

ASHE / D9 JOINT WORKSHOP

US 219 Boynton Bridge Emergency Project

Presented to:



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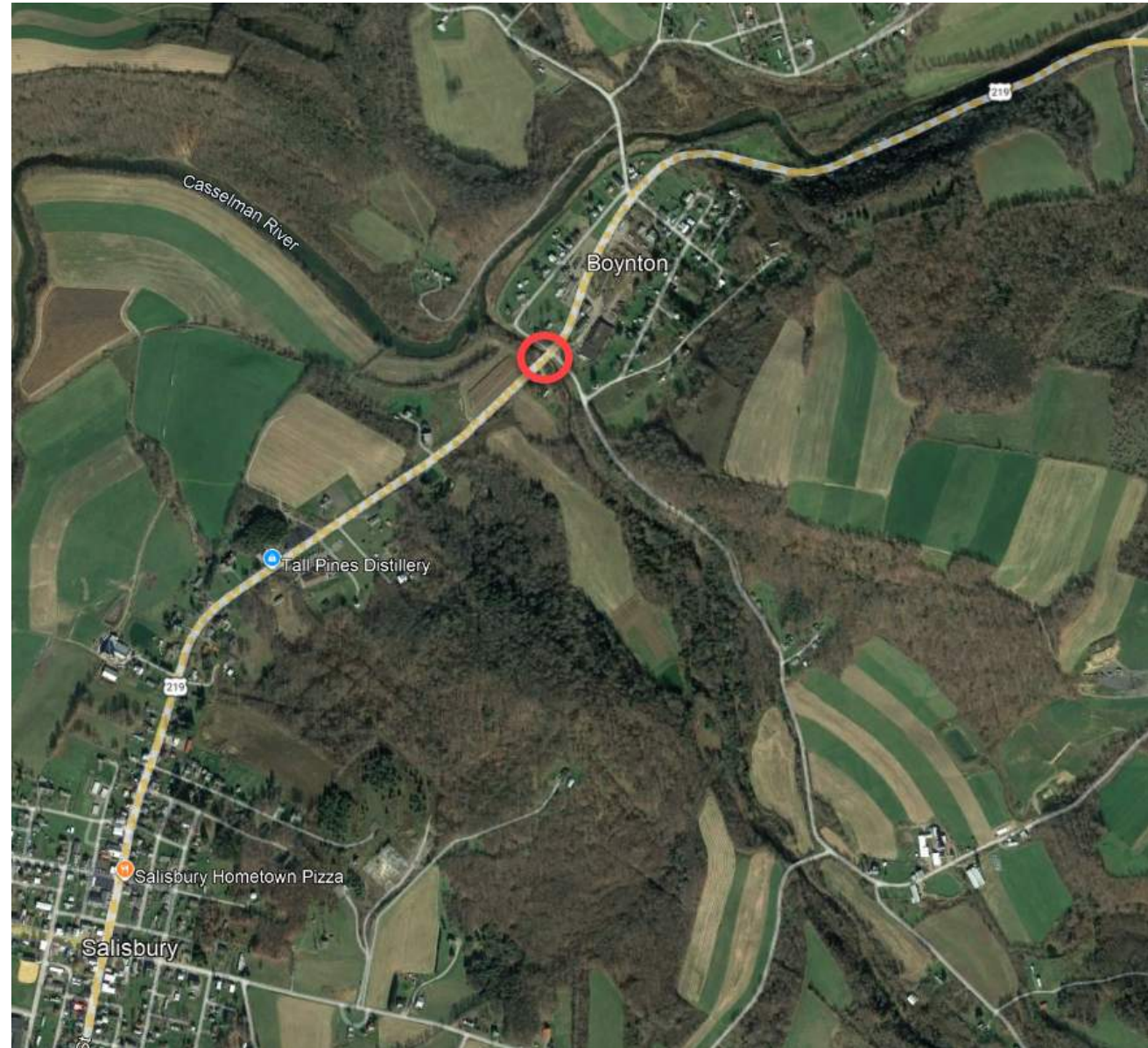
APRIL 23, 2026



Pennsylvania
Department of Transportation

LOCATION

- Bridge Carrying US 219 over Piney Creek in Elk Lick Twp, Somerset County
- 22 Miles South of I-76
- ADT: 4,700 vehicles, 17% Commercial Trucks



EXISTING INFORMATION

- 2-Span Concrete T-Beam Structure
- Original Construction in 1923 and Rebuilt/Widened in 1979
- Supported by Gravity Concrete Abutments and a Reinforced Concrete Pier
- Piney Creek is a tributary to Casselman River and lies within FEMA Zone AE

