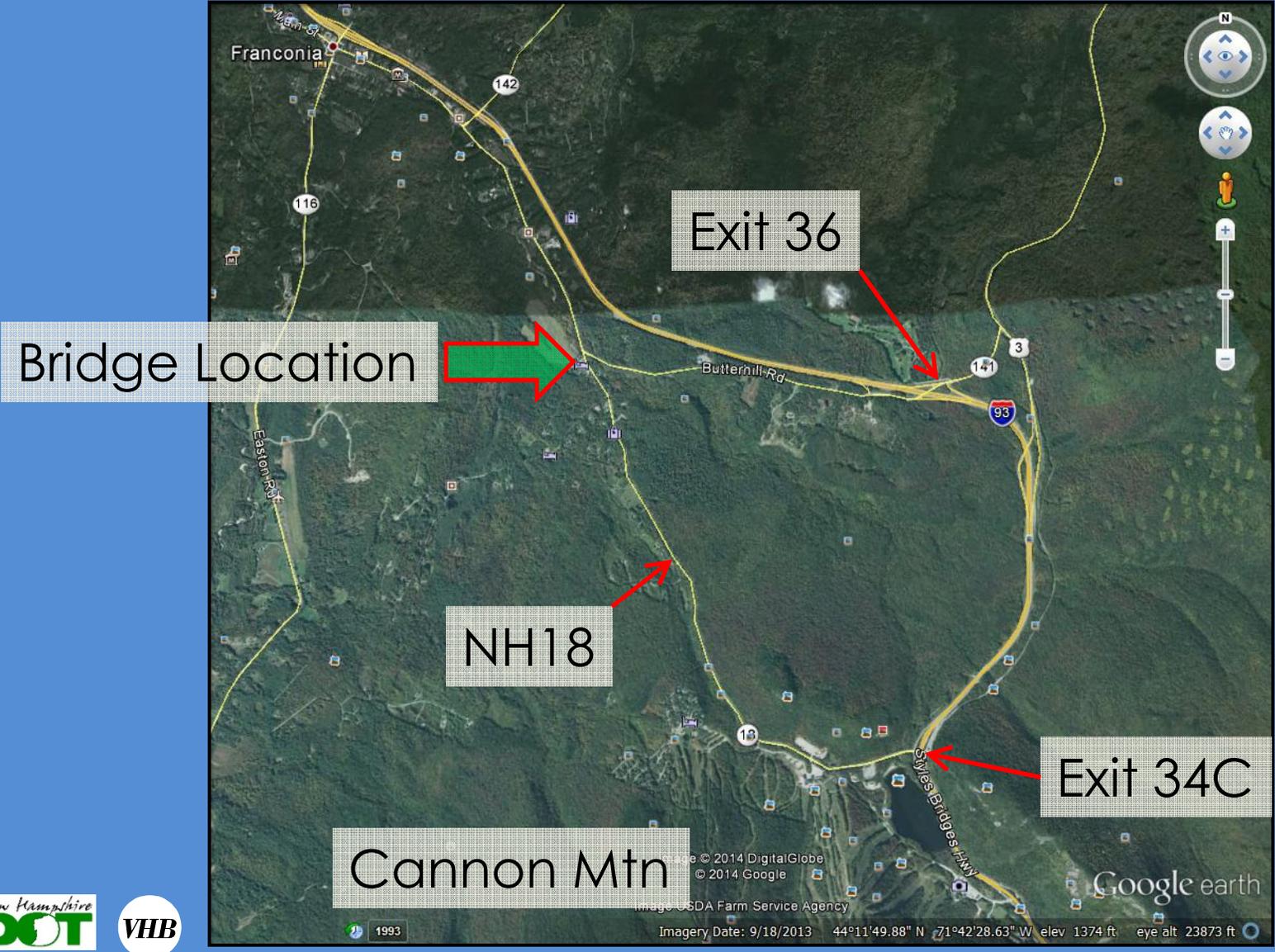


Franconia 24497 Lafayette Brook Bridge Public Informational Meeting



NH 18 over Lafayette Brook
August 14, 2014

Project Location



Project Location



Site Photos



Looking South from
Intersection with
NH 141 (Butter Hill Road)



