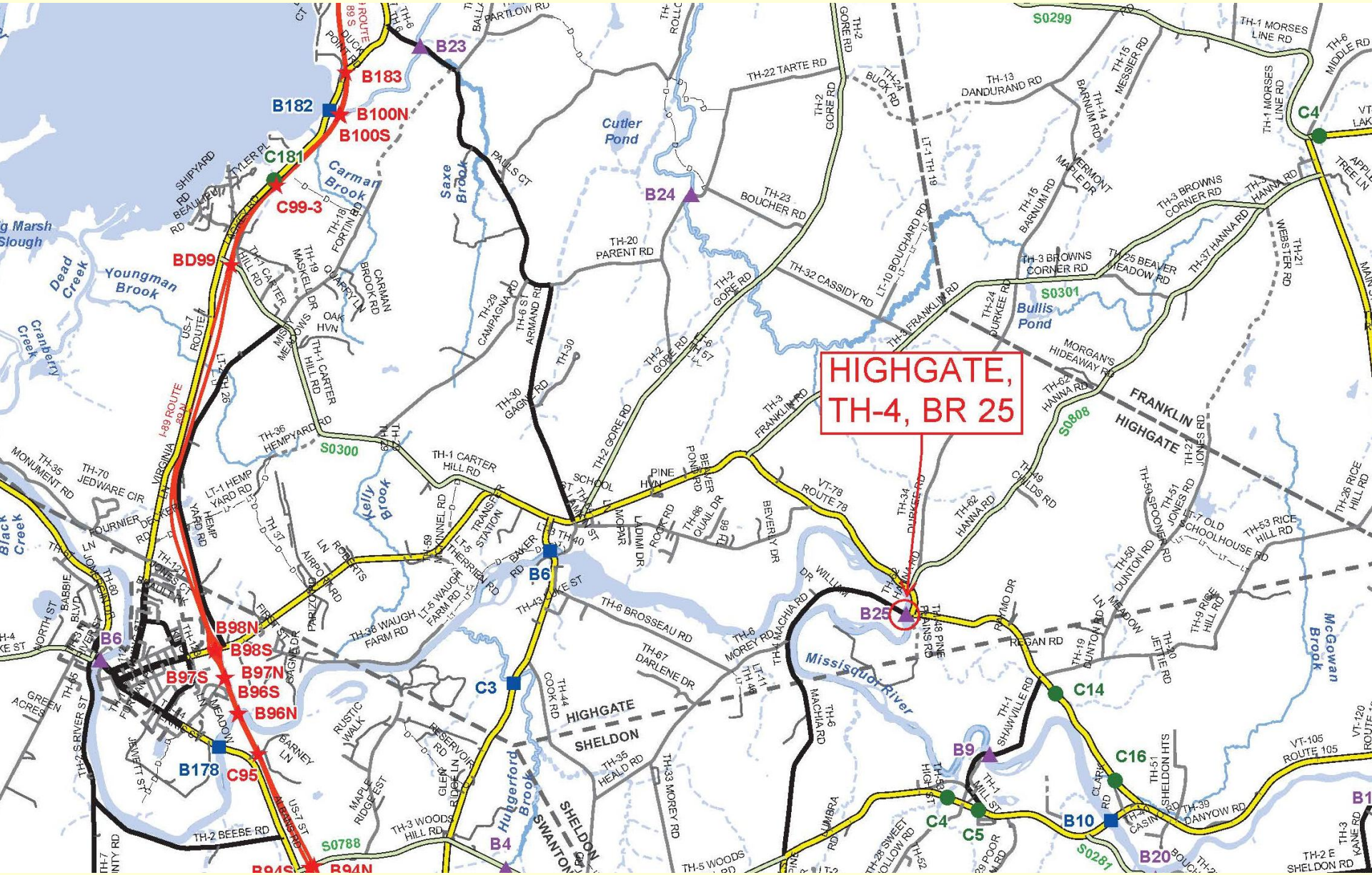
Highgate BO 1448(43)
Bridge 25 on TH 4 (Machia Road)
over the Missisquoi River
Public Informational Meeting

Presented by
Christopher P. Williams, P.E.
Senior Project Manager, Structures Section
Vermont Agency of Transportation
Chris.Williams@State.VT.US

May 1, 2014

PROJECT LOCATION



Meeting Outline

- Purpose of the Meeting
- Existing bridge information
- Proposed project information
- Next Steps
- Questions