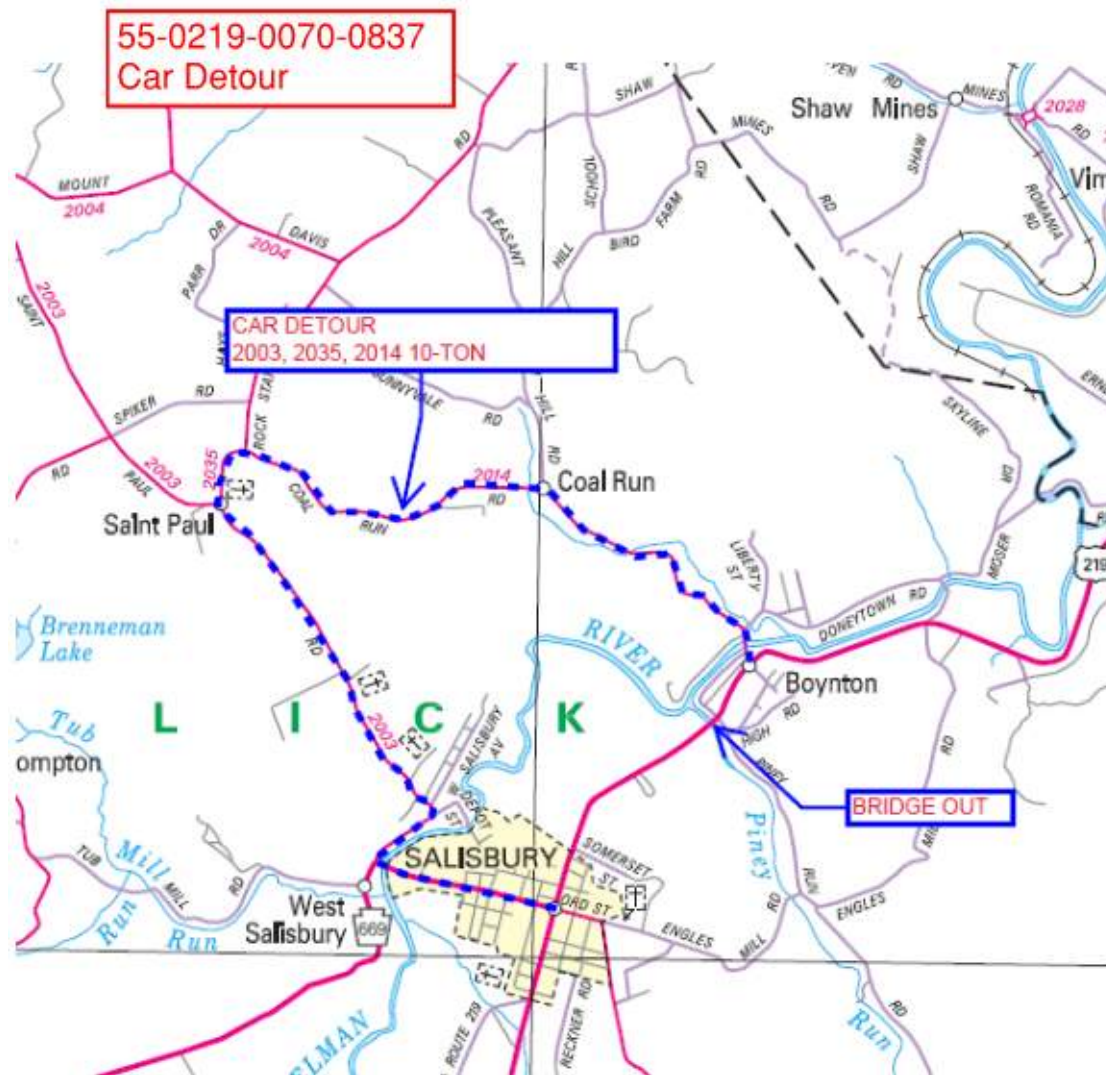
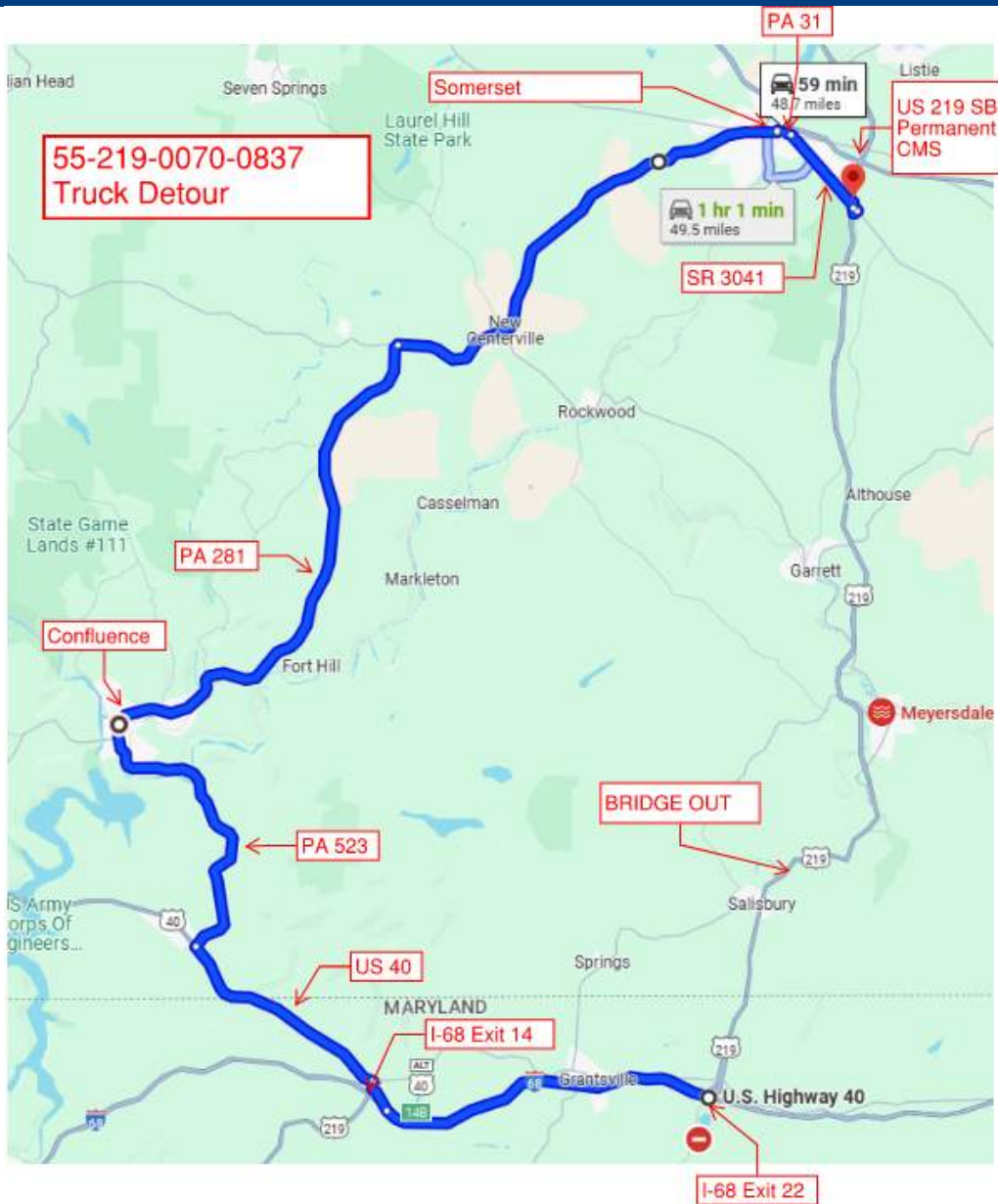


