CONSTRUCTION ASPECTS OF CAPON BRIDGE
OVER
CACAPON RIVER

Hampshire County, WV

Faheem Ahmad, PE, PS, CFM
Venkata Ajay Madala, CPESC

May 16, 2023
1:30 – 2:00 PM

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Introduction

- Triton Construction Inc. was awarded the Capon Bridge November 09, 2021
- Justin Koers from Triton is the project manager

Justin Koers from Triton Construction
Project Manger

TRITON
CONSTRUCTION, INC.

Introduction

- The existing Capon Bridge is located on US Route 50 over the Cacapon River in Capon Bridge, Hampshire County.
- The bridge is located approximately 0.12 miles east of the intersection of County Route 15 and US Route 50.

Four Alternatives and a no build option was originally studied. Renovating the bridge with temporary detour was selected

Strong community response favoring repair over replacement made the difference as the state Division of Highways developed plans for Capon Bridge's big green bridge across the Cacapon River.

MARCH 30, 2018 · LEAVE A COMMENT

Reduce Speed Ahead

CULTURE SPRING 2018 TASTE TRAVEL

THE TINY AND UNASSUMING TOWN OF CAPON BRIDGE LIVES LARGER THAN CENSUS NUMBERS WOULD INDICATE.

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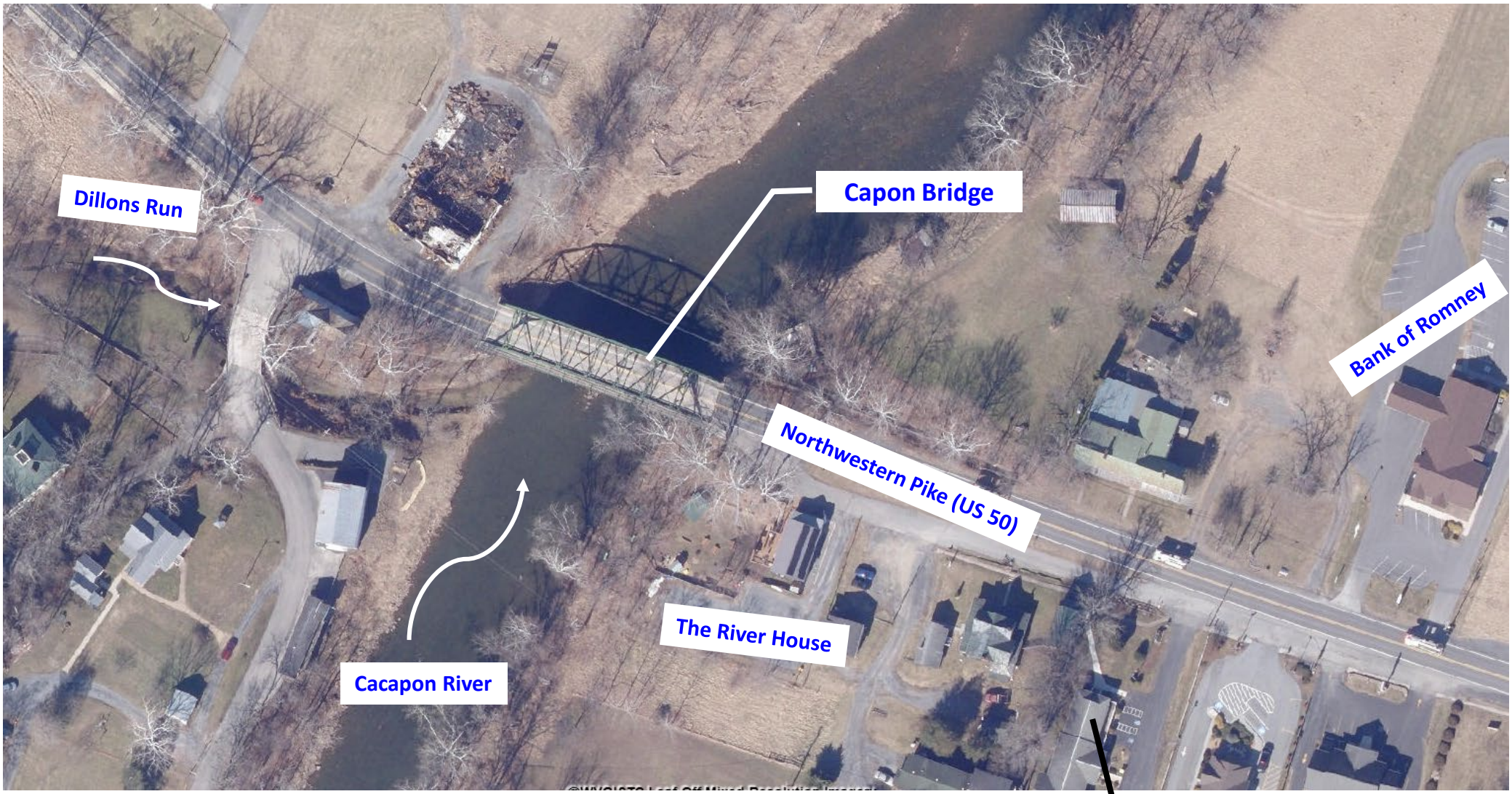
Location Map



