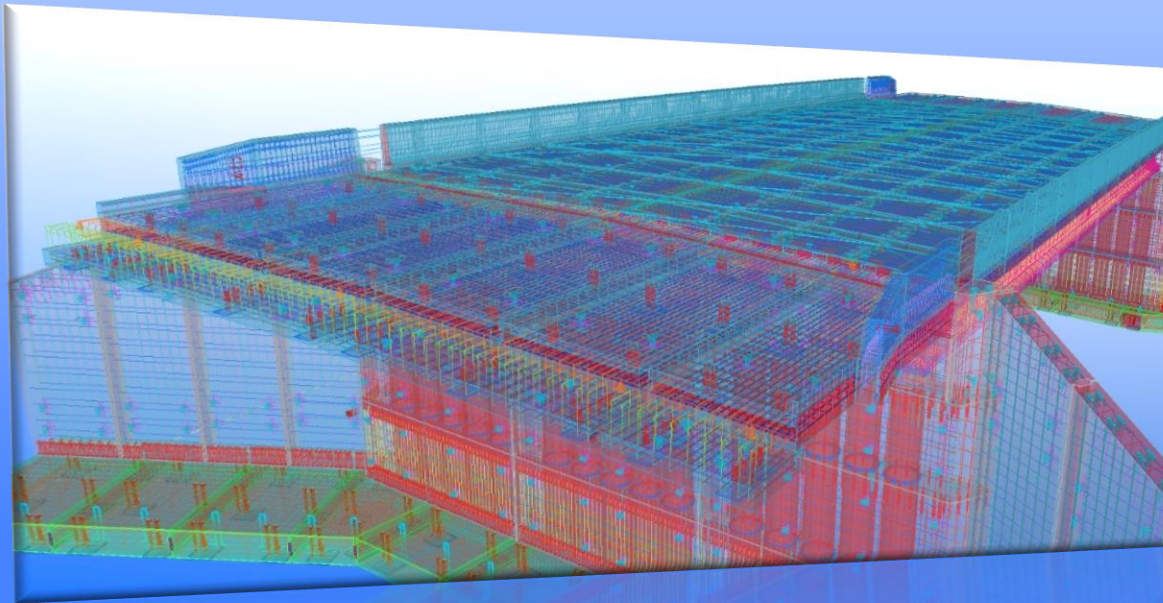




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TOTAL PRECAST BRIDGE STRUCTURES

Accelerated Bridge Construction, PBES



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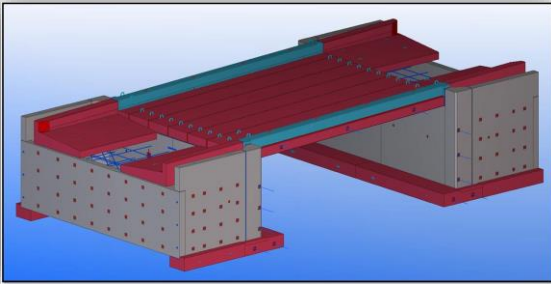
TOTAL PRECAST BRIDGE STRUCTURES

This course is approved for 1 LU/PDH/HSW Credit

Not a New Concept...

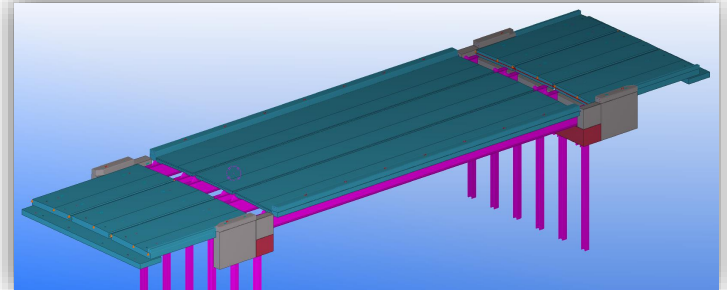


Example Projects - Types



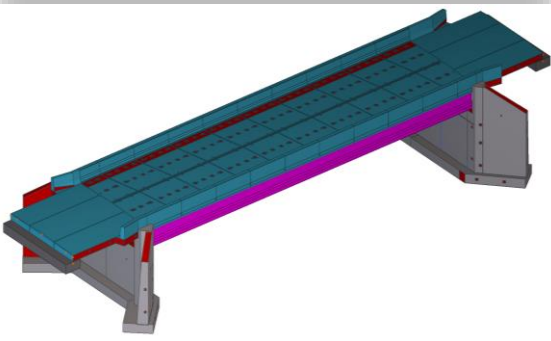
Abutment Block

S.R. 1020 SEC. 02B over Sherman
Valley Run in Bedford County, PA



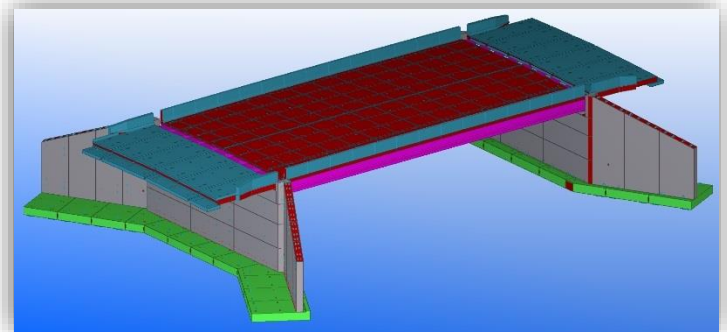
Modular Deck (Steel or PS Beams)

S.R. 0288 SEC. L10 over Wampum Run in
Lawrence County, PA



CIP Component Replacement

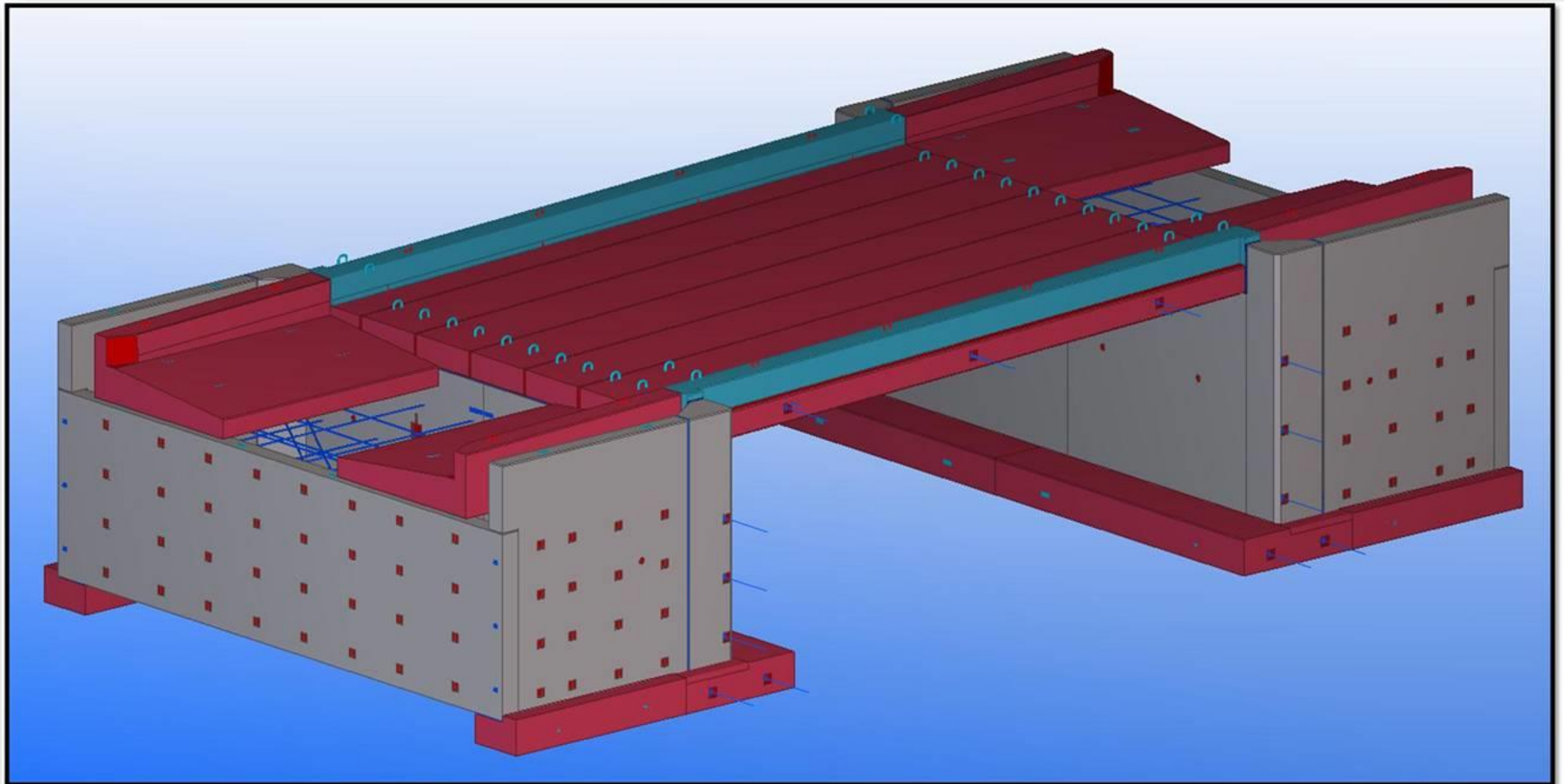
S.R. 1004 SEC. 001 over Cove Creek in
Bedford County, PA



PennDOT Standards Detail.

