URS

MEMORANDUM

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To: Brian Hilgardner **Copy:** **File:**

From: Beth Kunkel and John Crawford

Date: December 1, 2005

Subject: Sand & Gravel Mining and Accessory Uses
Amendment to reroute trucks off of 170th Street in the City of Lakeville, and provide updated AADT figures

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Truck Restrictions on 170th Street in Lakeville

The Final Environmental Impact Statement (FEIS) was published for public review and comment in June, 2005. During the review period, the City of Lakeville commented that

> *County Road 58 / 170th Street from the Lakeville City border to Pilot Knob Road was turn-backed to the City by Dakota County effective August 1, 2005. This change in status poses a significant issue for Lakeville, given the volume and type of traffic that is expected to be generated by the Mining Project.*

Conversations with the City identified the possibility that a 7-ton axle weight restriction may be a measure that the City could impose on the segment of 170th Street in Lakeville between Diamond Path Road and Pilot Knob Road. As a result, the City asked the Township to analyze traffic impacts for the project with the inclusion of this weight restriction.

To analyze the impacts of the potential weight restriction, truck trips in the project area were rerouted off of 170th Street, with a combination of Diamond Path Road, 160th Street, and Pilot Knob Road being the roadways used to avoid 170th Street. Diamond Path Road currently does not connect between 160th and 170th Streets. This analysis assumes that the connection is constructed as a part of other developments by the Year 2015. No rerouting to the east on 170th or to TH 3 was found to be a practical alternate for the analysis. In addition, no changes to non-truck traffic were made for this analysis.

Changes that occur with the updated analysis include changes of traffic volumes (truck volumes only), and minor changes to intersection delay and Level of Service (LOS). One mitigation measure that had been presented in the FEIS as being required to maintain acceptable AM and PM peak hour traffic operations at the intersection of 170th Street at Pilot Knob Road in Year 2025 was to provide a westbound right turn overlap signal phase. With the rerouting of trucks

away from this intersection, this overlap phase would no longer be required to maintain acceptable AM and PM peak hour traffic operations in Year 2025. The one mitigation measure change was the only change to previously identified mitigation that would result from the rerouting of trucks off of 170th Street in Lakeville.

The LOS changes occur only during the AM Peak Hour, and are presented in an updated Table 6-1 in the attachments to this document. The intersections and scenarios that have changed compared to the Traffic Impact Study have been shaded, and show the previous LOS (with strikethrough text), and the updated LOS (e.g.: ~~D~~ C). None of the intersections have been degraded to an unacceptable LOS as a result of rerouting trucks off of 170th Street in Lakeville.

The figures and tables attached to this document present the results of the analysis. All other analysis assumptions identified in the December, 2004 Traffic Impact Study remain the same. The figures that have changes since the FEIS are included in this document, and have the letter "R" added for "revised." All other figures from the FEIS remain unchanged.

AADT Data and Projection

During a meeting with the City of Lakeville on August 30, 2005, it was pointed out that there was a discrepancy between the AADTs and peak hour volumes in the project documentation. Typically, peak hour traffic volumes are approximately 8-11 percent of the daily traffic volumes on roadways such as those surrounding the project site. However, a brief review of traffic volumes on 170th Street from the figures in the document would result in up to 90 percent of the daily traffic occurring in a peak hour.

<u>AADT</u>
AADT figures were requested in comments to the FEIS. The existing AADT was obtained from counts that existed from Mn/DOT traffic volume maps, which were for the Year 2002. The Year 2002 volume provided on 170th Street was 500 AADT. Year 2004 Mn/DOT data was not available at the time of the creation of the AADT maps in the FEIS. Further investigation based on the Year 2004 data shows that the volume on 170th Street has increased significantly, and the Year 2004 Mn/DOT traffic volume maps show a volume of 3,650. Growth from an AADT of 500 to 3,650 in two years was not anticipated.

When the AADT figures were created for the FEIS response to comments, all available daily data was used to develop existing, 2015 and 2025. Therefore, the available 2002 data for 170th Street showing 500 AADT was used to project background growth for 2015 and 2025, resulting in volumes that are not much higher than the newly available 2004 AADT of 3,650. The City also pointed out in its comments that the City's Transportation Plan projected an AADT of 3,500 in Year 2020.

Based on the findings described above, the project AADT figures have been updated and are attached to this document. Note that the Traffic Impact Analysis and the potential mitigation measures were based on peak hour turning movement projections, for which existing data was collected in 2004. These peak hour turning movement volumes have not changed based on the Year 2004 AADT data.

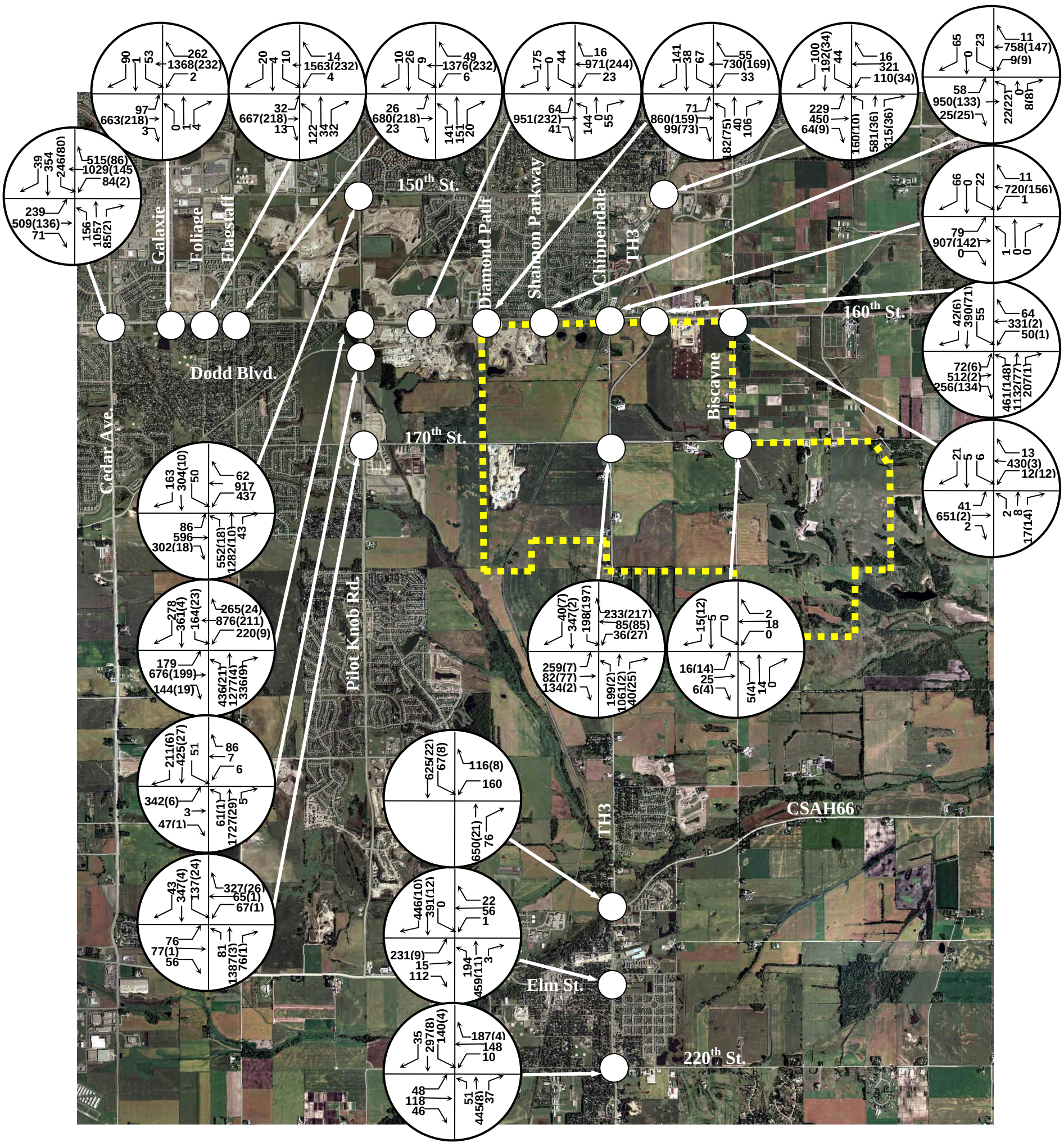
FIGURES

Turning Movement Volume and LOS Figures

Figure 4-14R	Year 2015 AM Peak Hour Turning Movement Volumes – Build (Mining Operation Plus Background Growth Plus Planned Land Developments)
Figure 4-15R	Year 2015 PM Peak Hour Turning Movement Volumes –-Build (Mining Operation Plus Background Growth Plus Planned Land Developments)
Figure 4-20R	Year 2015 AM Peak Hour Intersection LOS –Build (Mining Operation Plus Background Growth Plus Planned Land Developments)
Figure 4-21R	Year 2015 PM Peak Hour Intersection LOS –Build (Mining Operation Plus Background Growth Plus Planned Land Developments)
Figure 4-26R	Year 2025 AM Peak Hour Turning Movement Volumes – Build (Mining Operation Plus Background Growth Plus Planned Land Developments)
Figure 4-27R	Year 2025 PM Peak Hour Turning Movement Volumes –-Build (Mining Operation Plus Background Growth Plus Planned Land Developments)
Figure 4-32R	Year 2025 AM Peak Hour Intersection LOS –Build (Mining Operation Plus Background Growth Plus Planned Land Developments)
Figure 4-33R	Year 2025 PM Peak Hour Intersection LOS –Build (Mining Operation Plus Background Growth Plus Planned Land Developments)
Figure 5-8R	Year 2015 AM Peak Hour Intersection LOS – Build Condition with Mitigation Option 1
Figure 5-9R	Year 2015 PM Peak Hour Intersection LOS – Build Condition with Mitigation Option 1
Figure 5-10R	Year 2025 AM Peak Hour Intersection LOS – Build Condition with Mitigation Option 1
Figure 5-11R	Year 2025 PM Peak Hour Intersection LOS – Build Condition with Mitigation Option 1
Figure 5-13R	Year 2025 AM Peak Hour Turning Movement Volumes – Build Condition with Mitigation Option 2
Figure 5-14R	Year 2025 PM Peak Hour Turning Movement Volumes – Build Condition with Mitigation Option 2
Figure 5-15R	Year 2025 AM Peak Hour Intersection LOS – Build Condition with Mitigation Option 2
Figure 5-16R	Year 2025 PM Peak Hour Intersection LOS – Build Condition with Mitigation Option 2

