



Danby BF 0130(3)
Alternatives Presentation Meeting
Brook Road (FAS Route 130/TH 1) – Bridge #9 over Mill Brook

March 12, 2015



Introductions

Jennifer Fitch, P.E.

VTrans Scoping Project Manager

Laura Stone, P.E.

VTrans Scoping Engineer

Carolyn Carlson, P.E.

VTrans Design Project Manager

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



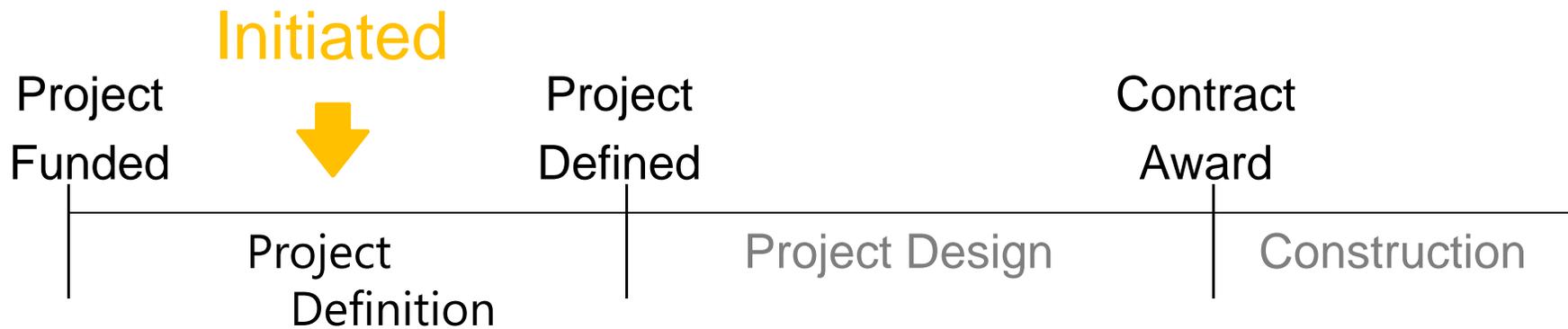
Project Location

Brook Rd

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

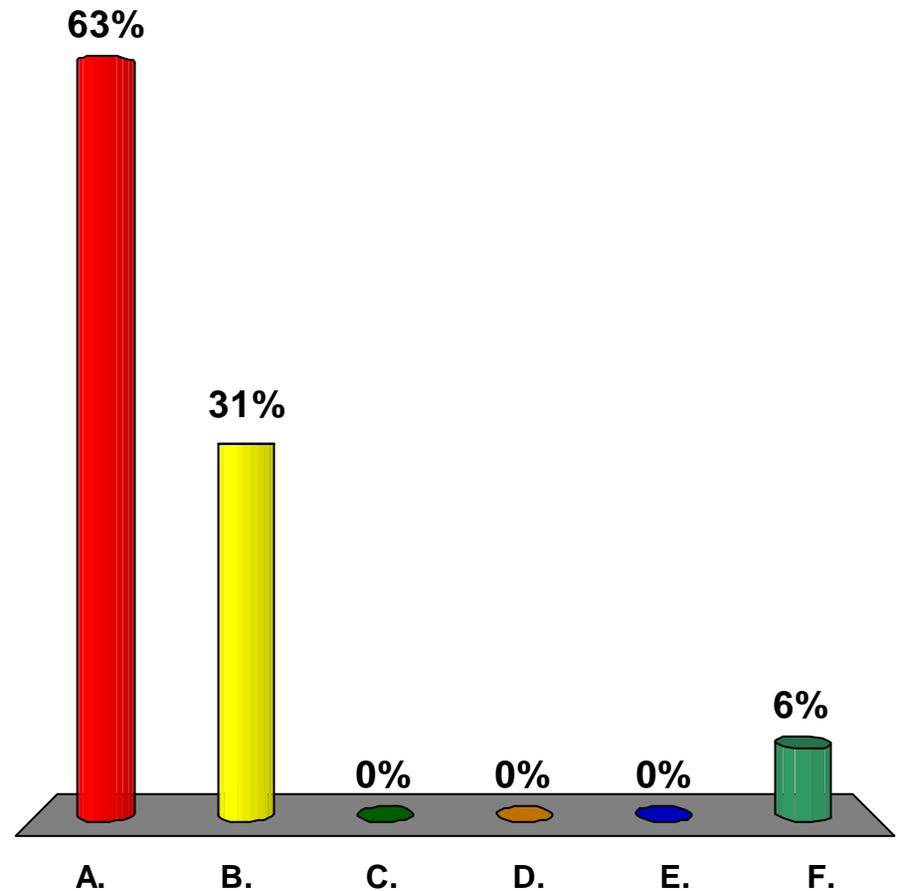


- Identify resources & constraints
- Evaluate alternatives
- Public participation
- Build Consensus

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

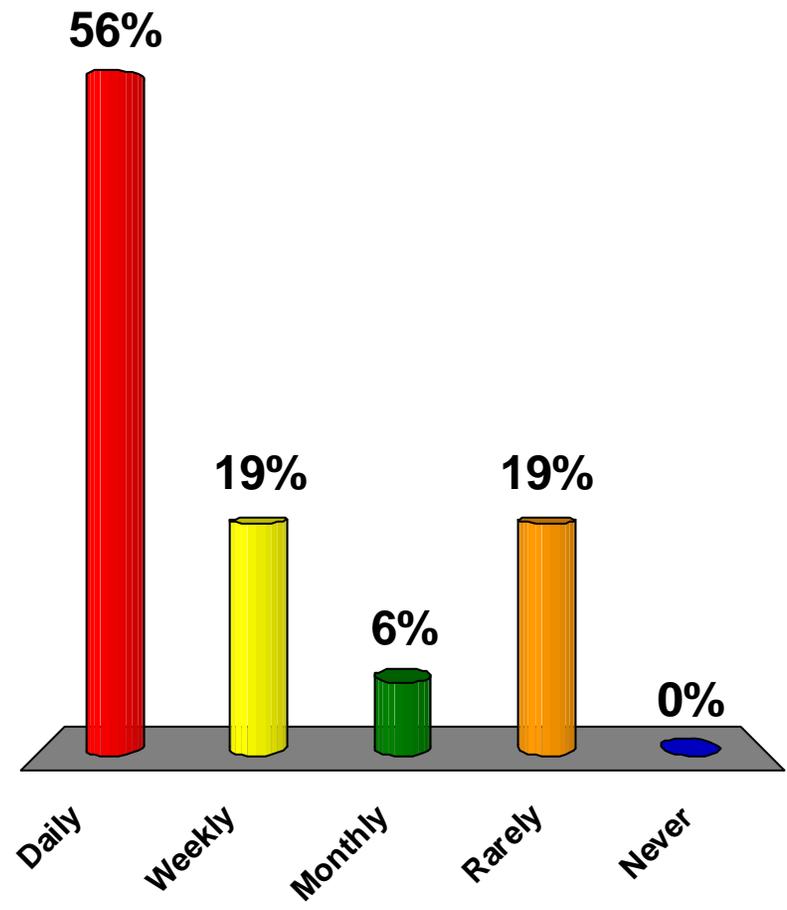
Who are you representing?

- A. Municipal Official
- B. Resident
- C. Local Business
- D. Independent Organization
- E. Emergency Services
- F. Other



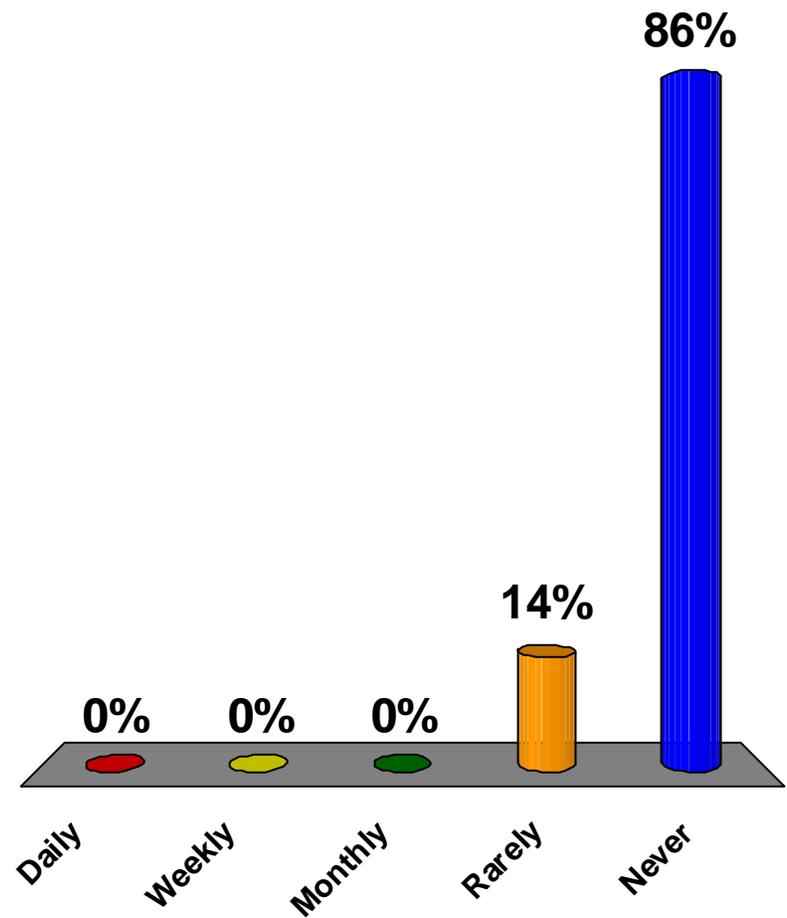
How often do you use this segment of Brook Road?

