SOUTH STAMFORD ACCESSIBILITY & MNRR BRIDGE REPLACEMENT FEASIBILITY STUDY

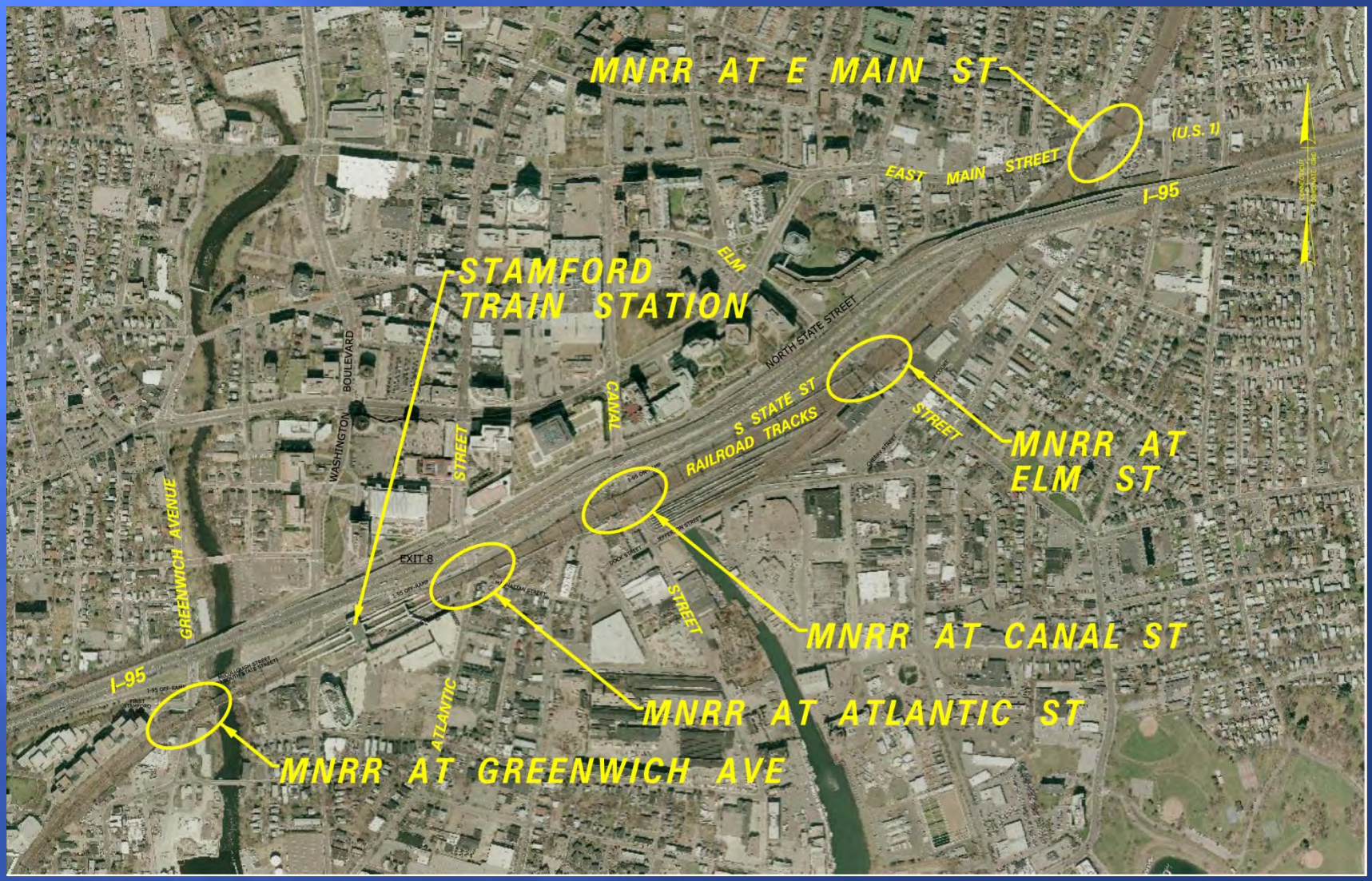
Presentation of the Preliminary Engineering Report

March 8, 2012

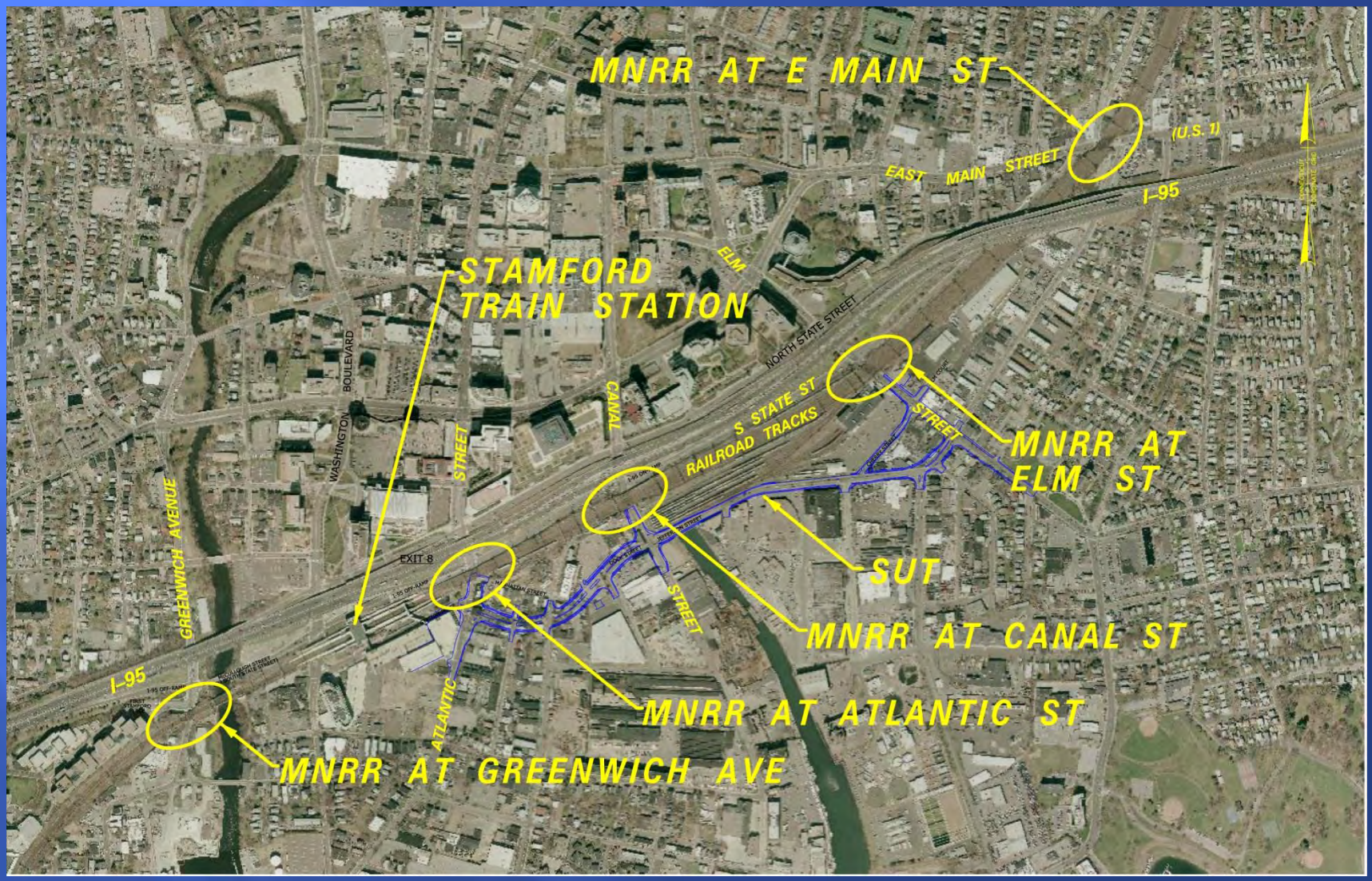
Background and Need

- Stamford Intermodal Transportation Center
- Development of the South End
- Complete Streets and Transit Access Projects
- Stamford Urban Transitway
- Transit Studies
  - BRT and Streetcar
- Stamford Station Parking Garage
- Potential I-95 Operational Lane
  - Northbound Exits 8 – 10

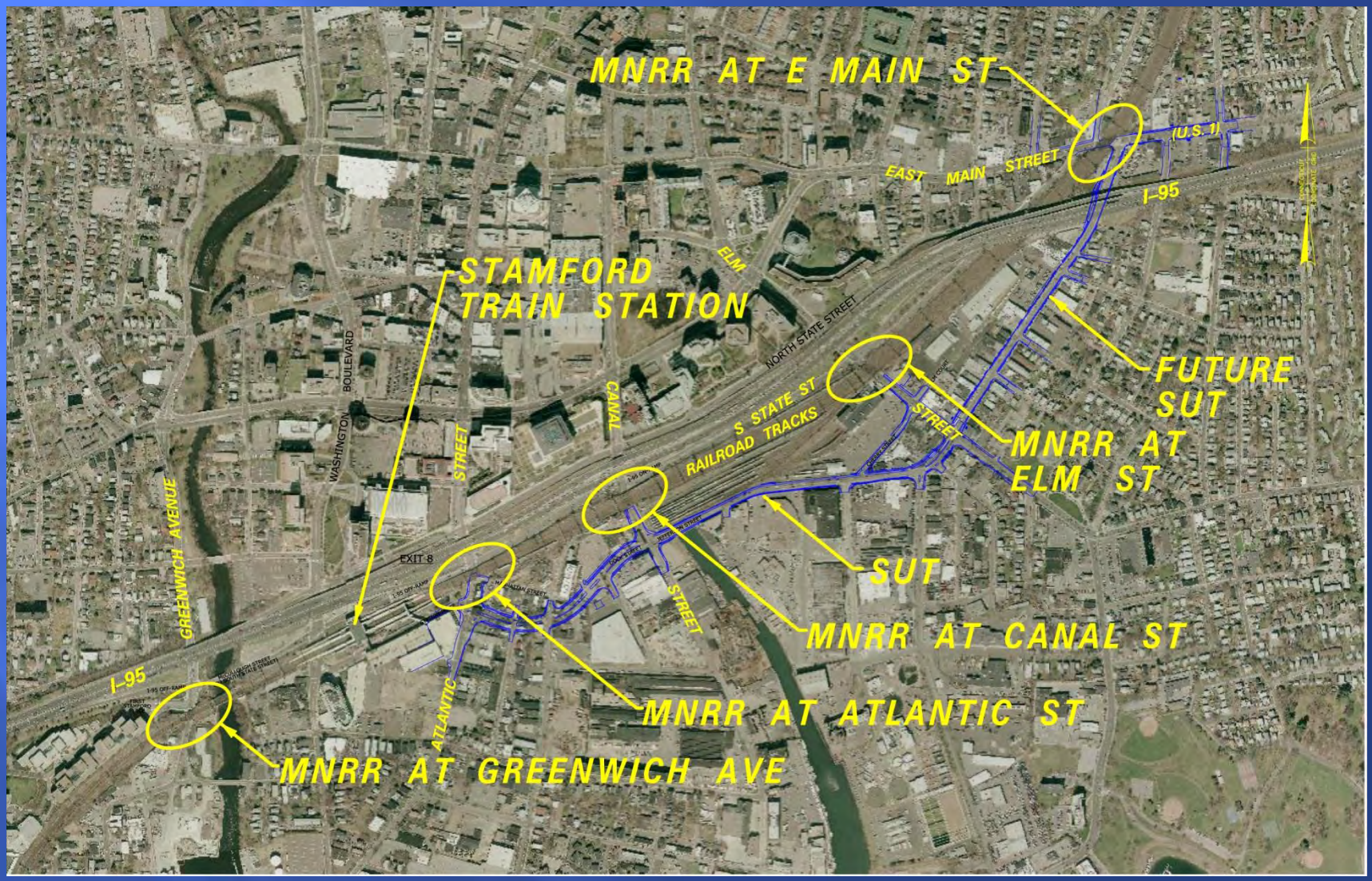
Project Area



Project Area



Project Area



Purpose for the Project

- Improve accessibility from the South End to the Stamford Train Station, Central Business District and I-95
- Add lanes under the bridges to improve traffic operations
- Increase vertical clearances
- Improve pedestrian safety and accessibility to Stamford Train Station
  - From the south side of the RR tracks to the northbound platform of Stamford Station
  - A continuous sidewalk along South State Street connecting Atlantic Street with the north side of Stamford Station
- Replace aging railroad bridges

