



Waterbury BO 1446(40) Alternatives Presentation Meeting

Stowe Street – Bridge #36 over Thatcher Brook

Monday August 2nd, 2021



Introductions

Laura Stone, P.E.

VTrans Scoping Engineer

Jonathan Griffin, P.E.

VTrans Project Manager

Tom Knight, P.E.

Stantec Project Manager



Purpose of Meeting

- Provide an understanding of VTrans' approach to the project
- Provide an overview of project constraints
- Discuss VTrans' recommended alternative
- Provide an opportunity to ask questions and voice concerns





Bridge 36
Project Location

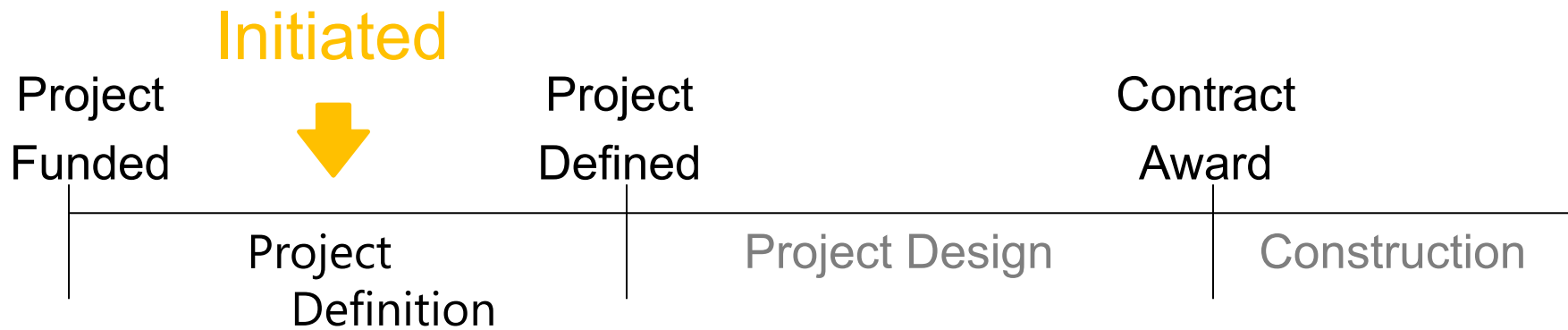
Location Map

Meeting Overview

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



VTrans Project Development Process



- Identify resources & constraints
- Evaluate alternatives
- Public participation
- Build Consensus

- Quantify areas of impact
- Environmental permits
- Develop plans, estimate and specifications
- Right-of-Way process if necessary



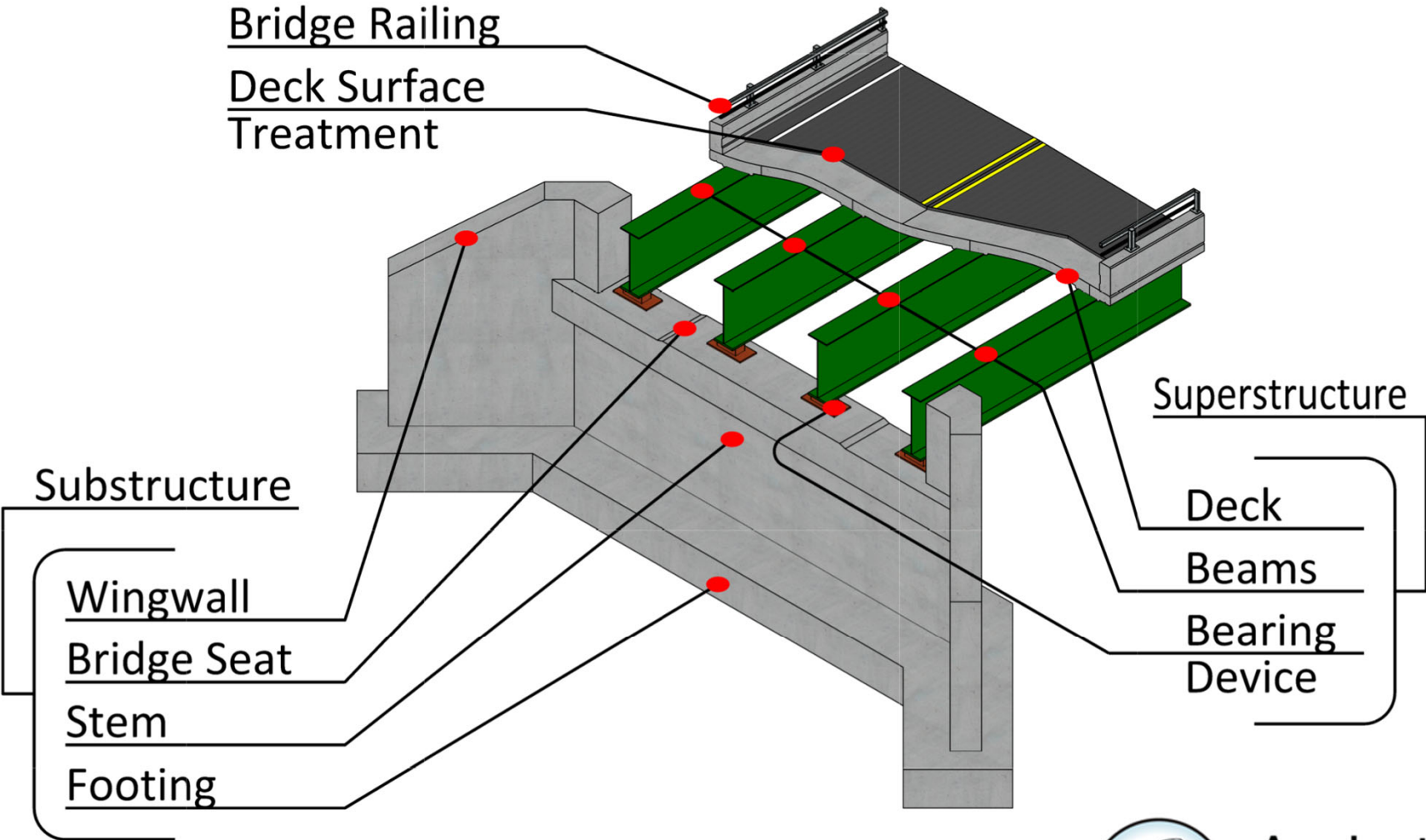
ACT 153 of the 2012 Legislative Session

	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



Description of Terms Used



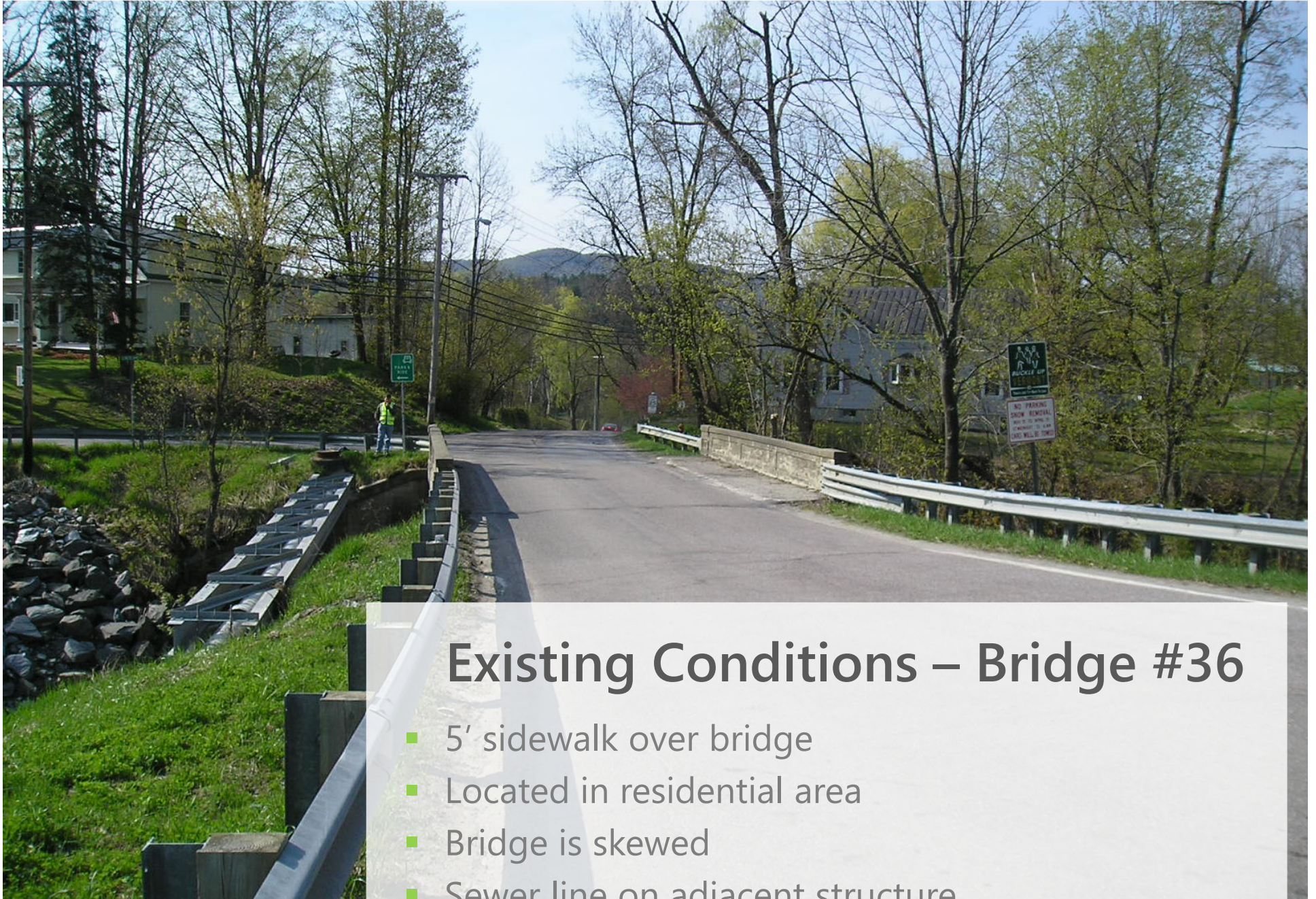
Looking North over Bridge



Existing Conditions – Bridge #36

- Roadway Classification – Local Town Road (Class 2 Town Highway)
- Bridge Type – 44' Span Reinforced Concrete T-Beam Bridge
- Ownership – Waterbury Village
- Constructed in 1928

