



Salisbury-Cornwall BO 1449(45) Alternatives Presentation Meeting

Town Highway 1/3 – Bridge 8 over Otter Creek

April 7, 2022

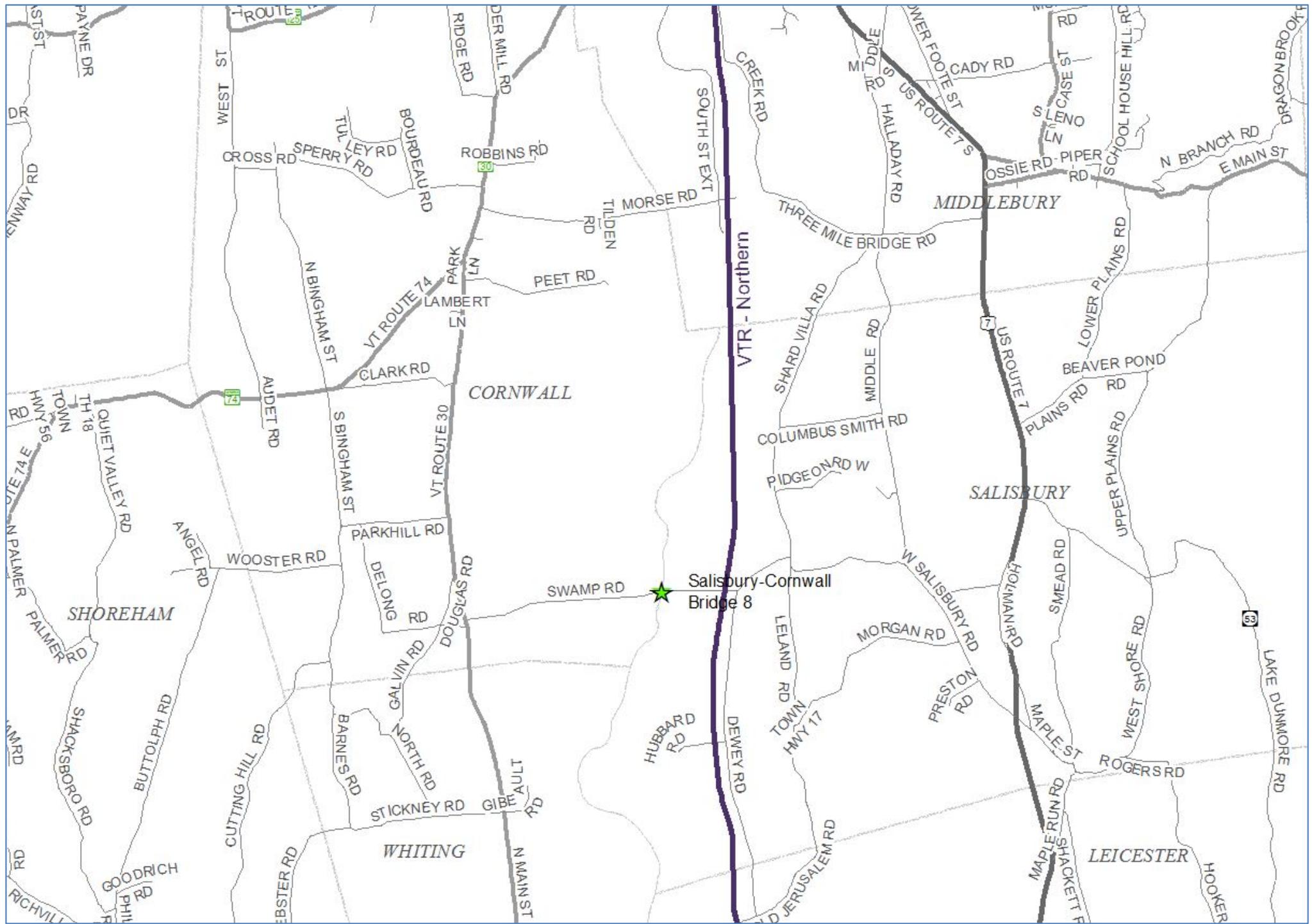
Introductions

Laura Stone, P.E.

VTrans Scoping Engineer

JB McCarthy, P.E.

VTrans Design Project Manager



Location Map



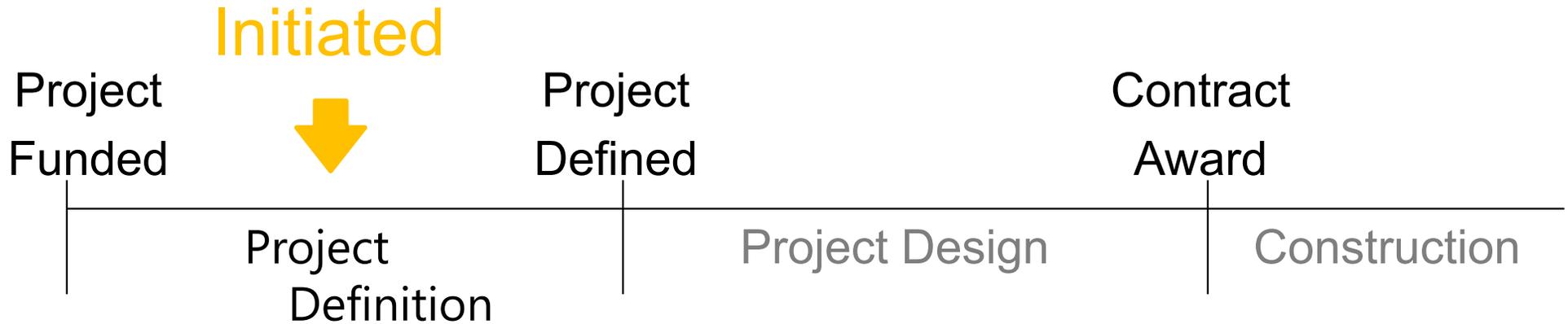
Otter Creek

Bridge 8
Project Location

Swamp Rd

Creek Rd

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

Looking East over Bridge 8



Existing Conditions – Bridge #8

- Roadway Classification – Local Road
- Bridge Type – 154' Span Town Lattice Covered Bridge
- Ownership – Towns of Salisbury and Cornwall
- Constructed in 1865, Reconstructed in 2008

Looking West over Bridge 8



Existing Conditions – Bridge #8

- Temporary bridge in place

01/31/2017

Existing Conditions – Bridge #8

- The structure was destroyed by a fire in 2016 and needs replacing.
- The existing roadway is substandard in width for the speed and traffic volumes present.

Condition Ratings

Existing Conditions - Bridge #8

- Deck Rating 0 (Failed)
- Superstructure Rating 0 (Failed)
- Substructure Rating 6 (Satisfactory)