AADT Figures

Figure 3-2R	Existing Condition Daily Traffic Volumes (AADT)
Figure 4-9BR	Year 2015 AADT – No-Build (Background Growth Only)
Figure 4-11BR	Year 2015 AADT – No-Build (Background Growth Plus Planned Land Developments)
Figure 4-13BR	Year 2015 AADT –Build (Mining Operation Plus Background Growth Plus Planned Land Developments)
Figure 4-21BR	Year 2025 AADT– No-Build (Background Growth Only)
Figure 4-23BR	Year 2025 AADT – No-Build (Background Growth Plus Planned Land Developments)
Figure 4-25BR	Year 2025 AADT –Build (Mining Operation Plus Background Growth Plus Planned Land Developments)



▪ ▪ ▪ ▪	-	Indicates proposed project site
xx	-	Total turning movement volume (includes total mining company volume)
(xx)	-	Total mining company site generated traffic volume

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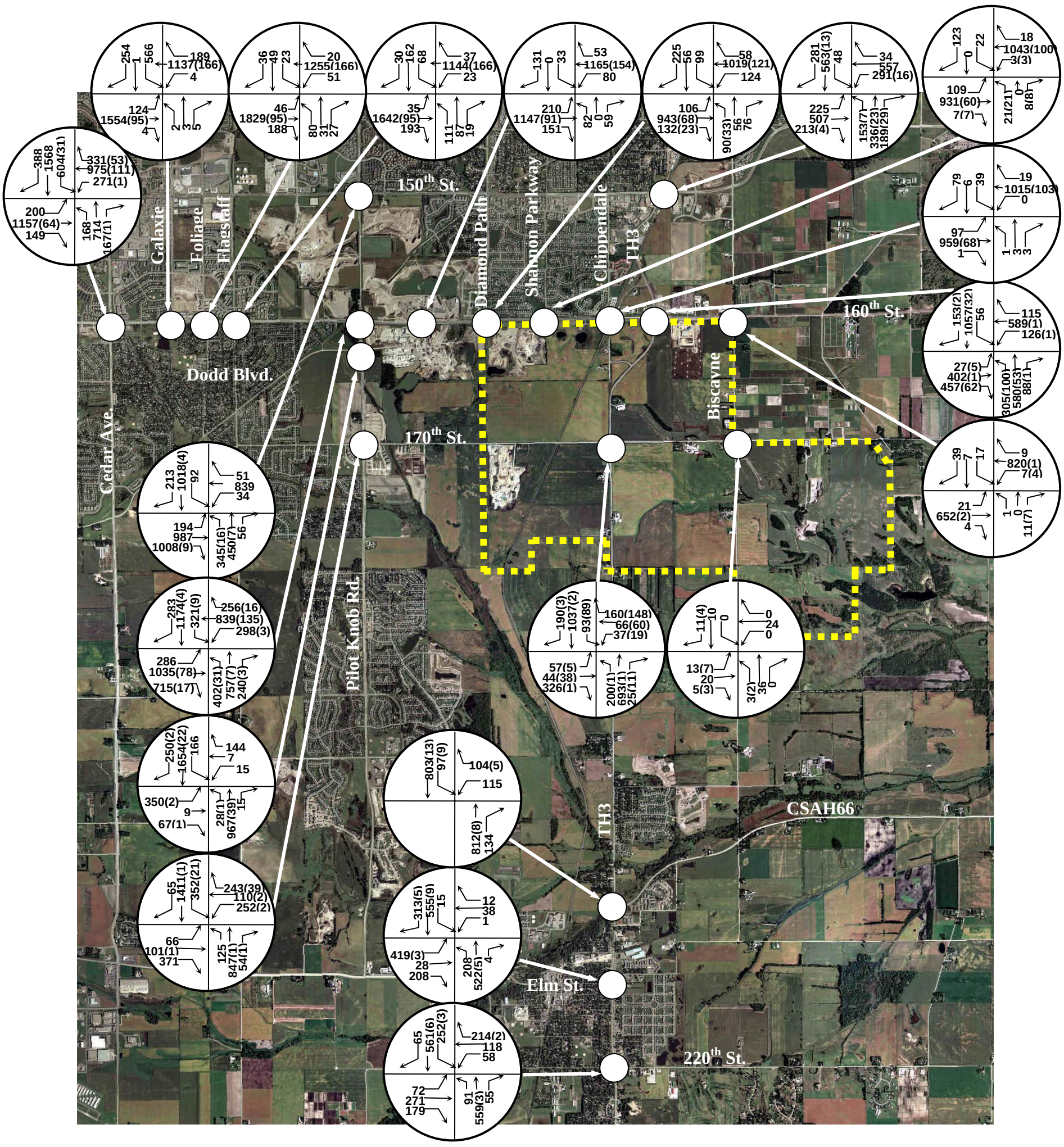
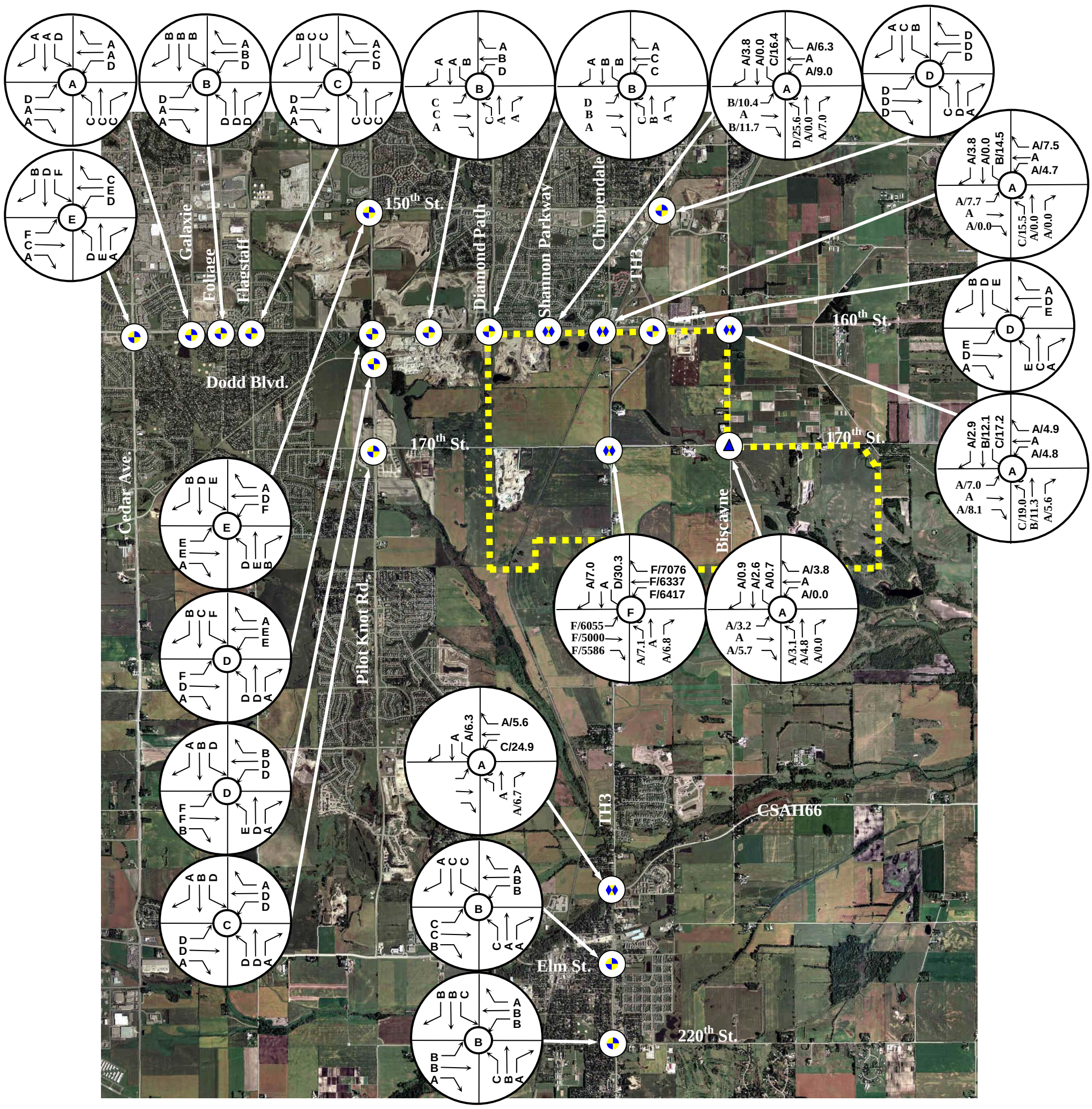
Figure 4-14R
Year 2015 AM Peak Hour Turning Movement Volumes – Build (Mining Operation plus Background Growth plus Planned Land Developments)



■ ■ ■ ■	-	Indicates proposed project site
xx	-	Total turning movement volume (includes total mining company volume)
(xx)	-	Total mining company site generated traffic volume

URS Empire Township No Scale

Figure 4-15R
Year 2015 PM Peak Hour Turning Movement Volumes – Build (Mining Operation plus Background Growth plus Planned Land Developments)



- Indicates signalized intersection
- Indicates stop control intersection
- Indicates yield control intersection
- Indicates proposed project site

