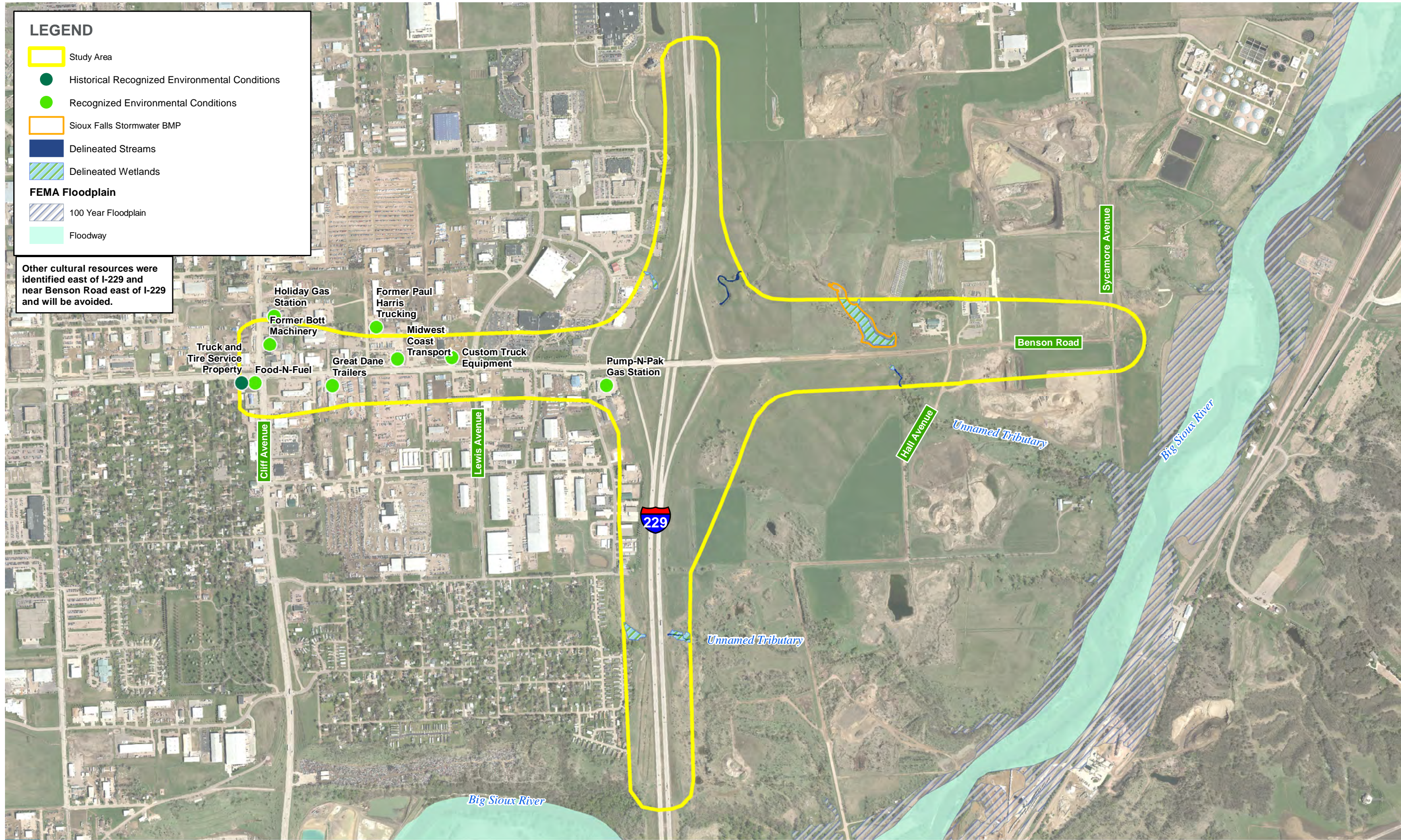
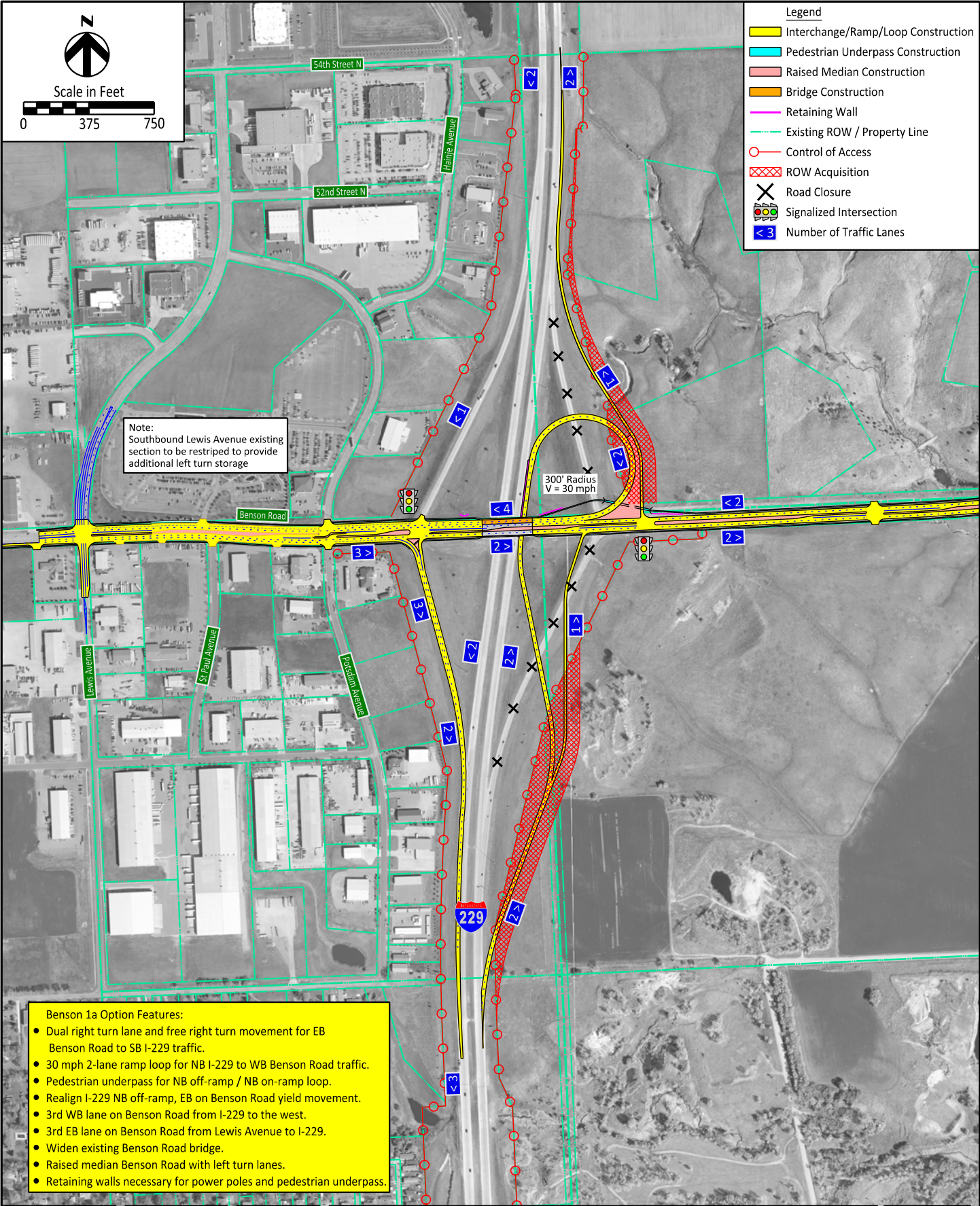


