Nottingham 40612 – Bridge 141/127 – NH Route 152 over North River

Public Informational Meeting

November 18, 2021

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Department of Transportation

Introductions

- **David Scott, PE**
  - NHDOT Bureau of Bridge Design
    - Design Chief
- **Jason Tremblay, PE**
  - NHDOT Bureau of Bridge Design
    - Senior Project Engineer
- **Anthony Weatherbee, PE, SE**
  - NHDOT Bureau of Bridge Design
    - Project Engineer
- **Tom Levins, PE**
  - GM2
    - Project Consultant
- **Brandon Loiselle**
  - GM2
    - Project Consultant

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Project Location Map

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Existing Bridge Details

- Constructed in 1925; Widened in 1970
- 17’ Clear Span: steel beams with concrete jack arch deck on faced masonry abutment (original); steel beams with conventional concrete deck on piles (widened section)
- 29’-0” roadway width (3’-6” shoulders on each side)
- 3,300 vehicles per day, 7% trucks
- Added to Red List in 2012

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Site Photos

Looking South Along NH Rt.152

Looking North Along NH Rt.152

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Site Photos

Looking Downstream

Looking Upstream

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Bridge Condition

Bridge Downstream Elevation

Bridge Upstream Elevation

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Issues to Address

- Deterioration of Bridge Substructure
  - Bridge is on State Red List
  - Substructure is in Condition State 3 (Serious)
- Hydraulic opening

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Bridge Replacement

- Proposed bridge to be a single span (30-foot clear opening). Bridge alternatives include:
  - Precast Concrete Rigid Frame supported on precast concrete pedestal walls and spread footings
  - Precast Prestressed Concrete Deck Beams supported on precast integral abutments on steel piles
- Bridge span will address hydraulic opening deficiencies and provide a wildlife path through the structure
  - the proposed span does not satisfy the stream crossing rules (Alternative Design process required)
  - Compliant span length = 66’-0” clear
- Bridge width anticipated to be 30’-0” wide
  - 11’-0” travel lanes and 4’-0” shoulders
  - 3-bar steel rail anticipated

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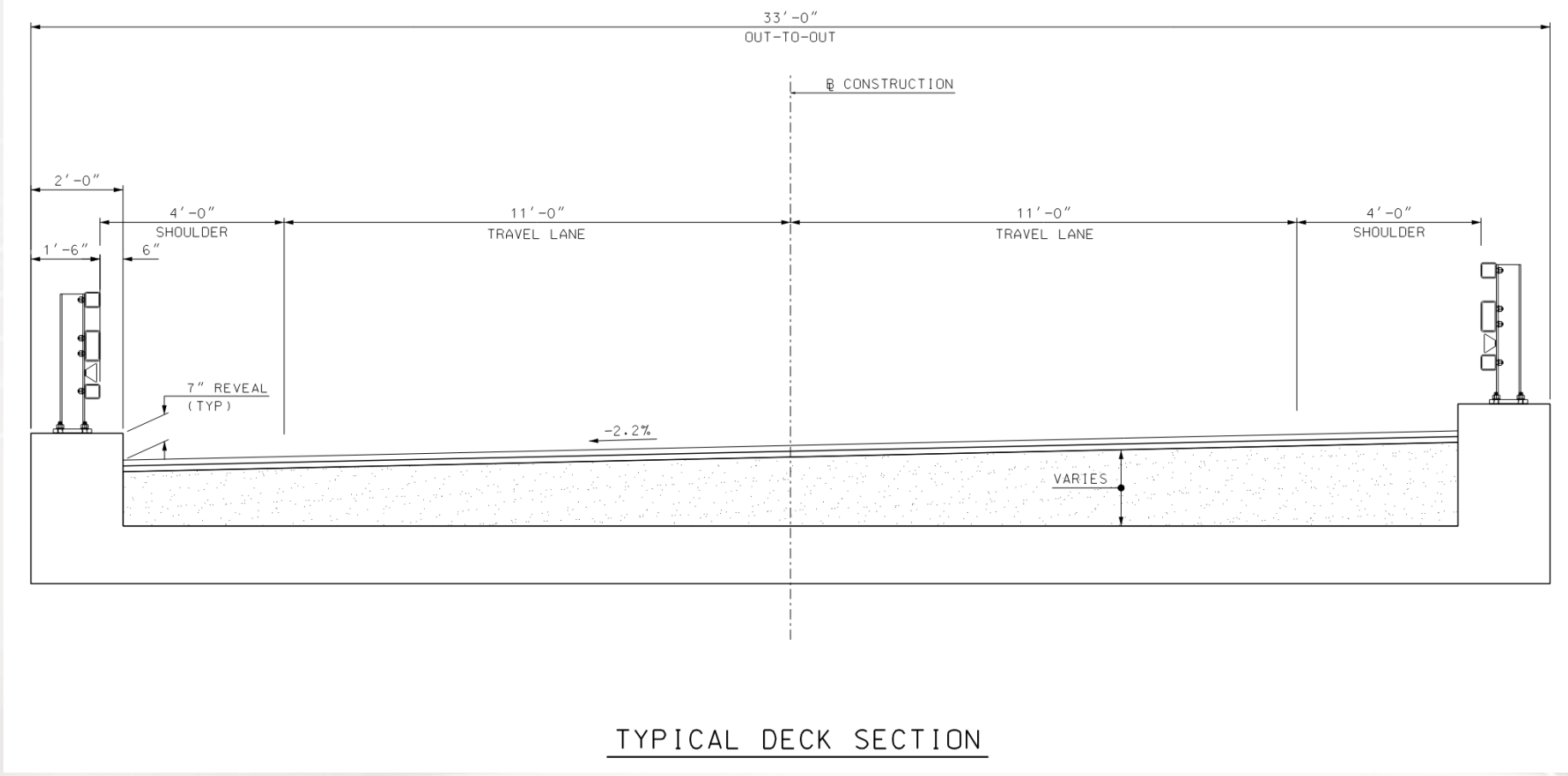
Bridge Replacement



