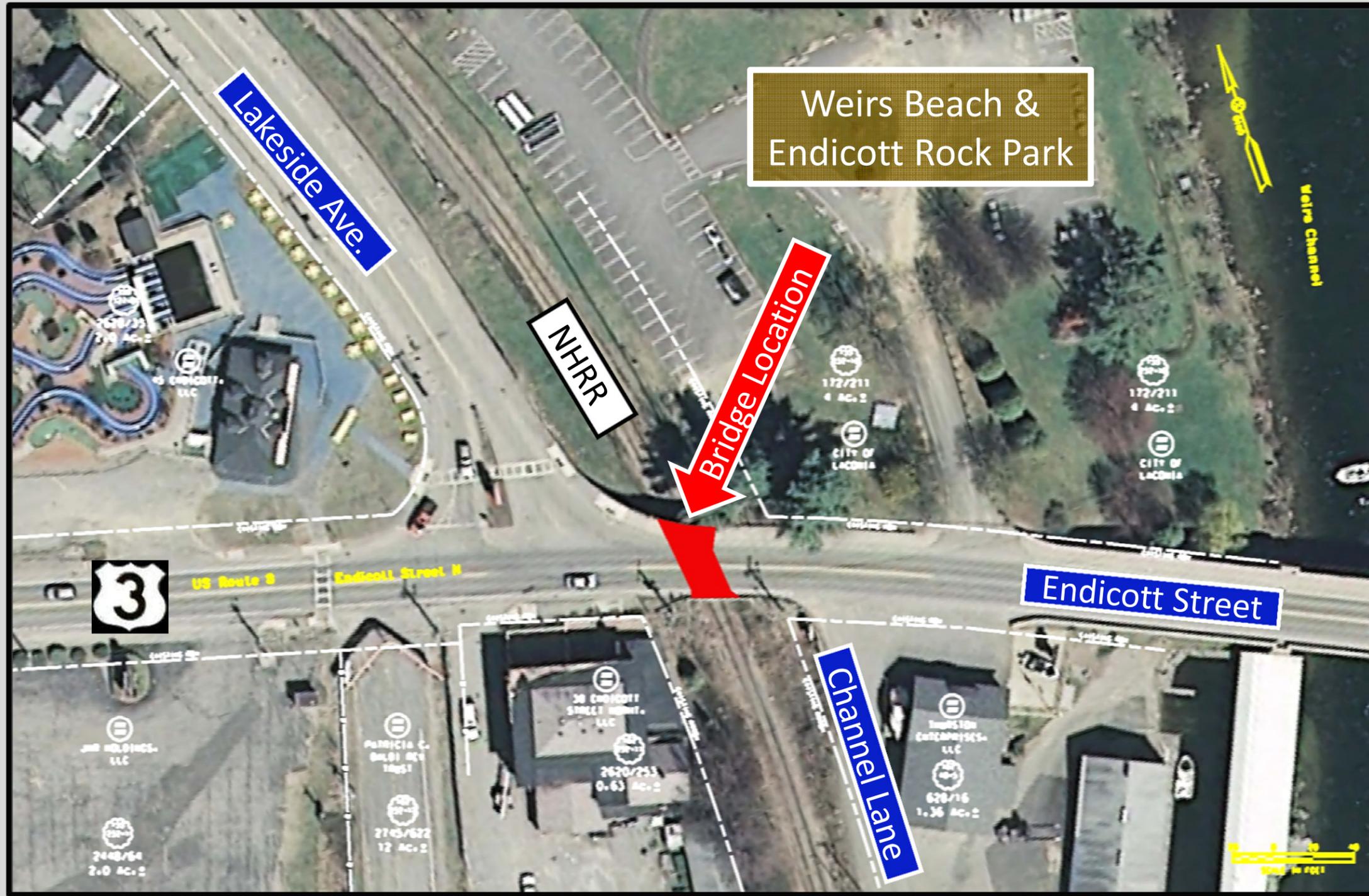


Laconia 16144
US Route 3 over New Hampshire Railroad (Br No 131/154)
City Officials Meeting



