAINING WALL
- SEATING
- PRIVATE TERRACE RECURVE
- PRIVATE TERRACE
- BUILDING RECURVE
- BUILDING
- TYPICAL RECURVE
- TYPICAL

0’ 100’ 200’ 400’ N

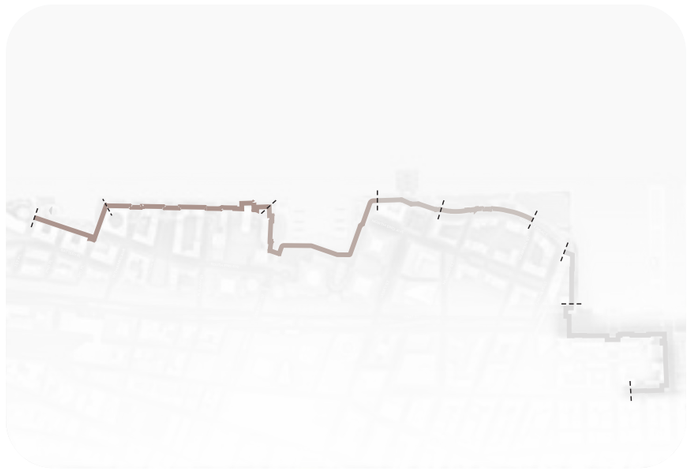
Ferry Terminal (Reach 4)



