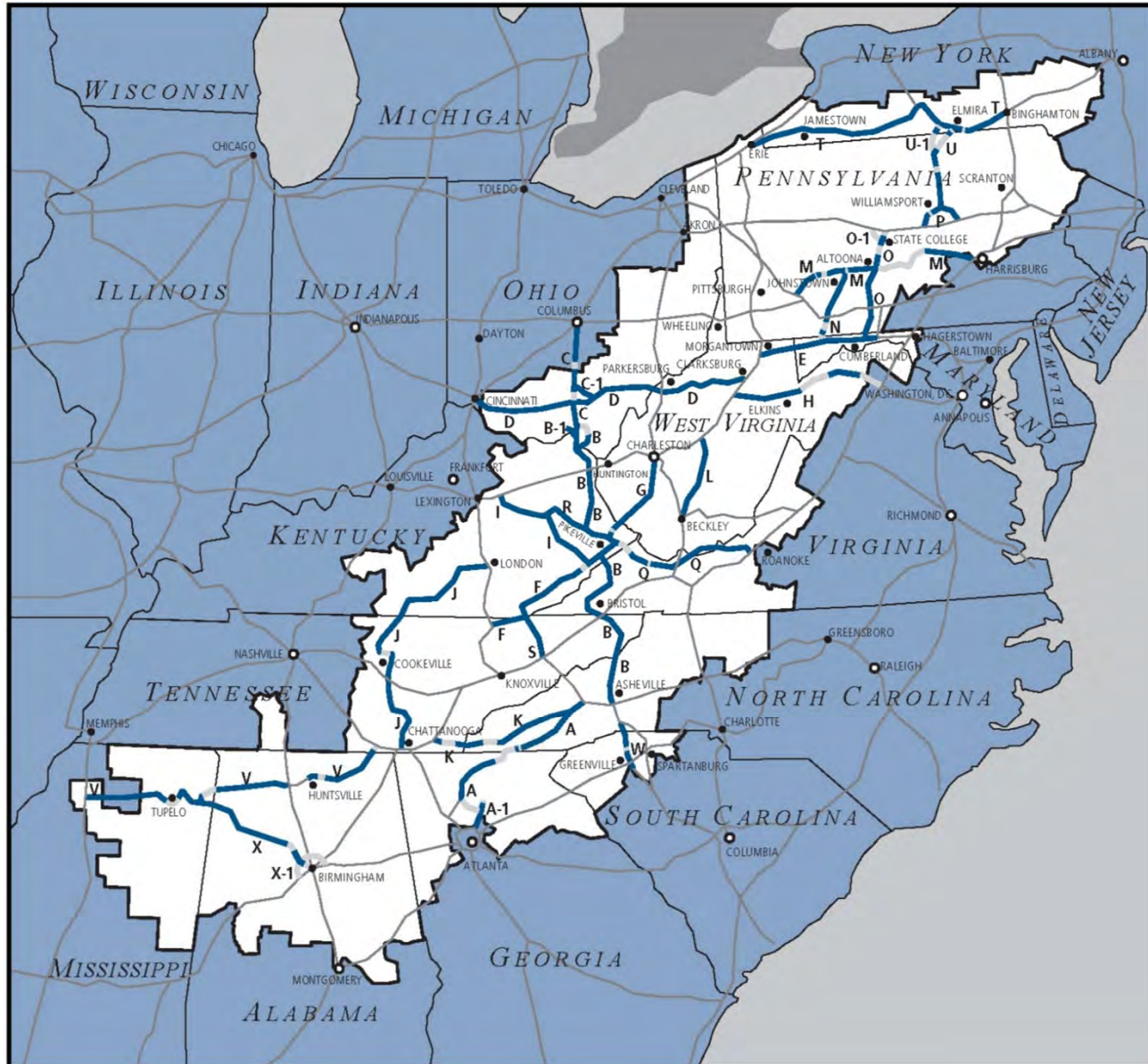


Pike County US 460 ARC Corridor Q



ARC Corridors



ADHS Program



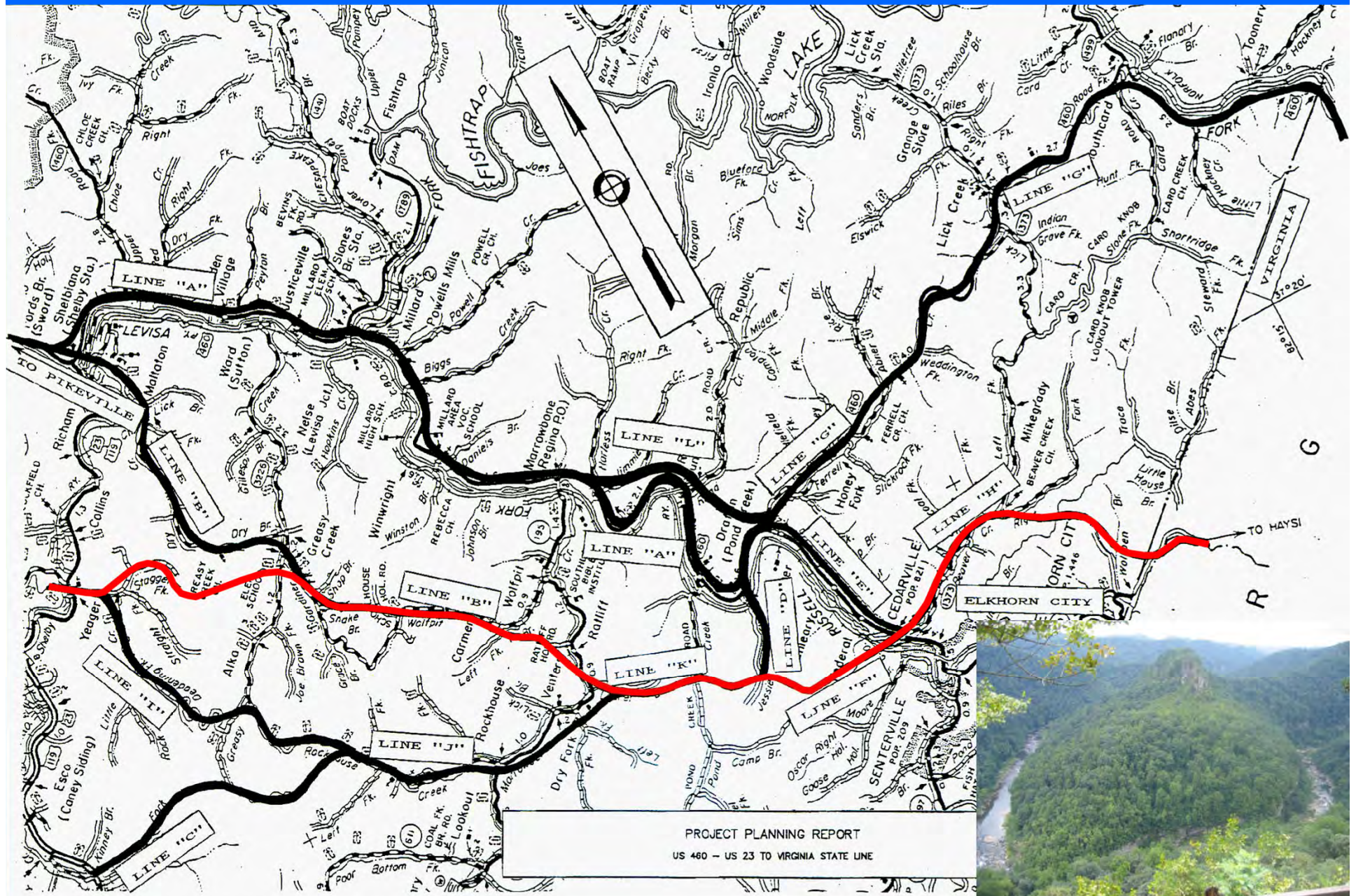
- **Established in 1965**
- **3090 miles**
- **87 percent complete**
- **Kentucky has 8 corridors (93 % complete)**
- **Kentucky share \$39 million in 2009**
- **State match \$10 million in 2009**



