Ludlow Village BO 1443(52) Alternatives Presentation Meeting

Town Highway 324 – Bridge #57 over Black River

11/19/2013

February 3, 2020

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Introductions

Laura Stone, P.E.

VTrans Scoping Engineer

Todd Sumner, P.E.

VTrans Design Project Manager

Kyle Obenauer

VTrans Historic Preservation Specialist

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Purpose of Meeting

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

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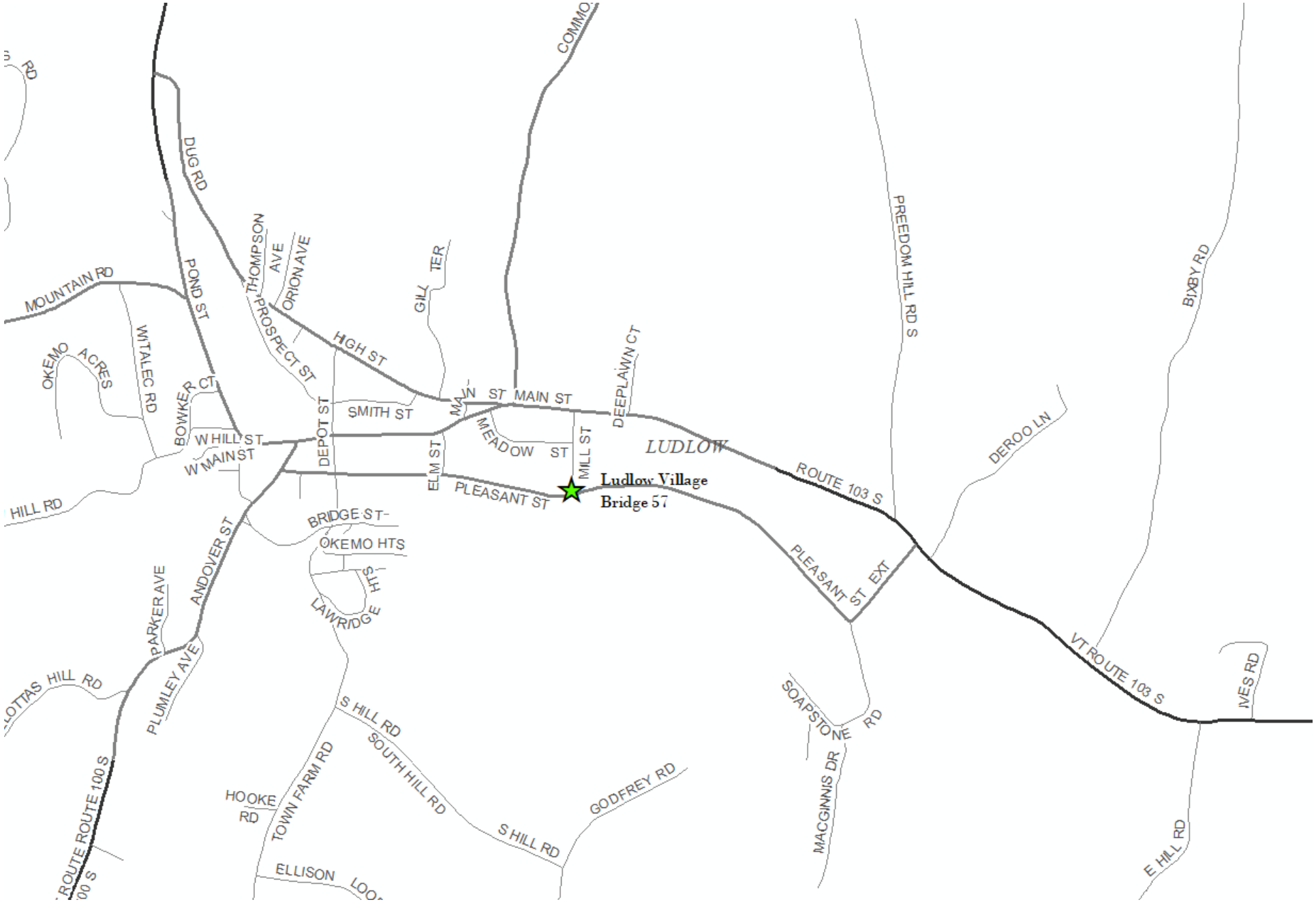
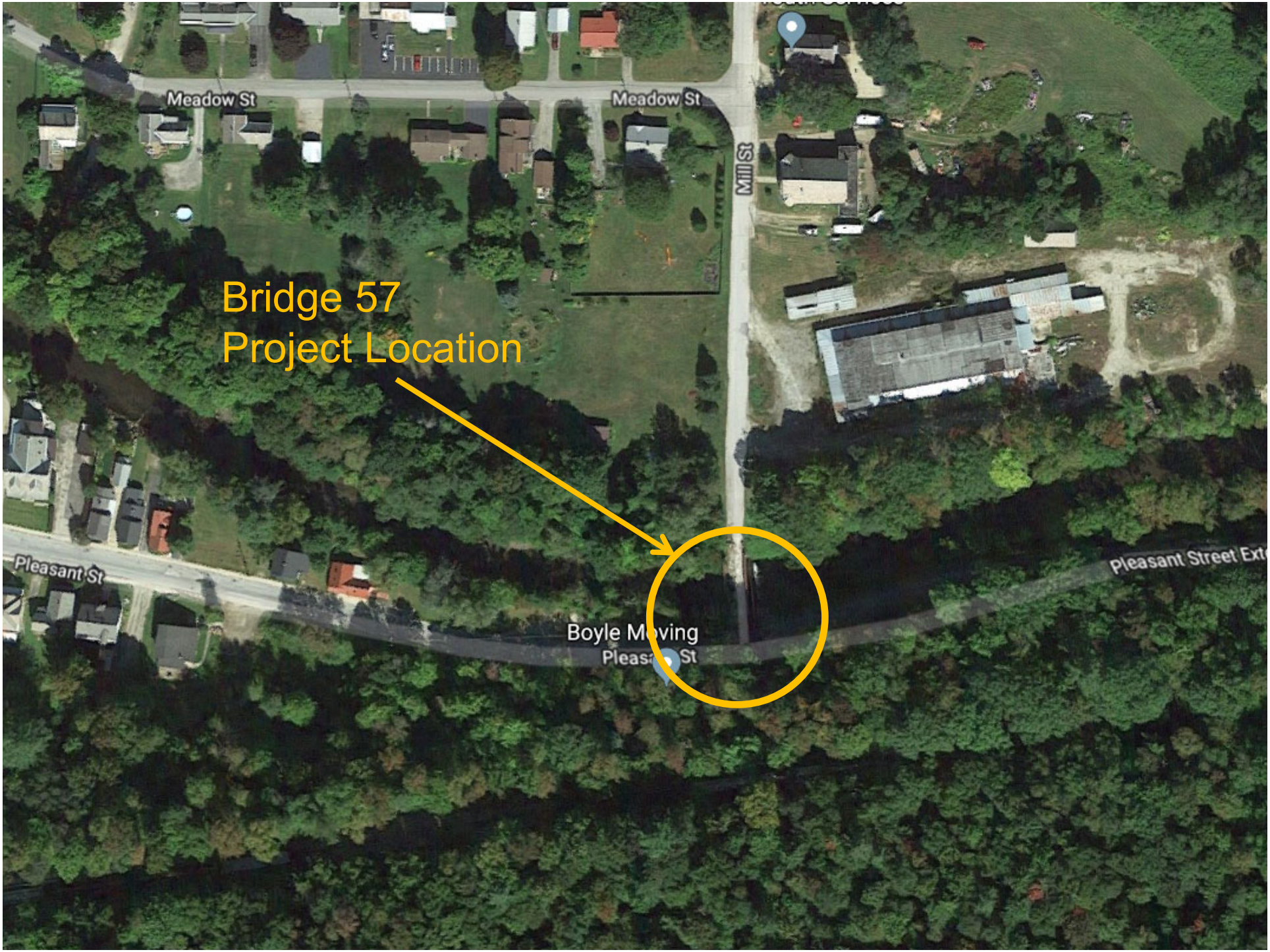


Location Map


Meadow St
Meadow St
Mill St
Bridge 57
Project Location
Pleasant St
Boyle Moving
Pleasant Street Ext

Meeting Overview

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

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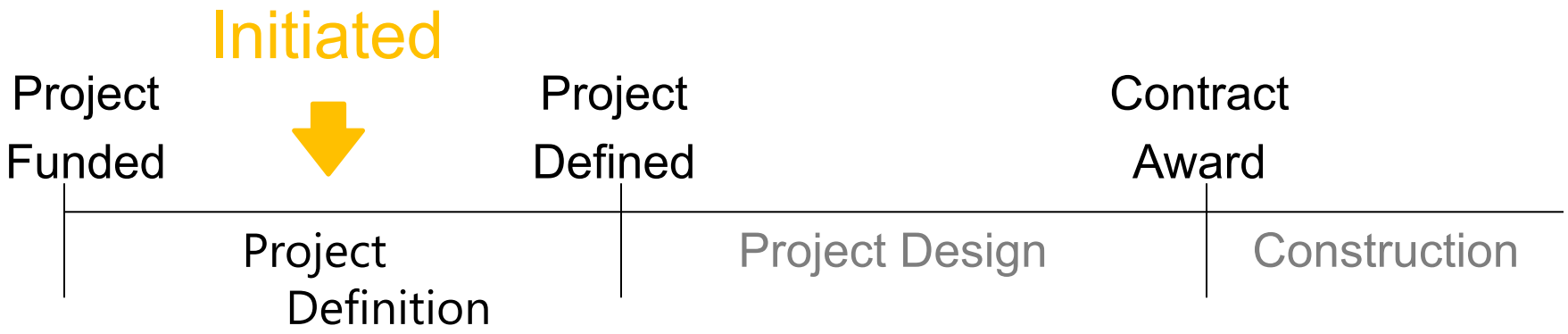
VTrans Project Development Process



- 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

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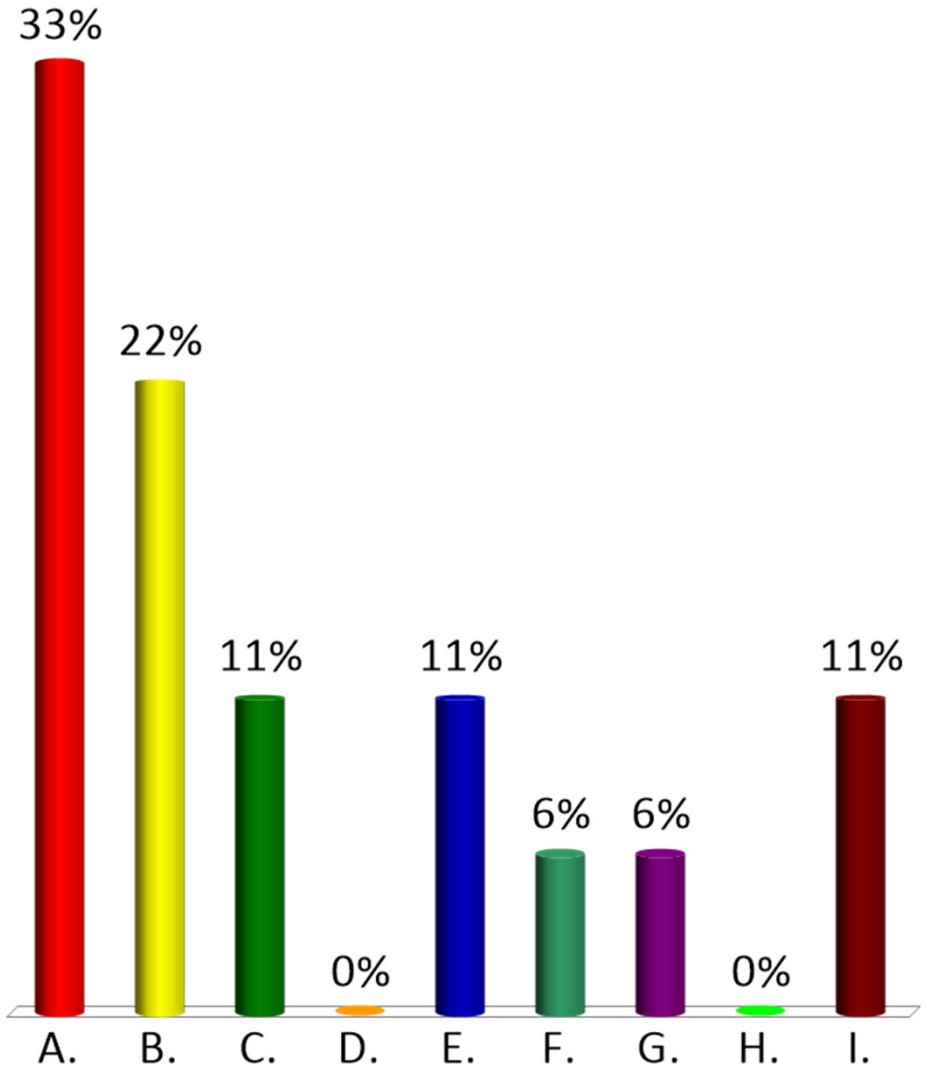
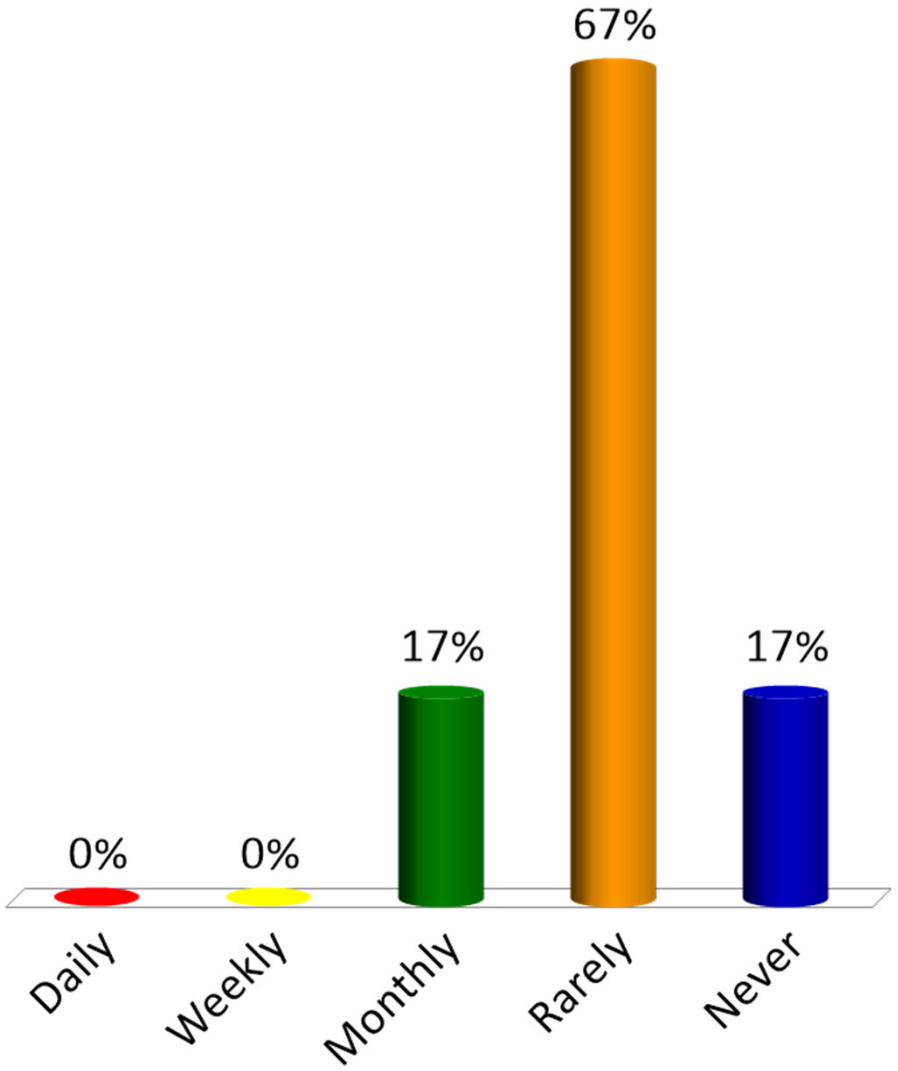
Who are you representing?

