



Lyme-Thetford 14460

Bridge Rehabilitation

East Thetford Road over Connecticut River

Public Information Meeting

November 28, 2022

Project Team Member Attendees

New Hampshire Department of Transportation Staff

Jennifer Reczek, P.E., Bridge Consultant Section Chief and
Project Manager

Jon Evans, Chief Environmental Manager

Jeff Potter, P.E., Contract Administrator

Vermont Agency of Transportation Staff

Gary Laroche, P.E., Project Manager

Presentation Objectives

To Explain:

1. How projects are initiated/identified
2. Project Development Process
 - Specifically, this project's development
3. Understand
 - Why the bridge is being rehabilitated
 - What work is included
4. Construction Impacts
 - Traffic Control
 - Schedule



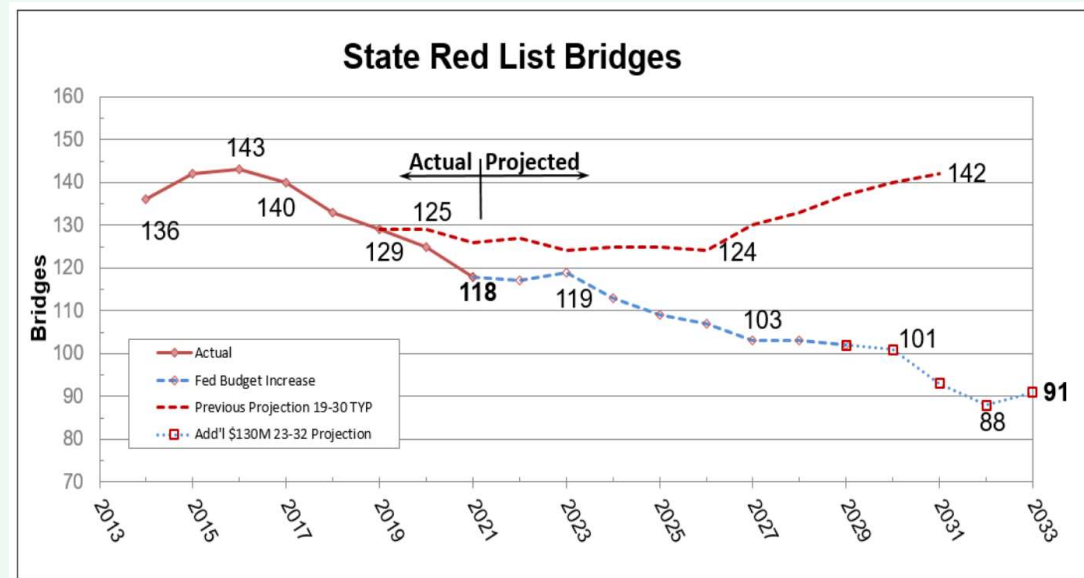
Project Planning

Planning Tools

- NH State Red List
 - Prioritizes Poor condition bridges – not unsafe
 - Bridges are inspected every 6-months
 - 99 bridges on the 2021 Red List
- State Bridge Rehab and Replace Priority List (formerly the Bridge Priority Ranking)
 - Includes non-poor condition bridges that require work to maximize their life
 - 200 bridges on the 2021 State Rehab & Replace List

Planning Tools

- Ten Year Transportation Improvement Plan
 - Updated every two years
 - Projects from the nine Regional Planning Commissions and NHDOT Programs
 - Estimated costs must stay within anticipated budget
 - Public Hearings held across the state
 - Approved through NH State Legislature



Planning Tools

- Ten Year Transportation Improvement Plan
 - Funding comes from multiple sources
 - Each source has requirements and restrictions for use
 - Some types have additional requirements, such as population restrictions

	Road and Bridge Mode											
	Highway Funded								Non-Highway Funded			
					SB367							
FY	FHWA	Major Projects GARVEE	Betterment	SAB	I-93 Debt	TIFIA Pledged Paving & Bridge	Other Matching Funds	Sub Total	Turnpike Improvement	Turnpike R&R	Roads and Bridge Total	

- Projects must fit both the funding type and any additional requirements

Project Background

- Introduced in 2003-2012 Ten Year Transportation Improvement Plan
 - Scoped as a bridge rehabilitation
 - Design funds first allocated in 2011
- Included in the 2006 Bridge Priority Ranking at #124 as a rehabilitation project
 - Currently ranked 2 of 200
- Added to NH State Red List in 2013
 - Currently ranked 2 of 99



Project Development

Existing Roadway

Roadway:

- Collector road
- Average Daily Traffic:
 - 2,100 vehicles per day (2021)
 - 2,200 vpd in 2016
- Width varies from 22-24 feet



New Hampshire roadway approach

Existing Bridge

Bridge:

- Built in 1937
- Parker truss
- Two – 230-foot spans
- 21 feet wide between curbs
- Down-posted to 15 tons due to condition of the floor system in 2014



Vermont roadway approach

Purpose and Need

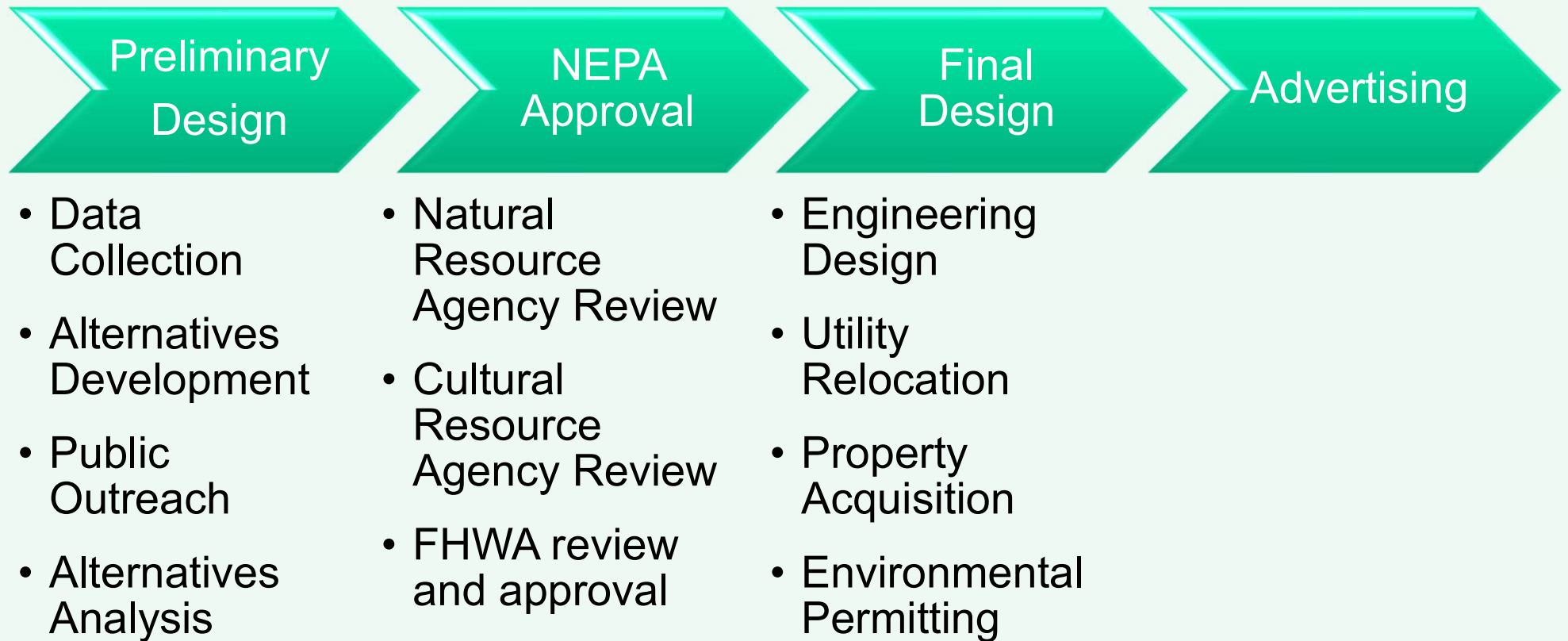
Purpose: Address structural deficiencies to allow the bridge to be removed from State Red List, restore its load carrying capacity, and maintain the river crossing over a 50-year design life

Need:

- Bridge is deteriorating
- Requires repair work to carry standard traffic loads

➤ Must do something – What?

