

# WELCOME

## Public Meeting Open House

# DRAFT PURPOSE AND NEED

The project team drafted the following preliminary purpose statement that can be further developed as the study progresses. The intent of this statement is to:



1. Solicit your input to help the project team better understand corridor and intersection issues
2. Use the input to refine the final purpose and need statements to comply with the National Environmental Policy Act (NEPA)

## PROJECT PURPOSE:

To improve traffic operations and geometric performance of the Exit 133 interchange and U.S. 14B between its intersection with 22nd Avenue and U.S. 14

## PROJECT GOALS:

*Desired project outcomes beyond the transportation issues identified in the Purpose and Need and balance environmental and transportation values*

- 1) Accommodation of Longer Combination Trucks (LCVs)
- 2) Accommodation of City of Brookings Bicycle Master Plan
- 3) Compatibility with Intelligent Transportation Systems

## PROJECT NEEDS:

*The primary “drivers” of the project and reflect the fundamental reasons why the project is being pursued*

- **Traffic operations:** Forecasted traffic volumes indicate capacity needs at the Exit 133 interchange and along the U.S. 14 Bypass through the 2050 Planning Horizon. The identified need from the planning process is a capacity deficiency, requiring that the Exit 133 interchange operate at least LOS “C” and other U.S. 14 Bypass intersections operate at least LOS “D”. The expected 2050 traffic volumes will cause intersection operations to exceed these values.
- **Geometric performance:** Existing Exit 133 geometric elements, including minimum radii, maximum degree of curvature, minimum right/left shoulder width, and inslope support improvements to meet current SDDOT Road Design Manual guidelines. Bridge function is also hindered due to the narrow width of the existing structure, which restricts full development of left turn lanes at ramp terminal intersections.
- **U.S. 14B structure condition:** According to the Structure Inventory and Appraisal report (SIA) completed in 2022, the bridge’s superstructure, substructure, deck, structure approach and bridge post are rated a “Fair” condition, meaning they are structurally sound but have minor section loss. The SIA also indicated that the structure is of substandard width and has substandard lateral clearance. The substandard width will also impact traffic operations as proper turn lanes currently cannot be incorporated on the structure, particularly for truck traffic.  
  
The SIA recommends structure replacement due to age, girder condition, overlay, substandard geometrics, and that the structure is near end of its useful life.