A. Municipal Official
B. Resident of Ludlow Village
C. Property Owner in Immediate Vicinity
D. School Representative
E. Emergency Services
F. Local Business
G. Independent Organization
H. Press
I. Other



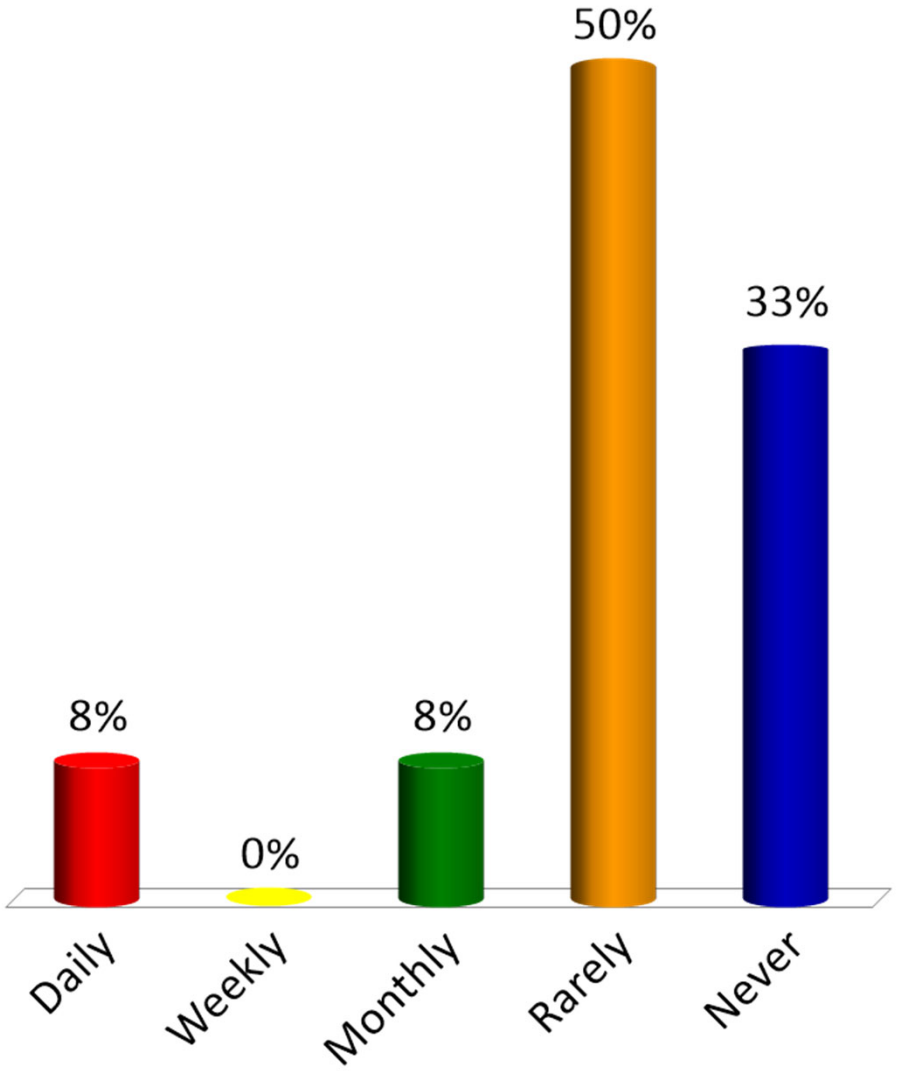
How often do you use Mill Street?

A. Daily
B. Weekly
C. Monthly
D. Rarely
E. Never



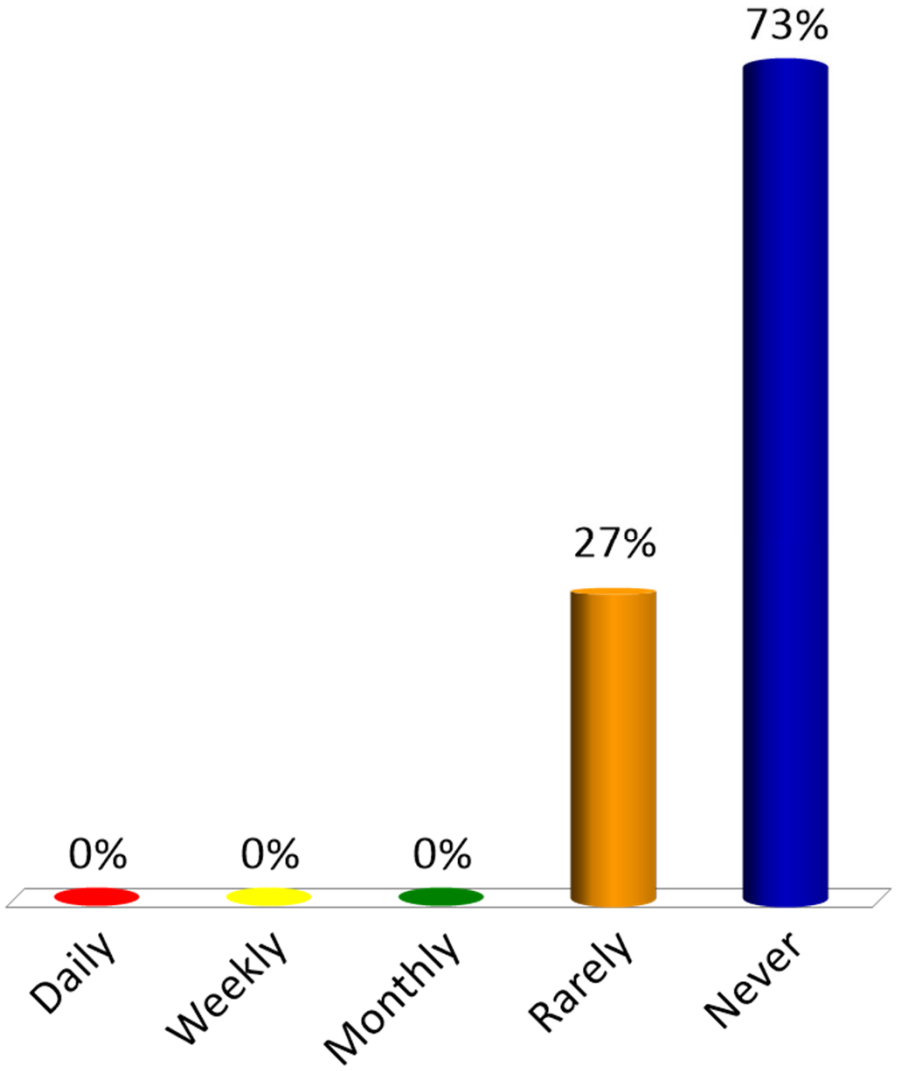
How often do you walk over Bridge 57?

A. Daily
B. Weekly
C. Monthly
D. Rarely
E. Never



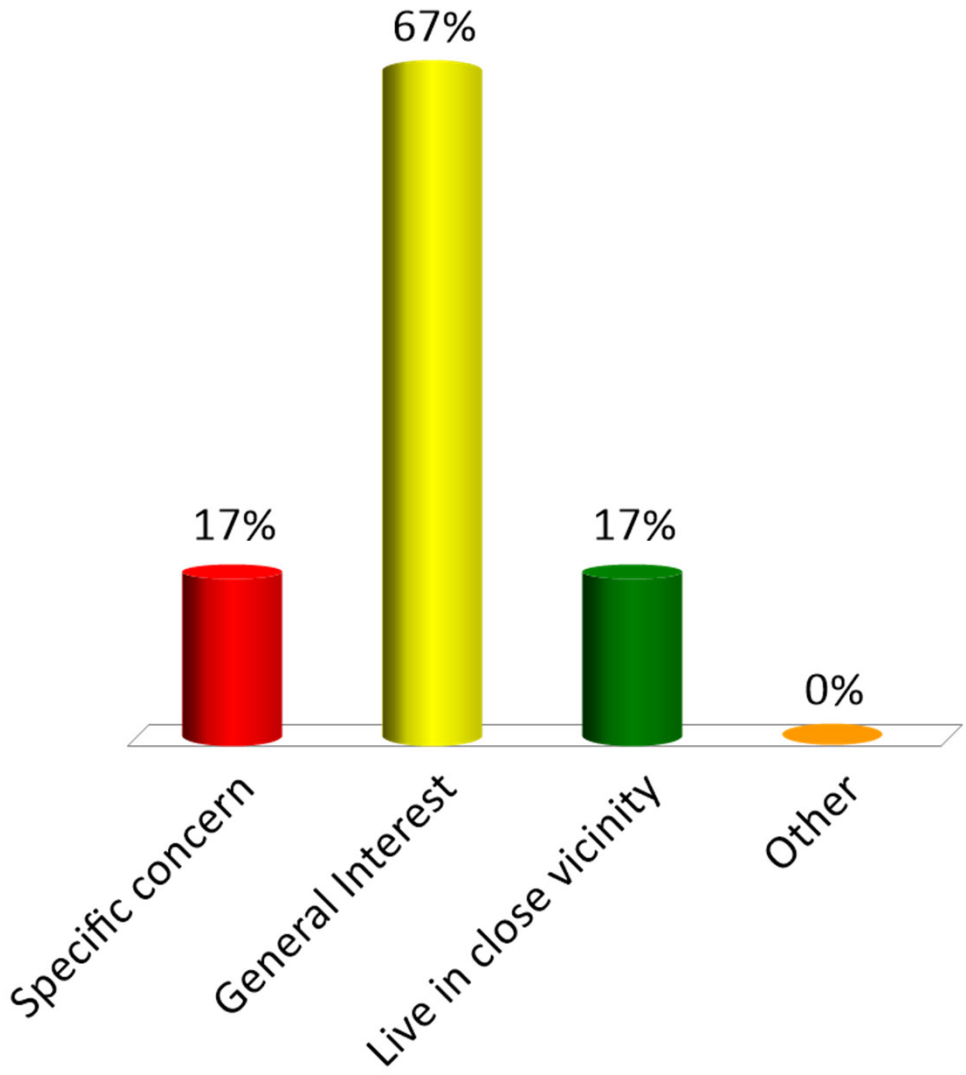
How often do you bike over Bridge 57?

A. Daily
B. Weekly
C. Monthly
D. Rarely
E. Never

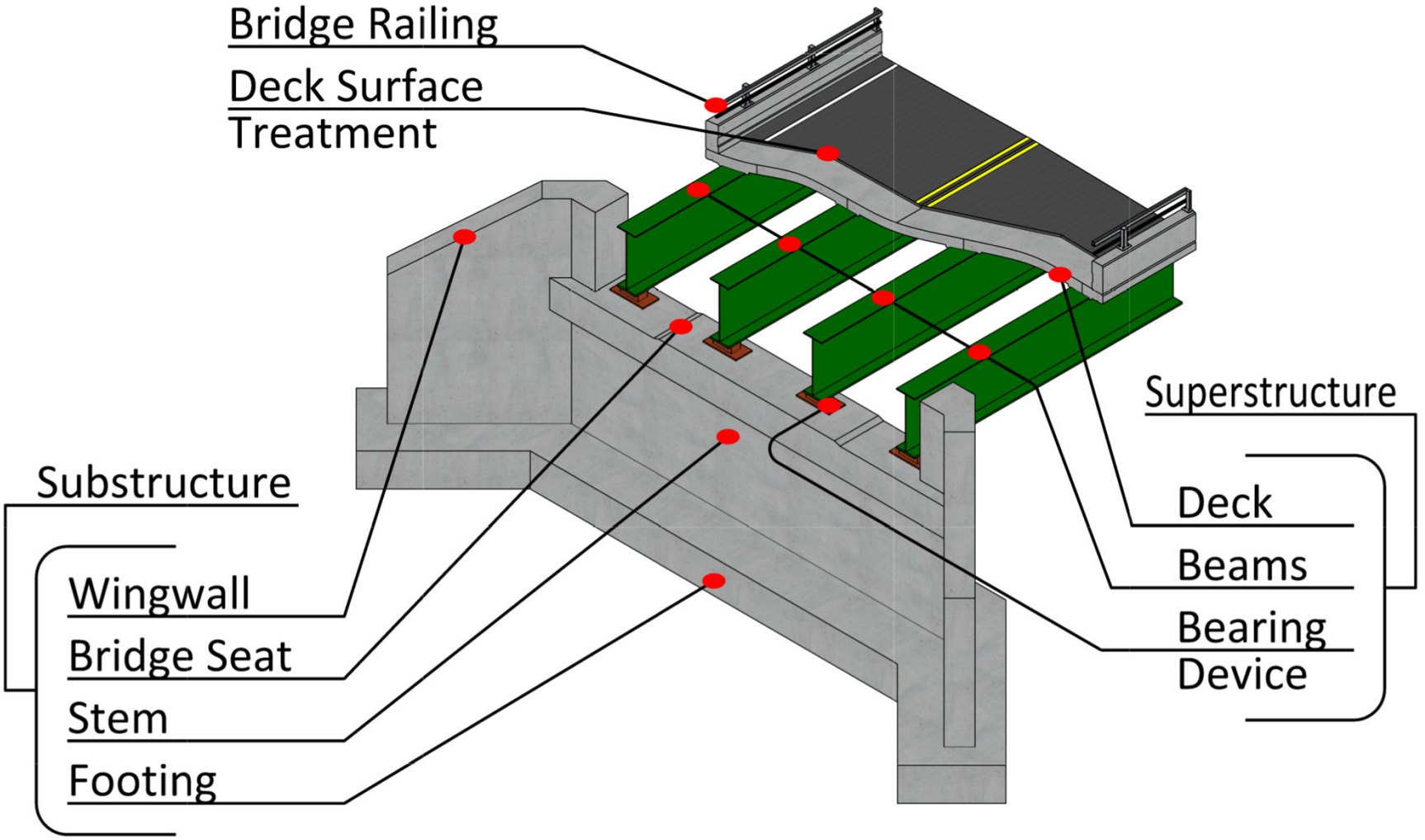


What is your reason for attending this meeting?

