Laconia 16144
US Route 3 over New Hampshire Railroad (Br No 131/154)
Cultural Resources Group Meeting

August 13, 2015

New Hampshire DOT Department of Transportation

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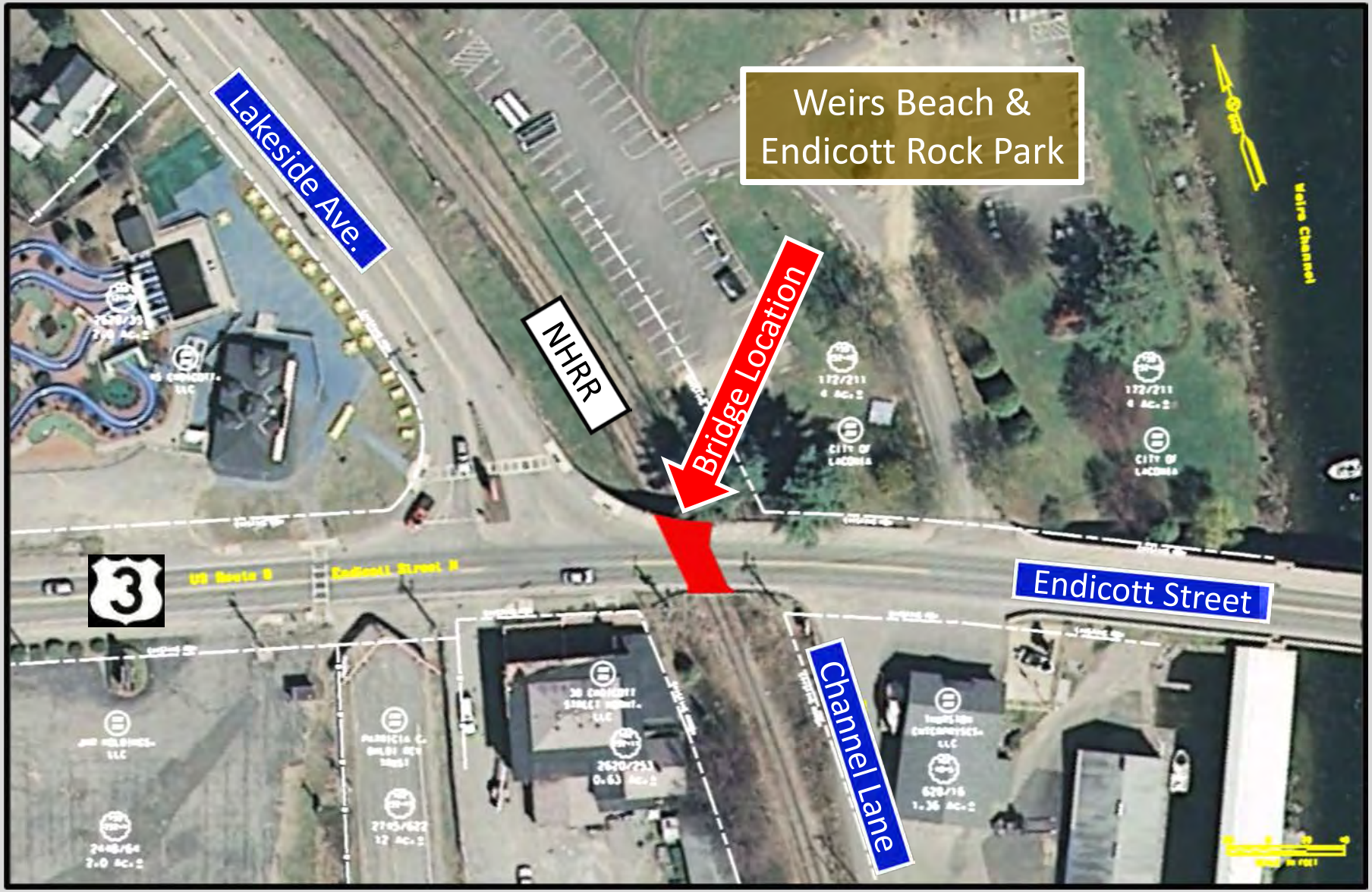
Project Location Map



Site Photos

Looking North

Looking South

Site Photos

West Abutment

East Abutment

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Site Photos

Retaining Wall – From Above

Retaining Wall – From Below

Site Photos

Looking West up Endicott Street (US Route 3)

