

Regional Concerns Meeting

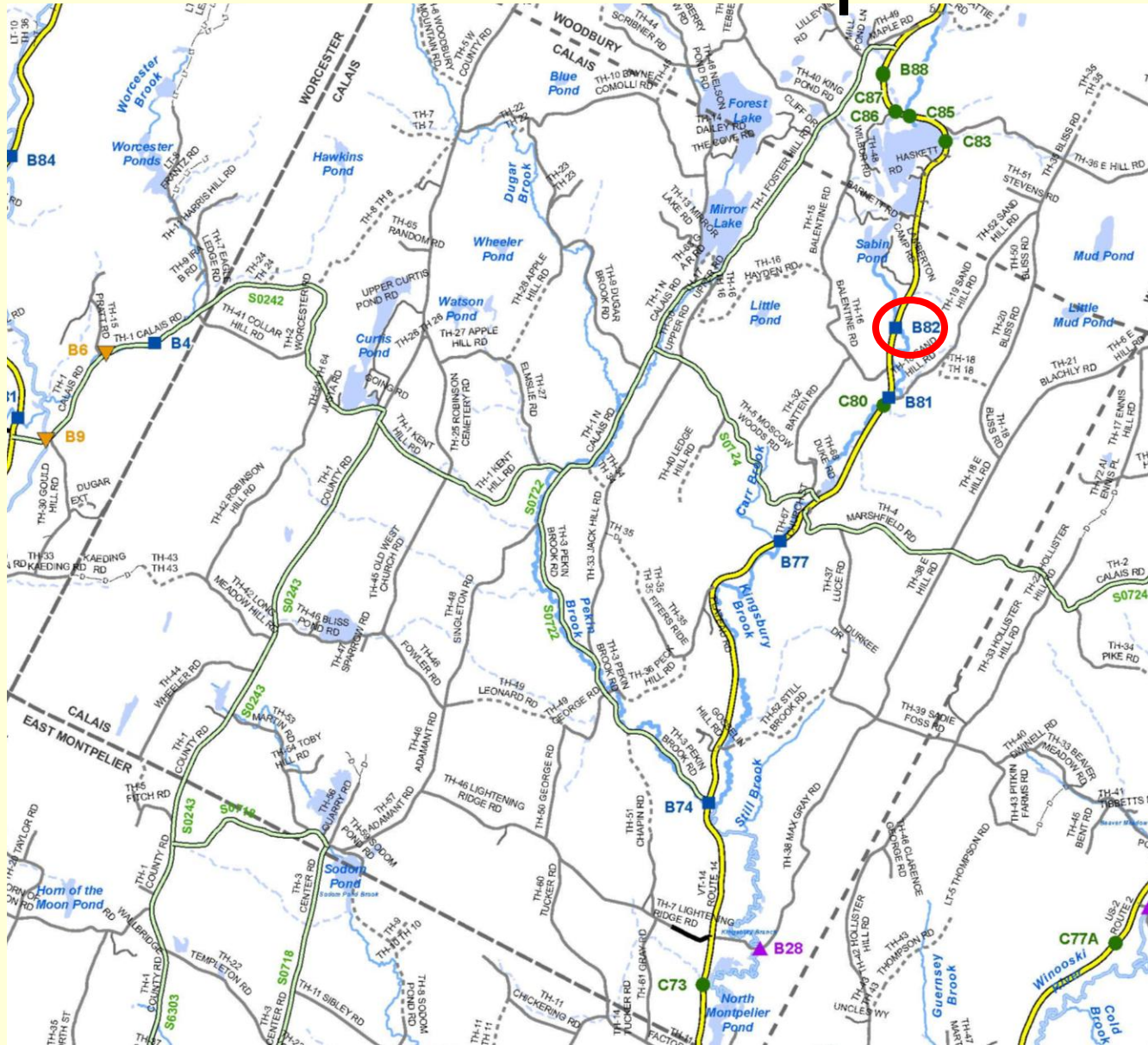
for

Calais VT 14, Bridge 82 over Kingsbury Branch

This Presentation is part 3 of 3 parts that will be given at the Regional Concerns Meeting.
This Presentation contains a discussion of bridge 82.

