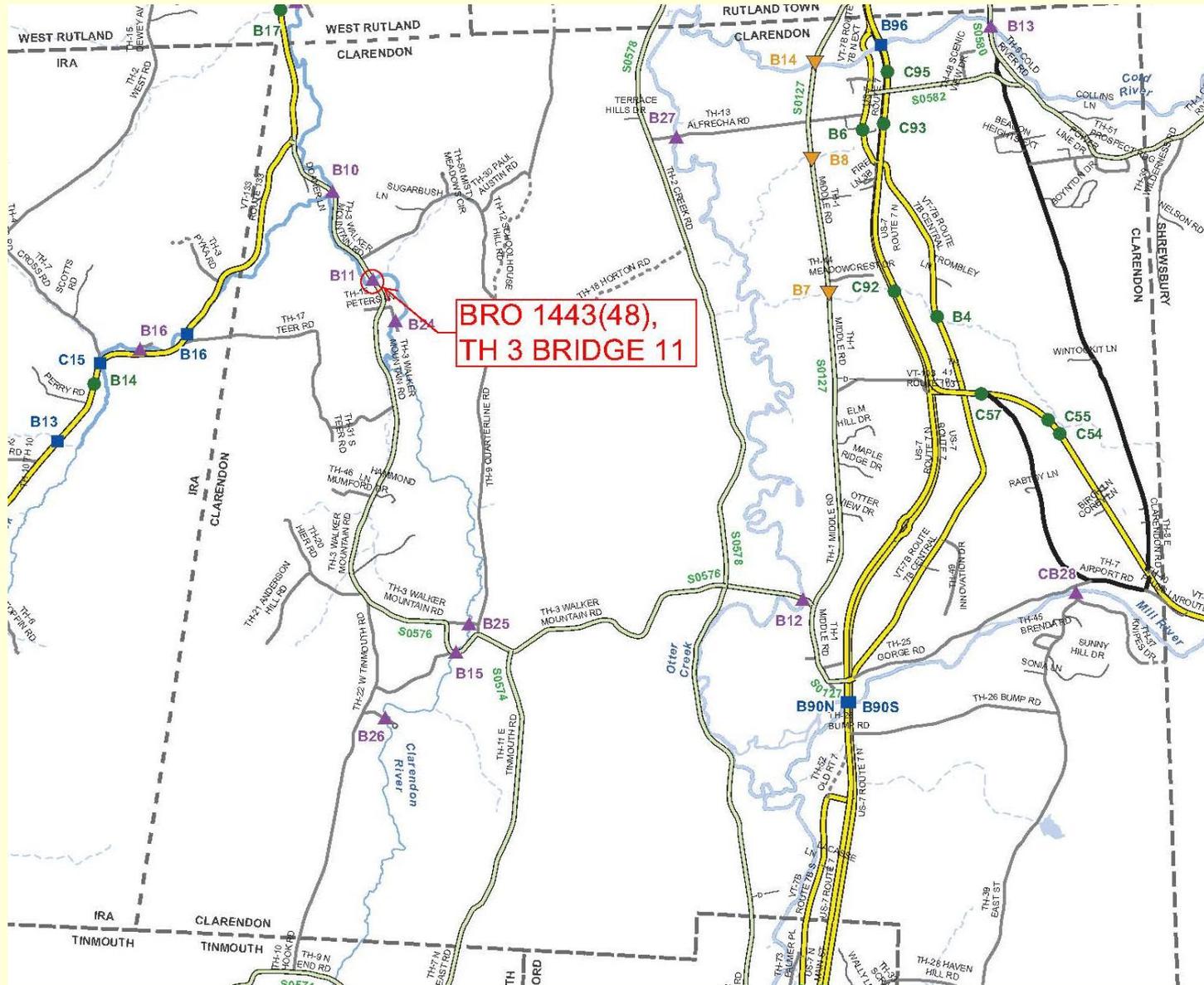


**Clarendon BRO 1443(48)
Bridge 11 on TH 3 (Walker Mtn. Rd)
Over Clarendon River
Alternatives Presentation**



PROJECT LOCATION



Meeting Outline

- Purpose of the Meeting
- Structures Section Re-organization
- Existing bridge deficiencies
- Alternatives considered
- Summary and recommendation