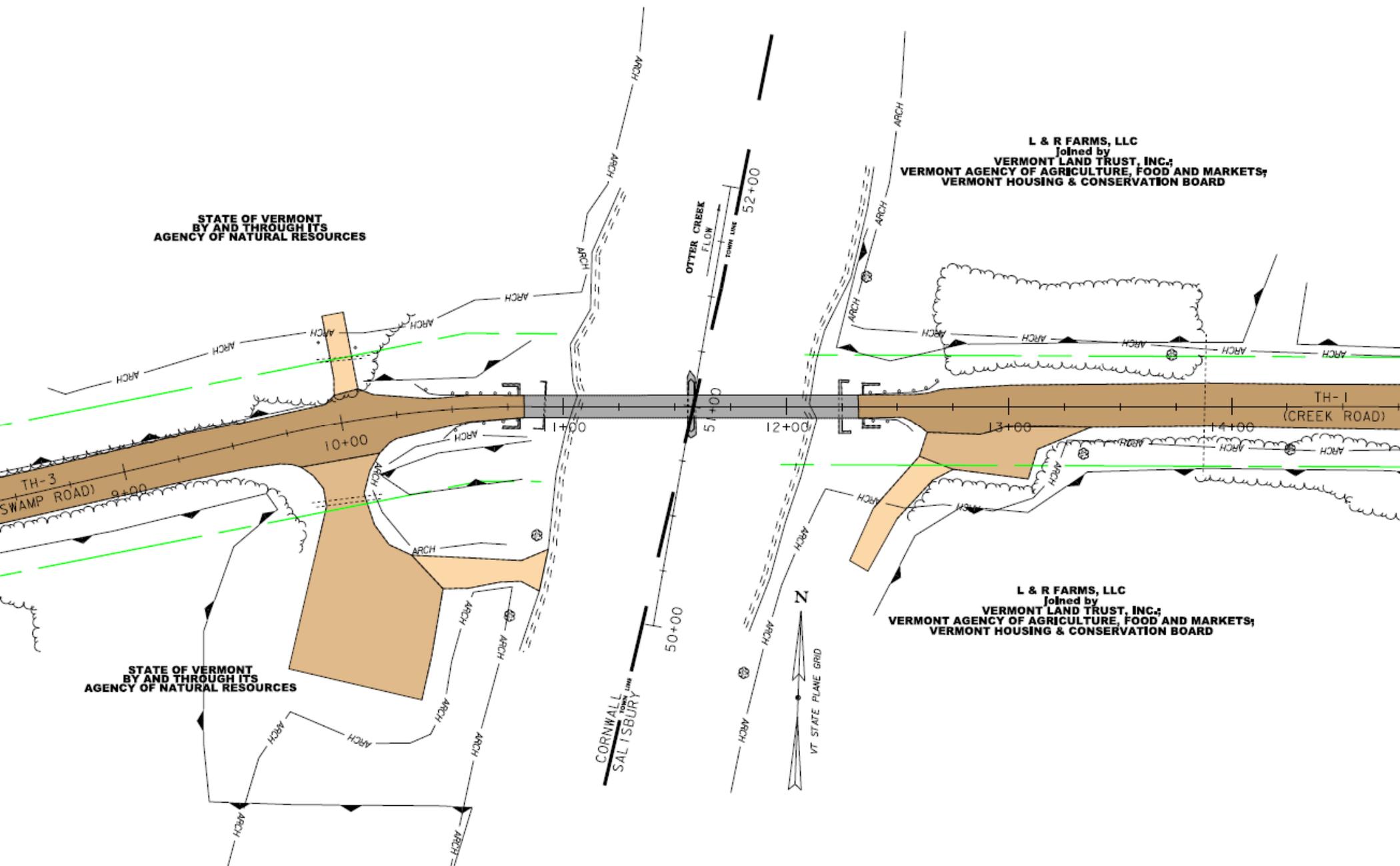




Existing Conditions – Bridge #8

- The Cedar Swamp, a 6,619-acre wetland complex
- Several RTE species
- Wildlife habitat
- Highly archaeologically sensitive areas

Existing Conditions



Design Criteria and Considerations

- Average Daily Traffic
 - 540 vehicles per day
- Design Hourly Volume
 - 85 vehicles per hour
- % Trucks
 - 4.3%

Alternatives Considered – Bridge #8

- Both Towns have indicated that a covered bridge or a bridge with similar height constraints may be preferred by some citizens. Additionally, Swamp Road on the Cornwall side of Bridge 8 is not designed for heavier truck traffic and Cornwall's current road ordinance prohibits traffic on Swamp Road that is heavier than 12,000 lbs. and/or wider than eight feet.
- Full Bridge Replacement with New Steel Beam Bridge
 - 150' length
 - 1 or 2-lane bridge
 - 75-year design life
- Full Bridge Replacement with New Truss
 - 150' length
 - 1 or 2-lane bridge, minimum 14' width
 - 75-year design life
- Full Bridge Replacement with New Covered Bridge
 - 150' length
 - Single lane bridge, 14' width
 - 75-year design life

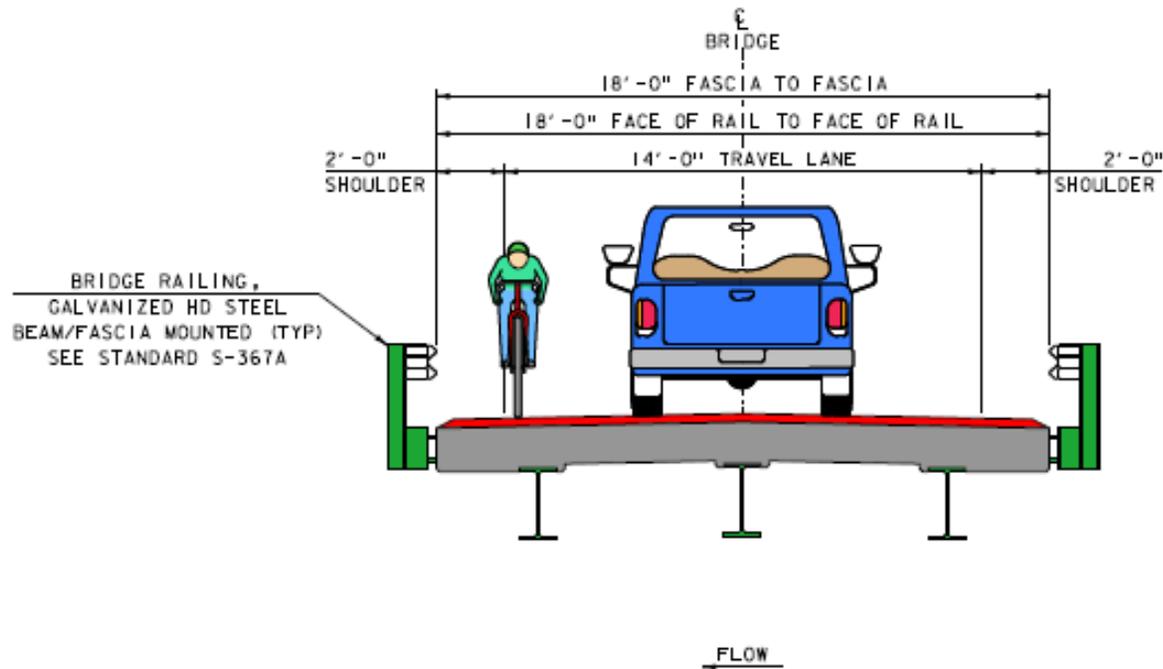
What Will the New Bridge Look Like?



Steel Beam Bridge – Bridge #8

- No Height Restriction
- Striped for one-lane alternating or two-lane traffic pattern
- Most economical

