



Wolcott BF 1446(38)
Alternatives Presentation Meeting
Town Highway 3 – Bridge 6 over Lamoille River

December 1, 2021

Introductions

Bob Klinefelter, P.E.

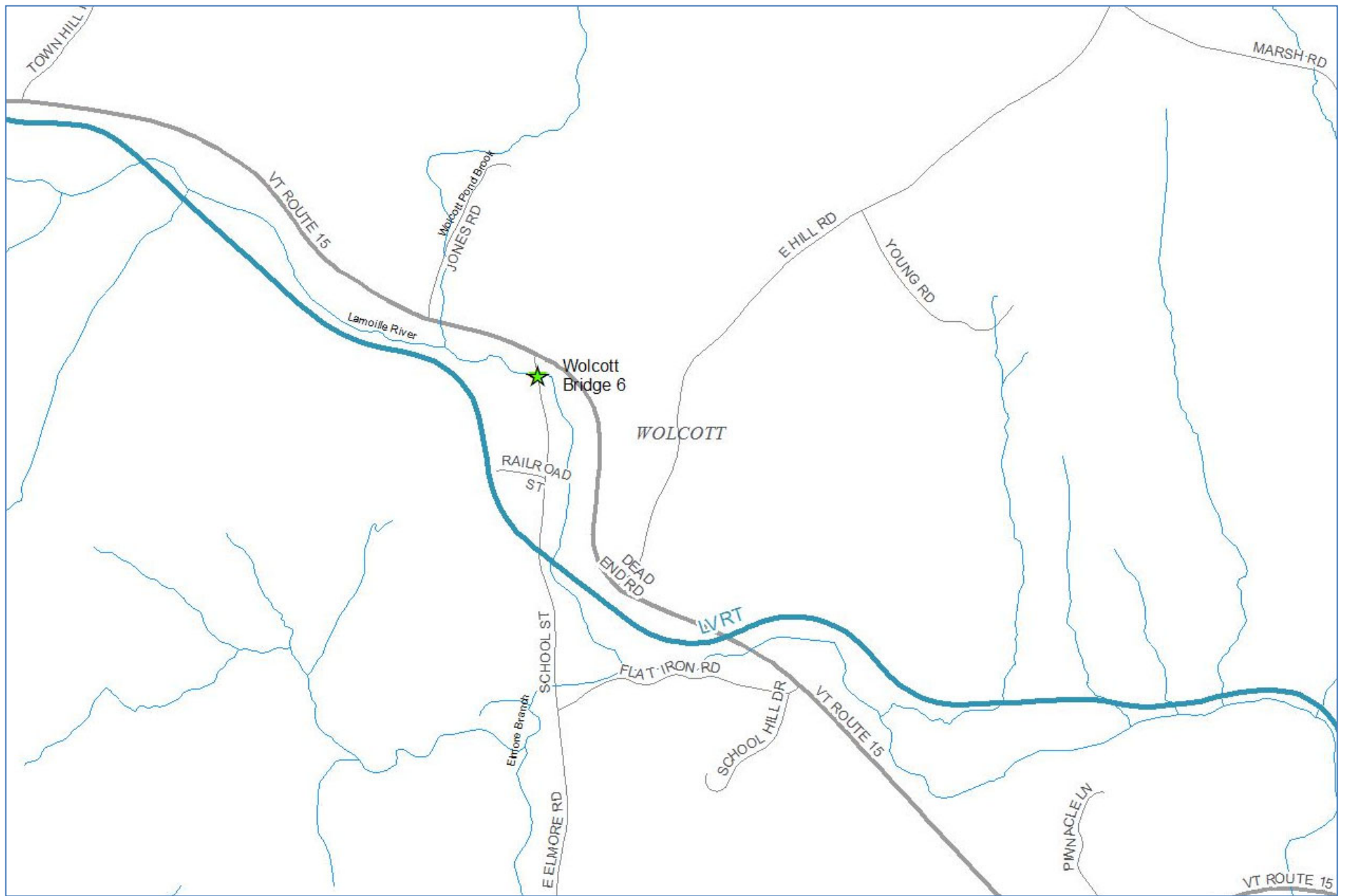
VTrans Design Project Manager

Laura Stone, P.E.

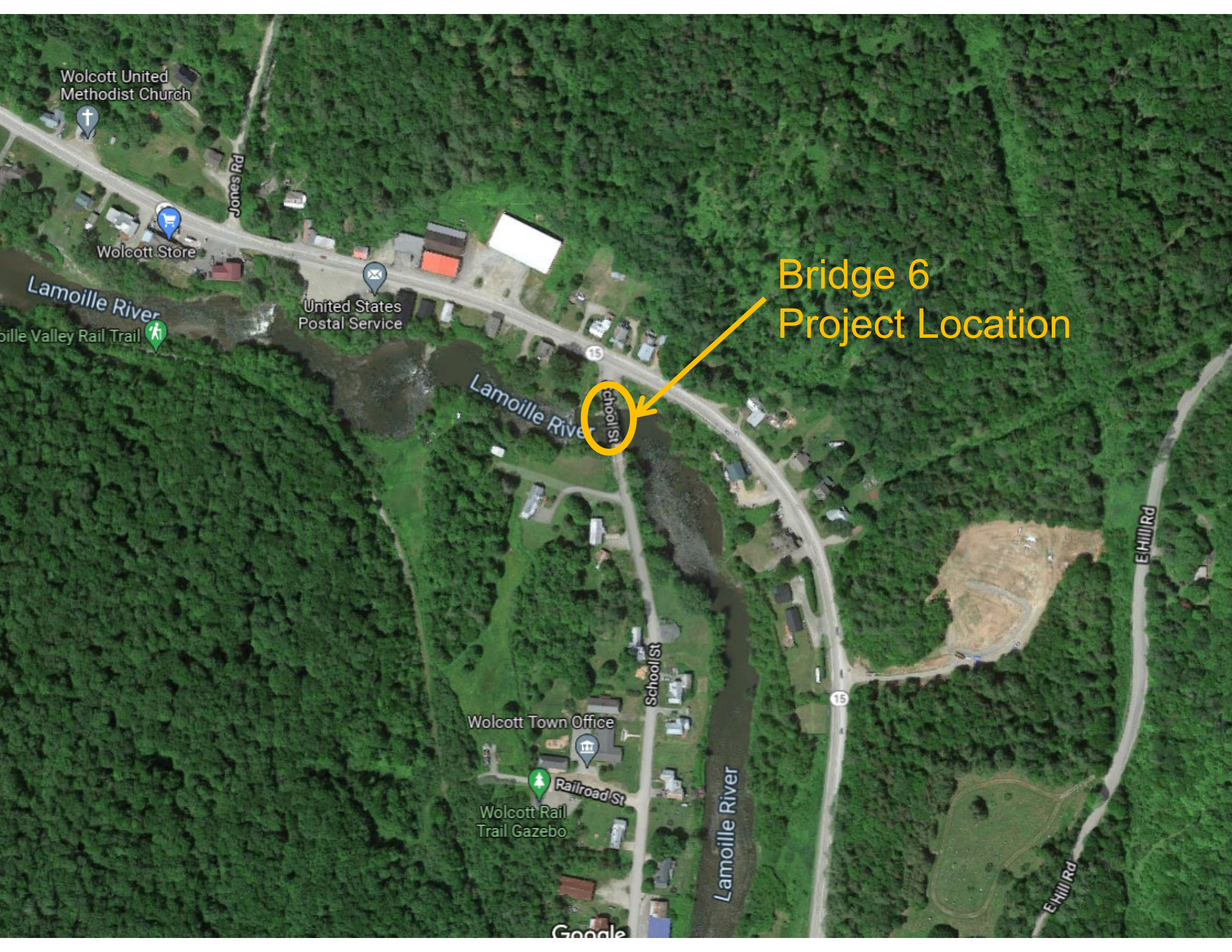
VTrans Scoping Engineer

Purpose of Meeting

- Provide an understanding of our approach to the project
- Provide an overview of project constraints
- Discuss alternatives that were considered
- Discuss our recommended alternative
- Provide an opportunity to ask questions and voice concerns