Site Photos

Lakeside Avenue Looking South to Intersection with US 3

Intersection of Lakeside Avenue

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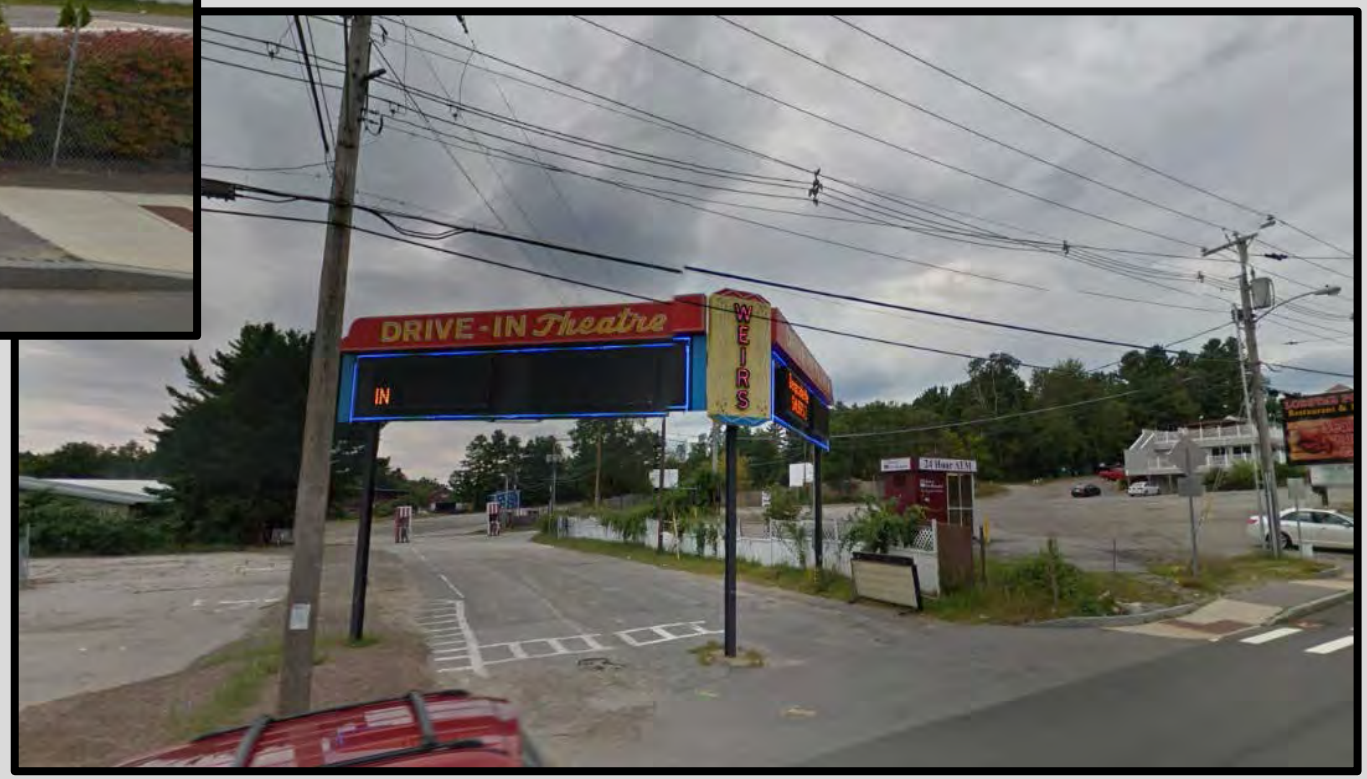
Site Photos

Looking South down Channel Lane
from US 3, Thurston Enterprises at left

Intersection of Channel Lane with US 3

Site Photos

Route 106 Realty Trust (Google Maps Photo)



Weirs Drive-In Theater (Google Maps Photo)

Site Photos

Weirs Beach Sign (Google Maps Photo)

Weirs Beach Water Slide (Google Maps Photo)

Site Photos

Weirs Beach & Endicott Rock Park Entrance

Weirs Beach & Endicott Rock Park

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Bridge Facts

- Bridge was put on the State's Red List in 2009, #40 on the 2015 Bridge Priority List
- Federal Sufficiency Rating (FSR) of 32.7 out of 100
- Carries Approximately 13,000 Vehicles per day in 2011 (5% trucks) , Posted speed 30 mph,
  - April last month before traffic significantly increases
- Rail service May to November

Superstructure

- Is a Cast-In-Place (CIP) Concrete Slab constructed in 1933
- It's a 23' to 32 ' long single span which carries US Route 3 over NHRR
- The narrowest roadway width is 27 ' between curbs, 7' wide sidewalk along the north side of the bridge
- The railroad vertical clearance is 17.5 ' from top of rail to bottom of slab

Substructure

- Is primarily made up of split granite block abutments, built prior to 1933
  (there are no existing records of their construction)
- In 1933 the abutments were widened with mass concrete along with a wing running down Lakeside Ave.