Benefits

Beneficial Improvements	Greenwich Avenue	Atlantic Street	Canal Street	Elm Street	U.S. Rte. 1 (East Main St)
Increases Capacity	X	X	X	X	X
Reduces Queuing and Congestion	X	X	X	X	X
Improves Safety	X	X	X	X	X
Improves Vertical Clearance	X	X	X	X	X
Complements the SUT		X	X	X	X
Eliminates a Structurally Deficient Bridge	X	X	X	X	X
Provides Geometric Improvements at Intersecting Streets		X			
Improves Pedestrian Access to the Train Station		X			
Key Component to a Future Streetcar System		X			
Provides Designated Bike Lanes	X				X

Recent Bridge Strikes due to Low Vertical Clearance

Bridge Strikes per Calendar Year	Atlantic Street	Elm Street	U.S. Rte. 1 (East Main St)
2006	1	7	4
2007	0	7	0
2008	1	10	1
2009	1	5	4
2010	0	7	2
2011	7	9	3

Phase 1 Construction

Construct Atlantic, Elm and East Main Street Bridges together in one package

- These bridges represent the biggest pinch-points in the City
- These bridges work well together for MNRR Rail Operations
- Concurrent construction minimizes disruption to traveling public
- Cost savings realized with concurrent construction

Two Span vs. Three Span Bridges

- Two Span Replacement Bridges:
  - Reviewed in the Preliminary Engineering Study
  - Provide shorter span lengths and reduced superstructure depth
  - Reduces lowering of streets below to achieve vertical clearances
  - Center pier complicates maintaining traffic during construction
- Three Span Replacement Bridges:
  - Applies to Atlantic and Elm Streets only
  - Included in presentation tonight though not fully developed during Preliminary Engineering Study
  - Longer center span results in increased superstructure depth
  - Additional lowering of streets below to achieve vertical clearances
  - Allows more options for maintaining traffic during construction
  - Longer construction duration
  - More expensive to construct

Construction Impacts on Local Streets

- Two Span Replacement Bridges
  - Traffic will be maintained with reduced lanes at all locations with the exception of Atlantic Street
  - Atlantic Street will be closed to traffic during construction
  - Elm Street will be one lane in one direction during construction
- Three Span Replacement Bridges
  - Traffic will be maintained with reduced lanes at all locations
  - One lane in each direction maintained at all bridges during construction

Construction Impacts on Local Streets

- I-95 N.B. Exit 8 ramp will be closed to traffic for approximately 6 months, Exit 7 will be the designated detour
- A Traffic Management Plan will be developed as the project design progresses
  - Pedestrian detours will be developed whenever a sidewalk under a bridge is closed

Construction Impacts to Metro-North

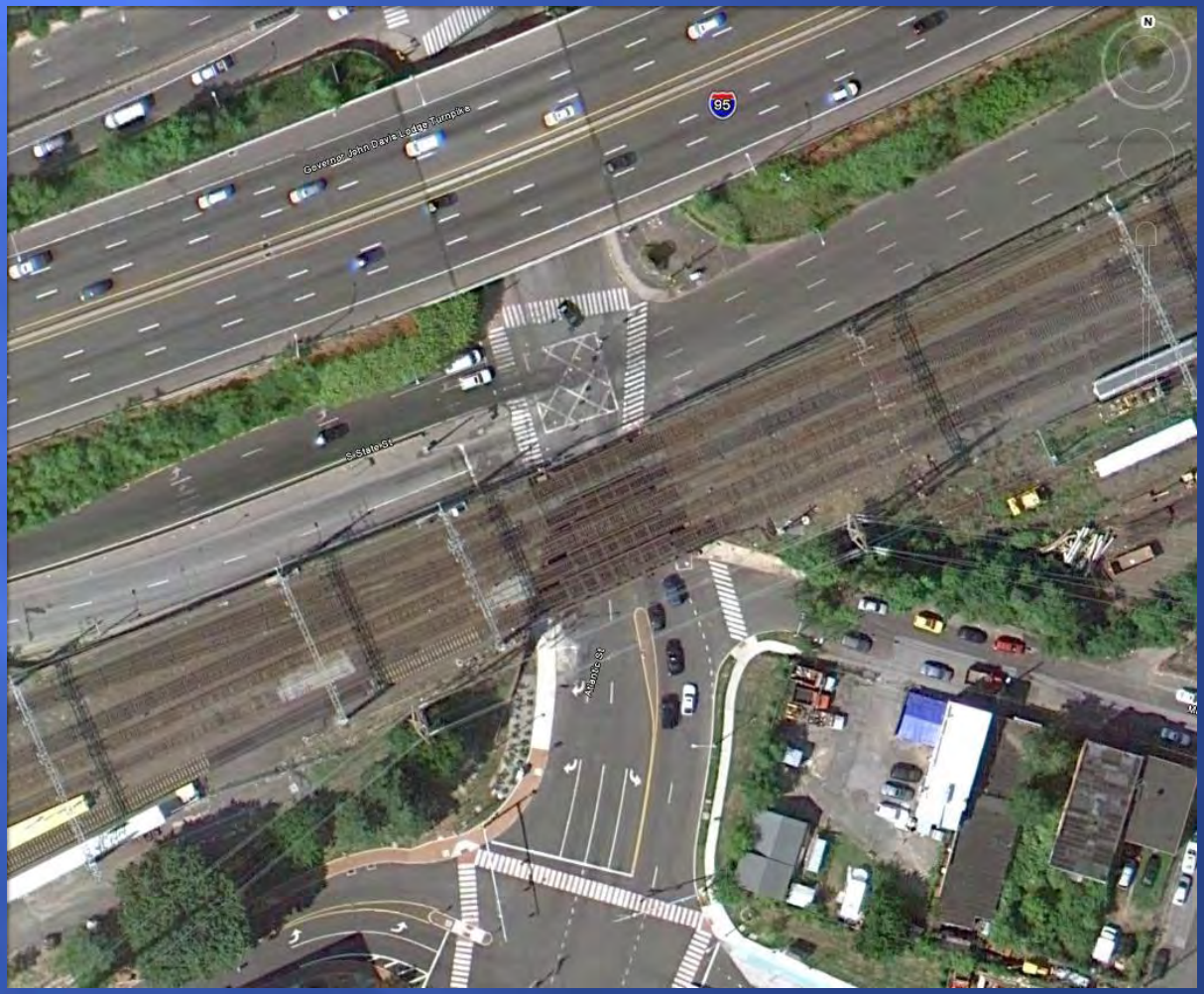
- MNRR tracks will be taken out of service during bridge replacement, one track at a time
- The Stamford Station platforms will be impacted during the replacement of the Atlantic Street bridge
  - The normal routing of trains into the station will need to be adjusted which may have the potential for minor schedule adjustments
  - Platforms will still be accessible via bridge plates
- Noroton Heights, Darien and Rowayton Station platforms will be impacted during the replacement of Elm Street and East Main Street bridges
  - Platforms will still be accessible via bridge plates
- Rail grades and alignments to remain unchanged

Phase 1 Construction Costs[1,2]

	Costs (2012)	Costs (2017)[3]
Atlantic Street	$76,500,000	$97,600,000
East Main Street	$54,100,000	$69,100,000
Elm Street	$63,800,000	$81,400,000
Total	$194,400,000	$248,100,000
Constructing all 3 Bridges at once	$181,400,000	$231,600,000
Net Savings	$ 13,000,000	$ 16,500,000

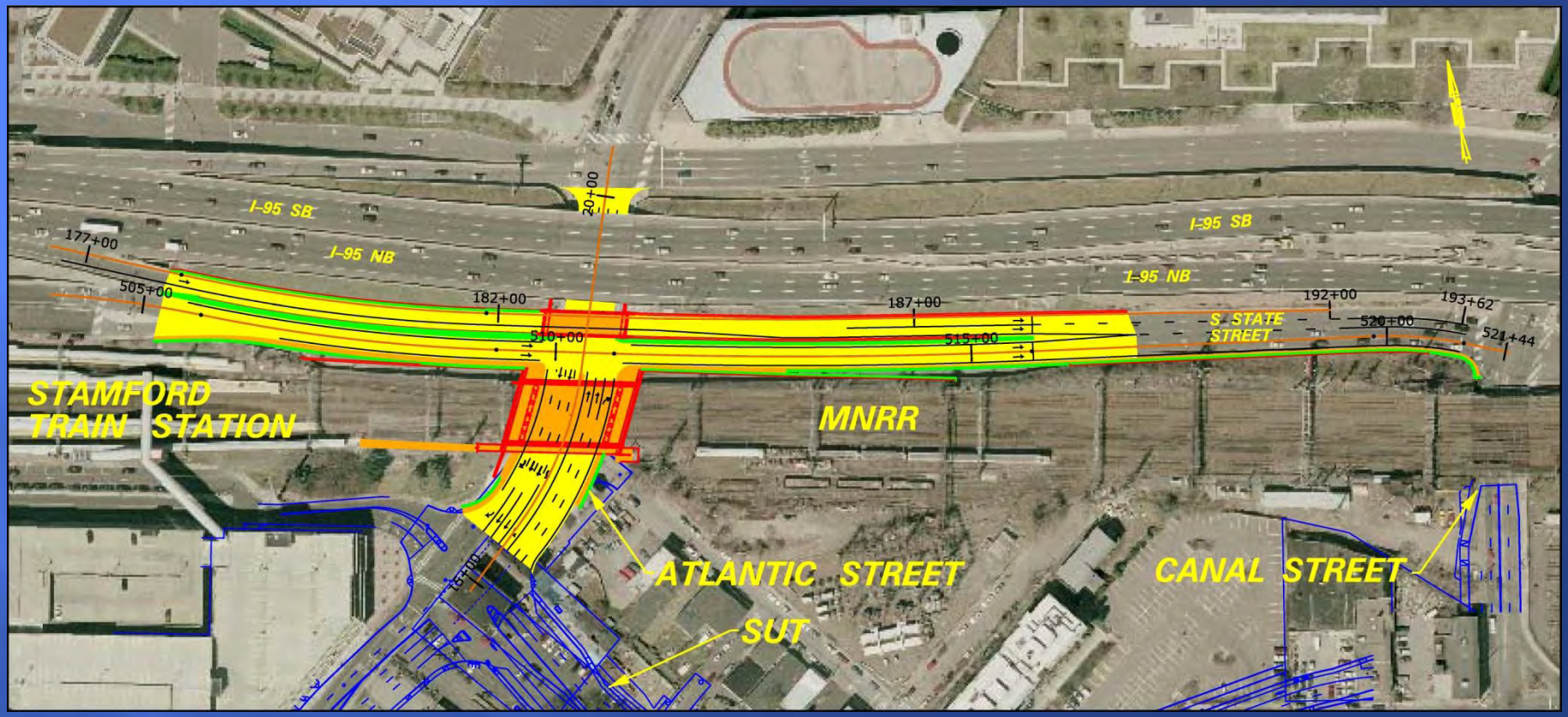
1. Not including environmental or R.O.W. costs.
2. Costs reflect 3 span alternates at Atlantic and Elm Streets.
3. 2017 is the mid-point of construction for an assumed construction start date of 2015.

