

| City of Concord, NH



I-93 “Bridge Park” Feasibility Study & Conceptual Design

Public Meeting February 4, 2025



Agenda

- Brief Study History
- Public Vision
- Opportunities, Constraints and Design Considerations
- Present Alternatives
- Cost Analysis
- Public Input

Presenters

City of Concord:

- Beth Fenstermacher, PLA, LEED AP

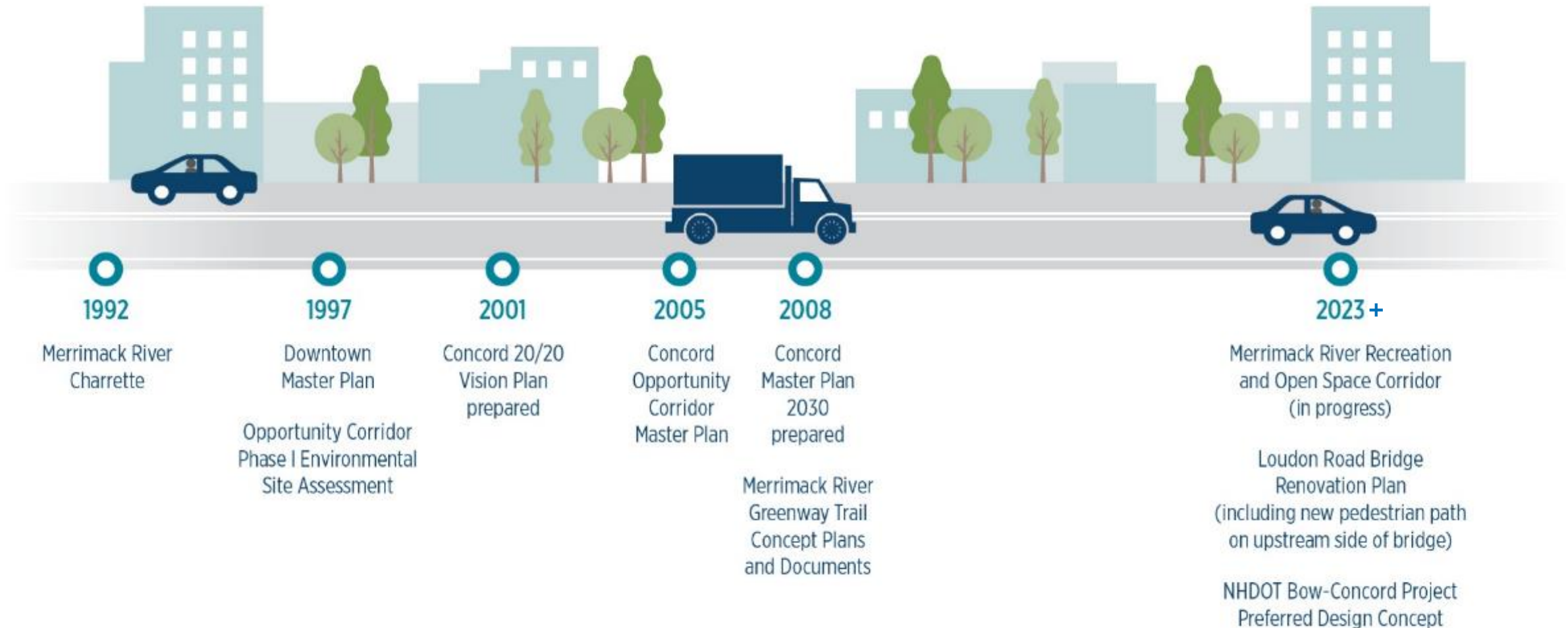


- Gregory Bakos, PE
- Stefanie Kizza, PE, ENV SP

Architectural Design Support from:



Project History and Background



Bridge Park Vision

- Span over railroad and highway corridors
- Create an attractive public space with views of the Merrimack River
- Reduce noise resulting from the widened interstate
- Include vegetation and pedestrian amenities on the structure
- Connect to the Merrimack River Greenway Trail (MRGT) and points east
- Provide space for “social mixing” to occur
- Create an attractive statement as the gateway to the Capital City



2005 Opportunity Corridor Master Plan

Source: <https://www.concordnh.gov/DocumentCenter/View/1663/Opportunity-Corridor-Master-Plan?bidId=>

Feasibility Study Considerations

Opportunities

- Enhanced visual connectivity to the river from the downtown side
- Deck portion could provide public space high above river
- Bridge portion would provide river views and bike/ped connection to east side of river and the MRGT



Feasibility Study Considerations

Known Constraints

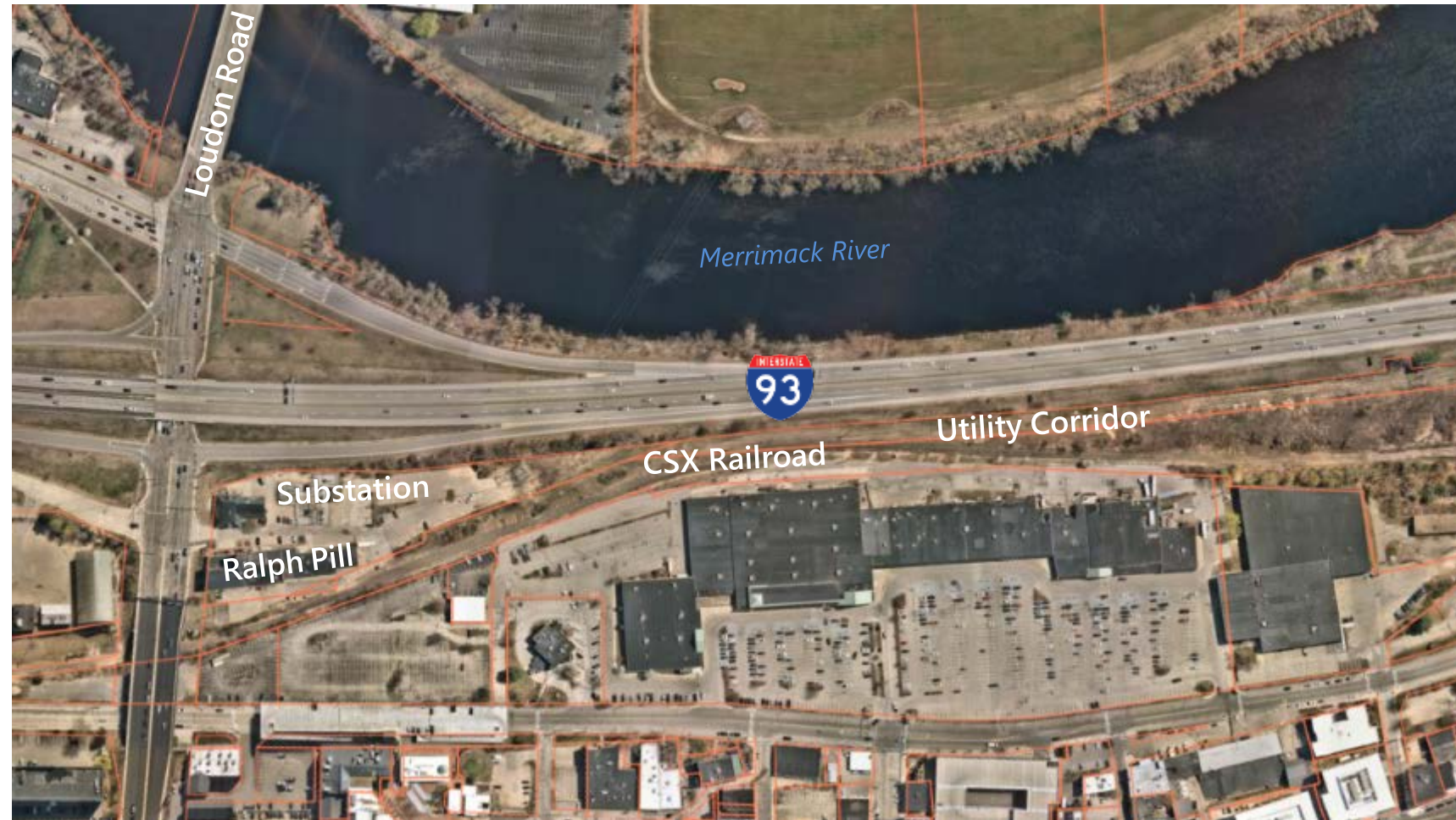
- Private, Railroad, and State Property
 - With exception of Healy Park, the City doesn't own property between Storrs Street and the Merrimack River