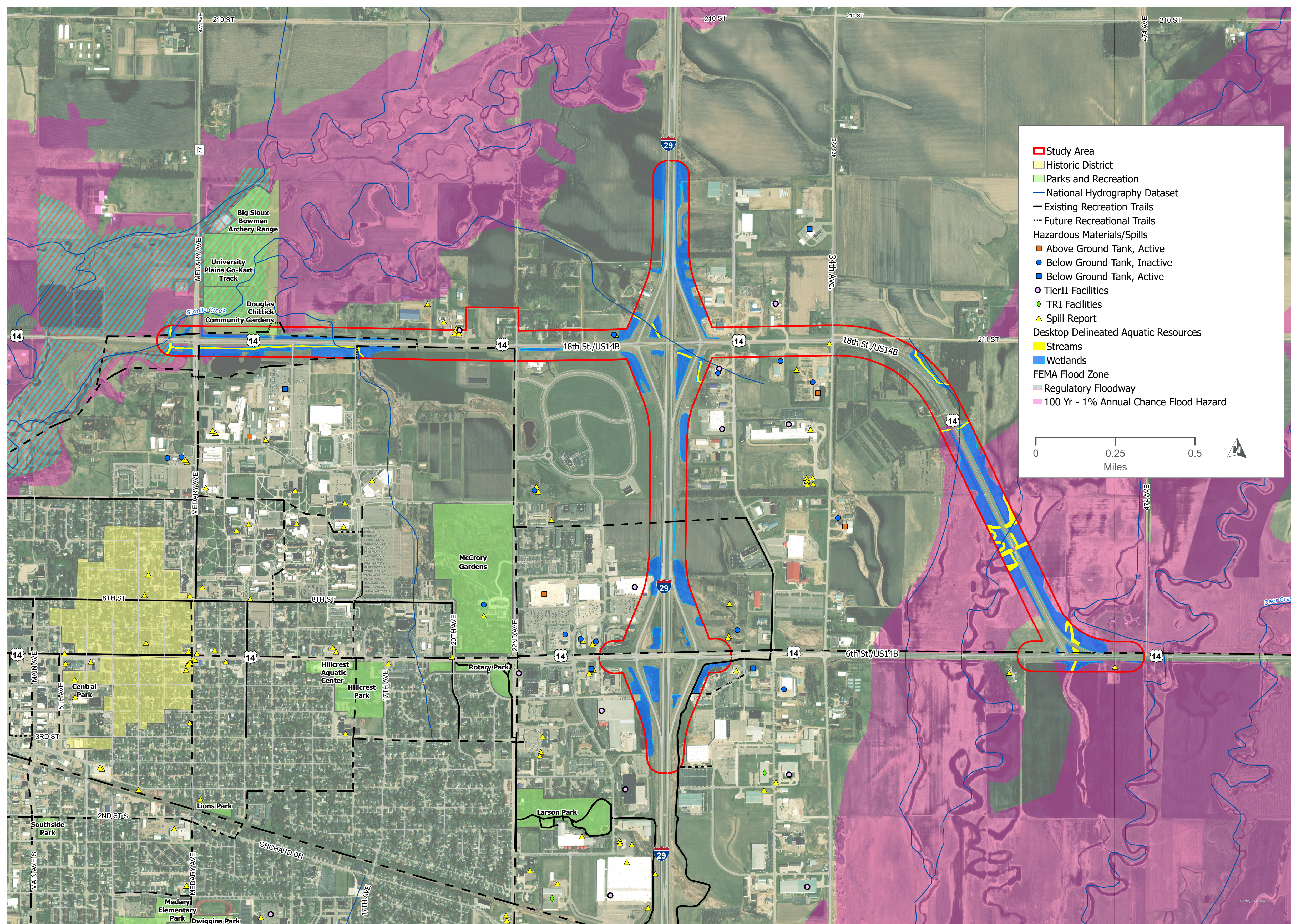




# I-29 | Exit 133

Interchange Modification Study

# ENVIRONMENTAL CONSIDERATIONS



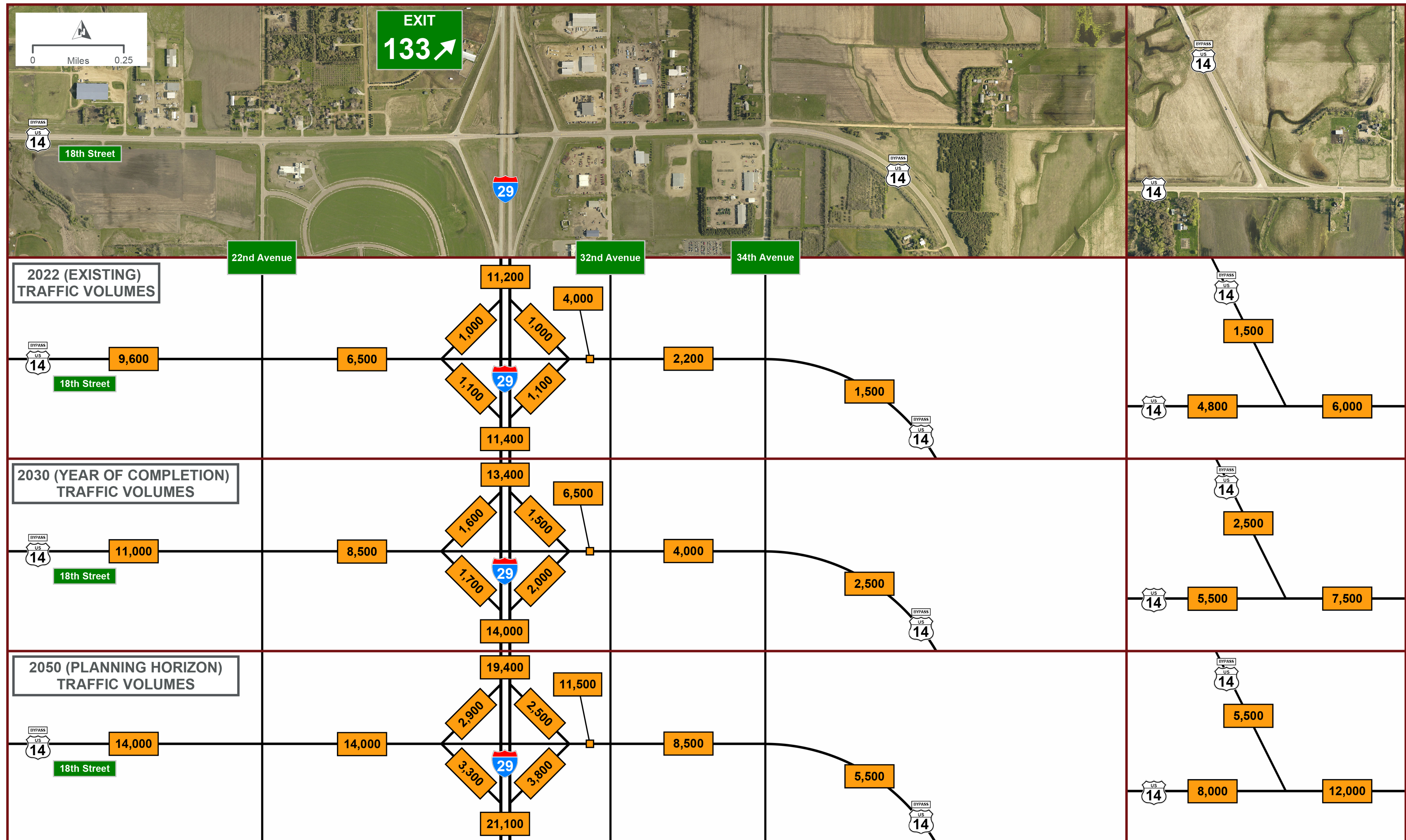




# I-29 | Exit 133

Interchange Modification Study

## DAILY TRAFFIC VOLUMES

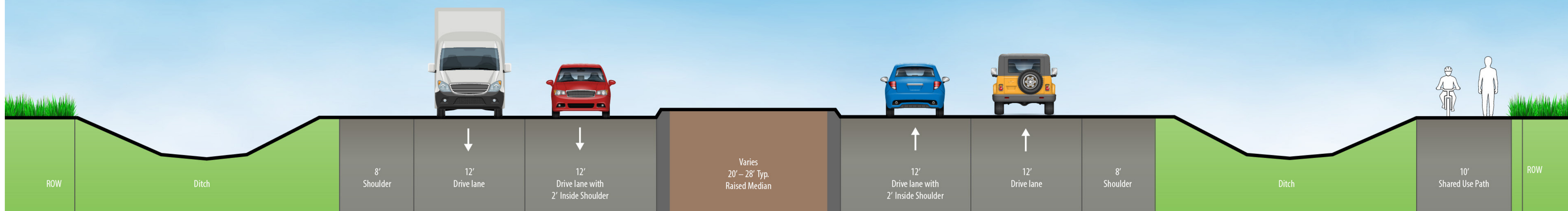




## 3-Lane Section



## 4-Lane (Multilane) Divided Section





INTERSTATE

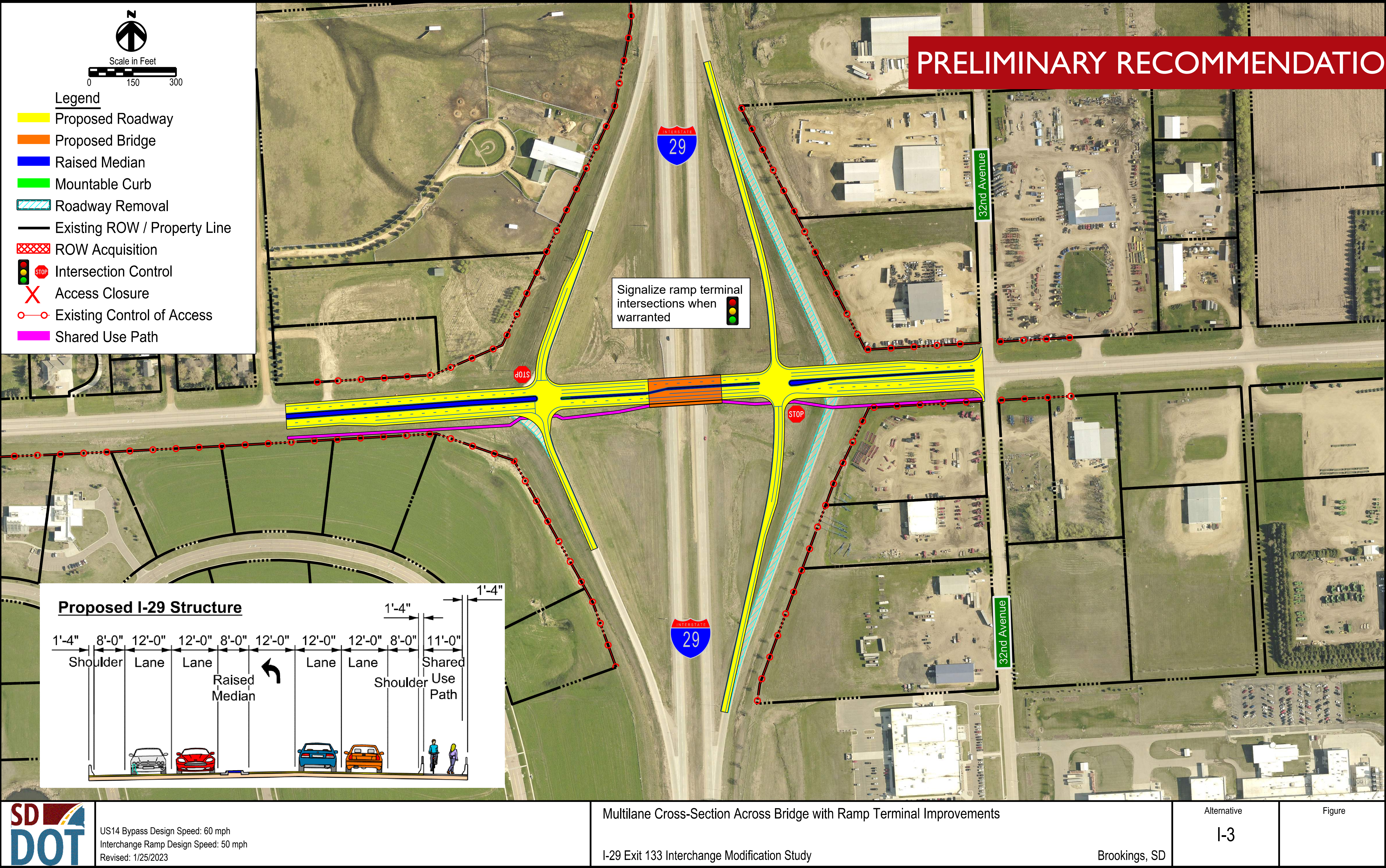
29

I-29 | Exit 133

Interchange Modification Study

I-29 EXIT 133 INTERCHANGE | Multilane Bridge

Multilane Bridge





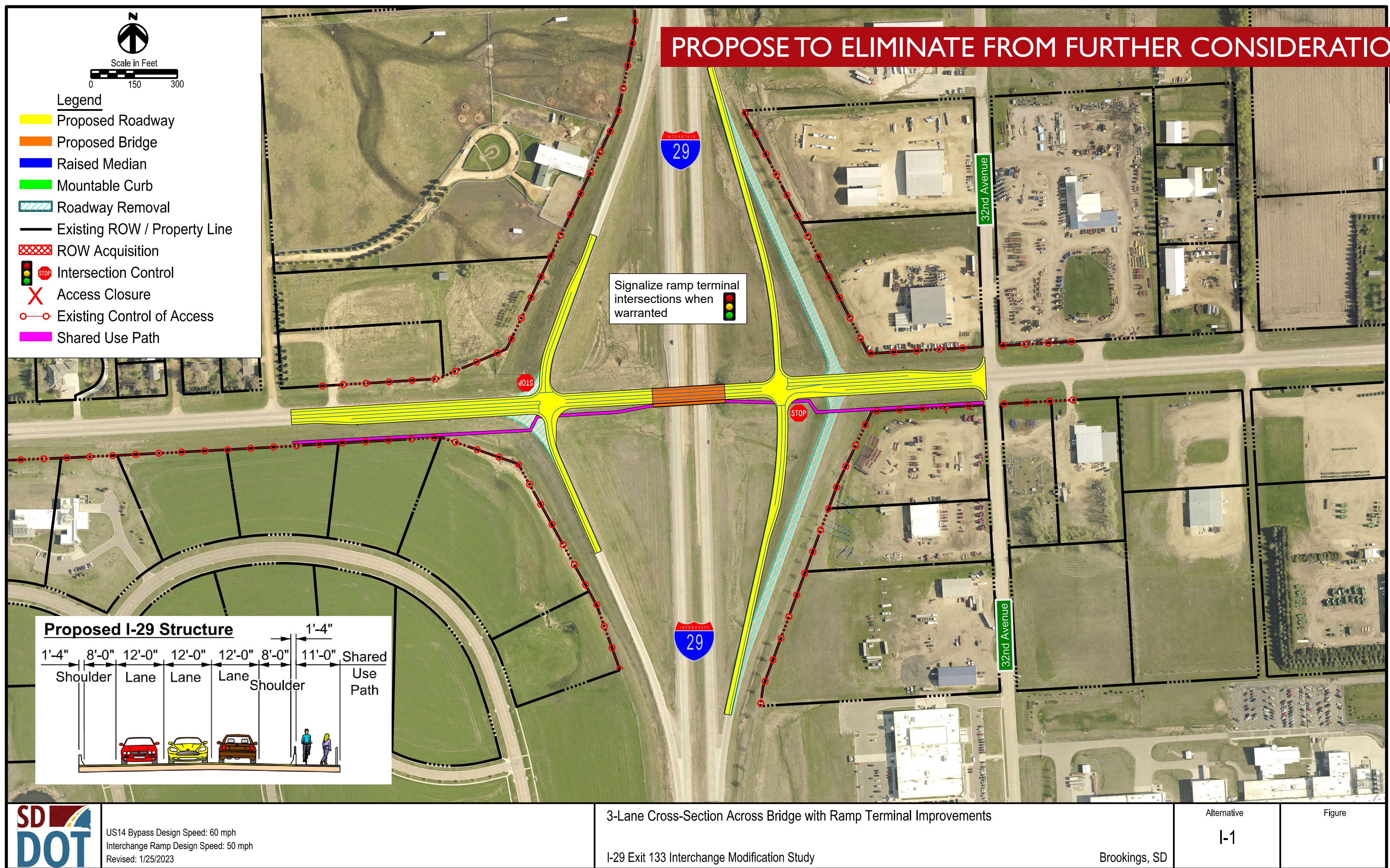


# I-29 | Exit 133

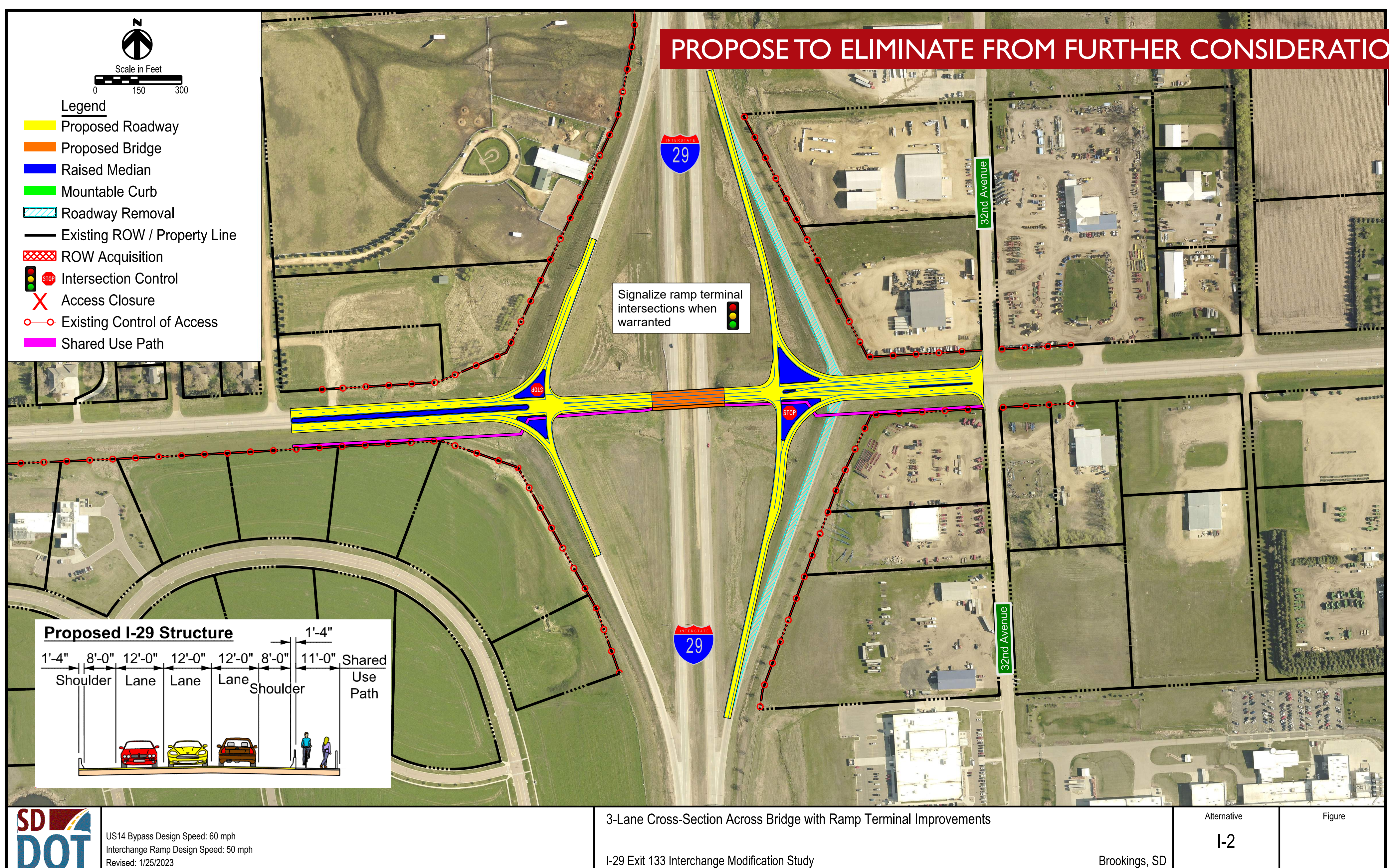
Interchange Modification Study

# I-29 EXIT 133 INTERCHANGE

## 3-Lane Bridge



## 3-Lane Bridge





I-29 EXIT 133 INTERCHANGE ALTERNATIVES EVALUATION MATRIX

Alt.	Description	Conformance with Plans	Compliance with Design Guidelines	Operational Performance	Safety	Environmental Impacts	Constructability & MOT	Other Traffic Considerations
I-1	Modified Diamond – 3-Lane Bridge <i>3-Lane US14 Bypass Corridor</i>	4	<u>5</u>	3	4	<u>5</u>	4	3
I-2	Modified Diamond – 3-Lane Bridge <i>Multilane US14 Bypass Corridor</i>	4	<u>5</u>	3	3	<u>5</u>	4	3
I-3	Modified Diamond – Multilane Bridge <i>Multilane US14 Bypass Corridor</i>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	4	<u>5</u>
NB	No Build	1	1	2	3	<u>5</u>	<u>5</u>	1

Rating of 3 or above indicates the respective measure meets study goals, is a benefit to the interchange, and/or exhibits minimal impact.  
MOT: maintenance of traffic