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



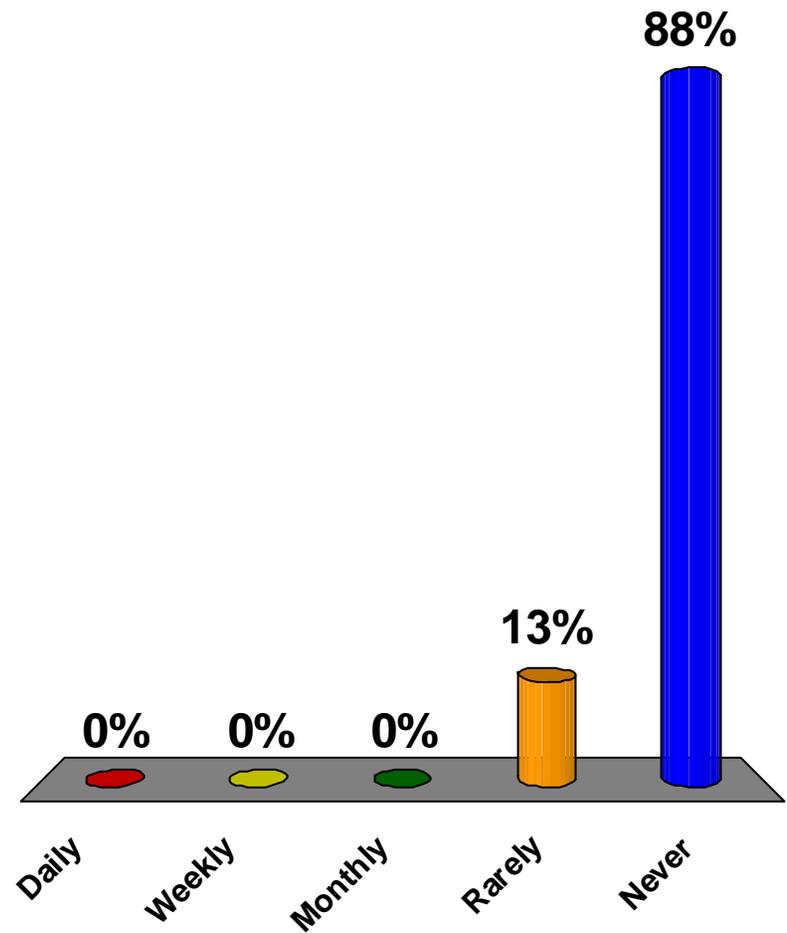
How often do you walk over the bridge?

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



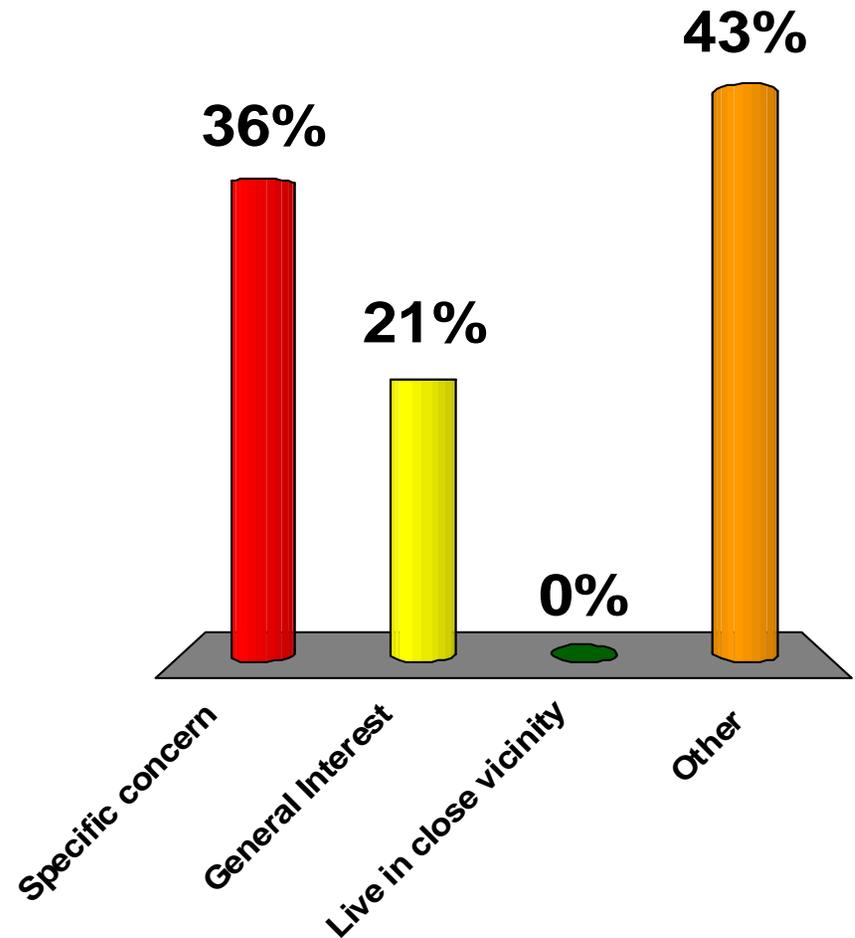
How often do you bike over the bridge?

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



What is your reason for attending this meeting?

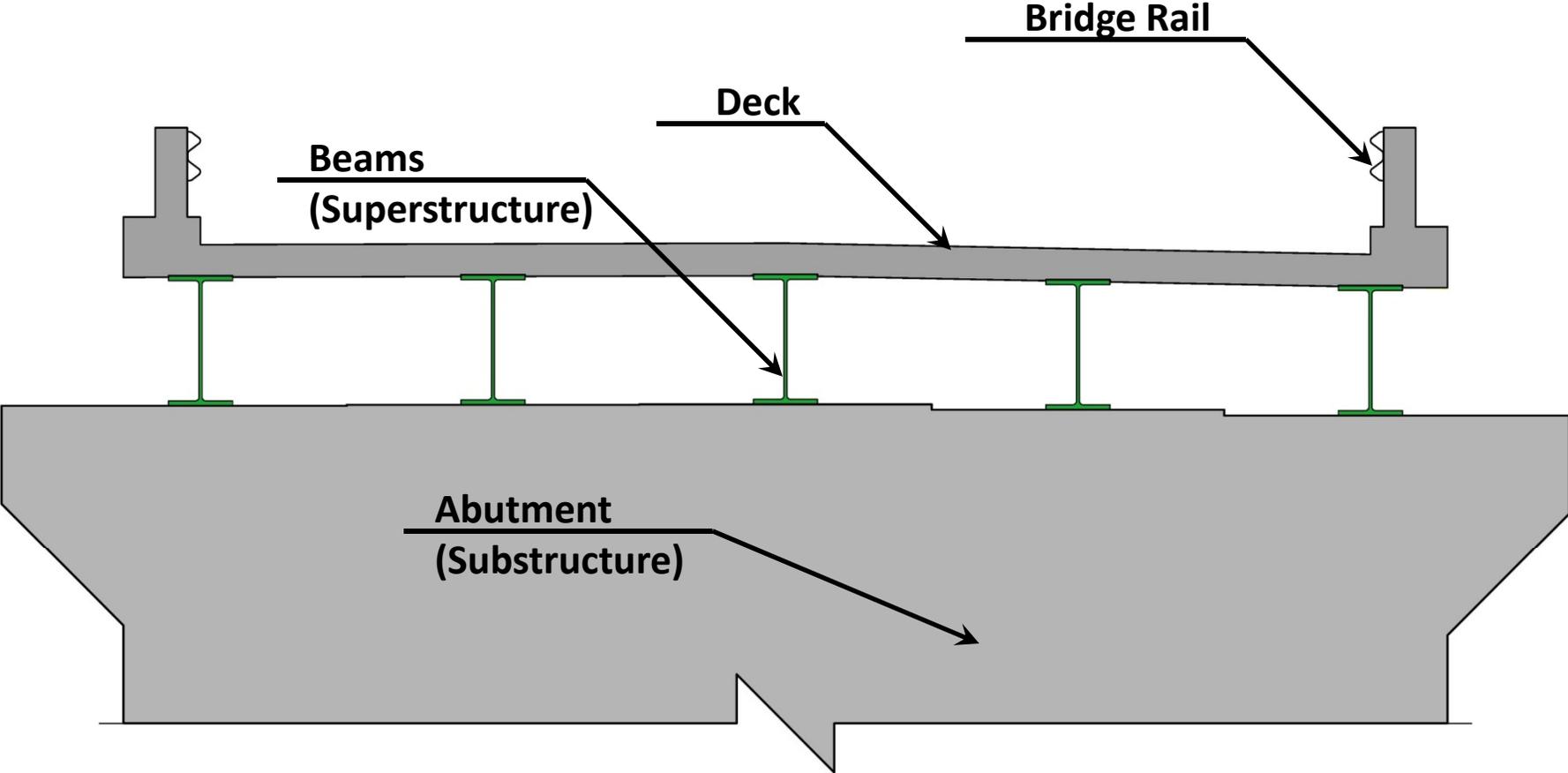
- A. Specific concern
- B. General Interest
- C. Live in close vicinity
- D. Other