Feasibility Study Considerations

Constraints

- Infrastructure
 - I-93 Corridor
 - CSX Railroad Corridor
 - Utilities
 - Loudon Road Bridge



Feasibility Study Considerations

- Access
 - Convenience/Usability
 - MRGT connectivity
 - Amenities
 - Safety / Security
- Aesthetics
 - High visibility
 - Visual statement
 - Appealing design features to offset scale
- Cost



Closeup of CC2DCA Intermodal Connector by SOM

Feasibility Study Considerations

Environmental Considerations

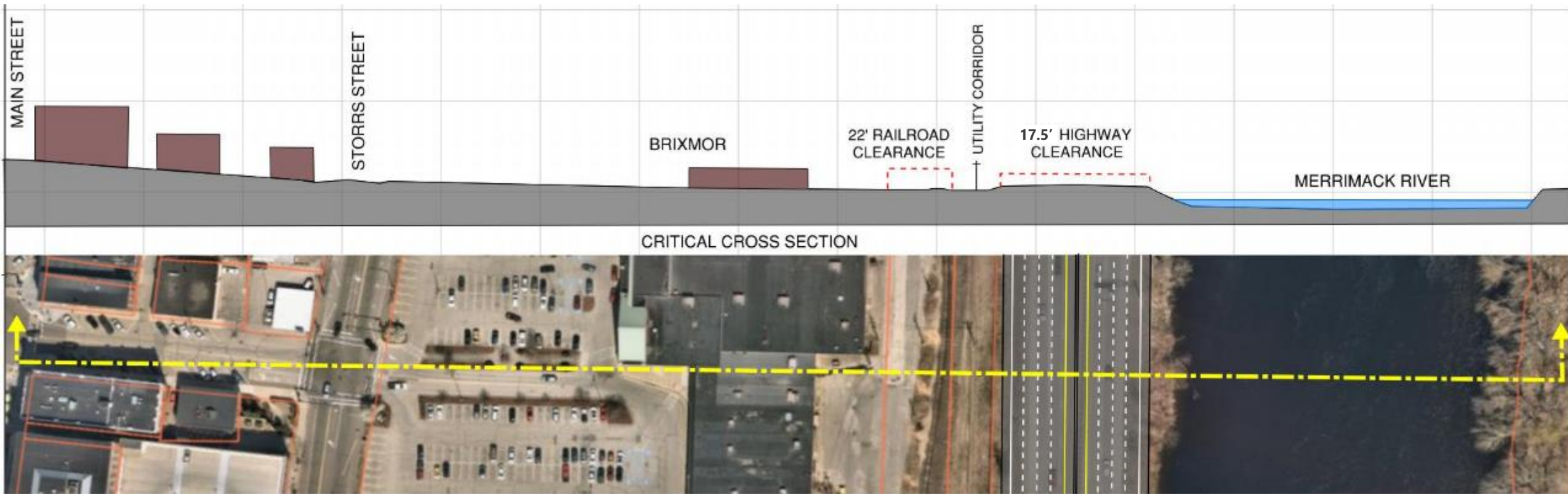
- Rigorous permitting process
- Floodplain, shoreline and & wetland impacts
- Conservation easement along shoreline
- Healy Park contamination



Feasibility Study Considerations

Physical Considerations

- Challenges associated with spanning over
 - Railroad, Utility Corridor and I-93
 - Merrimack River
- ADA compliant structure
 - Evaluate critical cross sections
 - Horizontal and vertical relationships
 - Actual river surface would be approx. 30-ft below the surface of the bridge park decking



Feasibility Study Considerations: Proposed I-93 Improvements



Alternatives Development

Alternative 1 – Multi-use Bridge

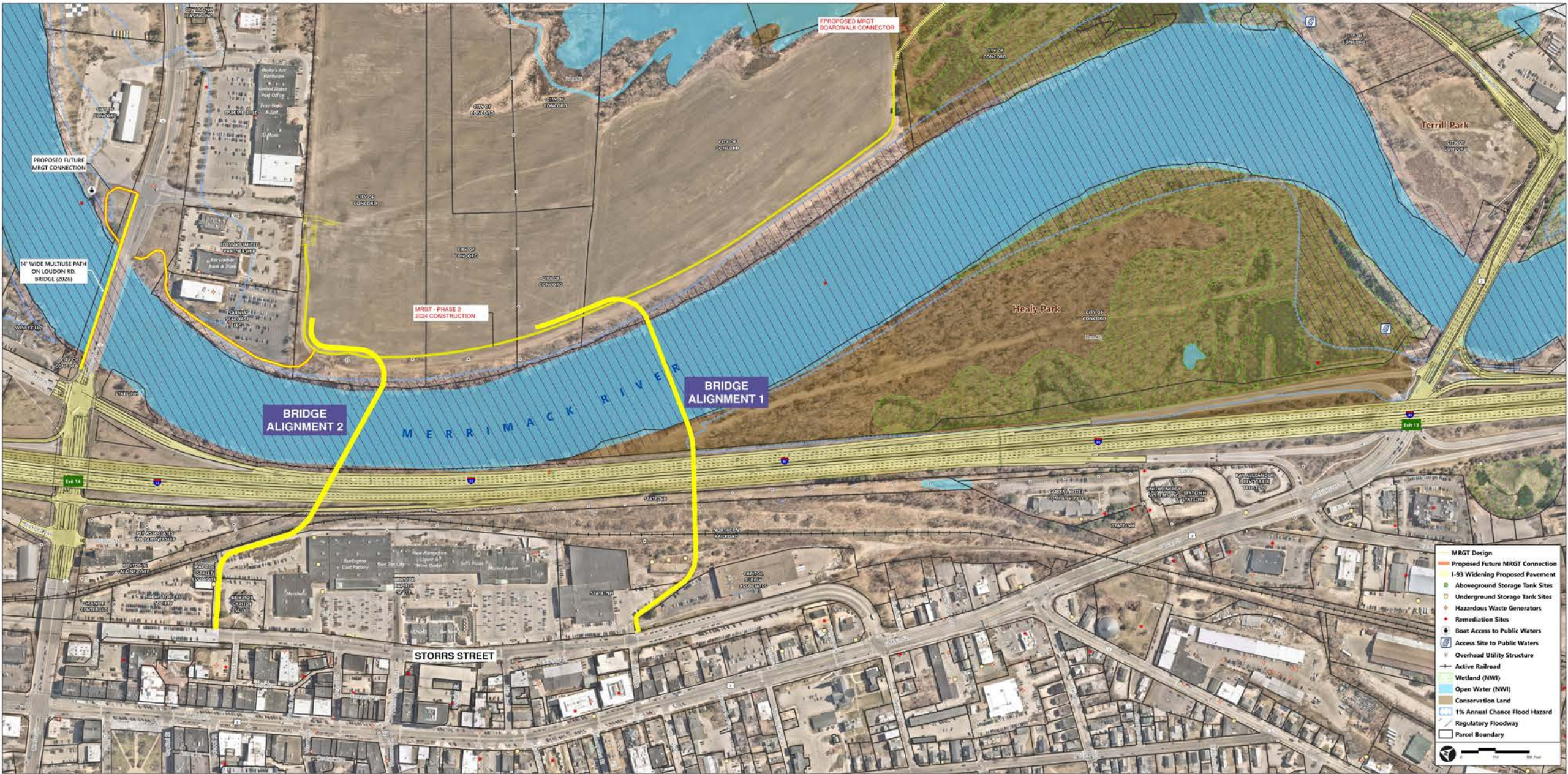
Bridge Alignments Considered:

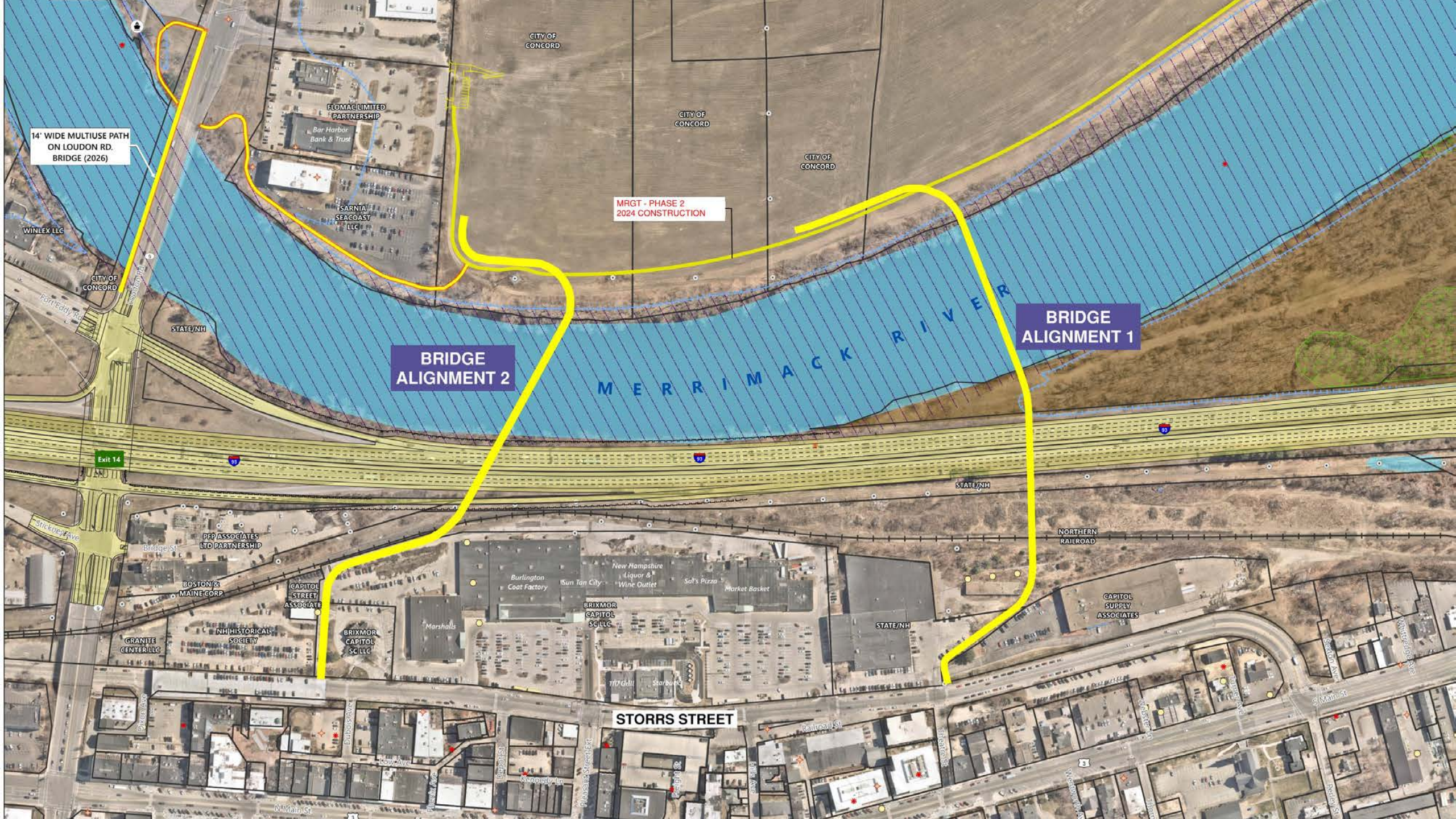
- Bridge Alignment 1 – Southern River Crossing
- Bridge Alignment 2 – Northern River Crossing

Alternative 2 – Bridge with Deck Park

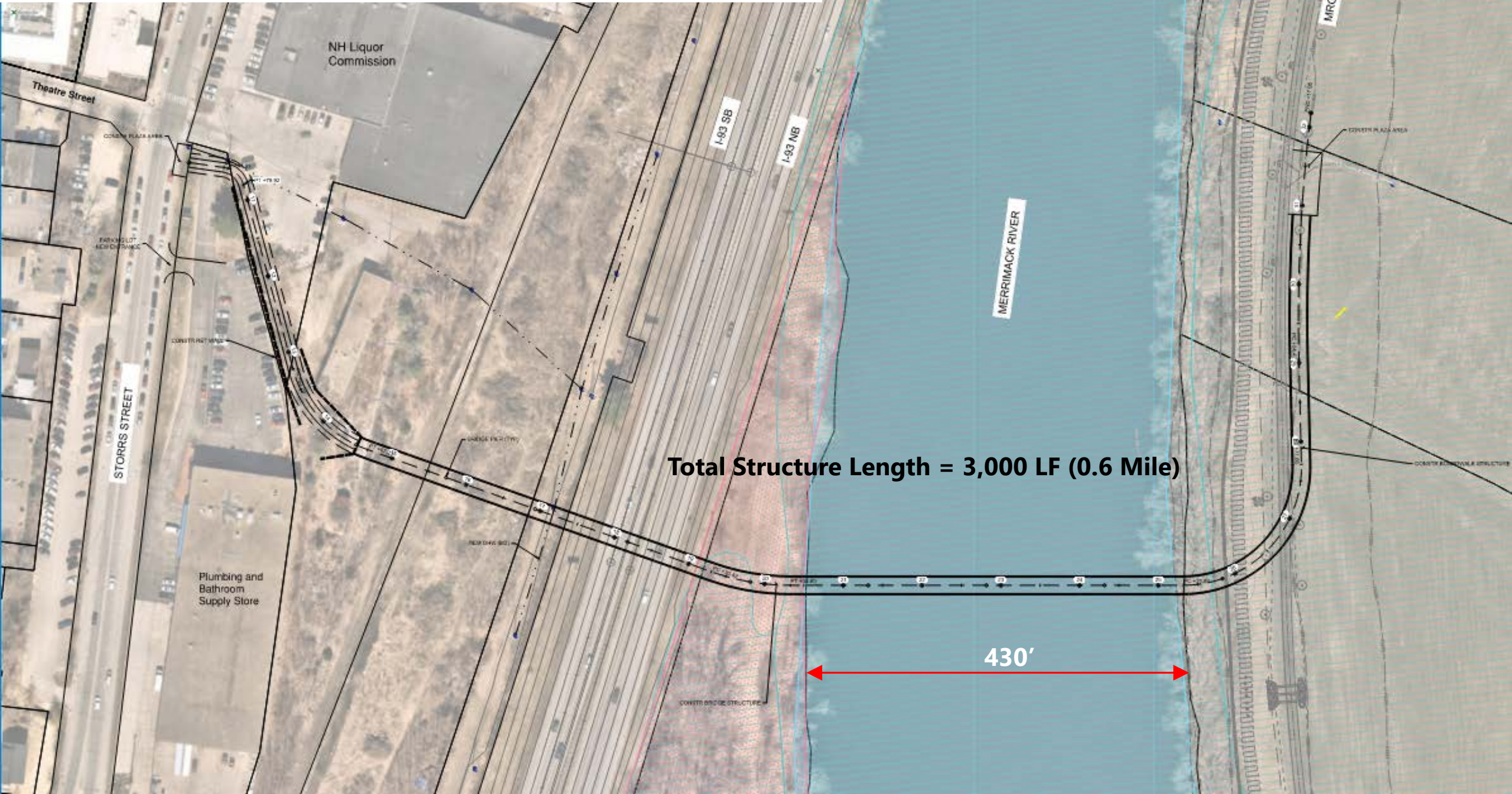
Alternative 3 – Depress I-93 / Add Expansive At-Grade Deck Park

