

US Route 2 (Rogers' Rangers) Bridge  
Lancaster, NH – Guildhall, VT  
NHDOT Bridge No. 111/129  
NHDOT Project No. 16155  
Federal Aid Project A001(159)



**Public Hearing**

March 25, 2014

# Existing Bridge Information

- Bridge constructed in 1950.
- Cantilevered sidewalk added in 1996.
  - Sidewalk used by snowmobilers to cross the Connecticut River as part of the local trail system.
- Bridge Type: High Parker Steel Through Truss
- Bridge Deck: Reinforced Concrete
- Sidewalk Deck: Timber
- Substructures: Reinforced Concrete Abutments and River Pier
- Span Lengths: 2 at 198'-0" each
- Overall Length: 398'-0"
- Roadway Width: 28'-0" (2 – 14'-0" Travel Lanes)
- 2 – 2'-6" Open Grid Safety Curbs



# In-Depth Inspection Performed in September 2011

- Inspection Revealed the Following:
  - Bridge deck cracking, spalling and leakage.
  - Bridge deck pavement cracking.
  - Safety curb open grid members have section loss.
  - Sidewalk timber deck is weathered and has some rot.
  - Numerous boards have curled ends creating a tripping hazard.
  - Bridge rail deterioration.
  - Extensive deterioration of floor system members below the bridge deck.
  - Truss bottom chord advanced deterioration.
  - Light to moderate truss top chord rusting.



# In-Depth Inspection Performed in September 2011

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- Lower half of truss diagonal members exhibit heavy rusting and deterioration on the side exposed to snow and salt spray.
- Damaged truss vertical members due to vehicular impact on sway bracing members.
- Bent truss sway bracing and portal members due to vehicular impact.
- Abutment and pier concrete spalling and cracking.
- Overall condition of bridge in 2011 was fair.



# In-Depth Inspection Performed in September 2011

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- Structural analysis resulted in need for repairs performed by NHDOT.
- Bridge is currently posted “E-1”
  - Certified single unit vehicles restricted from crossing the bridge.
- The bridge condition was changed from fair to poor after the July 16, 2013 inspection.
- Bridge was added to the Redlist due to its changed condition.



# Alternatives Analysis

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- Bridge Rehabilitation and Replacement investigated due to:
  - Condition of bridge.
  - Truck traffic volume.
  - Inadequate vertical clearance.
- Traffic Control Options:
  - Temporary bridge located upstream for bridge rehabilitation.
  - New bridge located upstream; maintain traffic on existing bridge during construction.



# Alternatives Analysis

- Existing bridge rehabilitation detailed evaluation:
  - Replace bridge deck and entire floor system.
  - Replace entire bottom chord.
  - Replace 6 diagonal members and 8 vertical members.
  - Replace gusset plates at all bearings and 3 other locations.
  - Remove, clean and reinstall gusset plates at 19 locations.
  - Replace 2 bent upper lateral bracing members.
  - Replace truss bracing to improve vertical clearance.
  - Clean and paint steel to remain.
  - Abutment rehabilitation.
  - Pier replacement.