Atlantic Street
Overview

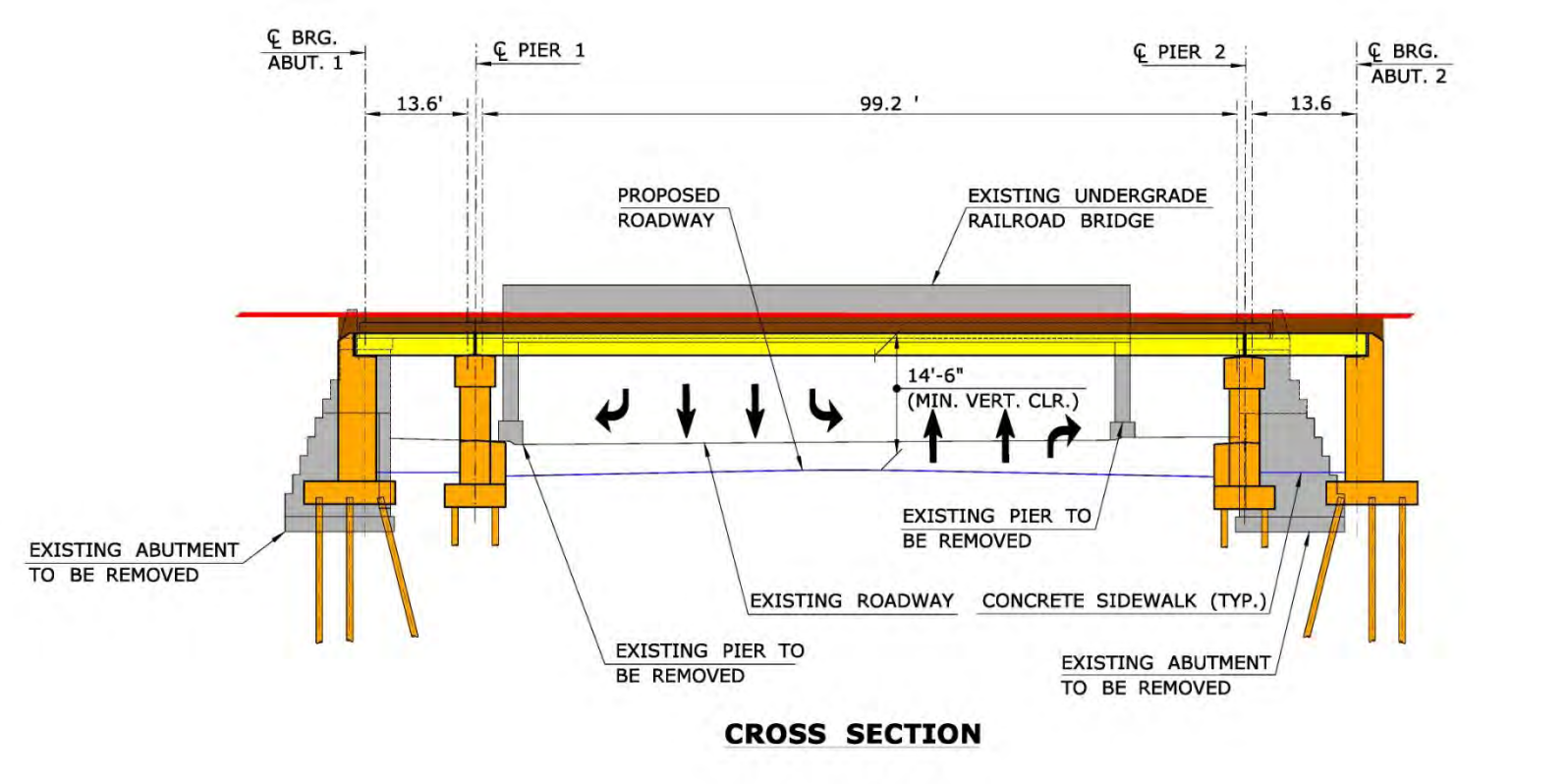


Atlantic Street
Overview

Atlantic Street
Proposed Three Span Improvements



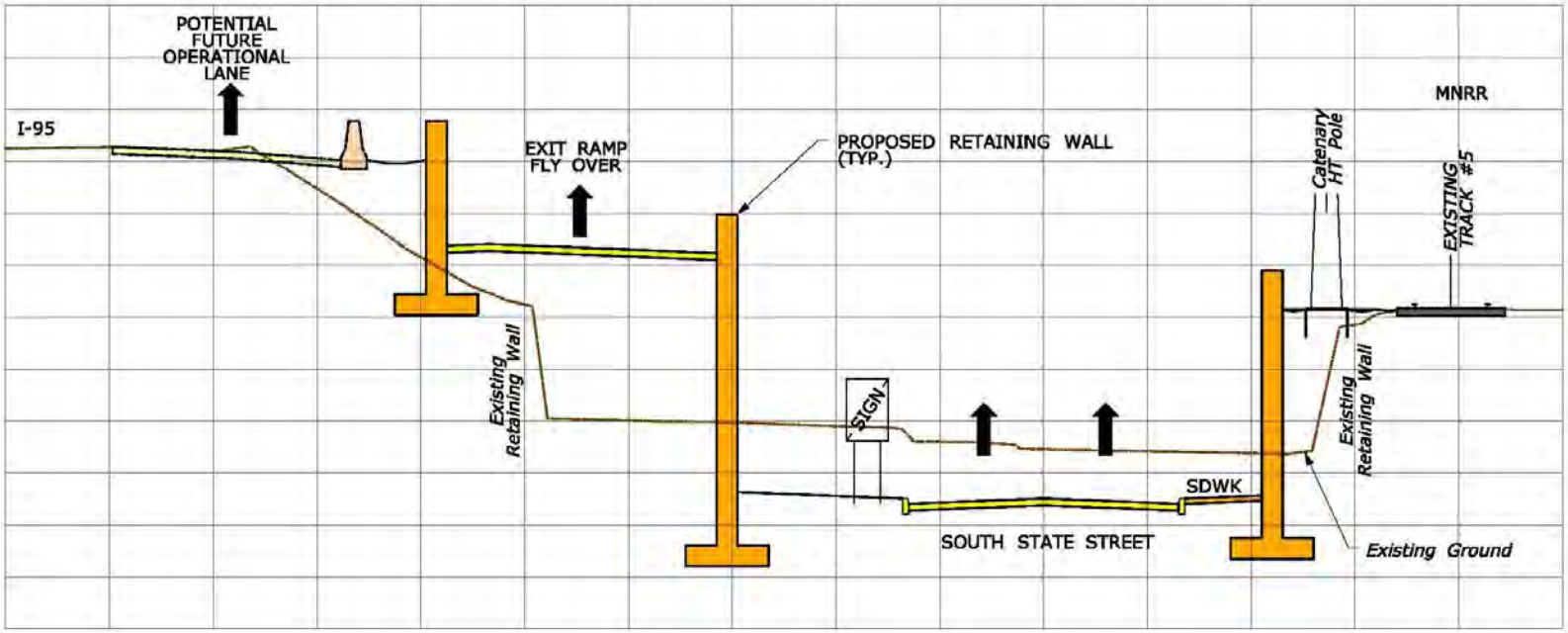
Atlantic Street
Three Span Cross Section



Proposed Improvements

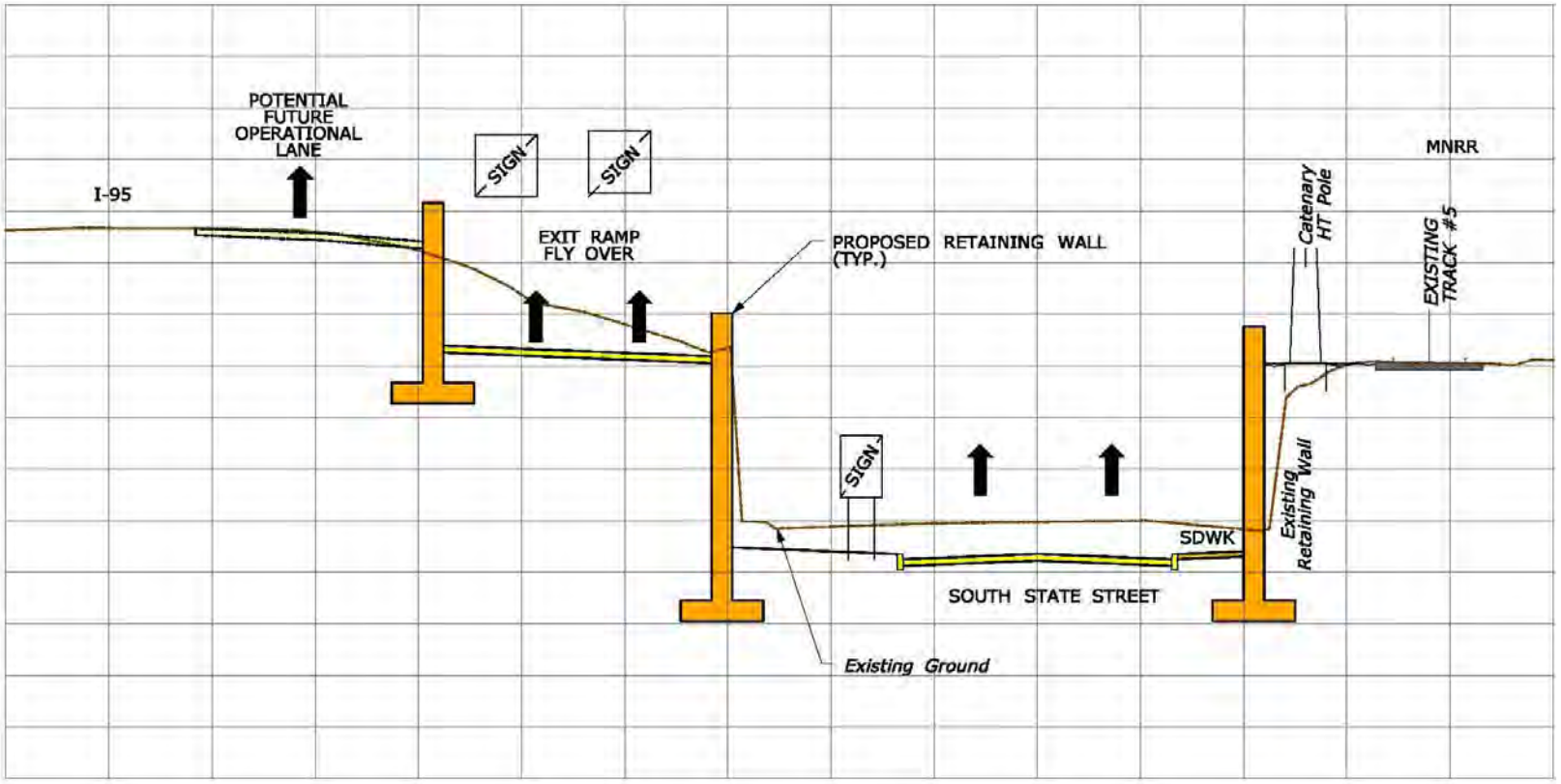
- 3 – 11′ wide N.B. lanes (2 through lanes, 1 multi-purpose lane)
- 4 – 11′ wide S.B. lanes (2 through lanes, 2 multi-purpose lane)
- 2′ shoulders (inside and outside)
- 8′ sidewalks (both sides)