May 11, 2015

Project Location Map



Site Photos



Looking North



Looking South

Site Photos



East Abutment



West Abutment

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

Site Photos



Looking South down Channel Lane
from US 3



Intersection of Channel Lane with US 3

Site Photos



Weirs Beach & Endicott Rock Park



Weirs Beach & Endicott Rock Park Entrance

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

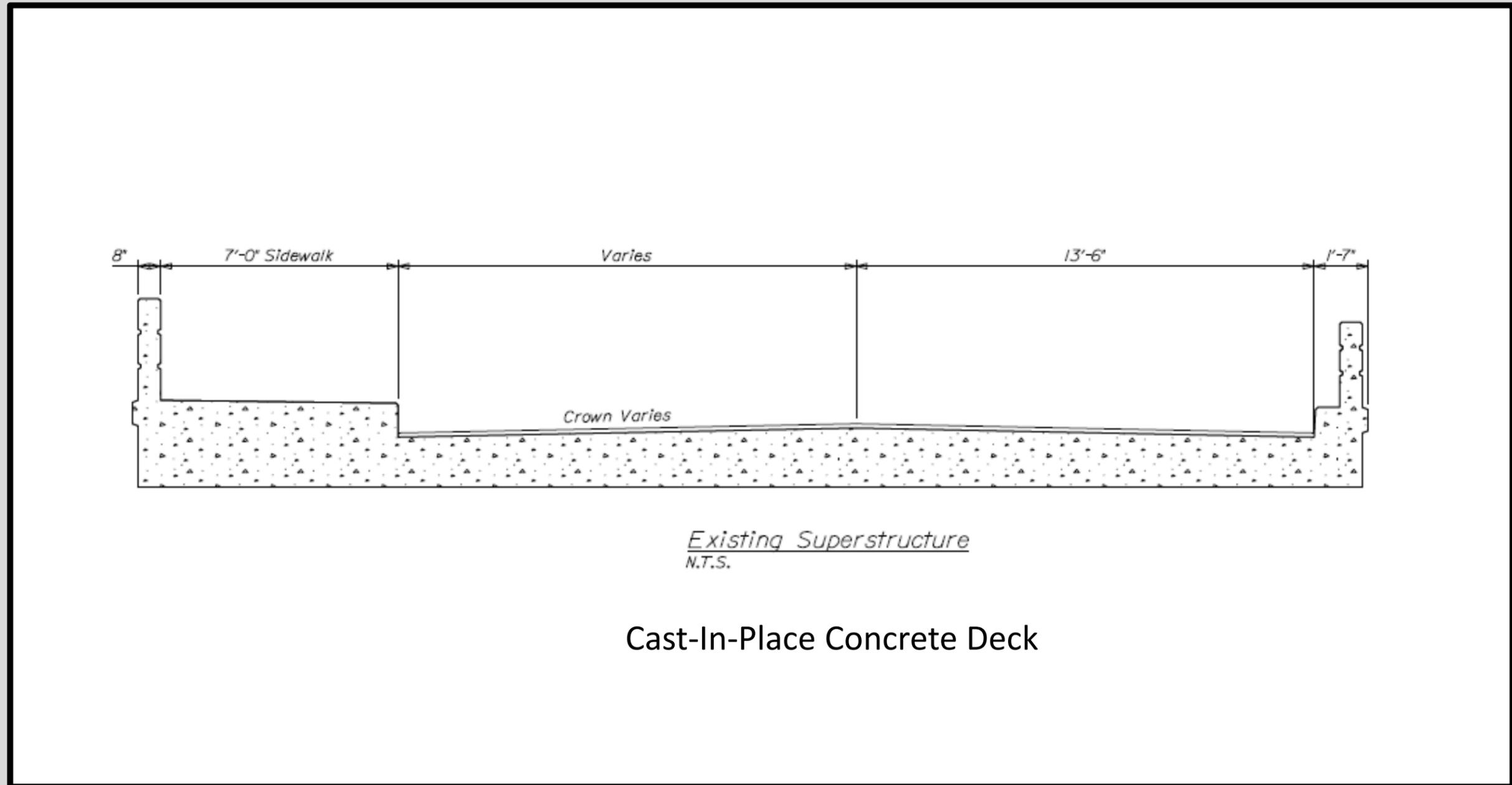
Superstructure

- 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.

Bridge Facts



Superstructure Section

Bridge Facts



Inspection Photos



Underside of Bridge Deck – Exposed Reinforcement

Inspection Photos



East Abutment

Mortared Joints in Disrepair, Stone Stable With No Signs of Shifting

Inspection Photos



Retaining Wall – Cracking

Summary of Inspection

Based on Visual Inspection and Material Testing:

- **Superstructure:** Poor condition, needs Replacement
- **Abutments:** Fair Condition, can be Rehabilitated
- **Wingwalls:** Fair Condition, can be Rehabilitated

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

- Steel beams with a concrete deck ⇒ Deep structure depth, clearance issues
- Cast-In-Place Concrete Slab ⇒ Slow to Construct
- **Precast-Prestressed Voided Slabs** ⇒ **Accelerate Schedule Advantages**