1978 - US 460 Design Plans



1991 to 1995 – Planning Study



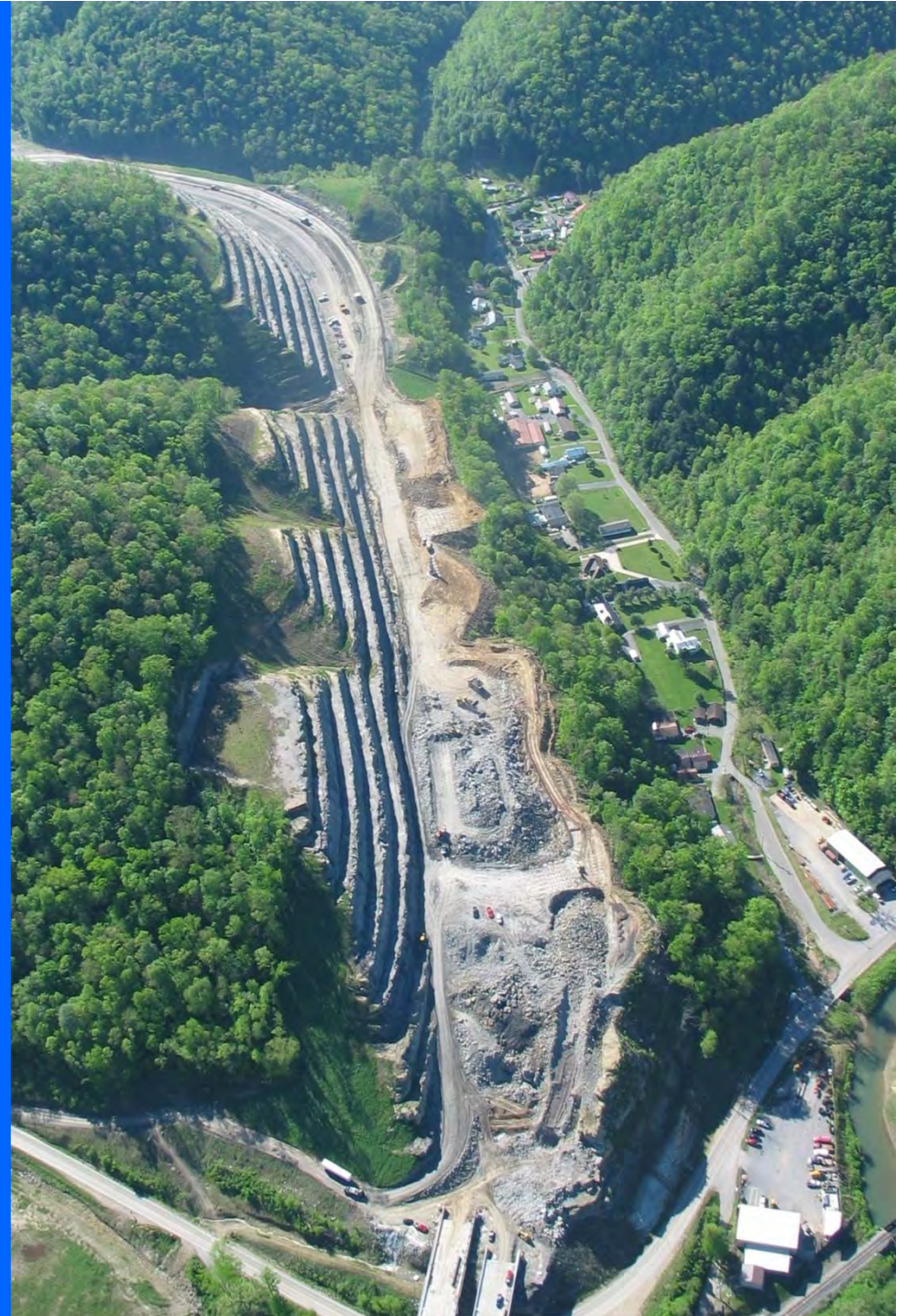
Preliminary Design (1995-1996)

- **Design Parameters**
 - **60 MPH**
 - **6% maximum grade**
 - **4 lanes with 40' depressed median**
 - **Avoid blueline streams**
 - **Access to State Routes (10% max ramp grade)**
 - **At-grade intersections only at limited locations**
 - **Contractor to identify and acquire waste areas**



Environmental

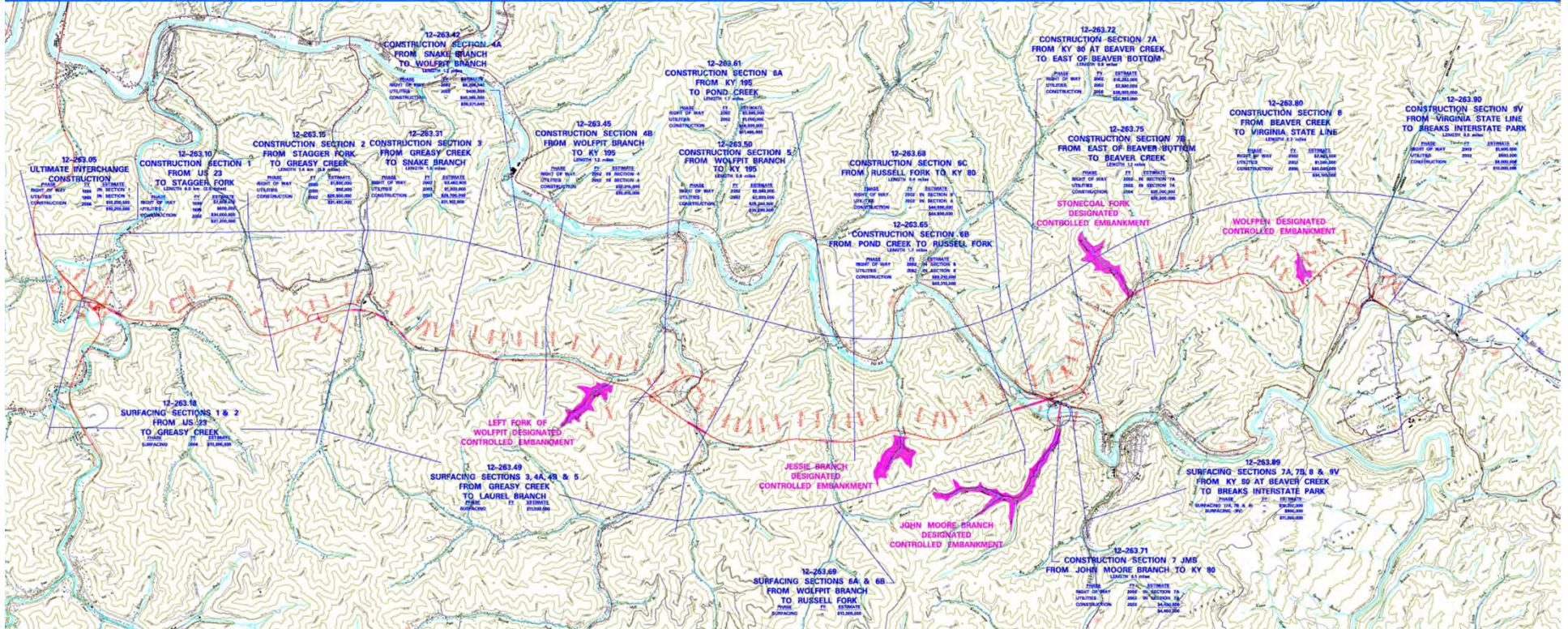
- **Public Hearing Held in October of 1998**
- **FONSI approved in January of 1999**
 - **Over 200 residential relocations**
 - **Blueline stream impacts**
 - **Cemetery archeology**



Cemeteries



1998 - Final Design Begins



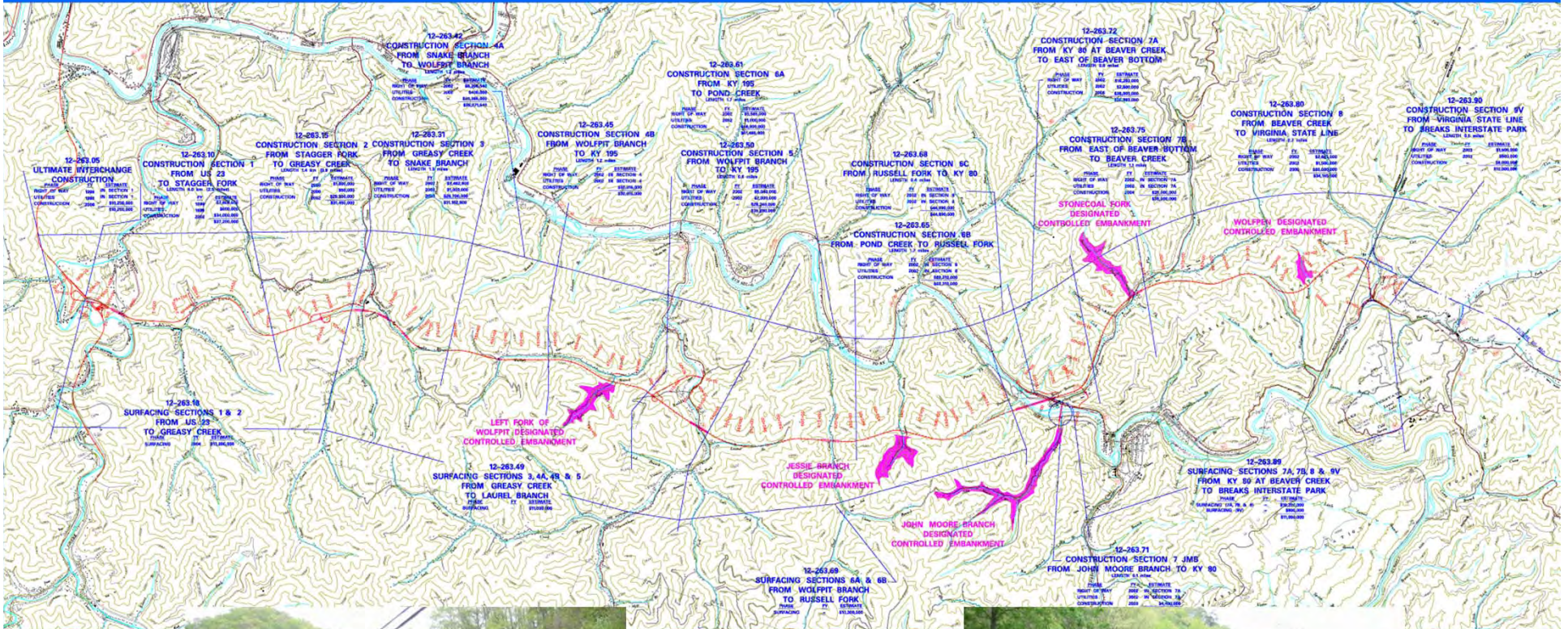
- 13 Grade and Drain Sections
- 2 Russell Fork Bridge Sections
- 4 Surfacing Sections
- \$550 Million Total Construction Cost

