Tucson Electric Power

Aerospace Research Campus 138 kV Transmission Line Project
Visual Resource Exhibit

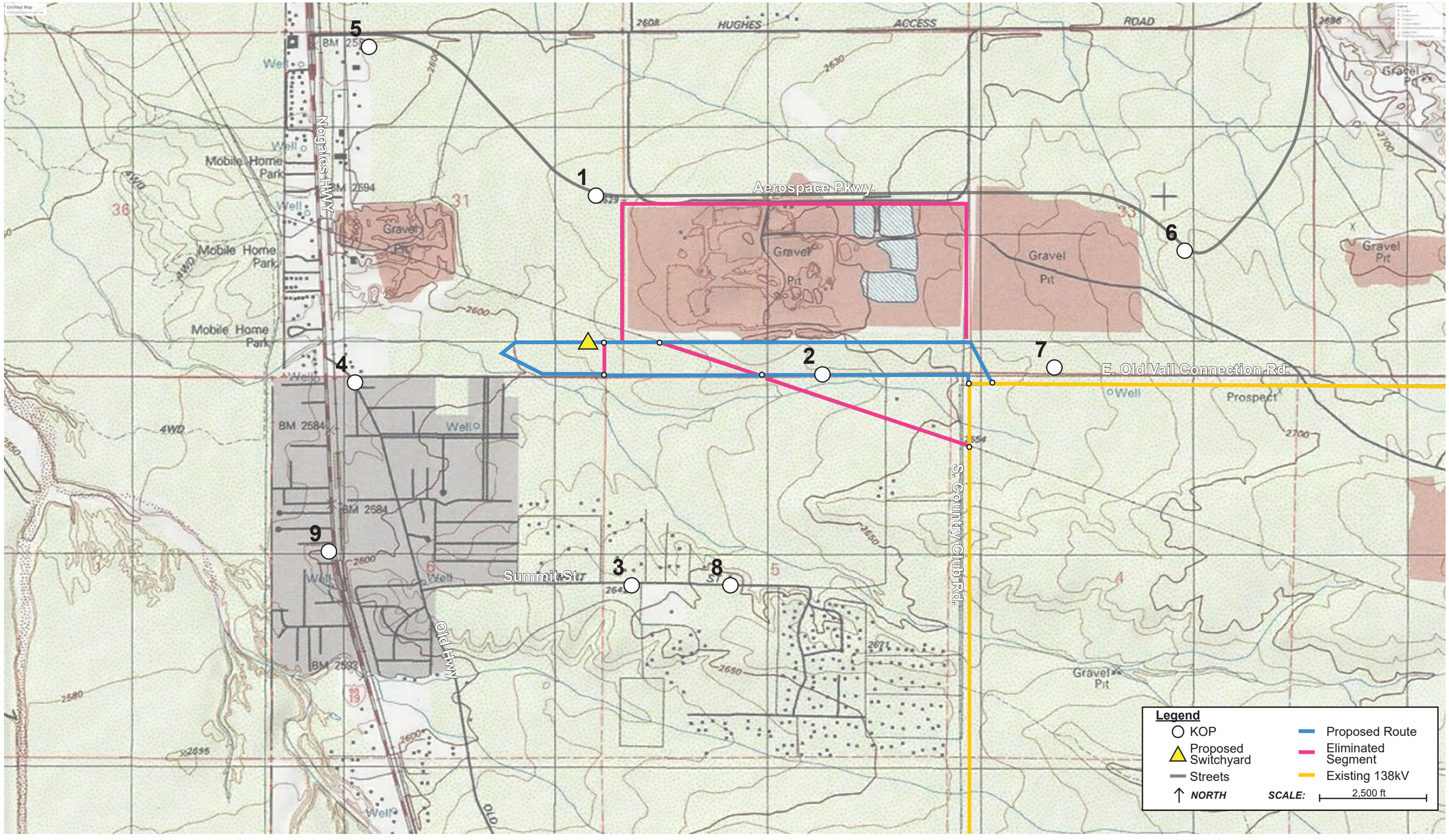
Visual Simulations

Prepared By:
Jeremy Palmer | Sole Proprietor

September 13th, 2023

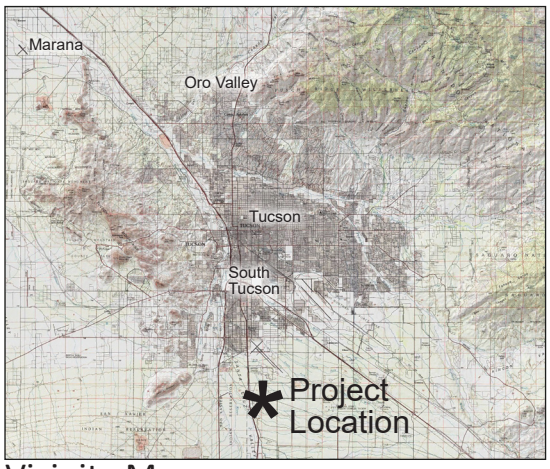
Aerospace Research Campus 138kV Transmission Line Project

Key Observation Point - Project Map

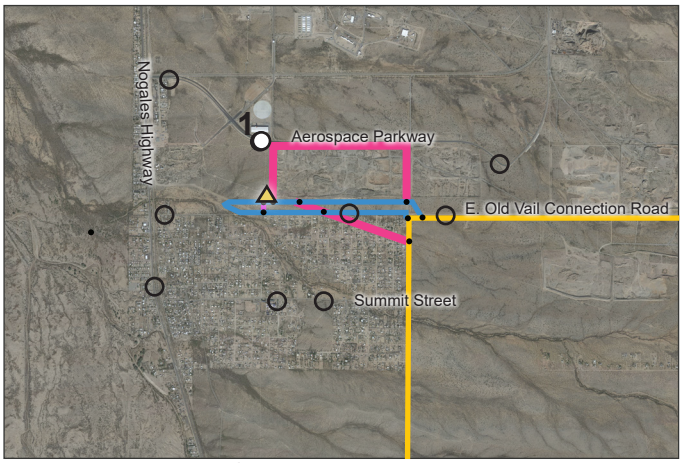


Key Observation Points - (KOPs)