BRIDGE CLOSURE

- May 13, 2025 heavy rainfall caused damage to the pier at which point Somerset County Maintenance Closed the Bridge
- May 14, 2025 GFT secured as designer and Merlo as Contractor
- Implemented a 49-mile truck detour and 5-mile car detour



DETOUR



EMERGENCY BRIDGE

Design Challenges

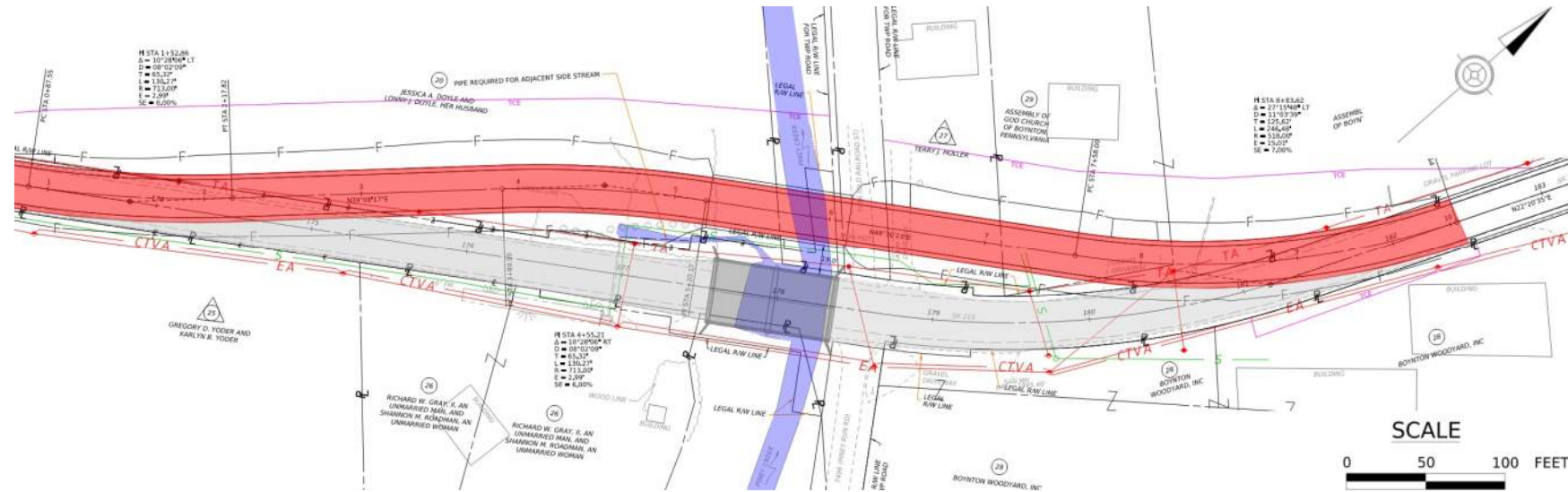
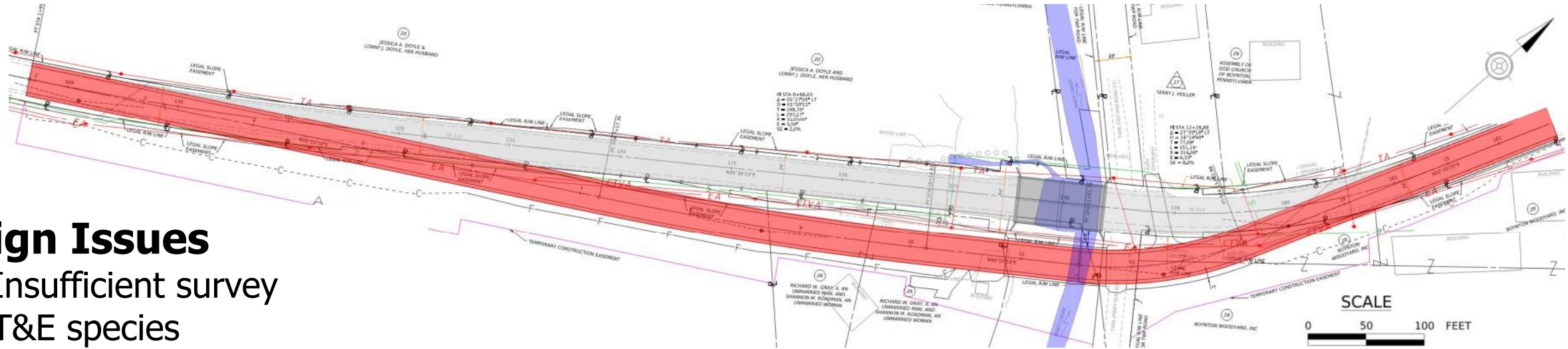
1. Time limitations
 - A.) Rapid damage assessment and solution development
 - Severe scour with pier settlement
 - Conceptual options within 24 hours
 - ✓ Permitting limitations
 - ✓ Design constraints
 - ✓ Coordination
 - B.) Critical priority – quick restoration
2. Appropriate staff resourcing
 - Experienced personnel
 - Staff familiarity with site
 - Immediate reallocation