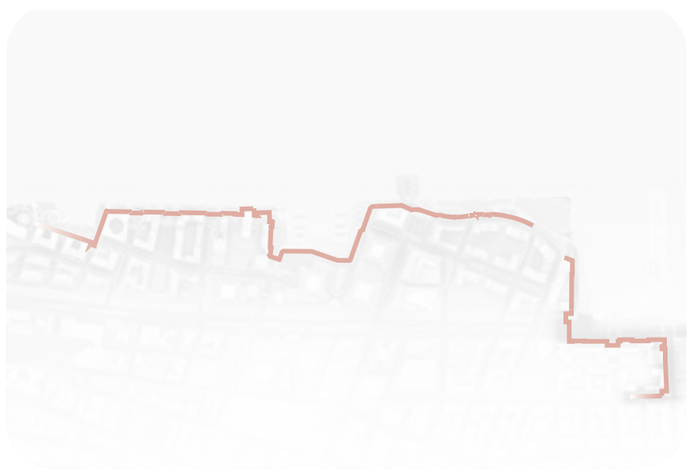
FBS | Color Studies



OPTION 1: CONTEXT MATCH



OPTION 2: GREY PINK GRADIENT



OPTION 3: PINK FBS

FBS | Color Studies

OPTION 1: CONTEXT MATCH

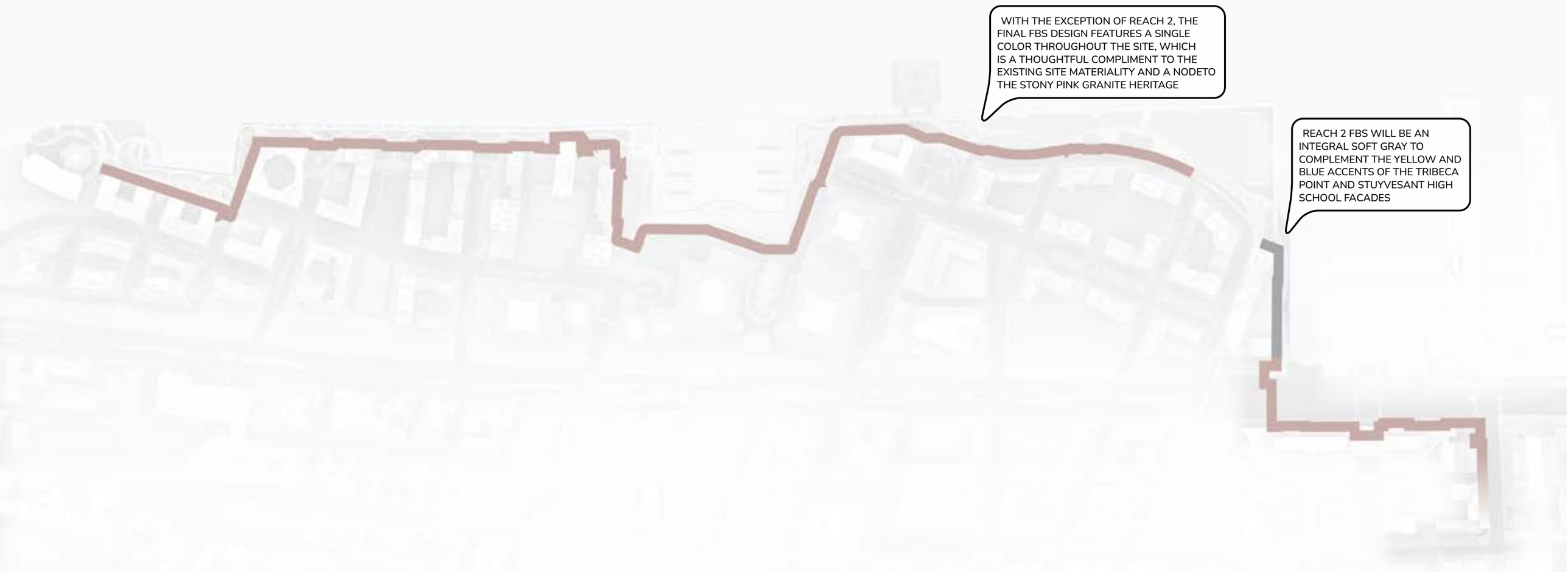
FBS | Color Studies

OPTION 2: GREY ROSE GRADIENT

FBS | Color Studies

OPTION 3: ROSE FBS

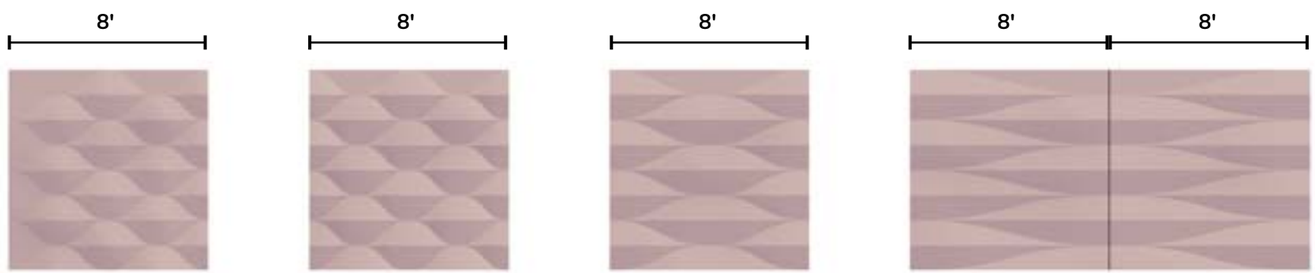
FBS | Color Approach



FBS | Floodwall Layout

Floodwall Modules

(CLOSEST TO FBS OPENINGS)



SMALL M. - TRANSITION
4' PATTERN

SMALL MODULE
4' PATTERN

MEDIUM MODULE
8' PATTERN

LARGE MODULES
16' PATTERN

(FURTHEST FROM FBS OPENINGS)

