



Enosburgh BO 1448(45)
Alternatives Presentation Meeting
Town Highway 4 – Bridge #50 over Tyler Branch

June 15, 2020



Introductions

Rob Young, 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



Bridge 50
Project Location

E Bakersfield Rd

Horseshoe Cir

Tyler Branch
E Bakersfield Rd

Enosburg Mountain Rd

Horseshoe Cir

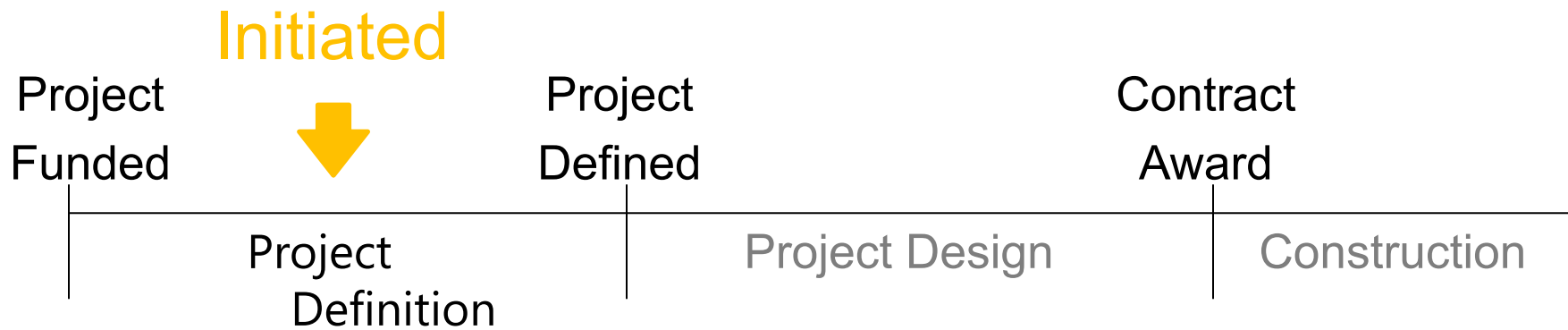
Horseshoe Cir

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



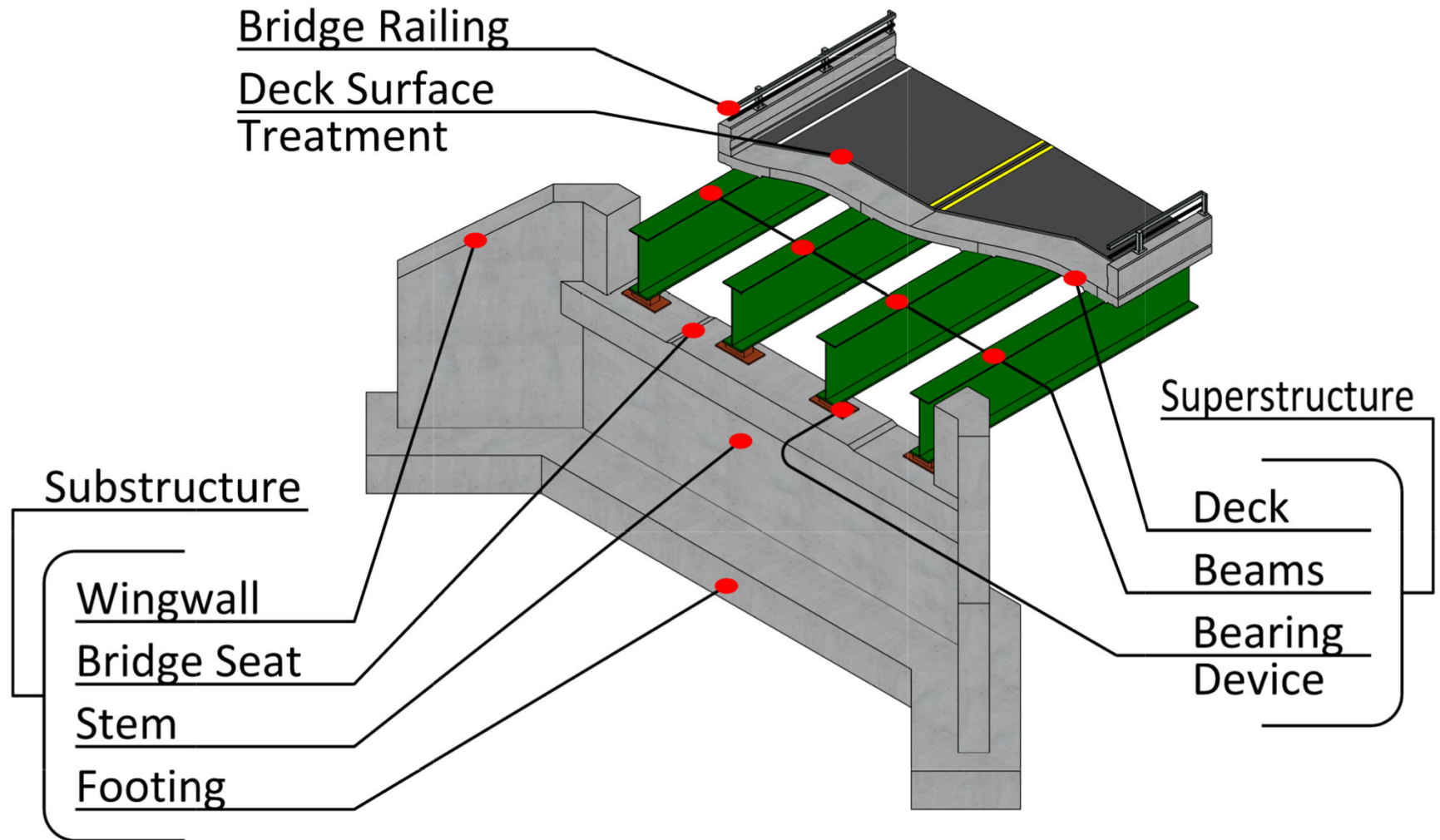
- Identify resources & constraints
- Evaluate alternatives
- Public participation
- Build Consensus

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

Project Overview

- Existing Conditions
- Alternatives Considered
- Recommended Alternative

Description of Terms Used



Looking West over Bridge 50



Existing Conditions – Bridge #50

- Roadway Classification – Local Road (Class 2 Town Highway)
- Bridge Type – Single Span Rolled Beam Bridge
- Bridge Length – 74 feet
- Ownership – Town of Enosburgh
- Constructed in 1918, Reconstructed in 1975

04/04/20

Looking East over Bridge 50



Existing Conditions – Bridge #50

- Complicated Intersection on East Approach
- Narrow Bridge
 - Typical Section: 14' Rail-to-Rail
 - Standard Typical: 9'/1'

Existing Conditions – Bridge #50

- The bridge was closed on 3/16/2020 due to the heavy deterioration of the eastern abutment. This abutment is comprised of rough rubble cobble aggregate and concrete mix with no rebar and poured onto a steep inclined ledge cut. This abutment is not considered stable and could potentially come apart along its lower portion and fail along the ledge interface.
- The deck has some random shallow potholes with exposed rebar along the wheel line areas
- The existing bridge is narrow for the traffic volumes present.

Condition Ratings

Existing Conditions - Bridge #50

- Deck Rating 6 (satisfactory)
- Superstructure Rating 7 (good)
- Substructure Rating 4 (poor)
- Channel Rating 8 (very good)