South State Street
Cross Section



CRITICAL CROSS SECTION
STATION 509+00

South State Street
Cross Section

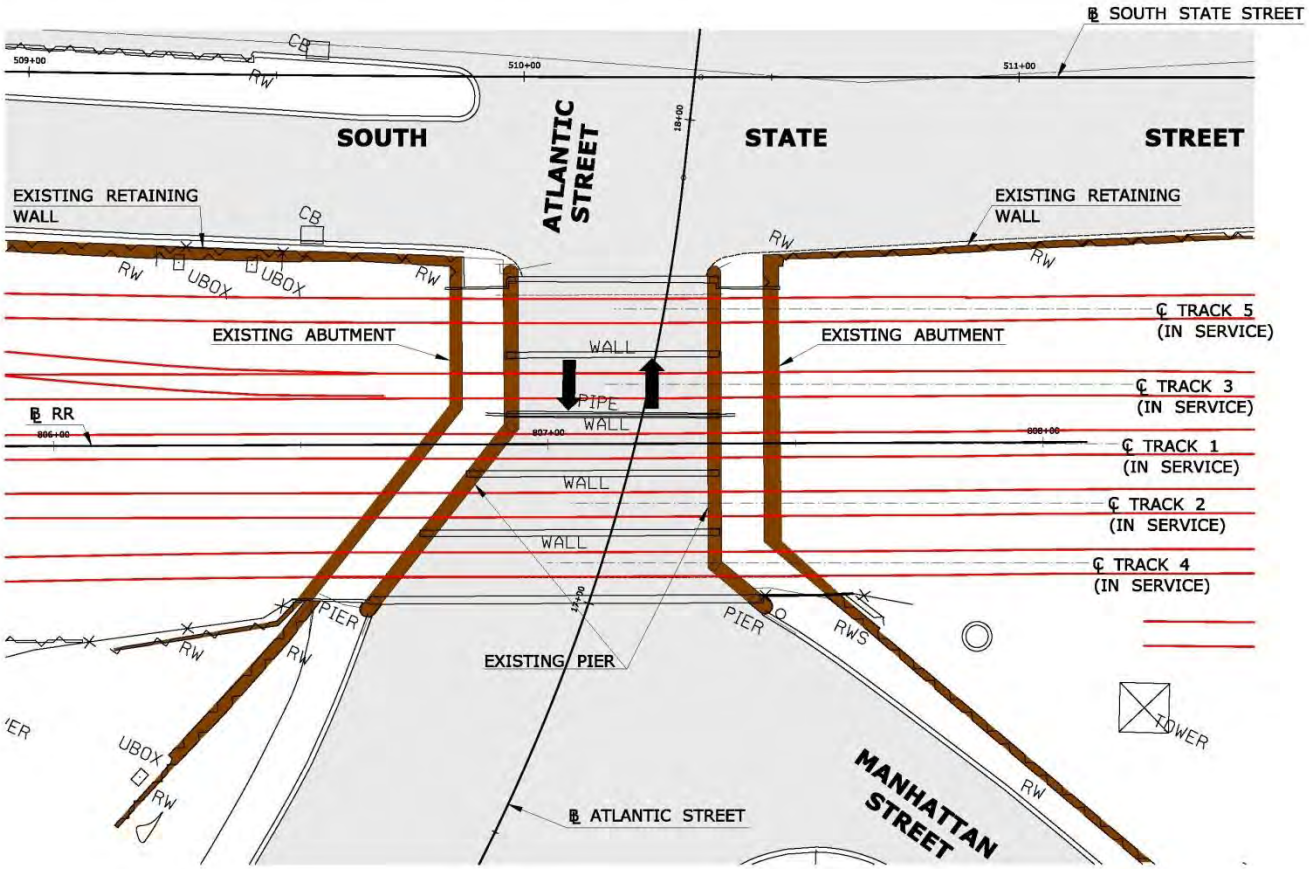


CRITICAL CROSS SECTION
STATION 511+50

Atlantic Street would need to be closed during Two Span Construction

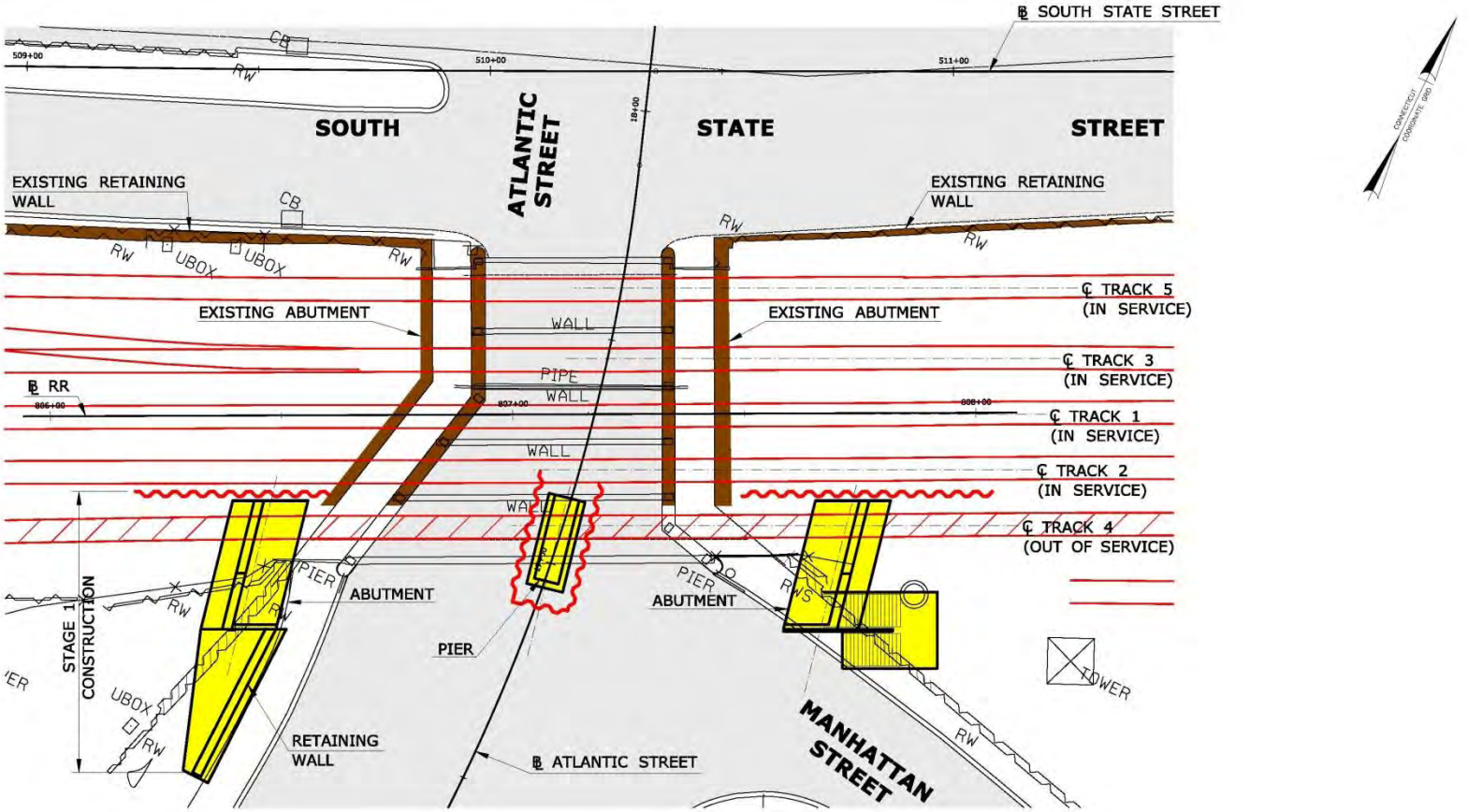
- The proposed geometric alignment of Atlantic Street was skewed to the existing bridge
- The proposed bridge utilized a center pier
  - reduced the superstructure depth
  - minimized the lowering of the roadway
- The proposed pier was skewed along the alignment
  - The skewed pier occupied a wider section of existing roadway than if it were not skewed
  - The required work zone did not allow adequate space to maintain a lane during construction
- Two Span would have required closure of Atlantic Street for the duration of construction

