

Westchester County

Rehabilitation of Ashford Avenue over I-87 and SMRP

BINs 5348380 and 534838A

April 28, 2010





Project Update

Completed or in progress:

TASK A

- Survey and Mapping
- In-Depth Inspection / Report
- Hazardous Material Screening / Report
- Load Ratings
- Traffic Study / Analysis
- Alternative Analysis

TASKS B and C

- Conceptual Design
 - Vehicular Ramp
 - Pedestrian Ramp

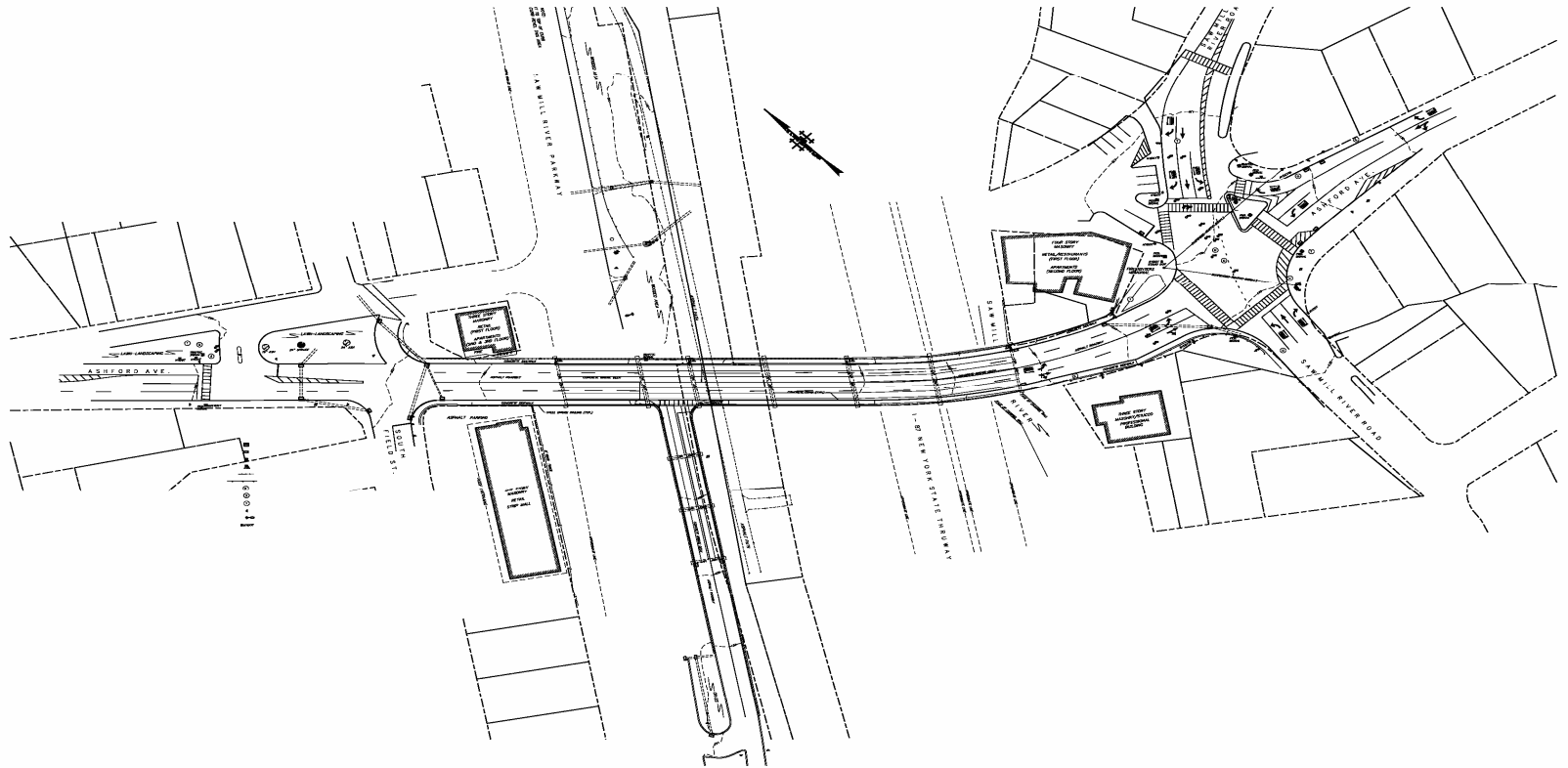
TASK D

- Design Approval Document

Work Performed to Date

■ Survey and Mapping

- Survey complete
- Right-of-way / property line research underway

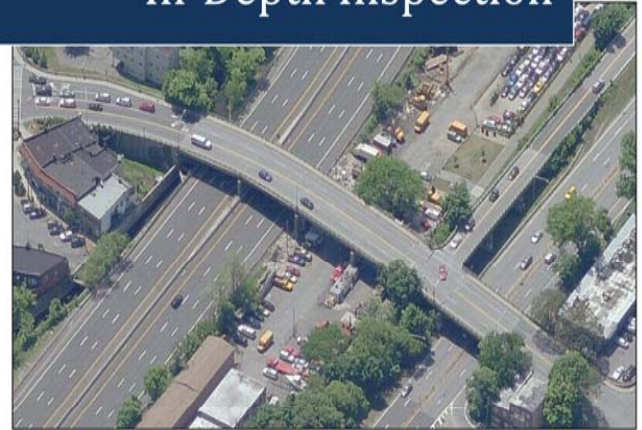


Work Performed to Date

■ In-Depth Inspection

- Completed field work in March 2010
- Inspection Report complete and available for review
- Inspection findings include:
 - Moderate overall deterioration
 - Localized serious deterioration
 - Functioning as originally designed

Ashford Avenue Bridge In-Depth Inspection



Prepared for the
WESTCHESTER COUNTY
DEPARTMENT OF PUBLIC WORKS

March 2010



Work Performed to Date

■ In-Depth Inspection Findings (Concrete Deck)

- Joint leakage typical
- Good ride quality, but with localized serious deterioration
- Underside exhibits extensive dampness, efflorescence, cracking, hollowness, and shallow spalls, especially at girder top flanges



Ramp Bridge Photo 21 <Span 2 at Begin. Locally serious deck deterioration.

Work Performed to Date

■ In-Depth Inspection Findings (Steel)

- Fascia girders exhibit typical section loss and stiffener deterioration
- Interior girders sections typically show no significant deterioration
- All girders with 10% to 15% section loss at top flange horizontal leg



Main Bridge Photo 60 <09988a>: Span 1 Girder G4, Right side, at Pier 1. Large hole in web plate.