Looking South over Bridge



Existing Conditions – Bridge #36

- 5' sidewalk over bridge
- Located in residential area
- Bridge is skewed
- Sewer line on adjacent structure

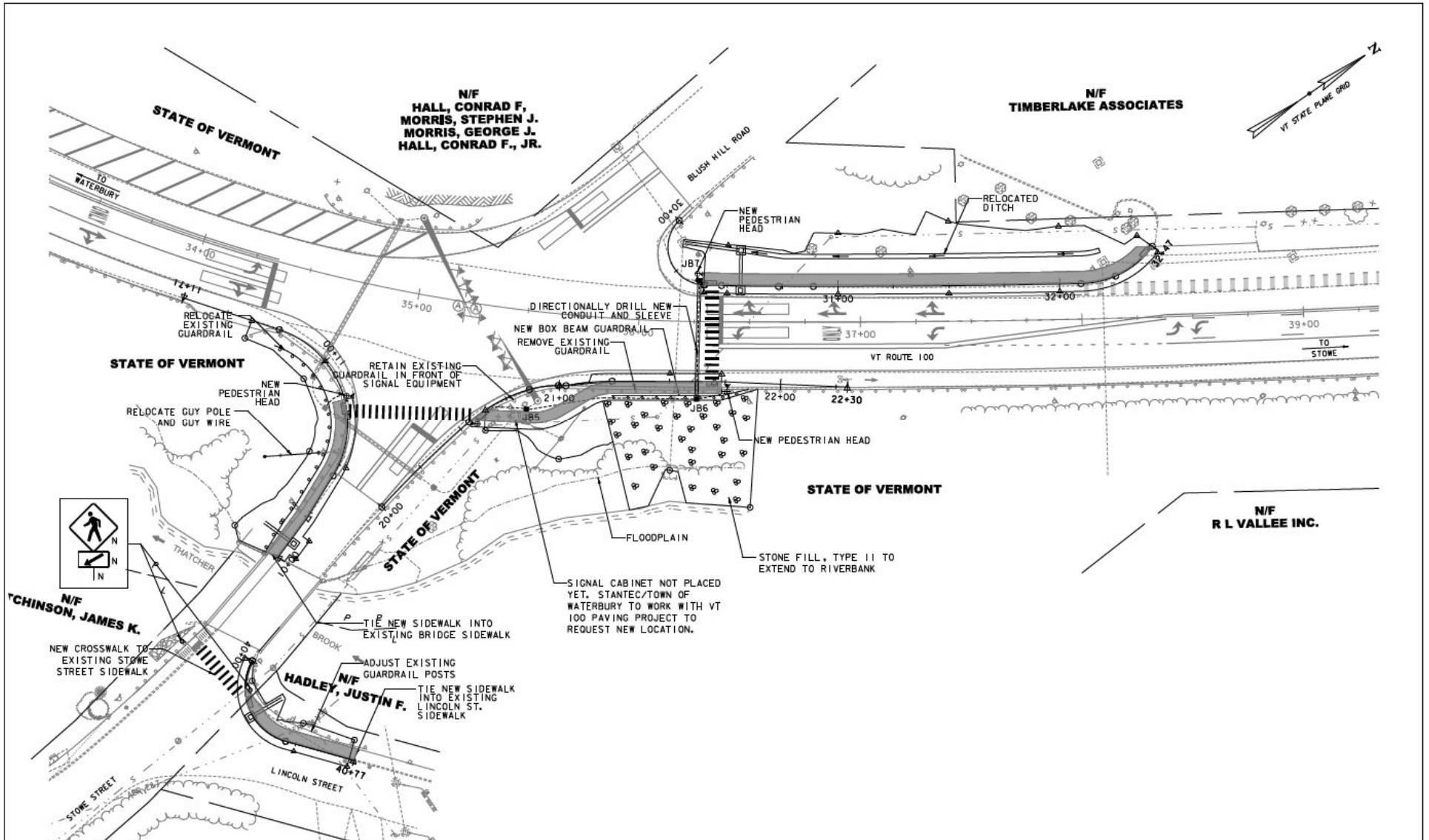
Known
Deficiencies?

Issues

- Width (lack of it)
- Sidewalk location (wrong side)
- Structural condition / inspection frequency
- Transit bus turning geometry
- Intersection alignment
- Traffic queues

Opportunities

- Pedestrian cyclist corridor study (Broadreach 2017)
- Pedestrian/Cycling Corridor Improvements STP BP17(11)



STP BP17(11) sidewalk improvements

Substructure



Existing Conditions - Bridge #36

- Scour, spalling, cracks

More Spauling and Cracking Beams and Deteriorated Abutments



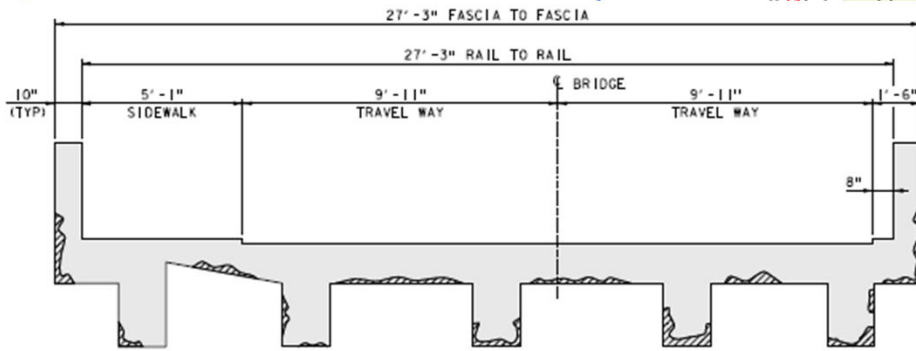
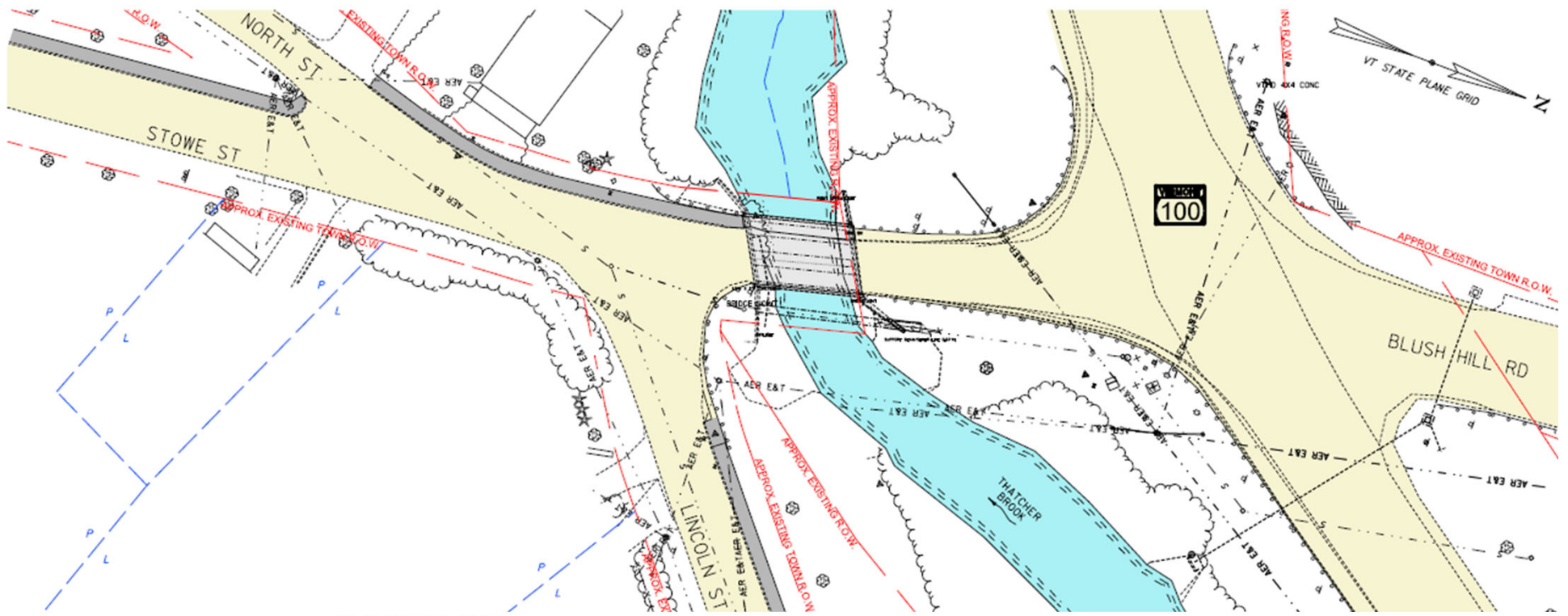
Existing Conditions - Bridge #36 (2018)

Upstream Elevation (Utility Bridge)