Project Development Steps



Preliminary Design



Projects receiving Federal Highway Administration funding must be developed in accordance with National Environmental Policy Act of 1969

Environmental Considerations



National Environmental Policy Act of 1969 (NEPA)

Section 106 of
National Historic
Preservation Act
of 1966 (NHPA)

Section 4(f) of
US
Department of
Transportation
Act

Section
404 of
Clean
Water Act

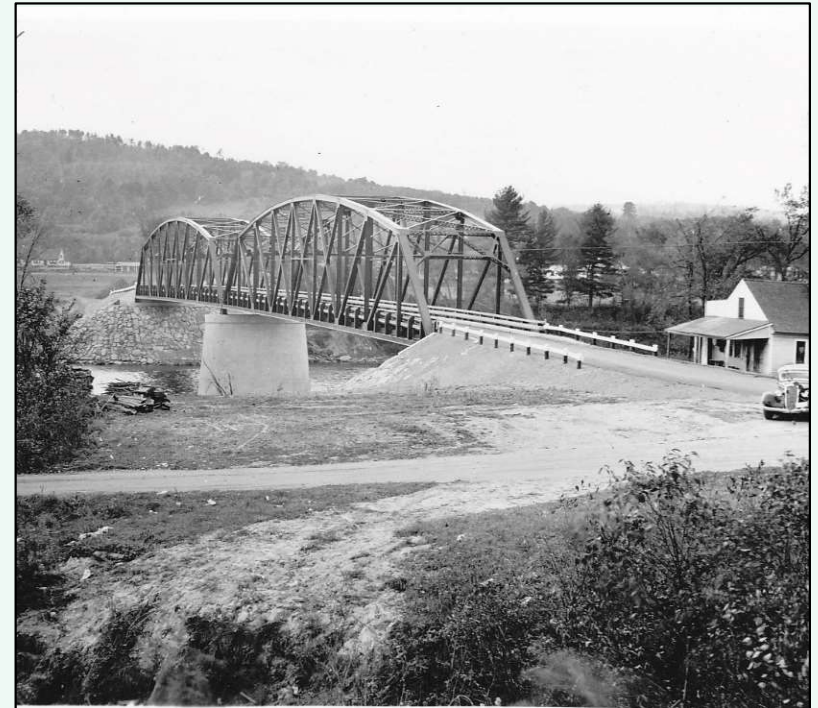
Section 7 of
Endangered
Species Act
(ESA)

NEPA Topics

- Natural Environment:
 - Wetlands and Surface Waters
 - Floodplains/Floodways
 - Water Quality
 - Wildlife and Fisheries
 - Threatened & Endangered species
 - Essential Fish Habitat
 - NH Designated River
 - Invasive Plants
- Socioeconomic:
 - Land Use
 - Environmental Justice
- Built Environment:
 - Air Quality
 - Noise
 - Hazardous/Contaminated Materials
 - Farmlands
 - Conservation Lands
 - Scenic Byways/Aesthetics
 - Transportation Patterns
 - Property Acquisitions
 - Utilities
 - Section 4(f) properties
 - Historic and Archeological Resources

Cultural Resources

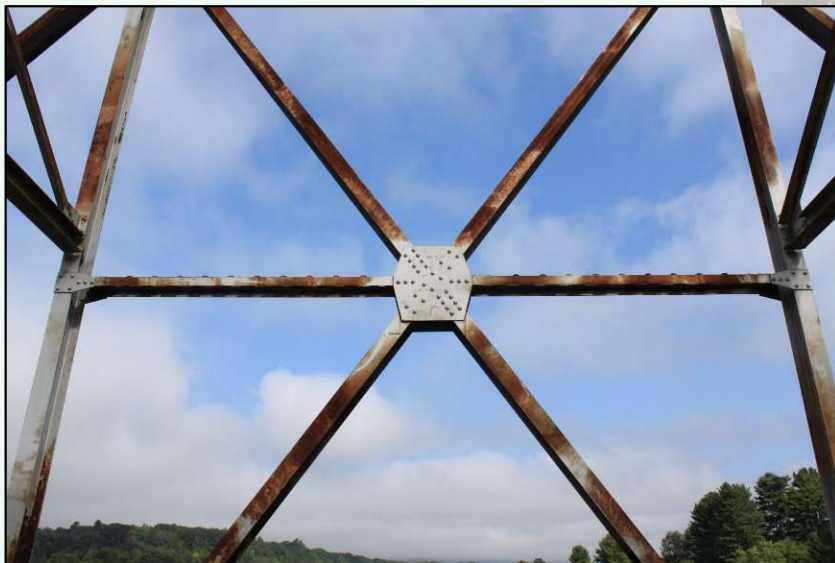
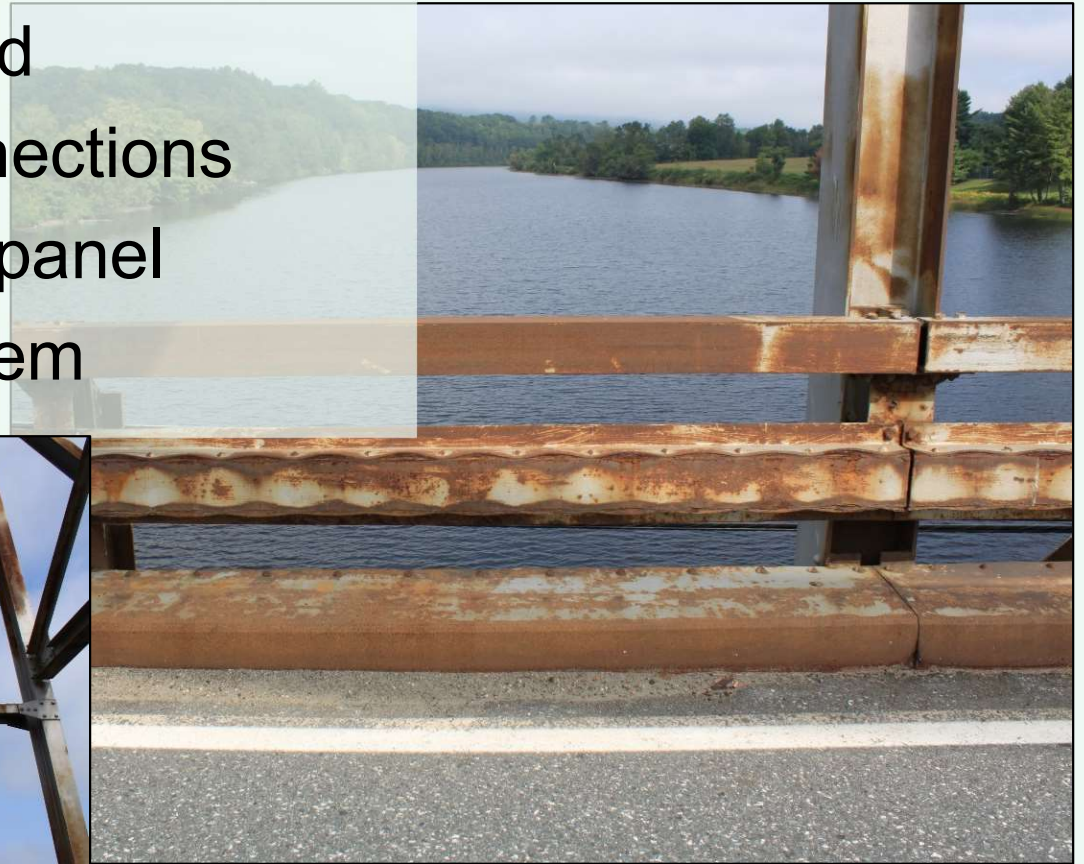
- Structures eligible for the National Register of Historic Places
 - Lyme-Thetford Bridge
 - Confirmed as eligible for the National Register in 2017
 - Bridge listed on Register in 2020 by Lyme Heritage Commission
 - Toll House
 - Smith and Webster House
- Archaeological sites identified within the project area
 - Adjacent to River Road, Lyme
 - Vaughan Farms property, Thetford



NH approach at time of construction

Cultural Resources

- Character Defining Features
 - Polygonal top chord
 - Plates/riveted connections
 - Diagonals in each panel
 - Steel rail/curb system



Cultural Resources

Eligible properties trigger need for compliance with Section 4(f) of the USDOT Act of 1966

- Historic Resources
- Recreational Facilities
- Wildlife and Waterfowl Refuges

Alternatives Must be selected that:

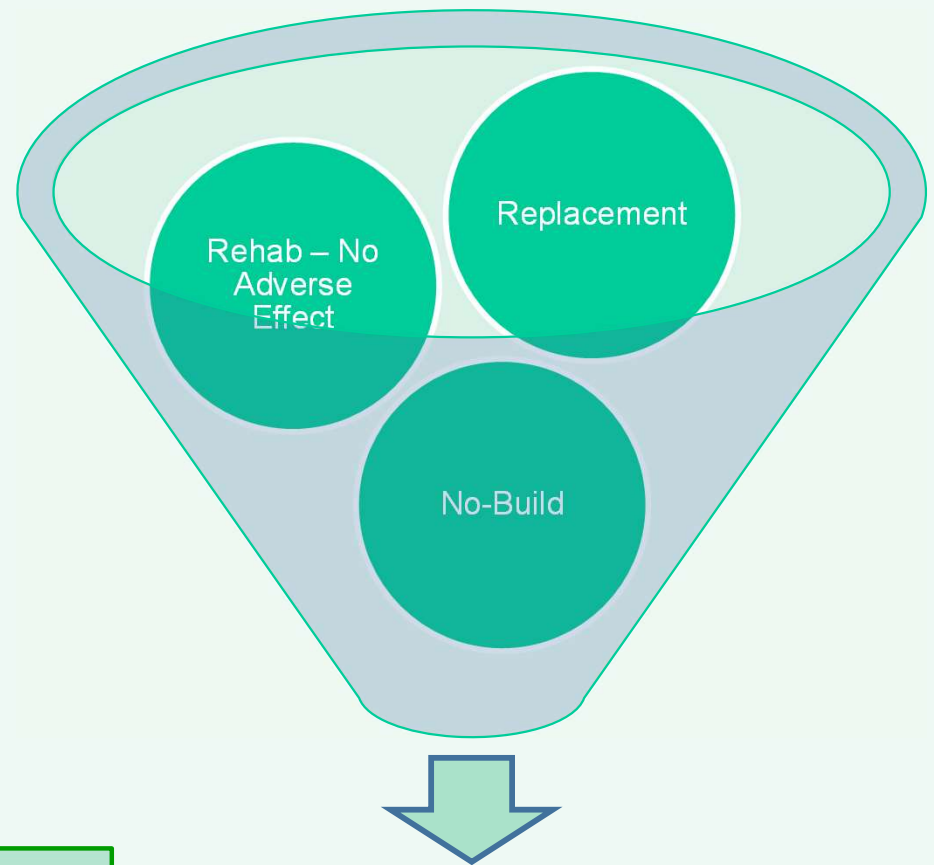
- 1st Avoid the use of Section 4(f) properties
 - Cannot avoid impact to resources and maintain the crossing
- 2nd Includes all possible planning to minimize harm to the Section 4(f) properties by selection of the alternative that results in the least overall harm
 - Rehabilitation option results in least overall harm

Evaluation of Alternatives

Key Considerations:

- Wetlands/Surface Water
- Section 4(f)
- Floodplains
- Utilities
- Residences
- Farmland/Business
- Cost

Required to rehabilitate as it
feasible to do so and causes
least harm



Rehabilitation

Public Outreach

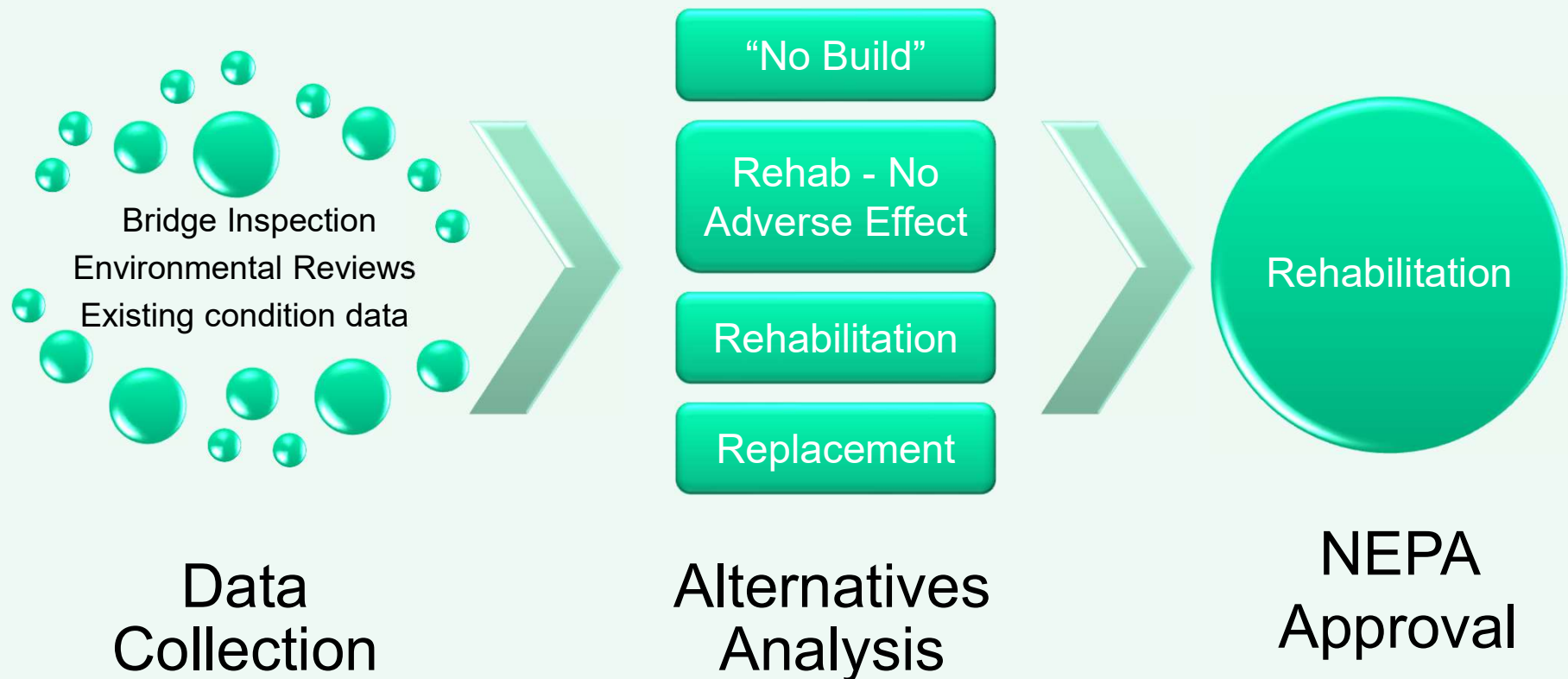
NEPA requires the opportunity for public comment

Two Public Meetings held in the communities:

- Public Information Meeting in Lyme, NH on July 23, 2014
 - Approximately 28+ attendees from both Towns
 - Review of alternatives under consideration
- Public Information Meeting in Thetford, VT on October 22, 2015
 - Approximately 8+ attendees
 - Presented the selected rehabilitation alternative

Letters sent to each Select Board with a project update on July 14, 2021

Preliminary Design



Rehabilitation is the Selected Alternative as required under Section 4(f)

FHWA confirmed NEPA and 4(f) Finding – January 2019

Final Design



Final
Design

- Final Design
 - Engineering Design
 - Utility Relocation
 - Property Acquisition
 - Construction Easement on Southeast corner
 - Environmental Permitting
 - New Hampshire and Vermont Wetlands Permits
 - New Hampshire Shoreland Permit
 - Vermont Flood Hazard Area/River Corridor Permit
 - ACOE NH and VT General Permits