Eastern Abutment



Existing Conditions - Bridge #50

Western Abutment



04/04/20

Existing Conditions - Bridge #50

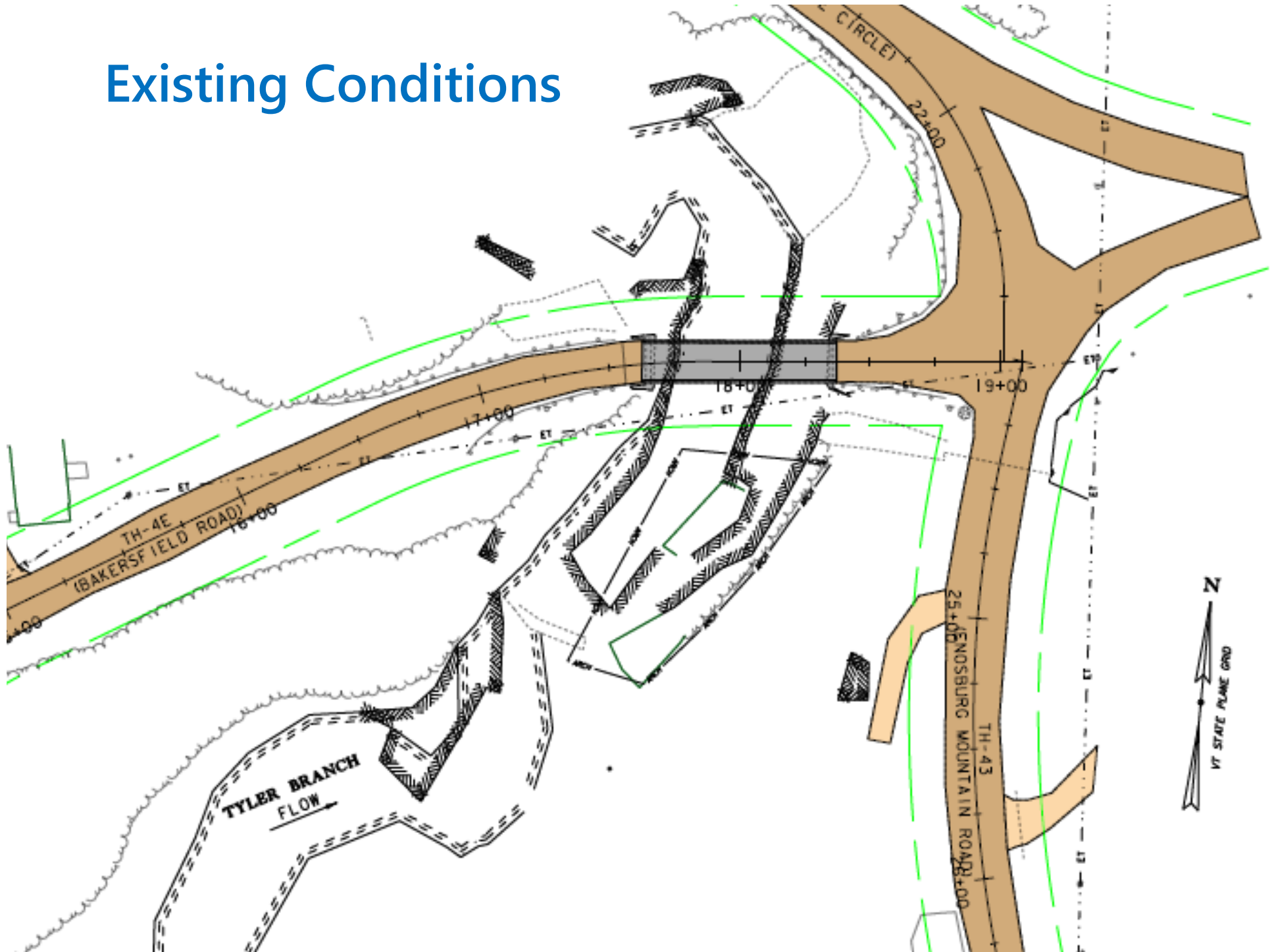
Resources – Looking Upstream



Existing Conditions – Bridge #50

- Northern Long-Eared Bat
- Historic Resource
 - Farm complex at 1811 Horseshoe Cir
- Archaeological Resources
 - Old Sawmill Foundation in SE quadrant
- Primary agricultural soils

Existing Conditions



Design Criteria and Considerations

- Average Daily Traffic
 - 90 vehicles per day
- Design Hourly Volume
 - 15 vehicles per hour
- % Trucks
 - 10.2%

