Royalton BF 0147(29)
Regional Concerns Meeting

December 14, 2021

Team Members

VERMONT
AGENCY OF TRANSPORTATION

vhb

GENESEE
G&W
WYOMING

U.S. Department
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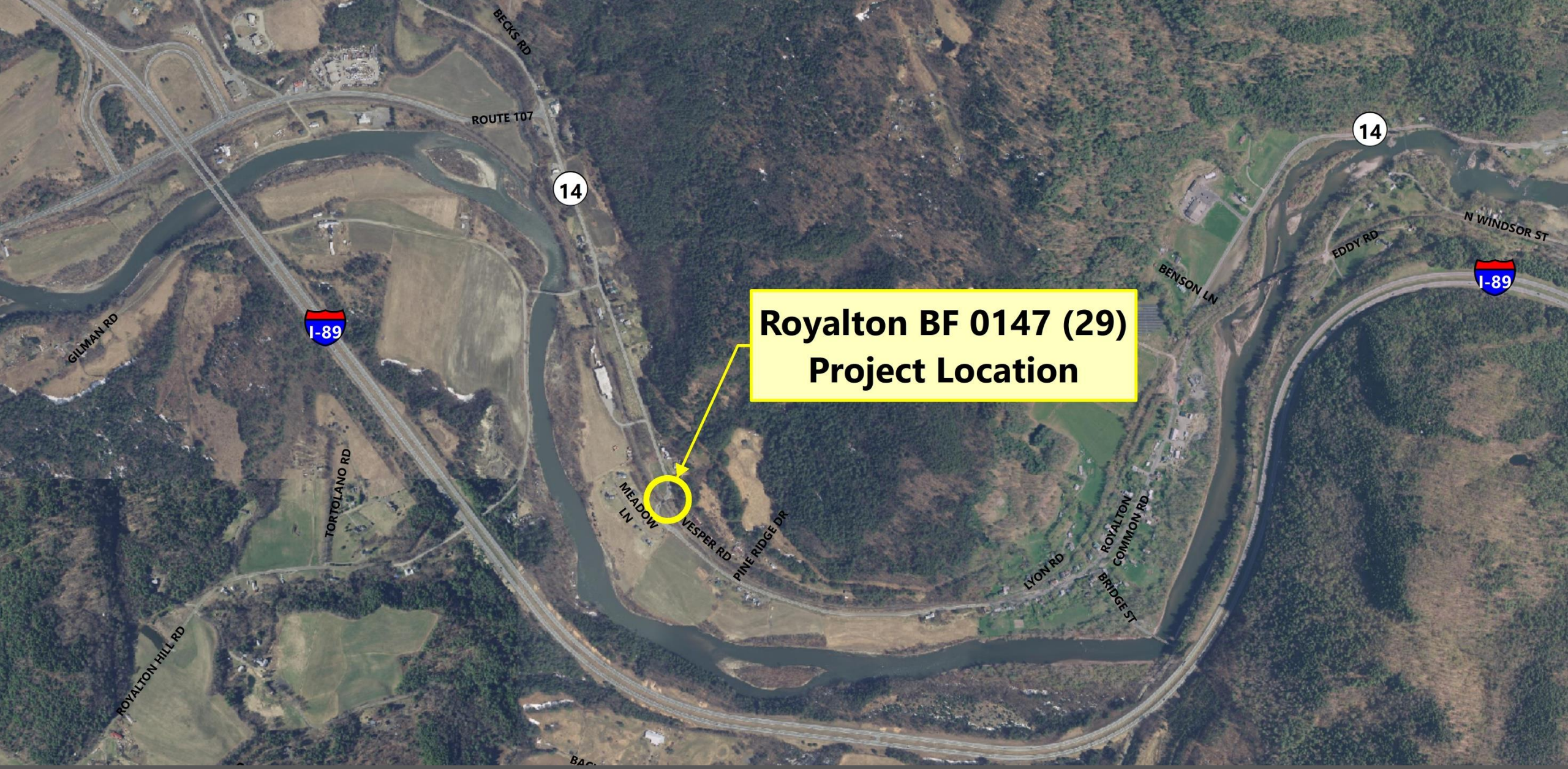
Federal Highway
Administration