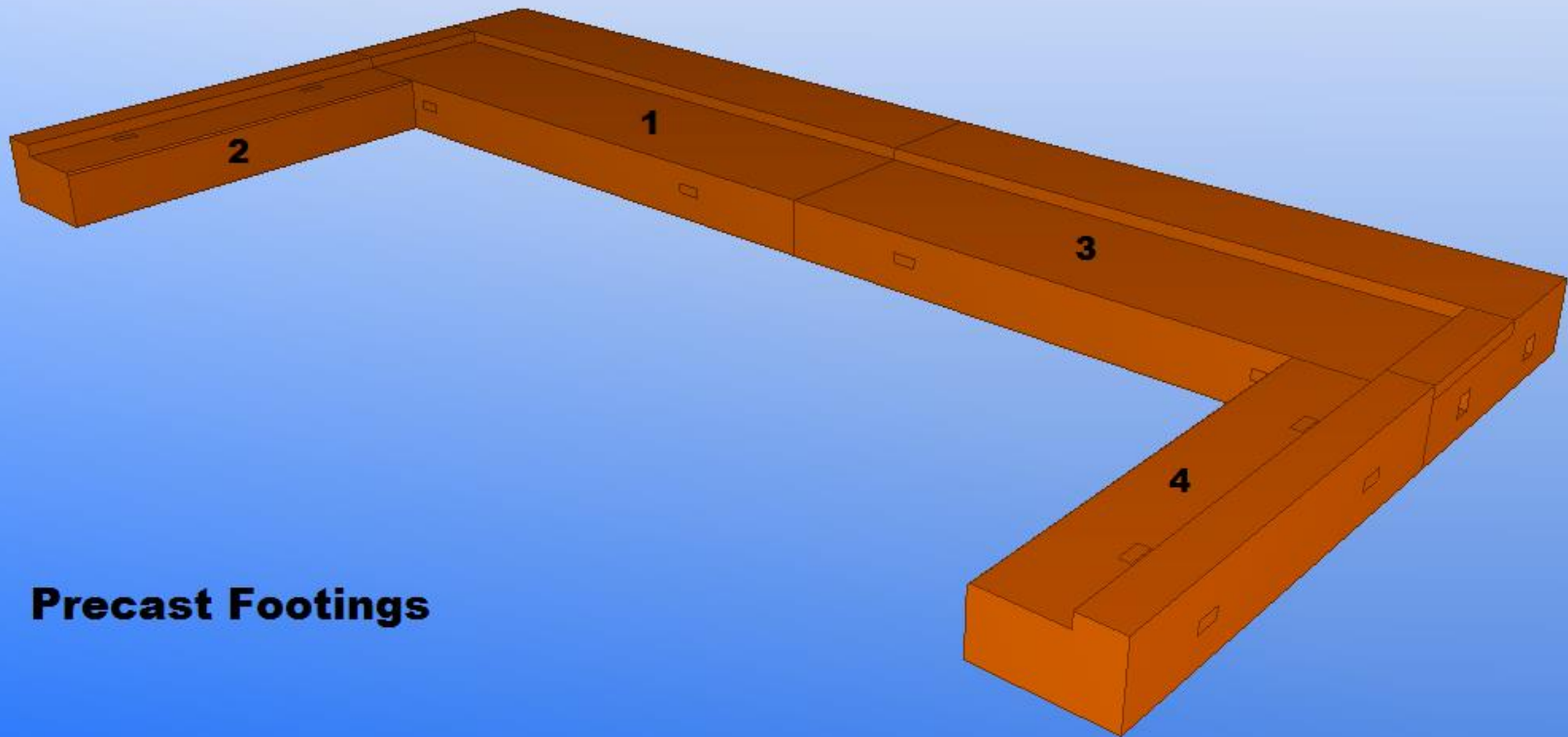
Golden Key Rd. Over I-78, Lehigh County

Abutment Block



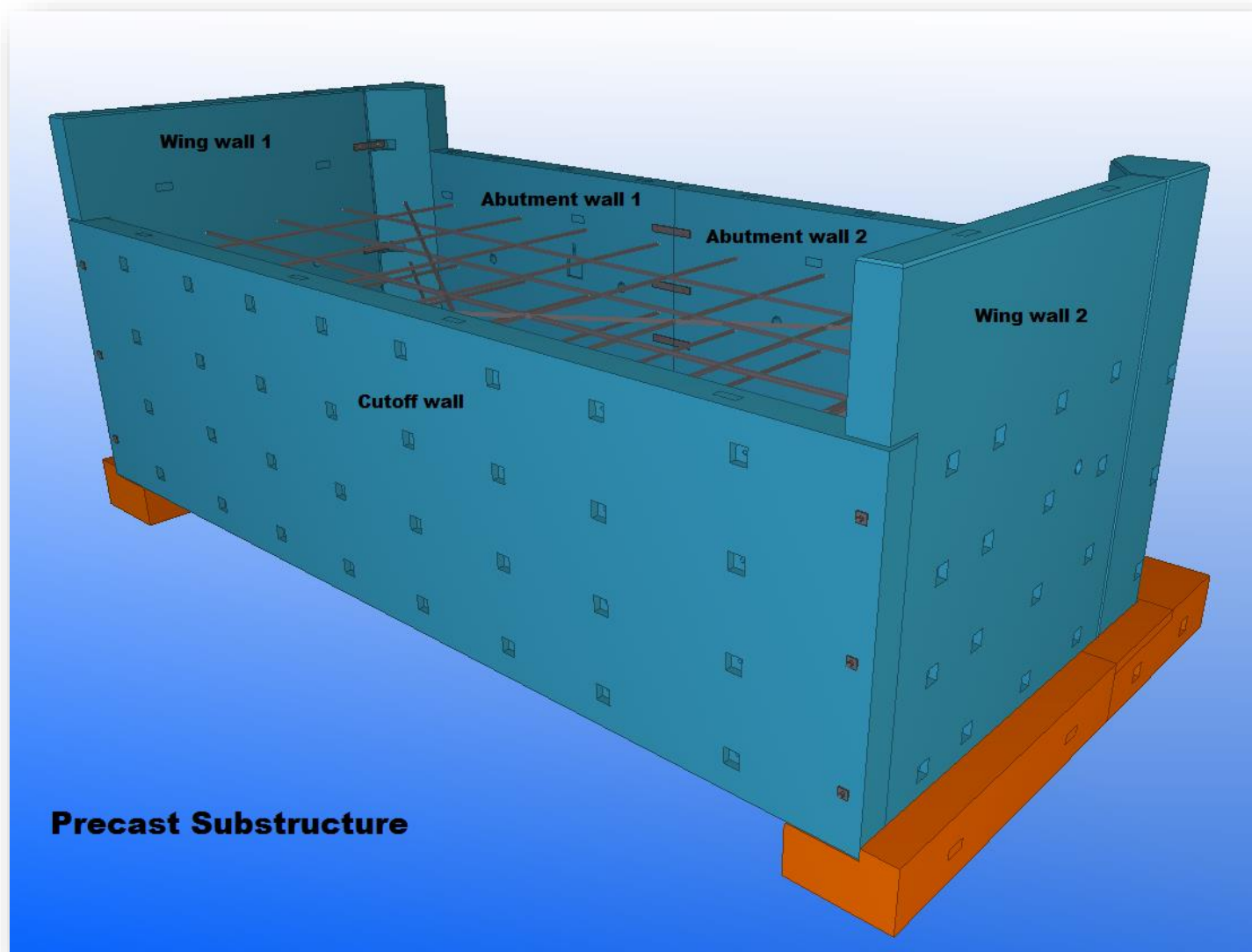
Sherman Valley Run, Bedford, PA

Abutment Block



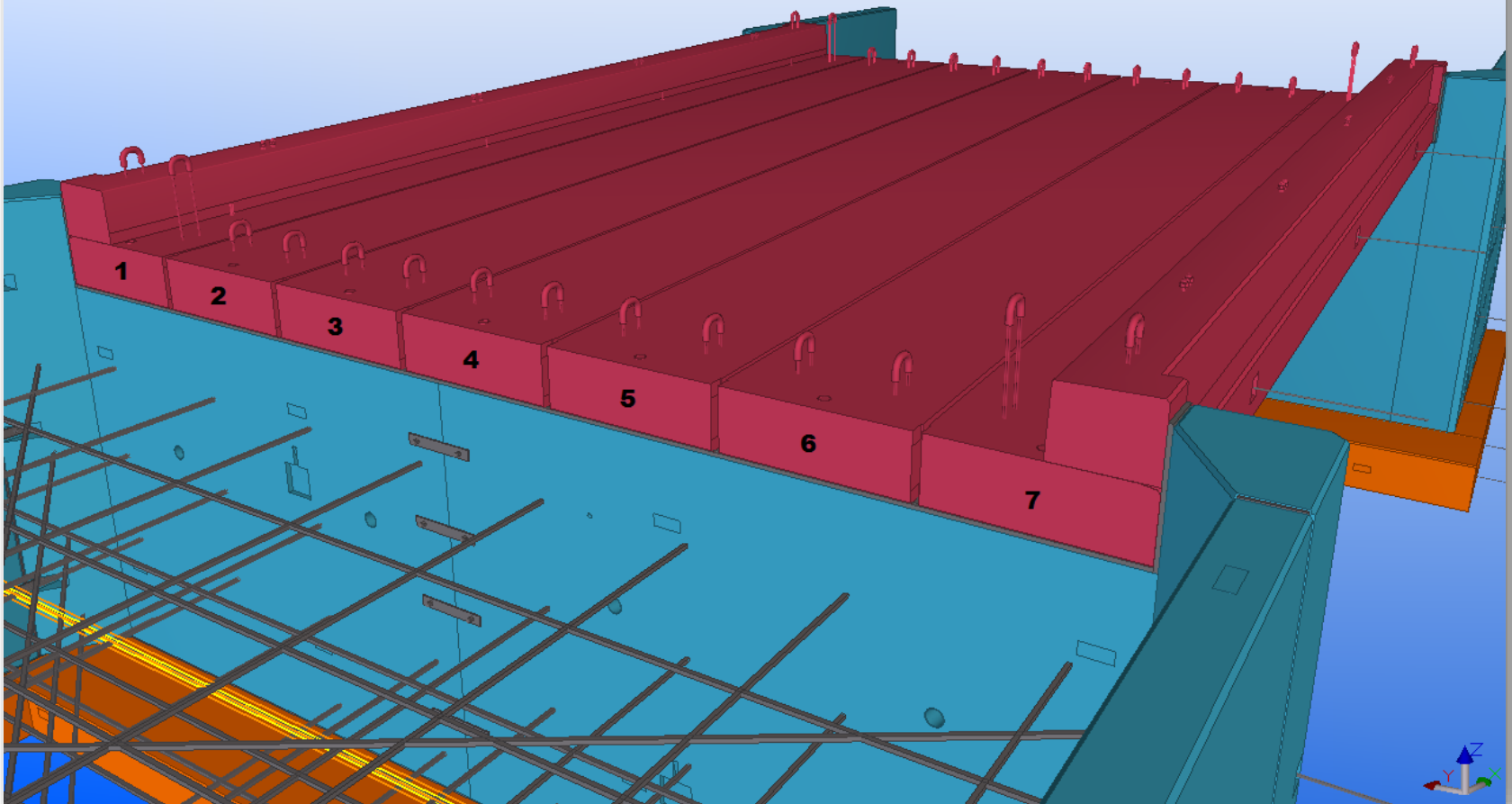
Precast Footings

Abutment Block



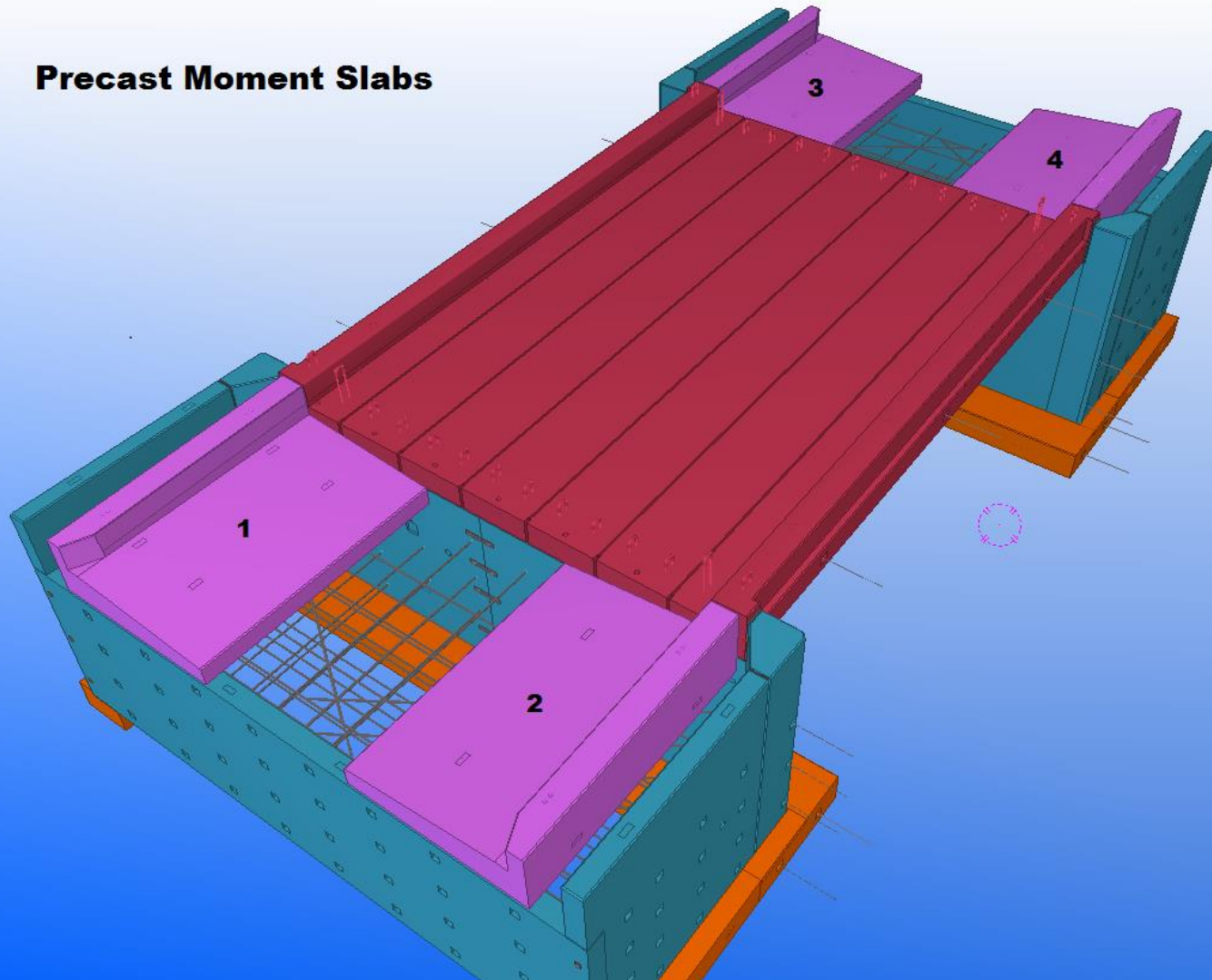
Abutment Block

Precast Superstructure



Abutment Block

Precast Moment Slabs



Abutment Block

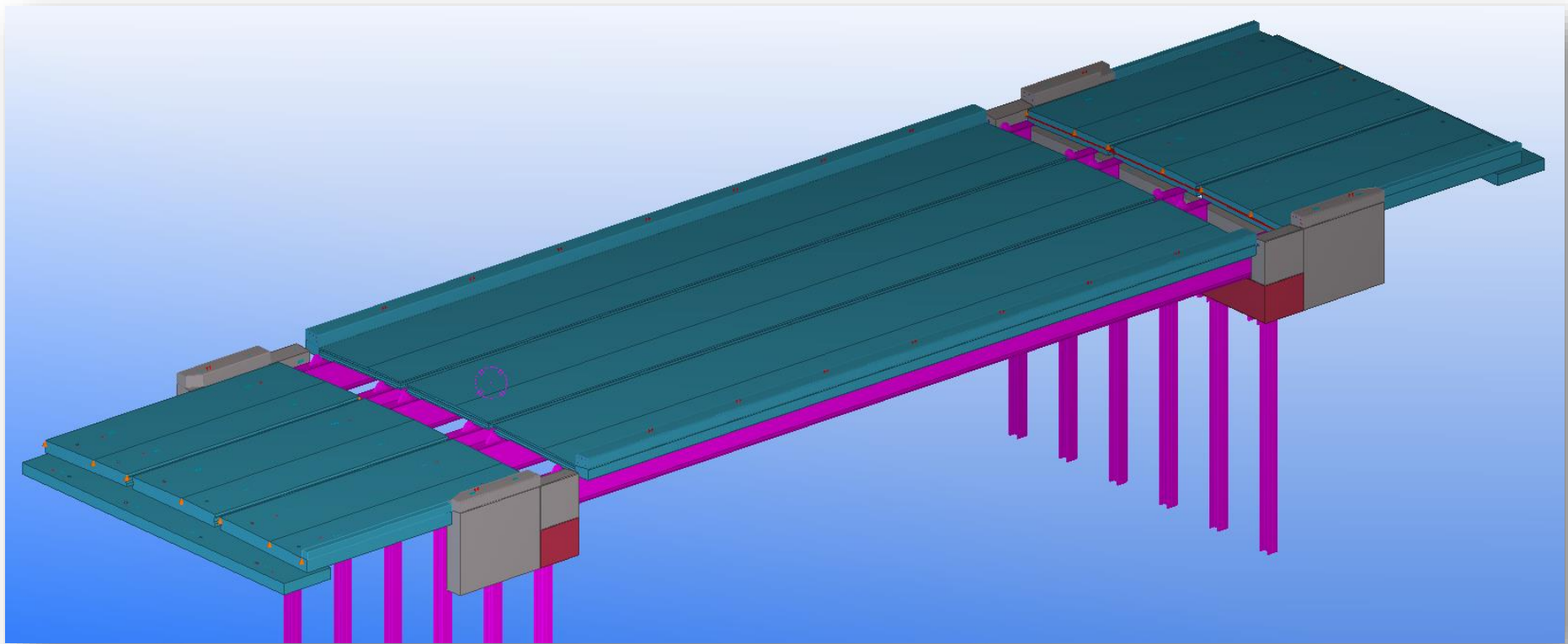


Abutment Block



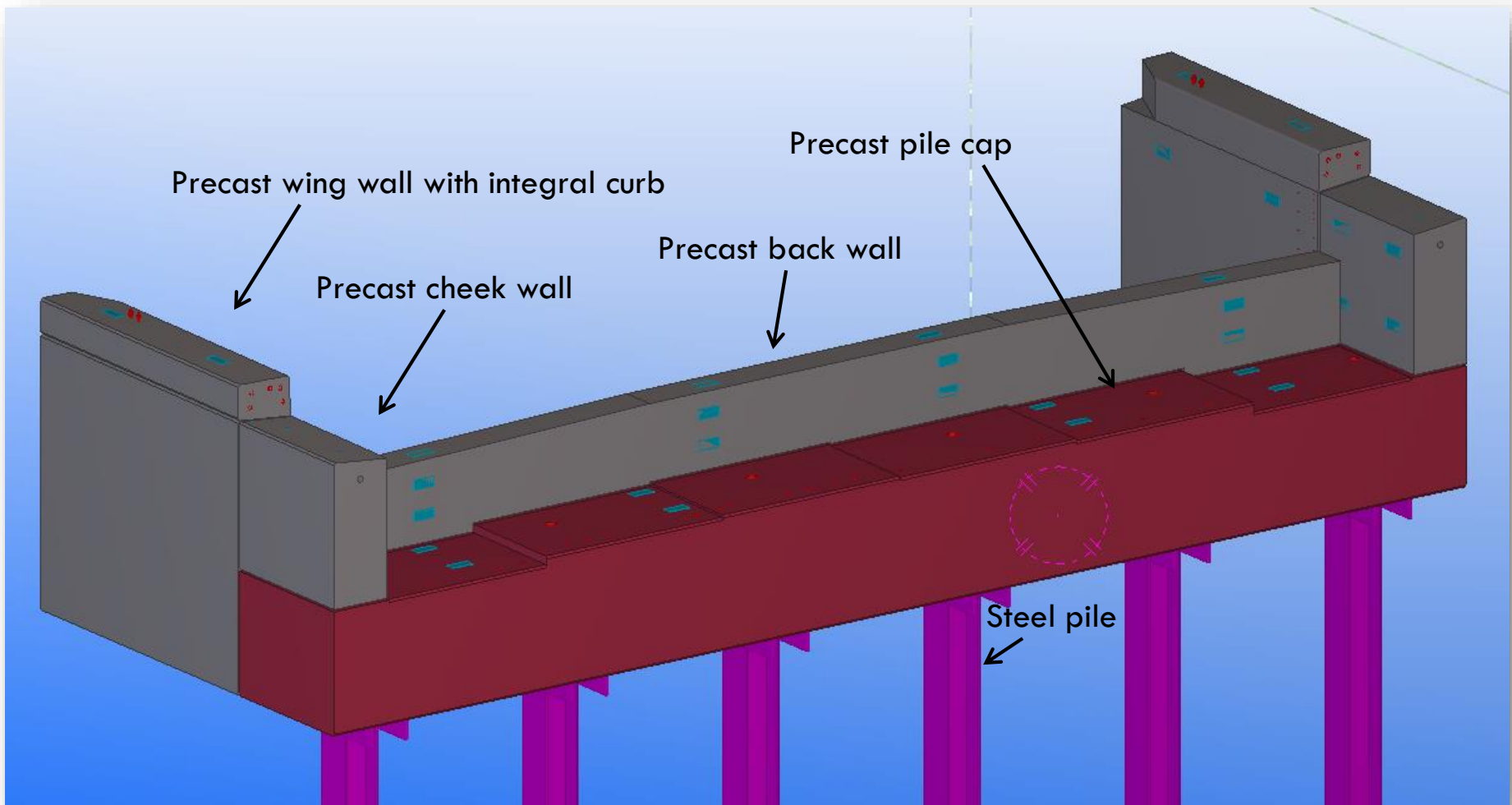
Completed in 21 calendar days

Modular Deck

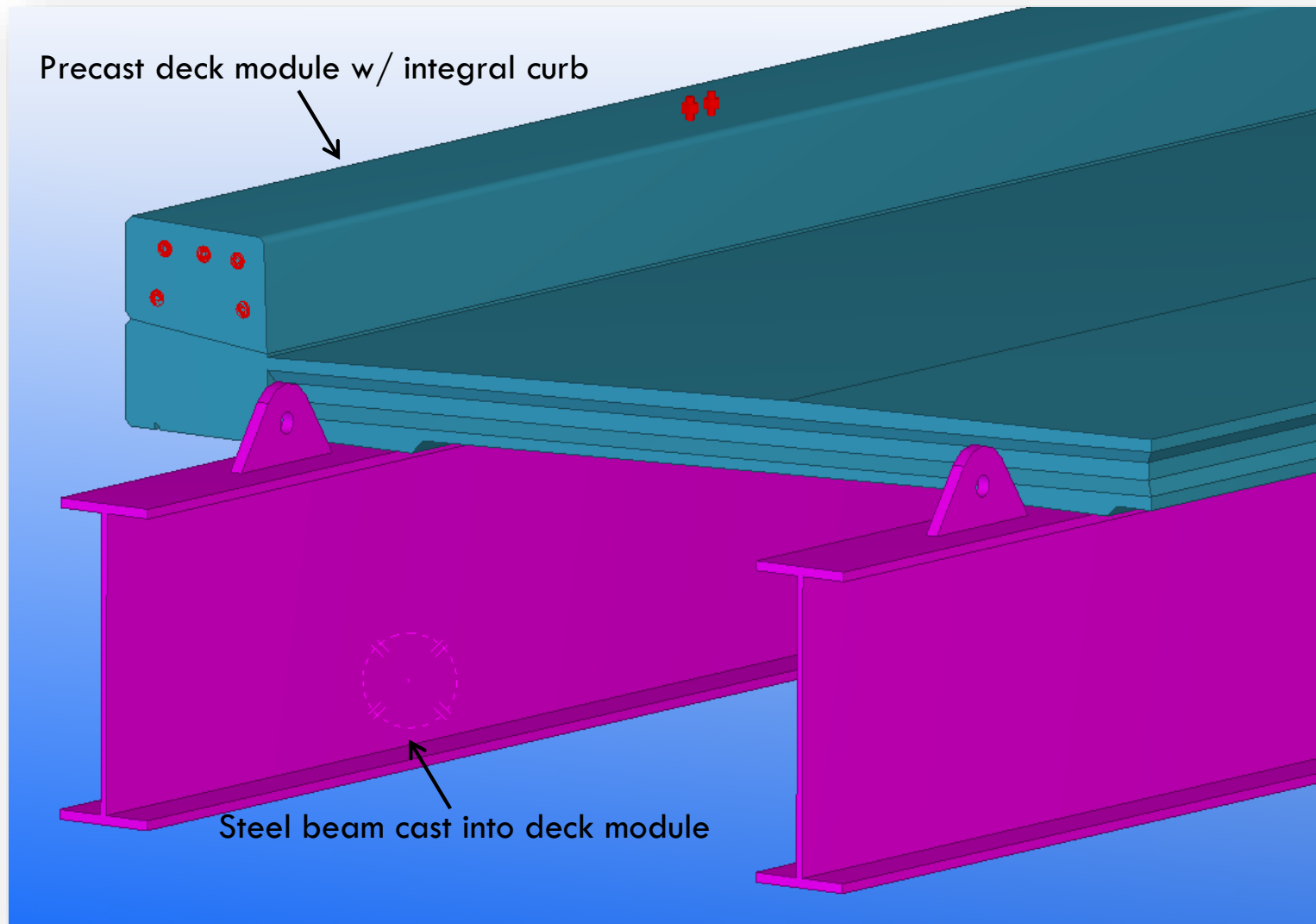


Wampum Run, Lawrence County, PA

Modular Deck



Modular Deck



Precast Decks on Bulb Tee Beams



Modular Decks on Multiple P/S Beams