Purpose of Meeting

- Present the Conceptual plans
- Provide you with the chance to ask questions.
- Provide you with the chance to voice concerns
- Build consensus for the proposed project-

Background Information

- The structure is owned and maintained by the Town
- Machia road is a class 2 local road
- Funding will be 80% Federal & 15% State funds
- Local share will be 5% due to the closure
- Functionally labeled as a Rural local road
- Posted Speed = 35 mph (Design Speed)
- Existing bridge is a two span Thru Truss
- Bridge length = 292 feet (2 equal spans @ 143 feet)
- Bridge Width = 16 feet +/-
- The bridge was built in 1928 (86 years old)

Historic Considerations

- The bridge is listed on or is eligible for the National Register of Historic Places
- The Historic Metal Truss Bridge Preservation plan in 1998 concluded that it is feasible and prudent to rehabilitate this bridge for limited highway use
- The town requested that the bridge be replaced
- The VAOT Historic Preservation Officer agreed

EXISTING BRIDGE DEFICIENCIES

Inspection Rating Information (Based on a scale of 9)

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

Rating Definitions

9 Excellent
8 Very Good
7 Good
6 Satisfactory
5 Fair
4 Poor
3 Serious
2 Critical
1 Imminent Failure

Deficiencies

- **The bridge is structurally deficient and unable to carry design loads**
- **The bridge is too narrow for the roadway classification and design speed**
- **The bridge and approach railing are substandard**
- **The vertical and horizontal alignments are substandard**