Local Concerns

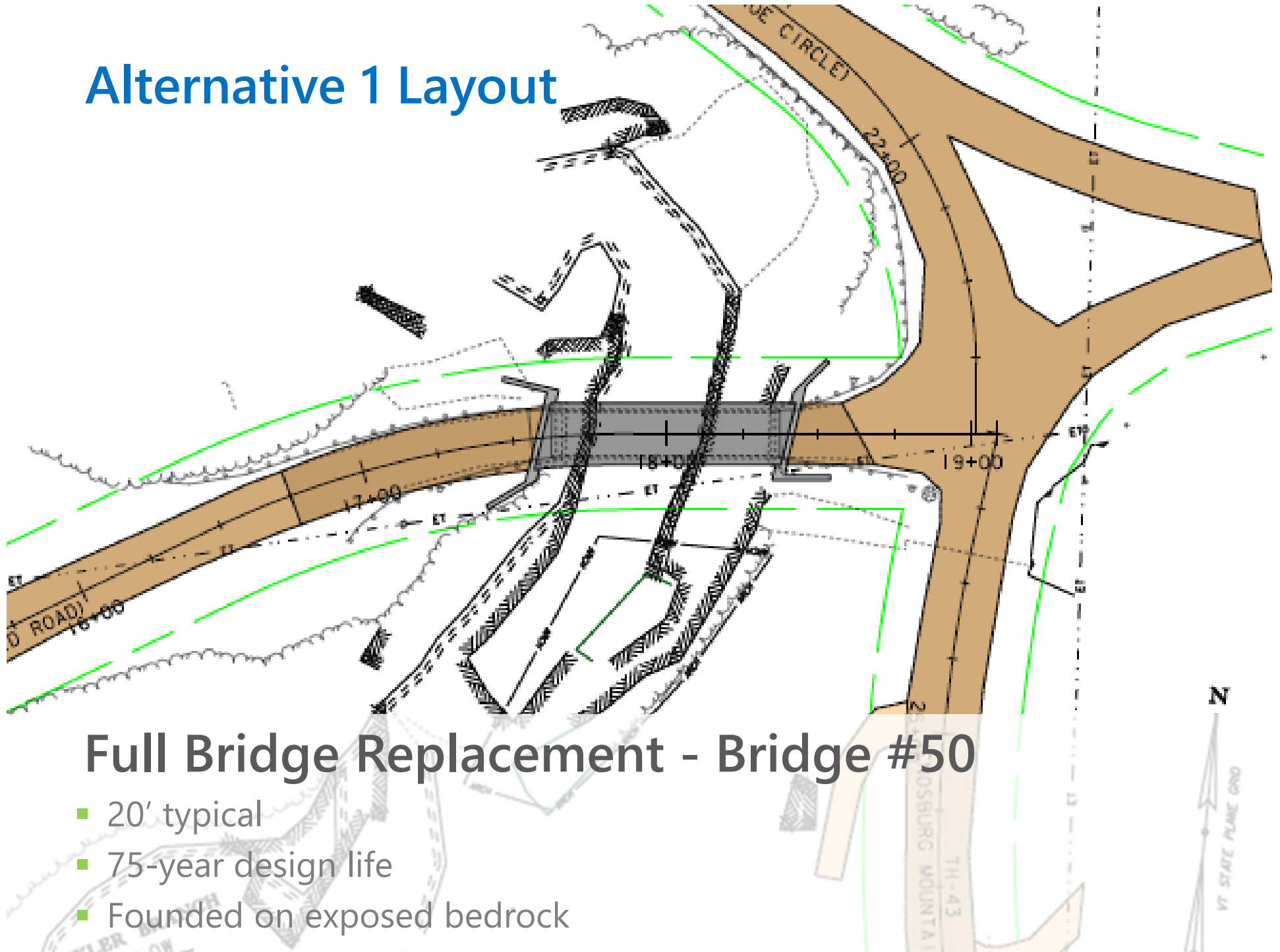
- There is a dairy farm located at the east end of the bridge that has fields on the other side
- No school busses currently use the bridge (but that could change at any given time)
- The Town feels that the bridge is too narrow at 14' wide rail-to-rail. The Town has requested a two-lane bridge with a minimum 24' width from face of rail to face of rail to accommodate the larger farm equipment and traffic of today

