



Proposed Bridge Replacement for Aden Road (Rte 646) over the Norfolk Southern RR, Nokesville, Virginia

January 9, 2013

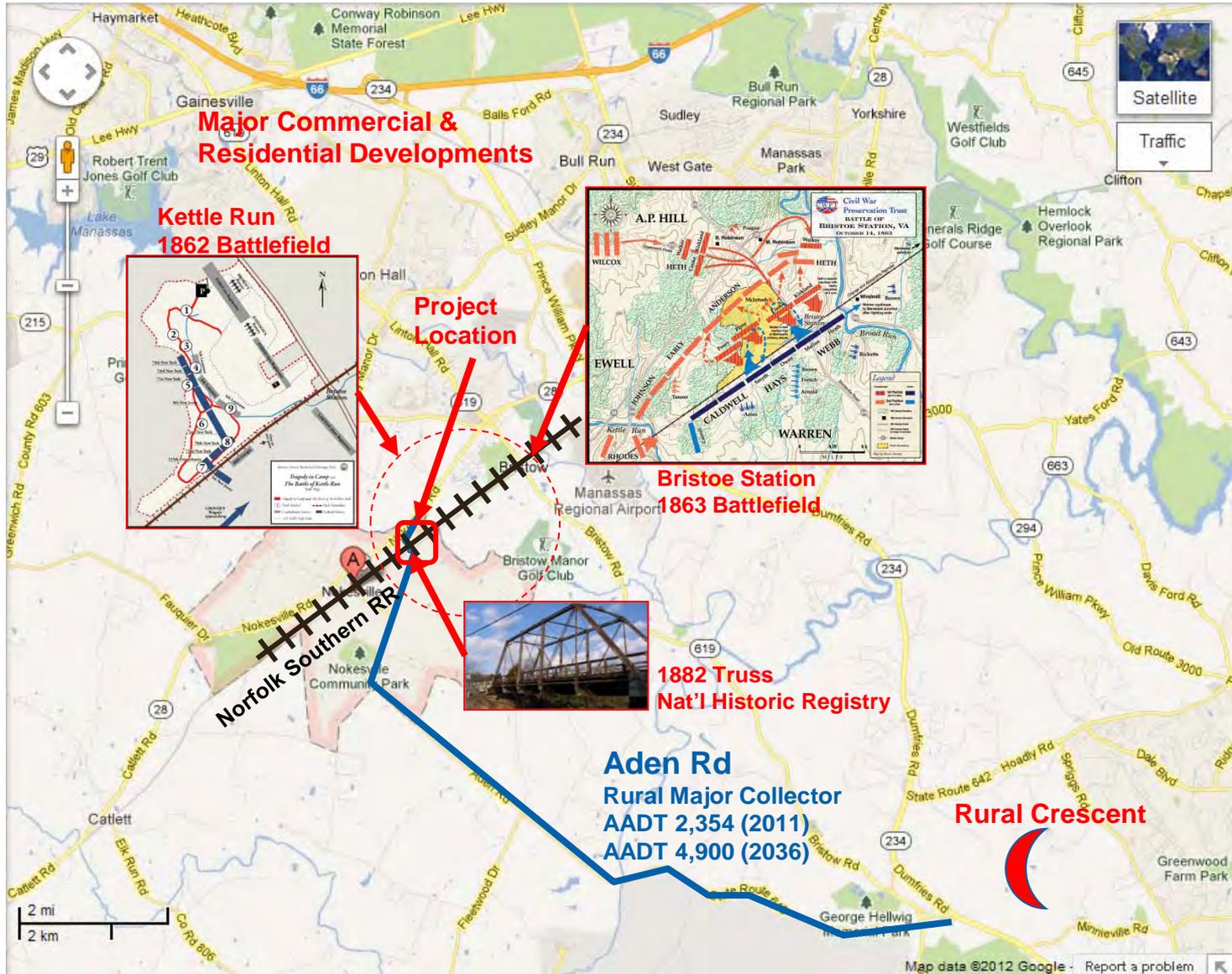
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Project Location & Key Features