Purpose of Meeting

- Present the alternatives that we have considered
- Explain the constraints to the project
- Help you understand our approach to the project
- Provide you with the chance to ask questions.
- Provide you with the chance to voice concerns
- Build consensus for the recommended alternative-

Accelerated Bridge Program

- Began in January 2012
- Bridges are deteriorating faster than we can fix them
- Accelerated Bridge Construction (ABC) is key
- Impacts to property and resources is minimized
- Standard details repeated on many projects
- Shift from individual projects to programmatic approach
- Accelerated Project Delivery
- Goal of 2 year design phase for ABP (5 years conventional)
- Goal of 25% of projects into Accelerated Bridge Program

Project Initiation & Innovation Team

- Part of re-organization in January 2012
- Currently team of 5
- All projects will begin in the PIIT
- Very efficient process
- Look for innovative solutions whenever possible
- Involved until Project Scope is defined
- Hand off to PM to continue Project Design phase

Phases of Development

Project
Funded

Project
Defined

Contract
Award

Project Definition

Project Design

Construction

Identify resources &
constraints

Evaluate alternatives

Public Participation

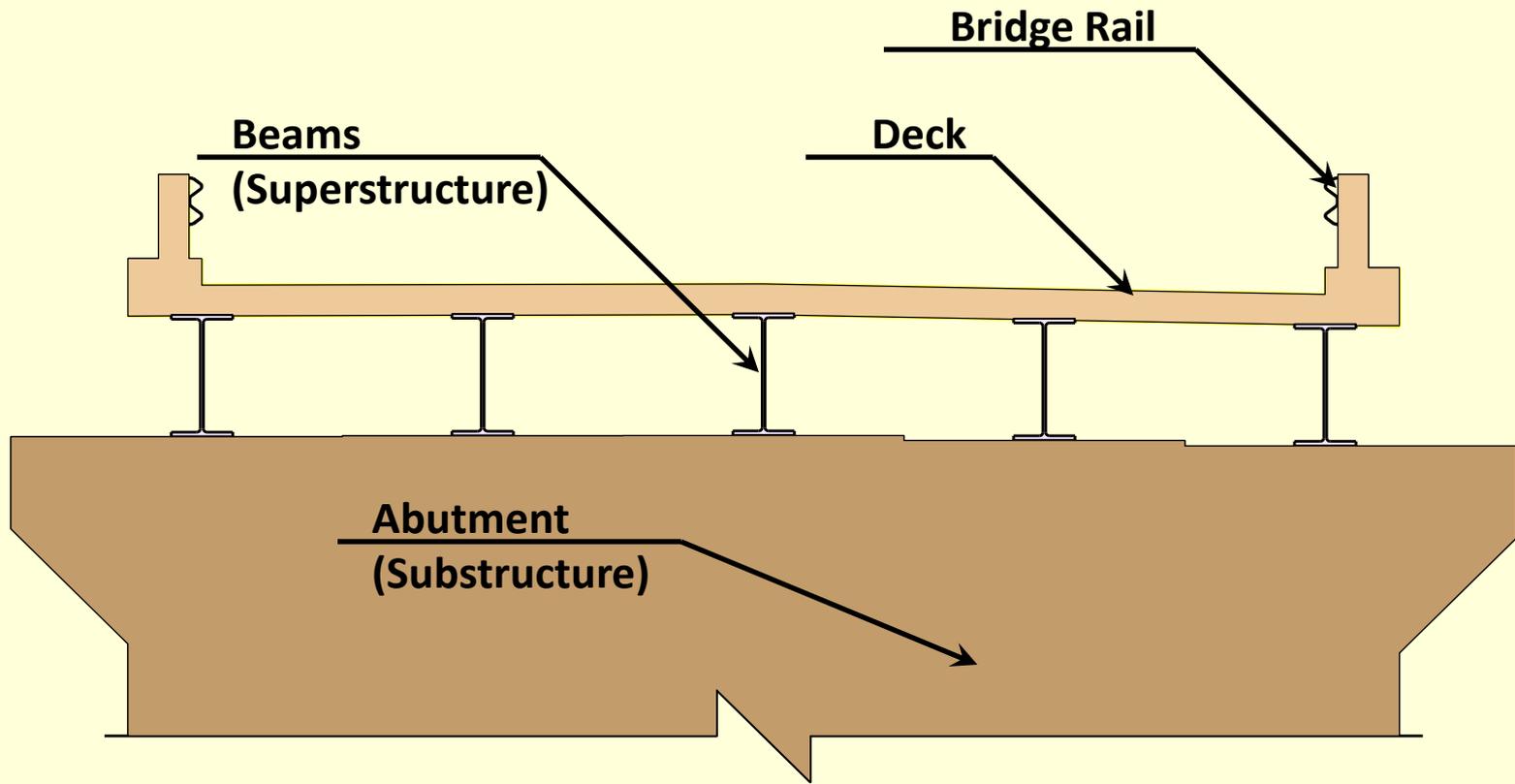
Build Consensus

- Quantify areas of impact

- Environmental permits

- Develop plans, estimate and specifications

Description of Terms Used



Project Background

- **Priority 34** in the Town Highway Bridge Program
- The structure is owned and maintained by the Town
- TH 3 (Walker Mtn. Road) is a Class 2 Town Highway
- Existing bridge is a single-span concrete T-Beam bridge
- Span of 30 feet and width of 20.2 feet
- The structure was built in 1927 (86 years old)
- Bridge is structurally deficient and has a Federal sufficiency rating of **45.7 (out of 100) -**

Project Background (Cont)

- Traffic Data

TRAFFIC DATA	2015	2035
ADT	700	750
DHV	100	110
ADTT	40	50
%T	5.3	6.1

EXISTING BRIDGE DEFICIENCIES

Deficiencies

- The bridge does not have adequate hydraulic capacity
- The bridge has scour issues
- The bridge width is substandard
- The deck and superstructure are in poor condition
- The bridge rail is questionable

Inspection Report Information (Based on a scale of 9)