Atlantic Street
Existing Conditions



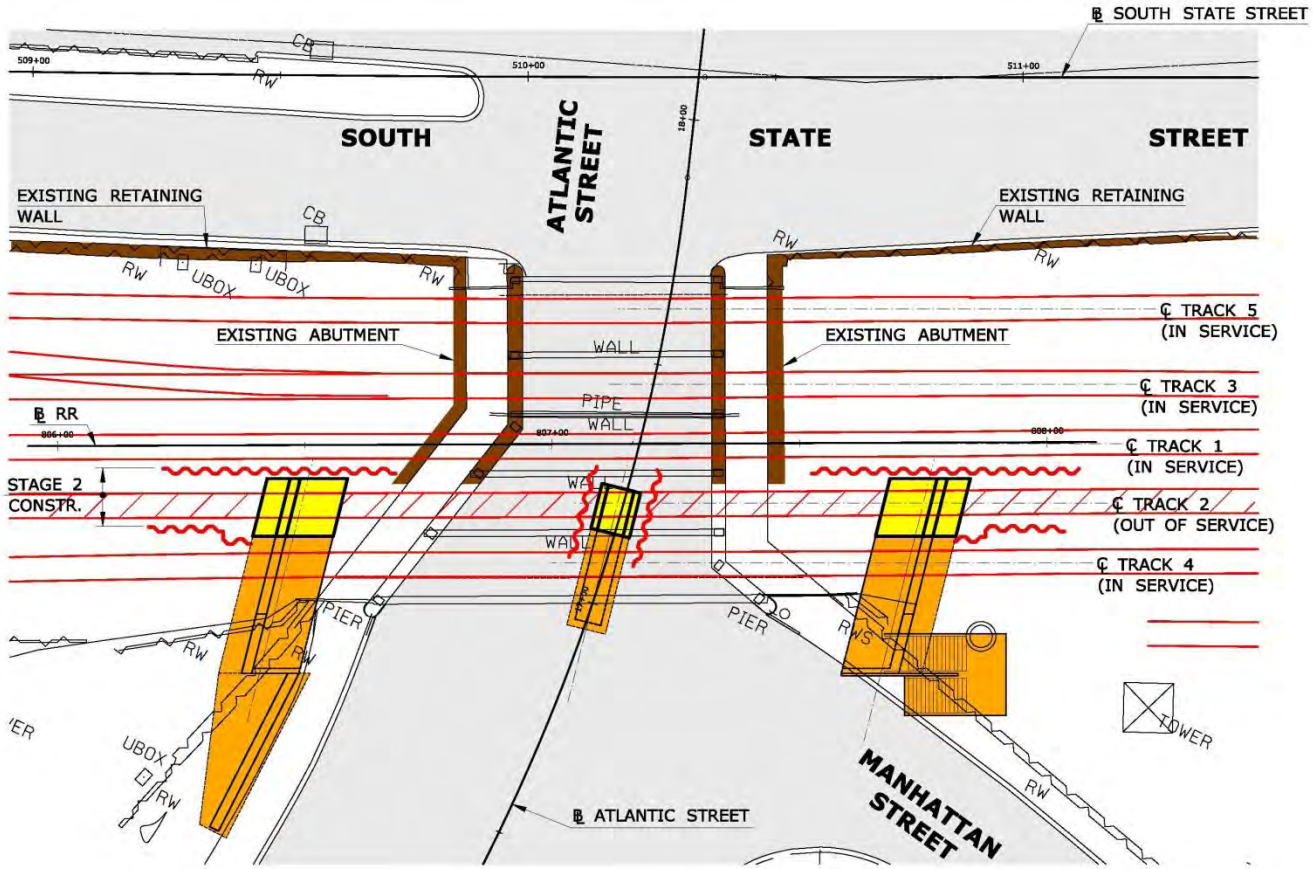
EXISTING CONDITION

Atlantic Street
Stage 1 Construction



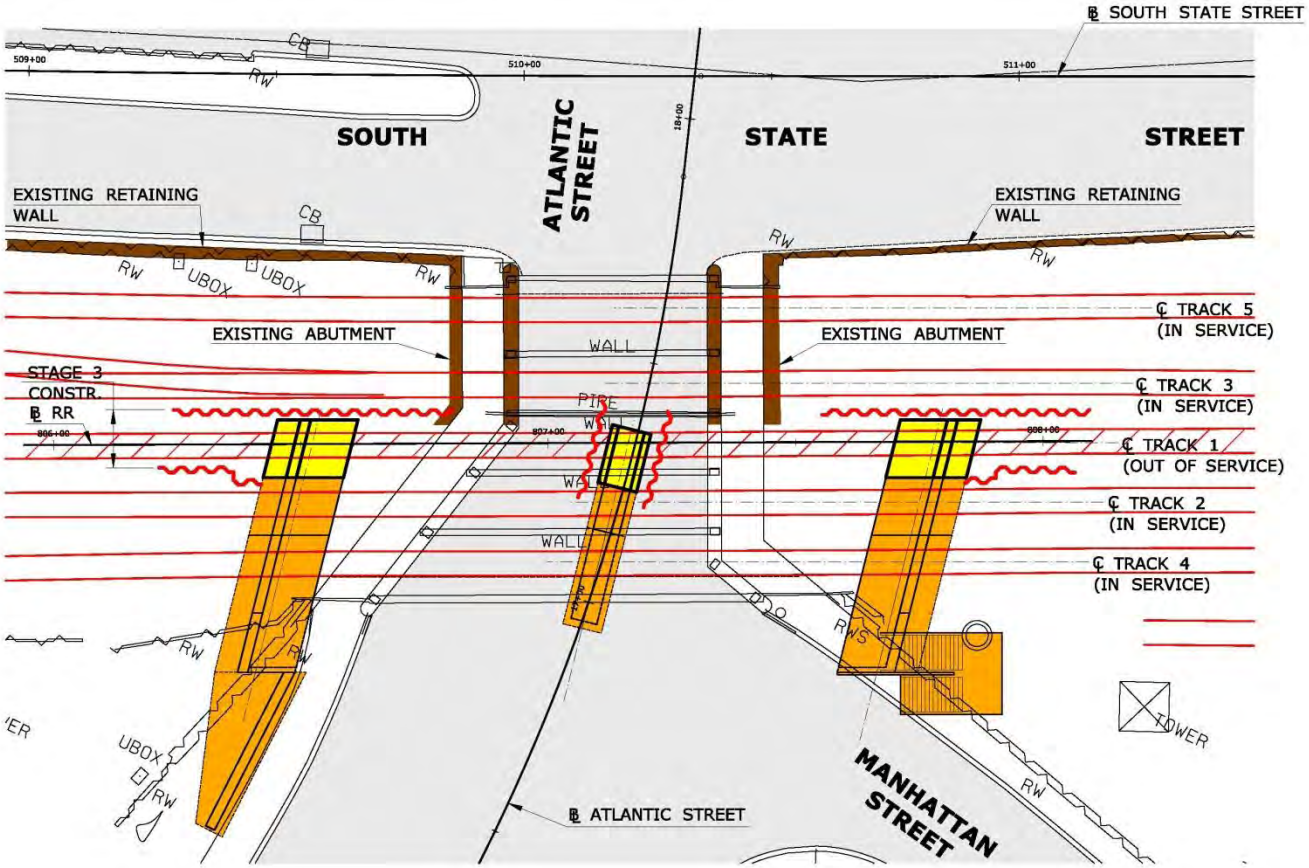
STAGE 1 CONSTRUCTION PLAN

Atlantic Street
Stage 2 Construction



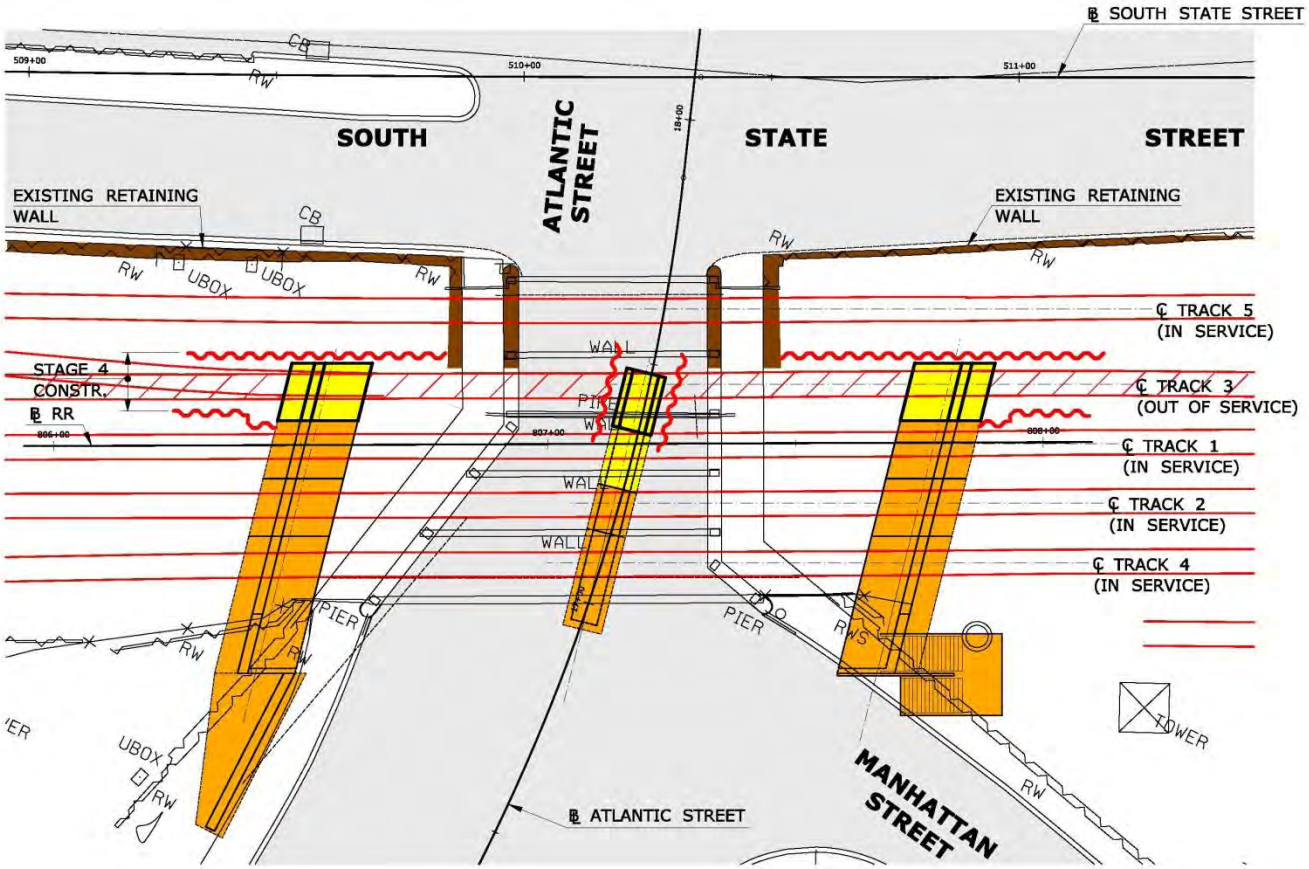
STAGE 2 CONSTRUCTION PLAN

Atlantic Street
Stage 3 Construction



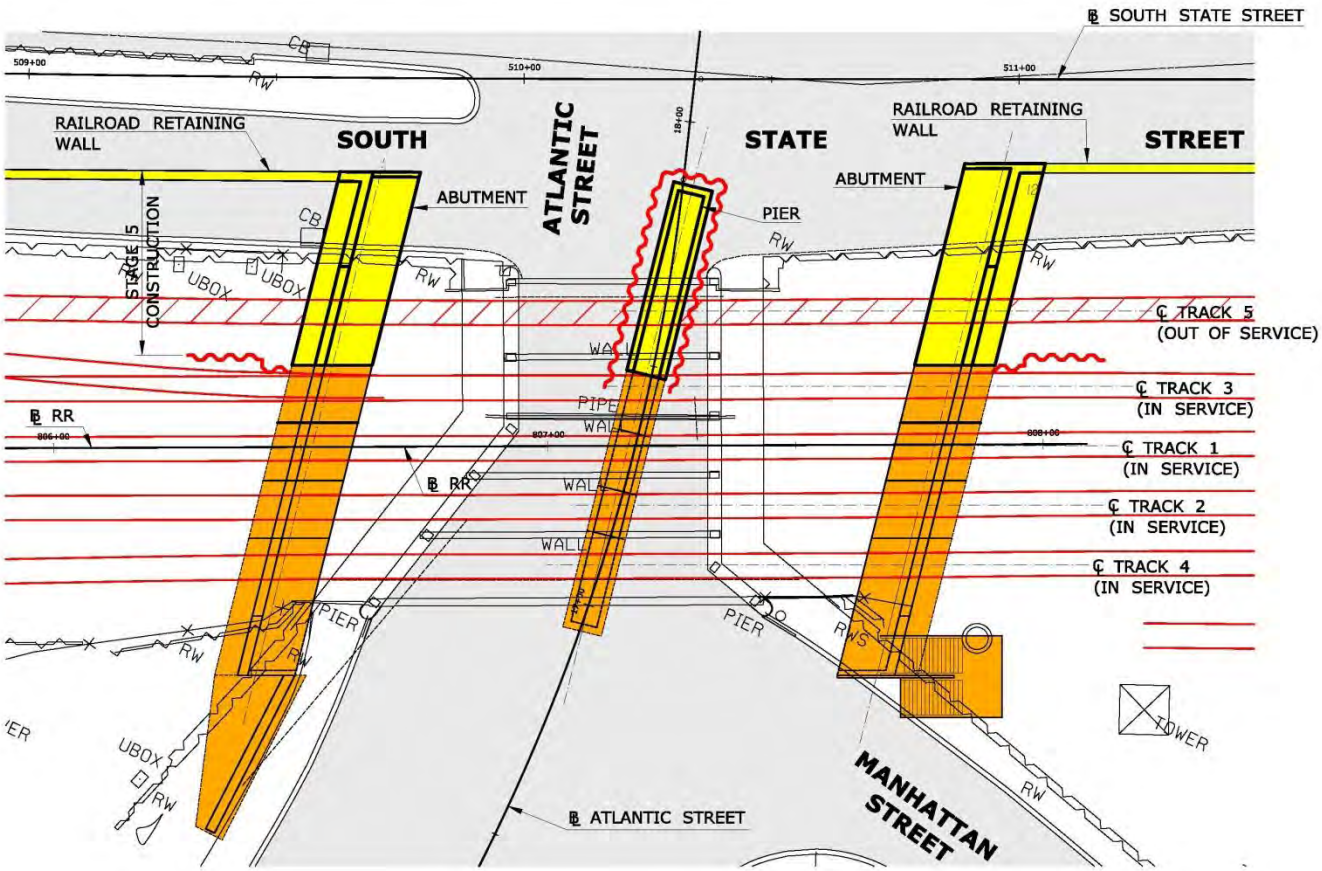
STAGE 3 CONSTRUCTION PLAN

Atlantic Street
Stage 4 Construction



