U.S. 54 Bridge (025) over the Walnut River Discovery Summary

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Project Location Map

The potential project area concerns the replacement of the U.S. 54 Bridge (025) over the Walnut River, located on the eastern edge of the City of El Dorado, Kansas.

Purpose and Need

The effective and efficient replacement of the existing U.S. 54 Bridge (025) with a sustainable design that addresses the functional and structural needs of KDOT, Butler County, El Dorado and the greater region. To address the purpose, the following tasks were identified and completed by the project team:

Data Collection

Design Survey

Hydrologic & Hydraulic Analysis

Stakeholder & Public Involvement

Traffic Analysis

Alternative Development & Evaluation

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Project Alignments

The project team identified and evaluated three (3) U.S. 54 east-west alignments.

- **On existing alignment**
- **Bridge replacement offset either north and/or south of the existing structure**
- **U.S. 54 bypass alignment with southern connection to U.S. 77**

Alternatives Considered

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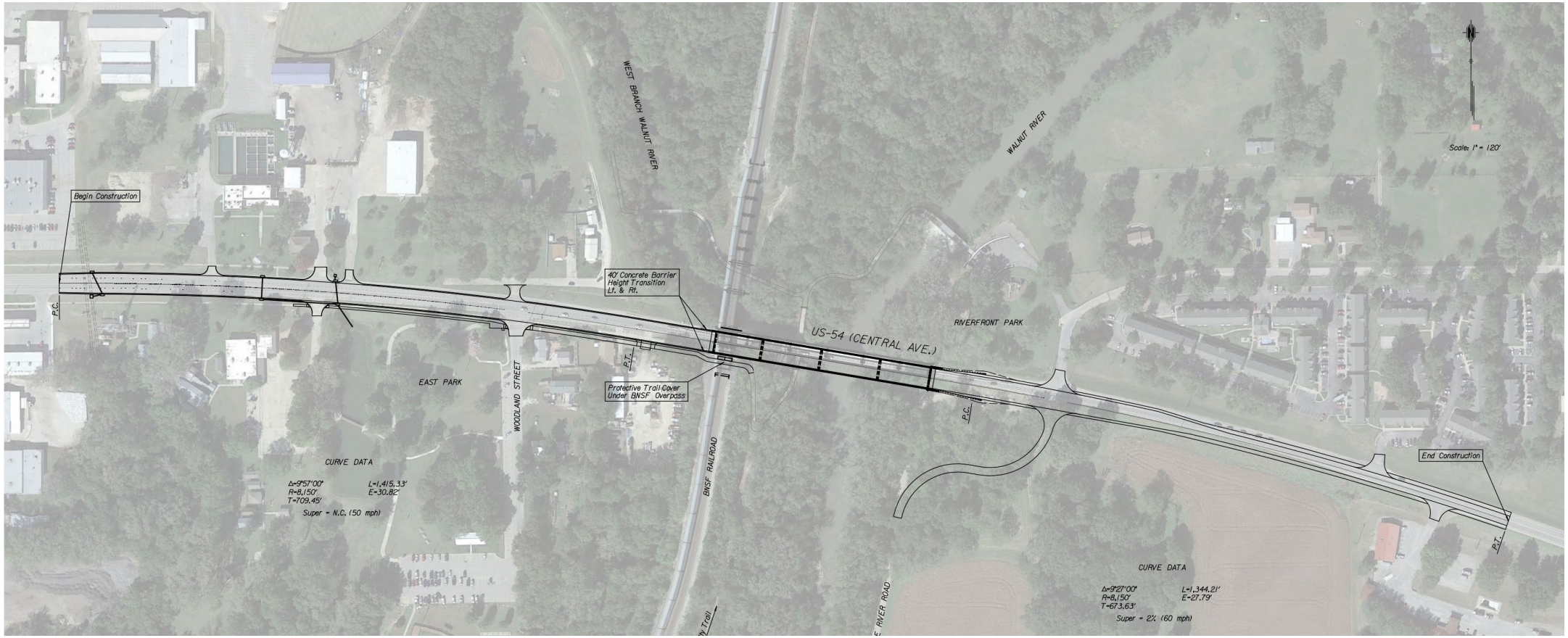
Alternative 1 - Single Bridge

(4-lane Configuration)