Location Map



Wolcott United Methodist Church

Wolcott Store

United States Postal Service

Lamoille River

Bridge 6
Project Location

Wolcott Town Office

Wolcott Rail Trail Gazebo

Lamoille River

Google

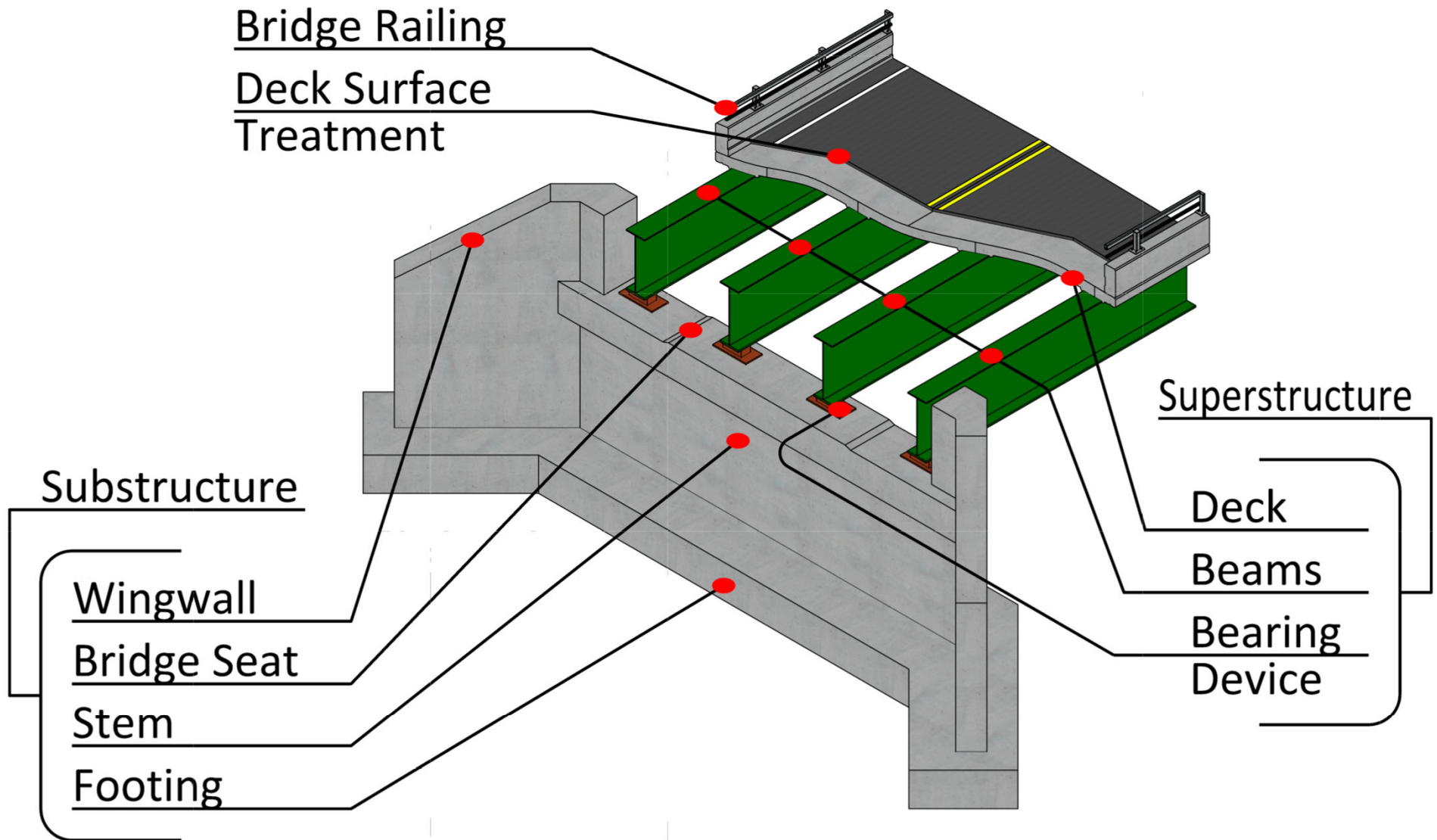
Meeting Overview

- VTrans Project Development Process
- Project Overview
 - Existing Conditions
 - Alternatives Considered
 - Recommended Alternative
- Maintenance of Traffic
- Schedule
- Summary
- Next Steps
- Questions

VTrans Project Development Process



Description of Terms Used



ACT 153 of the 2012 Legislative Session

	Local Share	
	Road Closed During Construction	Road Open During Construction
Rehabilitation	2.5%	5%
Replacement	5%	10%

- Per Act 153, the local share is reduced by 50% for rehabilitating versus replacement
- Per Act 153, the local share is reduced by 50% for closing the road to traffic during construction

Looking South over Bridge 6



08/09/2017

Existing Conditions – Bridge #6

- Roadway Classification – Local Road
- Bridge Type – 100' Span Parker Pony Truss
- Ownership – Town of Wolcott
- Constructed in 1928, reconstructed in 2004

Looking North over Bridge 6



Existing Conditions – Bridge #6

- Utilities (aerial and future sewer)

08 / 13 / 20

Existing Conditions – Bridge #6

- The bridge was closed to traffic in 2018 and a temporary bridge was placed on top of the existing pony truss. During the annual inspection, it was discovered that the gusset connection, located at the bottom chord end of abutment #1 upstream bearing, had deteriorated to the point where it completely cracked through with some deformation seen.
- The shoulder width on Bridge 6 is substandard.
- Bridge 6 does not span bank full width.

Condition Ratings



Existing Conditions - Bridge #6

- Deck Rating 8 (Very Good)
- Superstructure Rating Failed – Temporary in place
- Substructure Rating 6 (Satisfactory)