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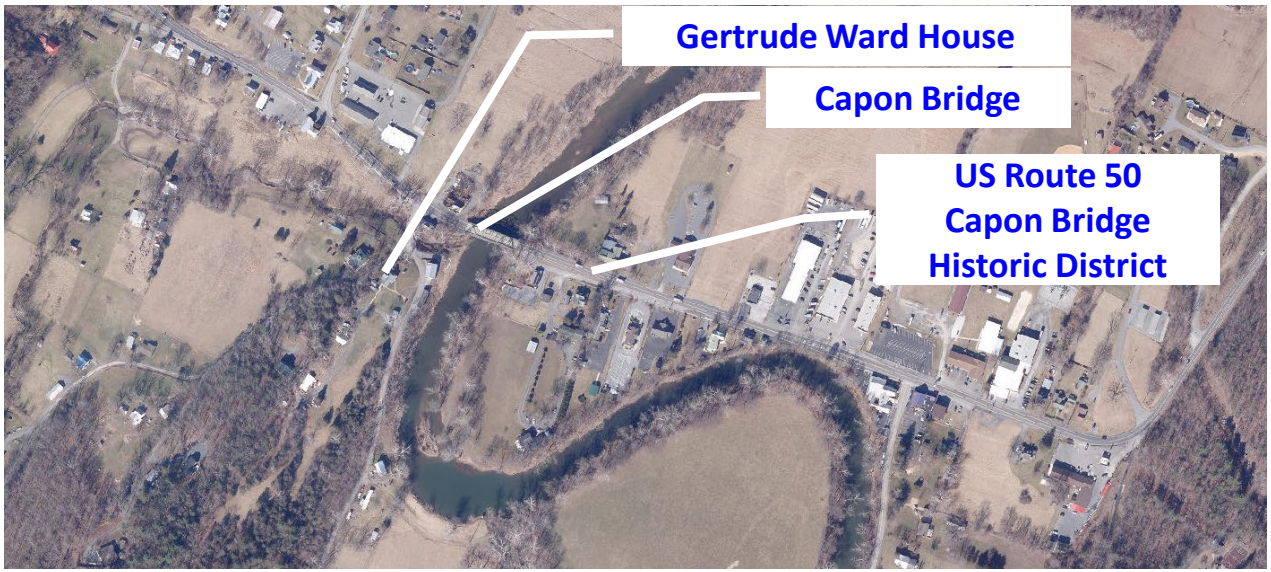
Historic Properties



Capon Bridge (A)
Gertrude Ward House (B)
Capon Bridge Historic District (C)

Gertrude Ward House

Capon Bridge

US Route 50

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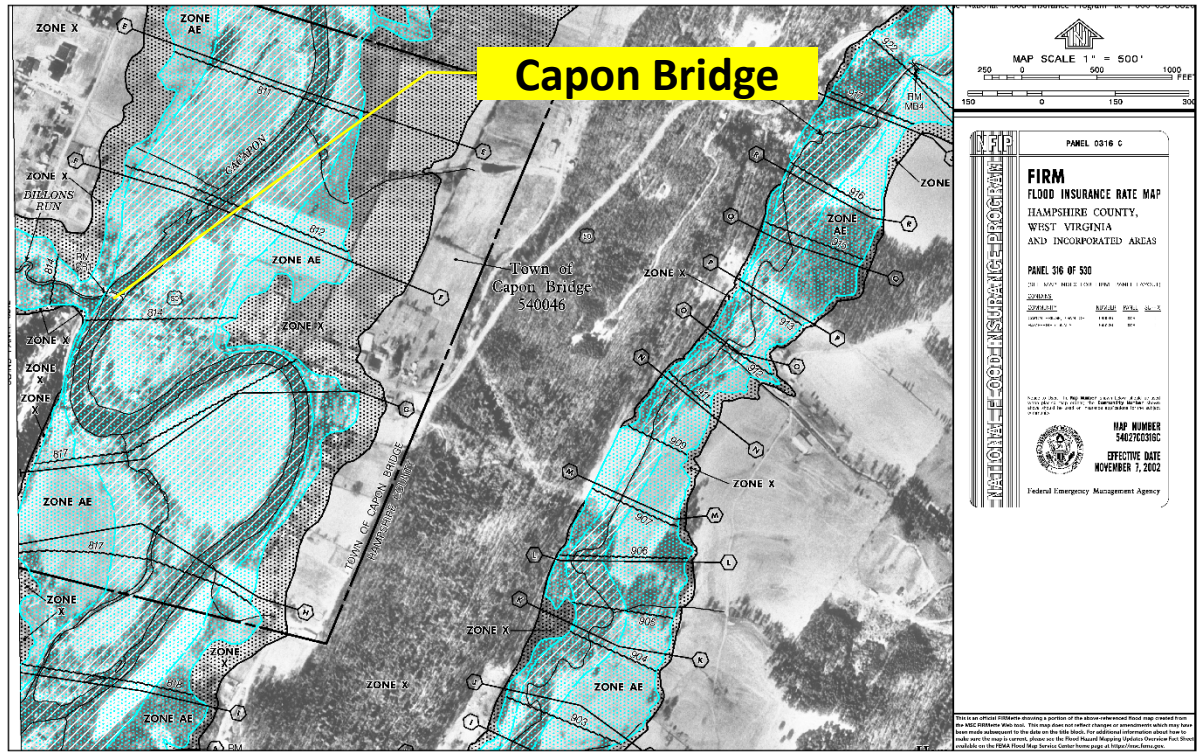
Hydraulics Information