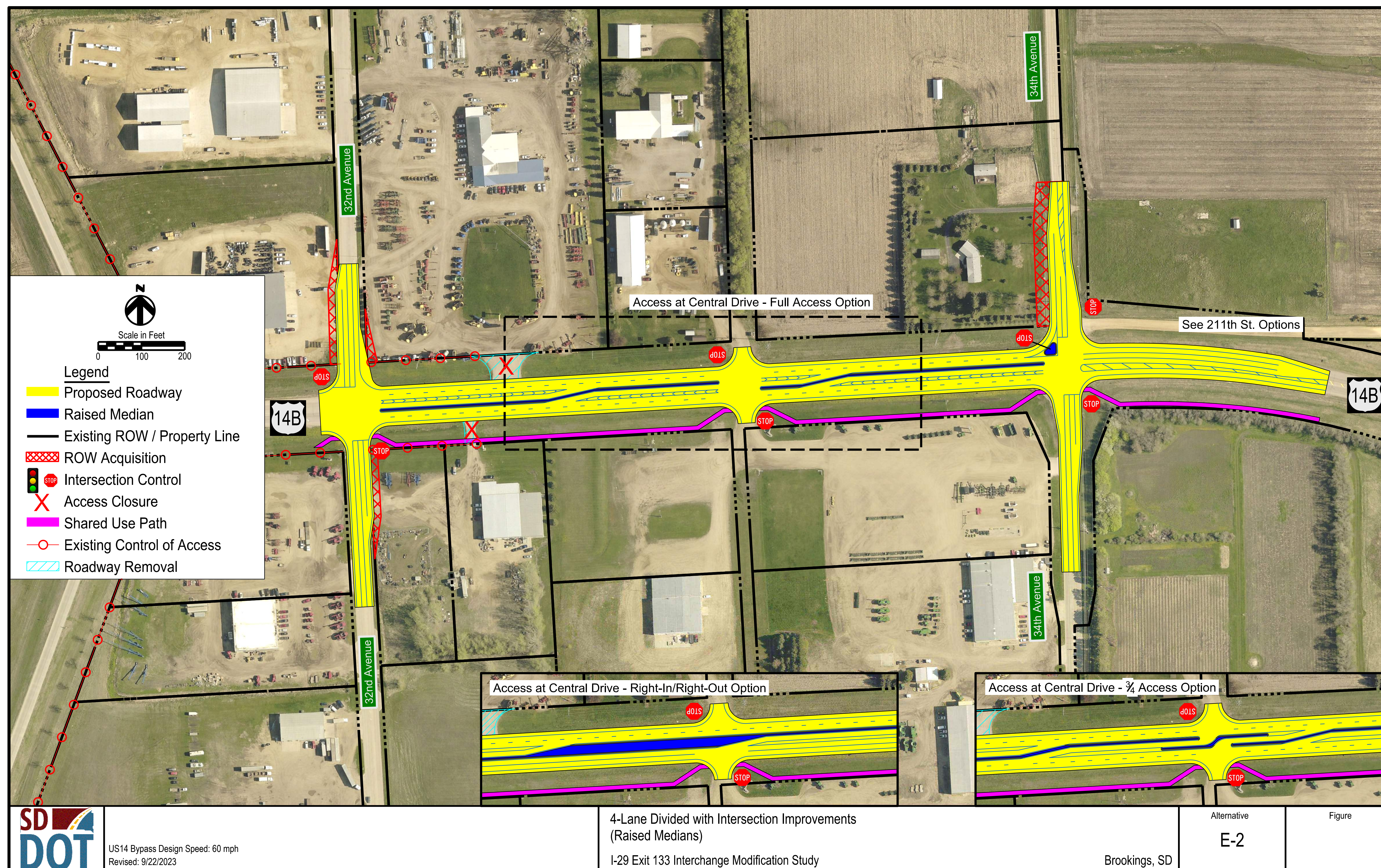




# I-29 | Exit 133

Interchange Modification Study

## U.S. 14 BYPASS (EAST) | 4-Lane Divided Corridor, E-2



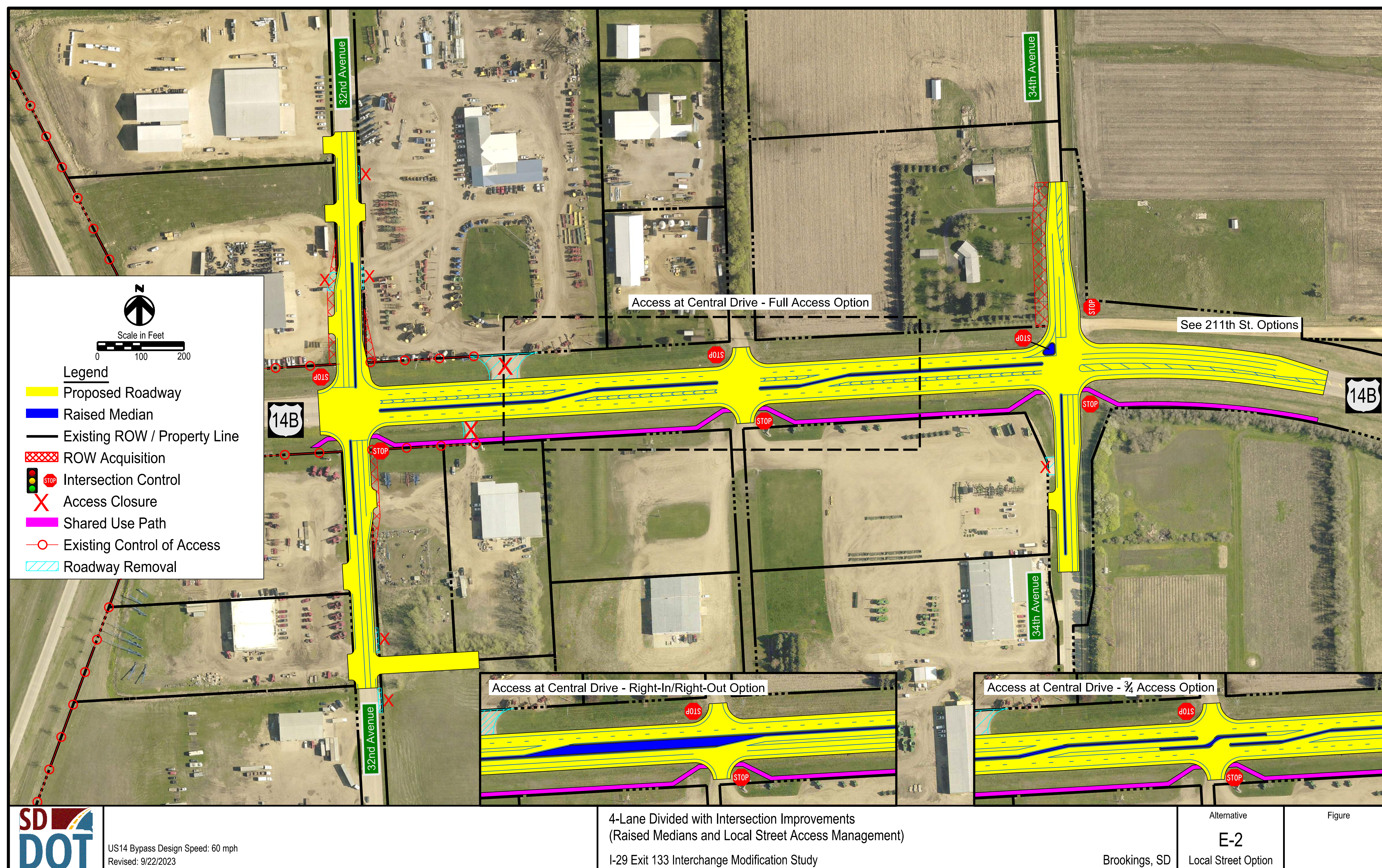




# I-29 | Exit 133

Interchange Modification Study

## U.S. 14 BYPASS (EAST) | 4-Lane Divided Corridor, E-2 Local Street Option



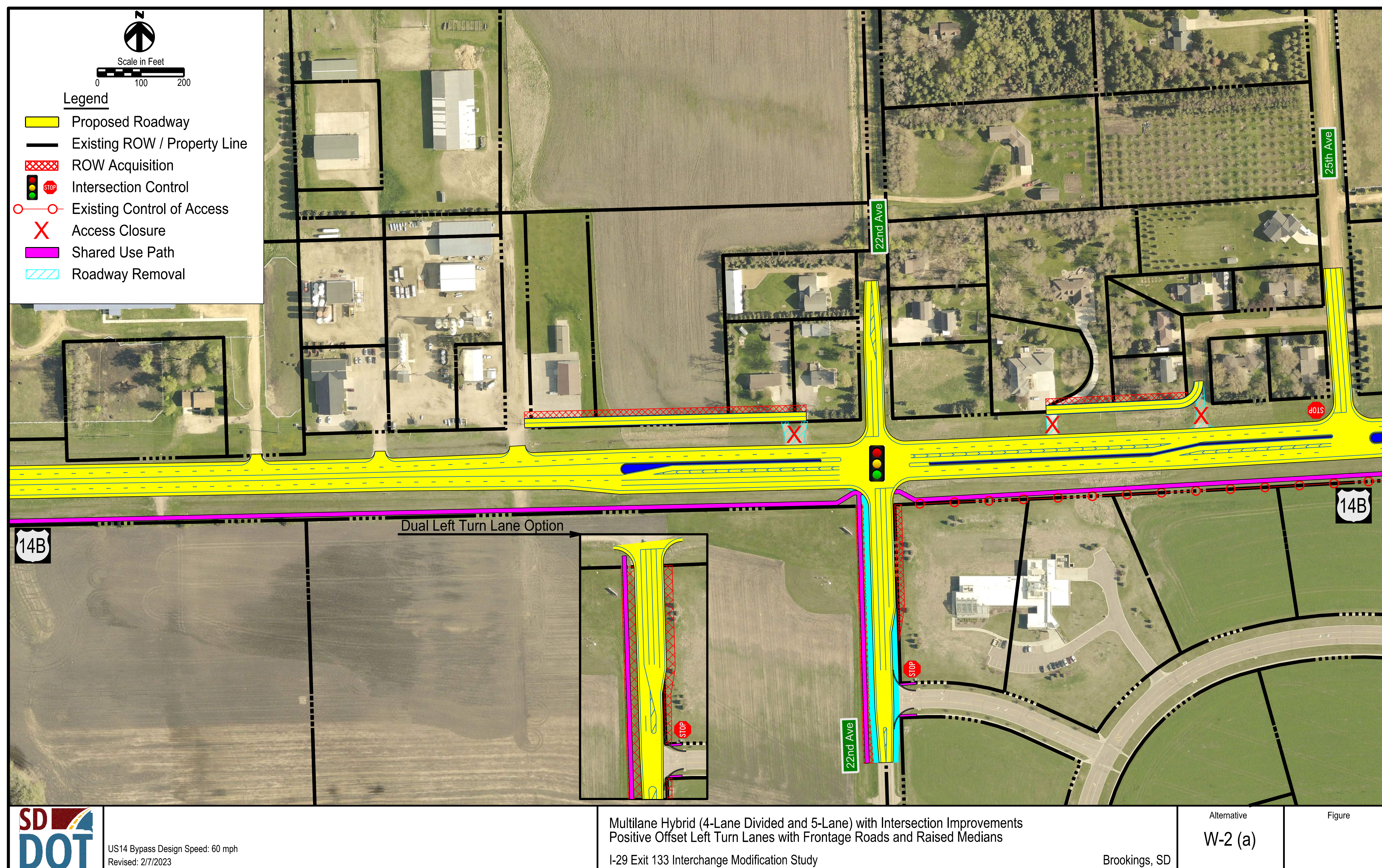




# I-29 | Exit 133

Interchange Modification Study

## U.S. 14 BYPASS (WEST) | Multilane Hybrid Corridor, W-2(a)





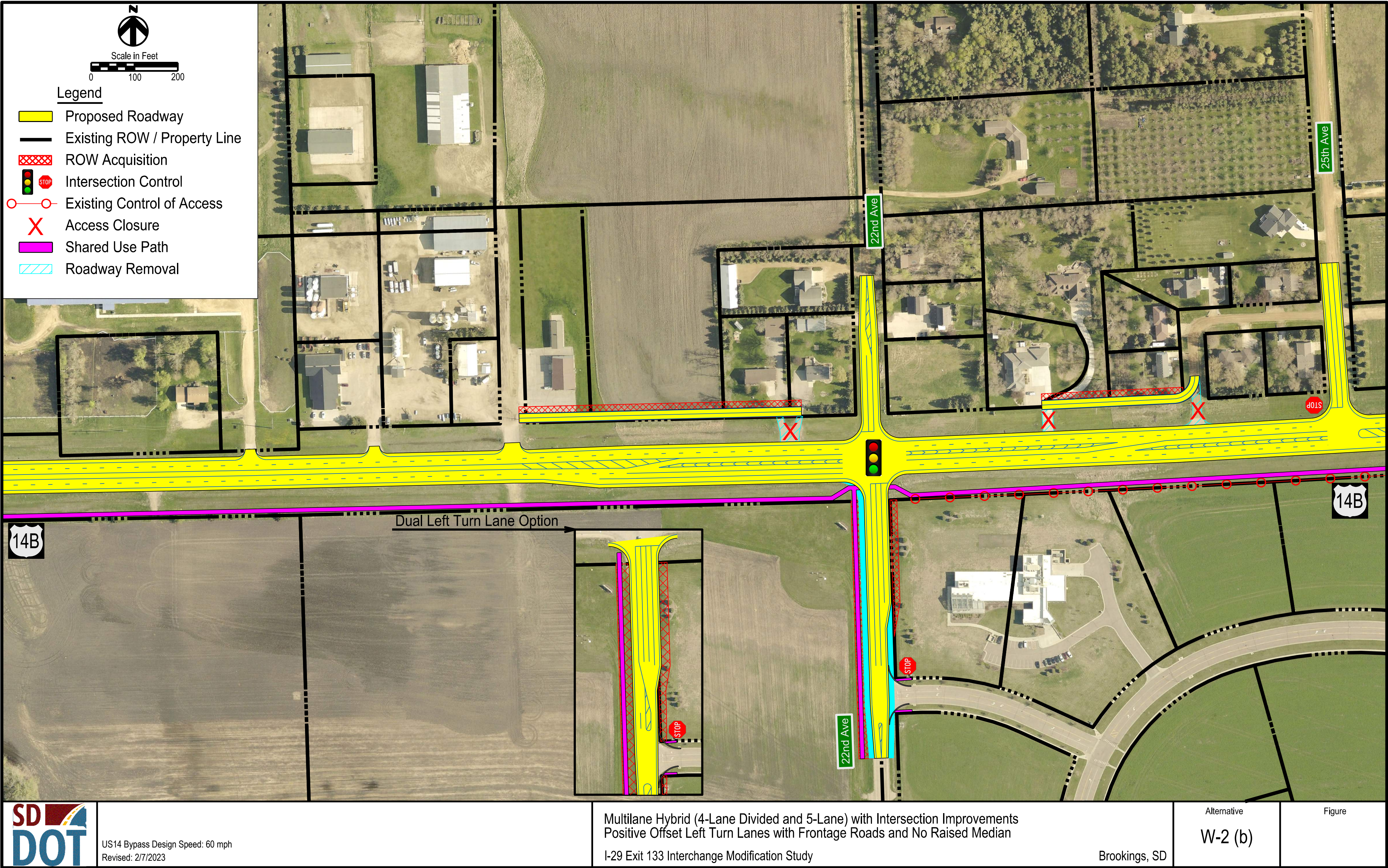


# I-29 | Exit 133

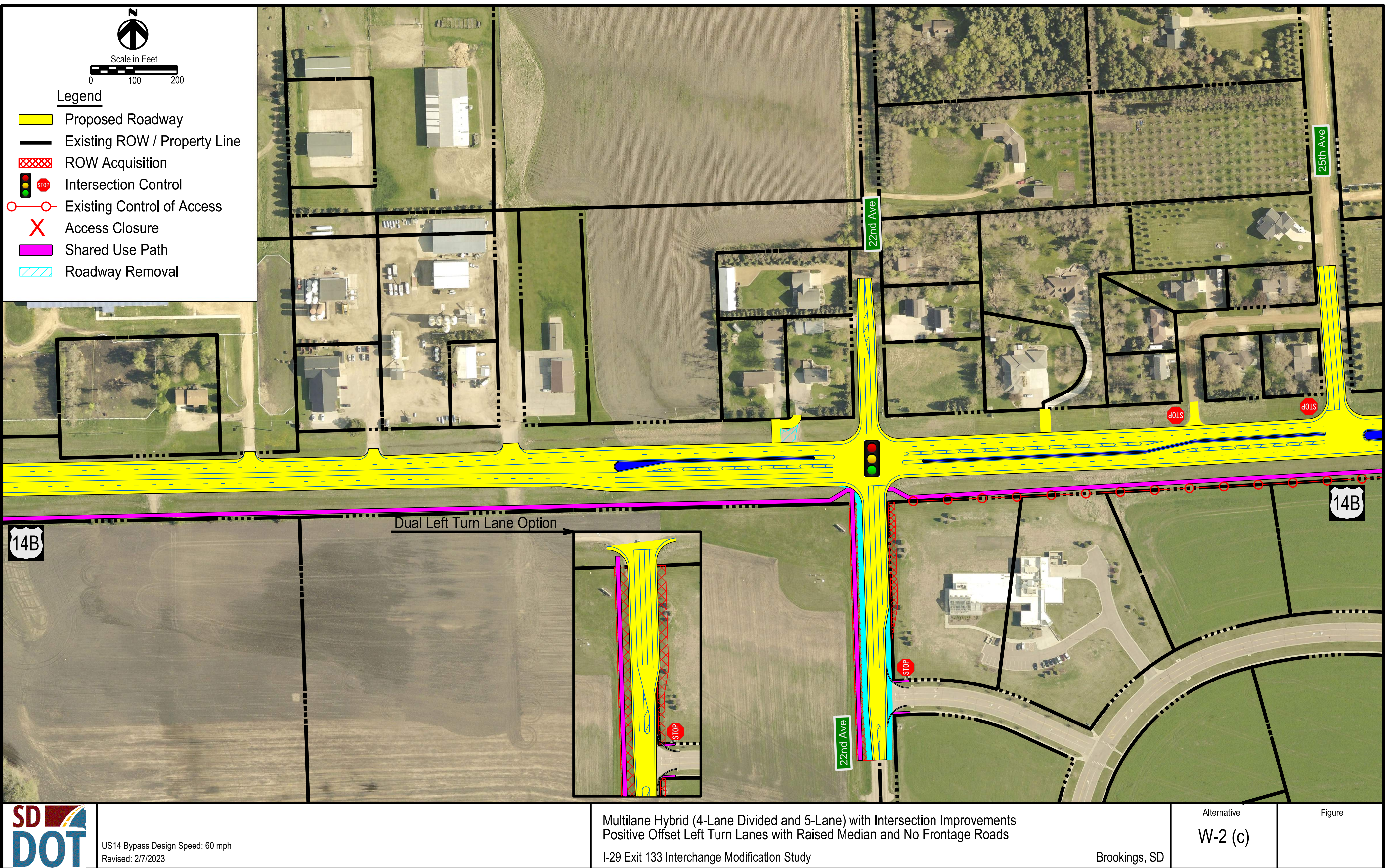
Interchange Modification Study

# U.S. 14 BYPASS (WEST)

## Multilane Hybrid Corridor, W-2(b)



## Multilane Hybrid Corridor, W-2(c)



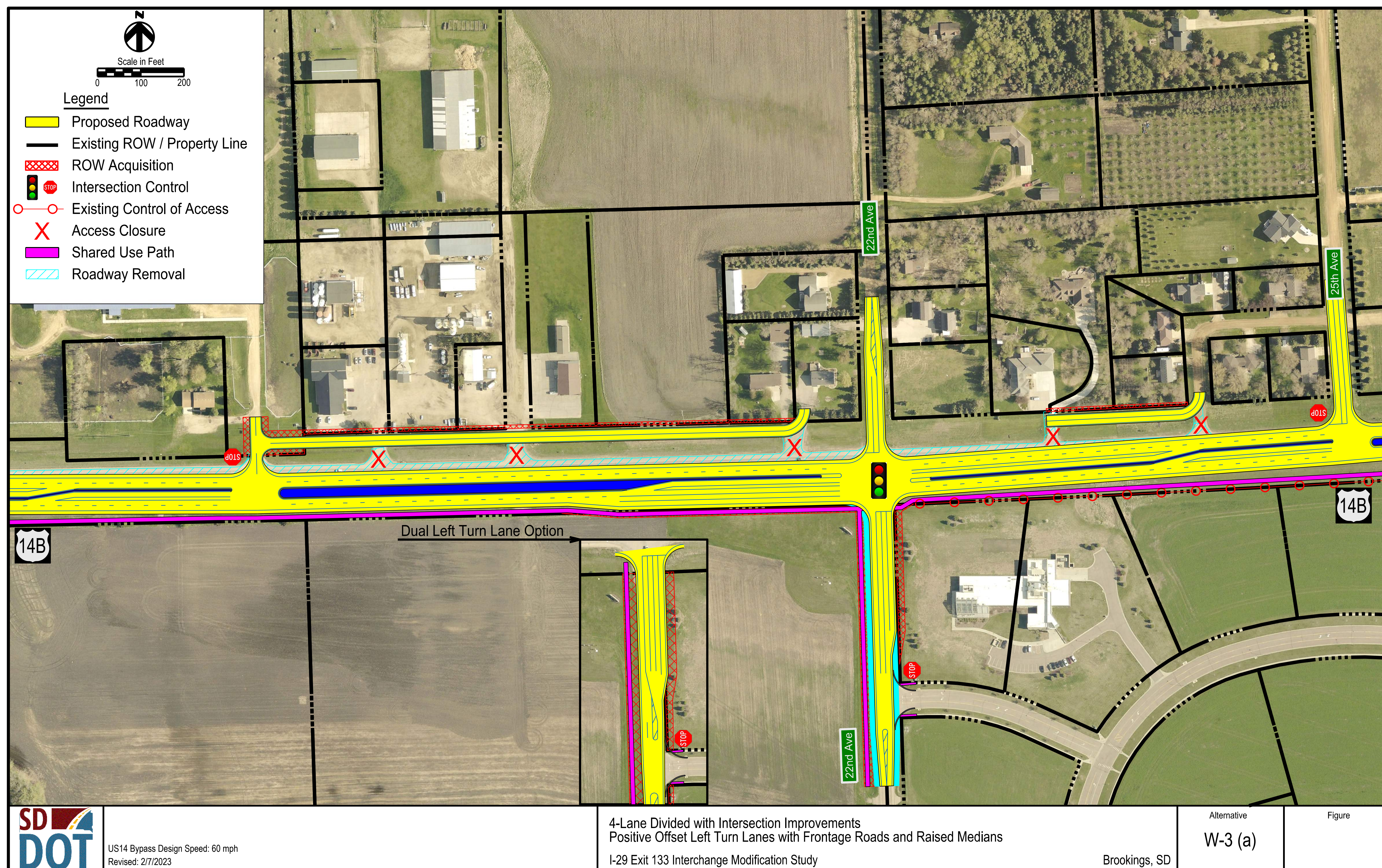