Alternatives Considered – Bridge #50

- No Action
 - Closed bridge – Abutment failure

- Full Bridge Replacement
 - Lengthened Span to found on competent bedrock
 - 9'/1' typical (minimum Standard) - Town has requested a 10'/2' typical
 - 75-year design life

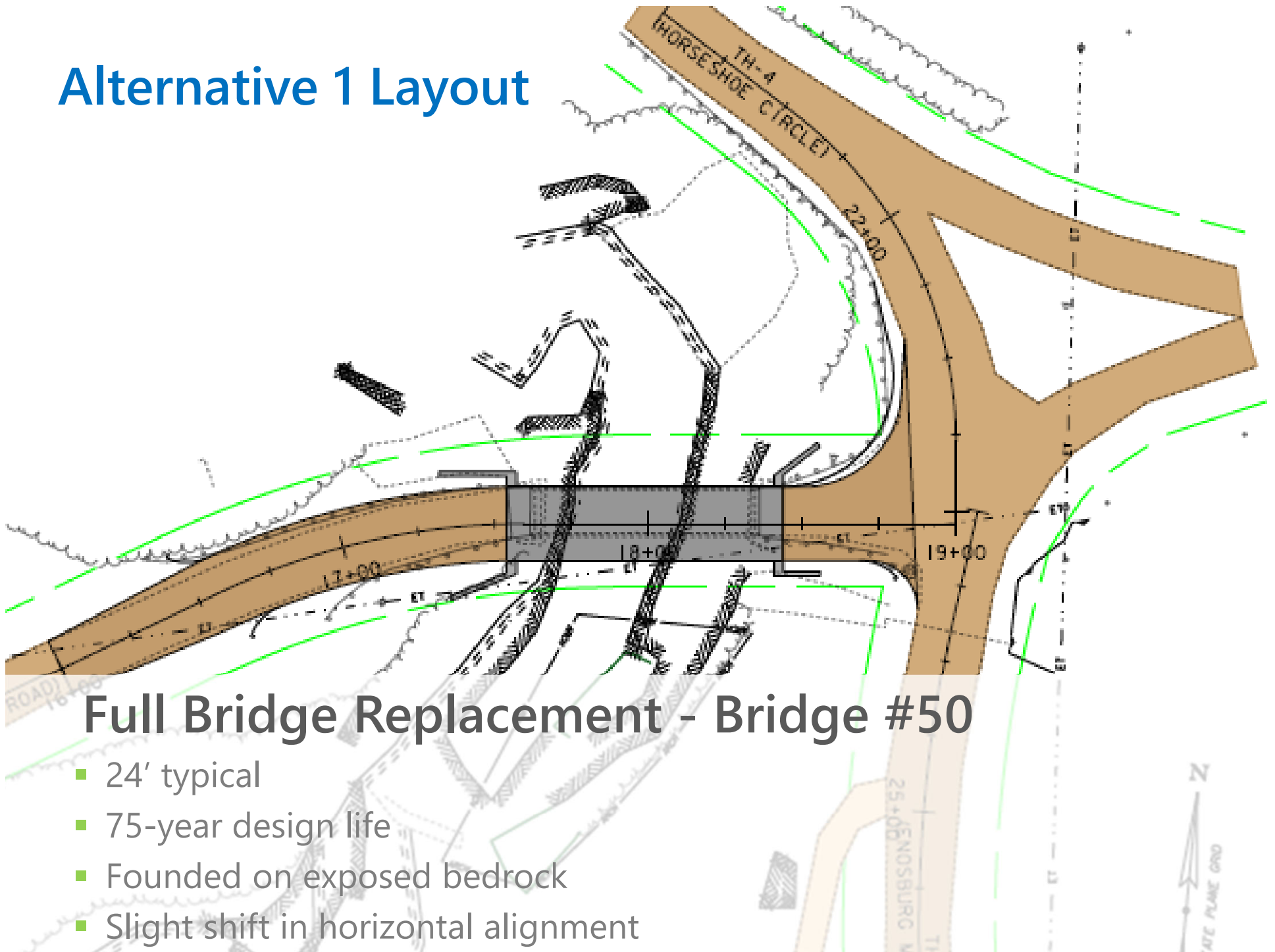
Alternative 1 Layout



Full Bridge Replacement - Bridge #50

- 20' typical
- 75-year design life
- Founded on exposed bedrock

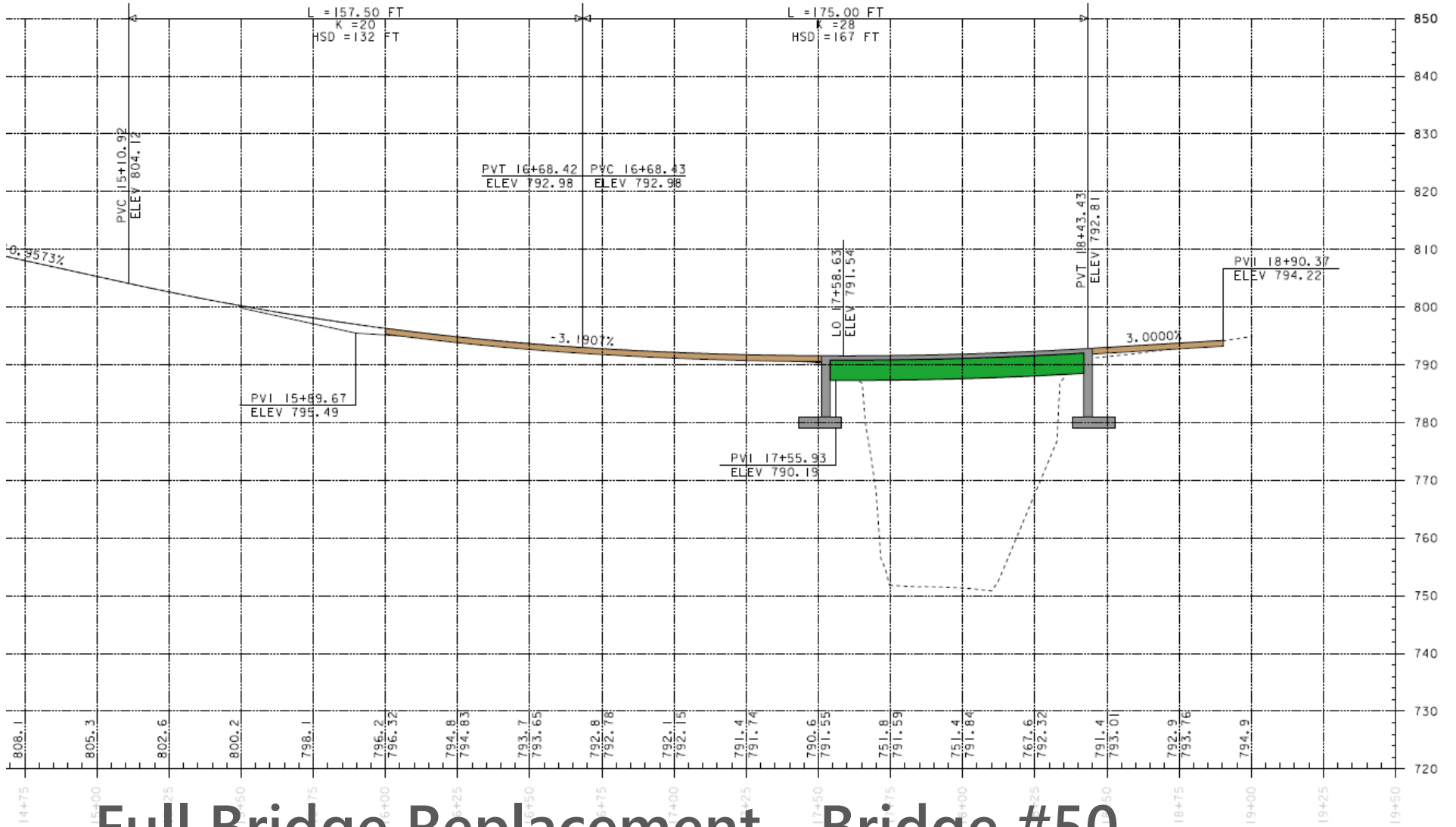
Alternative 1 Layout



Full Bridge Replacement - Bridge #50

- 24' typical
- 75-year design life
- Founded on exposed bedrock
- Slight shift in horizontal alignment

TH-4 Profile



Full Bridge Replacement - Bridge #50

- Potential Grade Raise

Recommended Alternative - Bridge #50

- Full Bridge Replacement
 - Substructures founded further back on competent exposed bedrock
 - Widen to meet minimum standards
 - 9'/1' standard typical
 - 10'/2' Town requested typical
 - Horizontal alignment shift to upstream side
 - Potential raise in vertical grade
 - 75-year design life

Maintenance of Traffic Options Considered

- Offsite Detour
- Temporary Bridge

A photograph of a road closure barrier. The barrier consists of several horizontal white panels with red diagonal stripes. In the center, a white rectangular sign with a black border and rounded corners displays the words "ROAD" and "CLOSED" in large, bold, black capital letters. The sign is supported by two white posts. In the background, there is a concrete curb, a chain-link fence, and green trees under a clear blue sky.