Overall Plan

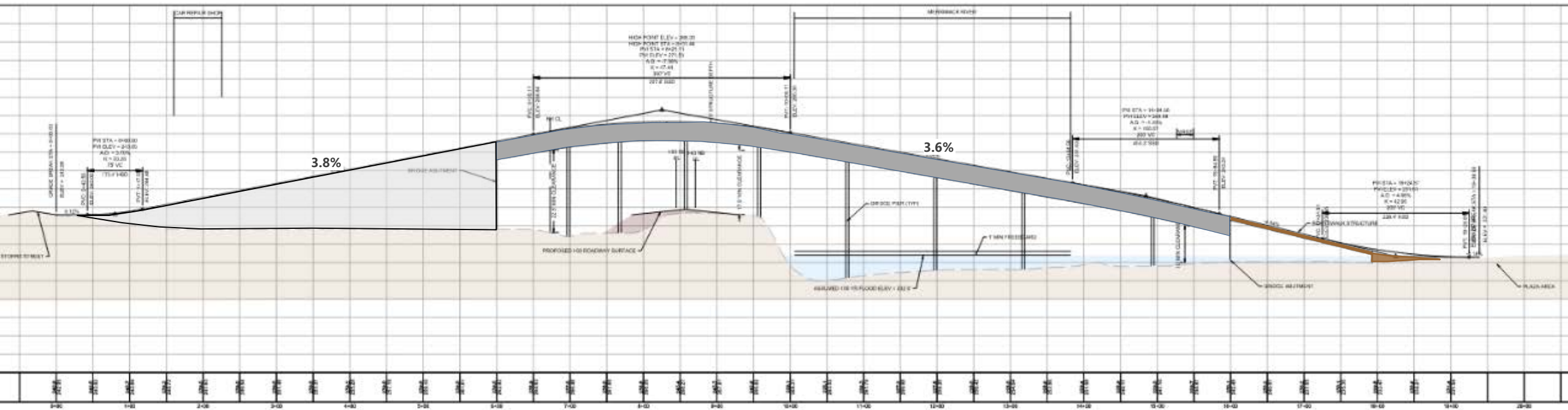




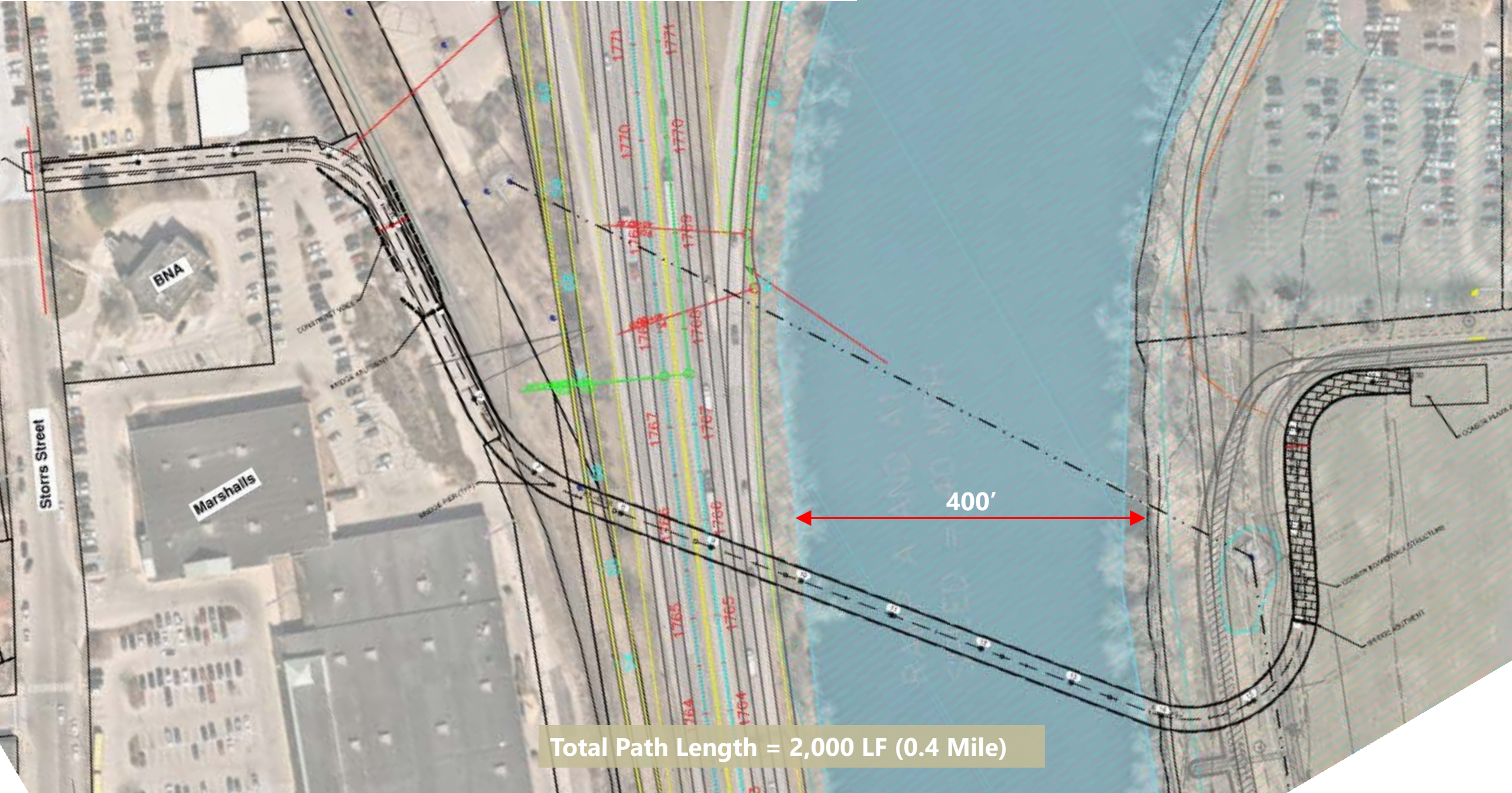
■ Bridge Alignment 1 – Southern River Crossing