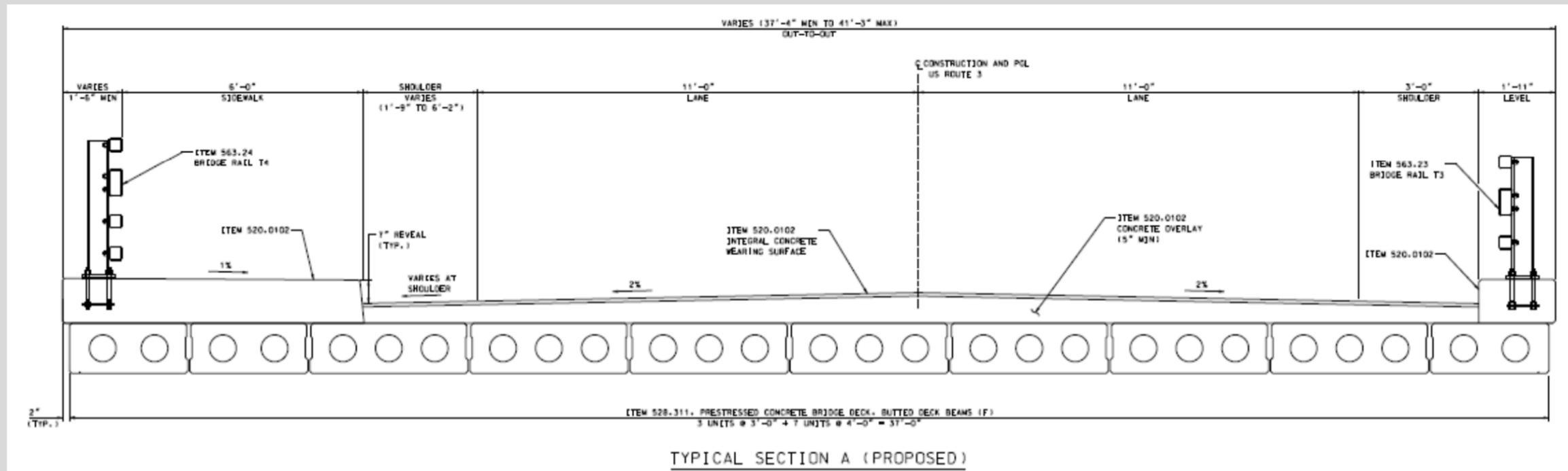
- Bridge Rail

- Concrete Bridge Railing ⇒ Line of Site issues, Safety Concerns
- **T4 Bridge Railing** ⇒ **Accelerate Schedule Advantages**