KRS 176.525 (1998)

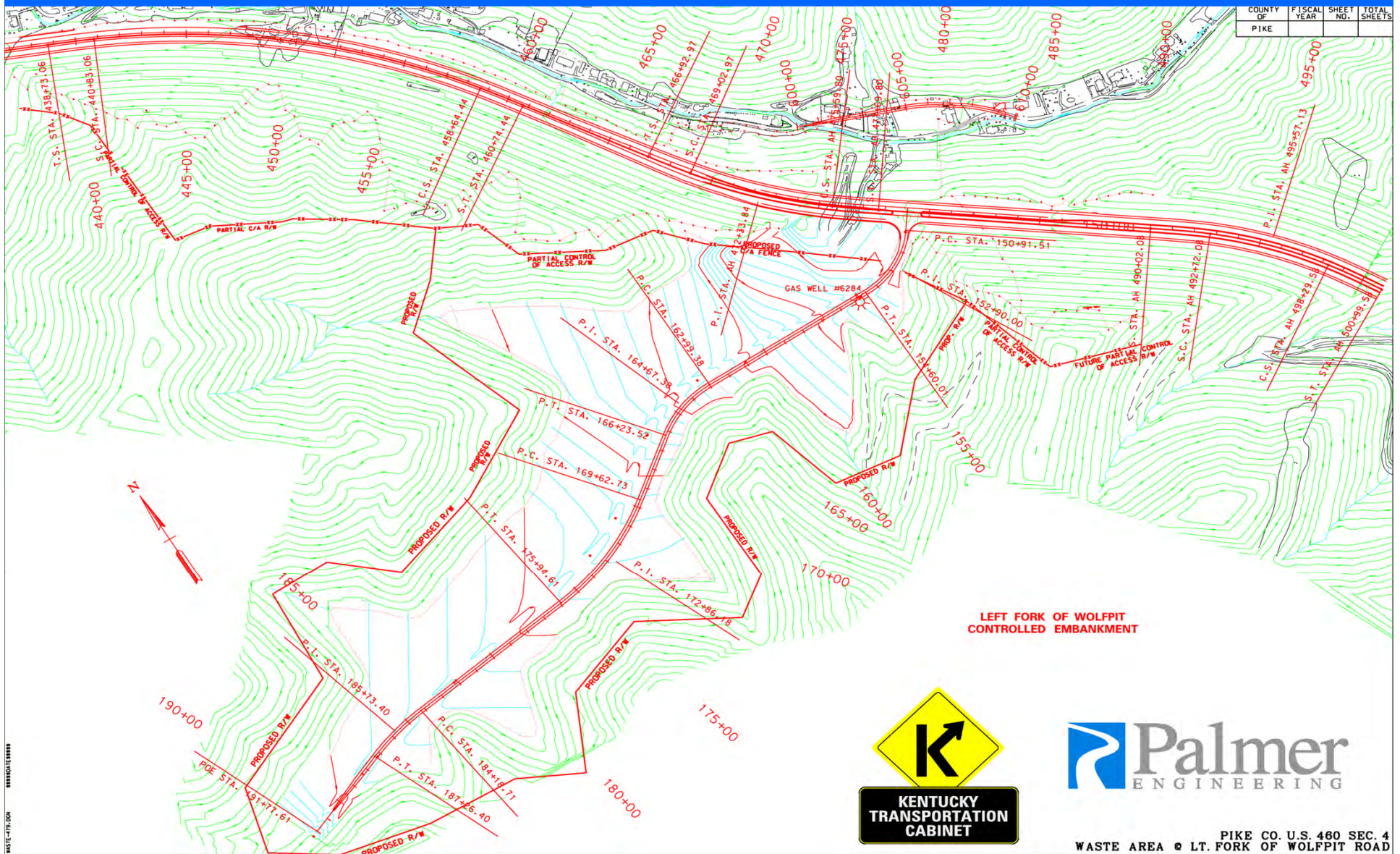
- **Minimum 4 acres**
- **For city, county, or other governmental agencies**
- **Compacted to roadway standards**
- **Five US 460 sites identified**
 - **Left Fork of Wolfpit Branch – 44 acres**
 - **Jessie Branch – 4 acres**
 - **John Moore Branch – 74 acres**
 - **Stonecoal Fork – 32 acres**
 - **Wolfpen Branch – 17 acres**



Defined Excess Material Development Sites



Left Fork of Wolfpit



COUNTY OF	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
PIKE			

109 acres acquired (44 developable)