# Alternatives Analysis

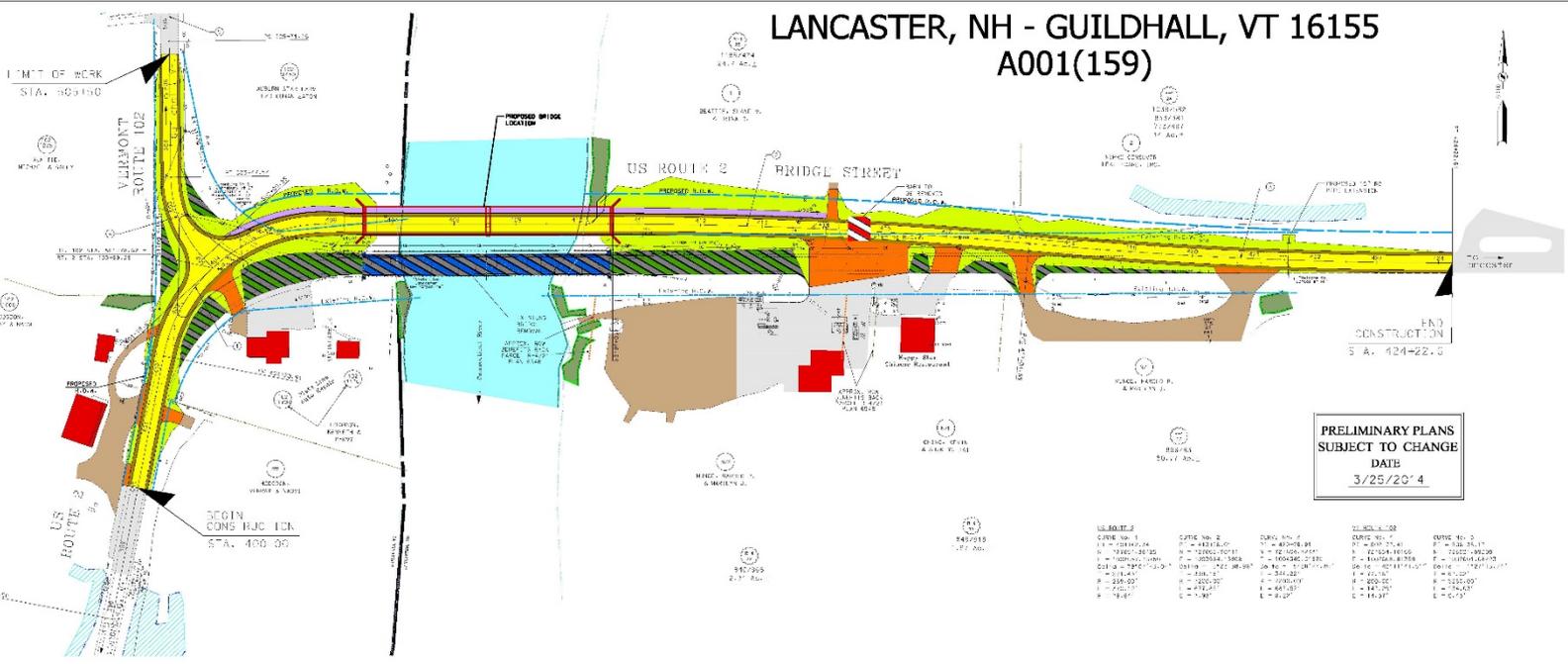
- Bridge Replacement (Selected Alternative)
  - Bridge length = 400' (match existing)
    - 2 span bridge: span lengths = 200' – 200'
  - Bridge width = 47'
    - 2 – 12' travel lanes
    - 2 – 5' shoulders
    - 1 – 10' sidewalk
    - Increased sidewalk width proposed to accommodate snowmobiles during winter months.



# LEGEND

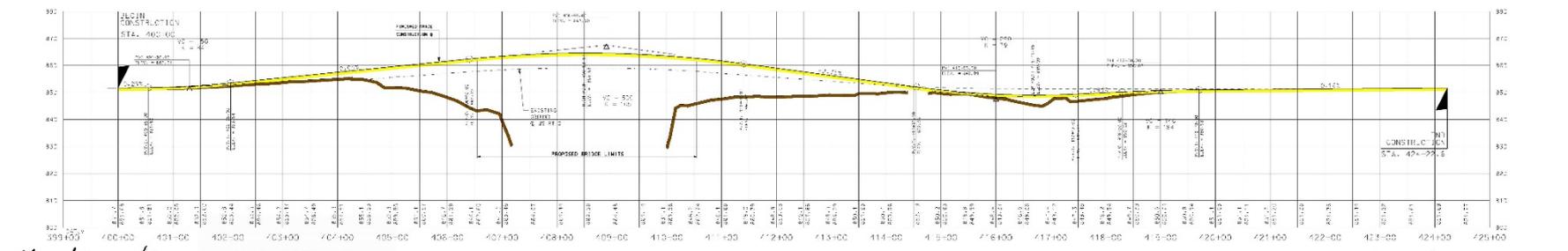
- █ Travel Way of Proposed Roadway
- █ Shoulder of Proposed Roadway
- █ Proposed Roadway Traffic Islands
- █ Proposed Driveway
- █ Access Paths to Proposed Roadway (Drives, etc.)
- █ Approximate Limit of Work and Landscaping
- █ Moment of Resting Pavement (Shoulder of Work)
- █ Existing Pavement (Overlays, Drives, Sidewalks, etc.)
- █ Existing Gravel Drives
- █ Existing Tree and/or Brush Lines
- █ Water (Streams, Wetlands, Lakes, Ponds, Reservoirs, etc.)
- █ Buildings
- █ Buildings To Be Demolished
- █ Wetlands
- █ Property Lines
- █ State, County, City and Town Lines
- █ Existing Easement Lines
- █ Proposed Easement Lines
- █ Existing R.O.W. (Right-of-Way)
- █ Proposed R.O.W.
- █ Existing C.A.R.O.W. (Controlled Access)
- █ Proposed C.A.R.O.W. (Controlled Access)
- █ Existing L.A.R.O.W. (Limited Access)
- █ Proposed L.A.R.O.W.
- █ Existing Tree Fill
- █ Existing FILL
- █ Water Fill
- █ Shading