Work Performed to Date

■ In-Depth Inspection Findings (Substructure)

- Bearings, bridge seat, and backwall at fascia show serious deterioration, interior locations in fair condition
- Piers contain cracks, dampness, hollowness, and spalling on 5% to 30% of face area
- Abutments show similar deterioration on 25% of face area at mainline, 75% at ramp
- Wingwalls show similar deterioration on minor to 25% of face area





Work Performed to Date

■ Hazardous Material Screening

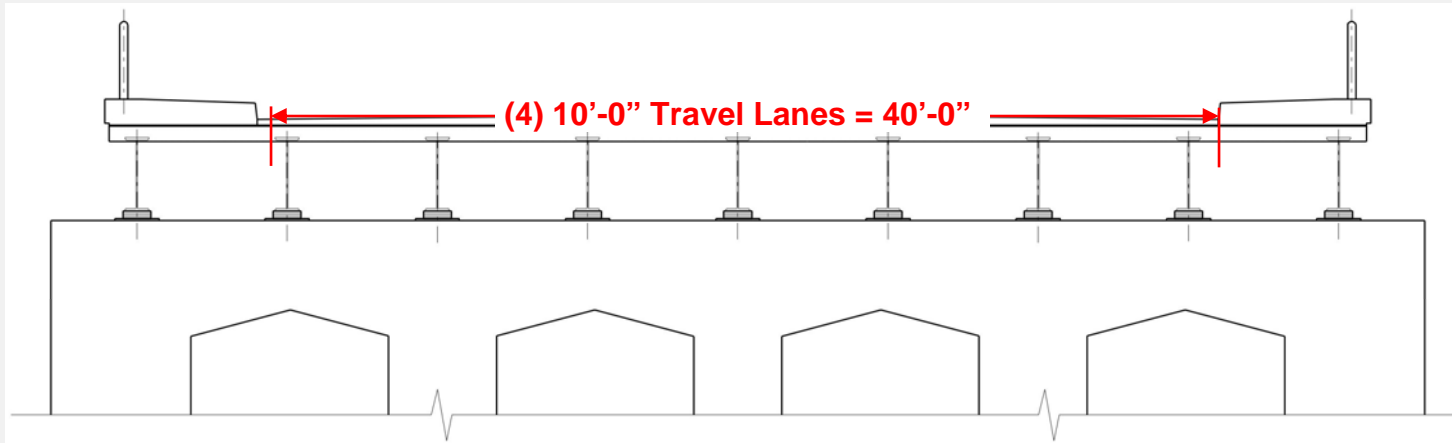
- Performed site walkthrough for hazardous material screening
- Lead-containing paint present on bridge, as expected
- Asbestos containing materials in localized areas, as expected
- Hazardous materials to be removed per NYSDOT specifications

■ Load Rating

- Load-carrying capacity analysis
- Fascia girders rate lower than interior (smaller size)

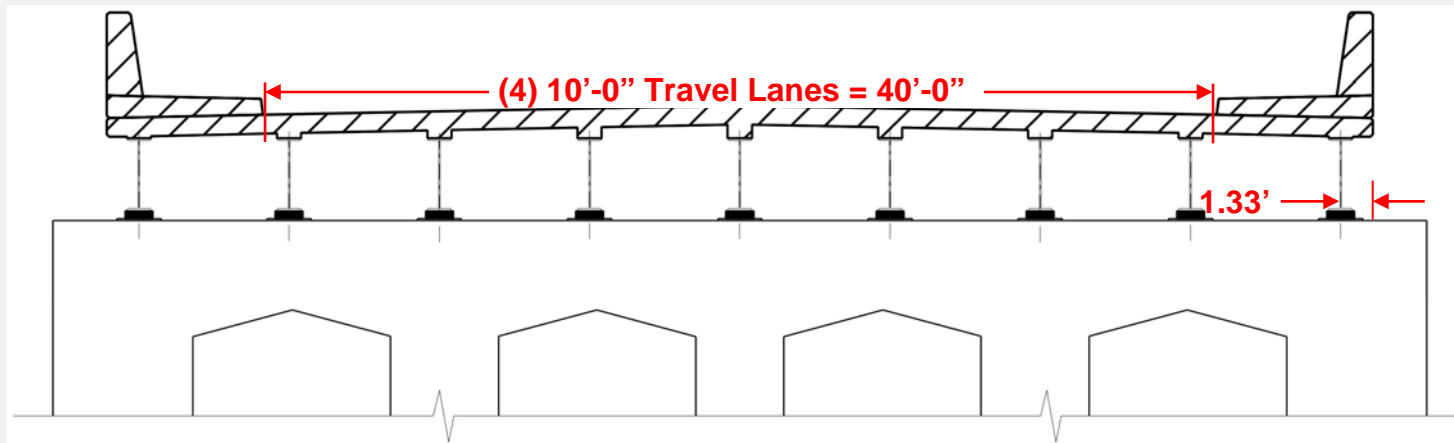
■ Traffic Operation Analysis of Proposed Alternatives

Existing Bridge



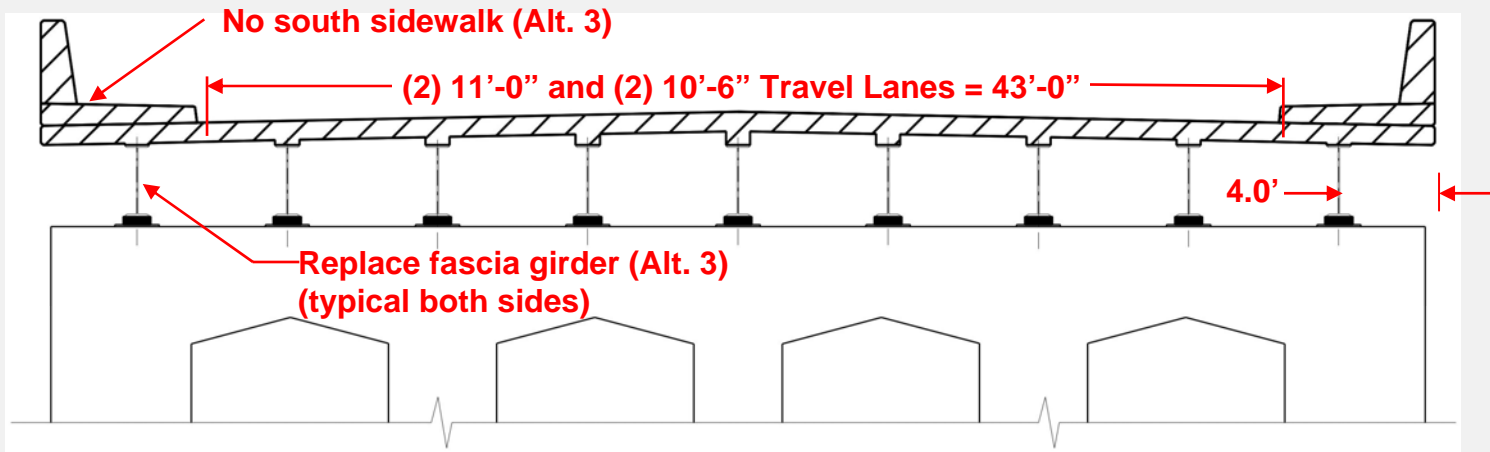
	<u>BIN 5348380</u>	<u>BIN 534838A</u>
– Total number of spans:	6	3
– Total length of bridge:	405.5 ft	173 ft w/ 100 ft app
– Curb to curb width:	40 ft	24 ft
– Total width of bridge:	52 ft - 8 in	27 ft – 11 in
– Year of construction:	1950	1950
– Last major rehabilitation:	1992	1992
– Computed condition rating:	3.861	4.333
– AADT (1997):	20,342	3,427