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

Bridge Looking South



Bridge Fascia



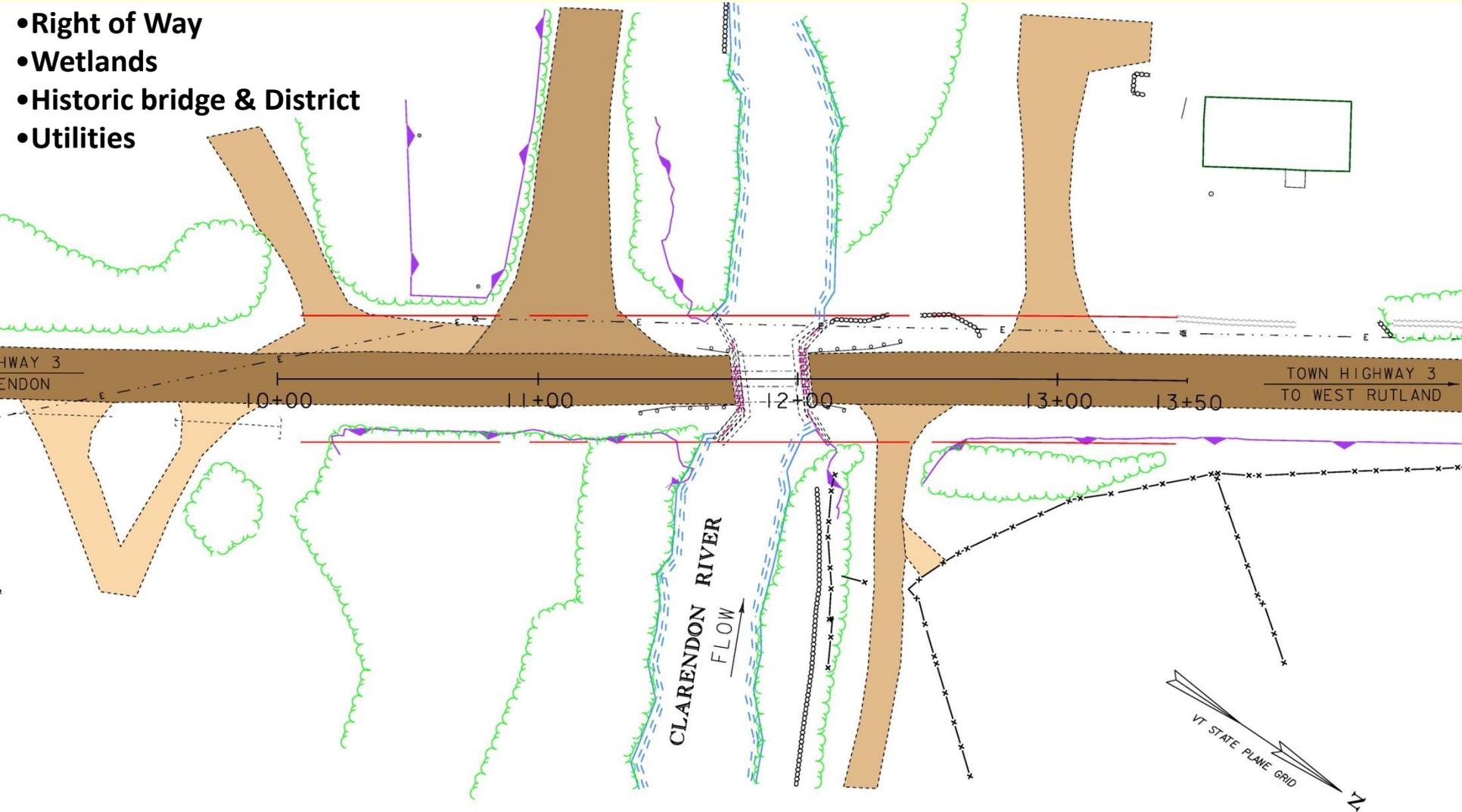
Underside of Deck



Existing Site Conditions

- Bridge Width (Face-Face Rail) = 20.2'
- Design Speed Limit = 35 mph (Posted speed)