A. Specific concern
B. General Interest
C. Live in close vicinity
D. Other



Description of Terms Used



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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

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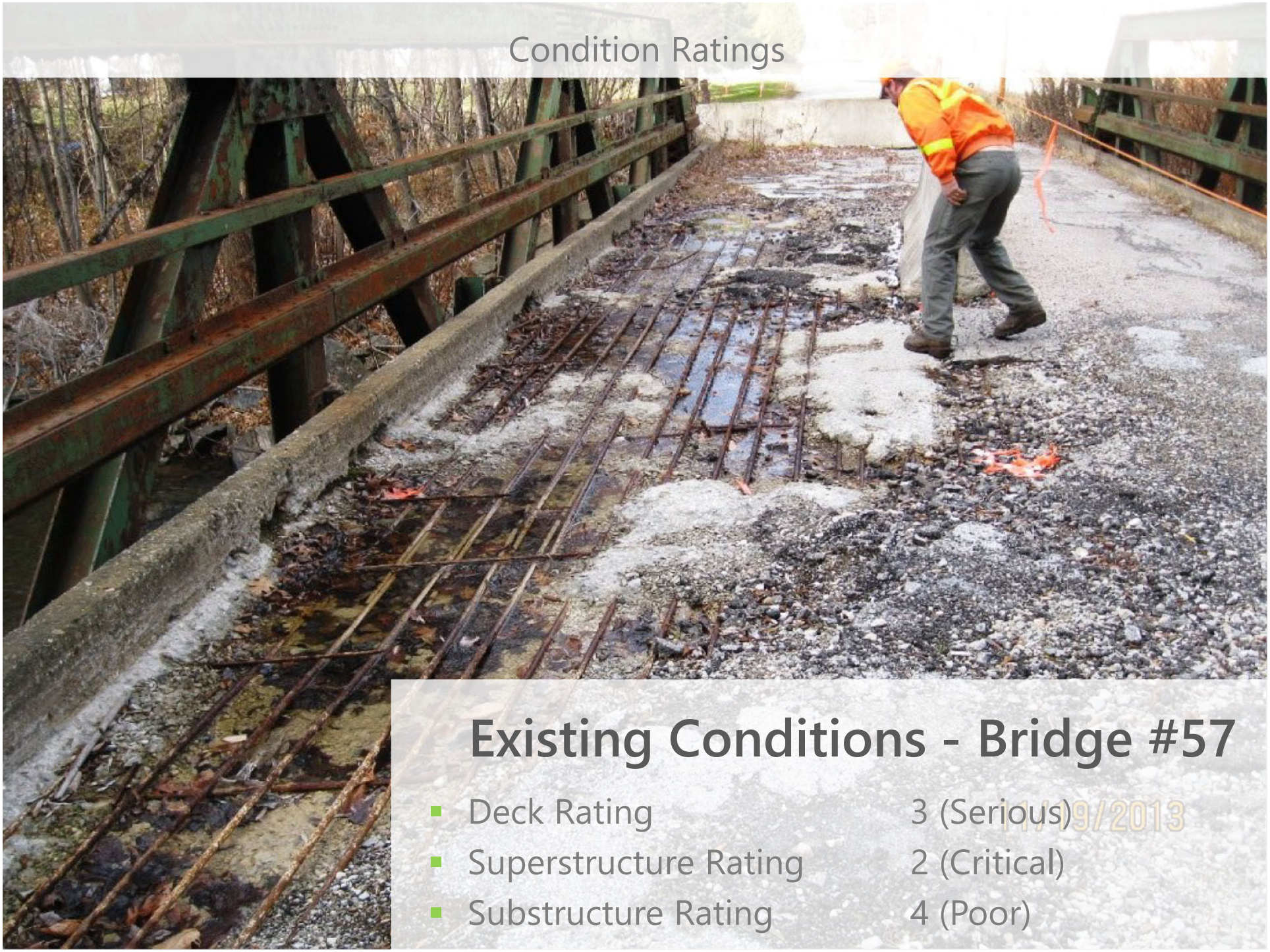
Looking North over Bridge 57

Existing Conditions – Bridge #57

- Roadway Classification – Local Road, Class 3 TH
- Bridge Type – 82’ Long, Riveted Steel Warren Pony Truss
- Ownership – Town of Ludlow
- Constructed in 1929

Existing Conditions – Bridge #57

- Bridge 57 is Structurally Deficient
  - Closed to vehicular traffic on October 10th, 2007 due to the amount of section loss in the gusset plate connections and floorbeams.
- The deck is in serious condition with large sections of spalling with exposed reinforcing steel on both the top and underside of the deck.
- The substructures are in poor condition. The abutment stems have cracks with leakage throughout as well as some areas of deep spalling.
- The existing bridge does not meet the minimum standard for width.
- The existing bridge railing is substandard.
- The bridge does not meet the minimum hydraulic standards.



Existing Conditions - Bridge #57

- Deck Rating — 3 (Serious)
- Superstructure Rating — 2 (Critical)
- Substructure Rating — 4 (Poor)

Northern Abutment

Existing Conditions - Bridge #57

Southern Abutment

Existing Conditions - Bridge #57

Substandard Hydraulically (Tropical Storm Irene)

Existing Conditions - Bridge #57

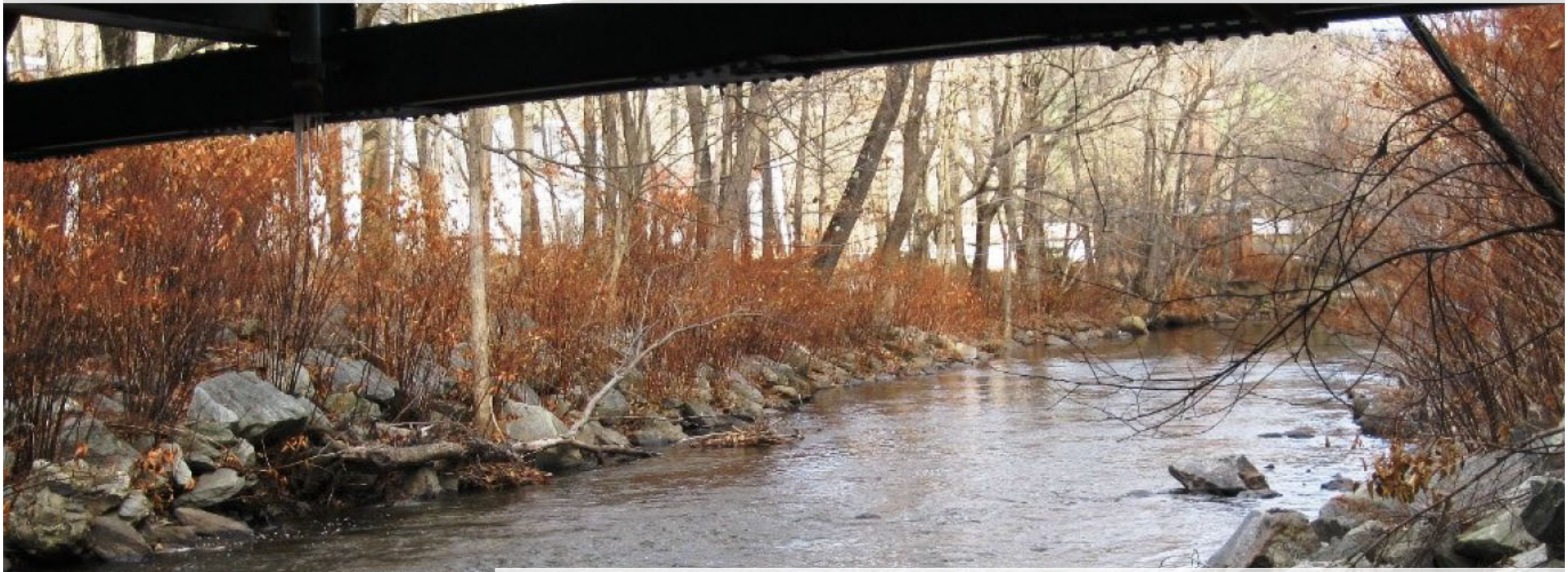
- Bridge Acts as a dam in major flood events
- (-)2.3 feet of freeboard at the design flow

Substandard Hydraulically (Tropical Storm Irene)

Existing Conditions - Bridge #57

- Contributes to higher floodwater elevations in the village

Resources – Looking Downstream

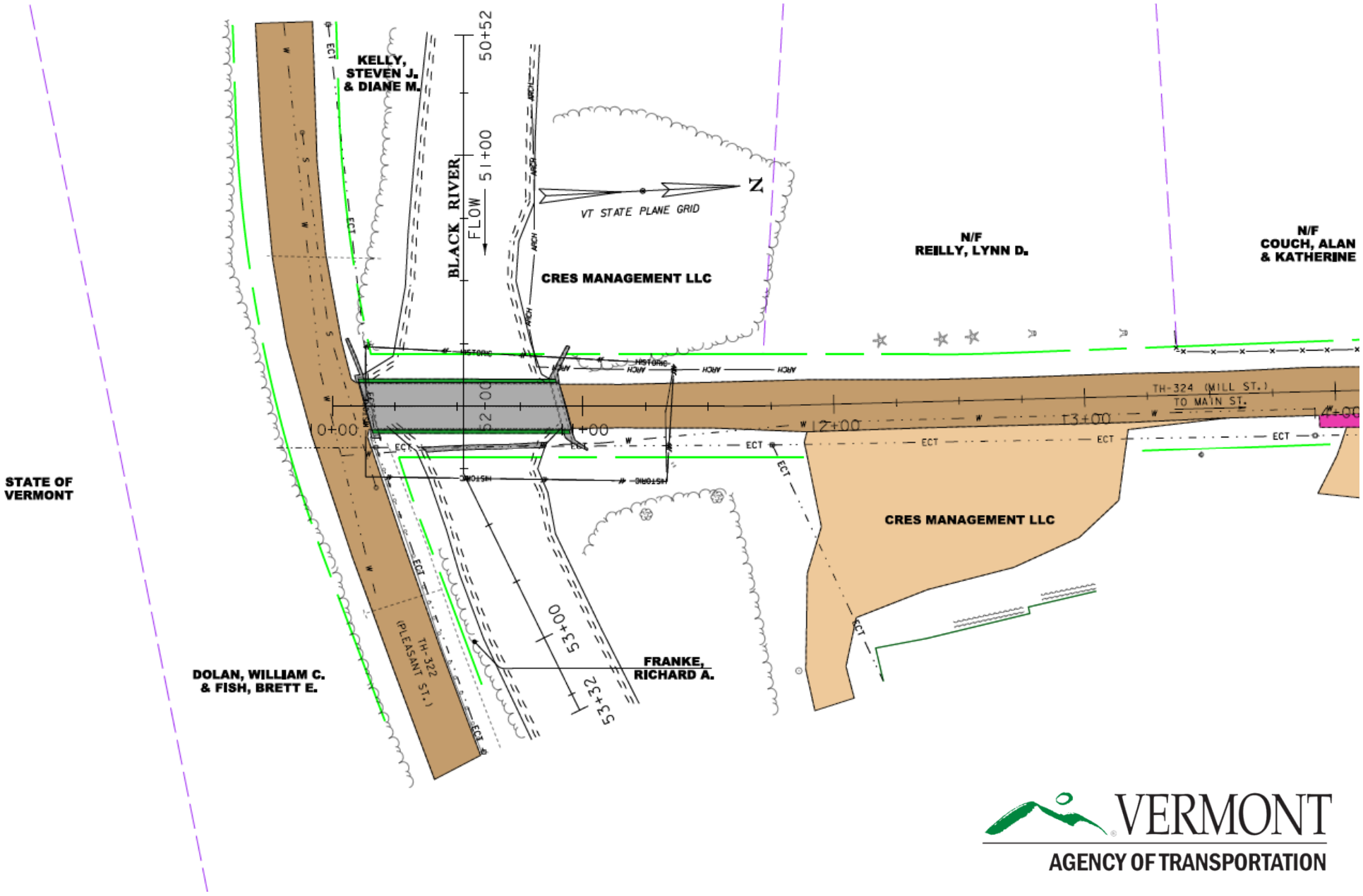


Existing Conditions - Bridge #57

- Archaeological Resources
  - Precontact Native American Site & Mill Remains
- Essential Fish Habitat
- FEMA Floodplains
- Historic Resources
  - Bridge 57