Alternative 1 – Deck Rehabilitation



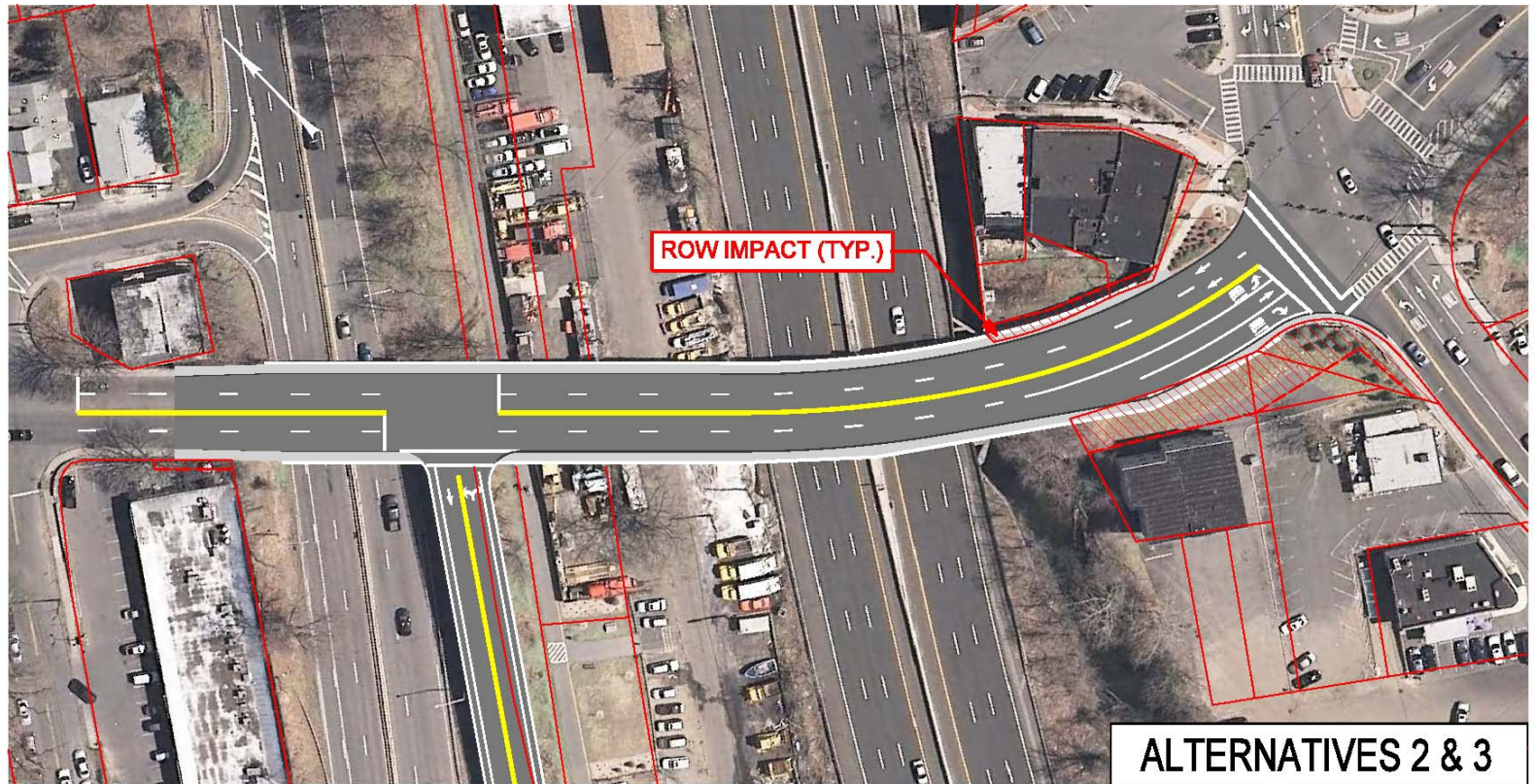
- Remove existing deck and bearings
- Composite Design (increase capacity)
- New Bearings
- Repair / field paint existing steel superstructure
- Repair concrete substructure
- Replace traffic signals, signage, striping, and lighting
- Effective service life: 20-years
- ESTIMATED COST: \$16.2 million

Alternatives 2 & 3 – Rehab. with Widening



- Includes all base rehabilitation work (listed in Alternative 1)
- Widen deck to accommodate 4' fascia overhang
- Effective service life: 20-years
- ESTIMATED COSTS:
 - Alternative 2 - \$16.8 million
 - Alternative 3 - \$18.2 million

