



### Safety Benefits:

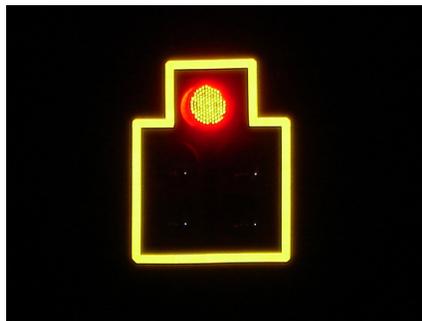
# 15%

reduction in total crashes.<sup>1</sup>

## Backplates with Retroreflective Borders

Backplates added to a traffic signal head improve the visibility of the illuminated face of the signal by introducing a controlled-contrast background. The improved visibility of a signal head with a backplate is made even more conspicuous by framing it with a 1- to 3-inch yellow retroreflective border. Signal heads that have backplates equipped with retroreflective borders are more visible and conspicuous in both daytime and nighttime conditions.

This treatment is recognized as a human factors enhancement of traffic signal visibility, conspicuity, and orientation for both older and color vision deficient drivers. This countermeasure is also advantageous during periods of power outages when the signals would otherwise be dark, providing a visible cue for motorists to stop at the intersection ahead.



Retroreflective borders are highly visible during the night. Source: South Carolina DOT

safety countermeasure is to adopt it as a standard treatment for signalized intersections across a jurisdiction or State.

Implementation challenges include minimizing installation time, accessing existing signal heads, and structural limitations due to added wind load in instances where an entire backplate is added. Agencies should consider the design of the existing signal support structure to determine if the design is sufficient to support the added wind load.

### Considerations

Transportation agencies should consider backplates with retroreflective borders as part of their efforts to systematically improve safety performance at signalized intersections. Adding a retroreflective border to an existing signal backplate is a very low-cost safety treatment. This can be done by either adding retroreflective tape to an existing backplate or purchasing a new backplate with a retroreflective border already incorporated. The most efficient means of implementing this proven



Signal backplate framed with a retroreflective border. Source: FHWA

For more information on this and other FHWA Proven Safety Countermeasures, please visit <https://safety.fhwa.dot.gov/provencountermeasures/> and <https://rosap.ntl.bts.gov/view/dot/42807>.

<sup>1</sup> Sayed, T., Leur, P., and Pump, J., "Safety Impact of Increased Traffic Signal Backboards Conspicuity," 2005 TRB 84th Annual Meeting: Compendium of Papers CD-ROM, Vol. TRB#05-16, Washington, D.C., (2005).