08/06/20

Southern Abutment



08/09/2017

Existing Conditions - Bridge #6

Upstream Fascia

08/09/2017

Existing Conditions - Bridge #6

2018 Inspection Finding Photo



08/06/20

Existing Conditions - Bridge #6

2018 Inspection Finding Photo



08/06/20

Existing Conditions - Bridge #6

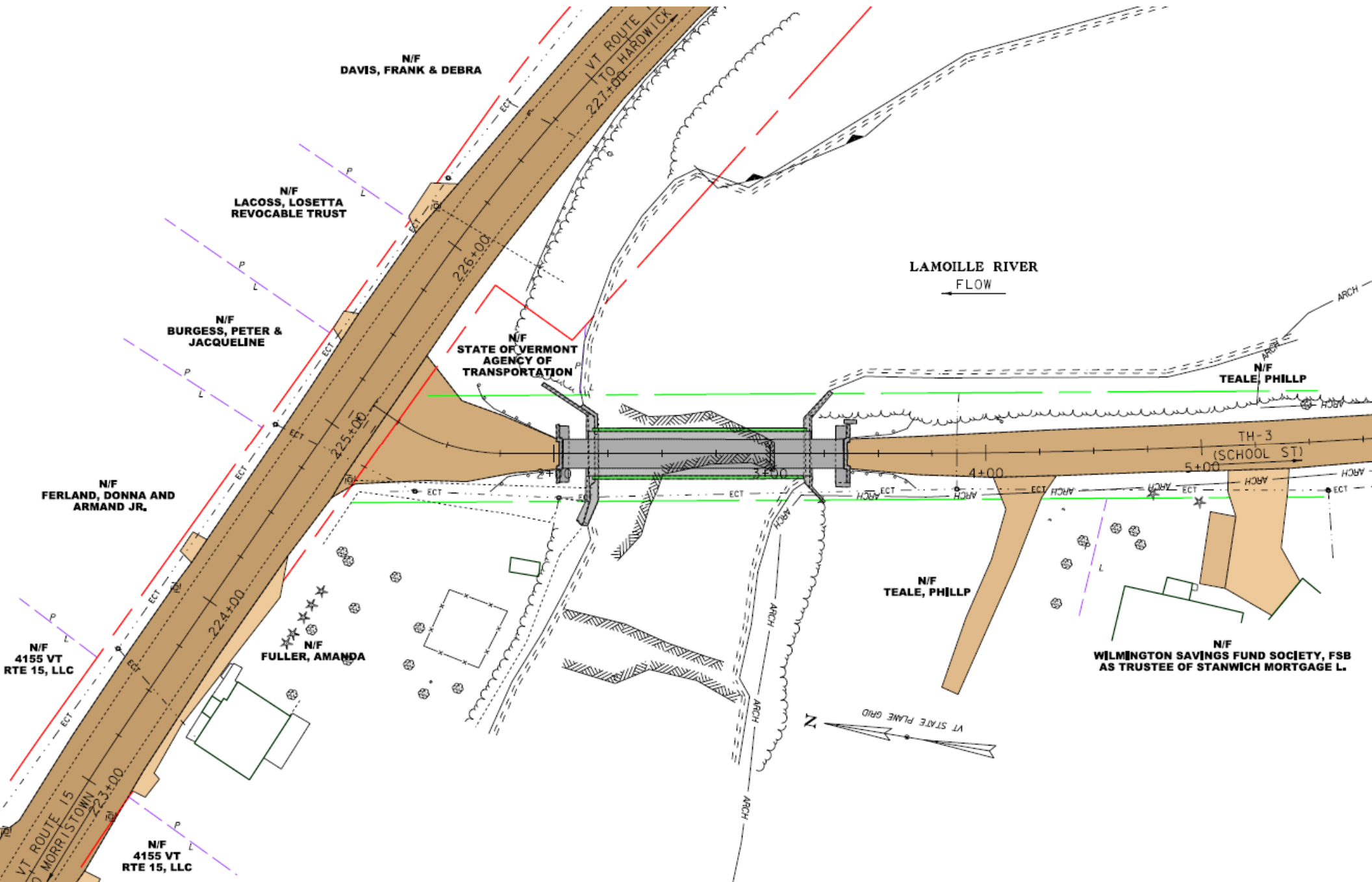


Existing Conditions – Bridge #6

- Wetland – 130' upstream on northern bank
- Archaeologically sensitive south of the river
- Wildlife Habitat
- Historic Resources – Bridge 6 and 10-4(f) properties

08/09/2017

Existing Conditions



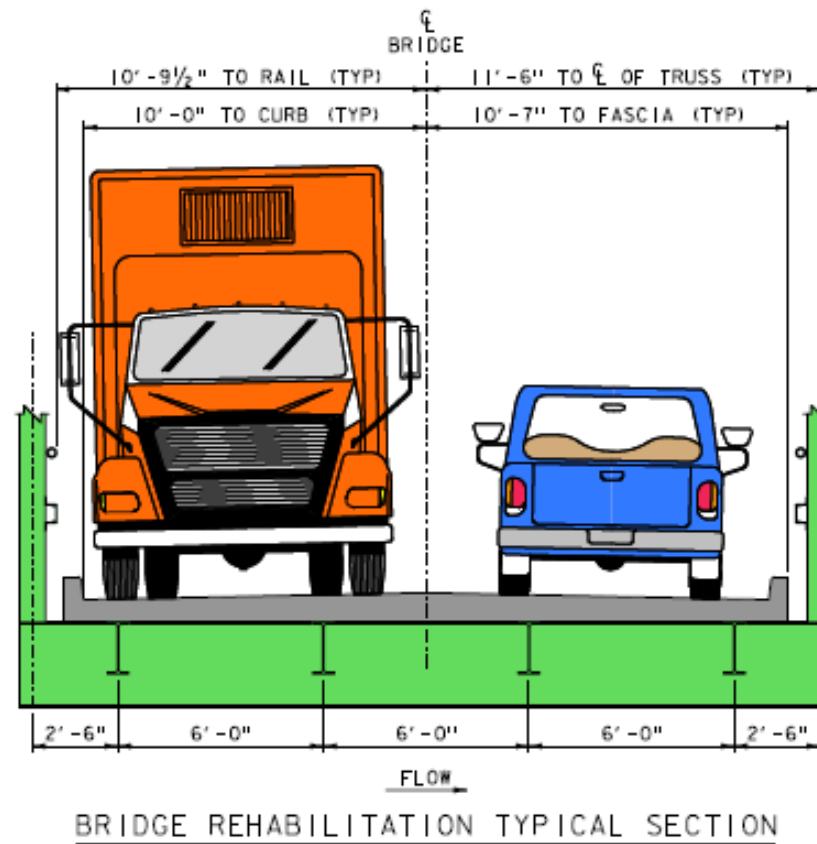
Design Criteria and Considerations

- Average Daily Traffic
 - 350 vehicles per day
- Design Hourly Volume
 - 55 vehicles per hour
- % Trucks
 - 10.6%

Alternatives Considered – Bridge #6

- No Action
 - Additional maintenance required within 10 years
- Truss Rehabilitation
 - Structural deficiencies would be addressed
 - Matches existing typical (9'/1')
 - 30-year design life
- Full Bridge Replacement with New Pony Truss (On and Off Alignment)
 - 120' span (minimum) for improved hydraulics
 - Widen to meet minimum standard (9'/3') with sidewalk option
 - 75-year design life
- Full Bridge Replacement with Steel Beam Bridge (On and Off Alignment)
 - 120' span (minimum) for improved hydraulics
 - Widen to meet minimum standard (9'/3') with sidewalk option
 - 75-year design life

