

# SR 15 SECTION 088 CSV T SOUTHERN SECTION



**PUBLIC MEETING**  
FEBRUARY 15, 2017



*Excellence Delivered As Promised*

## **AGENDA**

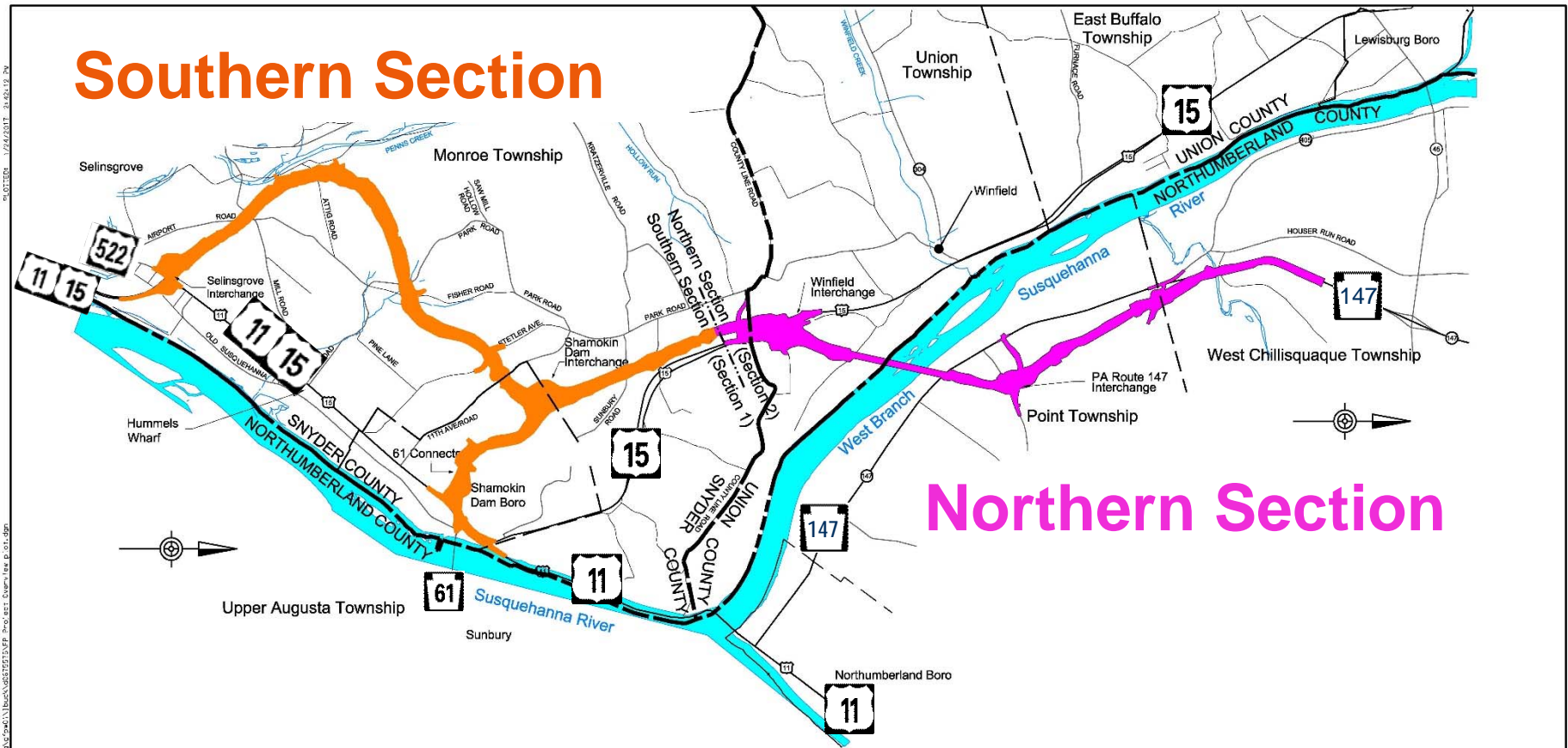
- **WELCOME**
- **MEETING PURPOSE**
- **CSVT NORTHERN SECTION UPDATE**
- **CSVT SOUTHERN SECTION OVERVIEW & STATUS**
- **MINOR DESIGN CHANGES**
- **ENGINEERING CHALLENGES**
- **NEXT STEPS**
- **QUESTIONS AND ANSWERS**
- **OPEN HOUSE**

## MEETING PURPOSE

- Provide updates
  - Minor design changes
  - Unexpected engineering challenges
    1. Acid bearing rock: special attention needed – straightforward to address
    2. Fly ash waste basins: more complex – requires larger changes
  
- Solicit input to consider as alternatives are developed to overcome engineering challenges



# Southern Section



# Northern Section

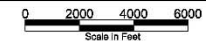
## Legend

- Southern Section (Section 1)
- Northern Section (Section 2)
- Borough Boundaries

NOTE:  
The proposed alignment shown on this map represents the design as of the May, 2006 approval of the re-evaluation of the Final Environmental Impact Statement.

Central Susquehanna Valley  
Transportation Project

Project Overview



## **NORTHERN SECTION STATUS**

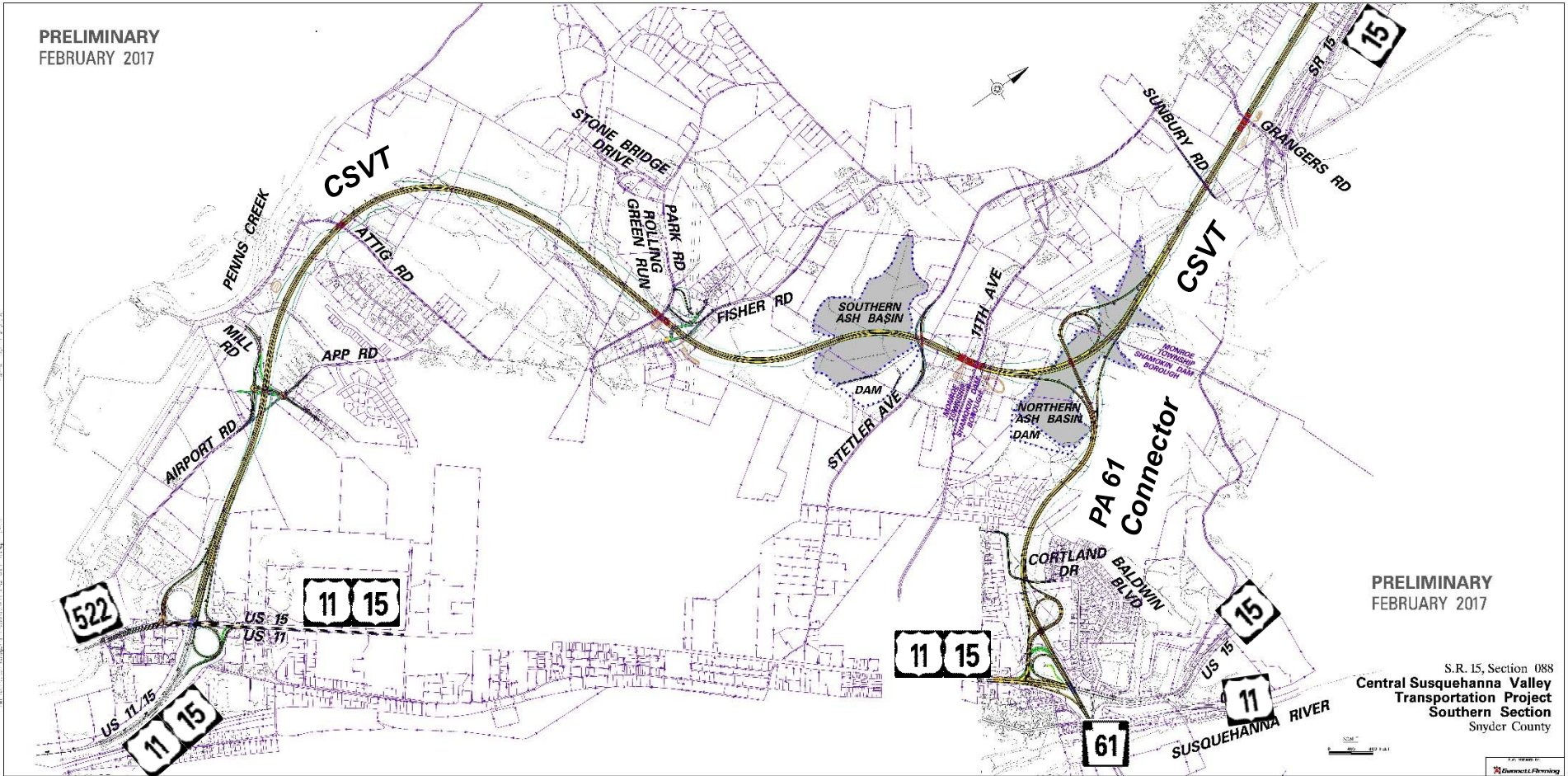
- 1<sup>st</sup> Contract – River Bridge
  - Awarded October 2015 – Trumbull Corporation – \$156 million
  - Work began January 2016 – 30% complete
  
- 2<sup>nd</sup> Contract – Earthwork/Structures – north of river
  - Awarded October 2016 – Trumbull Corporation – \$61 million
  - Work began November 2016
  
- 3<sup>rd</sup> Contract – Earthwork/Structures – south of river (US 15 Interchange)
  - Anticipated bid opening – March 2017
  
- 4<sup>th</sup> Contract – Paving
  - Anticipated bid opening – 2020
  
- Overall – anticipated completion – 2021

## RIVER BRIDGE CONSTRUCTION



**STATION #2**

**REVIEW OF CSVT SOUTHERN SECTION**



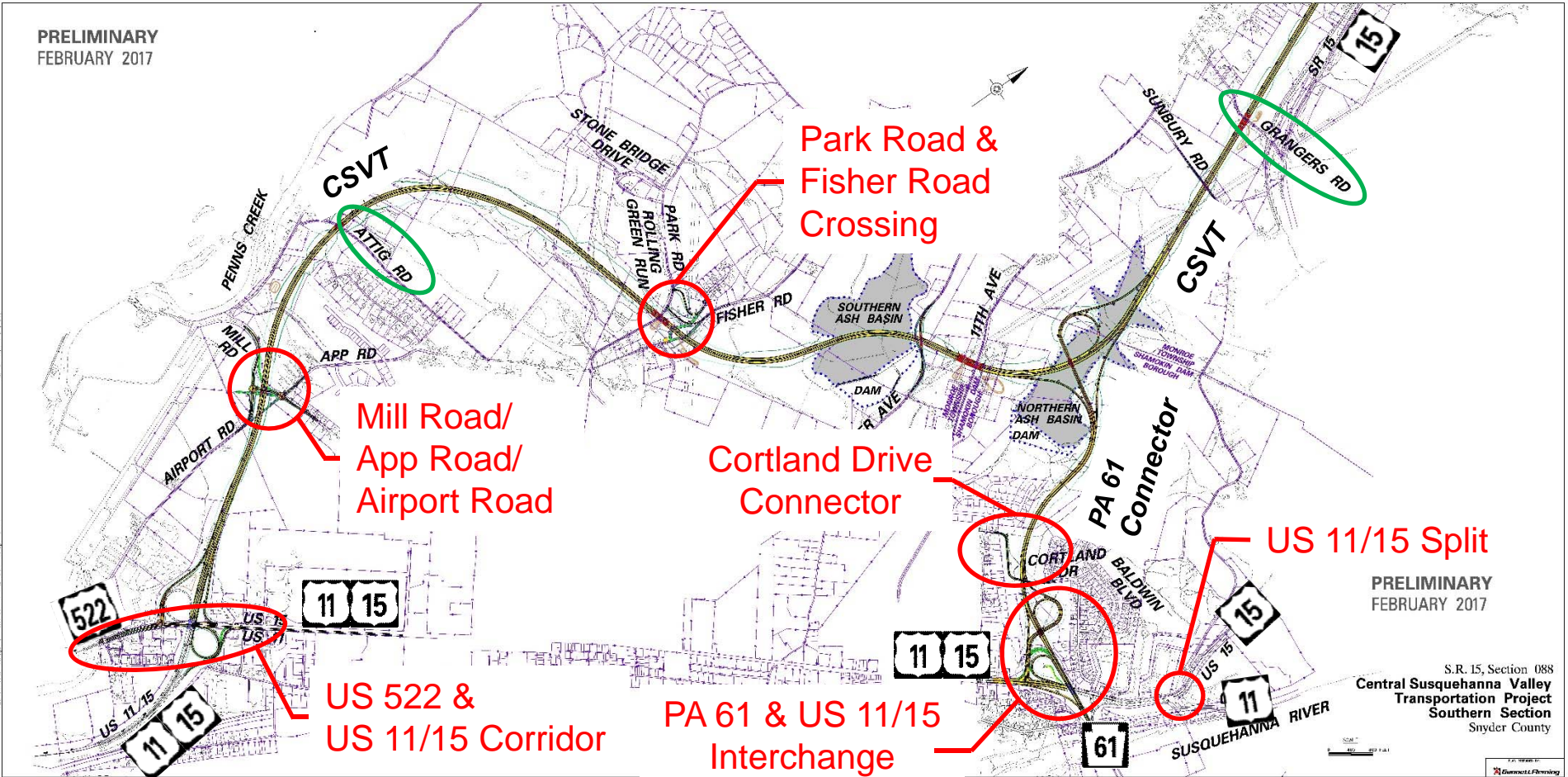
## PROJECT STATUS

- Survey and geotech fieldwork - largely completed
- Alignment study – minor design changes – mostly completed
  - Some coordination with municipalities is ongoing.
- Engineering challenges – must be resolved to advance design, right-of-way acquisition, utility relocations and permitting