EMERGENCY BRIDGE – TEMP US/DS OPTIONS

Design Issues

- ✓ Insufficient survey
- ✓ T&E species
- ✓ Inadequate environmental delineation
- ✓ Utility relocations
- ✓ Immediate property impacts
- ✓ Levee impact
- ✓ Geotech Required for temp foundations
- ✓ Time to design and construct



EMERGENCY BRIDGE – TEMP ONLINE OPTION

Temporary Online Bridge Replacement

- ✓ Fastest and most practical solution to reopen the roadway.
- ✓ Reconstruction contained within the existing template.
- ✓ Temporary bridge fabricator, ACROW, had components ready to ship from New Jersey.
- ✓ T&E Species concern was reduced/eliminated. Levee impact was eliminated.
- ✓ Allowed additional time for permanent solution.

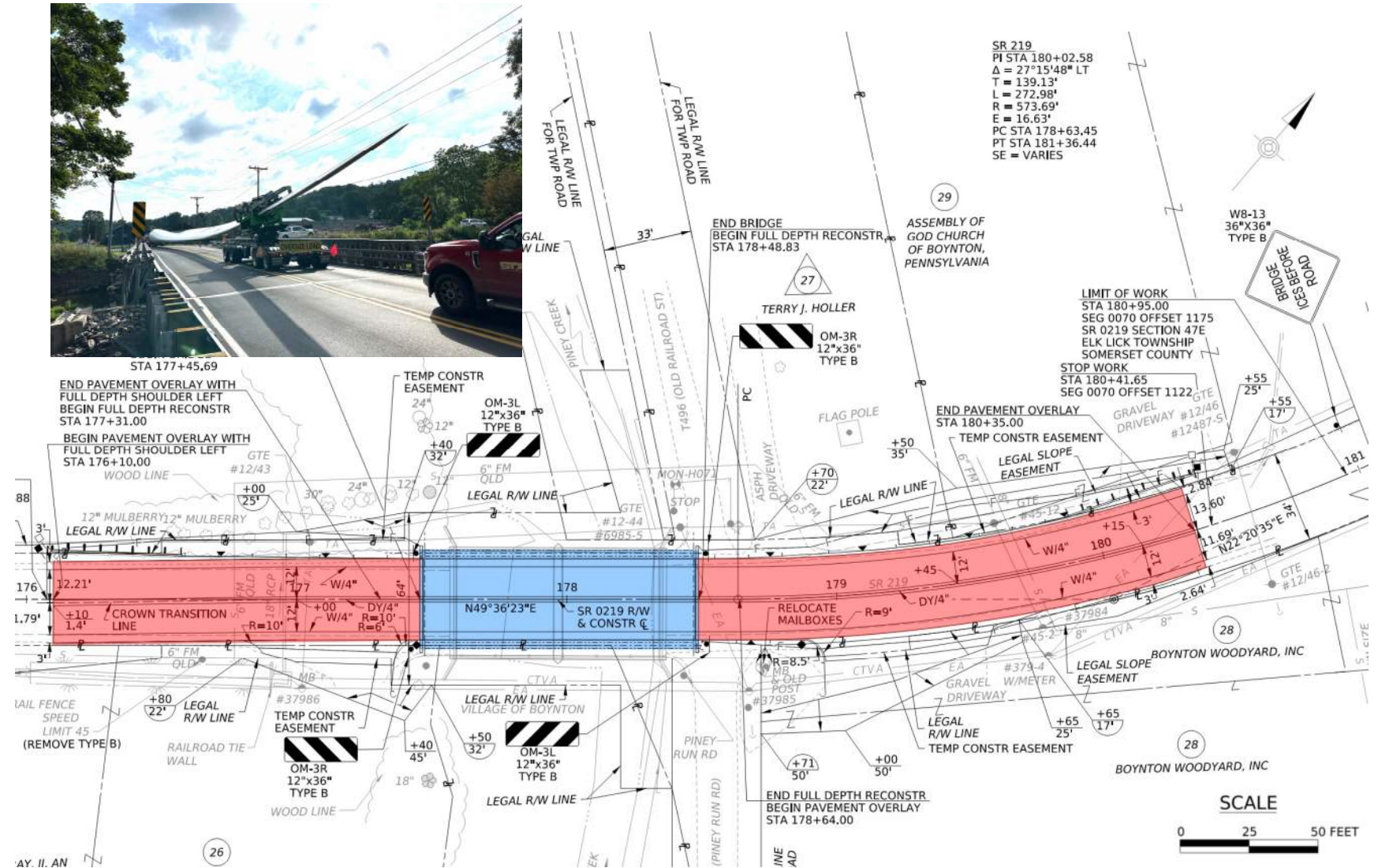
Bridge Design Strategy

- ✓ Increased span length
- ✓ Closely maintain the low chord
- ✓ Progressed foundation design upon obtaining fabricator bridge reactions.
- ✓ Prior experience and sound engineering judgement used for geotech.
- ✓ Reinforcement detailed without hooks or bends

EMERGENCY BRIDGE – TEMP ONLINE OPTION

Roadway Strategy

- ✓ Geometry was largely controlled by existing horizontal and vertical.
- ✓ Intersecting roads and northwest driveways closed.
- ✓ Profile adjustments necessary to minimized full-depth reconstruction and maximize overlay
- ✓ Windmill vehicles were considered.
- ✓ Posted speed reduced to 35 mph



EMERGENCY BRIDGE – TIMELINE

DATE	ACTIVITY
May 13 - 14	Heavy rains throughout southern Somerset County result in high water at the bridge; PennDOT inspects the bridge revealing roughly 3” of settlement on the upstream portion of the pier and superstructure. BRIDGE CLOSED.