- Cacapon River is an 81-mile-long shallow river.
- The FEMA – NFIP Map, Panel No. 54027C0316C shows that the Capon Bridge over Cacapon River project is in Flood Zone AE which was identified on 11/7/2002.
- Base Elevations have been determined by FEMA



Local Floodplain Manager
Hampshire County Floodplain Manager
Mr. Michael Ketterman

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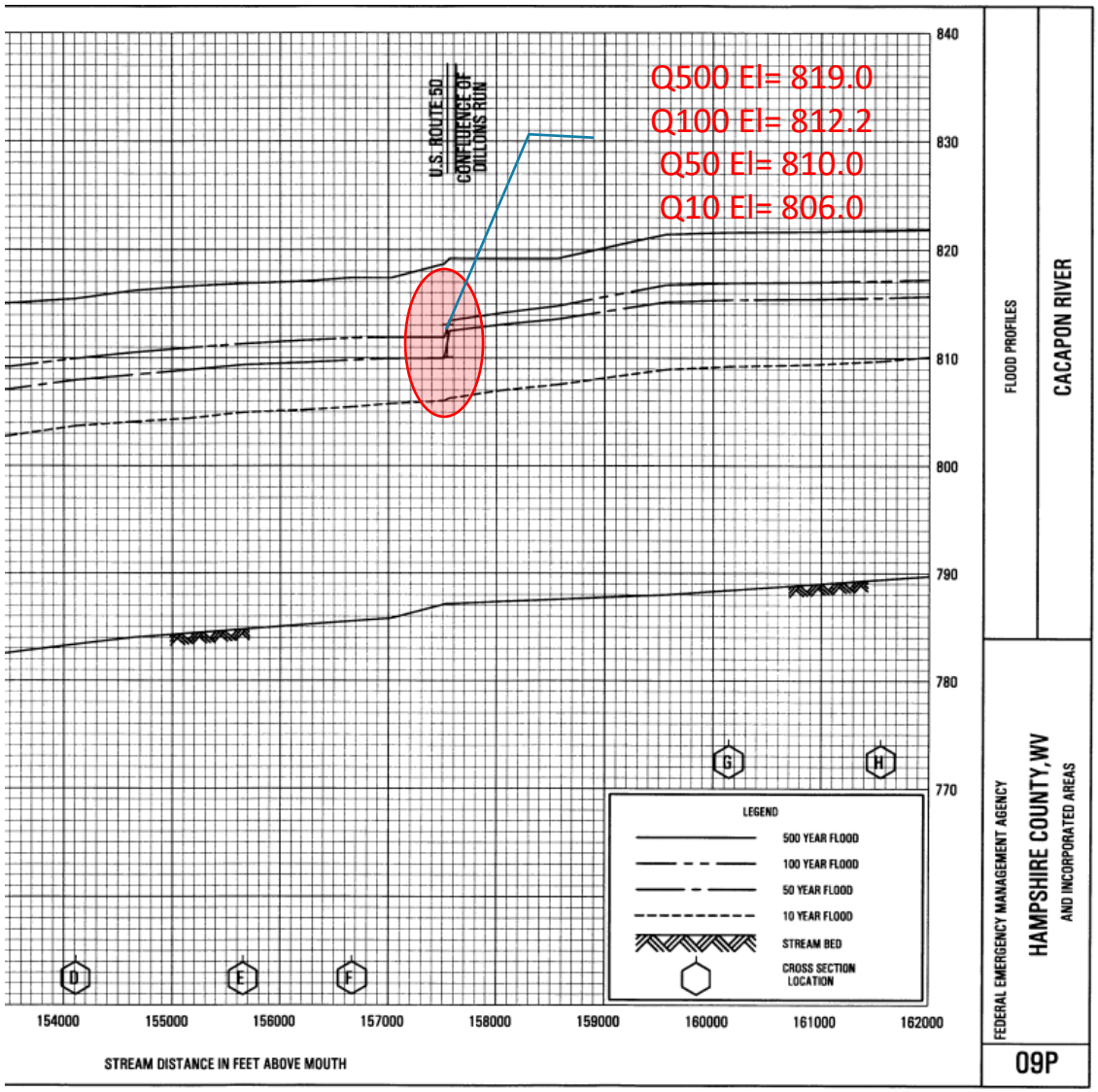
Hydraulics Information