Modular Deck



Modular Deck

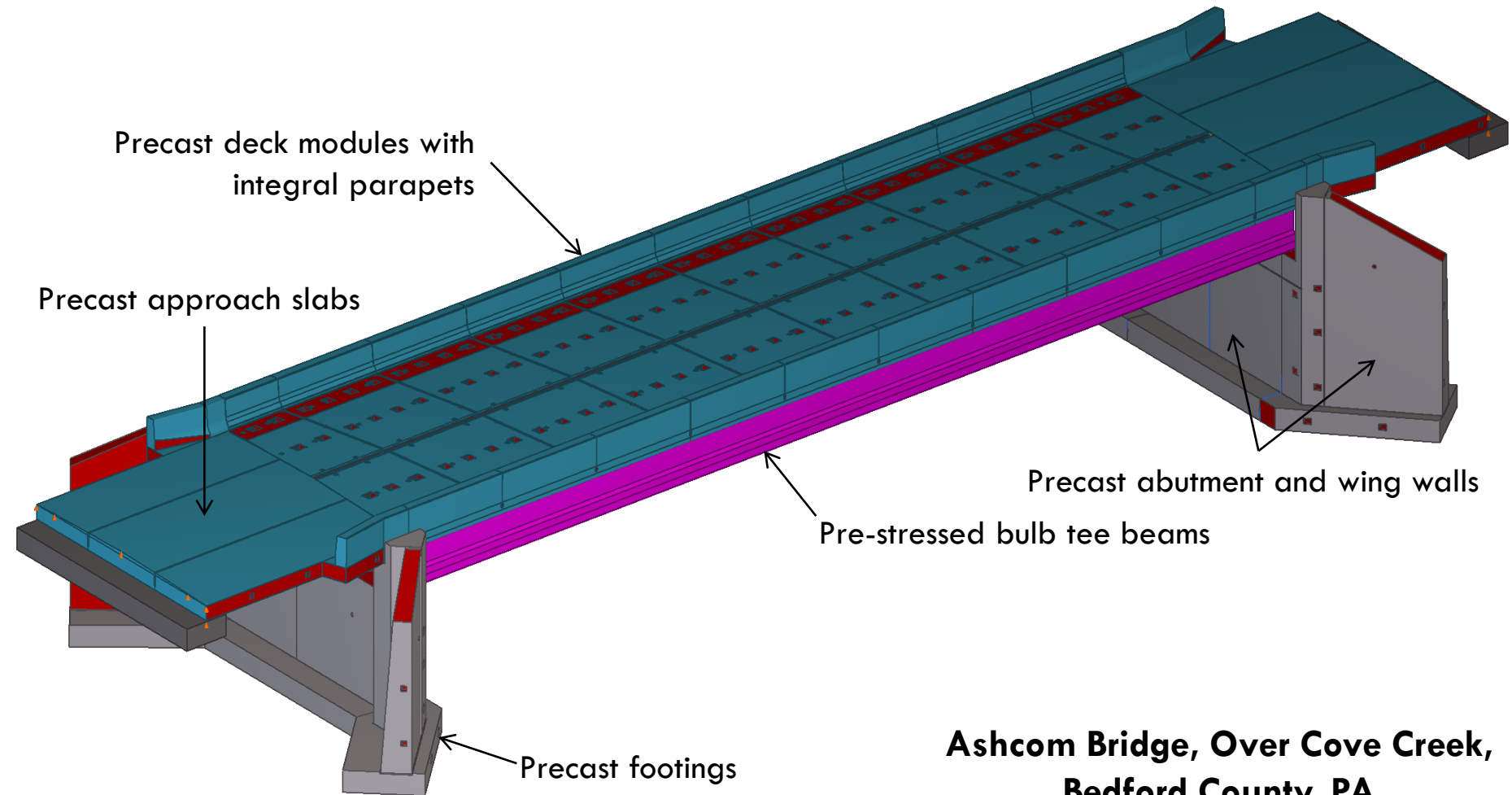


Modular Deck



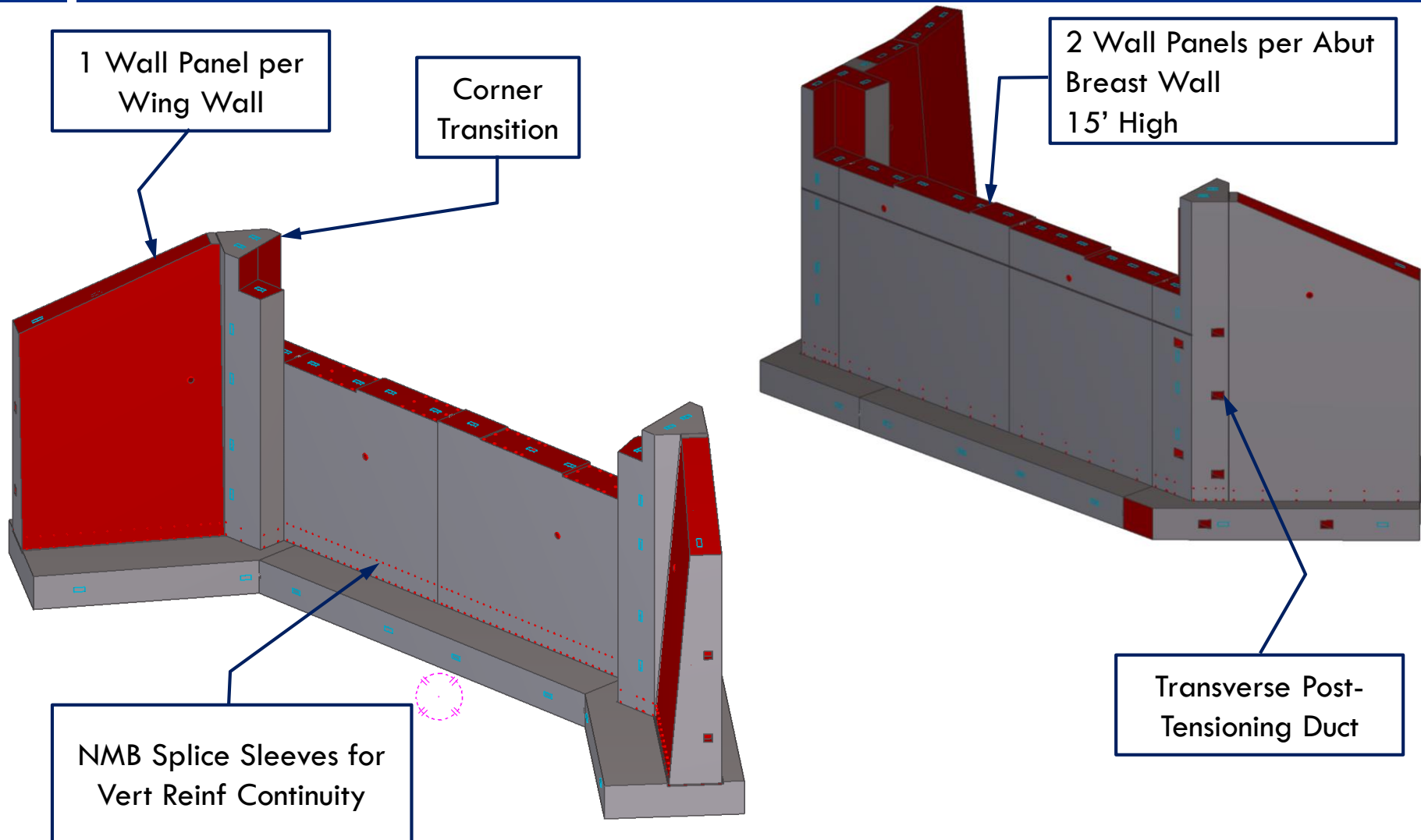
7 Days Road Closure to Re-open

CIP Component Replacement



**Ashcom Bridge, Over Cove Creek,
Bedford County, PA**

CIP Component Replacement



CIP Component Replacement



CIP Component Replacement



NMB Splice Sleeve

www.splicesleeve.com

CIP Component Replacement



CIP Component Replacement



CIP Component Replacement



CIP Component Replacement



CIP Component Replacement

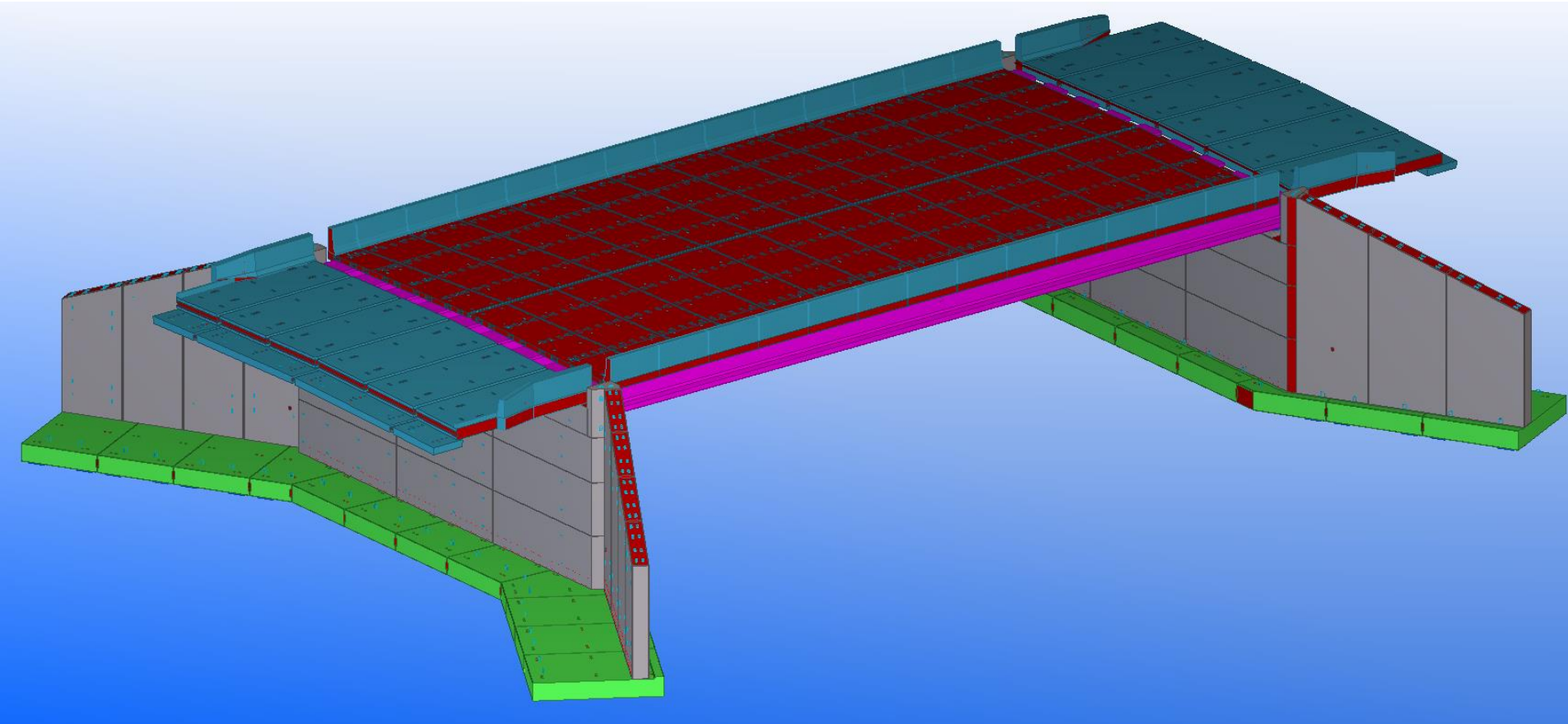


CIP Component Replacement



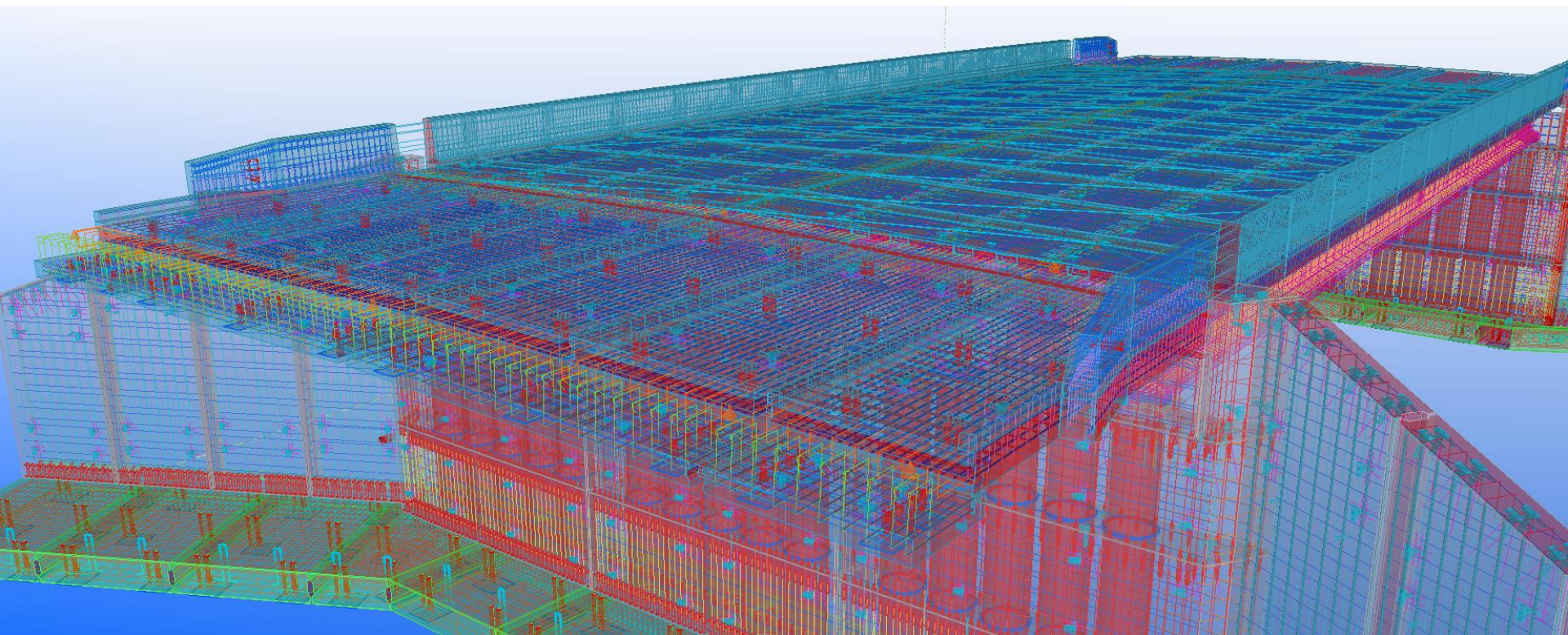
Completed Project 54 Calendar Days

PennDOT Standards

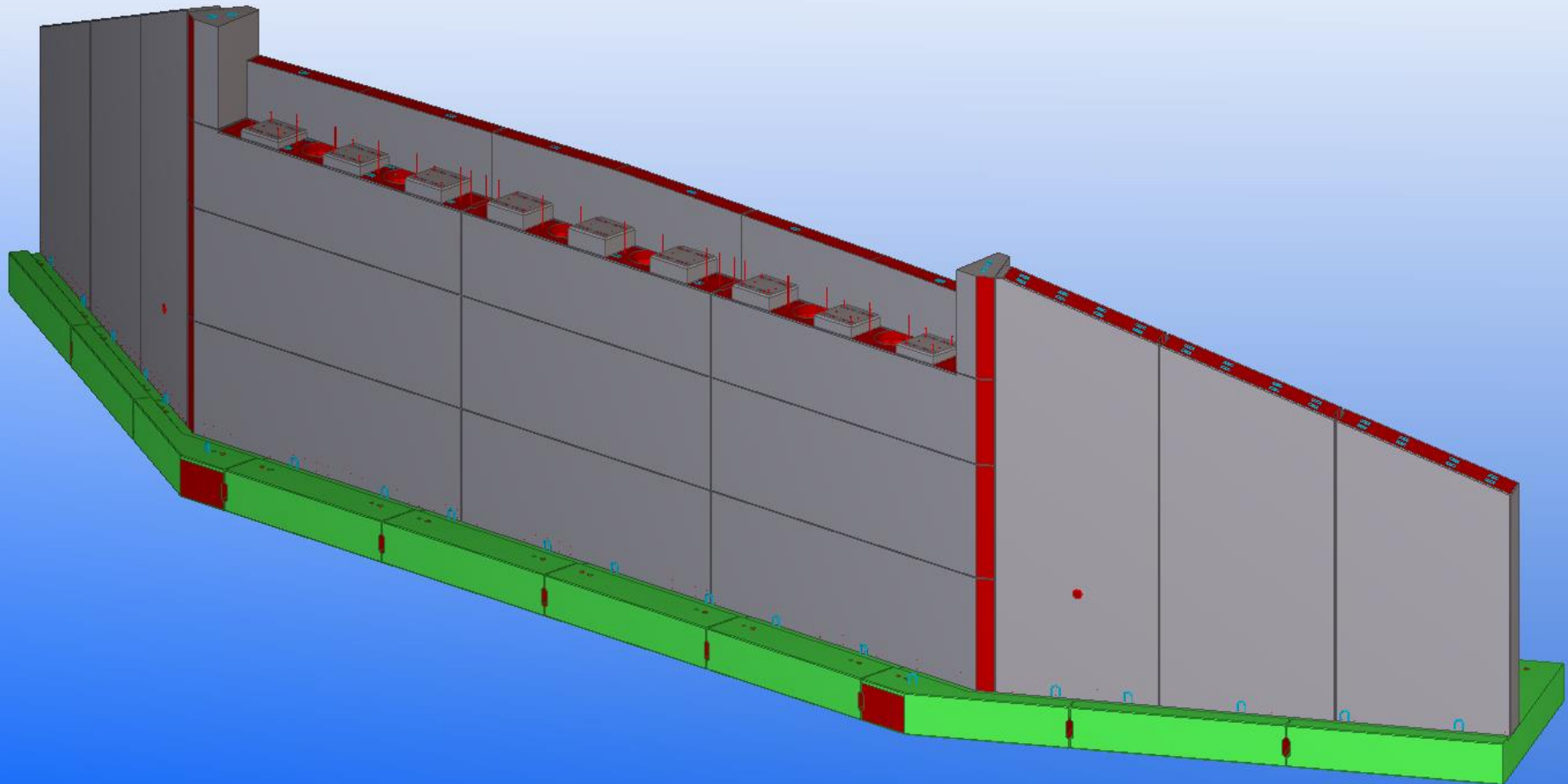