X/XXX – LOS/Delay for Stop/Yield-Controlled Movement

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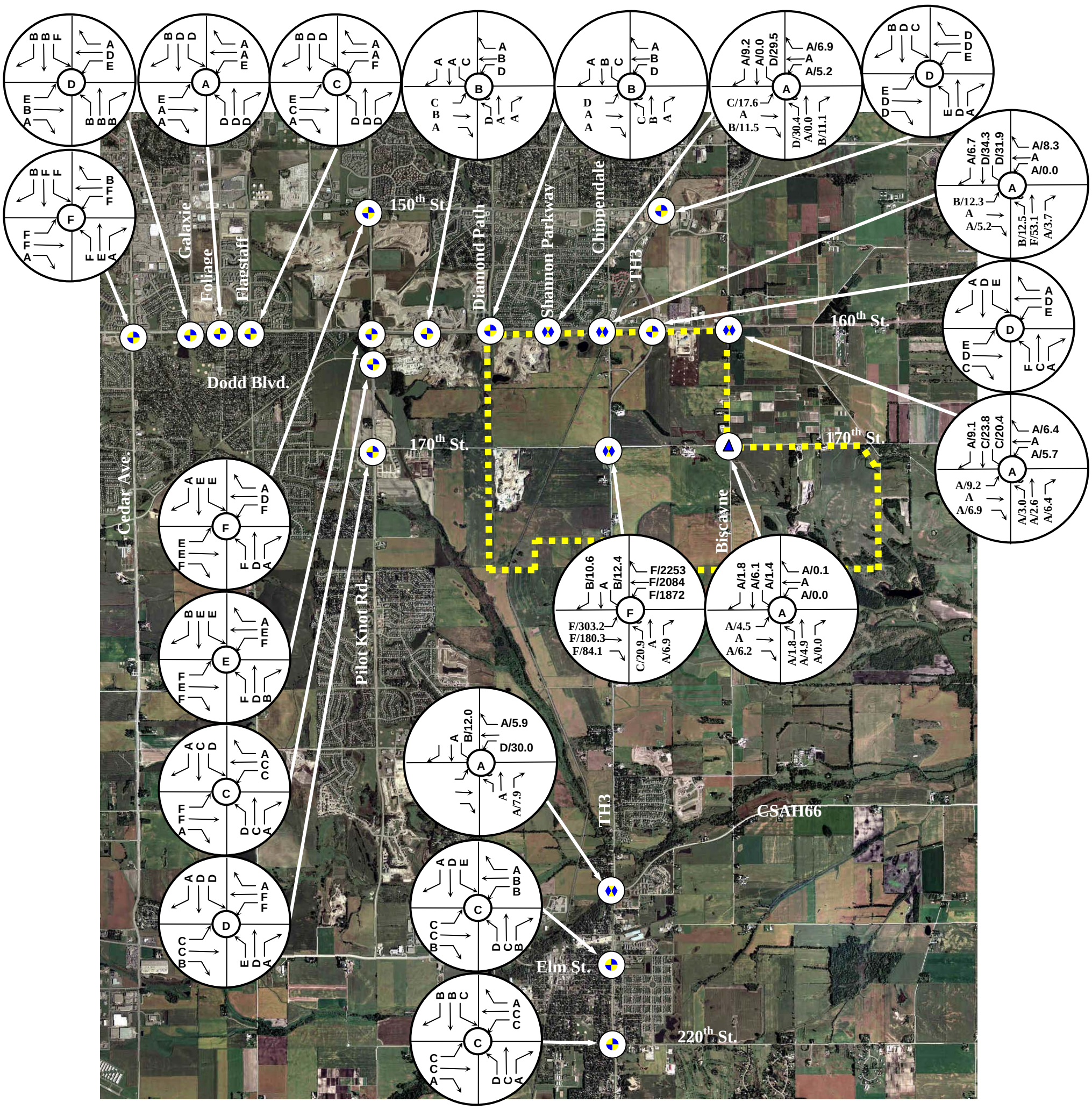
Figure 4-20R
Year 2015 AM Peak Hour Intersection LOS
Build (Mining Operation plus Background Growth plus Planned Land Developments)

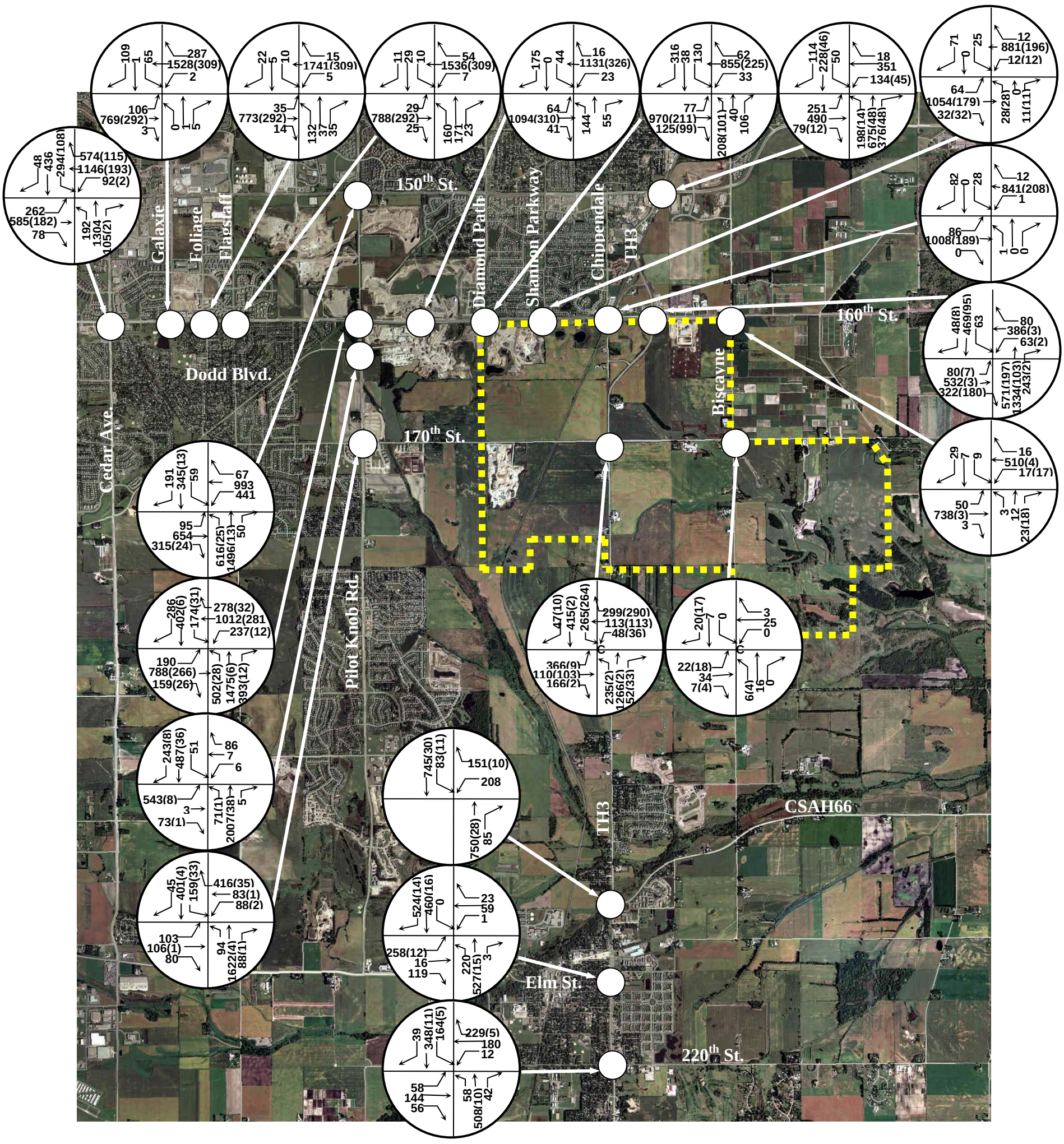


- Indicates signalized intersection
- Indicates stop control intersection
- Indicates yield control intersection
- Indicates proposed project site

X/XXX – LOS/Delay for Stop/Yield-Controlled Movement

URS Empire Township No Scale

Figure 4-21R
Year 2015 PM Peak Hour Intersection LOS Build (Mining Operation plus Background Growth plus Planned Land Developments)



■ ■ ■ ■	-	Indicates proposed project site
xx	-	Total turning movement volume (includes total mining company volume)
(xx)	-	Total mining company site generated traffic volume

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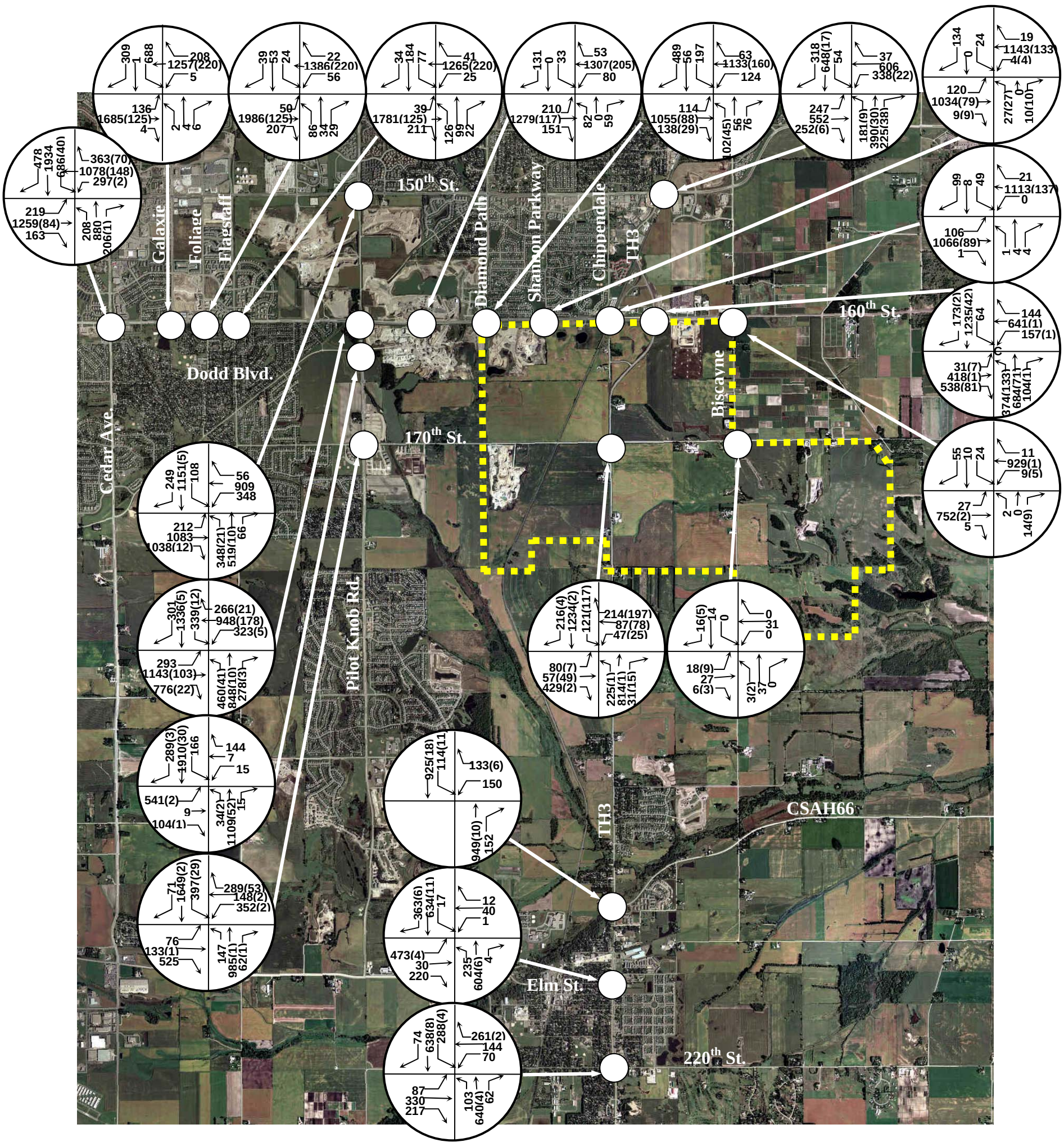
Figure 4-26R
Year 2025 AM Peak Hour Turning Movement Volumes – Build (Mining Operation plus Background Growth plus Planned Land Developments)