Proposed Bridge

- **Prince William County's transportation plan indicates increasing the capacity of Aden Road**
 - **Average Daily Traffic is expected to increase from 2,800 to 4,900 by 2036**
- **Funding for the project was approved by the Prince William County Board of Supervisors in 2008 and it is in VDOT's Six Year Plan**
- **County requires two lanes over the Norfolk Southern RR**
- **New bridge will be maintained by VDOT in accordance with the current Virginia Code**
- **Meet Norfolk Southern design requirements for vertical & lateral clearance for future conditions**

General History



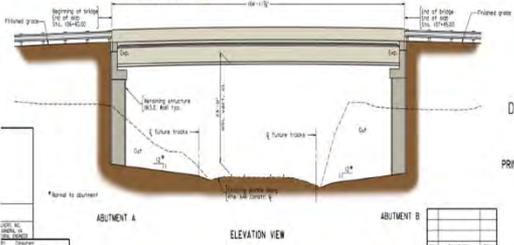
- **Bridge is a wrought iron truss built in 1882 by Keystone Bridge Company for the Virginia Midland Railway to carry a single track railway**
- **Relocated to its current location sometime between 1904 and 1928 by Southern RR**
- **Placed on the National Historic Registry in 1977**
- **Owned and maintained by Norfolk Southern Railroad**
- **VDOT inspects and monitors the bridge**
 - **Presently classified as Structurally Deficient & posted for a 6 ton weight limit**
 - **Health Index rating is 47 out of 100 and Sufficiency Rating is 24.3 out of 100**

Options Considered



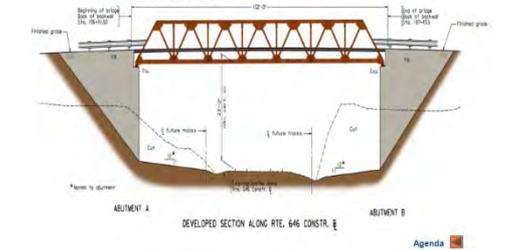
Preliminary Option 1
2-Lane Concrete Beam Bridge on New Alignment

- Meets NSRR Operational Requirements for Vertical Clearance
- Meets NSRR Operational Requirements for Lateral Clearance Between Track and Face of Wall



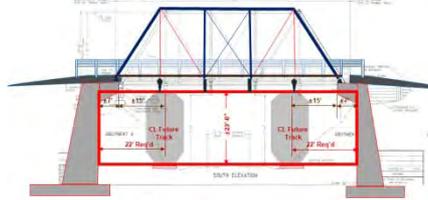
Preliminary Option 2
2-Lane Truss on New Alignment

- Meets NSRR Operational Requirements for Vertical Clearance
- Meets NSRR Operational Requirements for Lateral Clearance Between Track and Face of Wall



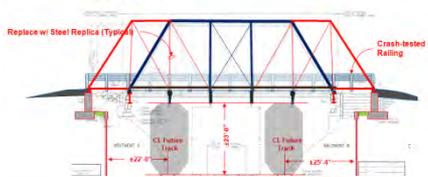
Preliminary Option 4 Rev
Existing 1-Lane Bridge in Place Modified for VA Legal Loads w/ New "Hammerhead" Abutments

- Meets NSRR Operational Requirements for Vertical Clearance
- May Not Meet NSRR Operational Requirements for Clearance Between Track and Face of Hammerhead



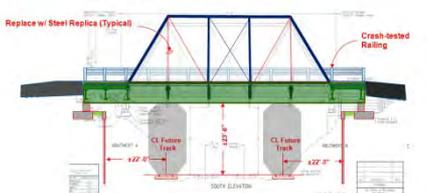
Preliminary Option 5
Existing 1-Lane Bridge in Place Modified for VA Legal Loads, Lengthened w/ Additional Steel Panels, New Abutments & Walls

- Meets NSRR Operational Requirements for Vertical Clearance
- May Not Meet NSRR Operational Requirements for Lateral Clearance Between Track and Face of Wall

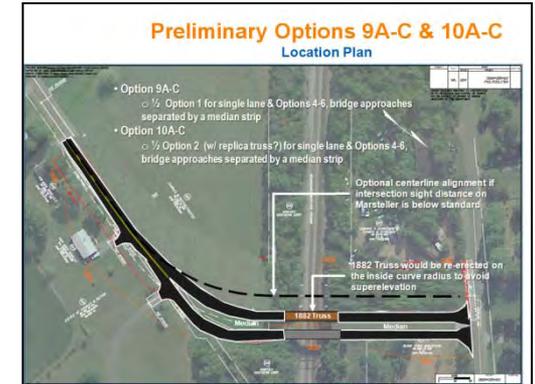


Preliminary Option 6
Existing 1-Lane Bridge Modified for VA Legal Loads, Steel Through Girders w/ Approach Spans, New Abutments & Walls