Existing Conditions - Bridge #36



Existing Layout

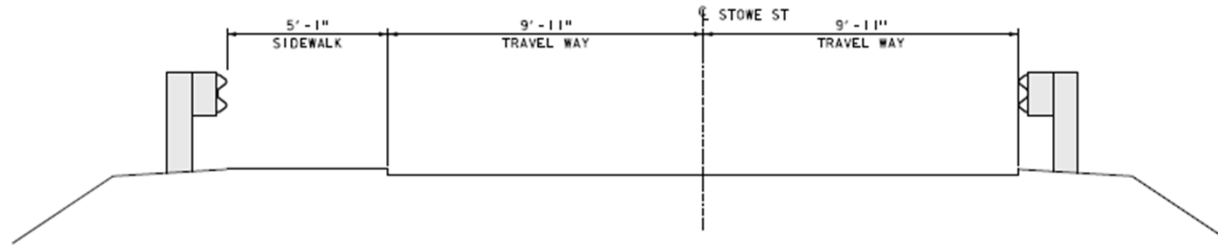


EXISTING BRIDGE TYPICAL SECTION

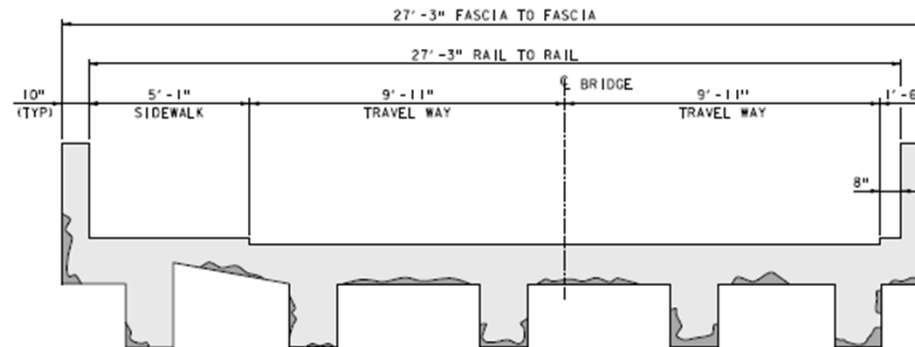


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Bridge
Program**
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Existing Roadway Typical Section



Existing Bridge Typical Repair Section



Design Criteria and Considerations

- ADT of 3000 vehicles per day
- DHV of 430 vehicles per hour
- % Trucks: 3
- Design Speed of 25 mph
- Utilities: Overhead Guy, Sewer, Water under stream upstream of bridge.

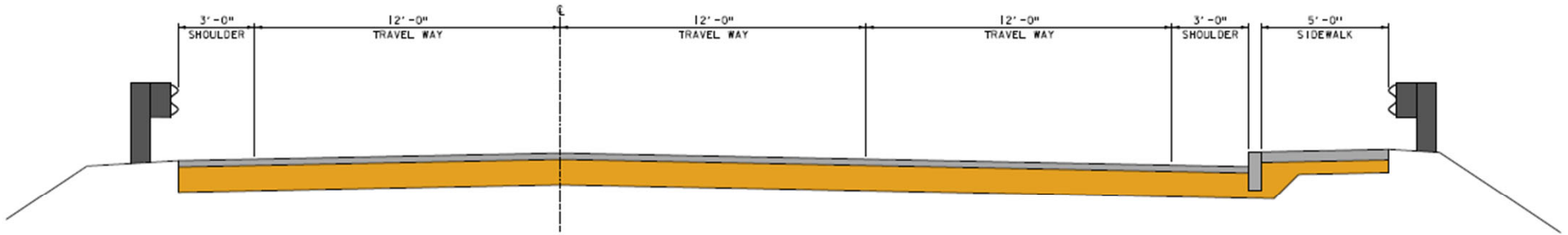
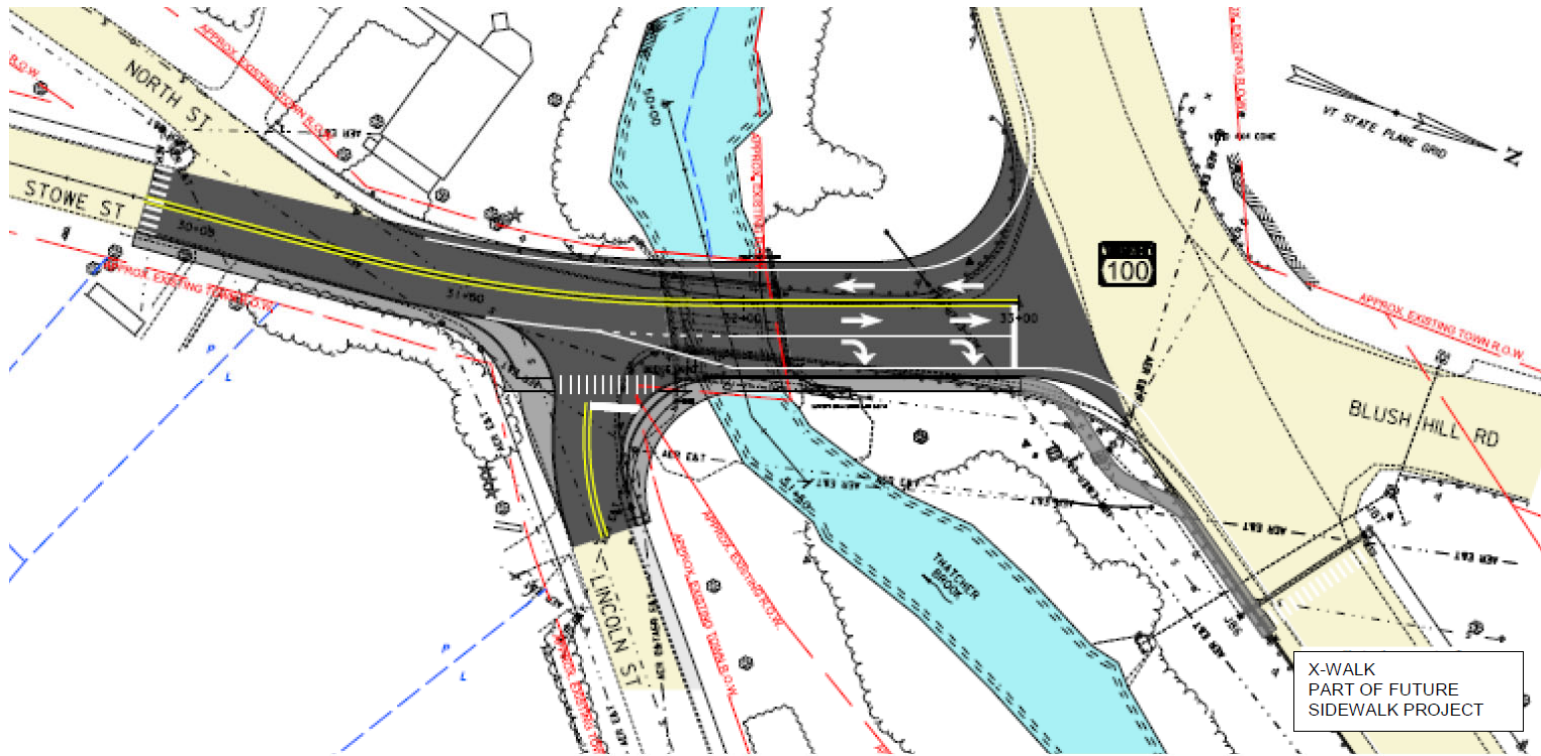


Alternatives Considered – Bridge #36

- No Action
 - Additional maintenance required within 2-10 years
- All Alternatives 3'-12'-12'-12'-3'-5'* Typical
 - *4'-11'-11'-11'-4'-5' is an option for the Town to consider.
- Superstructure Rehabilitation/Substructure Repair
 - 15-year design life
- Superstructure Replacement/Widening of Abutments
 - Substructure repair
 - 50-year design life based on condition of abutments
- Full Bridge Replacement with Buried Structure
 - Maintain horizontal and vertical alignment
 - 75-year design life
- Full Bridge Replacement with Steel Beam Superstructure
 - Maintain horizontal and vertical alignment
 - 75-year design life



