



Hartford (Quechee) NH 020-2(45)
Public Informational Meeting
US Route 4 – Bridge #61 over Ottauquechee River

June 21, 2018

Introductions

JB McCarthy, P.E.

Vermont Agency of Transportation Structures Section
Bridge Preservation Engineer
Project Manager

Matt Langham

Vermont Agency of Transportation
Regional Planning Coordinator

Jill Barrett

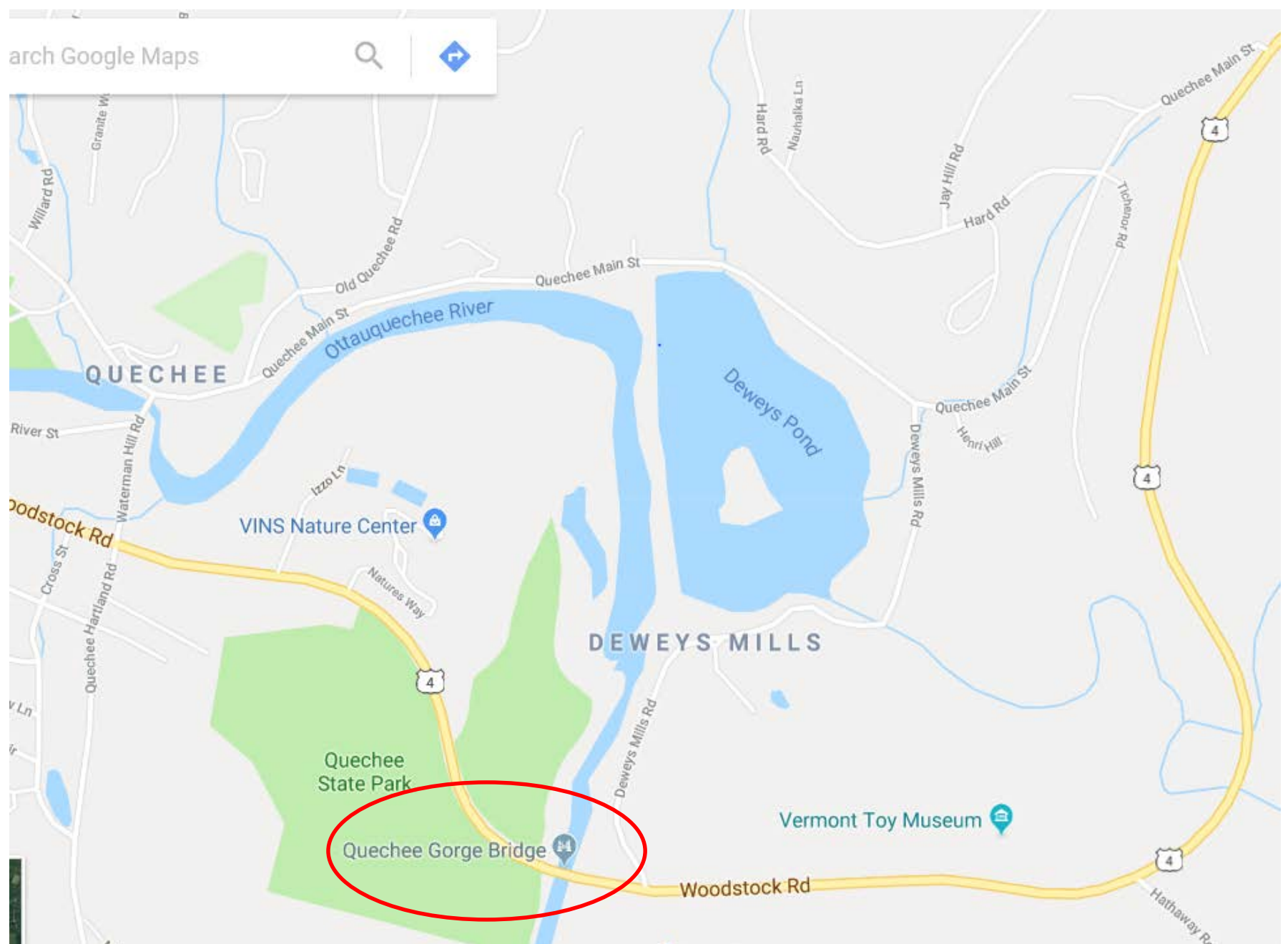
Fitzgerald & Halliday, Inc
Public Outreach, Project Manager

Cindy Cook

Adamant Accord, Inc.
Meeting Facilitation and Mediation Services

Purpose of Meeting

- Provide an outline of the Scoping Report
- Provide an overview of project constraints
- Discuss our selected alternative
- Provide an opportunity to comment, ask questions and voice concerns