Alternative 1 Typical Section – 1 lane option

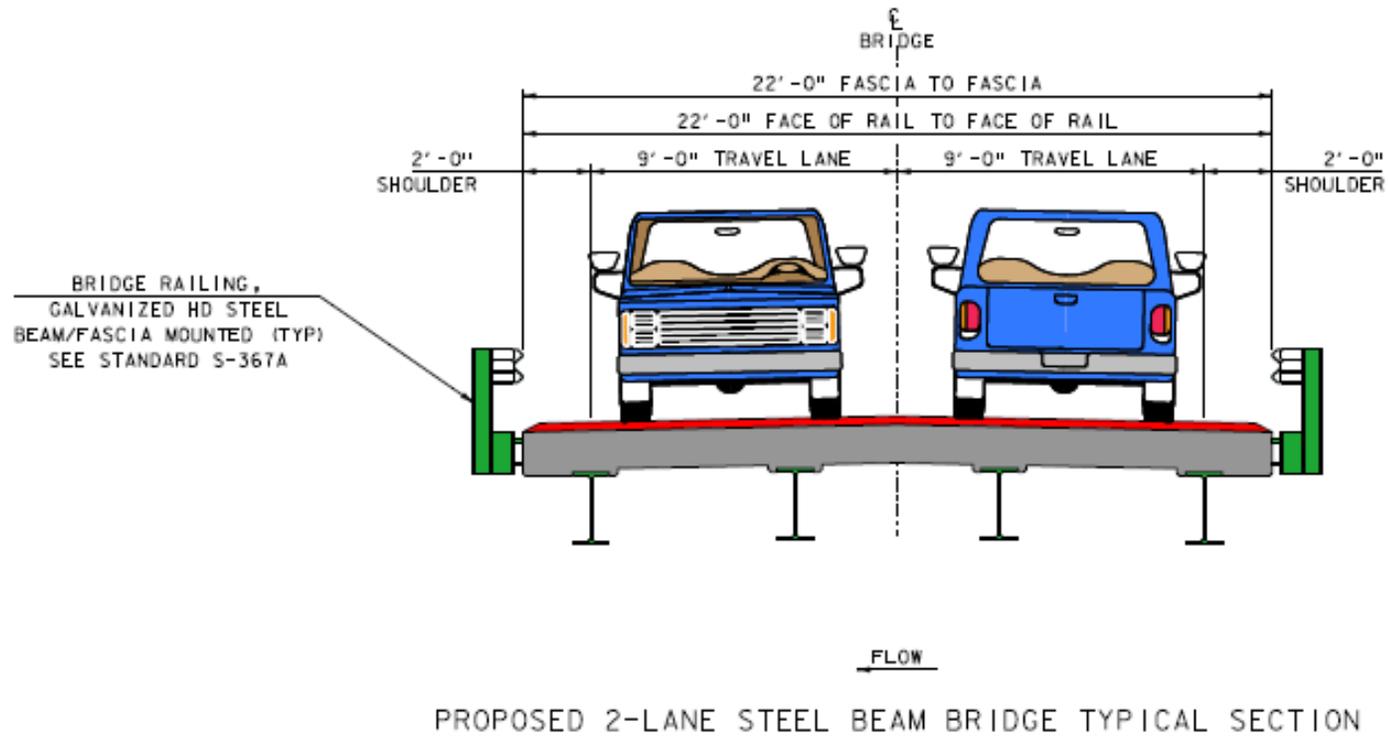


PROPOSED SINGLE LANE STEEL BEAM BRIDGE TYPICAL SECTION

New Steel Beam Bridge - Bridge #8

- 18' Rail-to-Rail Single Lane Structure
- Height Restriction

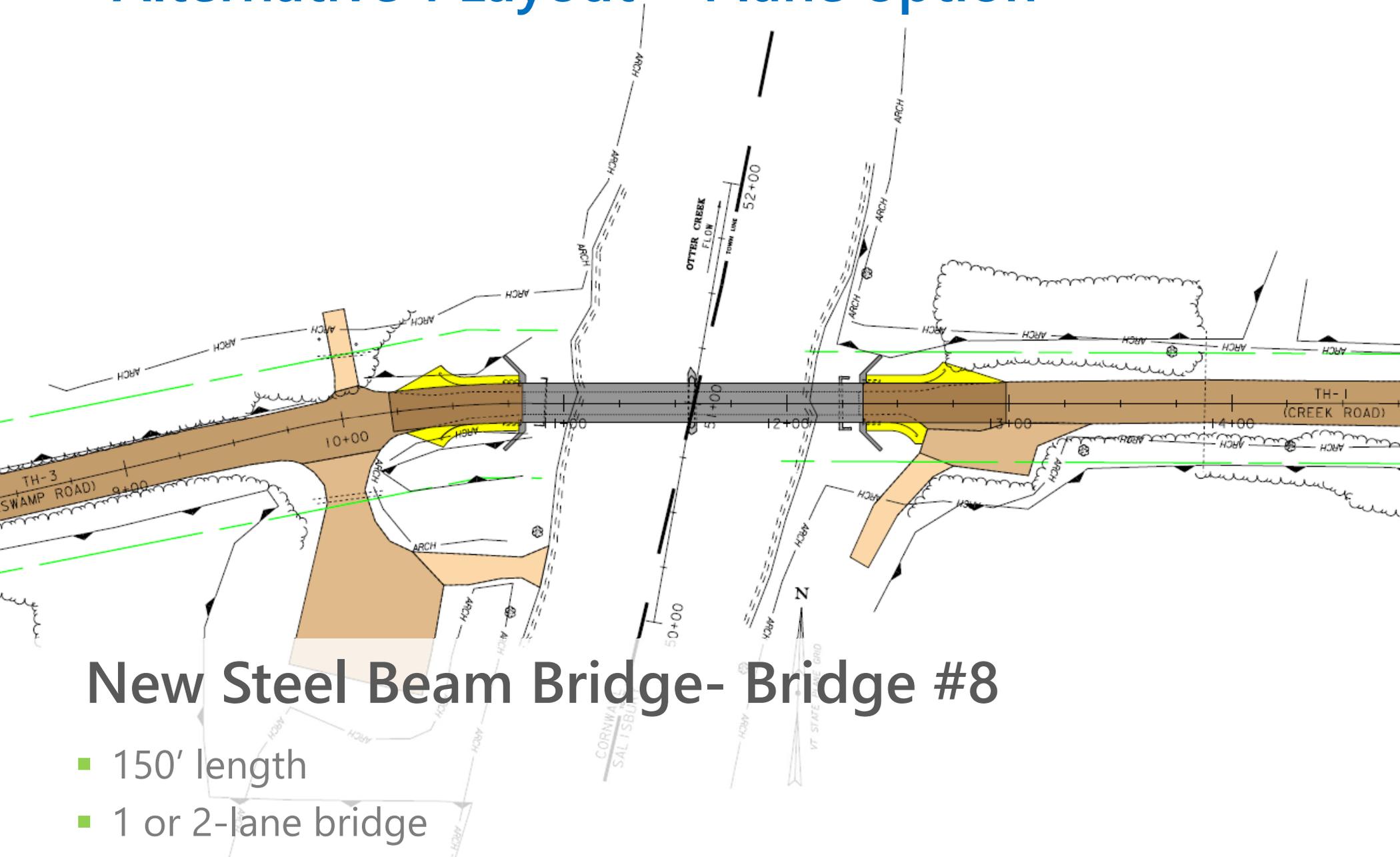
Alternative 1 Typical Section – 2 lane option