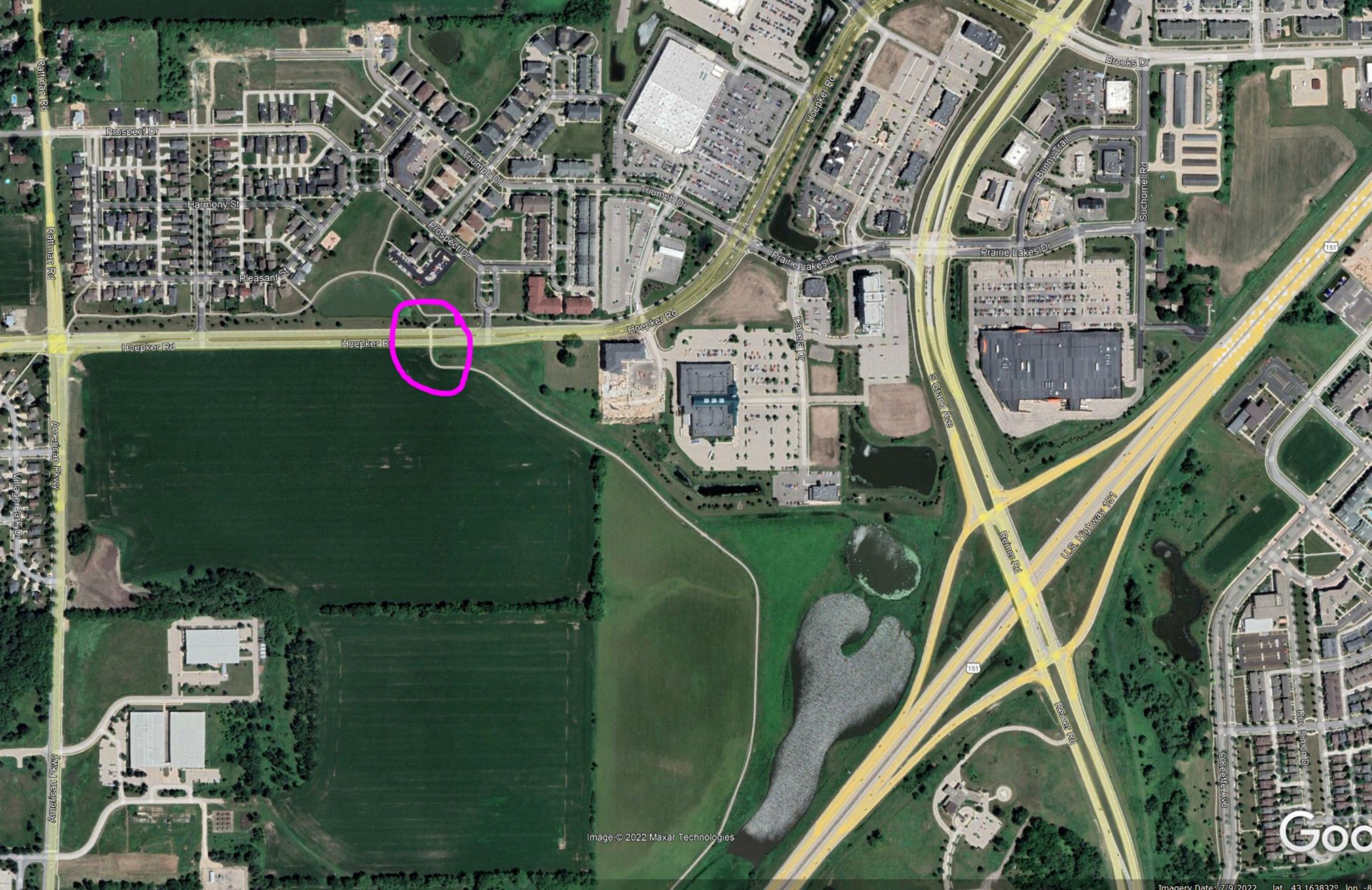


Image © 2022 Maxar Technologies

Google

Imagery Date: 7/9/2022 lat: 43.1638329 lon: -89.2411111

CIMARRON TRL

MUIR FIELD RD





Acewood Bl

BMO  
Harris Bank



RANDALL AVE

ORCHARD ST

CHARTER ST

MILLS ST

BROOKS ST

PARK ST

**Alt 3**

Buffered Lane To Bridge, Protected Lane (south side) on Bridge  
CITY OF MADISON

- ① Pavement Markings, 4-inch Dbl Yellow Centerline
- ② Pavement Markings, 6-inch Solid Line, White
- ③ Pavement Markings, 6-inch Diagonal Line, White
- ④ Pavement Markings, 6-inch 2' Line x 6' Gap, White

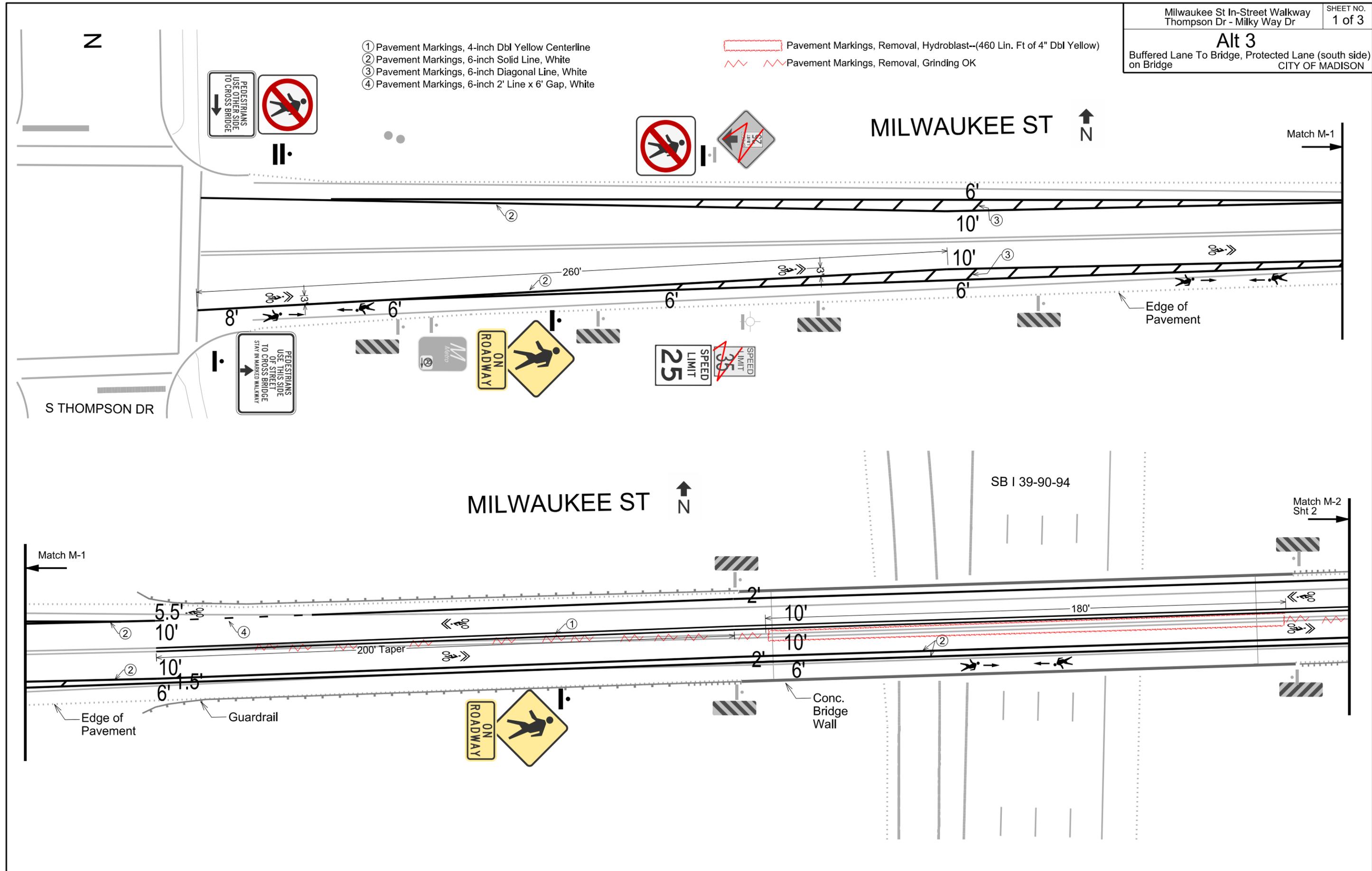
-  Pavement Markings, Removal, Hydroblast--(460 Lin. Ft of 4" Dbl Yellow)
-  Pavement Markings, Removal, Grinding OK