Location Map

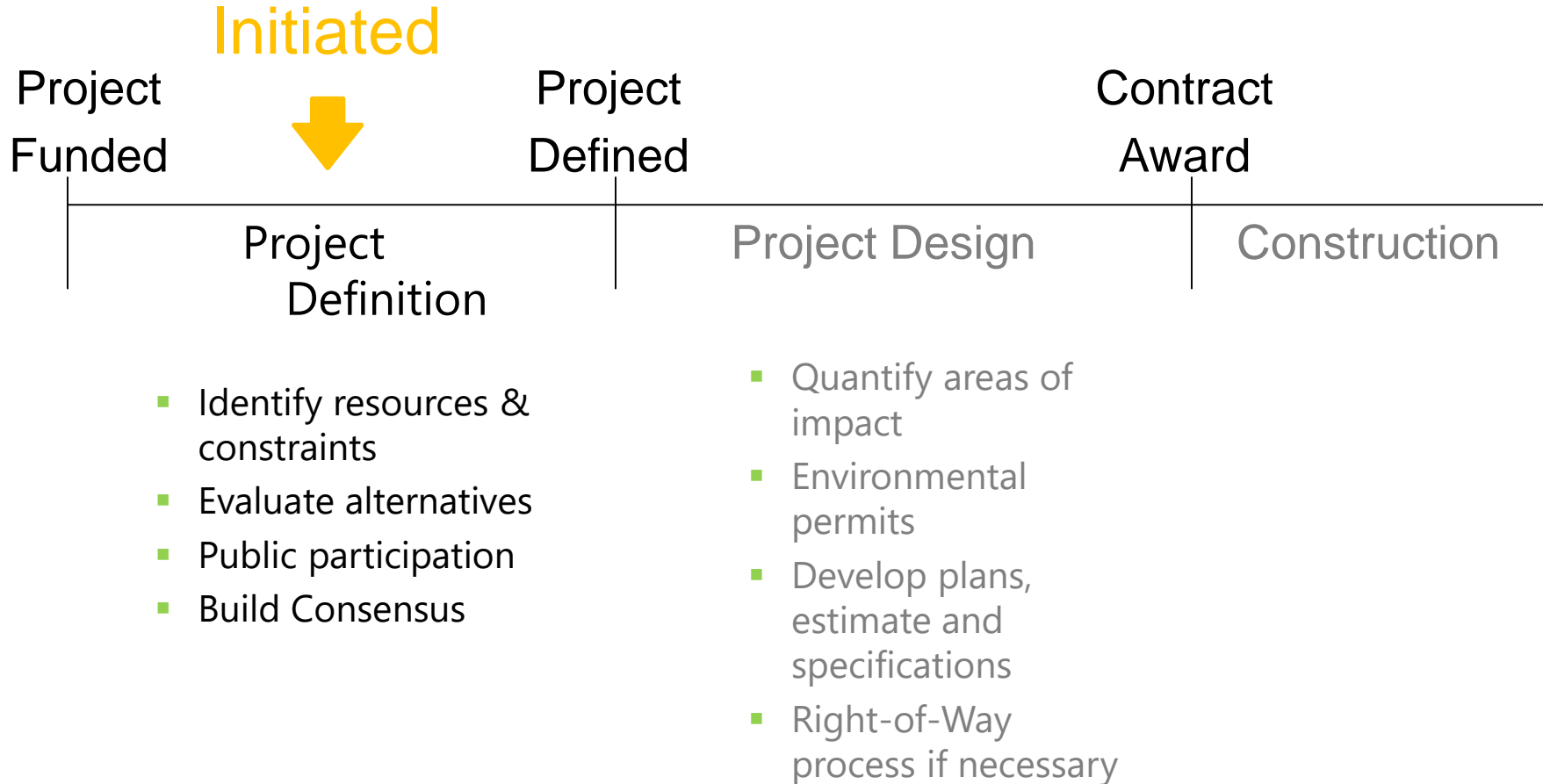
Bridge 61
Project Location



Meeting Overview

- VTrans Project Development Process
- Project Overview
 - Existing Conditions
 - Preservation and Maintenance Needs
 - Recommended Work
- Maintenance of Traffic
- Schedule
- Summary
- Questions