Project Location Map

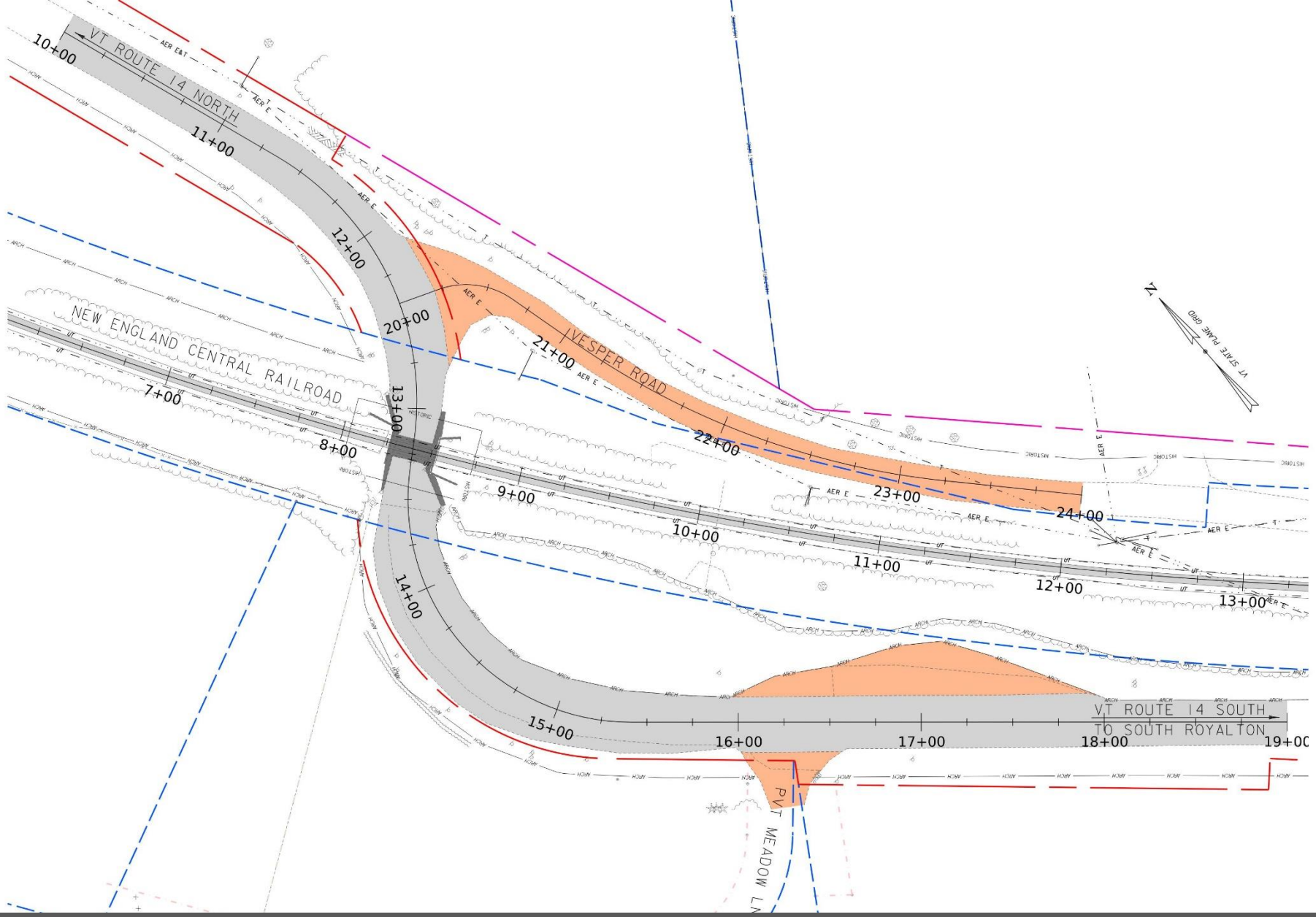
VTrans Project Development Process

- Scoping/*Conceptual Design - Completed*
- ***Preliminary Design – In progress now***
- Final Design
- Construction

*"**The purpose of the project** is to construct a safe highway-railroad crossing that meets current design standards with a long, low-maintenance service life. The project is needed because the existing bridge crossing has limited vertical and horizontal roadway clearance, sight distance, and horizontal alignment that do not meet current design standards. The bridge is in poor condition and has had many impacts resulting in damage to the steel superstructure and abutments."*

Purpose & Need Statement

Royalton – Existing Conditions



Existing Conditions Site Plan

- 10 Year History
- 9 Total Crashes
  - 5 PDO
  - 3 Injury
  - 1 Fatal

Crash Locations (2012 – 2021)

Existing Conditions Safety Concerns

- Railroad Bridge Structure Clearance Issues
- Bridge Structural Integrity
- High Vehicular Crash Location
- Deficient Roadway Geometry
- Narrow Shoulders
- Insufficient Sight Distances
- Drainage Issues

Design Criteria and Considerations

- Vermont Route 14 – Major Collector State Highway
- Average Daily Traffic (2026) = 3300 vpd
- Design Codes:
  - Vermont State Standards
  - AASHTO: A Policy on Geometric Design of Highways and Streets
  - AASHTO: Roadside Design Guide
  - AREMA Manual for Railway Engineering
  - VTrans Structures Design Manual

Alternatives Considered

- Alternative 1 – Do Nothing
- Alternative 2A – Bridge Replacement (30 MPH alignment)
- Alternative 2B – Bridge Replacement (40 MPH alignment)
- Alternative 3 – Bridge Replacement with NECR Owned Bridge
- Alternative 4A – New At-Grade Crossing (30 MPH alignment)
- Alternative 4B – New At-Grade Crossing (40 MPH alignment)