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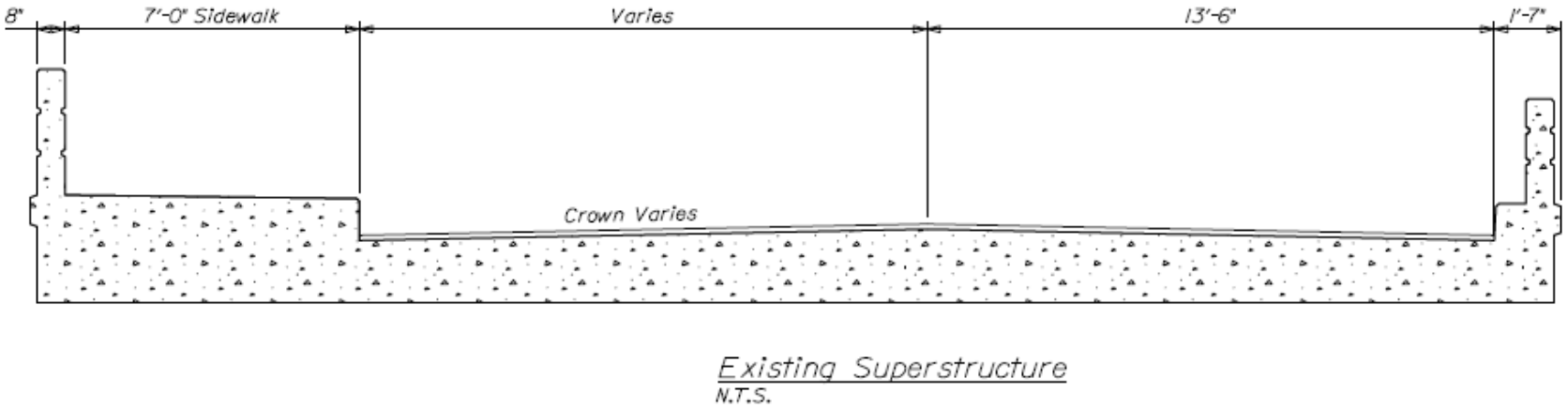
Bridge Facts