VTrans Project Development Process



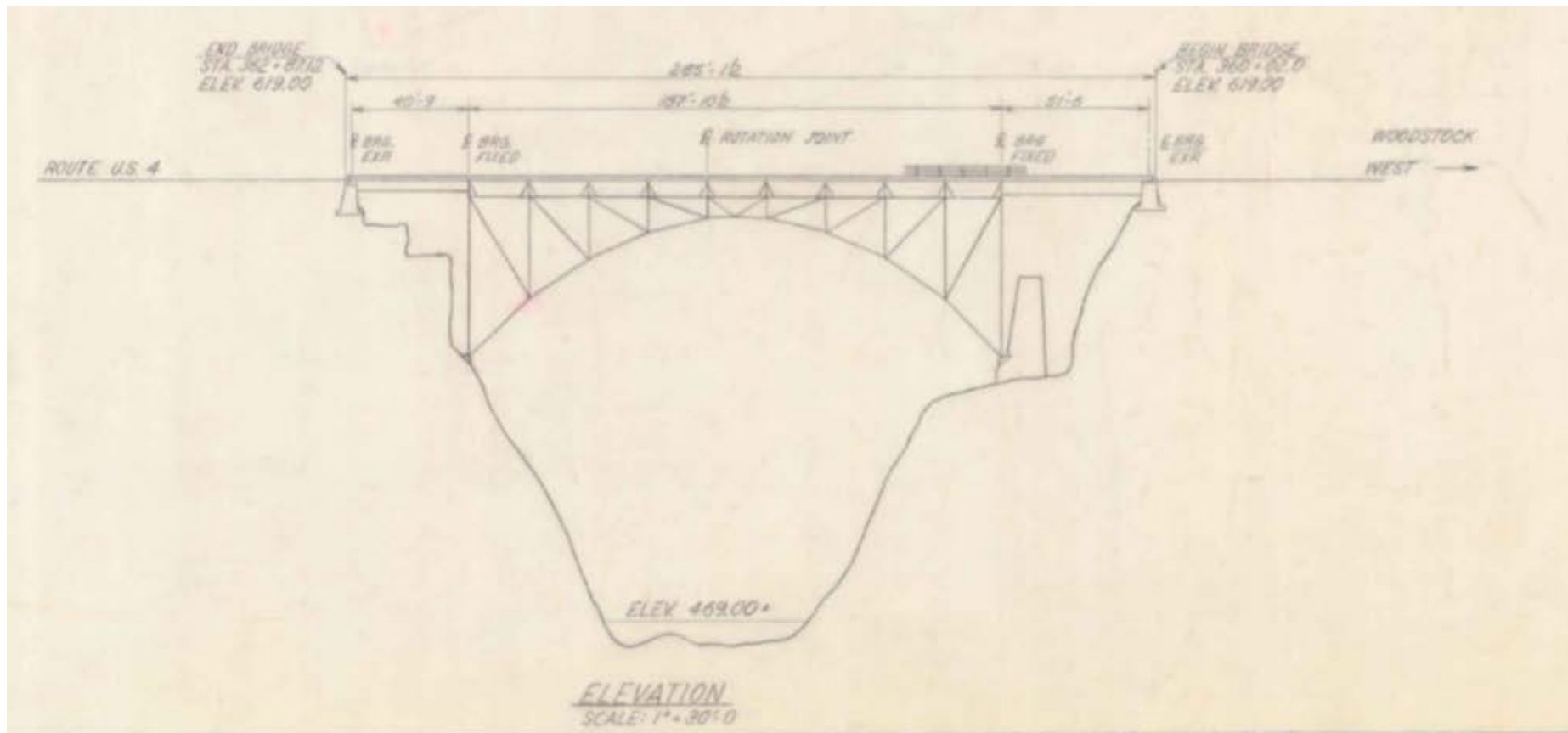
Existing Bridge Condition

Hartford (Quechee) US 4 (NHS) Br. 61

- 3 Span Steel Deck Arch – Const 1911 RR Bridge
- Owned by state of Vermont
- 1930s converted to a highway bridge
- 1972 project added 4'-2" sidewalks
- 1988 project replaced interior sections of deck
- Structural Condition:
 - Deck: 7 Good
 - Superstructure: 5 Fair
 - Substructure: 6 Satisfactory