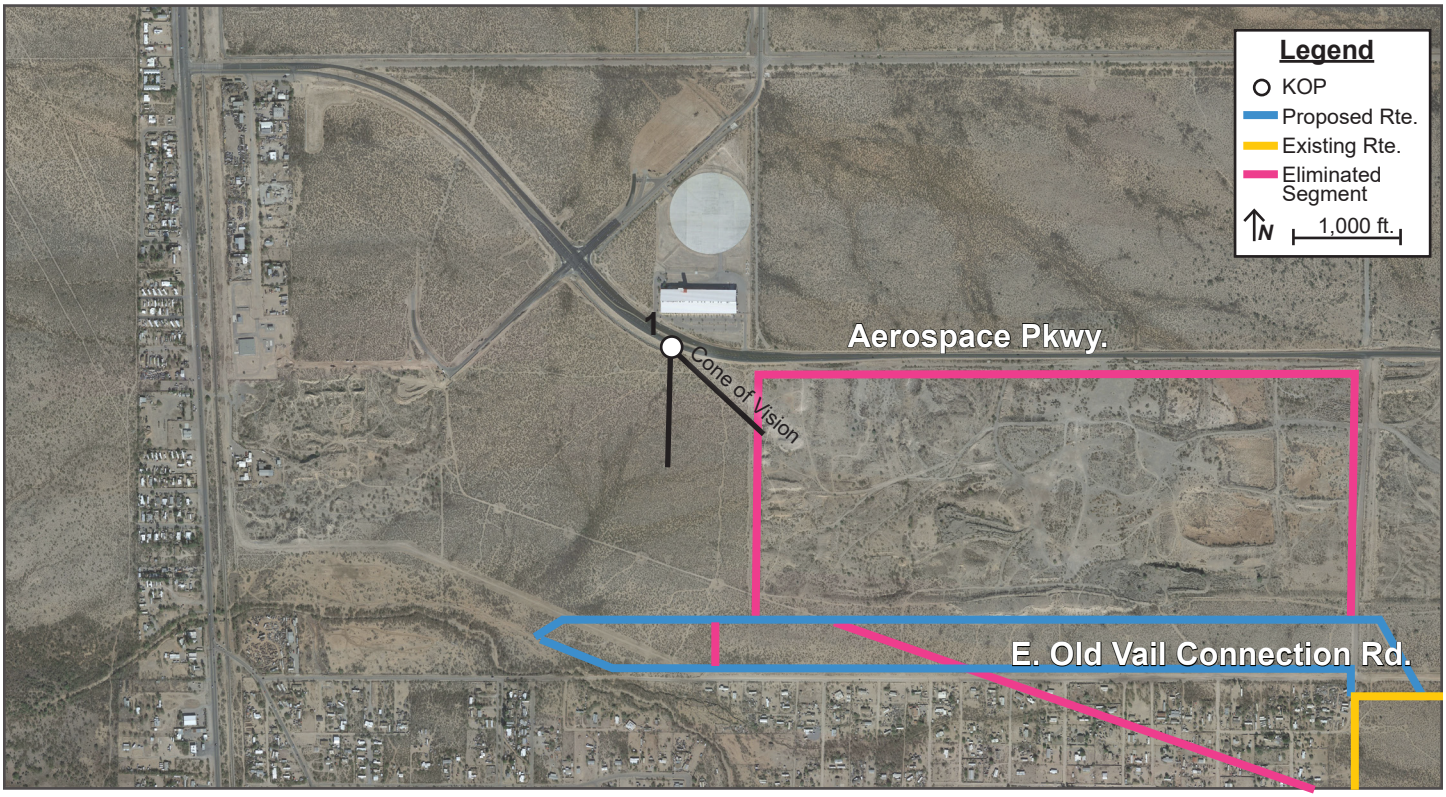
Key Observation Point (KOP) # 1



Vicinity Map



Project Map Enlargement



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: f/9 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residents, commuters
- Location: 1805 E Aerospace Pkwy
- Latitude: 32.083397° N; Longitude: 110.944917° W
- View Point Elevation at Eye Level: 2,628 ft.
- Looking: southeast
- Poles Visible: pole structures, switchyard
- Image File Name: IMG_2403.JPG

Simulation Notes

- Photo Taken: August 5, 2023, 10:35 AM
- The image is based on a single photo and represents approximately 39.5 degree horizontal field of view.
- This view is approximately 2,253 feet northwest of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

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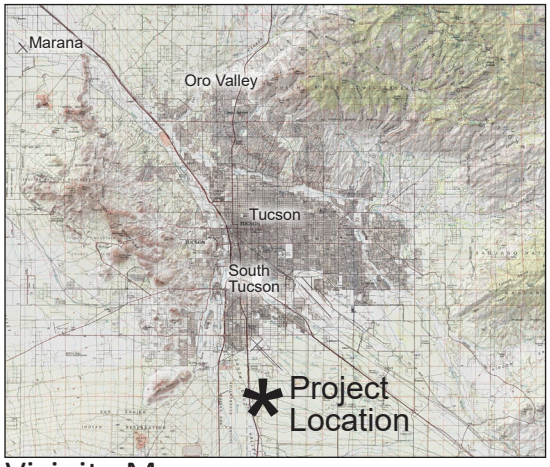
Key Observation Point (KOP) #1

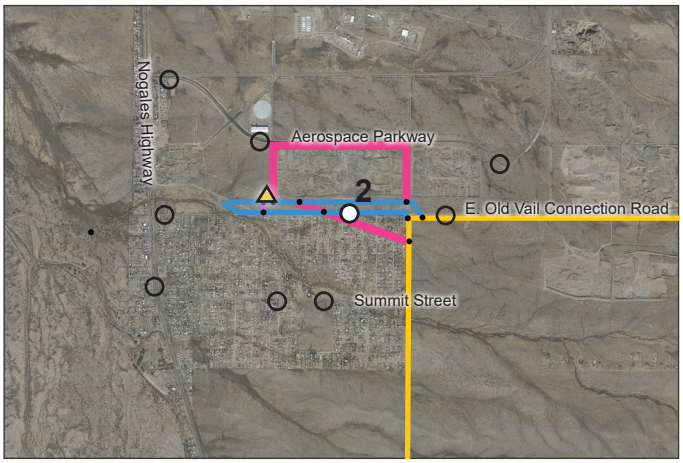
Existing Condition

Simulated Condition

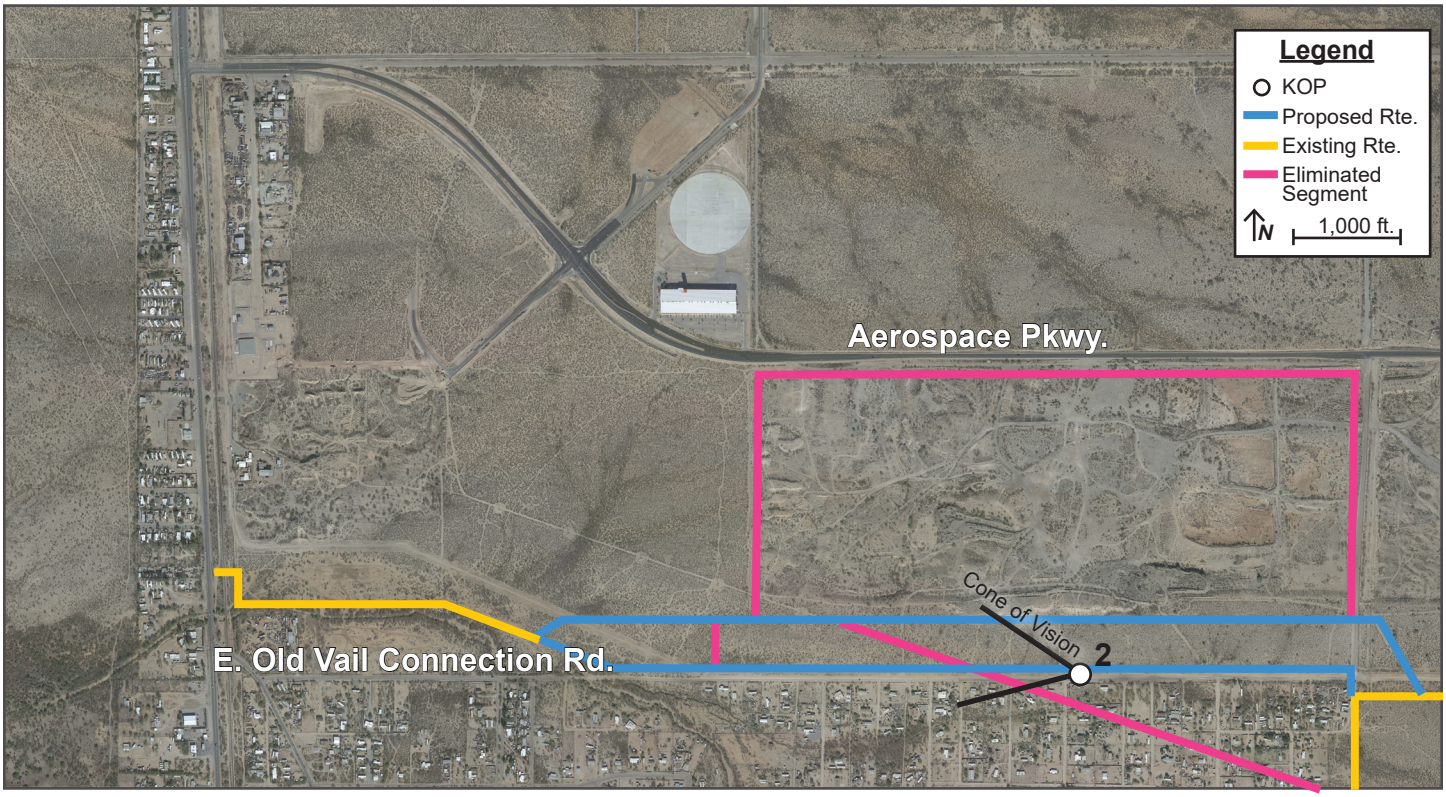
Key Observation Point (KOP) # 2



Vicinity Map



Project Map Enlargement



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 35mm | F-Stop: f/10 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residents
- Location: 2680 E Old Vail Rd
- Latitude: 32.075874° N; Longitude: 110.933893° W
- View Point Elevation at Eye Level: 2,642 ft.
- Looking: west
- Poles Visible: Pole Structures, Switchyard
- Image File Name: IMG_2574.JPG