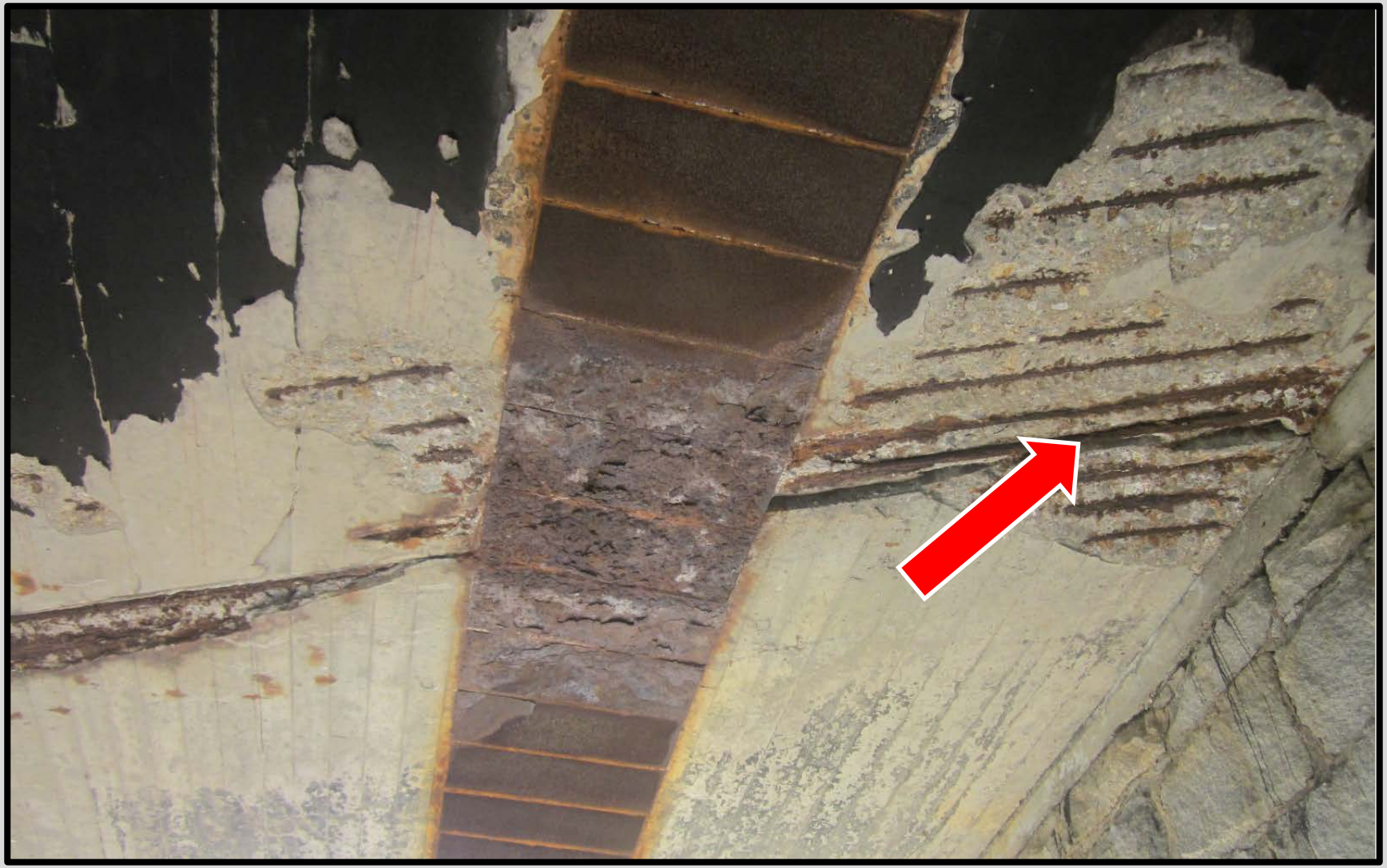
Cast-In-Place Concrete Deck

Superstructure Section

Bridge Facts

Components

Inspection Photos



Underside of Bridge Deck – Exposed Reinforcement

Design Considerations

- Narrow roadway shoulders over bridge (not easily widened without increasing bridge width)
- Line of sight & obstructions (concrete rail)
- Many Utilities (move prior to construction)
- Close proximity to intersections
  - Lakeside Avenue
  - Channel Lane
  - Endicott Rock Park Drive
- Located in Tourist Area
  - Weirs Beach
  - Other Attractions
- NHRR with 17.5 ’ clearance
- Detour Length

Bridge Improvement Options

- Superstructure Replacement Options
  - Steel beams with a concrete deck ⇒ Deep structure depth, clearance issues
  - Cast-In-Place Concrete Slab ⇒ Slow to Construct
  - **Precast-Prestressed Voided Slabs ⇒ Accelerated Schedule Advantages**
- Bridge Rail Options
  - Concrete Bridge Railing ⇒ Line of Site issues, Safety Concerns
  - **T4 Bridge Railing ⇒ Accelerated Schedule Advantages**
- Substructure Options
  - Do nothing ⇒ Deterioration, needs to be addressed
  - Complete replacement ⇒ Delays, Cost, Permits, ROW, Substructure still Viable
  - **Repair Existing Abutment ⇒ Existing Abutments are Stable & can be Rehabilitated**