TYPICAL DECK SECTION

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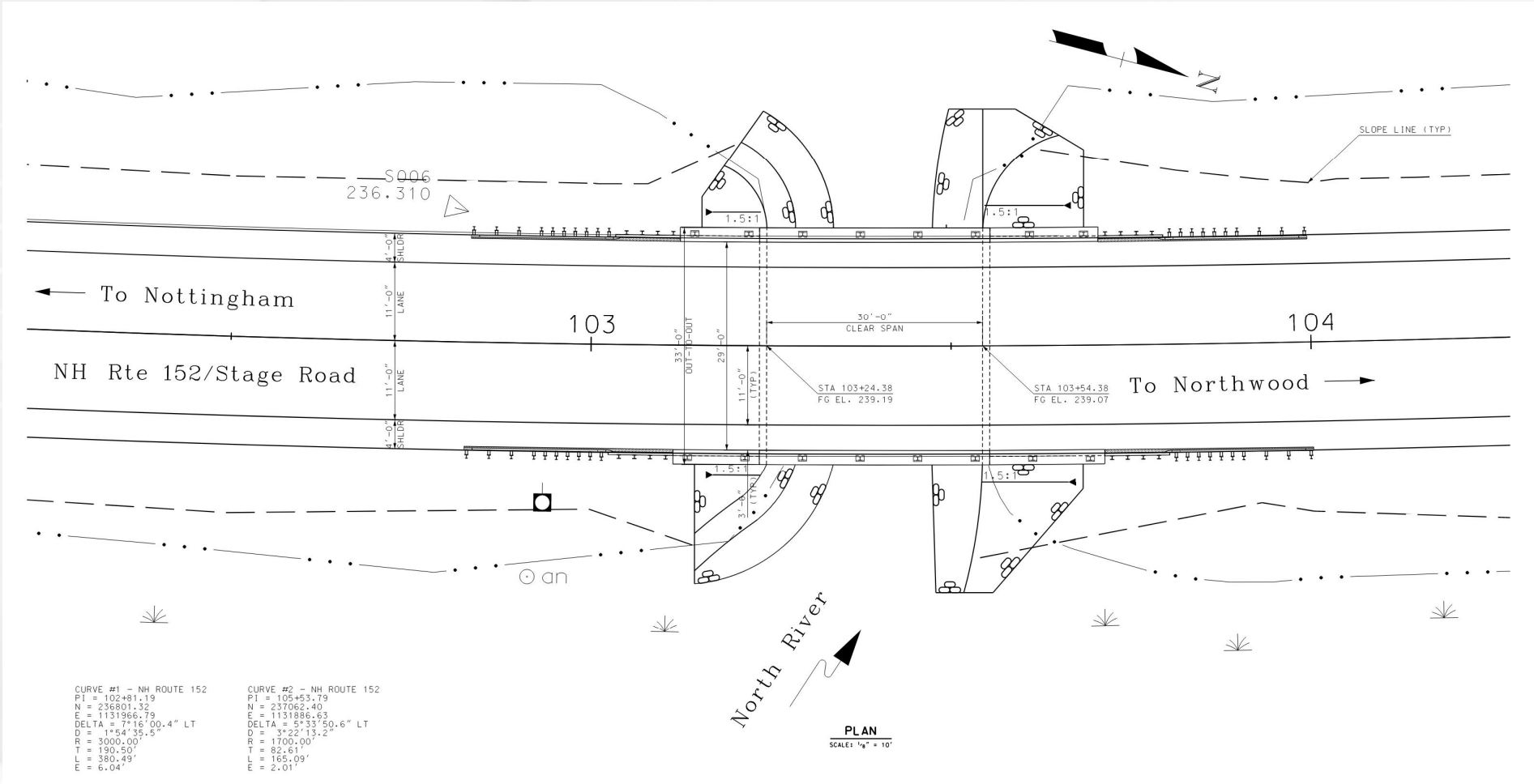
Bridge Span