Simulation Notes

- Photo Taken: August 5, 2023, 11:07 AM
- The image is based on a single photo and represents approximately 54 degree horizontal field of view.
- This view is approximately 690 feet east of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

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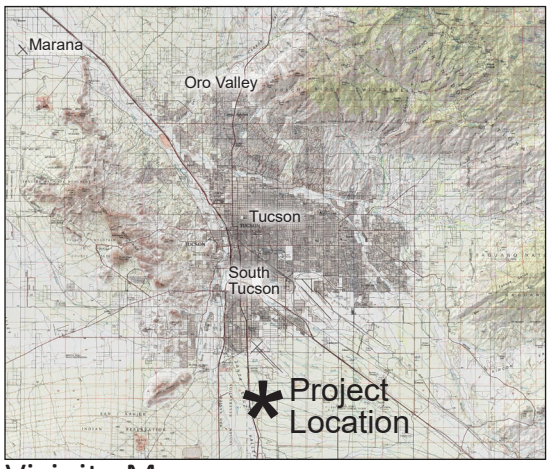
Key Observation Point (KOP) #2

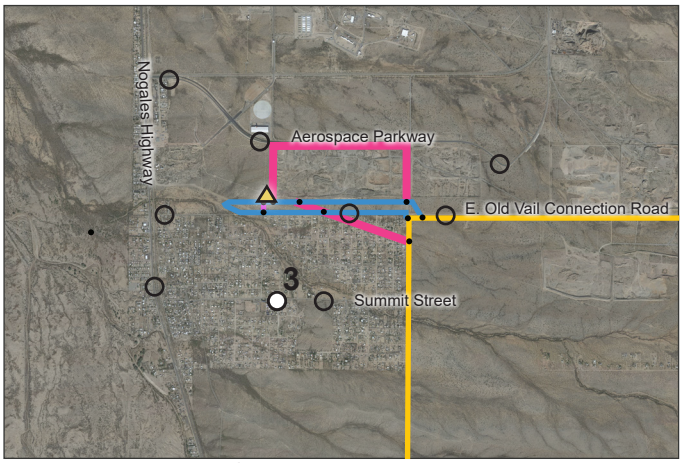
Existing Condition

Simulated Condition

Key Observation Point (KOP) # 3

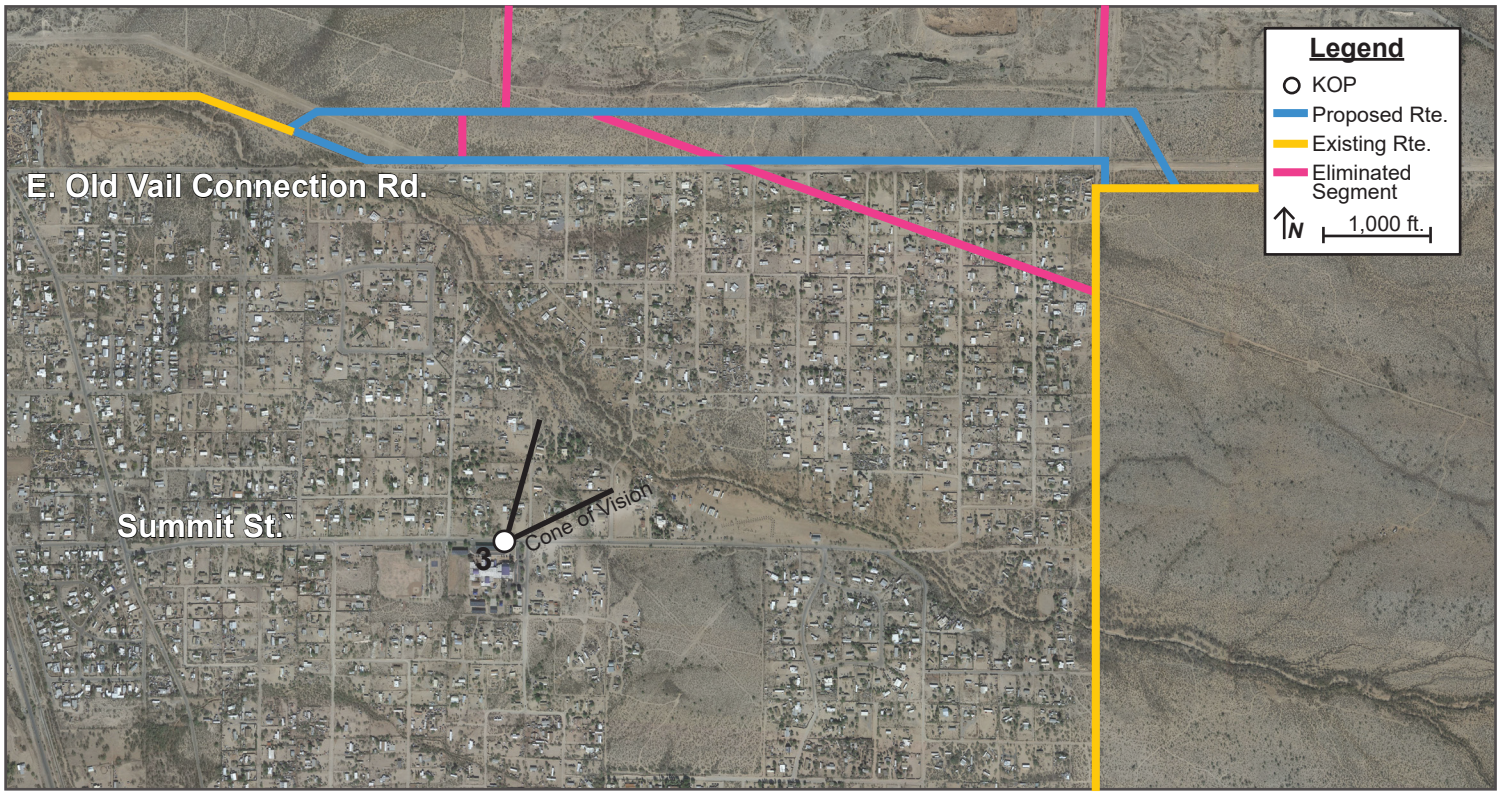


Vicinity Map



Project Map Enlargement

Legend
- Existing Transmission
- Proposed Route
- Eliminated Segment
- KOP
- Proposed Substation
- Proposed Switchyard



Notes:

Camera Information
- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 35mm | F-Stop: f/10 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP
- Representative View for: residents, and school visitors
- Location: 1961 E Summit St/ Summit View Elementary
- Latitude: 32.066979° N; Longitude: 110.943138° W
- View Point Elevation at Eye Level: 2,646 ft.
- Looking: northeast
- Poles Visible: Pole Structures
- Image File Name: IMG_2630.JPG