EXTRA LARGE MODULES
32' PATTERN

Additional Elements

LOW WALLS

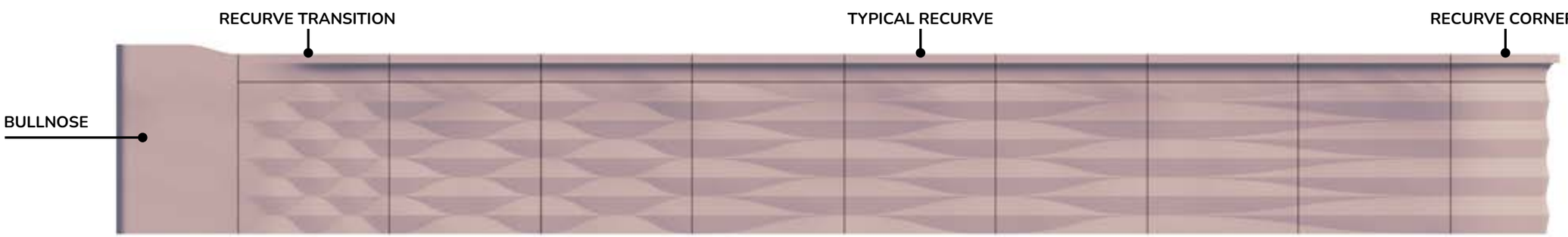
LOW WALL HEIGHTS
NO PATTERN

TURNS / ROUNDED CORNERS

SMALL CORNER
2' RADIUS

MEDIUM CORNER
5' RADIUS

LARGE CORNER
32' RADIUS

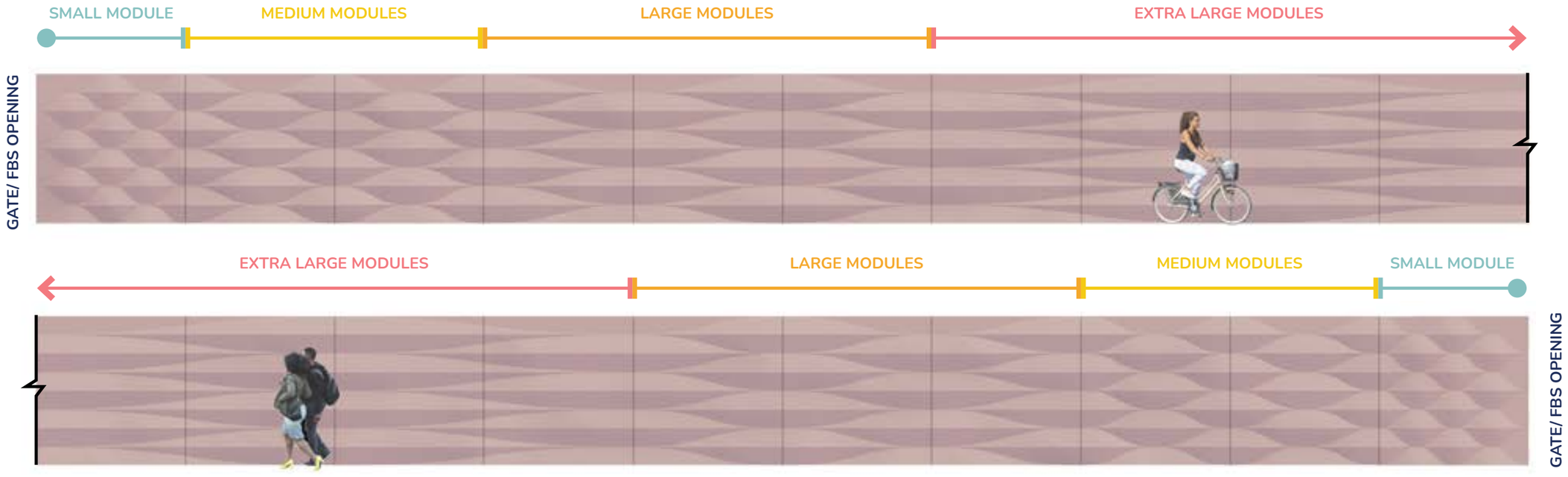


FBS | Floodwall Layout

Module variation correlates with proximity to FBS opening and acts as a form of wayfinding throughout the site. The modules are the smallest as they approach FBS opening and increase in size as the openings become farther away.

Short Wall Spans

Long Wall Spans



FBS | Gate Types

Plan

LEGEND

- PDC JURISDICTION
- ROLLER GATE
- SWING GATE
- STOP LOGS
- FLIP-UP GATE
- SLIDE-UP GATE

NOTE: Gate type and placement are still being explored/finalized

FBS | NYC Gate Precedents

SLIDING GATE, ASSER-LEVY PLAYGROUND, NEW YORK, NY

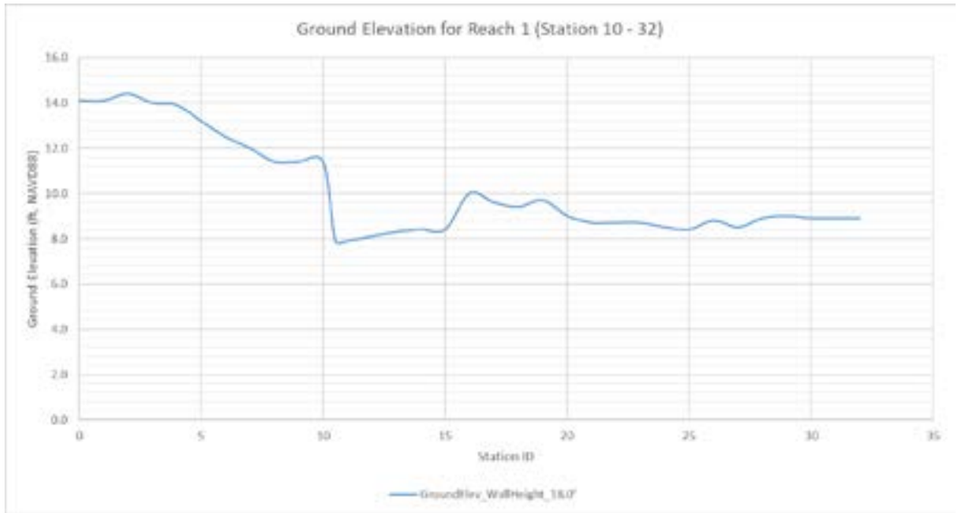
SWING GATE, MTA HUGH L/ CAREY TUNNEL, NEW YORK, NY

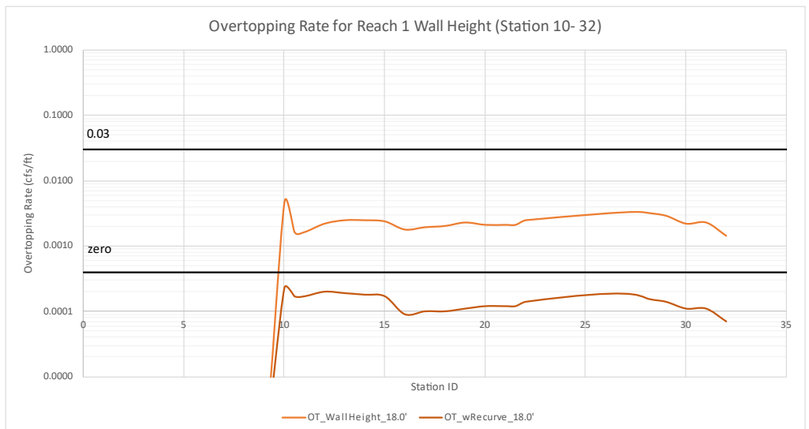
SWING GATE, MTA SOUTH FERRY STATION, NEW YORK, NY