■ ■ ■ ■	-	Indicates proposed project site
xx	-	Total turning movement volume (includes total mining company volume)
(xx)	-	Total mining company site generated traffic volume

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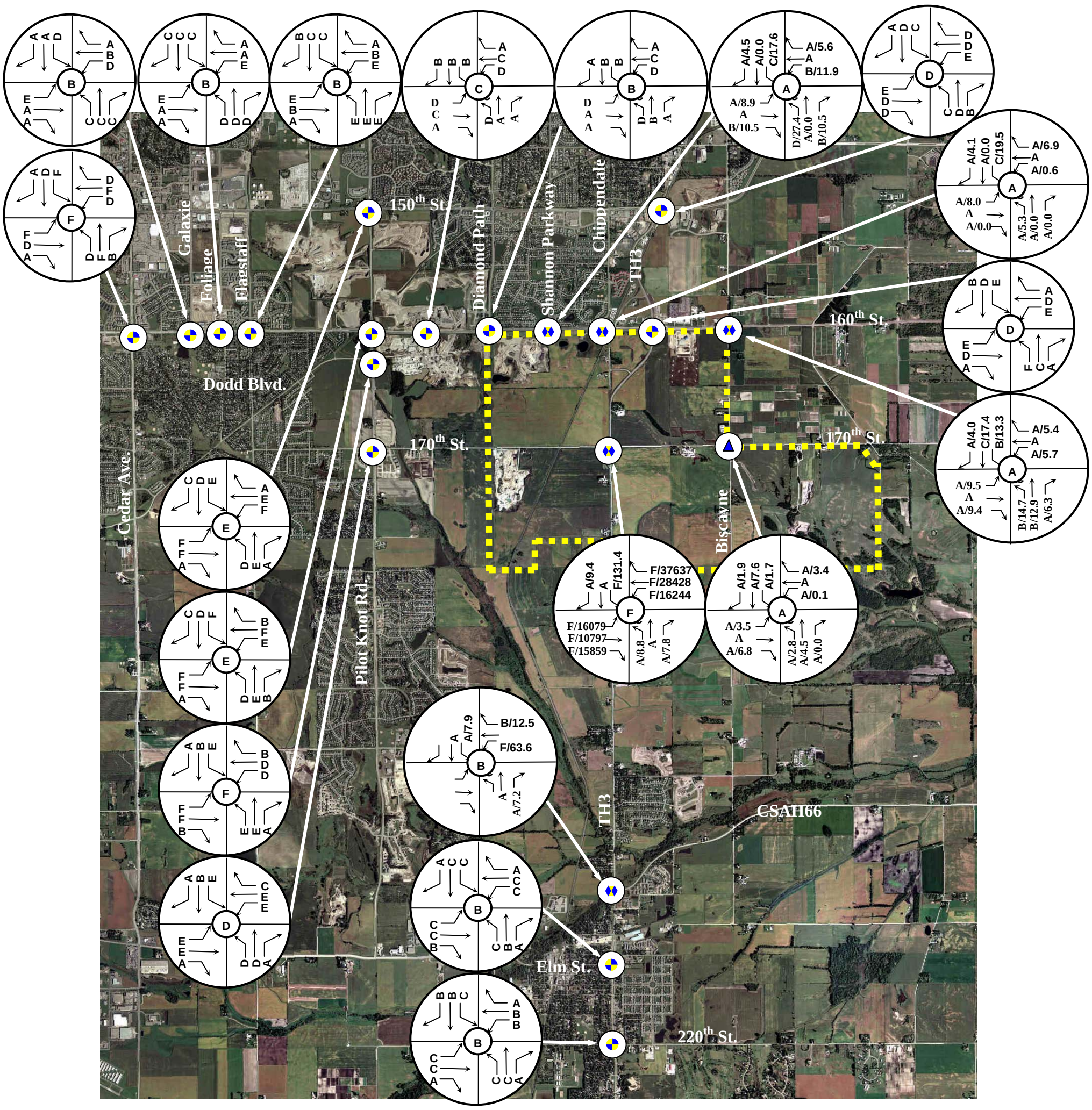
Figure 4-27R
Year 2025 PM Peak Hour Turning Movement Volumes – Build (Mining Operation plus Background Growth plus Planned Land Developments)

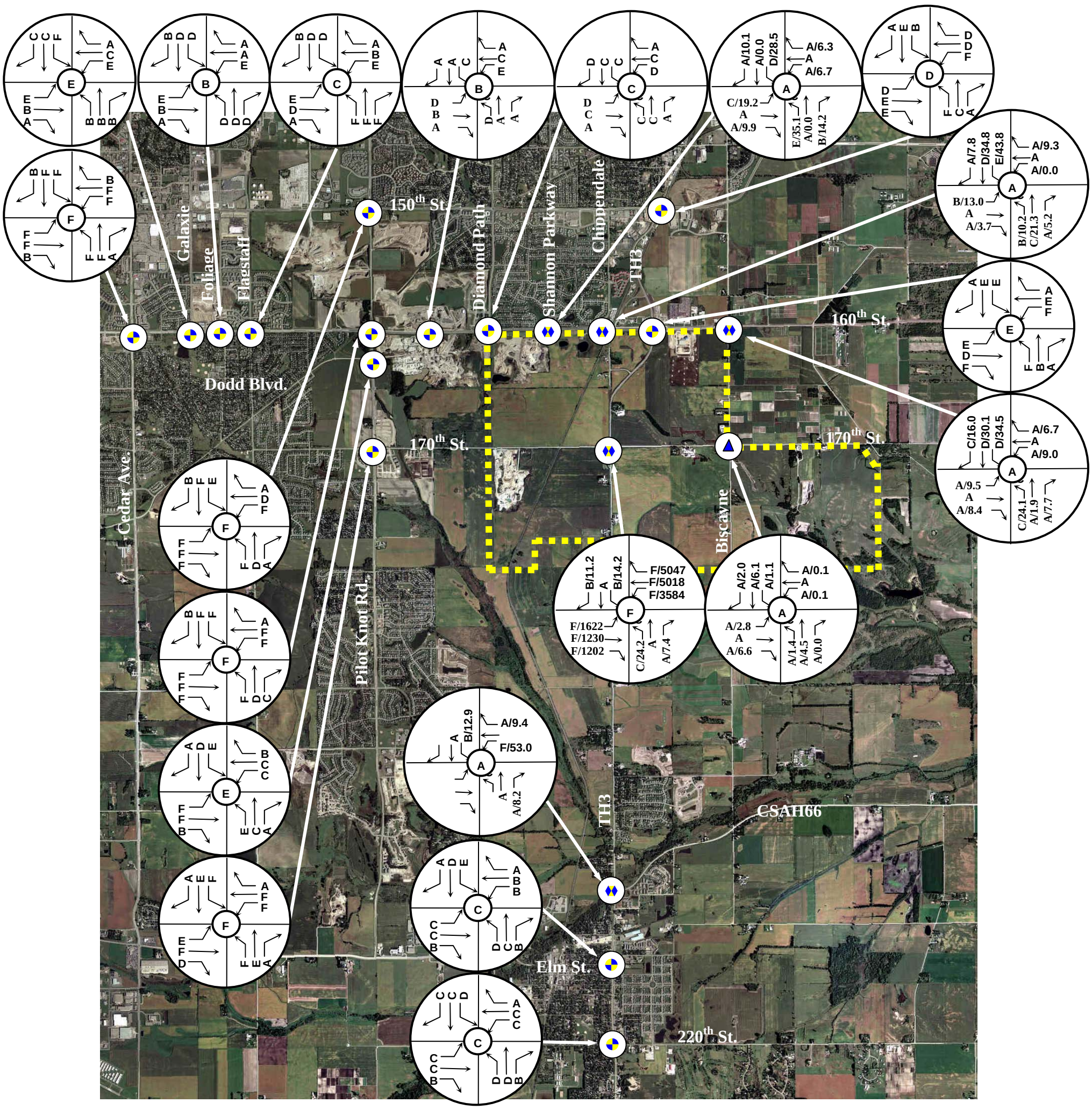


- Indicates signalized intersection
- Indicates stop control intersection
- Indicates yield control intersection
- Indicates proposed project site

X/XXX – LOS/Delay for Stop/Yield-Controlled Movement

URS Empire Township No Scale

Figure 4-32R
Year 2025 AM Peak Hour Intersection LOS
Build (Mining Operation plus Background
Growth plus Planned Land Developments)



- Indicates signalized intersection
- Indicates stop control intersection
- Indicates yield control intersection
- Indicates proposed project site