Simulation Notes
- Photo Taken: August 5, 2023, 11:26 AM
- The image is based on a single photo and represents approximately 54 degree horizontal field of view.
- This view is approximately 4,030 feet southwest of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

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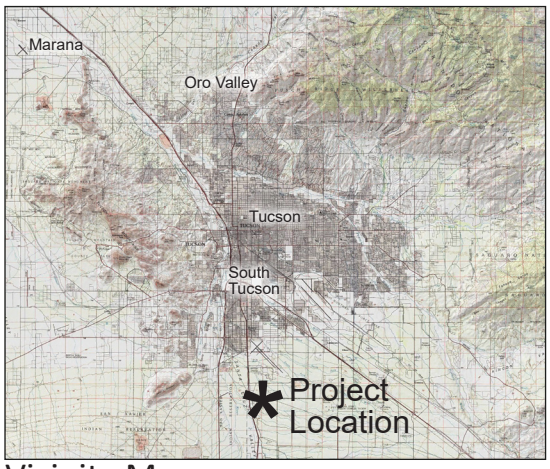
Key Observation Point (KOP) #3

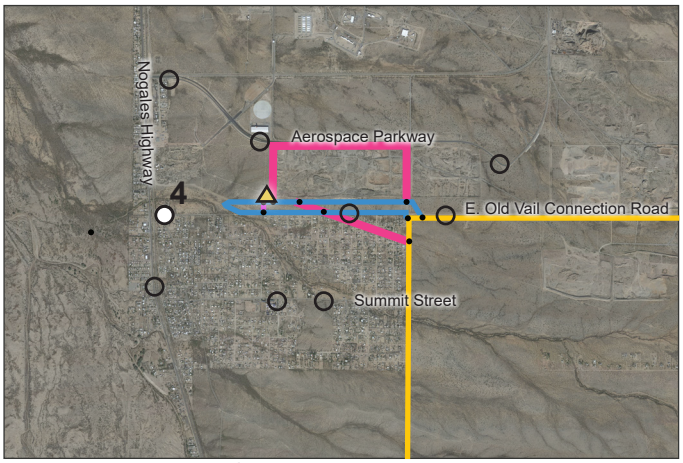
Existing Condition

Simulated Condition

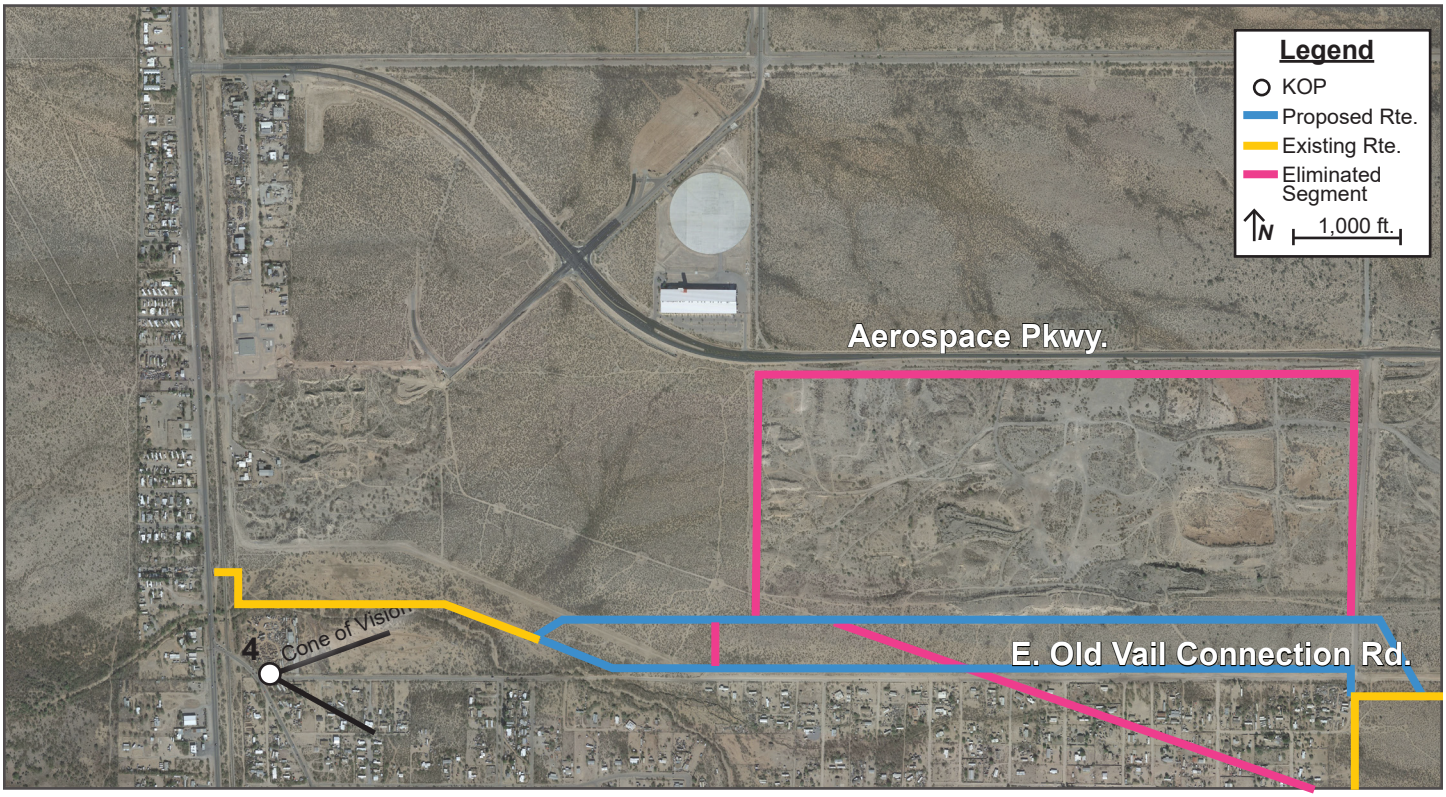
Key Observation Point (KOP) # 4



Vicinity Map



Project Map Enlargement



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: f/10 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residents
- Location: 1101 E Summit St
- Latitude: 32.075736° N; Longitude: 110.956981° W
- View Point Elevation at Eye Level: 2,587 ft.
- Looking: east
- Poles Visible: Pole Structures
- Image File Name: IMG_2524.JPG

Simulation Notes

- Photo Taken: August 5, 2023, 10:58 AM
- The image is based on a single photo and represents approximately 39.5 degree horizontal field of view.
- This view is approximately 2,388 feet west of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

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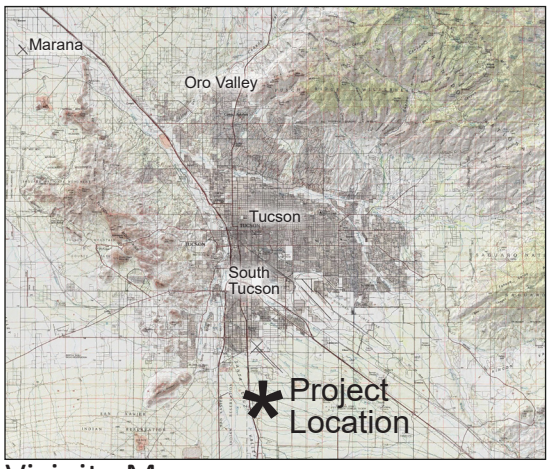
Key Observation Point (KOP) #4