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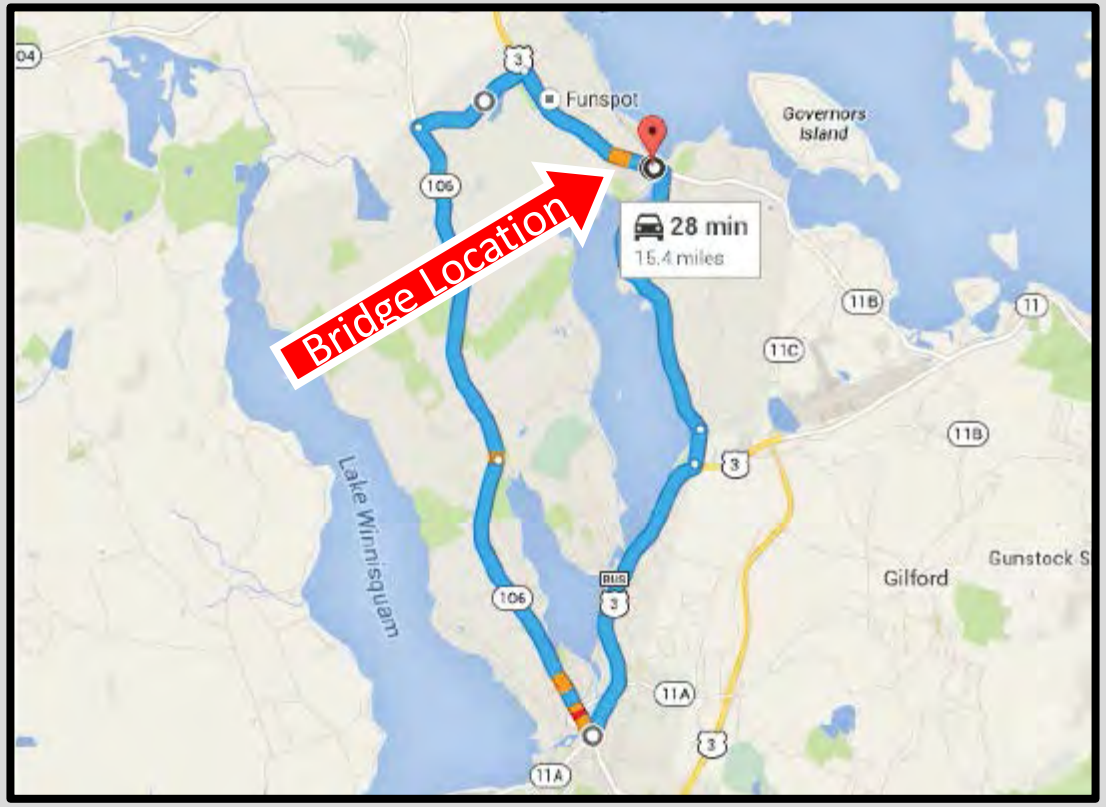
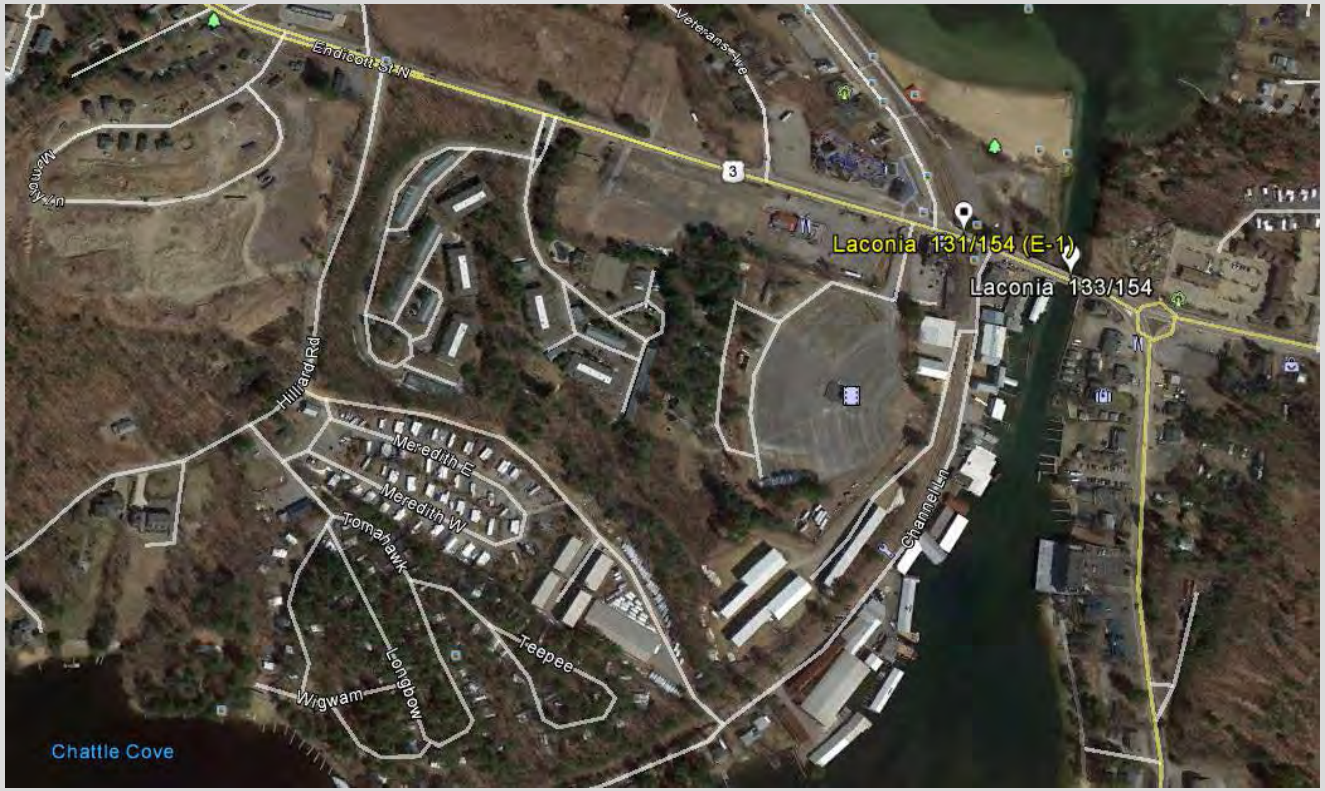
Traffic Control Alternative (Detour Route)



Phased Construction: Alternating One-Way with Temporary Signals

Bridge Closure : Detour Traffic

Potential Emergency Vehicle Response Route (Closed Option)