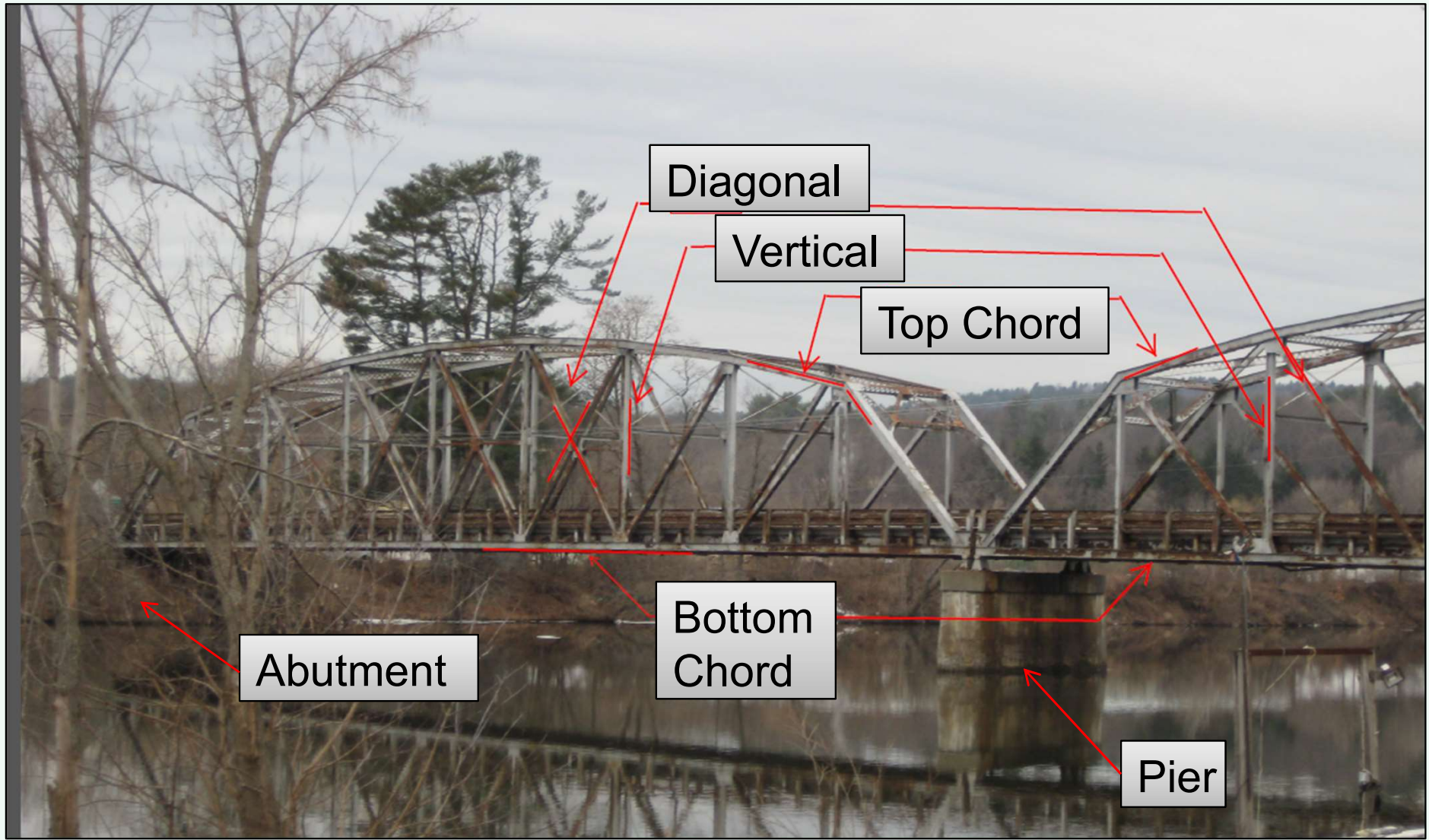
Advertising

- Advertising for Bid
 - Advertised September 2021 – No Bids
 - Re-Advertised May 2022
 - Total Project Cost = \$11 million