**ROAD
CLOSED**

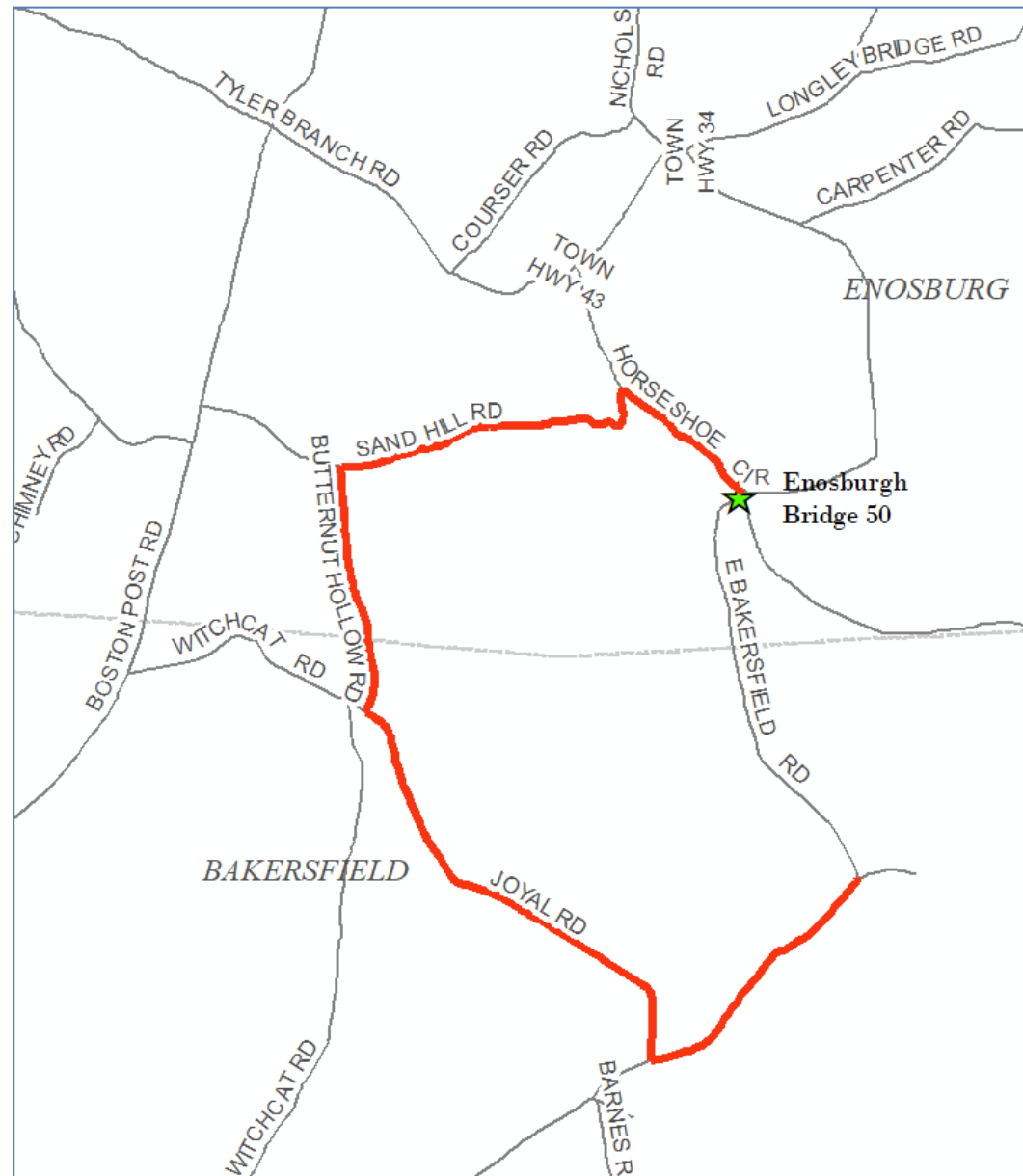
Road Closure

- Detour chosen and signed by Town
- Now through construction
- Shortest detour route is 6.6 miles end-to-end

Traffic Control – Offsite Detour

- **Detour Route:** East Bakersfield Road, to Horseshoe Circle, Sand Hill Road (narrow with 5 Ton Weight Limit), Butternut Hollow Road, and Joyal Road, back to East Bakersfield Road

- 6.6 Miles end-to-end
- 2.4 Miles Through-Route
- 4.2 Miles Detour Route
- 1.8 Miles Added



Recommended Scope

- Full Bridge Replacement with Traffic Maintained on Offsite Detour
 - Structure lengthened to found on competent exposed bedrock
 - Widen to 24' rail to rail typical
 - Horizontal alignment shift to upstream side
 - Potential raise in vertical grade
 - 75-year design life
 - Aerial utility relocation needed

- Construction Year: 2021

Alternatives Matrix

Enosburg BO 1448(45)	Do Nothing	Alternative 1a	Alternative 1b
		Full Bridge Replacement	Full Bridge Replacement
		Offsite Detour	Temporary Bridge
Total Project Costs	\$0	1,717,410	2,148,123
Annualized Costs	\$0	22,899	28,642
Town Share	\$0	85,871	214,812
	\$0	5%	10%
Project Development Duration	NA	1 year	2 years
Construction Duration	NA	4 months	7 months
Closure Duration (If Applicable)	NA	Construction Season	N/A
Typical Section - Roadway (feet)	20	20'	20'
Typical Section - Bridge (feet)	14'	1-9-9-1 (minimum)	1-9-9-1 (minimum)
Geometric Design Criteria	Substandard width	Meets minimum width	Meets minimum width
Traffic Safety	Structurally Deficient Bridge	Improved	Improved
Alignment Change	NA	No	No
Bicycle Access	Substandard width	Improved	Improved
Pedestrian Access	Substandard width	Improved	Improved
Hydraulics	Meets minimum standard	Meets minimum standard	Meets minimum standard
Utilities	No Change	Aerial relocation	Aerial relocation
ROW Acquisition	No Change	No	Yes
Road Closure	Bridge currently closed to traffic	Yes	No
Design Life (years)	>10 years	75	75

Next Steps – Bridge #50

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/19J224>



Enosburgh BO 1448(45) Questions and Comments

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