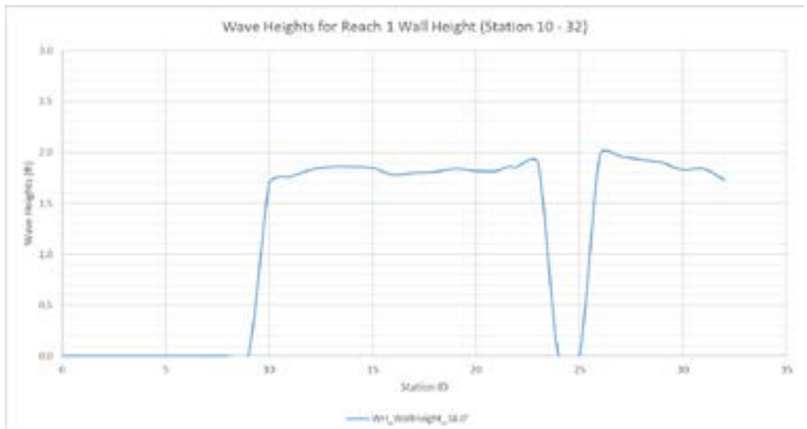
FBS | Gate Concept

Determining FBS Elevations | Rt 9A Example

- Ground elevation is approximately 8 - 14 ft NAVD88
- Wave Height is around 2 ft
- **Top of flood wall is at 18 ft**, meeting FEMA requirements and no impact on interior drainage system

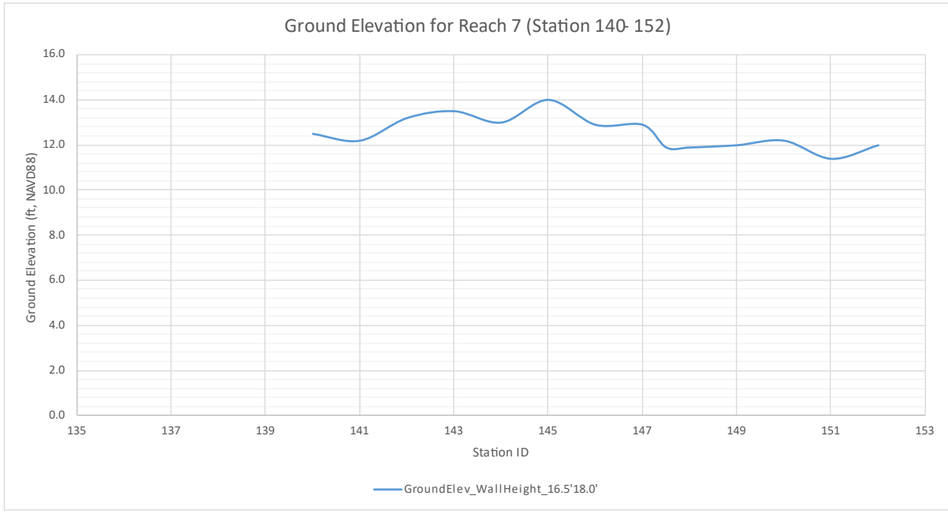


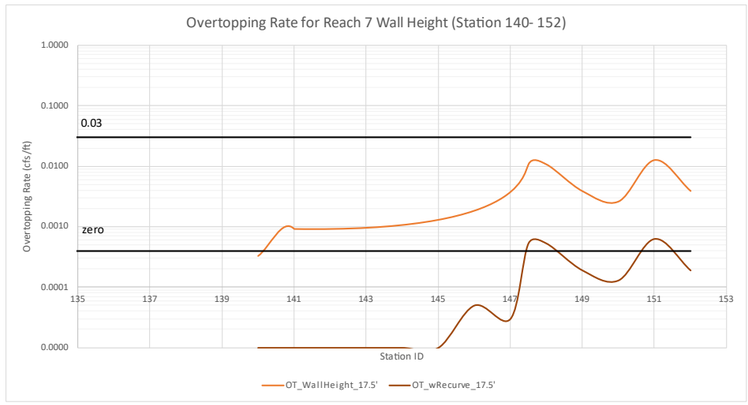


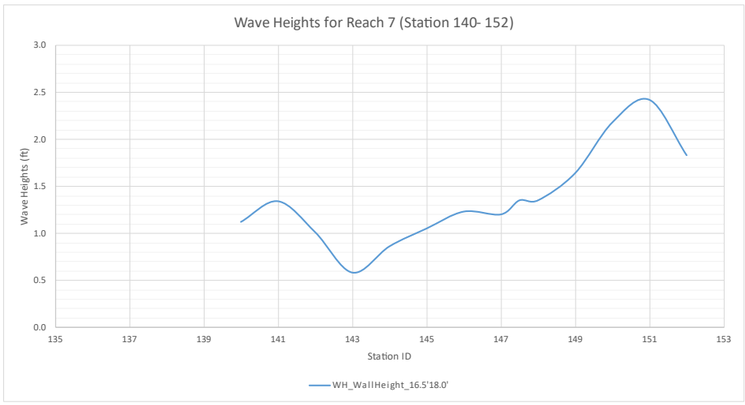


Determining FBS Elevations | South Neighborhood

- Ground elevation is approximately 12 - 14 ft NAVD88
- Wave Height is around 0.5 -2.5 ft
- **Top of flood wall is at 16.5 and18 ft**, meeting FEMA requirements and no impact on interior drainage system