PLOT SCALE:

PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.



### Alt 3

Buffered Lane To Bridge, Protected Lane (south side)  
on Bridge  
CITY OF MADISON

- ① Pavement Markings, 4-inch Dbl Yellow Centerline
- ② Pavement Markings, 6-inch Solid Line, White
- ③ Pavement Markings, 6-inch Diagonal Line, White
- ④ Pavement Markings, 6-inch 2' Line x 6' Gap, White

## MILWAUKEE ST



PLOT SCALE:

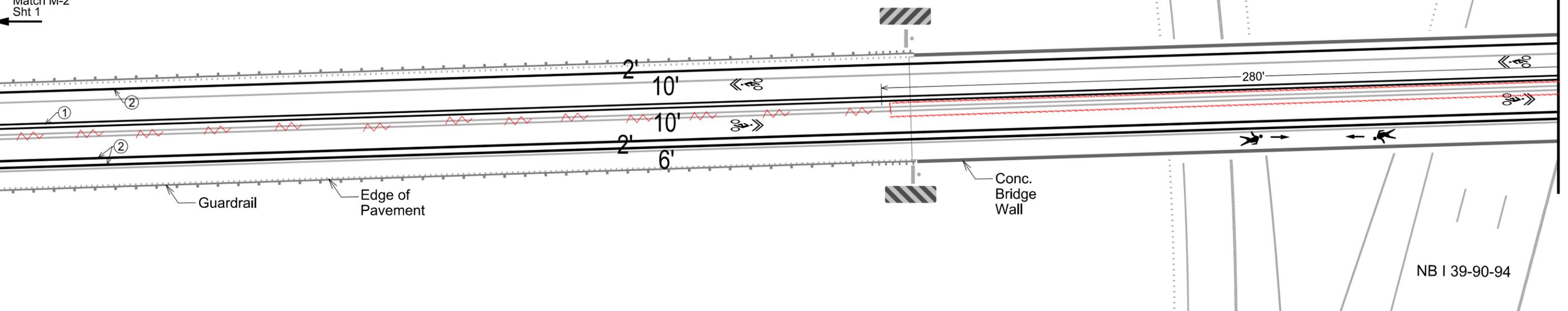
PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.

Match M-2  
Sht 1

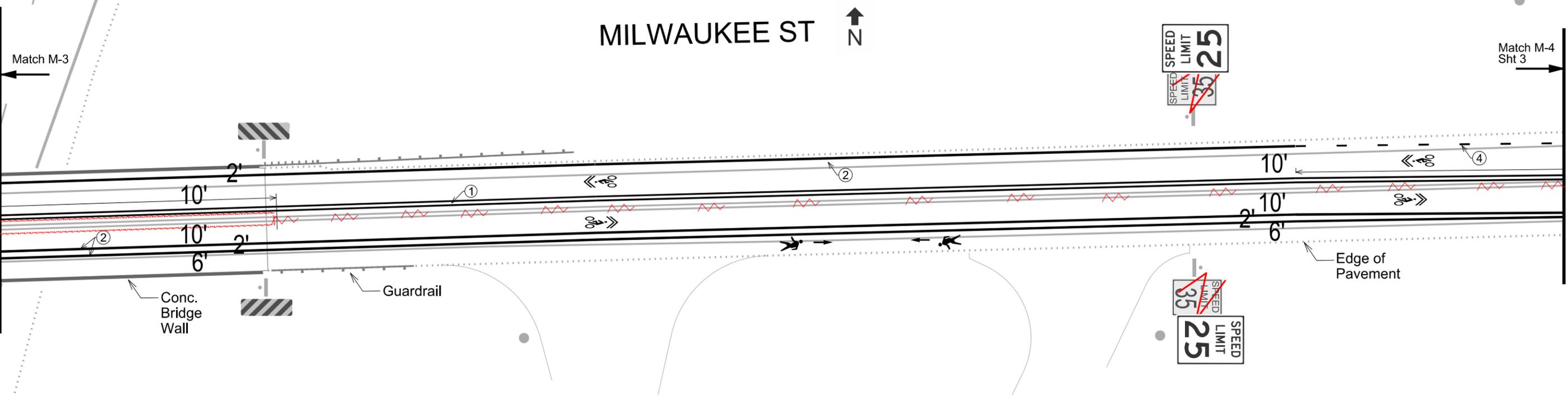
Match M-3



NB I 39-90-94

Match M-3

Match M-4  
Sht 3



### Alt 3

Buffered Lane To Bridge, Protected Lane (south side)  
on Bridge  
CITY OF MADISON