New Steel Beam Bridge- Bridge #8

- 22' Rail-to-Rail 2-Lane Structure
- Height Restriction

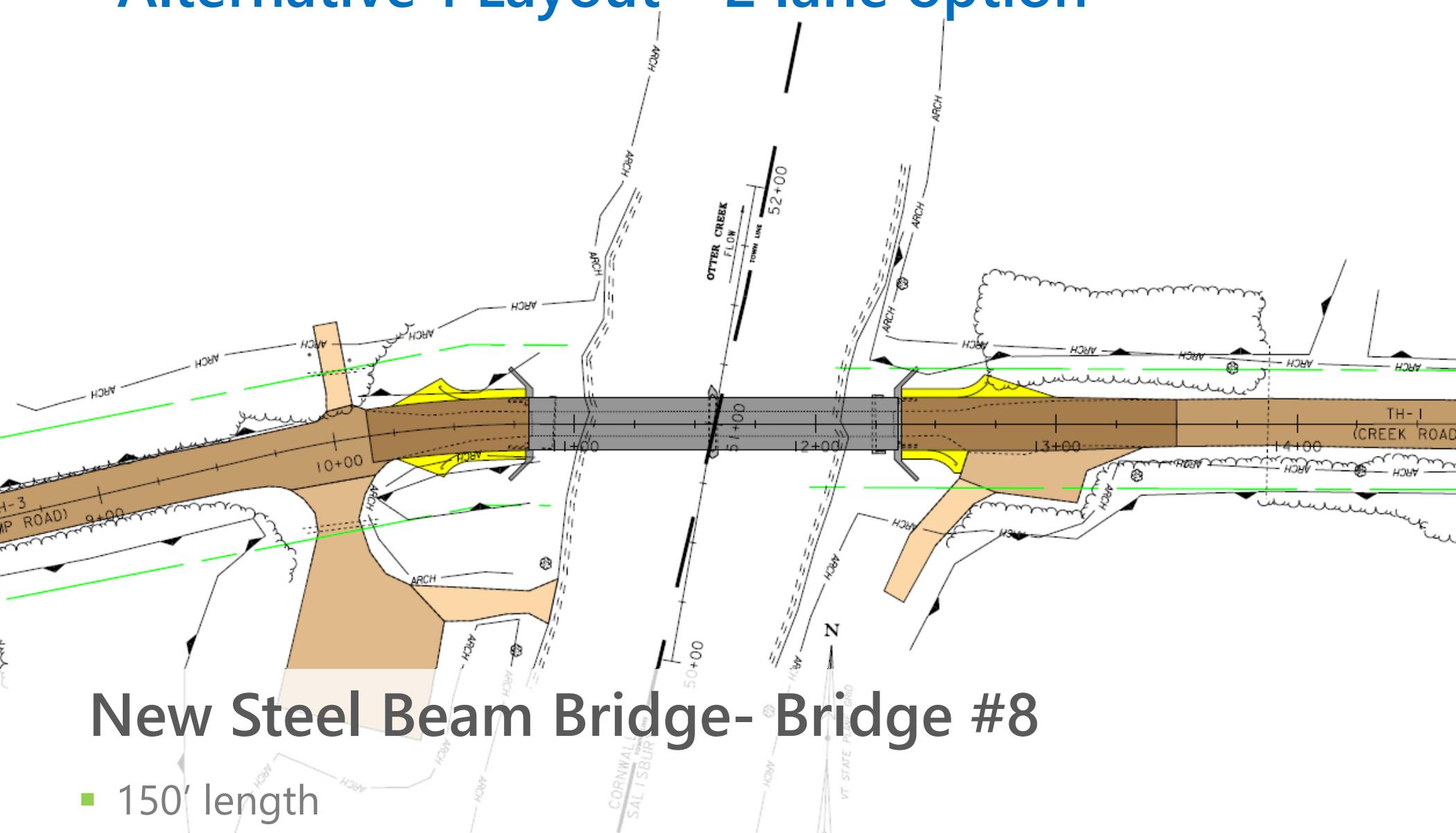
Alternative 1 Layout – 1 lane option



New Steel Beam Bridge- Bridge #8

- 150' length
- 1 or 2-lane bridge
- 75-year design life

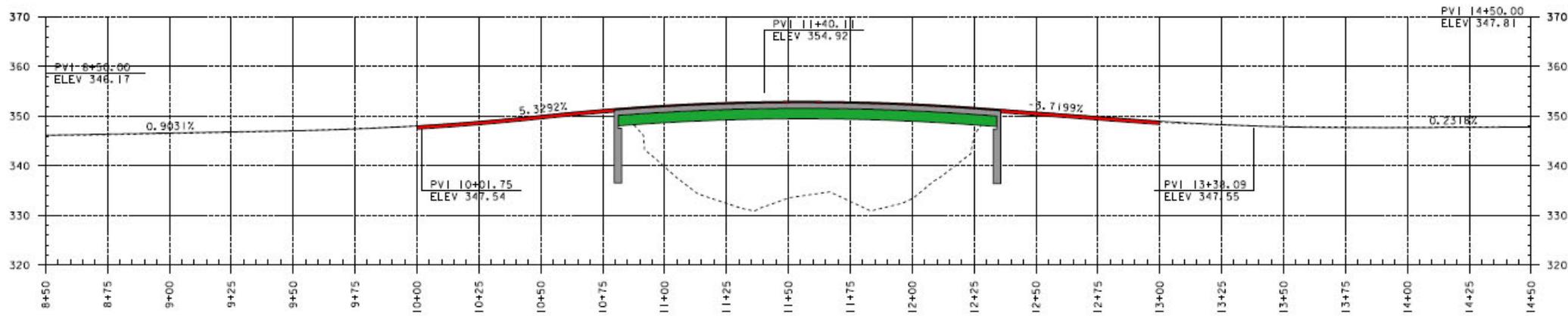
Alternative 1 Layout – 2 lane option



New Steel Beam Bridge- Bridge #8

- 150' length
- 1 or 2-lane bridge
- 75-year design life

Alternative 1 Profile

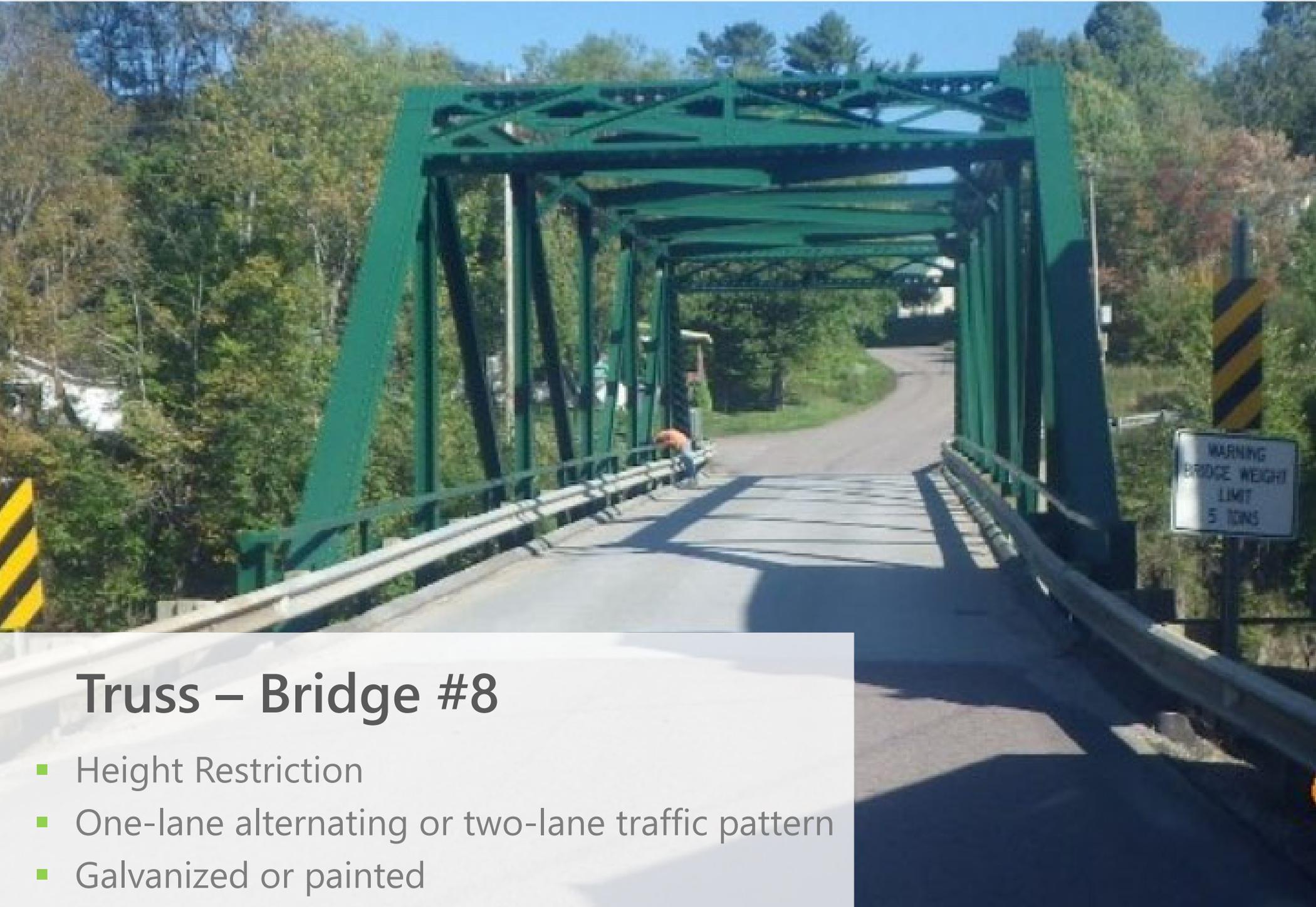


SALISBURY TH-1/CORNWALL TH-3 STEEL BEAM BRIDGE PROFILE

New Steel Beam Bridge - Bridge #8

- Match into existing vertical alignment

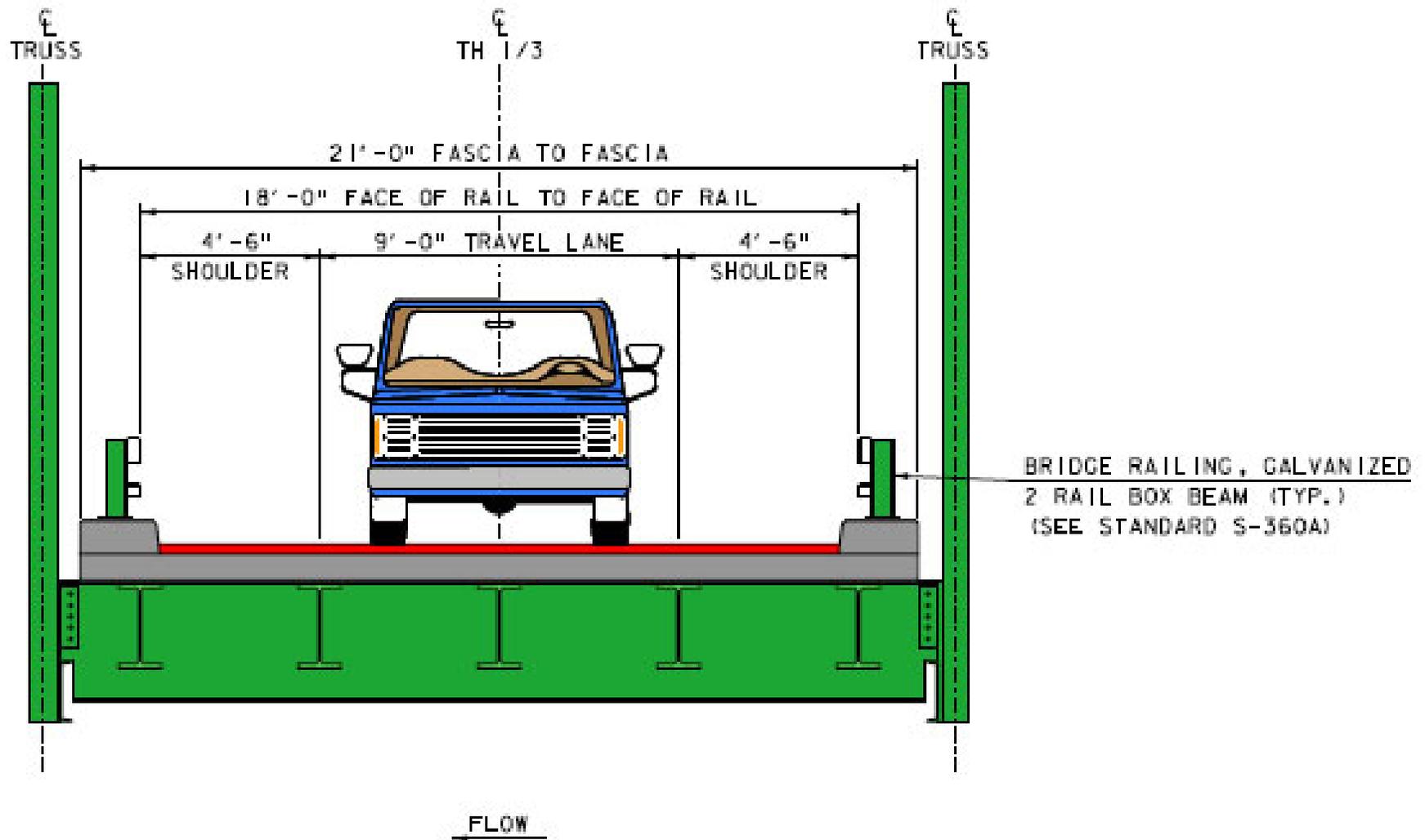
What Will the New Bridge Look Like?