Downstream Elevation

Site Photos



Upstream Elevation

Site Photos

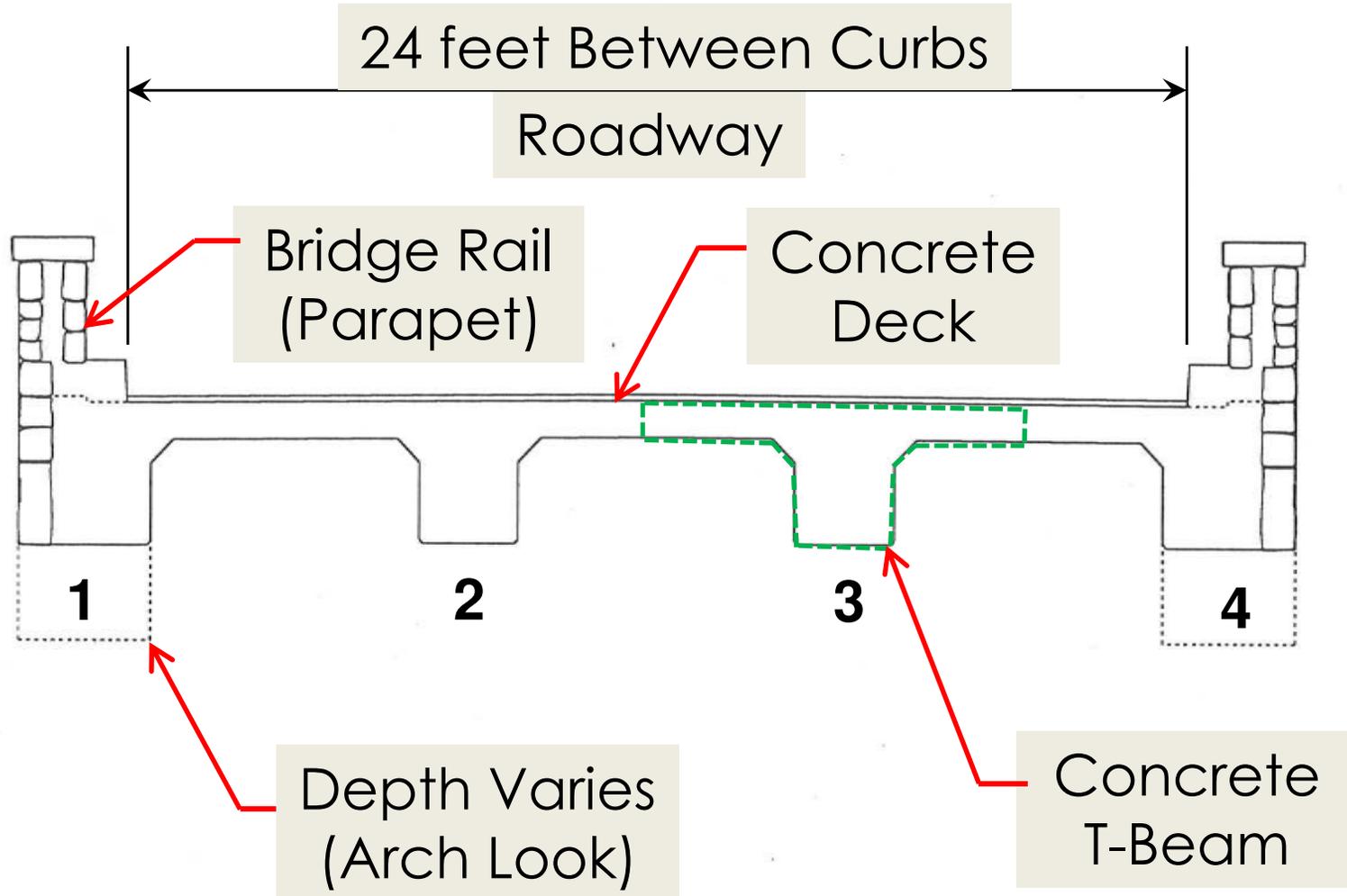


Upstream Looking North
Butter Hill Road in Background at Right

About the Bridge

- Concrete T-Beam Bridge Built in 1932
- Eligible for Historic Registry
- 52 foot Single Span over Lafayette Brook
- Roadway Width is 24 feet Between Curbs
- Stone Facing on Exterior Surfaces and Rail
- Bridge is on State's Red List (since 2010)
- 2014 Bridge Priority Number #78
- Carries Approximately 640 Vehicles per Day