2007

Left Fork of Wolfpit

2008



Left Fork of Wolfpit



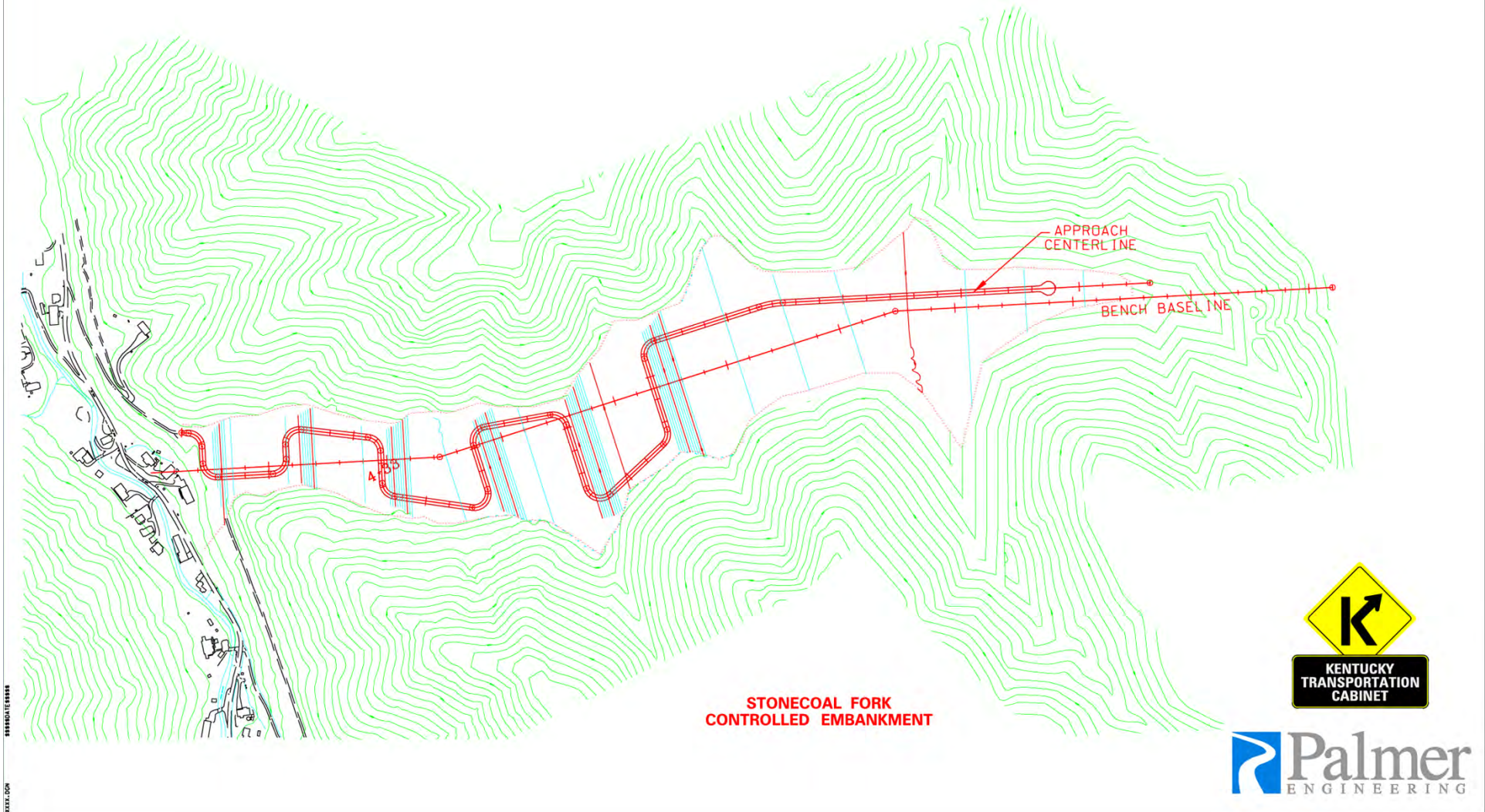
2009

Left Fork of Wolfpit



2010

Stonecoal Fork



Stonecoal Fork

2008



2009



Stonecoal Fork



2010

Stonecoal Fork



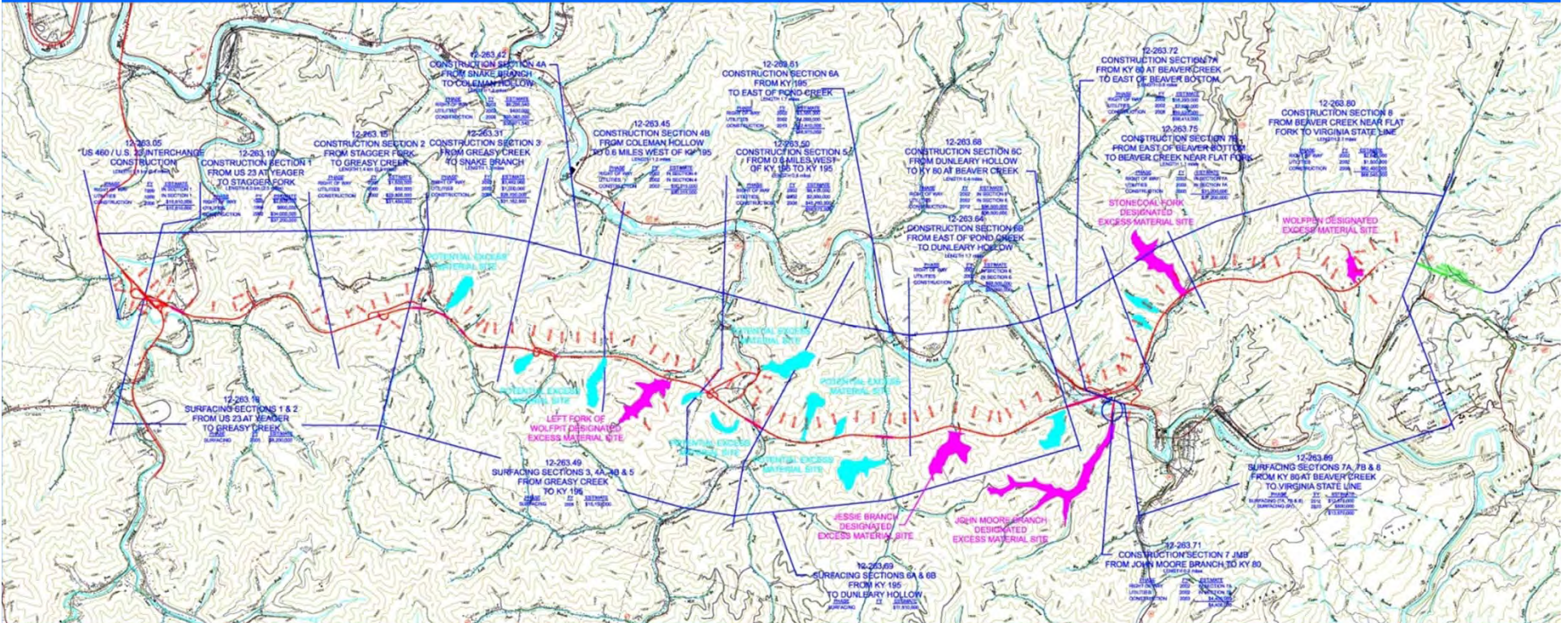
2010

Excess Material Site Development Challenges

- **Economic Justification**
- **Access Issues with Property Remainders**
- **Contractor Access**
- **Corps of Engineers Permit Approval**



Permitted Excess Material Sites



- Areas Needed to Balance Sections
- Over-permitted
- Not Acquired in Right of Way

Permitted Excess Material Sites

Not Acquired in Right of Way



Permitted Excess Material Sites

Acquired as Uneconomic Remnant



Who to Buy?



Who to Buy?



Who to Buy?



Who to Buy?



An aerial photograph of a densely forested hillside. The trees are a mix of green shades, suggesting a diverse forest. A small, light-colored building with a dark roof is situated on a cleared patch of land in the center of the image. A dirt road or path winds through the forest, leading to the building. The overall scene is a rural, wooded area.

Who to Buy?

And How to Buy?

Erosion Control



Mining



Mining



Section 2 Excavation Bid
\$1.68 / CY

If we knew then...