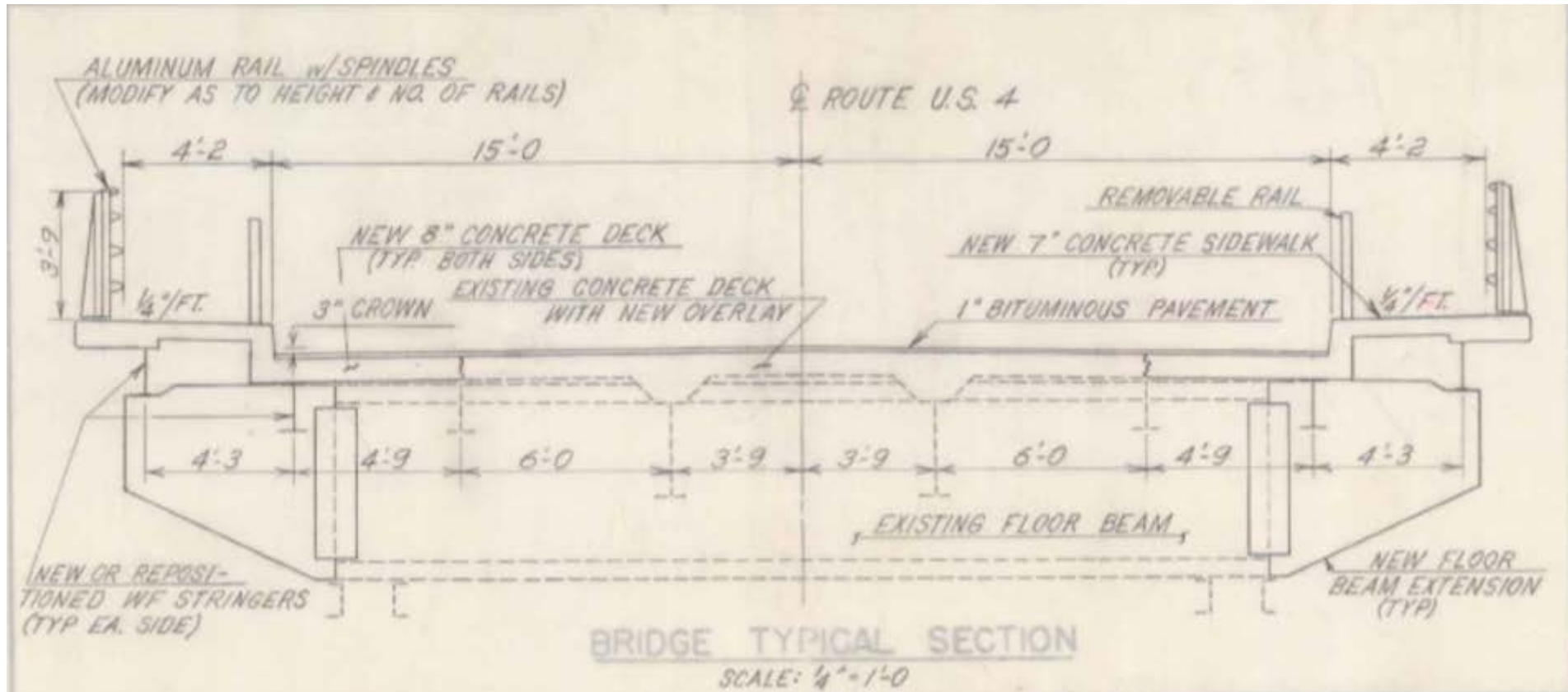
Existing Bridge Condition

Hartford (Quechee) US 4 (NHS) Br. 61 3 Span Steel Deck Arch



Existing Bridge Condition

Hartford (Quechee) US 4 (NHS) Br. 61 Typical Bridge Section



Bridge Components



Looking East over Bridge



Existing Conditions - Bridge #61

- Roadway Classification –Principal Arterial (on NHS)
- Bridge Type – 285' Span 3-Hinge Steel Deck Arch
- Ownership – State of Vermont
- Constructed in 1911
 - Reconstructed in 1972 & 1989

05/09/20

Existing Conditions – Bridge #61

- “Forever Bridge” – keep in service as long as possible.
- Overall satisfactory condition with some maintenance issues
- Bridge shoulders are 4 ft. VT State Std. call for 8 ft.
- The existing sidewalk width does not comply with the Americans with Disabilities Act (ADA) standards.
- Suicide Concerns - Legislative Report
- High Crash Location – due to pedestrians.

Design Criteria and Considerations

Engineering Design Criteria

Roadway 20-25 yrs

Bridge – 100 yrs (new)

Environmental Resources (*Minimize Impacts*)

Biological

Historical

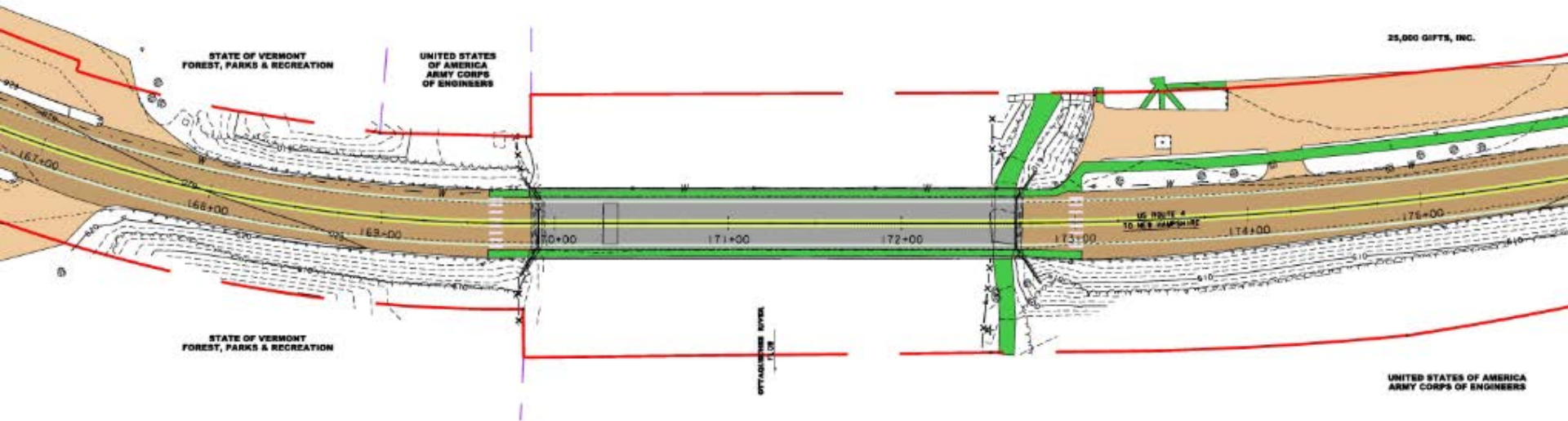
Archaeological

Right-Of Way – Property Owner (*Minimize Impacts*)

Design Criteria and Considerations

- ADT of 10,000
- DHV of 1,200
- % Trucks: 5.7
- Design Speed of 35 mph
- Municipal Utilities
- Historic Bridge
- Heavy Pedestrian Traffic – due to the natural resource
- Pedestrian Safety Railing

Existing Conditions



Alternatives Considered – Bridge #61

- No Action
 - a “Forever Bridge” and preservation of the existing bridge is desired to keep it in service as long as possible. Due to the current needs at the Bridge, the No Action alternative is not recommended
- Preventative Maintenance
 - Structural steel
 - Bridge joint replacement
 - New Deck Membrane
 - Sidewalks Widening
 - Silane application to exposed concrete
 - Slope stabilization
- Vehicular and Pedestrian Railing Safety Improvements

Recommended Alternative - Bridge #61

- Address all Preventative Maintenance Options at this time
 - Cleaning and painting the steel arch members
 - Replacement of deteriorated steel members
 - Bridge joint repair or replacement
 - Bearing rehabilitation/replacement
 - A deck membrane and pave application
 - Widening of the existing sidewalks to meet minimum ADA Standards
 - 3.5' to 5'
 - Maintain the 4-11-114 bridge typical
 - Partial deck replacement to the approximate limits of the 1972 deck and sidewalk reconstruction, and
 - Silane application to the substructures and new concrete sidewalks and fascias
 - Slope stabilization