Truss – Bridge #8

- Height Restriction
- One-lane alternating or two-lane traffic pattern
- Galvanized or painted

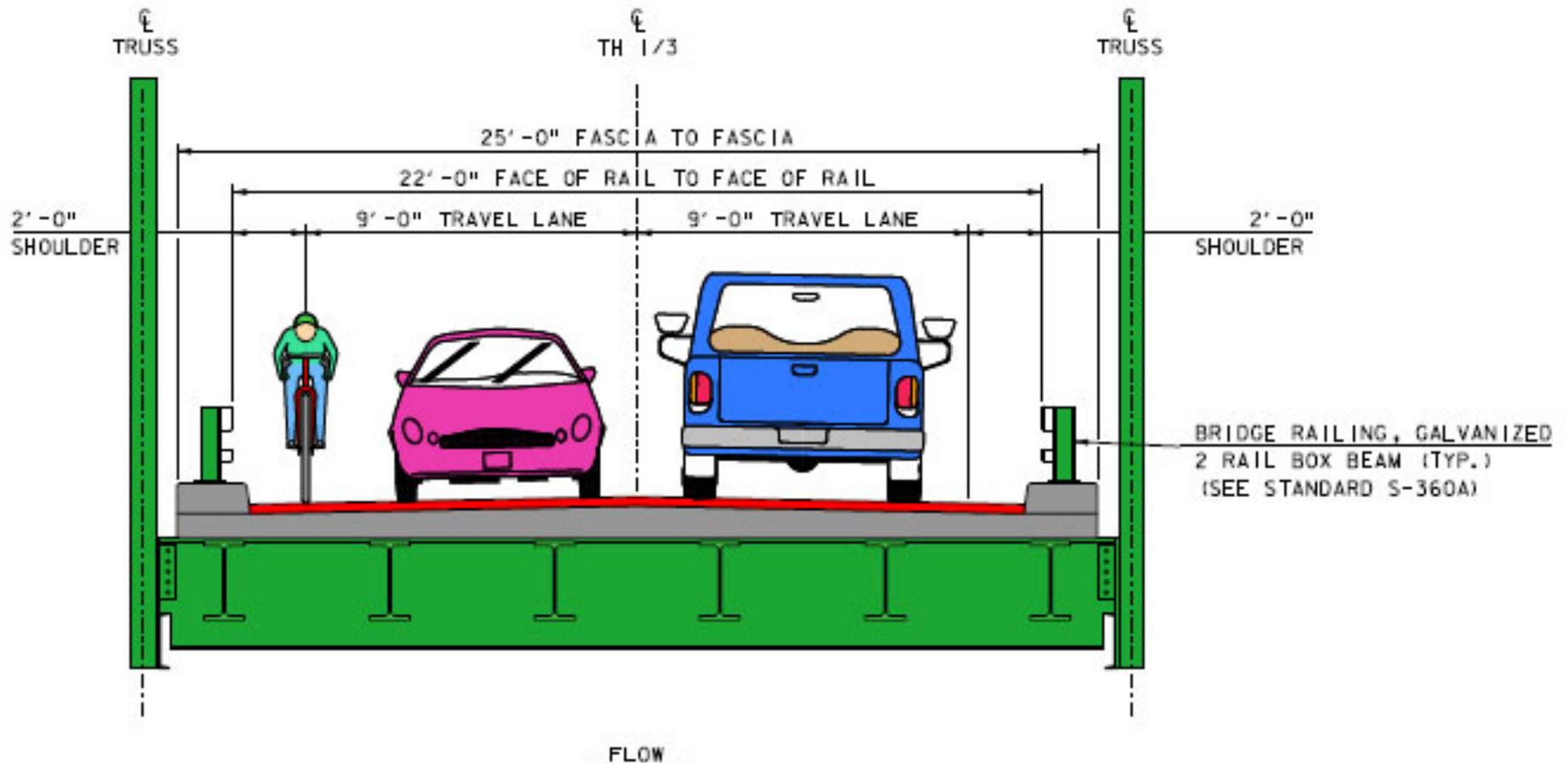
Alternative 2 Typical Section – 1 lane option



New Truss - Bridge #8

- 18' Rail-to-Rail Single Lane Structure
- Height Restriction

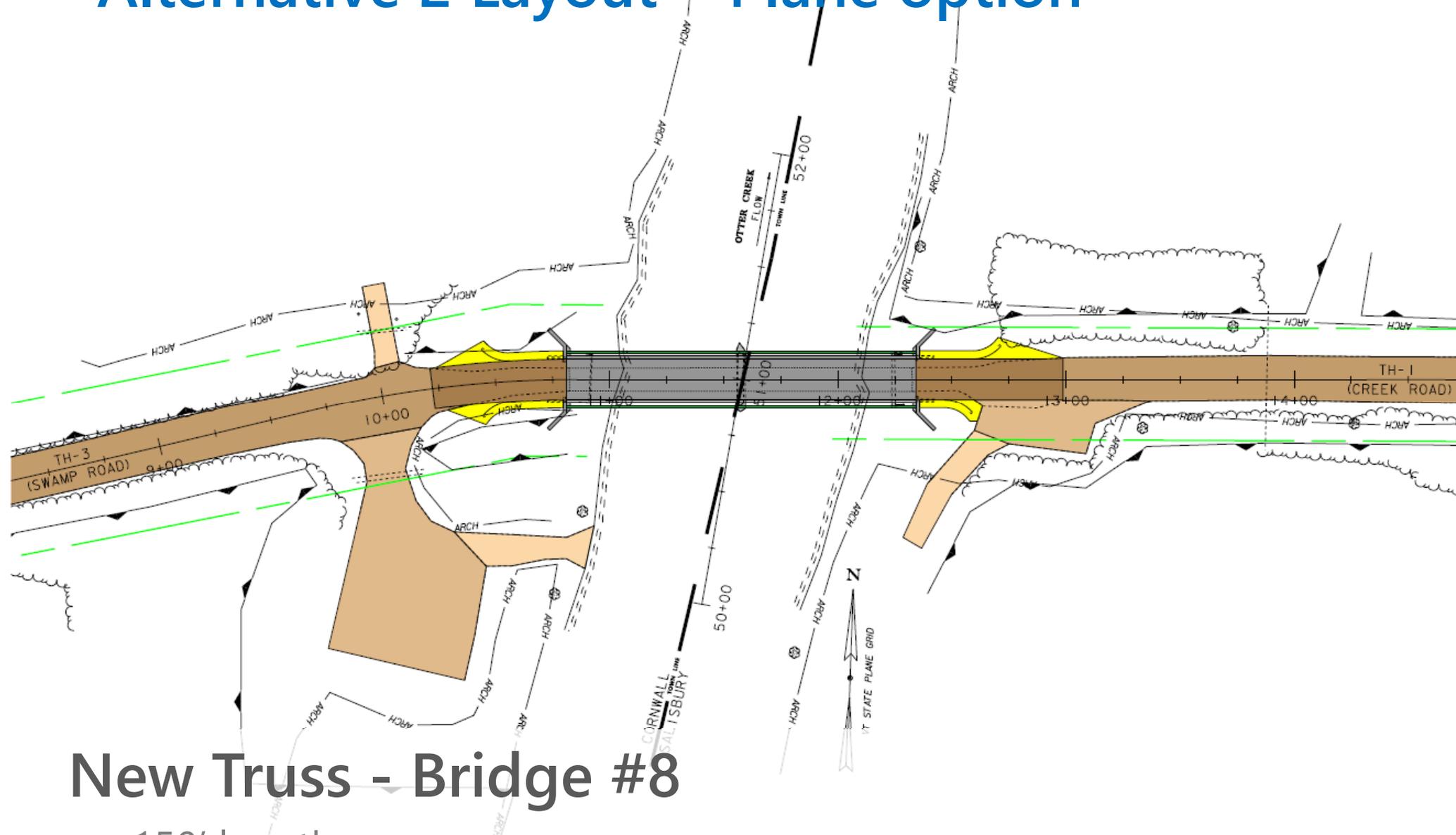
Alternative 2 Typical Section – 2 lane option