# I-29 | Exit 133

Interchange Modification Study

## U.S. 14 BYPASS (WEST) | 4-Lane Divided Corridor, W-3 (a)





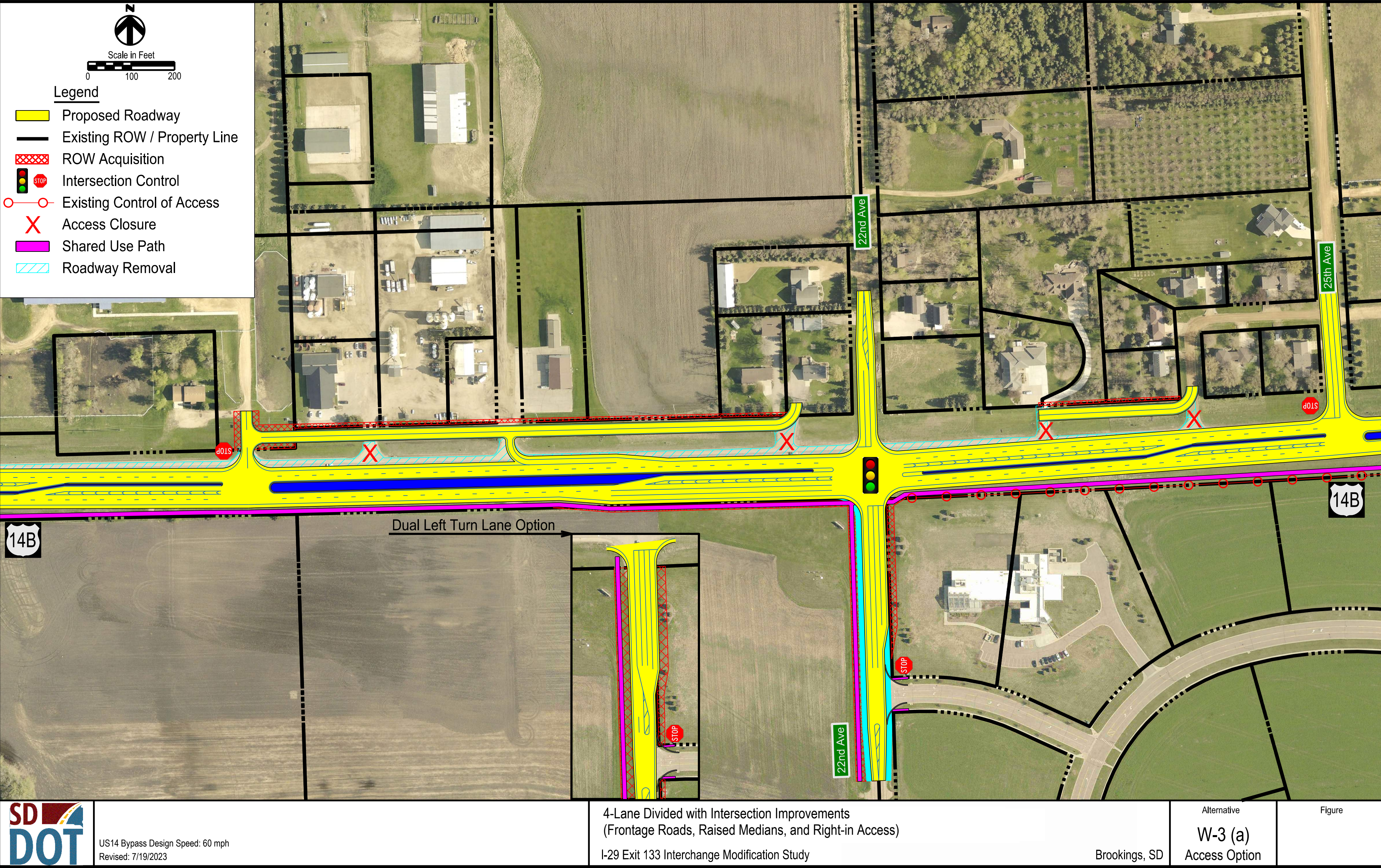


# I-29 | Exit 133

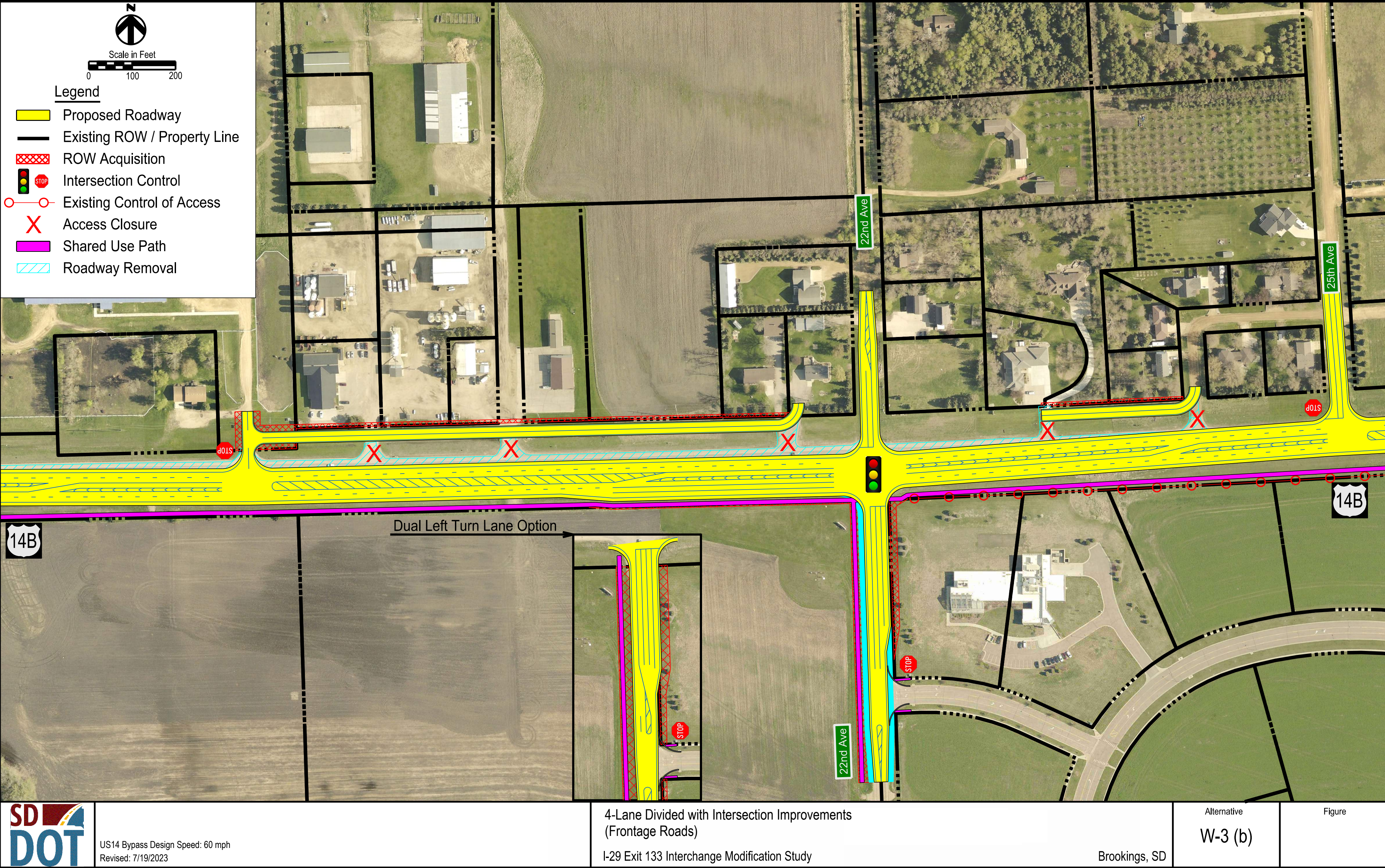
Interchange Modification Study

# U.S. 14 BYPASS (WEST)

## 4-Lane Divided Corridor, W-3 (a) Access Option



## 4-Lane Divided Corridor, W-3 (b)



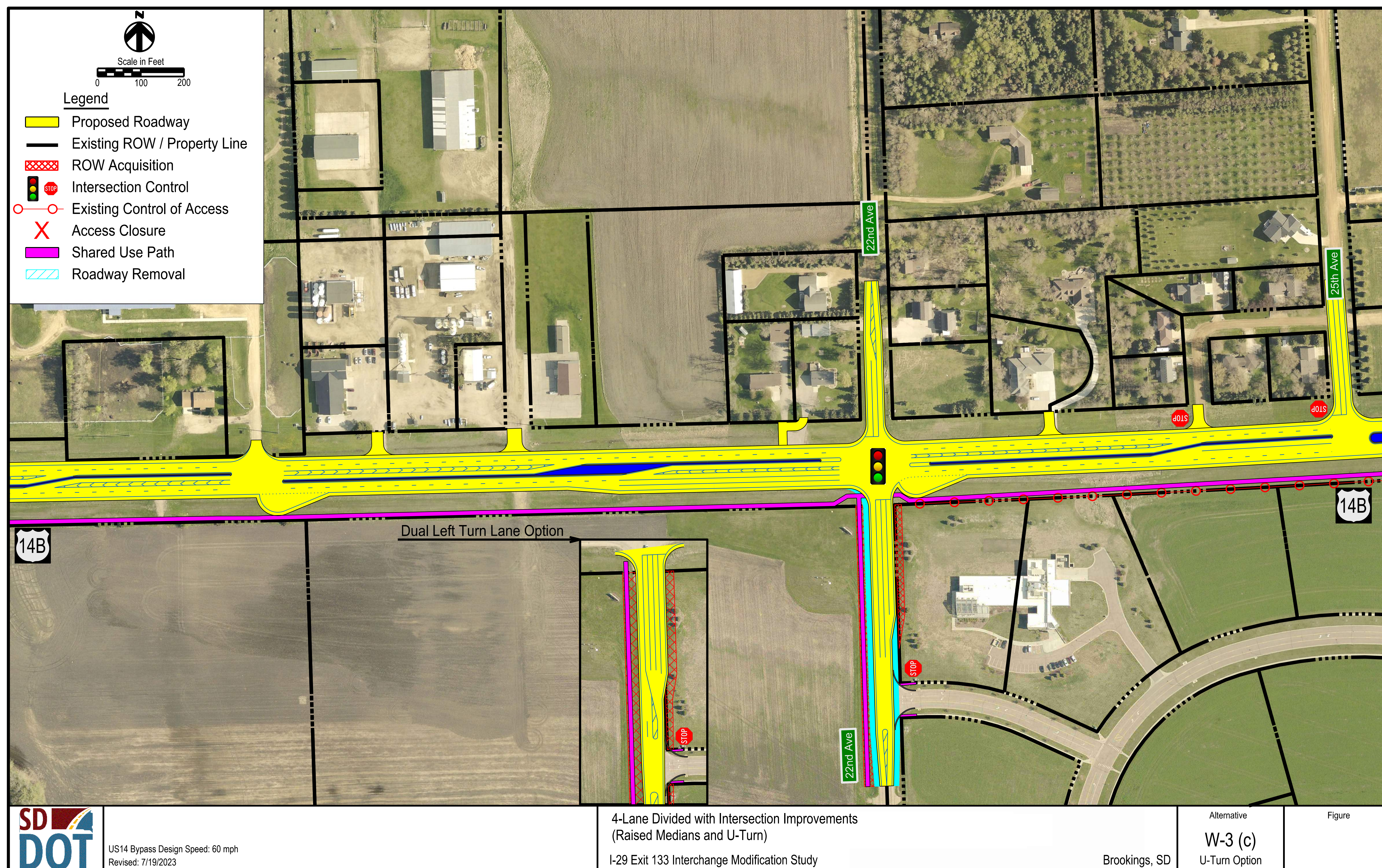




# I-29 | Exit 133

Interchange Modification Study

## U.S. 14 BYPASS (WEST) | 4-Lane Divided Corridor, W-3 (c) U-Turn Option



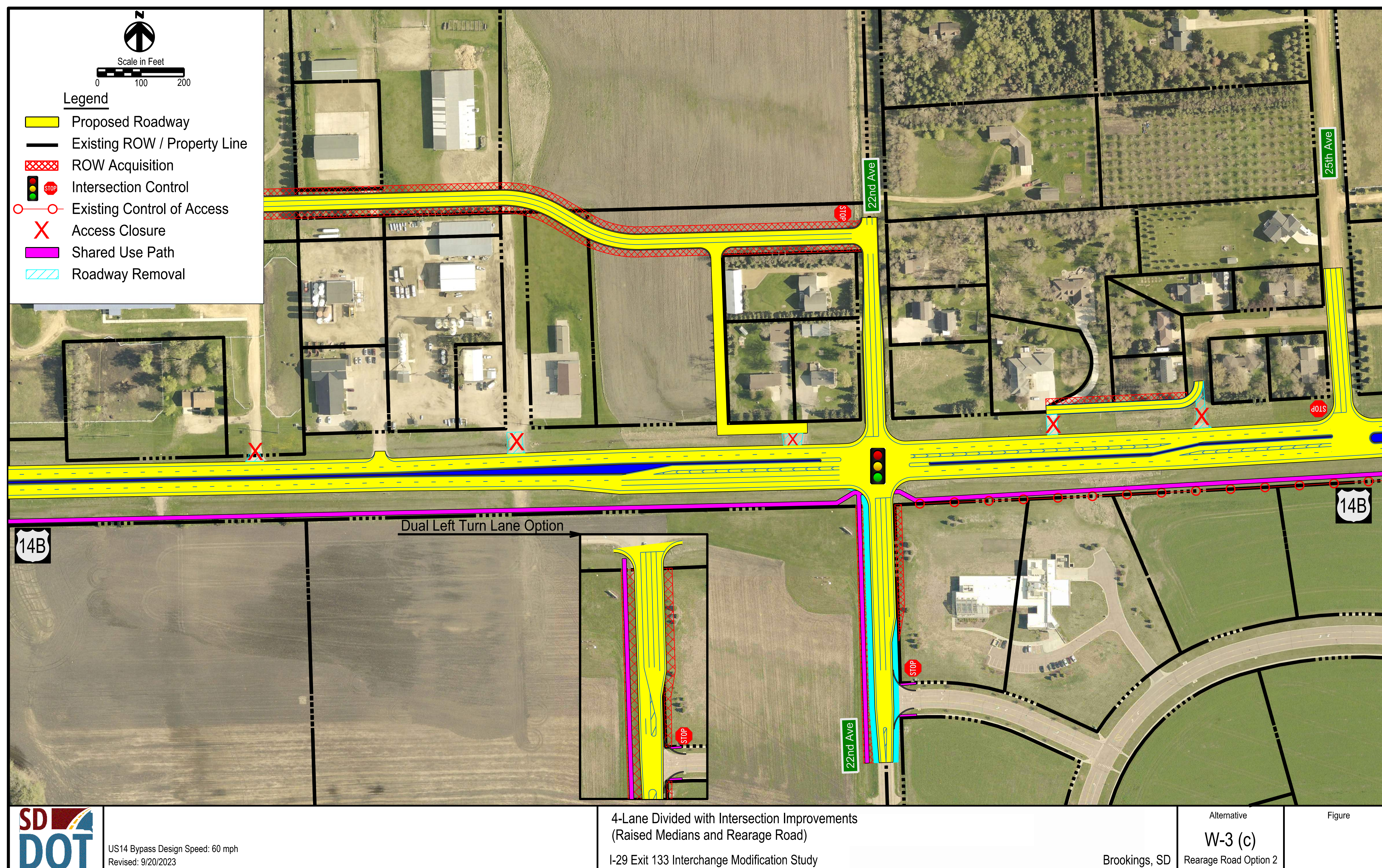




# I-29 | Exit 133

Interchange Modification Study

## U.S. 14 BYPASS (WEST) | 4-Lane Divided Corridor, W-3 (c) Rearage Road Option 2





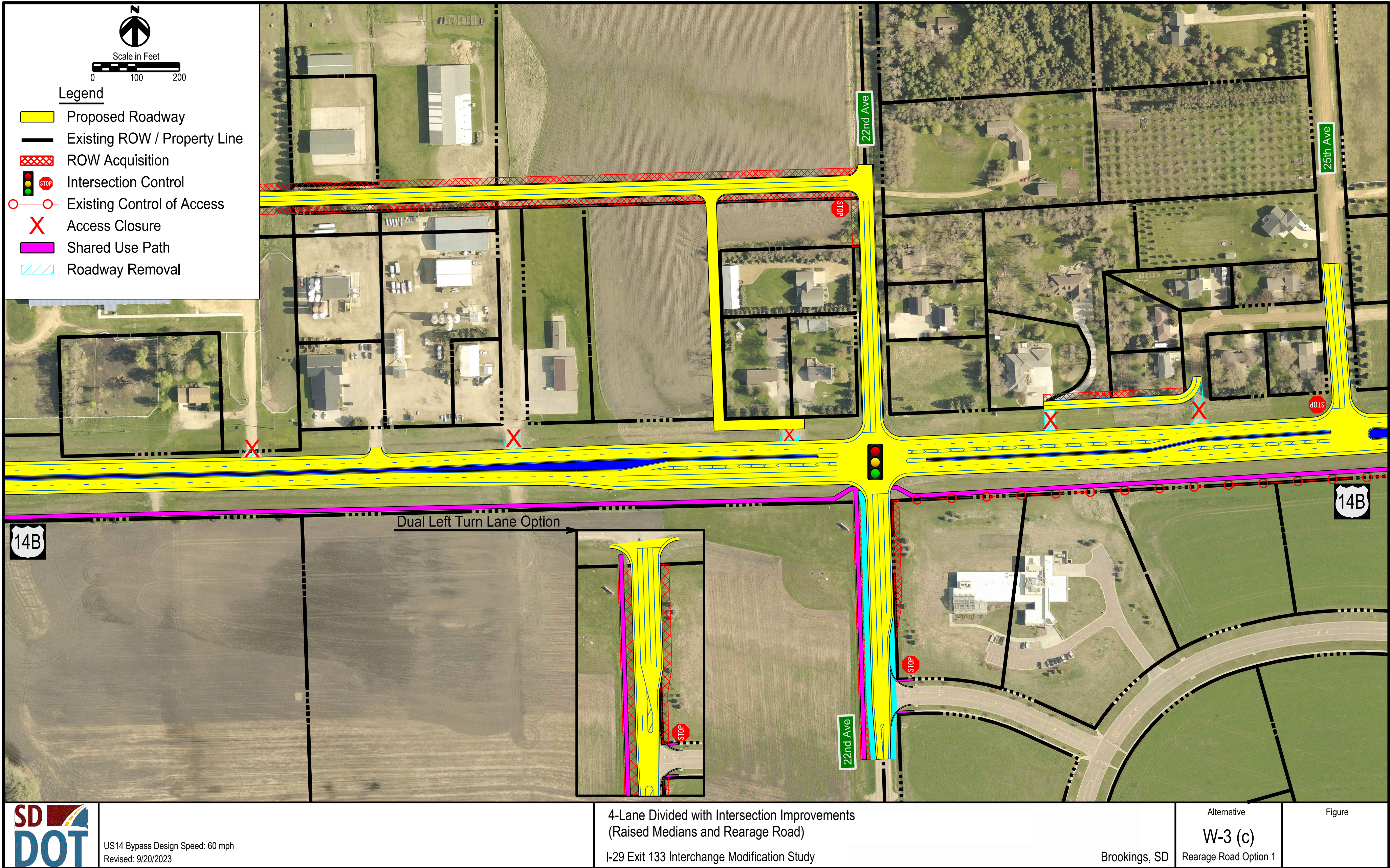