Bridge Components



Section - Superstructure

Bridge Components

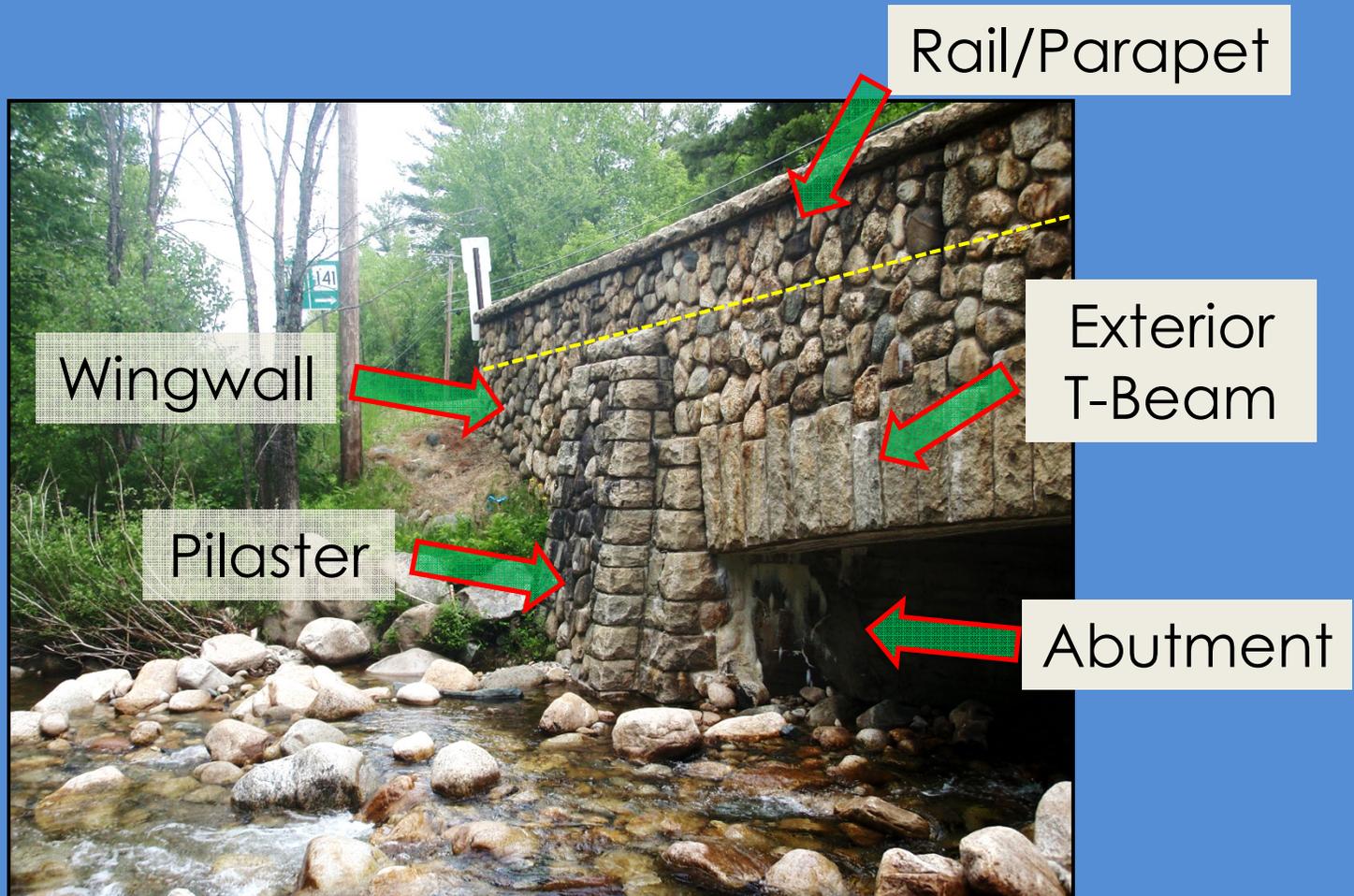


Bridge Components



Underside Looking North
Exterior T-Beams Depth Varies (Arch Look)