Preventative Maintenance – Bridge #61

- Existing paint starting to corrode

07/26/2017

Replacement of Deteriorated Steel Members



Preventative Maintenance – Bridge #61

- Replace Lattice Members – increase section

Bridge Joint Replacement

05/09/2017

Preventative Maintenance – Bridge #61

- 3 Vermont Joints in poor condition
- Leaking water and salt on steel members below

Bearing Replacement



Preventative Maintenance – Bridge #61

- Bearings at abutments are in poor condition

Deck Membrane and Pave



Preventative Maintenance – Bridge #61 20

- Spray on membrane recommended for increase design life

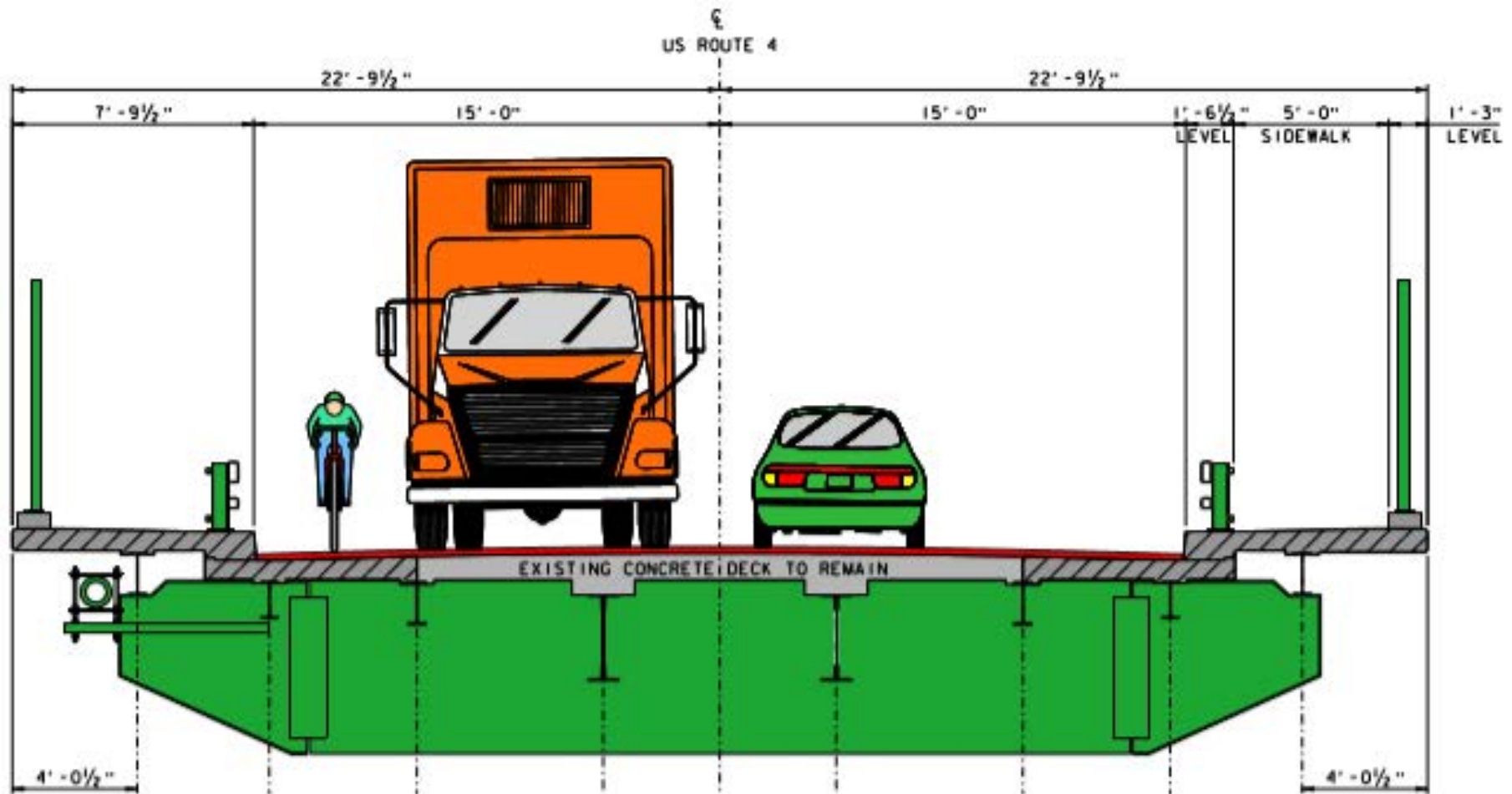
Widen Existing Sidewalks

Preventative Maintenance – Bridge #61

- Existing Sidewalks are 3.5' widen to 5'-0"
- Heavy pedestrian traffic
- May have impacts to 8" water main attached to northern fascia



Partial Deck Replacement



BRIDGE 61 PARTIAL DECK REPLACEMENT

FLOW →

Slope Stabilization



Preventative Maintenance – Bridge #61

- Shale slope



Maintenance of Traffic Options Considered

- **Single Lane Closed on the bridge during off-peak hours**

Cleaning and painting the steel arch members, replacement of deteriorated steel members, bridge joint repair/replacement, bearing rehabilitation/replacement, and deck membrane and pave application)