Project Overview

- Existing Conditions
- Alternatives Considered
- Recommended Alternative

Description of Terms Used



Cross Section of Bridge

Looking East over Bridge



Existing Conditions – Bridge #9

- Roadway Classification – Rural Major Collector (Class 2 TH)
- Bridge Type – 74' Long Rolled Beam Bridge
- Constructed in 1933
- Ownership – Town of Danby

Existing Conditions – Bridge #9

- The rolled beams have significant rust
- There is transverse cracking in the deck
- Leaky bridge joints
- The lane and shoulder widths of the bridge are too narrow
- Horizontal curve is substandard
- The existing vertical alignment through the project location does not meet the current standard

Transverse Cracks in Concrete Deck and Rusting Rolled Beams



Existing Conditions - Bridge #9

- Deck Rating 5 (Fair) 6/06/2012
- Superstructure Rating 6 (Satisfactory)
- Substructure Rating 5 (Fair)

Looking West over Bridge



Existing Conditions - Bridge #9

- Sag vertical curve and headlight site distance are substandard
- Horizontal curve is too sharp
- Bridge is too narrow

Substructure Condition

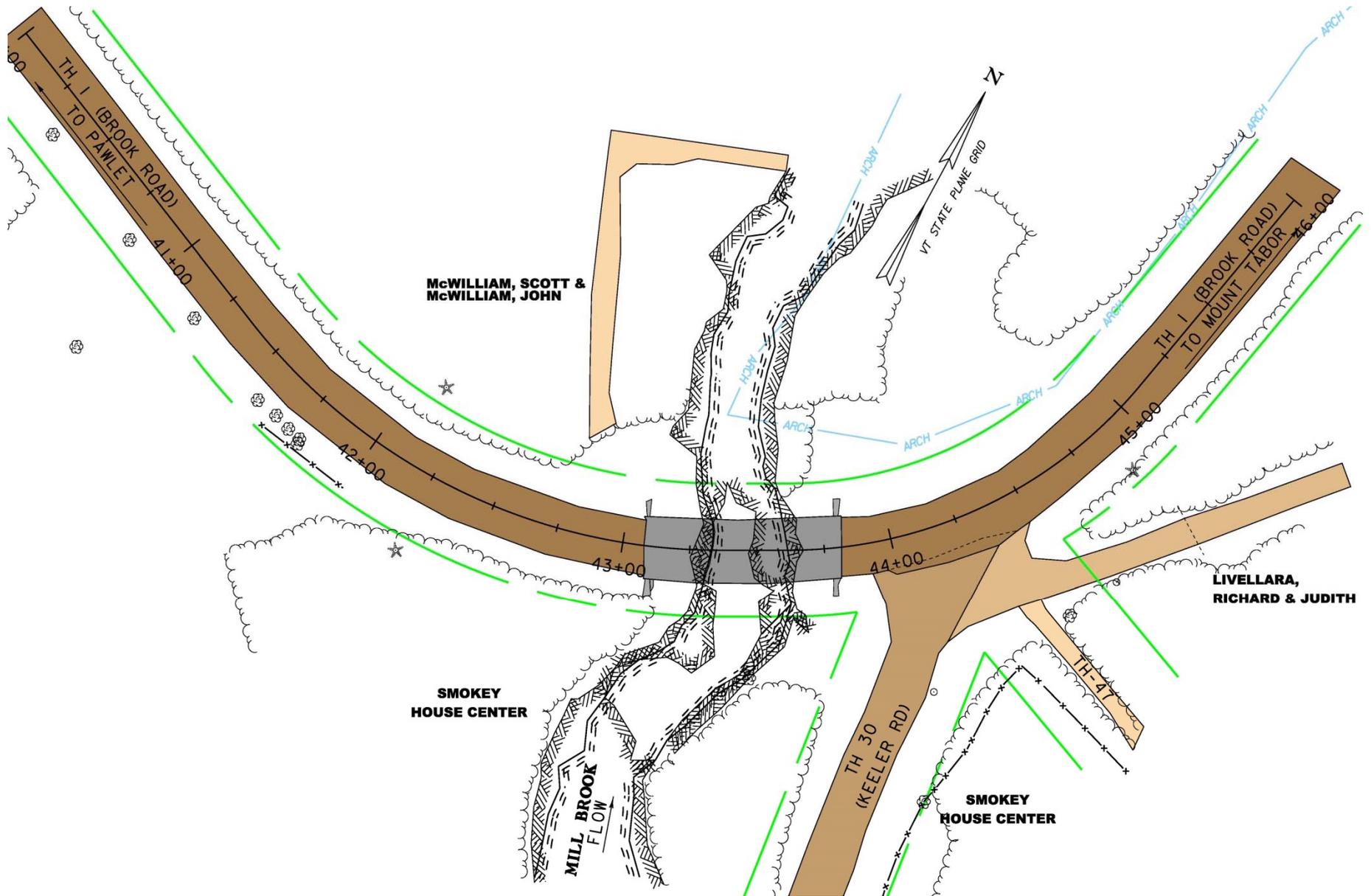


Existing Conditions - Bridge #9

06/06/2012

- Bedrock overhang with marble block masonry wall support
- Bedrock is instable

Existing Conditions



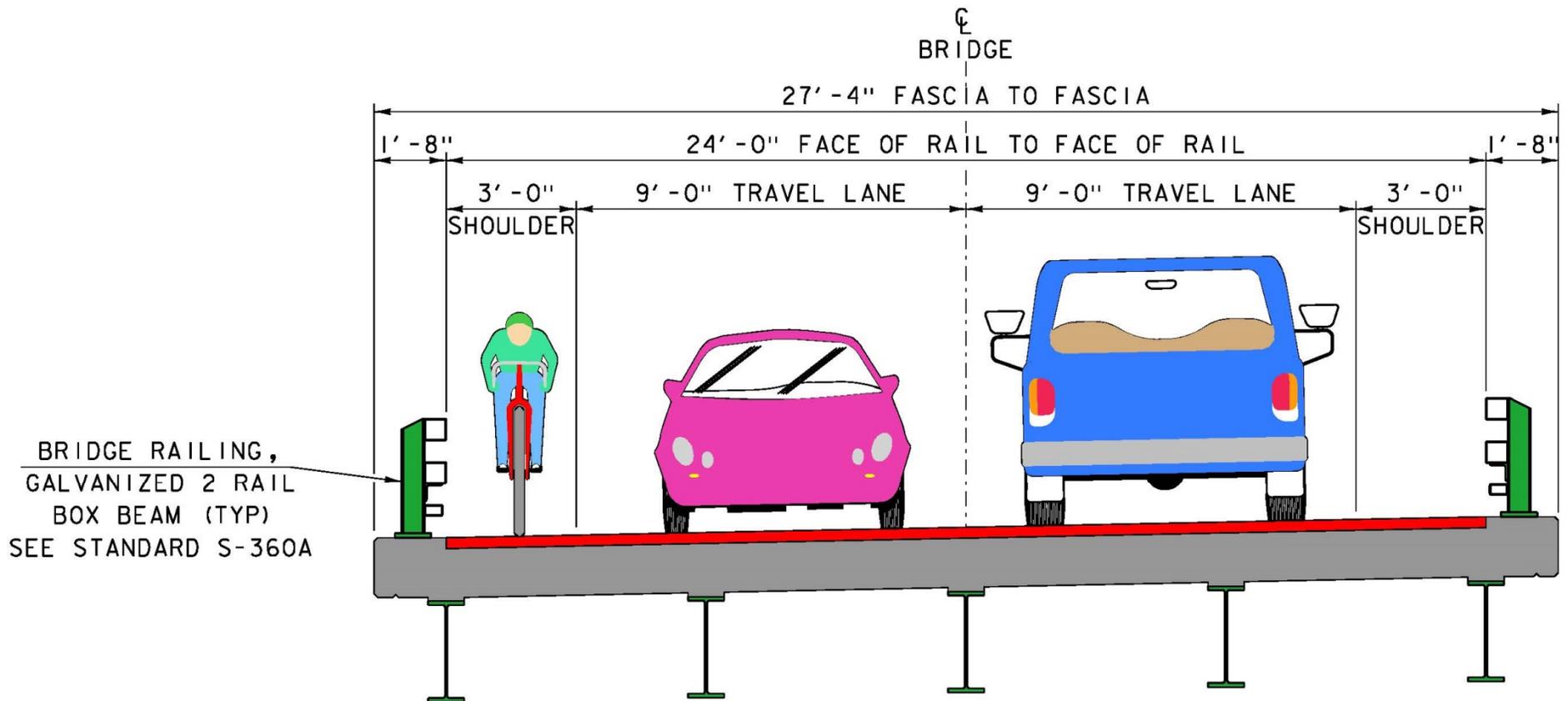
Design Criteria and Considerations

- ADT of 700
- DHV of 90
- % Trucks: 5.2
- Design Speed of 30 mph
- History of cars running off the road
- Archaeological sensitive area downstream of existing bridge
- Stability of the bedrock outcrop