11/19/2013

Existing Conditions



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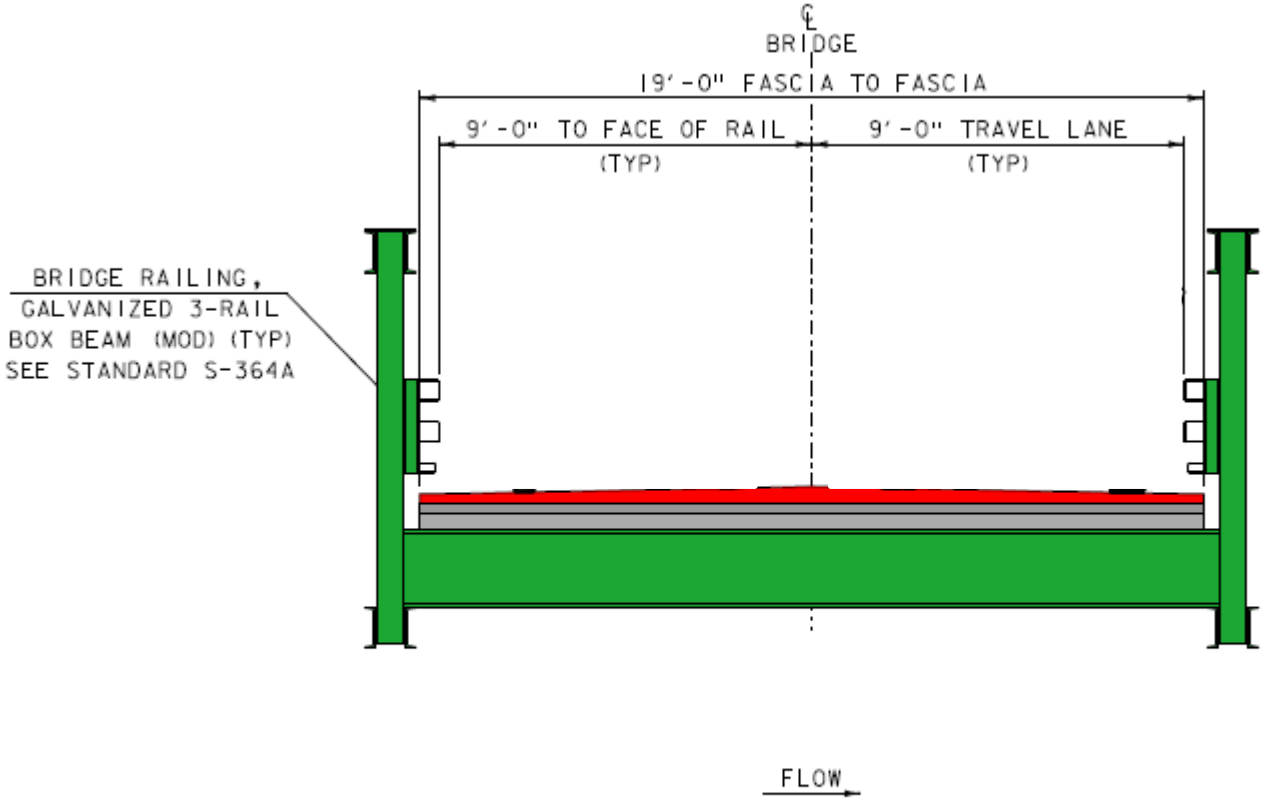
Existing Typical Section



REHABILITATION TYPICAL SECTION

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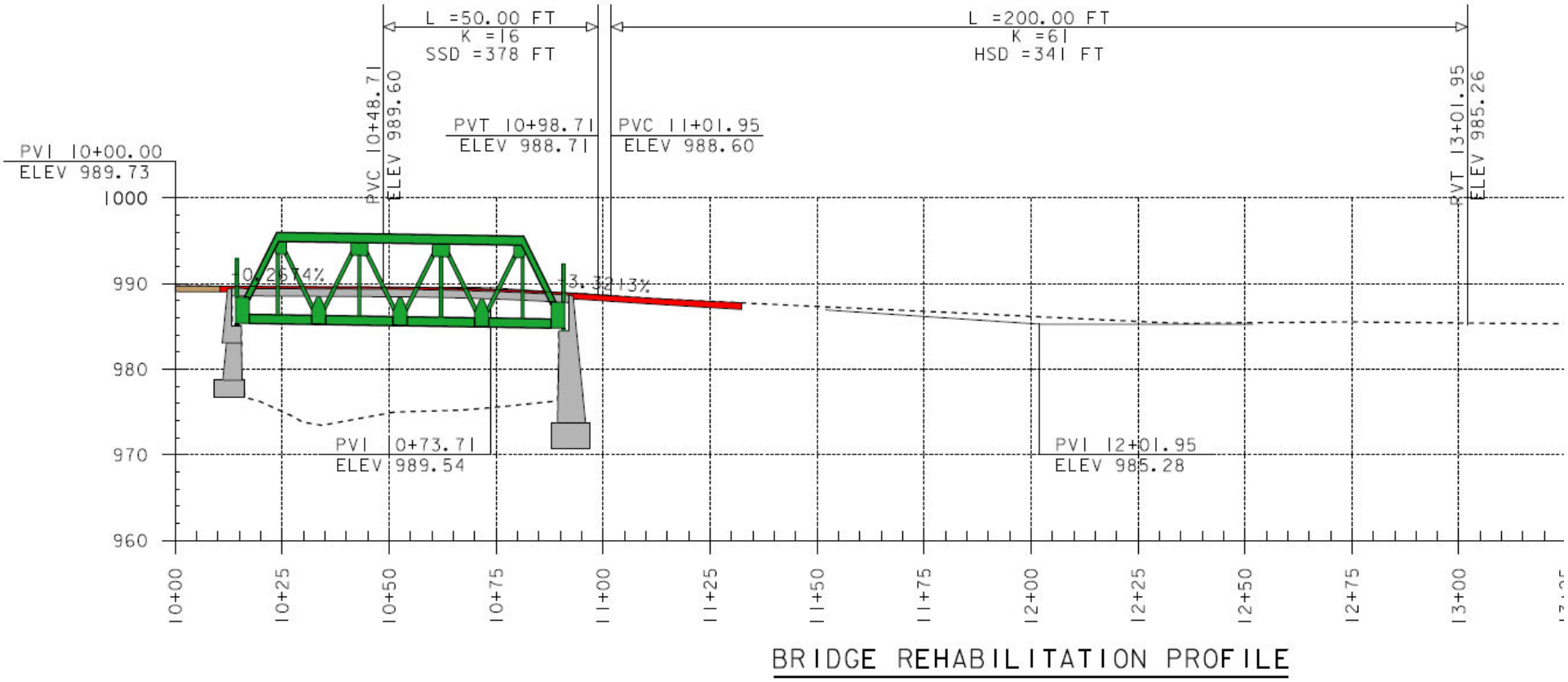
Existing Profile



BRIDGE REHABILITATION PROFILE

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Design Criteria and Considerations

- Average Daily Traffic of 160 veh/day
- Design Hourly Volume of 30 veh/hr
- % Trucks: 9.3
- Design Speed of 25 mph

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Alternatives Considered – Bridge #57

- No Action
  - Additional maintenance required within 10 years
- Strategic Disinvestment
  - Removal of Bridge 57
  - Truck turn arounds would be constructed as needed
- Strategic Disinvestment with a Pedestrian Bridge
  - All future maintenance to pedestrian bridge would not be eligible under the TH bridge program
- Truss Rehabilitation
  - Structural deficiencies would be addressed
  - Rehabilitation for pedestrian loads or vehicular loads
  - Deck Replacement
  - Match Existing Typical Section: 0′-9′-9′-0′ typical
  - 30-year design life
- Full Bridge Replacement
  - New Warren Pony Truss
  - Widen to standard, 2′-9′-9′-2′ typical with a sidewalk
  - 75-year design life

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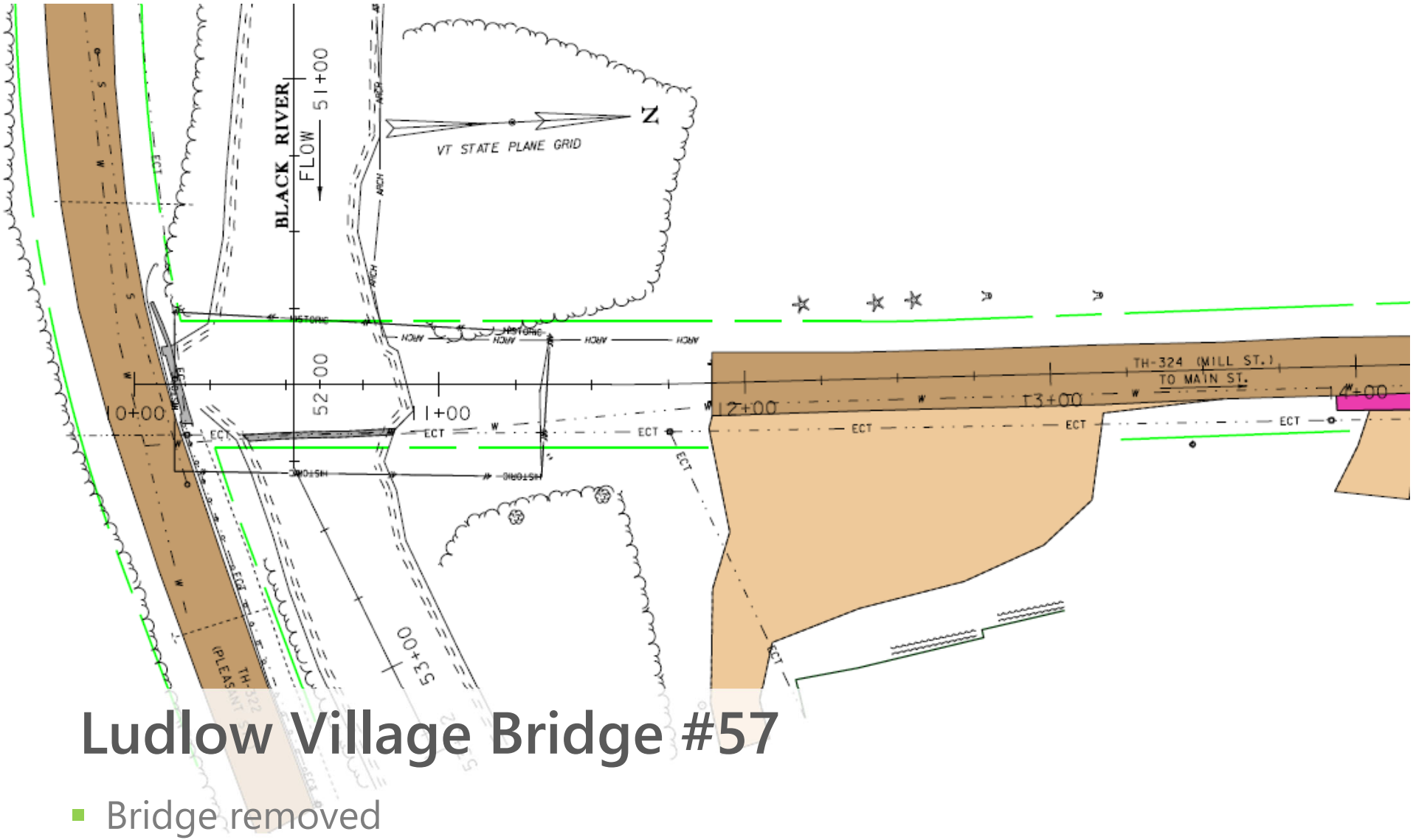
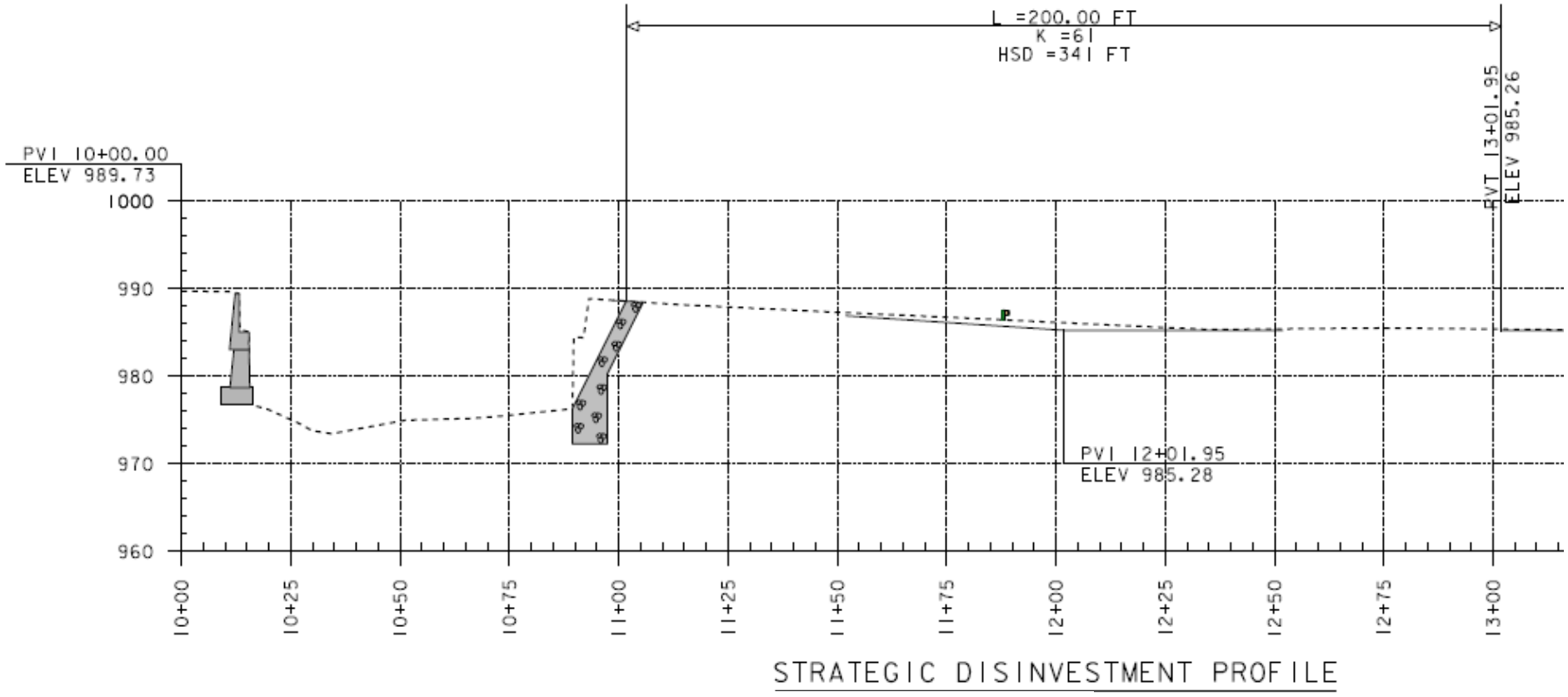
Alternative 1: Strategic Disinvestment Layout