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Location Map



Bridge 82 - Project Background

- Existing bridge is a single span concrete T-beam bridge
- Span length = 34'
- Bridge width = 32'
- Age is unknown – **reconstructed in 1946**
- Posted speed limit = 50 mph
- **Priority 17** in the State Bridge Program-

EXISTING BRIDGE DEFICIENCIES – B82

Inspection Report Information (Based on a scale of 9)

Bridge Deck Rating	4 Poor
Superstructure Rating	5 Fair
Substructure Rating	5 Fair

Deficiencies

- Structural Capacity/Condition of the Bridge Deck and T-beams
- Bridge railing does not meet the current standard
- The bridge does not meet the hydraulic standard

Bridge Looking North



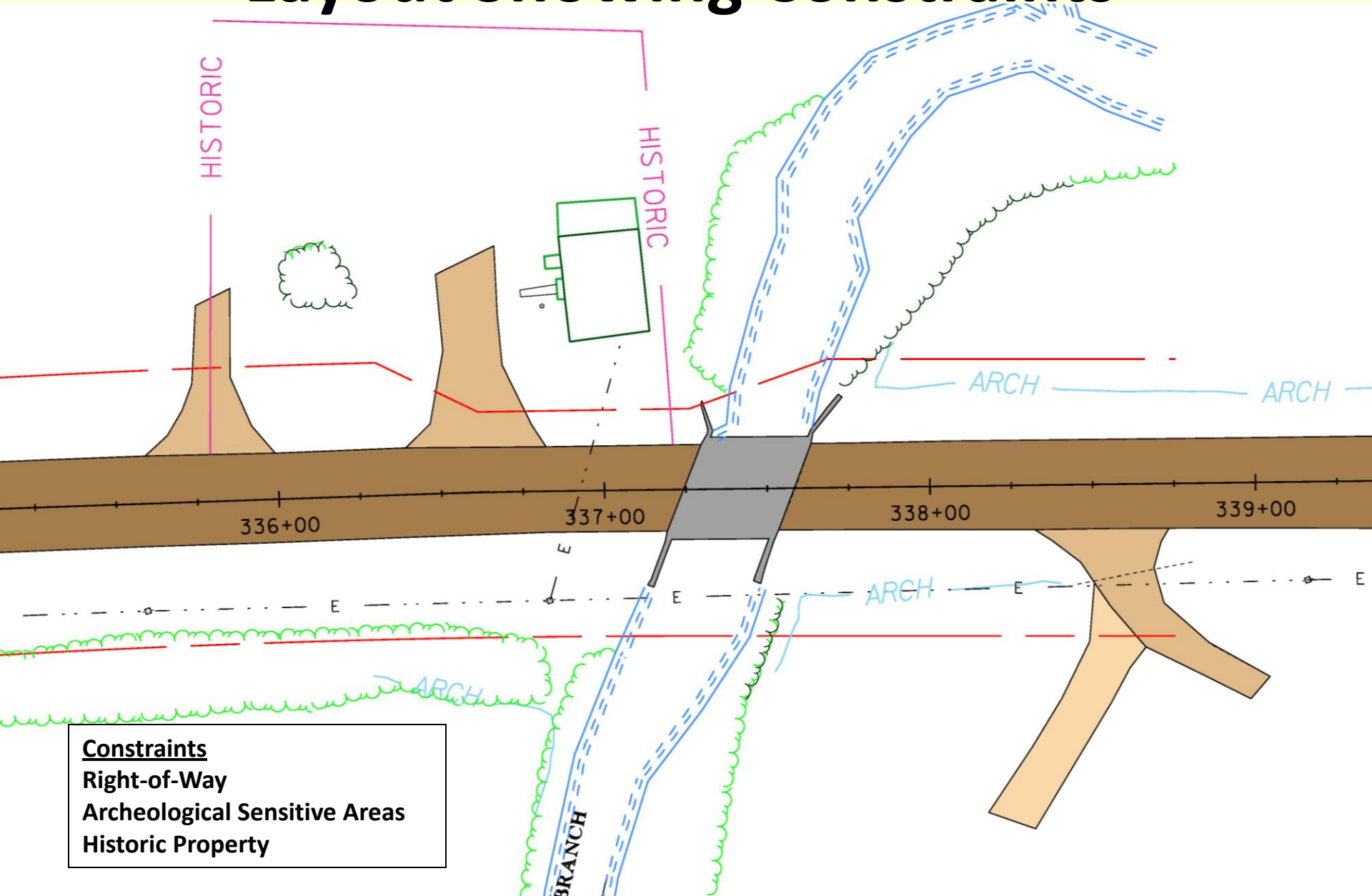
Bridge Looking South



Northeast Wingwall



Layout Showing Constraints



Alternatives Considered

Note that several alternatives were considered in the Scoping Report that did not warrant future consideration so are not included in this presentation