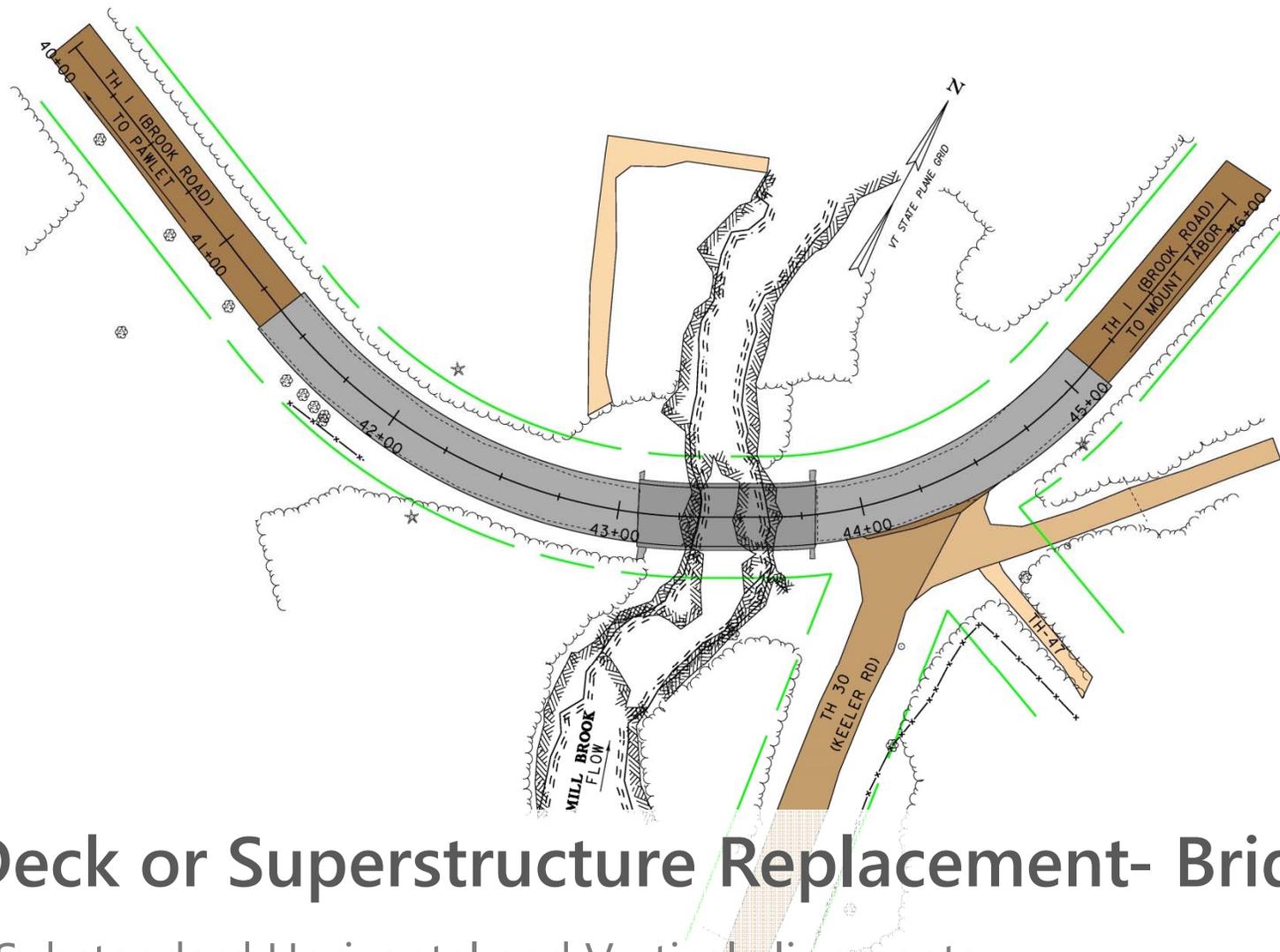
Alternatives Considered – Bridge #9

- No Action
 - Additional maintenance required within 10 years
- Deck Replacement
 - Least-up front cost
 - Beams cleaned and painted, substructure repair
 - Substandard horizontal and vertical alignment
- Superstructure Replacement
 - New beams, no field paint/hazardous materials issues
 - Substandard horizontal and vertical alignment
- Full Bridge Replacement On Alignment
 - Resolve all geometric issues except horizontal alignment
 - Longest service life
- Full Bridge Replacement Off Alignment
 - Resolve all geometric issues
 - Longest service life