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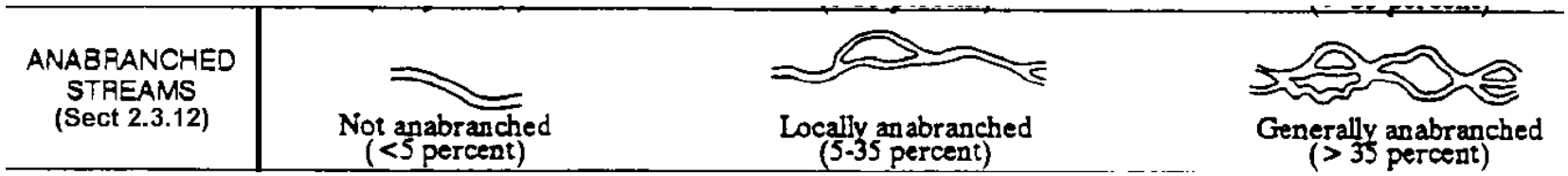
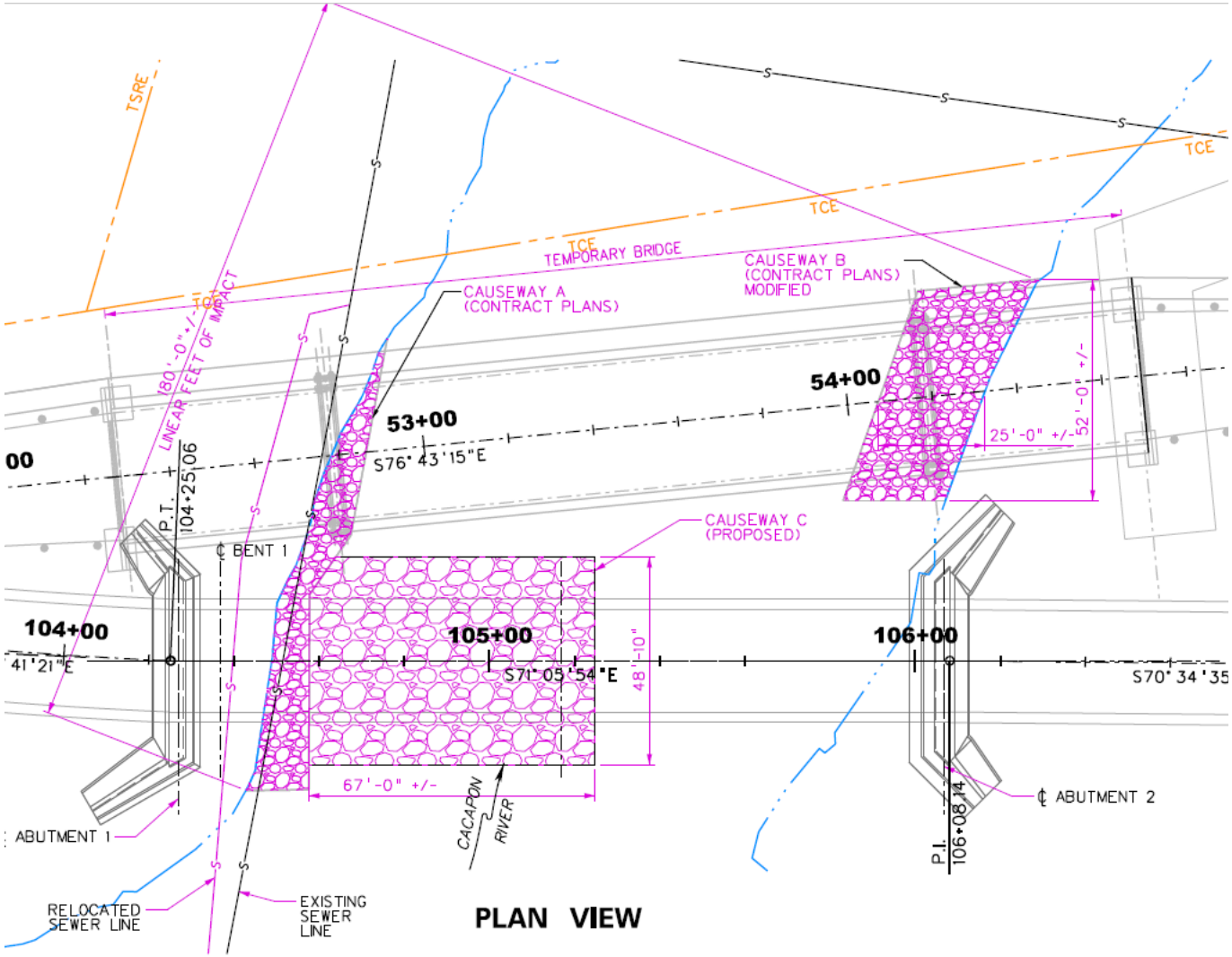
Stream Stability



In the vicinity of the bridge, the channel is classified as “Not Anabranched” – Refer FHWA HEC-20 (Stream Stability at Highway Structures).

Proposed Temporary Causeway



Temporary Causeway A
Temporary Causeway B
Temporary Causeway C

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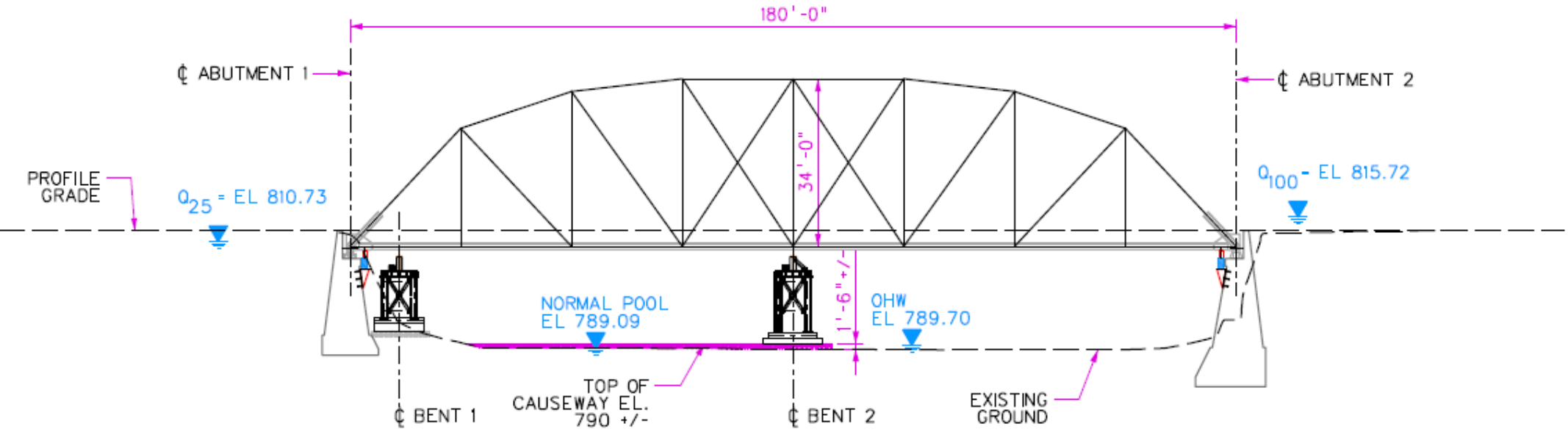
Proposed Temporary Causeway