**LEGEND**

- Study Area
- Historical Recognized Environmental Conditions
- Recognized Environmental Conditions
- Sioux Falls Stormwater BMP
- Delineated Streams
- Delineated Wetlands
- FEMA Floodplain**
- 100 Year Floodplain
- Floodway

Other cultural resources were identified east of I-229 and near Benson Road east of I-229 and will be avoided.



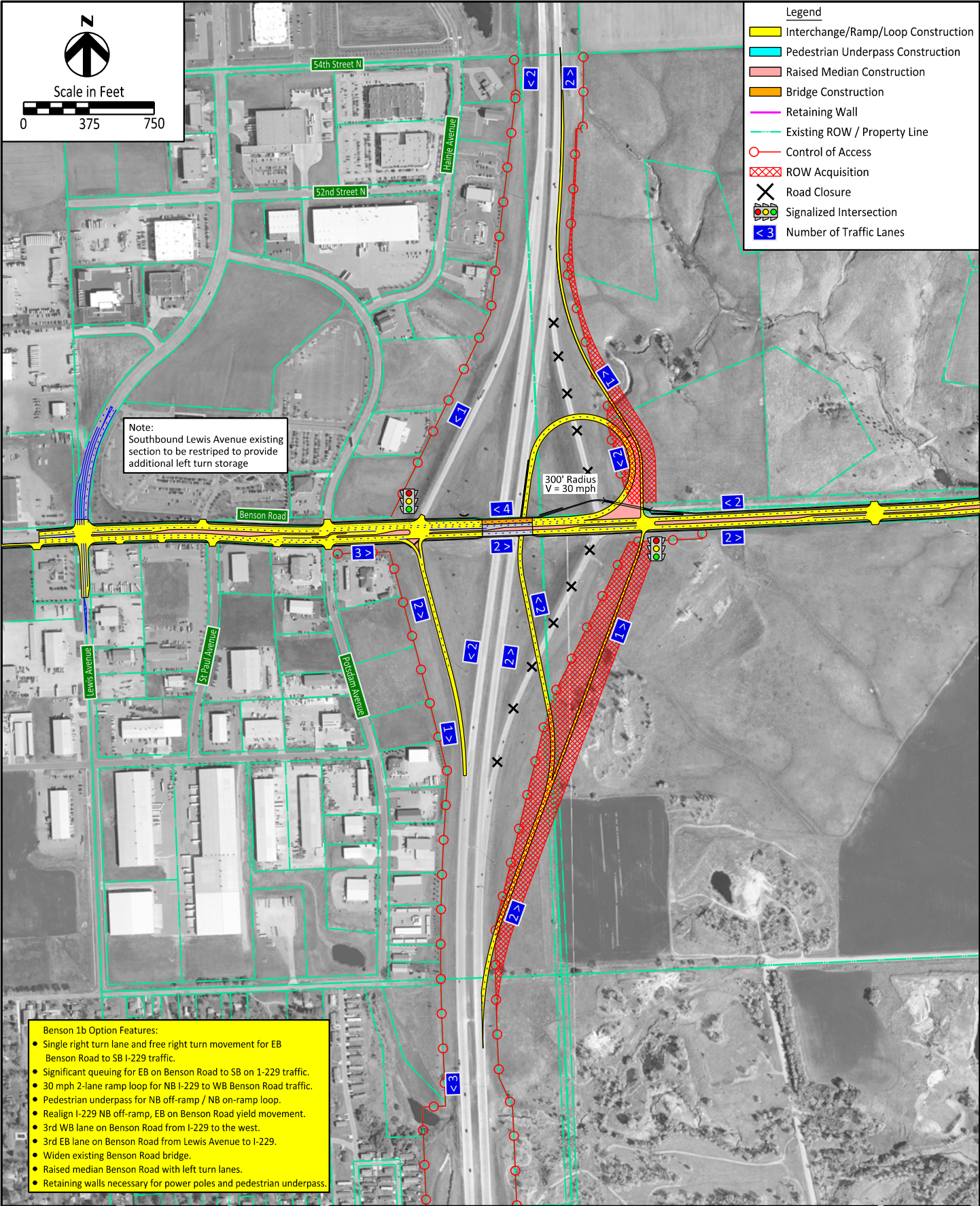


Drawn By: B. Miller  
 Date: 5/14/2018  
 Chkd By: P. Sanow  
 Date: 5/14/2018  
 Revision: 10/8/2018



Alternative Scenario 1a  
 2-Lane Northeast Quadrant Loop with 3-Lane SB On-Ramp  
 I-229 Exit 9 (Benson Road) IMJR

Figure  
 I-1  
 Sioux Falls, SD



Legend	
	Interchange/Ramp/Loop Construction
	Pedestrian Underpass Construction
	Raised Median Construction
	Bridge Construction
	Retaining Wall
	Existing ROW / Property Line
	Control of Access
	ROW Acquisition
	Road Closure
	Signalized Intersection
	Number of Traffic Lanes

Note:  
Southbound Lewis Avenue existing section to be restriped to provide additional left turn storage

300' Radius  
V = 30 mph

- Benson 1b Option Features:**
- Single right turn lane and free right turn movement for EB Benson Road to SB I-229 traffic.
  - Significant queuing for EB on Benson Road to SB on I-229 traffic.
  - 30 mph 2-lane ramp loop for NB I-229 to WB Benson Road traffic.
  - Pedestrian underpass for NB off-ramp / NB on-ramp loop.
  - Realign I-229 NB off-ramp, EB on Benson Road yield movement.
  - 3rd WB lane on Benson Road from I-229 to the west.
  - 3rd EB lane on Benson Road from Lewis Avenue to I-229.
  - Widen existing Benson Road bridge.
  - Raised median Benson Road with left turn lanes.
  - Retaining walls necessary for power poles and pedestrian underpass.

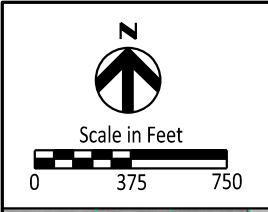
Drawn By: B. Miller  
Date: 5/14/2018  
Chkd By: P. Sanow  
Date: 5/14/2018  
Revision: 10/8/2018



Alternative Scenario 1b  
2-Lane Northeast Quadrant Loop with 2-Lane SB On-Ramp  
I-229 Exit 9 (Benson Road) IMJR

Figure  
I-2

Sioux Falls, SD

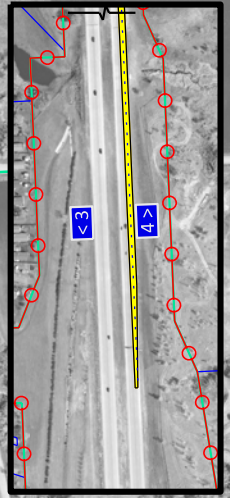


Legend	
	Interchange/Ramp/Loop Construction
	Pedestrian Underpass Construction
	Raised Median Construction
	Bridge Construction
	Retaining Wall
	Existing ROW / Property Line
	Control of Access
	ROW Acquisition
	Road Closure
	Signalized Intersection
	Number of Traffic Lanes

Note:  
Southbound Lewis Avenue existing section to be restriped to provide additional left turn storage

300' Radius  
V = 30 mph

- Benson 1c Option Features:**
- Collector-Distributor (CD) lane for NB off-ramp connection.
  - Dual right turn lane and free right turn movement for EB Benson Road to SB I-229 traffic.
  - 30 mph 2-lane ramp loop for NB I-229 to WB Benson Road traffic.
  - Pedestrian underpass for NB off-ramp / NB on-ramp loop.
  - Realign I-229 NB off-ramp, EB on Benson Road yield movement.
  - 3rd WB lane on Benson Road from I-229 to the west.
  - 3rd EB lane on Benson Road from Lewis Avenue to I-229.
  - Widen existing Benson Road bridge.
  - Raised median Benson Road with left turn lanes.
  - Retaining walls necessary for power poles and pedestrian underpass.