Proposed Typical Section



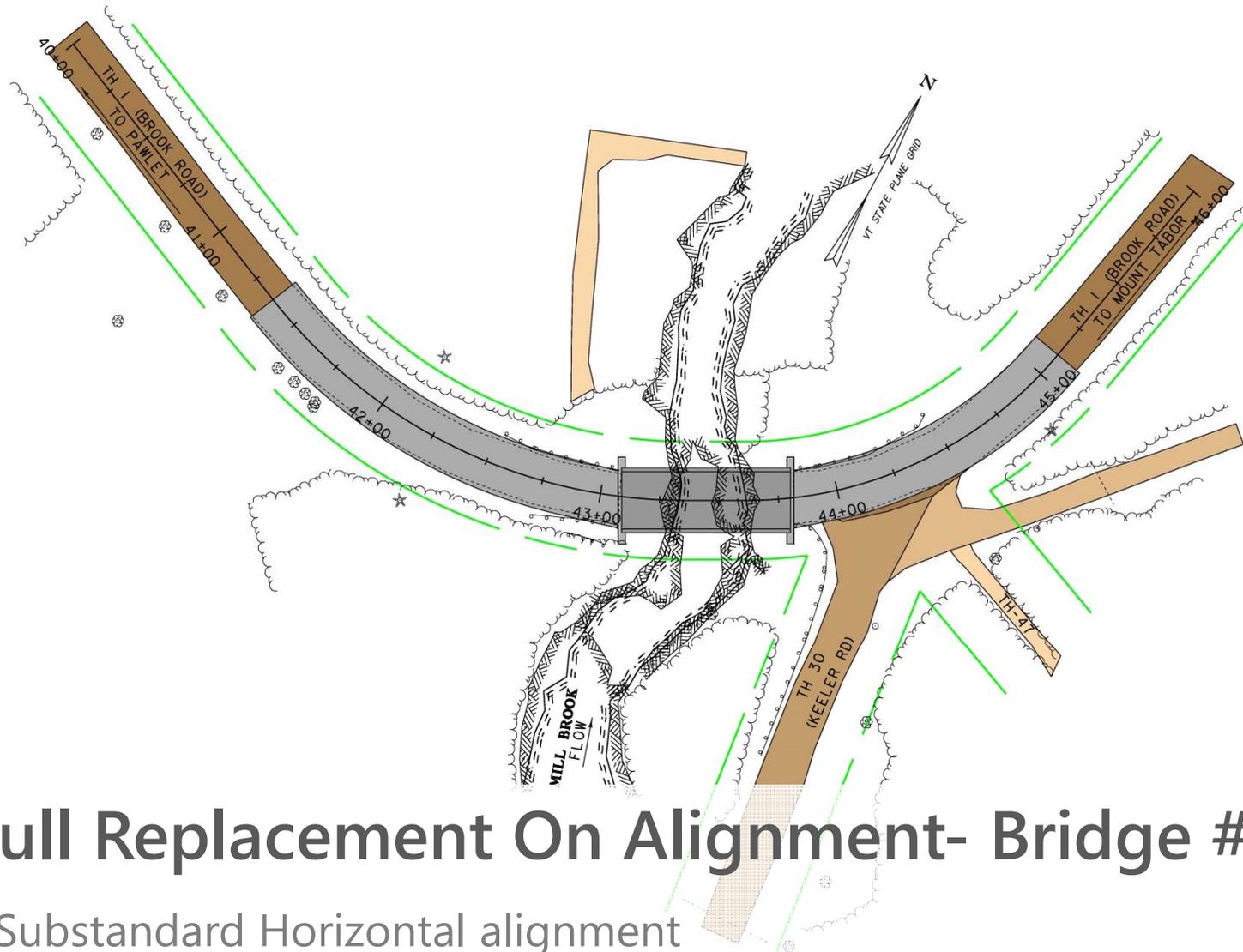
Alternatives 1&2 Layout



Deck or Superstructure Replacement- Bridge #9

- Substandard Horizontal and Vertical alignments

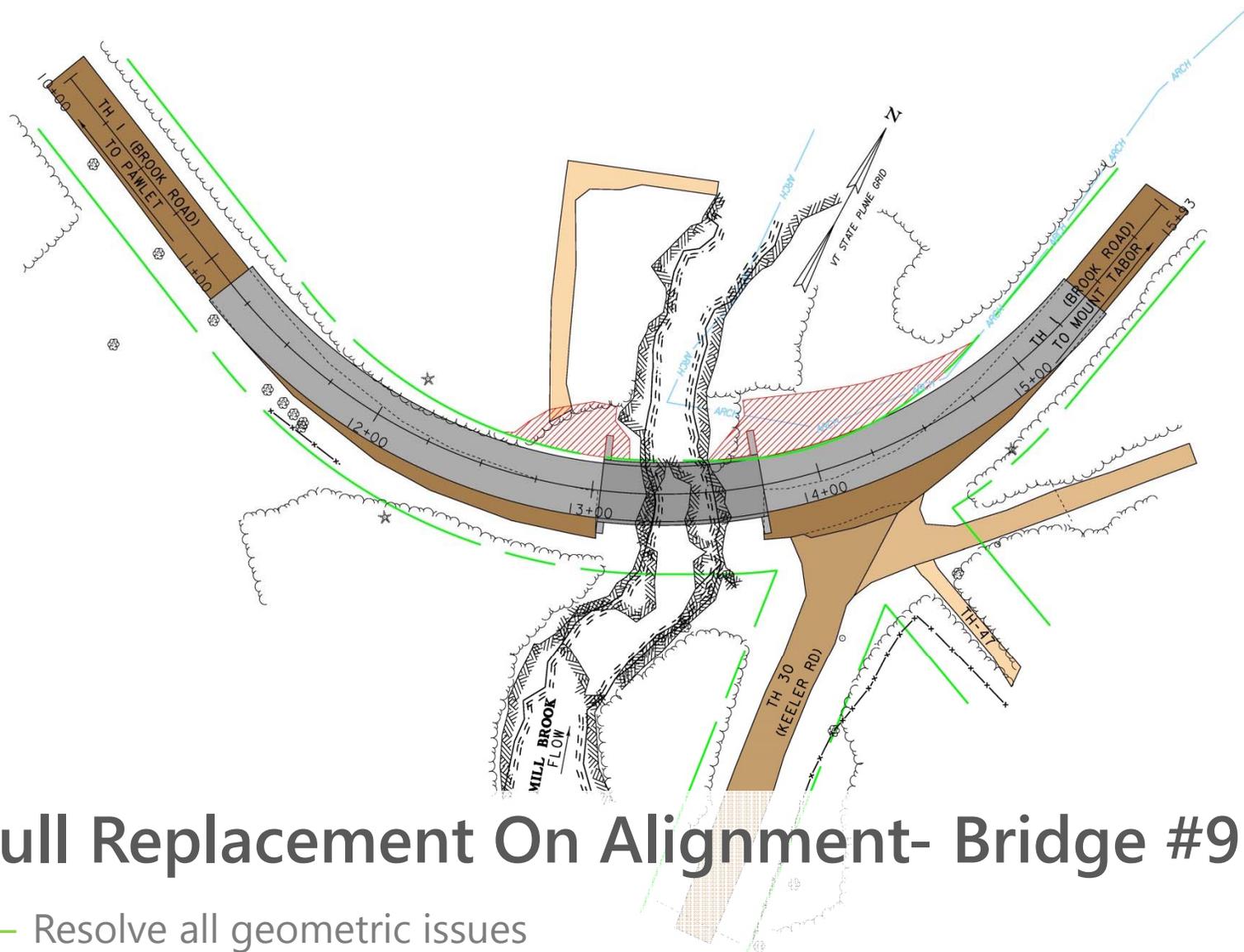
Alternative 3 Layout



Full Replacement On Alignment- Bridge #9

- Substandard Horizontal alignment

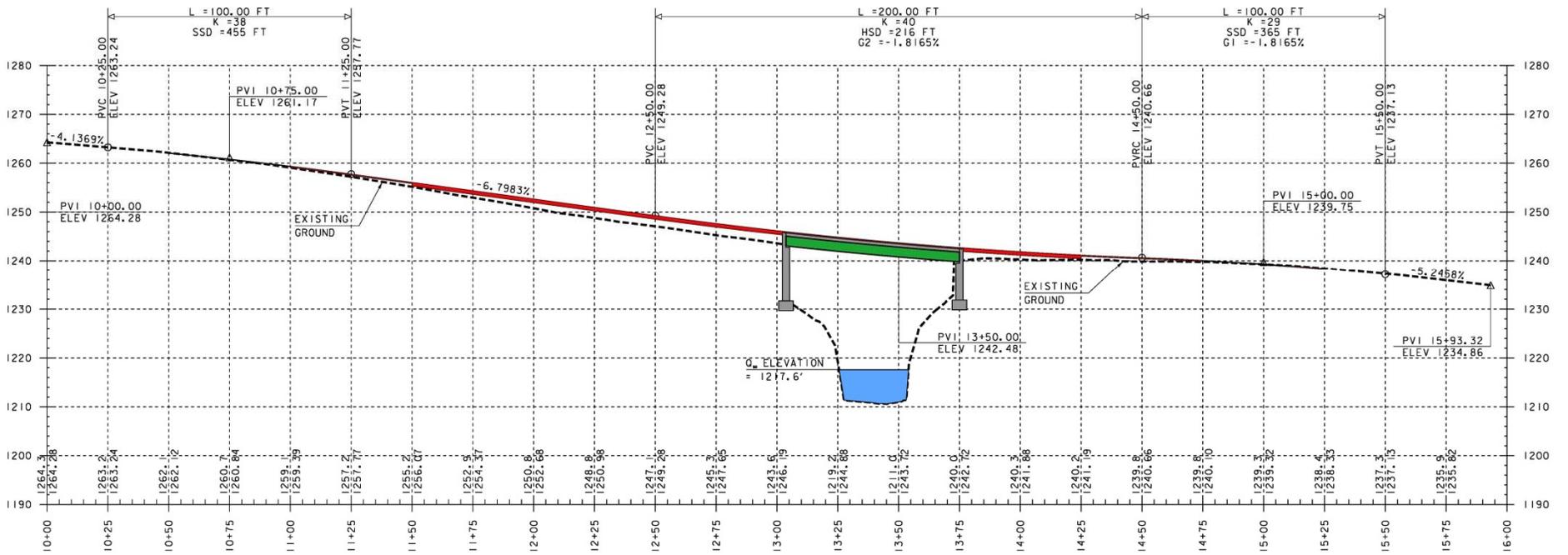
Alternative 4 Layout



Full Replacement On Alignment- Bridge #9

- Resolve all geometric issues

Proposed Profile



Recommended Alternative - Bridge #9

- Full Bridge Replacement Off Alignment
 - Replace entire structure on an improved alignment slightly downstream
 - Widen Bridge to 9'/3'
 - Warn curve for 20 mph (no design exception needed as per VSS Section 5.3)
 - Span to be determined out in field by the VTrans Geologist
Approximate length is 70', curved girders
 - Raise vertical grade approximately 2 feet to meet standard
 - No utility relocation
 - ROW needed
 - Approximately 20 week duration closure

What Will the New Bridge Look Like?