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Maintenance of Traffic

Alternatives:

- Accelerated Bridge Construction (ABC) with bridge closure
  - Detour traffic using NH Rt 152, NH Rt 125, and US Route 4
  - Approximate closure duration of NH Rt 152 = 1 month
  - Anticipated construction duration = 1 construction season
- Phased construction, maintaining one lane of traffic in each direction on NH Rt 152
  - Requires additional widening of proposed structure
  - Existing masonry abutment makes phase construction more difficult
  - Anticipated construction duration = 2 construction seasons
- Offline temporary bridge
  - Additional impacts to wetlands (North River is a Designated River; part of Lamprey River Watershed)
  - 70 to 80 foot span for temporary bridge
  - Anticipated construction duration = 2 construction seasons

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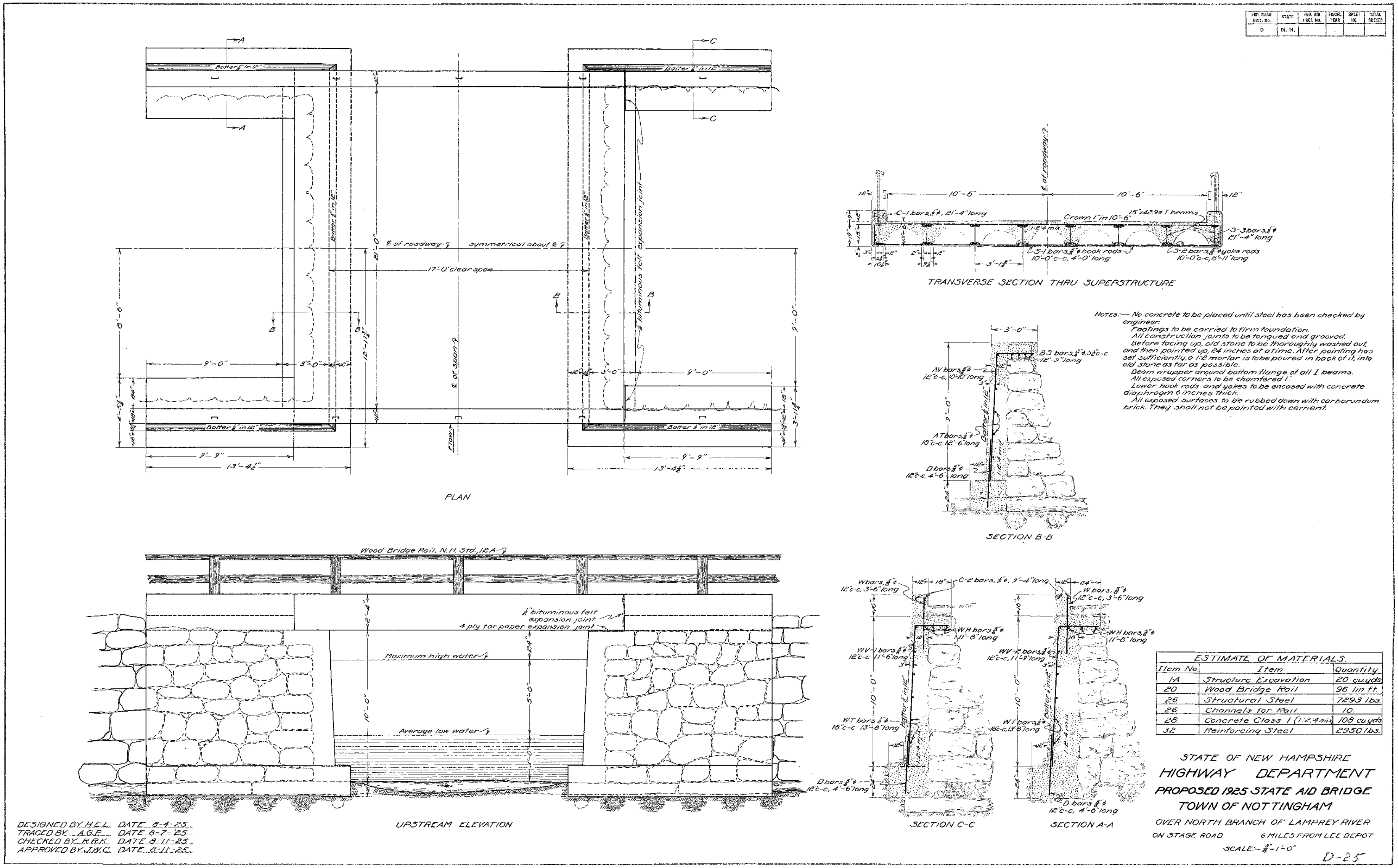
PLAN
Wood Bridge Rail, N.H. Std. 12A
UPSTREAM ELEVATION
Maximum high water
Average low water
TRANSVERSE SECTION THRU SUPERSTRUCTURE
SECTION B-B
SECTION C-C
SECTION A-A
NOTES:— No concrete to be placed until steel has been checked by engineer.