Looking east at Bridge approach

Looking west on Bridge approach

East Abutment showing signs of movement

West Abutment showing undermining

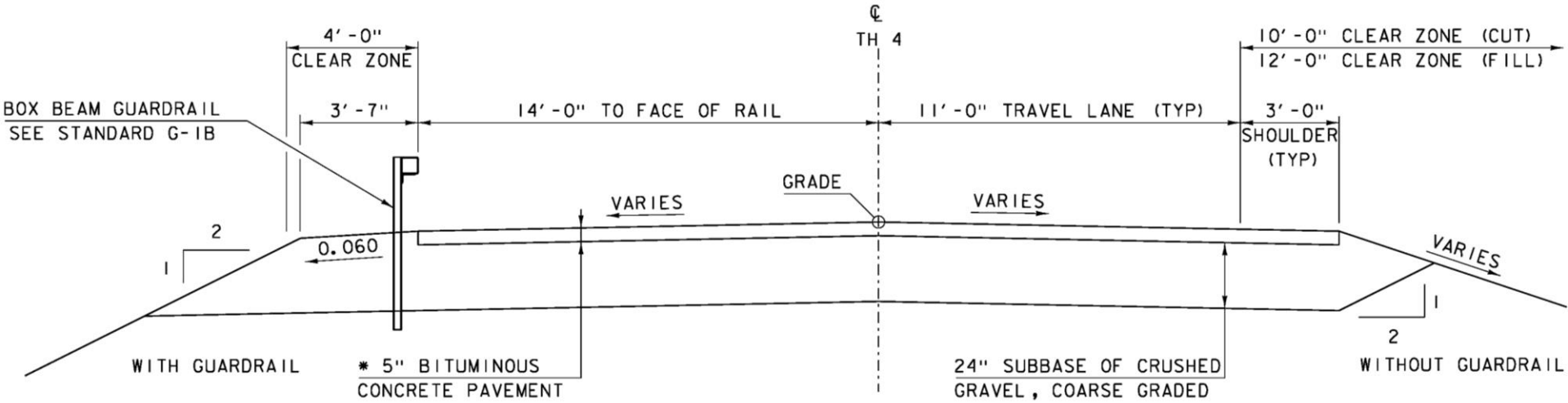
Proposed Project Details

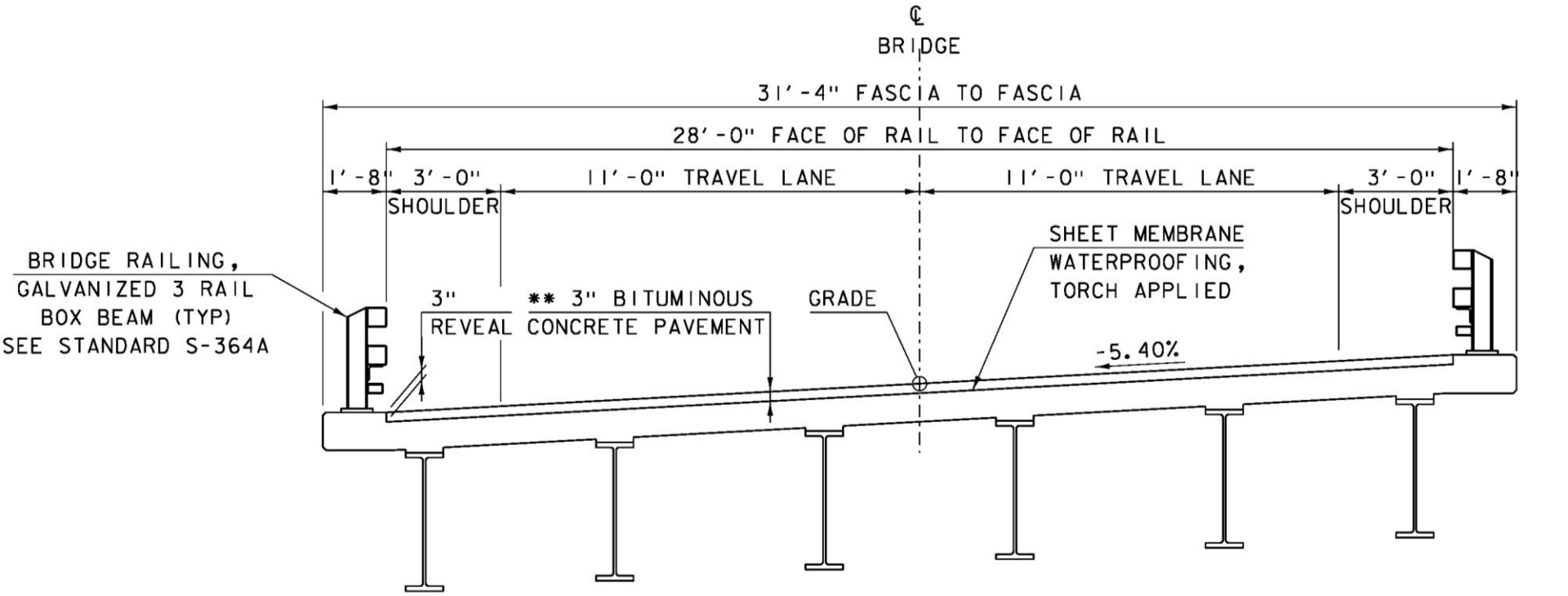
- Complete bridge replacement
- 2 spans @ 150’ – 130’ (280’ overall span length)
- 28’ width between face of rail (per Town request)
- Alignment will be improved using 900’ radius curve
- Maintain approximate vertical grade of bridge