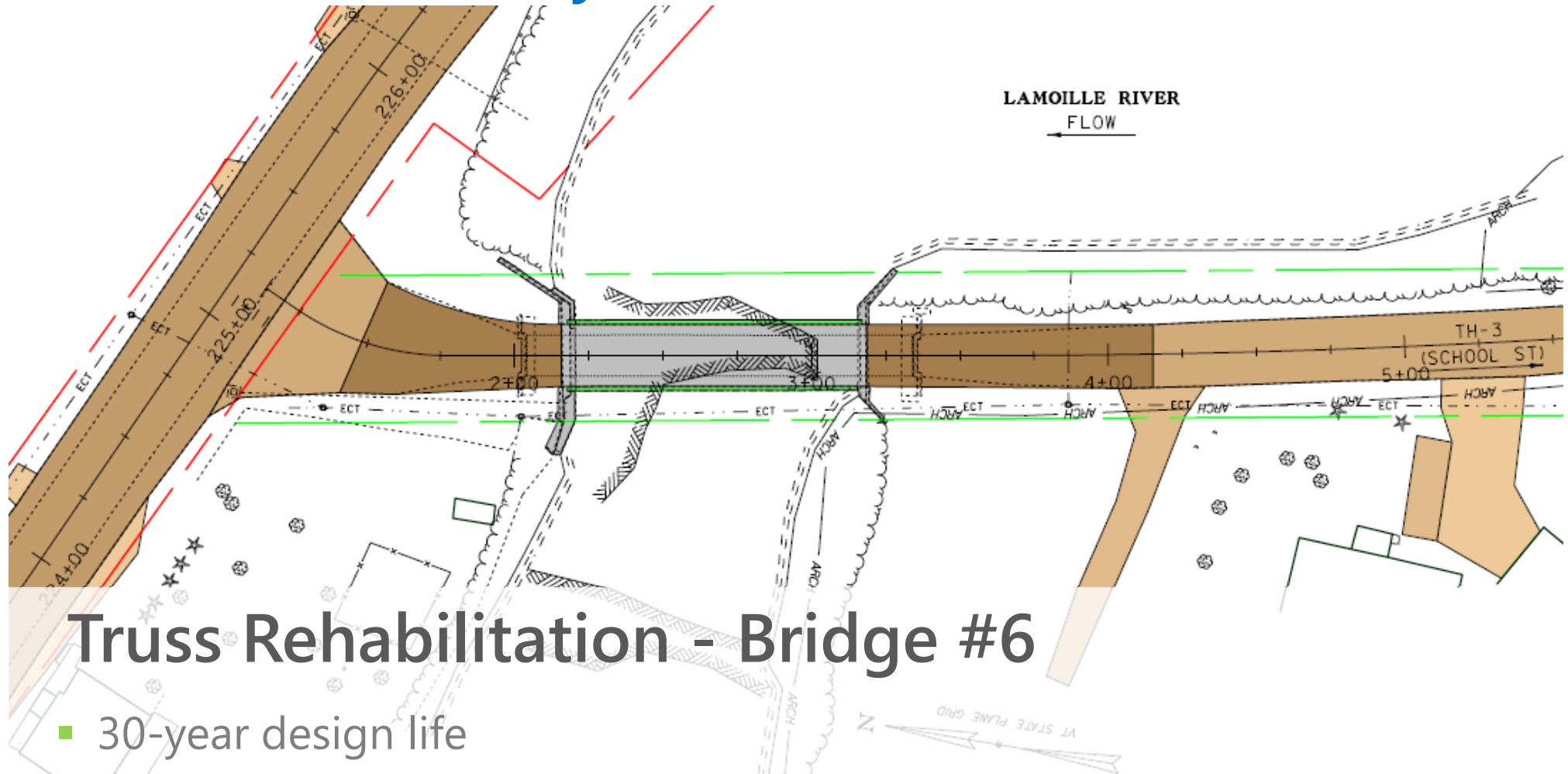
Alternative 1 Typical Section



Truss Rehabilitation - Bridge #6

- 9'/1' typical

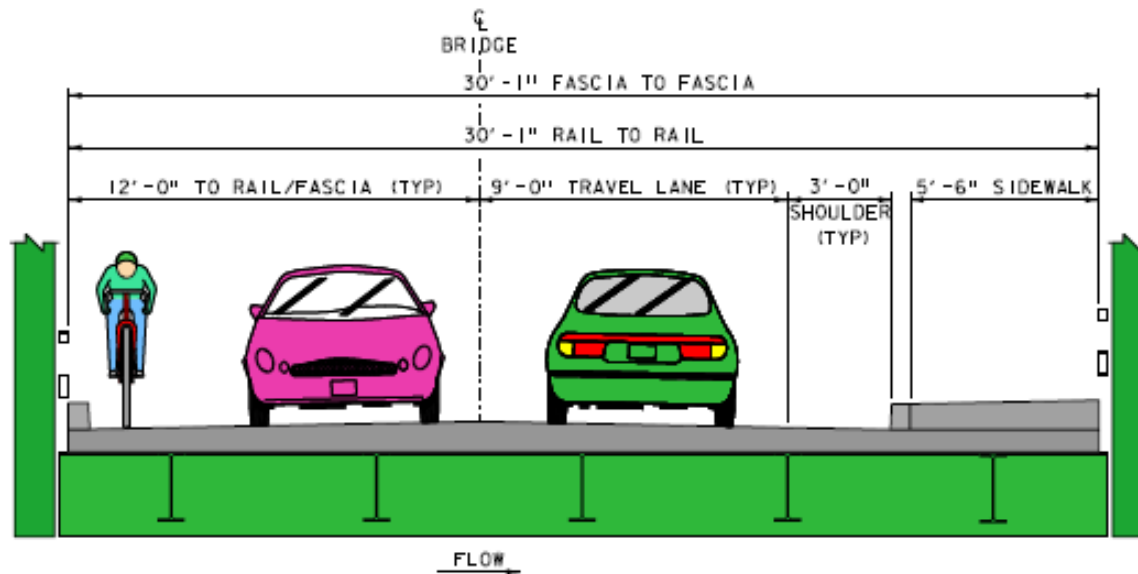
Alternative 1 Layout



Truss Rehabilitation - Bridge #6

- 30-year design life
- 100' span
- Cleaning, repair or replacement of deteriorated truss members, strengthening of members, and repainting.
- Replacement of existing bridge seats and backwalls
- Construct new floor system and deck