Bridge Components



Inspection Photos



NE Bridge Rail
Collision Damage Repair



East Curb – Spalled Concrete
Exposed Reinforcing Steel

Inspection Photos



Underside of Deck
Exposed Reinforcing Steel



Upstream Exterior T-Beam
Cracks and Leaking

Inspection Photos



Downstream Exterior T-Beam
Spalling and Leaking

Inspection Photos

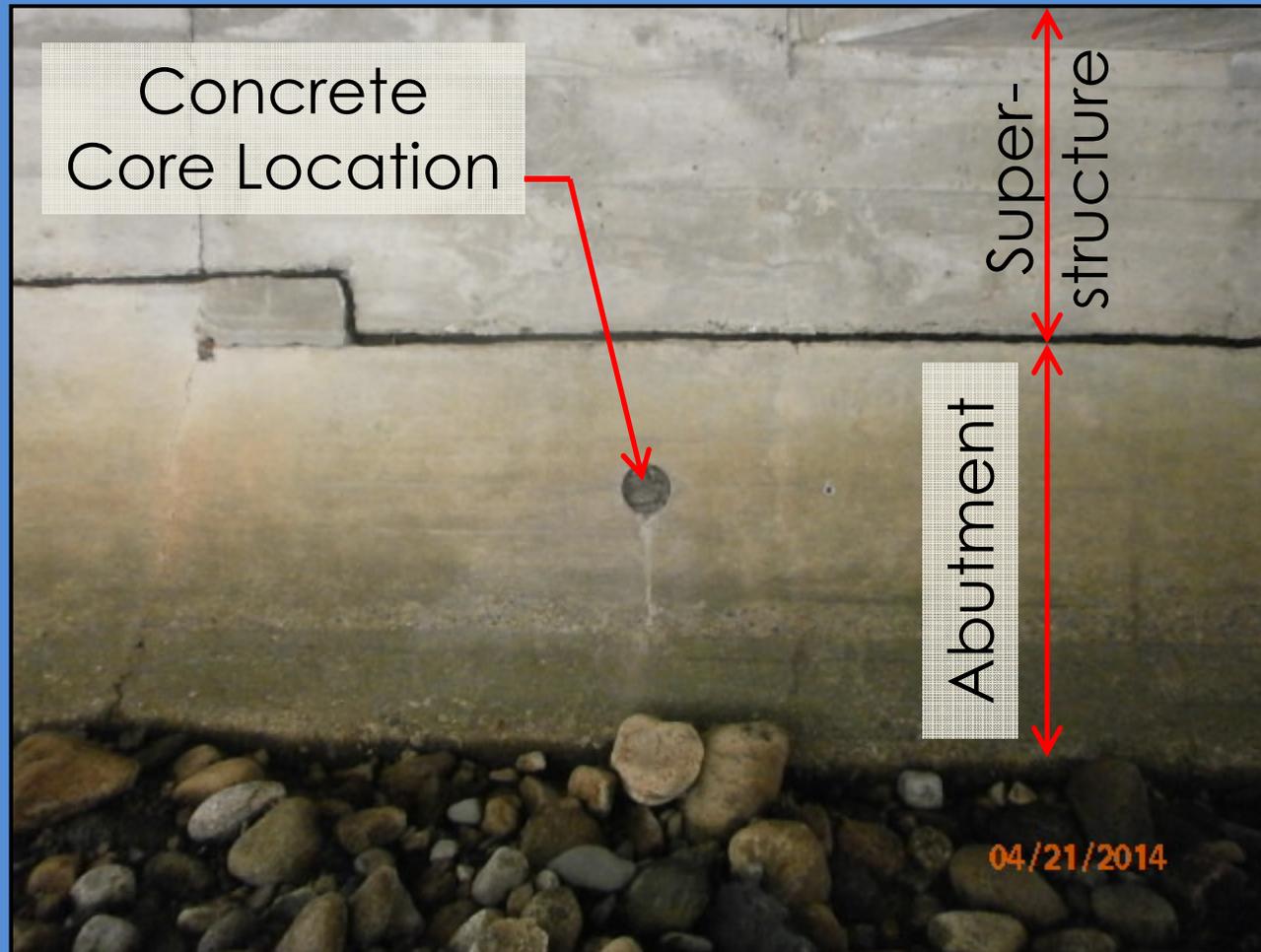


Debris at Exterior Beam
Downstream



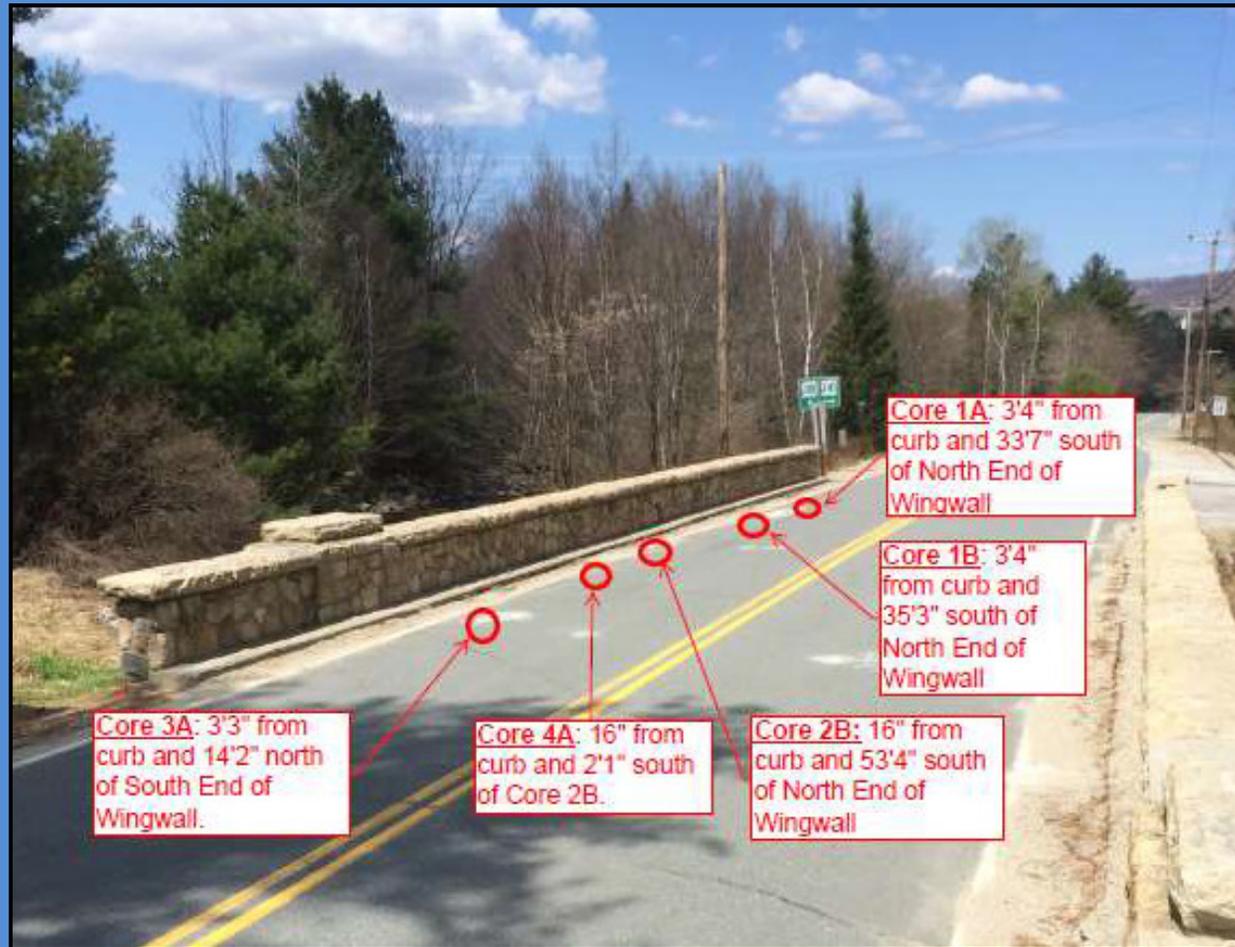
Cracks in Stone Facing
Upstream

Inspection Photos



South Abutment – Good Condition

Inspection - Concrete Testing



To Better Evaluate Condition of Bridge
Concrete Cores Taken - April 2014

Inspection - Concrete Testing



Concrete Cores - Taken April 2014
Poor Quality Concrete



Intact Core

Inspection Findings - Summary

Based on Visual Inspection and Concrete Testing (Cores) We Conclude That:

- Bridge Superstructure is in Poor Condition, Especially Exterior T-Beams, and Must Be Replaced