Common Features Plan

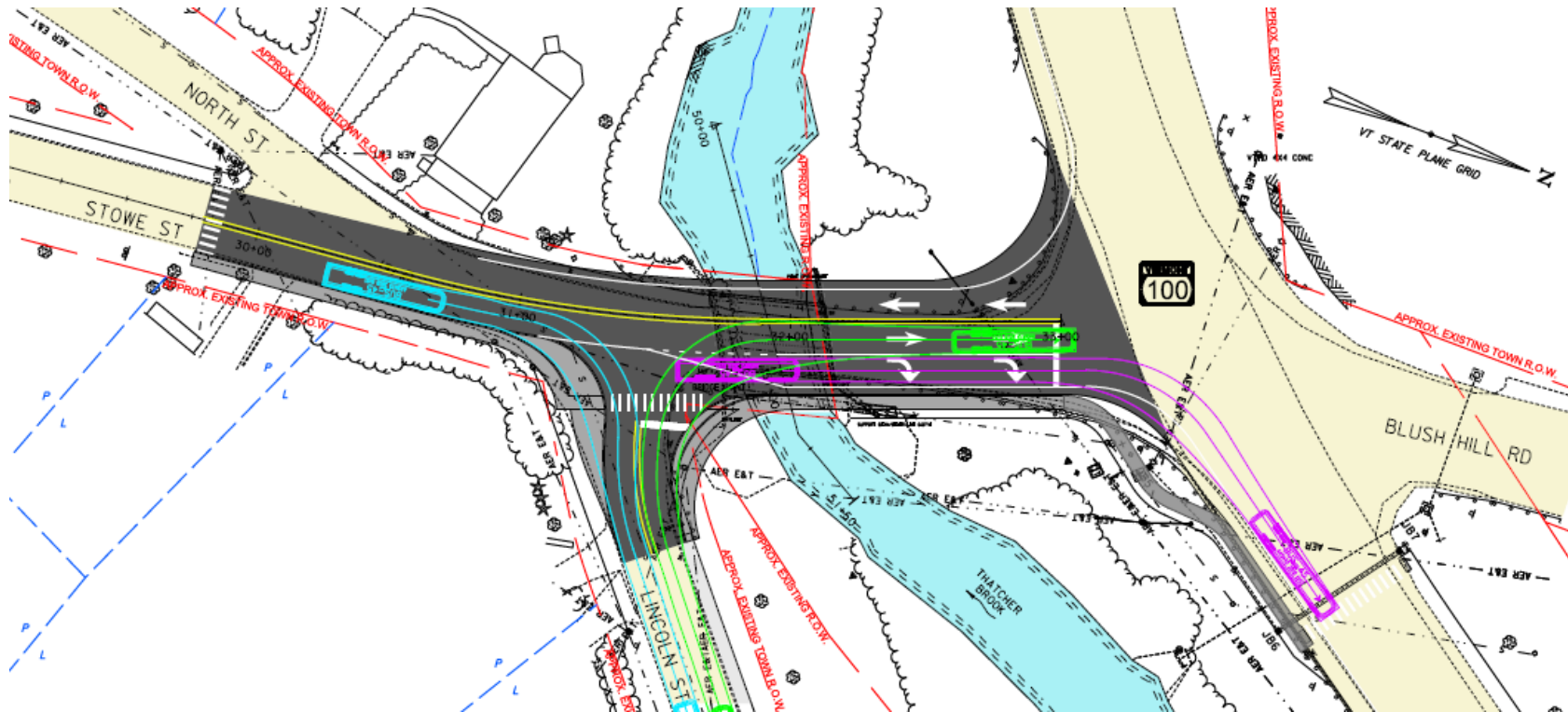


PROPOSED ROADWAY TYPICAL SECTION

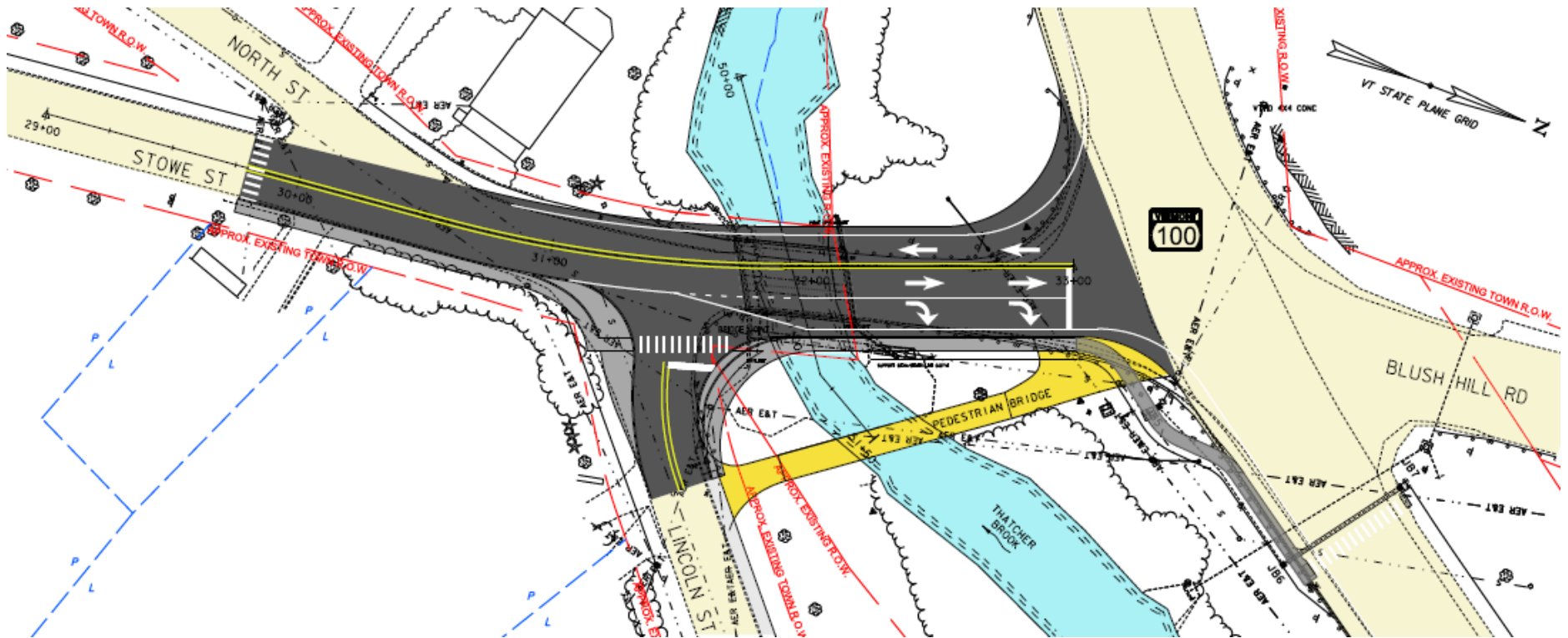


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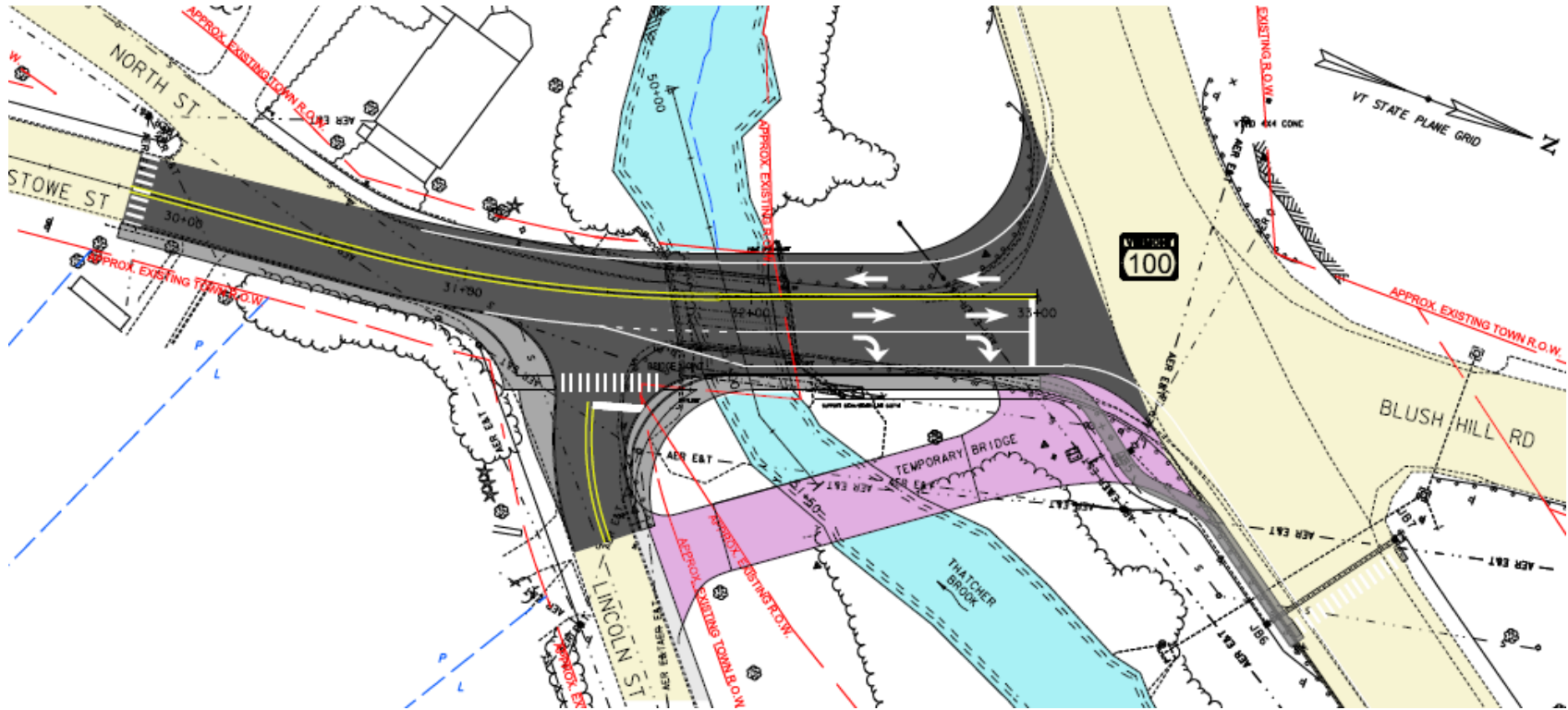
Common Features Plan with Bus Turns