- No Postings for Weight Restriction
- Overhead Utilities present over western wingwalls

Layout Showing Constraints



Alternatives

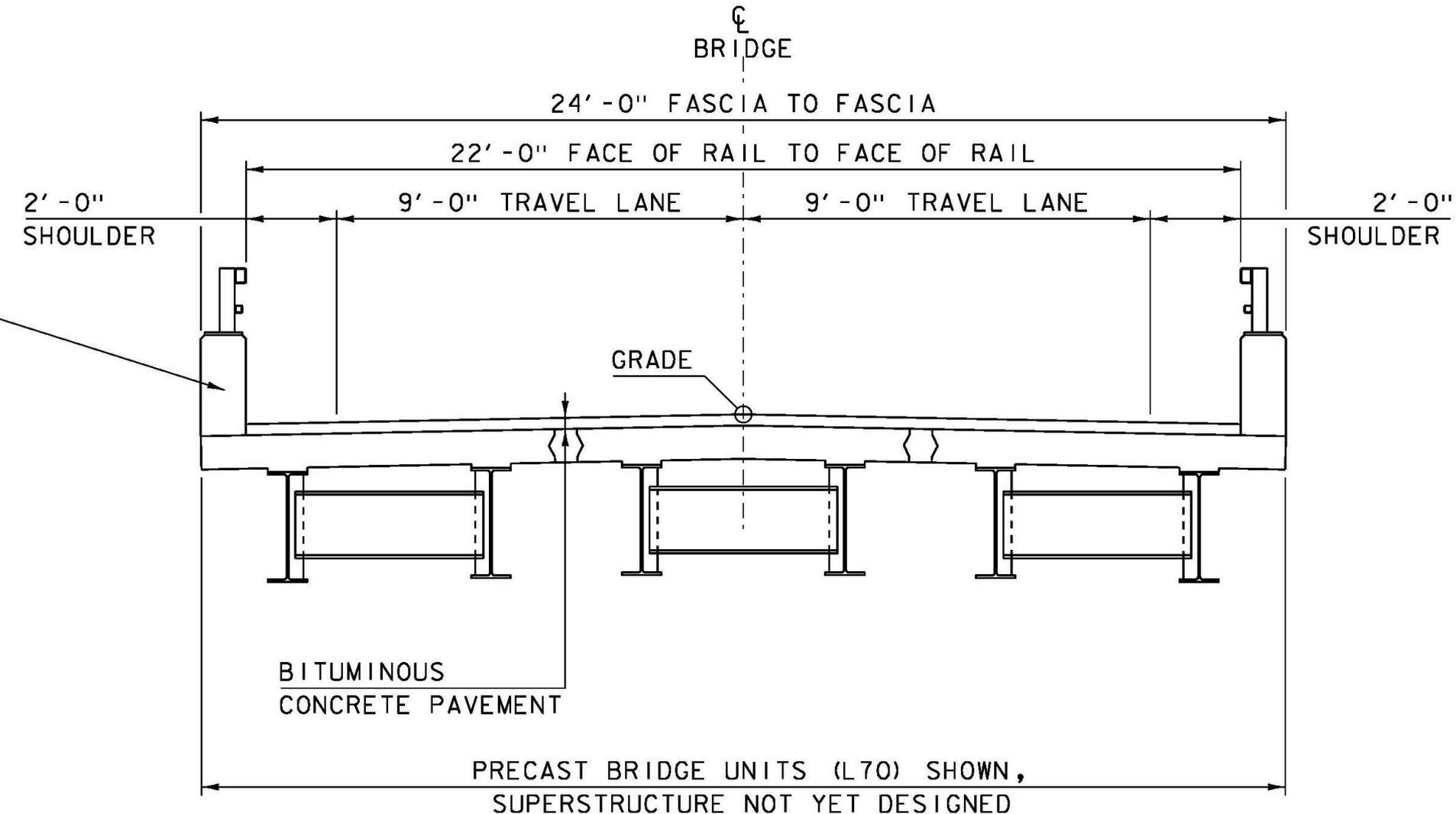
1. Full replacement (with short-term closure)
2. Full replacement (with one-way temporary bridge)