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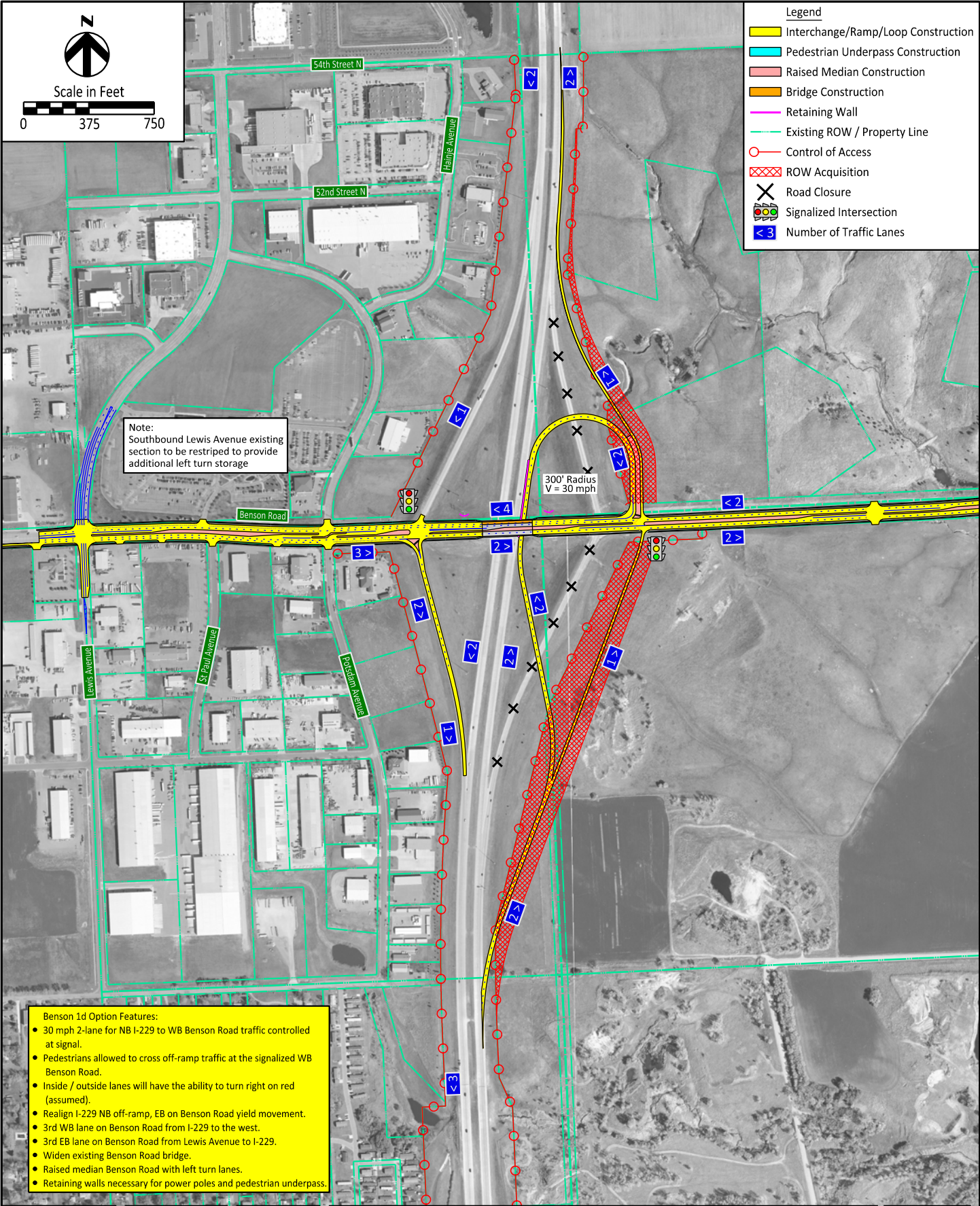


Alternative Scenario 1c  
2-Lane Collector - Distributor (CD) Lane Northeast Quadrant Loop  
with 3-Lane SB On-Ramp  
I-229 Exit 9 (Benson Road) IMJR

Figure

I-3

Sioux Falls, SD



Note:  
Southbound Lewis Avenue existing  
section to be restriped to provide  
additional left turn storage

300' Radius  
V = 30 mph

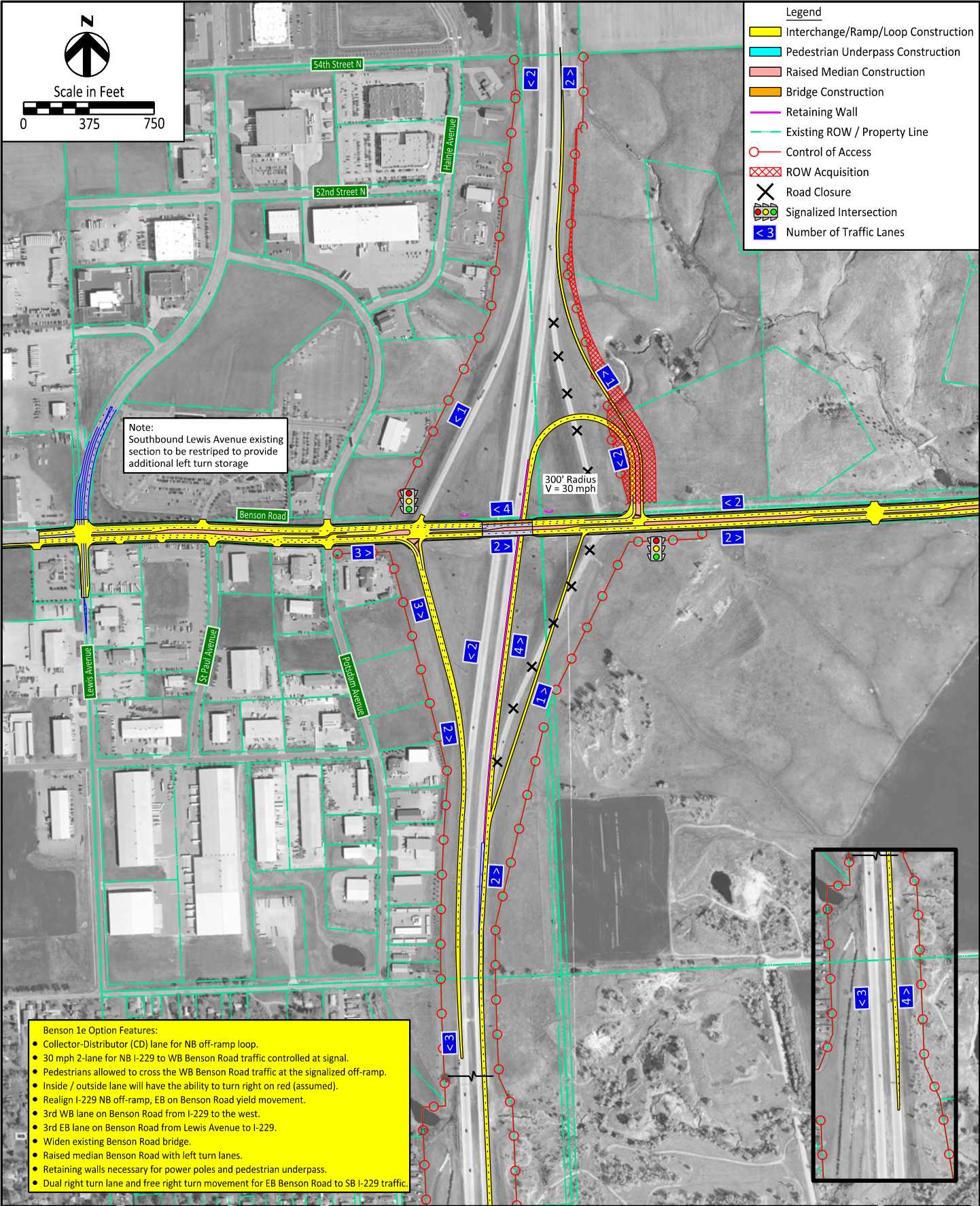
- Benson 1d Option Features:**
- 30 mph 2-lane for NB I-229 to WB Benson Road traffic controlled at signal.
  - Pedestrians allowed to cross off-ramp traffic at the signalized WB Benson Road.
  - Inside / outside lanes will have the ability to turn right on red (assumed).
  - Realign I-229 NB off-ramp, EB on Benson Road yield movement.
  - 3rd WB lane on Benson Road from I-229 to the west.
  - 3rd EB lane on Benson Road from Lewis Avenue to I-229.
  - Widen existing Benson Road bridge.
  - Raised median Benson Road with left turn lanes.
  - Retaining walls necessary for power poles and pedestrian underpass.