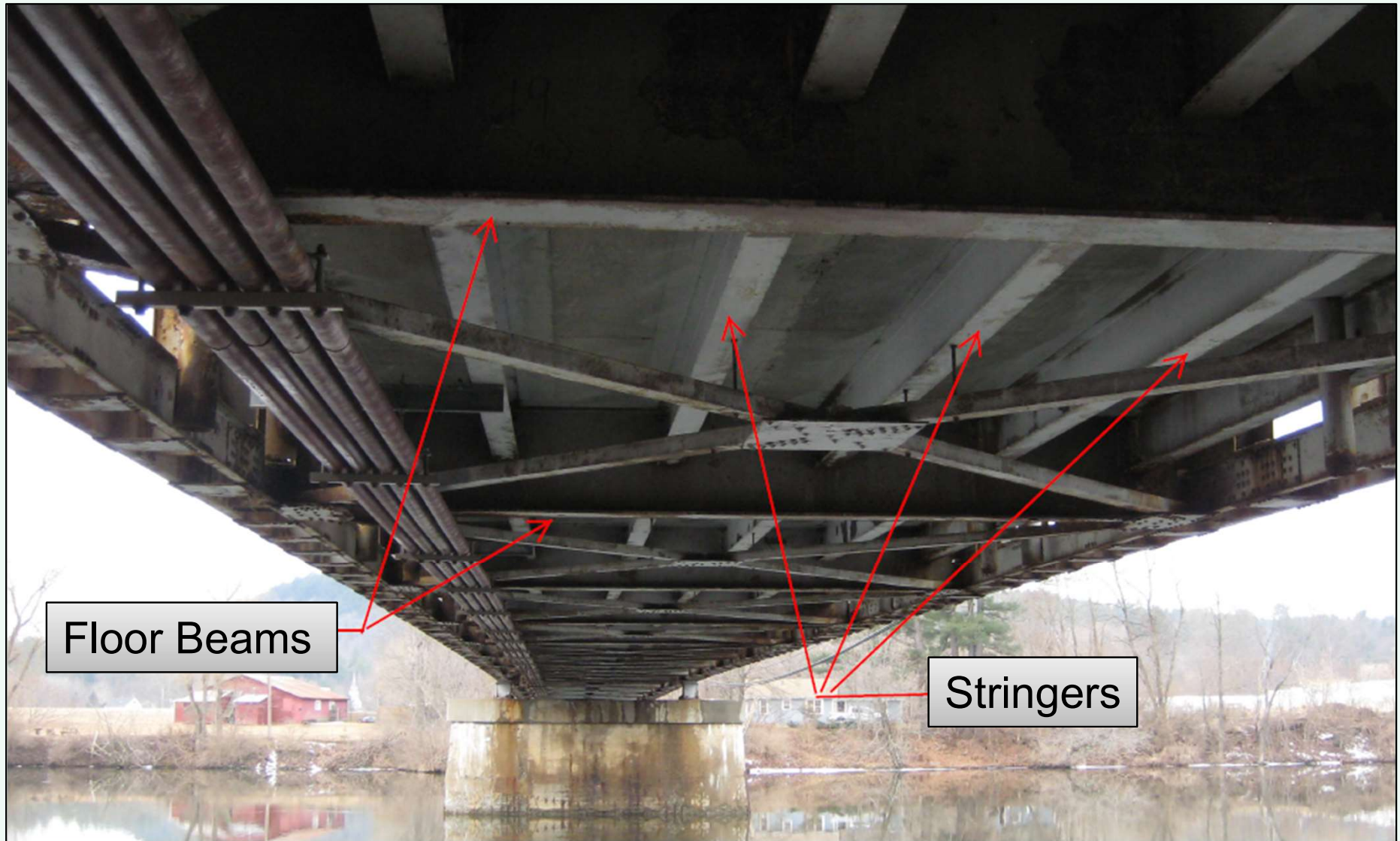
Rehabilitation Work

Truss Bridge Components



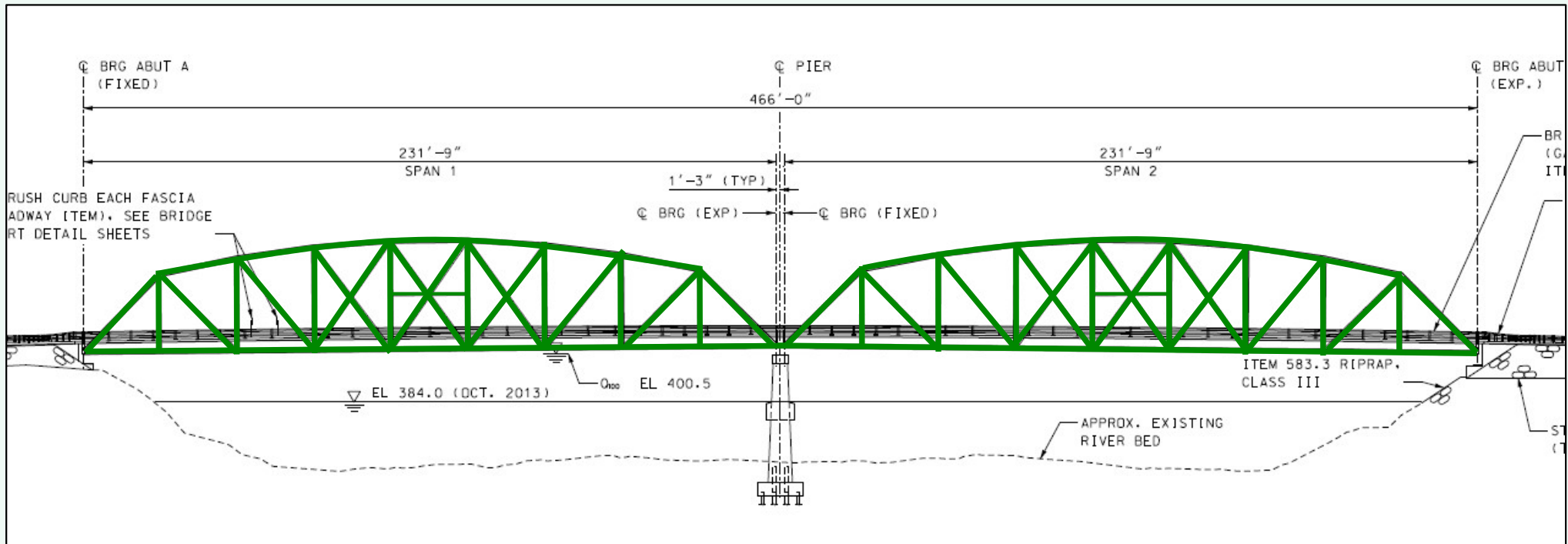
Elevation View of Bridge Trusses

Truss Bridge Components



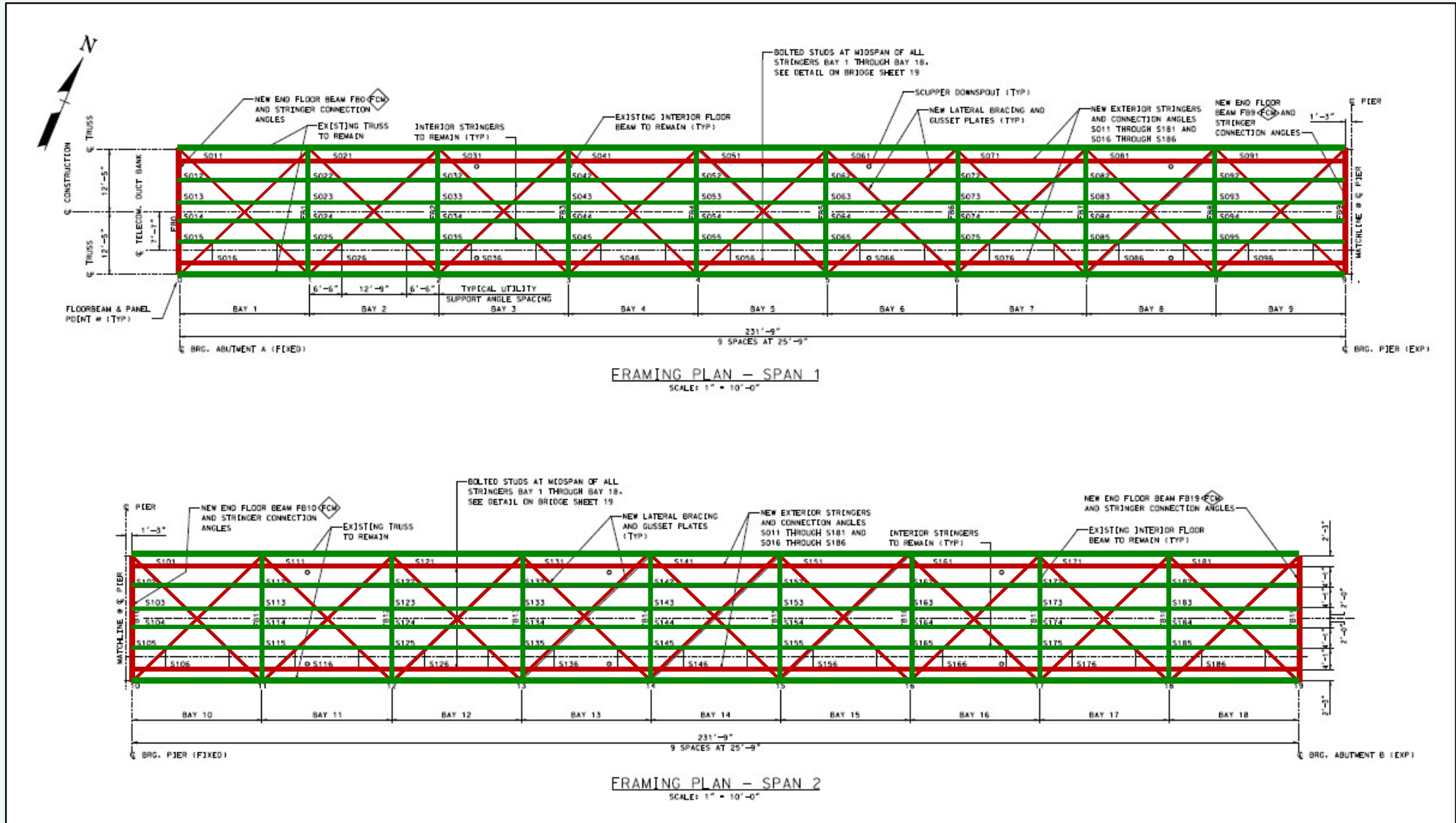
Floor System - View of Underside of Bridge Deck

Truss Framing



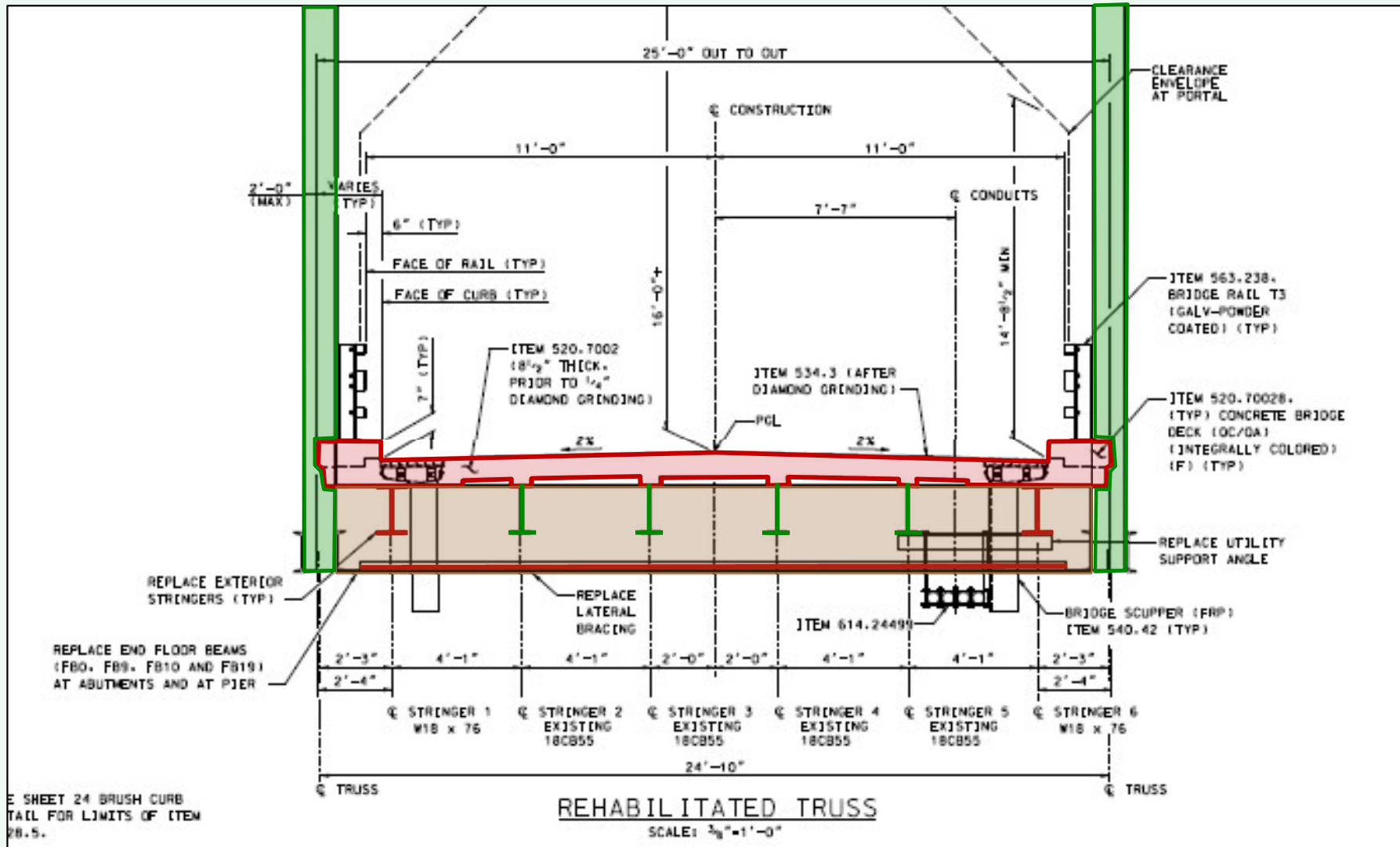
- Member to remain
- Member to be replaced