Proposed Example - Bridge #9

- Curved Steel Beam Bridge

Maintenance of Traffic Options Considered

- Road Closure with Offsite Detour
 - By closing the bridge to traffic during construction, the local share is reduced by 50%
- Temporary Bridge
 - Impacts to archaeological resources and adjacent properties



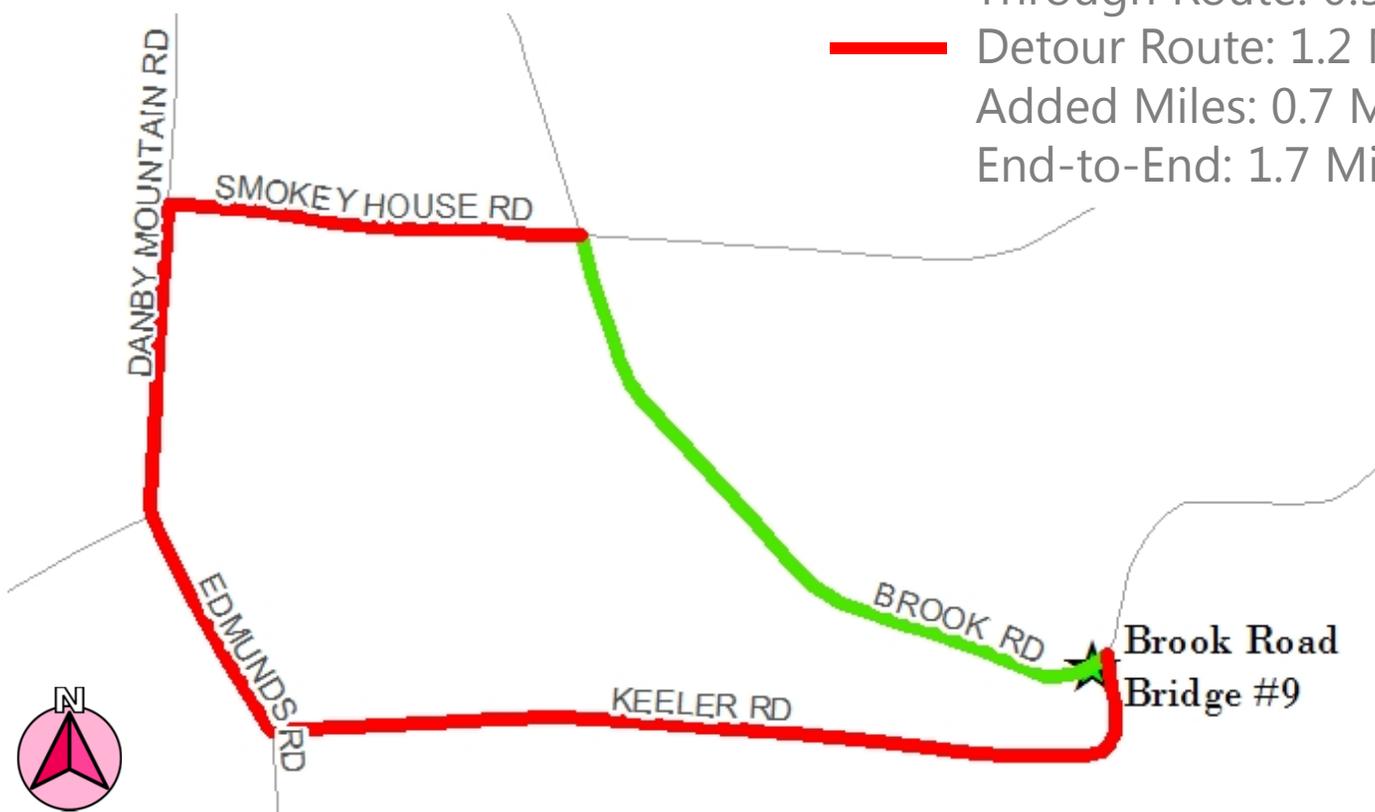
Road Closure

- Approx. 2 or 20 week bridge closure depending on alternative chosen
- **Detour route chosen and signed by town**
- Shortest route available: 1.7 miles end-to-end

Shortest Possible Detour Route

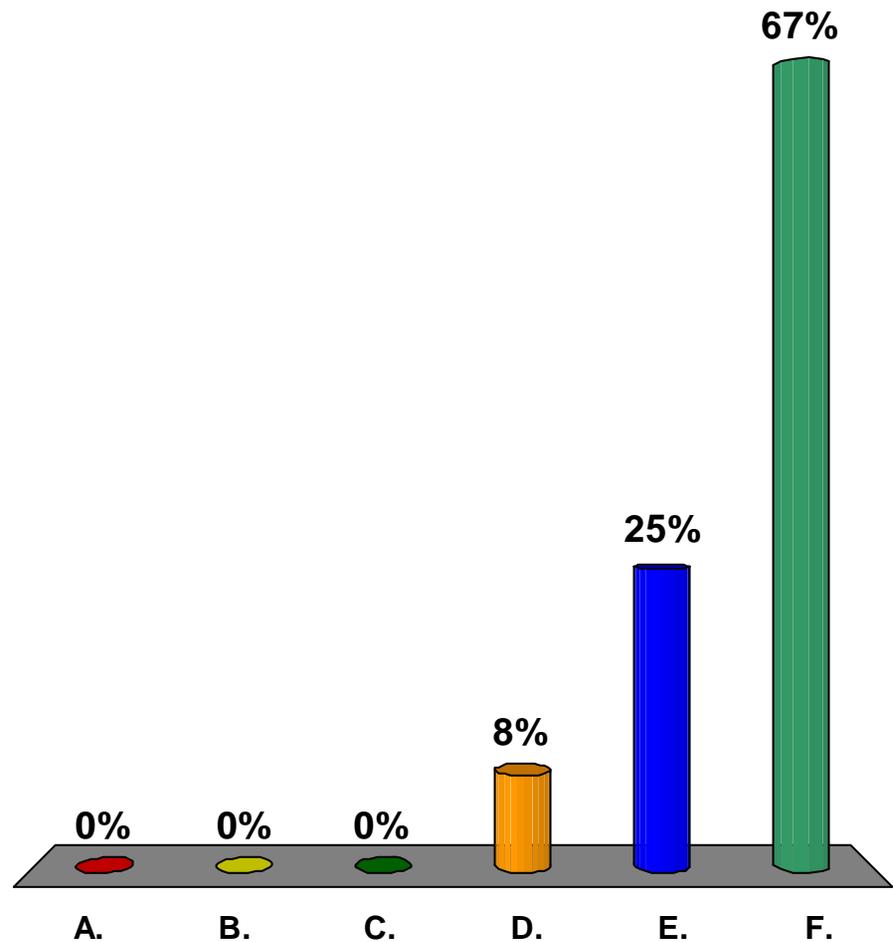
- Brook Road, to Keeler Road, Edmunds Road, Danby Mountain Road, back to Brook Road

- Through Route: 0.5 Miles
- Detour Route: 1.2 Miles
- Added Miles: 0.7 Miles
- End-to-End: 1.7 Mile



What would be the maximum acceptable length of closure for Bridge #9?

- A. 2 weeks
- B. 8 weeks
- C. 12 weeks
- D. 16 weeks
- E. 20 weeks
- F. 24 weeks