Ludlow Village Bridge #57

- Bridge removed
- Improved Hydraulic Condition

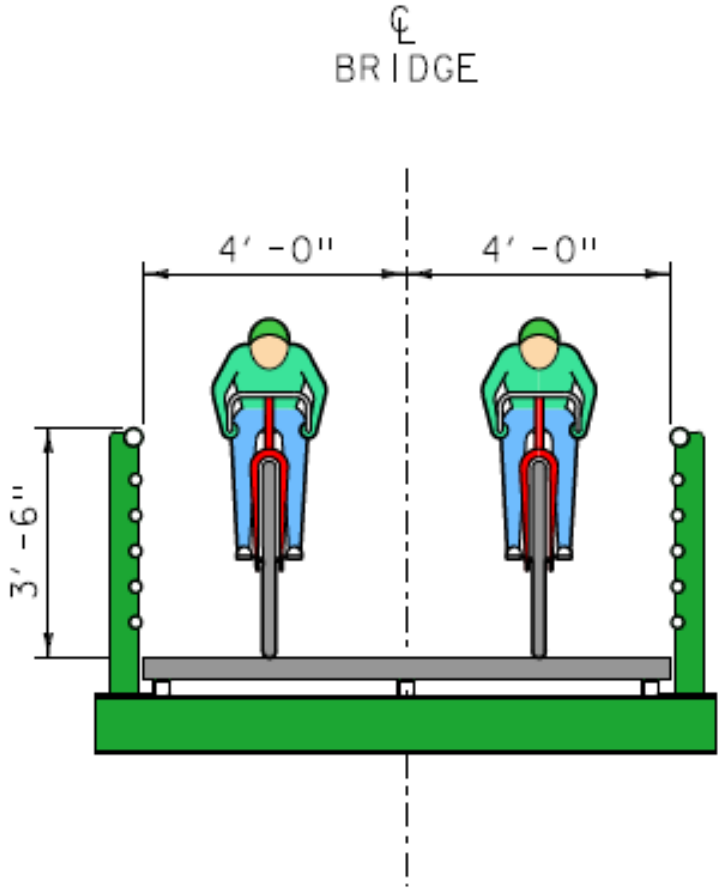
Alternative 1: Strategic Disinvestment Profile



Ludlow Village Bridge #57

- Bridge removed
- Improved Hydraulic Condition

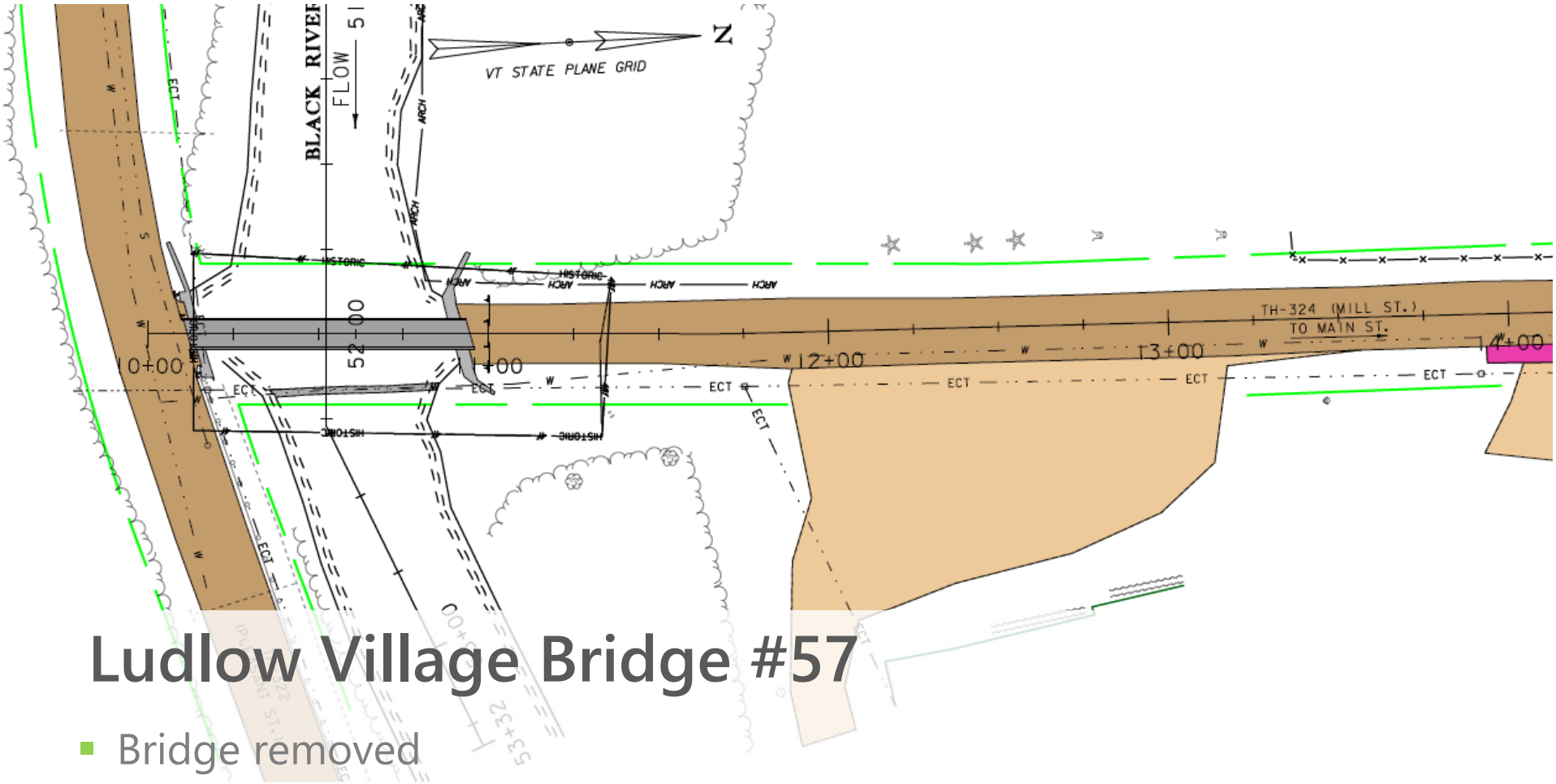
Alternative 1b: Strategic Disinvestment with Pedestrian Bridge Typical Section (Recommended Alternative)



Ludlow Village Bridge #57

- Bridge removed
- Improved Hydraulic Condition

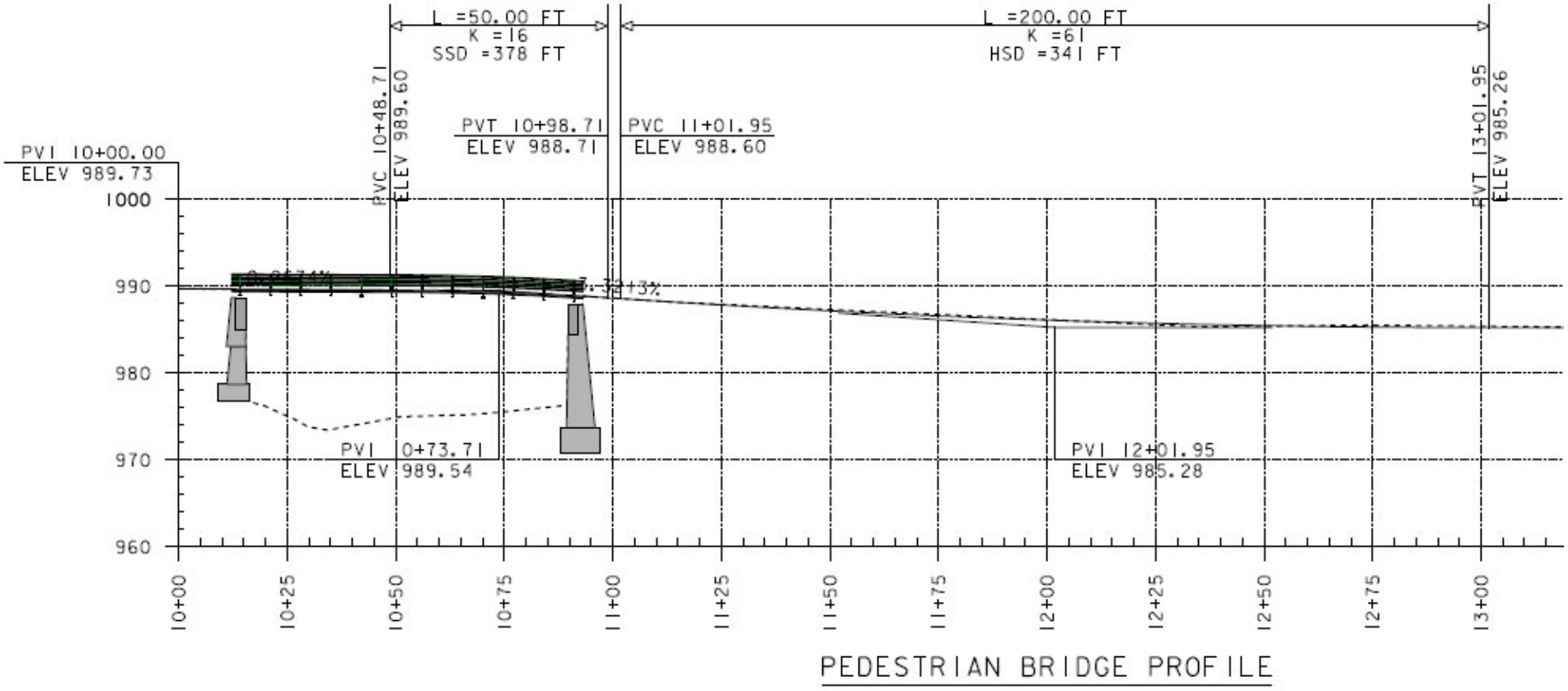
Alternative 1b: Strategic Disinvestment with Pedestrian Bridge Layout (Recommended Alternative)



Ludlow Village Bridge #57

- Bridge removed
- New pedestrian structure constructed
- Low future maintenance costs
- Improved Hydraulic Condition

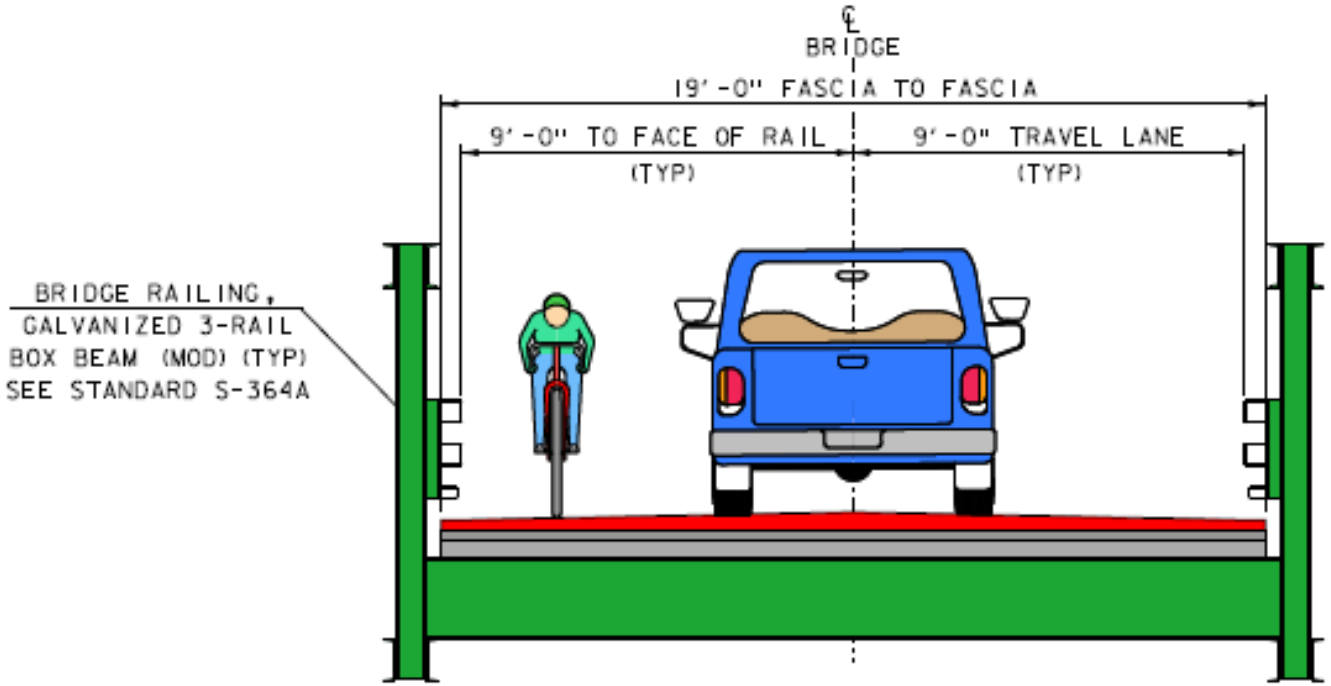
Alternative 1b: Strategic Disinvestment with Pedestrian Bridge Profile (Recommended Alternative)



Ludlow Village Bridge #57

- Shallow Superstructure for Improved Hydraulic Condition
- Cambered for Improved Hydraulic Condition