X/XXX – LOS/Delay for Stop/Yield-Controlled Movement

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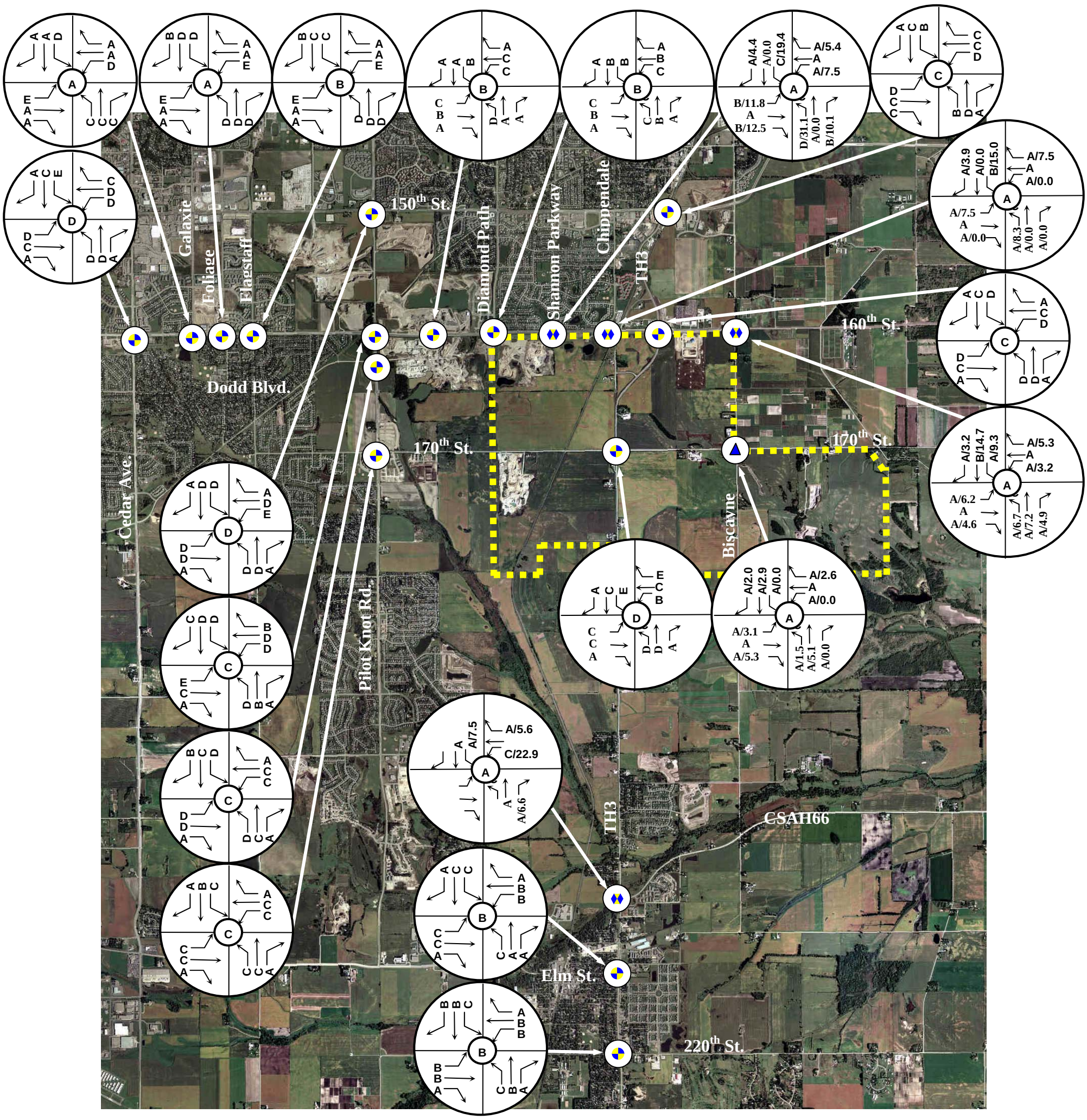
Figure 4-33R
Year 2025 PM Peak Hour Intersection LOS Build (Mining Operation plus Background Growth plus Planned Land Developments)



- Indicates signalized intersection
- Indicates stop control intersection
- Indicates yield control intersection
- Indicates proposed project site

X/XXX – LOS/Delay for Stop/Yield-Controlled Movement

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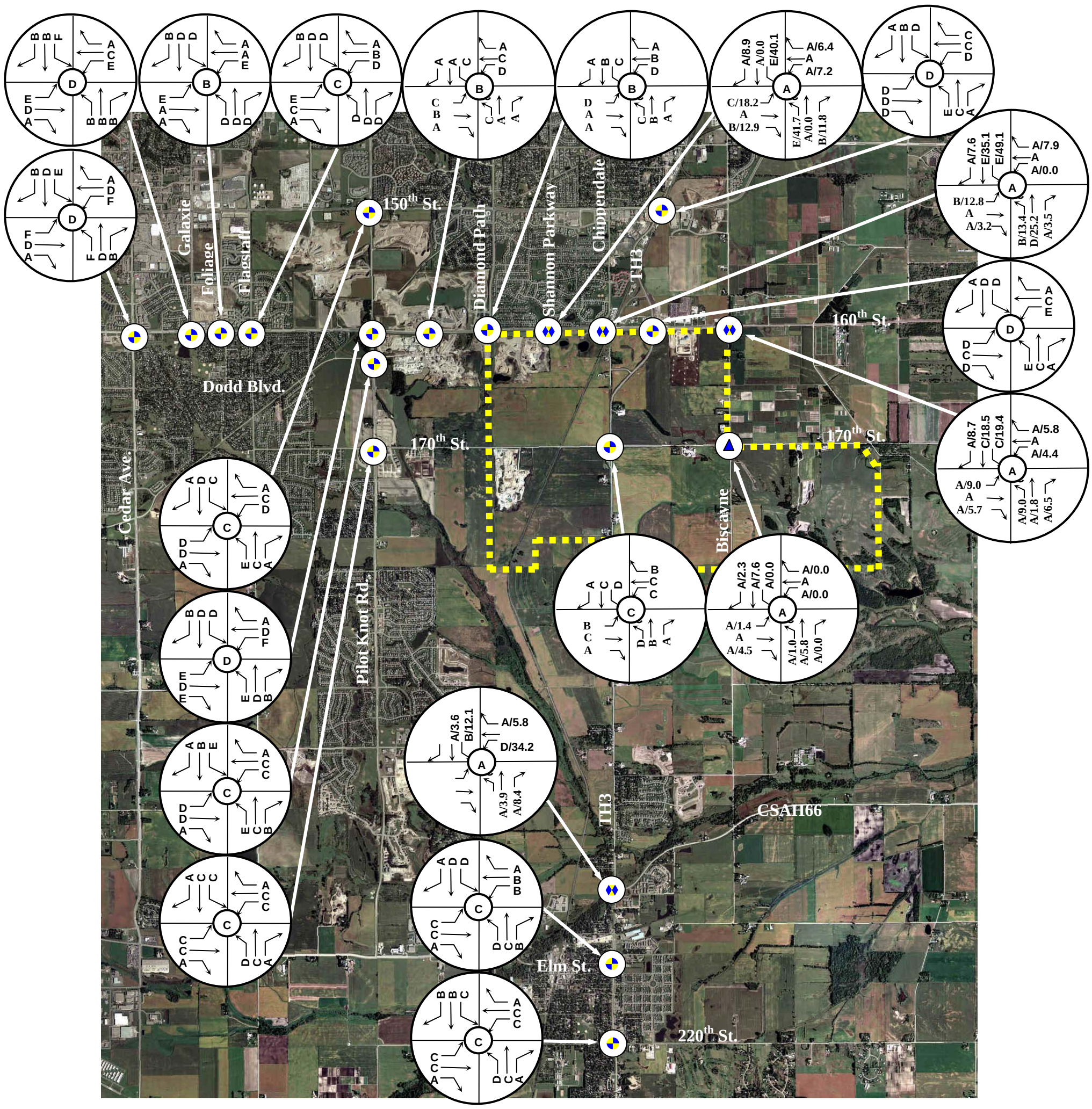
Figure 5-8R
Year 2015 AM Peak Hour Intersection LOS
Build Condition with Mitigation Option 1



- Indicates signalized intersection
- Indicates stop control intersection
- Indicates yield control intersection
- Indicates proposed project site

X/XXX – LOS/Delay for Stop/Yield-Controlled Movement

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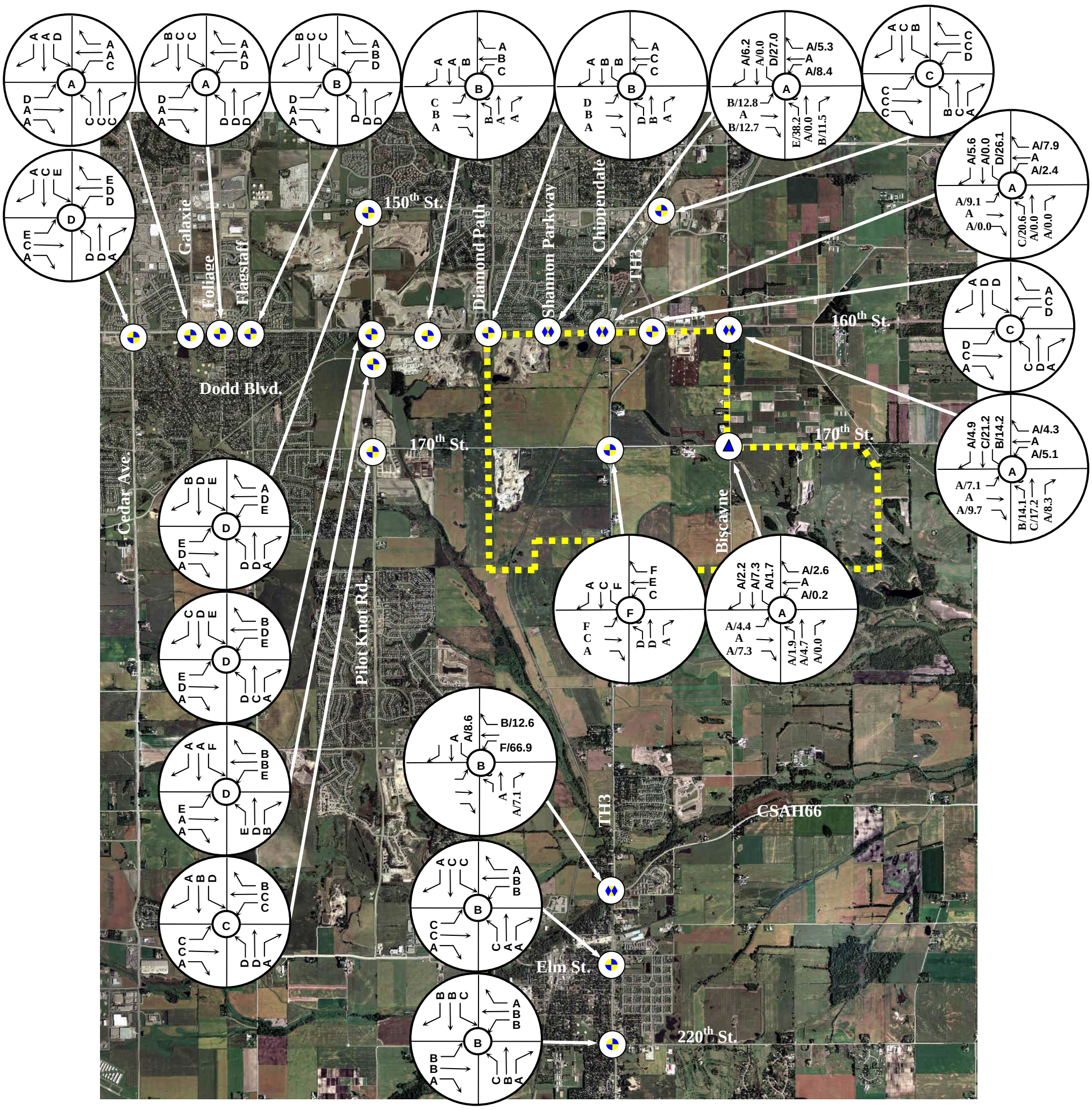
Figure 5-9R
Year 2015 PM Peak Hour Intersection LOS
Build Condition with Mitigation Option 1