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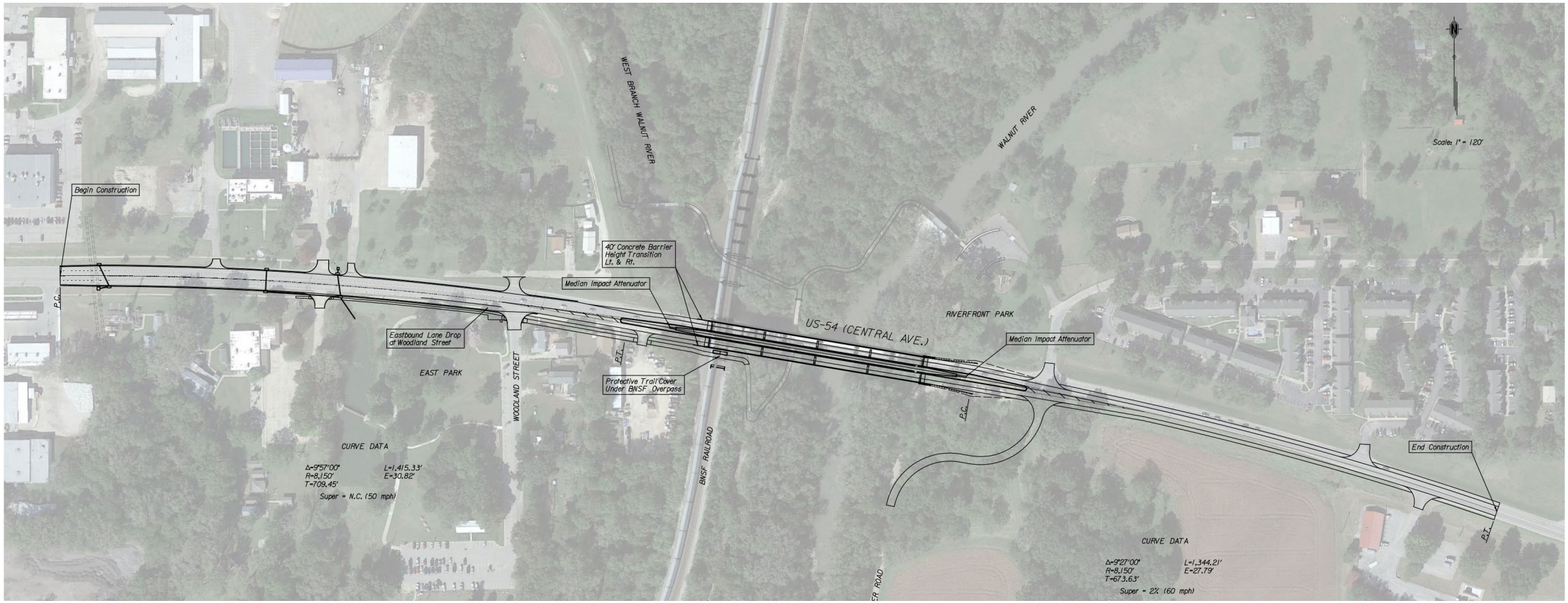
Alternative 2 - Twin Bridge

(1-lane Configuration/Bridge)