New Truss - Bridge #8

- 22' Rail-to-Rail 2-Lane Structure
- Height Restriction

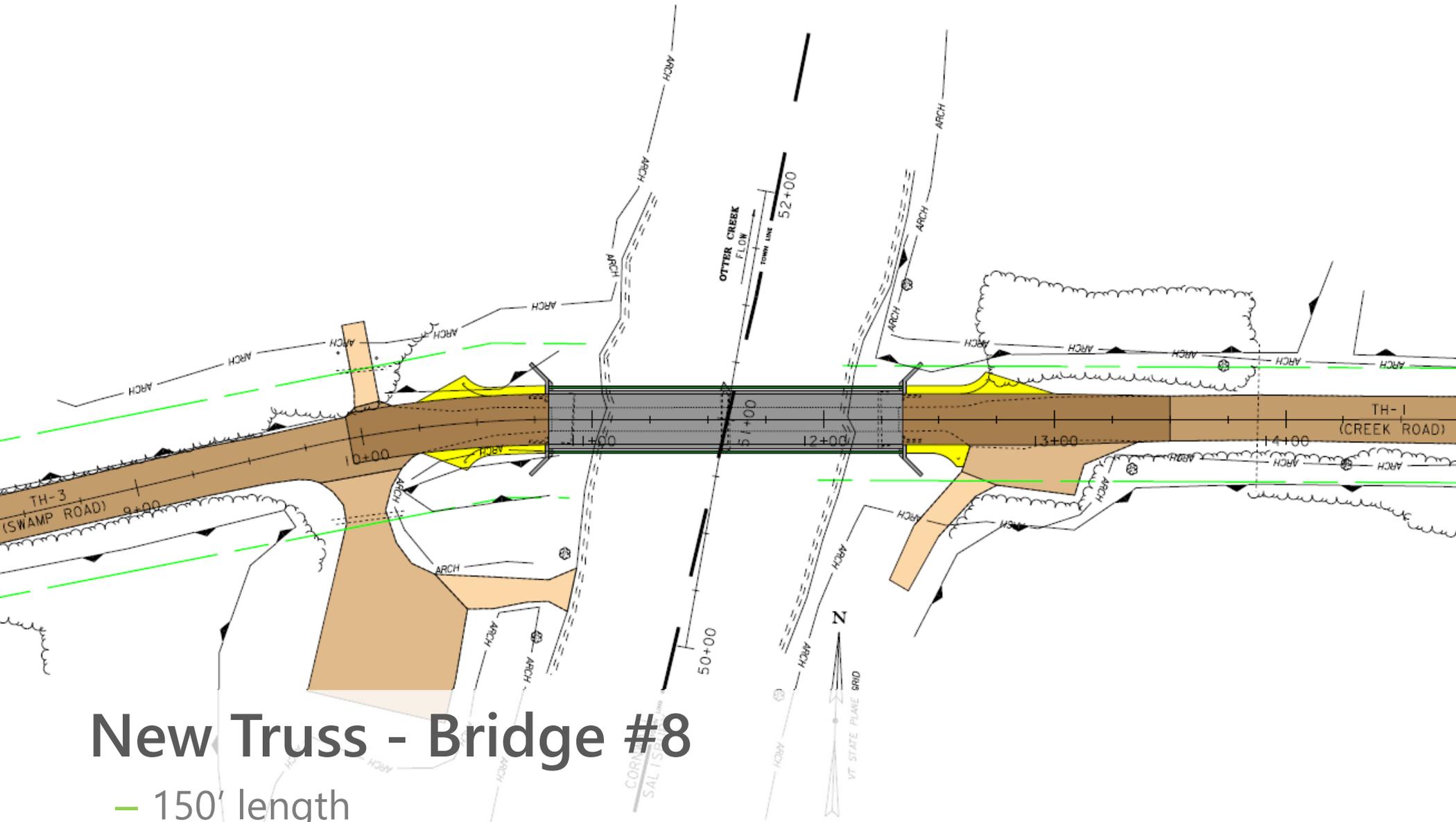
Alternative 2 Layout – 1 lane option



New Truss - Bridge #8

- 150' length
- 1 or 2-lane bridge, minimum 14' width
- 75-year design life

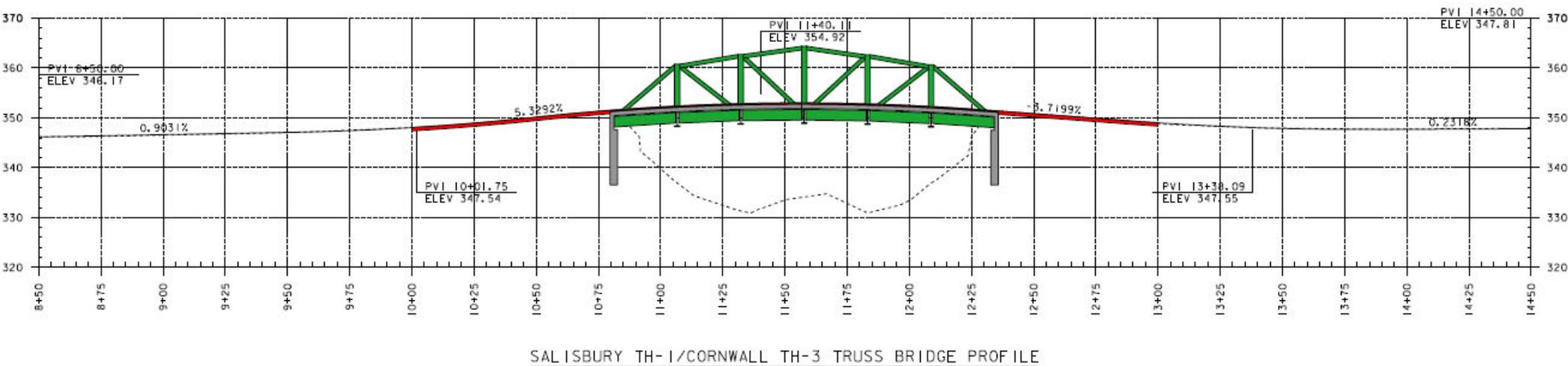
Alternative 2 Layout – 2 lane option



New Truss - Bridge #8

- 150' length
- 1 or 2-lane bridge, minimum 14' width
- 75-year design life

Alternative 2 Profile



New Truss - Bridge #8

- Match into existing vertical alignment

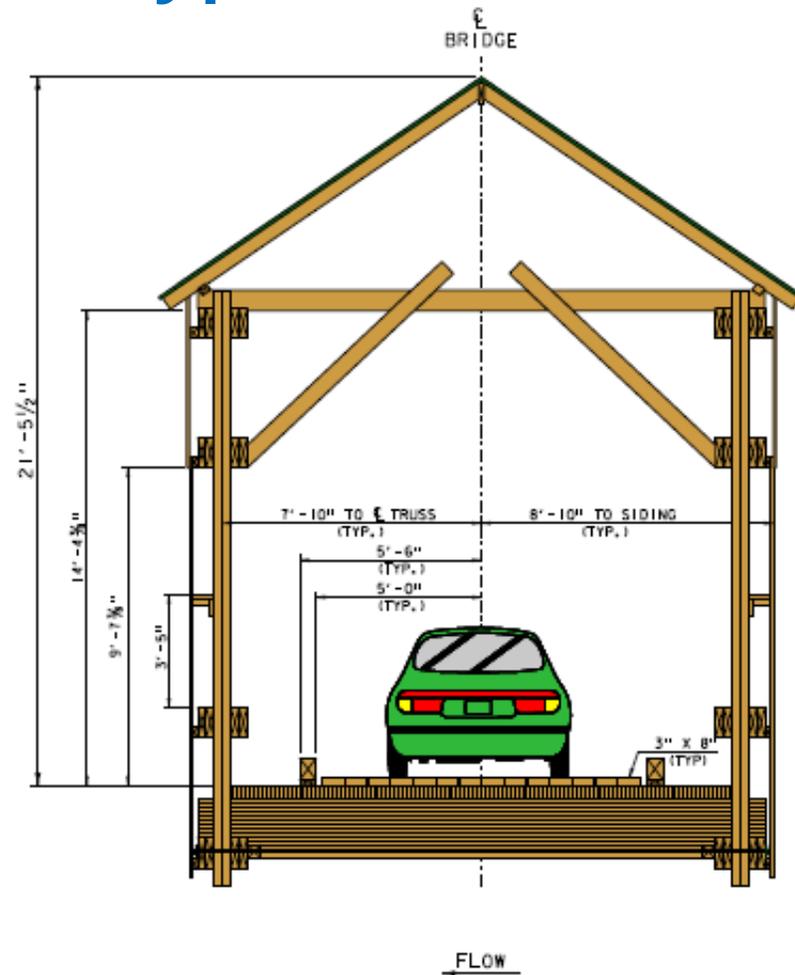
What Will the New Bridge Look Like?