- ① Pavement Markings, 4-inch Dbl Yellow Centerline
- ② Pavement Markings, 6-inch Solid Line, White
- ③ Pavement Markings, 6-inch Diagonal Line, White
- ④ Pavement Markings, 6-inch 3' Line x 9' Gap, White

# MILWAUKEE ST

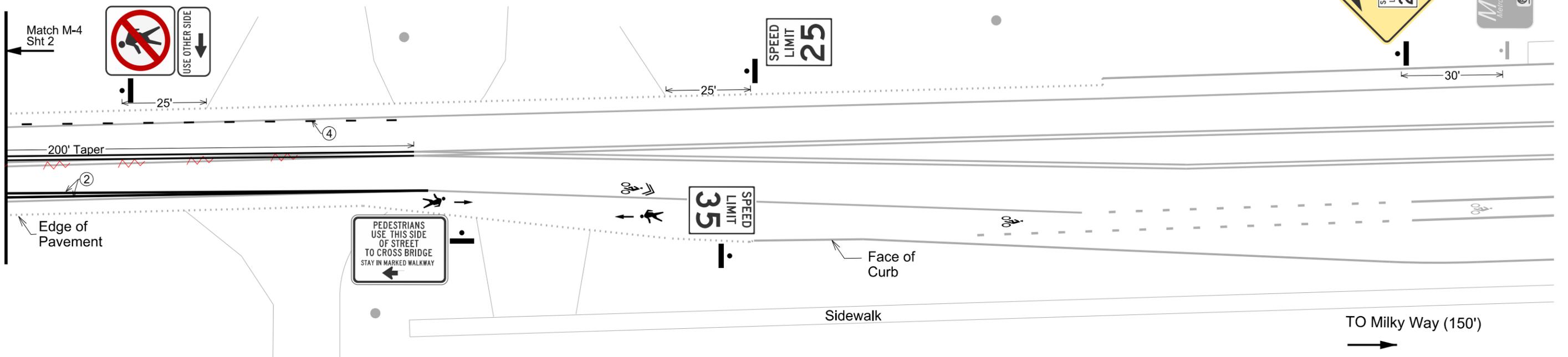
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PLOT SCALE:

PLOT NAME:

REV. DATE:

ORIGINATOR: CITY OF MADISON, TRAFFIC ENG. DIV.

