



Duxbury BF 013-4(47)
Alternatives Presentation Meeting
VT Route 100 – Bridge #193 over Crossett Brook

May 9, 2016



Introductions

Kristin Higgins, PE

VTrans Senior Project Manager

Jennifer Fitch, PE

VTrans Scoping Project Manager

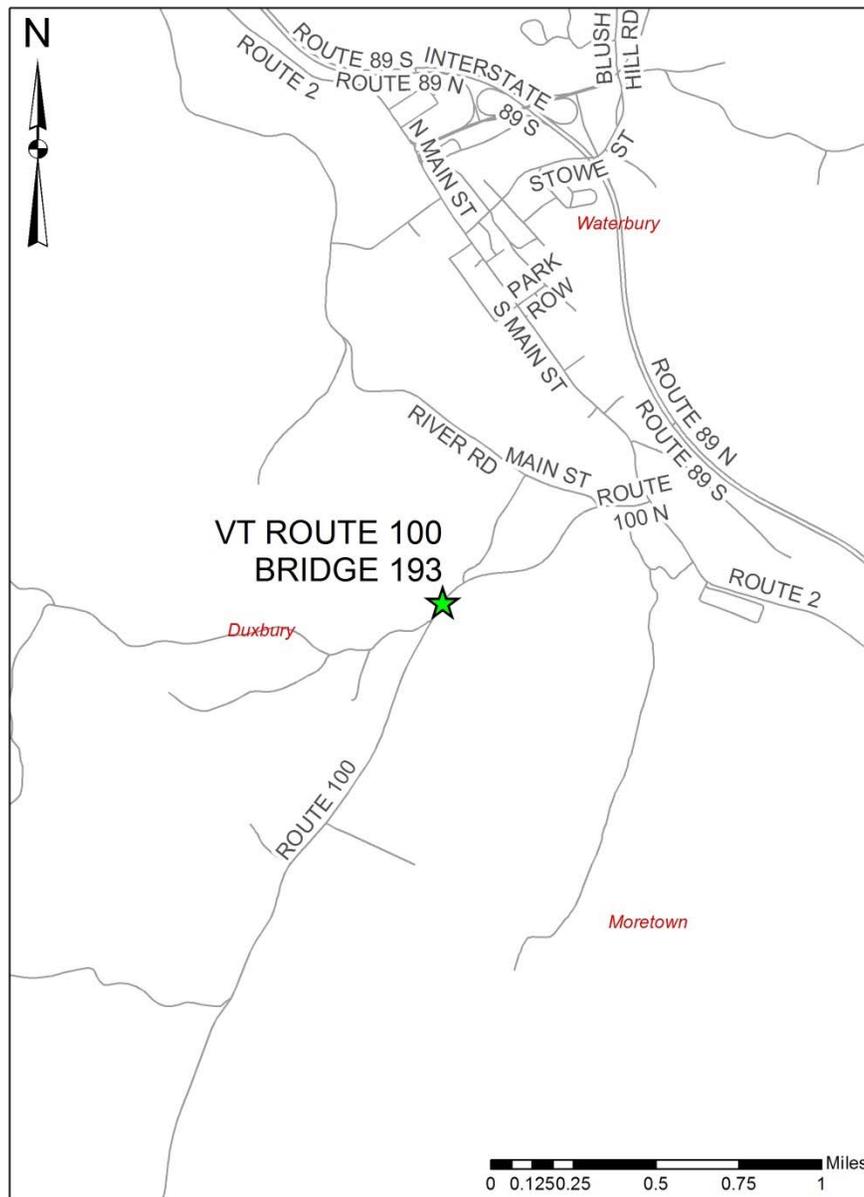
Francine Perkins

Public Information Officer



Meeting Overview

- VTrans Project Development Process
- Project Overview
 - Existing Conditions
 - Selected Alternative
- Maintenance of Traffic
- Construction Schedule
- How to Receive Project Updates
- Questions



Location Map



Project Location

Crosset Brook

Crosset Brook Middle School

Crosset Brook

Crosset Brook

Town Clerk

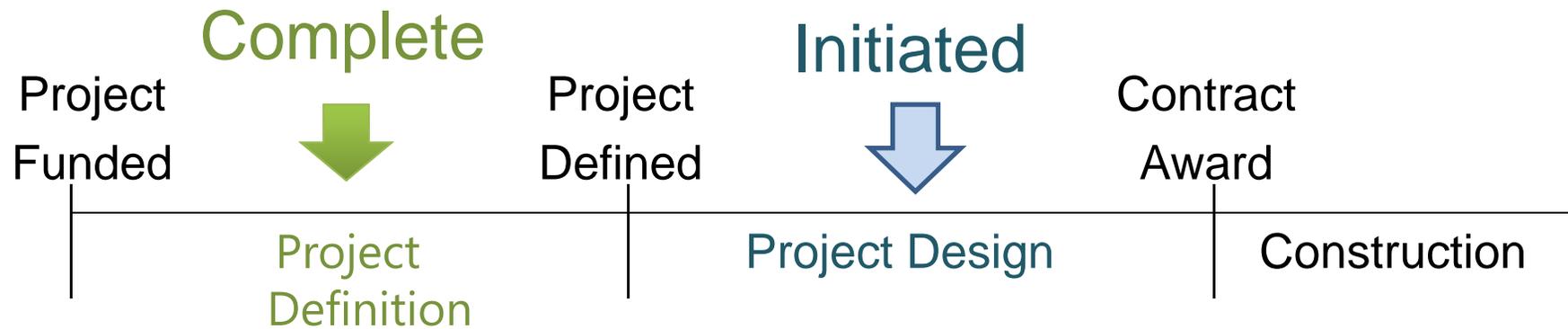
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Google