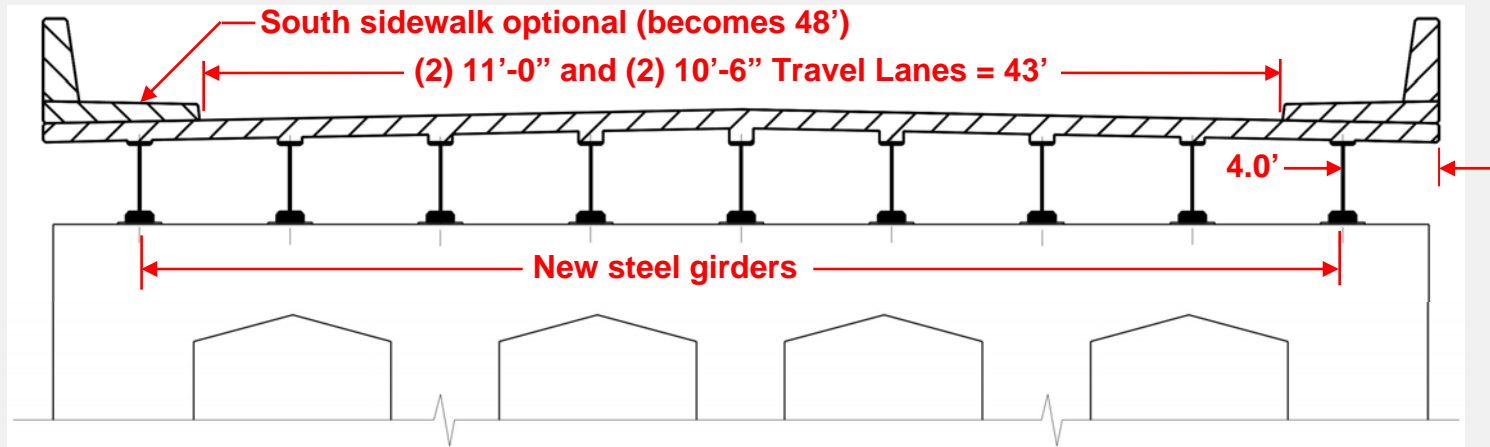
Alternatives 2 & 3 – Rehab. With Widening



Alternative 3, sidewalk removal results in:

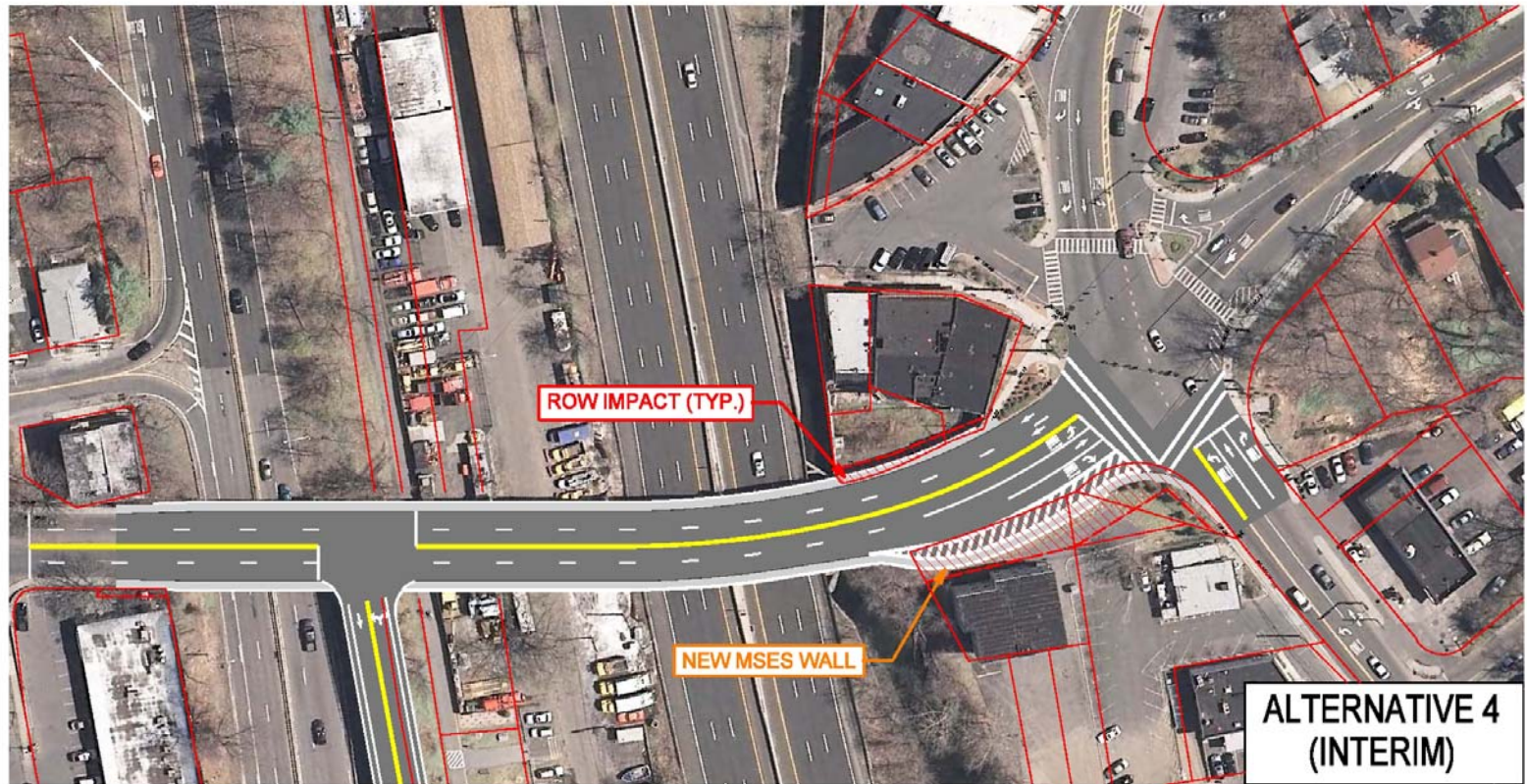
- ~10 feet longer right turn bay
- 2 feet curb offset
- Slightly wider travel lanes
- Changes pedestrian movements