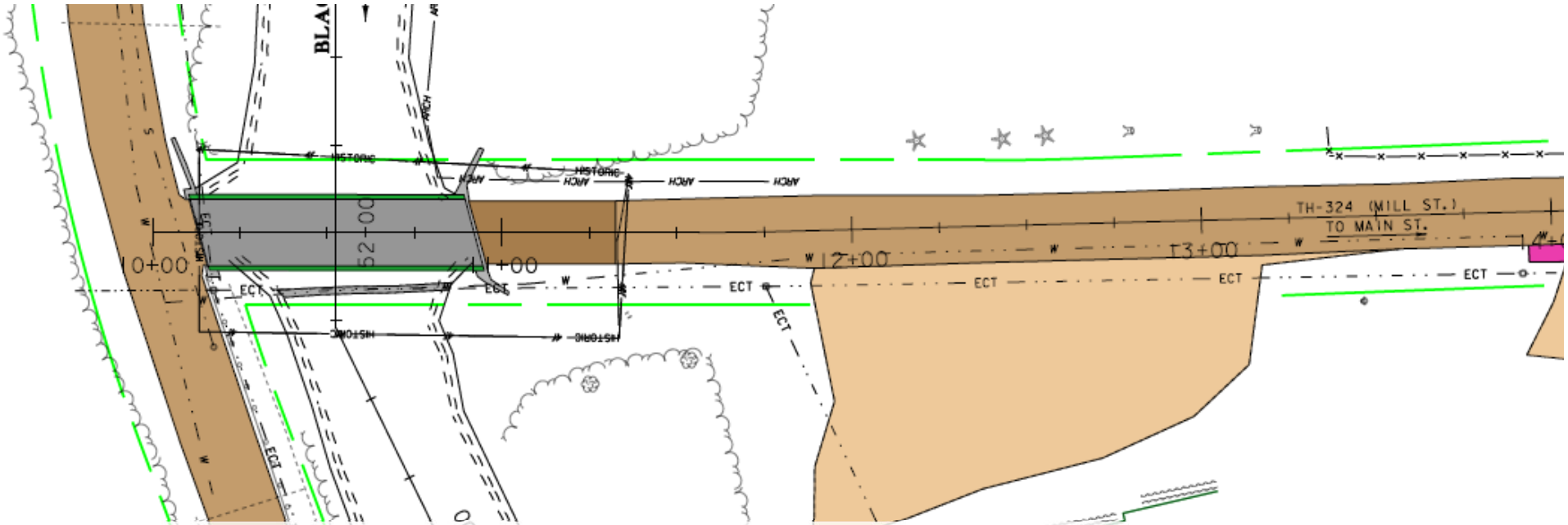
Alternative 2: Truss Rehabilitation Typical Section



Ludlow Village Bridge #57

- 0'-9'-9'-0' Typical
- Rehabilitated for pedestrian loads only or for a reduced vehicular loading
- Hydraulic Condition not Improved – superstructure depth remains unchanged

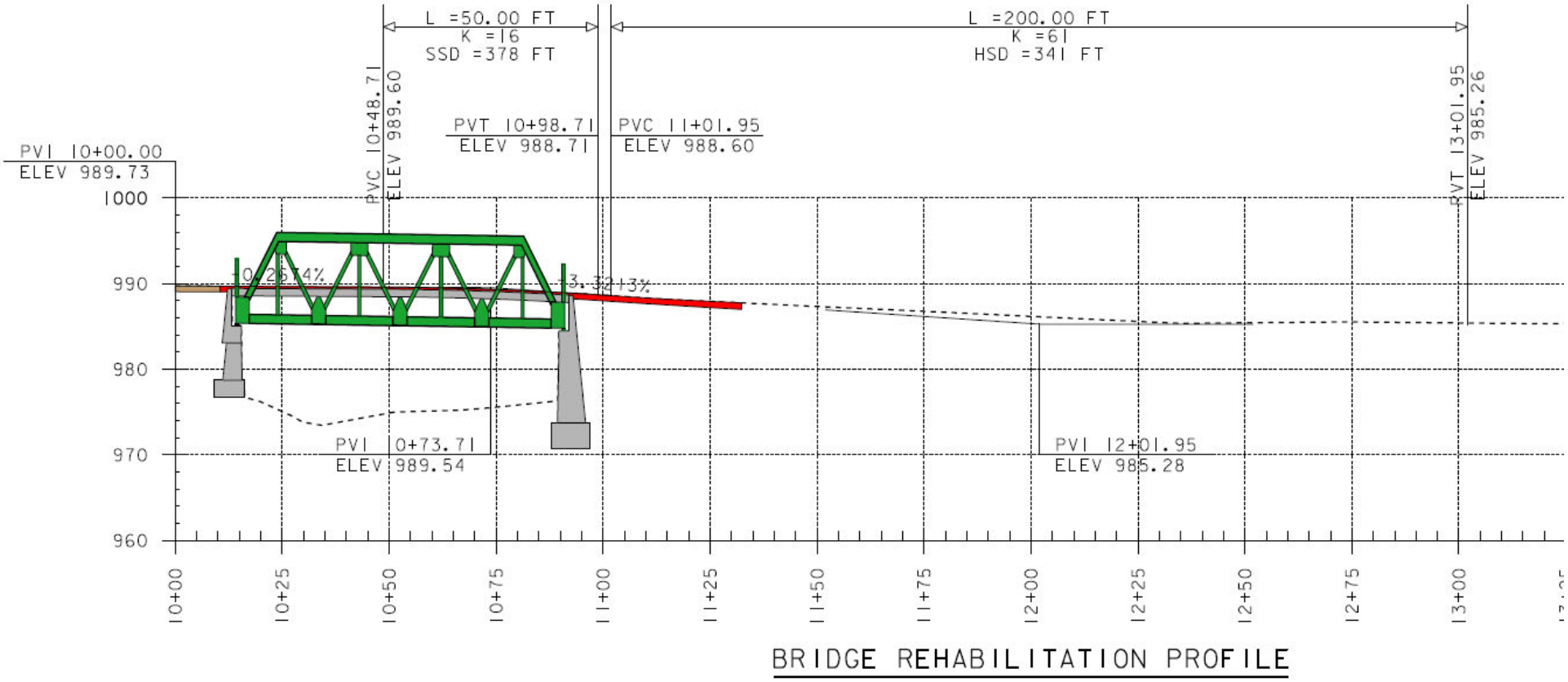
Alternative 2: Truss Rehabilitation Layout



Ludlow Village Bridge #57

- Truss member replacement as necessary and a new cast-in-place deck
- Existing abutments to remain in place if rehabilitated for pedestrian loads
- New abutments poured if rehabilitated for vehicular loads
- 18’ rail-to-rail bridge width
- 30-year design life
- 2.5% Local Share

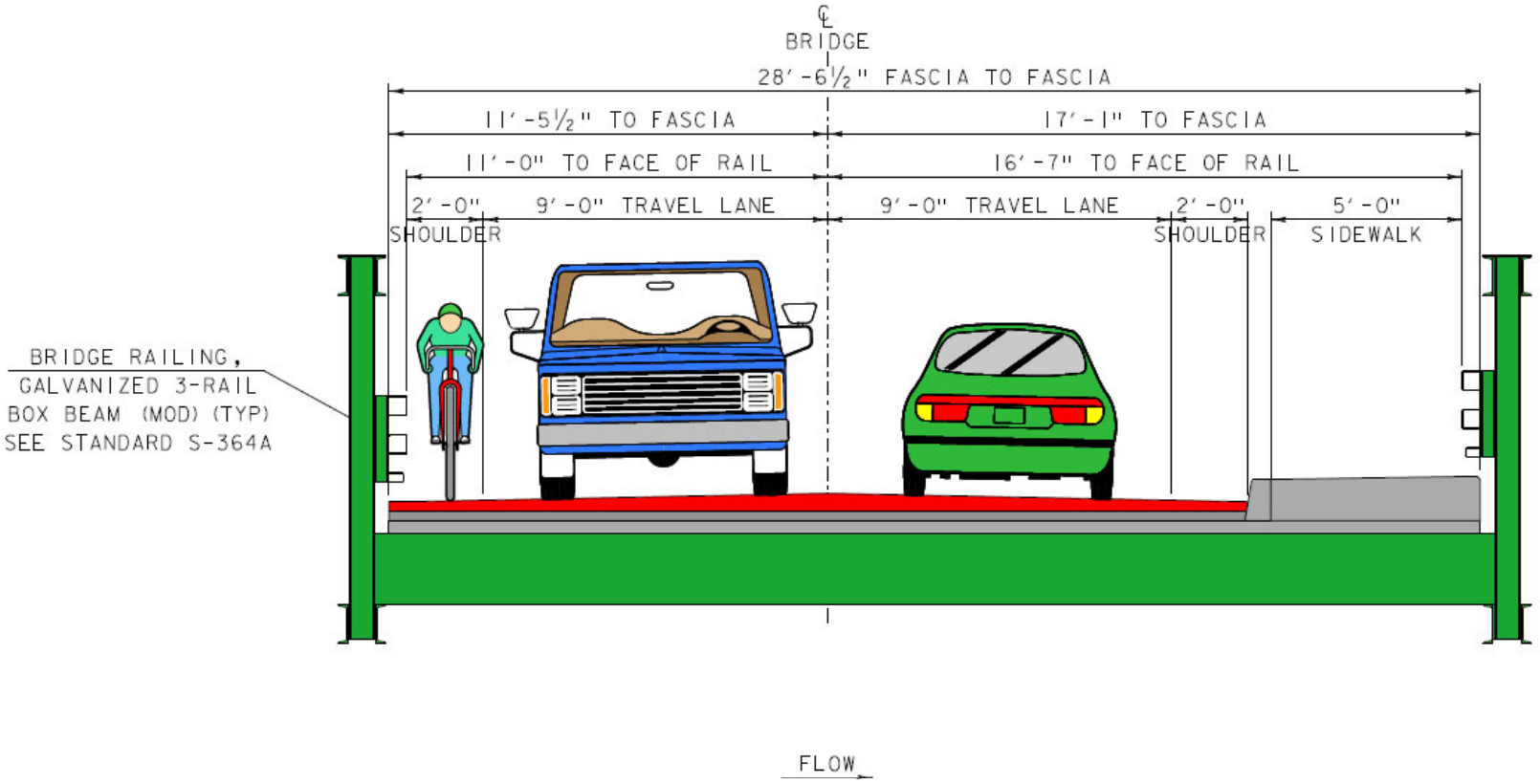
Alternative 2: Truss Rehabilitation Profile



Ludlow Village Bridge #57

- Matches Existing
- Hydraulic Condition not Improved

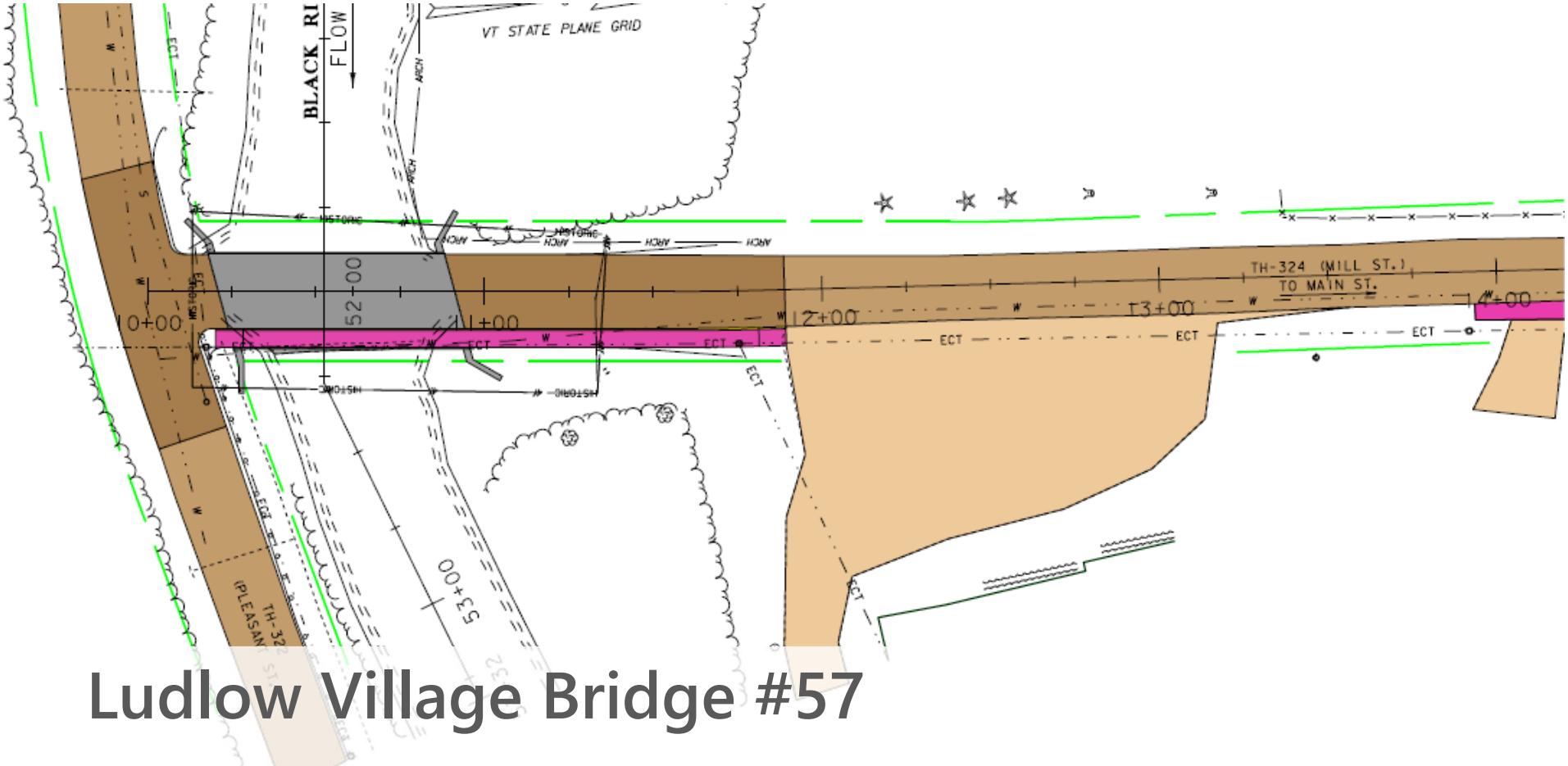
Alternative 3: New Pony Truss Typical Section