- Meets NSRR Operational Requirements for Vertical Clearance
- Meets NSRR Operational Requirements for Lateral Clearance Between Track and Face of Wall



Options 1 or 2 w/ Options 4, 5, or 6 as Bike/Ped Bridge

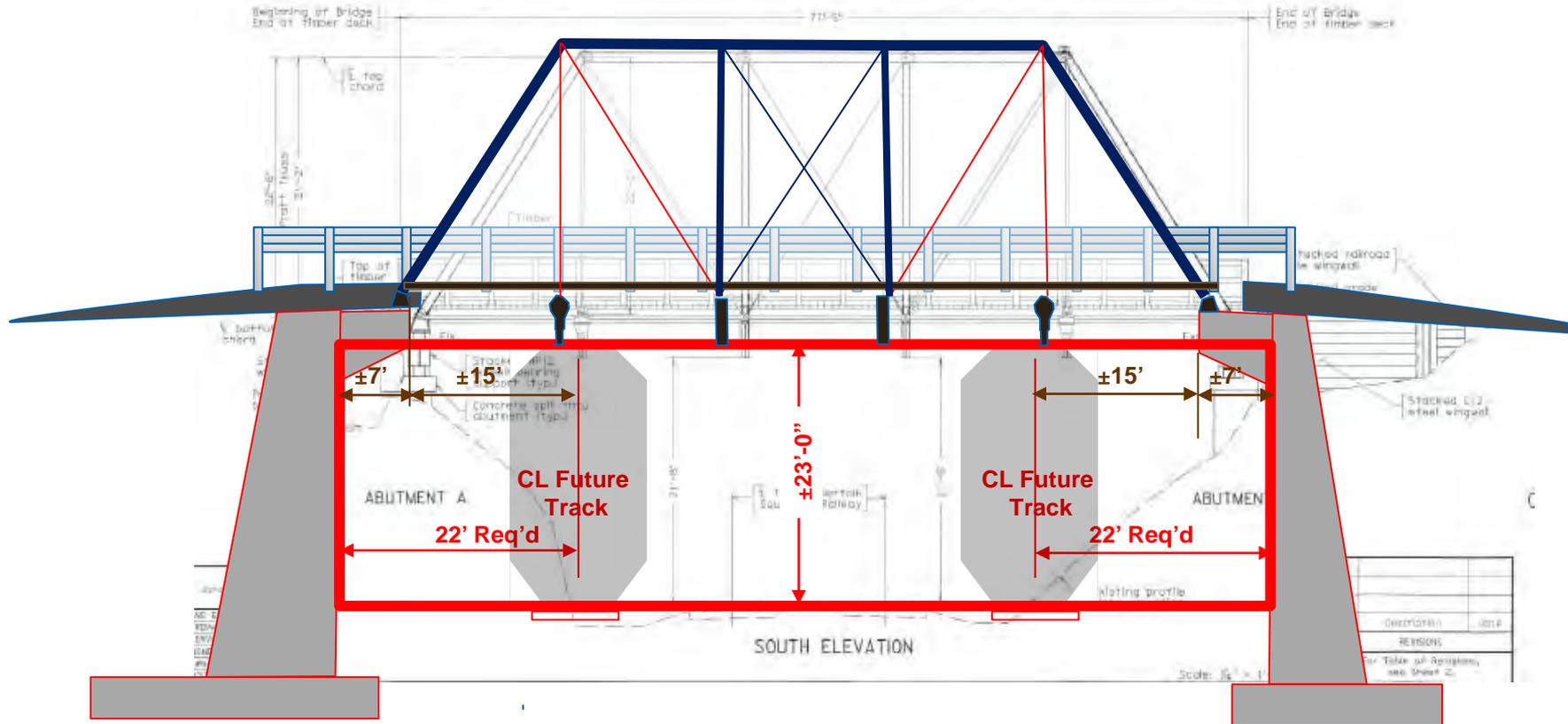