REACH-BY-REACH

SOUTH NEIGHBORHOOD (REACH 7)

South Neighborhood | Plan

Existing

SOUTH COVE

+9.5’

+7.0’

+11’

+12’

+12’

Regatta Condominium

South Cove Plaza Building

1ST PLACE

2ND PLACE

3RD PLACE

SOUTH END AVE

Riverwatch Building

Cove Club Building

LEGEND

EXISTING RELIEVING PLATFORM

EXISTING TREE

0’ 10’ 20’ 50’ N

South Neighborhood | Plan

Proposed

Tie-In to South BPC Resilience Project

SOUTH COVE

Existing landscape, steps, and edge to remain

Existing pergola partially preserved

+9.5’

Wall height 10’ from esplanade (DFE +19.5’)

Partial Height 8’ Openings with Slide-Up Gates (No. SG705)

Slide-Up Gates (No. SG704)

Regatta Condominium

+7.0’

+13.5’

50’ Flip-Up Gate (No. SG703)

SOUTH END AVE

Wall height 8’ from path (DFE +18’)

+12’

South Cove Plaza Building

1ST PLACE

2ND PLACE

24’ Opening with Roller Gate (No. SG701)

Wall height 5.5’ from path (DFE +16.5’)

20’ Opening with Swing Gate (No. SG702)

+13’

Riverwatch Building

3RD PLACE

Wall height 3’ from sidewalk (DFE +16.5’)

Cove Club Building

LEGEND

- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- EXISTING RELIEVING PLATFORM
- PLATFORM RECONSTRUCTION AREA
- EXISTING TREE TO REMAIN
- NEW TREE
- LIMIT OF WORK

0’ 10’ 20’ 50’ N

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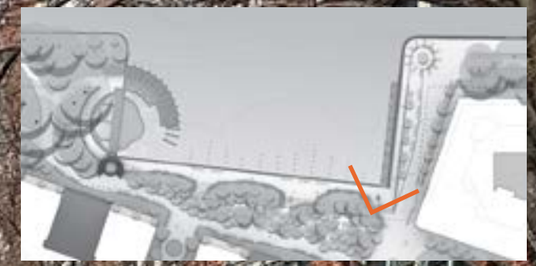
South Cove | View of Lower Ramp

Existing



+ 9.50’

+ 5.75’

+ 7.00’

South Cove | View of Lower Ramp

Proposed

Existing Wood Deck to Remain

New Planting along Edge

Textured Wall with Storm Elevation Markers Sign

Wall height varies 6’-10’ from esplanade (DFE +19.5’)

FBS Wall

+ 9.50’

+ 5.75’

+ 7.00’

+ 13.00’

SOUTH ESPLANADE (REACH 6)

South Esplanade | Plan

Existing

LEGEND

EXISTING TREES

0’ 20’ 50’ 100’ 200’ N

Hudson River

+9.51’

+9.54’

+9.61’

+9.5’

+9.5’

Esplanade Plaza

+14.5’

Kowsky Plaza

Regatta Residences

Liberty Terrace Residences

Hudson Tower Residences

Gateway Apartments

W Thames St.

Rector Park

Albany St.