Alternative 4 – Superstructure Replacement

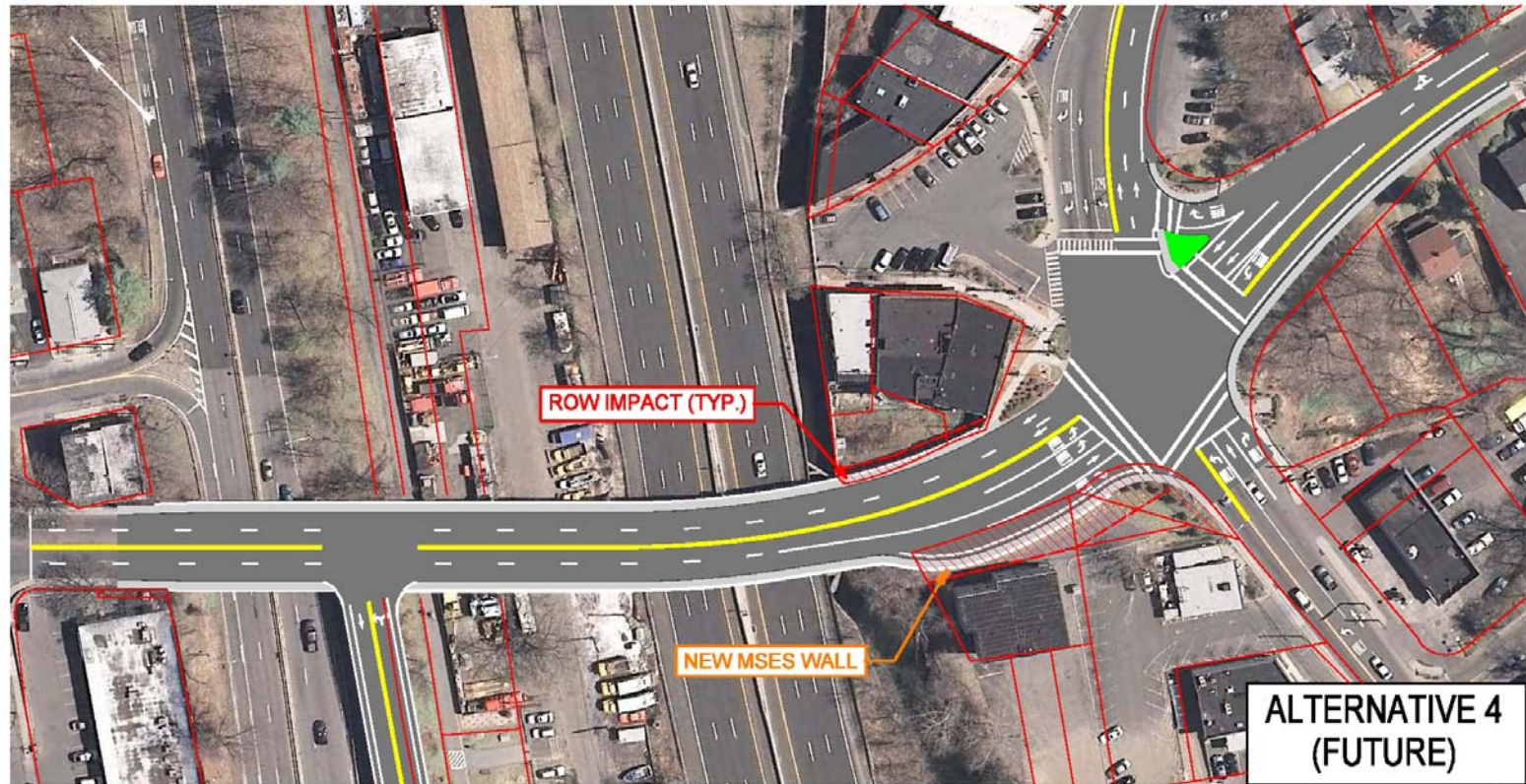


- Complete deck and girder replacement
- Repair concrete substructure
- Accommodate future improvements at Rte. 9a intersection
- Effective service life: 50-years
- ESTIMATED COST: \$19.7 million

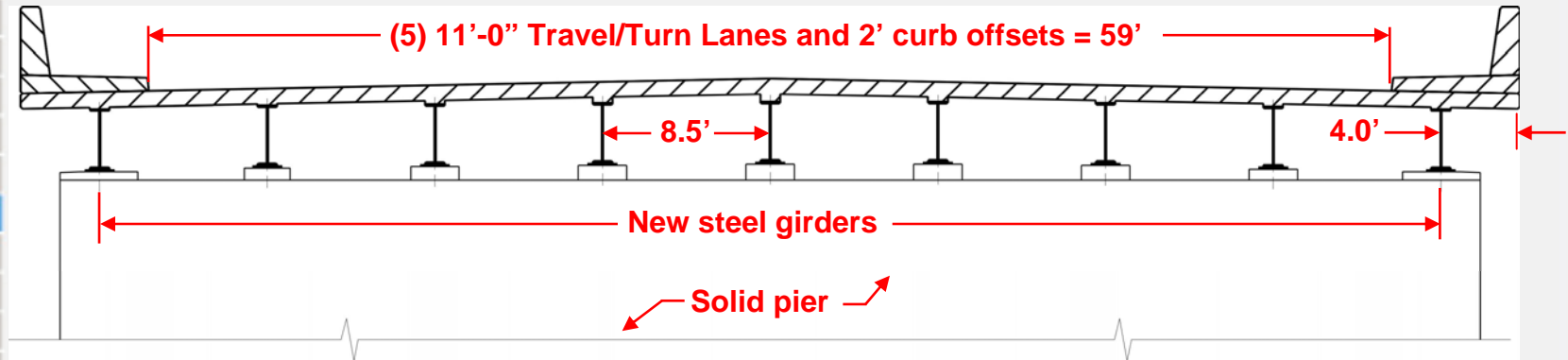
Alternative 4 – Superstructure Replacement