- Superstructure Replacement
- Full Bridge Replacement

Note that the method to maintain traffic will be addressed later

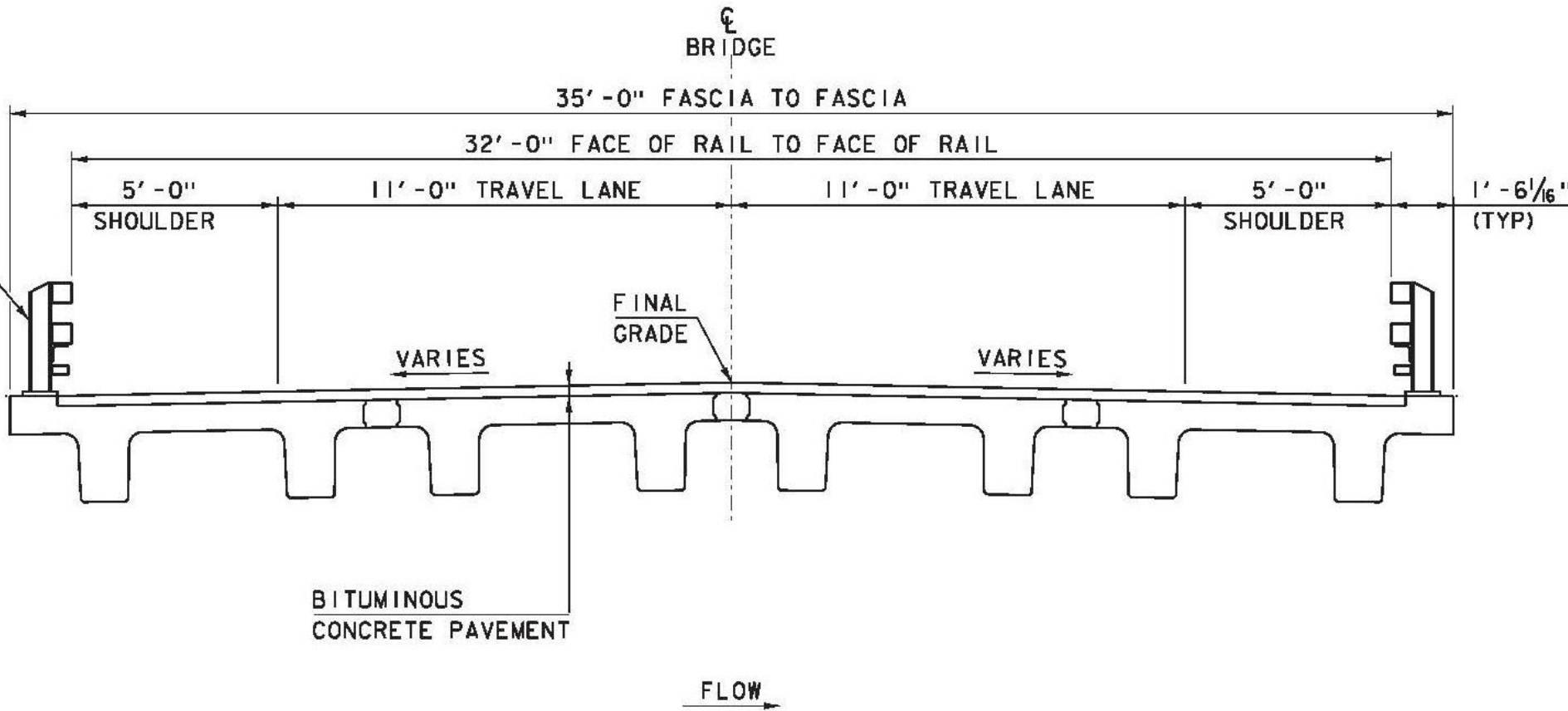
Superstructure Replacement

- Use 11' lanes and 5' shoulders (32' rail-rail width)
- Keep existing abutments
- Maintain existing centerline of road
- Maintain vertical grade of road
- Superstructure deficiencies would be addressed
- No improvement to hydraulic capacity
- Predicted 40 year life expectancy-