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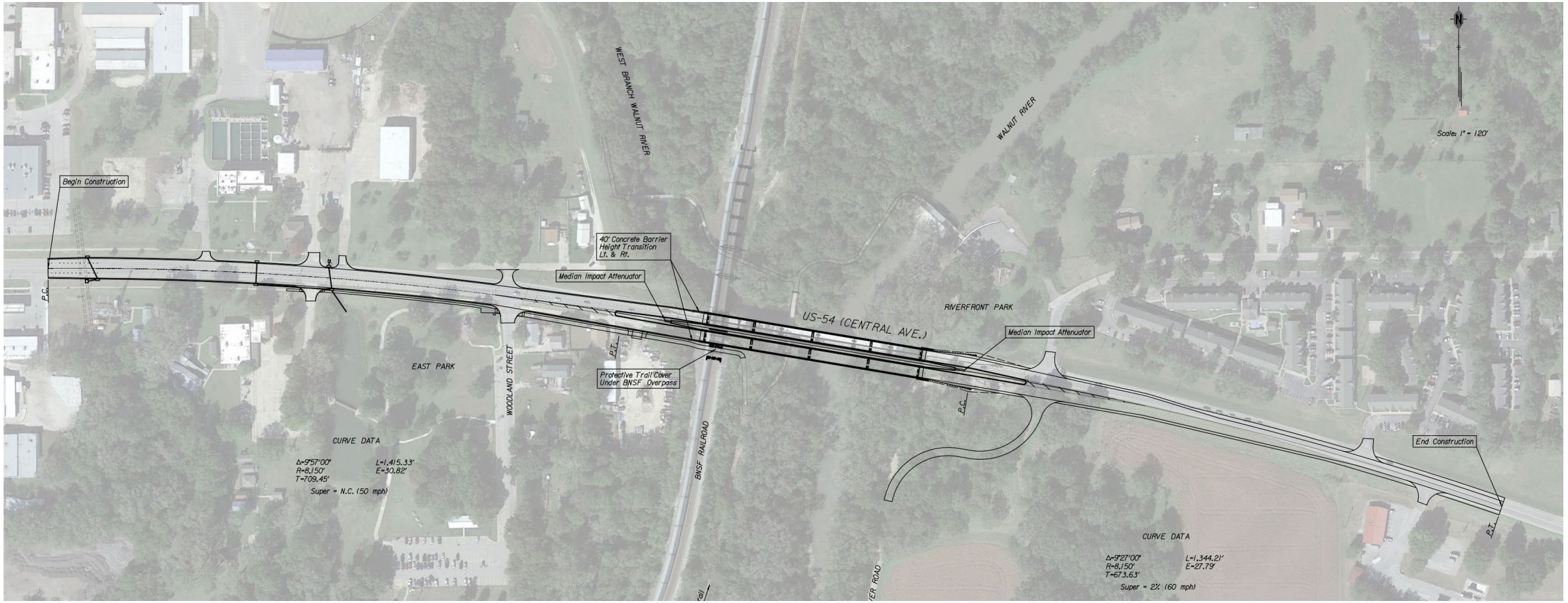
Alternative 3 - Twin Bridge

(2-lane Configuration/Bridge)



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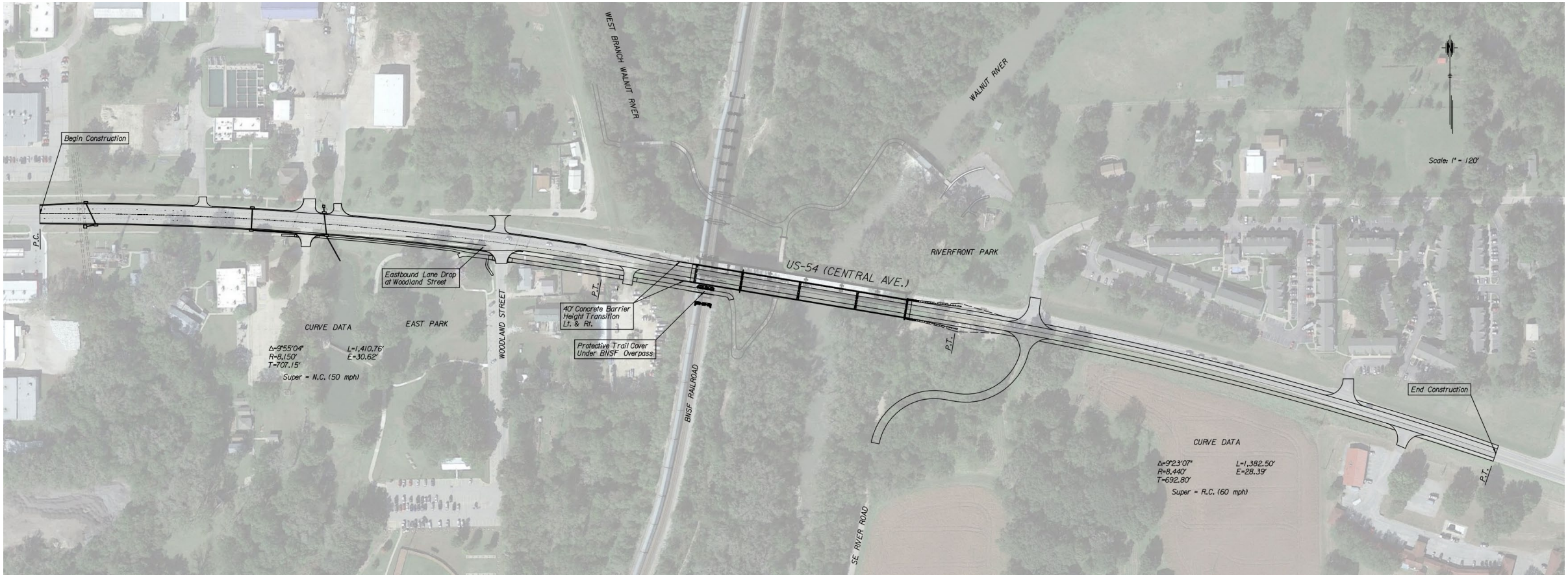
Alternative 4 – Single Bridge