Known Issues to Discuss

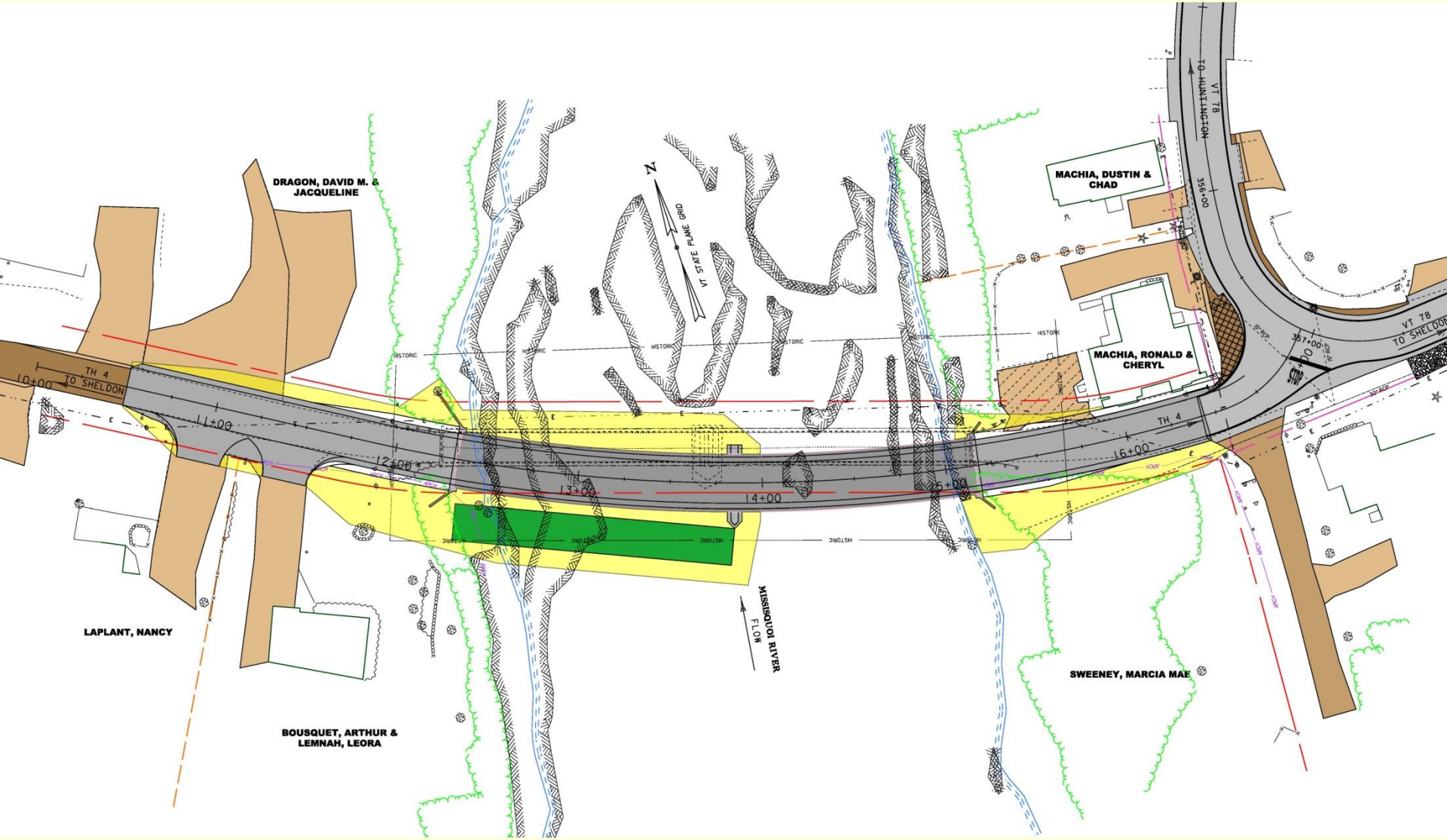
- Drive Access to property on eastern approach
  - Current plans show railing extending across the drive and blocking access
  - At town request we could provide a transition that would maintain the drive access but the transition would not meet the standards
- Town has requested W-beam approach railing rather than box beam
  - Option 1 could have short section of box beam off bridge then transition to W-beam
  - Option 2 could have concrete end block at bridge then use Thrie-beam to transition to W-beam