- Indicates signalized intersection
- Indicates stop control intersection
- Indicates yield control intersection
- Indicates proposed project site

X/XXX – LOS/Delay for Stop/Yield-Controlled Movement

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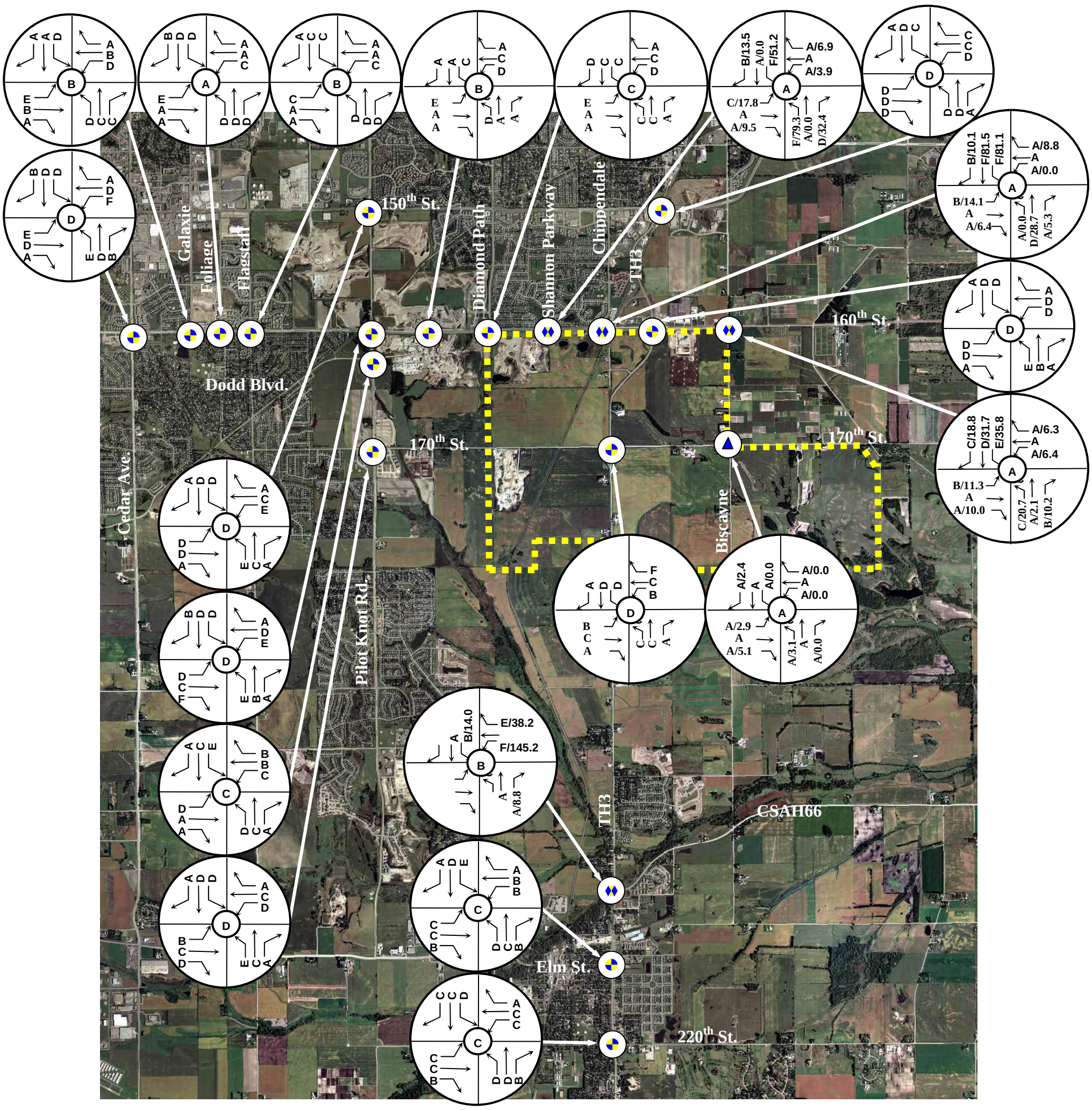
Figure 5-10R
Year 2025 AM Peak Hour Intersection LOS
Build Condition with Mitigation Option 1



- Indicates signalized intersection
- Indicates stop control intersection
- Indicates yield control intersection
- Indicates proposed project site

X/XXX – LOS/Delay for Stop/Yield-Controlled Movement

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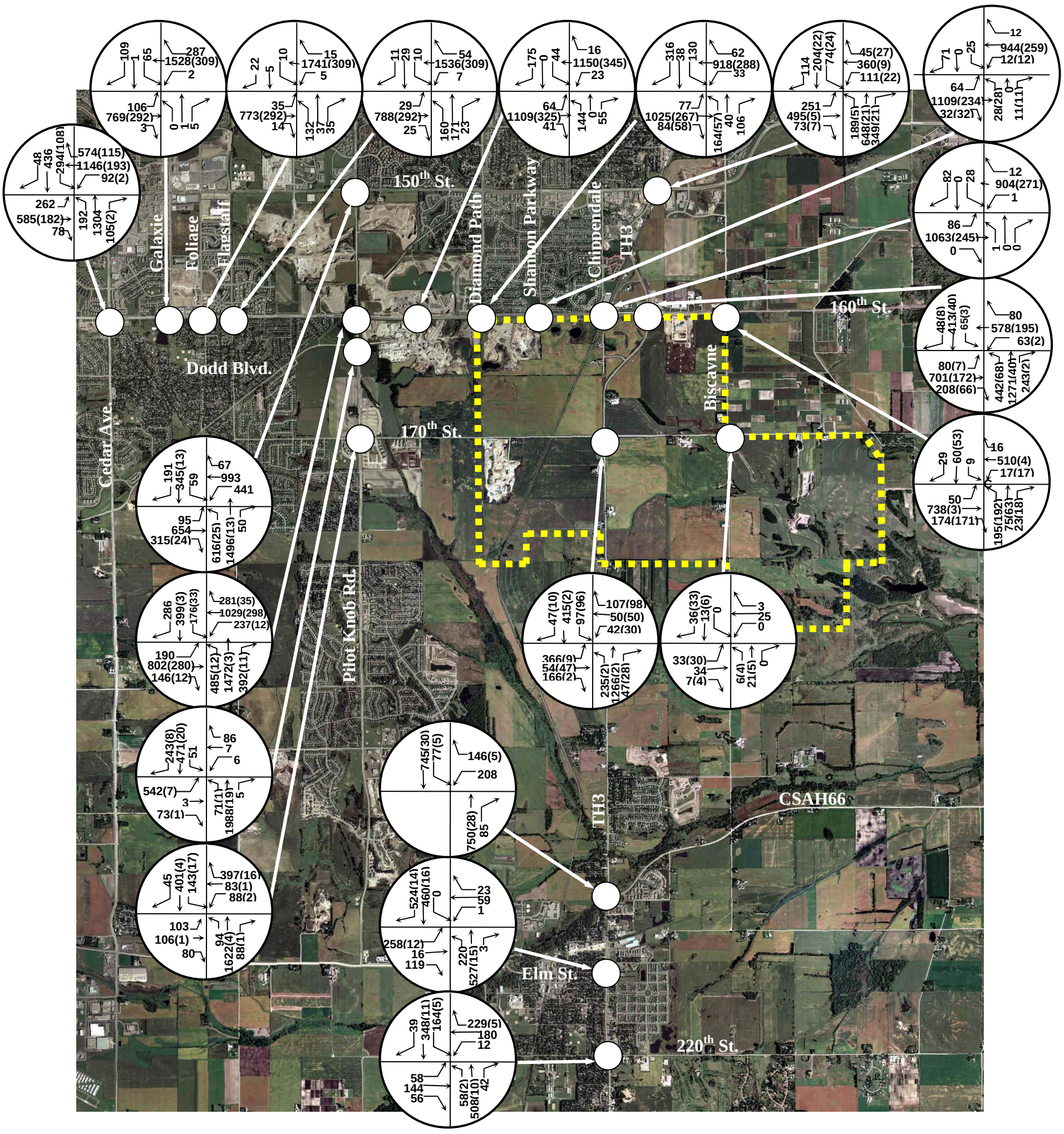
Figure 5-11R
Year 2025 PM Peak Hour Intersection LOS
Build Condition with Mitigation Option 1



▪ ▪ ▪ ▪	-	Indicates proposed project site
xx	-	Total turning movement volume (includes total mining company volume)
(xx)	-	Total mining company site generated traffic volume