Golden Key Rd. Over I-78, Lehigh County, PA

PennDOT Standards



PennDOT Standards



PennDOT Standards

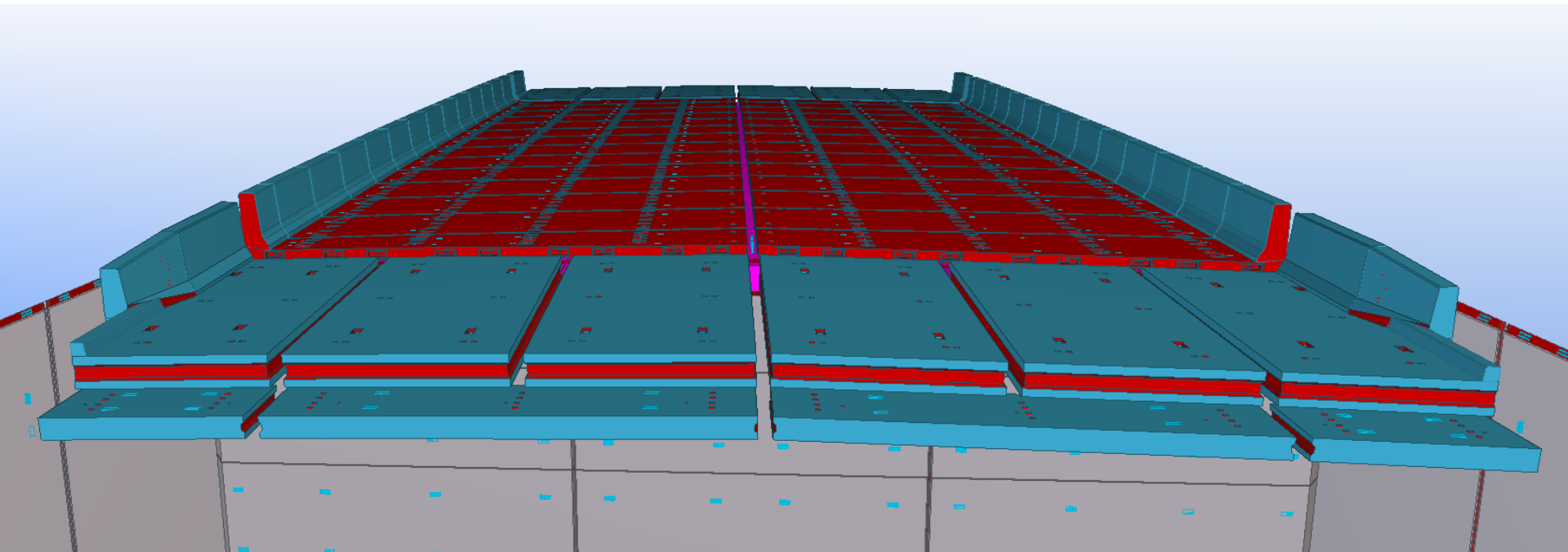


Dry Fitting A Wing Wall

PennDOT Standards



PennDOT Standards



PennDOT Standards



PennDOT Standards



PennDOT Standards



Bridge Erected in 30 calendar days

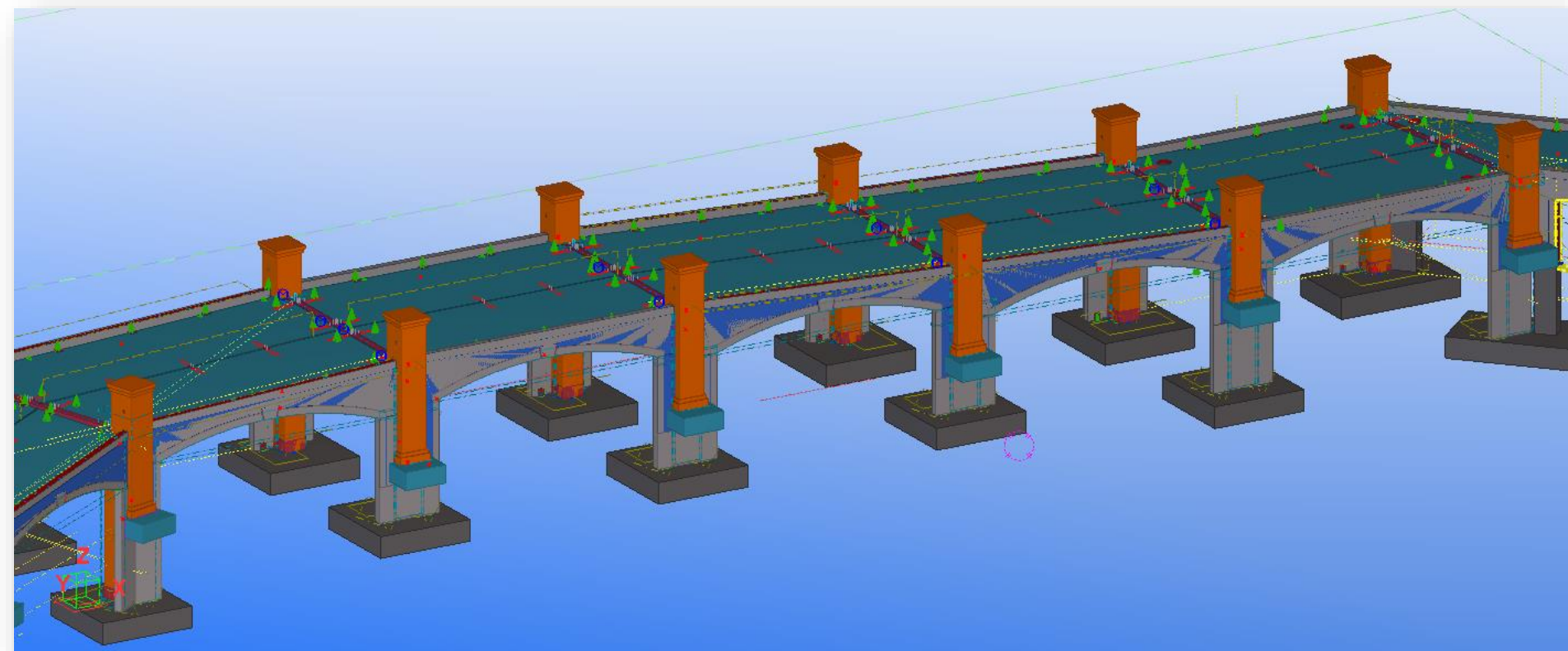
PennDOT Standards



DAY 1



DelGrosso's Pedestrian Bridge



DelGrosso's Pedestrian Bridge



DelGrosso's Pedestrian Bridge



Cedar Lane Bridge, Rockville, MD



Four Span

Abutment & Pier
Caps

52 Beams

Ornamental Rail
Parapet, with
Integral Sidewalk

Cedar Lane Bridge, Rockville, MD



Cedar Lane Bridge, Rockville, MD



Cedar Lane Bridge, Rockville, MD

9 Days to Erect; 41 Days Close to Open