Deck Framing Work



— Member to remain
 — Member to be replaced

Deck Framing Work



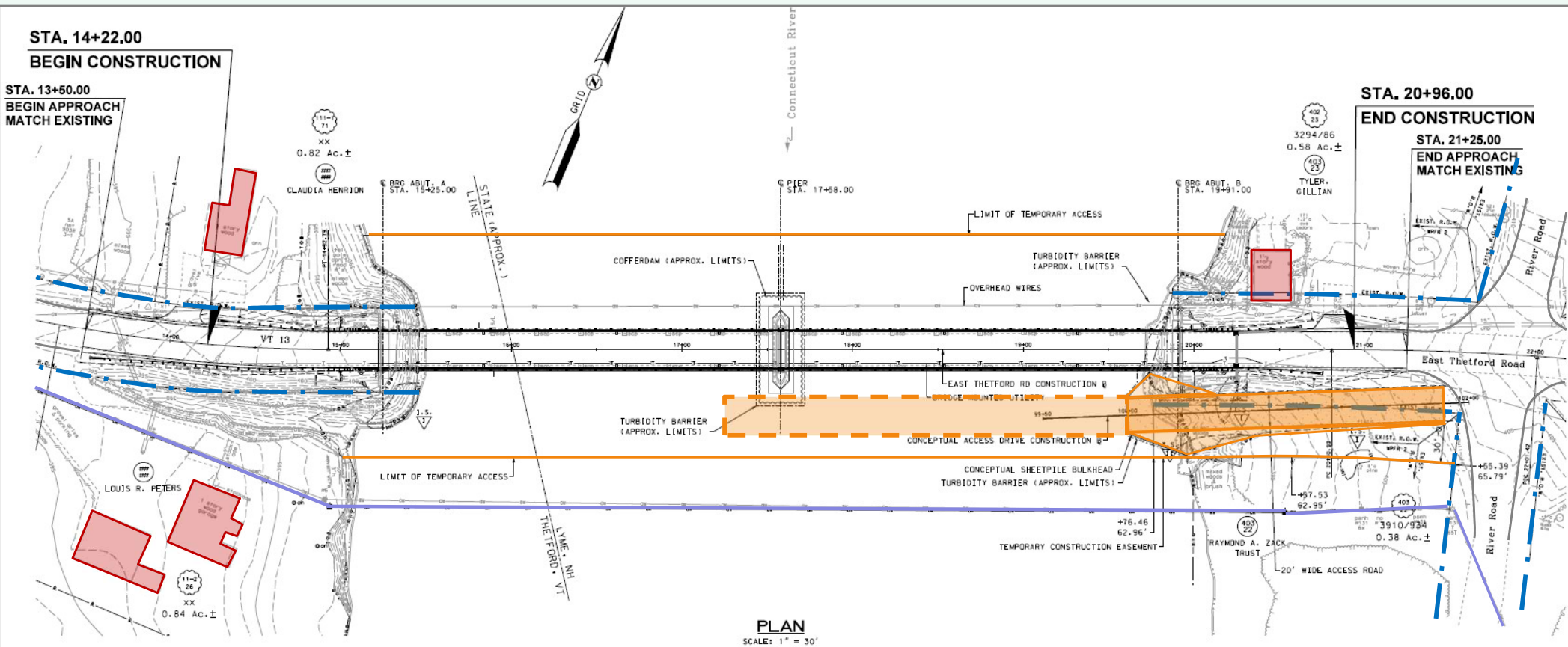
Rehabilitation Work

- Repair the abutments and pier
- Replace portions of the floor system framing
- Replace concrete bridge deck
- Replace the bridge railing and steel curb
- Clean and paint all steel truss components
- Includes limited approach roadway work as necessary to provide smooth transitions to the new bridge deck