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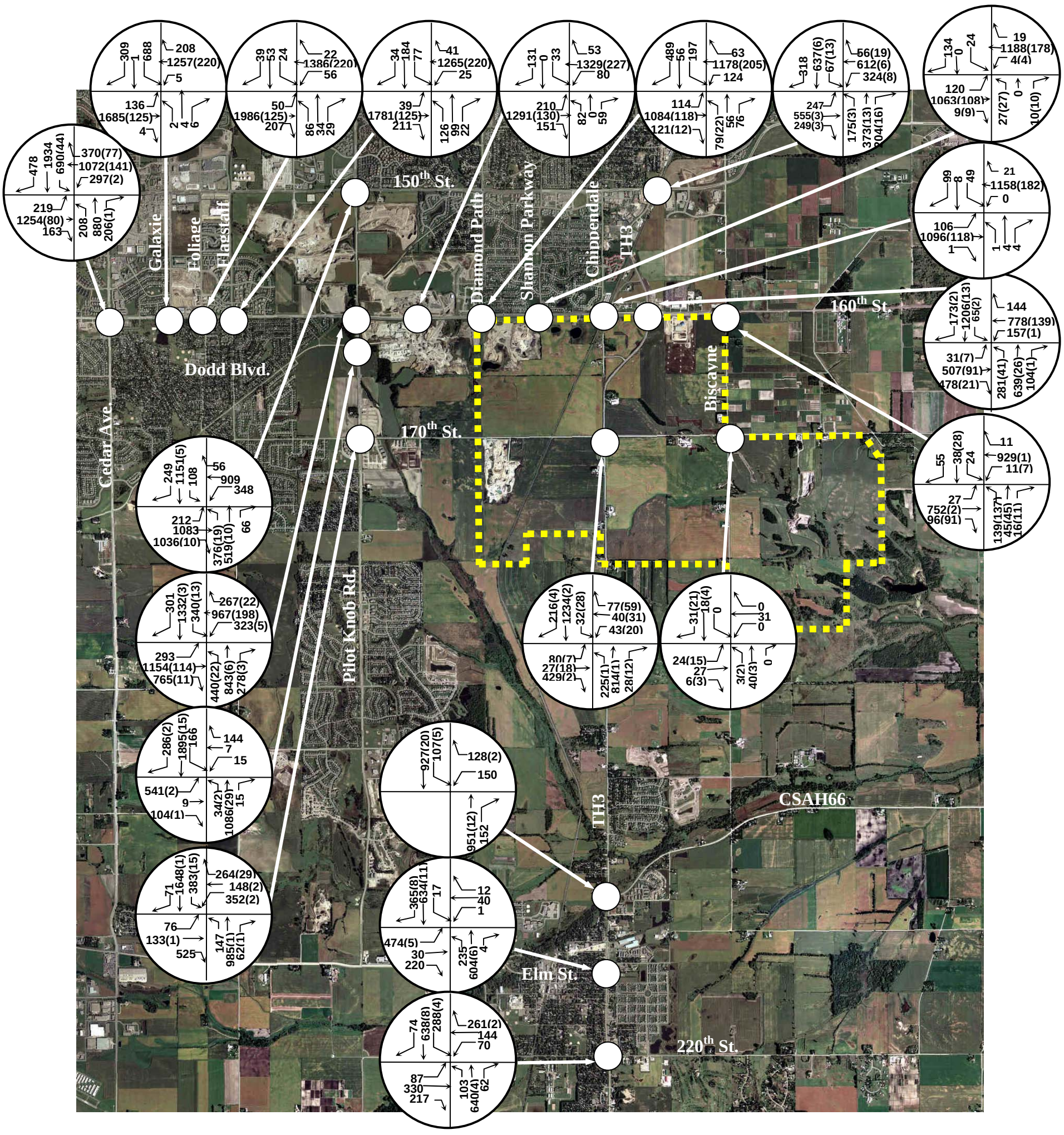
Figure 5-13R
Year 2025 AM Peak Hour
Turning Movement Volumes
Build Condition with Mitigation Option 2



- - - - Indicates proposed project site
xx - Total turning movement volume (includes total mining company volume)
(xx) - Total mining company site generated traffic volume

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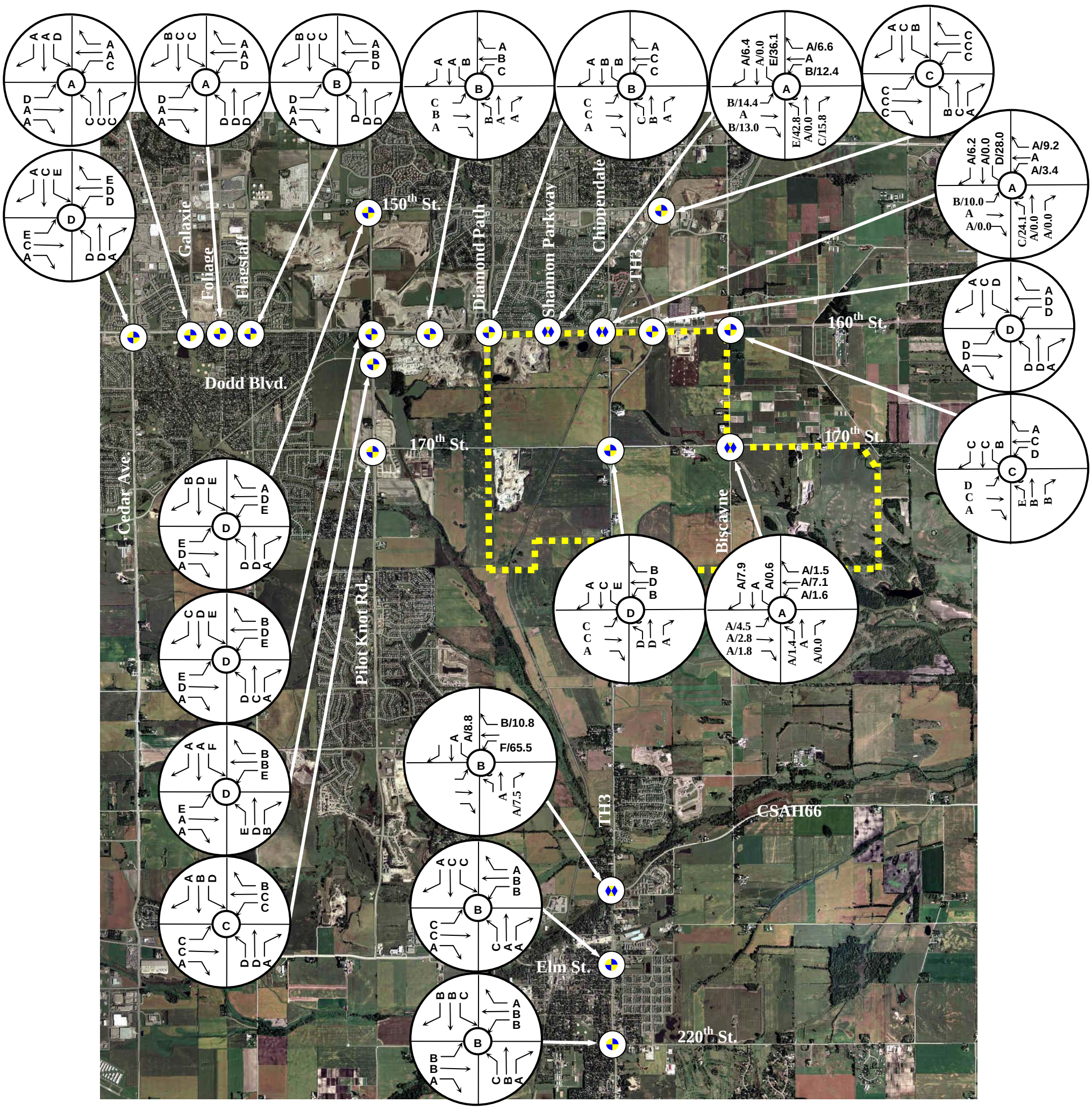
Figure 5-14R
Year 2025 PM Peak Hour
Turning MovementVolumes
Build Condition with Mitigation Option 2

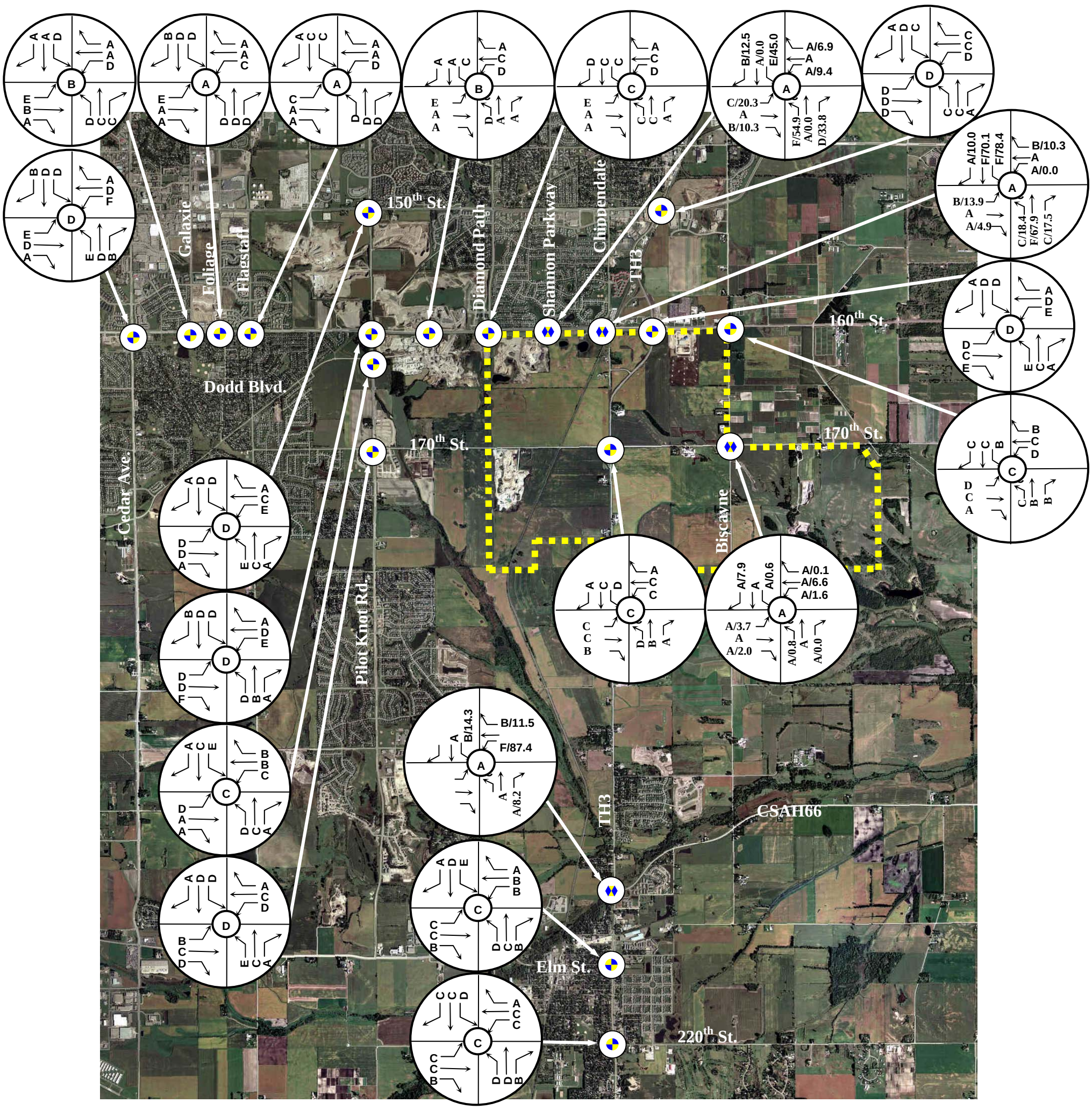


- Indicates signalized intersection
- Indicates stop control intersection
- Indicates yield control intersection
- Indicates proposed project site