Footings to be carried to firm foundation.
All construction joints to be tongued and grooved.
Before facing up, old stone to be thoroughly washed out, and then pointed up, 24 inches at a time. After pointing has set sufficiently, a 1:2 mortar is to be poured in back of it, into old stone as far as possible.
Beam wrapper around bottom flange of all I beams.
All exposed corners to be chamfered 1".
Lower hook rods and yokes to be encased with concrete diaphragm 6 inches thick.
All exposed surfaces to be rubbed down with carborundum brick. They shall not be painted with cement.
STATE OF NEW HAMPSHIRE
HIGHWAY DEPARTMENT
PROPOSED 1925 STATE AID BRIDGE
TOWN OF NOTTINGHAM
OVER NORTH BRANCH OF LAMPREY RIVER
ON STAGE ROAD 6 MILES FROM LEE DEPOT
SCALE:— 3/8" = 1'-0"
D-25
DESIGNED BY H.E.L. DATE 8-4-25
TRACED BY A.G.P. DATE 8-7-25
CHECKED BY R.R.K. DATE 8-11-25
APPROVED BY J.W.C. DATE 8-11-25

ESTIMATE OF MATERIALS.

Item No.	Item	Quantity
1-A.	Structure Excavation	20 cu.yds.
20	Wood Bridge Rail	96 lin. ft.
26	Structural Steel	7293 lbs.
26	Channels for Rail.	10.
28.	Concrete Class 1 (1:2:4 mix)	108 cu.yds.
32	Reinforcing Steel.	2950 lbs.