VTrans Project Development Process

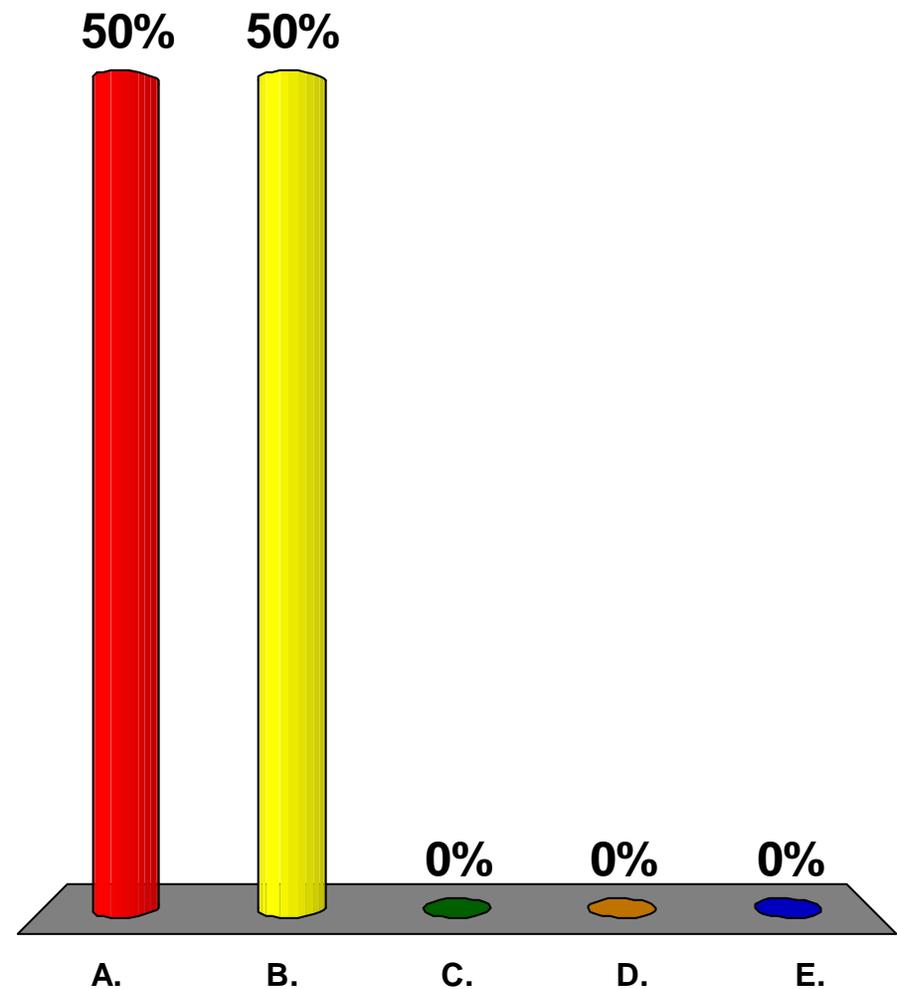


- Identify resources & constraints
- Evaluate alternatives

- Quantify areas of impact
- Environmental permits
- Develop plans, estimate and specifications

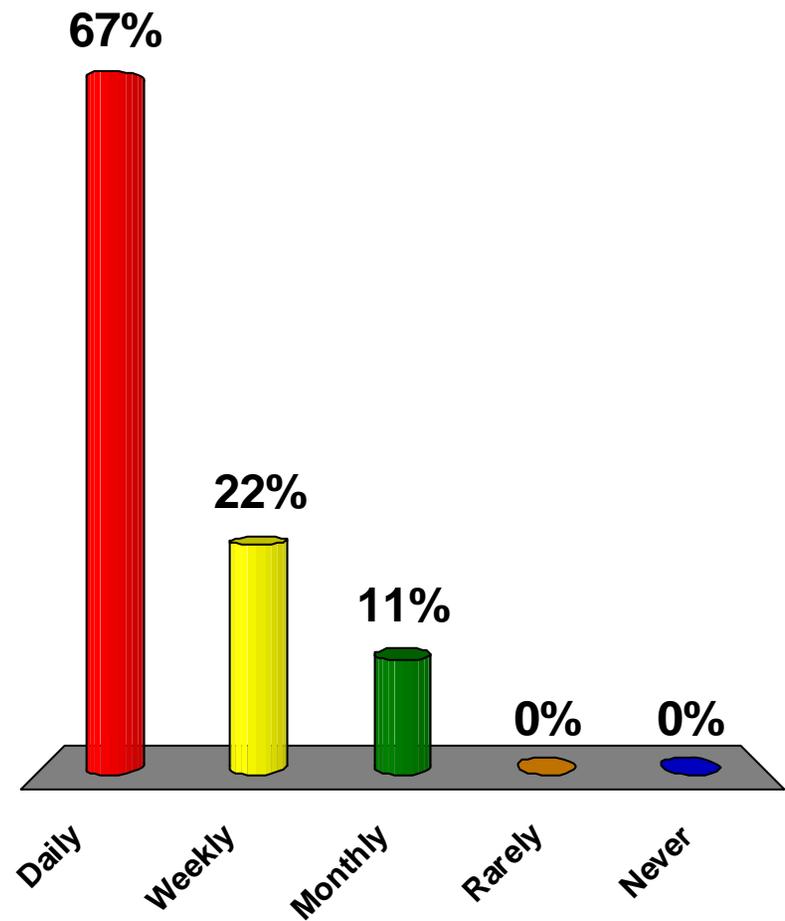
Who are you representing?