# I-29 | Exit 133

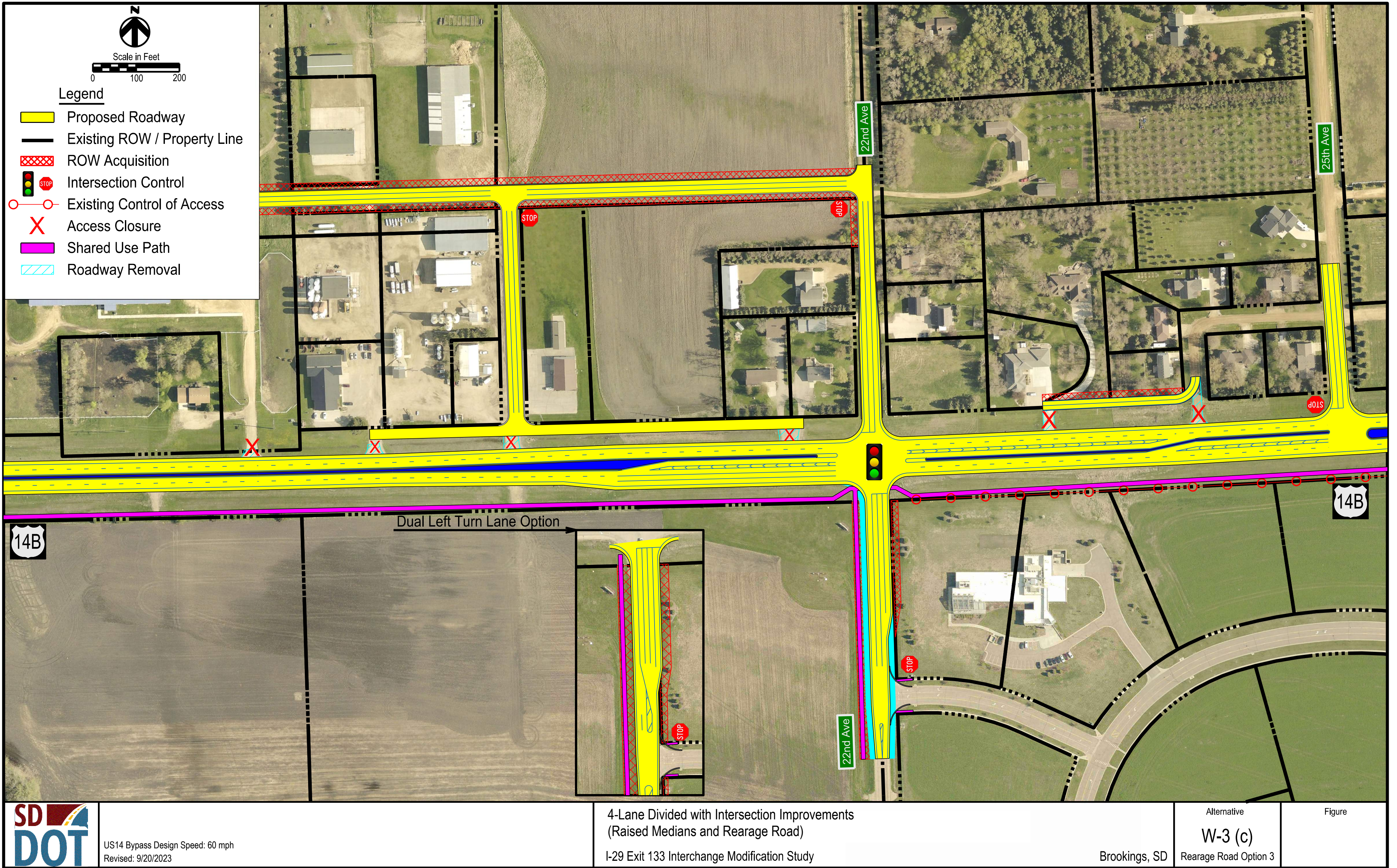
Interchange Modification Study

# U.S. 14 BYPASS (WEST)

## 4-Lane Divided Corridor, W-3 (c) Rearage Road Option 1



## 4-Lane Divided Corridor, W-3 (c) Rearage Road Option 3







## USI4 BYPASS CORRIDOR ALTERNATIVES EVALUATION MATRIX

Alt.	Description	Conformance with Plans	Compliance with Design Guidelines	Operational Performance	Safety	Environmental Impacts	Constructibility & MOT	Other Traffic Considerations
W-1	Existing 3-Lane w/ Intersection Improvements 3-Lane USI4 Bypass Corridor	4	<u>5</u>	3	3	<u>5</u>	4	4
W-2	Multilane Hybrid w/ Intersection Improvements Multilane USI4 Bypass Corridor	<u>5</u>	<u>5</u>	<u>5</u>	4	<u>5</u>	4	<u>5</u>
W-3	4-Lane Divided w/ Intersection Improvements Multilane USI4 Bypass Corridor	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	4 / <u>5</u>	4	<u>5</u>
NB	No Build	3	3	3	2	<u>5</u>	<u>5</u>	3

Alt.	Description	Conformance with Plans	Compliance with Design Guidelines	Operational Performance	Safety	Environmental Impacts	Constructibility & MOT	Other Traffic Considerations
E-1	Existing 3-Lane w/ Intersection Improvements 3-Lane USI4 Bypass Corridor	4	<u>5</u>	4	3	<u>5</u>	4	4
E-2	Multilane Hybrid w/ Intersection Improvements Multilane USI4 Bypass Corridor	<u>5</u>	<u>5</u>	<u>5</u>	5	<u>5</u>	4	<u>5</u>
NB	No Build	3	3	1	2	<u>5</u>	<u>5</u>	3

Rating of 3 or above indicates the respective measure meets study goals, is a benefit to the interchange, and/or exhibits minimal impact.