Covered Bridge – Bridge #8

- Height Restriction
- Limits truck traffic
- One-lane alternating traffic pattern
- Fire detection and protection system options

Alternative 3 Typical Section

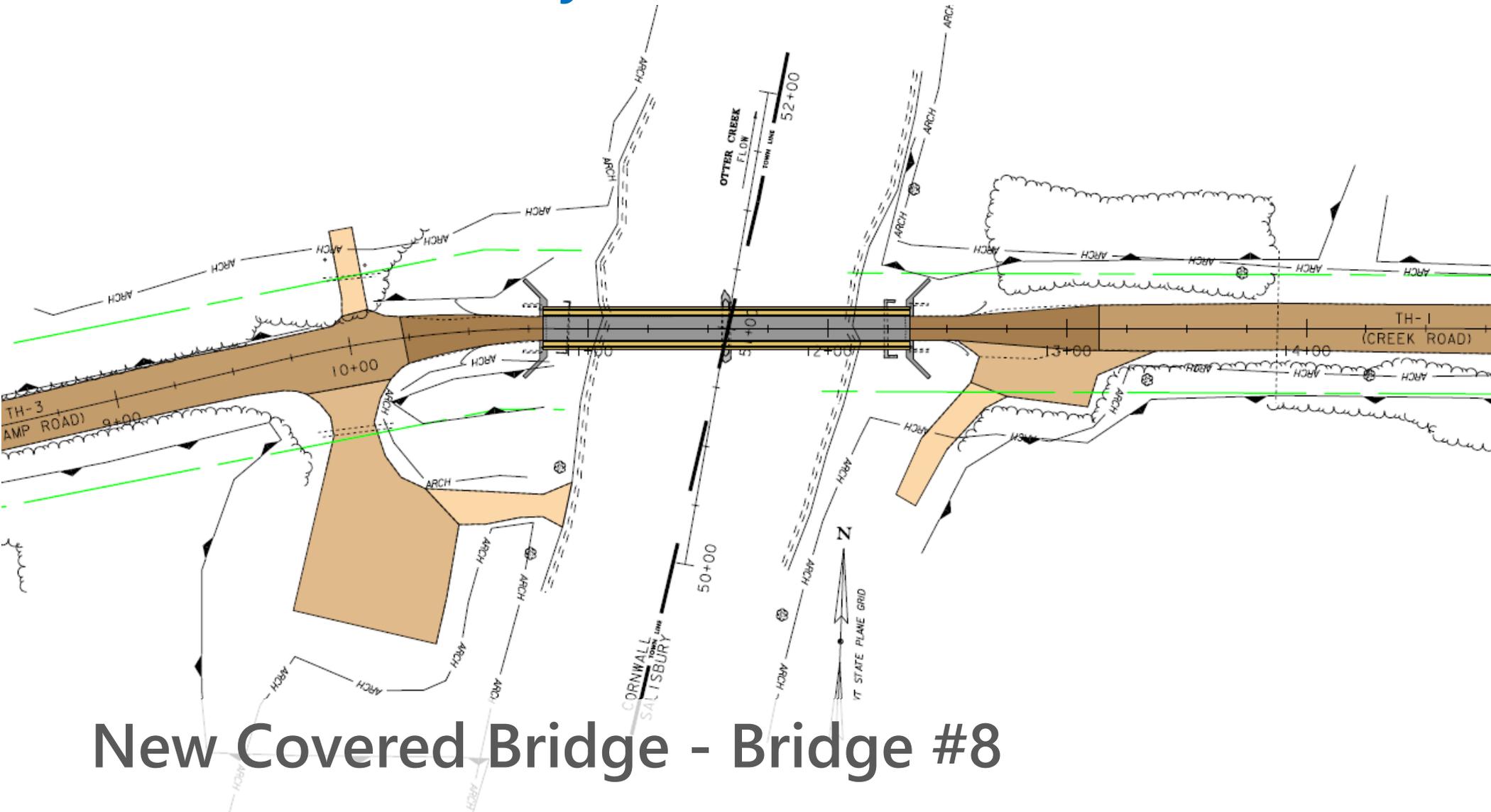


PROPOSED COVERED BRIDGE TYPICAL SECTION

New Covered Bridge - Bridge #8

- 14' Rail-to-Rail Single Lane Structure
- Height Restriction

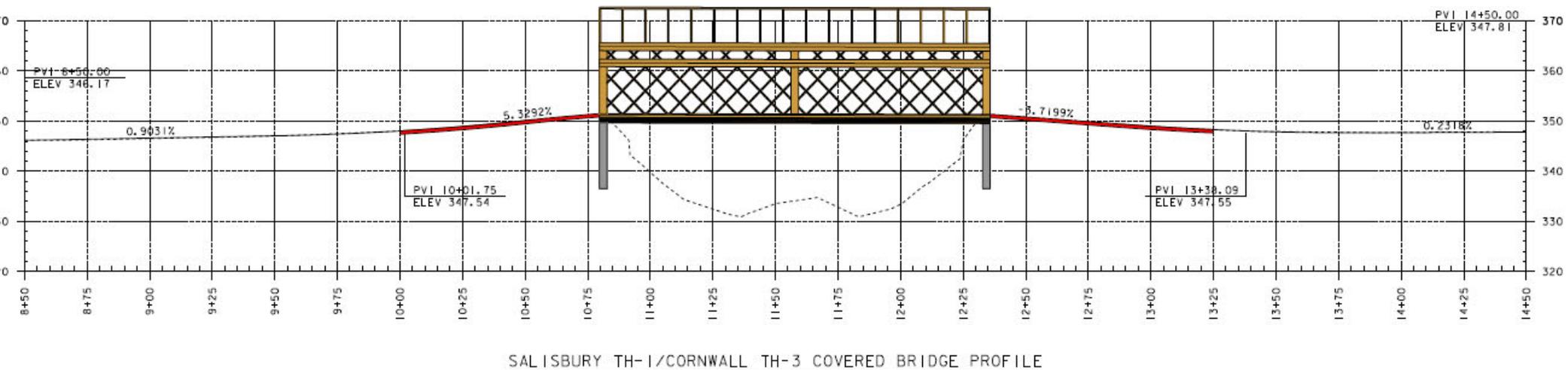
Alternative 3 Layout



New Covered Bridge - Bridge #8

- 150' length
- Single lane bridge, 14' width
- 75-year design life

Alternative 3 Profile



New Covered Bridge - Bridge #8

- Match into existing vertical alignment

What Will the New Bridge Look Like?

Covered Bridge



- Height Restriction
- Limits truck traffic
- One-lane alternating traffic pattern
- Fire detection and protection system options

Thru Truss



- Height Restriction
- One-lane alternating or two-lane traffic pattern
- Galvanized or painted

Conventional Steel Beam Bridge



- No Height Restriction
- Striped for one-lane alternating or two-lane traffic pattern
- Most economical

Recommended Alternative - Bridge #8

- Full Bridge Replacement On-Alignment
 - Conventional Steel Beam Bridge, Truss, or Covered Bridge to be chosen by the town
 - New single lane or 2-lane bridge
 - 150' length single or 2-span bridge to match existing conditions
 - Removal of pier may be desirable due to debris issues
 - 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 positioned behind a series of horizontal barriers with red and white diagonal stripes. The background shows a concrete curb, a chain-link fence, and green trees under a clear blue sky.