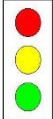


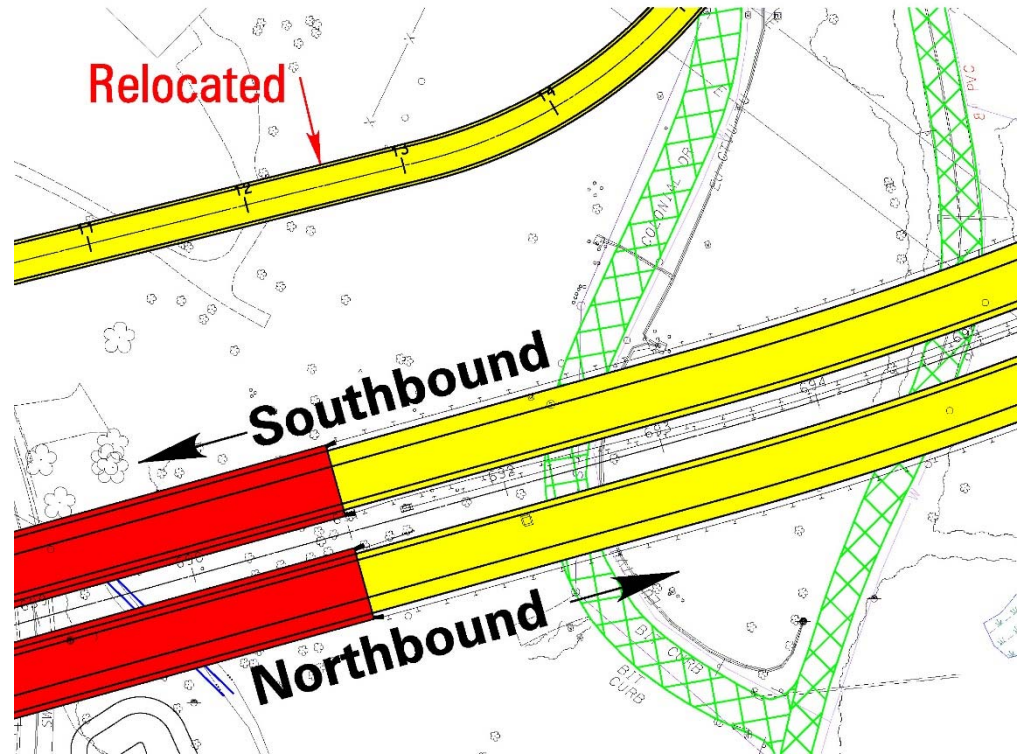
**MINOR DESIGN CHANGES**



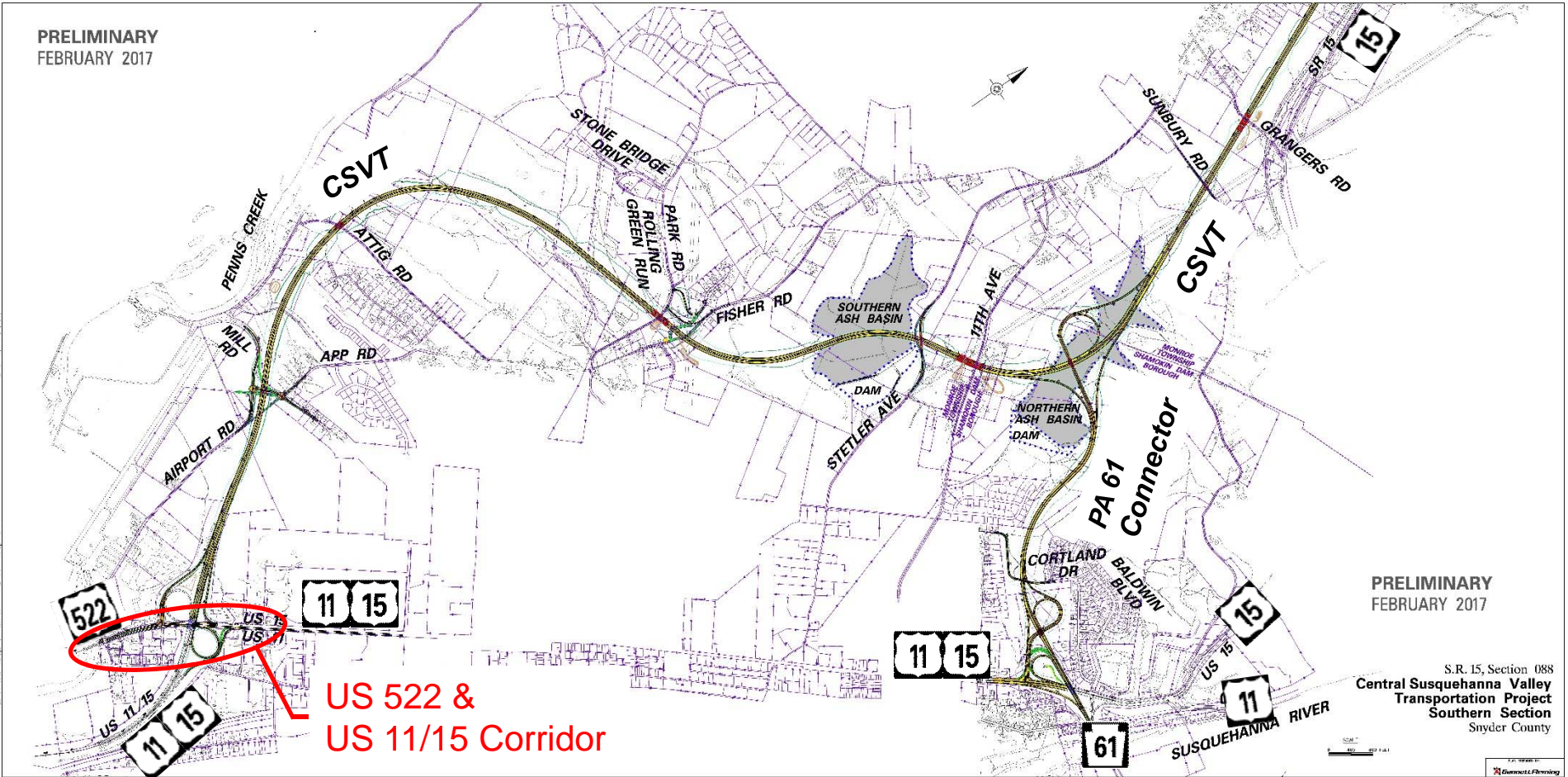
**MINOR DESIGN CHANGES**

**LEGEND**

-  EXISTING ROADWAY REMOVAL
-  PROPOSED ROADWAY
-  BRIDGE WORK
-  PROPOSED STRUCTURE
-  PROPOSED SIGNAL
-  EXISTING SIGNAL



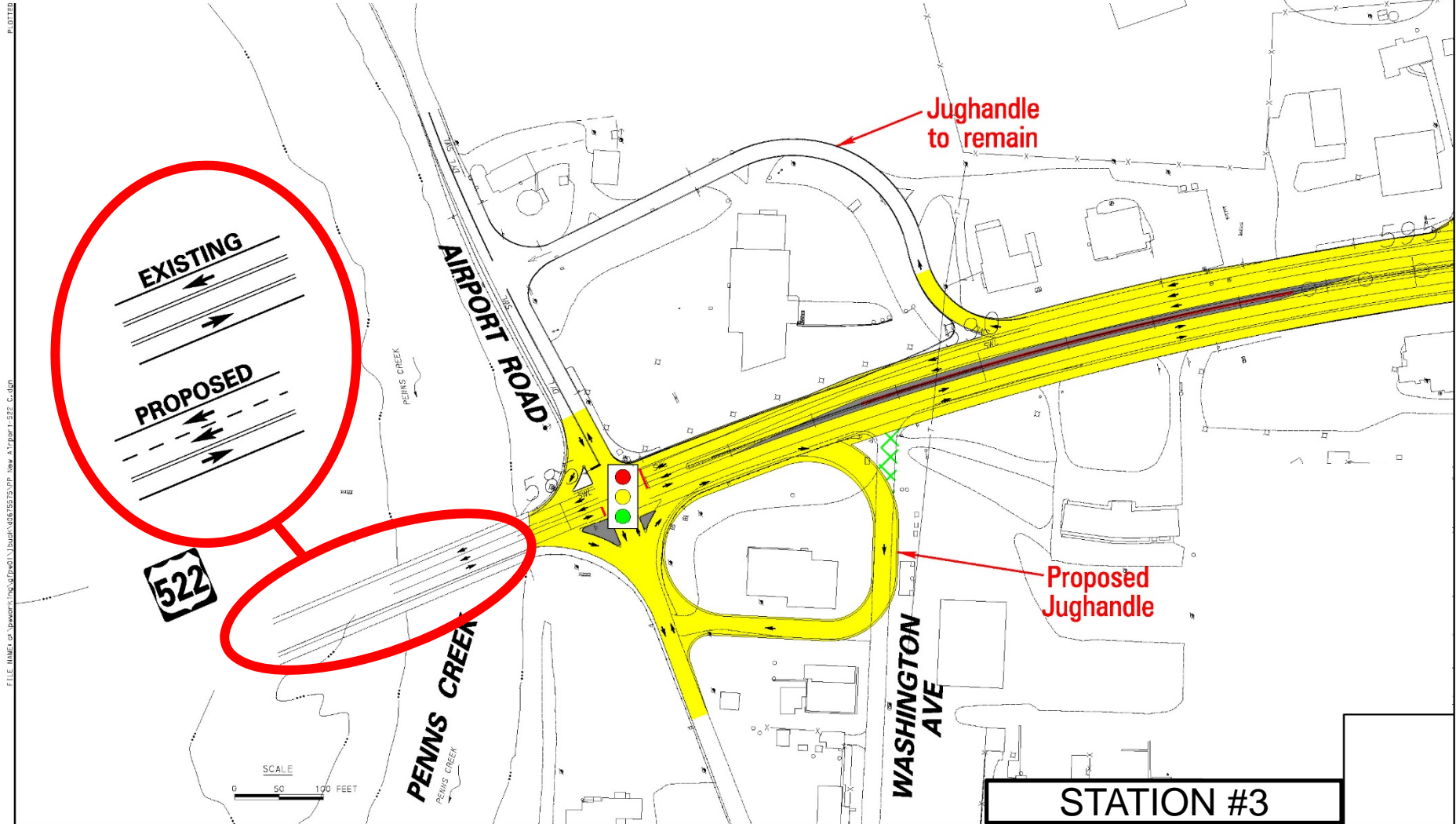
**MINOR DESIGN CHANGES**



**MINOR DESIGN CHANGES**

US 522 & US 11/15 Corridor – Proposed Improvements

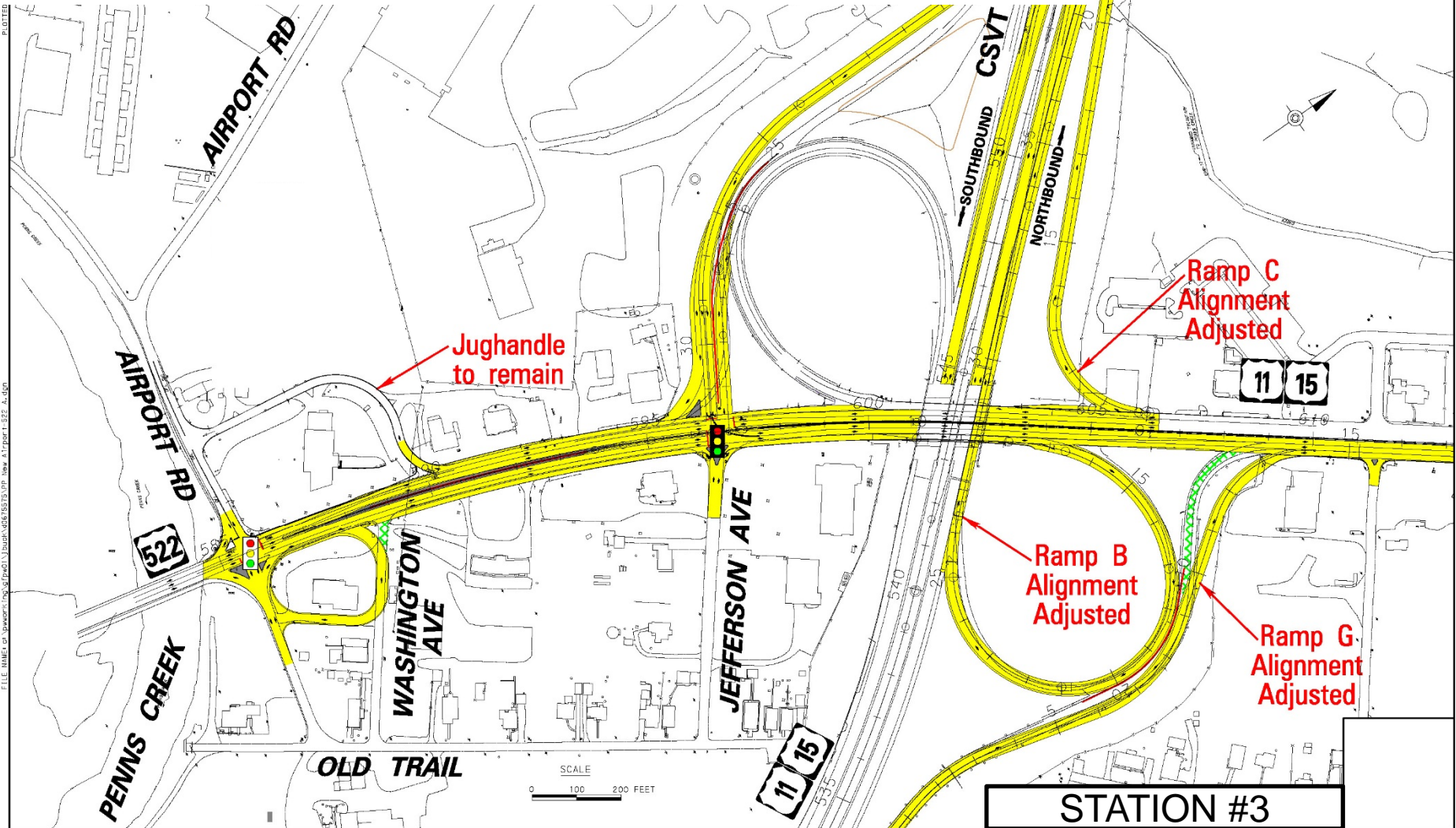
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
3-0	SNYDER	15	088	OF
MONROE TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