Alternative 4 – Superstructure Replacement

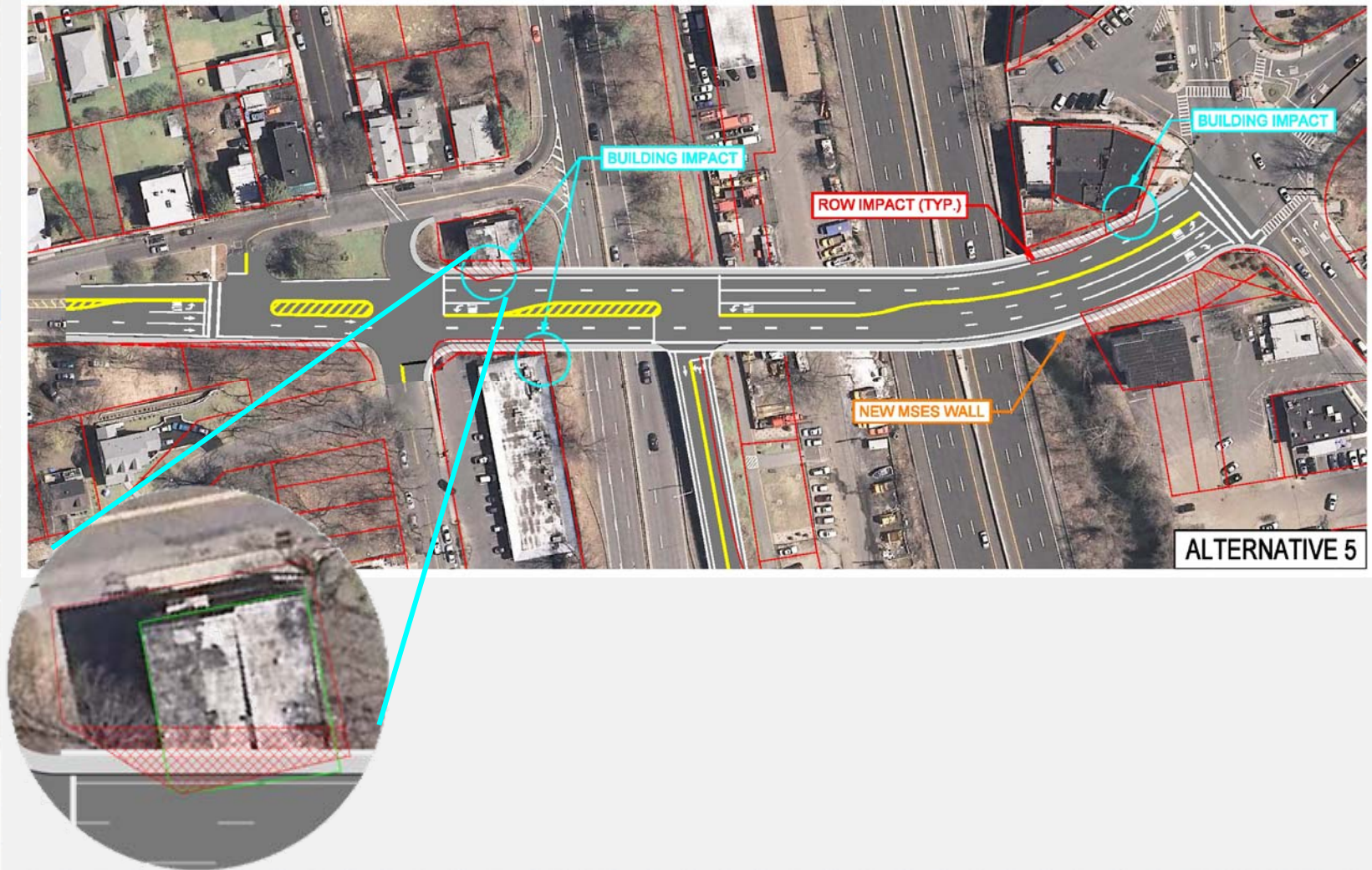


Alternative 5 – Complete Replacement



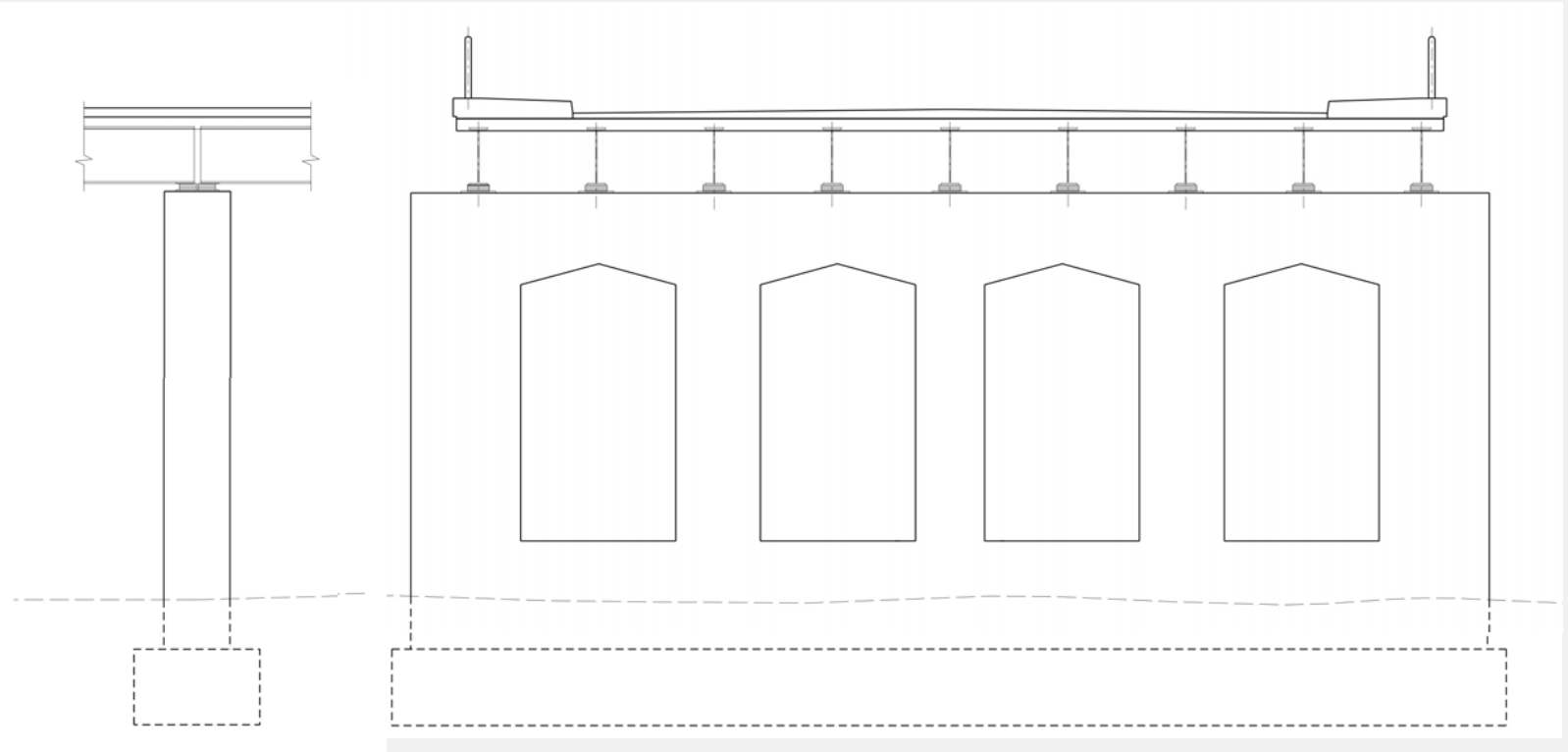
- Complete superstructure and substructure demolition
- Install 3-span continuous structure
- Install concrete piers, abutment, wingwalls
- Effective service life: 70-years
- ESTIMATED COST: \$28.3 million