Options 1 or 2 – Single Lane w/ Options 4, 5, or 6 – Single Lane

Preliminary Option 4 Rev

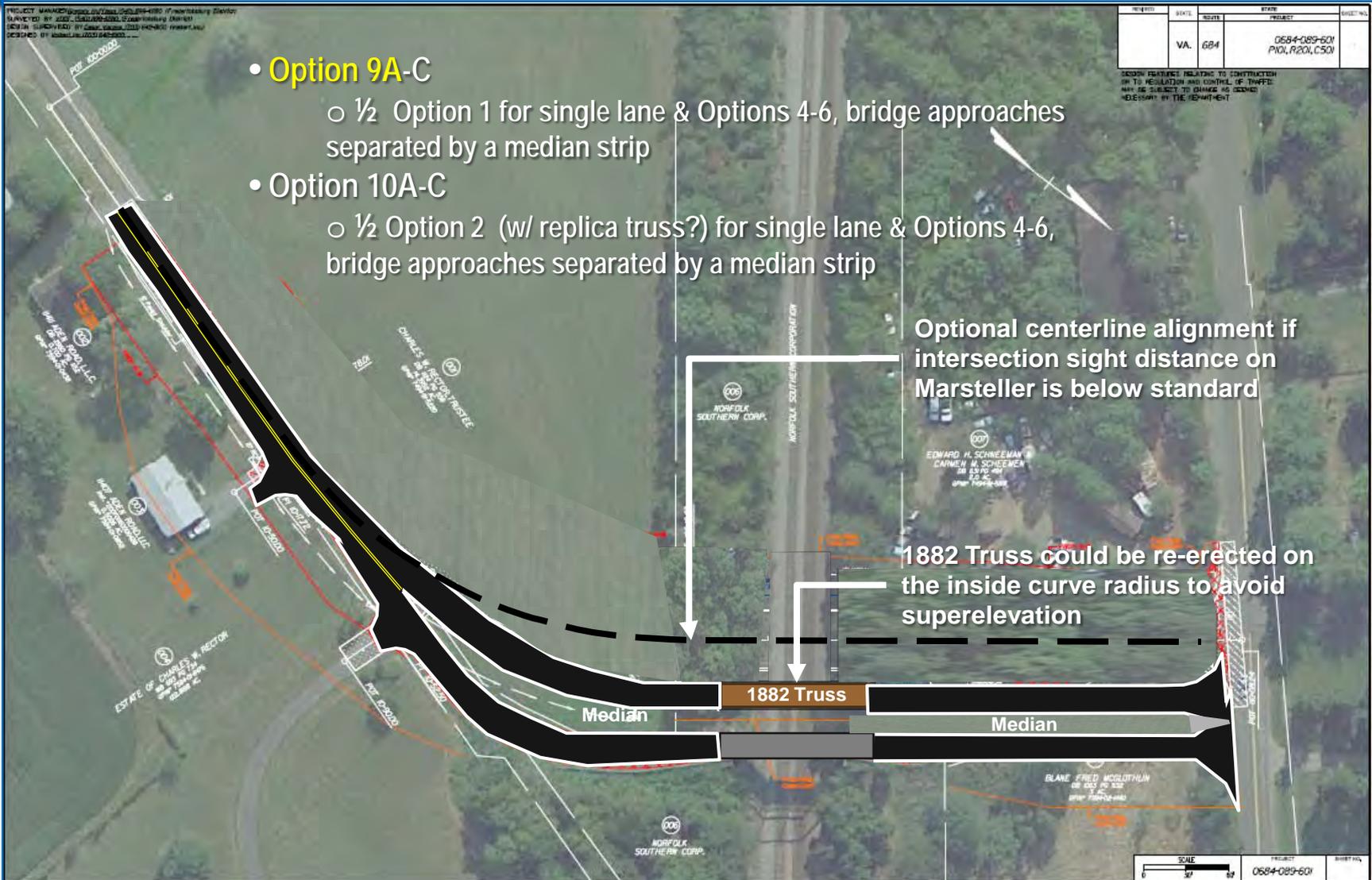
Existing 1-Lane Bridge in Place Modified for VA Legal Loads w/ New “Hammerhead” Abutments