For moving the Truss



Temporary Causeway C

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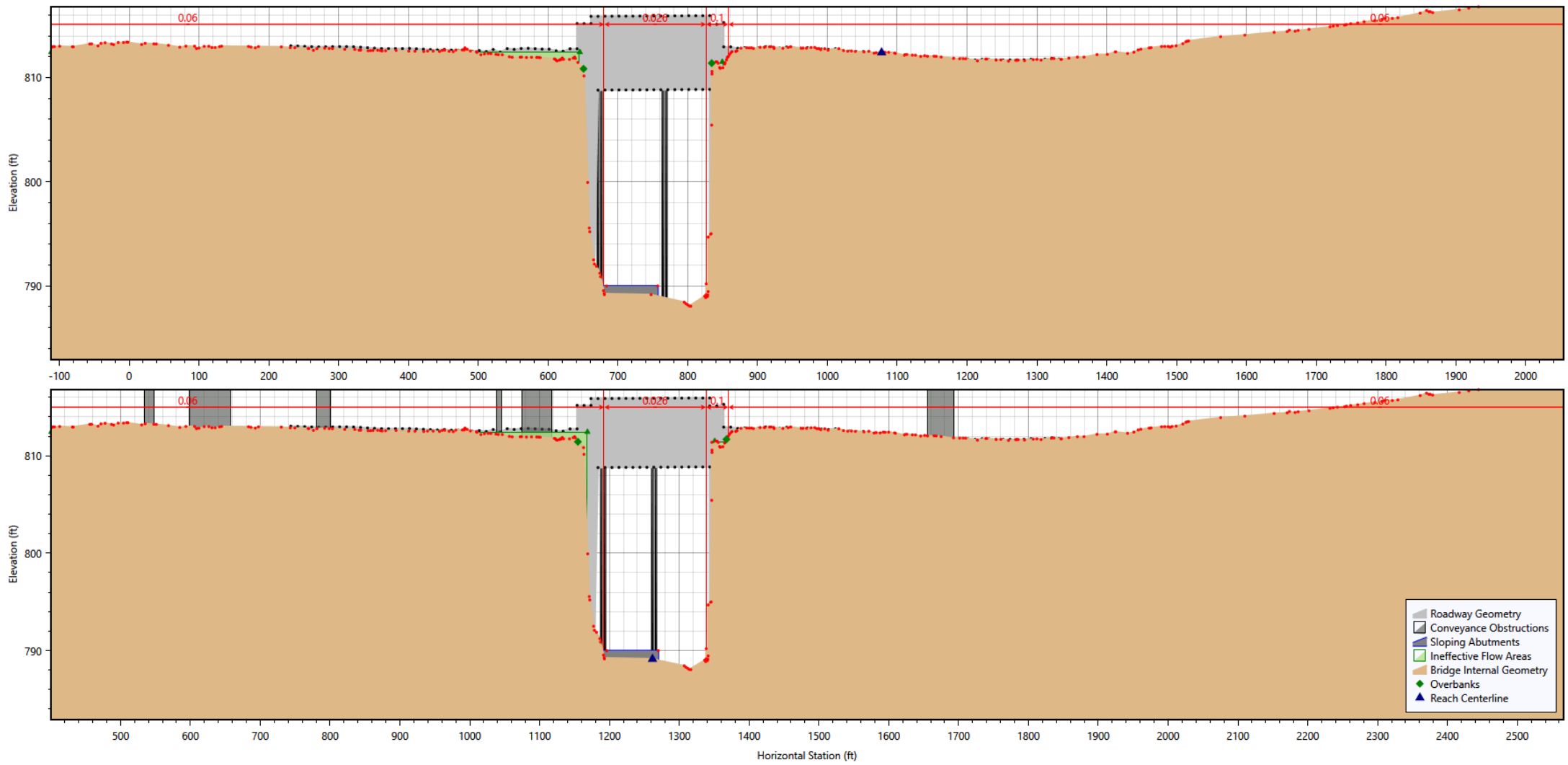
Proposed Temporary Causeway

For moving the Truss



Temporary Causeway C

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Proposed Temporary Causeway

- Temporary Causeway effects were analyzed in USACE HEC-RAS version 6.2.
- The proposed temporary causeway layout cause an increase in backwater by 0.34 ft upstream of the bridge for the 10-yr storm
- The increase in backwater will be contained within the existing stream banks of the Cacapon River
- Once the construction of the proposed bridge is complete, the causeway will be removed, and the channel will be restored