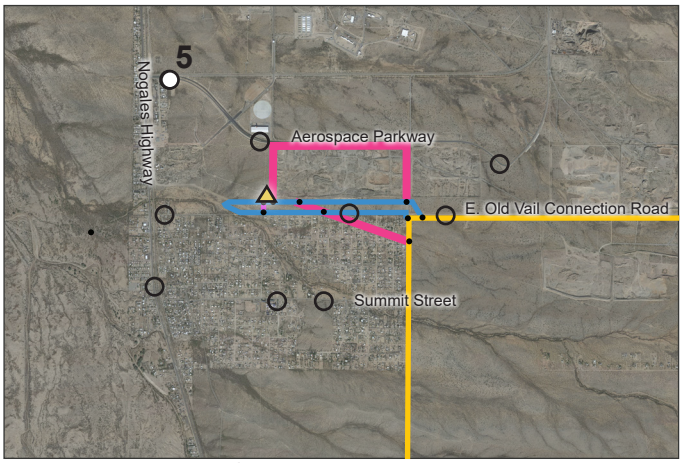
Existing Condition

Simulated Condition

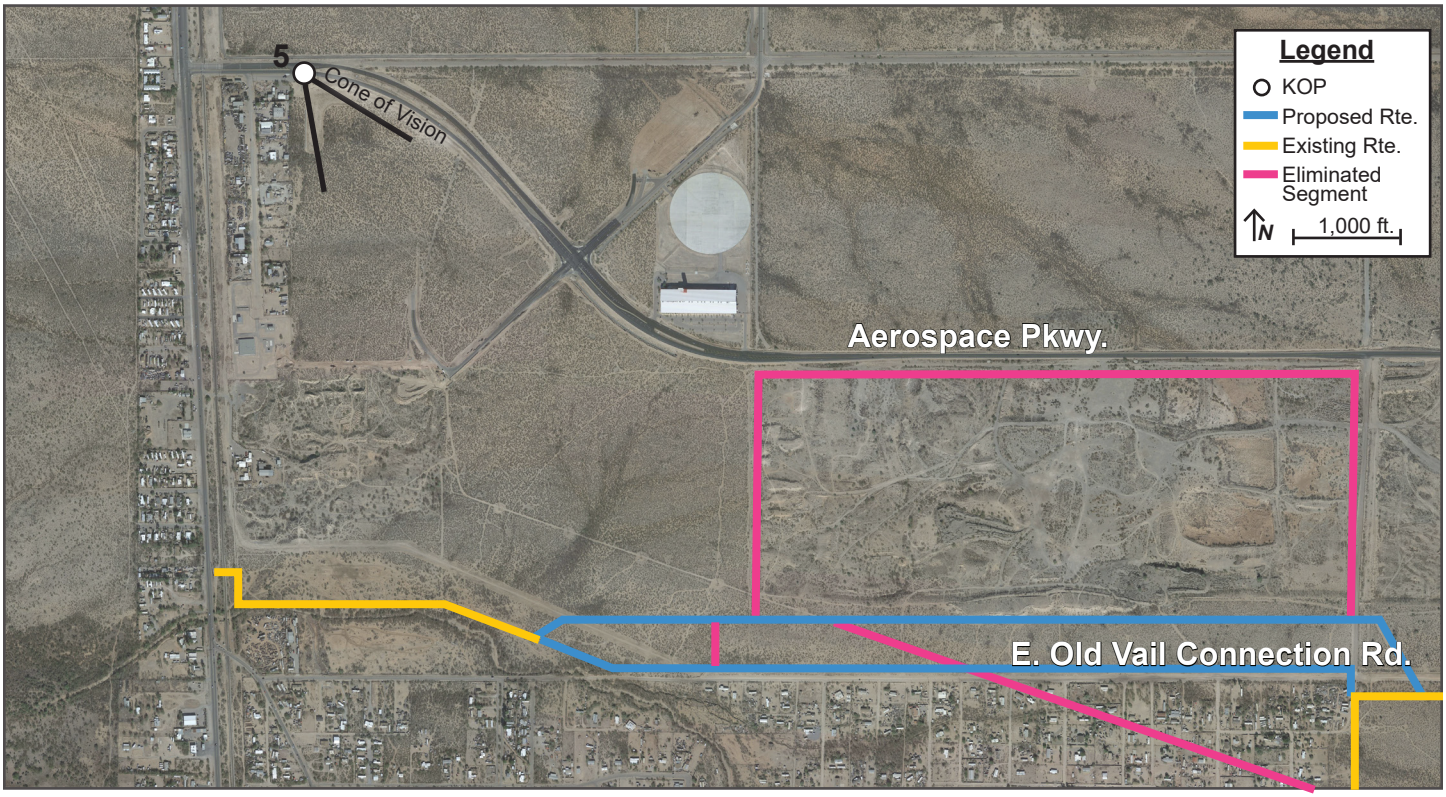
Key Observation Point (KOP) # 5



Vicinity Map



Project Map Enlargement



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 35mm | F-Stop: f/10 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residents, commuter
- Location: 964 Aerospace Pkwy
- Latitude: 32.090031° N; Longitude: 110.955978° W
- View Point Elevation at Eye Level: 2,596 ft.
- Looking: southeast
- Poles Visible: Pole Structures
- Image File Name: IMG_2353.JPG

Simulation Notes

- Photo Taken: August 5, 2023, 10:29 AM
- The image is based on a single photo and represents approximately 54 degree horizontal field of view.
- This view is approximately 5,331 feet northwest of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

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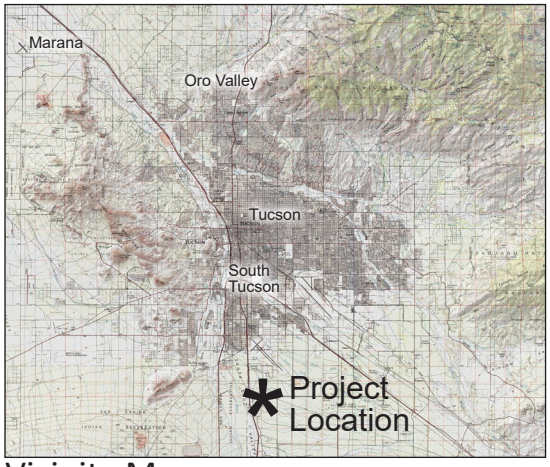
Key Observation Point (KOP) #5