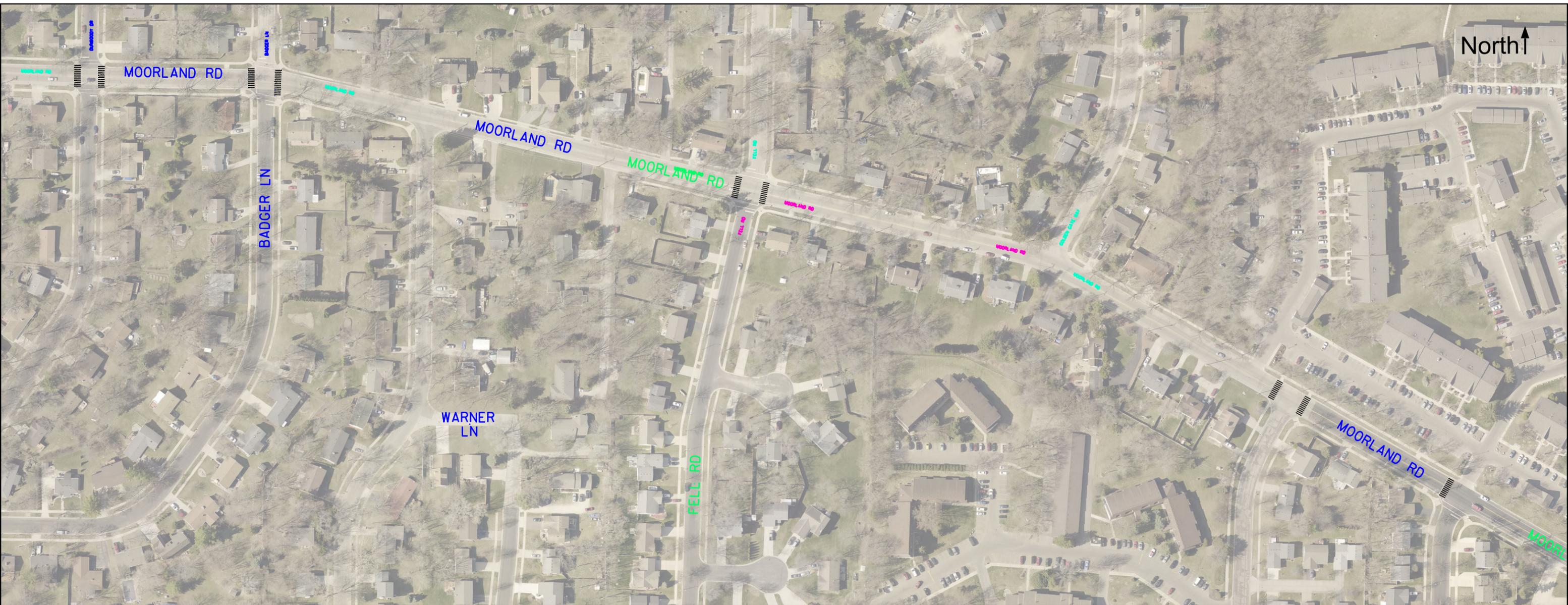






Brearly

Williamson St



North ↑

MOORLAND RD

BADGER LN

WARNER LN

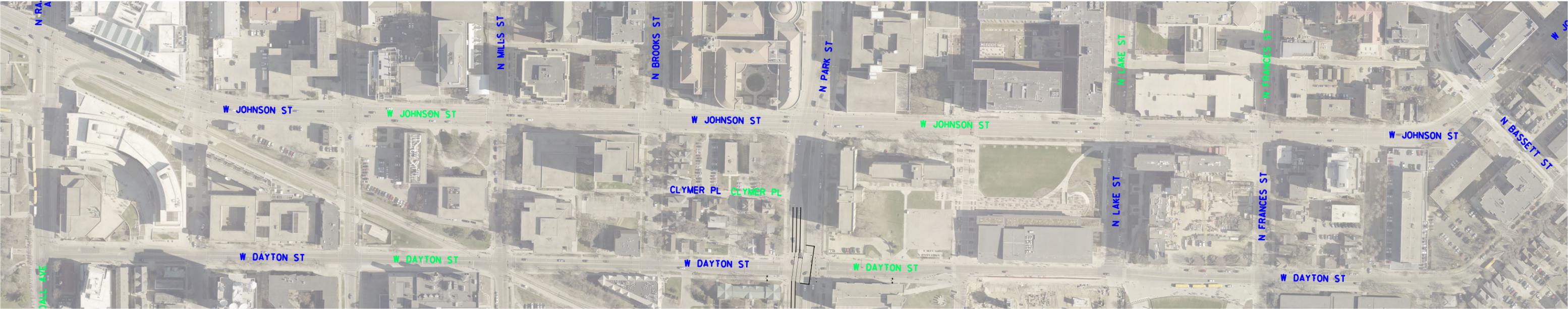
MOORLAND RD

MOORLAND RD

FELE RD

MOORLAND RD

MOORLAND RD