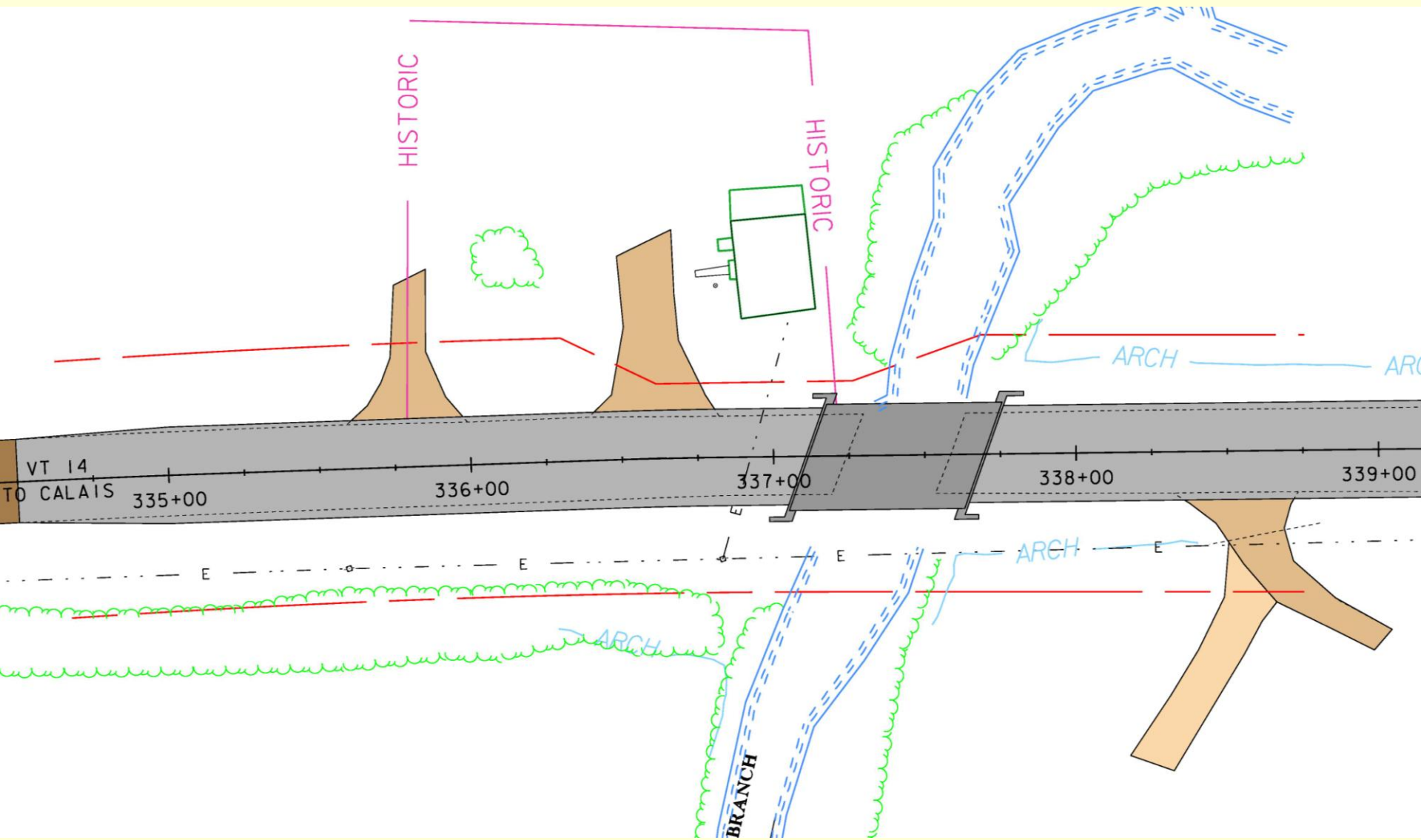
Full Bridge Replacement

- Use 11' lanes and 5' shoulders (32' rail-rail width)
- Increase span to 58 feet
- Maintain existing centerline of road
- Raise vertical grade of road
- Structural deficiencies would be addressed
- Improvement to hydraulic capacity
- Predicted 80 year life expectancy-