- A. Municipal Official
- B. Resident
- C. Local Business
- D. Independent Organization
- E. Other



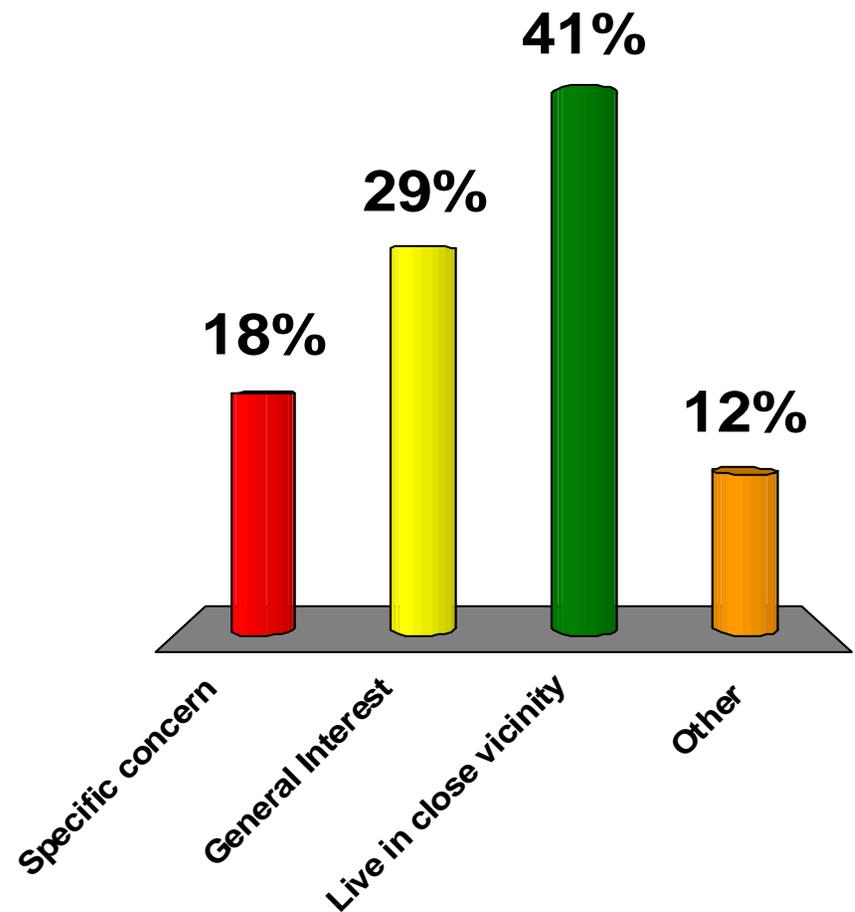
How often do you use this segment of VT 100?

- A. Daily
- B. Weekly
- C. Monthly
- D. Rarely
- E. Never



What is your reason for attending this meeting?

- A. Specific concern
- B. General Interest
- C. Live in close vicinity
- D. Other