Public Informational Meeting Input was a preference toward closure

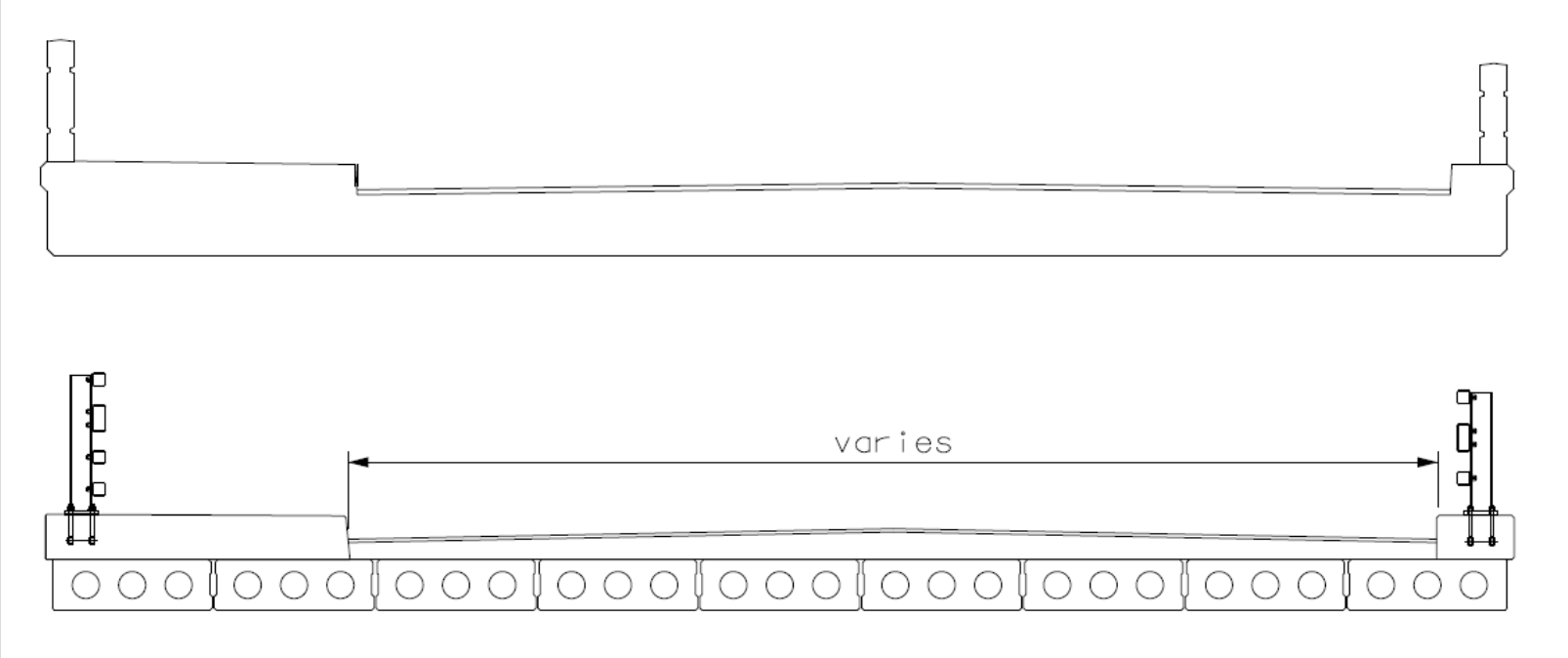
Emergency Access via Hillard Road & Channel Lane

(Closed/Accelerated Construction)

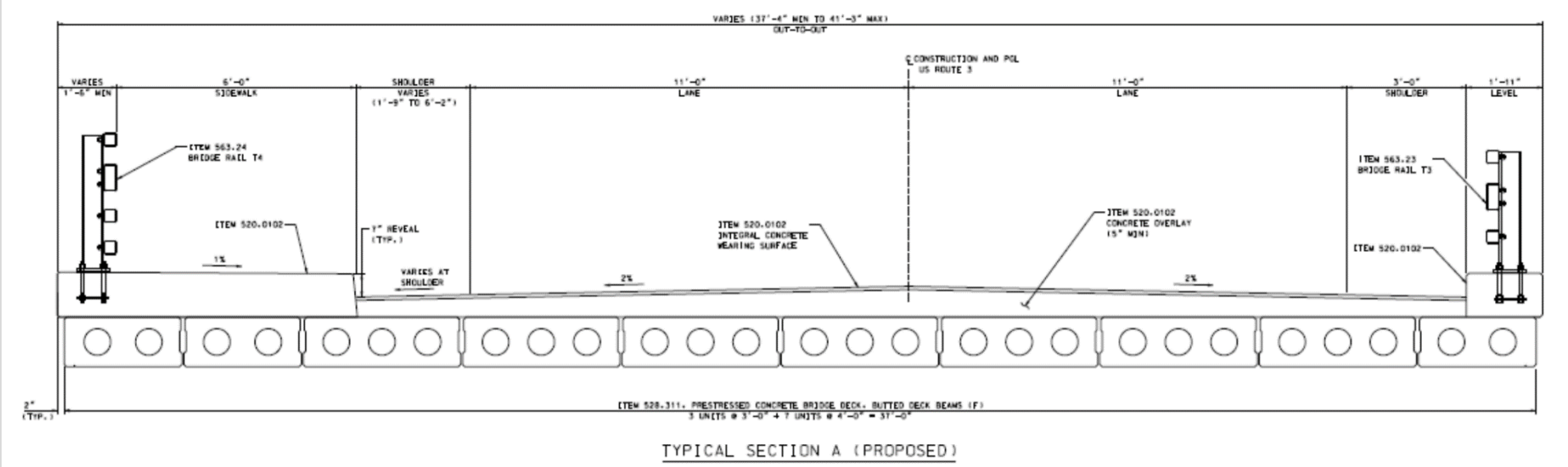
- Accelerated Options
- Emergency Response Coordination Required
- 30 Day (Accelerated) Construction Period (March-April timeframe?)
- Most Economical
- **Accelerated Option Recommended**