Alternative 2 On-Alignment Typical

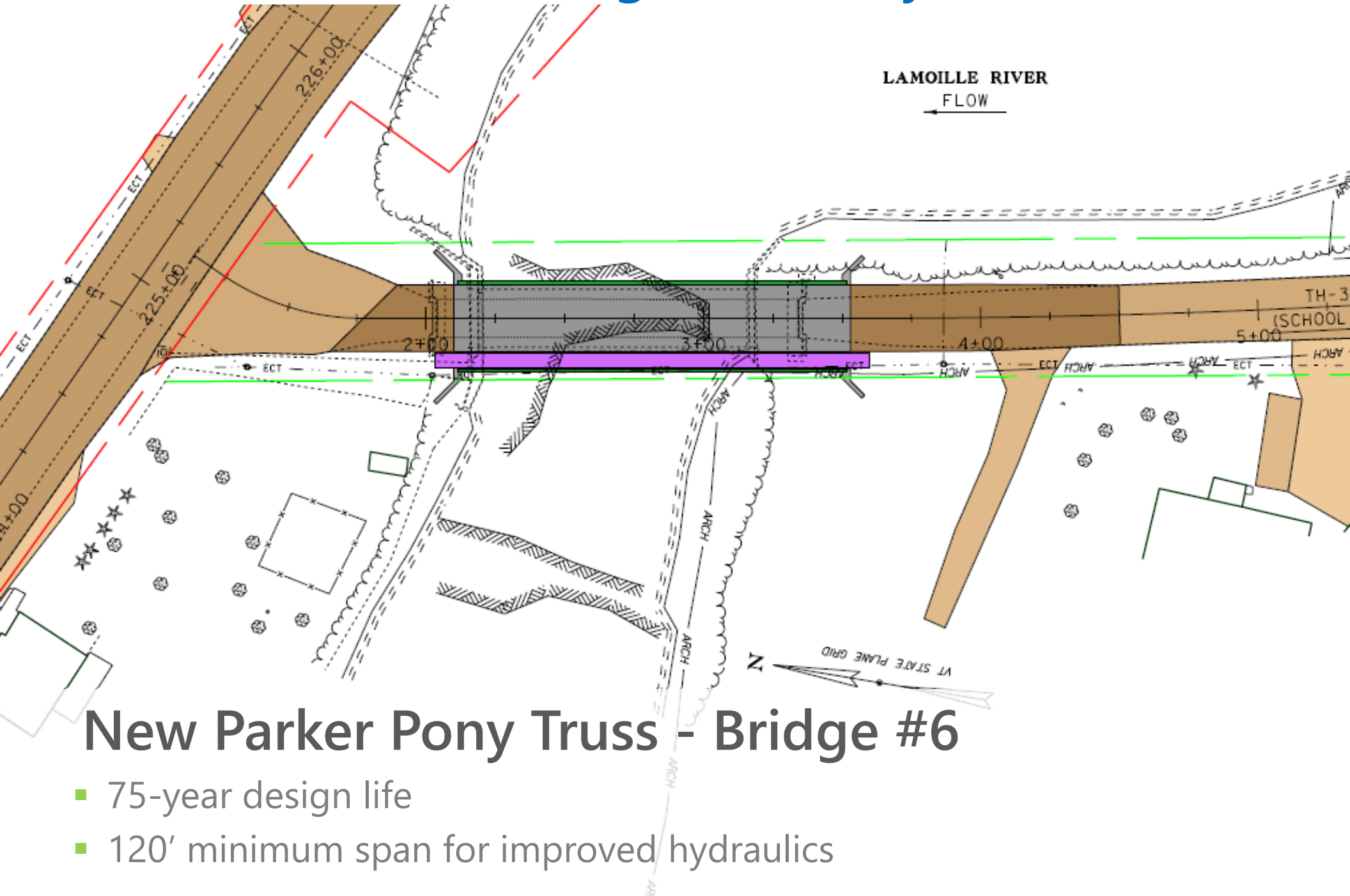


PROPOSED TRUSS BRIDGE TYPICAL SECTION

New Parker Pony Truss - Bridge #6

- 9'/3' typical with a sidewalk

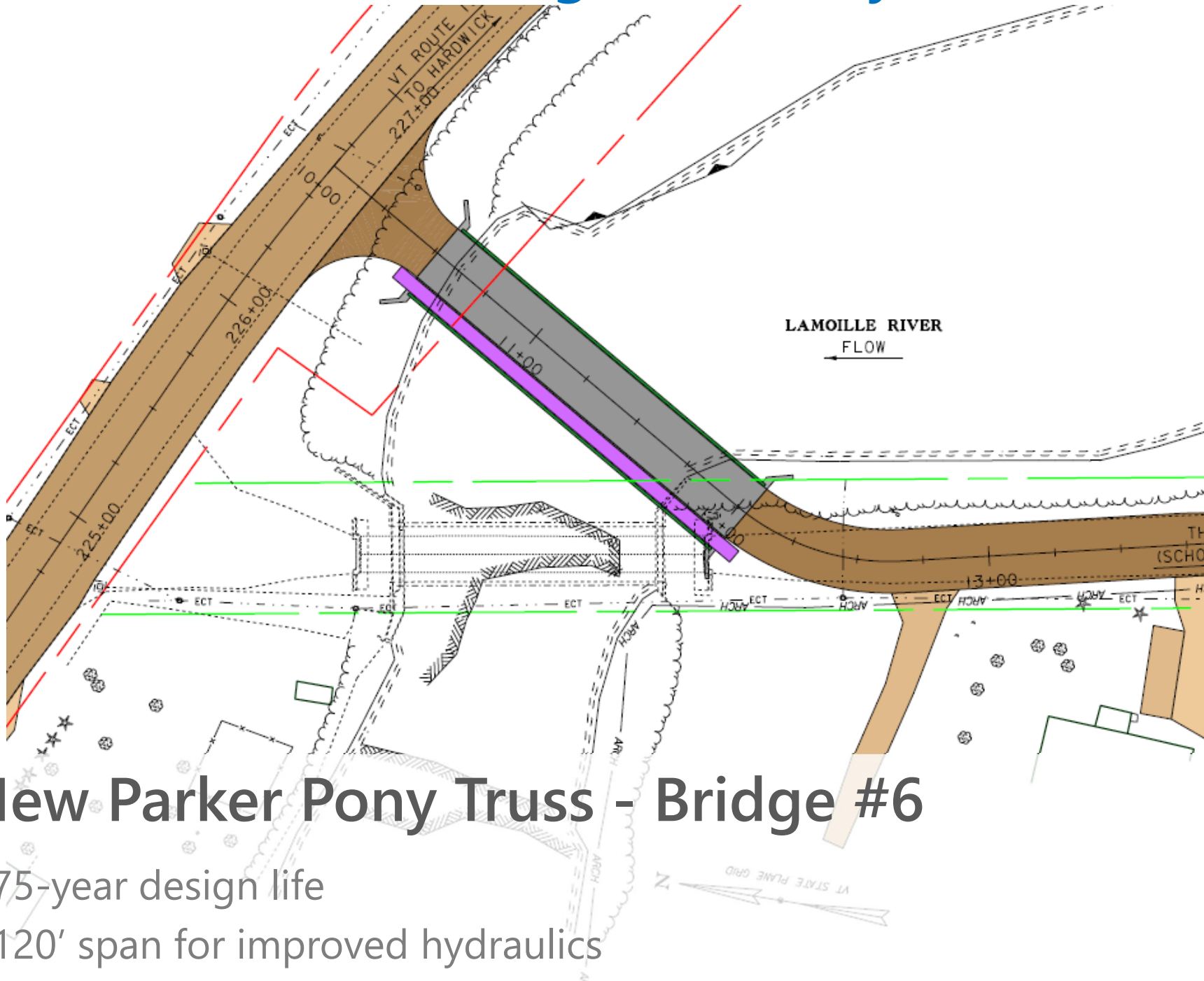
Alternative 2 On-Alignment Layout



New Parker Pony Truss - Bridge #6

- 75-year design life
- 120' minimum span for improved hydraulics

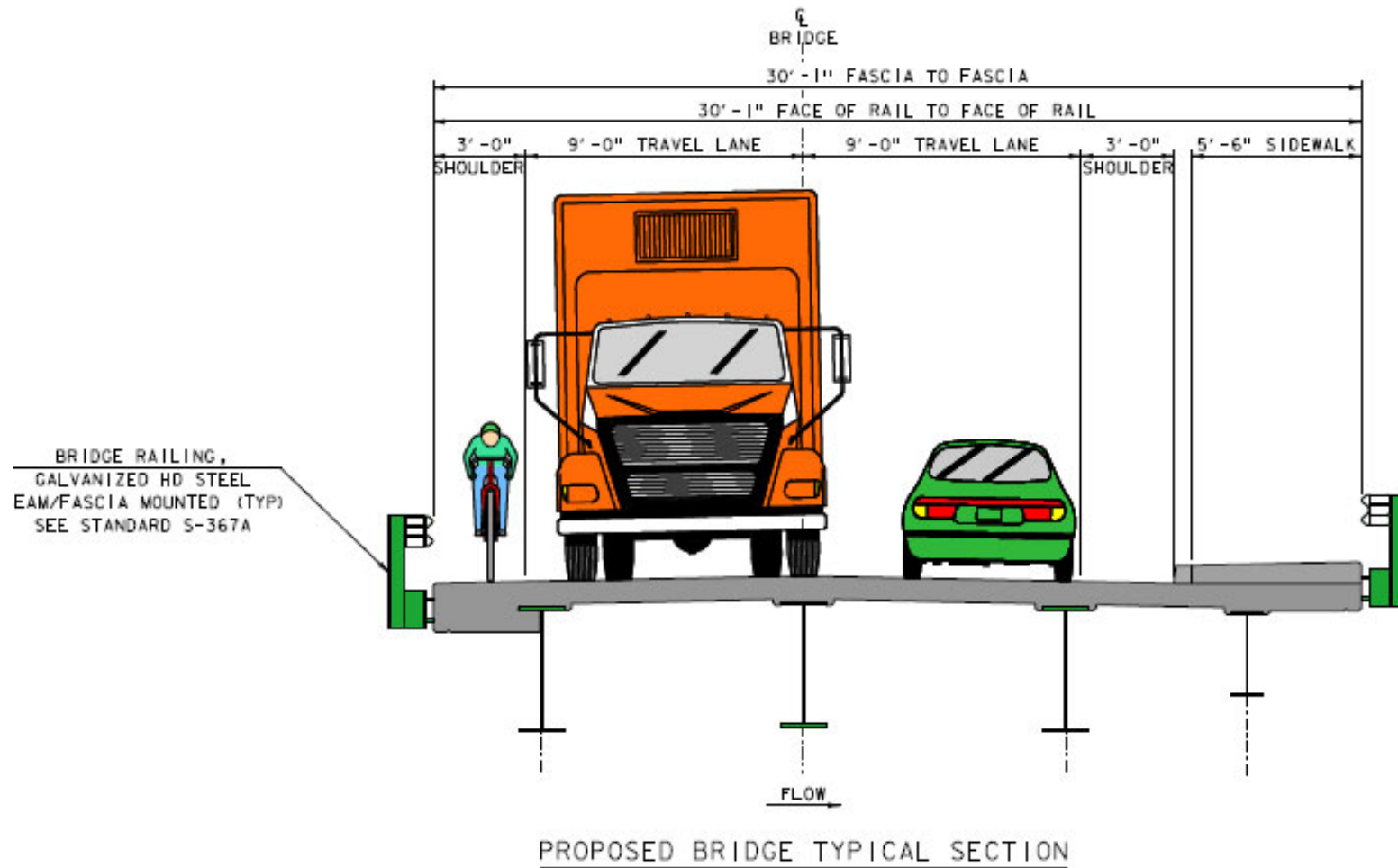
Alternative 2 Off-Alignment Layout



New Parker Pony Truss - Bridge #6

- 75-year design life
- 120' span for improved hydraulics

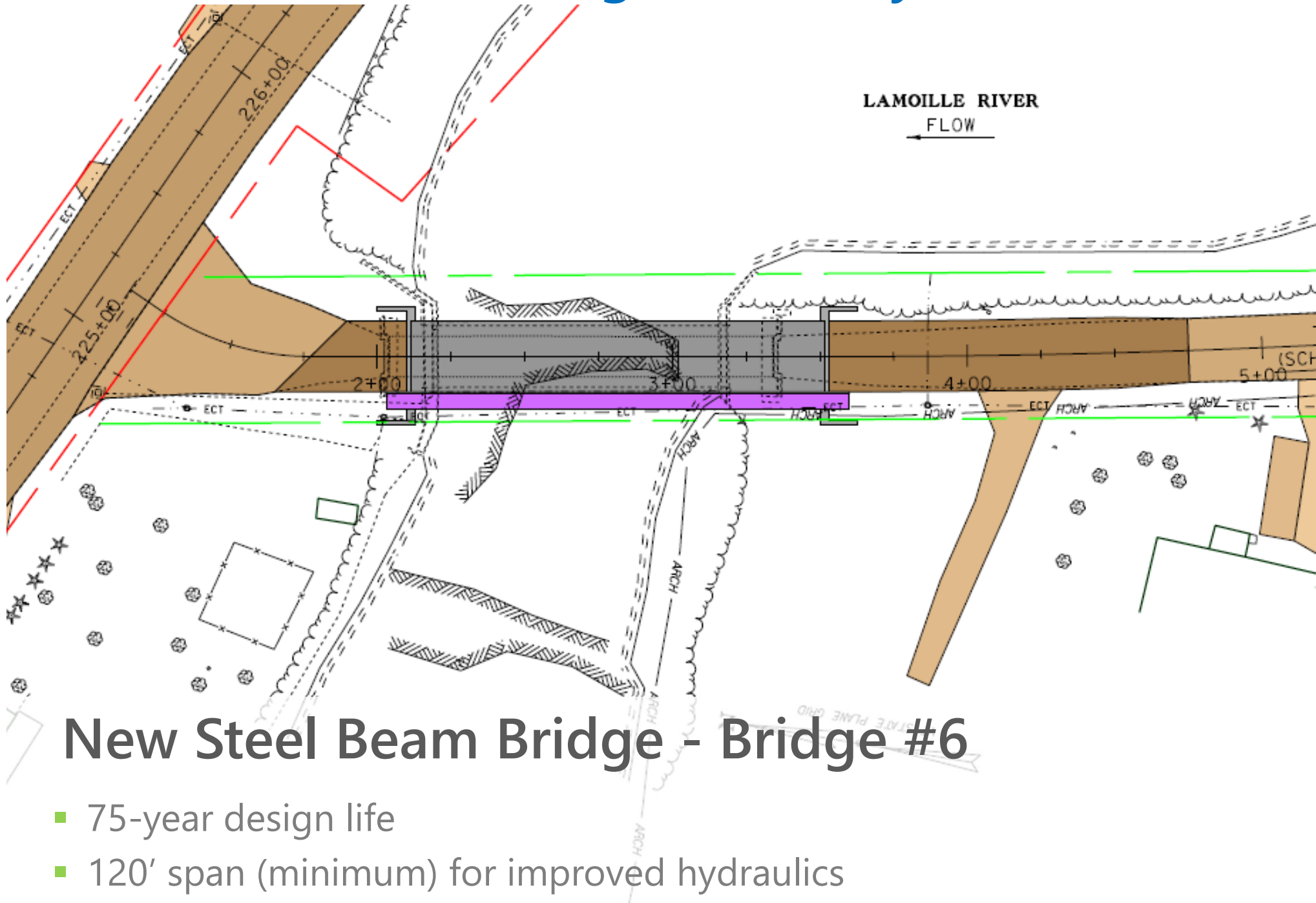
Alternative 3 On-Alignment Typical Section



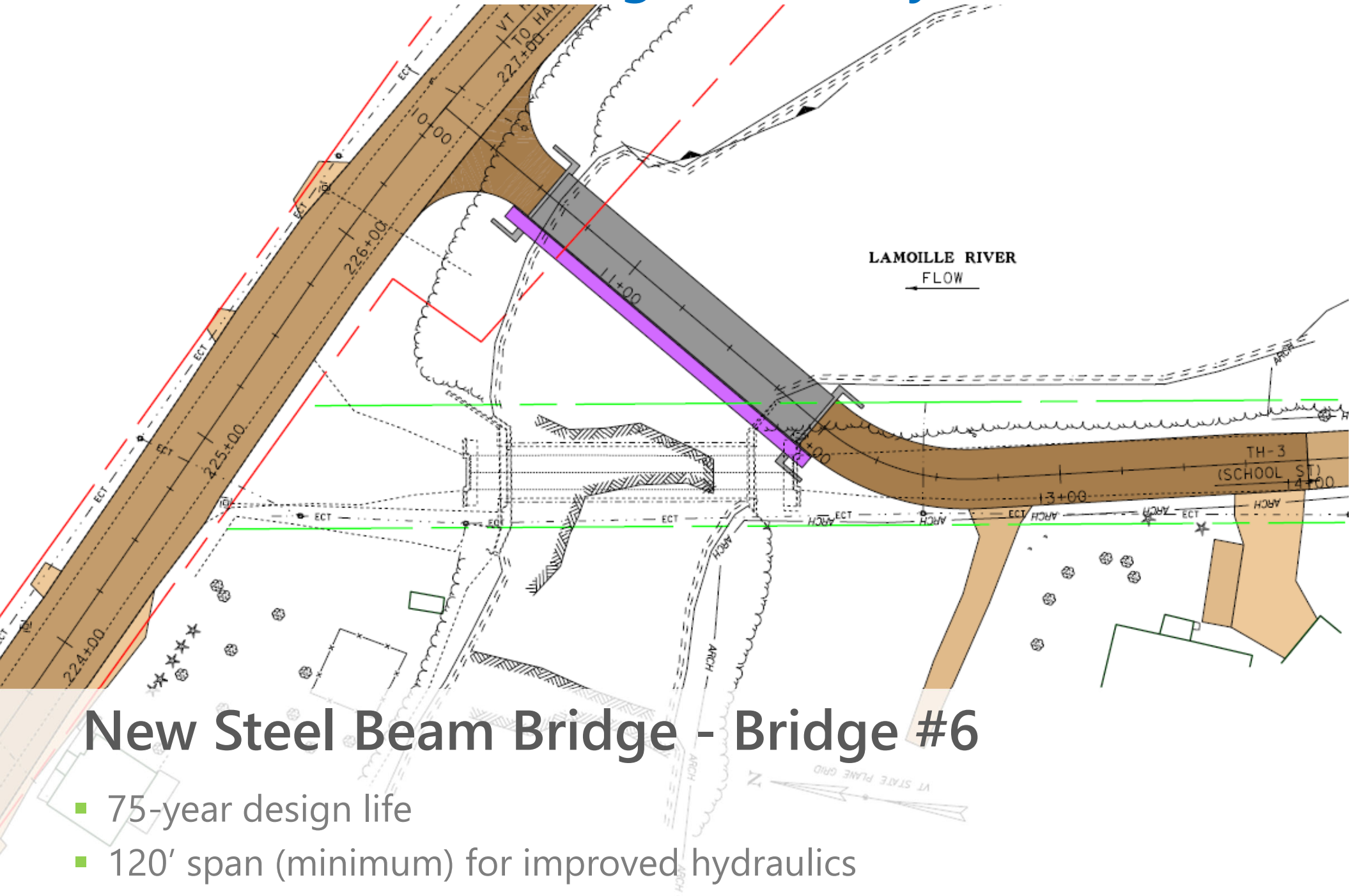
New Steel Beam Bridge - Bridge #6

- 9'/3' typical with a sidewalk

Alternative 3 On-Alignment Layout



Alternative 3 Off-Alignment Layout



Recommended Alternative - Bridge #6

- A new 120-foot span (minimum) parker pony truss constructed on an improved alignment
 - Original pony truss is narrow for the traffic volumes present and does not meet the minimum hydraulic standards warranting replacement.
 - Abutments to be aligned better with the channel
 - Lengthened to 120' span to improve the hydraulic condition and reduce water surface elevations during flood events
 - 75-year design life

Maintenance of Traffic Options Considered

- Offsite Detour
- Temporary Bridge

A photograph of a road closure. In the center, a white rectangular sign with a black border and the words "ROAD CLOSED" in large, bold, black capital letters is mounted on a white post. The sign is flanked by two horizontal barriers with red and white diagonal stripes. In the background, there is a concrete wall, a chain-link fence, and green trees under a clear blue sky.