STAGE 4 CONSTRUCTION PLAN

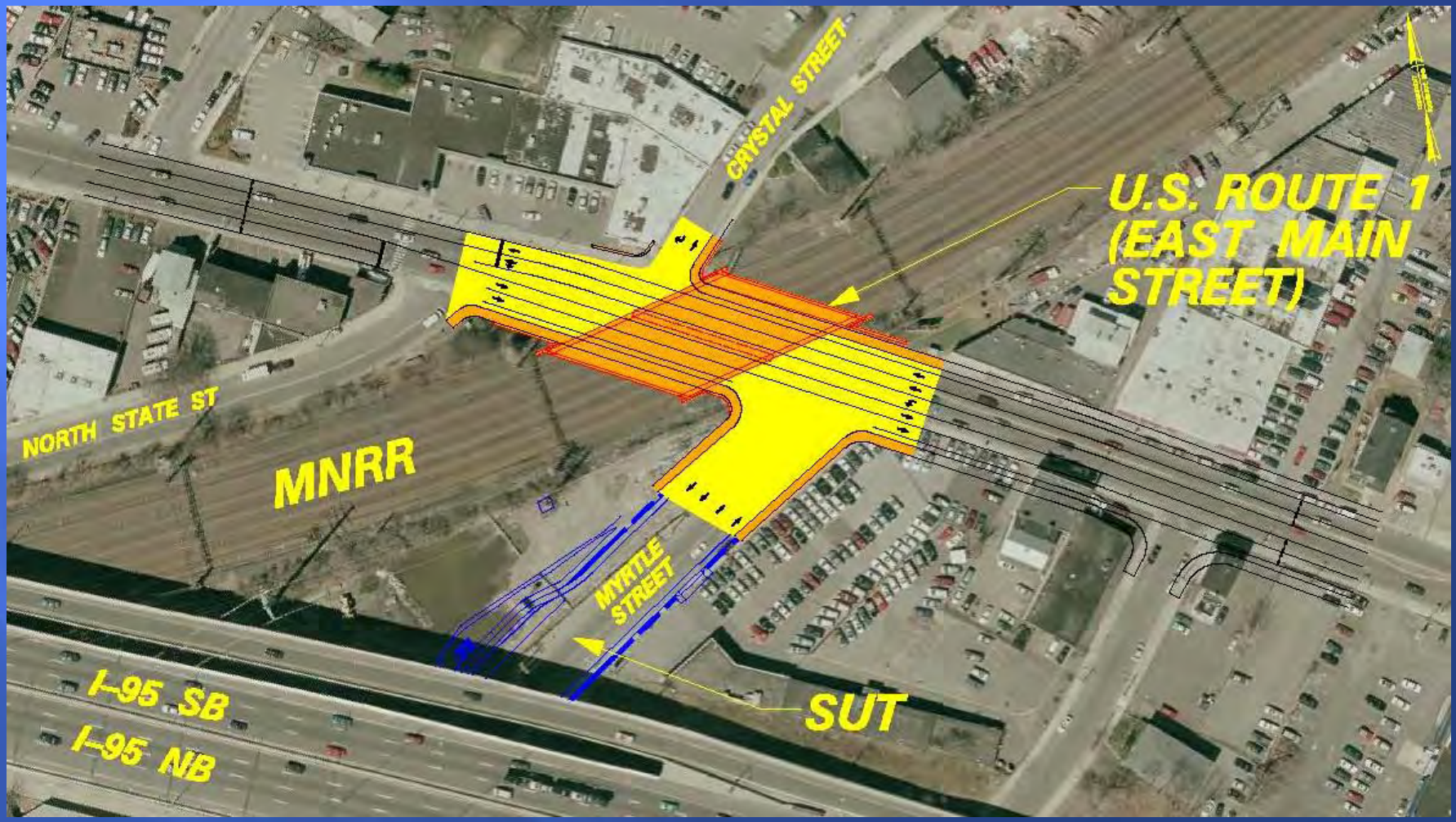
Atlantic Street
Stage 5 Construction



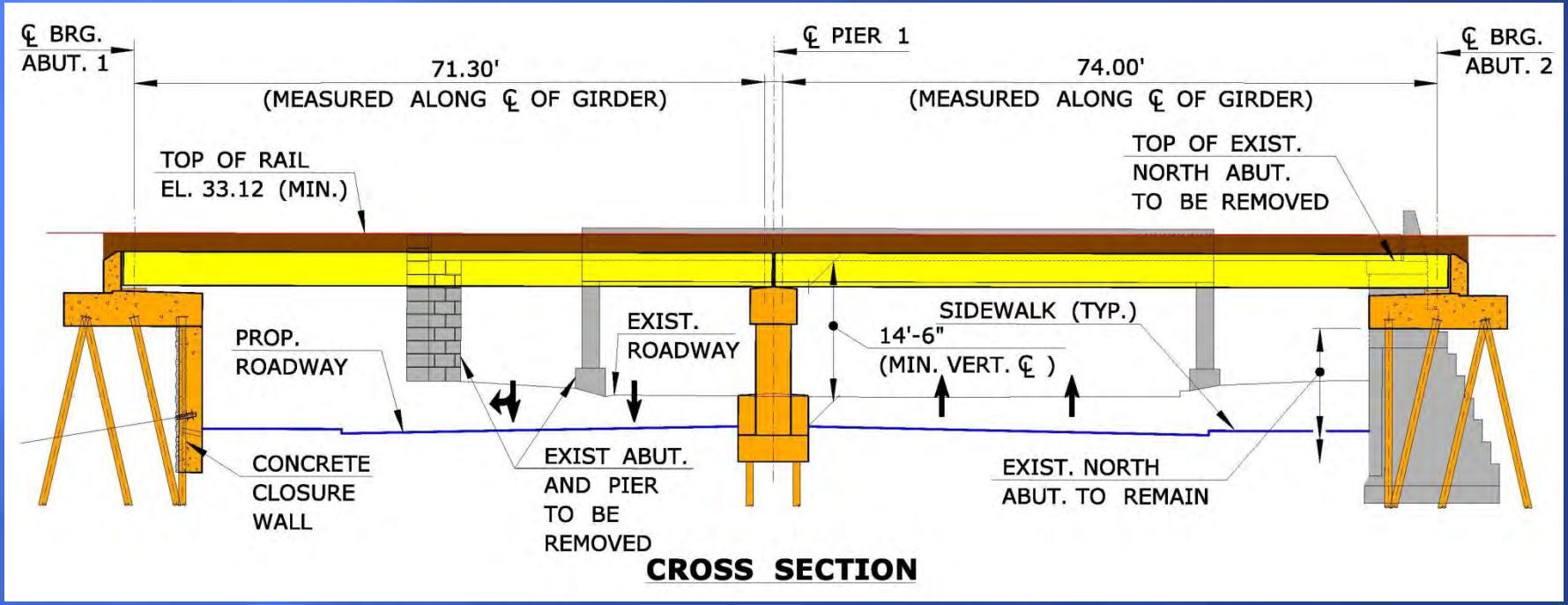
STAGE 5 CONSTRUCTION PLAN

East Main Street
Overview

East Main Street
Proposed Improvements



East Main Street
Cross Section

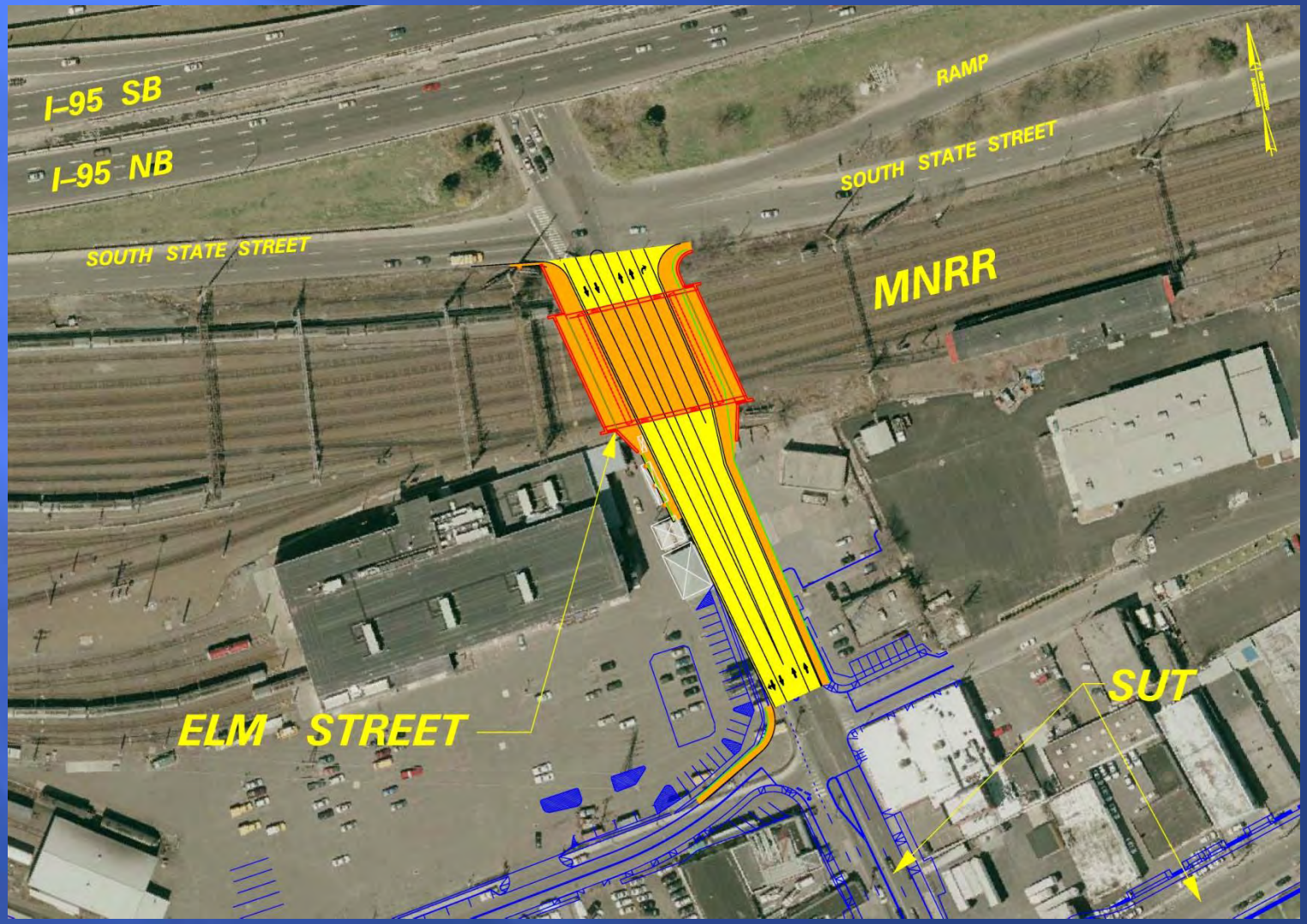


Proposed Improvements

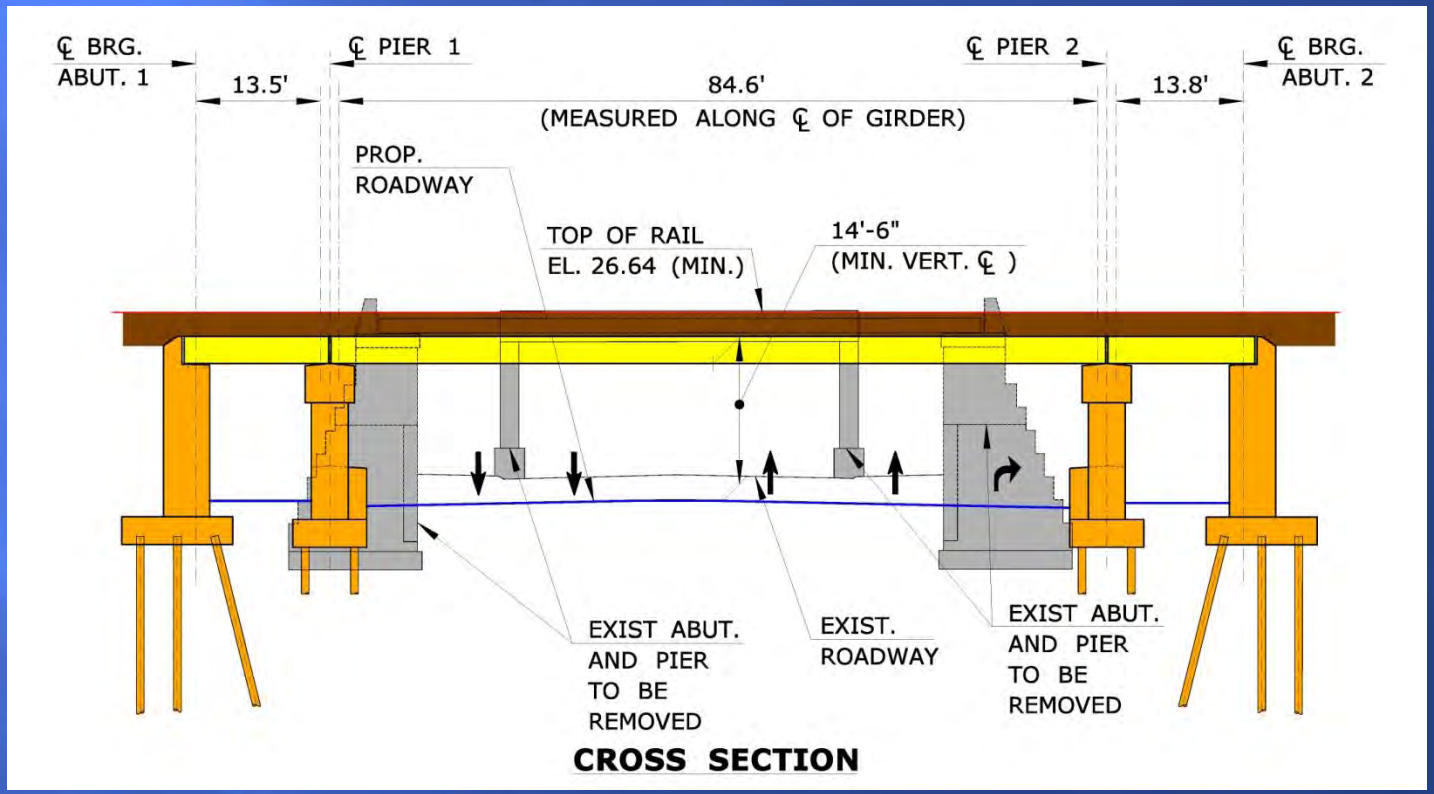
- 2 – 11′ wide N.B. lanes (2 through lanes)
- 2 – 11′ wide S.B. lanes (2 through lanes)