Ludlow Village Bridge #57

- 2′-9′-9′-2′ with a 5′ Sidewalk
- Modern HL-93 loading
- Hydraulic Condition not Improved – superstructure depth remains unchanged

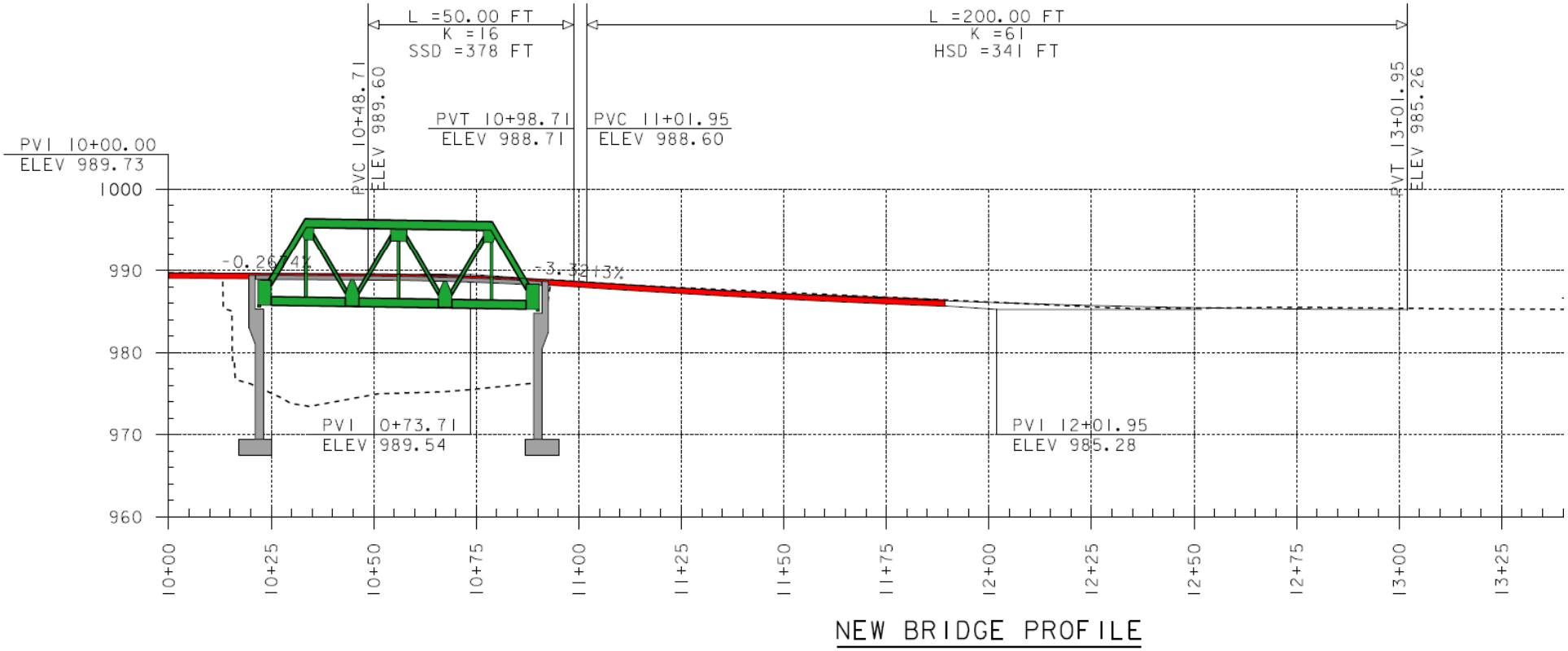
Alternative 3: New Pony Truss Layout



Ludlow Village Bridge #57

- All new bridge components (deck, superstructure, and substructures)
- 22’ traveled bridge width
- 75-year design life
- 5% Local Share

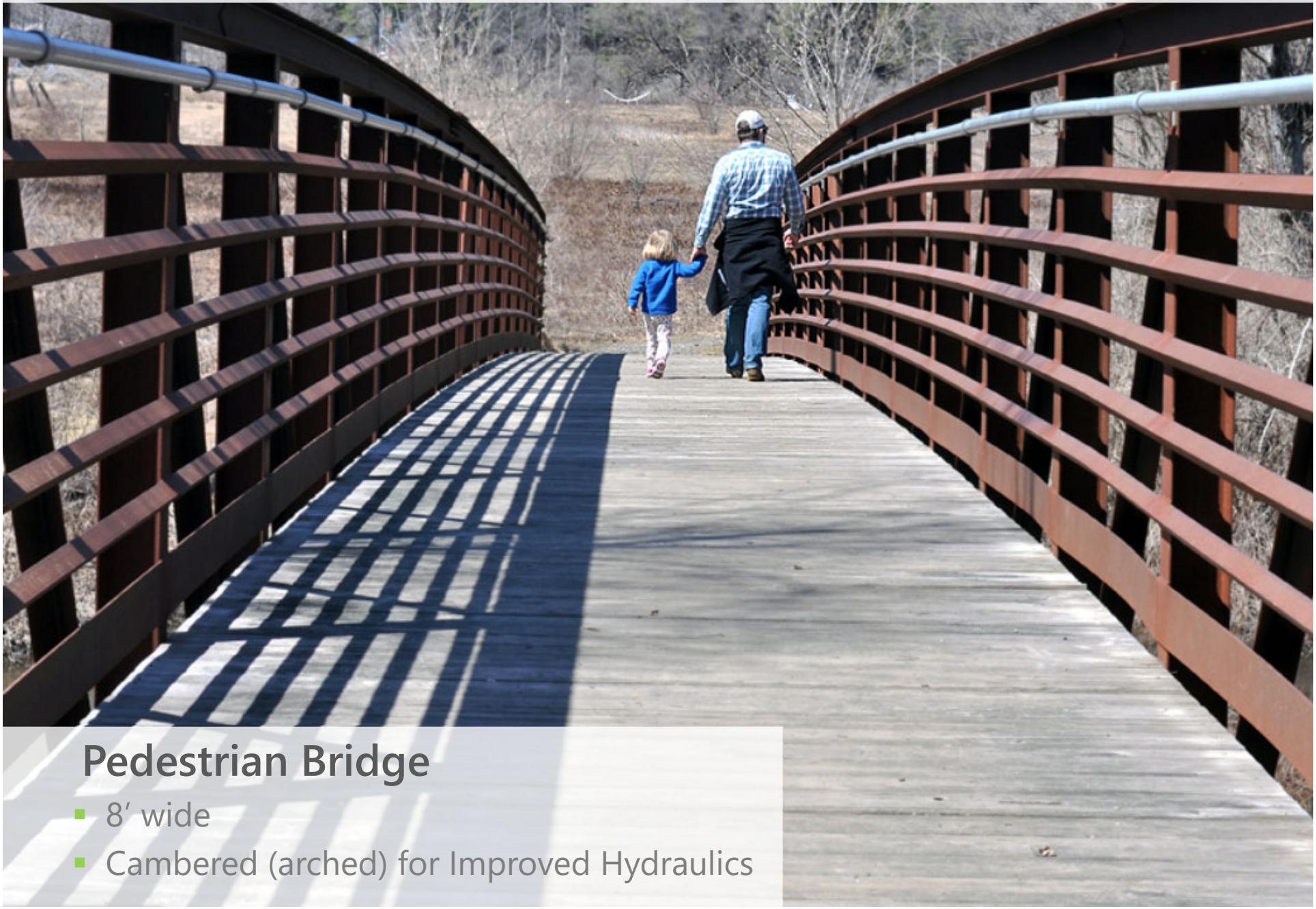
Alternative 3: New Pony Truss Profile



Ludlow Village Bridge #57

- Matches Existing
- Hydraulic Condition not Improved

What Will the New Bridge Look Like?



Pedestrian Bridge

- 8’ wide
- Cambered (arched) for Improved Hydraulics

Maintenance of Traffic Options Considered

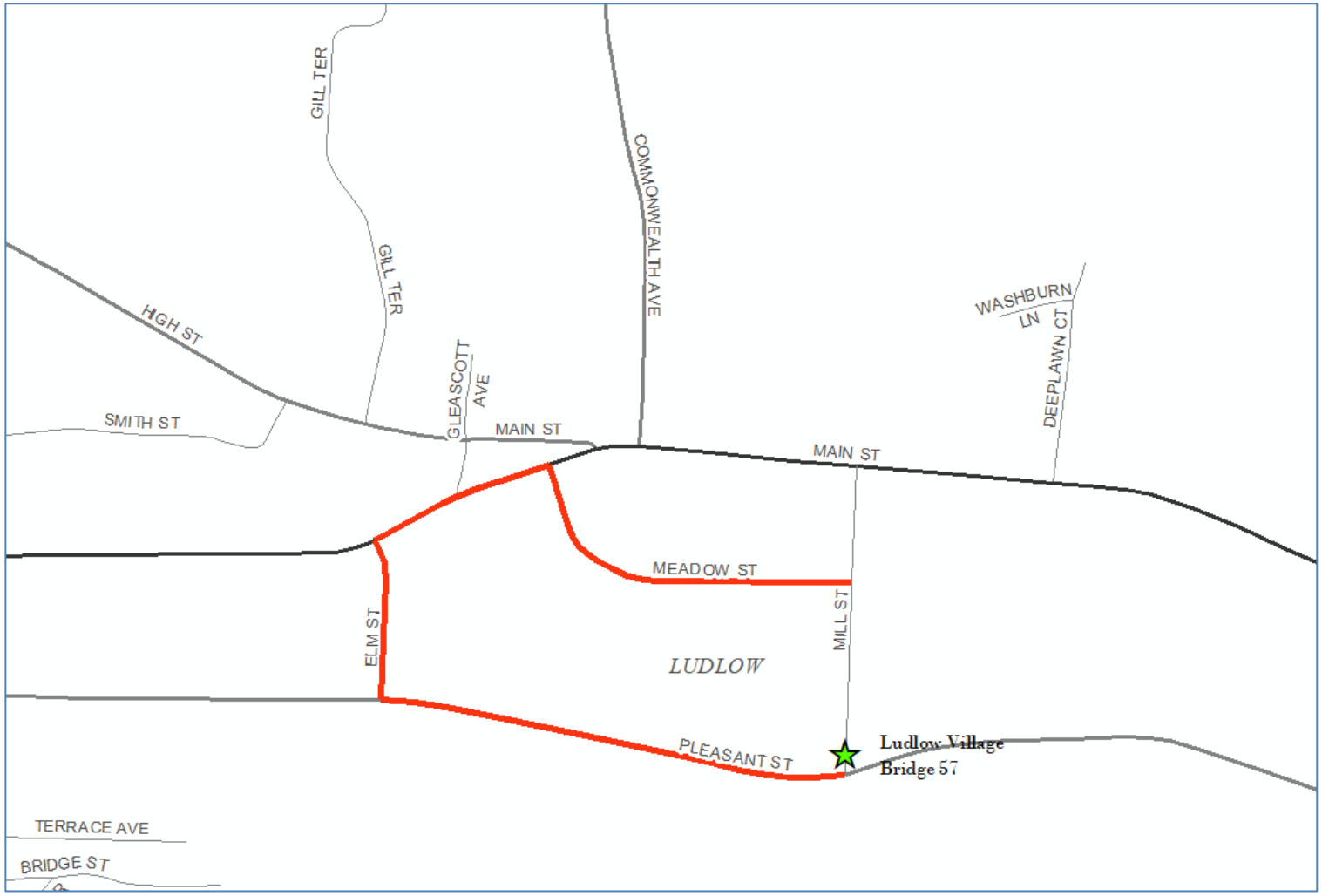
- Bridge has been closed since 2007 – makes sense to keep it closed through construction
  - By closing the bridge to traffic during construction, the local share is reduced by 50%

Road Closure

- Detour signed by Town
- Road Closed since 2007
- 0.7 miles end-to-end

Traffic Control – Pedestrian Detour

- The shortest pedestrian detour route, has an End-to-End distance of 0.7 miles



Recommended Scope: Bridge 57

- Permanent Bridge Closure (Strategic Disinvestment) with a New Pedestrian Bridge
  - Pedestrians detoured during construction
  - Existing Bridge 57 would be removed
  - Improves hydraulic condition and floodwater elevations
  - All future maintenance to pedestrian bridge would not be eligible under the TH bridge program
  - Construction Year: 2023