ROAD
CLOSED

Road Closure

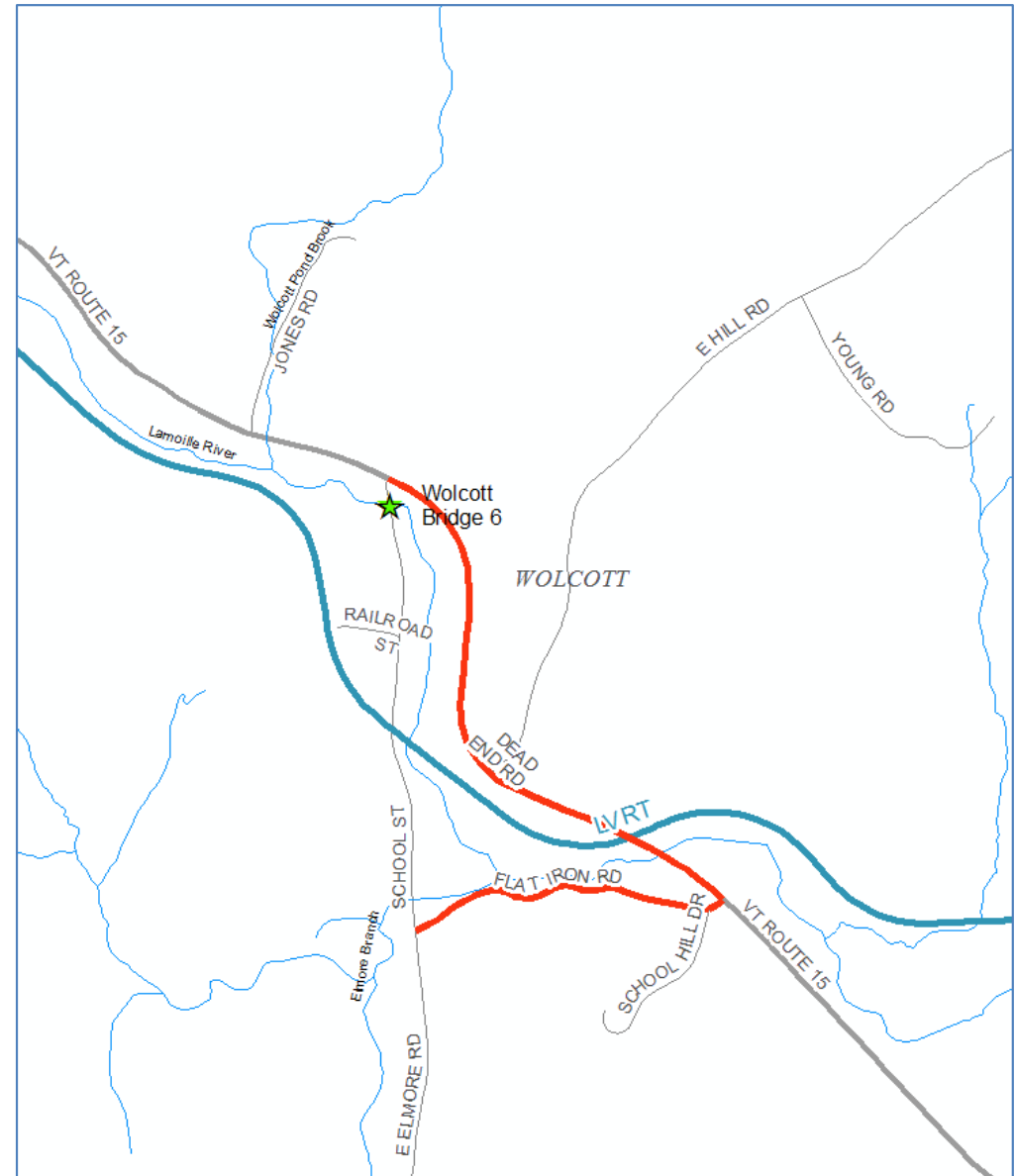
- Detour chosen and signed by Town
- Construction Season duration
- Shortest Detour Route is 1.8 miles end-to-end

Traffic Control – Detour

■ Regional Detour

Route: School Street to Flat Iron Road, and VT Route 15, back to School Street

- End-to-End Distance: 1.8 miles
- Through Distance: 0.6 miles
- Detour Distance: 1.2 miles
- Added Distance: 0.6 miles