Common Features Plan with Temporary Pedestrian Bridge

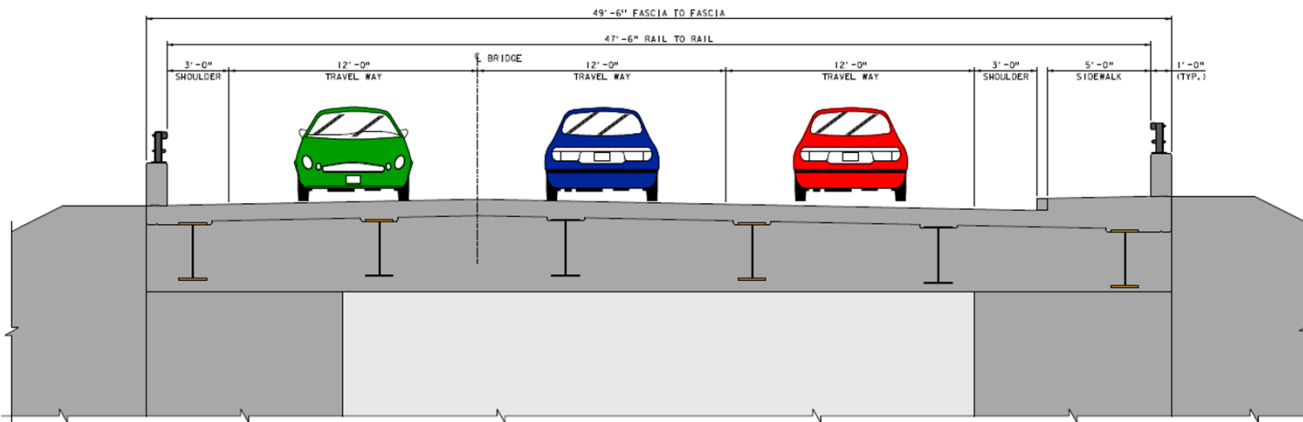
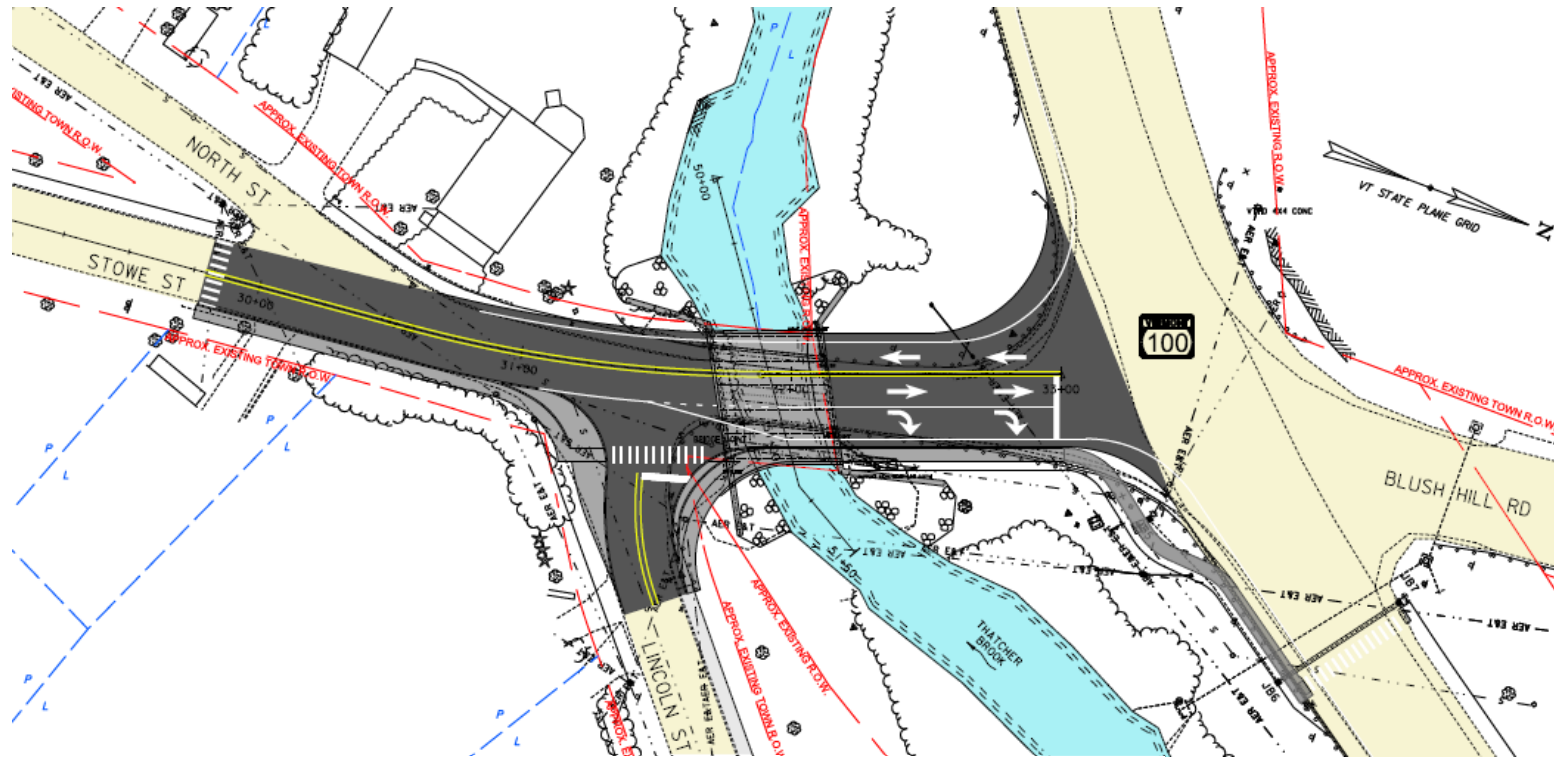


Common Features Plan with Temporary Bridge

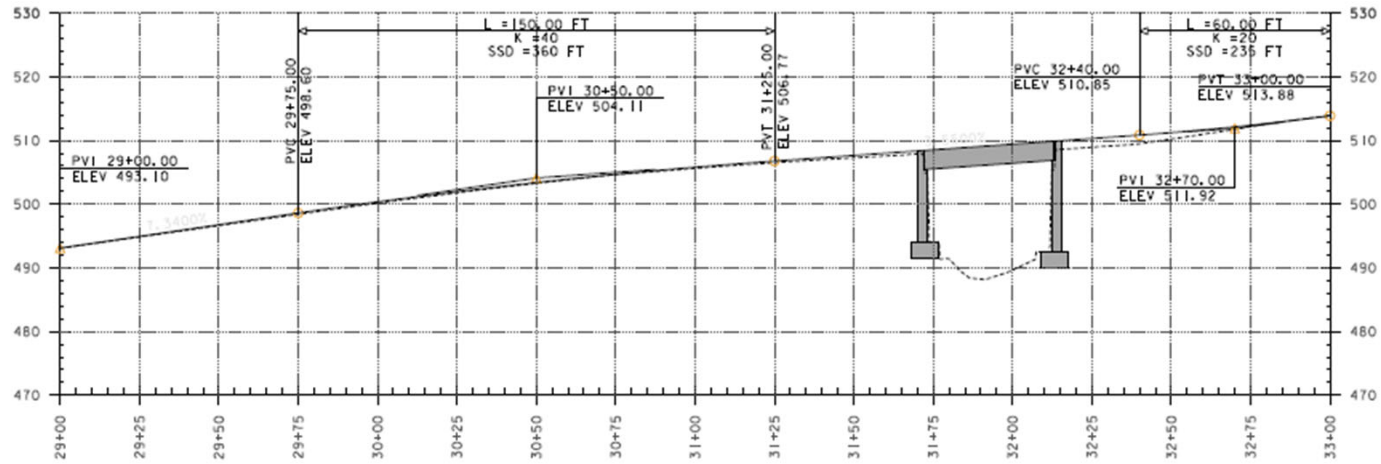


VTTRANS

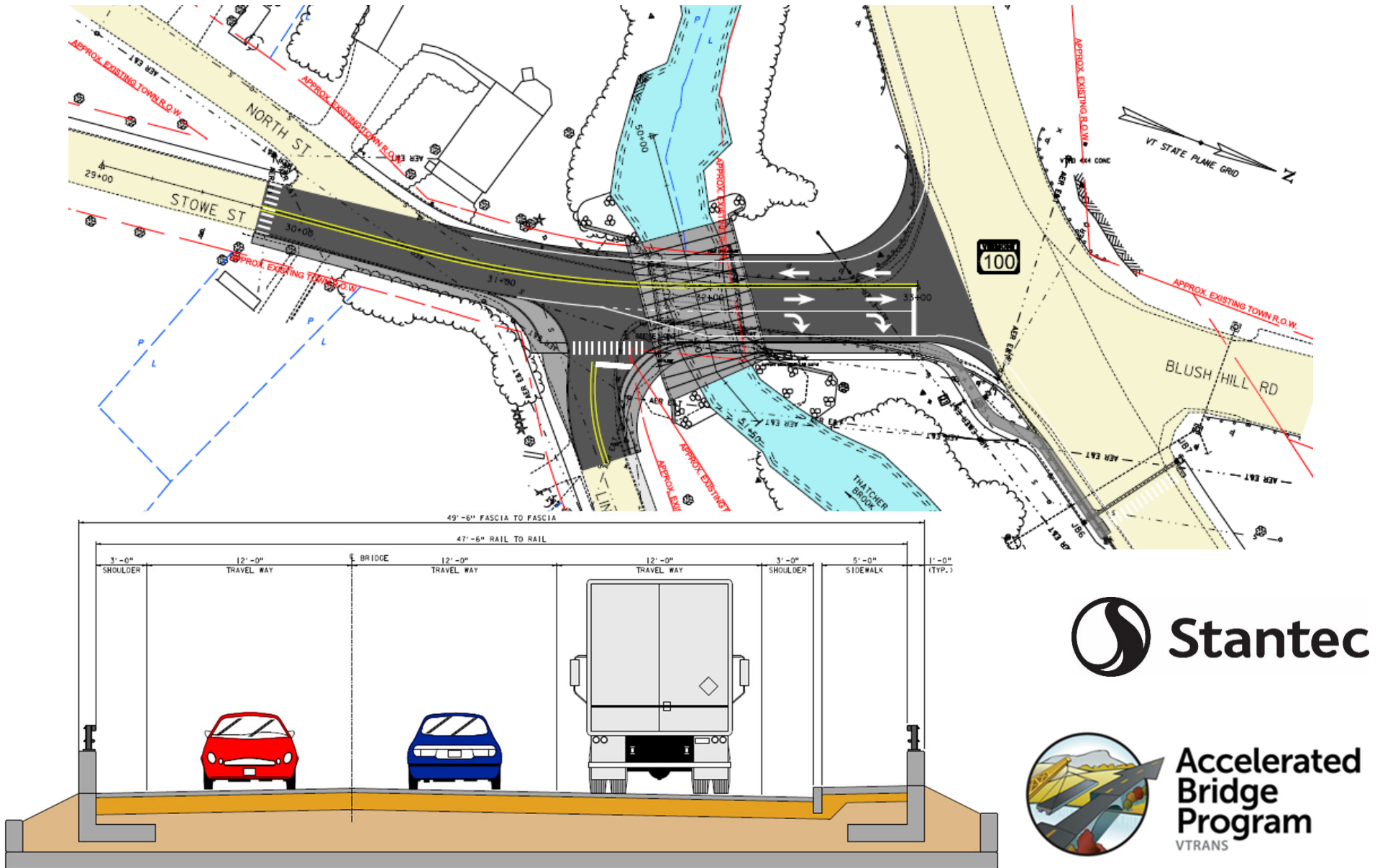
Alternative 2: Superstructure Replacement, Widen Existing Substructure