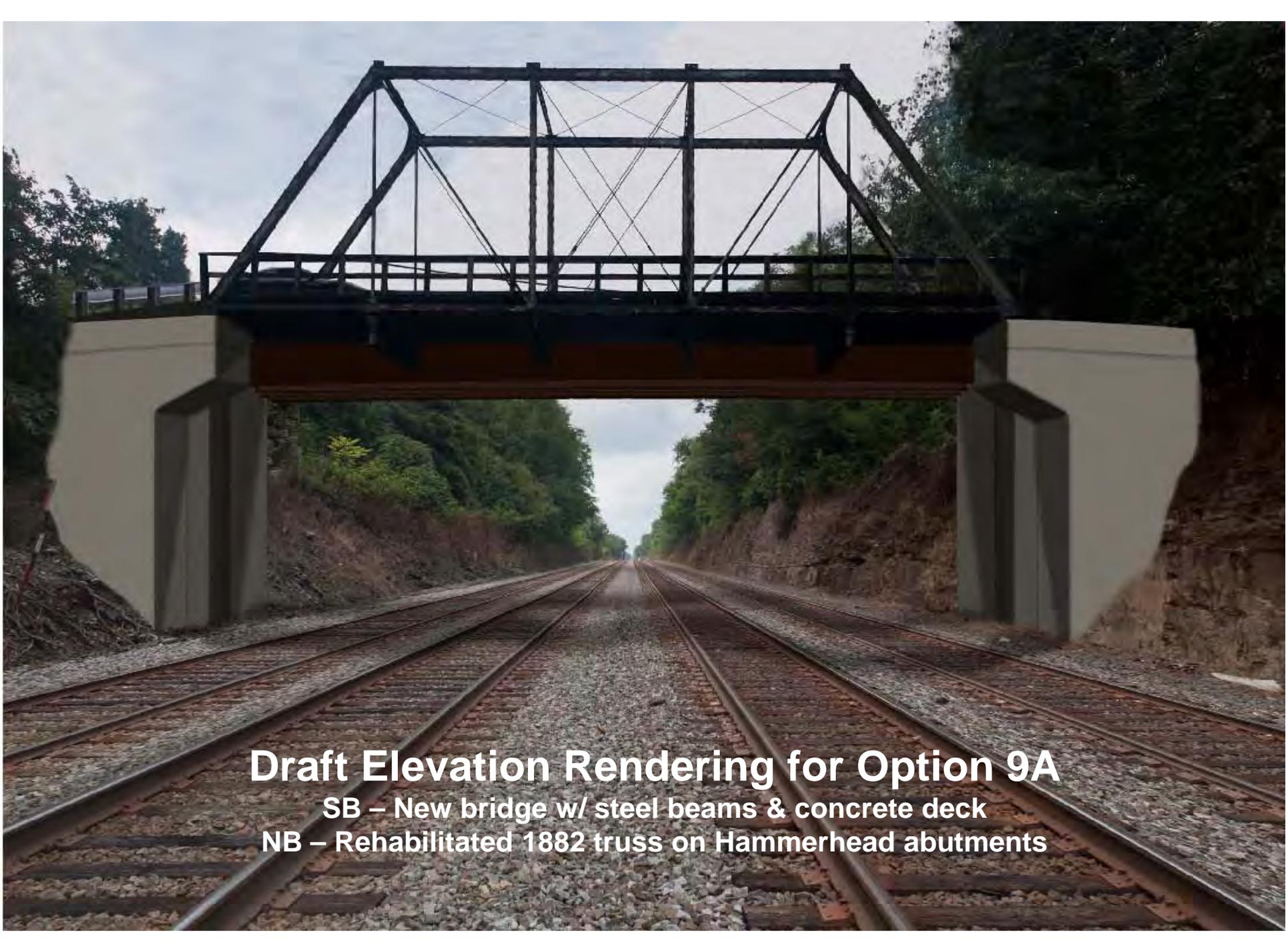
- ☑ Meets NSRR Operational Requirements for Vertical Clearance
- ☒ May Not Meet NSRR Operational Requirements for Clearance Between Track and Face of Hammerhead