South End Ave

PUMPHOUSE PARK

SOUTH END AVE

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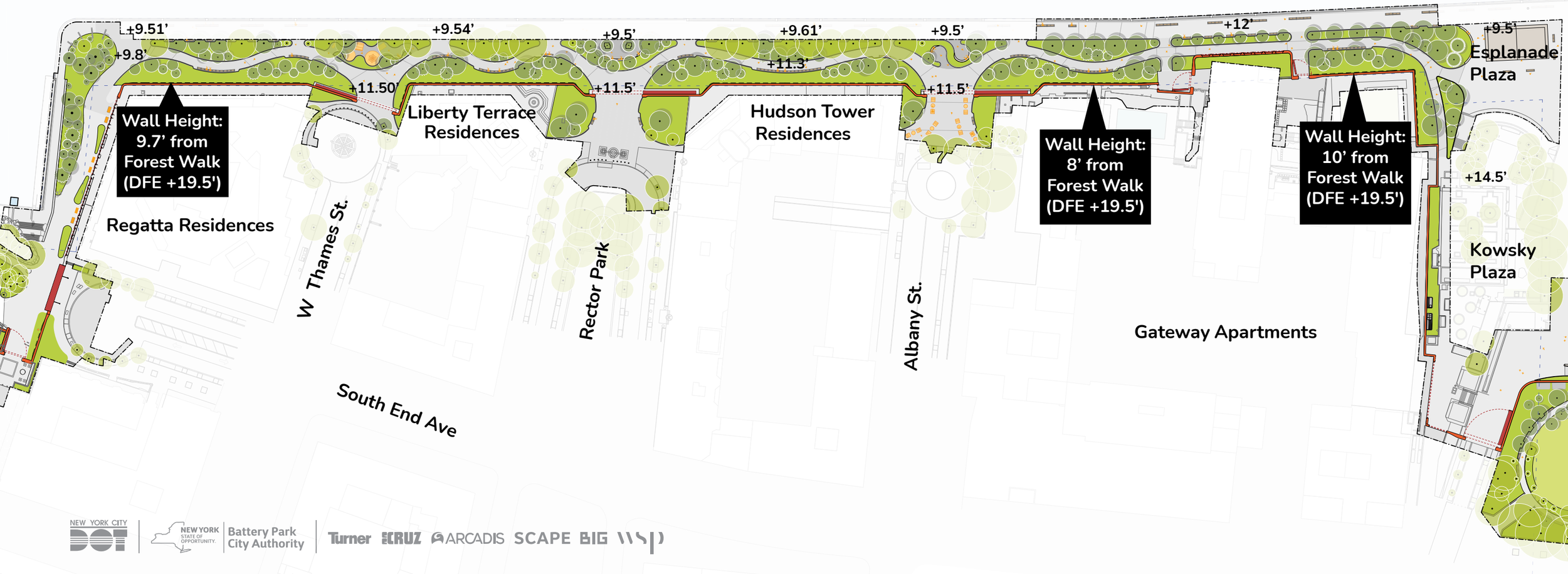
South Esplanade | Plan

Proposed

LEGEND
- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- EXISTING RELIEVING PLATFORM
- EXISTING TREES
- NEW TREES
- LIMIT OF WORK

0’ 20’ 50’ 100’ 200’ N



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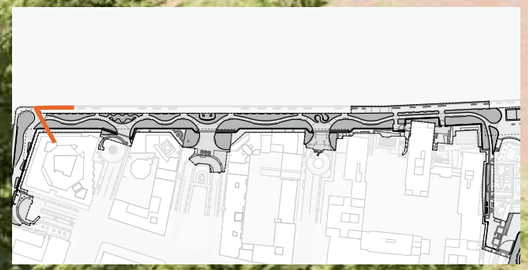
South Esplanade | View from South Corner of Regatta Bldg

Existing

+ 9.51’

South Esplanade | View from South Corner of Regatta Bldg

Proposed



Existing Esplanade Preserved

Existing Trees (Preserved)

Meandering Forest Walk

Enlarged Planting Buffer

FBS Wall

Wall Height:
9.5' from Forest Walk
(DFE +19.7')

9.7'

+ 10'

+ 9.51'

BROOKFIELD PLACE (REACH 5)

Brookfield Place | Plan

Existing

Hudson River

North Cove Marina

+9.5’

Esplanade Plaza

Kowsky Plaza

+14.3’

Gateway Plaza

Pumphouse Park

+14.0’

+9.8’

+14.0’

Waterfront Plaza

+12.5’

Belvedere Plaza

+12’

300 Vesey St.

North End Ave.

250 Vesey St.

Vesey St.

Winter Garden

South End Ave.

SOUTH END AVE.

LEGEND

EXISTING TREES

0’ 25’ 50’ 100’ 200’

N

Brookfield Place | Plan

Proposed

Hudson River

+9.5’

Esplanade Plaza

North Cove Marina

+12.5’

Belvedere Plaza

300 Vesey St.

+12’

North End Ave.

Kowsky Plaza

+14.5’

Gateway Plaza

250 Vesey St.

Vesey St.

+9.8’

+11.6’

Wall Height:
2.5’ from Upper Plaza
(DFE +16.5')

Pumphouse Park

+14.0’

Waterfront Plaza

South End Ave.

Winter Garden

LEGEND

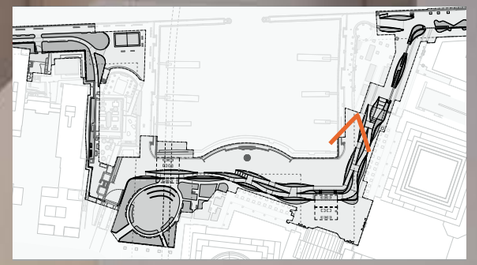
- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- EXISTING RELIEVING PLATFORM
- EXISTING TREES
- NEW TREES
- LIMIT OF WORK
- BRIDGING STRUCTURE

0’ 25’ 50’ 100’ 200’ N

Waterfront Plaza | View toward Wintergarden

Existing

+ 9.80’