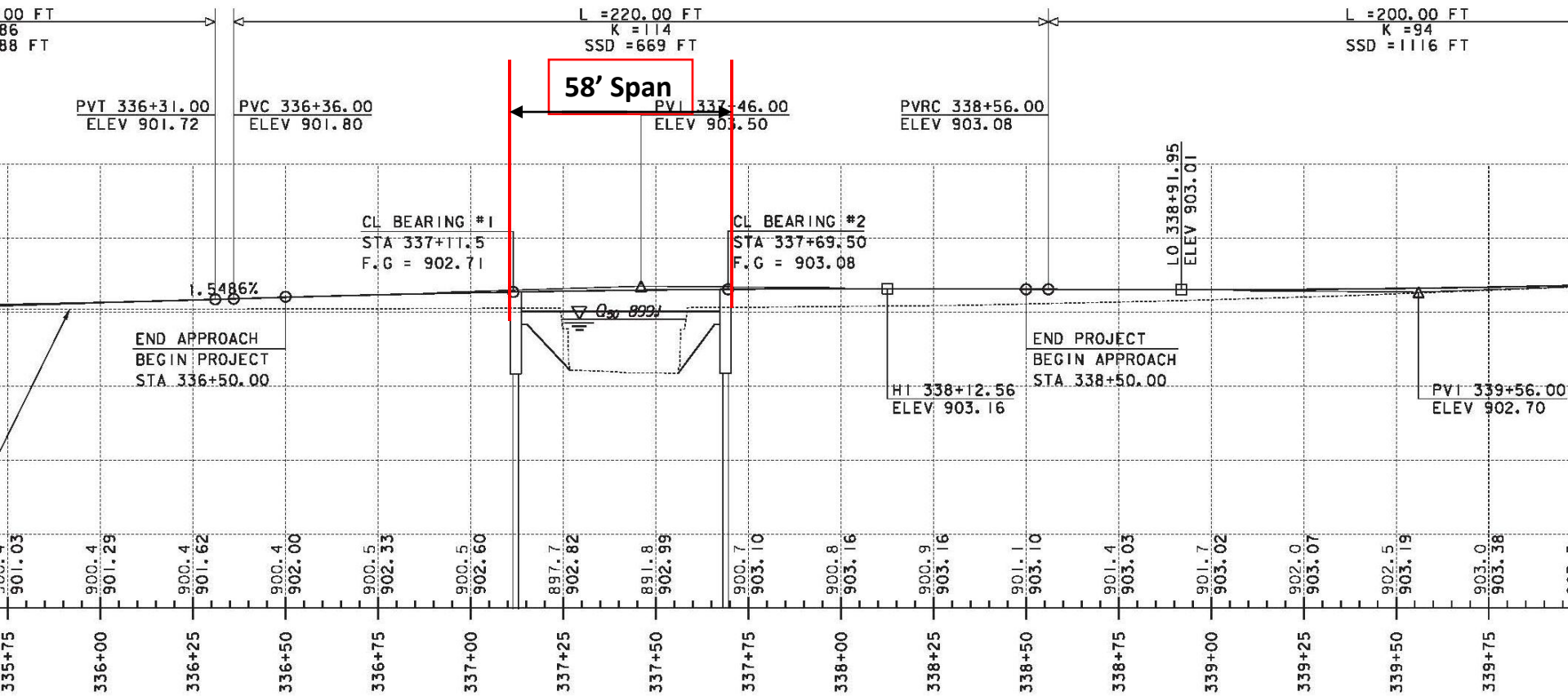
Proposed Bridge Typical



Layout – Complete Replacement



Profile –Complete Replacement



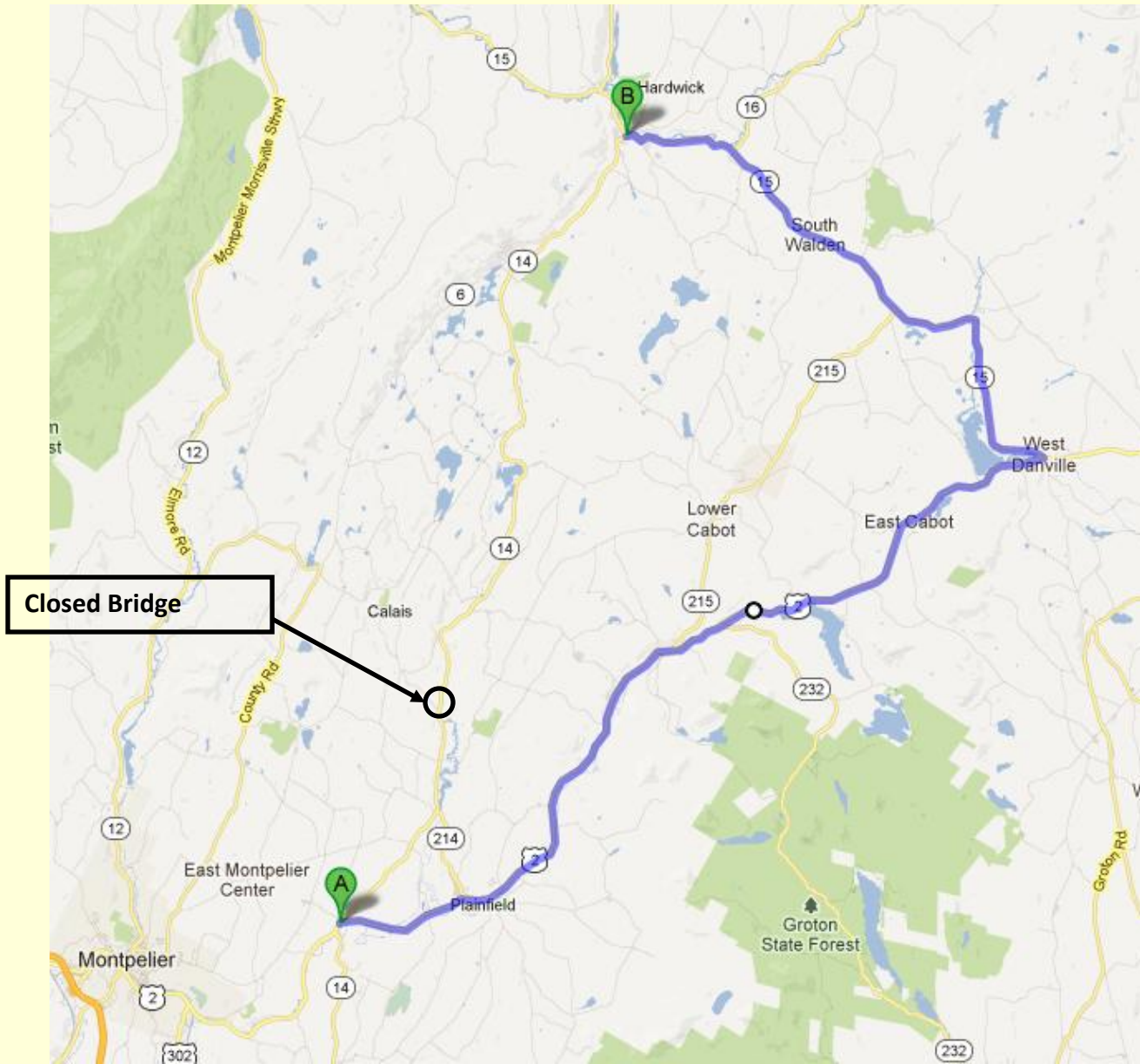
VT 14 BRIDGE REPLACEMENT PROFILE

SCALE: HORIZONTAL 1"=20'-0"
 VERTICAL 1"=10'-0"

Methods to Maintain Traffic

- Off-site Detour
- Phased Construction
- Temporary Bridge on east side of VT 100