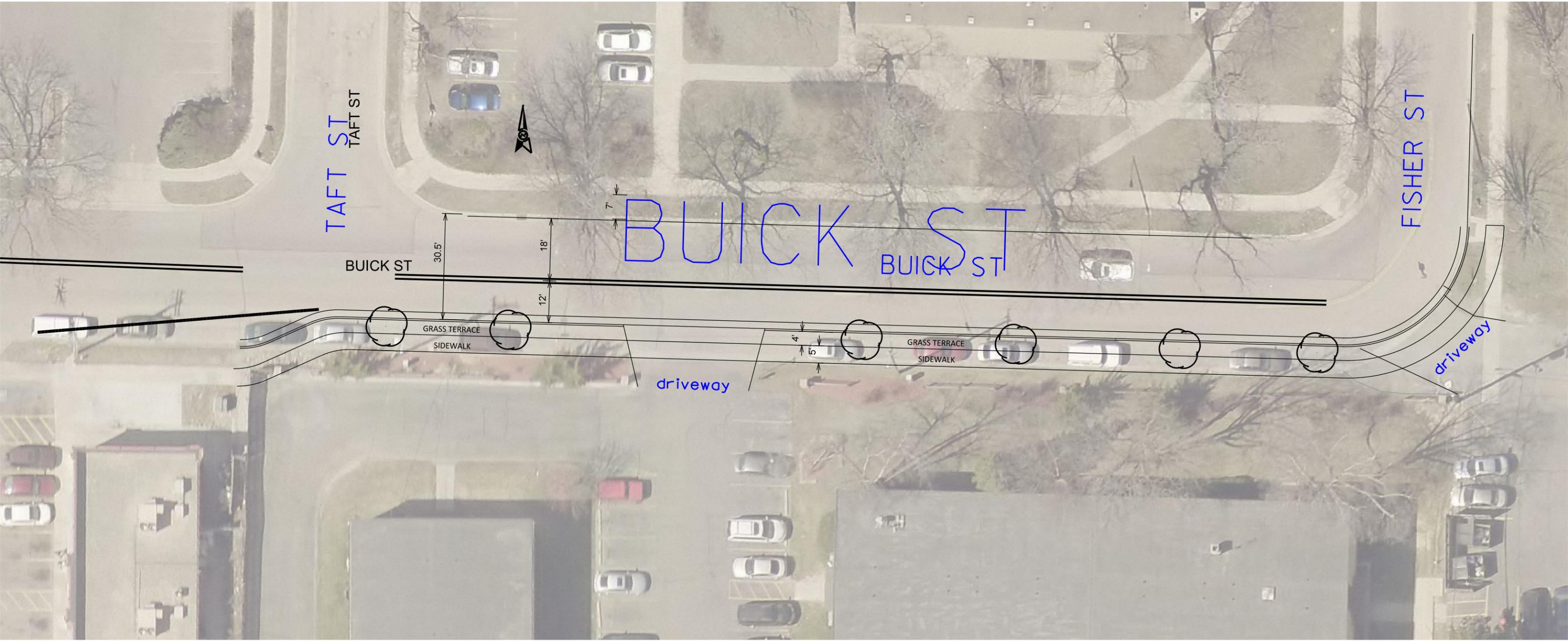


PACKERS AVE

ABERG

MAVE





TAFT ST  
TAFT ST

BUICK ST

GRASS TERRACE  
SIDEWALK

BUICK ST  
BUICK ST

GRASS TERRACE  
SIDEWALK

FISHER ST

driveway

driveway



30.5'

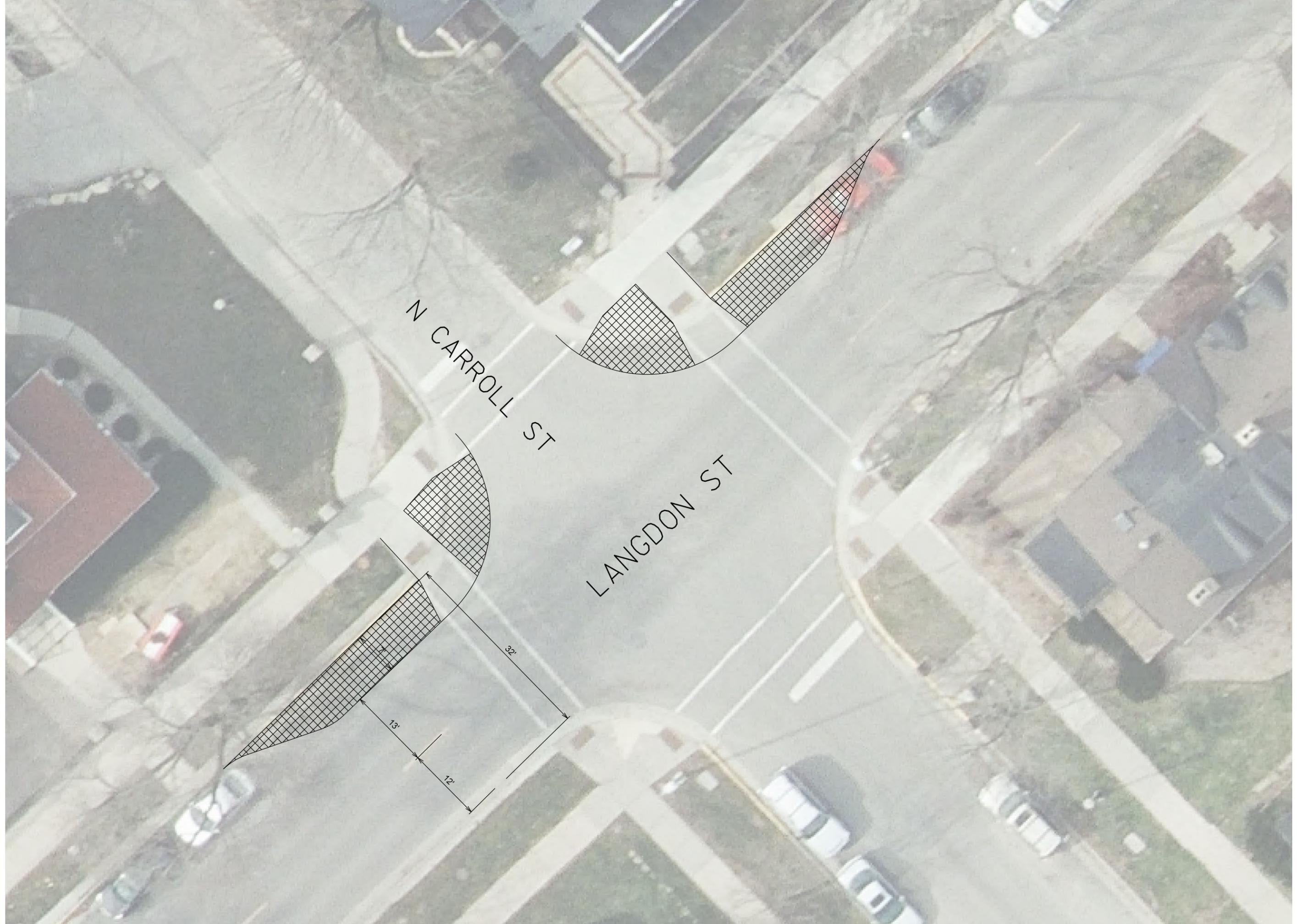
12'