ADVANTAGES

- PUBLIC & JOBSITE SAFETY
- SPEED: Accelerated Construction
- QUALITY
- FIELD OPERATIONS
- RISK MANAGEMENT
- FINANCIAL BENEFITS & ECONOMICS

PUBLIC & JOBSITE SAFETY

- Reduces exposure to travelling public
 - Accidents, short duration patterns, Detours
 - Delays, Congestion, Inconvenience
- Reduces exposure to Construction Crews
 - Smaller Crews
 - Shorter durations
 - Normally Closure, minimal thru-traffic
 - Less injury prone type work

SPEED: Accelerated Construction

- Significant “Close to Open” time savings
- **FHWA “Every Day Counts” Initiative**
- Reduced environmental impact
- **Replace more deficient bridges faster**
- Eliminate field concrete cure time
- Not weather dependent-Erect all year
- Short closures vs. Long term phasing
- Time is \$

QUALITY

Plant Manufactured Products

- PCI Certified QC Program & Production
- Manufactured under ideal conditions
 - Indoor, temperature & moisture control
 - Consistent, high performance concrete
 - Consistent curing
- Architectural Treatments & Staining/coatings
- Life Cycle Value

FIELD OPERATIONS

- Smaller, Less costly crews
- Less specialized equipment (ex. Bidwell)
- Better equipment utilization (ex. Crane)
- Not weather dependent
 - All-season erection
 - Significantly less weather delays
- Significantly less lay down area
- Better process for night operations

RISK MANAGEMENT

- Insurance advantages
- Less risk for:
 - Construction delays
 - Schedule erosion
 - Environmental impacts
 - Accidents & Injuries
 - Public issues
 - Litigation

FINANCIAL Benefits & ECONOMICS

- Decrease cost as “Innovation” stage expires
 - Contractors – new business model
 - Indirects/OH spread over more projects
- Links to most all the bullet items presented
- Distinct cost saving application examples:
 - Phased projects
 - Any time-sensitive projects (school routes)
 - Complicated geometry
 - Environmental sensitive (trout streams)

OBSTACLES

- It's a new/non-conventional path for bridges
- Recognizing the overall value considering
 - Safety, Time, Cost, Quality, Risk aversion, Synergy
- Currently in the “Innovation” stage
- Realistic DOT assessment for value of driver & project costs in incentive, A+BX, contracts