Note that other alternatives considered in the Scoping Report are not shown in this presentation

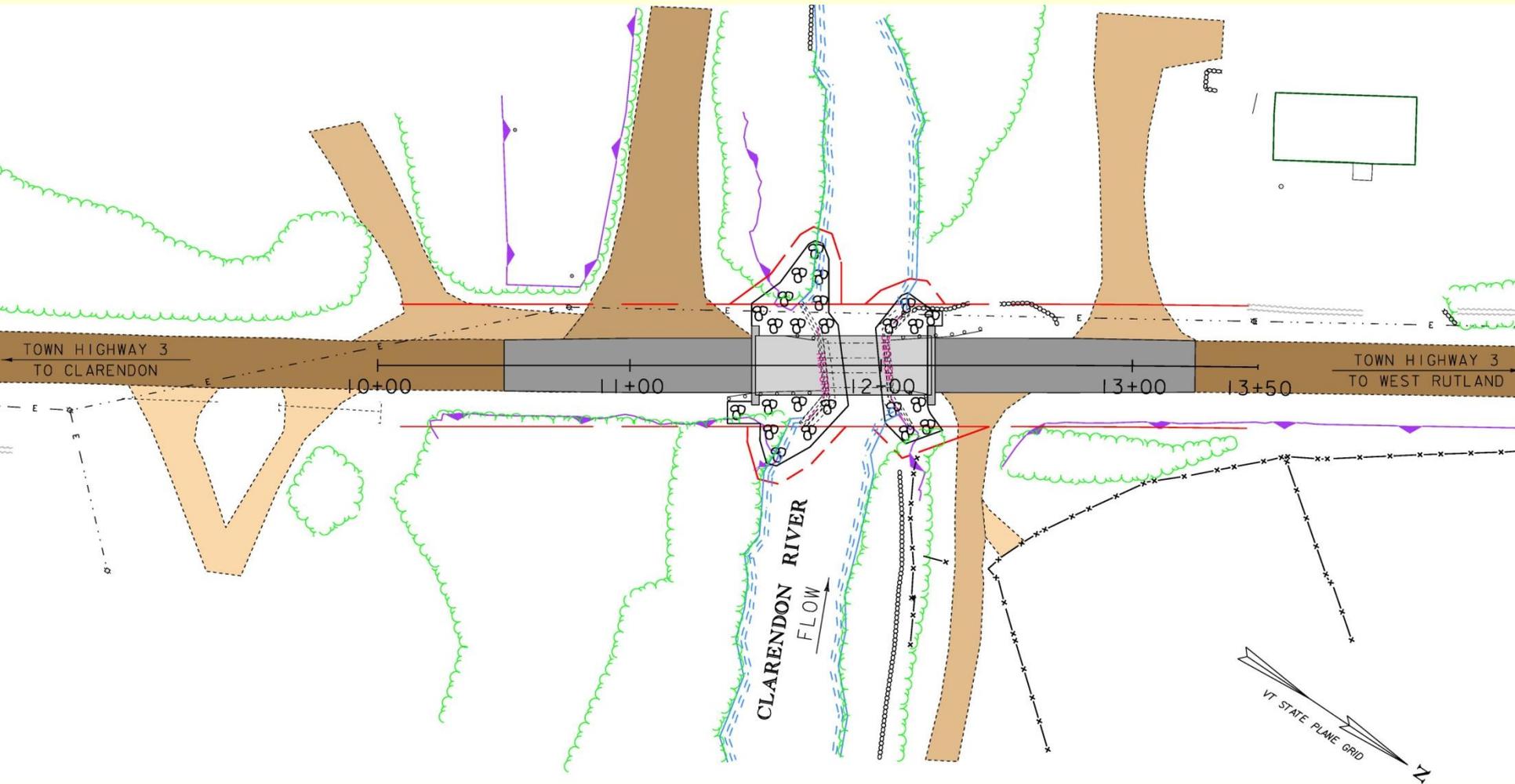
Full Bridge Replacement

- Complete Bridge replacement
- 70' span w/ substructure on steel H piles
- 22' width between face of rail
- Maintain existing centerline of bridge
- Maintain approximate vertical grade of bridge
- Long term (80 year) solution