(2-lane configuration)



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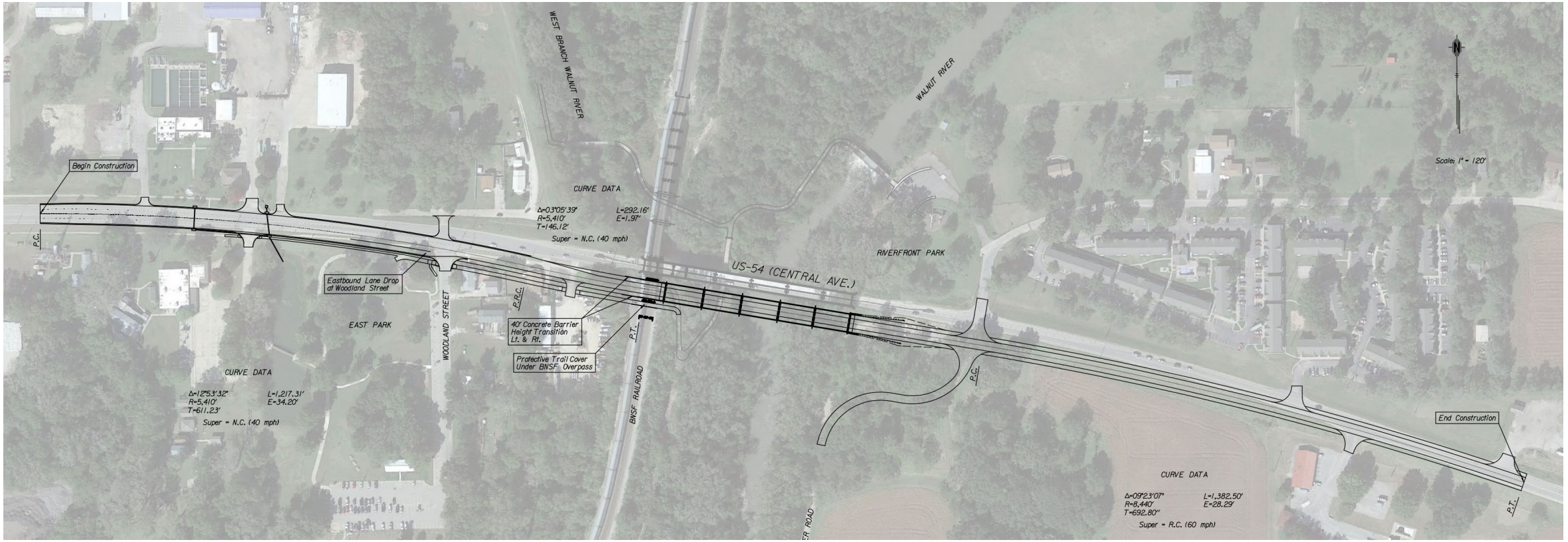
Alternative 5 – Single Bridge South Offset

(2-lane configuration)