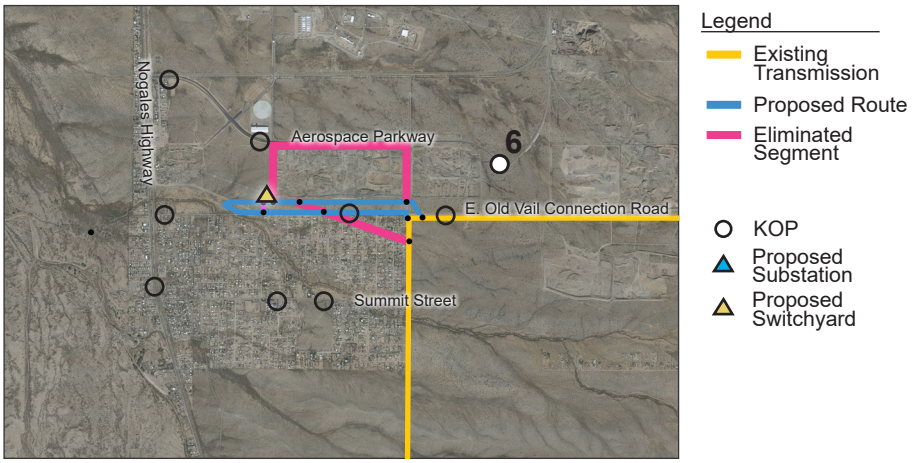
Existing Condition

Simulated Condition

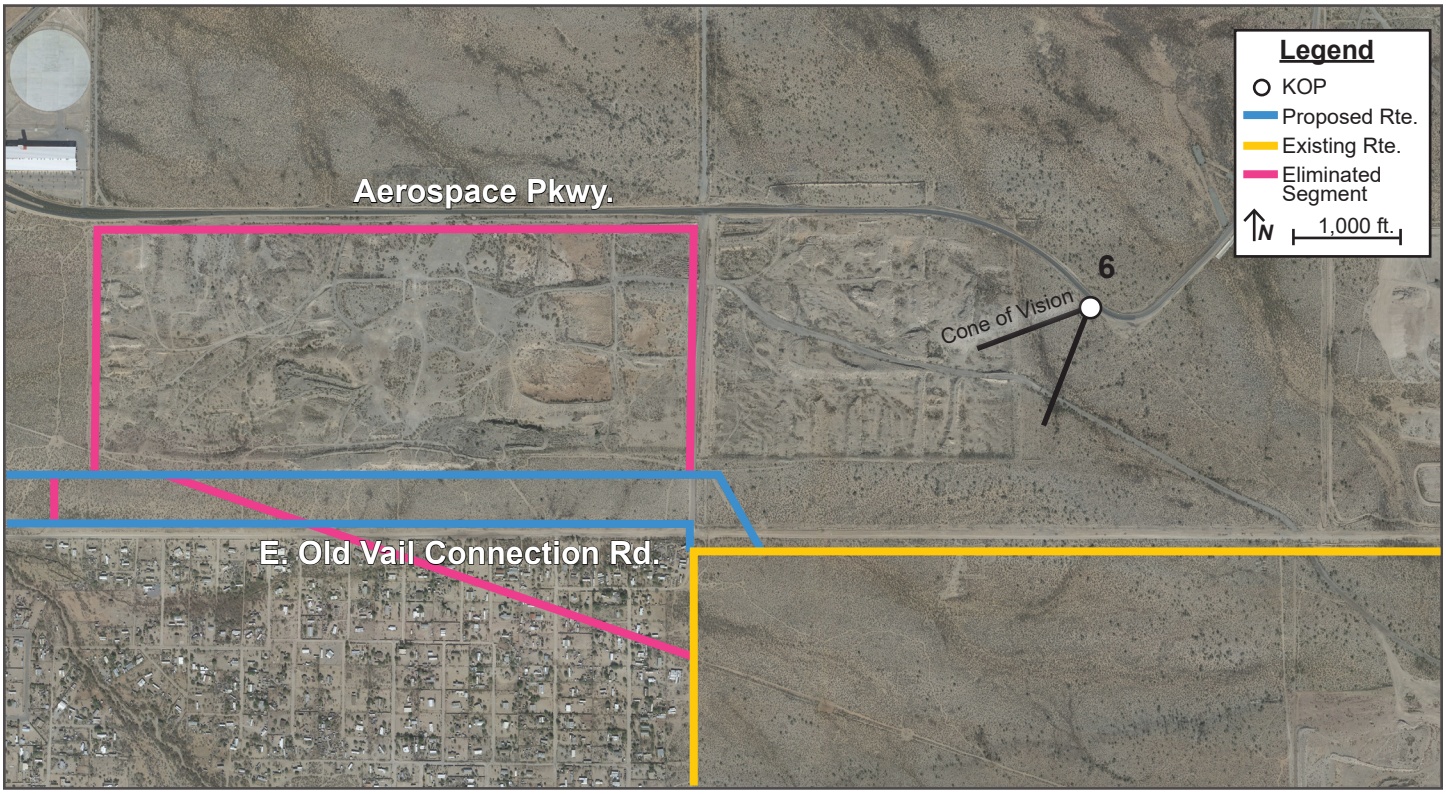
Key Observation Point (KOP) # 6



Vicinity Map



Project Map Enlargement



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: f/6.3 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residents, commuters, commercial
- Location: 3651 Aerospace Pkwy
- Latitude: 32.081220° N; Longitude:110.915699° W
- View Point Elevation at Eye Level: 2,690 ft.
- Looking: southwest
- Poles Visible: Pole Structures
- Image File Name: IMG_2457.JPG

Simulation Notes

- Photo Taken: August 5, 2023, 10:44 AM
- The image is based on a single photo and represents approximately 39.5 degree horizontal field of view.
- This view is approximately 3,369 feet northeast of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

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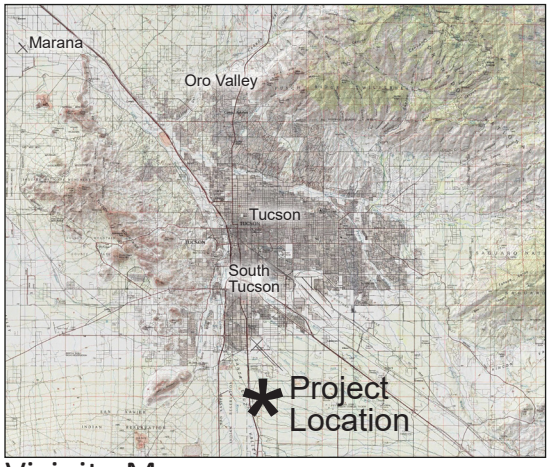
Key Observation Point (KOP) #6