May 14	Request for Emergency Declaration submitted with verbal approval received; Emergency planning begins; GFT develops preliminary options overnight
May 15	Emergency Declaration Issued; Onsite team meeting held; decision made for online temporary bridge; Merlo mobilizes; GFT proceeds on design
May 16	Press Event; NEPA clearance received; demolition of superstructure and pier begins
May 16–17	Removal of existing superstructure and pier; Temporary abutment plans provided.
May 18–20	Excavation, forming, reinforcing, and pouring of temporary abutments
May 20	Delivery of ACROW bridge components; Roadway plans provided.
May 21–22	Bridge assembly and launching completed
May 23	Pavement operations for roadway approaches
May 24	Installation of appurtenances; bridge reopened to traffic

EMERGENCY BRIDGE – CONSTRUCTION PHOTOS

DAY 2 (MAY 16)



Bridge Demolition Began

DAY 3 (MAY 17)



Bridge Demolition - Complete

DAY 4 (MAY 18)



Temporary Foundations

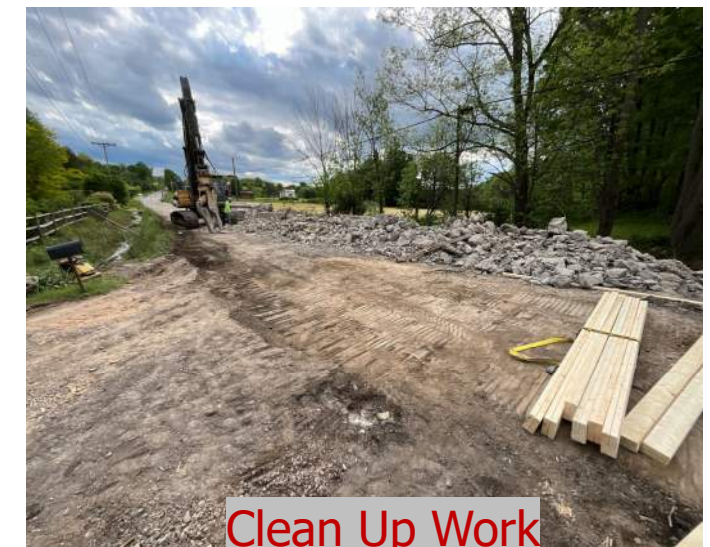
DAY SHIFT



Bridge Demolition



Temporary Foundations



Clean Up Work

NIGHT SHIFT

EMERGENCY BRIDGE – CONSTRUCTION PHOTOS

DAY 5 (MAY 19)



DAY 6 (MAY 20)



DAY 7 (MAY 21)



DAY SHIFT



NIGHT SHIFT

EMERGENCY BRIDGE – CONSTRUCTION PHOTOS

DAY 8 (MAY 22)



DAY 9 (MAY 23)



DAY 10 (MAY 24)



DAY SHIFT

NIGHT SHIFT



EMERGENCY BRIDGE - AWARD

2025 APC TQI PARTNERING AWARD

➤ Owner



Pennsylvania Department of Transportation (PennDOT)
District 9-0

➤ Design Consultant



GFT

➤ Prime Contractor



Merlo, Inc.