Section Splits



Section Splits

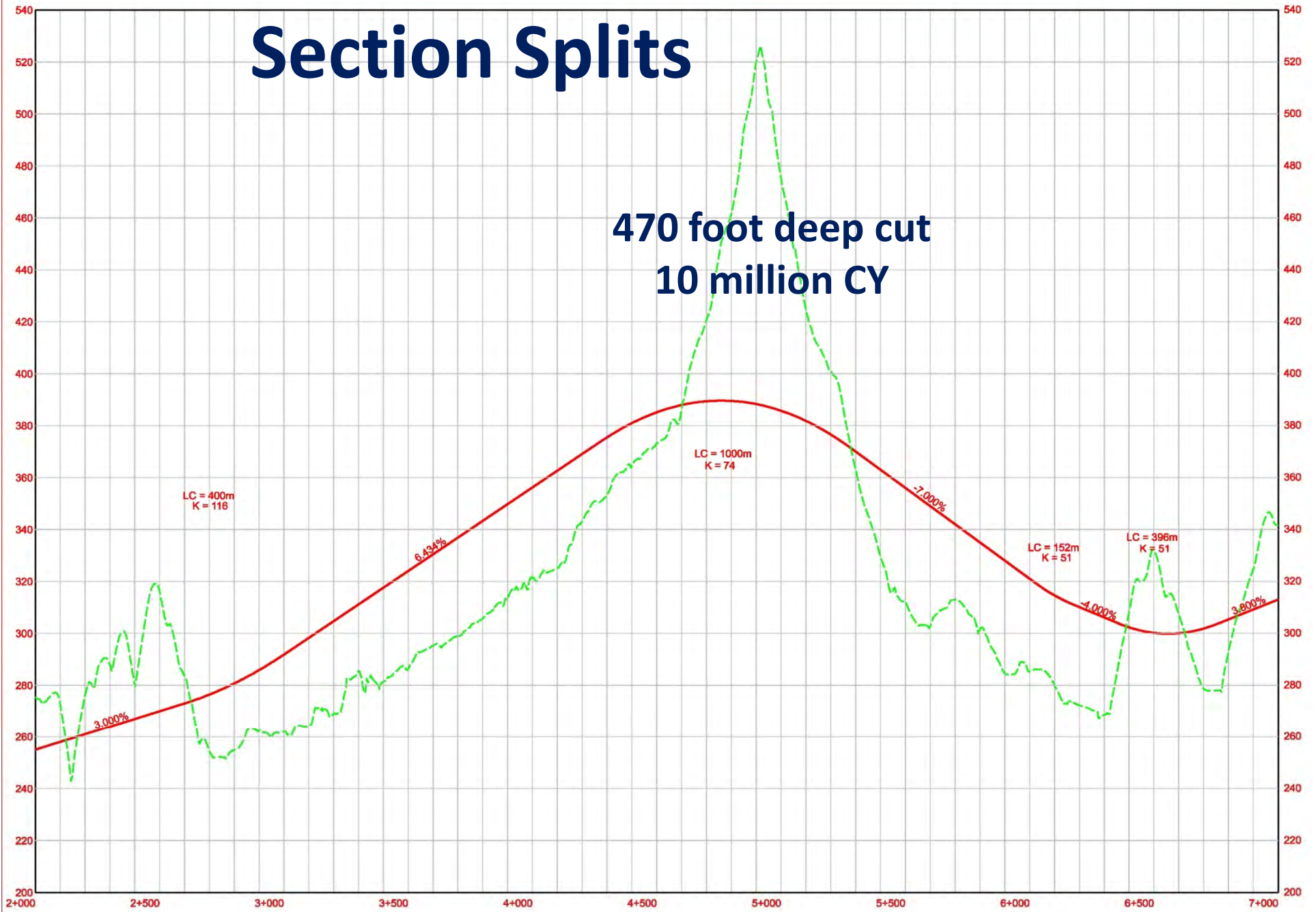


Section Splits



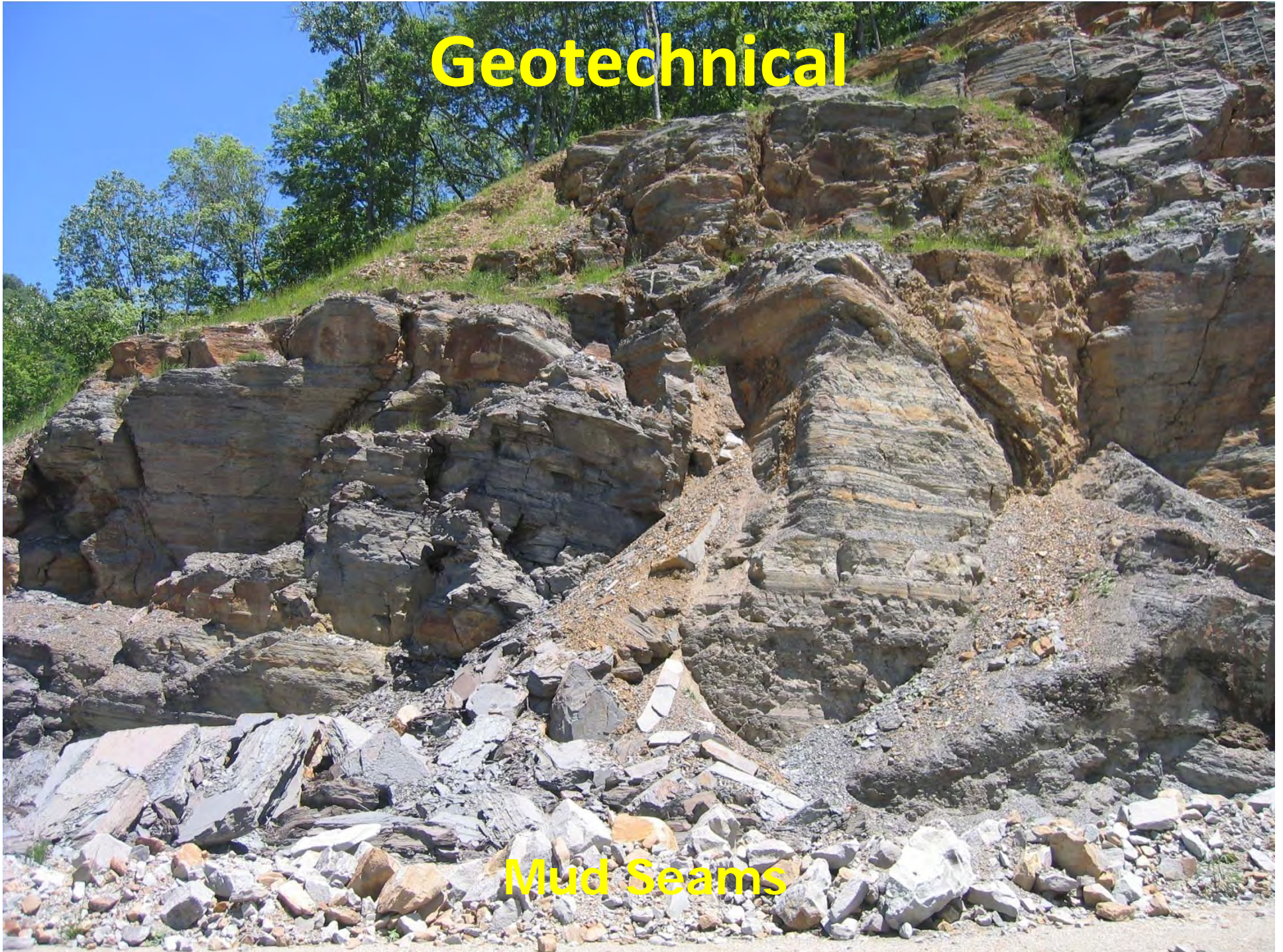
Section Splits

470 foot deep cut
10 million CY



Geotechnical

Mud Seams



... we're not in Kansas any more



Kentucky Road

Kansas Road





Kentucky Dog