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Alternative Scenario 1d  
2-Lane Partial Clover Leaf Northeast Quadrant Loop with  
2-Lane SB On-Ramp  
I-229 Exit 9 (Benson Road) IMJR

Figure  
**I-4**  
Sioux Falls, SD



Legend	
	Interchange/Ramp/Loop Construction
	Pedestrian Underpass Construction
	Raised Median Construction
	Bridge Construction
	Retaining Wall
	Existing ROW / Property Line
	Control of Access
	ROW Acquisition
	Road Closure
	Signalized Intersection
	Number of Traffic Lanes

Note:  
Southbound Lewis Avenue existing section to be restriped to provide additional left turn storage

300' Radius  
V = 30 mph

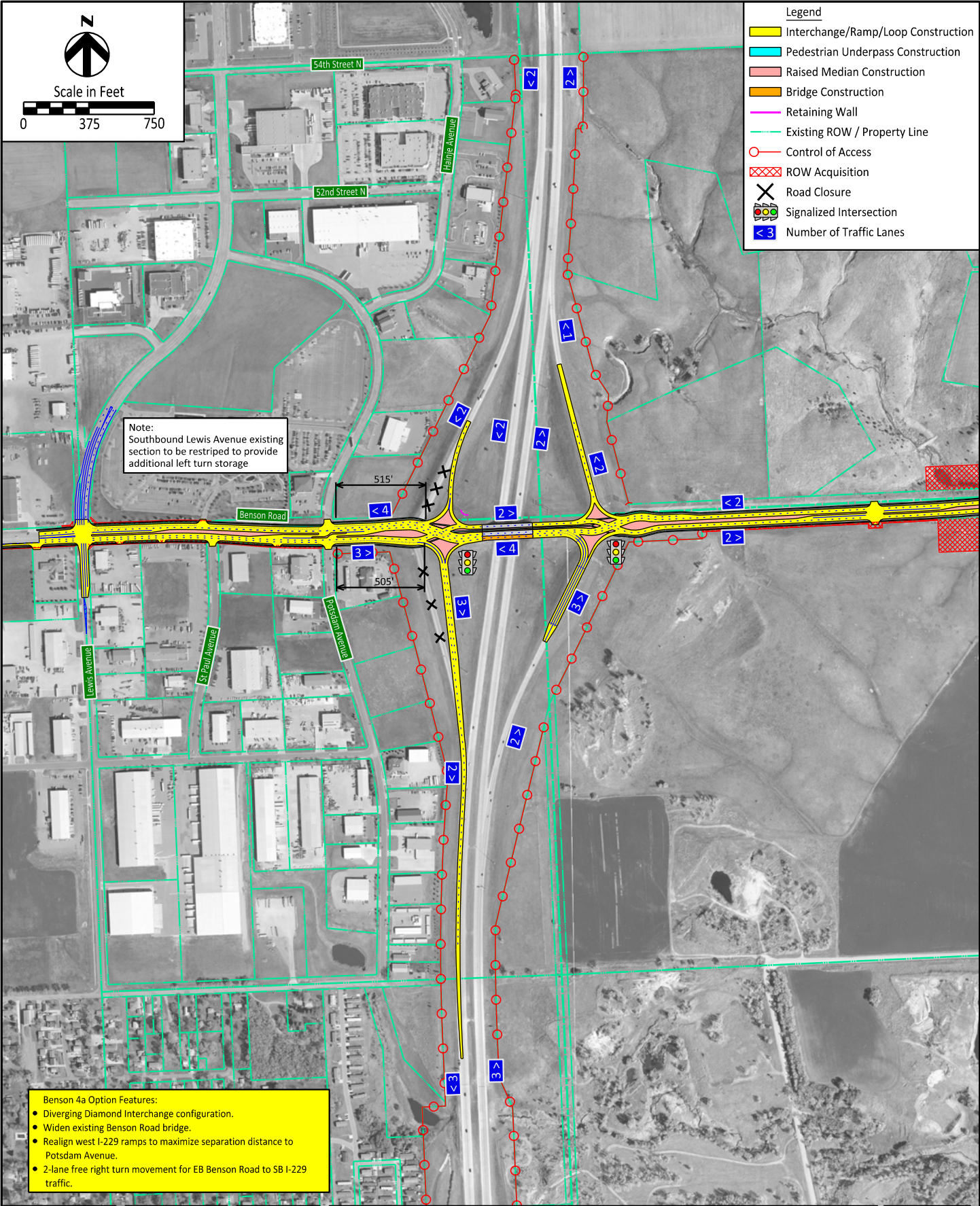
- Benson 1e Option Features:**
- Collector-Distributor (CD) lane for NB off-ramp loop.
  - 30 mph 2-lane for NB I-229 to WB Benson Road traffic controlled at signal.
  - Pedestrians allowed to cross the WB Benson Road traffic at the signalized off-ramp.
  - Inside / outside lane will have the ability to turn right on red (assumed).
  - Realign I-229 NB off-ramp, EB on Benson Road yield movement.
  - 3rd WB lane on Benson Road from I-229 to the west.
  - 3rd EB lane on Benson Road from Lewis Avenue to I-229.
  - Widen existing Benson Road bridge.
  - Raised median Benson Road with left turn lanes.
  - Retaining walls necessary for power poles and pedestrian underpass.
  - Dual right turn lane and free right turn movement for EB Benson Road to SB I-229 traffic.