18'

7'

4'

6'



N CARROLL ST

LANGDON ST





N HENRY ST

LANGDON ST

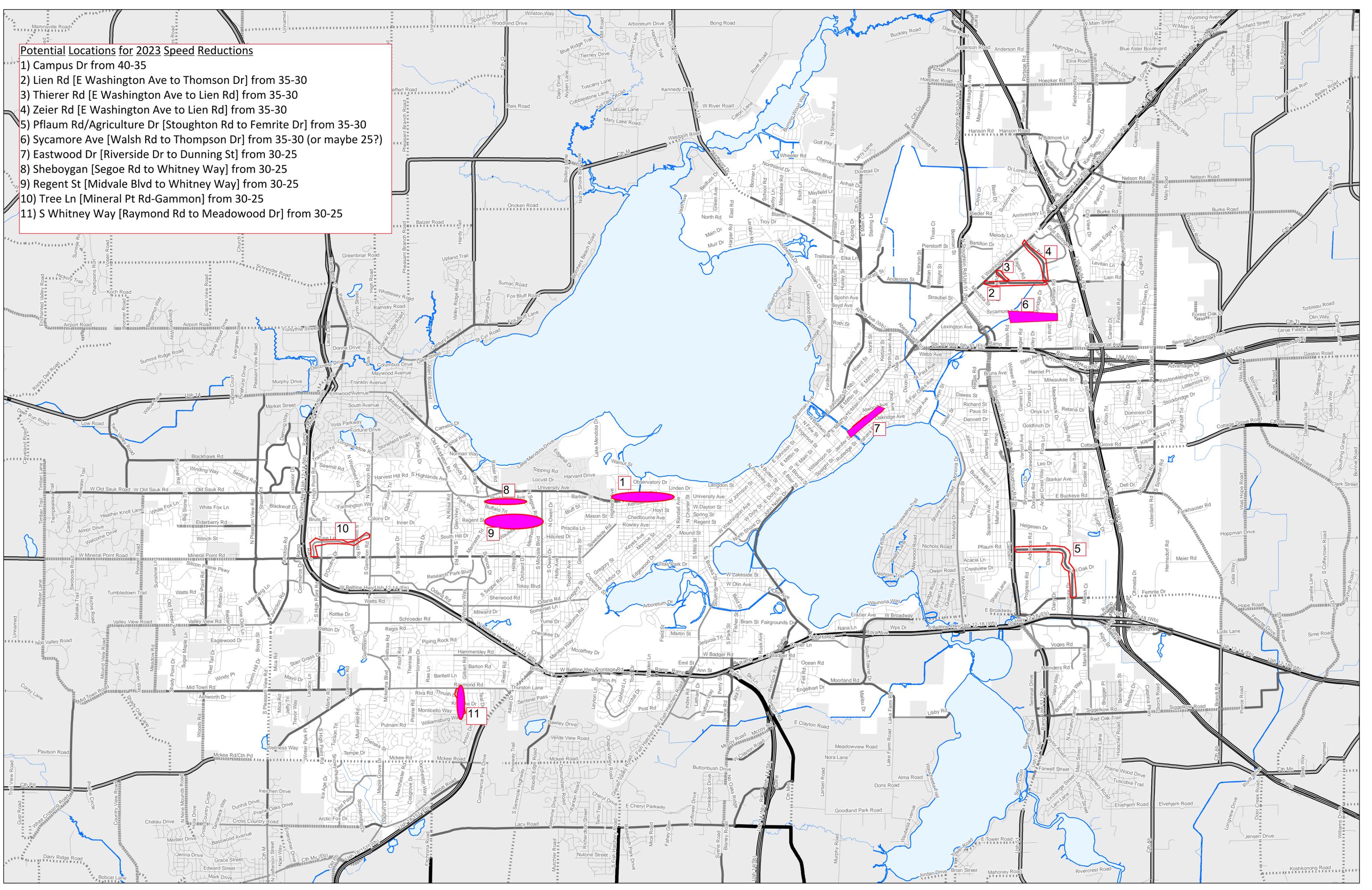
13'