Kansas Dog



Kentucky can count to 7

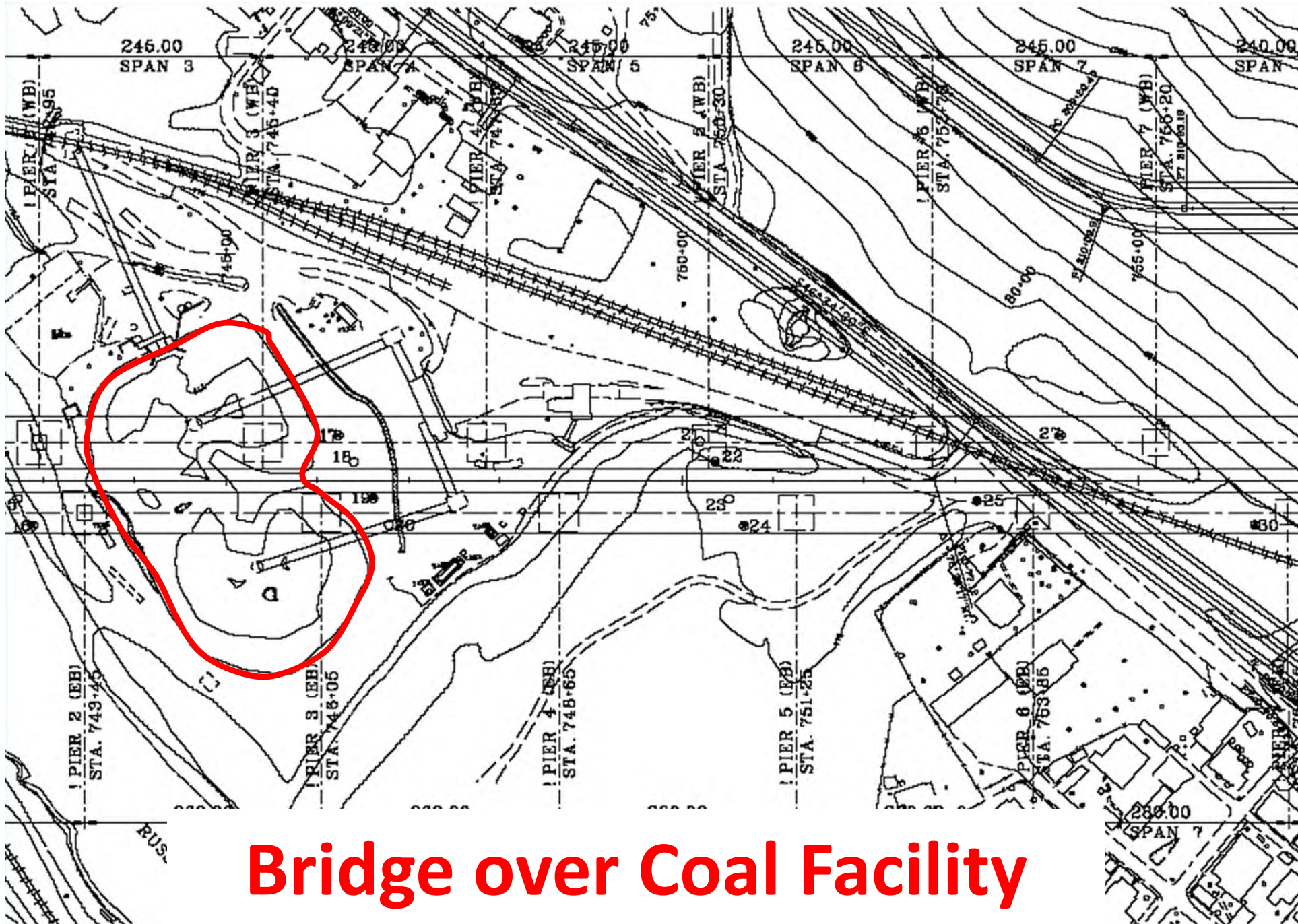
Bridge Challenges



#1 - Bridge over Troubled Waters



Coal Piles



Bridge over Coal Facility



#2 - BIG Trucks



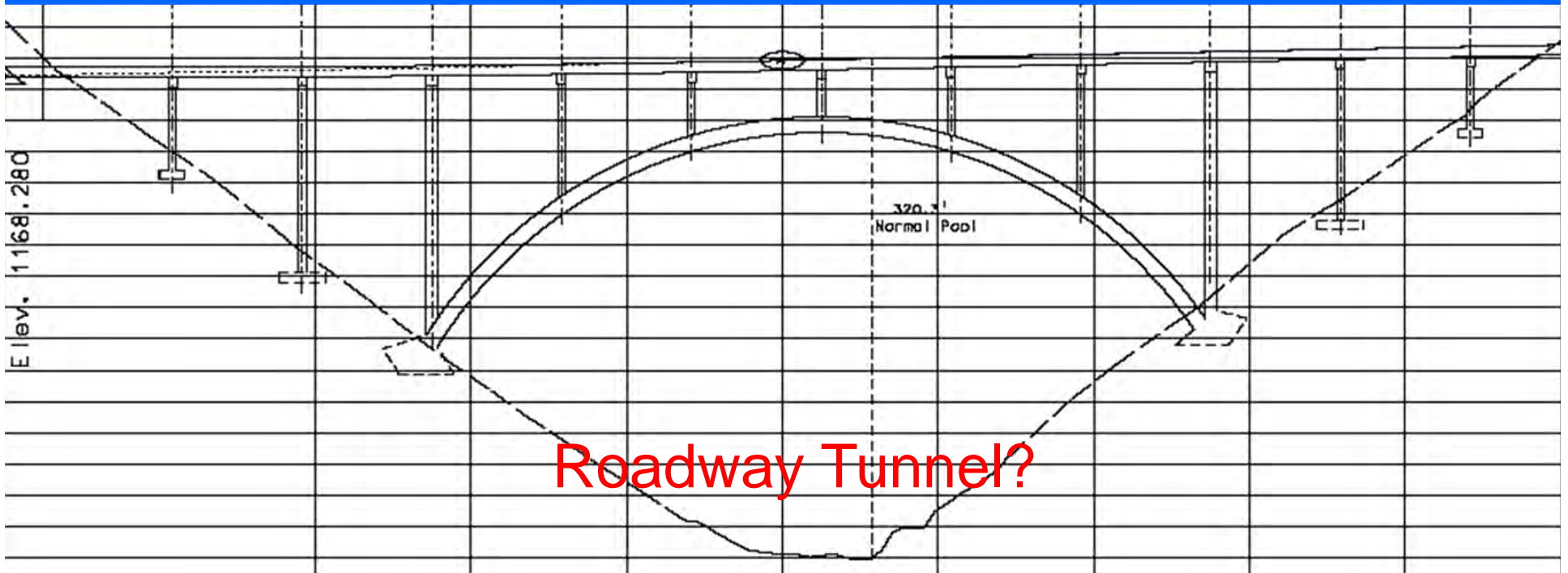
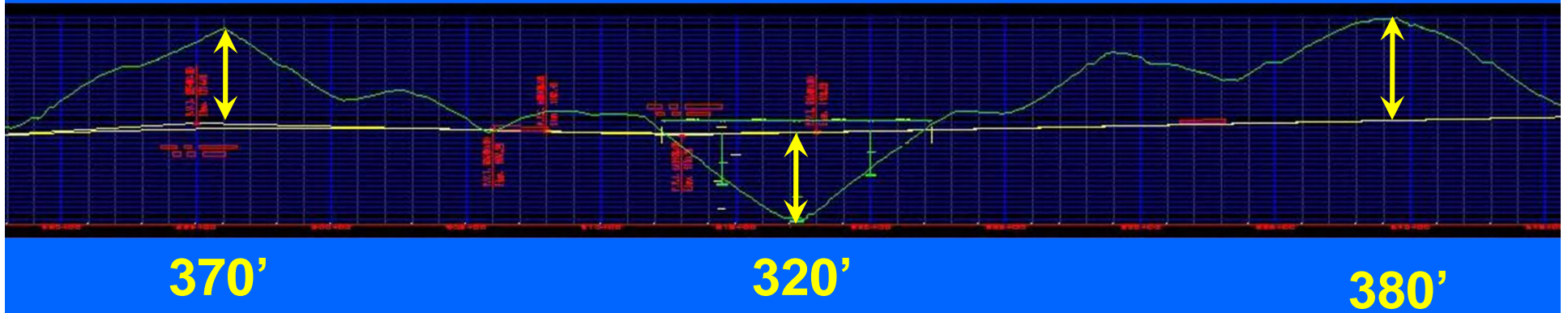
Special Design