**MINOR DESIGN CHANGES**

US 522 & US 11/15 Corridor – Proposed Improvements

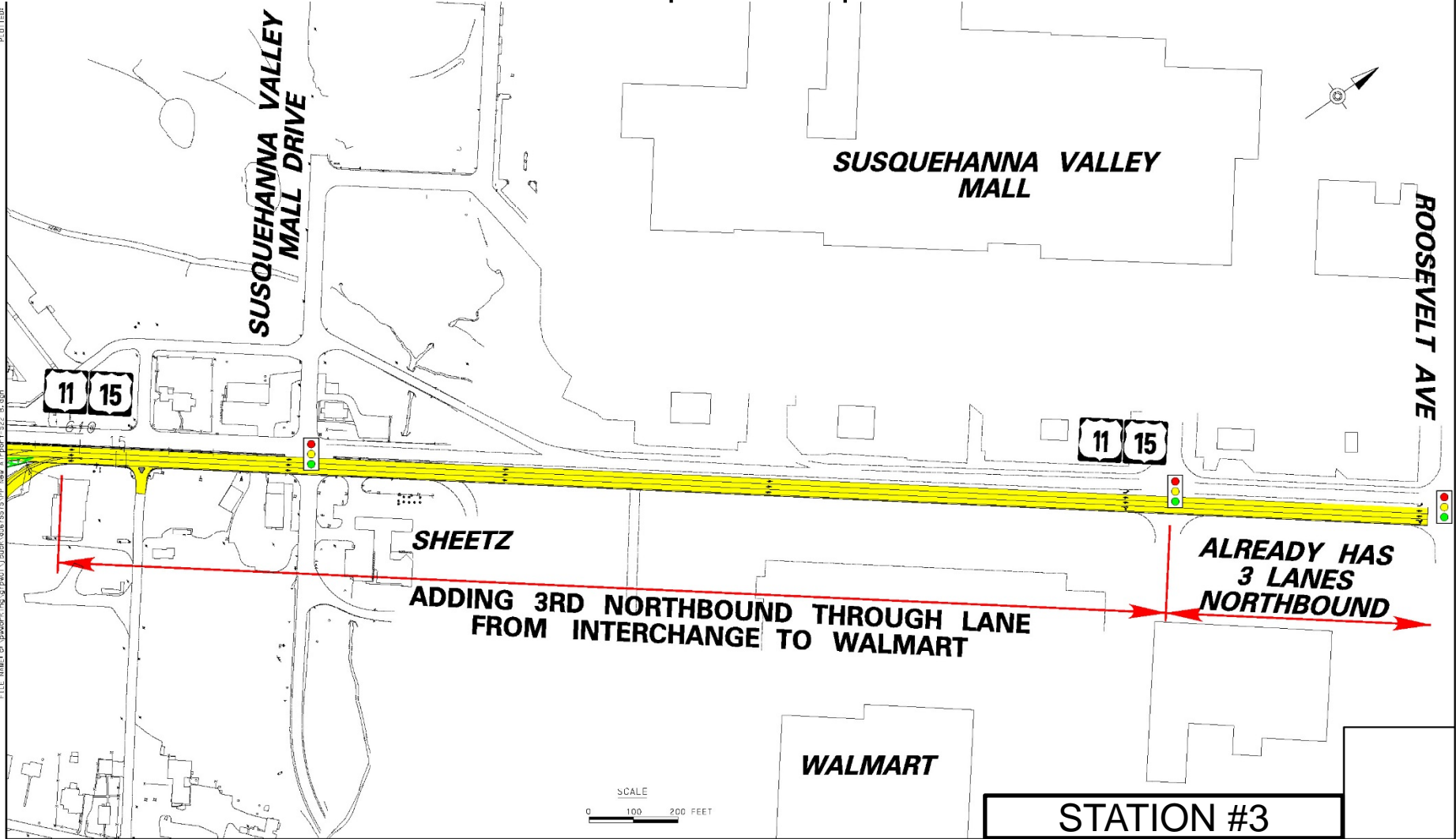
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
3-0	SNYDER	15	088	OF
MONROE TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



## MINOR DESIGN CHANGES

US 522 & US 11/15 Corridor – Proposed Improvements

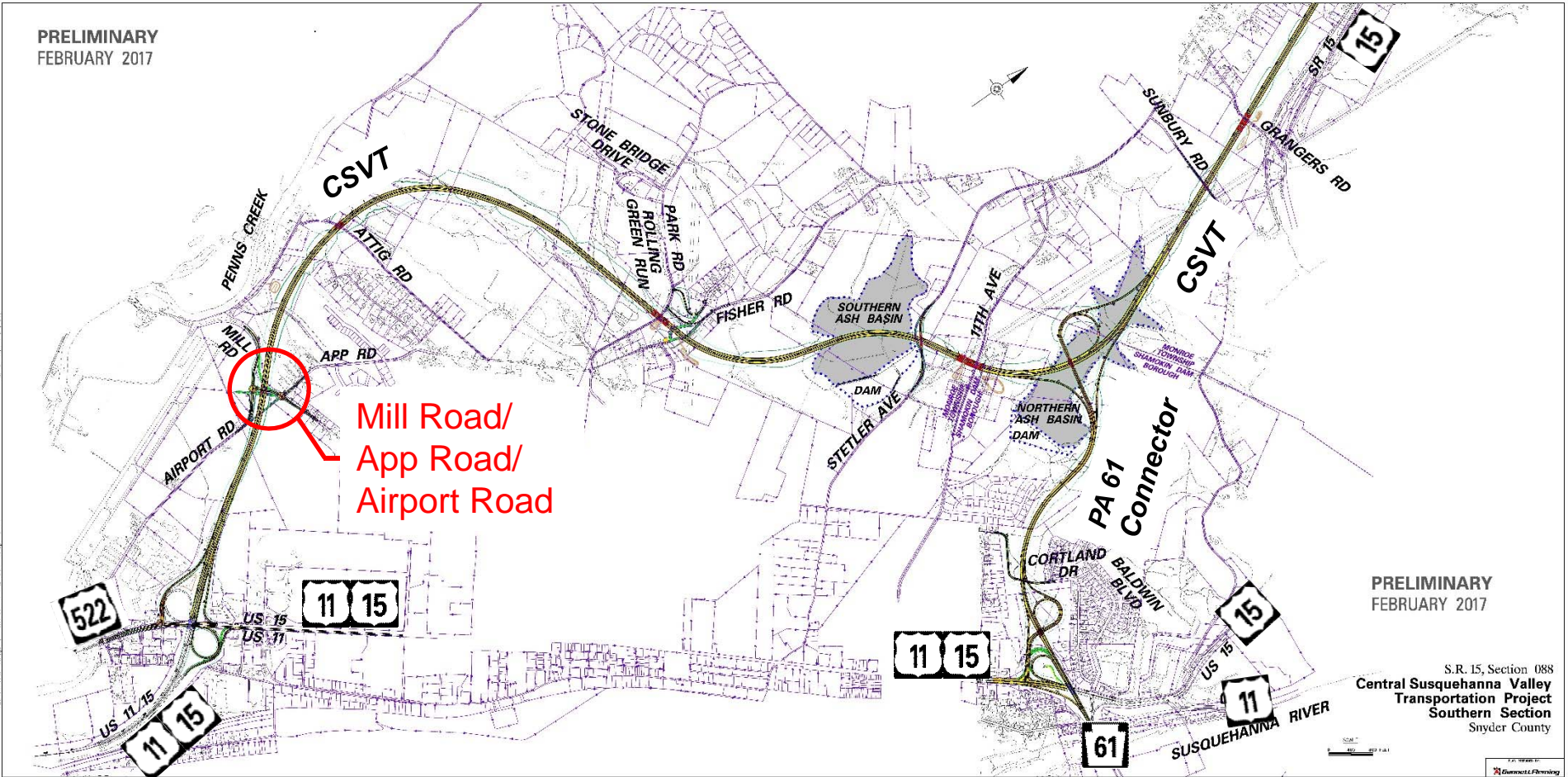
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3-0	SNYDER	15	088	OF
MONROE TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



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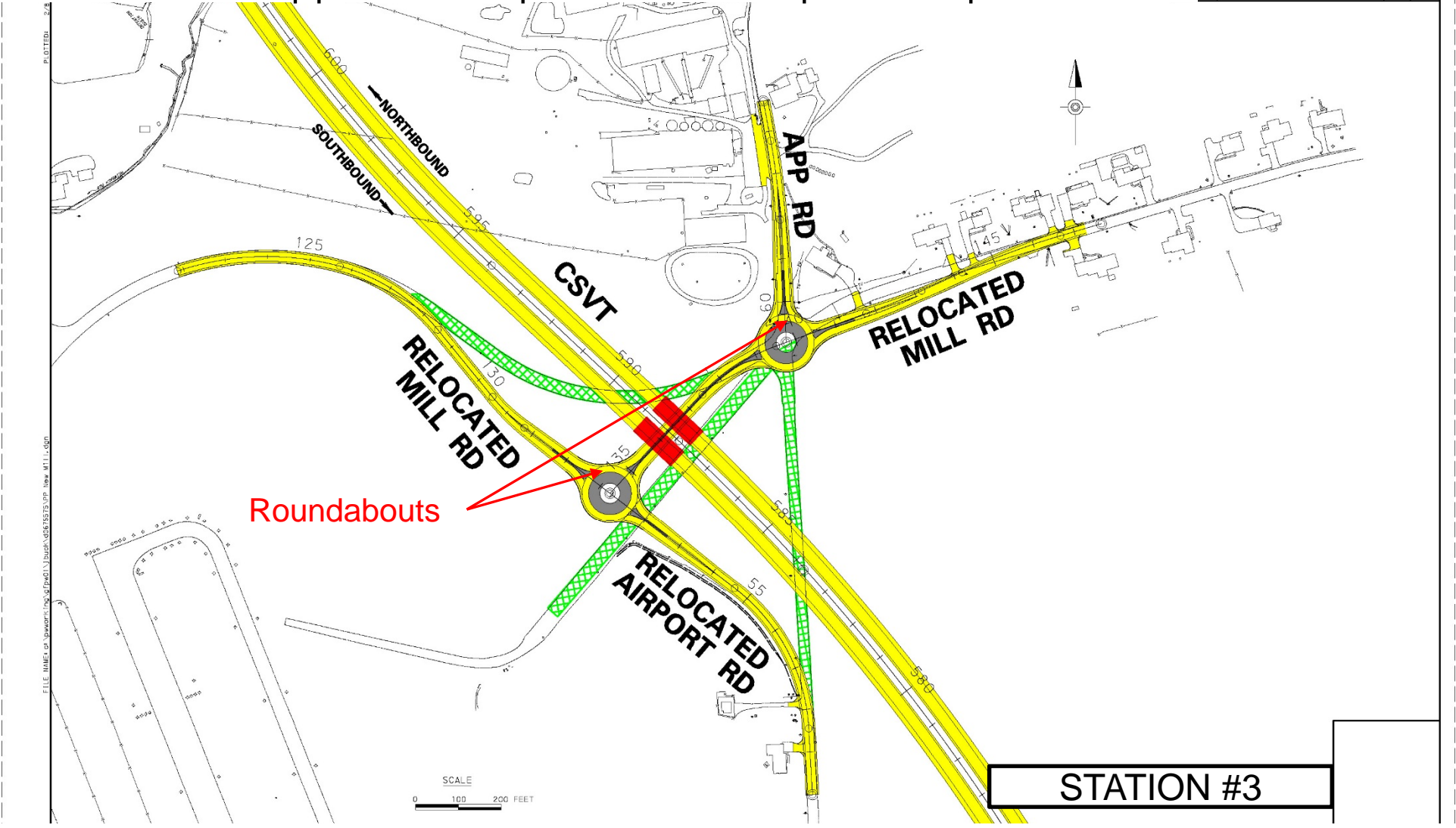
**MINOR DESIGN CHANGES**