■ Alignment 1 – Southern River Crossing Profile

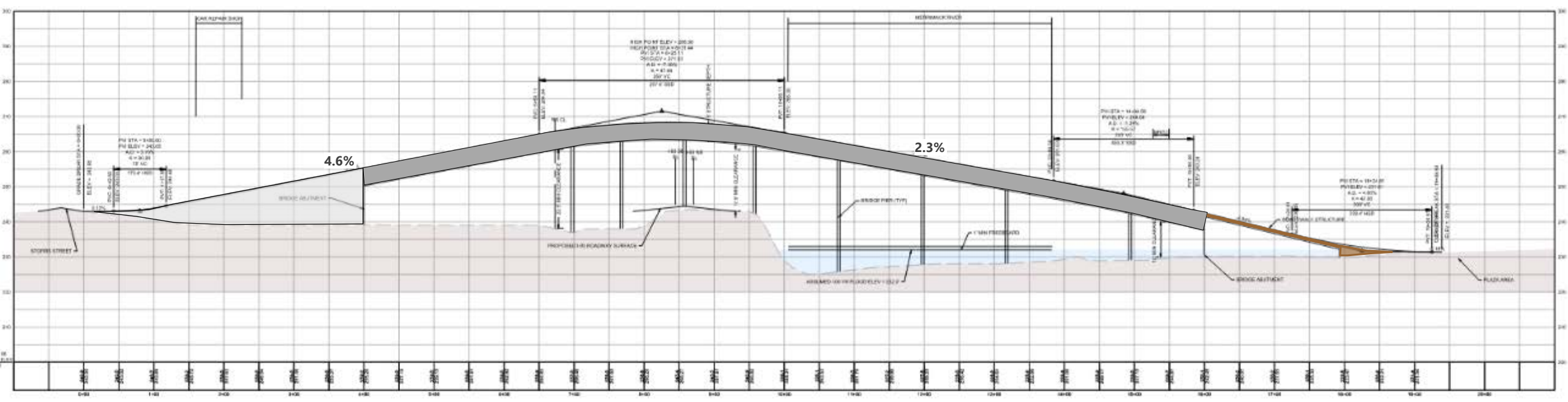


■ Bridge Alignment 2 – Northern River Crossing



Total Path Length = 2,000 LF (0.4 Mile)

■ Alignment 2 – Northern River Crossing Profile

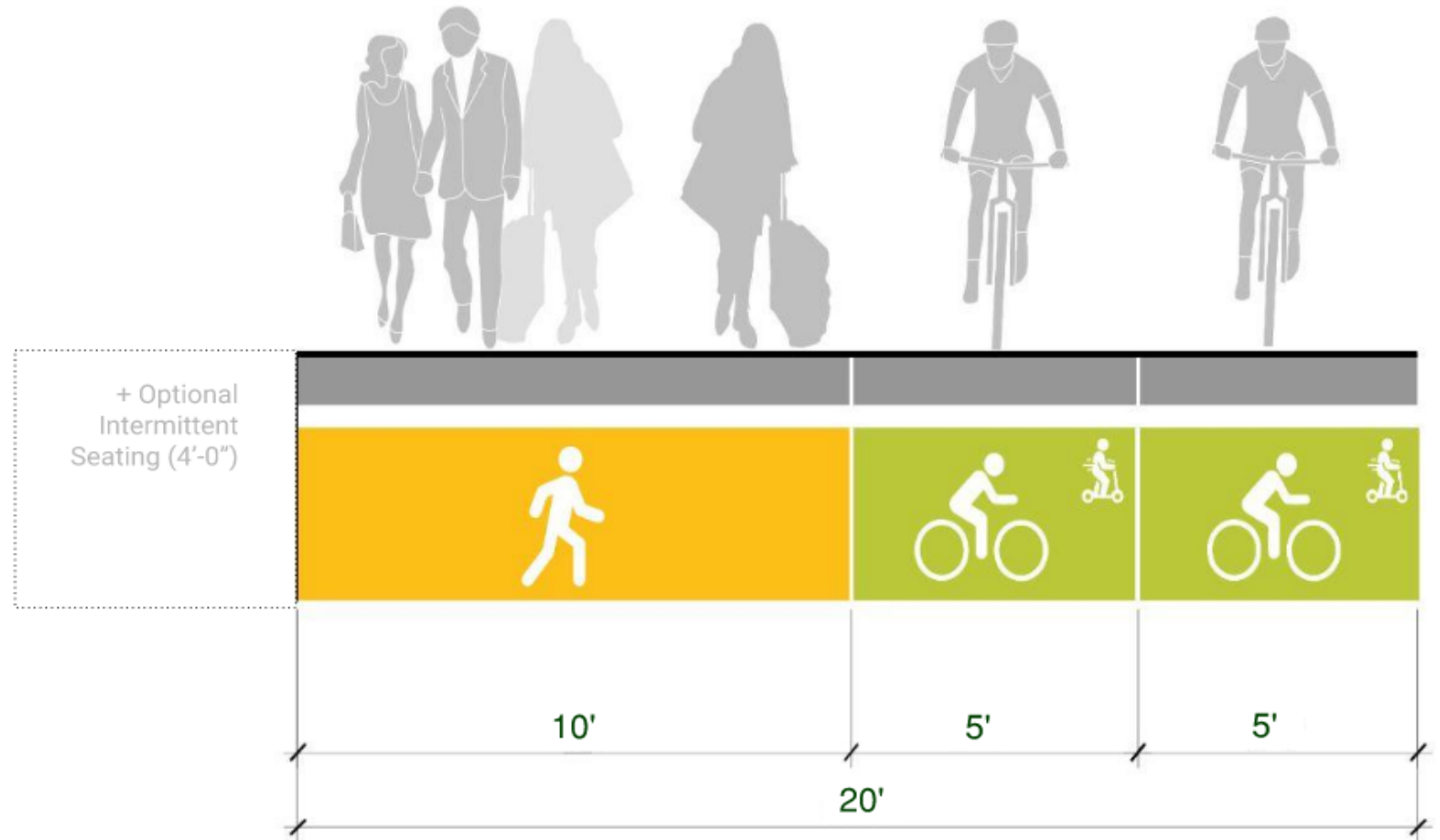


Interior Clearance: 24'-0"

Overall Width: 24'

Accommodates:

- 2 uni-directional cyclist paths
- 1 bi-directional pedestrian path
- Lane striping
- Intermittent Programmed Area As Desired