Alternative 5 – Complete Replacement



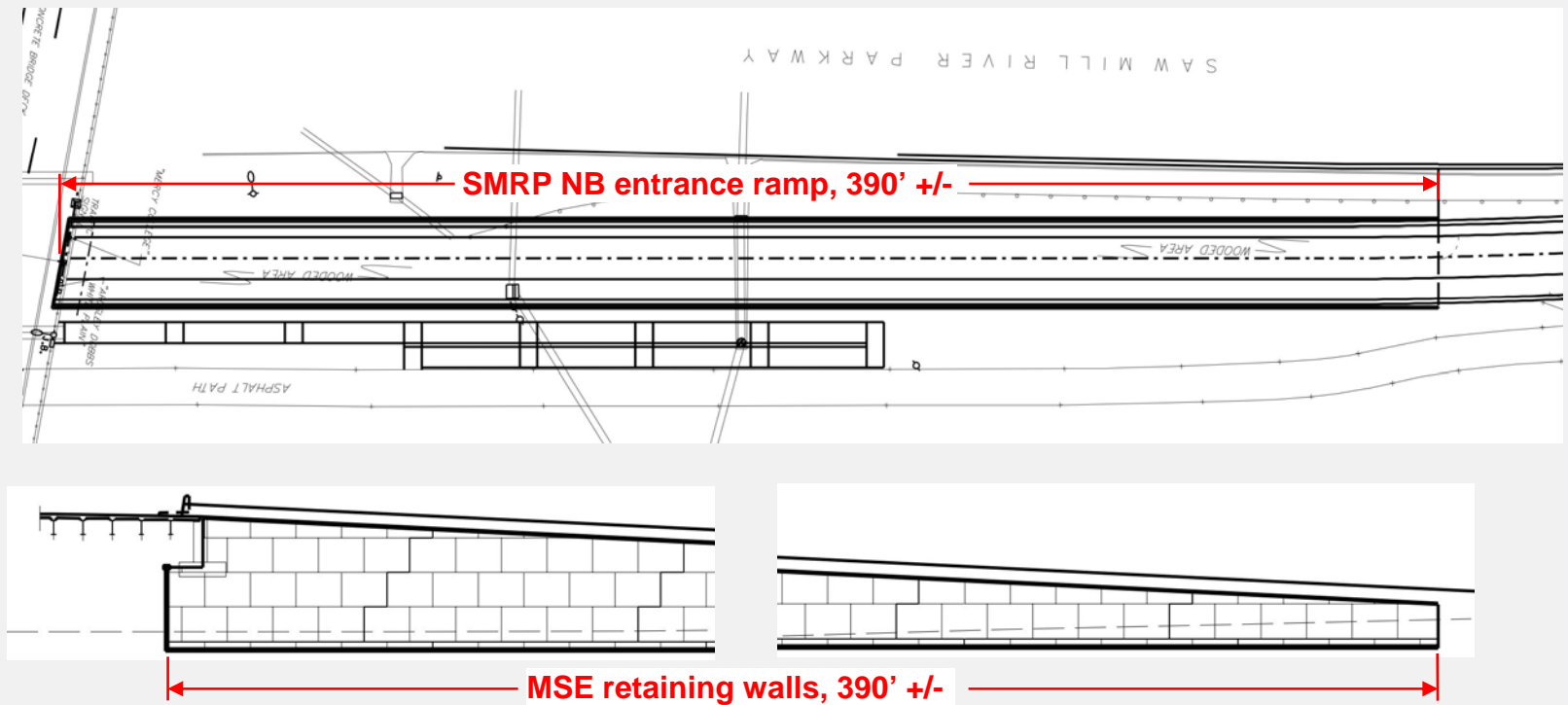
Seismic Retrofit

- Fill in fixed piers (Piers 2 and 4 on mainline, Pier 6 on ramp)
- Increase pier cap with to satisfy minimum seat width requirements
- ESTIMATED COST: \$1.0 million



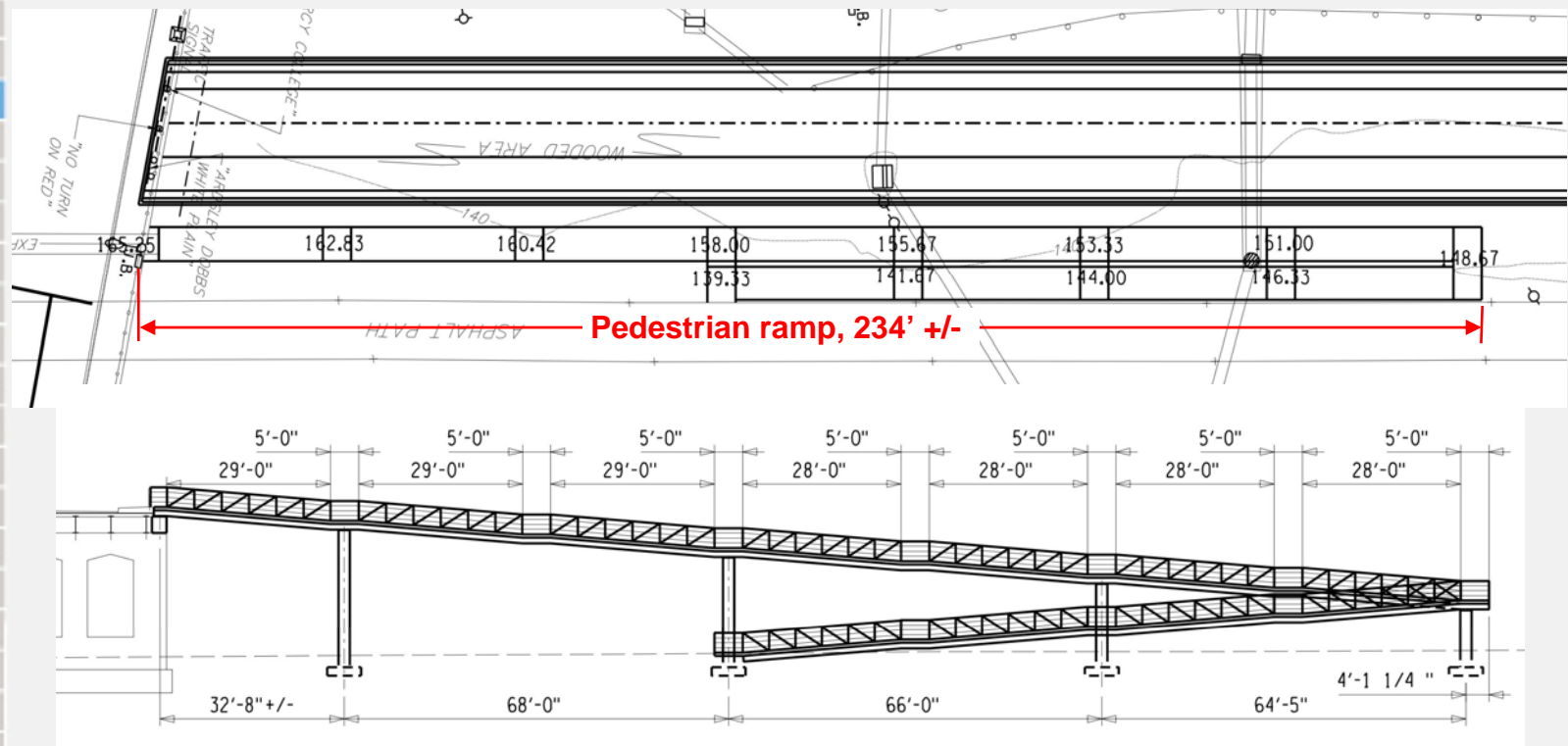
Conceptual Design: Vehicular Ramp

- MSE wall abutment and wingwalls
- 12'-0" travel lane, 6'-0" right shoulder, 3'-0" left shoulder
- ESTIMATED COST: \$3.0 million