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Alternatives Matrix

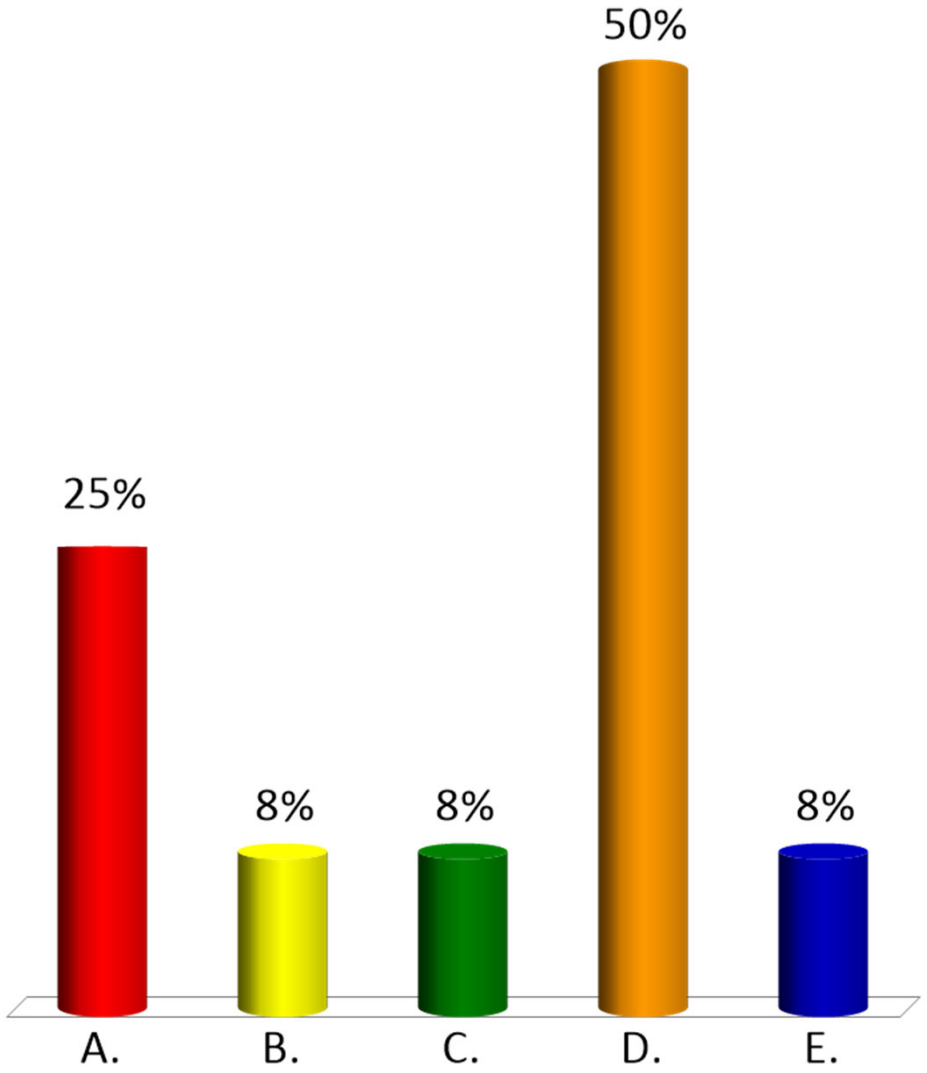
Ludlow Village BO 1443(52)	Do Nothing	Alternative 1: Strategic Disinvestment		Alternative 2: Truss Rehabilitation with Deck Replacement		Alternative 3: Full Bridge Replacement with a New Pony Truss
		a. No Pedestrian Bridge	b. Pedestrian Bridge	a. Rehabilitated for Pedestrian Use Only	b. Rehabilitated for Vehicular Loads	
Total Project Costs	$0	$410,384	$620,297	$1,596,610	$2,584,360	$2,201,153
Annualized Costs	$0	NA	$8,270	$39,915	$64,609	$29,349
Town Share		$10,260	$15,510	$39,915	$64,609	$110,058
Local %		2.5%	2.5%	2.5%	2.5%	5%
Project Development Duration	N/A	2 Years	2 Years	4 Years	4 Years	4 Years
Construction Duration	N/A	2 Months	4 Months	4 Months	4 Months	6 Months
Closure Duration (If Applicable)	N/A	N/A	N/A	N/A	N/A	N/A
Typical Section - Roadway (feet)	18'	18'	18'	18'	18'	22'
Typical Section - Bridge (feet)	18'	N/A	6’	18'	18'	22' with sidewalk
Geometric Design Criteria	Substandard Width	N/A	N/A	Substandard Width	Substandard Width	Meets Minimum Standards
Traffic Safety	Functionally Deficient	N/A	N/A	Improved	Improved	Improved
Alignment Change	No	N/A	N/A	No	No	No
Bicycle Access	Meets Standard	Access Removed	Improved	No Change	Improved	Improved
Pedestrian Access	Meets Standard	Access Removed	Improved	No Change	Improved	Improved
Hydraulics	Meets Standard	N/A	Substandard	Substandard	Substandard	Substandard
Utilities	No Change	No Change	No Change	No Change	No Change	Minor Aerial Relocation
ROW Acquisition	No	Yes	Yes	Yes	Yes	Yes
Road Closure	No	Indefinitely	Indefinitely	Yes	Yes	Yes
Design Life	<10 years	N/A	75	30	30	75

Preliminary Project Schedule

- Construction Start – 2023
  - Total Cost Estimate: $620,300
    - Town Share: $15,500 (2.5%)

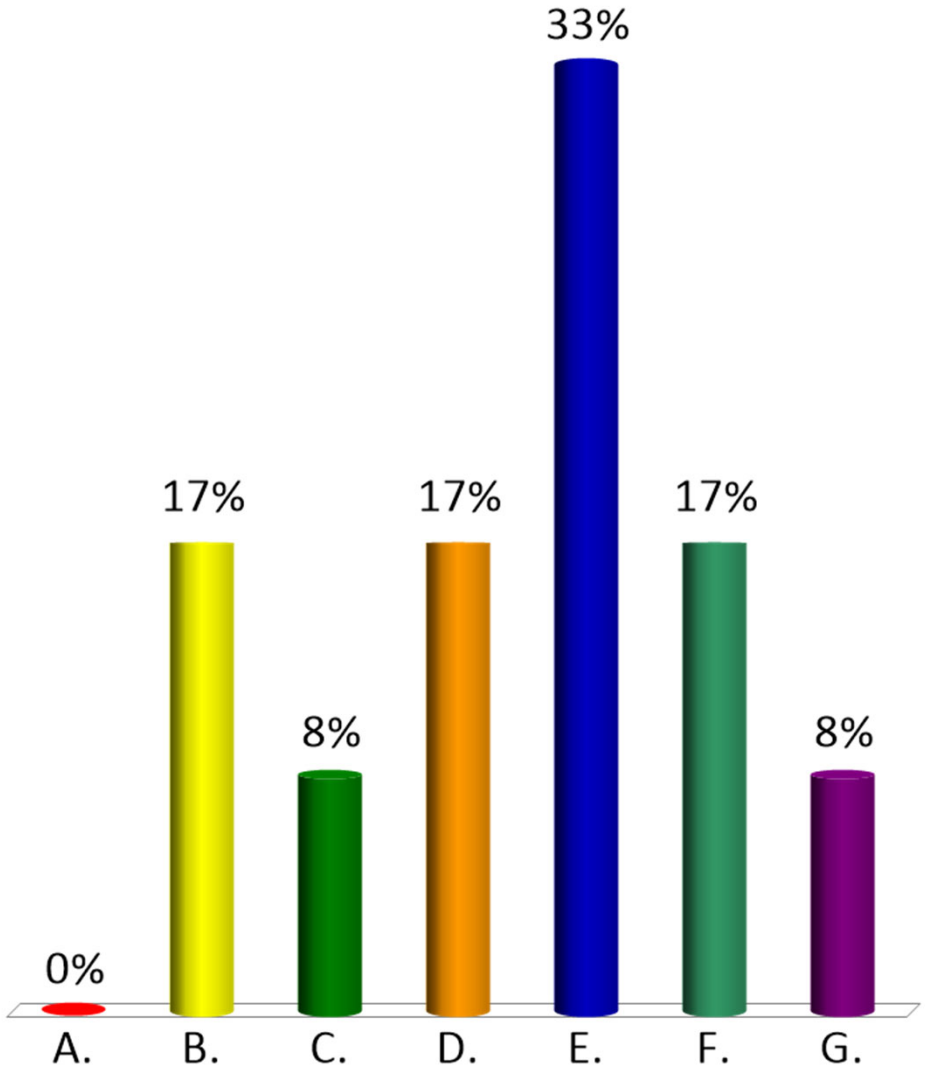
Which design aspect is the most important to you?

A. Shoulder width/bicycle accommodations
B. Aesthetics - Bridge Railing
C. Construction year
D. Cost
E. Other



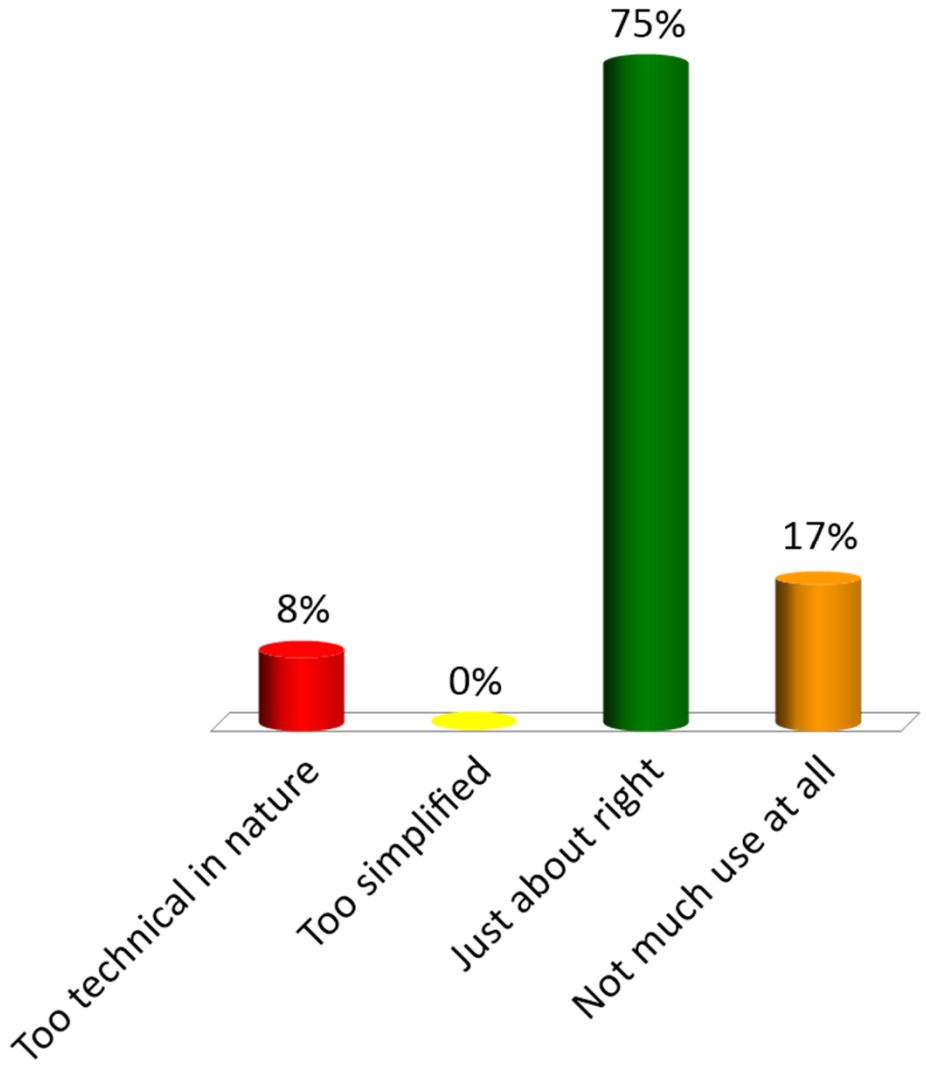
Which would you be most concerned about?

A. Bridge Aesthetics
B. Environmental Impacts
C. Business Impacts
D. Property Impacts
E. Safety
F. Other
G. Not Really Concerned



Did you find this presentation to be?

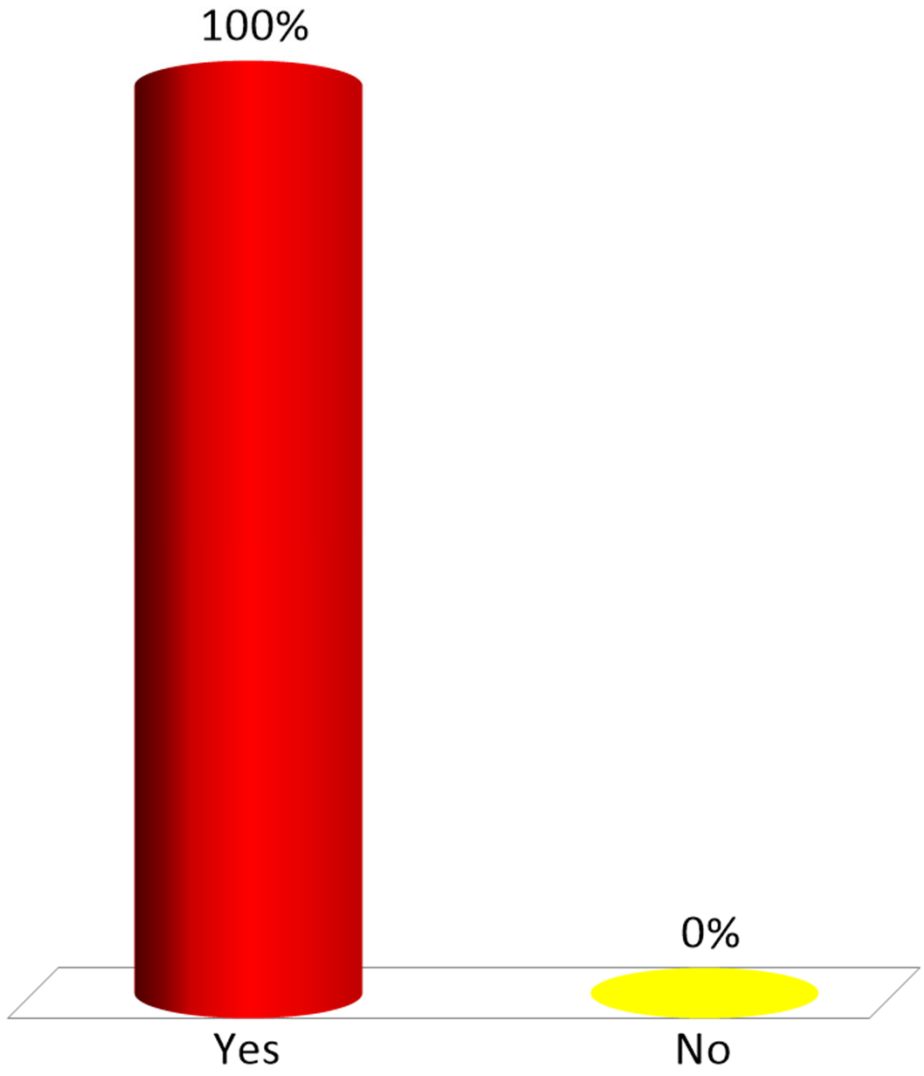
A. Too technical in nature
B. Too simplified
C. Just about right
D. Not much use at all



Do you find the recommended scope of work satisfactory?

A. Yes

B. No



Next Steps – Bridge #57

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)

For more information:

- https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/12J638

Ludlow Village BO 1443(52)
Questions and Comments

Town Highway 324 – Bridge #57 over Black River

11/19/2013

February 3, 2019

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