Drawn By: B.Miller  
Date: 5/14/2018  
Chkd By: P.Sanow  
Date: 5/14/2018  
Revision: 10/8/2018



Alternative Scenario 1e  
2-Lane Partial Clover Leaf Northeast Quadrant with CD Lane and  
2-Lane SB On-Ramp  
I-229 Exit 9 (Benson Road) IMJR

Figure  
**I-5**  
Sioux Falls, SD

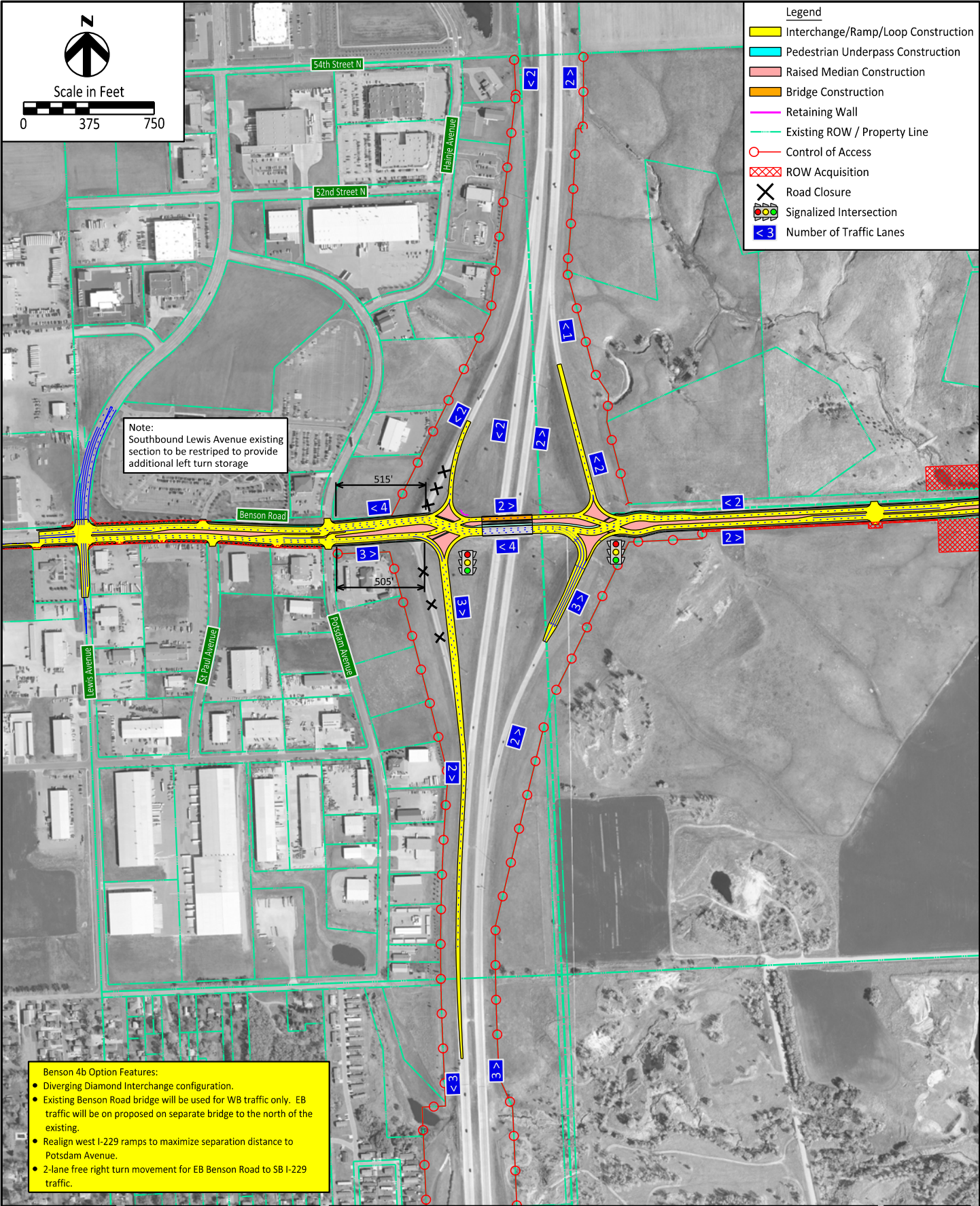


Drawn By: B. Miller  
 Date: 5/14/2018  
 Chkd By: P. Sanow  
 Date: 5/14/2018  
 Revision: 10/8/2018