Project Overview

- Existing Conditions
- Alternatives Considered
- Selected Alternative

Guardrail

Roadway

Subbase Material

ROADWAY

Side slope

Structural Back Fill

Over & Around
Concrete Structure

Anchors

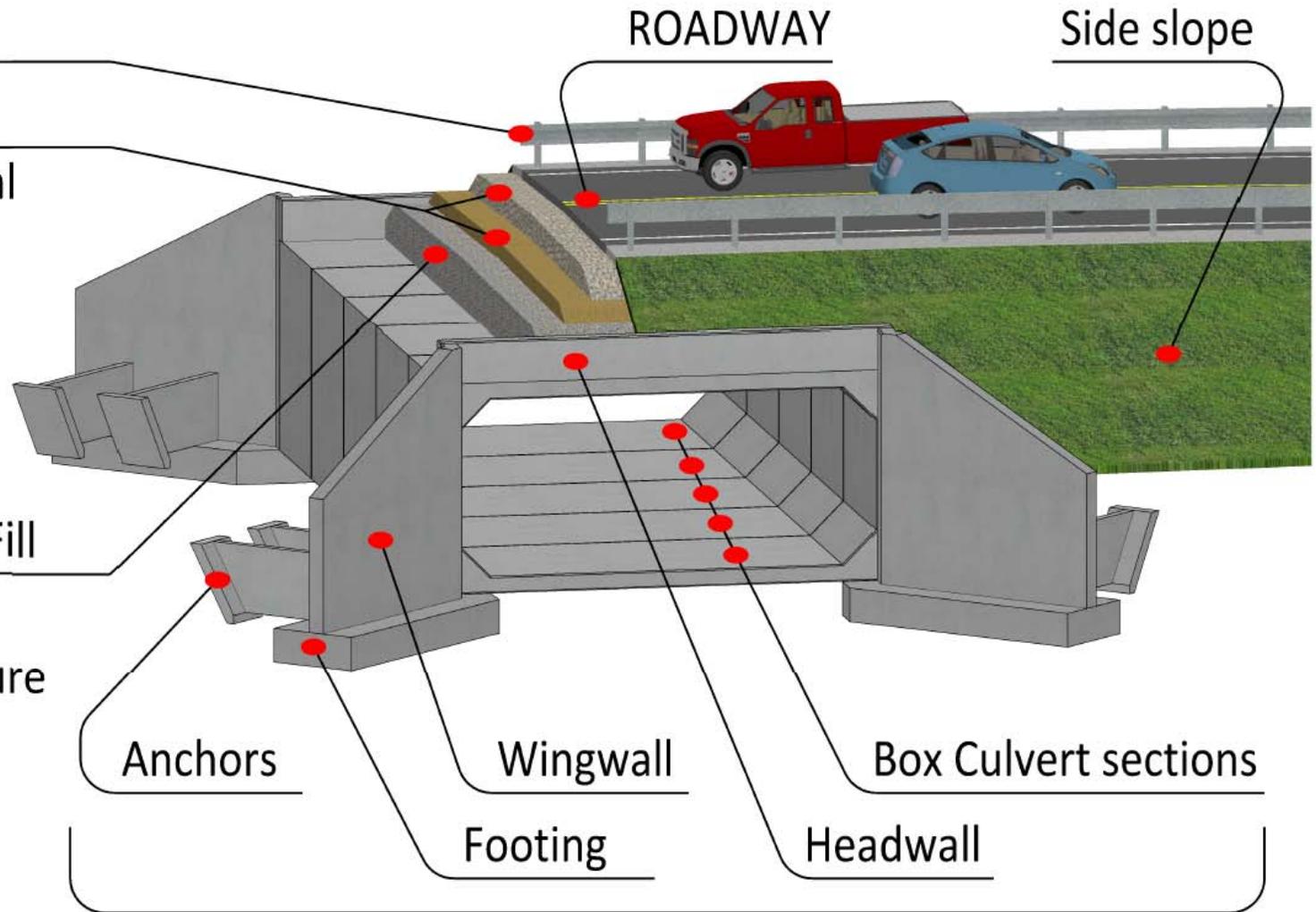
Wingwall

Box Culvert sections

Footing

Headwall

Precast Concrete Bridge / Culvert Components



Looking North over Bridge



Existing Conditions – Bridge #193

- Roadway Classification – Minor Arterial
- Bridge Type – 158' Corrugated Metal Plate Pipe Arch
- Constructed in 1977
- Ownership – State of Vermont
- Existing Typical Section: 7'-12'-12'-7'

Existing Conditions – Bridge #193

- The corrugated metal plate arch has begun to fail. Deficiencies include:
 - The invert has deteriorated
 - The pipe is crushing
 - Roadway subsidence due to extensive loss of fill
- The structure constricts the channel width and does not meet current hydraulic standards

Culvert Inlet (Constricts Channel)



Existing Conditions - Bridge #193

- Culvert Rating 4 (Poor)

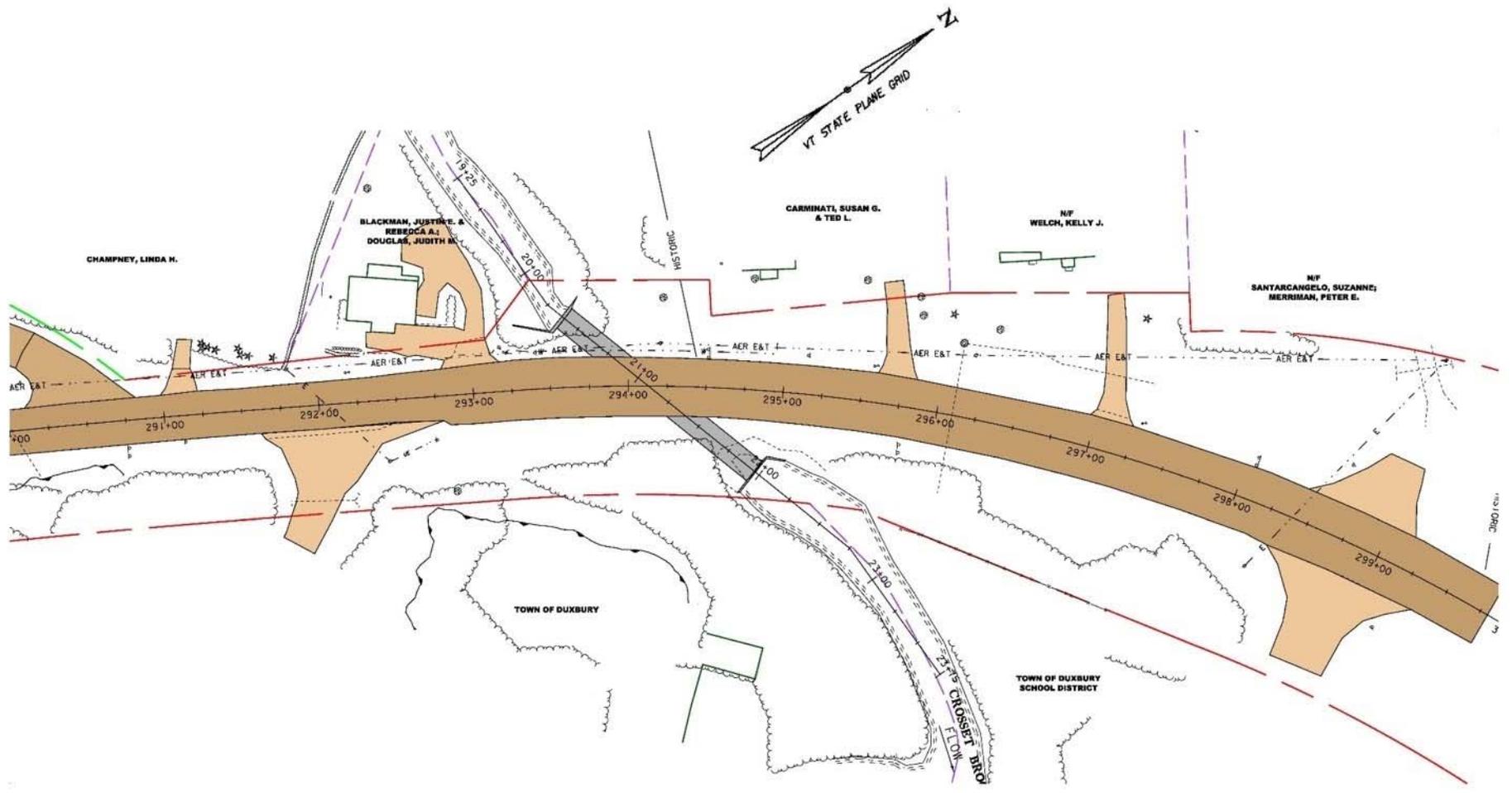
Invert Condition



Existing Conditions - Bridge #193

- Heavy rusting and deterioration

Existing Conditions



Design Criteria and Considerations

- ADT of 3800
- DHV of 500
- % Trucks: 5.7
- Design Speed of 40 mph
- Substandard Features:
 - Culvert Rating: 4
 - Hydraulic Standards
- Site Constraints:
 - Located in a floodplain
 - Class 2 wetlands located on the downstream side
 - Aerial Utilities and a Waterline