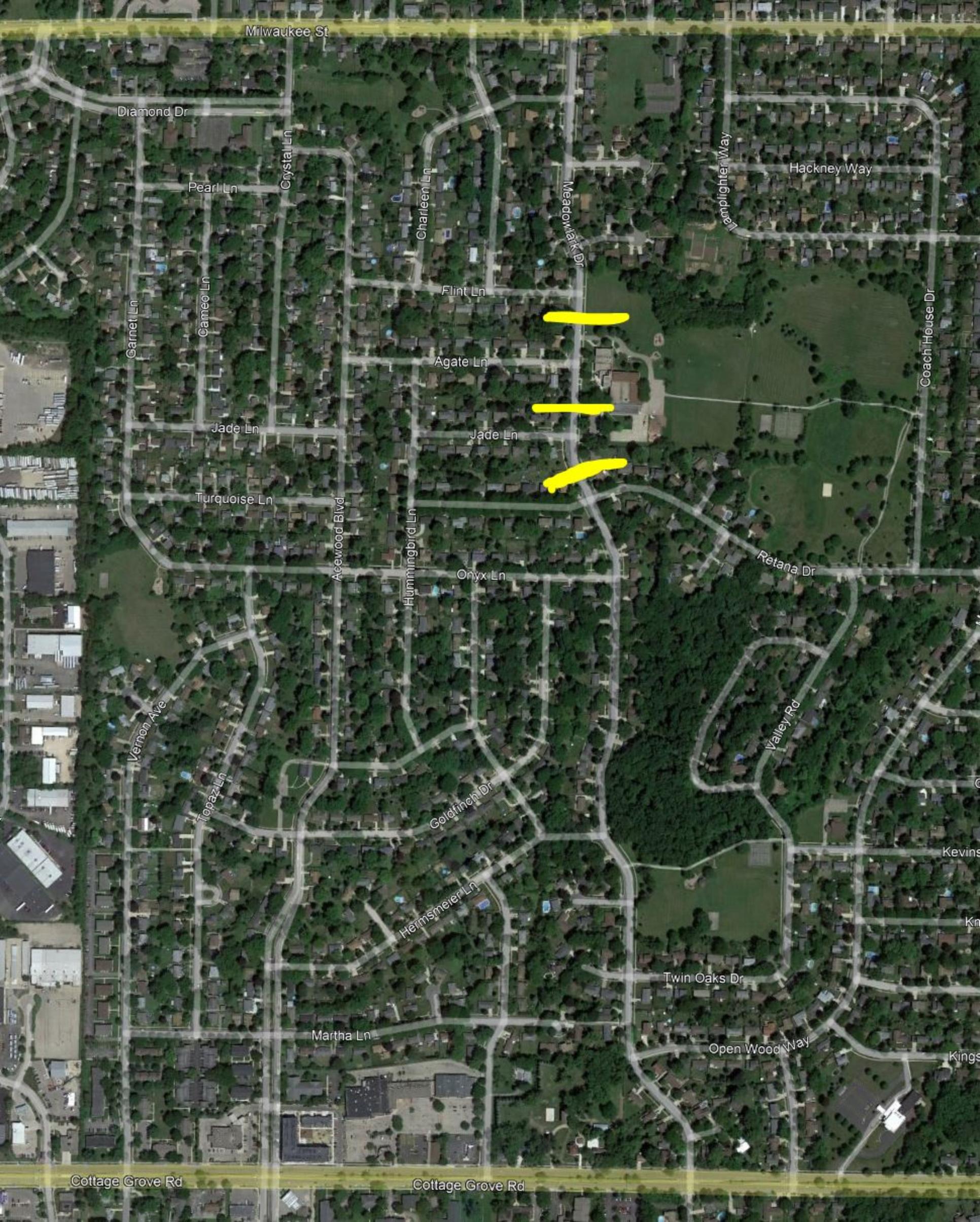
12.4'



**Potential Locations for 2023 Speed Reductions**

- 1) Campus Dr from 40-35
- 2) Lien Rd [E Washington Ave to Thomson Dr] from 35-30
- 3) Thierer Rd [E Washington Ave to Lien Rd] from 35-30
- 4) Zeier Rd [E Washington Ave to Lien Rd] from 35-30
- 5) Pflaum Rd/Agriculture Dr [Stoughton Rd to Femrite Dr] from 35-30
- 6) Sycamore Ave [Walsh Rd to Thompson Dr] from 35-30 (or maybe 25?)
- 7) Eastwood Dr [Riverside Dr to Dunning St] from 30-25
- 8) Sheboygan [Segoe Rd to Whitney Way] from 30-25
- 9) Regent St [Midvale Blvd to Whitney Way] from 30-25
- 10) Tree Ln [Mineral Pt Rd-Gammon] from 30-25
- 11) S Whitney Way [Raymond Rd to Meadowood Dr] from 30-25





Milwaukee St

Diamond Dr

Pearl Ln

Crystal Ln

Charleen Ln

Flint Ln

Meadowlark Dr

Hackney Way

Leamplighter Way

Garnet Ln

Cameo Ln

Agate Ln

[Yellow highlight on Meadowlark Dr]

Coach House Dr

Jade Ln

Jade Ln

[Yellow highlight on Jade Ln]

Turquoise Ln

Acewood Blvd

Hummingbird Ln

Onyx Ln

[Yellow highlight on Hummingbird Ln]

Retana Dr

Vernon Ave

Topaz Ln

Goldfinch Dr

Valley Rd

Hermsmeier Ln

Twin Oaks Dr

Martha Ln

Open Wood Way

Cottage Grove Rd

Cottage Grove Rd

MILWAUKEE ST

FINAL SECTION OF N STAR DR COMPLETED LATE FALL 2021

FINAL SECTION OF MILKY WAY COMPLETED 2019

PINK LINES = NEW SPEED HUMPS ON MILKY WAY

ORANGE LINES = EXISTING SPEED HUMPS ON NORTH STAR DRIVE

COTTAGE GROVE RD