Bridge Concept Options

1. Girder



2. Box Beam



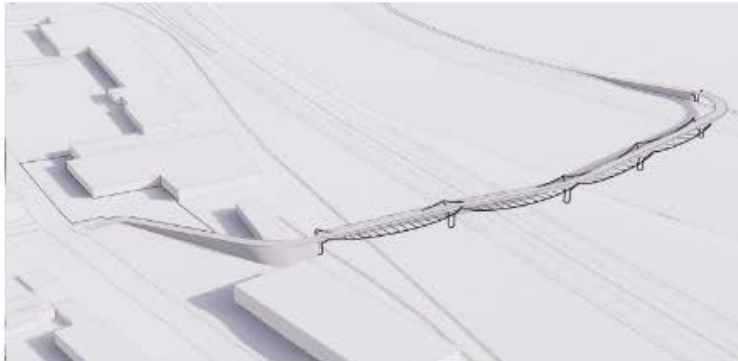
3. Truss



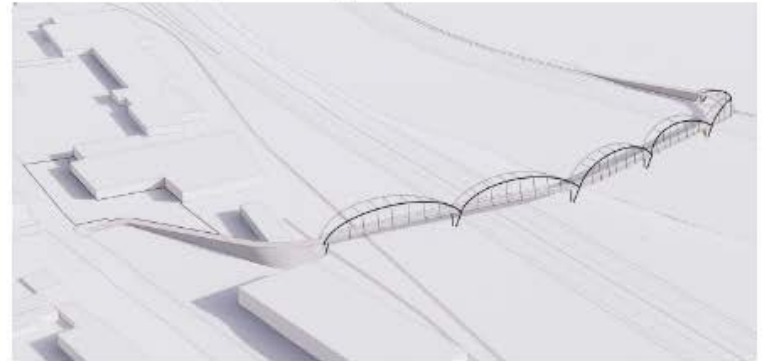
4. Cable Stayed

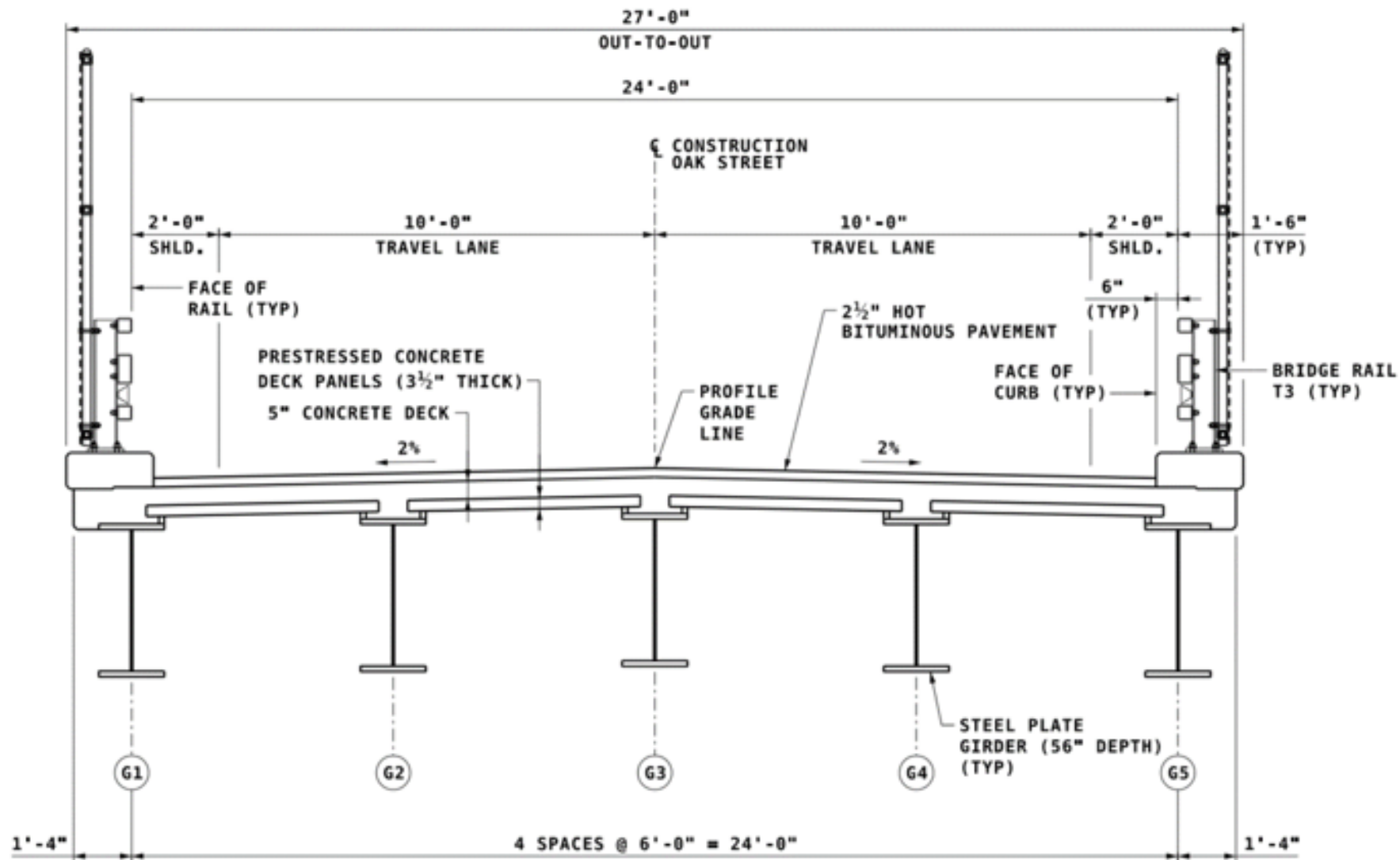


5. Stressed Ribbon



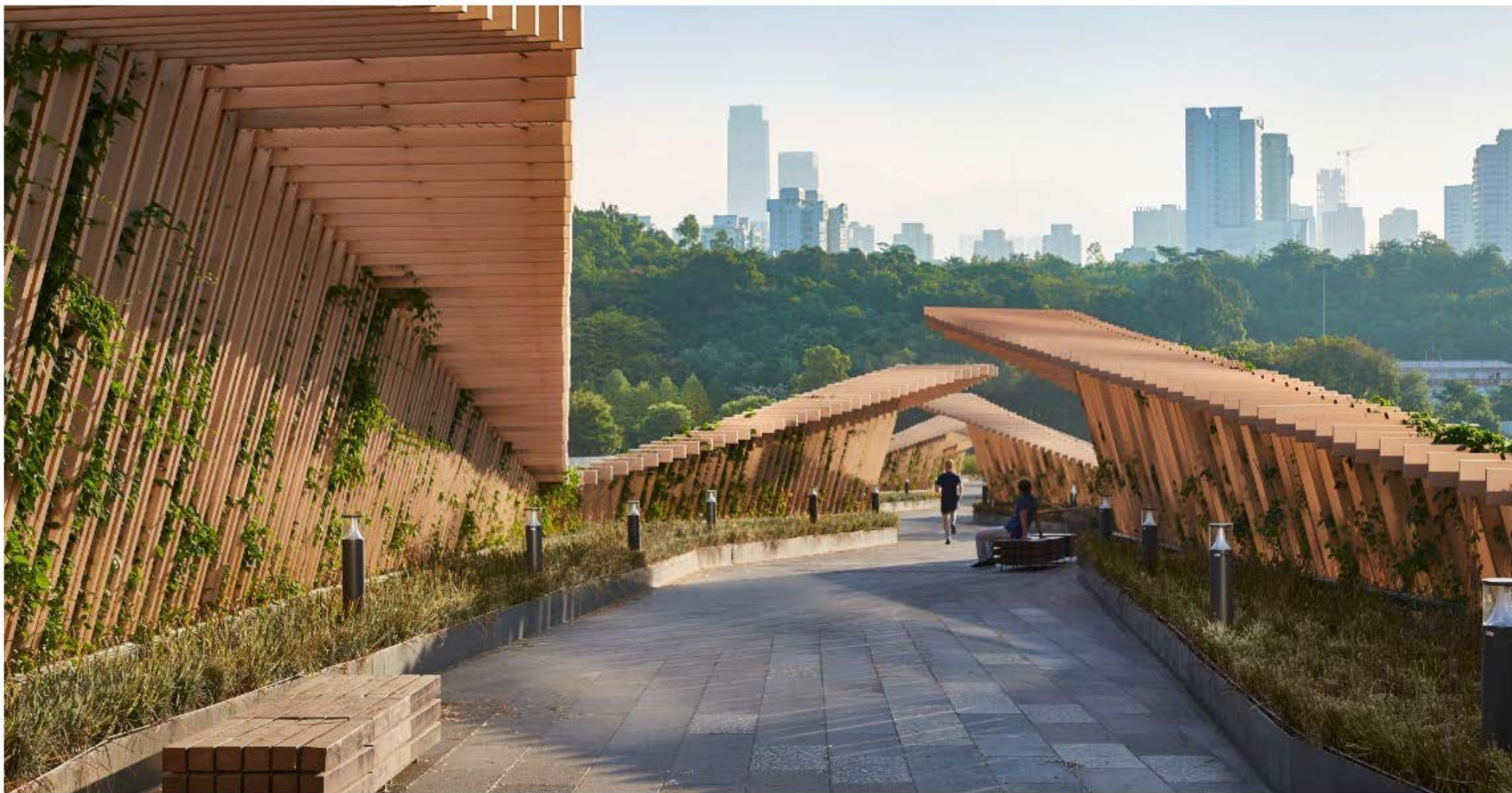
6. Arch (A & B)