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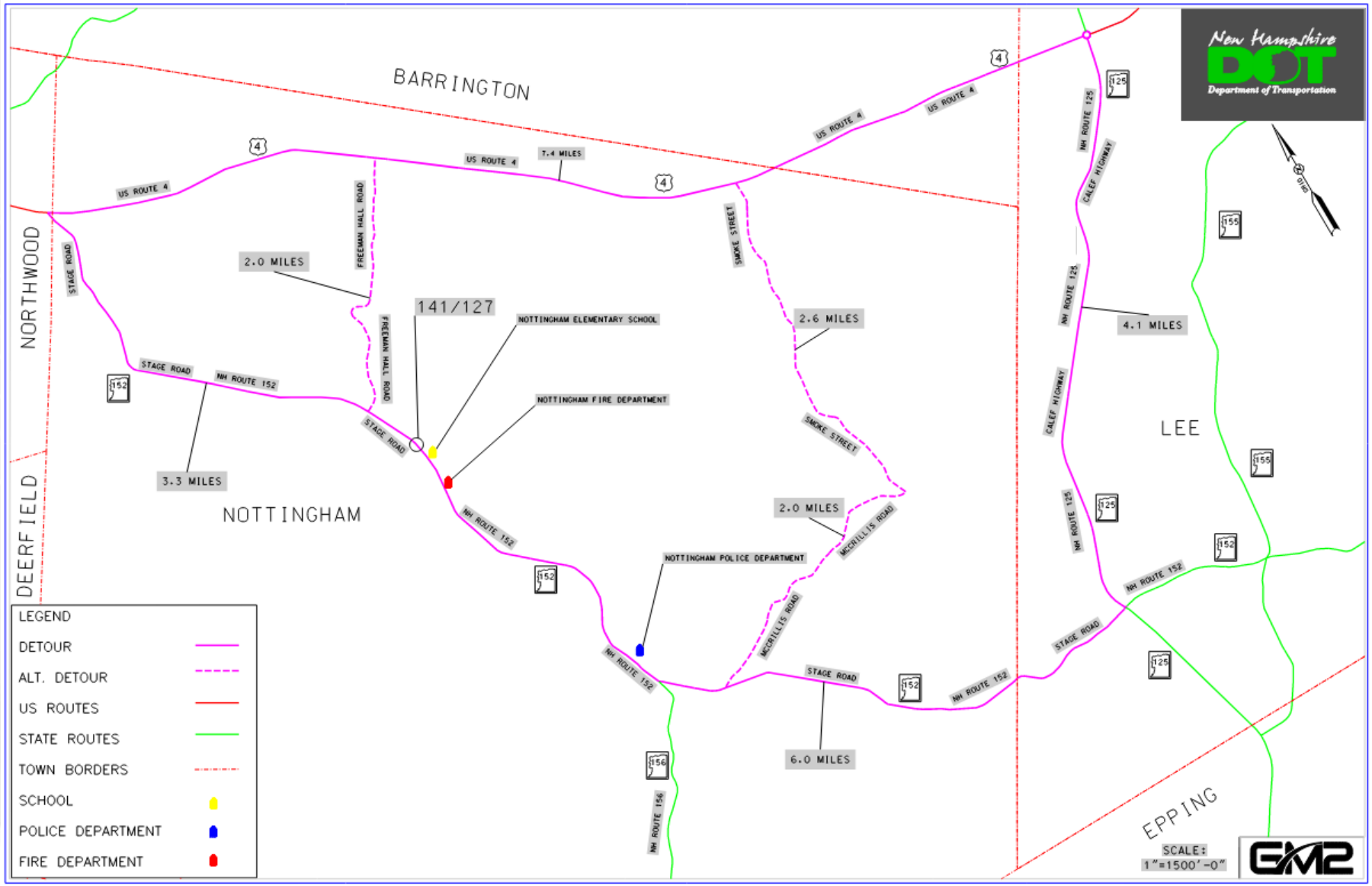
Detour Traffic Control for ABC Alternative



Rte. 4 to Rte. 125

21 miles on state routes. ~4 miles on local roads

Cultural Resources: Section 106 Review

- Bridge: not eligible
  - Constructed in 1925 and rebuilt in 1970
- Archeological survey
  - No further survey recommended
- Some surrounding properties > 50 y.o.
  - No impacts with preferred alternative

FIGURE 10: Photo of Nottingham Bridge 141/127 on bridge card dated May 7, 1941, showing east elevation before 1970 widening.

Natural Resources

- North River and Wetlands
  - Tier 3 stream crossing
  - Designated river
  - Protected shoreland
  - Wetland permit- standard dredge & fill
  - Priority Resource Area
- Federally listed species- plant & bat
- State listed species- turtles, snake, mussel & fish
- Wildlife Corridor- wildlife shelf being considered

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Cost Estimate

- Funded by SB 367
  - $800,000

Your Input is Needed

- Preferred Closure Time (Spring, Summer, or Fall) for ABC
- Emergency Response Routes
- Mutual Aid
- School Bus Routes
- Historic Concerns
- Past Flooding Concerns
- Bicycle and Pedestrian Concerns
- Other Concerns

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Next Steps

- Develop and evaluate alternatives based on the Town's input
- Present findings to Cultural and Natural Resource Agencies to get their input and comments
- Complete the NEPA process (National Environmental Policy Act) for environmental permitting
- Construction scheduled to begin in 2024-2025

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Questions?

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