MOT: maintenance of traffic



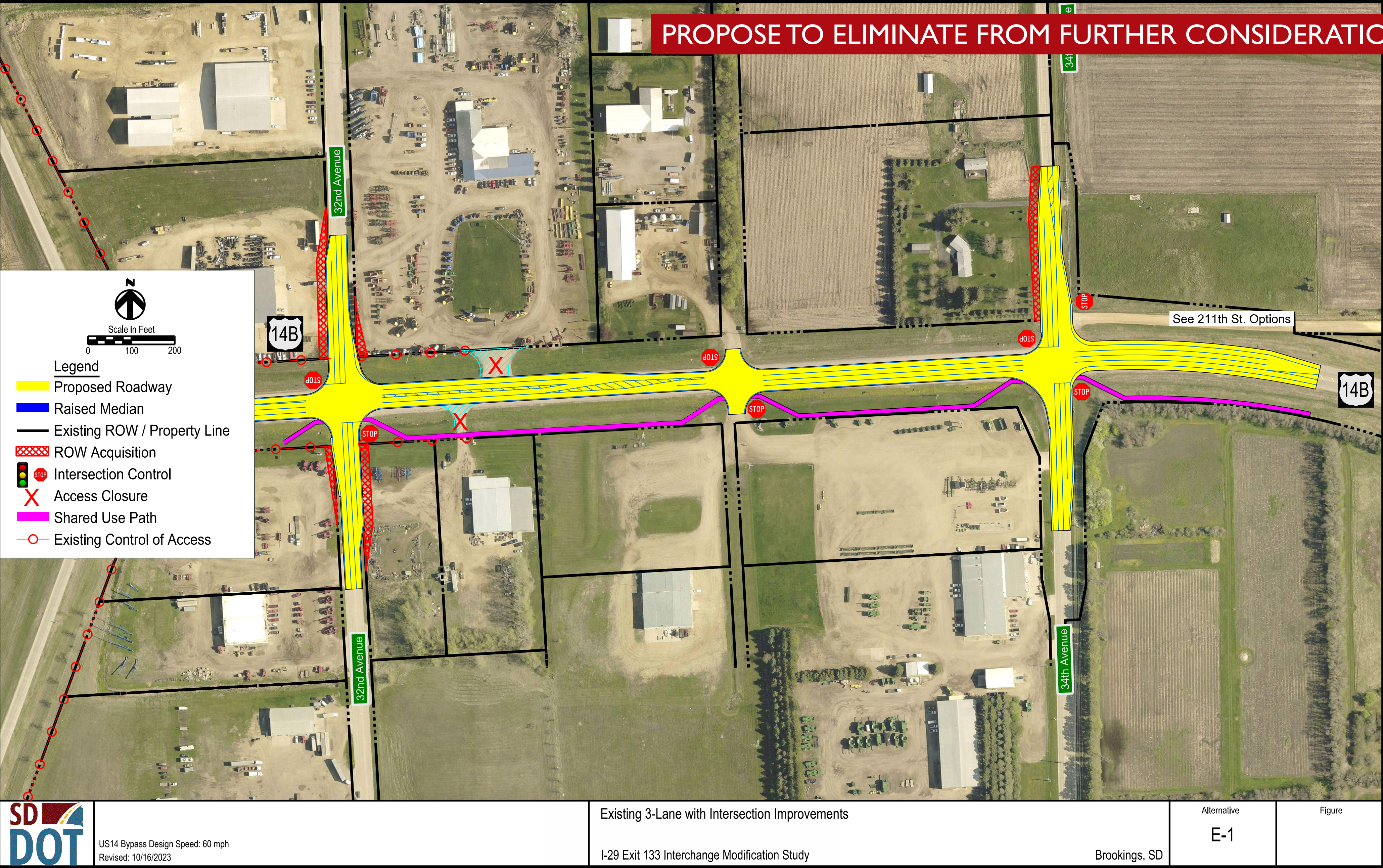


# I-29 | Exit 133

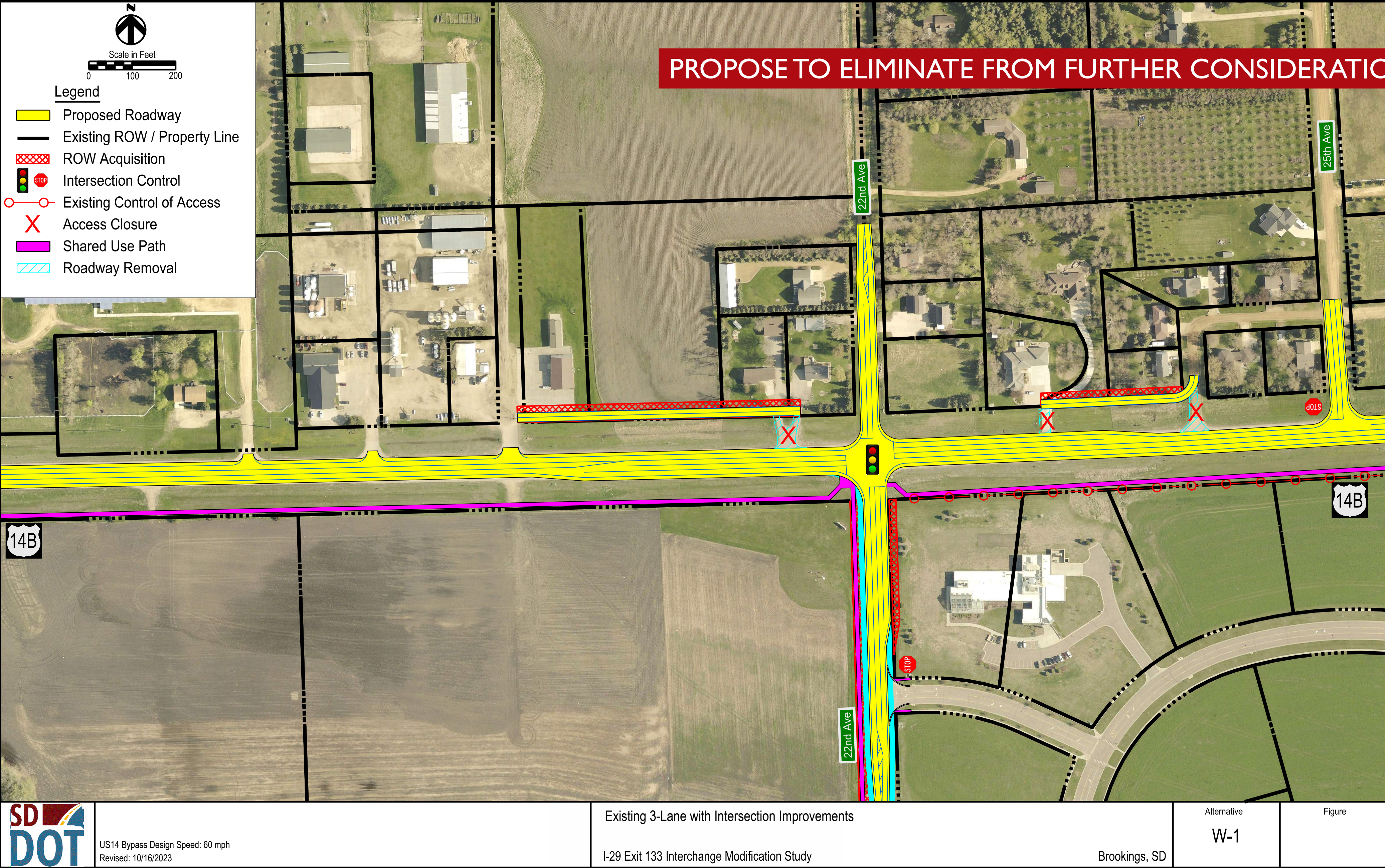
Interchange Modification Study

# 3 LANE CORRIDOR

## Existing 3-Lane Corridor, E-I



## Existing 3-Lane Corridor, W-I





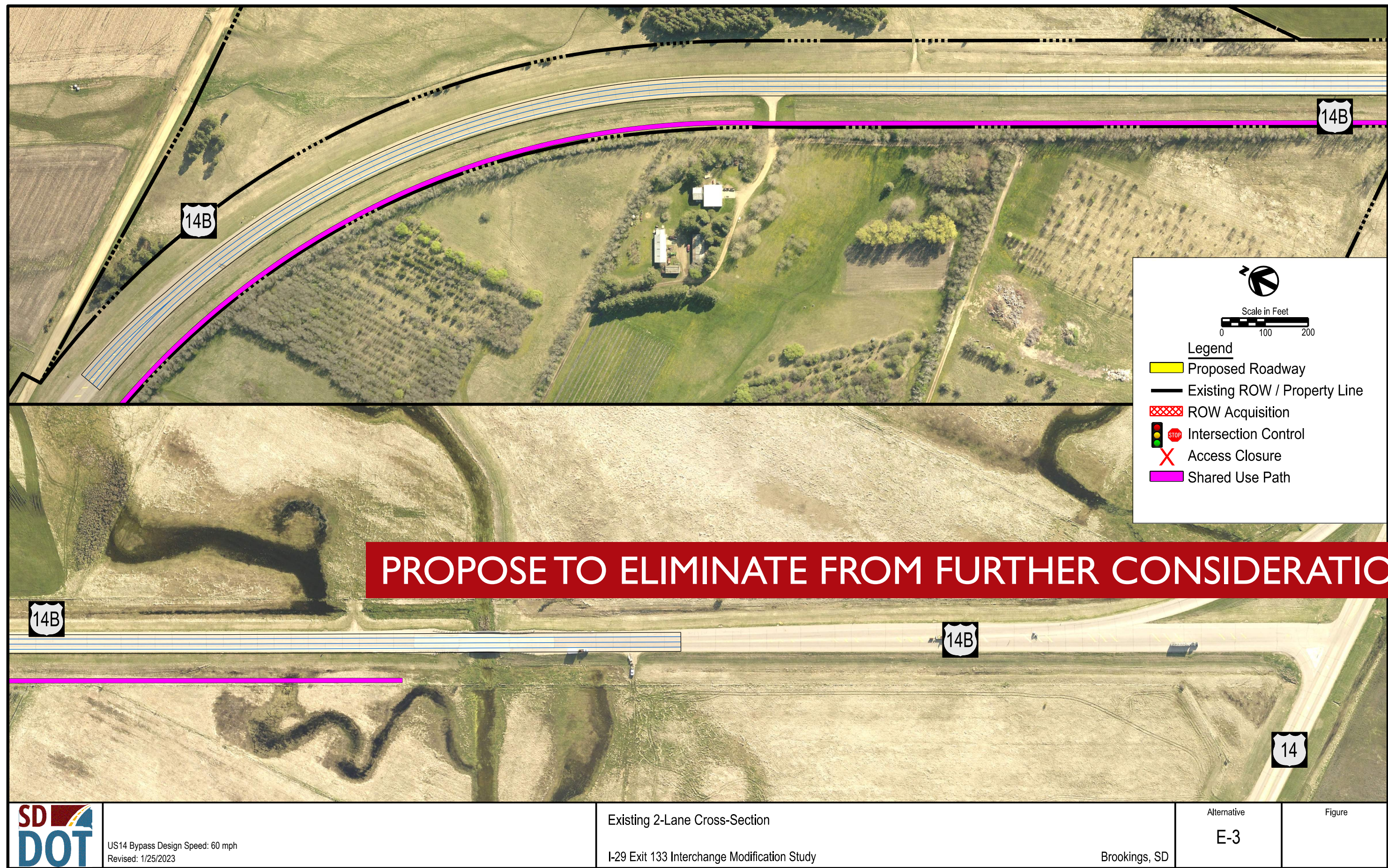


# I-29 | Exit 133

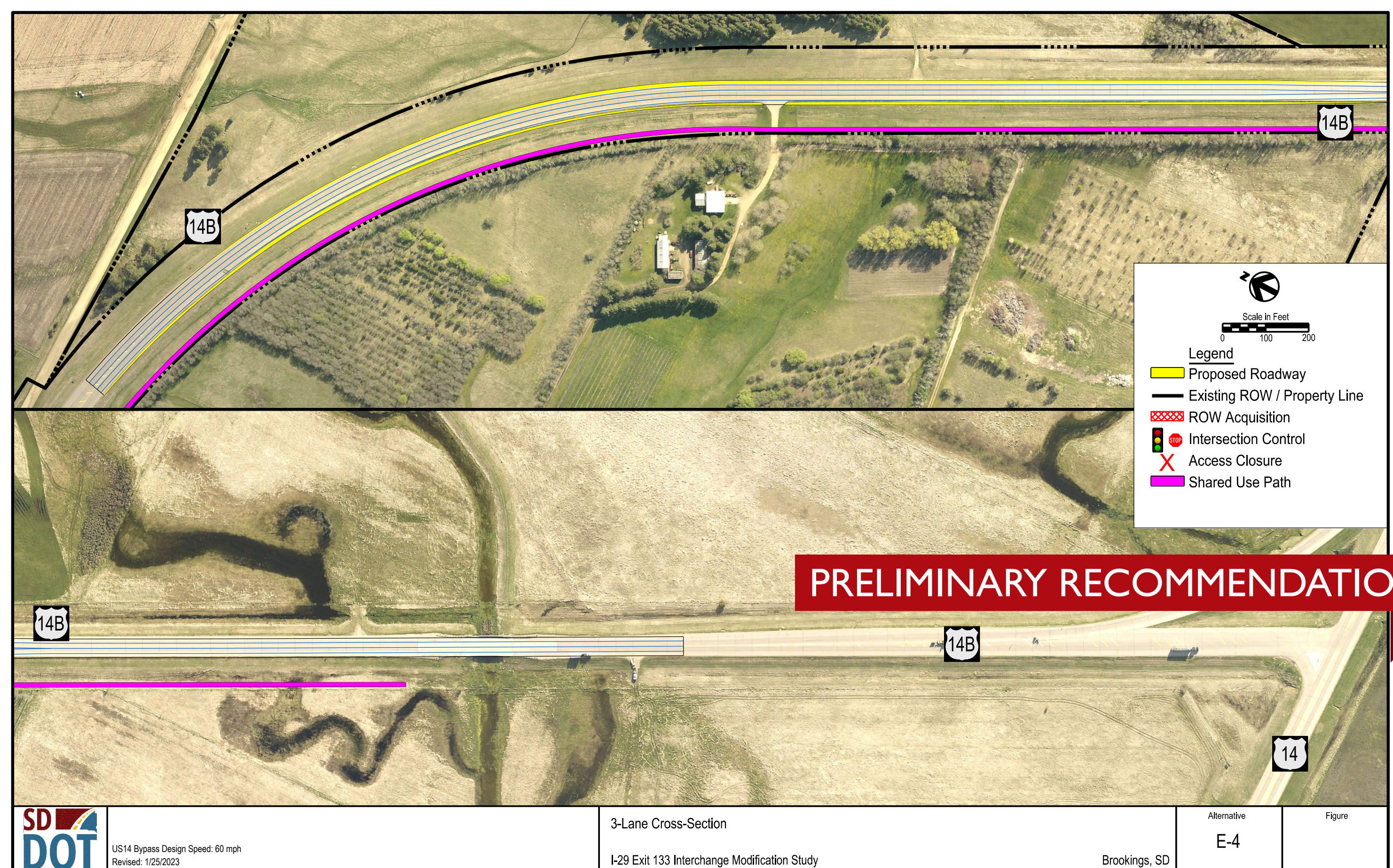
Interchange Modification Study