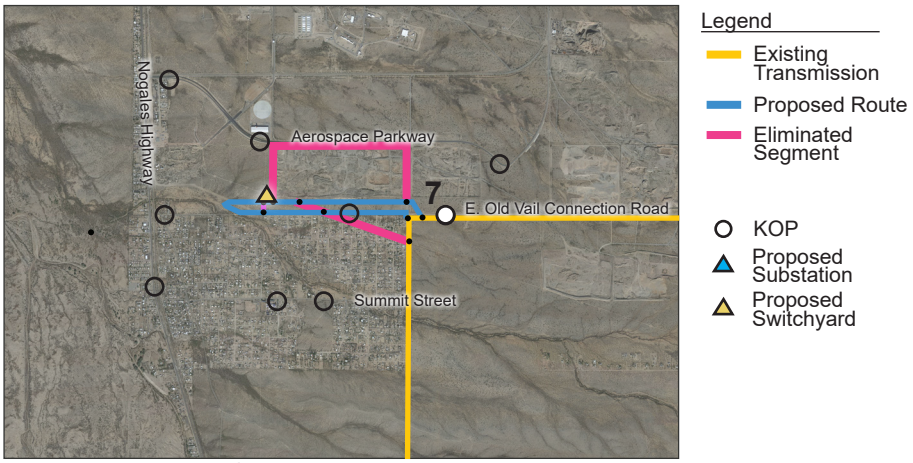
Existing Condition

Simulated Condition

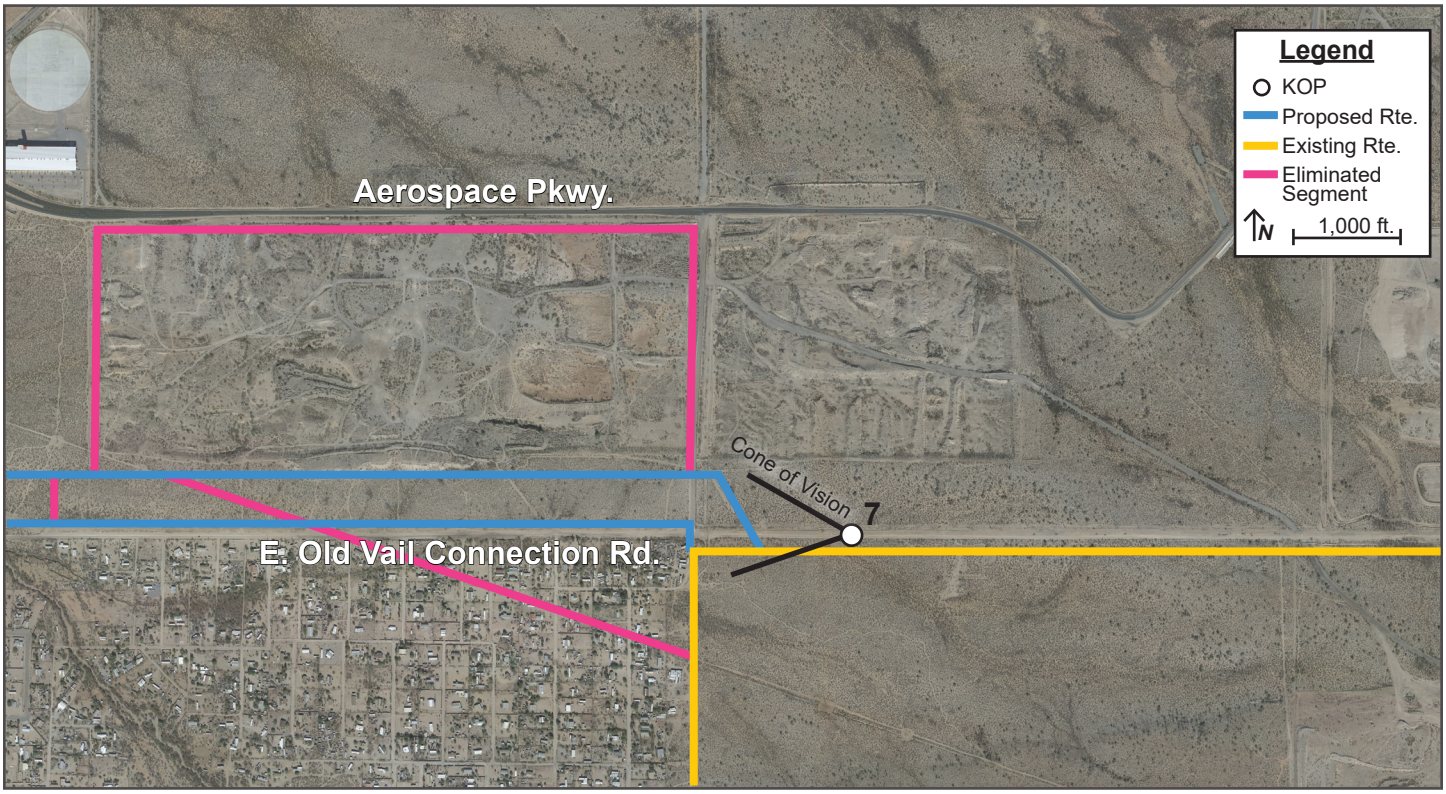
Key Observation Point (KOP) # 7



Vicinity Map



Project Map Enlargement



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 35mm | F-Stop: f/10 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residents, commercial
- Location: 3101 E Old Vail Rd
- Latitude: 32.075845° N; Longitude:110.922090° W
- View Point Elevation at Eye Level: 2,668 ft.
- Looking: west
- Poles Visible: Pole Structures
- Image File Name: IMG_2610.JPG

Simulation Notes

- Photo Taken: August 5, 2023, 11:14 AM
- The image is based on a single photo and represents approximately 54 degree horizontal field of view.
- This view is approximately 912 feet east of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

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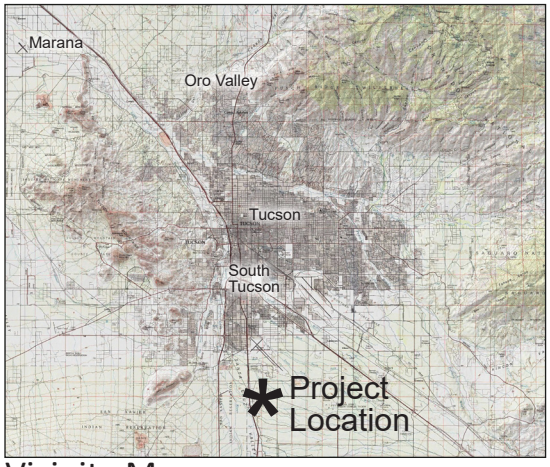
Key Observation Point (KOP) #7