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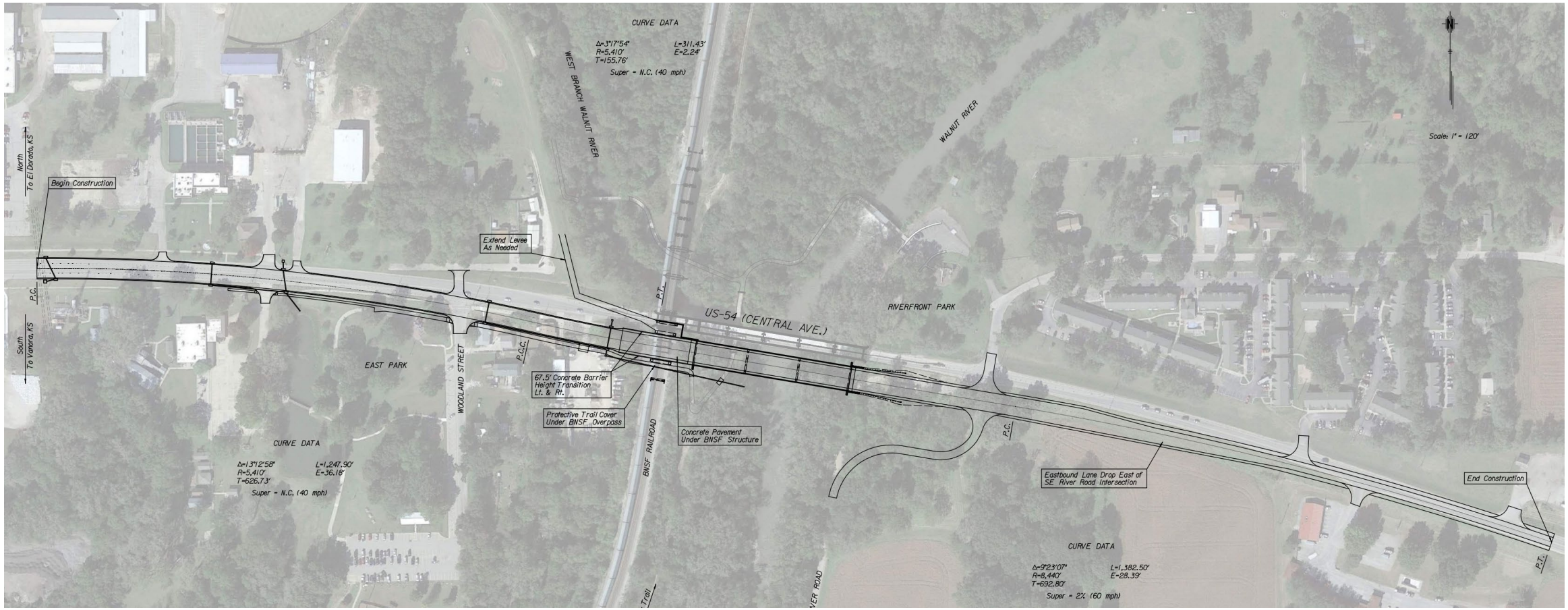
Alternative 6 Single Bridge South Offset

(4-lane configuration)



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Study Recommendations

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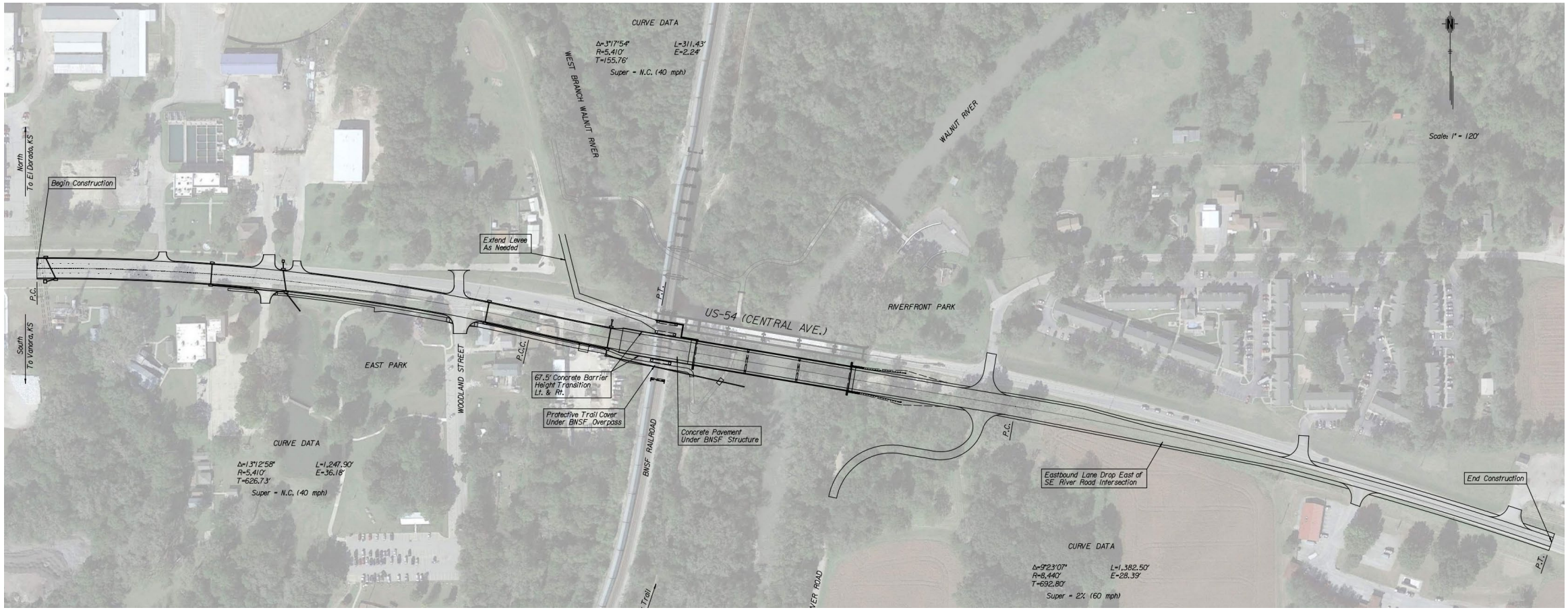
Alternative 6 Single Bridge South Offset