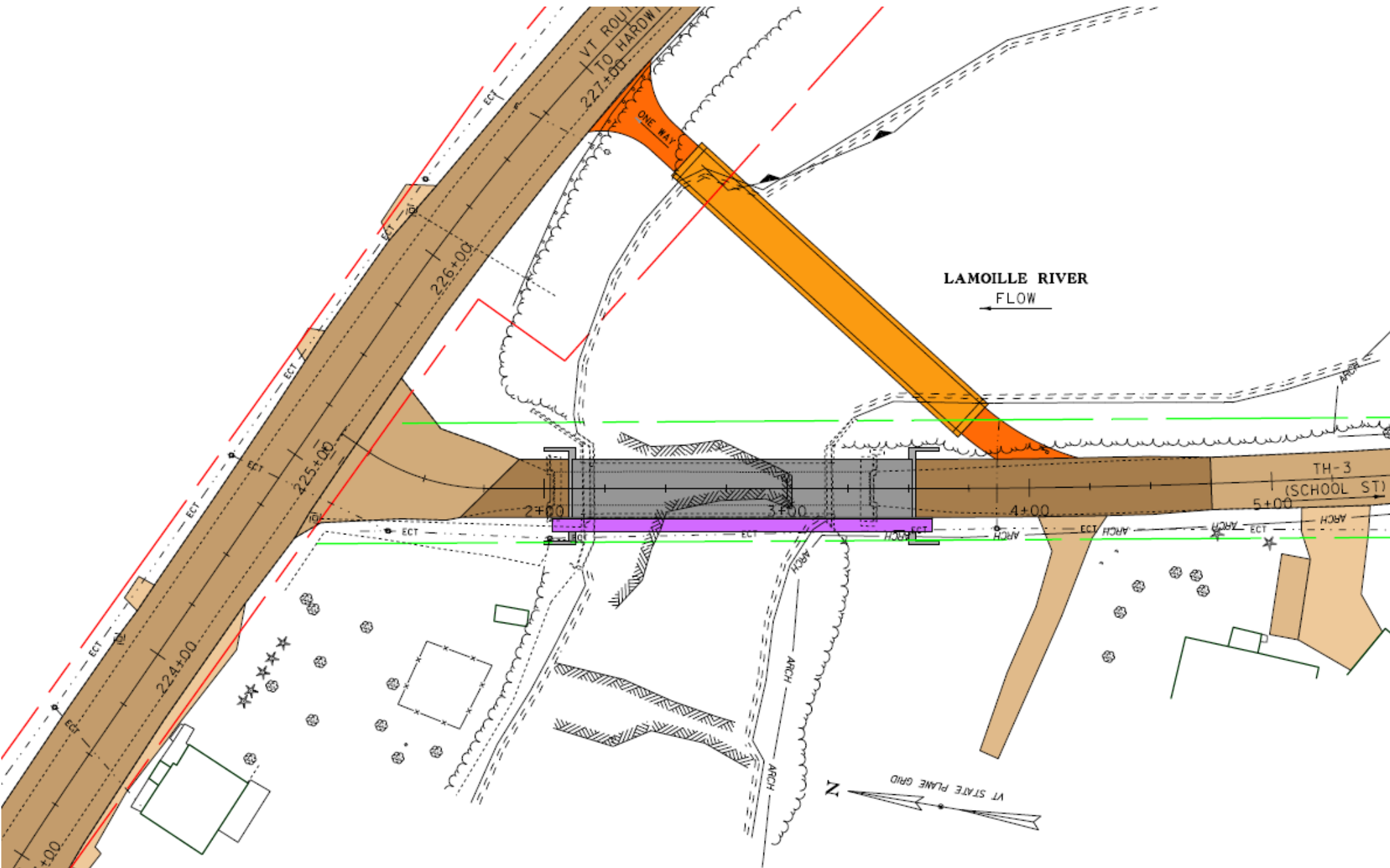




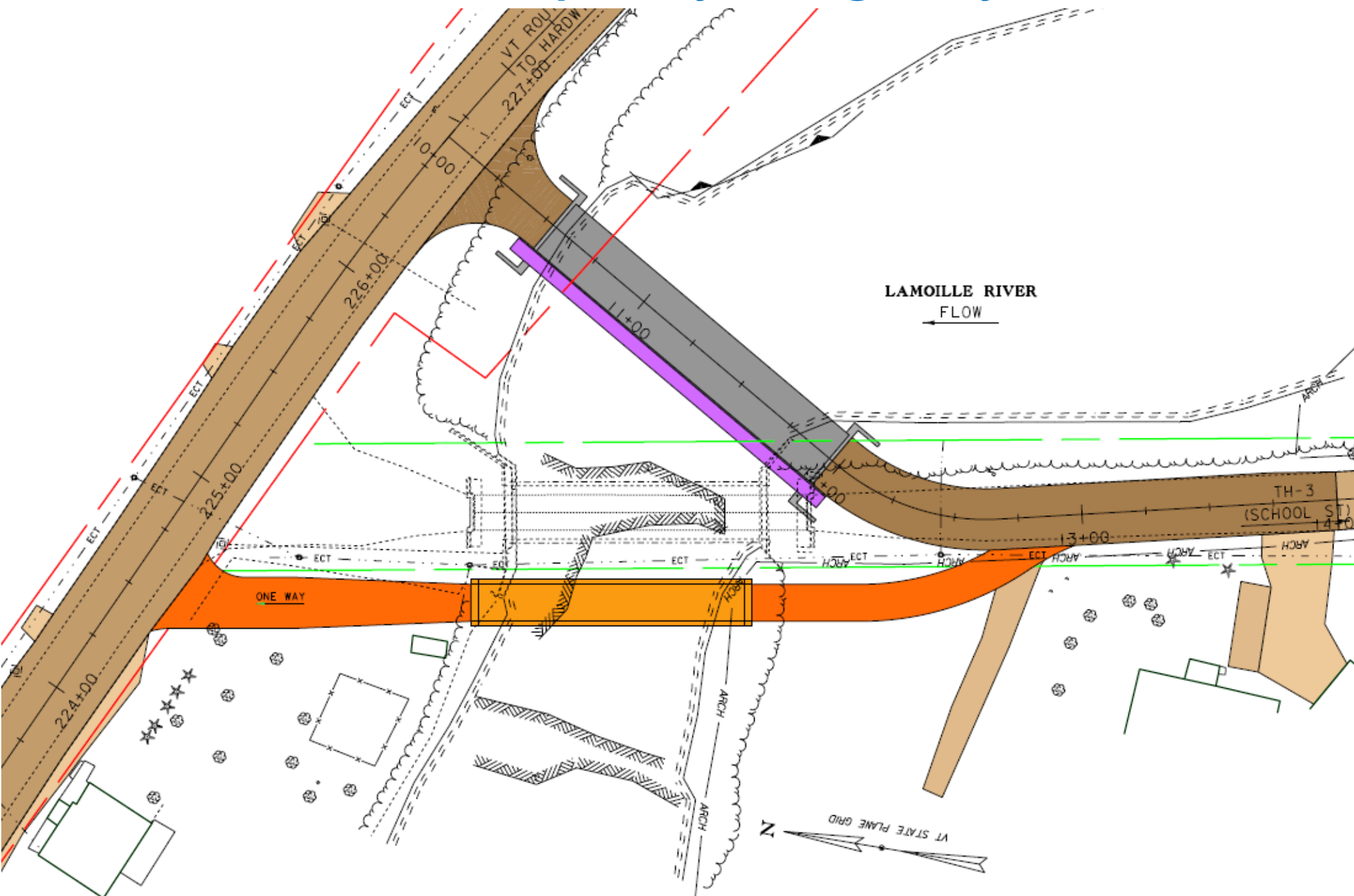
Temporary Bridge/Roadway

- One Lane Temporary Bridge constructed either Upstream or Downstream side of School Street

Upstream Temporary Bridge Layout



Downstream Temporary Bridge Layout



Recommendation: Bridge 6

- A new 120-foot span (minimum) parker pony truss constructed on an improved alignment with traffic maintained on an Offsite Detour
 - 120' span for improved hydraulics
 - 9'/3' typical to match corridor
 - 9'/2' is standard
 - Addition of sidewalk
 - Abutments to be aligned better with the channel
 - 75-year design life
 - Utility Relocation (Aerial), future sewer to go through project site
 - Right-of-Way needed
 - Construction Year: 2025

Alternatives Matrix

Wolcott BO 1446(38)	Alternative 1		Alternative 2				Alternative 3			
	Truss Rehabilitation		Full Bridge Replacement with New Parker Pony Truss				Full Bridge Replacement with Steel Beam Bridge			
	On-Alignment		On-alignment		Off-Alignment		On-alignment		Off-Alignment	
	a. Offsite Detour	b. Temporary Bridge	a. Offsite Detour	b. Temporary Bridge	c. Offsite Detour	d. Temporary Bridge	a. Offsite Detour	b. Temporary Bridge	c. Offsite Detour	d. Temporary Bridge
Total Project Costs	1,800,700	2,210,133	5,410,433	6,612,829	6,101,193	7,402,329	4,670,937	5,791,129	5,176,137	6,351,129
Annualized Costs	60,023	73,671	72,139	88,171	81,349	98,698	62,279	77,215	69,015	84,682
Town Cost	45,018	110,507	270,522	661,283	305,060	740,233	233,547	579,113	258,807	635,113
Town Share	2.50%	5%	5%	10%	5%	10%	5%	10%	5%	10%
Project Development Duration	4 years	4 years	4 years	4 years	4 years	4 years	4 years	4 years	4 years	4 years
Construction Duration	6 months	8 months	6 months	8 months	6 months	8 months	6 months	8 months	6 months	8 months
Closure Duration (If Applicable)	Construction Season	NA	Construction Season	NA	Construction Season	NA	Construction Season	NA	Construction Season	NA
Typical Section - Roadway (feet)	24	24	24	24	24	24	24	24	24	24
Typical Section - Bridge (feet)	20	20	24	24	24	24	24	24	24	24
Geometric Design Criteria	Substandard Width		Meets Minimum Standard		Meets Minimum Standard		Meets Minimum Standard		Meets Minimum Standard	
Alignment Change	No Change	No Change	No Change		Northern Approach Shifted 75 feet east		No Change		Northern Approach Shifted 75 feet east	
Bicycle Access	No Change	No Change	Improved	Improved	Improved	Improved	Improved	Improved	Improved	Improved
Pedestrian Access	No Change	No Change	Improved	Improved	Improved	Improved	Improved	Improved	Improved	Improved
Hydraulics	Substandard BFW		Meets Minimum Standard		Meets Minimum Standard		Meets Minimum Standard		Meets Minimum Standard	
Utilities	Aerial Relocation	Aerial Relocation	Aerial Relocation	Aerial Relocation	Aerial Relocation	Aerial Relocation	Aerial Relocation	Aerial Relocation	Aerial Relocation	Aerial Relocation
ROW Acquisition	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Road Closure	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Design Life (years)	30	30	75	75	75	75	75	75	75	75

Preliminary Project Schedule

- Construction Start – 2025
 - Total Cost Estimate: \$6,100,000
 - Town Share: \$305,000

Next Steps – Bridge #6

This is a list of a few important activities expected in the near future and is not a complete list of activities.

- ➡ Wait for Town response to recommendation on proposed project
 - Develop Conceptual plans and distribute for comment
 - Process local agreements
 - Right-of-Way process
 - Updates on project plans and estimates at each submittal

For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/19J222>



Wolcott BF 1446(38) Questions and Comments Town Highway 3 – Bridge 6 over Lamoille River

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