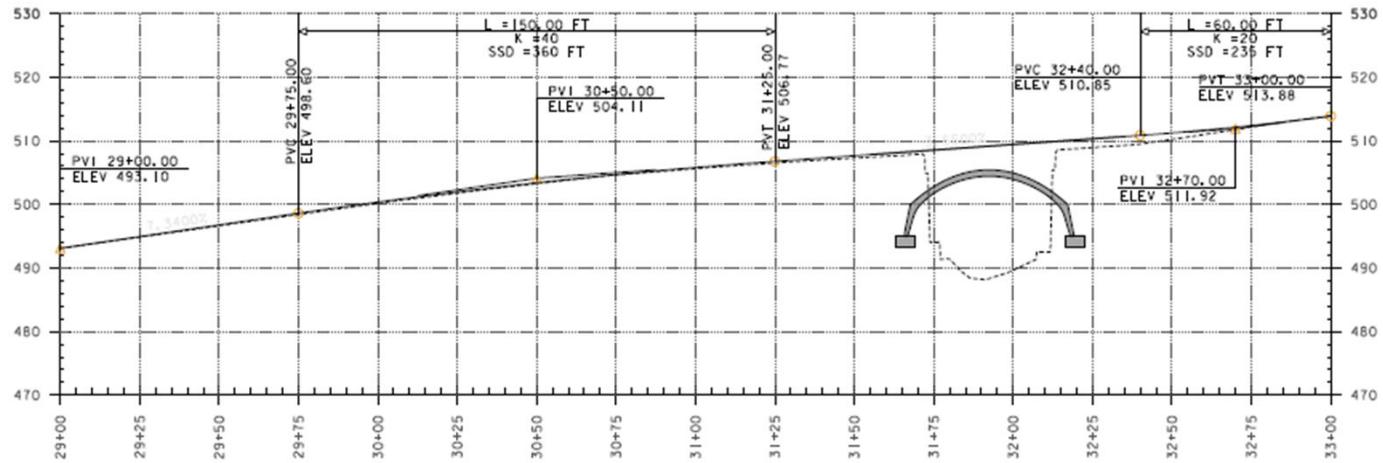
Alternative 2: Profile



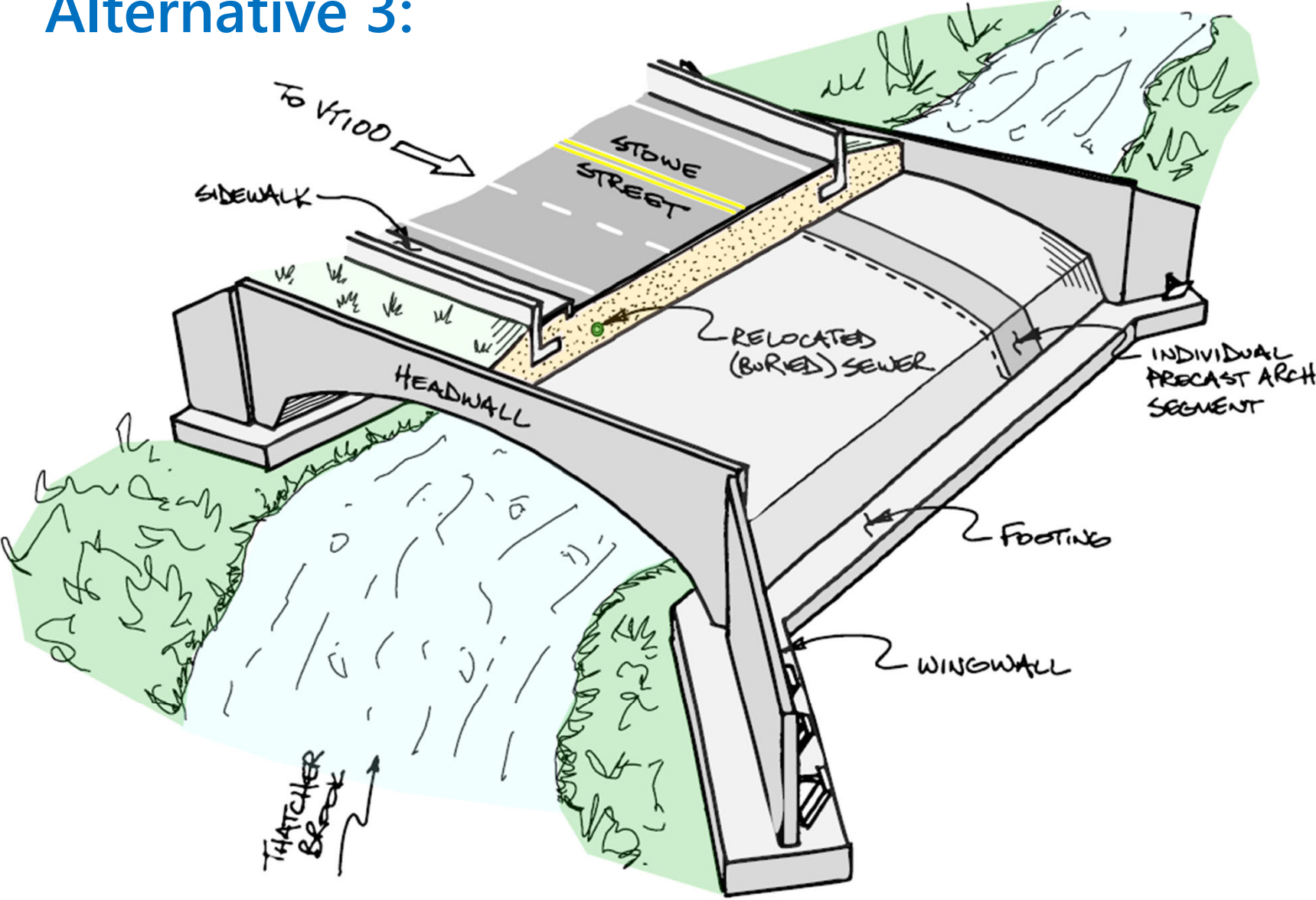
Alternative 3: Bridge Replacement with Buried Structure