- Substructure

- 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 Rehabbed**

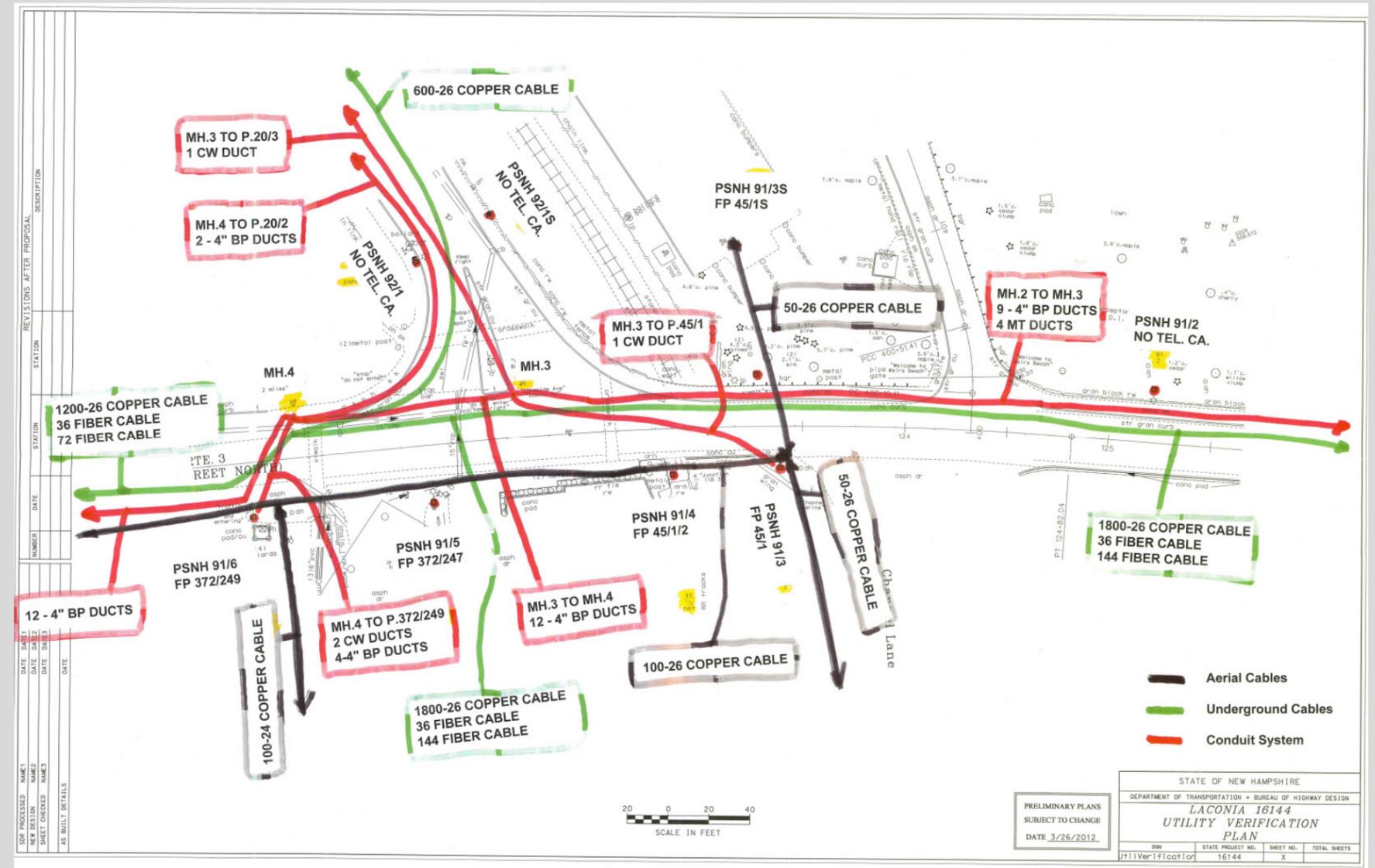
Bridge Improvement Options (Proposed Bridge)



Cast-In-Place (CIP) Very Similar

Utilities

- Public Service of NH
 - 3 phase 35KV
 - 2 - 3 phase 4KV
- Fair Point Communications
 - Nine 4" ducts in sidewalk
- Metrocast (CATV)
- Fire Alarm Tech
- Laconia Dept of Public Works (sewer)
- Gilford Gravity Sewer & Force Main