Proposed Typical Sections





Layout of Proposed Bridge



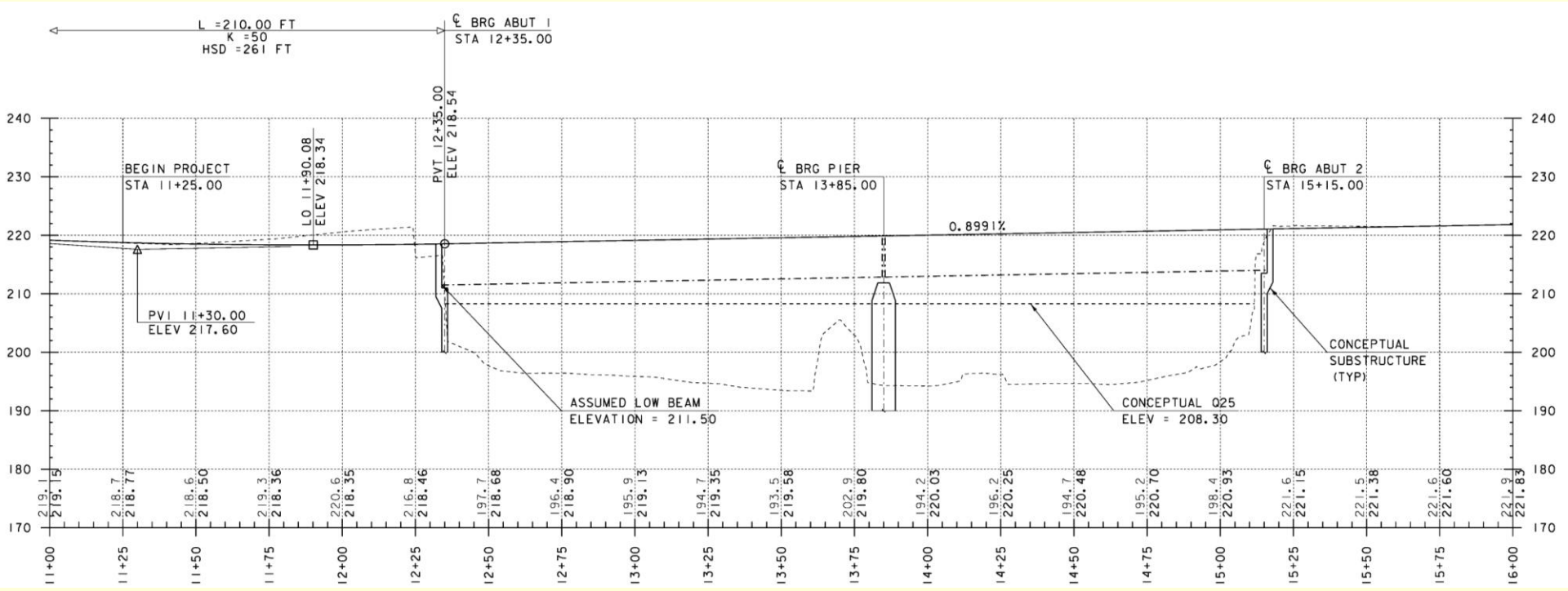
Guardrail Pictures

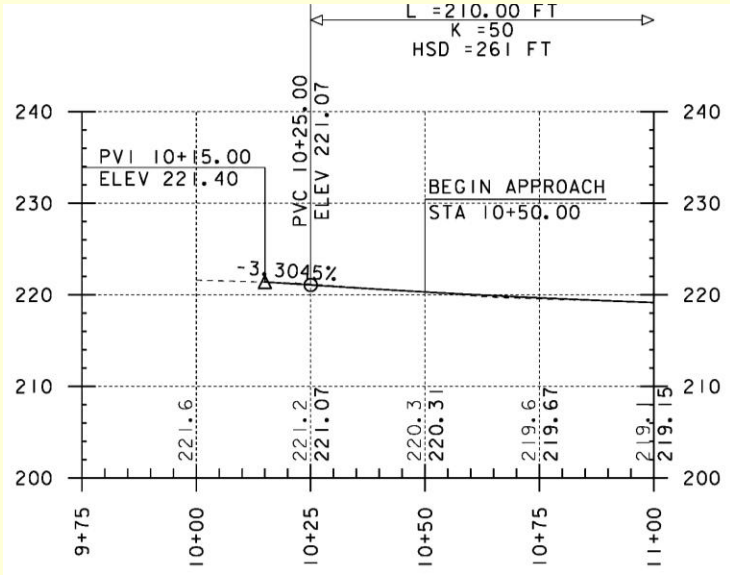
Box Beam w/ end section

Thrie-Beam

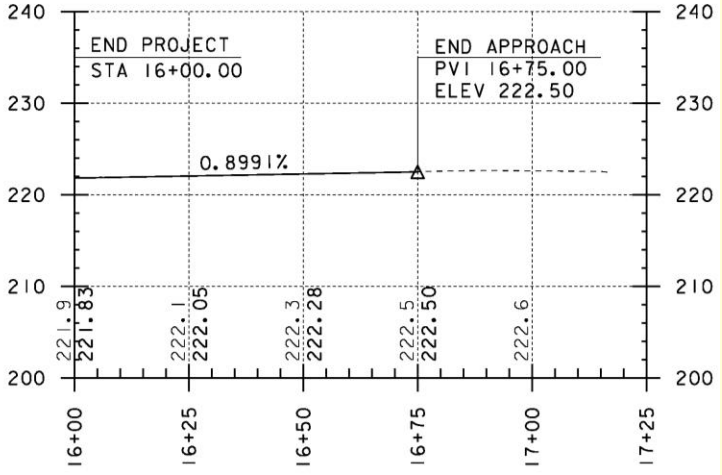
W-Beam w/ end section

Profile of Proposed Bridge





NOTE: ALL SUBSTRUCTURE UNITS ARE ASSUMED TO BE SPREAD FOOTINGS FOUNDED ON ROCK



Traffic Maintenance

- Bridge closure with detour signed by Town
- Bridge 25 to be closed for 12 weeks (maximum)
- Closure would start in July due to in-stream work required prior
- Allow 24/7 construction during bridge closure
- Contract incentives/dis-incentives to encourage contractor
- Town will be responsible for detour route
- Local share will be cut in half (10% reduced to 5%)-

Scope - Cost - Schedule

The project cost and schedule can not be determined until the scope of the project is clearly defined.