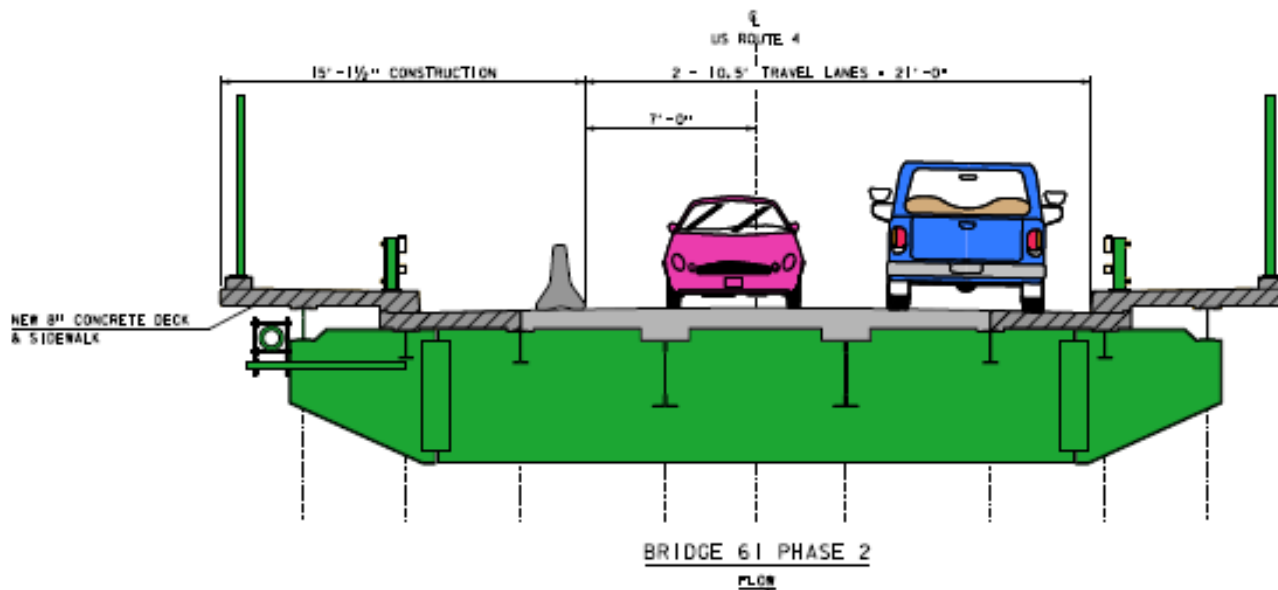
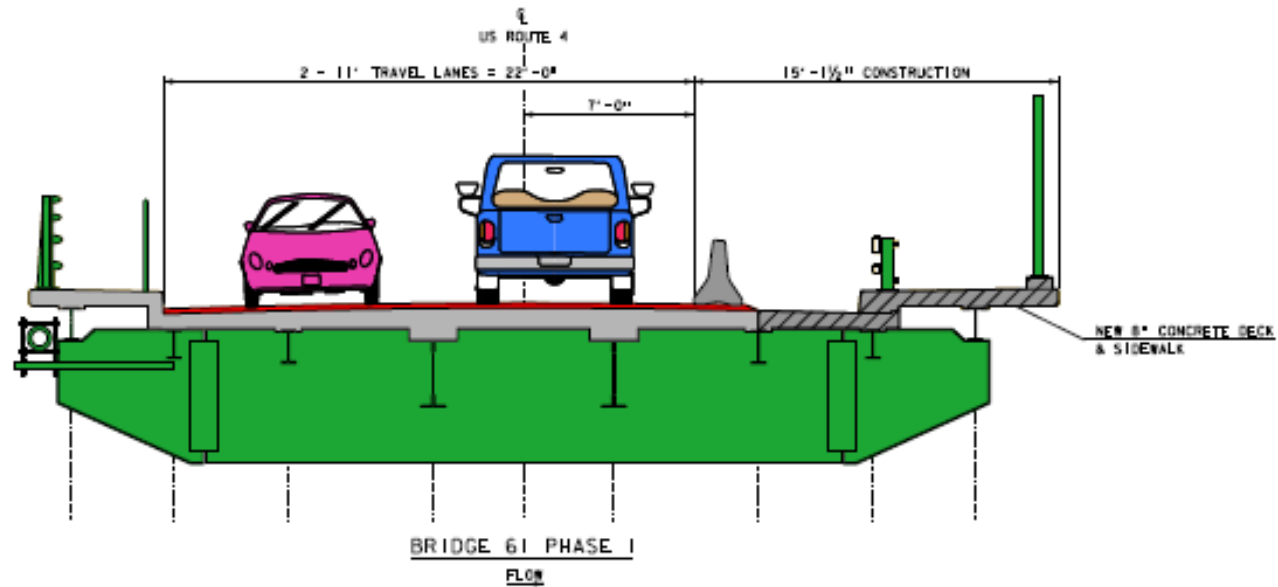
- any lane closures should occur at night or during the day in between peak traffic volumes. Off peak lane closures are expected intermittently throughout construction.