Need to be Resolved/Moved Prior to Bridge Construction

Cultural Resources



Historic Research is Ongoing

Natural Resources

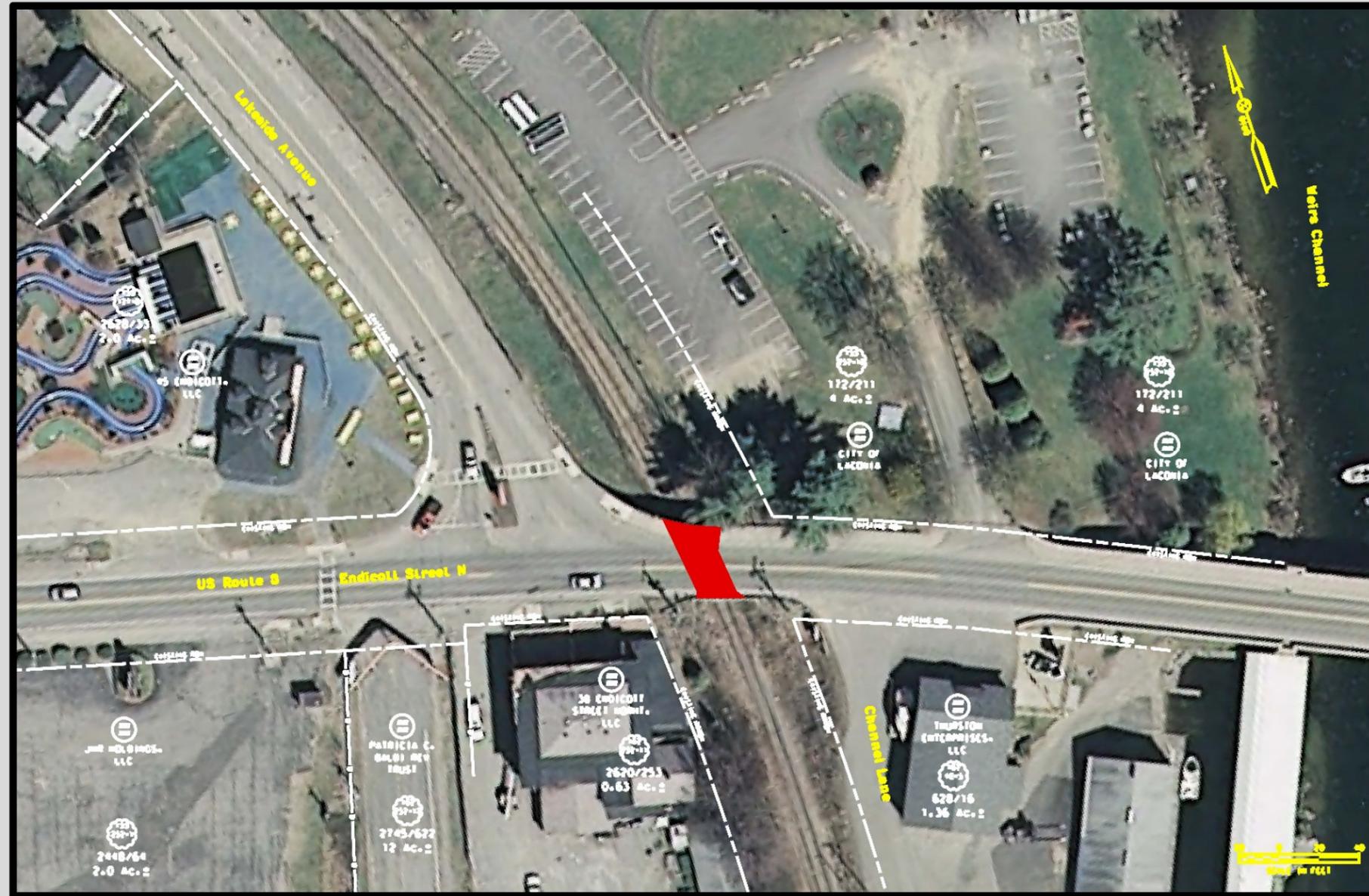
- Wetlands –
(possible due to swale by railroad)
- Hazardous Material - (potential)
- Invasive Species - (currently unknown)
- Air and Noise - (currently known)

- Section 4F - (Endicott State Park)
(Historic Properties, Public Parks,
Fish & Waterfowl / Wildlife refuge)

- Section 6F - (Endicott State Park)
(Property purchased with Federal Funds)



ROW & Abutters



ROW currently under research
Temporary easements will likely be needed

Traffic Control Two Alternatives

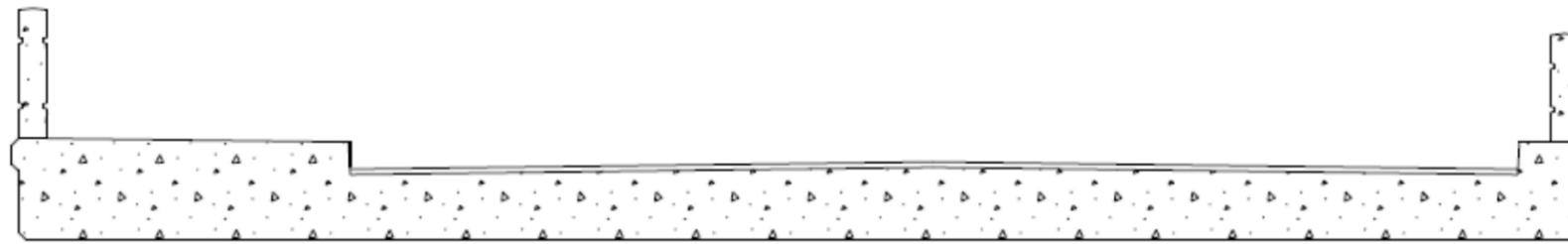
- 1. Phased Construction:** Alternating One-Way with Temporary Signals
- 2. Bridge Closure :** Detour Traffic

Traffic Control Alternative (Phased Construction)

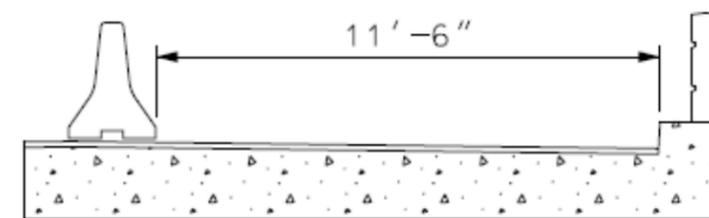
- Alternating One-Lane two-directional traffic via Signal Control
- Difficult due to narrow width of Structure and Close Proximity of Intersections
- Estimated 120 day Construction Length due to Site Restraints and Building a Bridge in Three Phases
- Cost approximately 25% More Than Bridge Closure Option