Evaluation Criteria	Alternative 1 – Do Nothing	Alternative 2 – Bridge Replacement		Alternative 3 – Bridge Replacement with NECR Owned Bridge	Alternative 4 – Bridge Removal and Construction of At-Grade Crossing	
		2A – 30mph Design Speed	2B – 40mph Design Speed		4A – 30mph Design Speed	4B – 40mph Design Speed
Vertical and Horizontal Roadway Clearance	🔴	🟢	🟢	🟢	🟢	🟢
Stopping and Intersection Sight Distance	🟡	🟡	🔴	🟡	🟢	🟢
Safe Crossing, Not Impeding Train and Vehicle Flow	🟡	🟢	🟢	🟢	🔴	🔴
Roadway Horizontal and Vertical Alignment	🔴	🟢	🟢	🟢	🟡	🟡
Constructability	🟢	🟡	🟡	🔴	🟢	🟢
Expected Future Maintenance	🔴	🟢	🟢	🟡	🟡	🟡
Opinion of Probable Construction Cost	$0	$5,100,000	$6,300,000	N/A*	$1,525,000	$1,650,000

🟢 = Good / Significant Improvement over Existing Conditions

🟡 = Fair / Minor Improvement over Existing Conditions

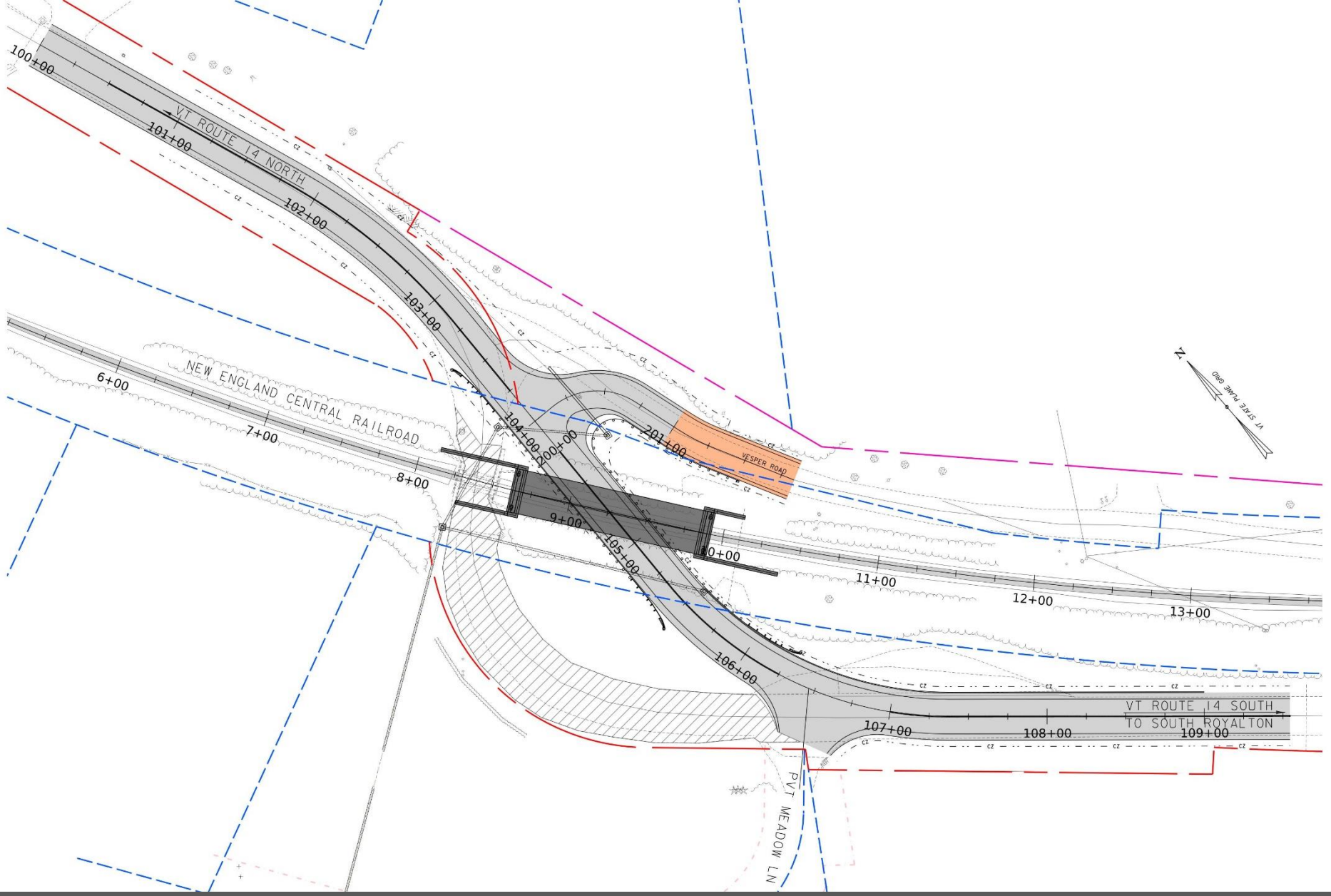
🔴 = Poor / Regression from Existing Conditions

*Alternative does not meet the purpose of this project; therefore an opinion of probable construction cost is not provided.