(4-lane configuration)



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Alternative 6 Single Bridge South Offset

(4-lane configuration)

The proposed U.S. 54 bridge lanes would be built to the south of the existing U.S. 54 lanes.

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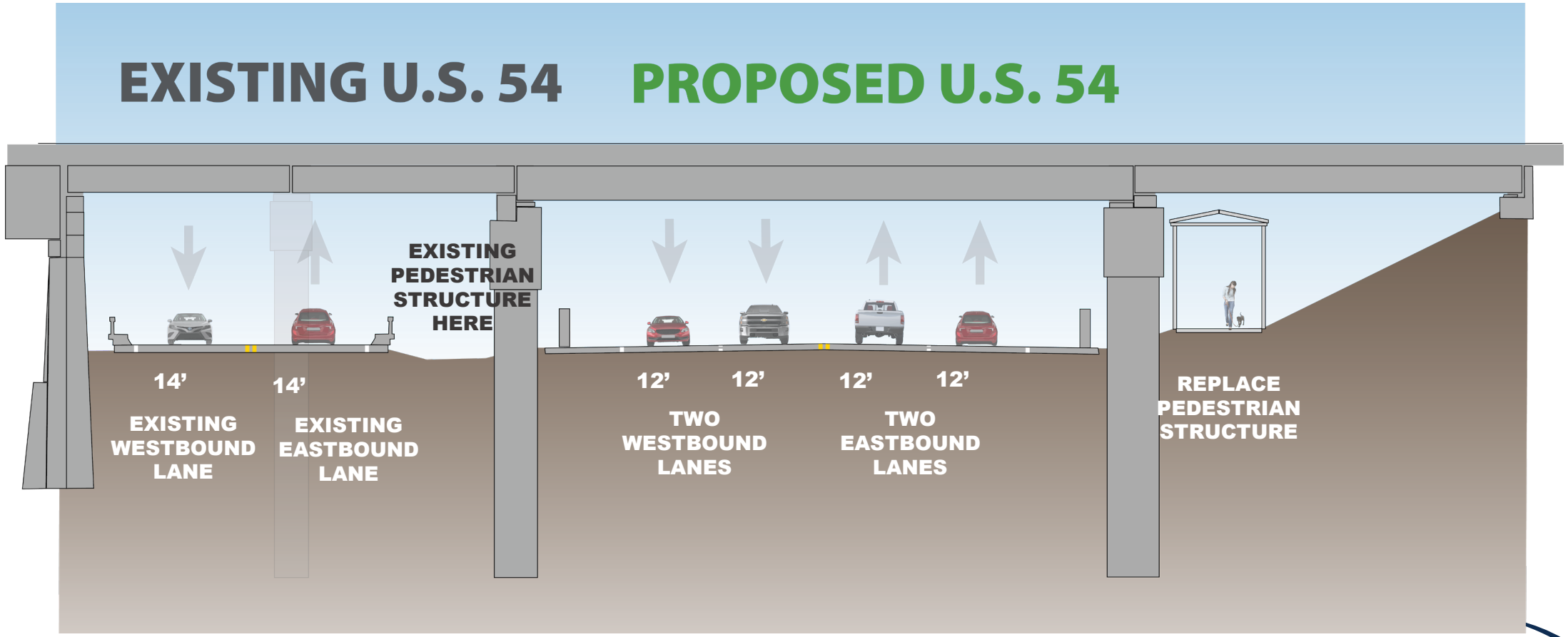
Alternative 6 Single Bridge South Offset

(4-lane configuration)



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Reasons Alternative 6 Selected

- Concepts developed and evaluations of projected traffic
- Traffic requirements for long-term bridge maintenance
- Horizontal and vertical clearances
- Hydraulic demands
- Anticipated cost

Thank you!

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