**MINOR DESIGN CHANGES**

Mill Road/App Road/ Airport Road – Proposed Improvements

PROJECT	COUNTY	ROUTE	SECTION	SHEET
0	SNYDER	15	088	OF
MONROE TOWNSHIP				
NO.	REVISIONS	DATE	BY	

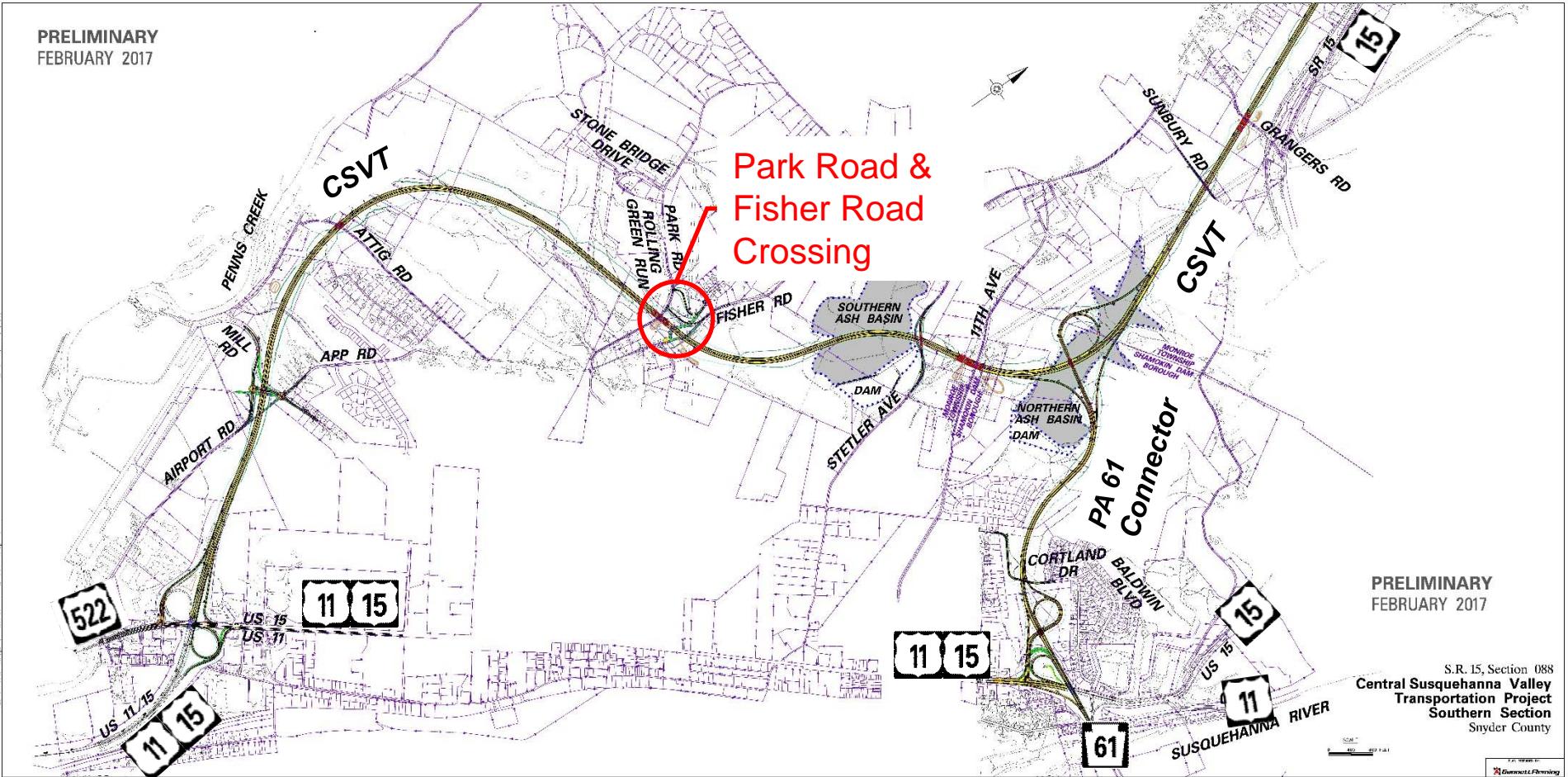


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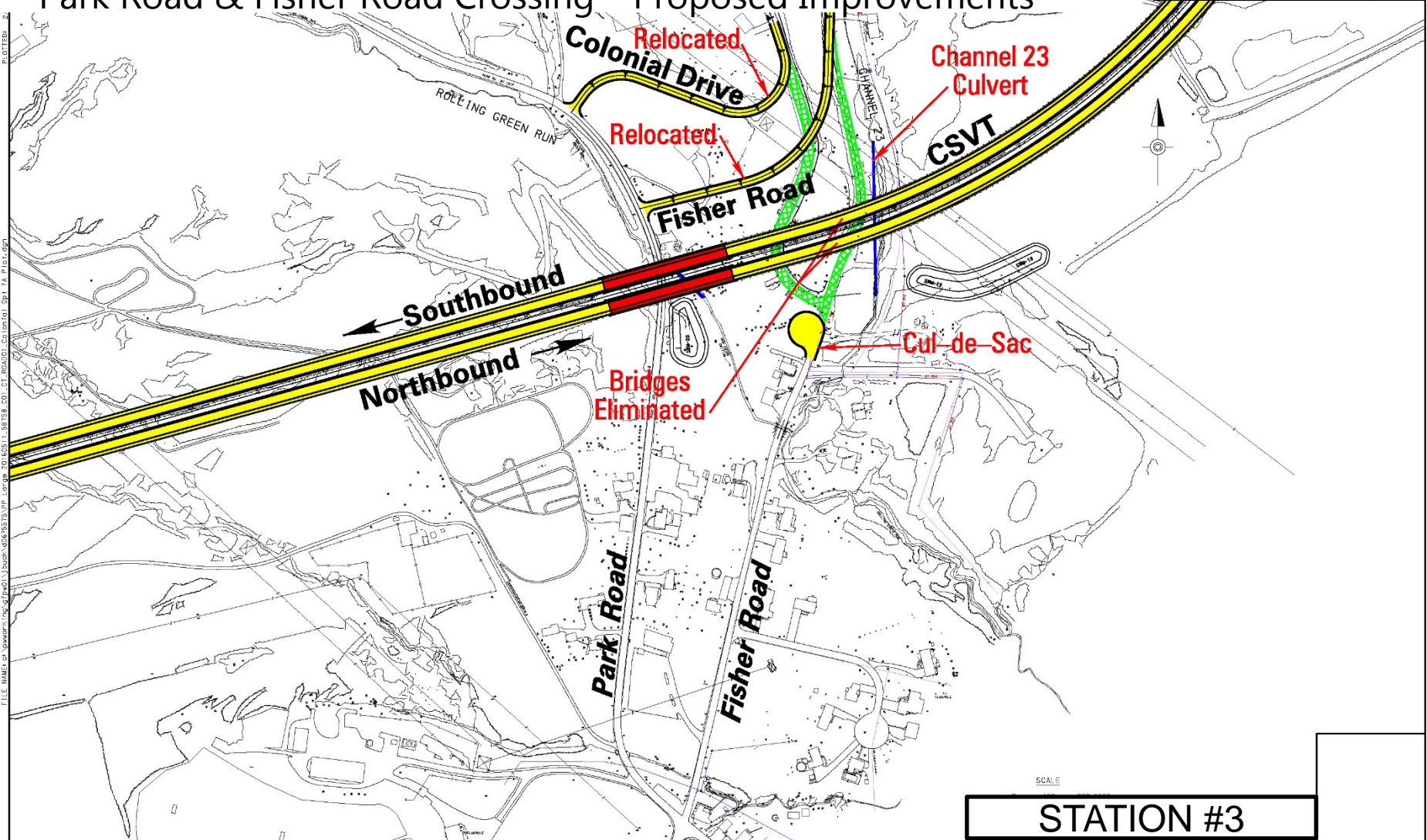
**MINOR DESIGN CHANGES**



**MINOR DESIGN CHANGES**

**Park Road & Fisher Road Crossing – Proposed Improvements**

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
3-0	SNYDER	15	088	OF
MORICE TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

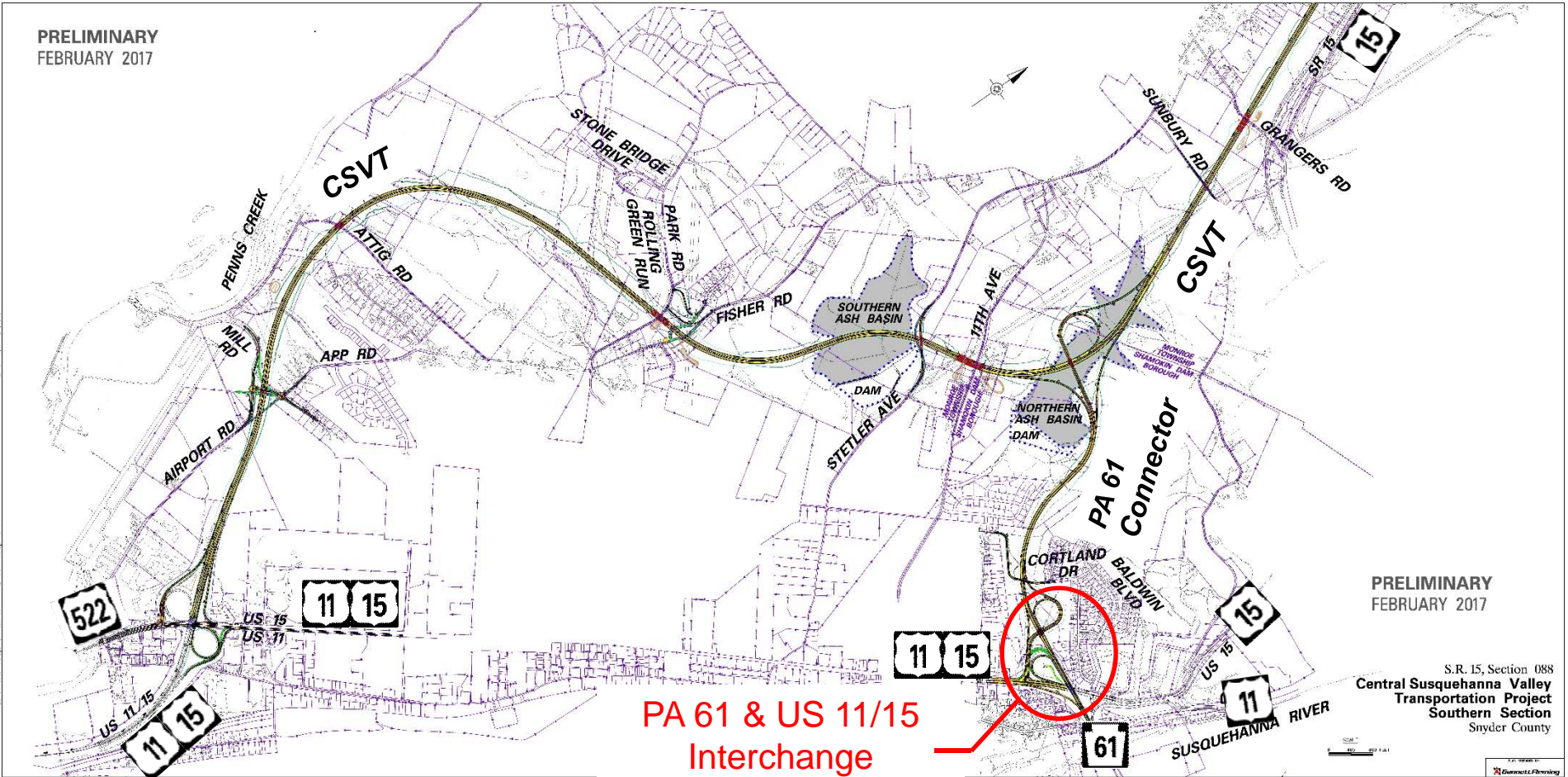


SCALE

**STATION #3**

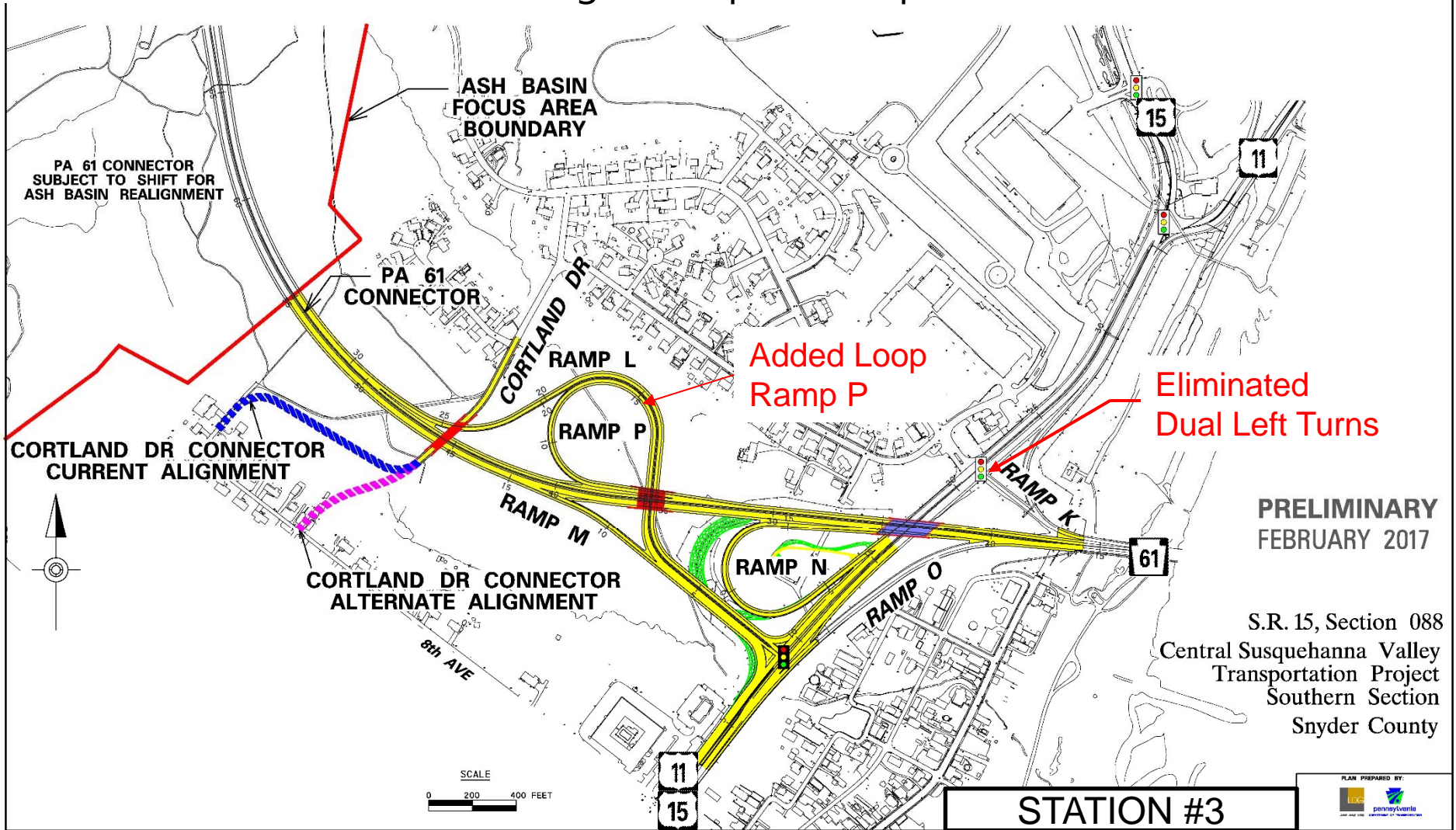
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**MINOR DESIGN CHANGES**



**MINOR DESIGN CHANGES**

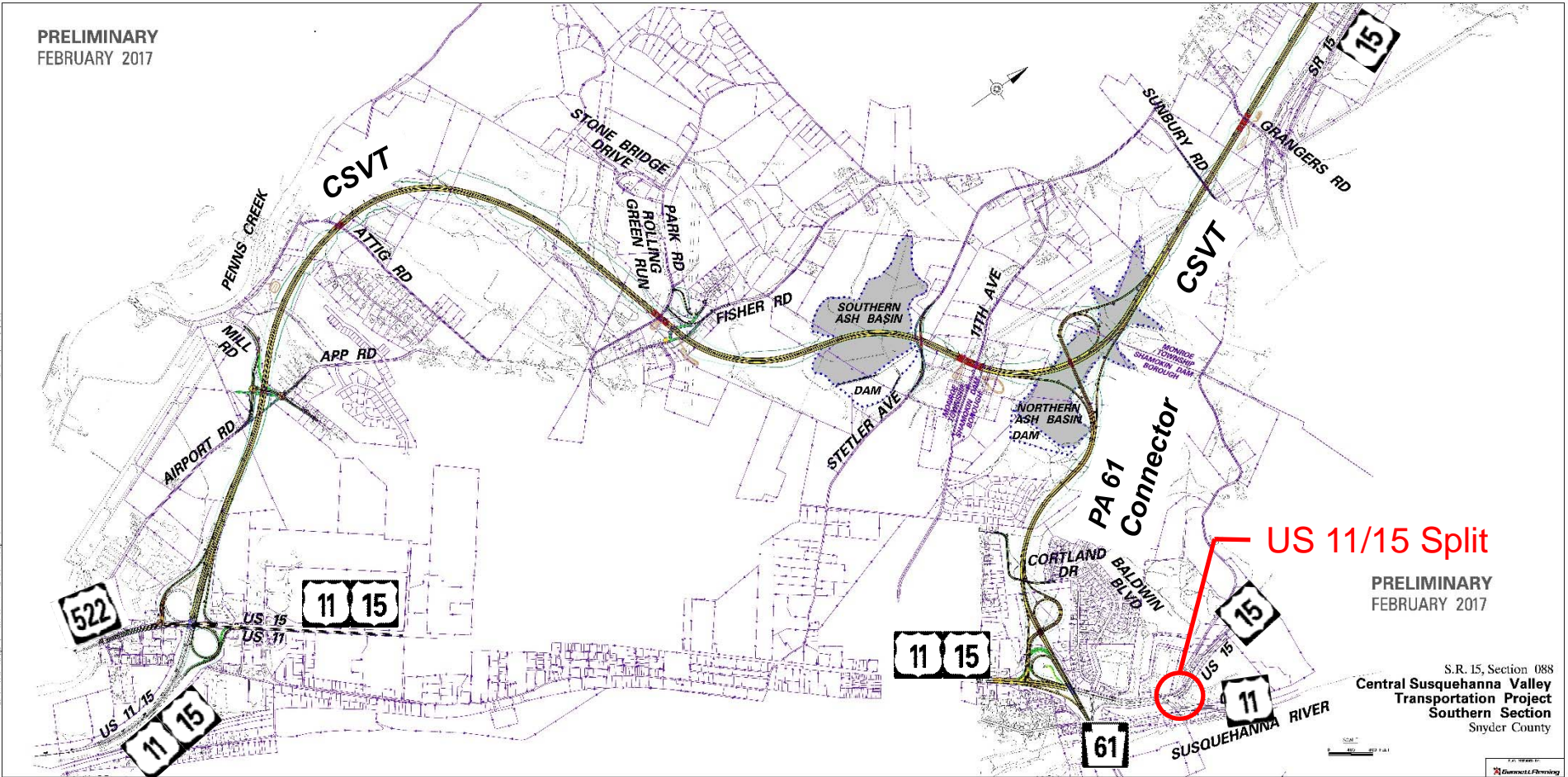
**PA 61 & US 11/15 Interchange – Proposed Improvements**