Alternatives Comparison Matrix

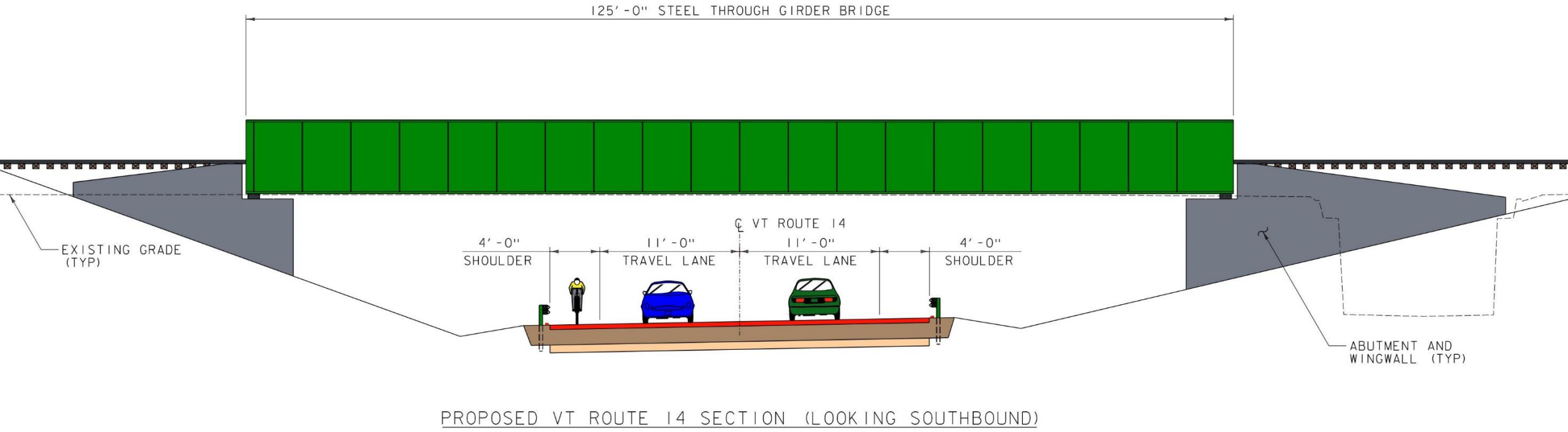
Selected Alternative 2B: New Bridge Construction (30 MPH alignment)

- New 125-ft long railroad bridge
- Raise grade of railroad over VT 14
- Increased vertical clearance – 14’-6”
- Improved VT 14 typical section – 4-11-11-4
- Improved sight distances along VT 14
- Improved sight distances at Vesper Road intersection
- Improved drainage collection and conveyance



Selected Alternative Site Plan

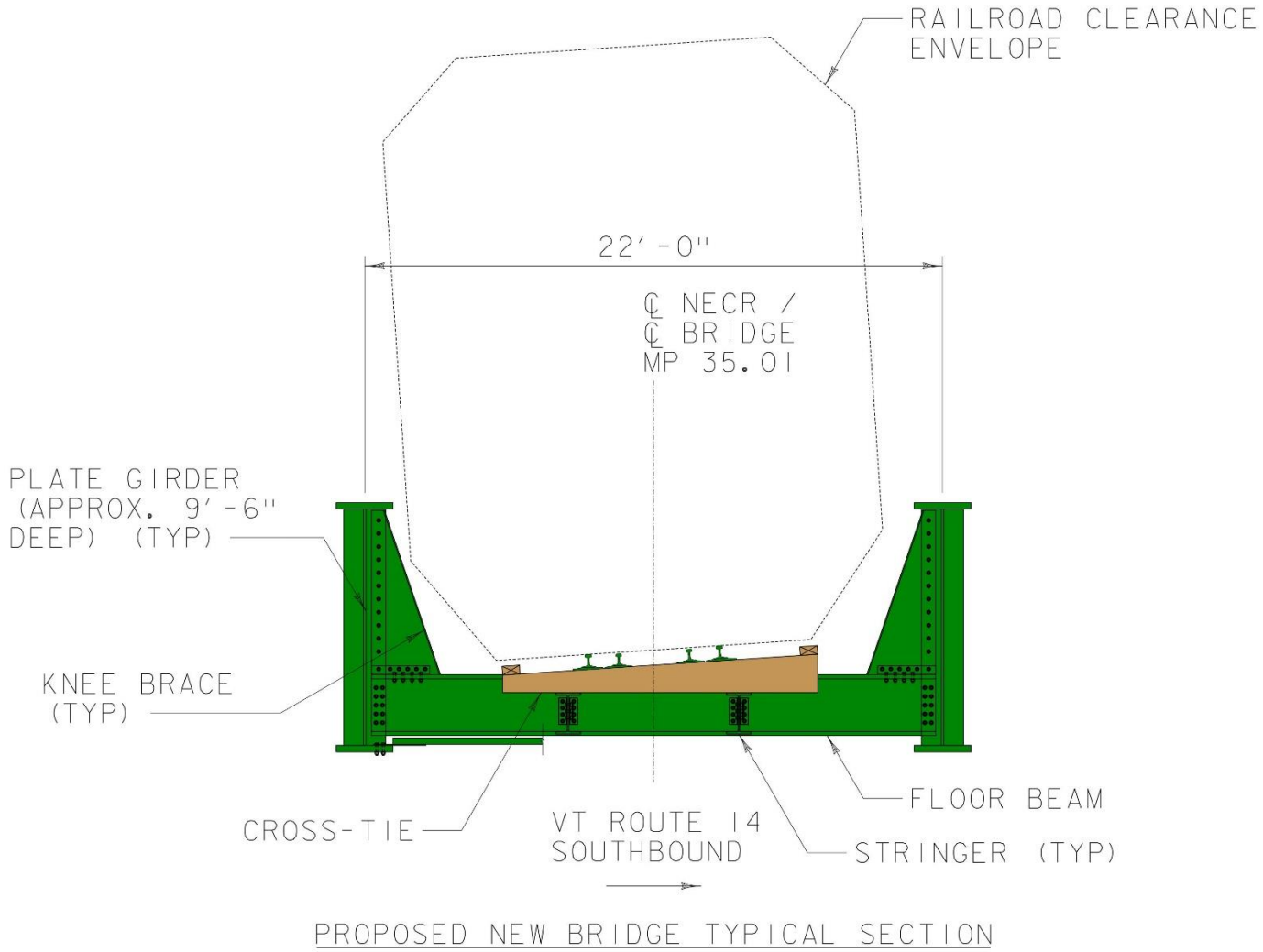
VT 14 Typical Section & Bridge Elevation