- 355,000 lb. Trucks
- 10,000,000 CY

- Finite Element
- Yield Line
- Fatigue
- Impact



#3 - Bridge vs. Tunnel vs. Culvert



Challenges

Bridge

- Construction Access
- Erection

Fill & Stream Tunnel

- Access for residents
- Tunnel cost

Fill & Stream Culvert

- Access for residents
- Culvert cost



#4 - Beam Delivery Route



Existing Roads

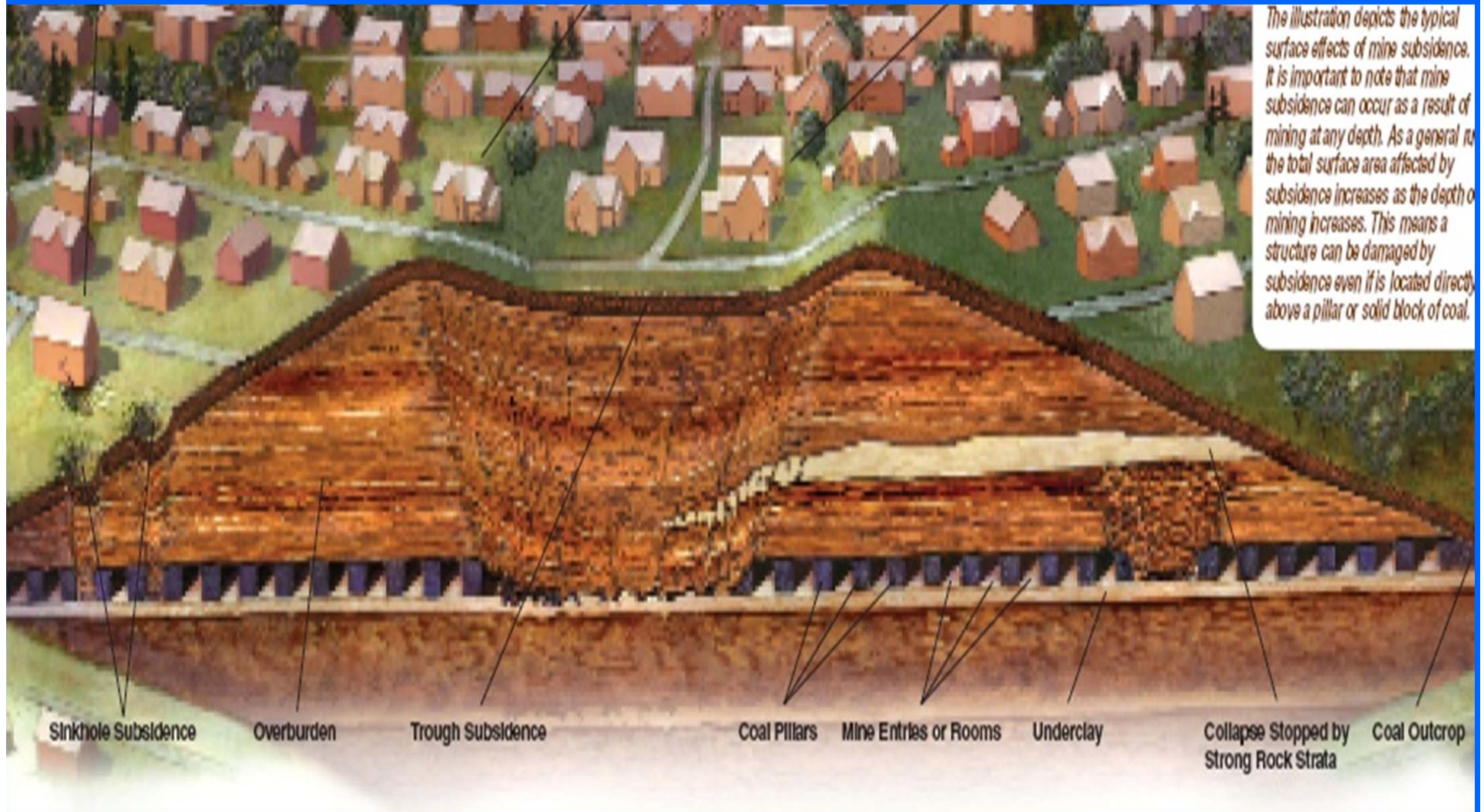
- Drive if Questionable

Along other New Construction

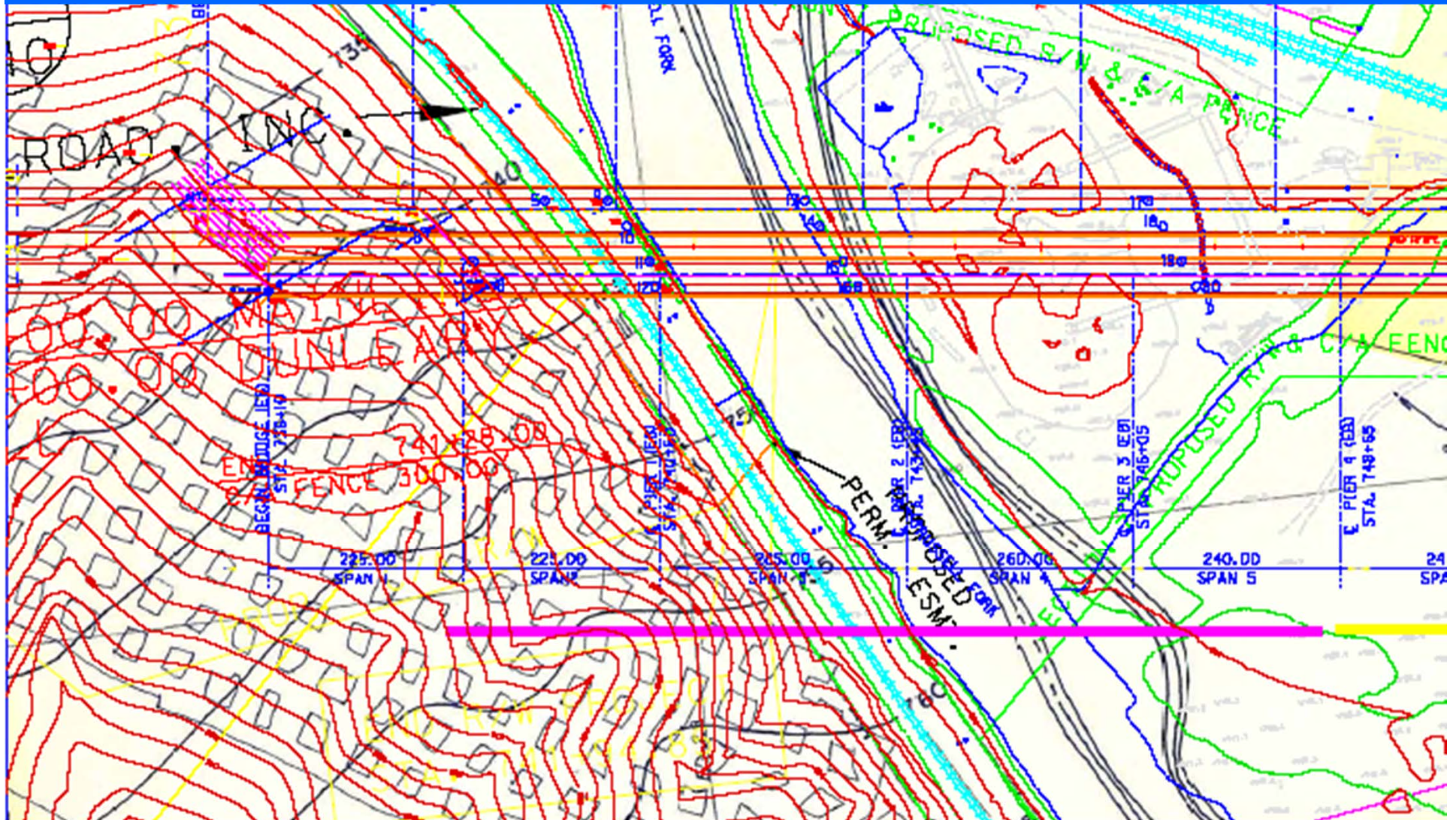
- Difficult to predict Phasing



#5 - Mine Subsidence



Abandoned Mine Below Bridge



6 – Sidehill Cuts

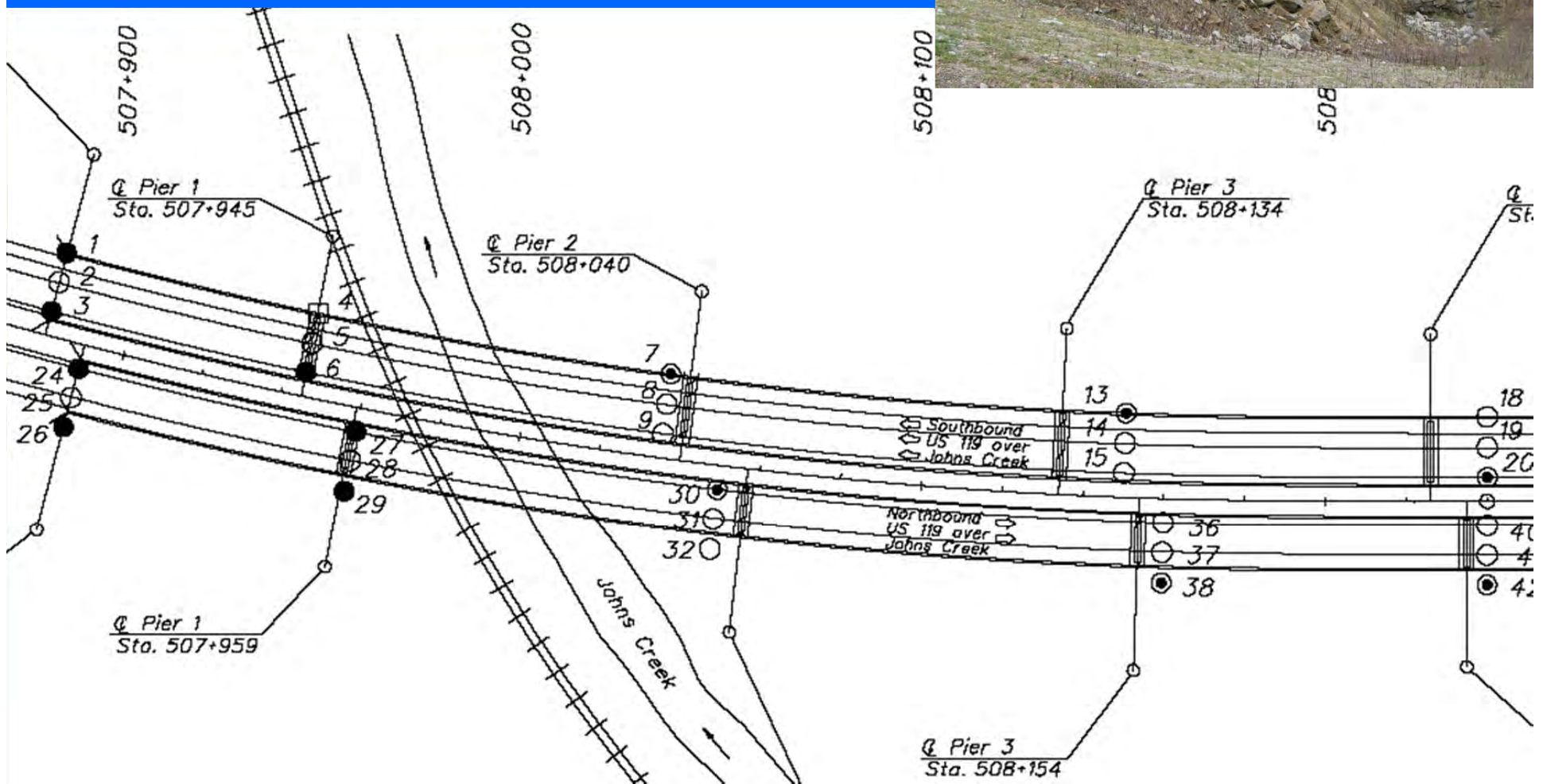
Issues

- Planning for Geotech Borings
- Parallel Substructures
 - Great Elevation Differences
 - Design vs. Contractors