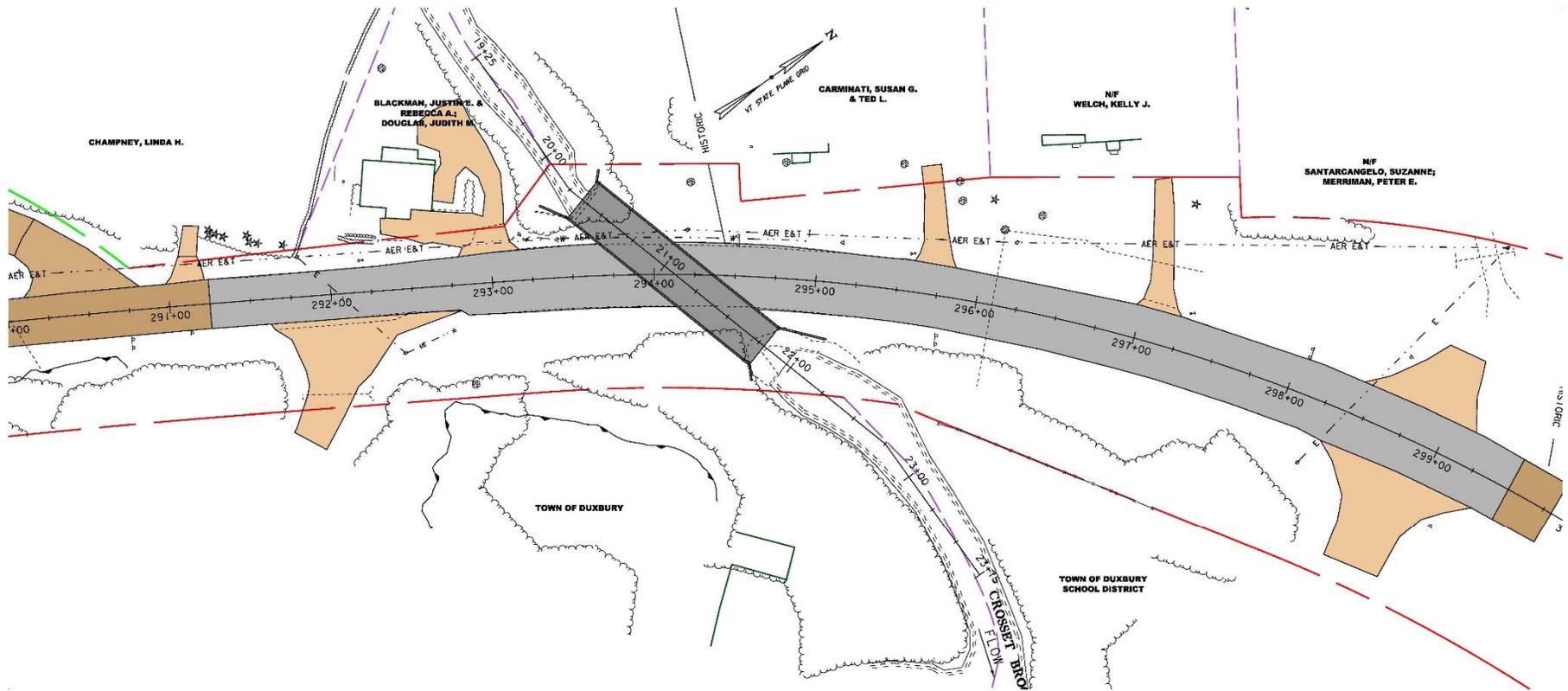
Alternatives Considered – Bridge #193

- Full Bridge Replacement with either:
 - Rigid frame
 - This section has a thick top and would interfere with the existing waterline
 - There would not be enough cover (Earth Fill) over the box to allow for guardrail posts to be driven without interference
 - Concrete arch
 - This section is thin in comparison to the Rigid frame
 - Provides room for the existing waterline and allows for traditional guardrail without interference
- Integral abutment bridge
 - Initially considered but then ruled out due to drives in proximity to structure. Buried structures are expected to have a longer service life because they are not exposed to winter maintenance practices.