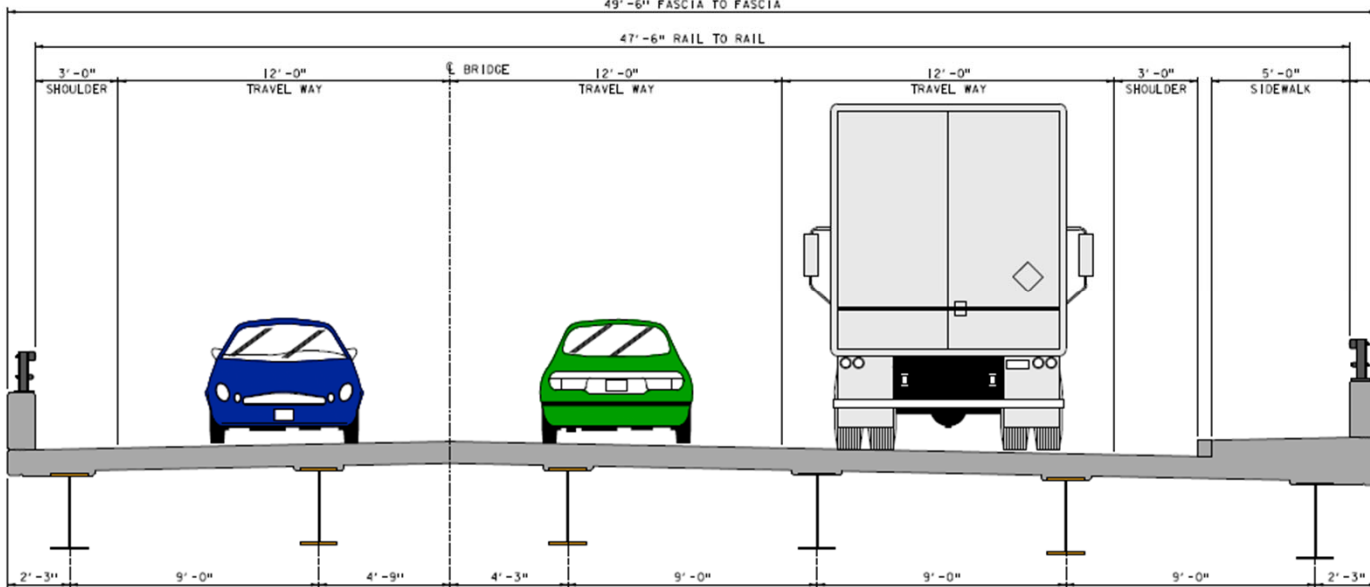
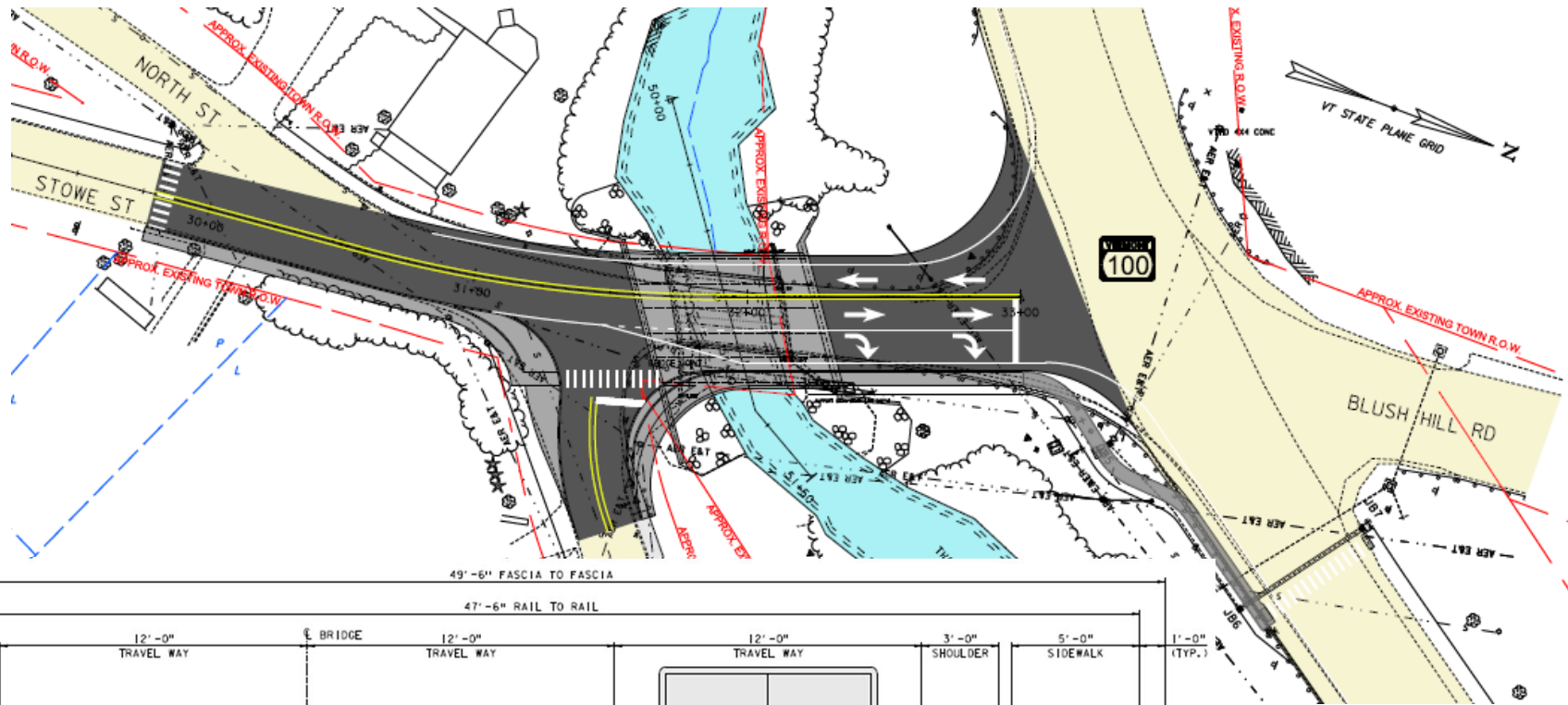
Alternative 3:



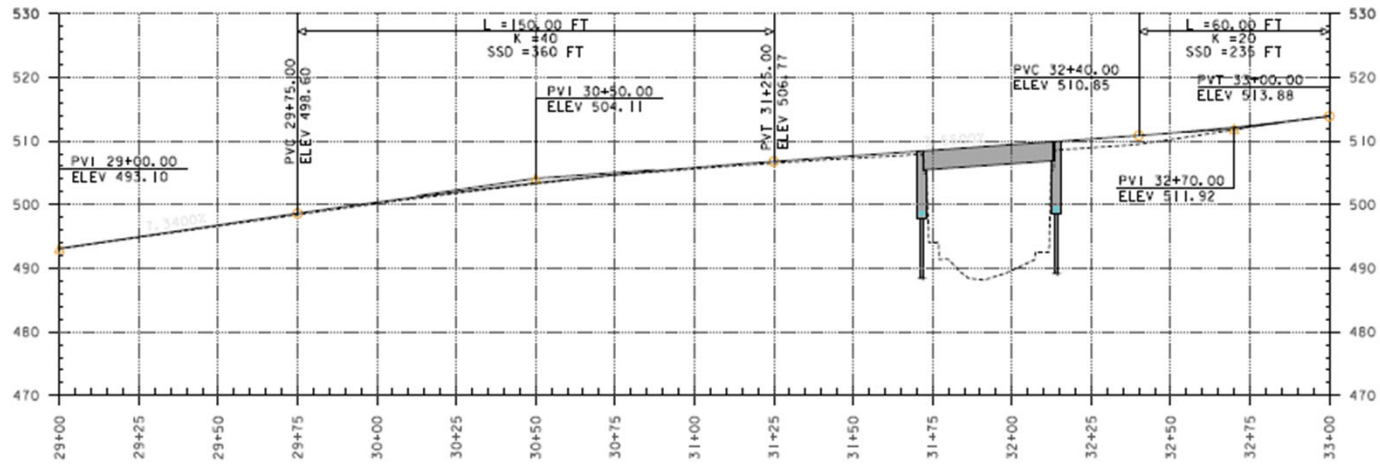
Alternative 3:



Alternative 4: Bridge Replacement with Steel Beam Superstructure, Integral Abutments



Alternative 3: Profile



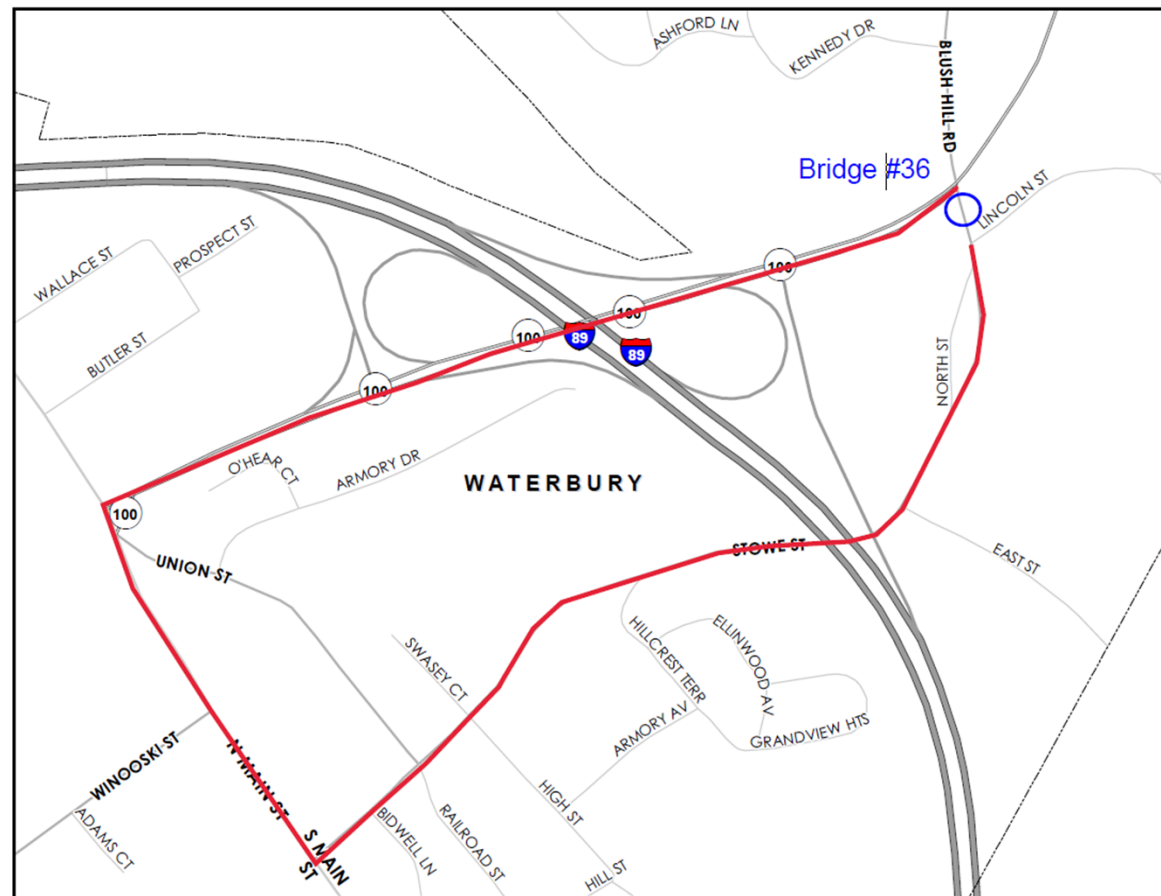
Maintenance of Traffic Options Considered

- Offsite Detour
- Temporary Bridge
- Temporary Pedestrian Bridge
- ✗ Phased Construction