# 3 LANE CORRIDOR

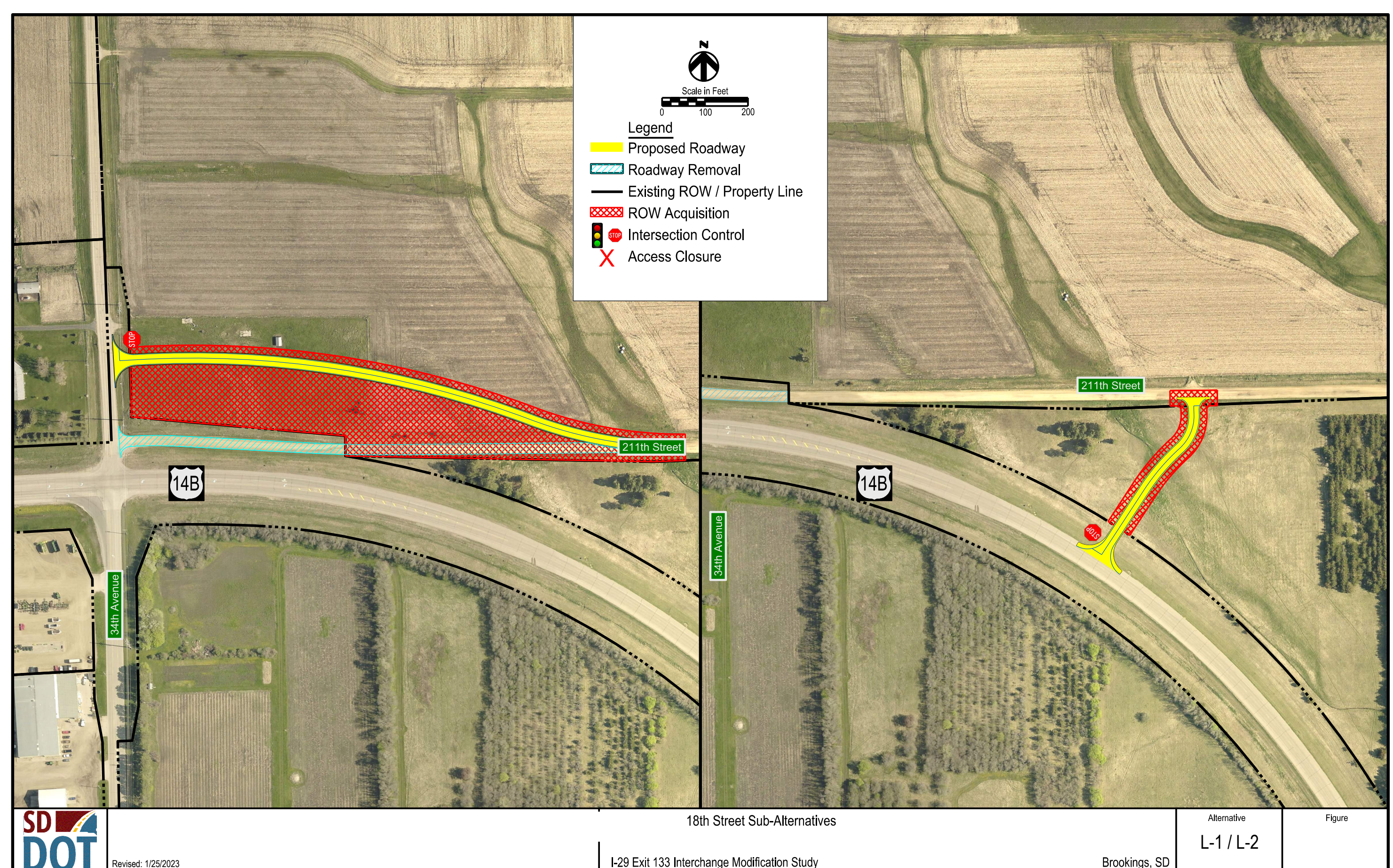
Existing 2-Lane Segment, E-3



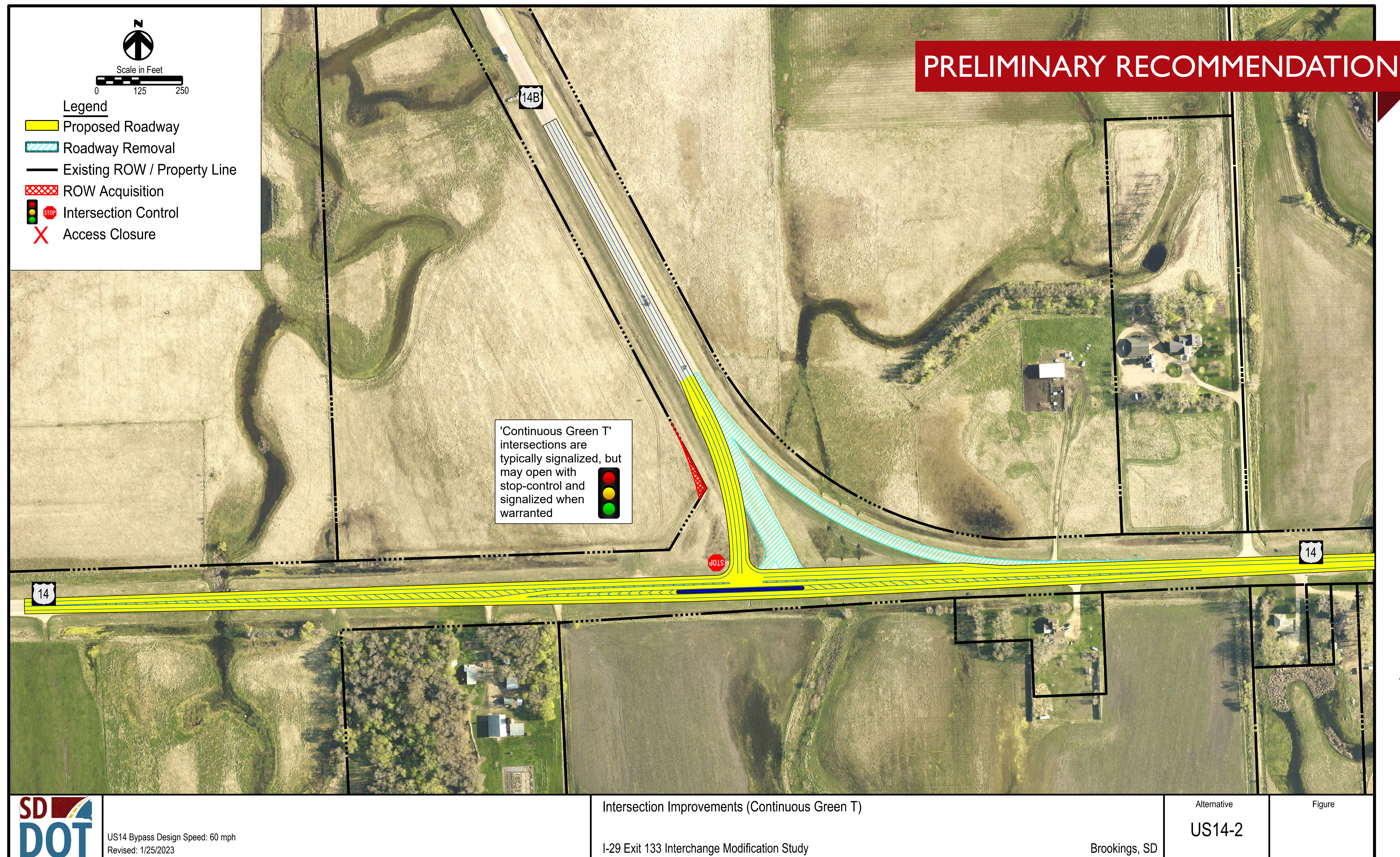
3-Lane Segment, E-4



211th Street / 18th Street Connection Concepts, L-1 / L-2







Scan this QR Code for additional information on Continuous Green T (CGT) intersections.





# I-29 | Exit 133

Interchange Modification Study

## U.S. 14 & U.S. 14 BYPASS INTERSECTION

### Intersection Improvements