Alternative Scenario 4a  
 Diverging Diamond Interchange with 3-Lane SB On-Ramp  
 Add 2 WB Lanes to Existing Overpass.  
 I-229 Exit 9 (Benson Road) IMJR

Figure  
**I-6**  
 Sioux Falls, SD



Note:  
Southbound Lewis Avenue existing  
section to be restriped to provide  
additional left turn storage

- Benson 4b Option Features:**
- Diverging Diamond Interchange configuration.
  - Existing Benson Road bridge will be used for WB traffic only. EB traffic will be on proposed on separate bridge to the north of the existing.
  - Realign west I-229 ramps to maximize separation distance to Potsdam Avenue.
  - 2-lane free right turn movement for EB Benson Road to SB I-229 traffic.

Drawn By: B. Miller  
Date: 5/14/2018  
Chkd By: P. Sanow  
Date: 5/14/2018  
Revision: 10/8/2018

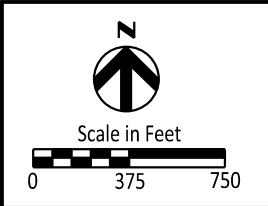


Alternative Scenario 4b  
Diverging Diamond Interchange with 3-Lane SB On-Ramp  
Add a Separate Structure for 2 EB Lanes  
I-229 Exit 9 (Benson Road) IMJR

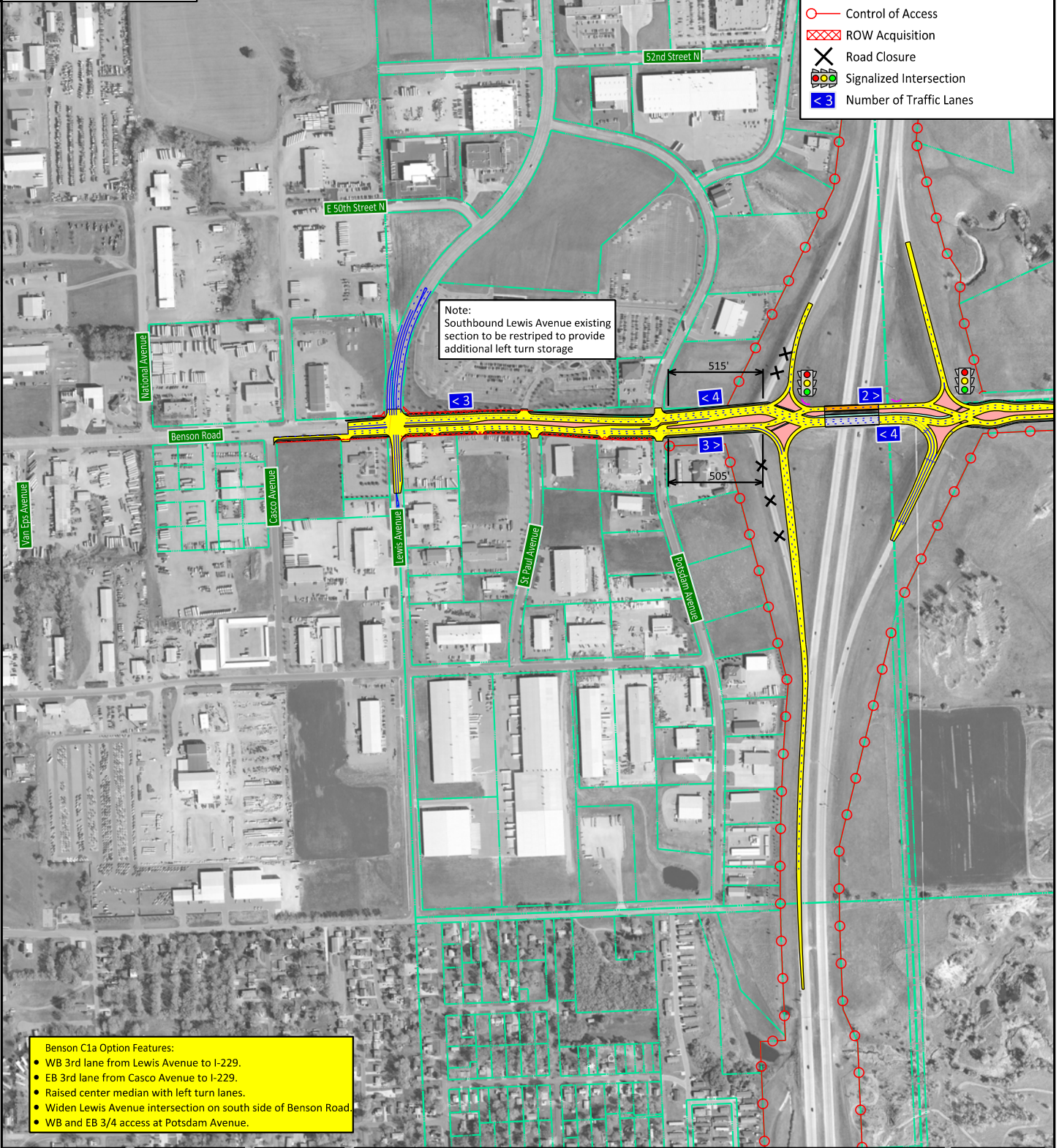
Figure  
**I-7**

Sioux Falls, SD





Legend	
	Interchange/Ramp/Loop Construction
	Pedestrian Underpass Construction
	Raised Median Construction
	Bridge Construction
	Retaining Wall
	Existing ROW / Property Line
	Control of Access
	ROW Acquisition
	Road Closure
	Signalized Intersection
	Number of Traffic Lanes