- Abutments and Wingwalls are in Good Condition and Could Be Rehabilitated

Considerations - Bridge Width and Rail



24 foot Wide Roadway – Between Curbs
Substandard Bridge Rail, No Approach Rail

Considerations - Intersection Sight Lines



Looking South from Intersection
with NH 141 (Butter Hill Road)

Traffic Control Alternatives

- Maintain a Single Lane of Alternating One-Way Traffic (with Temporary Signals)
- Close Bridge and Detour Traffic

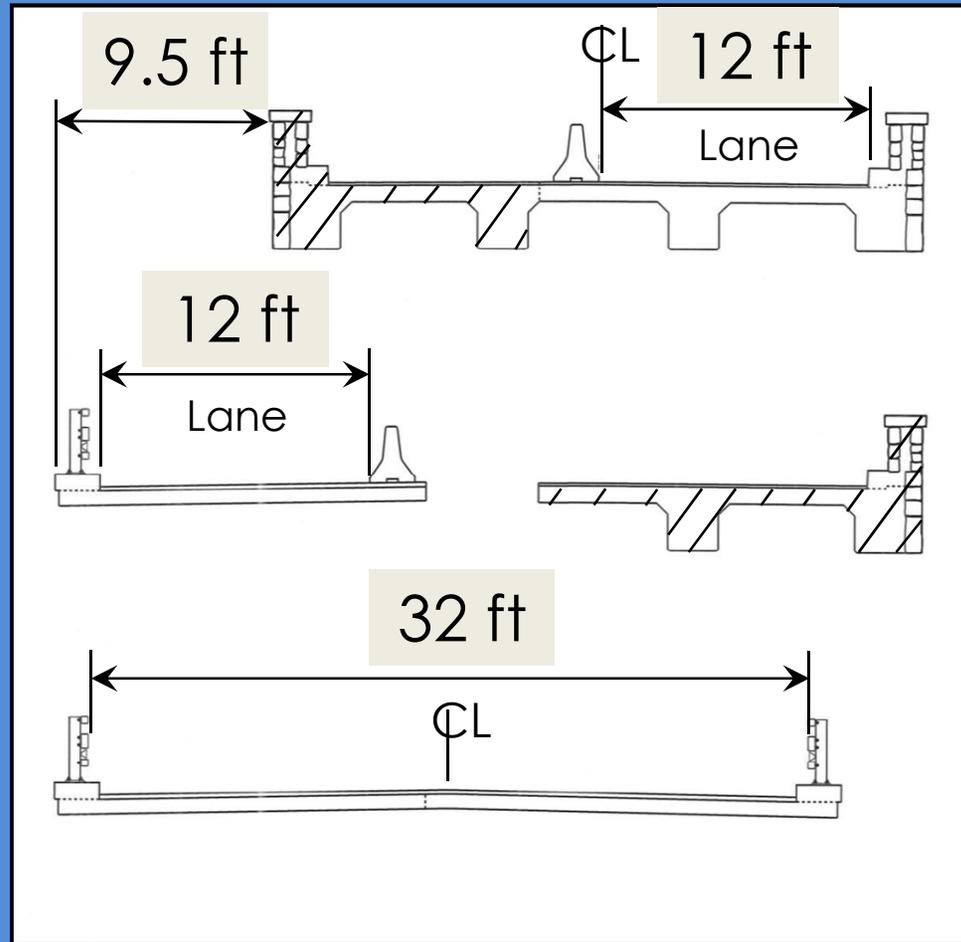
Traffic Control Alternatives

Single Lane of Alternating One-Way Traffic:

- Existing Width is Too Narrow to Maintain Minimum Lane Widths Within the Existing Bridge Footprint
- Requires a Shift in the Roadway Alignment and May Involve Right-of-Way Impacts (Right-of-Way Impacts Can Delay Schedule 2 Years)
- Estimated to Increase Construction Costs 25% Compared to the Closed Option (Not Including Right-of-Way)
- Two Construction Seasons to Construct
- **Not Recommended**