➤ Prefabricated Bridge Supplier



ACROW

PERMANENT BRIDGE – CHALLENGES

Accelerated Schedule

- Milestone Commitments
 - ✓ July 9, 2025 - Advanced NTP
 - ✓ Mid September – Environmental Clearance/DFV approval
 - ✓ Early January PS&E approval
 - ✓ February 26, 2026 - Let Date
 - ✓ 2026 Construction Season

Less than 8 months to progress through PE/FD and produce bid package for letting

Long-Term Detour Unacceptable

Separate Permitting

- PADEP required separate plans and impacts for a GP-11 and GP-8
- Parallel stream and wetland avoidance requirements
- PADEP regulated levee

Two Plan Packages

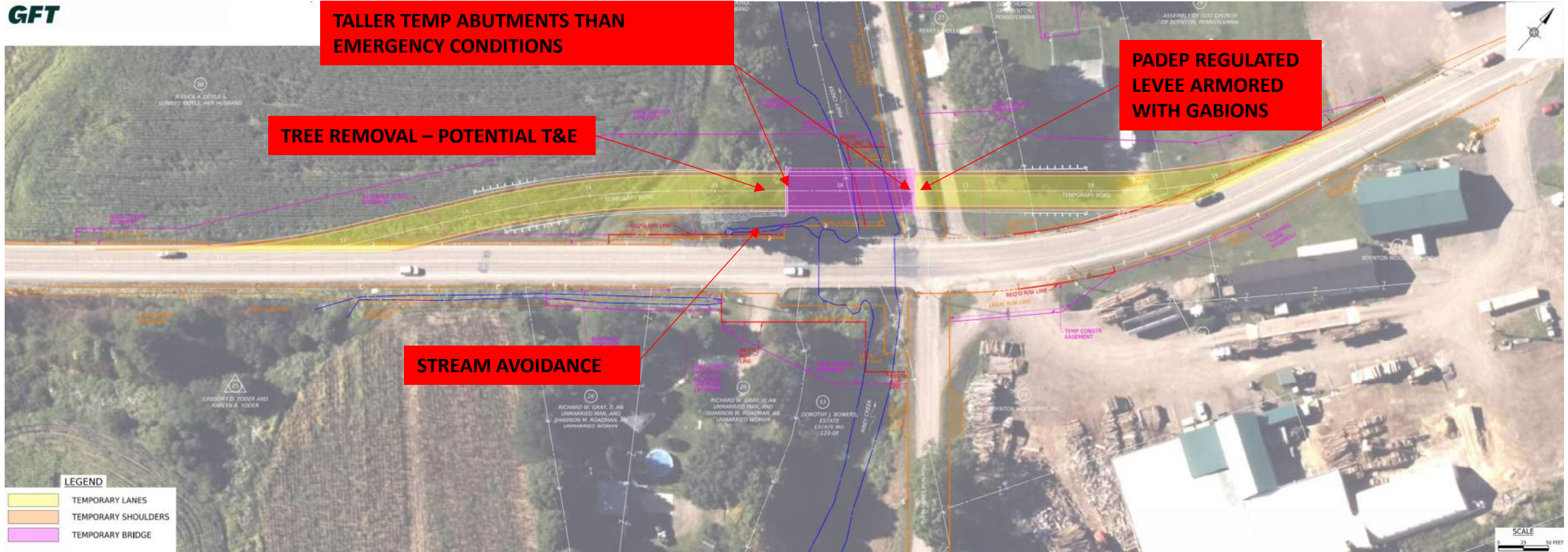
- Work order PS&E set
- Advertisement PS&E set

Path to Accomplishing These Design Milestones

- Condensed durations for both GFT and District 9-0 on reviews
- Close Team Coordination
 - ✓ GFT and District 9-0
 - ✓ District 9-0 and Agencies
 - ✓ GFT Design Team (GFT, AGES and MBE)
 - ✓ GFT/District 9-0 Early and Often Coordination with Utility Companies
- Right-of-Way Plan Later in the Process
- Combined Line, Grade and Typical Section/Safety Review Submission
- Minor Project Review Process