PROPOSED VT ROUTE 14 SECTION (LOOKING SOUTHBOUND)

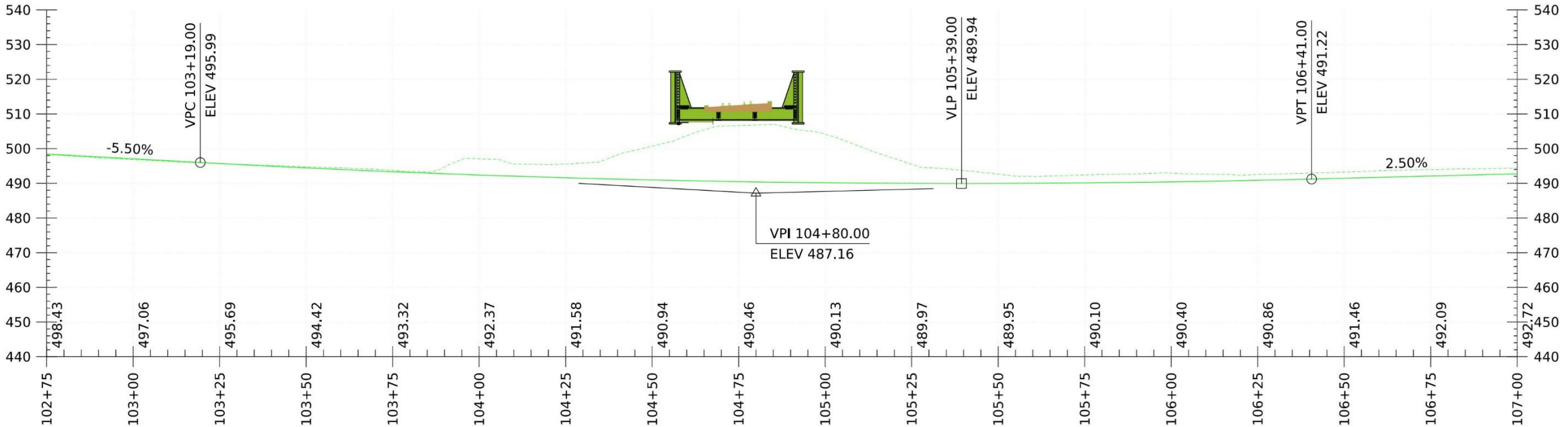
Looking South

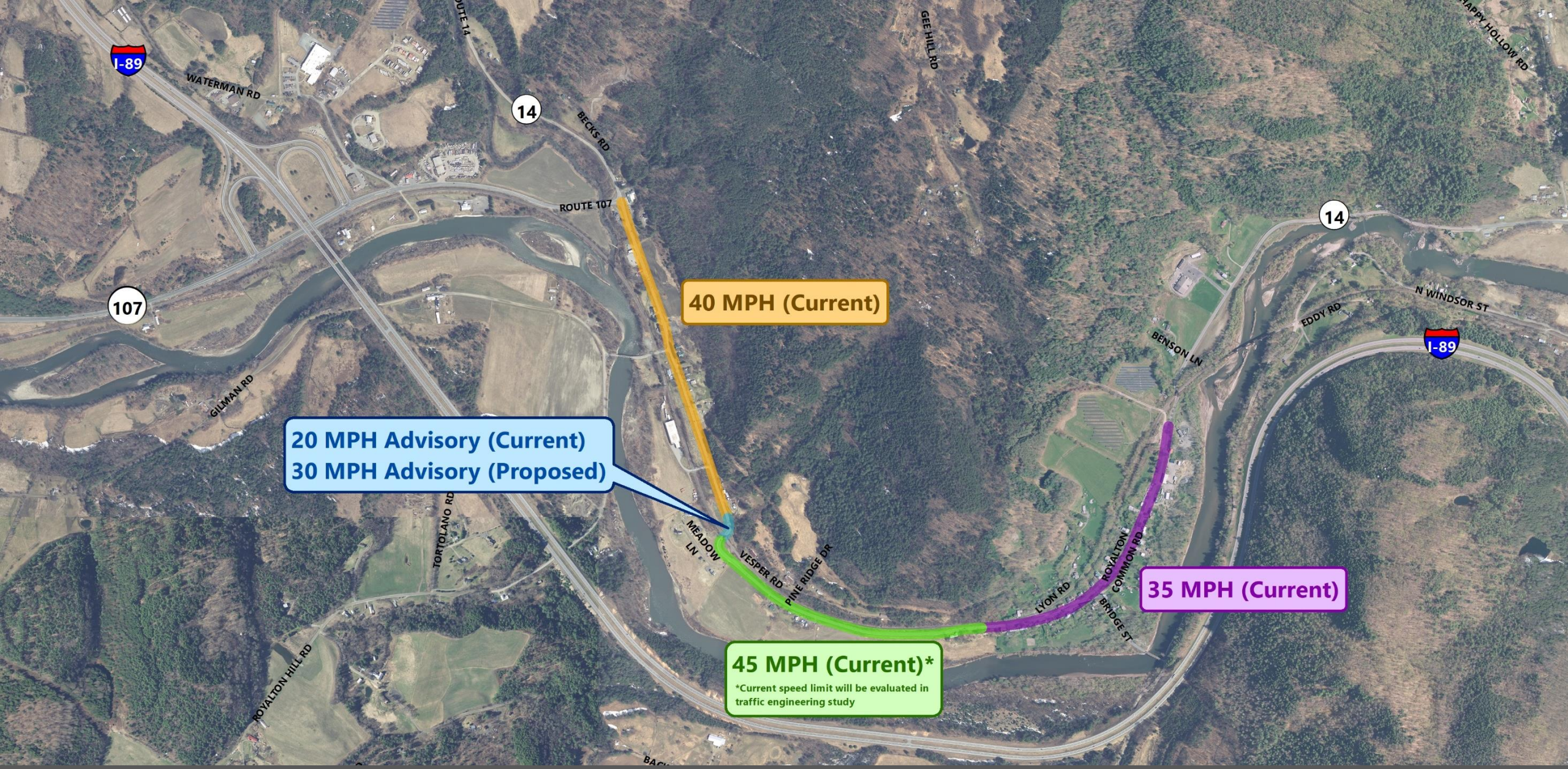
Bridge Typical Section



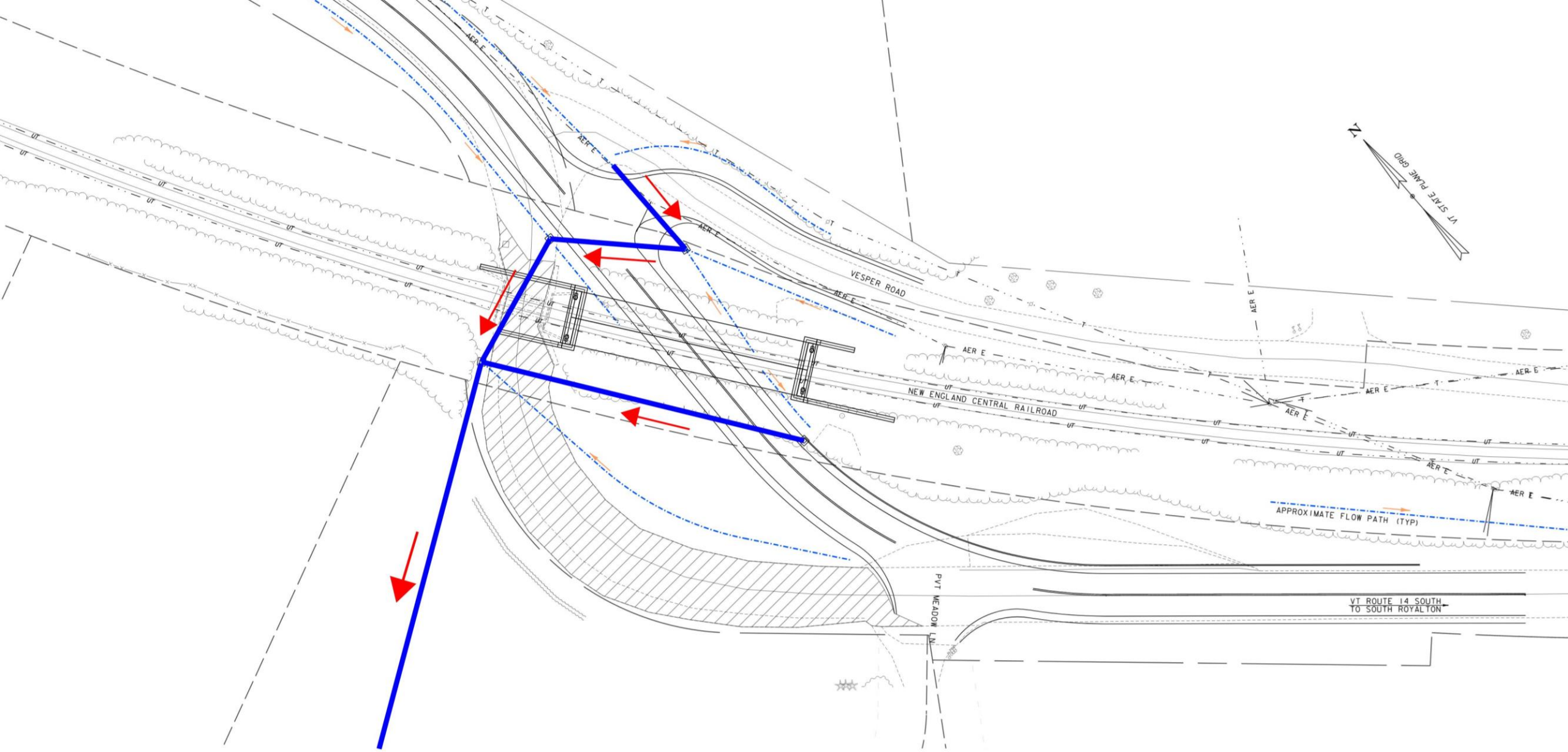
Looking South

Proposed VT 14 Profile





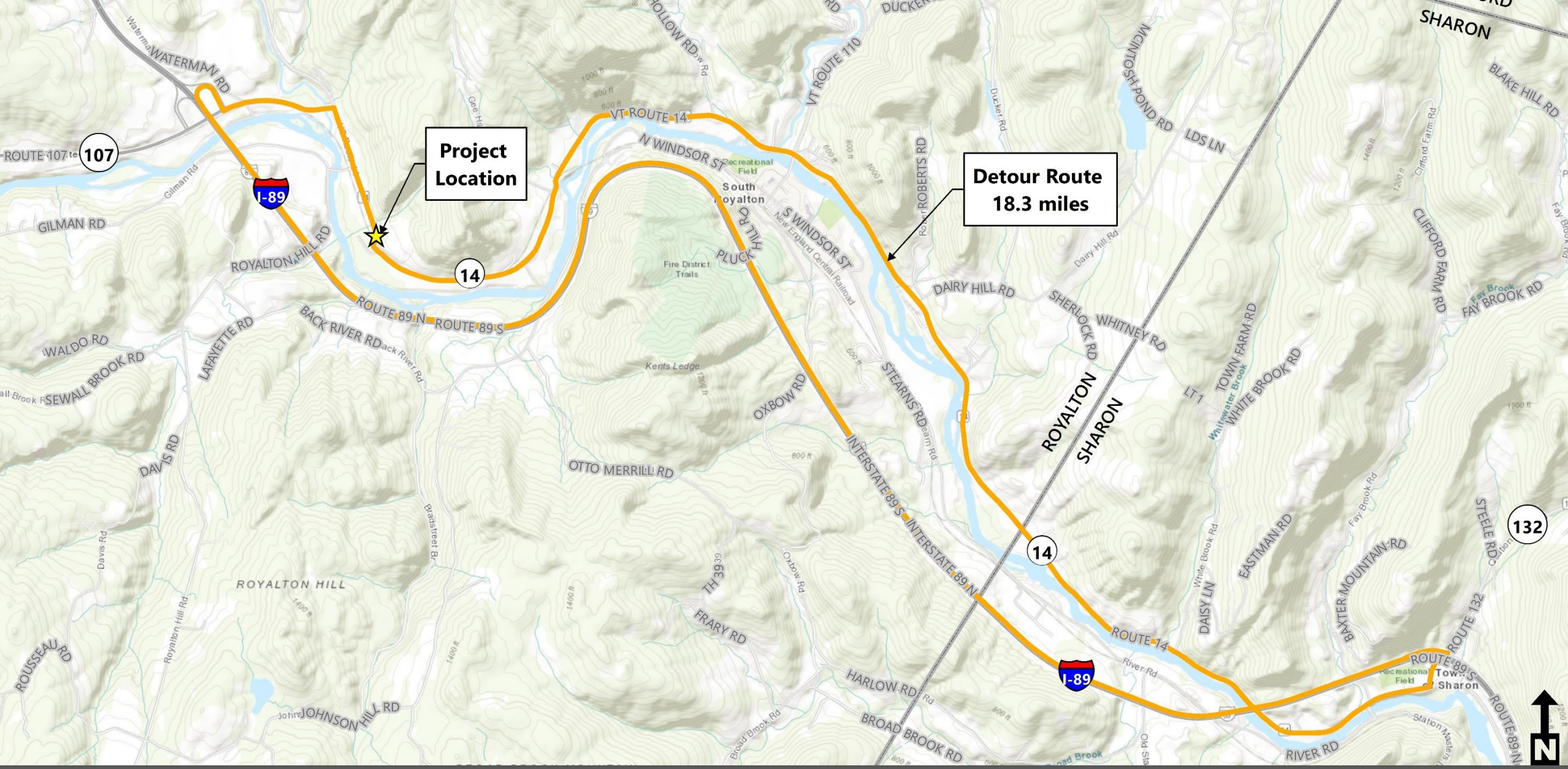
Speed Limit Summary



Proposed Stormwater Drainage Design

Maintenance of Traffic Considerations

- Minimize impacts to all modes of travel (vehicle, bicycle, train)