Proposed Temporary Causeway

For moving the Truss

Temporary Causeway C

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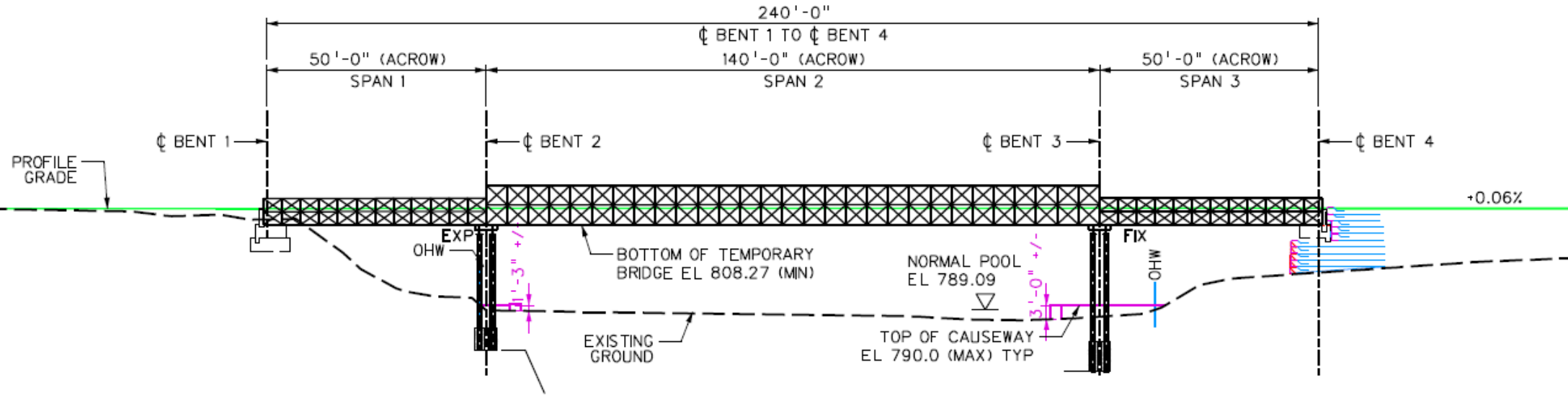
Proposed Temporary Causeway

For Temporary Bridge



Temporary Causeways A & B

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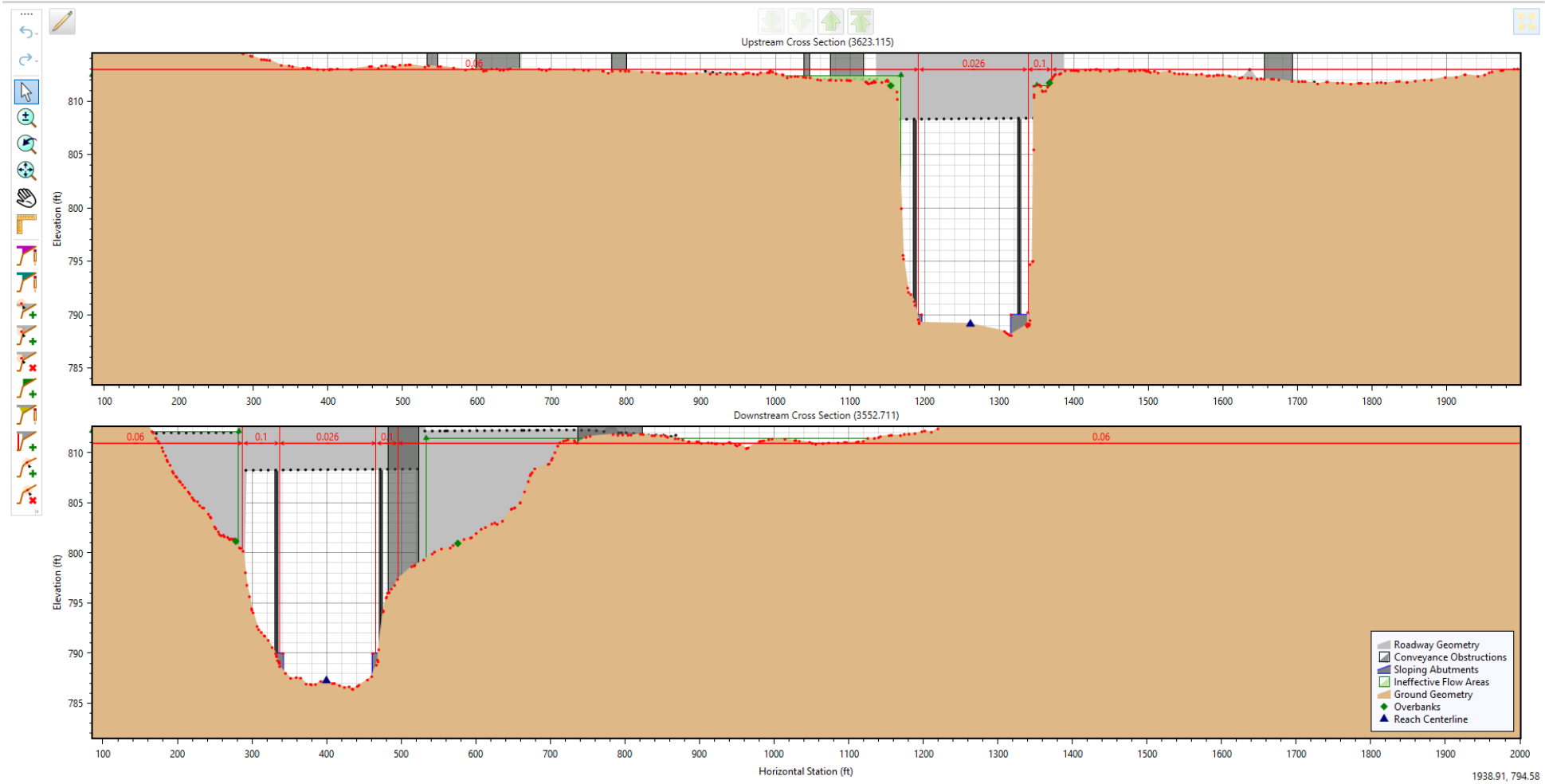
Proposed Temporary Causeway