Off Site Detour Option



Mileage Summary

A-B Thru = 19 miles

A-B Detour = 32 miles

Added Miles = 13 miles

End-End Dist. = 51 miles

Major Factors

Traffic Volume = 3,300

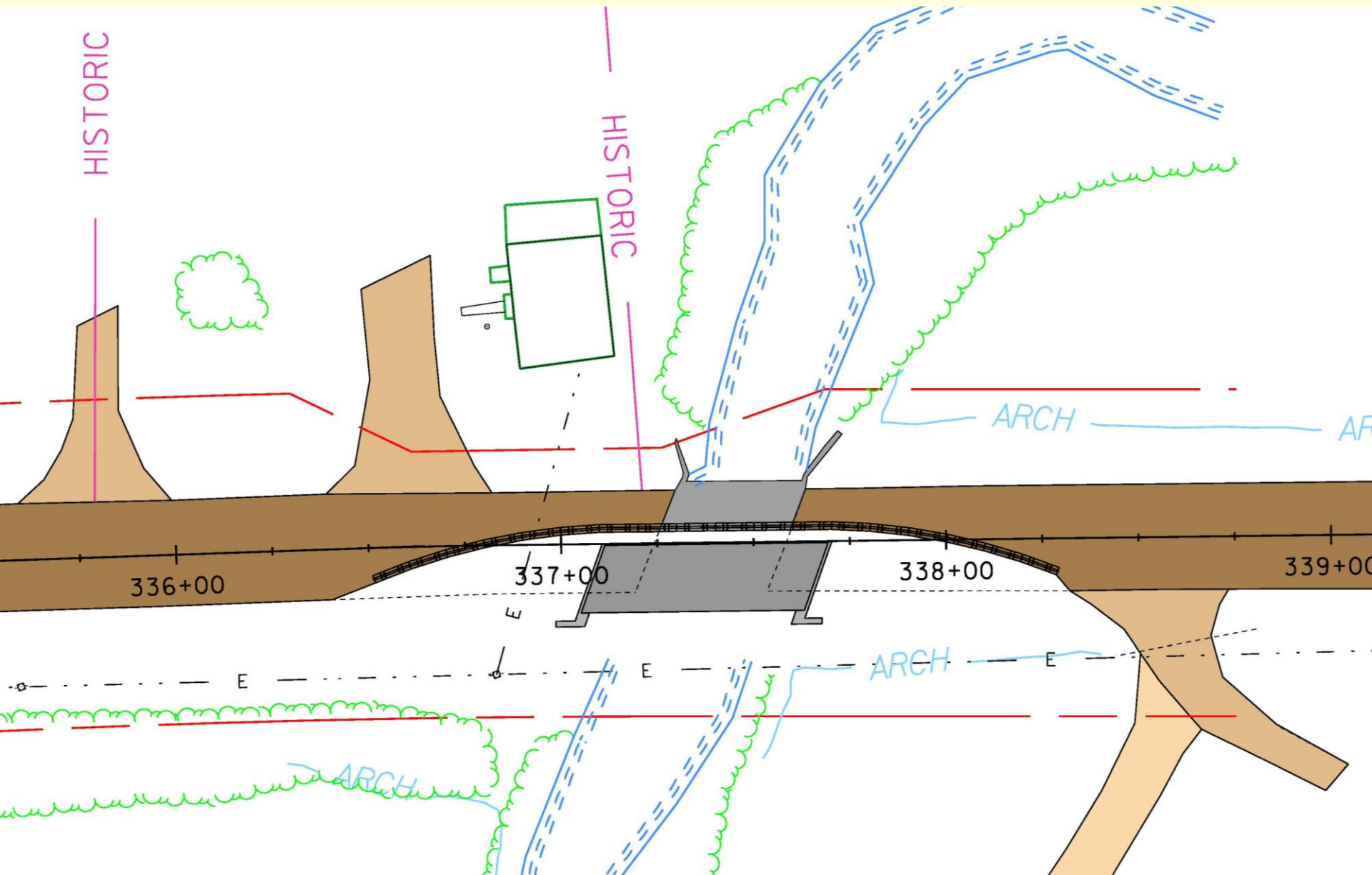
Added Miles = 13 miles

Duration = 4 weeks

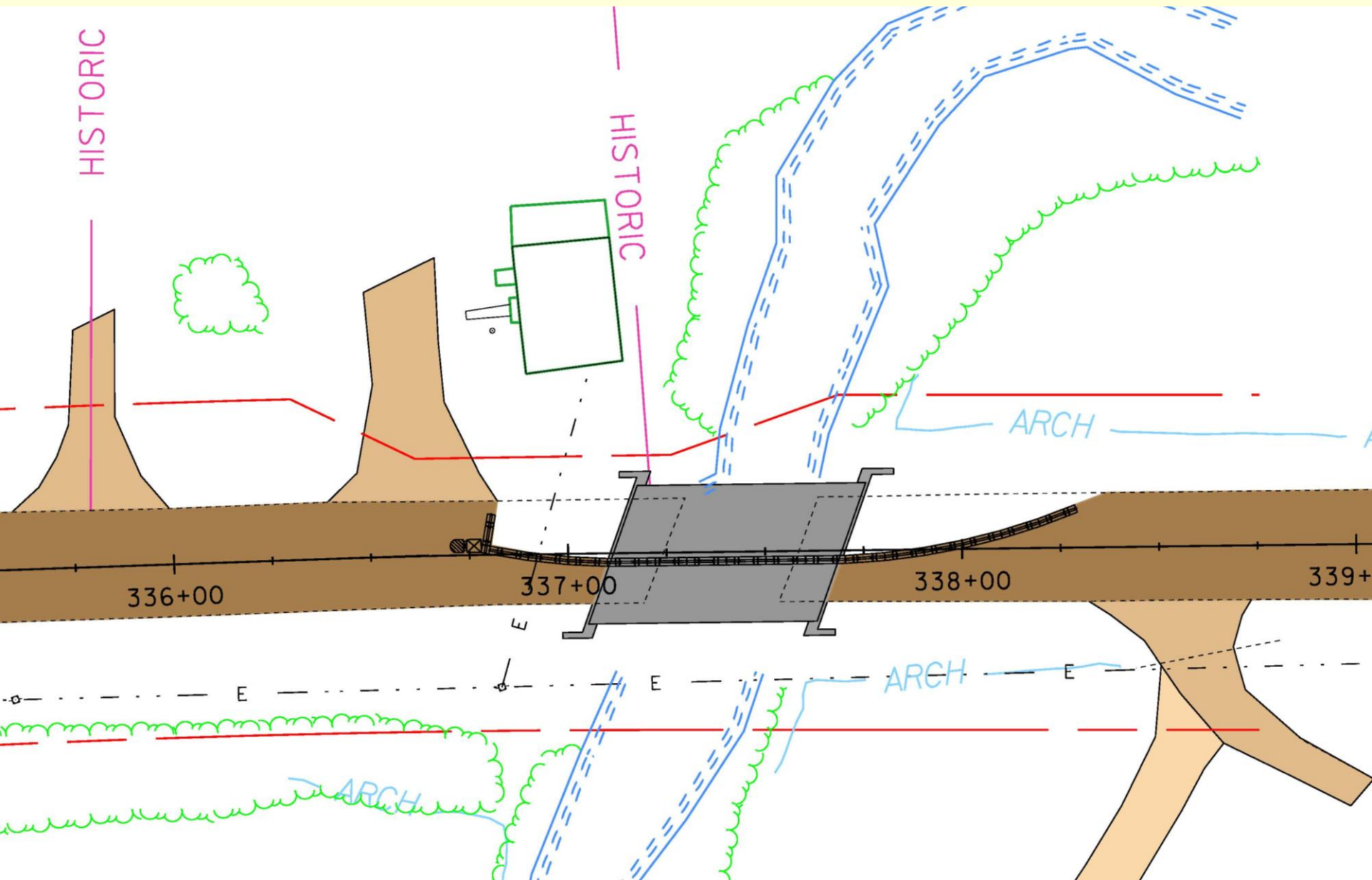
Phased Construction Option

- Build half new bridge while traffic is on half of old bridge
- One-Way alternating traffic with lights
- Queue lengths and queue times can be inconvenient
- Access to side drives/buildings needs to be considered
- Relatively long construction duration
- Workers & motorists in close proximity
- Can usually be done without ROW acquisition

Phase 1 – Complete Replacement



Phase 2 – Complete Replacement



Alternatives Matrix – Bridge 82

	Superstructure Replacement w/ Temp Bridge	Superstructure Replacement w/ Phased		Complete Replacement w/ Temp Bridge	Complete Replacement w/ Phased
Maintenance of Traffic	\$150,000	\$40,000		\$150,000	\$40,000
Construction w/ CE + Contingencies	\$572,000	\$442,000		\$1,479,400	\$1,389,700
Preliminary Engineering	\$123,200	\$95,200		\$341,400	\$320,700
Right of Way	\$91,100	\$0		\$91,100	\$57,000
Total Cost	\$786,300	\$537,200		\$1,911,900	\$1,767,400
Project Development Duration	4 years	2 years		4 years	4 years
Construction Duration	6 months	6 months		18 months	12 months
Mobility Impacts	20 weeks	20 weeks		40 weeks	40 weeks

Conclusion and Recommendation

Complete bridge replacement while maintaining traffic using phased construction.

The primary reasons for this recommendation are:

- Addresses all structural deficiencies
- Improves the hydraulic capacity while balancing the constraints on the project
- Long term (80 year) solution
- Short-term bridge closure not appropriate for the volume of traffic, detour distance and duration
- Temporary bridge not appropriate due to increased impacts and costs-

Questions



Direct any questions to:

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