- 2′ shoulders (inside and outside)
- 5′ bike lanes (both sides)
- 8′ sidewalks (both sides)

Elm Street
Overview

Elm Street
Proposed Three Span Improvements



Elm Street
Three Span Cross Section



Proposed Improvements

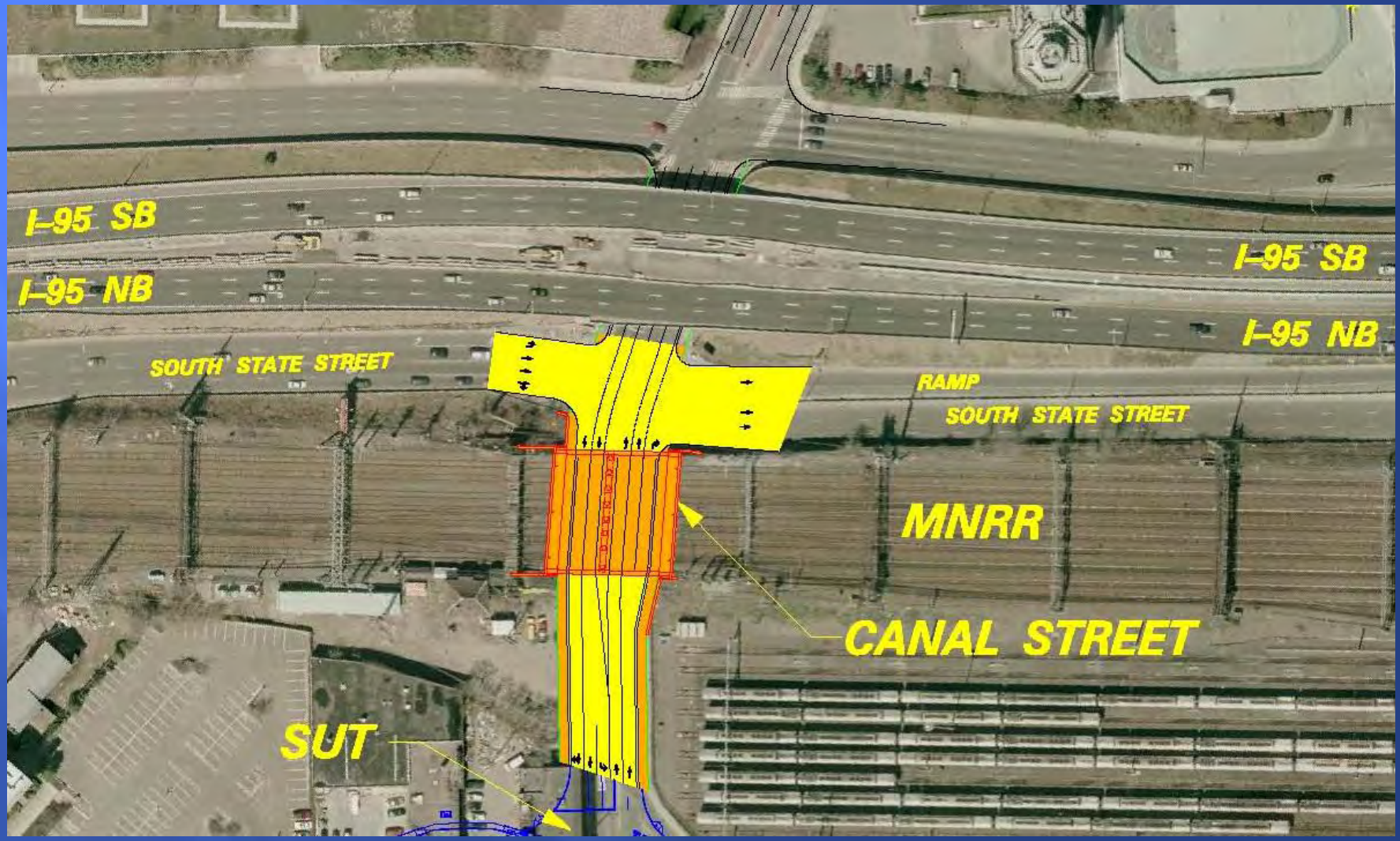
- 3 – 11′ wide N.B. lanes (2 through lanes, 1 right-turn lane)
- 2 – 11′ wide S.B. lanes (2 through lanes)
- 2′ shoulders(inside and outside)
- 8′ sidewalks (both sides)