- **Traffic lanes reduced to two 10-foot lanes with no shoulders**

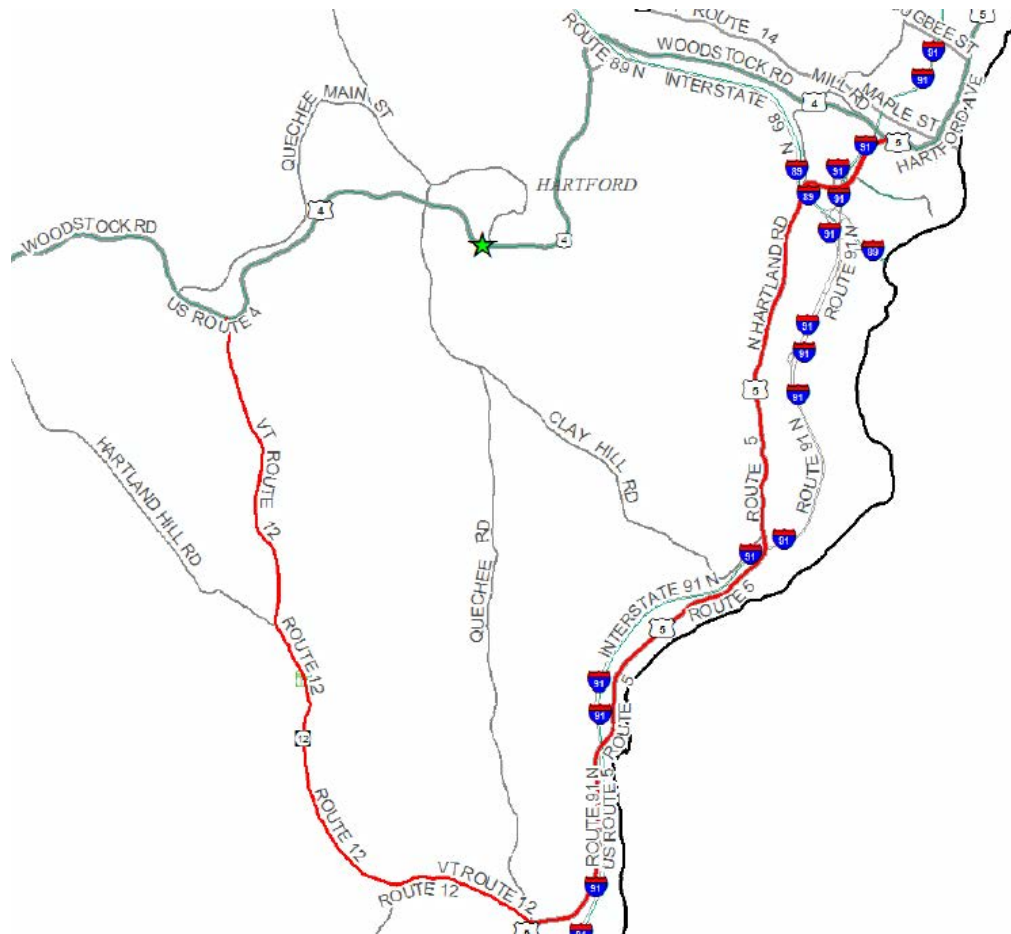
(Widening of the existing Sidewalks – New concrete sidewalks and fascias, and partial deck replacement to the approximate limits of the 1972 deck and sidewalk reconstruction, silane application.)

- 2 lanes needs to be maintained during peak hours to avoid queue
- Travel way reduced 10-foot lanes for a continuous 3-week period.