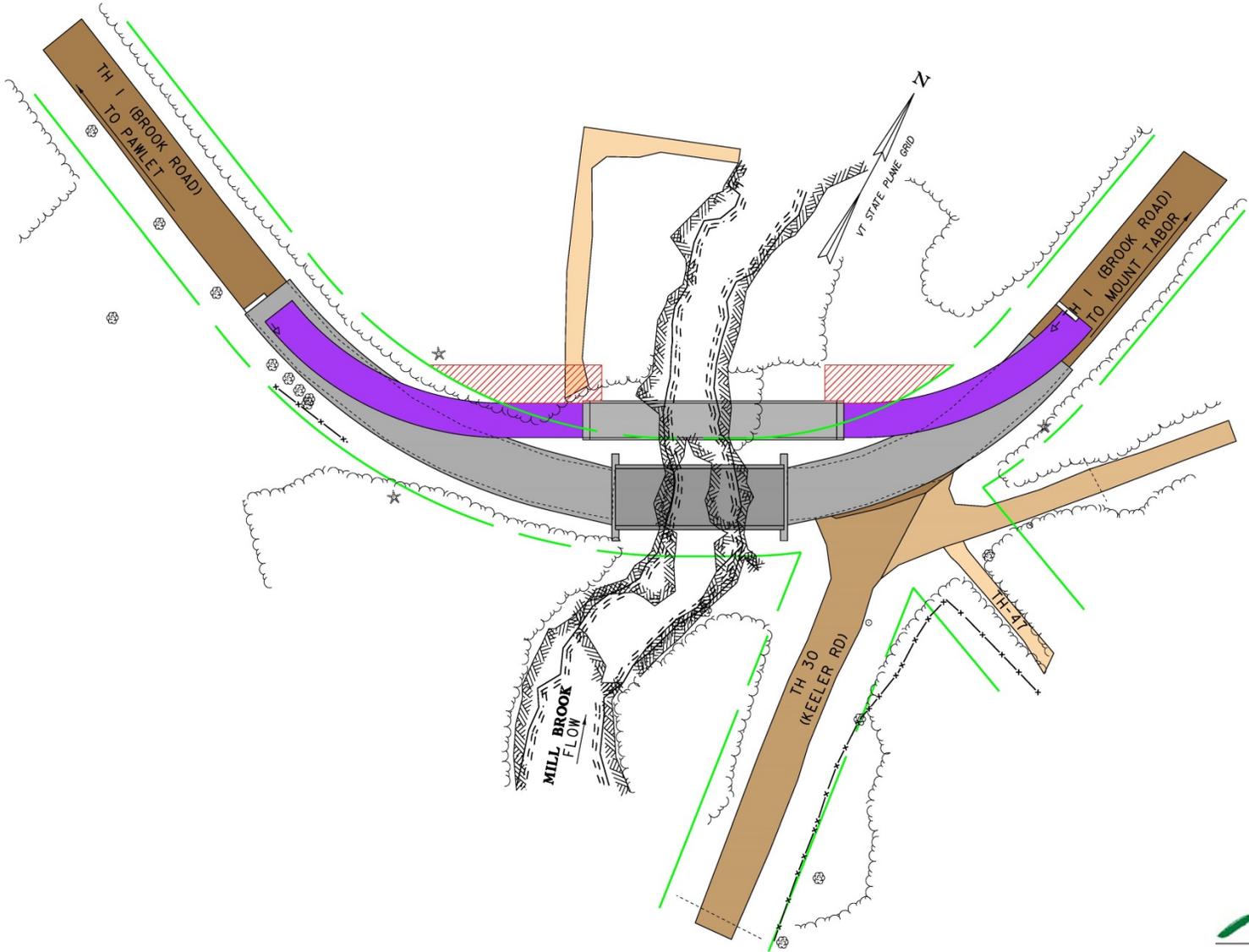




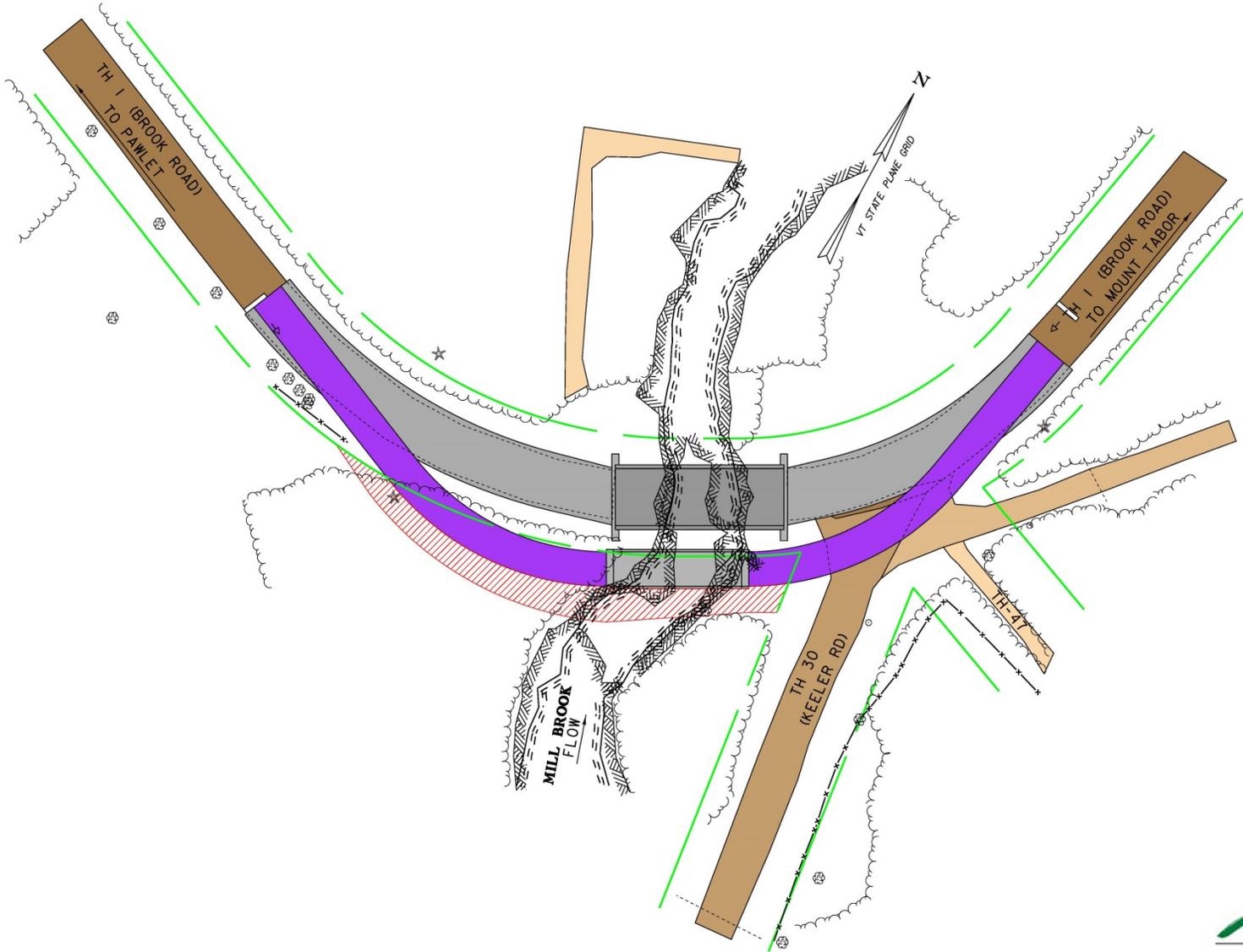
Temporary Bridge

- One Lane Temporary Bridge with Traffic Signal
- Downstream temporary bridge would have impacts to archaeologically sensitive resources
- Both upstream and downstream would require ROW acquisition

Downstream Temporary Bridge Layout



Upstream Temporary Bridge Layout



Recommended Scope

- Full Bridge Replacement Off Alignment with Traffic Maintained on Offsite Detour
 - Approximately 20 week proposed closure
 - Local detour to be chosen and signed by the Town of Danby
 - Meets all geometric criteria
 - Construction – Summer 2019 or 2020

Alternatives Matrix

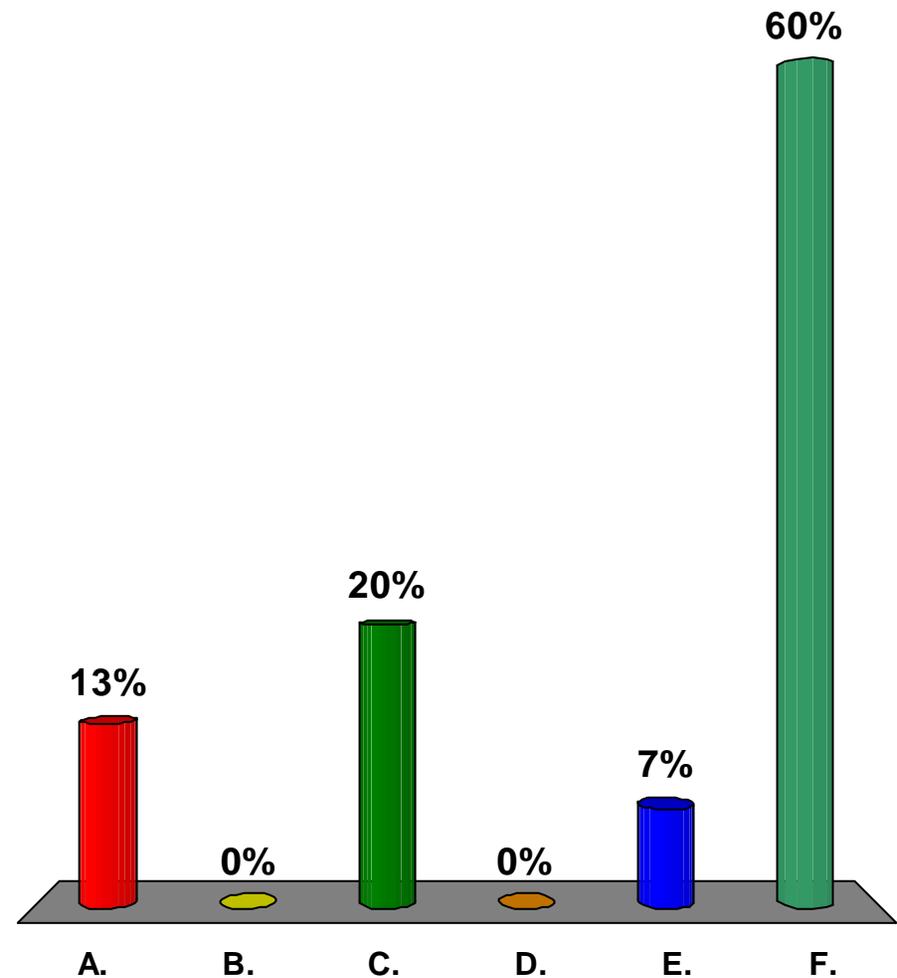
Recommended



	Alt 1a	Alt 1b	Alt 2a	Alt 2b	Alt 3a	Alt 3b	Alt 4a	Alt 4b
Danby BF 0130(3)	Deck Replacement		Superstructure Replacement		Full Bridge Replacement On Alignment		Full Bridge Replacement Off Alignment	
	Offsite Detour	Temporary Bridge	Offsite Detour	Temporary Bridge	Offsite Detour	Temporary Bridge	Offsite Detour	Temporary Bridge
Total Project Costs (including Engineering and Contingencies)	\$798,400	\$1,046,110	\$1,048,000	\$1,295,710	\$1,825,320	\$2,022,120	\$2,035,730	\$2,276,300
Town Share	\$19,960 (2.5%)	\$52,310 (5%)	\$26,200 (2.5%)	\$64,790 (5%)	\$91,300 (5%)	\$202,210 (10%)	\$101,790 (5%)	\$227,630 (10%)
Project Development Duration	2 years	4 years	2 Years	4 Years	4 years	4 years	4 years	4 Years
Construction Duration	4 months	18 months	4 months	18 months	6 months	18 months	6 months	18 months
Closure Duration (If Applicable)	2 weeks	N/A	2 weeks	N/A	16 weeks	N/A	20 weeks	N/A
Geometric Design Criteria	Substandard horizontal and vertical curve		Substandard horizontal and vertical curve		Substandard horizontal curve		Meets All Geometric Criteria	
Alignment Change	No		No		Vertical Change (Roadway raised approximately 1.8 feet at the bridge)		Horizontal and Vertical Change	
Utilities	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change
ROW	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Design Life	20 years		30 Years		80 years		80 years	