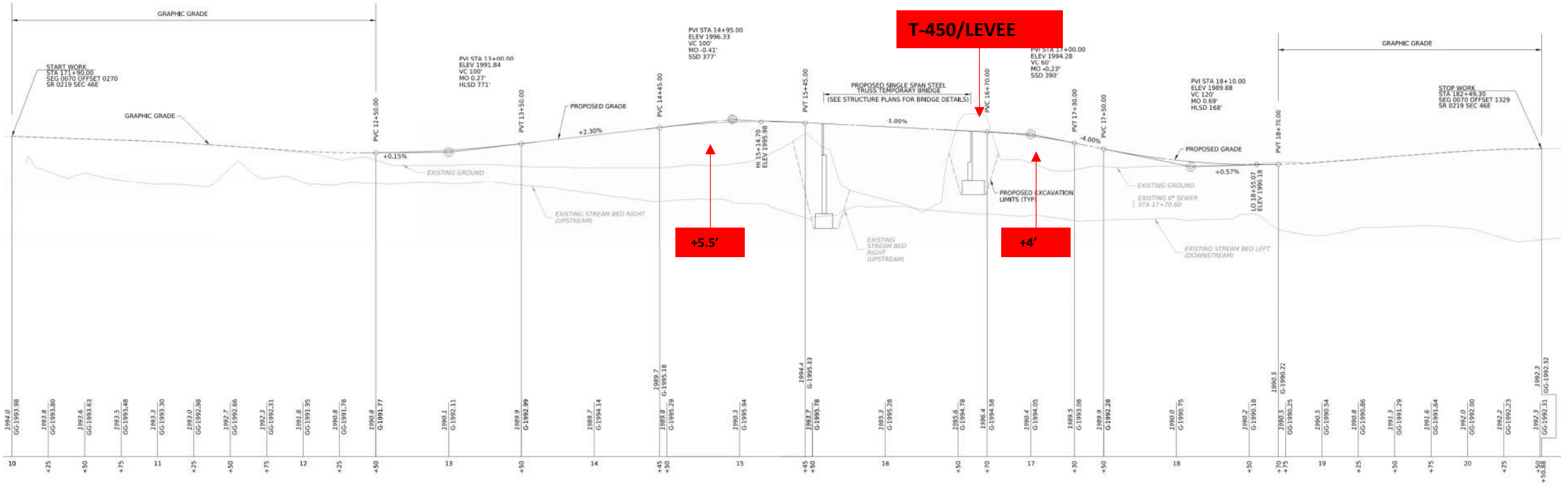
PERMANENT BRIDGE – TEMPORARY RD/BRIDGE PLAN VIEW

GFT

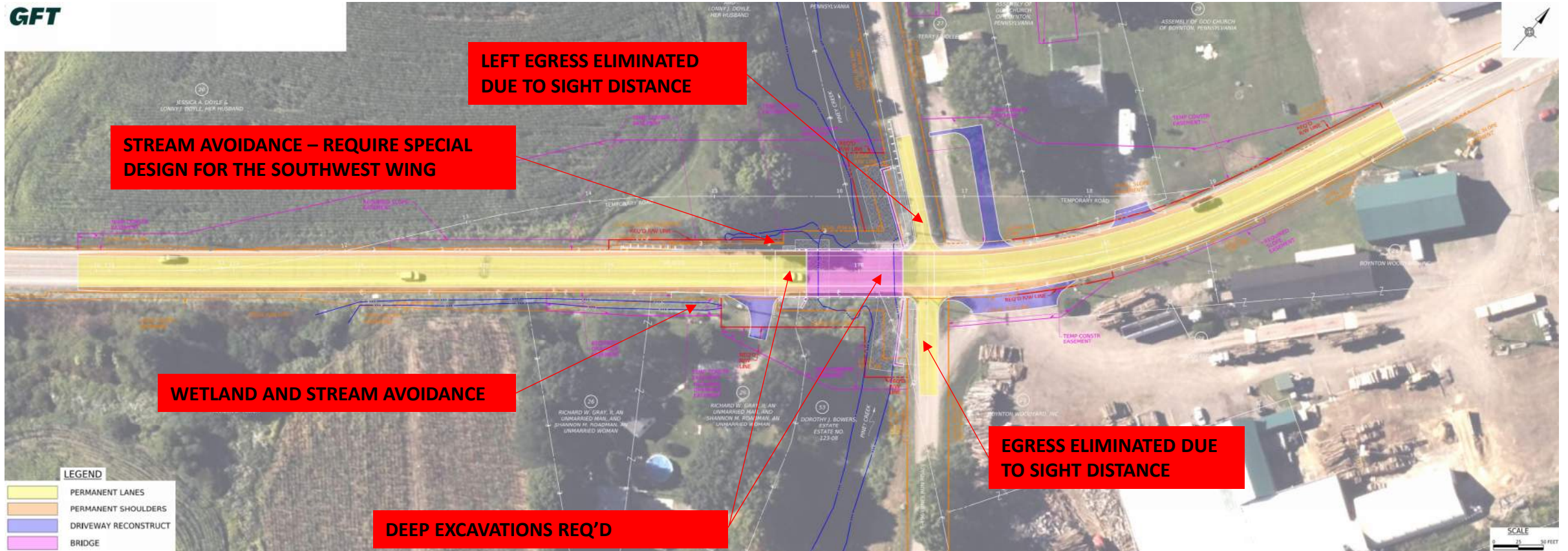


- Downstream temporary road and bridge to maintain traffic
- Reuse of emergency SR 219 temporary bridge
- Lane/Shoulder widths consistent with existing/emergency
- Minimal disruption to traffic to construct (3-day weekend detour) and minimal impact during permanent work.
- Utility relocations required