# LANCASTER, NH - GUILDHALL, VT 16155 A001(159)



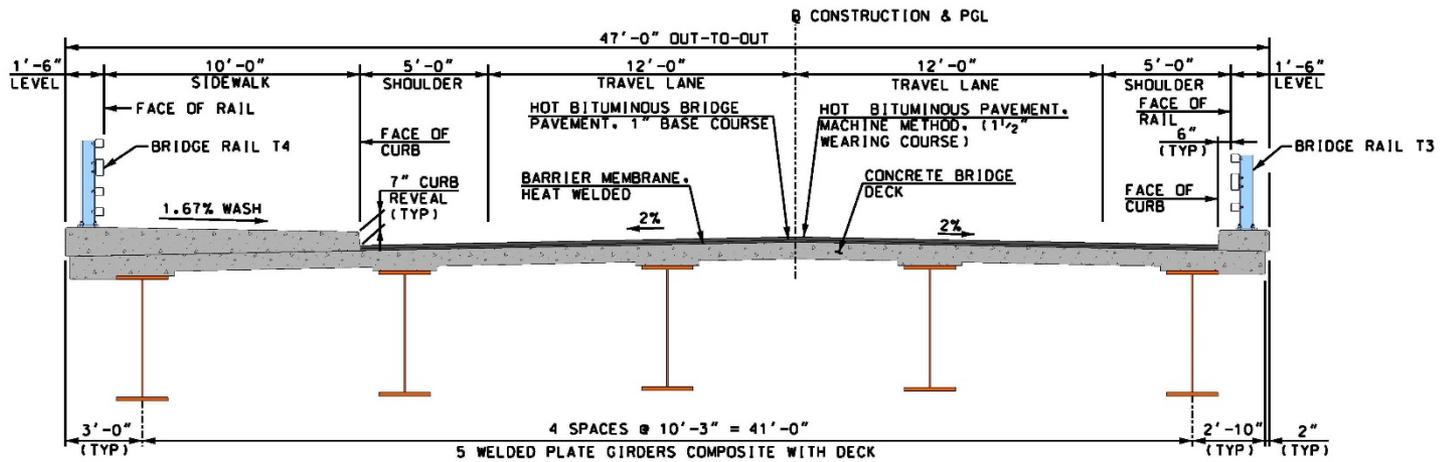
PRELIMINARY PLANS  
SUBJECT TO CHANGE  
DATE  
3/25/2014

US ROUTE 2	ROUTE NO. 2	ROUTE NO. 2	ROUTE NO. 2	ROUTE NO. 2	ROUTE NO. 2
DATE: 10-1-13					
BY: [Name]					
CHECKED: [Name]					
DATE: 10-1-13					
BY: [Name]					
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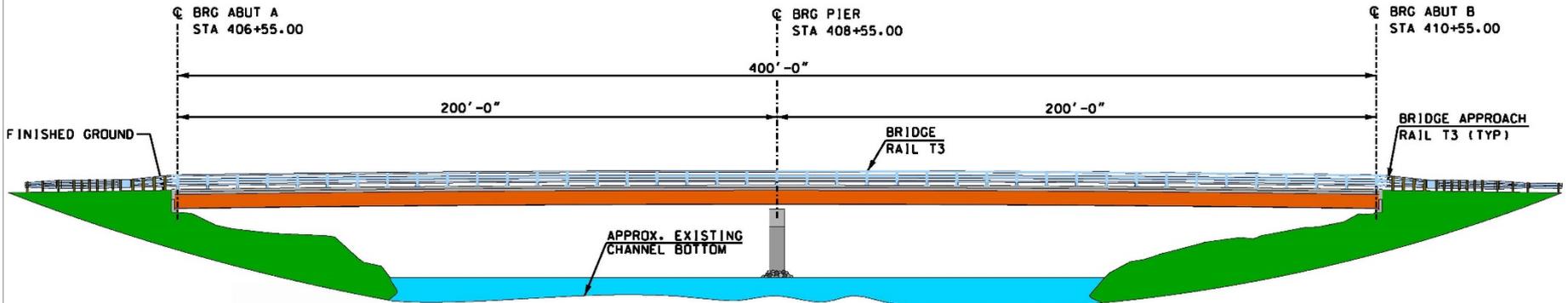


## US Route 2 (Rogers' Rangers) Bridge over the Connecticut River Proposed Bridge Replacement Roadway Plan and Profile Hearing Plan





PROPOSED BRIDGE TYPICAL DECK SECTION



PROPOSED BRIDGE ELEVATION

# Alternative Analysis Cost Estimates

- Bridge Rehabilitation: \$14,200,000
  - Bridge rehabilitation = \$10,200,000
  - Temporary bridge = \$3,000,000
  - Roadway = \$300,000
  - Temporary = \$700,000
- Bridge Replacement: \$10,000,000
  - Bridge Replacement = \$7,500,000
  - Roadway = \$1,500,000
  - Bridge Removal: \$1,000,000