- Accelerated Bridge Construction
- Incentive / Disincentive
- State Route vehicular detour (VT 14 / I-89)
- Local Detour Routes (unsigned)



Detour Route

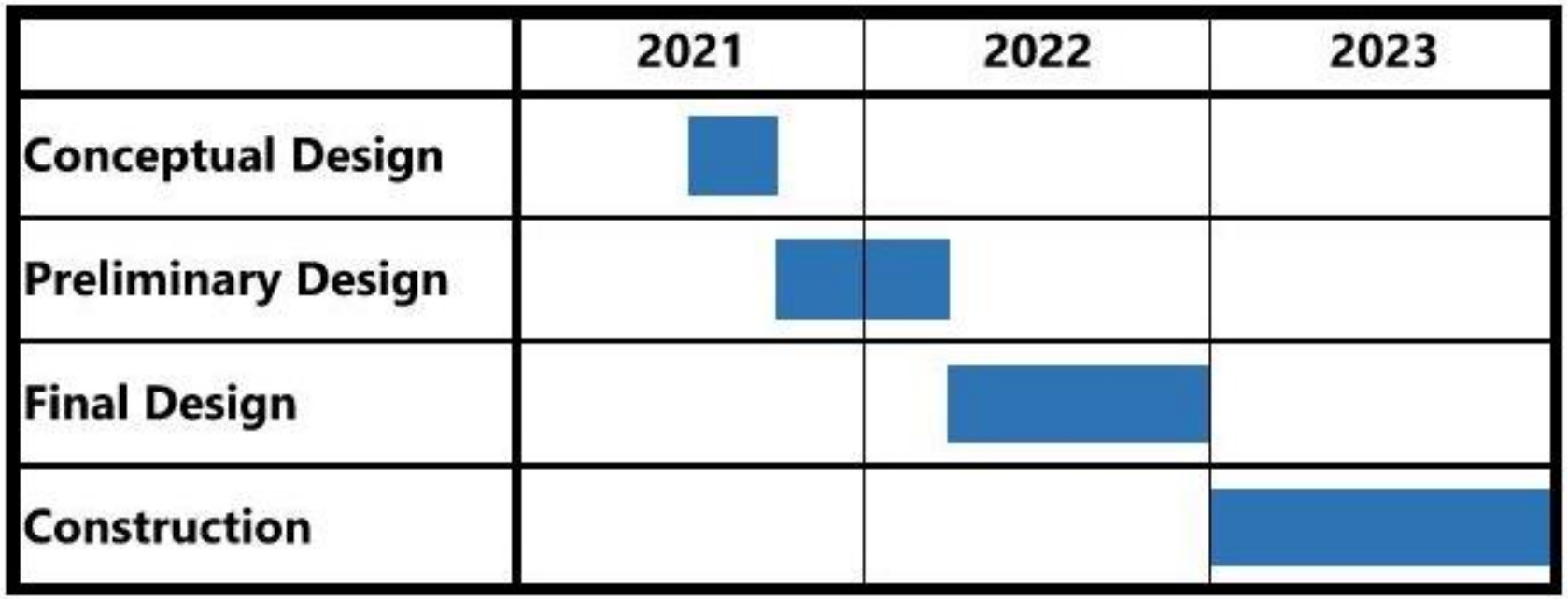
ABC / Vermont Route 14 Traffic Impacts

- **Utility Relocations** – Lane Closures on Vesper Road and VT 14
- **Contractor Mobilization** – Minimal Impacts on VT 14 / Shoulder Closures
- **Offline Bridge Construction** – Minimal Impacts on VT 14 / Shoulder Closures
- **Bridge Foundation Construction** – Short-term Railroad Closures
- **Accelerated Bridge Construction Period** – VT 14 and Railroad Closure
  - Removal of existing bridge and construction of new embankment
  - Excavation for new roadway location
  - Slide new bridge into place
  - Construct new roadway subbase and pavement
  - Install guardrail
- **Project Finalization and Cleanup** – Minimal Impacts on VT 14 / Shoulder Closures

Project Risks

- Traffic control impacts
- Railroad work windows
- Project permitting
- Right-of-way acquisition
- Material cost escalation
- Subsurface conditions

Next Steps - Milestone Timeline



Public Outreach Moving Forward

- Public Meetings
- Public Information Officer
- Property Owner Meetings
- VTrans Project Website
  - https://outside.vermont.gov/agency/VTRANS/external/Projects/Structures/21J240

Questions

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