For Temporary Bridge



Temporary Causeways A & B

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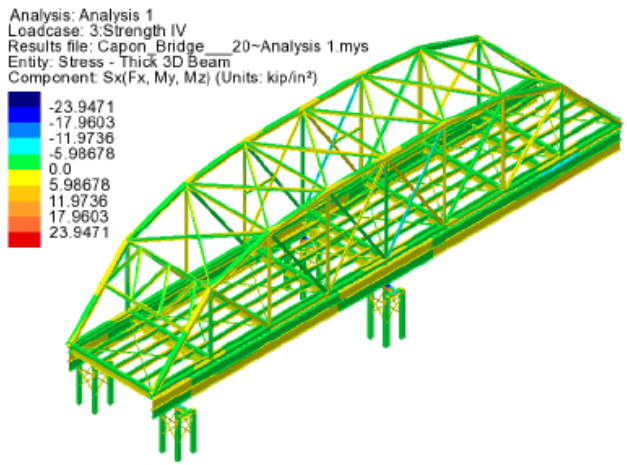
Proposed Temporary Causeway

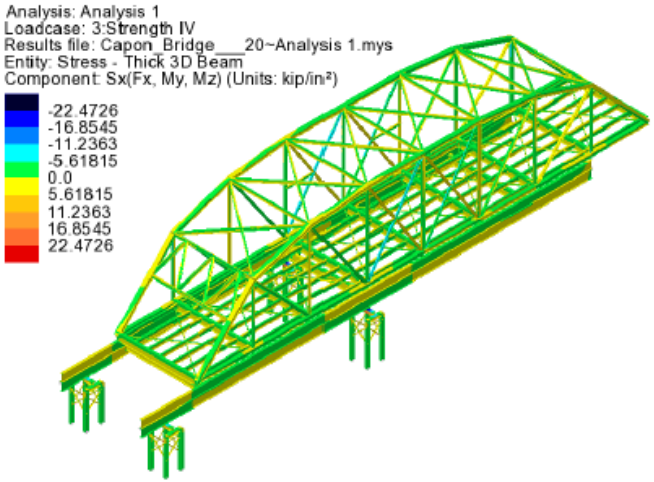
Temporary Causeways A & B

Construction

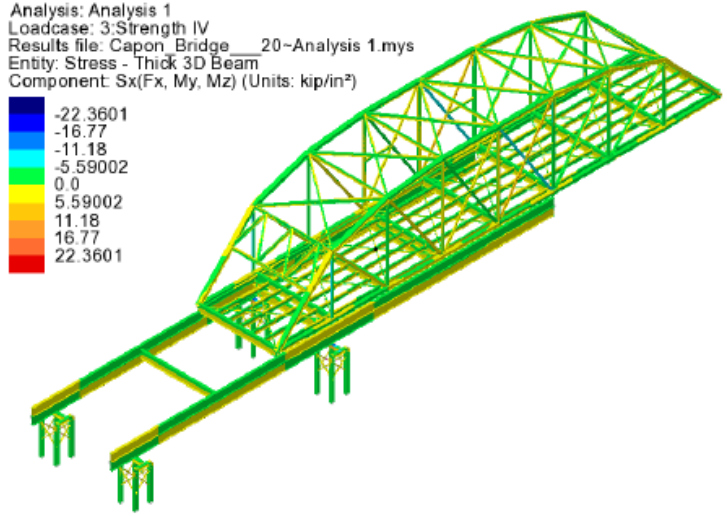
Results – Truss , Beam and Tower Stresses During Rolling



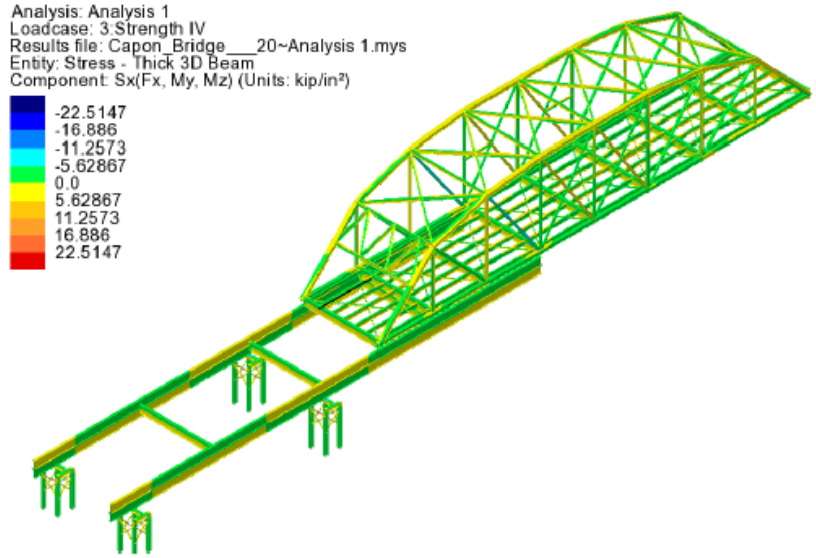
Truss , Beam and Tower Stresses During Rolling – Position 1