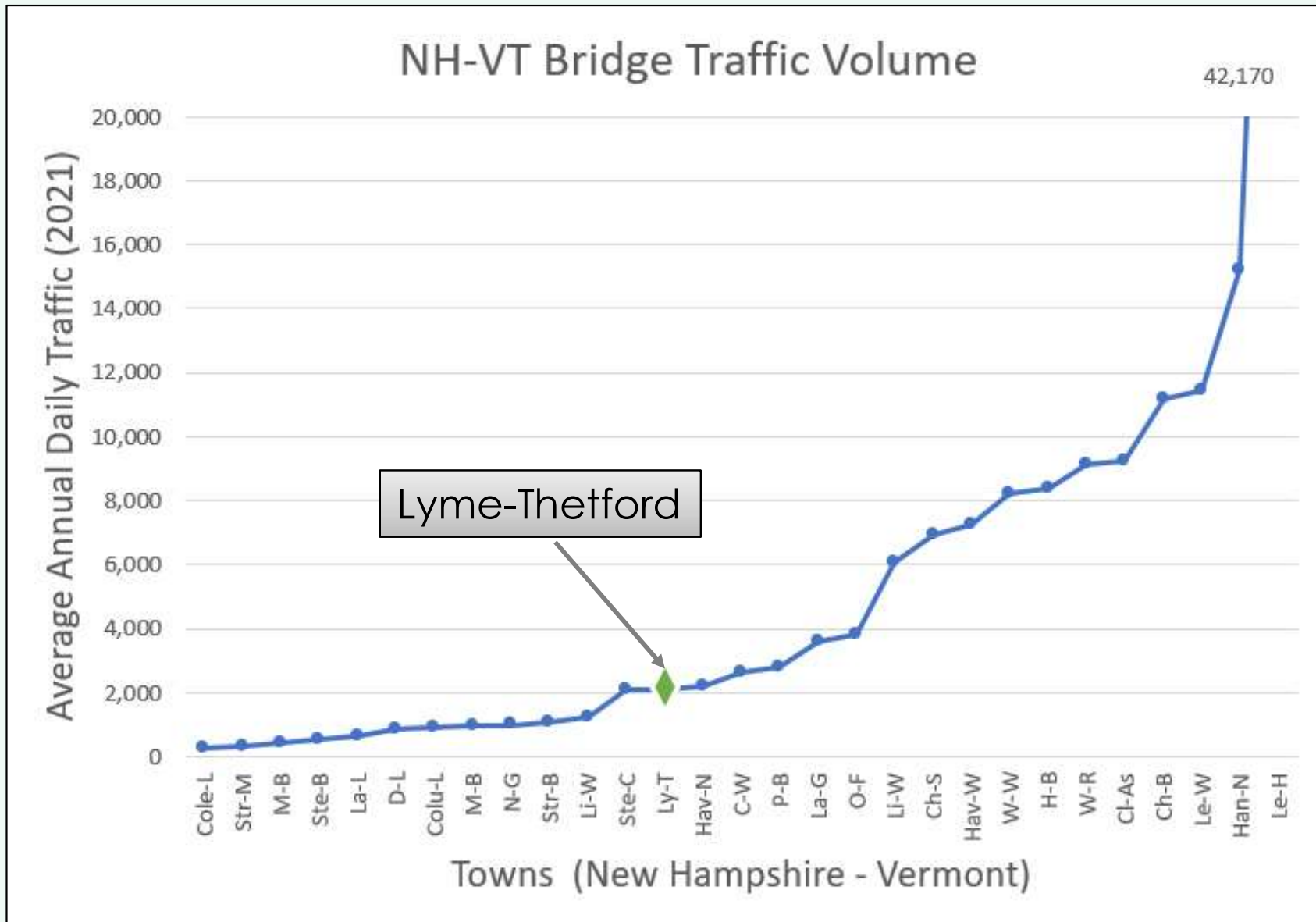
Traffic Control

Construction Access



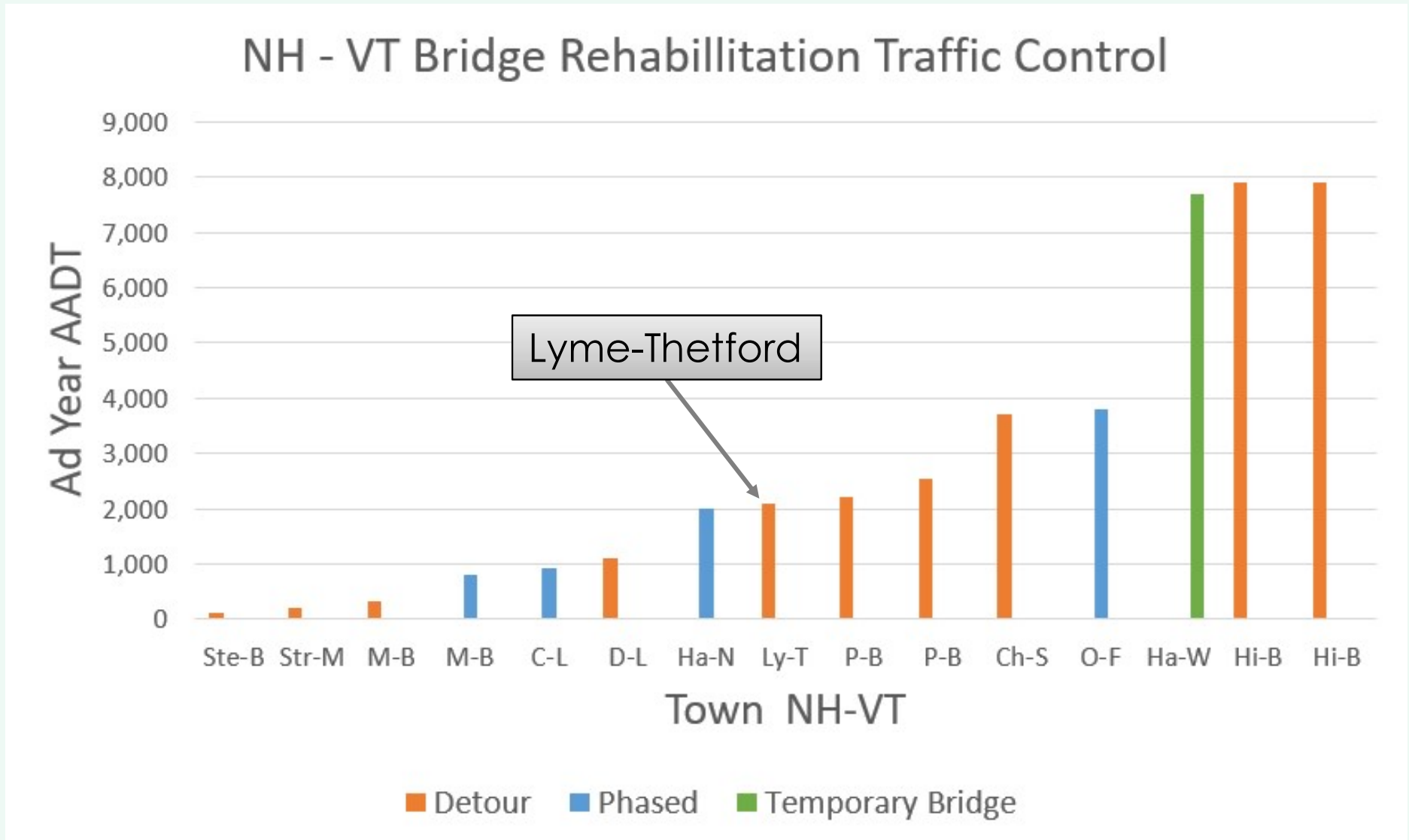
Lyme-Thetford 14460 – Construction Site Plan