Note:  
Southbound Lewis Avenue existing section to be restriped to provide additional left turn storage

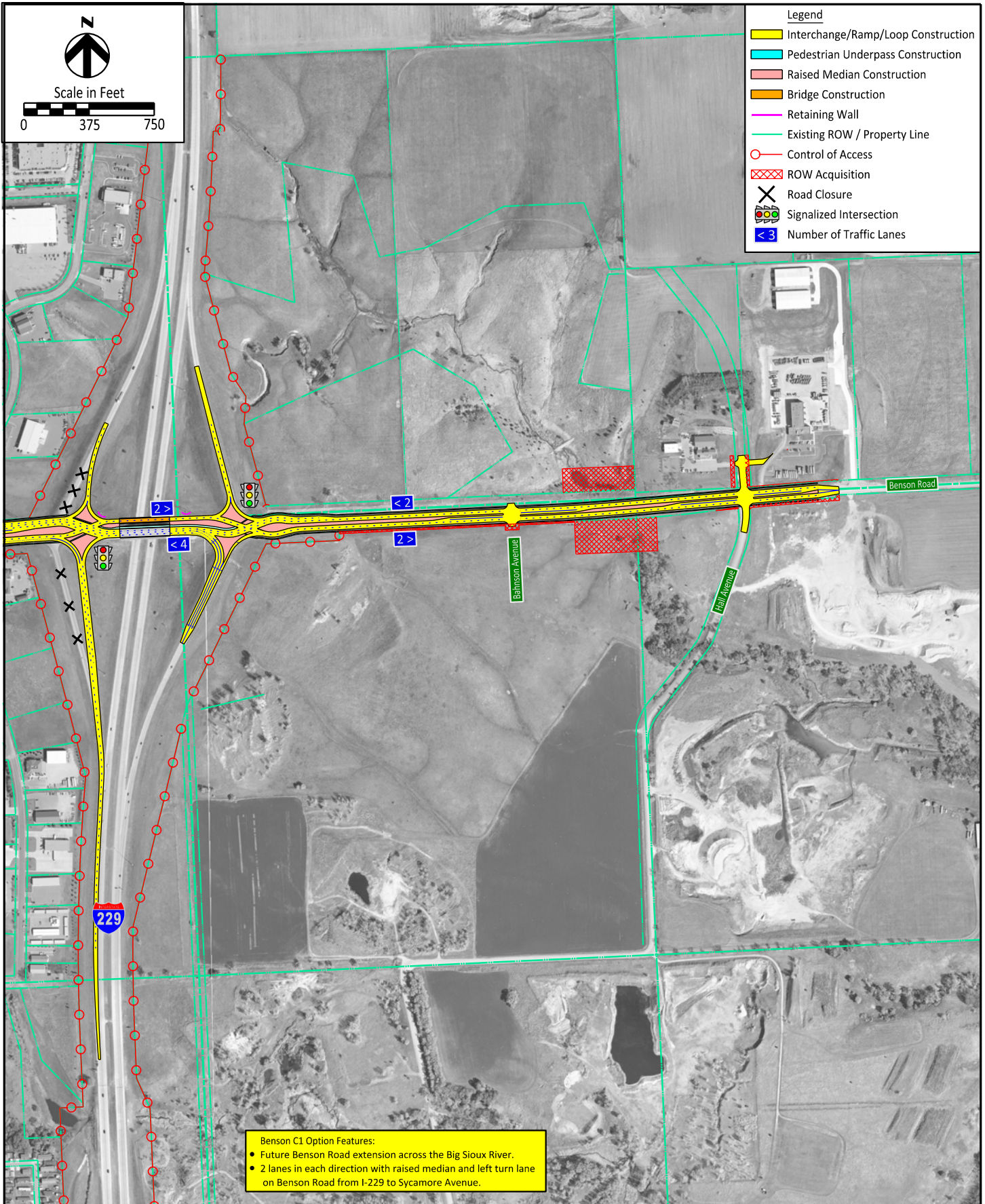
- Benson C1a Option Features:**
- WB 3rd lane from Lewis Avenue to I-229.
  - EB 3rd lane from Casco Avenue to I-229.
  - Raised center median with left turn lanes.
  - Widen Lewis Avenue intersection on south side of Benson Road.
  - WB and EB 3/4 access at Potsdam Avenue.

Drawn By: B.Miller  
Date: 5/14/2018  
Chkd By: P.Sanow  
Date: 5/14/2018  
Revision: 10/8/2018



Alternative Scenario Benson Road  
Westbound 3rd Lane from Lewis Avenue to I-229  
I-229 Exit 9 (Benson Road) IMJR

Figure  
**A-1**  
Sioux Falls, SD



Drawn By: B.Miller  
 Date: 5/14/2018  
 Chkd By: P.Sanow  
 Date: 5/14/2018  
 Revision: 10/8/2018



Alternative Scenario Benson Road  
 4-Lane Divided Section to Hall Avenue east of I-229  
 I-229 Exit 9 (Benson Road) IMJR

Sioux Falls, SD

Figure  
 A-2