Traffic Control Alternative (Phased Construction)

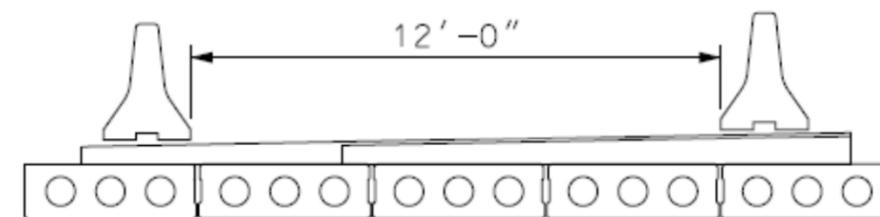
Existing



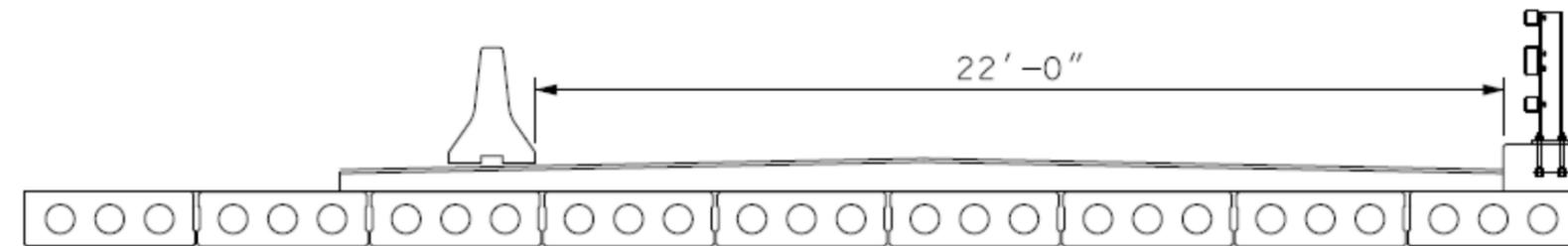
Phase 1



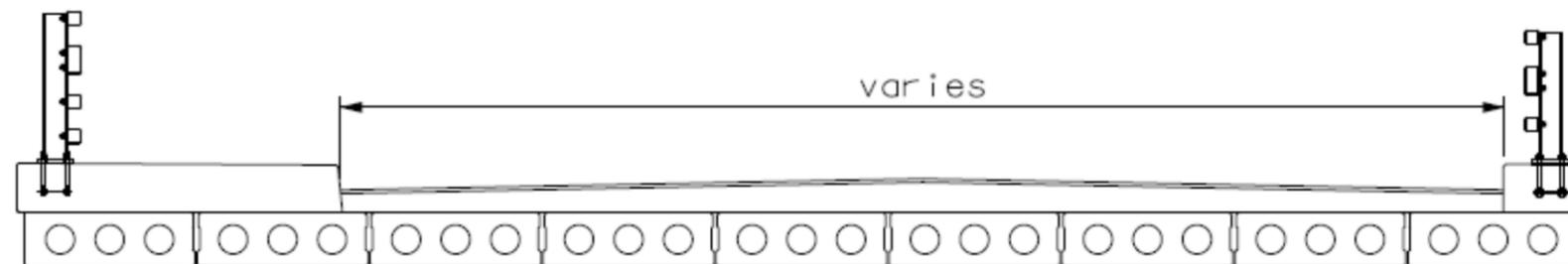
Phase 2



Phase 3



Final



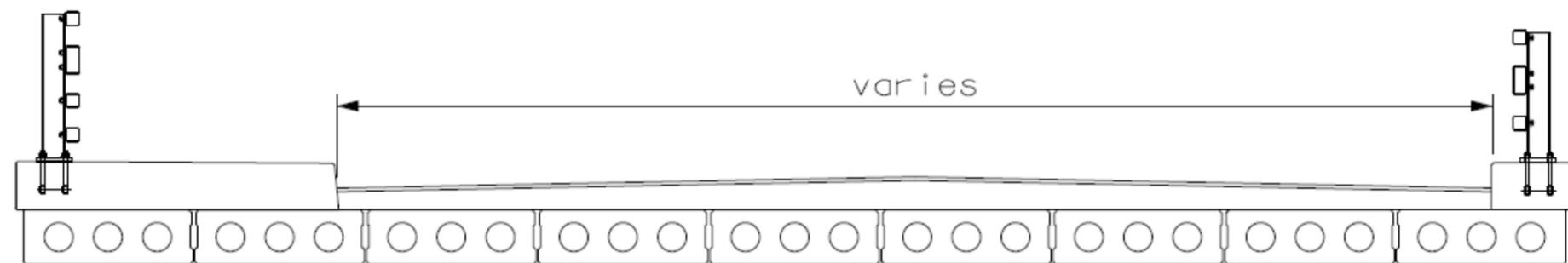
(Closed/Accelerated Construction)