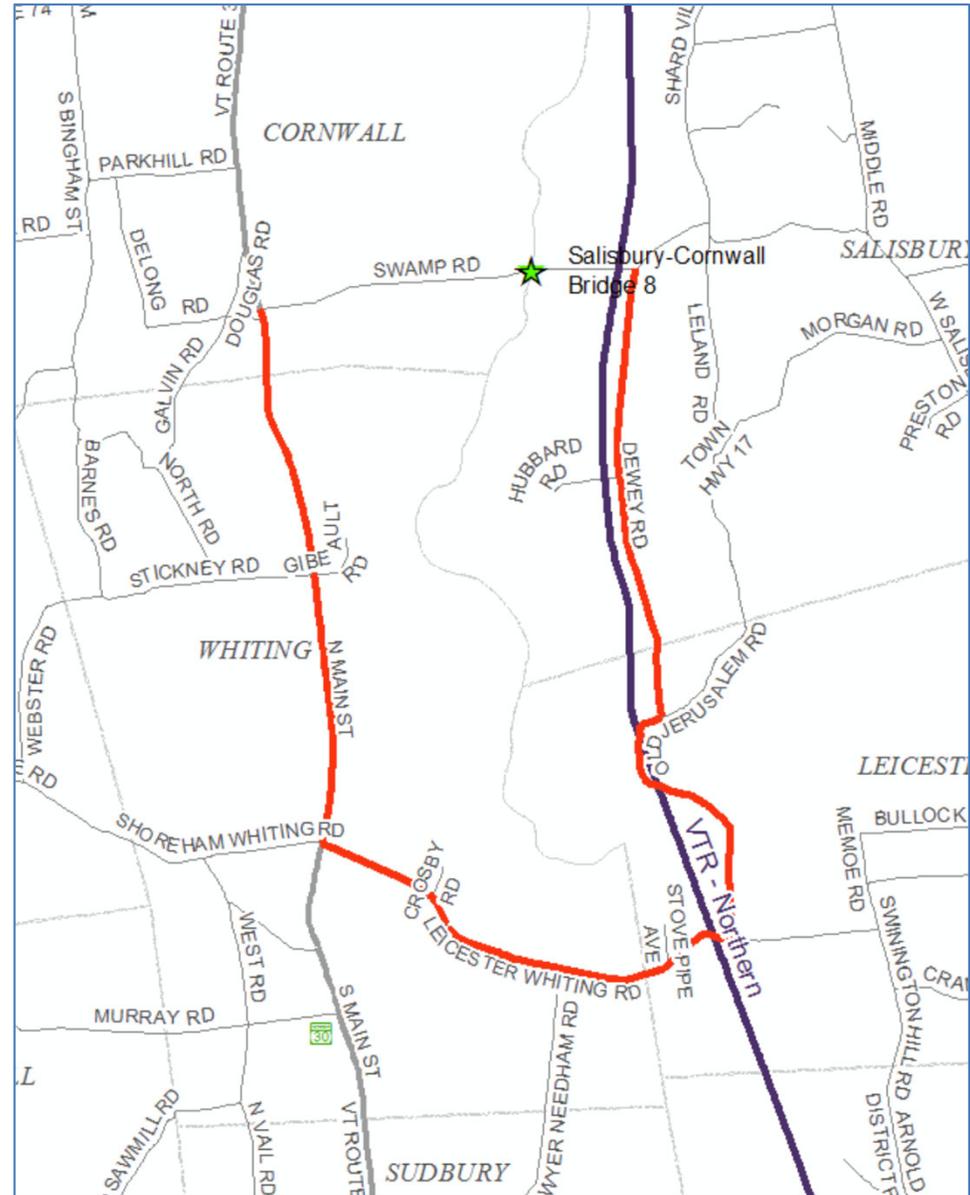
ROAD
CLOSED

Road Closure

- Detour chosen and signed by Town
- Construction Season duration
- Shortest Detour Route is 13.9 miles end-to-end
- Reduces Town share from 10% to 5%

Traffic Control – Detour 1

- **Local Detour Route:** Creek Road to Dewey Road, Old Jerusalem Road, Leicester Whiting Road, VT-30 North, to Swamp Road
- Through Route: 2.5 Miles
- Detour Route: 11.4 Miles
- Added Distance: 8.9 Miles
- End-to-End Distance: 13.9 Miles

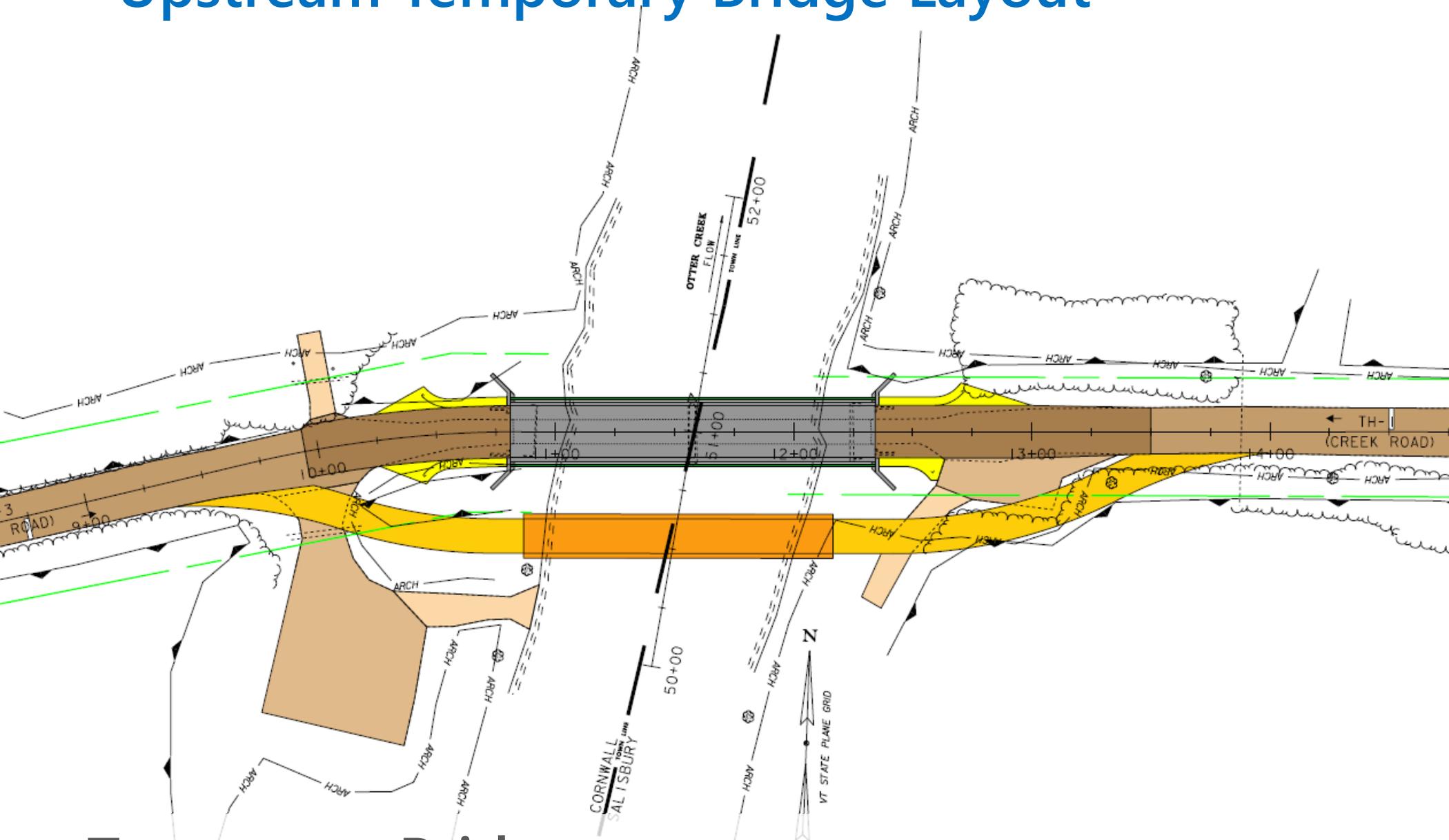




Temporary Bridge

- One Lane Temporary Bridge constructed either Upstream or Downstream side of Bridge 8

Upstream Temporary Bridge Layout



Temporary Bridge

- Placement of temporary bridge increases Town share from 5% to 10%

Recommendation: Bridge 8

- Full Bridge Replacement On-Alignment with Traffic Maintained on and Offsite Detour
 - Closure for a construction duration
 - Conventional Steel Beam Bridge, Truss, or Covered Bridge to be chosen by the town
 - New single lane or 2-lane bridge
 - 150' length single or 2-span bridge to match existing conditions
 - 75-year design life
 - Right-of-Way likely needed

Preliminary Project Schedule

- Construction Start – 2025

Next Steps – Bridge #8

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/18J164>



Salisbury-Cornwall BO 1449(45) Questions and Comments

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