Truss, Beam and Tower Stresses During Rolling– Position 2

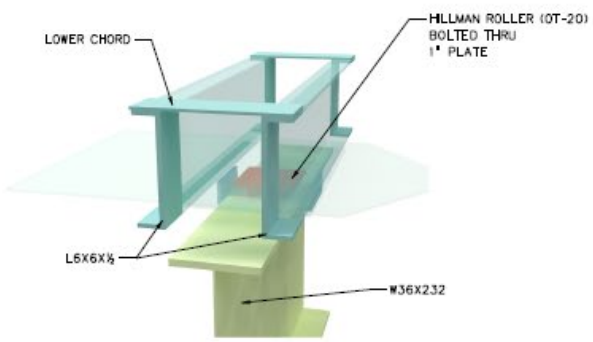


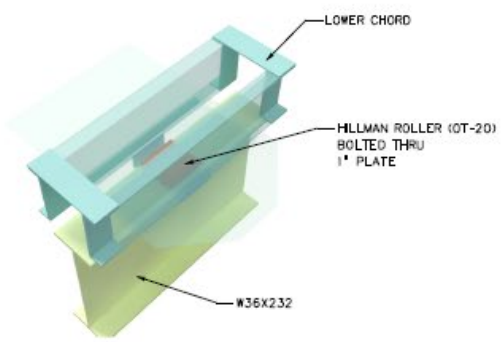
Truss, Beam and Tower Stresses During Rolling– Position 3

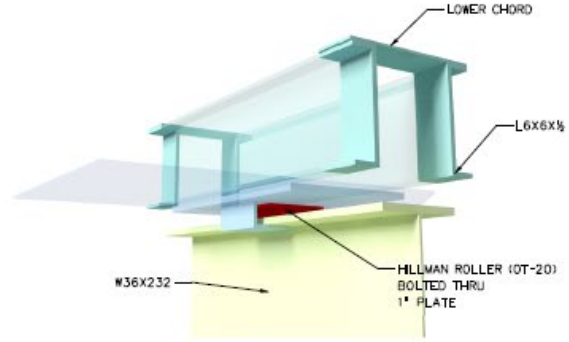


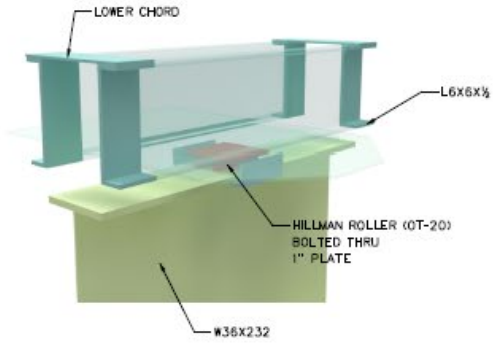
Truss, Beam and Tower Stresses During Rolling – Position 4

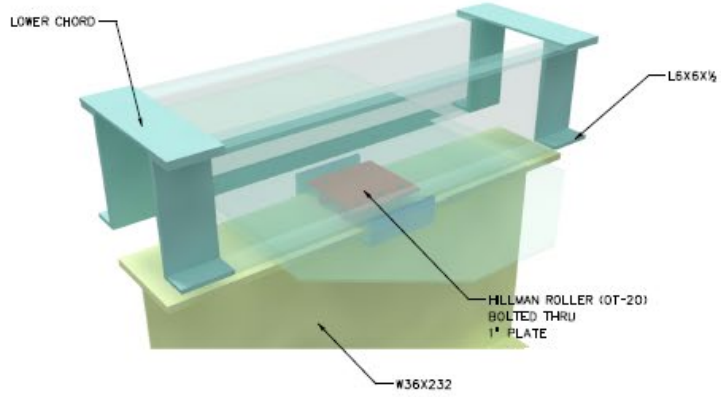
Construction











HILLMAN ROLLER OT-20

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Capon Bridge Move Day – April 26, 2023

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Capon Bridge Move Day – April 26, 2023

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Capon Bridge Move Day – April 26, 2023

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E. L. Robinson Engineering Co.

- ✓ **Headquartered in Charleston, WV**
- ✓ **100 % Employee-owned firm. Over 200 employees located in ten offices.**
- ✓ **Continuously invest in education and training of our employees.**
- ✓ **Innovative and cost-effective solutions to WVDOH and citizens of West Virginia for the past 43 years.**

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ENR TOP 500

2012, 2019, 2020, 2021, 2022, 2023

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Locations, 185 Employees

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Chapmanville, WV 25508

Beckley
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Beckley, WV 25801

NORTH CAROLINA

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Raleigh, NC 27609

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3145 Greenup Avenue
Ashland, KY 41101

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Berger Road, 21046

OHIO

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1801 Watermark Dr.
Suite 310
Columbus, OH 43215

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The Western Reserve Building
1468 West 9th Street
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Cleveland, OH 44113

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Ironton, OH 45638

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Little Hocking, OH 45742