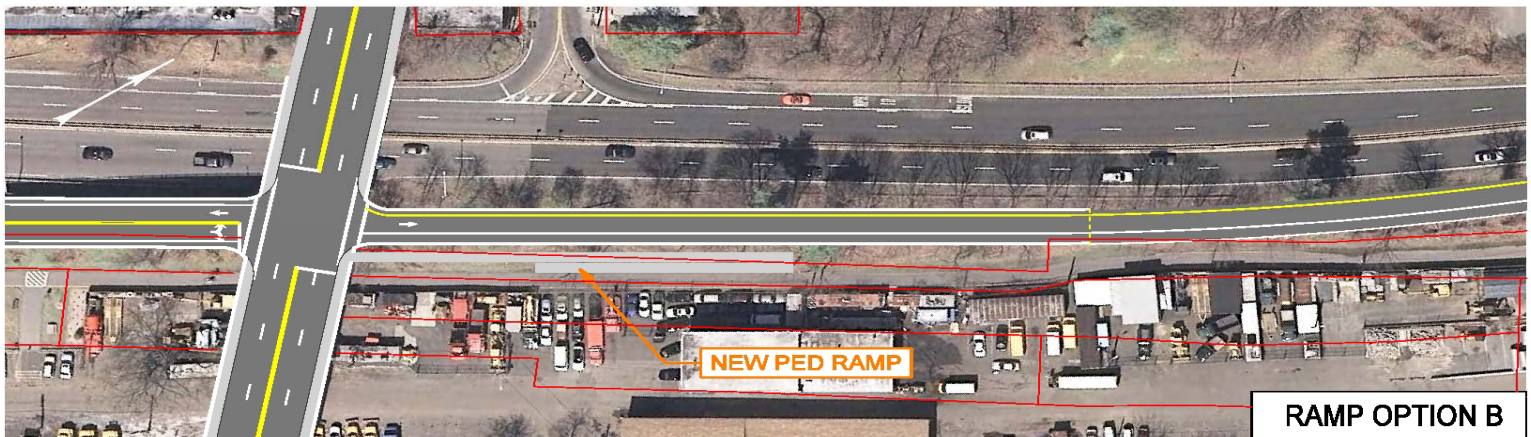
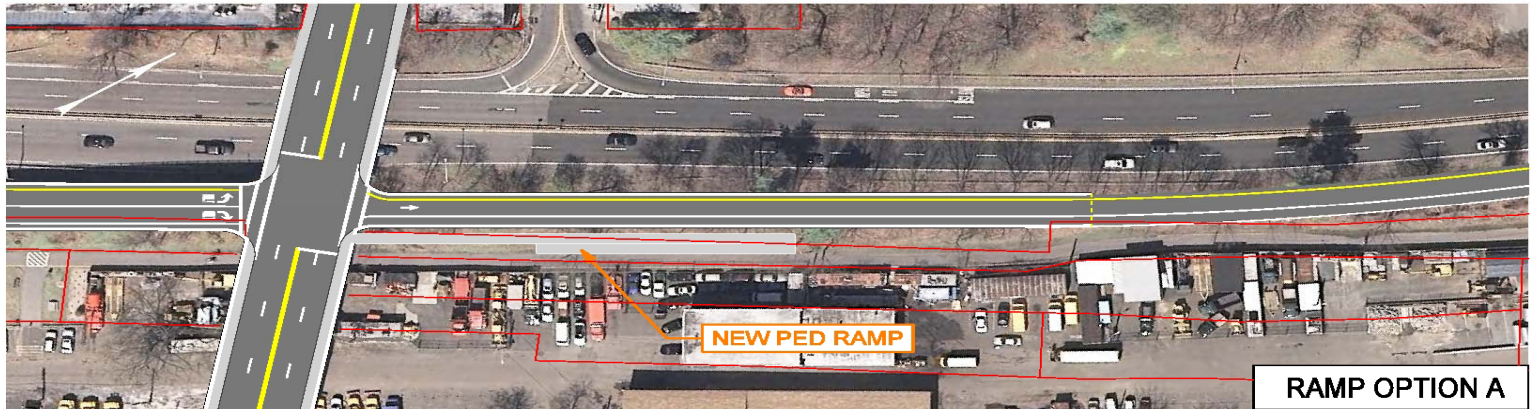
Conceptual Design: Pedestrian Ramp

- Provide access to the South County Trailway from Ashford Avenue
- ADA compliant
- Prefabricated truss pedestrian bridge on concrete piers
- ESTIMATED COST: \$1.5 million



Work Performed to Date

■ Conceptual Design: Vehicular and Pedestrian Ramps – Options A & B



Maintenance and Protection of Traffic

- Staged Construction
- Maintain one lane of traffic in each direction at all times
- Major operations over Thruway and SMRP during off-peak periods
- Temporary detour during ramp work



Comparison of Alternatives

Impacts/Benefits	Alternative 1 (Rehabilitation)	Alternative 2 & 3 (Rehabilitation with widening)	Alternative 4 (Superstructure Replacement)	Alternative 5 (Complete Replacement)
Address Structural Deficiencies	Steel Repairs	Steel Repairs/New Fascia Girder	New Structural Steel	New Structural Steel
Operational Improvements	No Change	Minor Improvements	Provides Future Dual Left Turn Lane at 9A	Provides Dedicated Left-Turn Lane on bridge
Property Impacts	None	ROW Takings Required	ROW Takings Required	Relocations Required
Construction Duration	18 months	18 months	24 months	30 Months
Maintenance	Minimal Reduction in Future Maintenance	Minimal Reduction in Future Maintenance	Reduced Maintenance due to Jointless Deck Details	Reduced Maintenance due to Jointless Deck Details
Service Life	20 years	20 years	50 years	70 years
Cost (mainline and ramp)	\$16.2 million	\$16.8 / \$18.2 million	\$19.7 million	\$28.3 million



Next Steps

- Address Village concerns
- Complete and submit Draft Design Approval Document
- Secure Funding

Questions and Answers