**PRELIMINARY  
FEBRUARY 2017**

S.R. 15, Section 088  
Central Susquehanna Valley  
Transportation Project  
Southern Section  
Snyder County

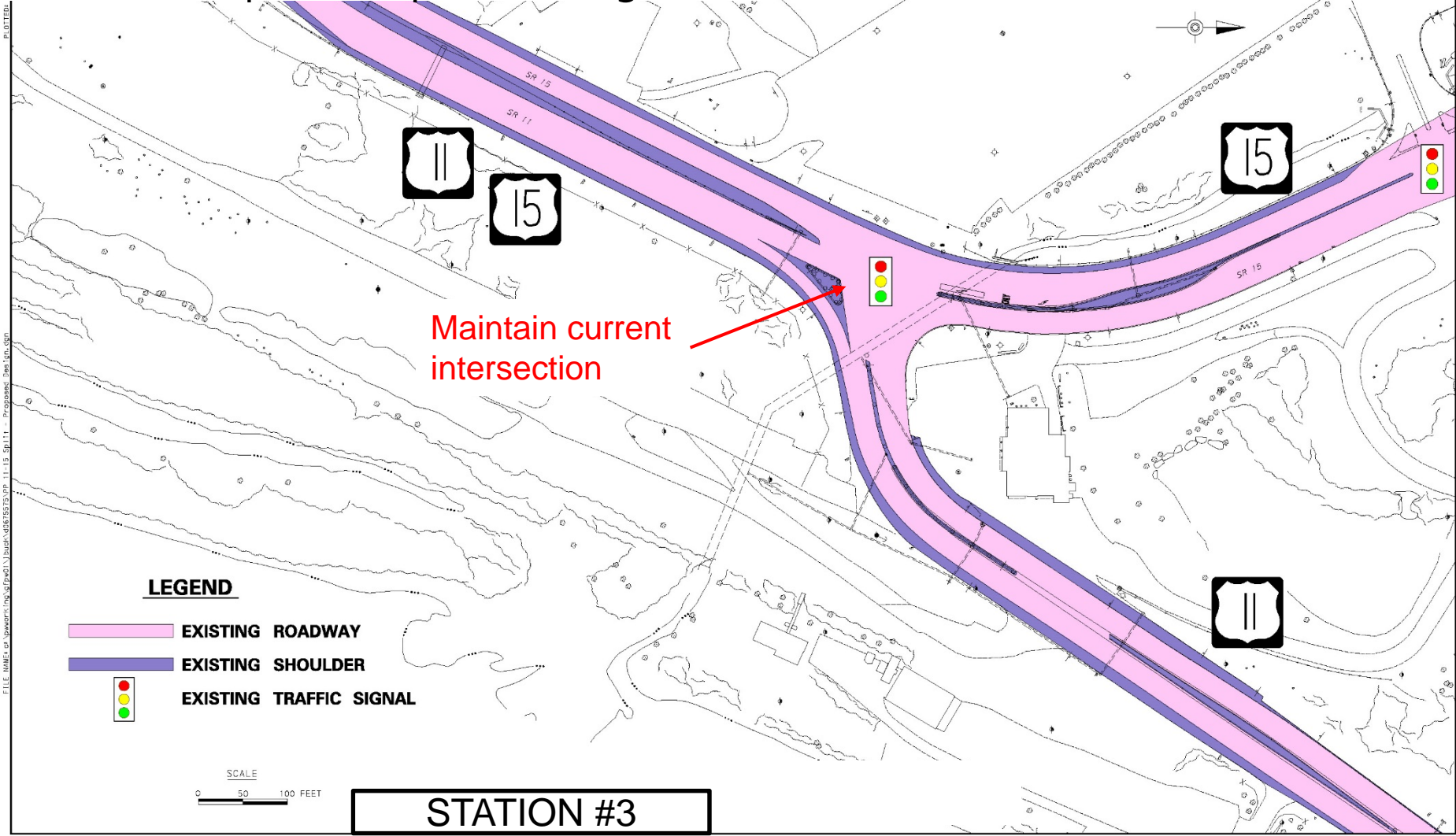
**MINOR DESIGN CHANGES**



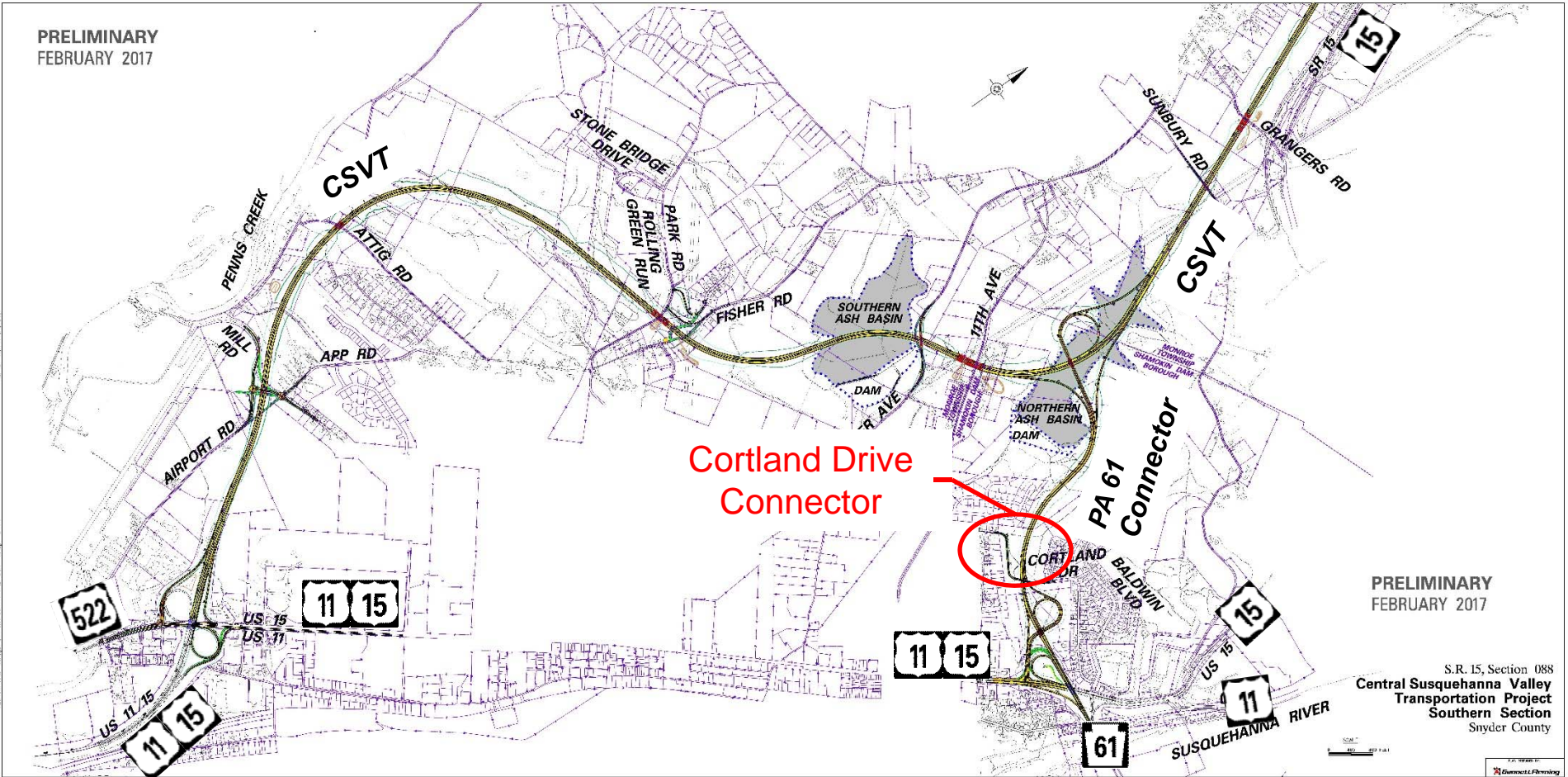
**MINOR DESIGN CHANGES**

**US 11/15 Split – Proposed Design**

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
3-0	SNYDER	15	088	OF
MONROE TOWNSHIP & SHAMOKIN DAM BOROUGH				
REVISION NUMBER	REVISIONS	DATE	BY	



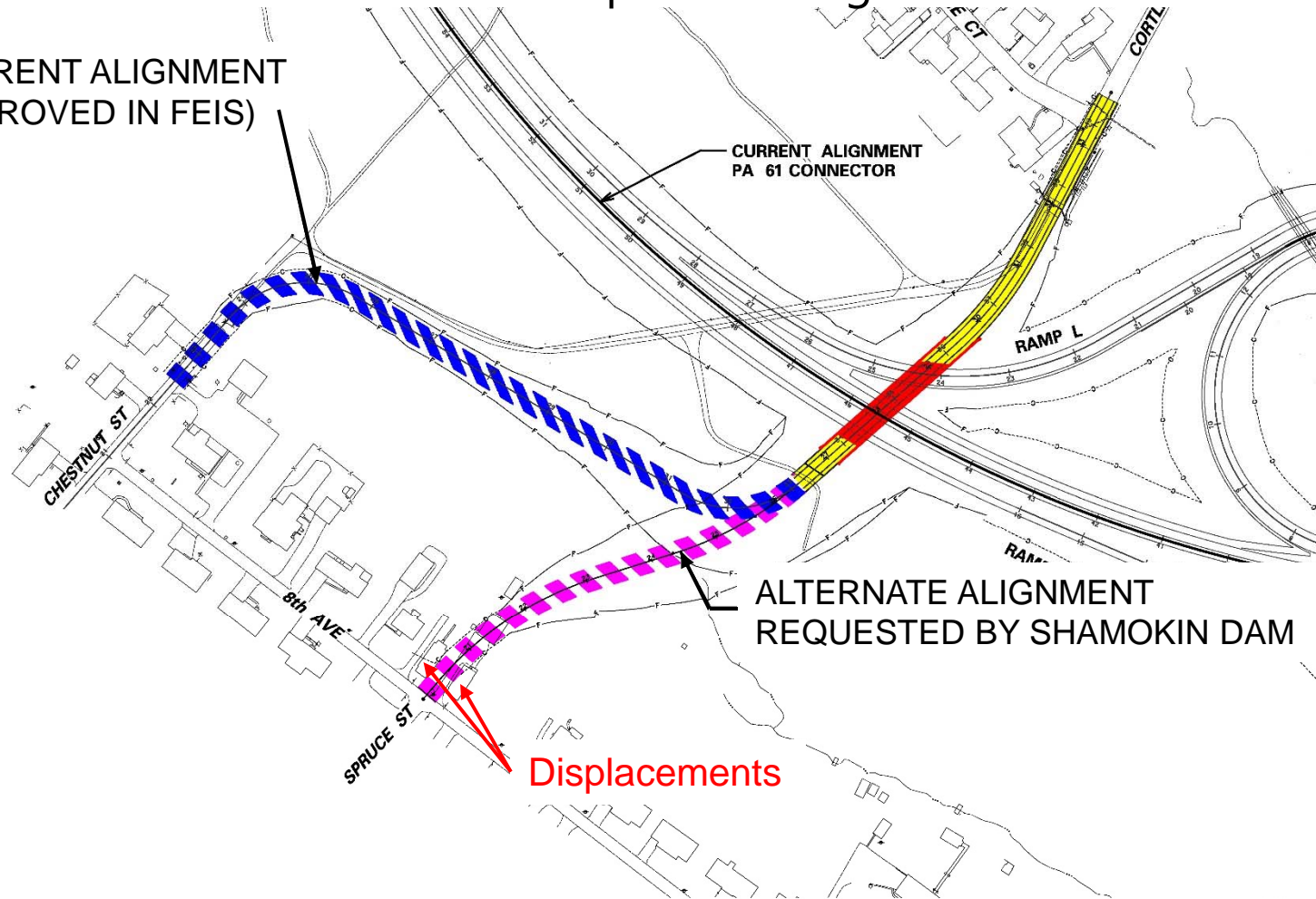
**MINOR DESIGN CHANGES**



**MINOR DESIGN CHANGES**

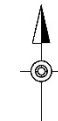
Cortland Drive Connector – 2 options being considered

CURRENT ALIGNMENT  
(APPROVED IN FEIS)



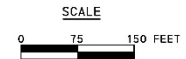
ALTERNATE ALIGNMENT  
REQUESTED BY SHAMOKIN DAM

Displacements



PRELIMINARY  
FEBRUARY 2017

S.R. 15, Section 088  
Central Susquehanna Valley  
Transportation Project  
Southern Section  
Snyder County