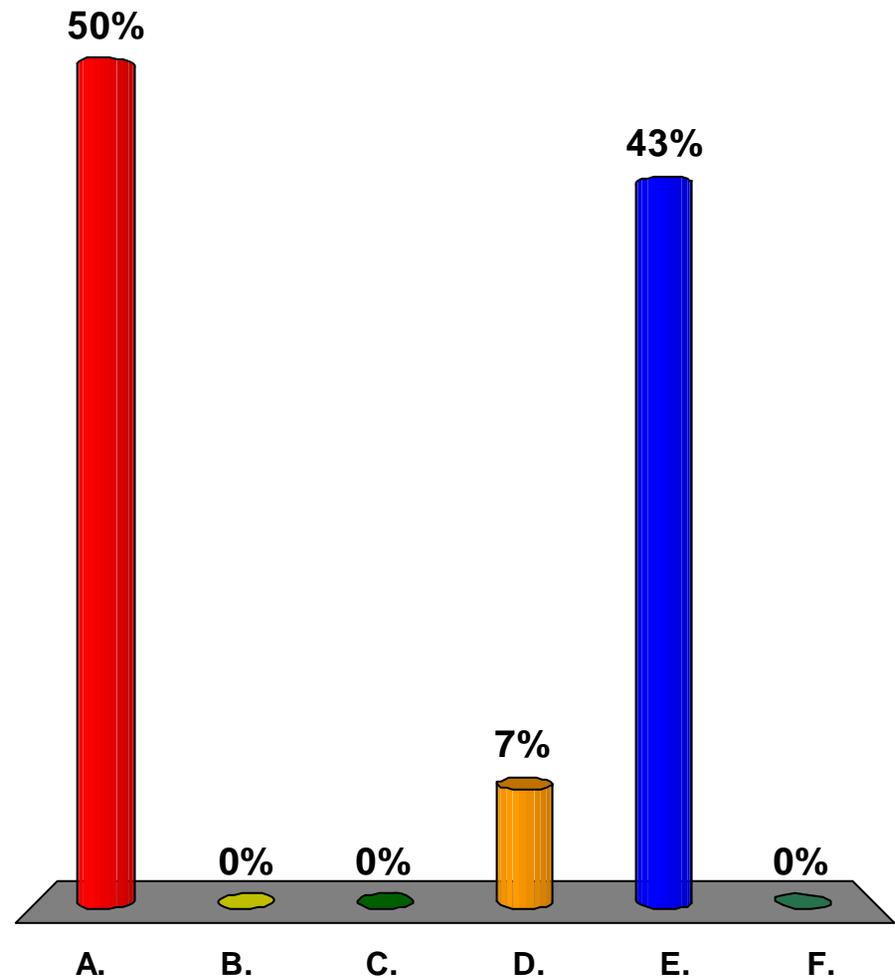
Which would you be most concerned about?

- A. Closure Duration
- B. Bridge Aesthetics
- C. Environmental Impacts
- D. Recreational Impacts
- E. Other
- F. Not really concerned



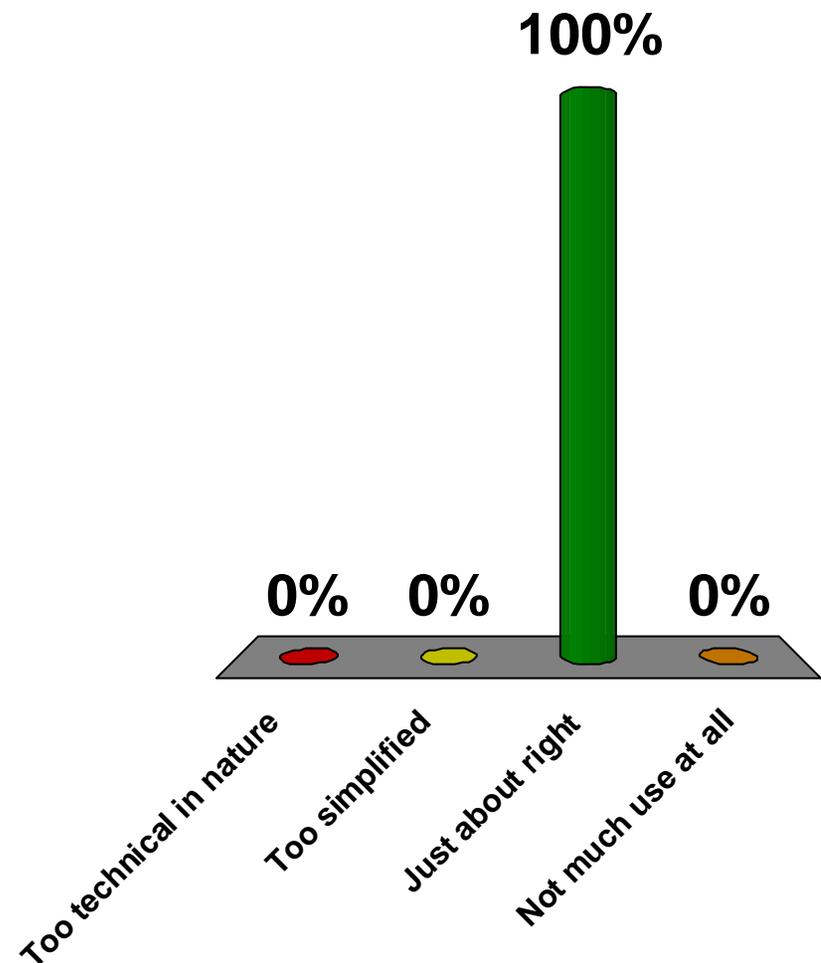
Which design aspect is the most important to you?

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



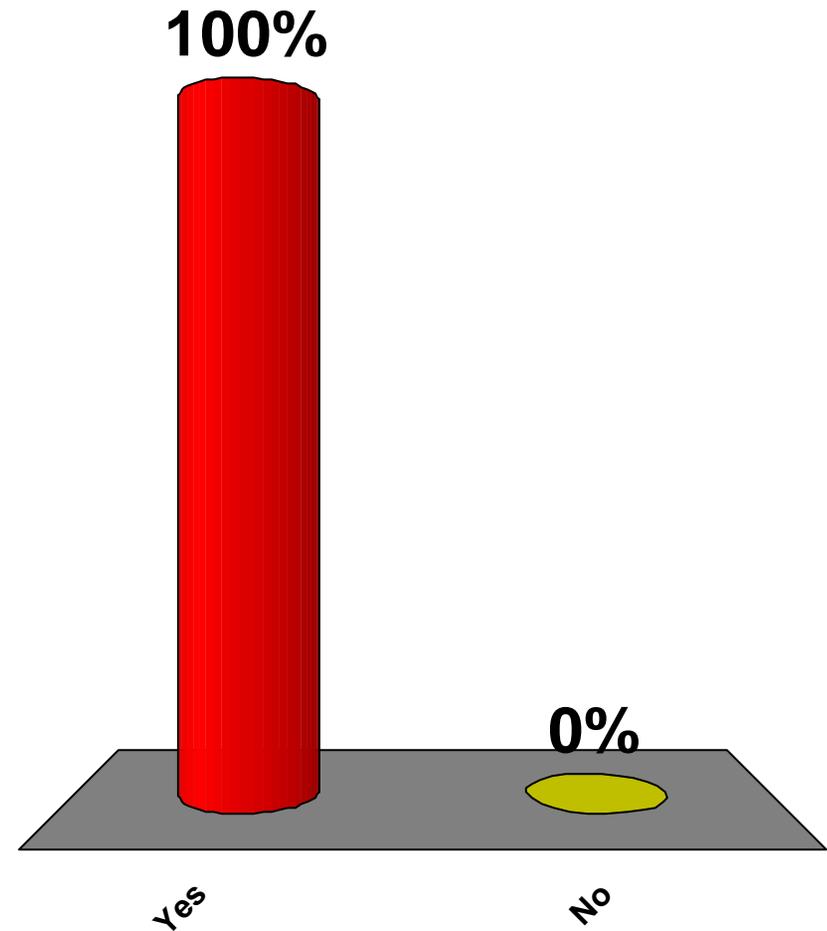
Did you find this presentation to be?

- 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 #9

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)
 - Town is responsible for any chosen detour route

For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/13J304>



Danby BF 0130(3) Questions & Comments

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