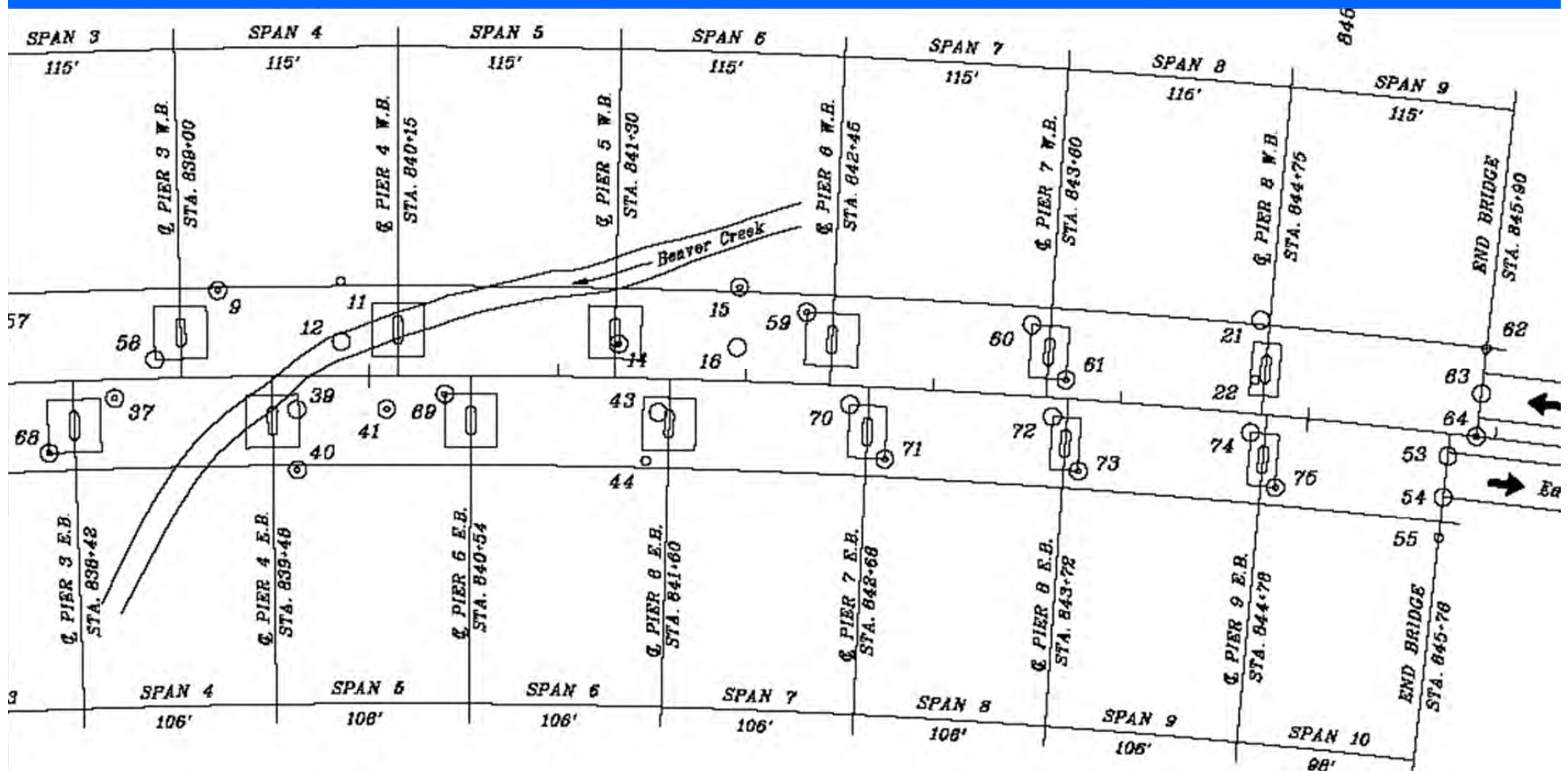
Previously

- Provided CL stations
- Substructure Skew Angle

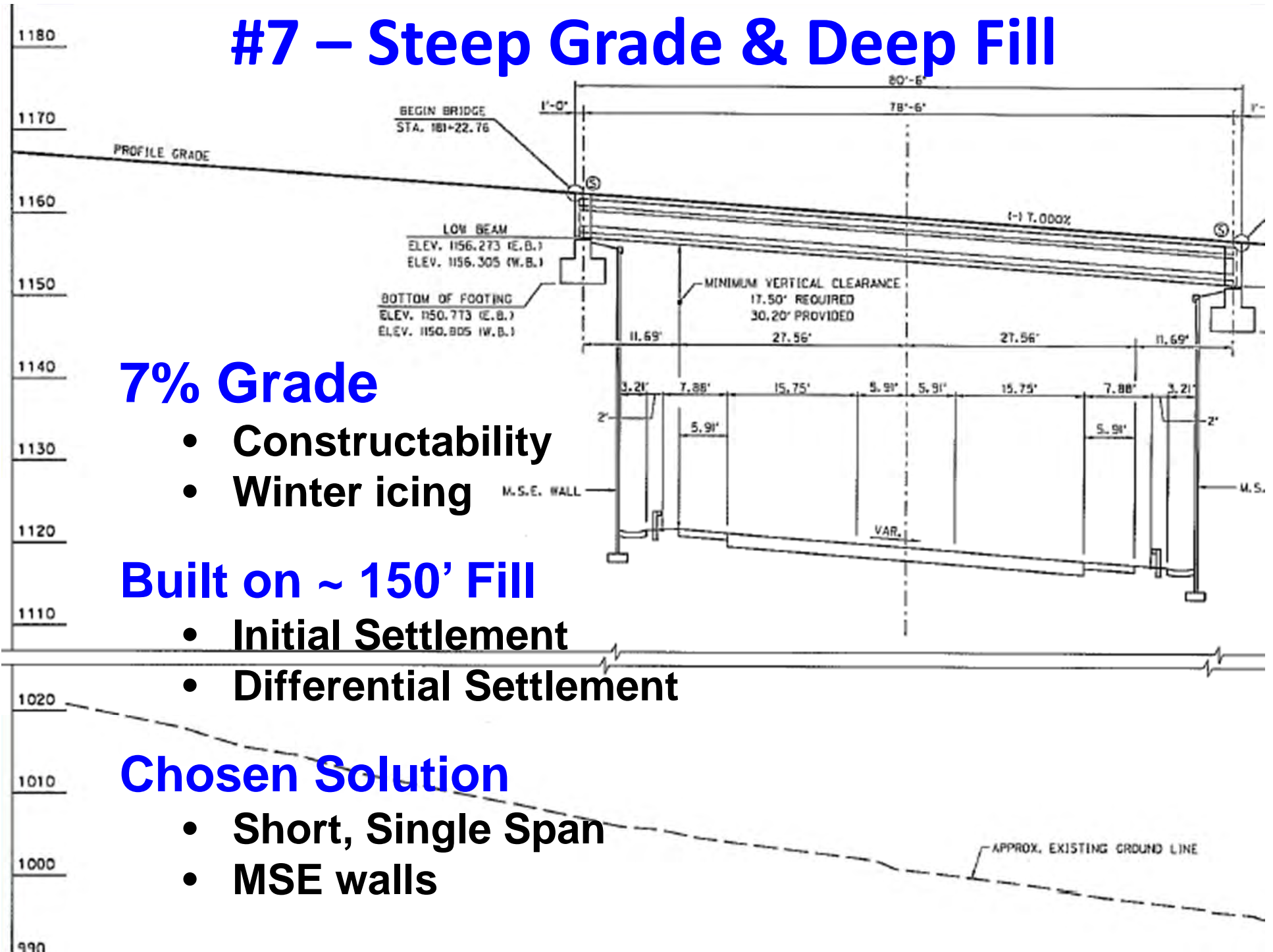


Currently

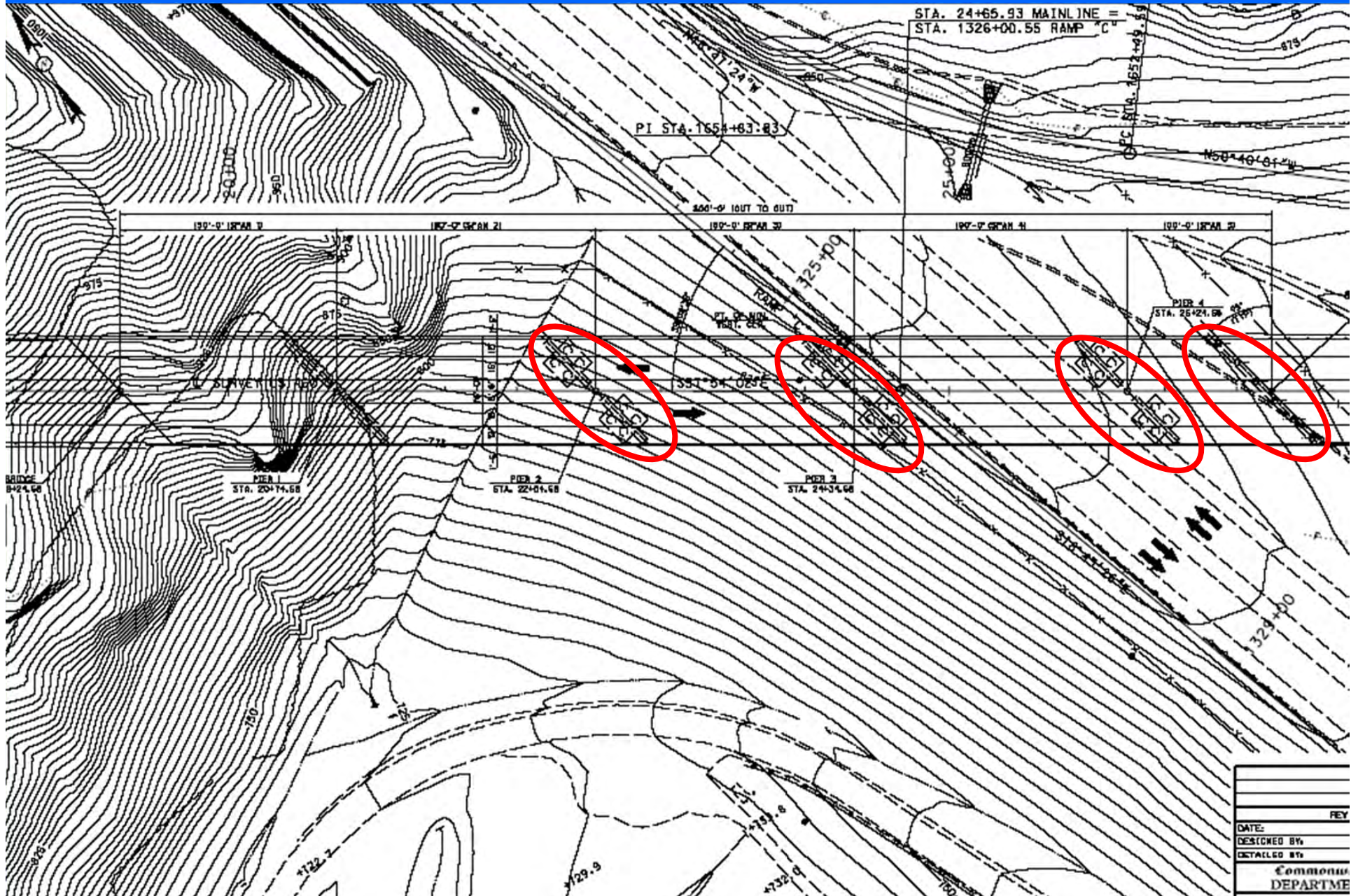
- Provide CL stations & Approx. Footing Size
- Better for Geotech to plan borings



#7 – Steep Grade & Deep Fill



#8 – Piers in Existing Fill



Concerns

- Drive piles?
- Drilled shafts?

Chosen Solution

- Micropiles



Current Project Status

- Design 98% Complete
- Right of Way and Utilities 98% Complete
- 8 of 16 Construction Contracts Let
- 1 of 4 Surfacing Contracts Let
- Tying to VDOT Design-Build Project





































An aerial photograph of a winding asphalt road that curves through a dense forest. The trees are in various stages of autumn, showing shades of green, yellow, orange, and red. The road is dark and has white markings. The overall scene is a scenic view of a road in a wooded area during the fall season.

Questions?

www.pike460.com