Preliminary Engineering	$ 800,000
Right-of-Way	$ 30,000
Construction w/ CE and Contingencies	$4,800,000
Total	$5,630,000

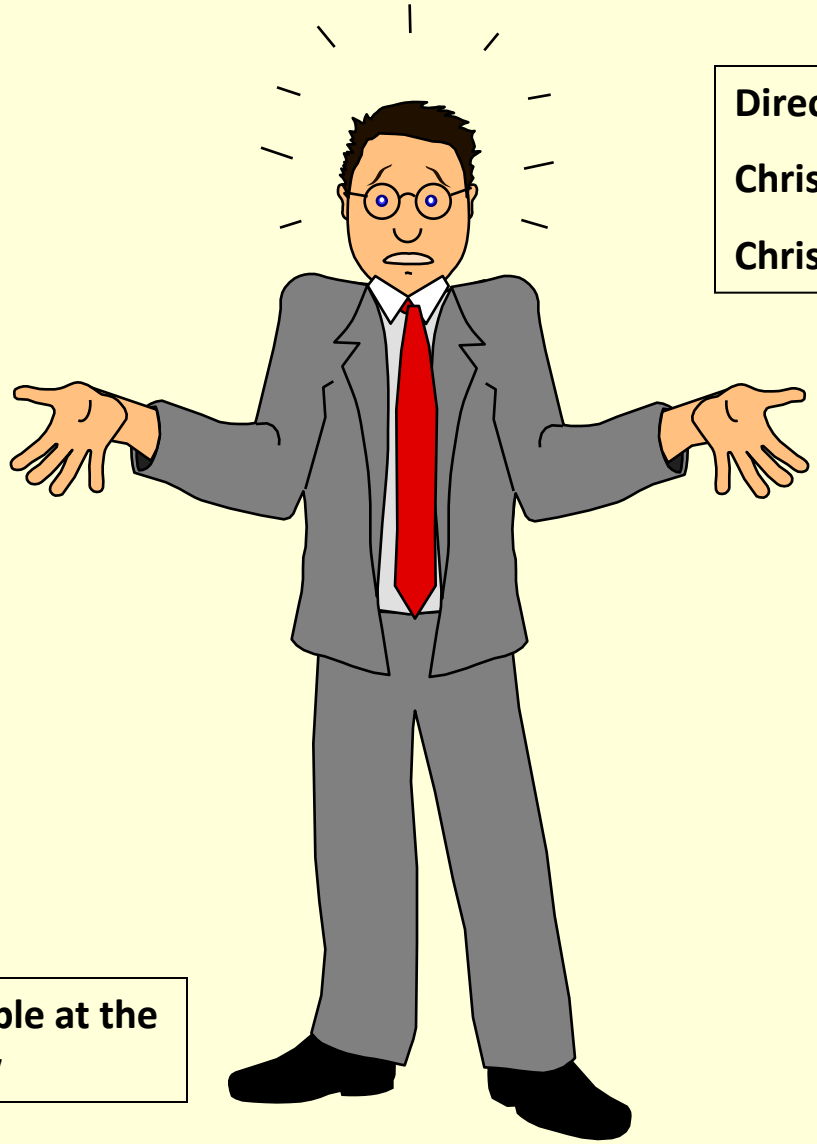
- Construction is currently scheduled for 2018
- Many factors can effect construction year
- Project is funded 80% Fed – 15% State – 5% Local
- Construction year is assuming Federal & State funding is available

Next Steps

This is a list of a few important activities expected in the near future and is not a complete list of activities.

- Wait to hear public comments on Conceptual plans
- Complete historic permitting process
- PROJECT DEFINED – Milestone
- Hand project off to Design Team
- Develop Preliminary Plans
- Environmental permitting
- Consider Town involvement in Right-of-Way process
- Right-of-Way process
- Utility relocation process

Questions



Direct any questions to:

Christopher P. Williams, P.E.

Chris.Williams@State.VT.US

This presentation is available at the web address shown below

https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/98J378