Existing

New Proposed

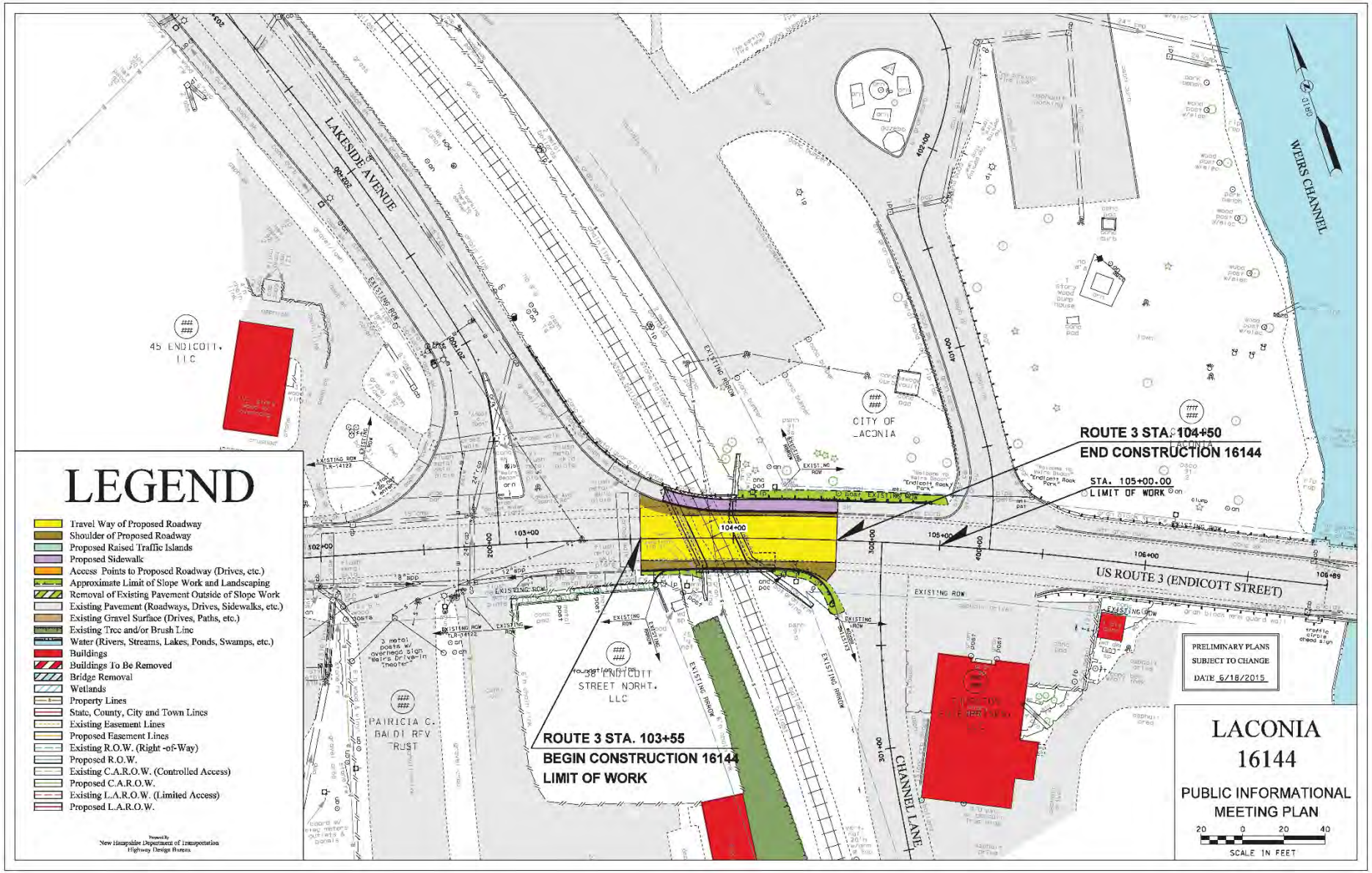


Bridge Improvement Option (Proposed Bridge)



