Laconia 16144 – Rehabilitation of Bridge 131/154 - US Route 3 over NHRR

Public Informational Meeting – Laconia City Hall, 7:00 pm, June 23, 2015

(Plan File O-2)

Existing bridge

1. Constructed in 1933; simple span, cast in place concrete slab
2. NHRR clearance 17'-6"
3. Railroad active from May to November
4. Bridge span length varies from 23'-0" to 32'-0"
5. Profile vertical curve -7.4 , 1.05, -1.9 (west to east)
6. Bridge width curb to curb 36'-0"; Out to Out two 13'-6" lanes and one 7'-0" sidewalk
7. Deck slab thickness varies from 12" to 22" (bottom elevation 536')
8. Abutments are split stone, mortared (1890's); widened with concrete in 1933
9. Posted speed 30 mph
10. Retaining wall 96 feet long and varies from 21.4' to 6' in height (concrete strength 2,300 to 5,100 psi)

Inspection Report

1. Added to Red List in 2009 and is currently #40 on 2015 Bridge Priority list
2. Federal sufficiency rating 32.7%
3. Deck rating is "4=Poor"
4. Superstructure rating is "4=Poor"
5. Substructure rating is "5=Fair"
6. AADT 13,000 vehicles with 5% trucks (2011)
7. Detour length is 18.3 miles (28 minutes)
8. Abutment concrete shows cracks, spalls, and some reinforcing is showing

Design Considerations

1. Narrow Bridge
2. Line-of-sight issues
3. Many utilities
4. Close proximity to multiple accesses (roadways and driveways)
5. Located in tourist area
6. Over NHRR
7. Long detour
8. High traffic volumes

Design Options

1. Superstructure Replacement Options
   - Steel beams with a concrete deck ⇒ Deep structure depth, NHRR clearance issues
   - Cast-In-Place Concrete Slab ⇒ Slow to Construct
   - Precast-Prestressed Voided Slabs ⇒ Accelerate Construction has Schedule Advantages
2. Substructure Options
   - Do nothing ⇒ Deterioration will continue and needs to be addressed
   - Complete replacement ⇒ Delays/Construction Time, Cost, Permits, ROW, Substructure is still viable
   - Repair Existing Abutment ⇒ Existing Abutments are Stable & can be Rehabilitated

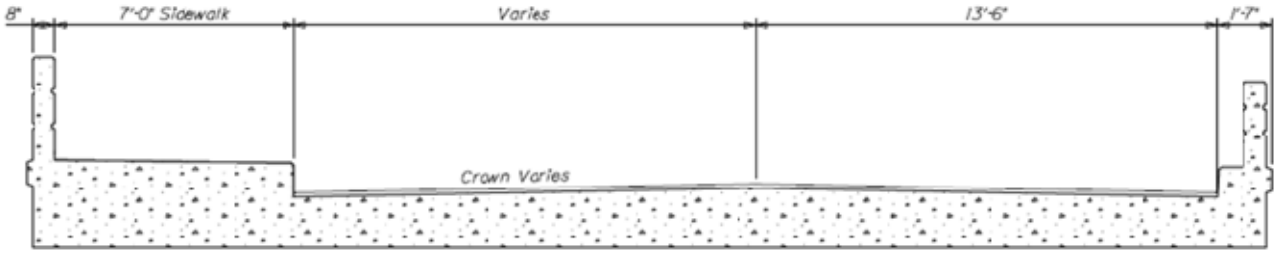
Traffic Design Options

1. Phased Construction: 120 day construction time
2. Bridge Closure: 30 day construction time

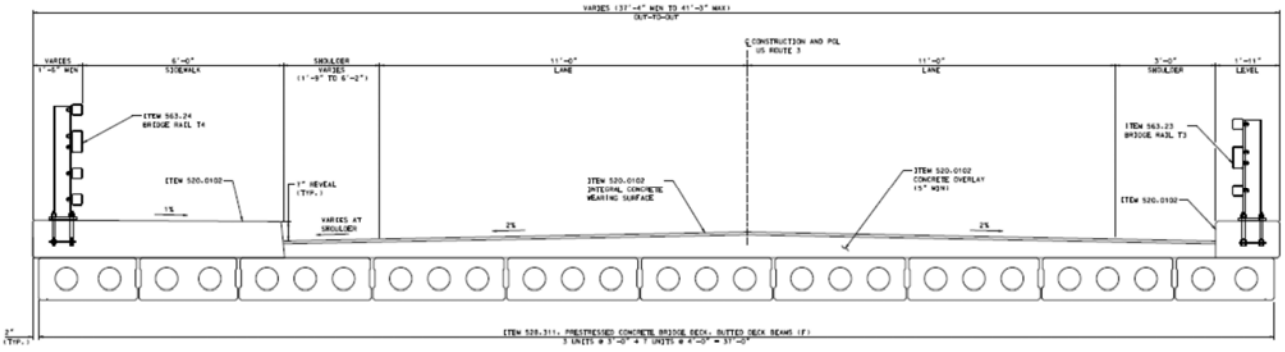
Misc.

ROW limits are currently under research (easements likely will be required)
Utilities will need to be moved prior to construction
Environmental issues
- Hazardous Materials (potential)
- Invasive species (present)
- Possible wetlands (swale by railroad)
- Endicott Rock state park is a section 4(f) & 6(f) historic resource

Elevation view of existing bridge, looking north along NHRR towards the Weirs



Existing Superstructure
N.T.S.



TYPICAL SECTION A (PROPOSED)