Traffic Control Alternatives

Single Lane of Alternating One-Way Traffic:



Requires 6.5 foot Shift in Roadway Centerline
May Result in ROW Impacts to Properties

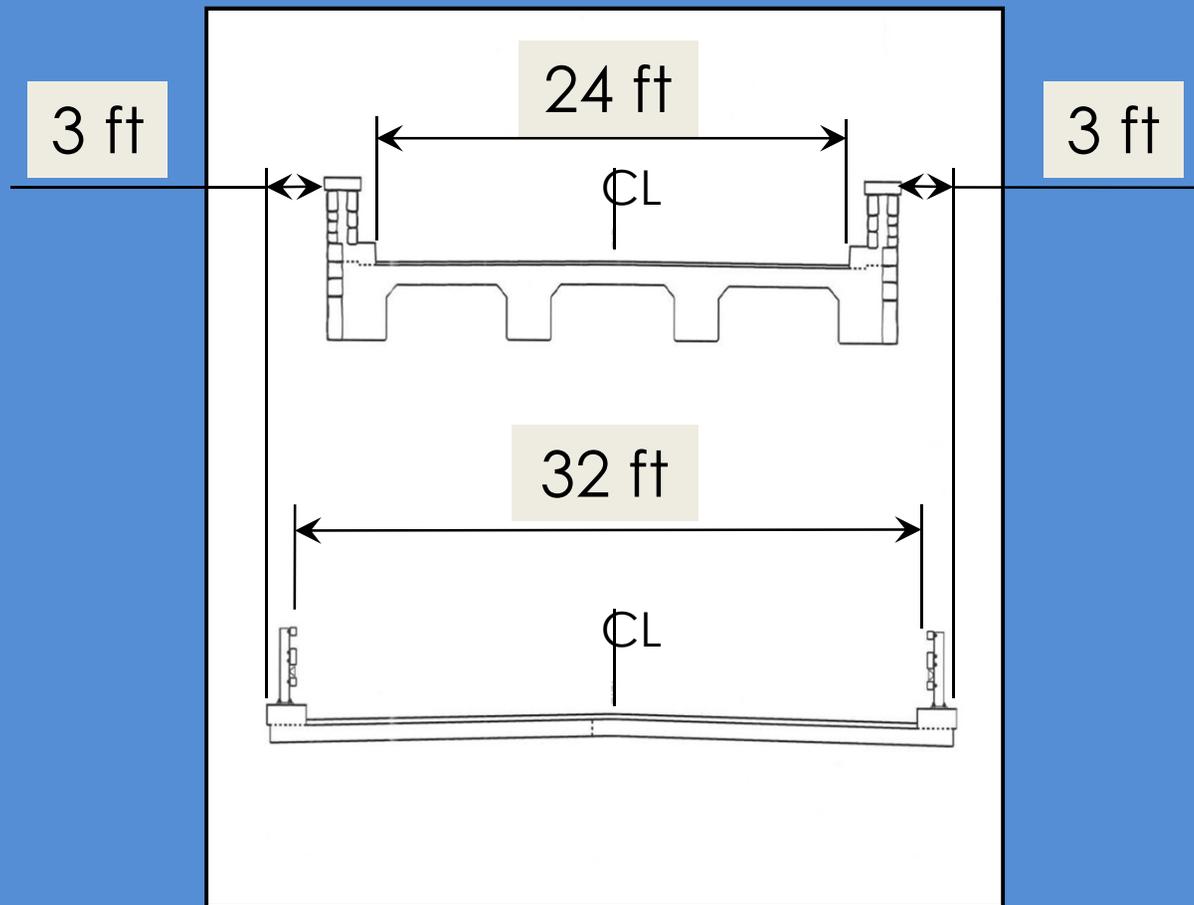
Traffic Control Alternatives

Closed Bridge During Construction:

- Requires Coordination with Emergency Response Providers
- Requires Coordination with School(s) for Bus Route Concerns
- One Construction Season
- Some Alternatives May Allow for Closure to Begin After School Year Ends
- **Recommended**

Traffic Control Alternatives

Closed Bridge During Construction:



No Change in Roadway Centerline

Signed Detour



Bridge Location

3 Miles

3.5 Miles

Approximately 6.5 miles (total)

Alternatives for Addressing the Deficient Bridge

Rehabilitation Involving Superstructure Replacement:

- Maintain (or Improve) Current Hydraulic Opening
- Utilize Precast Concrete Superstructure - Constant Depth
- Use Crash Tested Bridge and Approach Rail (Typically 3-bar Steel)
- Rehabilitate Abutments and Wingwalls
- Bridge Will be Closed During Construction (One Season)

Alternatives for Addressing the Deficient Bridge

Complete Bridge Replacement - Entire Structure, Including Abutments & Wingwalls:

- Consider Wider Bridge with 5-foot Shoulders
- Consider Improvements to Intersection Alignment with NH Route 141 (Butter Hill Road)
- May Involve Right-of-Way Impacts
- Longer Design and Permitting Process
- Construction Takes At Least One Full Construction Season
- Bridge Closure Recommended for this Option