Note: Cast-In-Place (CIP) Option Similar

Proposed Project Construction Limits

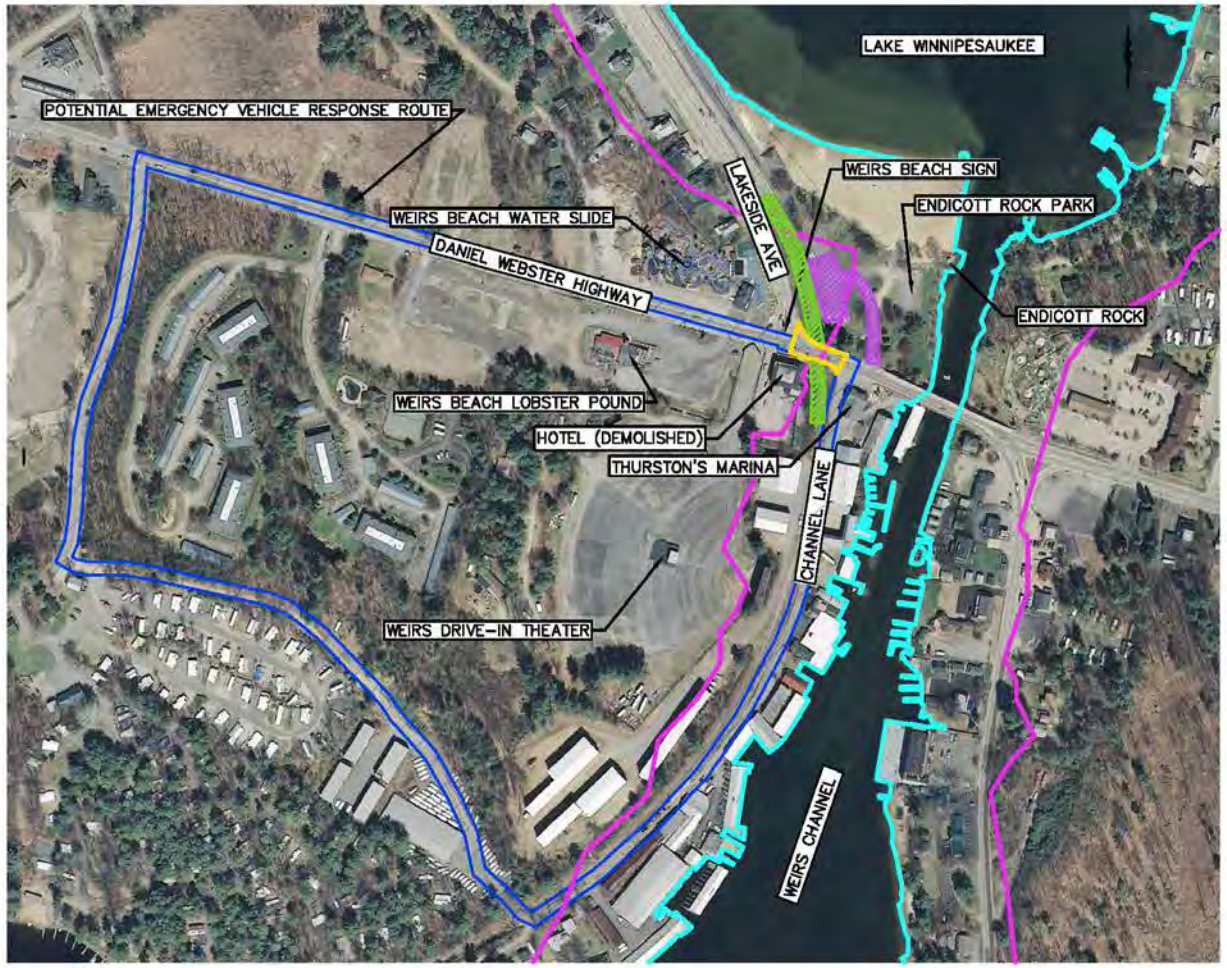


Cultural Resources

Request for Project Review Submitted

Phase 1A Bibliography Form and Short Report Submitted

Cultural Resources - Area of Potential Effect



LEGEND:

- 250 ft Shoreland Buffer
- Approx. Edge of Channel or Lake
- Project Area
- Potential Emergency Detour Route
- NH Railroad Corridor
- Potential Staging Area

300 0 150 300

(in feet)
1" = 300'

Note: The extent of aerial imagery is the proposed Area of Potential Effect.

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Laconia, 16144
US RT. 3 over NH RR. Bridge Rehabilitation
NHDOT Bridge No. 131/154

- Area of Potential Effect Plan -

Figure 2

M:\CADD\PROJECTS\927-Laconia\16144\Cadd\Env\RPR\Area of Potential Impact.dwg Date Plotted: Jul 30, 2015 – 12:14pm Plotted By: BAUDET

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Next Steps and Schedule

- Continued coordination with ROW, Cultural & Natural Resource Agencies
  - Preparation of an Individual Inventory Form for Bridge No. 131/154; confirming its NR eligibility and its contribution to the BC&M Railroad Historic District
- Meet with City again to review recommended solutions (Fall of 2015)
- Develop Contract Plans by End of 2016
- Advertise fall of 2019
- Construction fall of 2019 to spring 2020 (closure likely would be April)

- Estimated Construction Cost $1,500,000 based on Superstructure Replacement with Accelerated Construction and Bridge Closure

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Concerns, Comments, & Questions