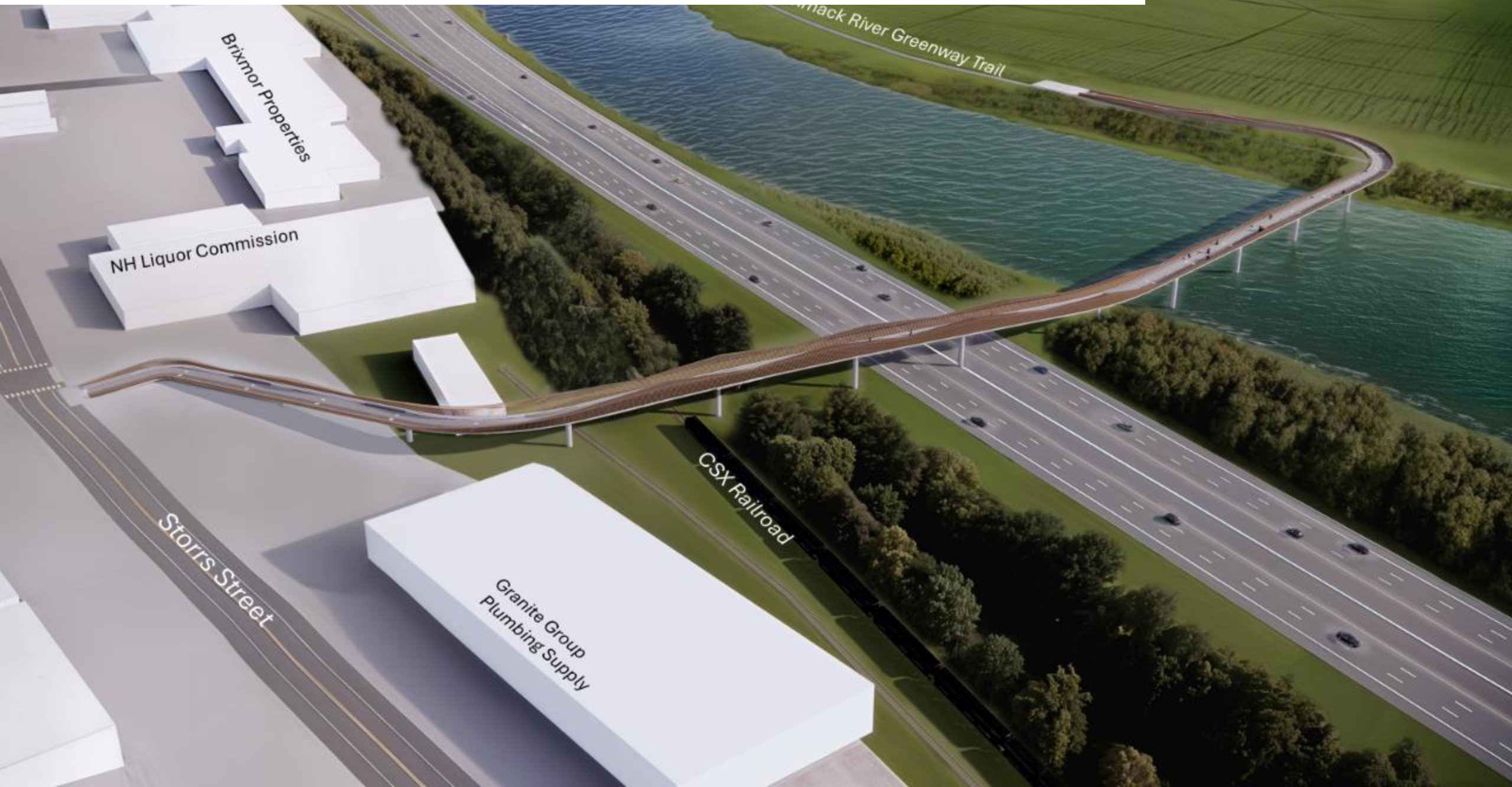
TYPICAL DECK SECTION

(DIAPHRAGMS NOT SHOWN)



Shenzhen, Guangdong, China

■ Alternative 1 (Southern River Crossing) Architectural Renderings



■ Alternative 1 (Southern River Crossing) Architectural Renderings



■ Alternative 1 (Southern River Crossing) Architectural Renderings

















An aerial architectural rendering of a waterfront park deck. The deck is a long, narrow strip of land extending from a multi-lane highway on the left towards a body of water on the right. It features a paved walkway with a brick border, a grassy area, and a seating area with several white umbrellas and tables. A small white building is also visible. The deck is supported by concrete pillars over the water. The surrounding area includes trees and a parking lot.

Deck Park Area = 18,000 SF (0.4 Acre)

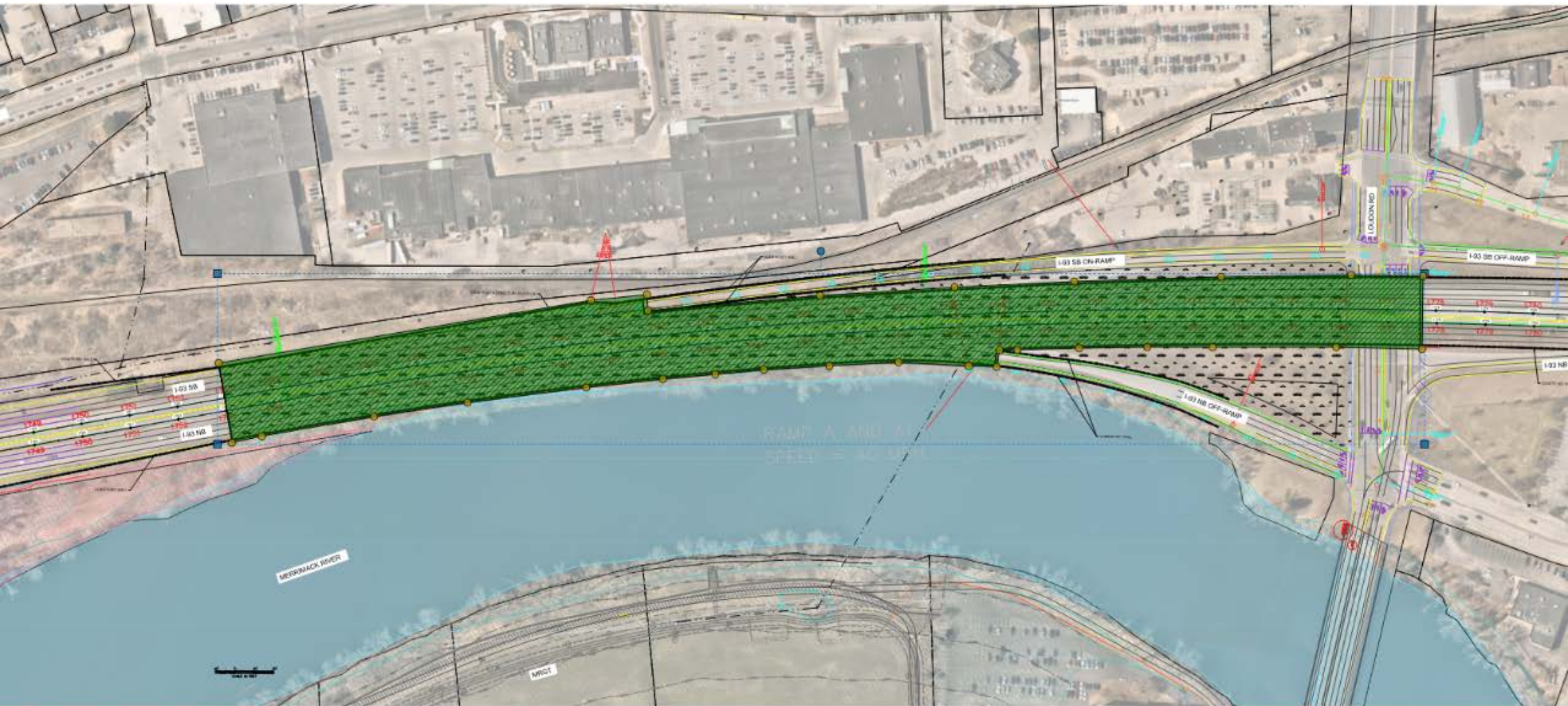
Comparable to:

- Eagle Sq. (0.43 Ac)
- Fletcher/Murphy Play Lot (0.48 Ac)
- McKee Sq Park (0.55 Ac)

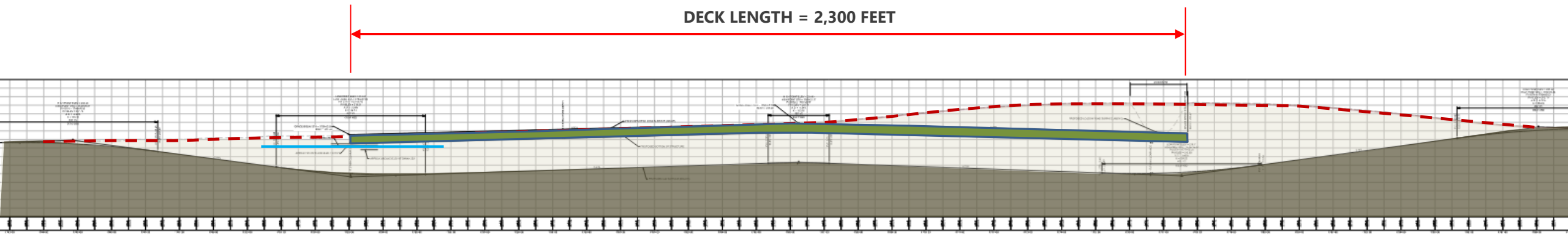




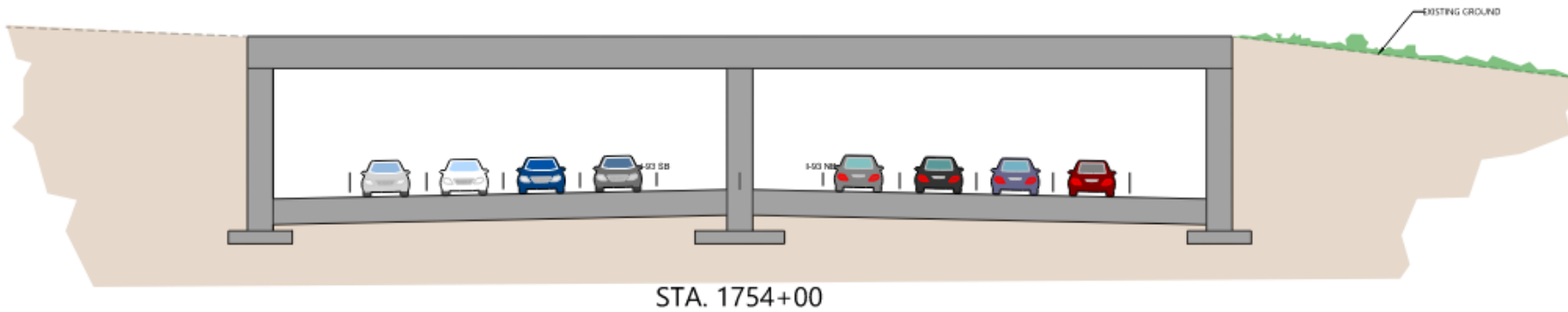
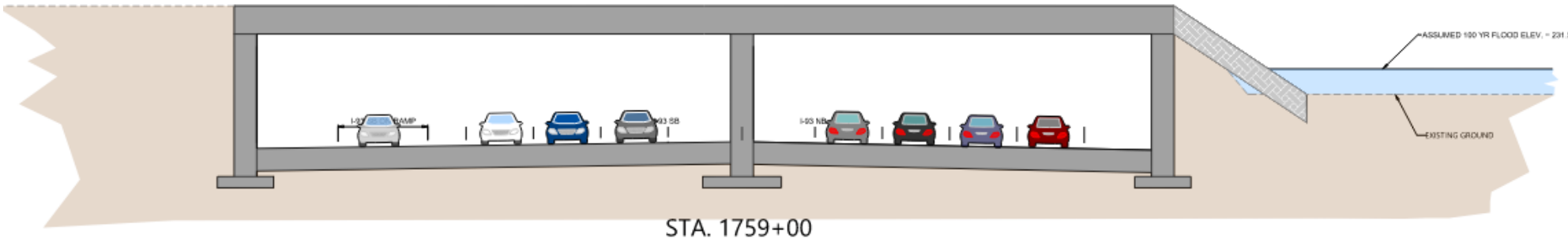
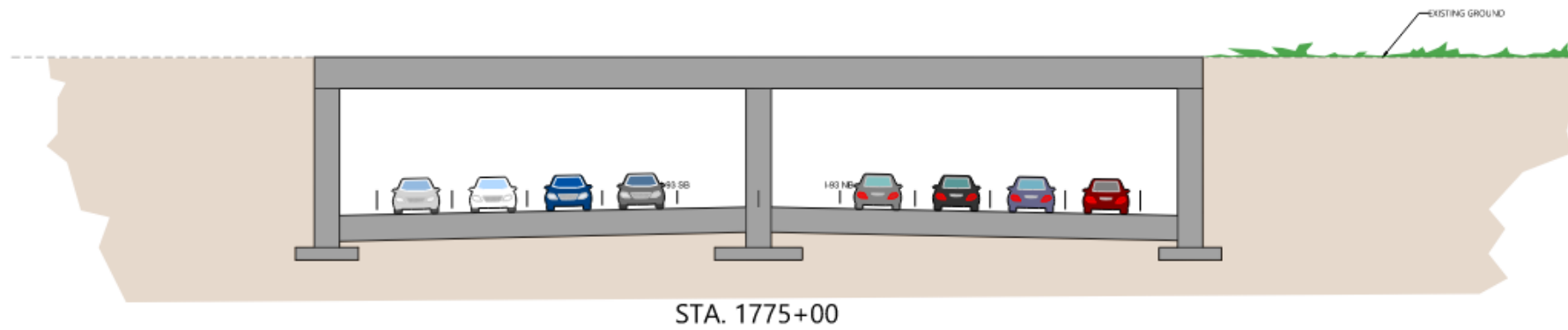
■ Alternative 3 - Depress I-93 / Add Expansive At-Grade Deck Park



- Alternative 3 - Depress I-93 / Add Expansive At-Grade Deck Park



■ Alternative 3 - Depress I-93 / Add Expansive At-Grade Deck Park



Alternative 1 – Southern Bridge Costs

	Area	Units	Unit Cost		Amount
Bridge Structure Costs	34,700	S.F.	\$ 1,150.00	\$	39,905,000.00
Approach Costs	22,000	S.F.	\$ 300.00	\$	6,600,000.00
			Subtotal	\$	46,505,000.00
Architectural Amenities			15%	\$	6,980,000.00
Right-of-Way			(Say)	\$	200,000.00
Design, Permitting, and Construction Services			20%	\$	9,301,000.00
			Subtotal	\$	62,990,000.00
Contingencies			20%	\$	12,600,000.00
			TOTAL	\$	75,590,000.00

Alternative 2 – Southern Bridge and Deck Park Costs

	Area	Units	Unit Cost		Amount	
Bridge Structure Costs	34,700	S.F.	\$	1,150.00	\$	39,905,000.00
Deck Park Addition	18,000	S.F.	\$	1,200.00	\$	21,600,000.00
Approach Costs	22,000	S.F.	\$	300.00	\$	6,600,000.00
			Subtotal		\$	68,105,000.00
Architectural Amenities			20%		\$	13,620,000.00
Right-of-Way			(Say)		\$	200,000.00
Design, Permitting, and Construction Services			20%		\$	13,621,000.00
			Subtotal		\$	95,550,000.00
Contingencies			20%		\$	19,110,000.00
			TOTAL		\$	114,660,000.00

Next Steps

- Present to City Council
- Summarize Findings in Report

Public Discussion, Please Share Your Thoughts

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