PERMANENT BRIDGE – TEMPORARY RD/BRIDGE PROFILE VIEW



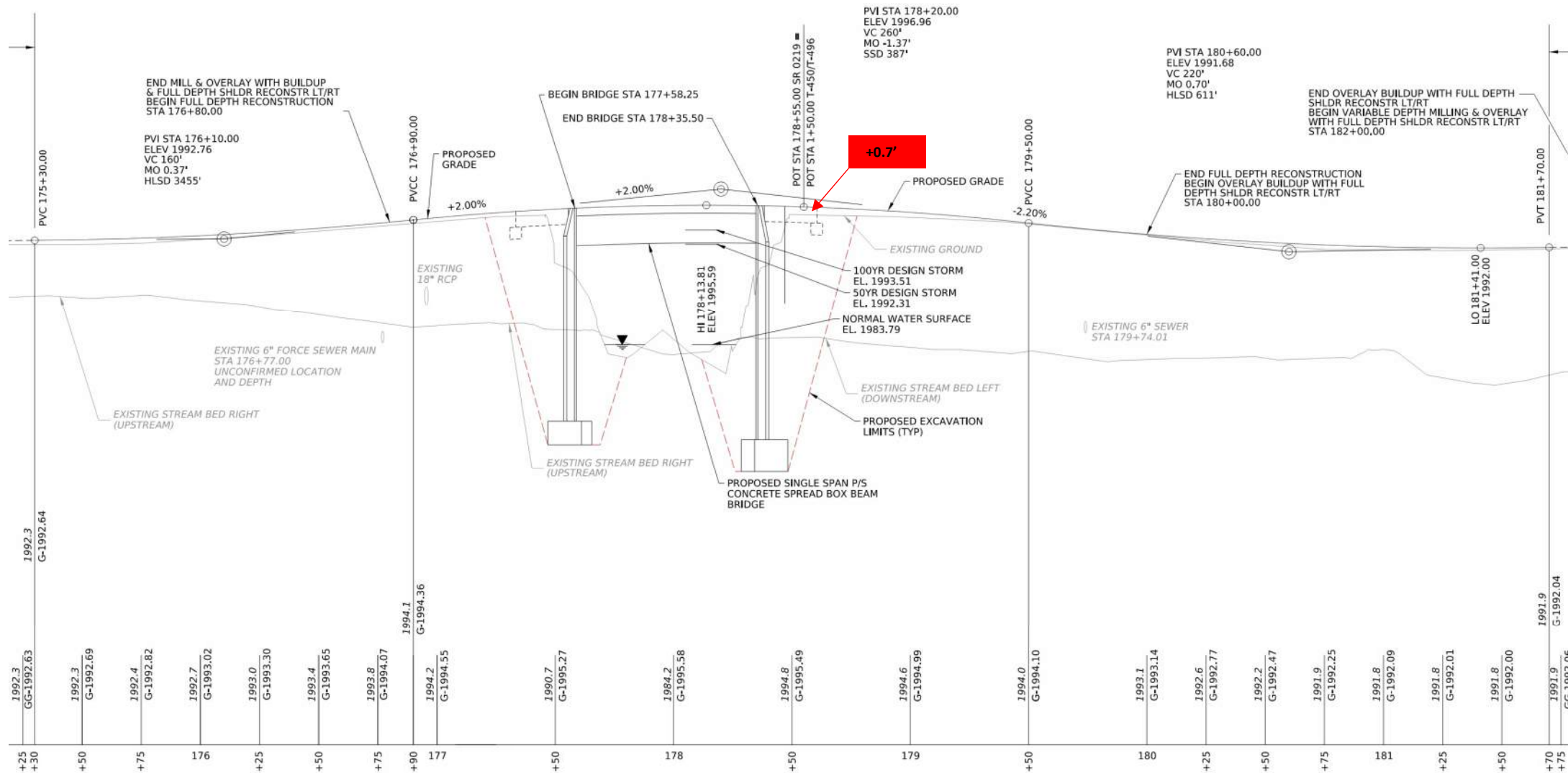
PERMANENT BRIDGE – PERMANENT PLAN OVERVIEW



- Permanent bridge constructed on the existing alignment
- Single span prestressed concrete spread box beam bridge

- Roadway approach work
 - ✓ Slight vertical grade adjustments; Improved Superelevation
 - ✓ Multiple design exceptions (Shldr, ISD, etc.)
 - ✓ T-450 and T-496 reconstructed

PERMANENT BRIDGE – PERMANENT PROFILE VIEW



PERMANENT BRIDGE

Accelerated Schedule

- ANTP - July 9, 2025
- SEPS ~ August 4, 2025; Borings Completed by August 20, 2025
- H&H/TS&L ~ August 6, 2025
- Environmental Clearance/DFV ~ Late Sept (PE COMPLETE)
- GP-11 with GP-8 Concurrent during PE ~ Mid Oct
- PS&E Package ~ December 23, 2025
- PS&E Approved ~ January 9, 2026
- Advertised ~ February 2, 2026
- Let ~ February 26, 2026

Environmental/Permitting

- Additional T&E coord
- In-stream restrictions (NRT, STS, and longnose sucker)
 - ✓ Feb 15 – July 1; Oct 1 – Dec 31
 - District obtained waiver
 - (Work allowed Feb 15 – Mar 15 and June 1 – Nov 15)

Questions?