- Standard and Accelerated Options
- Emergency Response Coordination Required
- 60 Day (Standard) and 30 Day (Accelerated) Construction Lengths
- Most Economical
- **Accelerated Option Recommended**

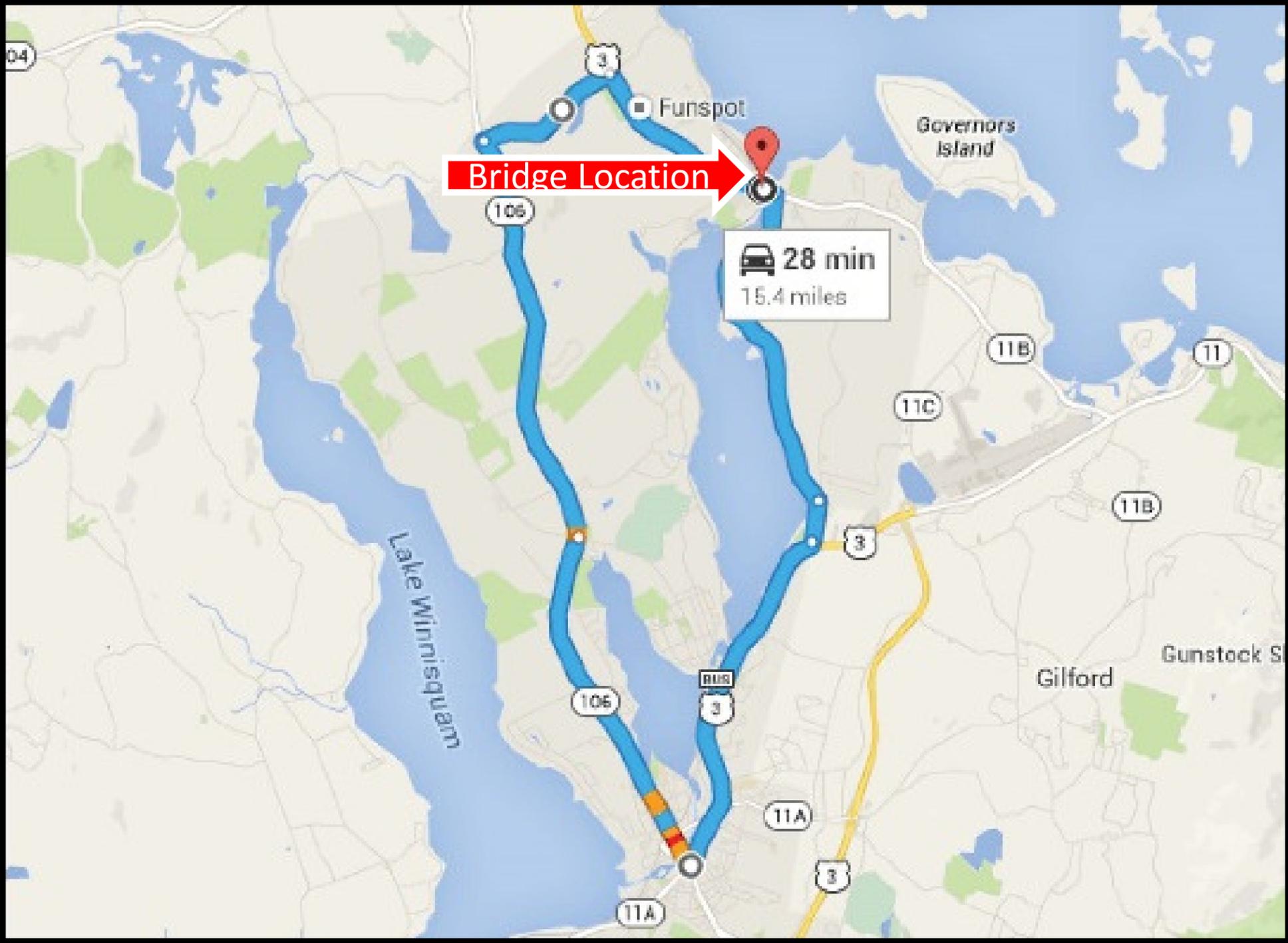
Existing



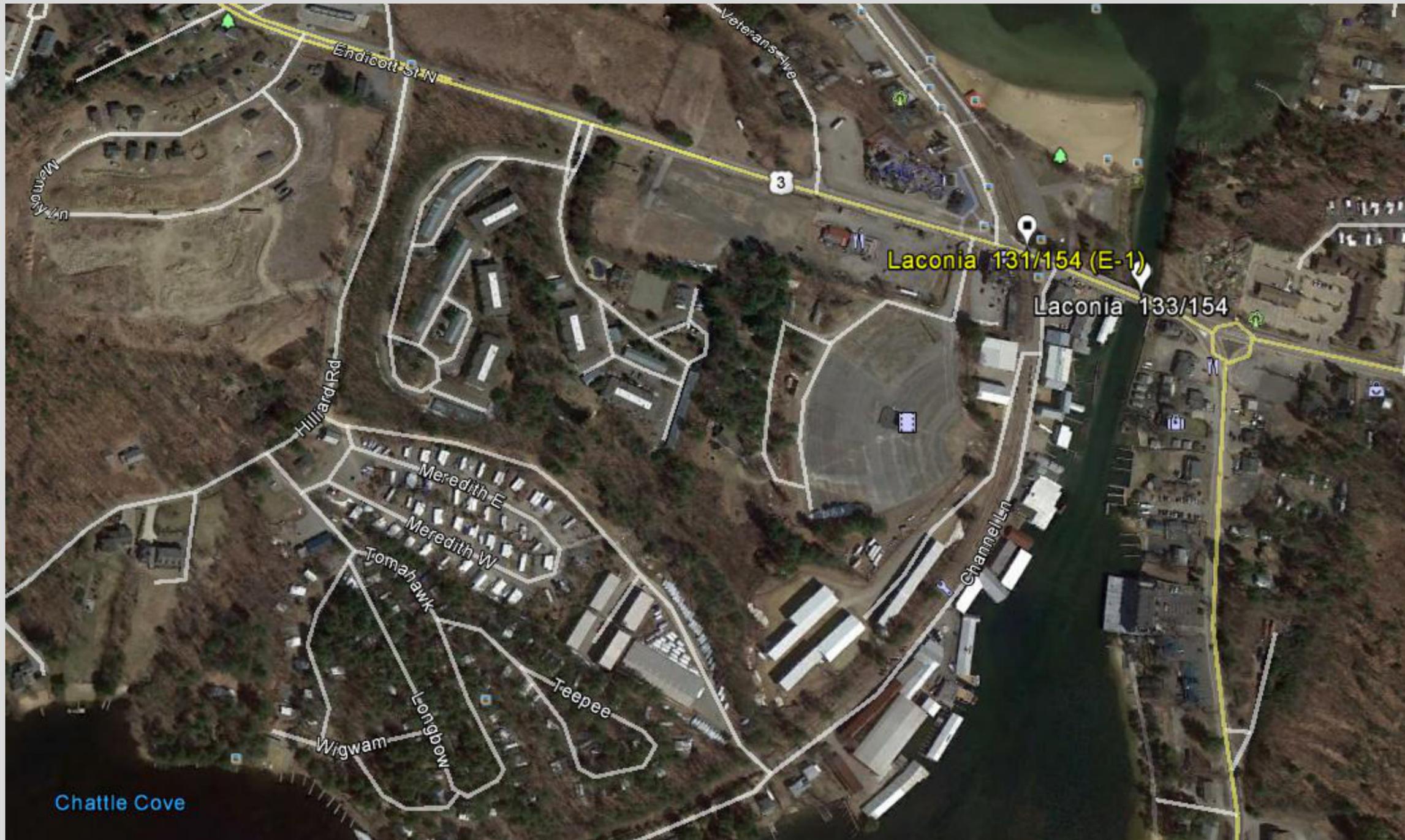
New Proposed



Traffic Control Alternative (Detour Route Phased)



Potential Emergency Vehicle Response Route (Closed Option)



Hillard Rd & Channel Lane

Next Steps and Schedule

- Incorporate City Officials comments
- Public Informational Meeting to be held on June 17th 2015
- Work with ROW, Cultural & Natural Resource Agencies
- Develop Contract Plans by End of 2016
- Construction Funding is available in FY 2019

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

Concerns, Comments, & Questions



Your Input is Needed On

- Emergency Response Routes
- Mutual Aid from/to Adjacent Towns
- School Bus Routes
- Closure vs Phased Construction
- Time of Year for Closure
(does April work?)
- Historic Concerns
- Tourism Concerns
- Rail Treatment Along Wing Wall
- Other Concerns

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