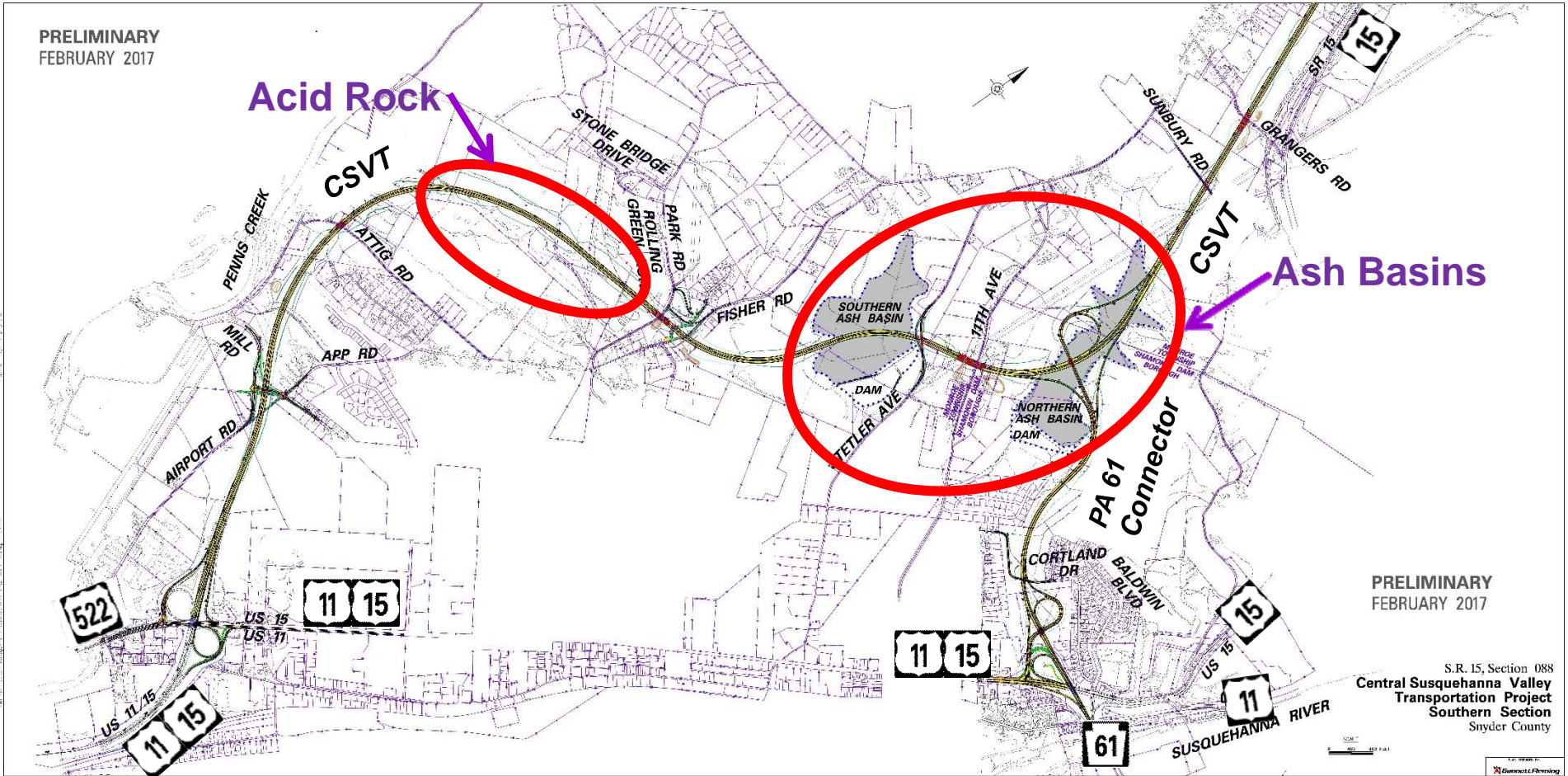
**STATION #3**



## **ENGINEERING CHALLENGES**

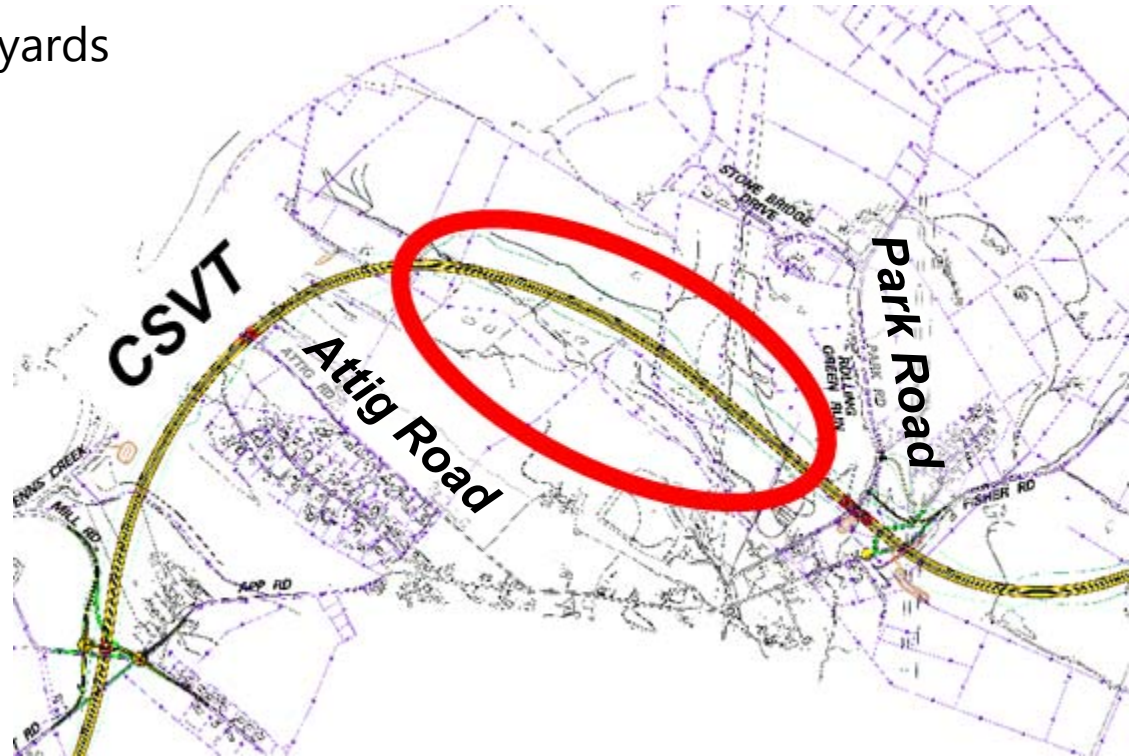
- Two unexpected geotechnical conditions were encountered.
  - 1. Acid Bearing Rock** - Requires special attention but straightforward
  - 2. Properties of Fly Ash Waste Basins** – more complex

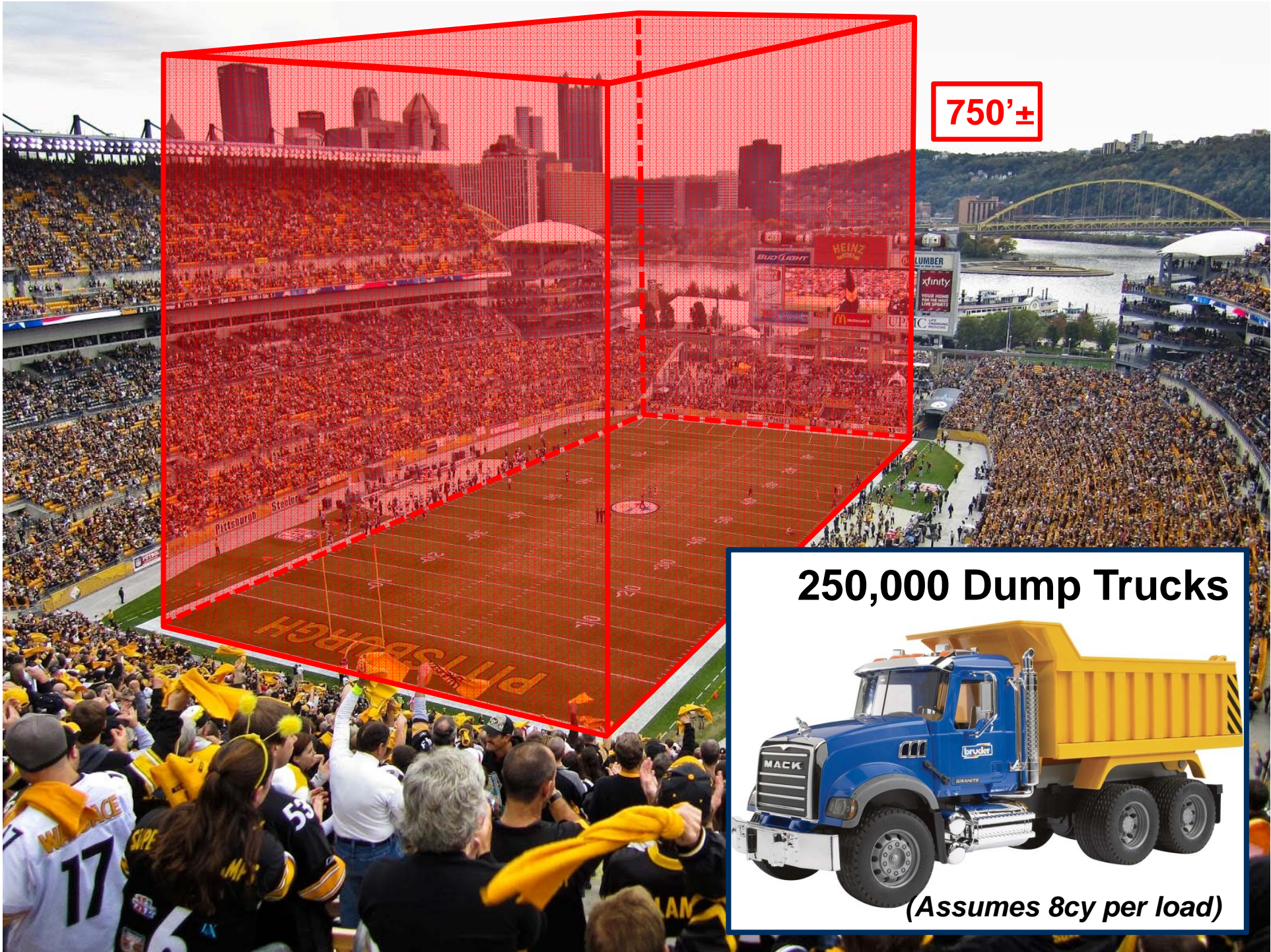
**ENGINEERING CHALLENGES**



## ACID ROCK

- Acid bearing rock unexpectedly found by soil boring program
  - Between Attig Road and Park Road
  - 2 million cubic yards





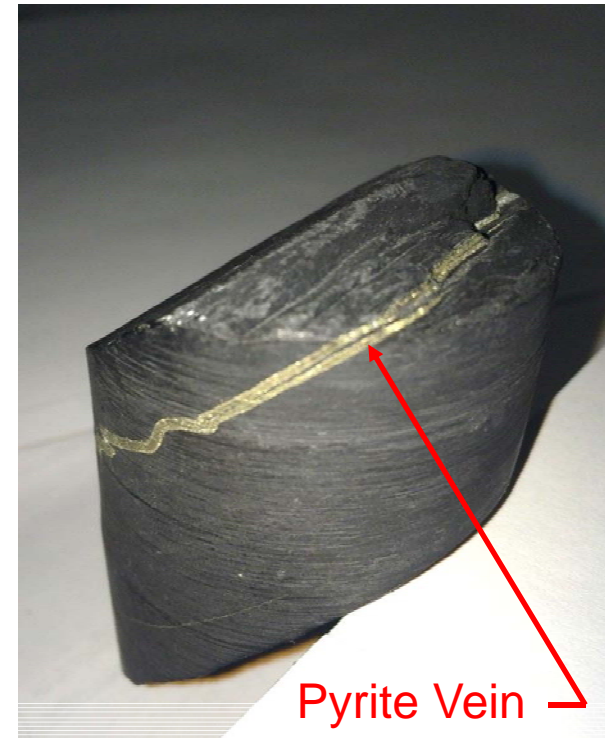
750'±

**250,000 Dump Trucks**

*(Assumes 8cy per load)*

## WHAT IS ACID BEARING ROCK?

- Rock containing iron sulfide such as pyrite.
- Produces acid at a quick rate when...
  - excavated into smaller pieces
  - smaller pieces exposed to air and water
- Why important?
  - If untreated, may result in issues similar to acid mine drainage



Pyrite Sample

STATION #4

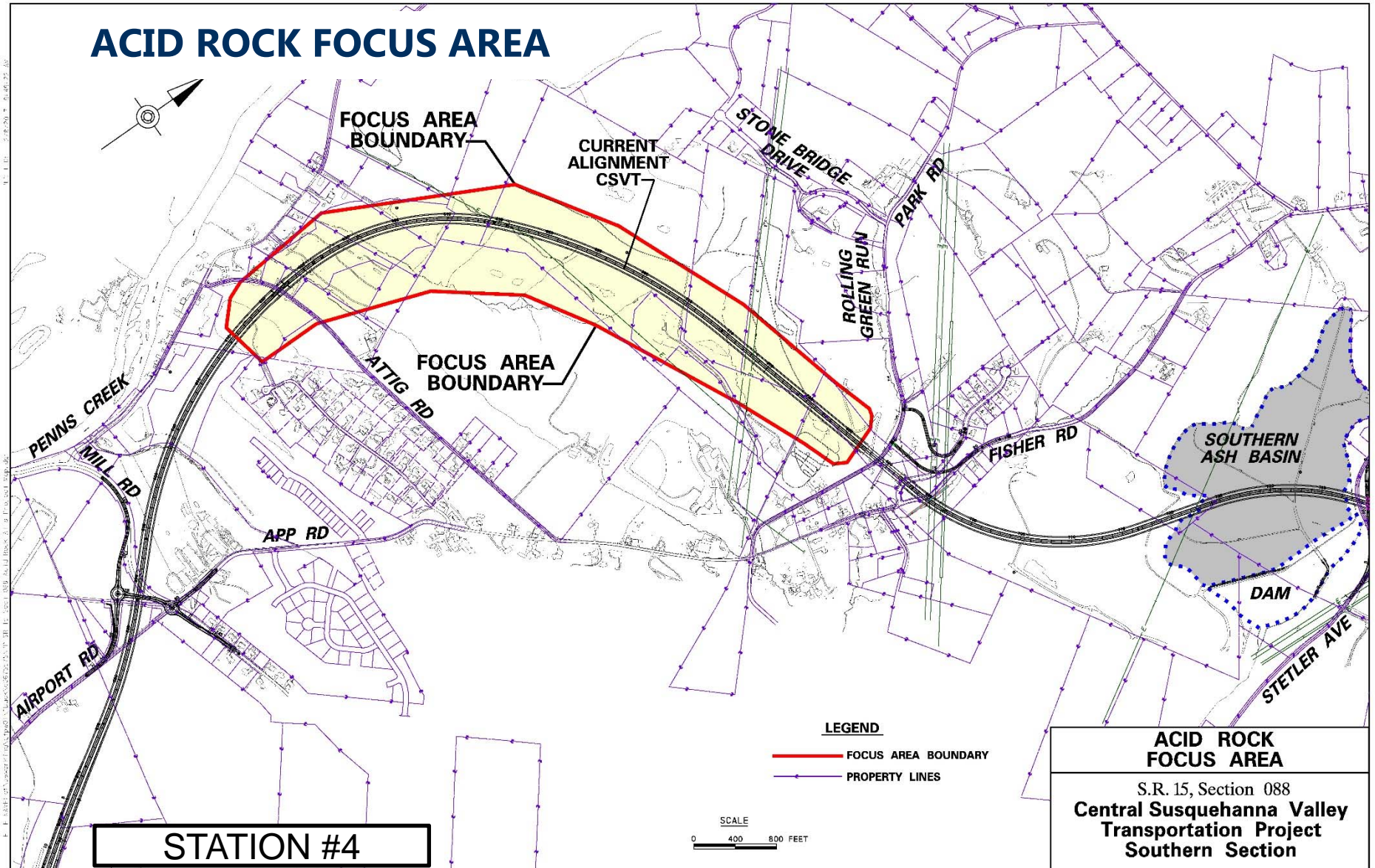
## HOW DO WE ADDRESS POTENTIALLY ACIDIC ROCK?