Preliminary Options 9A-C & 10A-C

Location Plan





Draft Elevation Rendering for Option 9A

SB – New bridge w/ steel beams & concrete deck

NB – Rehabilitated 1882 truss on Hammerhead abutments



Draft Perspective Rendering for Option 9A

SB – New bridge w/ steel beams & concrete deck

NB – Rehabilitated 1882 truss on Hammerhead abutments



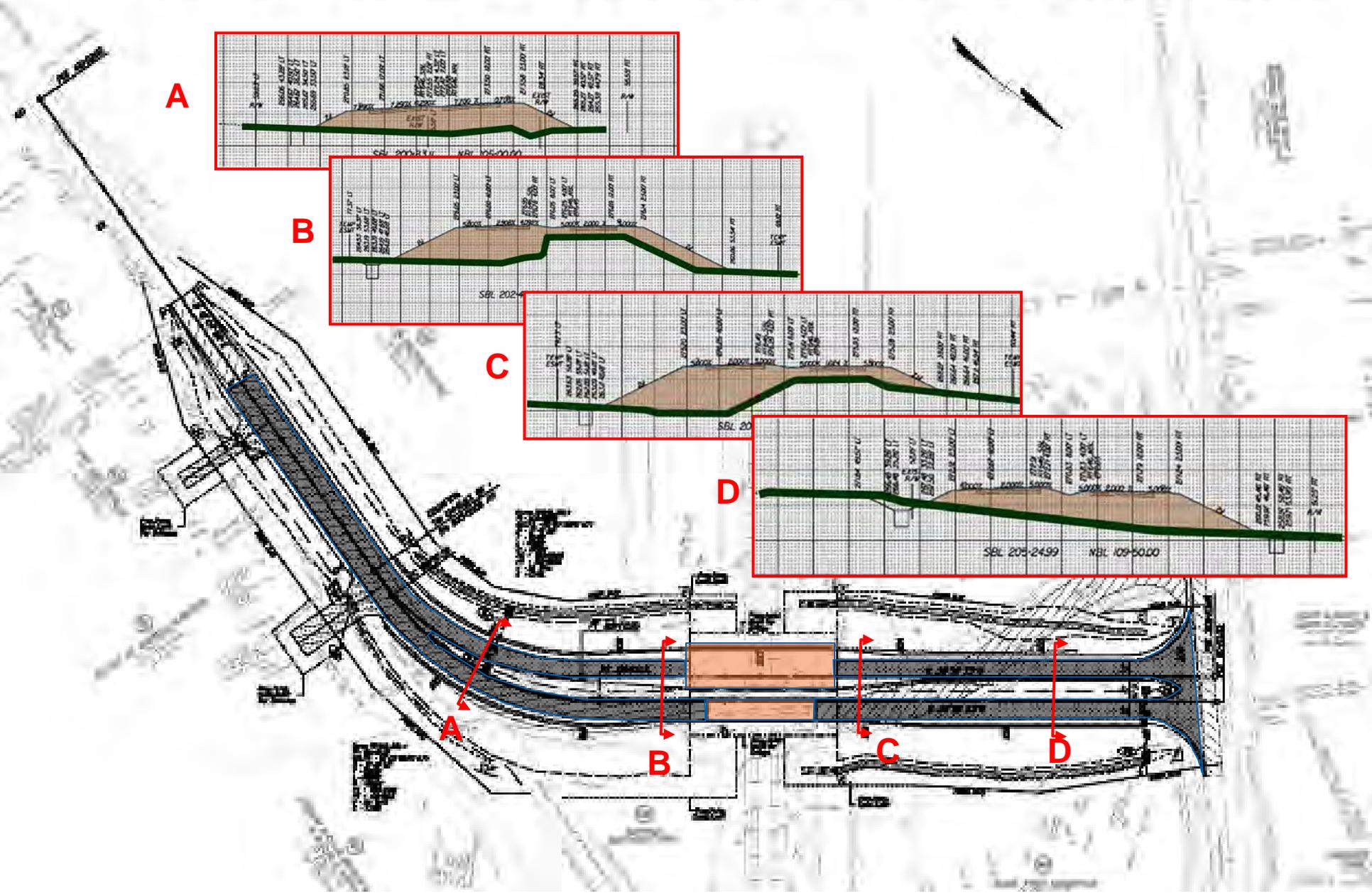
Existing view of single lane 1882 truss crossing over NSRR from north approach on Aden Rd



Proposed view of new 2-lane road crossing over NSRR w/ new bridge & 1882 truss from north approach on Aden Rd



ADEN ROAD (RTE 646) OVER NS RAILWAY



A

B

C

D

A

B

C

D