Traffic Volumes - Connecticut River Bridges



Connecticut River Bridge Traffic Volumes

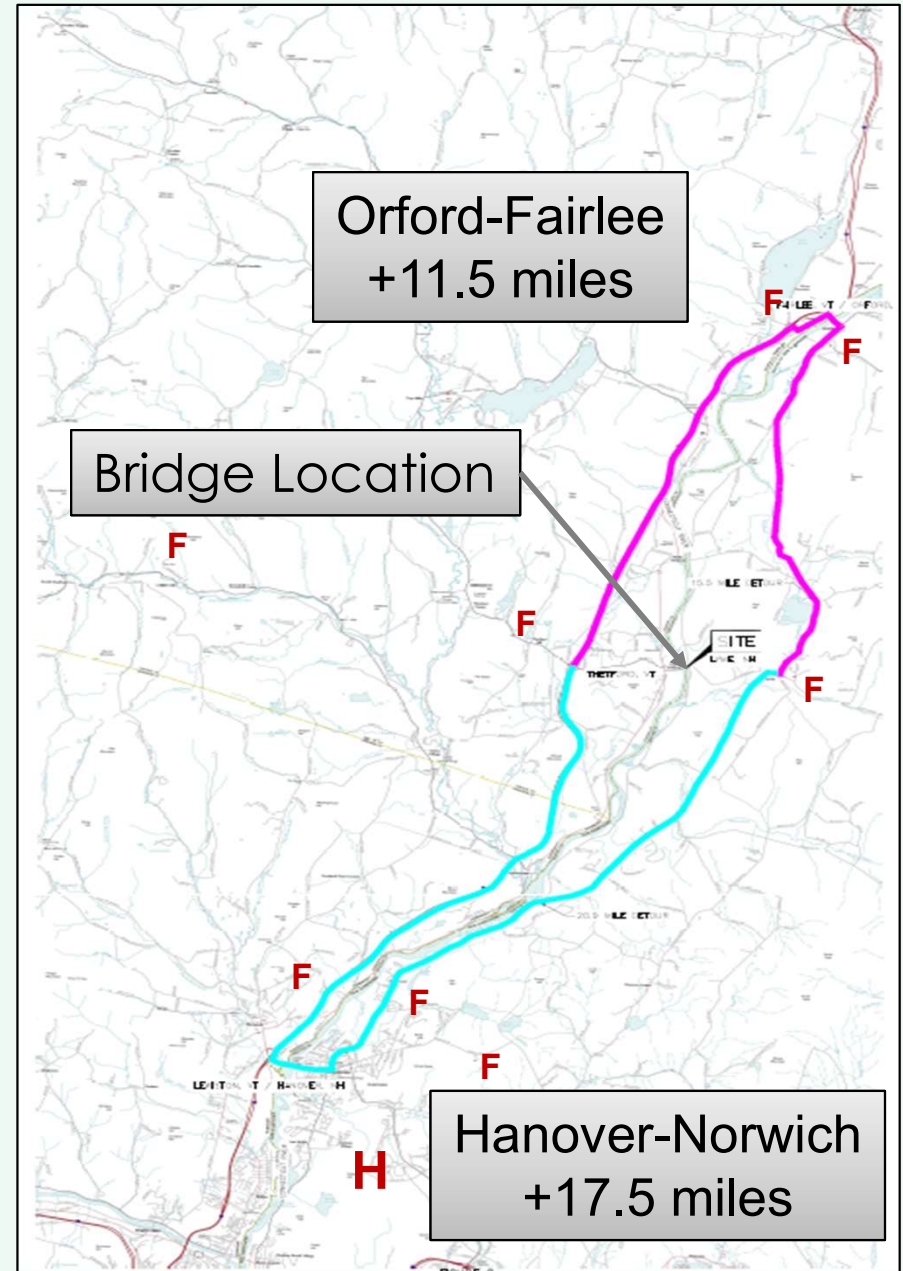
Past Traffic Control Methods



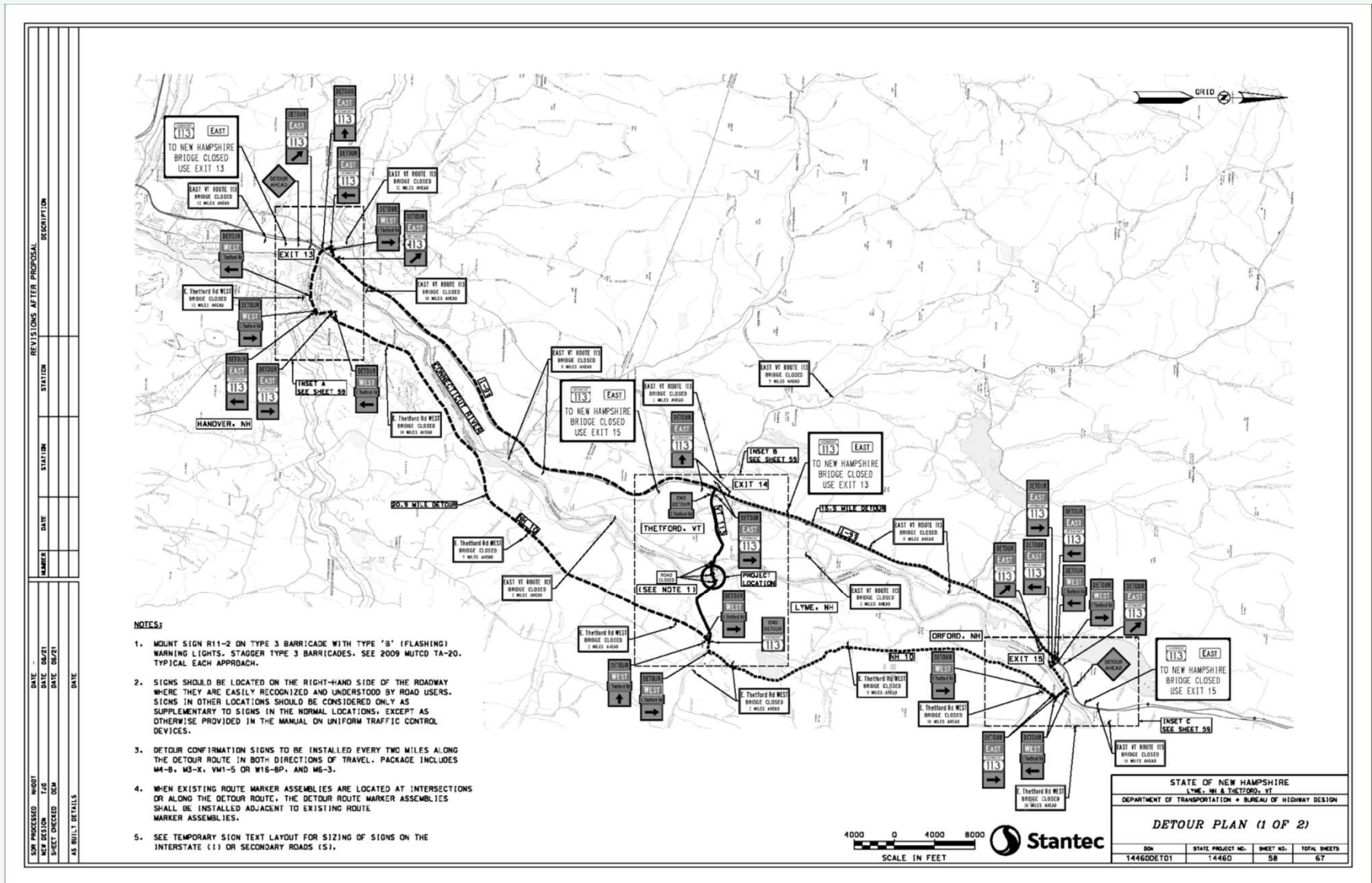
Connecticut River Bridge Rehabilitation projects from 1990 to present

Detour

- 4 miles between Town Centers across bridge
- Upper Valley Regional Emergency Services Association
 - Most fire trucks are over 15 tons – cannot cross now
- Bridge preservation project at Hanover-Norwich crossing in 2023
 - Bridge carries ~15,200 vpd



Detailed Detour Plan

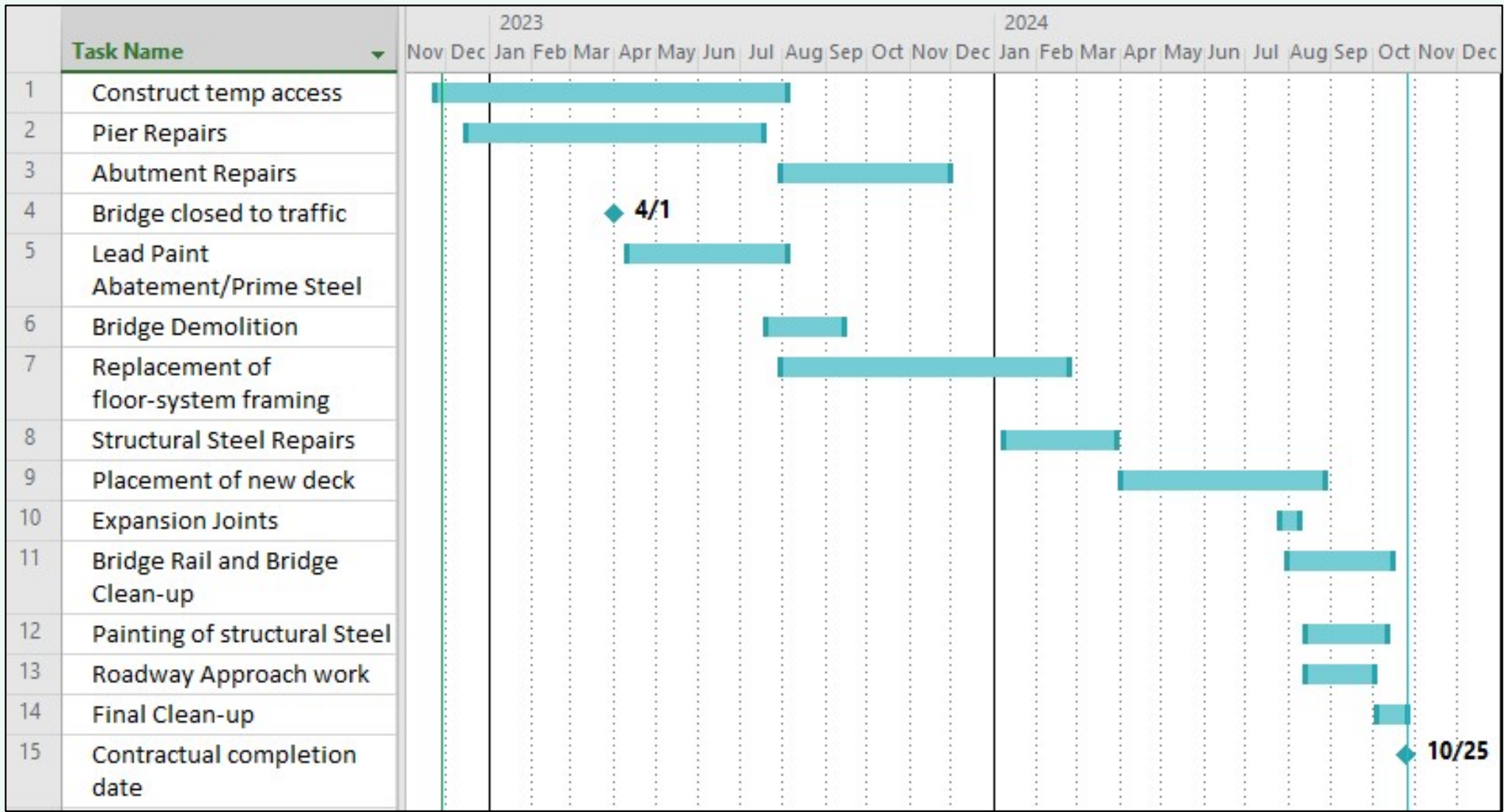


Lyme-Thetford 14460 – Detour Plan (1 of 2)

A low-angle, perspective view of a large steel truss bridge structure under construction. The image shows the intricate network of steel beams and girders forming the bridge's framework, receding into the distance. The sky is a pale, hazy blue. At the top of the image, there is a solid green horizontal bar with a slight curve on its right side. In the lower center, the text "Construction Schedule" is written in a bold, green, sans-serif font.

Construction Schedule

Construction Schedule



Lyme-Thetford 14460 – Initial Construction Schedule

A photograph of a steel truss bridge spanning a river. The bridge has two distinct spans supported by a central pier. The water is calm, reflecting the bridge and the surrounding trees. In the foreground, there is a grassy bank. The sky is overcast, and the trees are mostly bare, suggesting a late autumn or winter setting. A green decorative bar is at the top of the image.

Thank you!