- Awareness is key
- Coordinate with PADEP
- Minimize amount of acid bearing rock to be excavated
- Divert & treat stormwater runoff from exposed rock slopes
- Mix excavated rock with lime and encapsulate (to prevent contact with air and water)

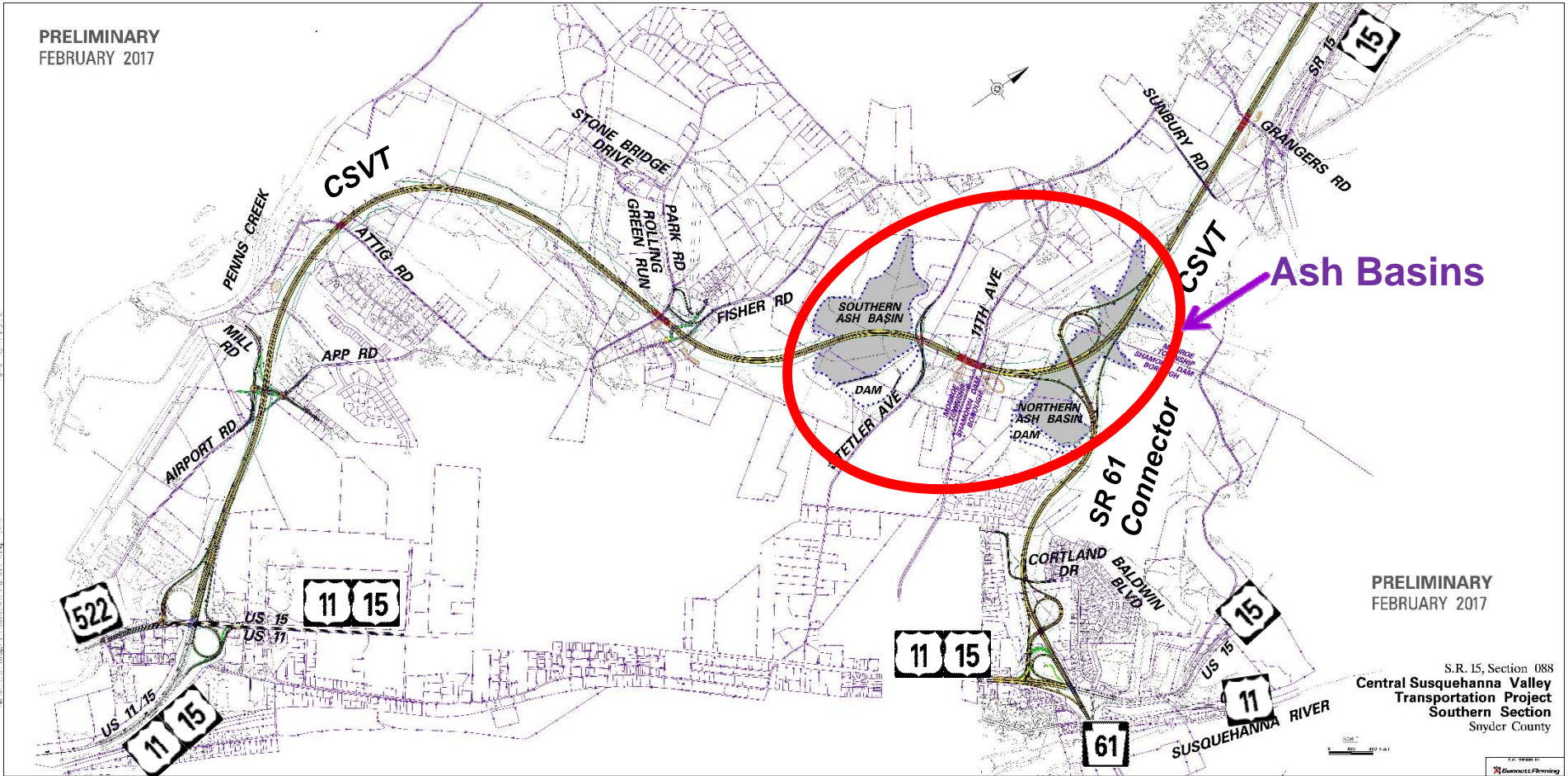
STATION #4

**ACID ROCK FOCUS AREA**



**ACID ROCK  
FOCUS AREA**  
S.R. 15, Section 088  
Central Susquehanna Valley  
Transportation Project  
Southern Section

**ASH BASINS**





## ASH BASINS



Northern Basin in use



Example of ash being pumped into a basin

## SOUTHERN ASH BASIN



- Built in 1955
- Raised crest in 1964, and between 1984-1986
- Closed in the late 1990s
- Dam Height – 136'
- Area – 66 Acres



## **NORTHERN ASH BASIN**

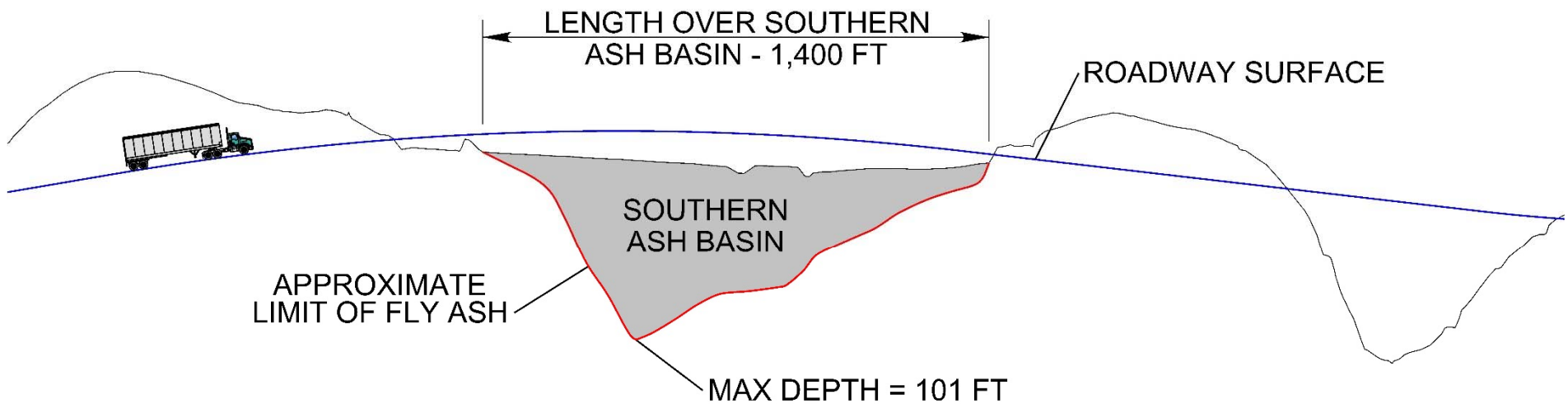
- Built in 1970
- Raised crest 1981-1982
- Closed in the late 1980s
- Dam Height – 117'
- Area – 61 Acres



## **WHY CURRENT ALIGNMENTS CROSS THE ASH BASINS**

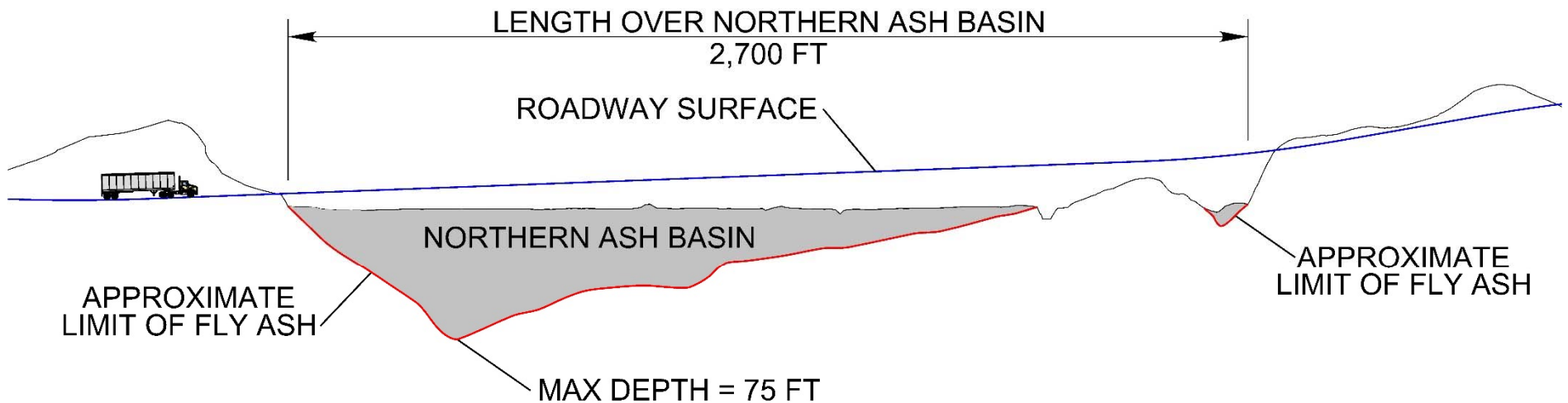
- General sentiment during preliminary design - place the roadway on land not suitable for any other use.
- Expected conditions to improve – lower water level

## CSVT PROFILE THROUGH SOUTHERN ASH BASIN



Note: Drawing is not to scale.

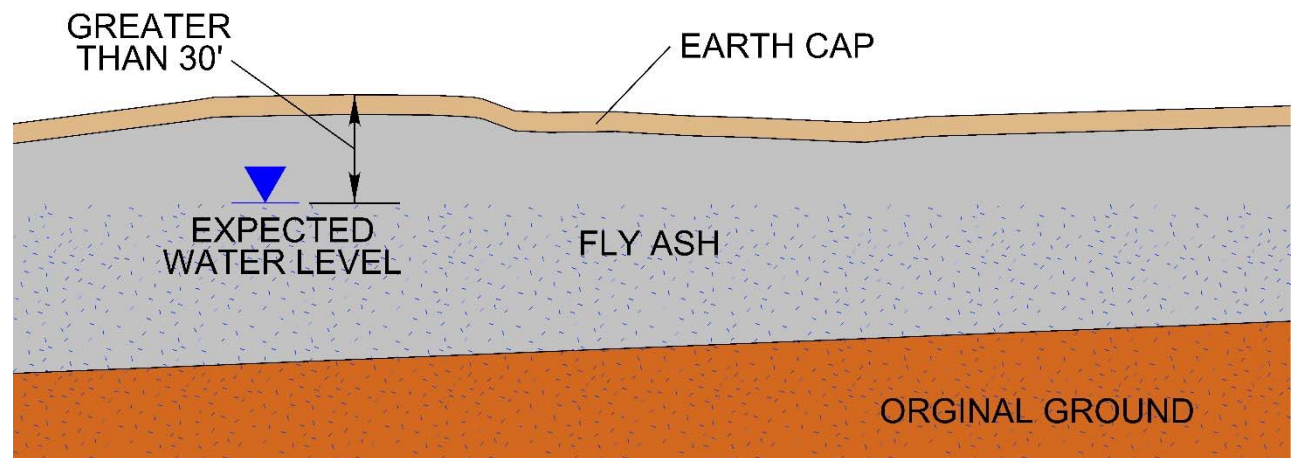
## CSVT PROFILE THROUGH NORTHERN ASH BASIN



Note: Drawing is not to scale.