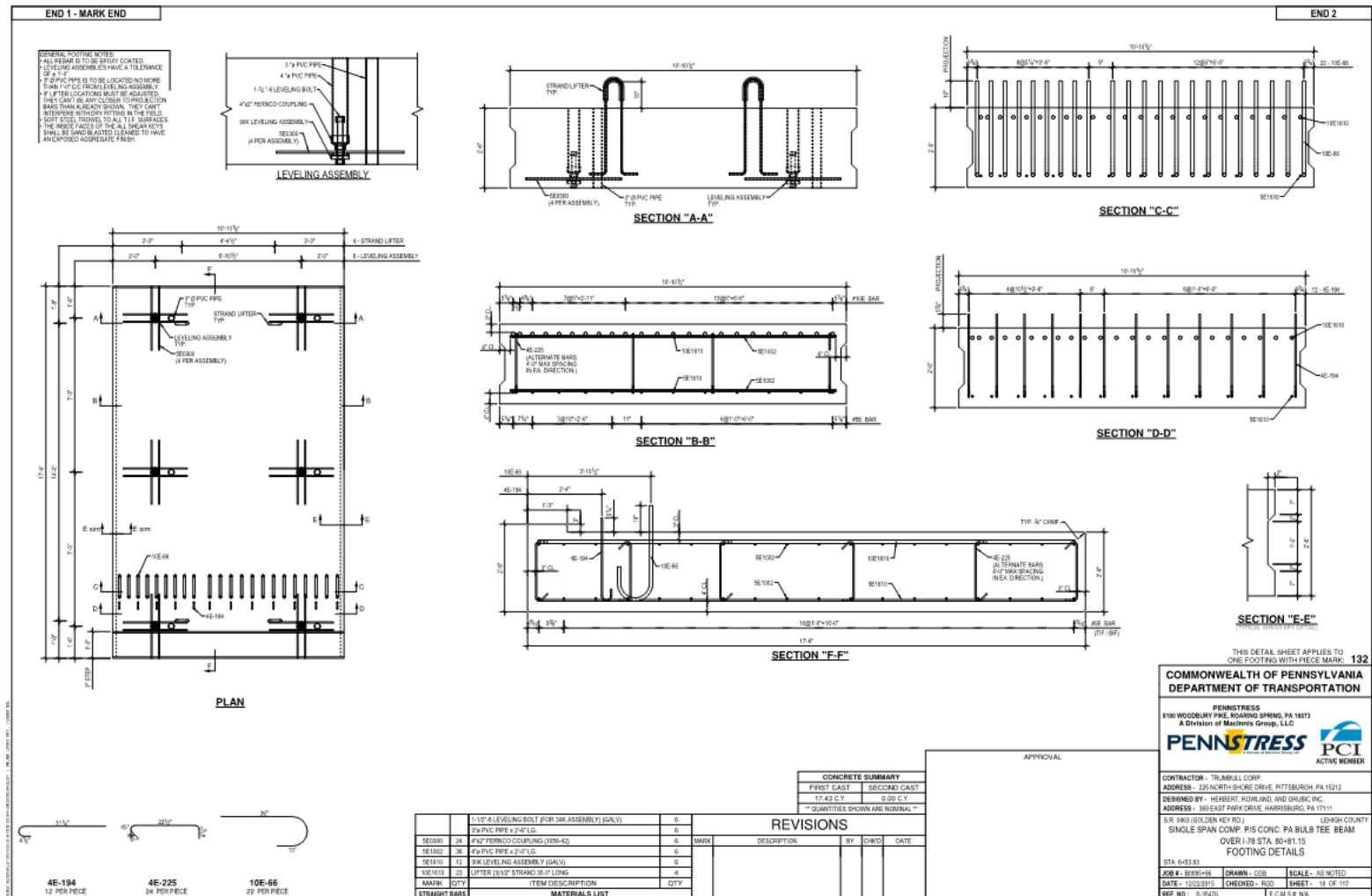


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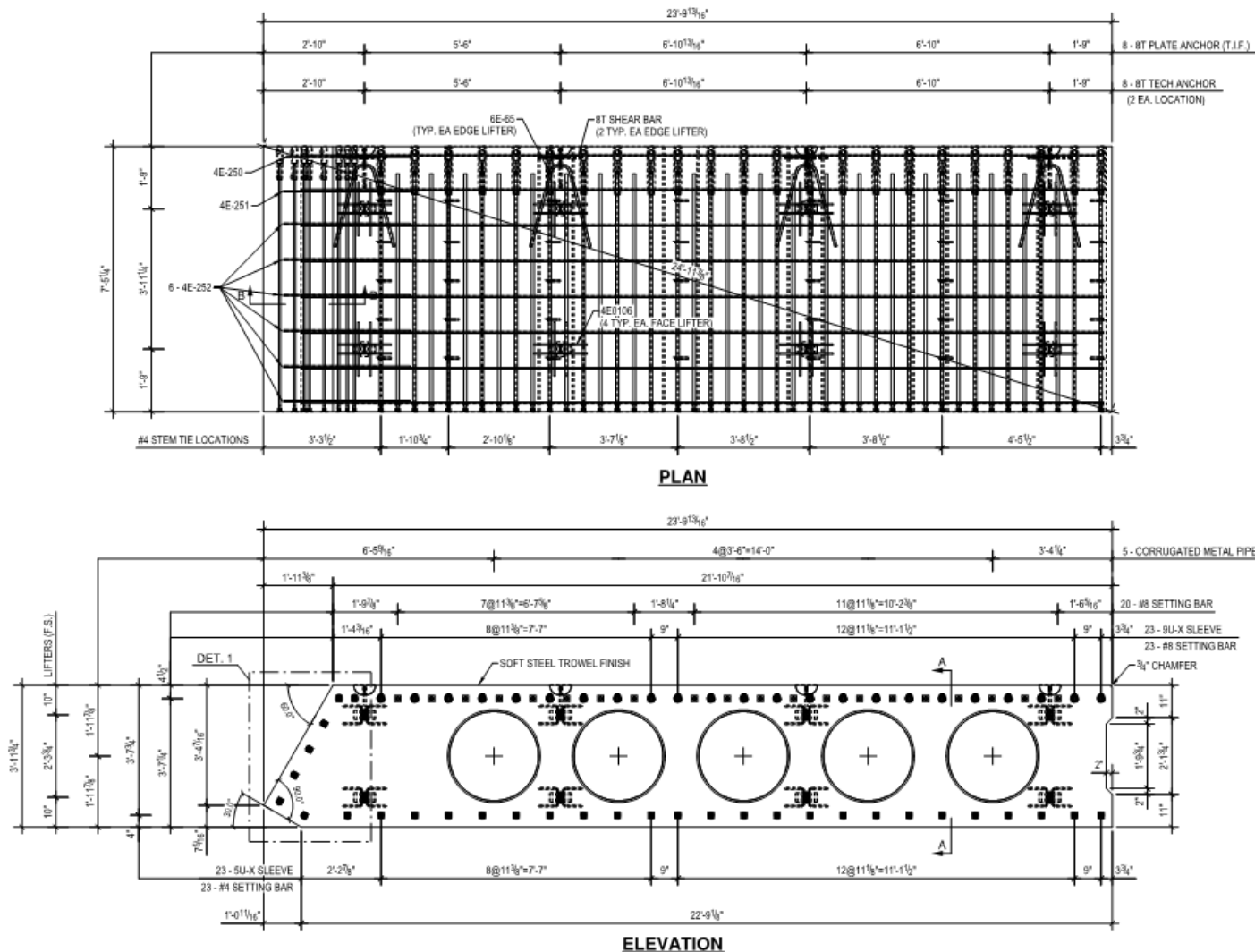
QUESTIONS ??

TOTAL PRECAST BRIDGE STRUCTURES

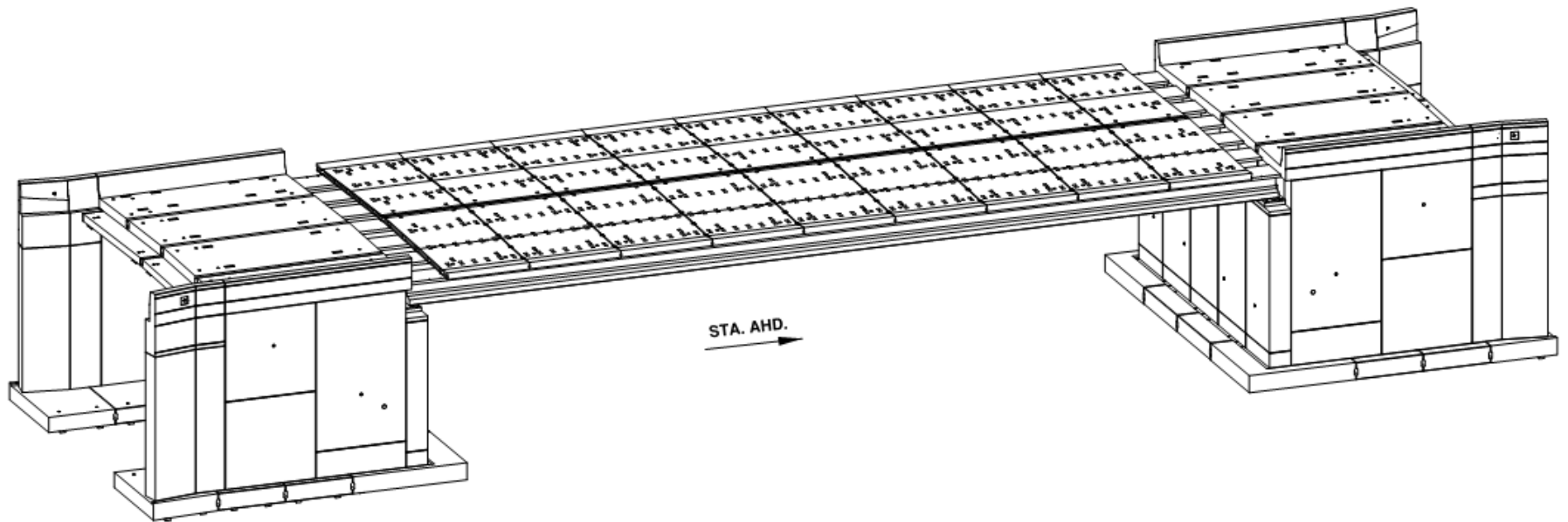
178 Lehigh County Total Precast Bridge



178 Lehigh County Total Precast Bridge



178 Berks County Total Precast Bridge



STA. AHD.
→

3D VIEW OF STRUCTURE