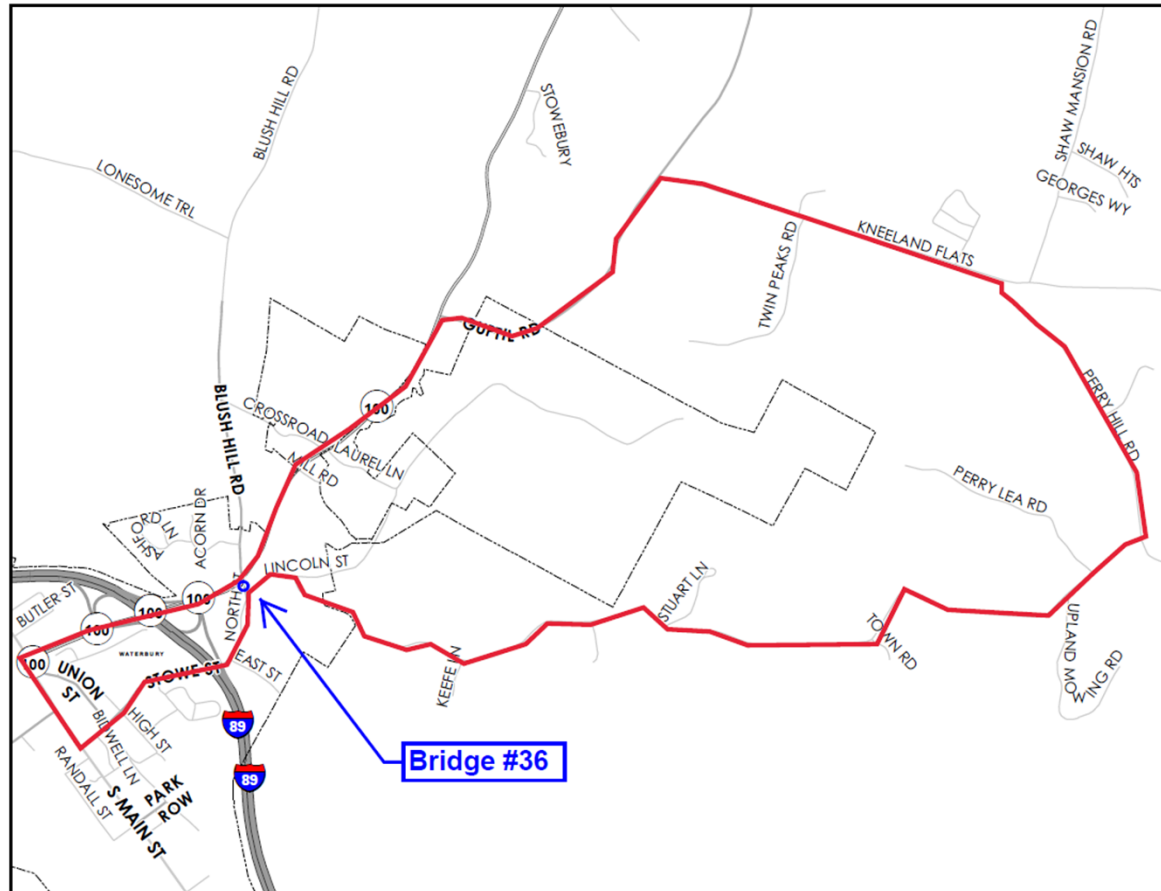
Traffic Control – Offsite Detour:

- The anticipated detour route is: Stowe Street → VT Route 100 → US 2 (west) → back to Stowe Street. This route has an end-to-end distance of 1.4 miles.



Traffic Control-Pedestrian Route

- Lincoln Street → Perry Hill Road → Kneeland Flats Road → Guptil Road → VT Route 100 → Stowe Street.



Recommended Alternative

- Full Bridge Replacement with Buried Structure:
 - Traffic Maintained on an Offsite Detour with shuttle Option for Pedestrian Traffic
 - 60 day proposed closure, detour signed by Town
 - 12'/3'* typical with a 5-foot wide sidewalk on the upstream fascia
 - Span length of approximately 50'
 - Substructure on ledge
 - Historic railing
 - 75-year design life
 - Right of Way Needed
 - Minor Aerial Utility Relocation
 - Municipal Utility Relocation



Alternatives Matrix

Recommended

Waterbury BO 1446(40)	Do Nothing	Alt 1a	Alt 2a Offsite Detour	Alt 2b Temporary Bridge ⁴	Alt 3a Offsite Detour	Alt 3b Temporary Bridge ⁴	Alt 4a Offsite Detour	Alt 4b Temporary Bridge ⁴
		Superstructure Rehabilitation	Superstructure Replacement, Widened Existing Substructure		Bridge Replacement - Buried Structure		Bridge Replacement - Steel Beam Superstructure	
Total Project Costs	\$0	\$530,000	\$2,650,000	\$3,050,000	\$3,375,000	\$3,770,000	\$3,665,000	\$4,060,000
Annualized Costs	\$0	\$35,333	\$53,000	\$61,000	\$45,000	\$50,267	\$48,867	\$54,133
TOWN SHARE		\$26,500	\$66,250	\$152,500	\$168,750	\$377,000	\$183,250	\$406,000
TOWN %		5%	2.5%	5%	5%	10%	5%	10%
Project Development Duration ³		4 years	4 years	4 years	4 years	4 years	4 years	4 years
Construction Duration		2 Months	6 Months	9 Months	6 Months	9 Months	6 Months	9 Months
Closure Duration (If Applicable)		N/A	3 Months	N/A	3 Months	N/A	3 Months	N/A
Typical Section - Roadway (feet)	21'	21'	42'	42'	42'	42'	42'	42'
Typical Section - Bridge (feet)	21'	21'	42'	42'	42'	42'	42'	42'
Geometric Design Criteria		No improvement	Meets Standards	Meets Standards	Meets Standards	Meets Standards	Meets Standards	Meets Standards
Alignment Change	No Change	No Change	Yes	Yes	Yes	Yes	Yes	Yes
Bicycle Access	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Pedestrian Access	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Utilities	No Change	No Change	Relocation of Aerial and Buried	Relocation of Aerial and Buried	Relocation of Aerial and Buried	Relocation of Aerial and Buried	Relocation of Aerial and Buried	Relocation of Aerial and Buried
ROW Acquisition	No Change	No Change	Yes	Yes	Yes	Yes	Yes	Yes
Road Closure	N/A	No	Yes	No	Yes	No	Yes	No
Design Life	<10 Years	15	50	50	75	75	75	75

Preliminary Project Schedule

- Construction Start – 2025
 - Total Cost Estimate: \$3,400,000
 - Town Share: \$170,000



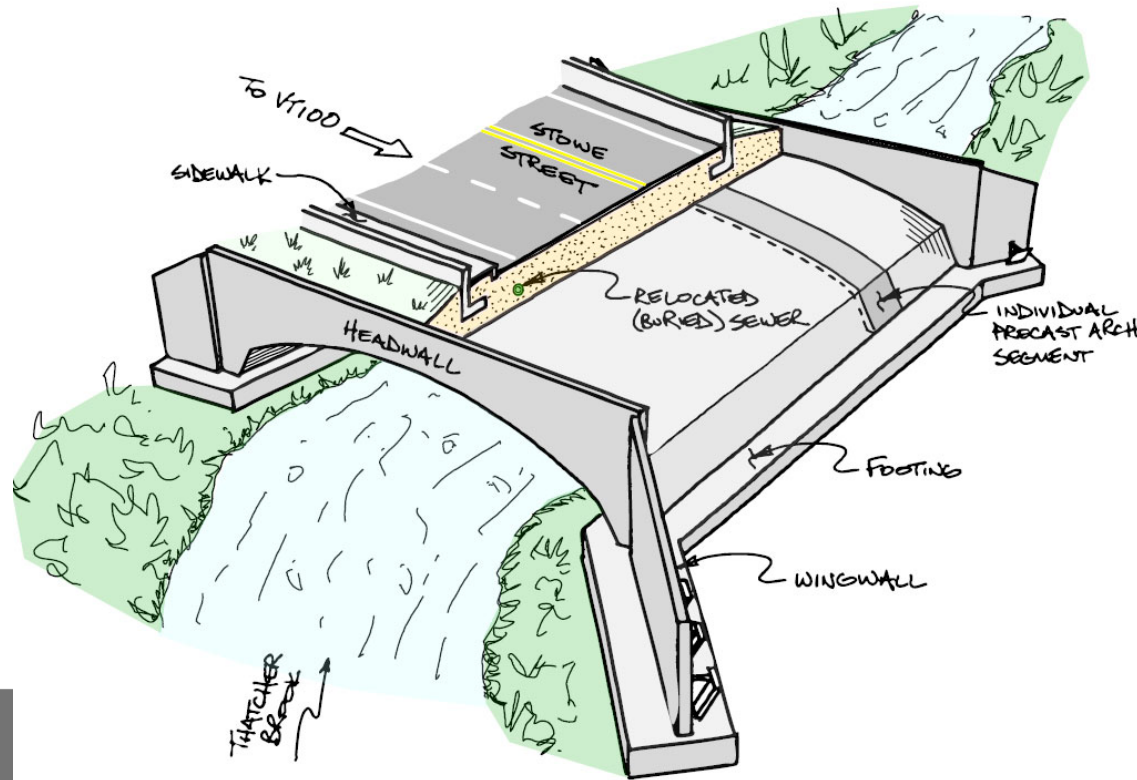
Next Steps – Bridge #36

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
 - Request a Public Information meeting
 - Process local agreements
 - Right-of-Way process (if needed)
 - Town is responsible for any chosen detour route

For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/93J040>



Questions / Comments ?

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Stowe Street – Bridge #36 over Thatcher Brook



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