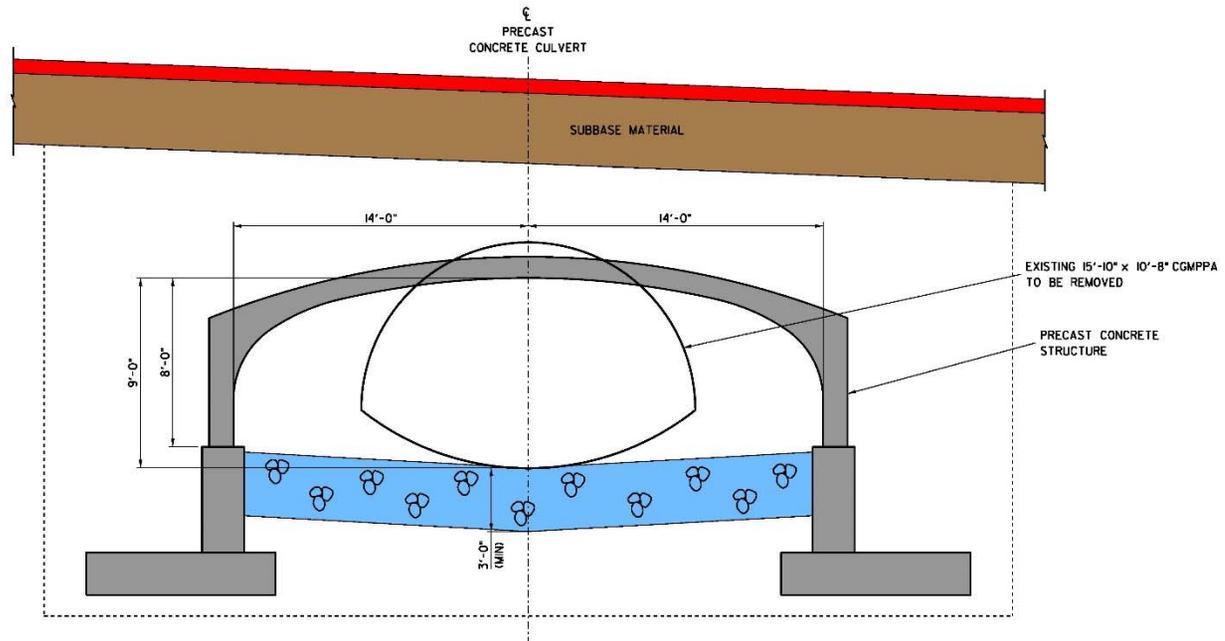
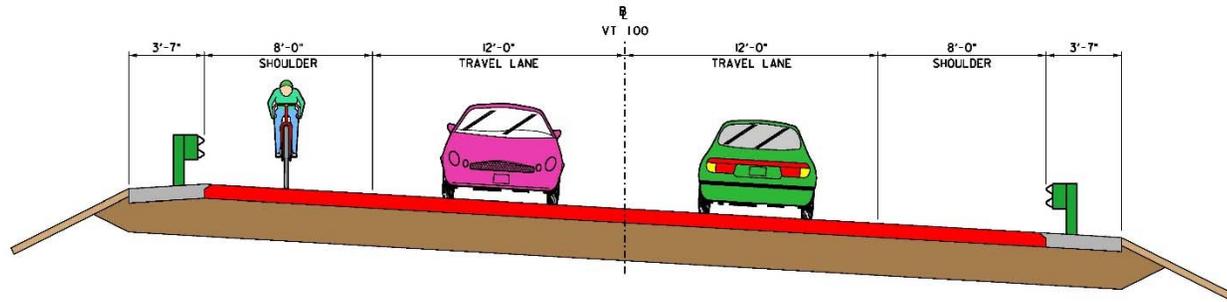
Selected Alternative - Bridge #193

- Replace entire structure on alignment with a precast concrete arch
 - Use a 28' minimum clear span

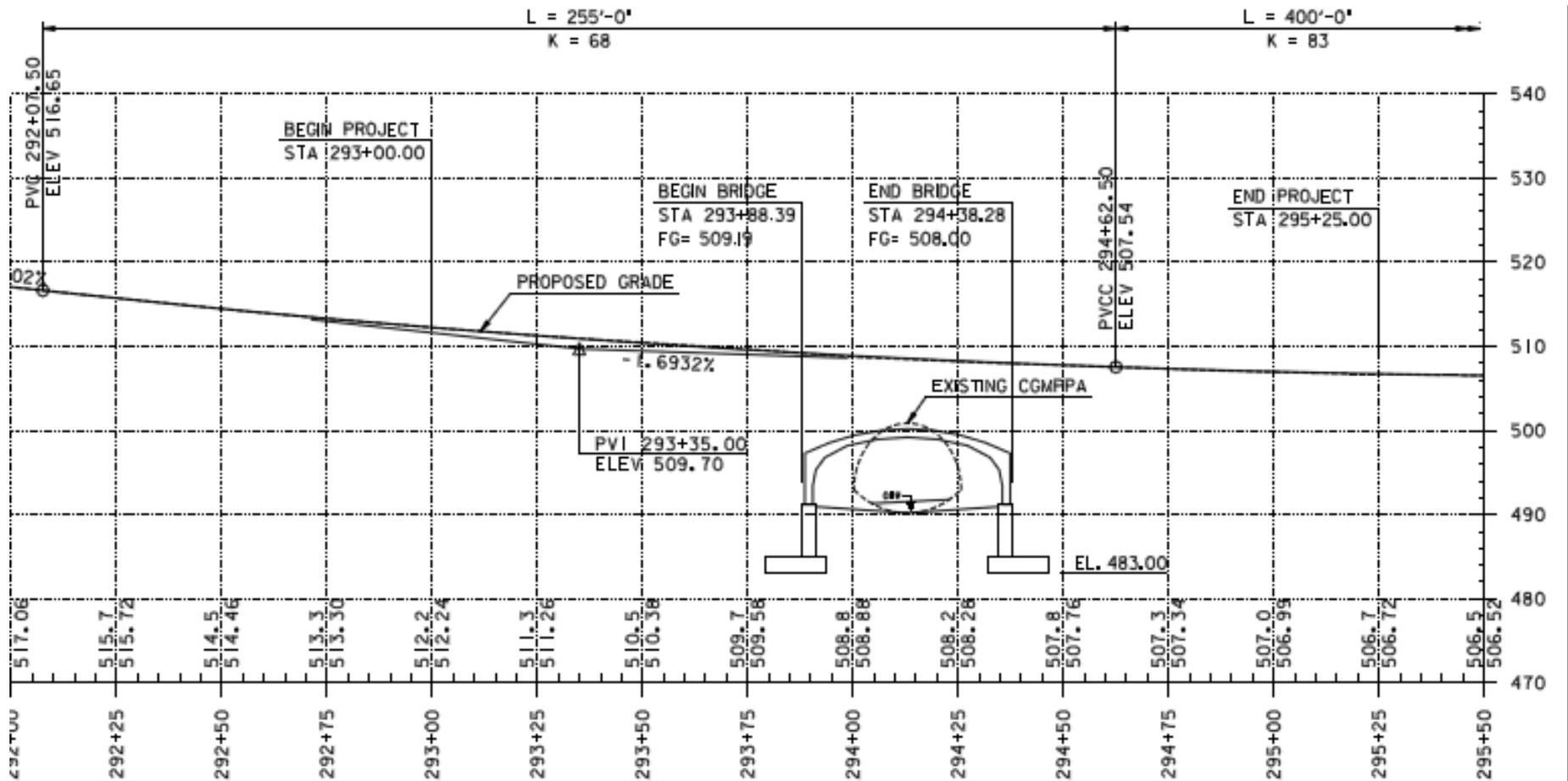
Layout



Frame/Arch Typical Section



Profile



VT 100 PROFILE I

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

FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

TYLININTERNATIONAL

PROJECT NAME: DUXBURY
 PROJECT NUMBER: BF 013-4(47)

FILE NAME: z16b00bro.dgn
 PROJECT LEADER: J. OLLUND
 DESIGNED BY: J. HOWE
 PROFILE I

PLOT DATE: 4/18/2016
 DRAWN BY: S. MORGAN
 CHECKED BY: XXXXX
 SHEET 10 OF 40

What Will the New Bridge Look Like?