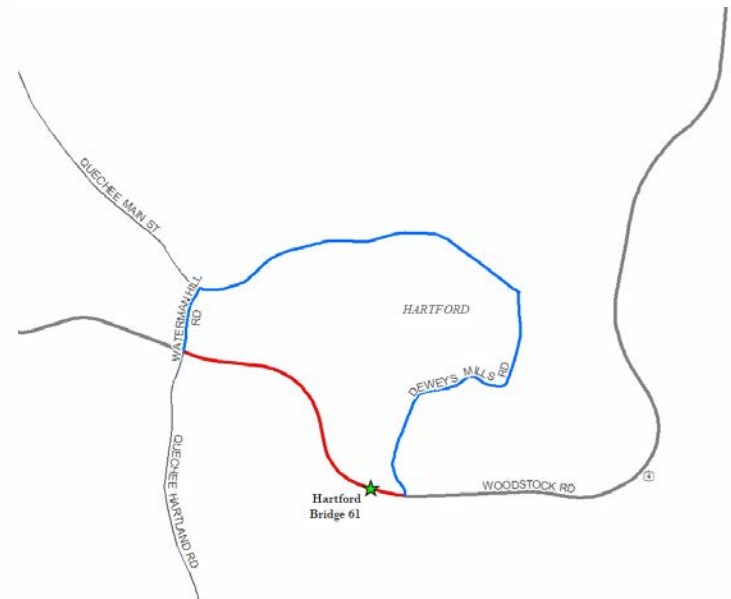
Traffic Control – Phased Construction



Traffic Control – Detour



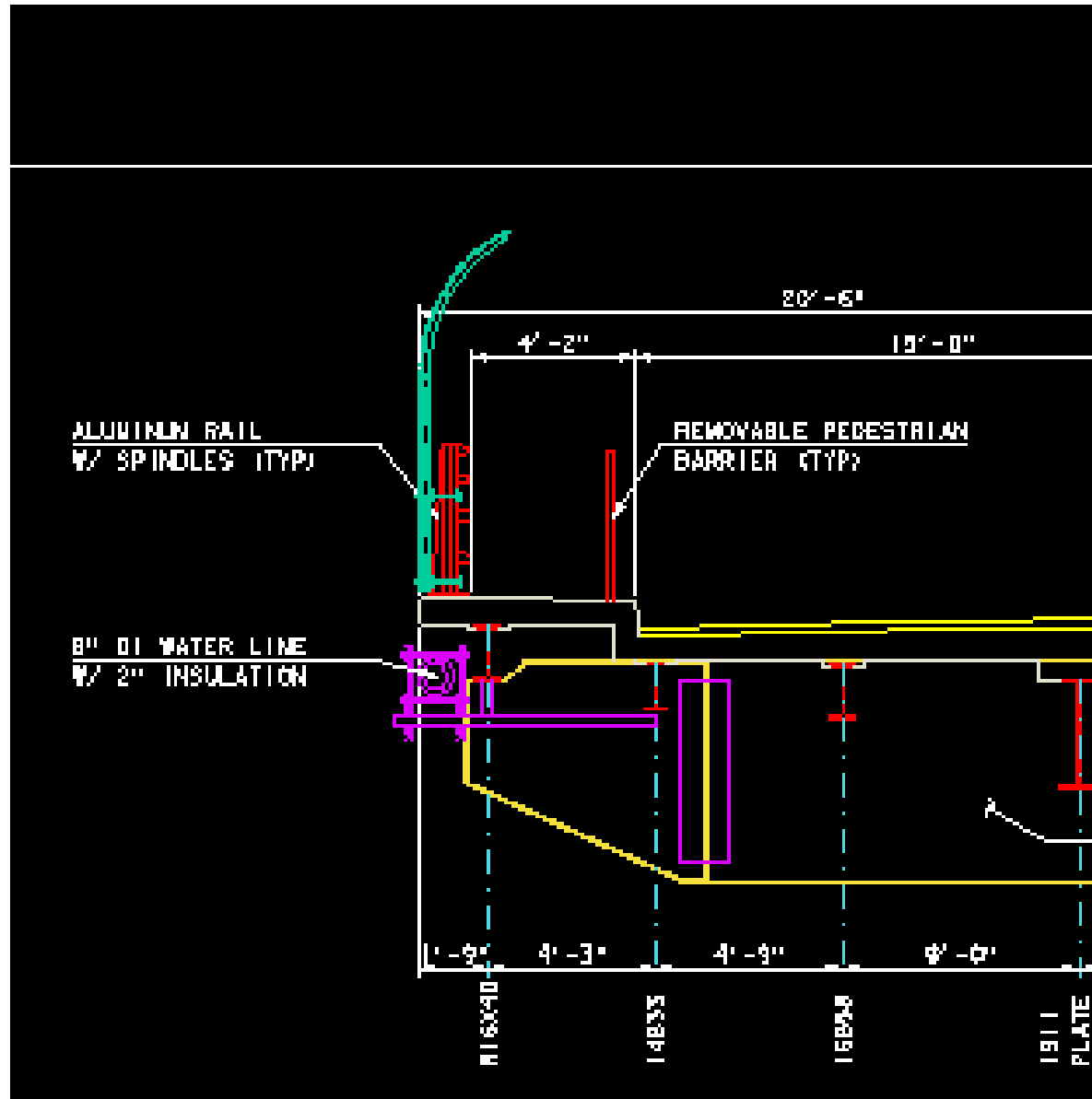
- **Regional Detour:** US Route 4, to US Route 5, and VT Route 12, back to US Route 4 (26.8 mi end-to-end)



The shortest local bypass route, has an End-to-End distance of 3.0 miles

- US Route 4, to Dewey's Mills Road, Quechee Main Street, and Waterman Hill Road, back to US Route 4

Temporary Safety Fence – 2018 Installation



Stonington Borough, CT



Stonington Borough, CT



Sample Window Opening



Preliminary Project Schedule

- Temporary Safety Fence - 2018
- Full Rehabilitation – Start 2021
 - 2 Year construction project
 - Year 1 – Sidewalks and structural work
 - Year 2 - Painting
 - Total Cost Estimate: \$6,506,000

For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/17b082>



Hartford (Quechee) NH 020-2(45) Questions and Comments

US Route 4 – Bridge #61 over Ottawaquechee River

June 21, 2018

Evaluation Matrix

Hartford NH 020-2(45)	Rehabilitation Options Considered									TOTAL COST
	Cleaning and Painting the Steel Arch Members	Replacement of deteriorated steel members	Bridge Joint Replacement	Bridge Bearing Replacement	Deck Membrane (Spray-on) and Pave Application	Silane Application to Exposed Concrete	New Concrete Sidewalks	Partial Deck Replacement	Slope Stabilization (Eastern Abutment)	
Total Project Costs	\$1,782,792	\$2,294,673	\$651,677	\$356,994	\$227,377	\$10,120	\$500,518	\$276,023	\$414,568	\$6,505,485
Project Development Duration	4 years	4 years	4 years	4 years	4 years	4 years	4 years	4 years	4 years	
Construction Duration	1 month	1 month	1 month	7 days	5 days	3 days	1 month	1 month	3 weeks	
Traffic Control During Construction	Single lane closed on the bridge during off-peak hours					Minimal Traffic impacts anticipated	Traffic lanes reduced to 2 10-foot lanes for 3-weeks with a potential truck detour		Minimal Traffic impacts anticipated	
Bicycle Access	No Change	No Change	No Change	No Change	No Change	No Change	Decreased Shoulder Width	No Change	No Change	
Pedestrian Access	No Change	No Change	No Change	No Change	No Change	No Change	Improved Sidewalk Width	No Change	No Change	