Next Steps

- Present Findings to Cultural and Natural Resource Agencies to Get Their Input and Comments
- Develop and Evaluate Bridge Alternatives
- 2nd Public Informational Meeting (spring 2015) to Present Findings of Alternative Analysis and to Present Preferred Alternative
- Complete NEPA Process (National Environmental Policy Act) for Environmental Permitting
- Develop Preliminary Plans
- Develop Contract Plans and Documents

Cultural Resources

- Project must follow Section 106 of the National Historic Preservation Act
- Section 106 requires consideration of cultural resources, including historic buildings, structures, and archaeological deposits
- The NH Division of Historical Resources (NHDHR) acts as the State Historic Preservation Office (SHPO)
- For this project, the Federal Highway Administration (FHWA) will be the Lead Federal Agency

Cultural Resources

Architectural Historian: Reviews the project area to identify potentially historic buildings or structures

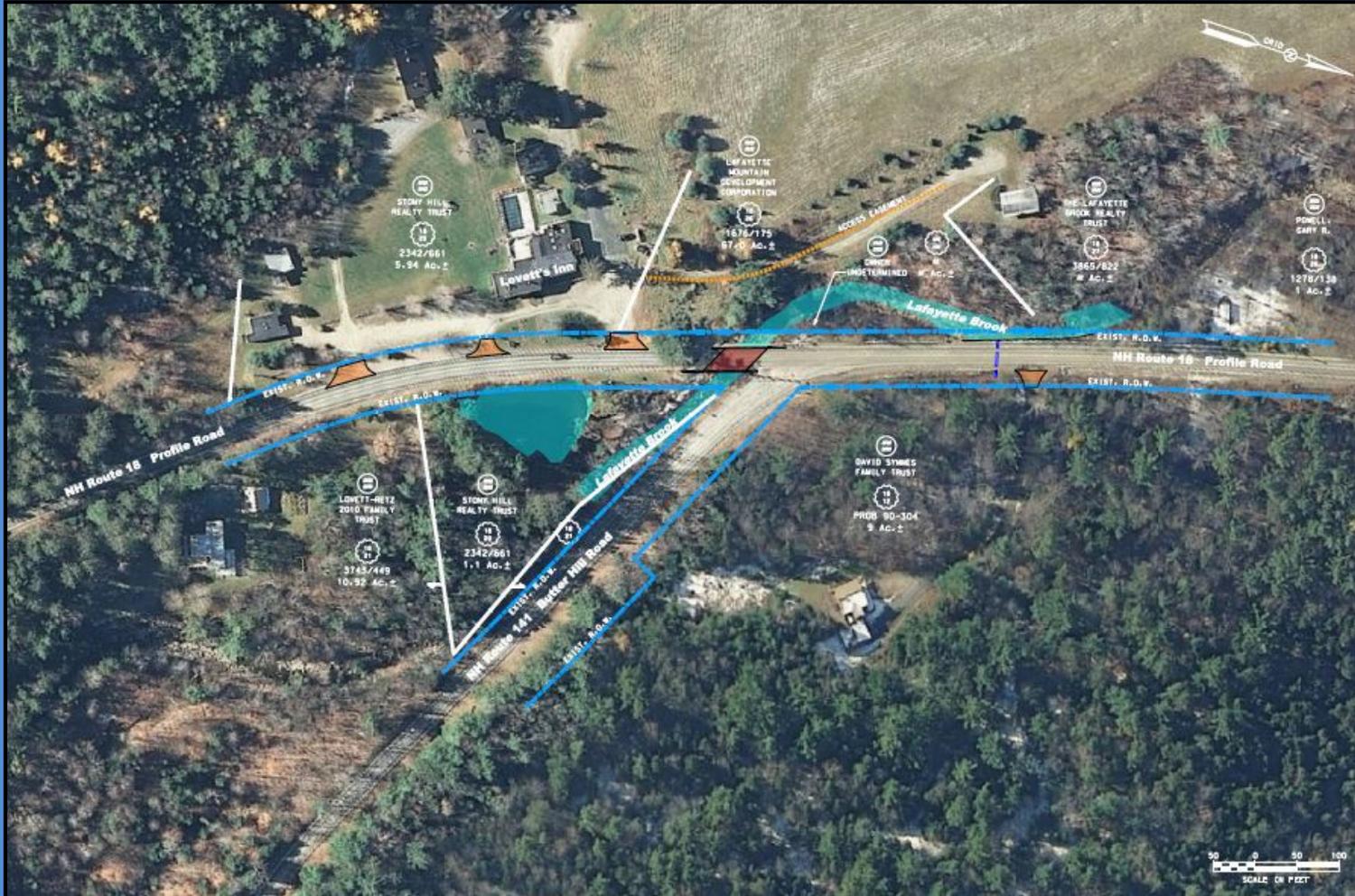
- Known Historic Property – Lovett's Inn (Listed on the National Register)
- Bridge – May be historic, under further study (eligible for listing on the National Register)

Archaeologist: NHDHR has indicated that there are no archaeological concerns within the anticipated project area