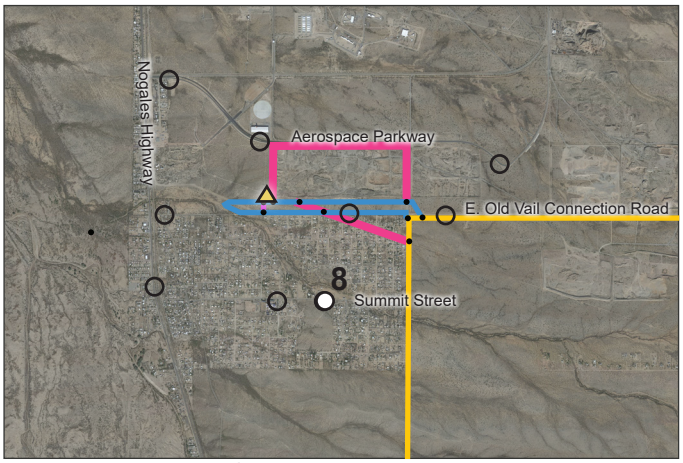
Existing Condition

Simulated Condition

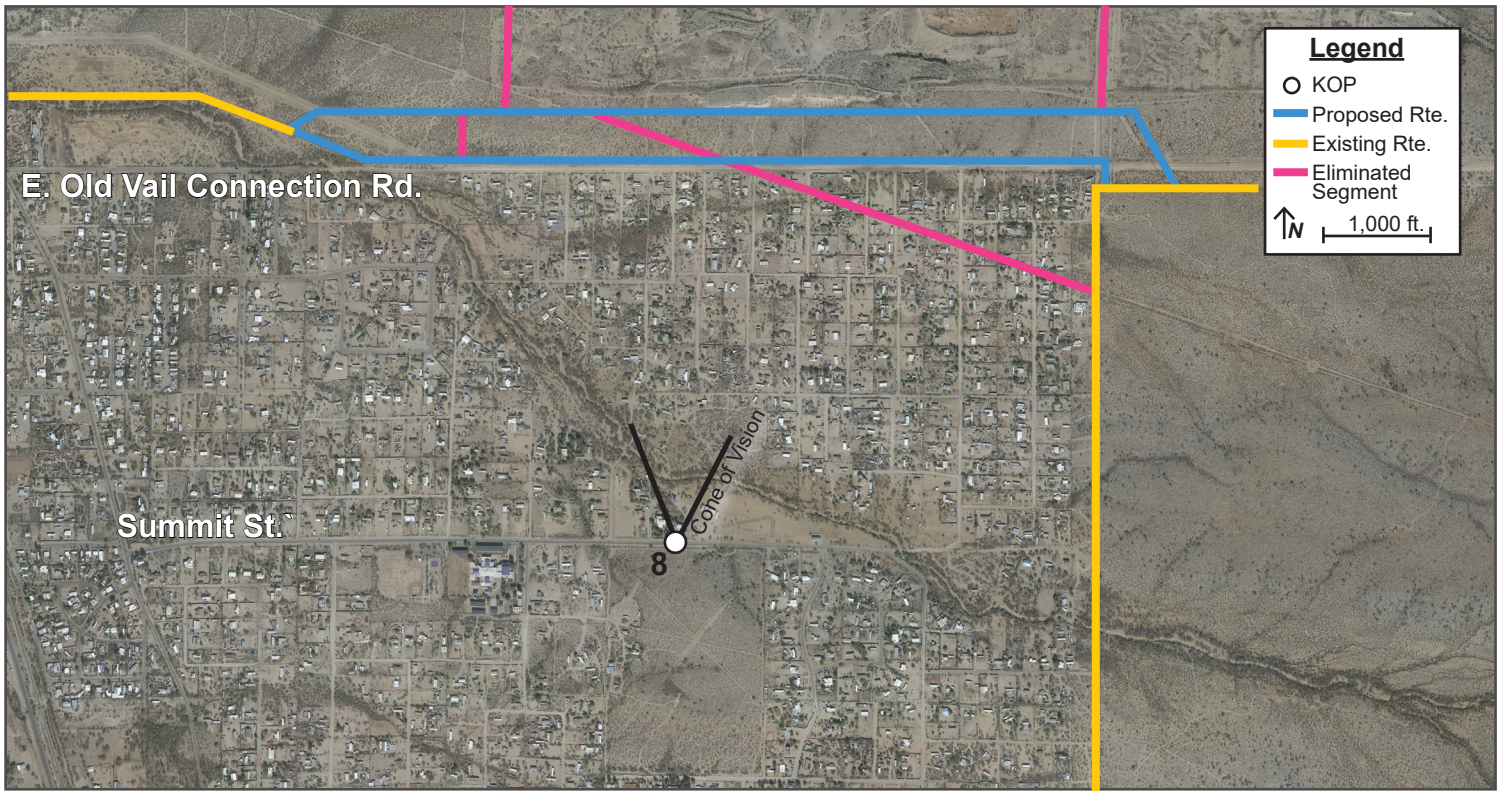
Key Observation Point (KOP) # 8



Vicinity Map



Project Map Enlargement



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 35mm | F-Stop: f/9 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residents
- Location: 2355 E Summit St
- Latitude: 32.066939° N; Longitude: 110.937235° W
- View Point Elevation at Eye Level: 2,644 ft.
- Looking: north
- Poles Visible: Pole Structures
- Image File Name: IMG_2649.JPG

Simulation Notes

- Photo Taken: August 5, 2023, 11:31 AM
- The image is based on a single photo and represents approximately 54 degree horizontal field of view.
- This view is approximately 3,581 feet south of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

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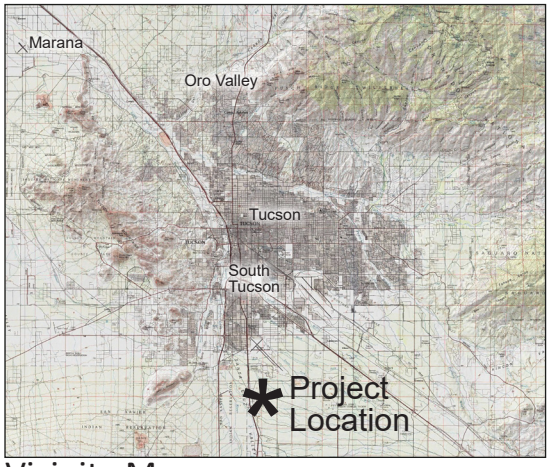
Key Observation Point (KOP) #8

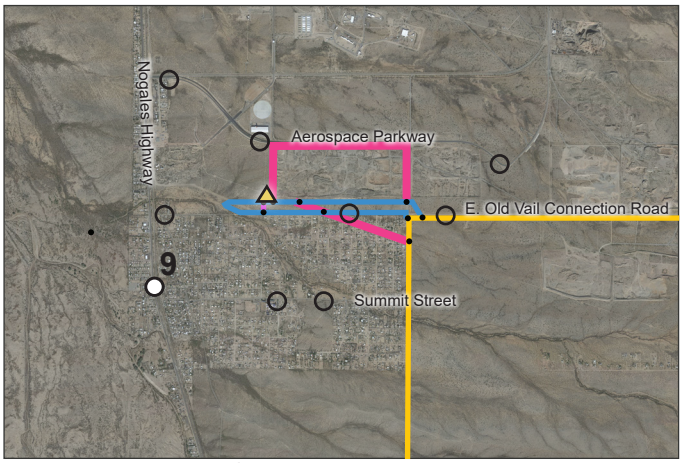
Existing Condition

Simulated Condition

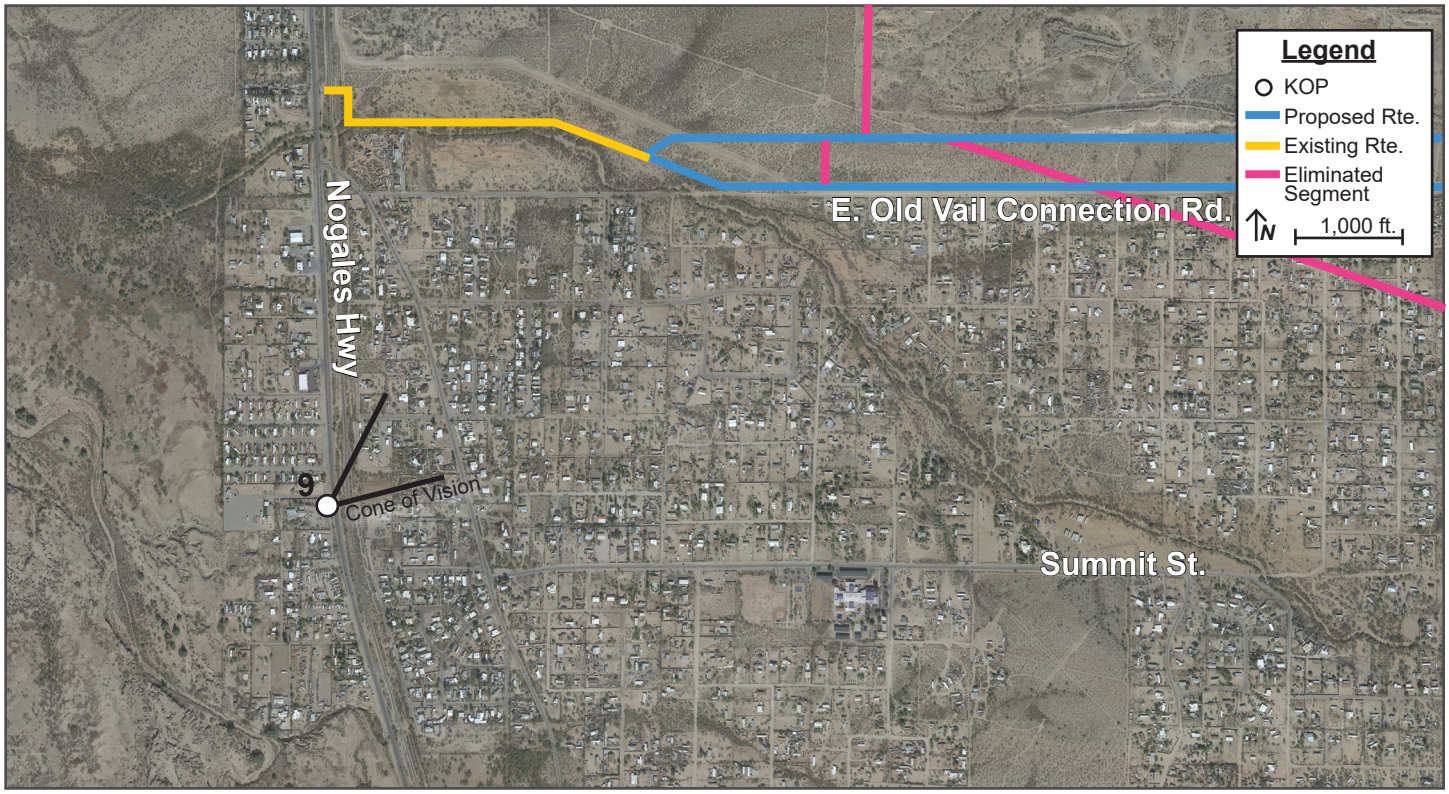
Key Observation Point (KOP) # 9



Vicinity Map



Project Map Enlargement



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: f/10 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: temple visitors, commercial
- Location: 10049 S Nogales Hwy
- Latitude: 32.068406° N; Longitude: 110.958424° W
- View Point Elevation at Eye Level: 2,599 ft.
- Looking: northeast
- Poles Visible: Pole Structures
- Image File Name: IMG_2694.JPG

Simulation Notes

- Photo Taken: August 5, 2023, 11:45 AM
- The image is based on a single photo and represents approximately 39.5 degree horizontal field of view.
- This view is approximately 4,091 feet southwest of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

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Key Observation Point (KOP) #9

Existing Condition

Simulated Condition