Waterfront Plaza | View toward Wintergarden

Proposed

New Trees and Planting and Shade

Integrated Wheelchair Spaces

Integrated Planter and Seating

Universal Access Throughout

New Access From Upper to Lower Esplanade

FBS Wall

+ 9.80'

Esplanade Circulation Maintains 20' Clear Minimum

FERRY TERMINAL (REACH 4)

Lily Pond | Plan

Existing

+9.5’

+10’

+12.5’

Lily Pond

+10’

+13’

Playground

+12’

Irish Hunger Memorial

River Terrace

LEGEND

EXISTING RELIEVING PLATFORM

EXISTING TREE

0’ 10’ 20’ 50’

N

Lily Pond | Plan

Proposed

+9.5’

New immersive landscape with seating areas

+10’

Existing Lily Pond remains

Wall height 4’ from esplanade (DFE +16.5’)

+12.5’

Wall height 3.5’ from plaza (DFE +16.5’)

Lily Pond

+10’

+13’

Playground

Expanded planting area and reduced hardscape

50’ Opening with Roller Gate (No. SG403)

+12’

Irish Hunger Memorial

River Terrace

LEGEND

- FLOOD BARRIER SYSTEM (WALL)
- FLOOD BARRIER SYSTEM (DEPLOYABLE)
- EXISTING RELIEVING PLATFORM
- PLATFORM RECONSTRUCTION AREA
- EXISTING TREE TO REMAIN
- NEW TREE
- LIMIT OF WORK

0’ 10’ 20’ 50’ N

Lily Pond | Aerial View

Proposed

Existing Lily Pond

+ 12.40’

Expanded planting and seating area and reduced hardscape

+ 13.00’

+ 10.00’

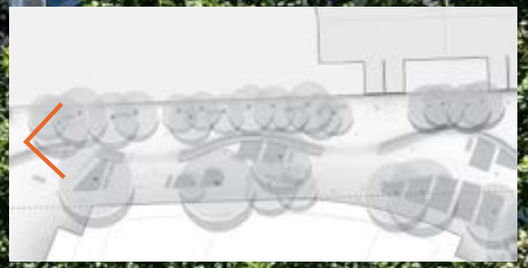
FBS Wall

Wall height 4.5’ from sidewalk (DFE +16.5’)

+ 12.00’

Esplanade and Ferry Terminal | View to North

Existing

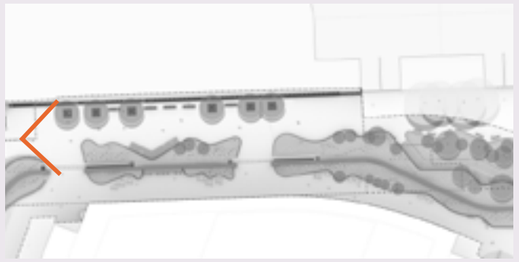


Wall height 4.5’ from esplanade (el. +14’)

+ 9.50’

Esplanade and Ferry Terminal | View to North

Proposed



Custom Lounge Seating

FBS Wall

Wall height 4’ from esplanade (DFE +16.5’)

+ 12.50’

+ 12.50’