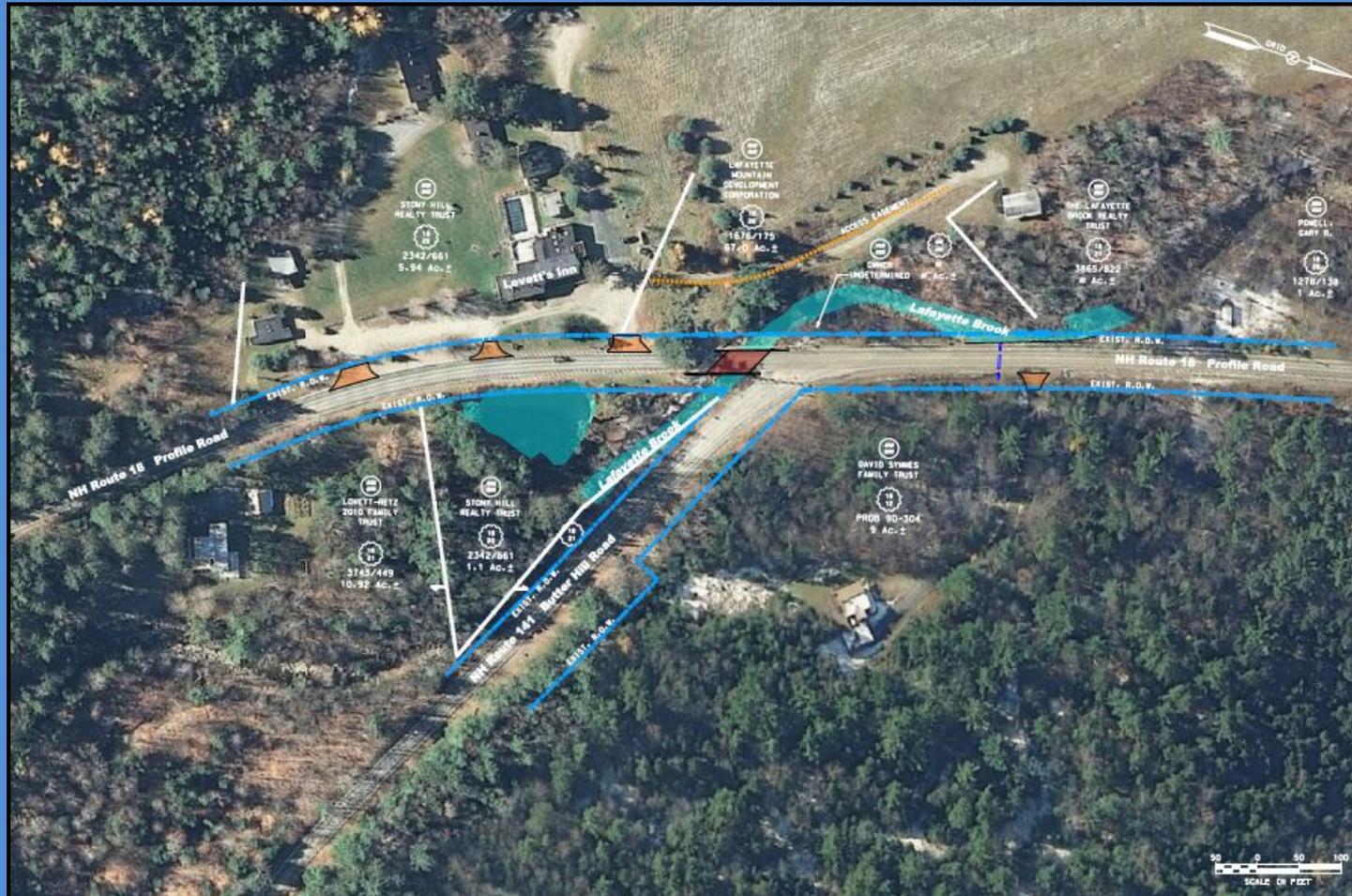
Cultural Resources

- Information reported to NHDOT and NHDHR for technical review and consultation, including a *Determination of Effect*
- Possible *mitigation* if the project is found to have an *Adverse Effect*
- Interested persons or organizations may request “*Consulting Party*” status from FHWA
Contact Jamie Sikora, 603-401-4870 or jamie.sikora@fhwa.dot.gov

Natural Resources



Abutters and Right-of-Way



Next Steps and Schedule

- Contract Plans Completed Fall 2017
- Funding in Fiscal Year 2022 (current Ten-Year Plan)
- Construction Starts in 2022
- Estimated Construction Cost \$2.5 Million Based on Rehabilitation and Closed Bridge During Construction (Funding is State & Federal - No Town Funding)
- Could Construct in 2018 if Funding Becomes Available

Your Input is Needed

- Emergency Response Routes
- Mutual Aid from/to Adjacent Towns
- School Bus Routes
- Historic (Lovett's Inn) Concerns
- Past Flooding Concerns with Lafayette Brook
- Intersection Site Distance Concerns
- Other Concerns

Concerns, Comments, and Questions



Photo courtesy of Charles Lovett