## EXPECTED CONDITIONS

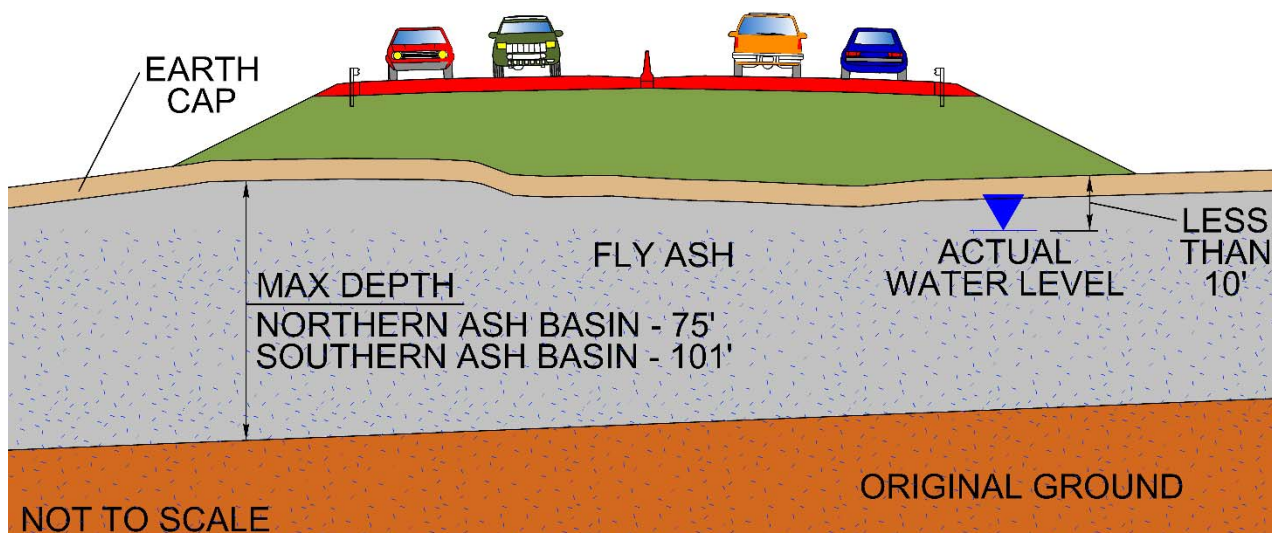
- Water level > 30 feet below surface
- Increasing ash strength with depth
- Stable for highway construction



STATION #5

## ACTUAL CONDITIONS

- Saturated ash within 10 feet of surface
- Consistency similar to toothpaste or a milkshake
- Very little strength
- Little gain in strength over depth

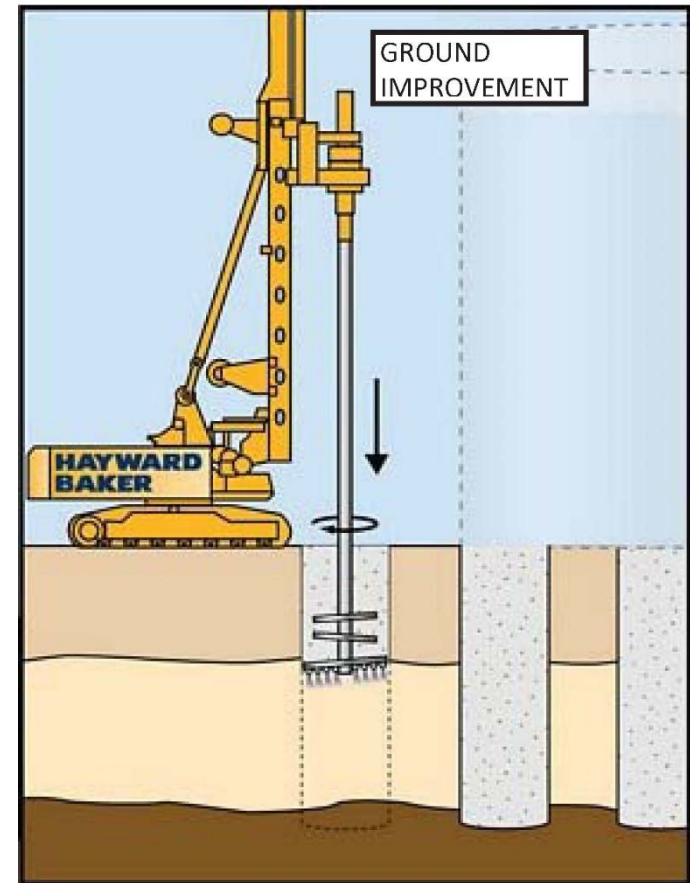


STATION #5



## CONSIDERED SOLUTION – GROUND IMPROVEMENT

- Inject cement slurry into ash basin to make columns which support highway
- Issues
  - Risk of highway embankment settlement
  - Risk of groundwater contamination
  - Cannot verify condition of mixed columns under 100 feet of ash
  - PennDOT (public) liability for ash basins and dams
  - Additional \$70 million
  - Time delay



## CONSIDERED SOLUTION – REMOVAL OF ASH FROM BASINS

- Remove all 7.5 million cubic yards of ash
- Issues
  - Risks spreading contaminants during excavation and transport
  - Cost prohibitive; well over an additional \$500 million
  - Would set CSVT schedule back several years



## CONSIDERED SOLUTION – REMOVAL OF ASH UNDER CSVT



- Excavate ash beneath CSVT (2 million cubic yards)
- Issues
  - Same challenges as previous approach plus....
  - Large bracing systems needed (100' height!)
  - Need to pass water from one side of the bracing system to the other
  - Over an additional \$250 million

## CONSIDERED SOLUTION – BRIDGING BASIN

- Construct low bridge over ash basins
- Issues
  - Ash basin cannot withstand large cranes necessary for bridge construction.
  - Pile driving could fracture rock below risking contamination of aquifer.
  - Additional \$160 million initial cost plus ground improvement



## CONSIDERED SOLUTION – FLOATING BRIDGE

- “Out-of-the-box idea”
- Construct pontoons that “float” on ash
- Issues
  - Pontoons would gradually settle with no way to raise them.
  - Risk of failure during seismic event
  - Additional \$450 million

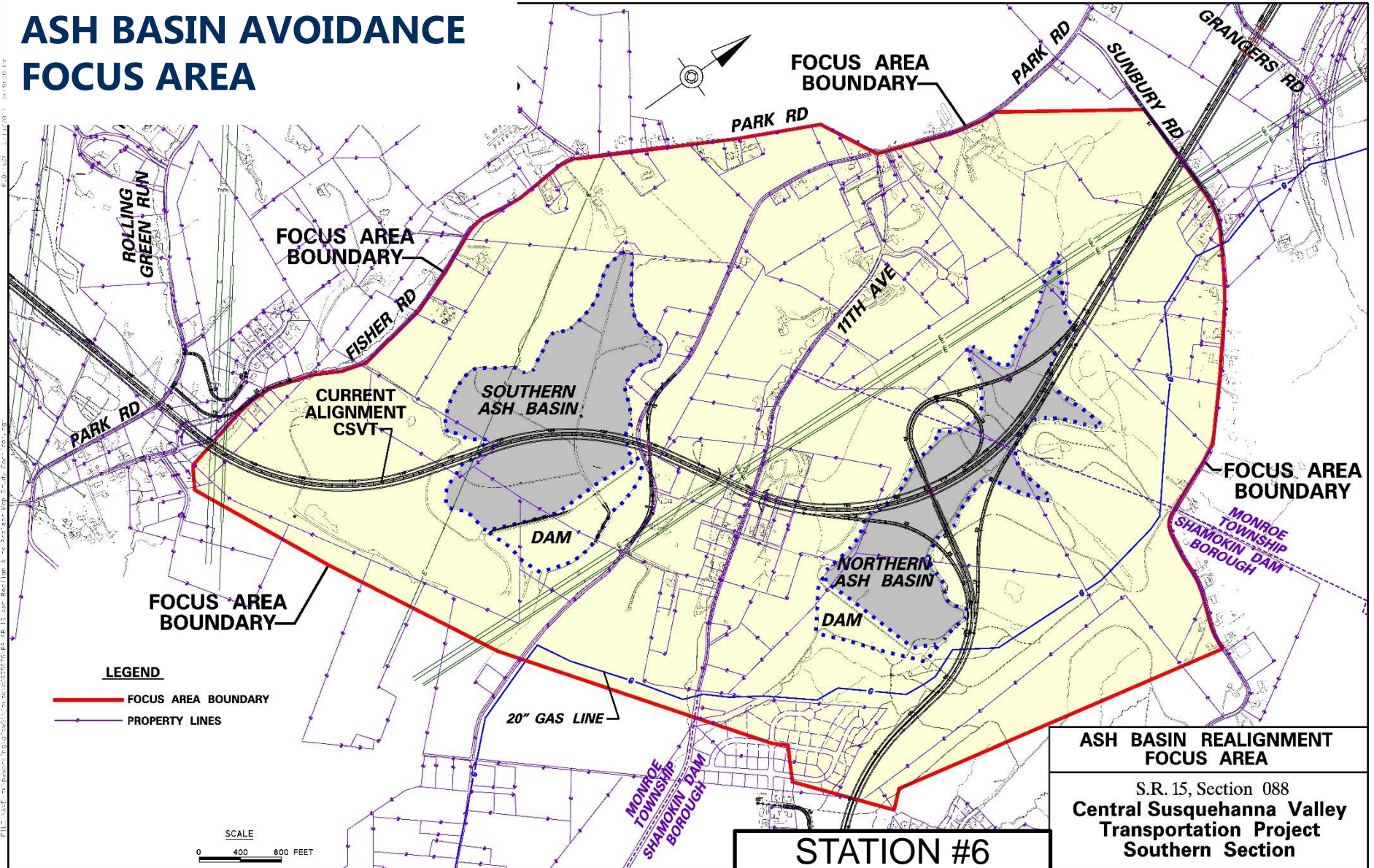


## **REASONS FOR AVOIDING ASH BASINS**

- Saturated ash cannot support weight of highway
- Risk of highway settling and deforming
- Risk of groundwater contamination during/after construction from the unlined basins
- Recent issues with other basins nationwide; increased scrutiny from environmental agencies
  - U.S. EPA - new regulations
  - PA DEP - strongly recommends CSVT avoid the ash basins
- Perpetual public liability for basins and their high-hazard dams
  - High-hazard classification - based on damage which would occur if the dams failed; not based on current condition of dams.

STATION #5

**ASH BASIN AVOIDANCE  
FOCUS AREA**



## PROJECT TEAM GOALS

- Constructing safe highway that meets current standards and meets needs of project. (Example – PA 61 Connector to divert traffic from existing road network)
- Minimizing/balancing impacts to...
  - Area residents
  - Communities / municipalities
  - Farmlands
  - Businesses
  - Natural environment
  - Cultural resources
  - Utilities
- Making use of right-of-way already acquired





## NEXT STEPS



- Public Meeting #1 - Tonight
  - Present design changes, engineering challenges and next steps
  - Request feedback
  - Open House
    - 1 on 1 discussion
    - Receive feedback on problem and considerations for potential solutions within focus area (face to face and questionnaire)

STATION #9

## NEXT STEPS

- Public Meeting #2 – Spring 2017
  - Present alternatives developed from Public Meeting #1 feedback
  - Request feedback



STATION #9

## **NEXT STEPS**

- Detailed studies – Summer 2017
  - Perform engineering and environmental studies
  - Coordinate with:
    - FHWA
    - Environmental agencies
    - Local officials
    - Utilities
    - Impacted land owners
    - Other stakeholders

STATION #9

## NEXT STEPS

- Public Meeting #3 – Fall 2017
  - Present results of detailed studies
  - Present preferred alternative
  - Collect feedback
  
- Move forward with environmental clearance, design, right-of-way acquisition, utility relocations and permitting



STATION #9

## PROJECT SCHEDULE

- Goal is that ash basin avoidance issue can be resolved by Fall 2017.
- After working through engineering challenges, proceed in most efficient manner to complete design.



## PROJECT COST

- Not expected to rise significantly when roadway is moved.



## HOW DO I GET INFORMATION?

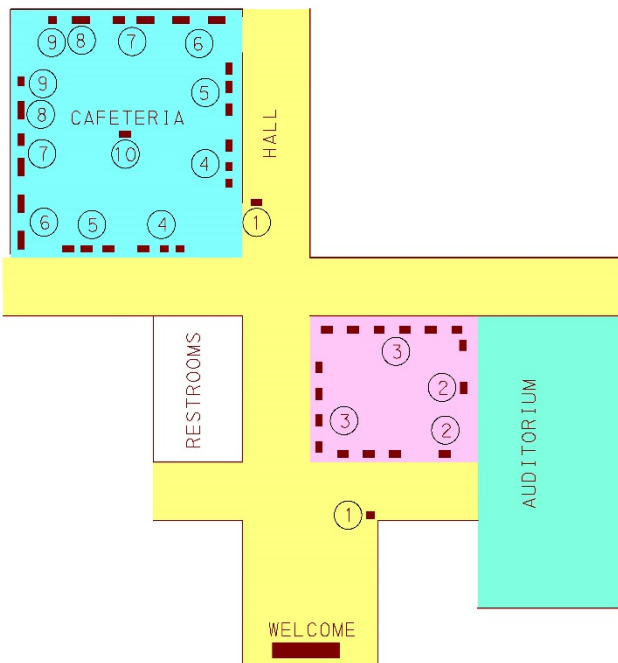
- Attend Public Meetings
- Visit Project Web Site – [csvt.com](http://csvt.com)

- Contact PennDOT District 3-0

Matthew Beck, P.E., Assistant Plans Engineer  
[matbeck@pa.gov](mailto:matbeck@pa.gov)  
570-368-4256



## OPEN HOUSE LAYOUT



### STATION ① - INFORMATION & DISPLAY LAYOUT

DISPLAY LAYOUT

### STATION ② - CSV T NORTHERN SECTION

CSV T NORTHERN SECTION PLAN WITH CONSTRUCTION PHOTOS

### STATION ③ - MINOR DESIGN CHANGES

US ROUTE 522 AND US ROUTES 11/15 CORRIDOR

MILL/APP/AIRPORT ROADS ROUNDABOUTS

BENEFITS OF ROUNDABOUTS

PARK ROAD AND FISHER ROAD CROSSING

PA ROUTE 61 AND US ROUTES 11/15 INTERCHANGE

CORTLAND DRIVE CONNECTOR

US ROUTES 11/15 SPLIT

### STATION ④ - ACID BEARING ROCK

WHAT IS ACID ROCK?

ACID ROCK TREATMENTS

ACID ROCK FOCUS AREA

### STATION ⑤ - ASH BASINS

ASH BASIN HISTORY

ASH BASINS: EXPECTED VS. ACTUAL CONDITIONS

WHY CSV T CANNOT BE CONSTRUCTED ON ASH BASINS

### STATION ⑥ - ASH BASIN FOCUS AREA

ASH BASIN FOCUS AREA

### STATION ⑦ - ENVIRONMENTAL TOPICS

FARMLANDS

NOISE ABATEMENT PROCESS

### STATION ⑧ - RIGHT-OF-WAY

CSV T RIGHT-OF-WAY

### STATION ⑨ - ANTICIPATED NEXT STEPS

ANTICIPATED NEXT STEPS

### STATION ⑩ - QUESTIONNAIRE



**OPEN DISCUSSION & GENERAL QUESTIONS  
(Specific/personal questions will be better served at the open house.)**



**THANK YOU!!**

*We Really Appreciate Your Time  
and Input !!*



*Excellence Delivered As Promised*