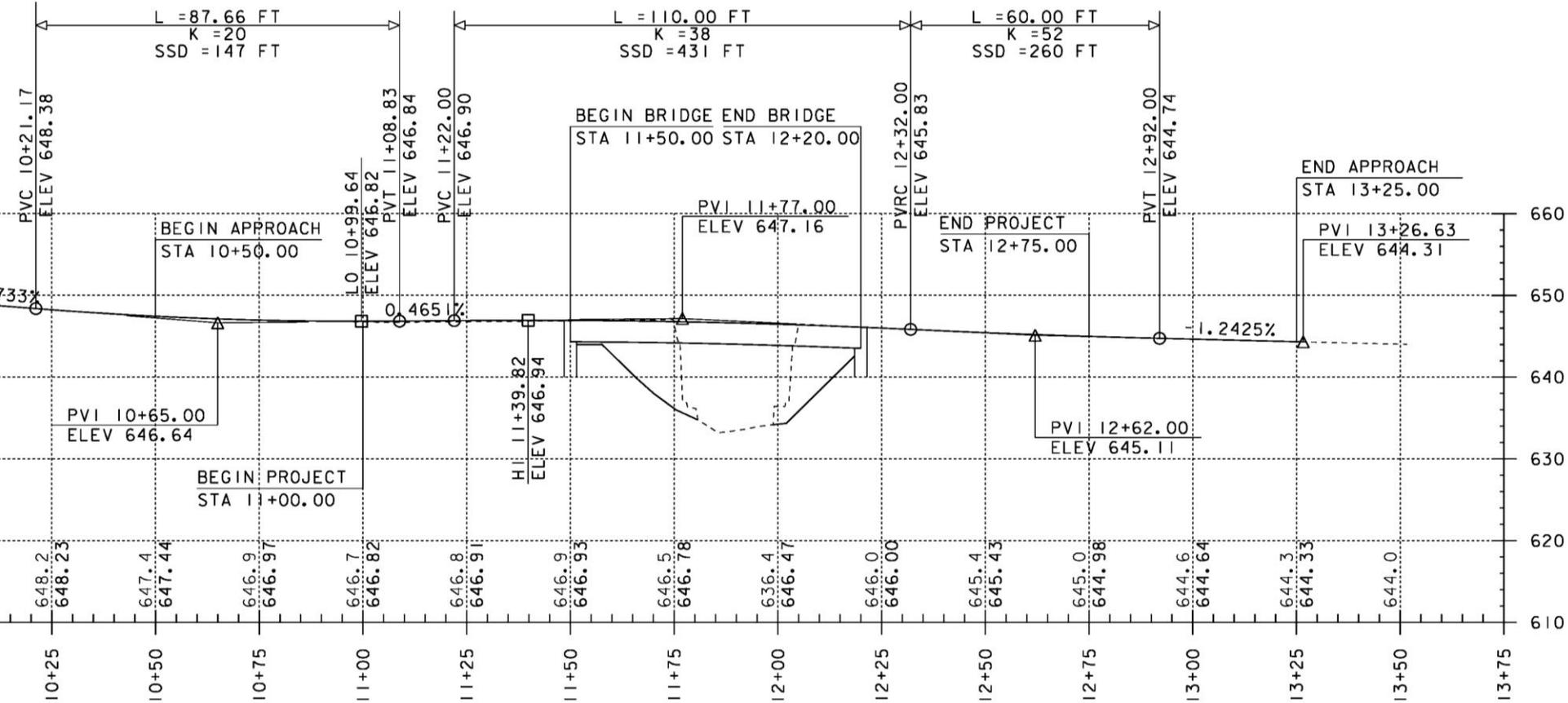
Bridge Typical Full Replacement



Full Replacement - Layout



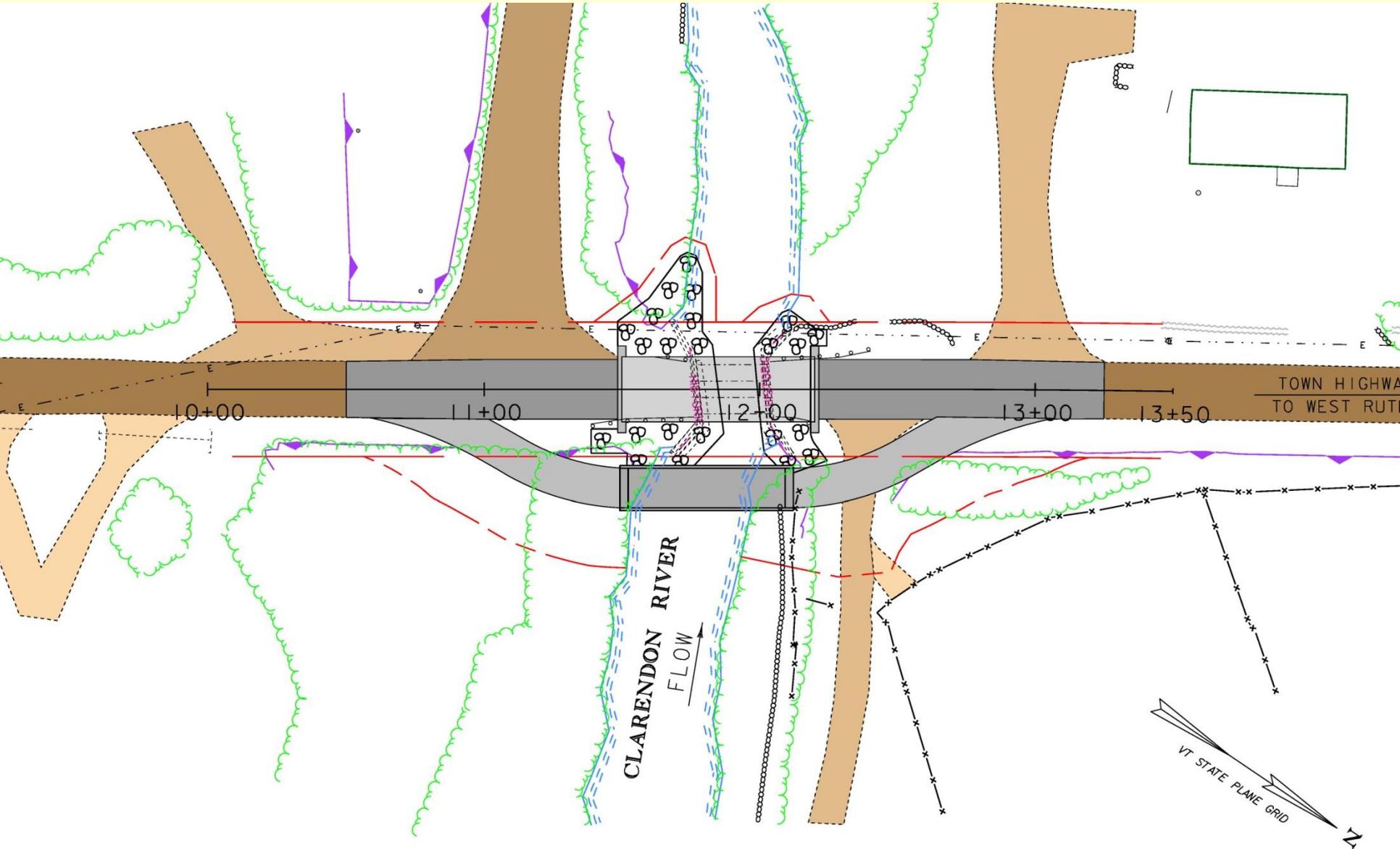
Full Replacement - Profile



Methods to Maintain Traffic

- Temporary Bridge on east side
- Short-term bridge closure with detour

Temporary Bridge Option



ABC with Bridge Closure Option

- Bridge 11 to be closed for 28 days (maximum)
- Allow 24/7 construction during bridge closure
- Contract incentives/dis-incentives to encourage contractor
- Community would have input on time of closure (between June 1 and September 1)
- Town will be responsible for detour route (location, signing, installing, maintaining)
- Several possible routes to consider
- Public Outreach to provide advance notice for planning
- Local share will be cut in half (10% reduced to 5%)-

Accelerated Bridge Construction Examples

- We have been using ABC methods to build bridges since 2007 on approximately 20 projects.
- The following slides show some examples of past projects