Elm Street
Three Span vs. Two Span Bridges

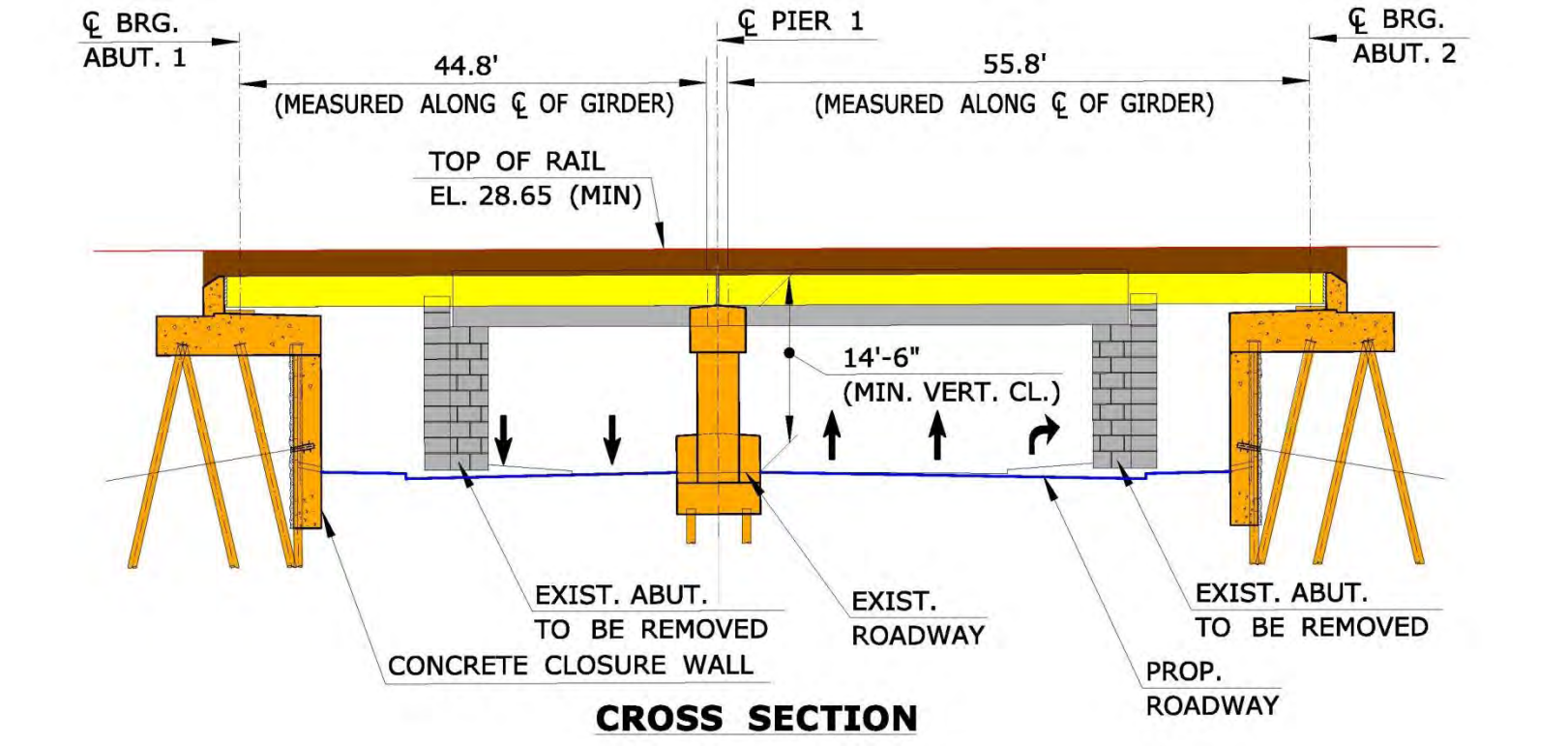
- Three Span Features:
  - Maintain one lane of traffic in each direction during construction
  - No center pier in completed roadway
  - Increase in construction duration and construction cost
  - Superstructure depth increases as max span length increases
  - Lower Elm Street by an additional 5" (approximately 3'- 0" vs. 2'- 7")

Canal Street
Overview

Canal Street
Proposed Improvements



Canal Street
Cross Section

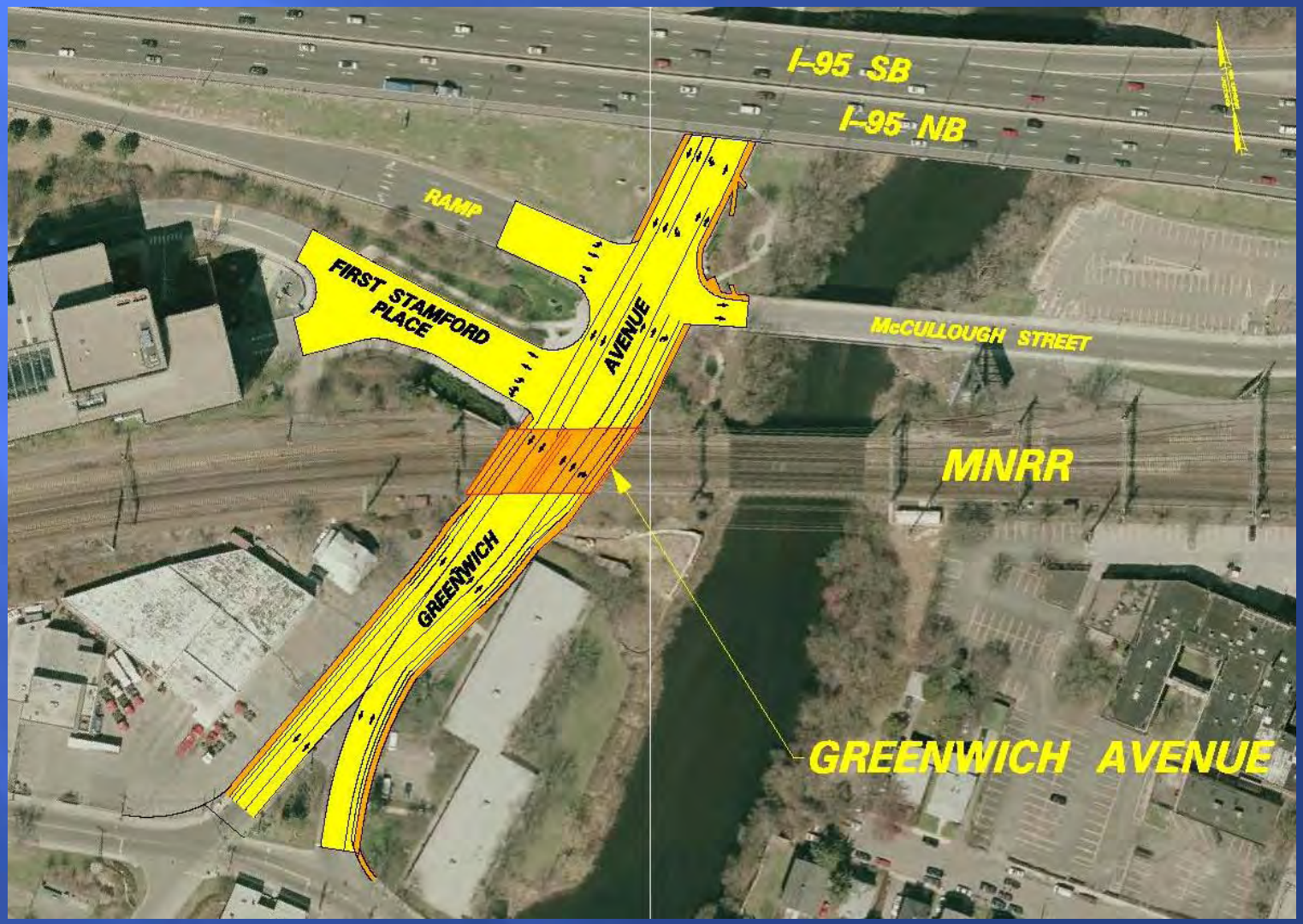


Proposed Improvements

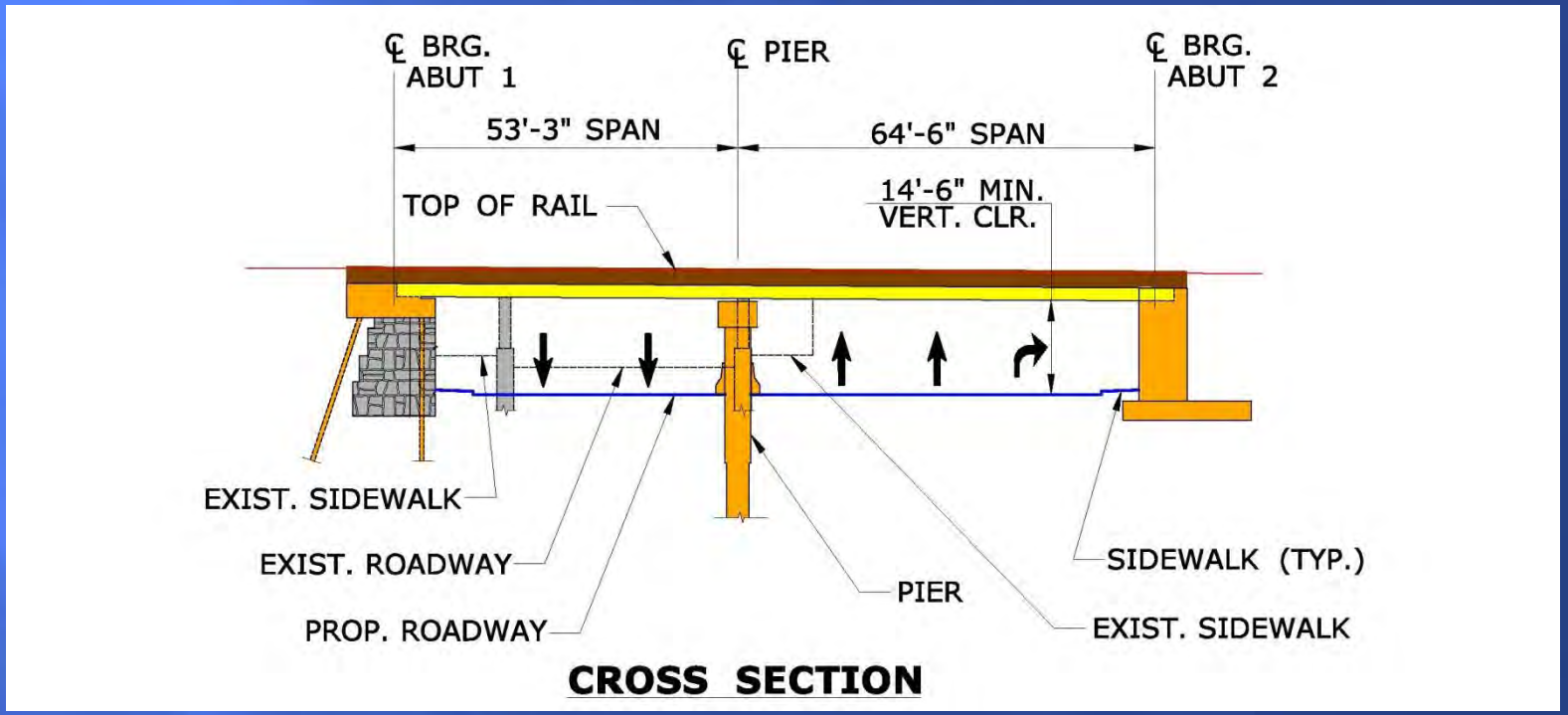
- 3 – 11′ wide N.B. lanes (2 through lanes, 1 right-turn lane)
- 2 – 11′ wide S.B. lanes (2 through lanes)
- 2′ shoulders (inside and outside)
- 8′ sidewalks (both sides)

Greenwich Avenue
Overview

Greenwich Avenue
Proposed Improvements



Greenwich Avenue
Cross Section



Proposed Improvements

- 3 – 11′ wide N.B. lanes (2 through lanes, 1 right-turn lane)
- 2 – 11′ wide S.B. lanes (2 through lanes)
- 2′ shoulders (inside and outside)
- 5′ bike lane (S.B. side)
- 8′ sidewalks (both sides)

Photos of Similar Project Details

Amtrak over Farmington Ave., Berlin

Photos of Similar Project Details

MNRR over Arch St., Greenwich

Photos of Similar Project Details

MNRR over Arch St., Greenwich

Photos of Similar Project Details

MNRR over U.S. Route 1, Darien

Property Impacts

- Atlantic Street
  - No property impacts expected
- Elm Street
  - Dunkin Donuts property
  - MNRR Maintenance Facility
- East Main Street
  - Firestone Tire Dealer and connected stores

Questions?