Selected Alternative - Bridge #193

- 3-sided frame/arch (Buried Structure)

Maintenance of Traffic Options Considered

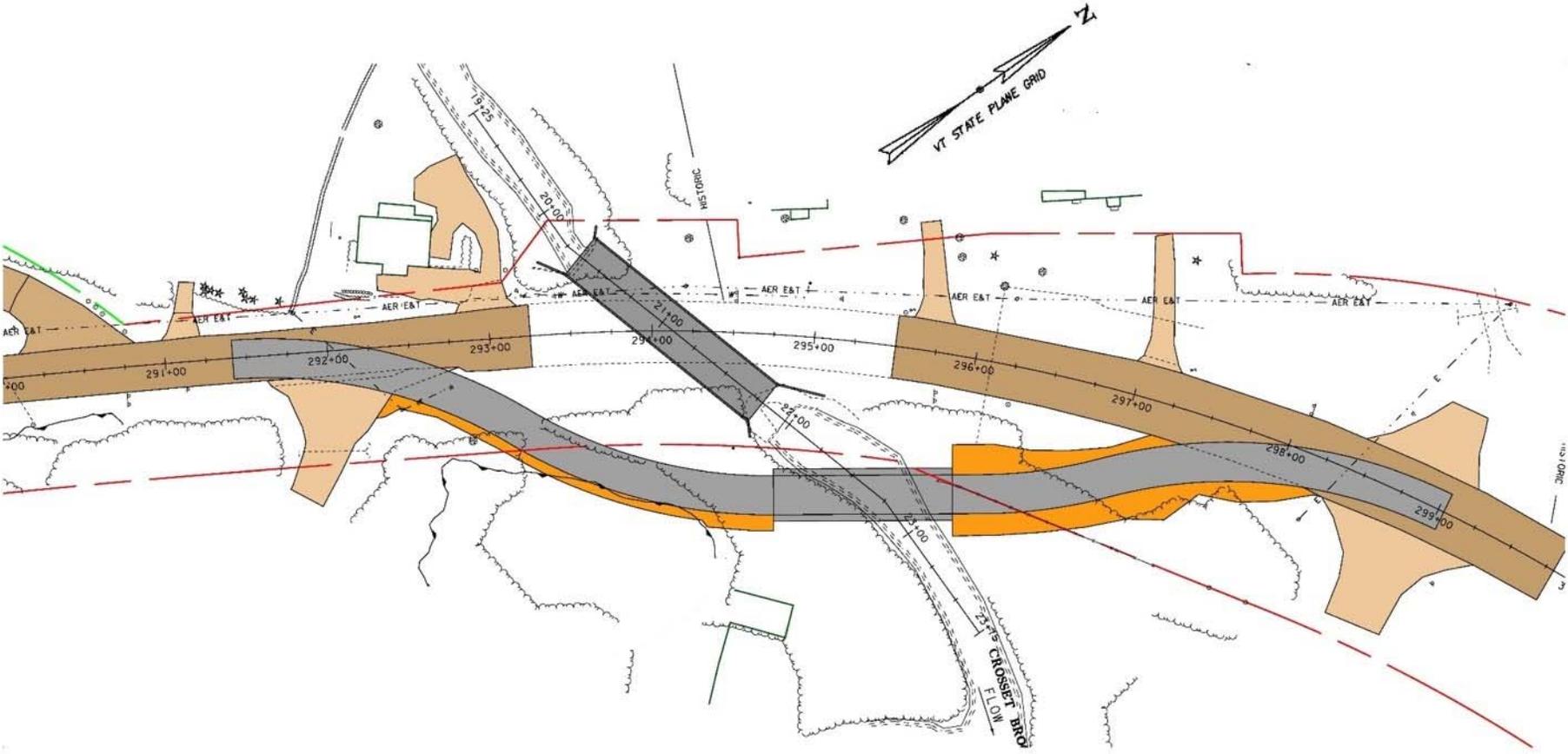
- Temporary Bridge
 - Impacts to environmental resources and adjacent properties
- Offsite Detour
 - Not considered due to a lengthy detour route and lack of local bypasses. Planned closure in Waitsfield along VT 100 to replace bridge 177.



Temporary Bridge

- Two lane temporary bridge
- Downstream is the only feasible location
- Downstream temporary bridge requires ROW acquisition as well as a Floodplain and Wetland Permit

Downstream Temporary Bridge Layout



Selected Alternative

- Full culvert replacement with a buried structure and traffic maintained on a two lane temporary bridge
 - Utility relocation needed
 - ROW needed
 - Temporary speed reduction through the work zone

Construction Schedule

- Advertise Project for Construction May 25, 2016
- Open Bids June 3, 2016
- Open Temporary Detour (Downstream) July 8, 2016
- Prepare site for new structure
 - Remove on Alignment Temporary bridge
 - Excavate for New Structure
 - Construct new footings (supports for Arch)
- Install Precast Arch Structure September 2016
- Open new Structure to Traffic November 11, 2016
- Remove Temporary Detour December 23, 2016
- Install Tree plantings June 30, 2017
- Seed Detour Area June 30, 2017
- Final lift of Pavement June 30, 2017

For More Information

If you'd like to receive project updates or have questions, please contact:

Francine Perkins

Public Information Officer

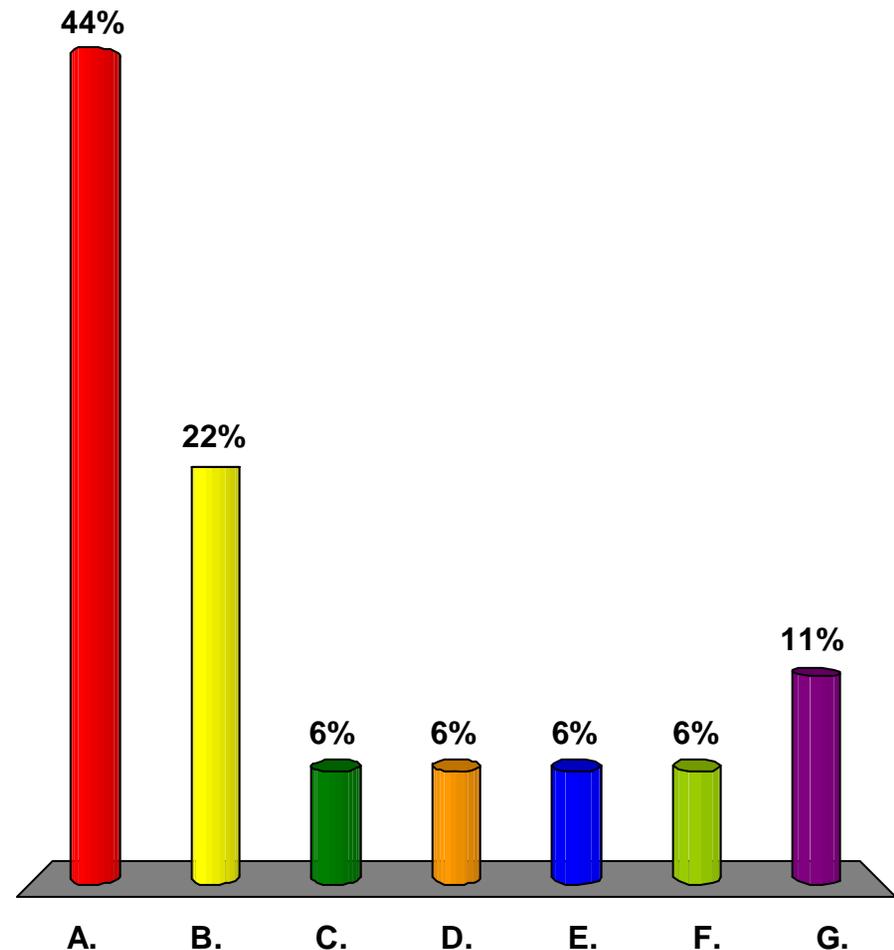
802-479-6994

- Project Website:

<http://watp.vtransprojects.vermont.gov/>

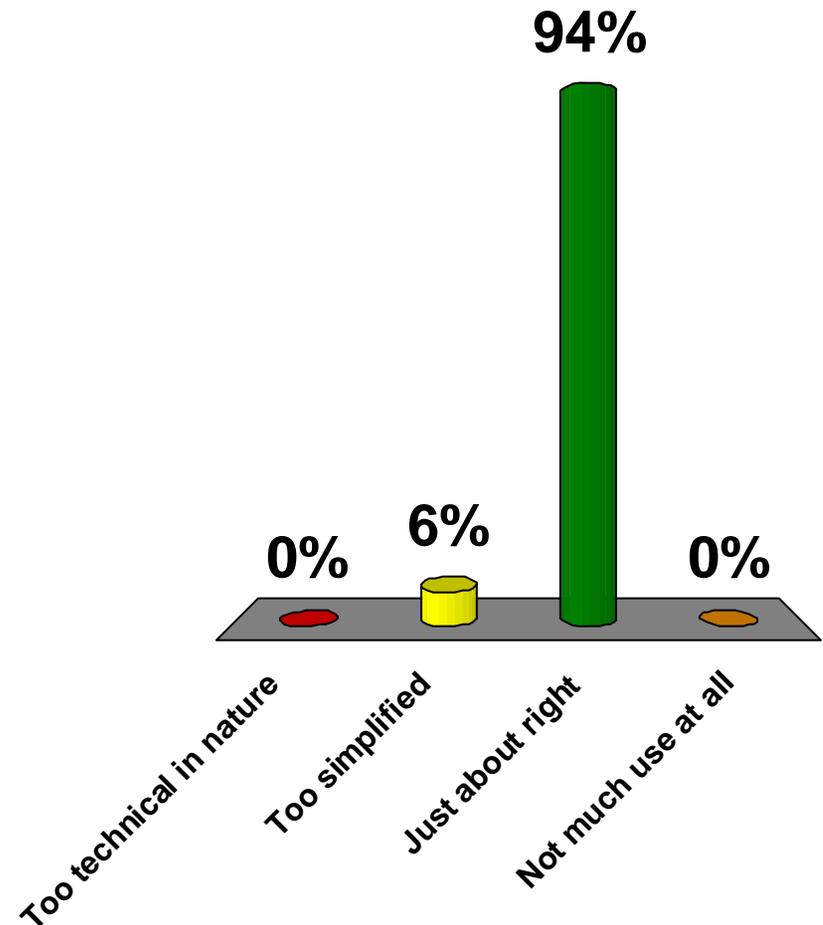
Which are you most concerned about?

- A. Construction Schedule
- B. Traffic Delays
- C. Emergency Management
- D. Business Impacts
- E. Project Impacts
- F. Other
- G. Not really concerned



Did you find this presentation to be?

- A. Too technical in nature
- B. Too simplified
- C. Just about right
- D. Not much use at all



For more information:

- <https://outside.vermont.gov/agency/vtrans/external/Projects/Structures/16b001>



Duxbury BF 013-4(47) Questions & Comments

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May 9, 2016