Accelerated Bridge Construction



Driven steel piles with precast concrete cap for abutment

Accelerated Bridge Construction



The first of three Precast Concrete Caps being placed

Accelerated Bridge Construction



Precast concrete Abutment in place and ready for Superstructure

Accelerated Bridge Construction



Precast Concrete NEXT Beam lifted into place

Accelerated Bridge Construction



The second NEXT Beam being placed

Accelerated Bridge Construction



Three NEXT Beams in place with the final unit ready

Accelerated Bridge Construction



Precast Bridge Unit (PBU) delivered to site

Accelerated Bridge Construction



Precast Bridge Unit (PBU) lifted onto abutments

Accelerated Bridge Construction



Precast Bridge Units (PBUs) connected together

Alternatives Matrix Note

- The “Do Nothing” and several rehabilitation alternatives were considered in the Scoping Report that are not shown in the following matrix. Refer to the Scoping Report for that information.
- A small amount of Right-of-Way acquisition will be required to allow removal of the existing structure that extends outside the existing ROW limits.

Alternatives Matrix

	New Structure w/ Short term closure	New Structure w/ Temporary Bridge
Temporary Bridge	\$0	\$150,000
Construction w/ CE and Contingencies	\$812,500	\$1,007,500
Preliminary Engineering	\$156,250	\$193,750
Right of Way	\$25,000	\$50,000
Total Cost	\$993,750	\$1,251,250
Town Share	\$49,688 (5%)	\$125,125 (10%)
Design Life (years)	80	80
Project Development Duration	3 years	4 years
Construction Duration	3 months	15 months
Closure Duration	4 weeks	None (one-way alternating)
Mobility Impact Duration	4 weeks	36 weeks

Conclusion and Recommendation

- Full Bridge Replacement using ABC & short-term closure
- Long term (80 year) fix
- Addresses all sub-standard features
- Project Development time minimized
- Minimal mobility impacts
- Minimal impact to environmental resources
- Minimal impact to adjacent property owners
- Takes advantage of reduced local share for closure--

Questions