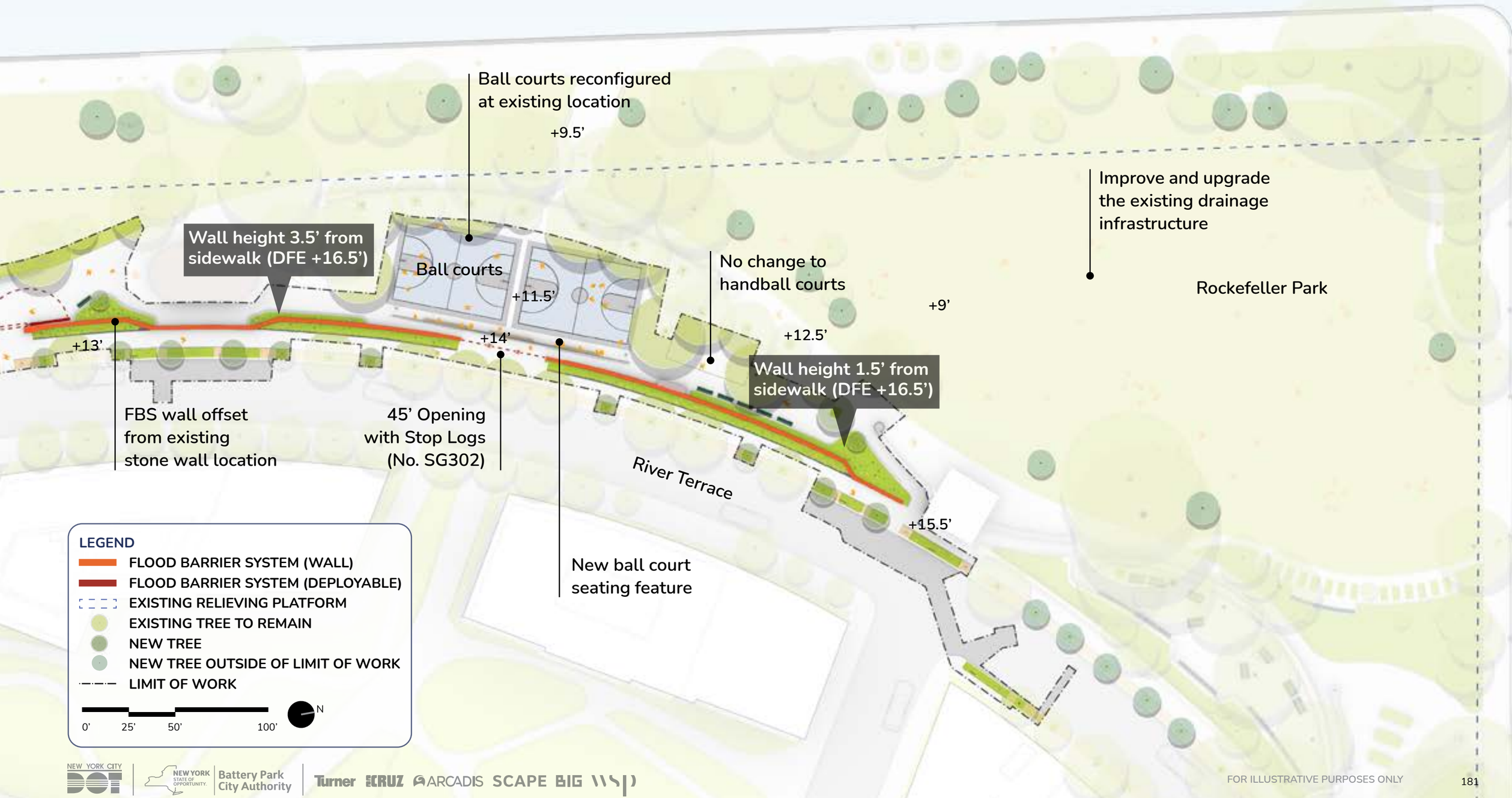
ROCKEFELLER PARK (REACH 3)

Rockefeller Park | Plan

Existing

Rockefeller Park | Plan

Proposed



River Terrace | View toward North Lawn

Existing

Wall height 2.7’ from sidewalk (el. +18.1’)

2.70’

+15.40

River Terrace | View toward North Lawn

Proposed

Wall height varies 1.3’-3.5’ from sidewalk (DFE +16.5’)

FBS Wall

FBS Wall offset from existing stone wall location, new planting along sidewalk

1.3’

+15.20

NORTH ESPLANADE (REACH 2)

North Esplanade | Plan

Existing

Hudson River Park-Estuarine Sanctuary

Hudson River Park

9.5’

9.5’

9.5’

11.4’

14.87’

10’

10’

Rockefeller Park

Tribeca Pointe

Stuyvesant High School

Chambers St.

CHAMBERS STREET

LEGEND

EXISTING TREES

N

0’ 25’ 50’ 100’

North Esplanade | Plan

Proposed

North Esplanade | Axonometric

Proposed

Stuyvesant
High School

Top of Wall:
+16.5’

New Seating Along
Building Planter

FBS Wall
Materiality Subject
to BPCA Decision

Enhanced
Privacy Buffers

Tribeca Pointe

Improved Connection
with Hudson River Park

New Seating with
Waterfront Views

+ 12.00’

Hudson River Park-
Estuarine Sanctuary

**Widened
Shared-Use Path**

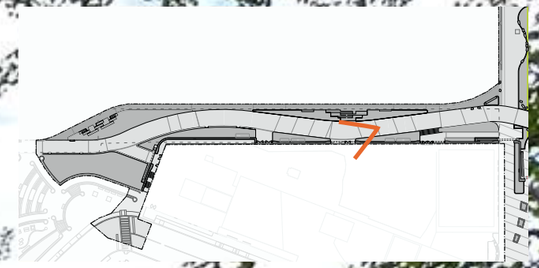
In Water
Habitat

+ 10.00’

New Seating with
Waterfront Views

North Esplanade | View from Esplanade

Existing

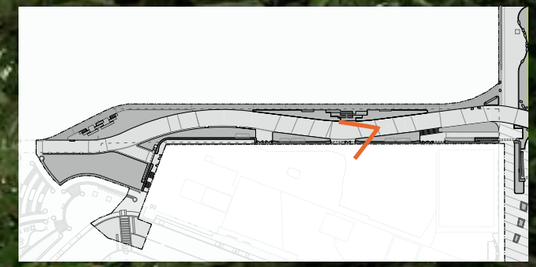


+ 9.79’

North Esplanade | View from Esplanade

Proposed

NORTH/WEST BATTERY PARK CITY RESILIENCY PROJECT



Deployable Location

FBS Wall

Enhanced Privacy Buffer

Overlook and Access to Waterfront

Wall Height: 1.5' from path (DFE +16.5')

1.5'

+ 15.00'

Widened Pedestrian Path

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