X/XXX – LOS/Delay for Stop/Yield-Controlled Movement

URS Empire Township No Scale

Figure 5-15R
Year 2025 AM Peak Hour Intersection LOS
Build Condition with Mitigation Option 2



- Indicates signalized intersection
- Indicates stop control intersection
- Indicates yield control intersection
- Indicates proposed project site

X/XXX – LOS/Delay for Stop/Yield-Controlled Movement

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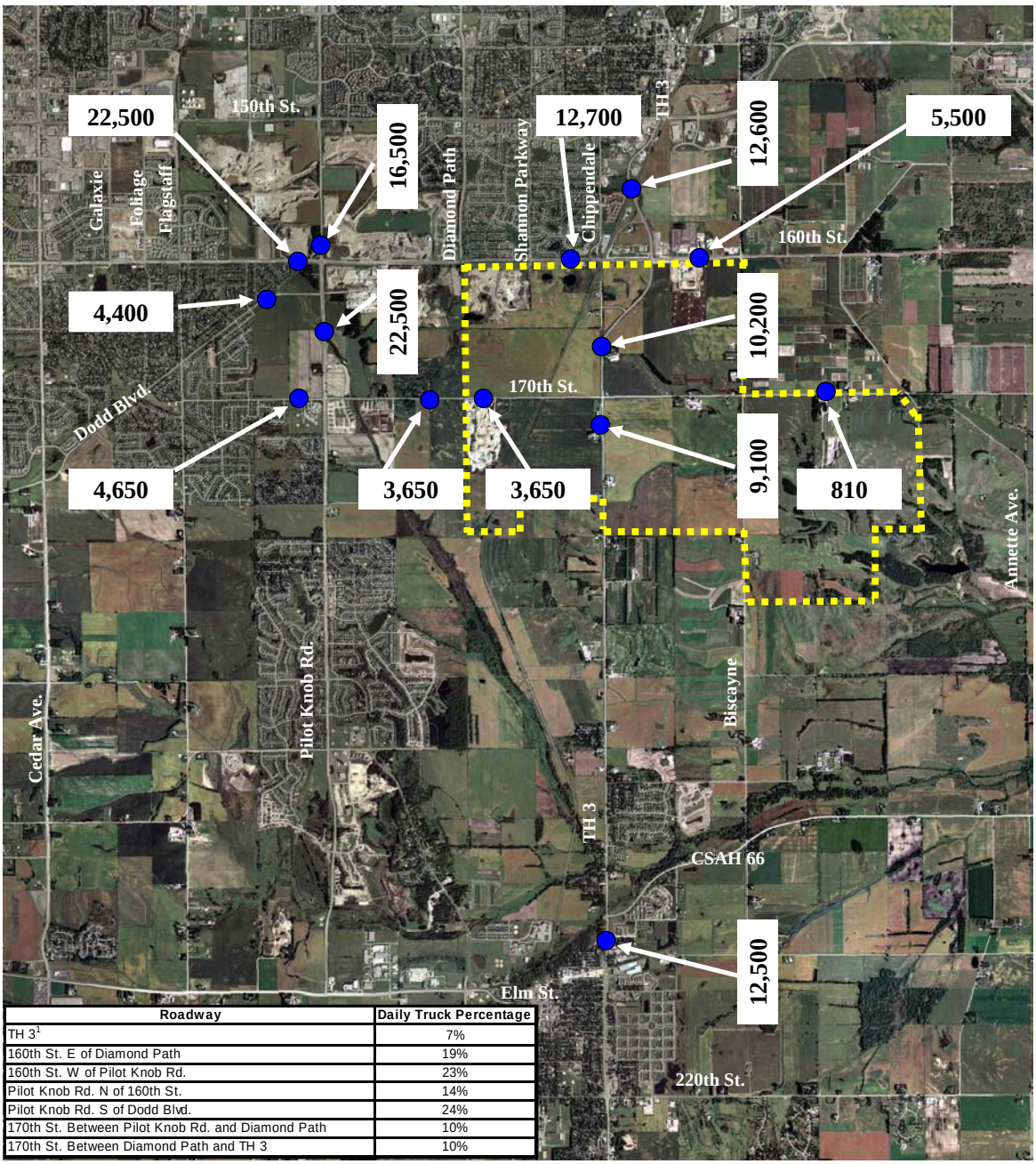
Figure 5-16R
Year 2025 PM Peak Hour Intersection LOS
Build Condition with Mitigation Option 2



Roadway	Daily Truck Percentage
TH 3[1]	7%
160th St. E of Diamond Path	19%
160th St. W of Pilot Knob Rd.	23%
Pilot Knob Rd. N of 160th St.	14%
Pilot Knob Rd. S of Dodd Blvd.	24%
170th St. Between Pilot Knob Rd. and Diamond Path	10%
170th St. Between Diamond Path and TH 3	10%

AADT Data Source: 2004 Mn/DOT Traffic Flow Map

Truck Percentage Data Source: Collected in September 2004 by URS Unless Otherwise Noted

[1] - Daily Truck Percentage based on Year 2002 Mn/DOT Traffic Flow Map

Indicates proposed project site

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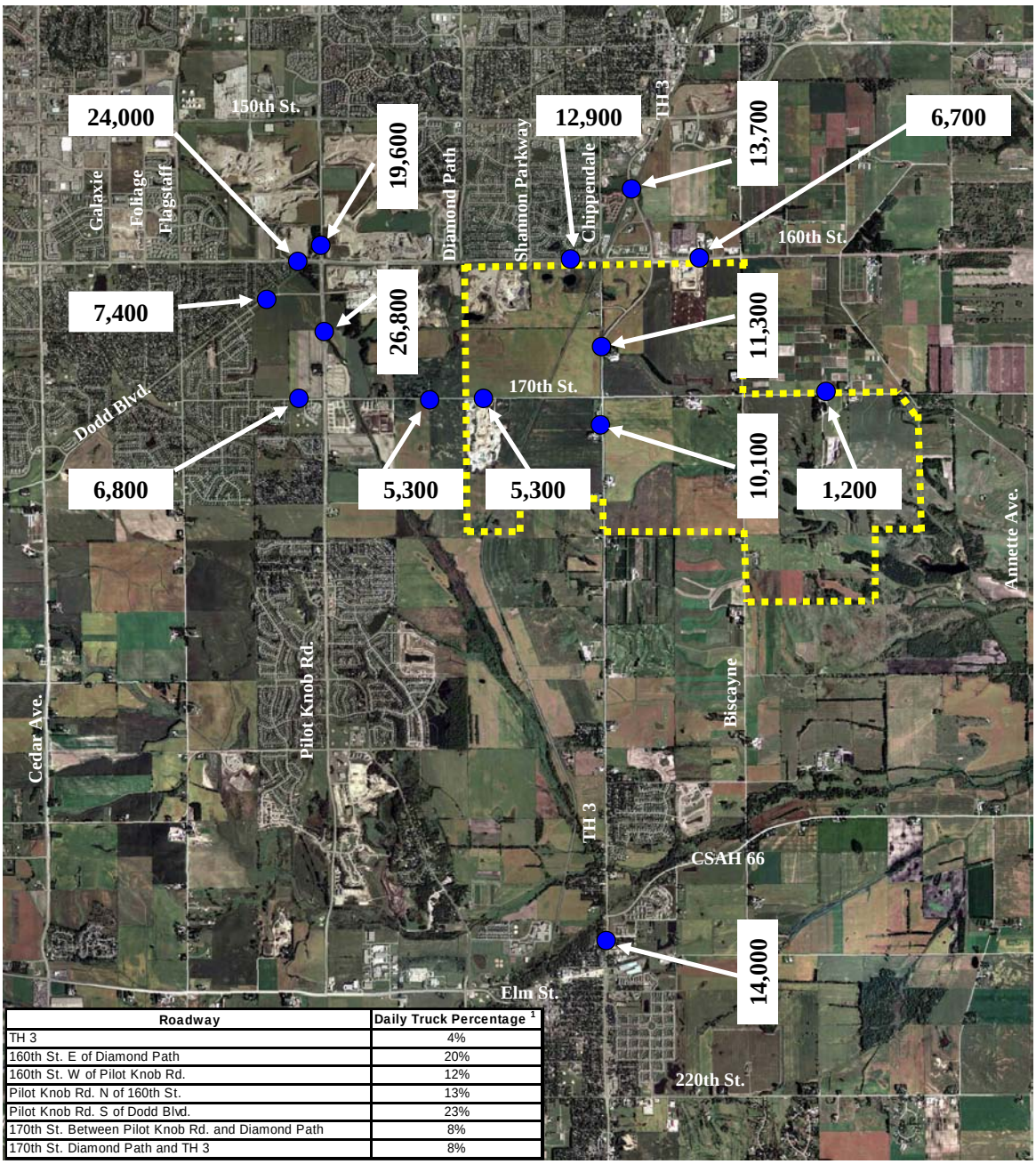
Figure 3-2R
Existing Condition Daily Traffic Volumes (AADT)



Roadway	Daily Truck Percentage [1]
TH 3	4%
160th St. E of Diamond Path	20%
160th St. W of Pilot Knob Rd.	12%
Pilot Knob Rd. N of 160th St.	13%
Pilot Knob Rd. S of Dodd Blvd.	23%
170th St. Between Pilot Knob Rd. and Diamond Path	8%
170th St. Diamond Path and TH 3	8%

Data Source: URS Corporation

[1] Truck Percentage drops from Existing at some locations due to reduction of Mining Activities under No Build Scenario

Indicates proposed project site

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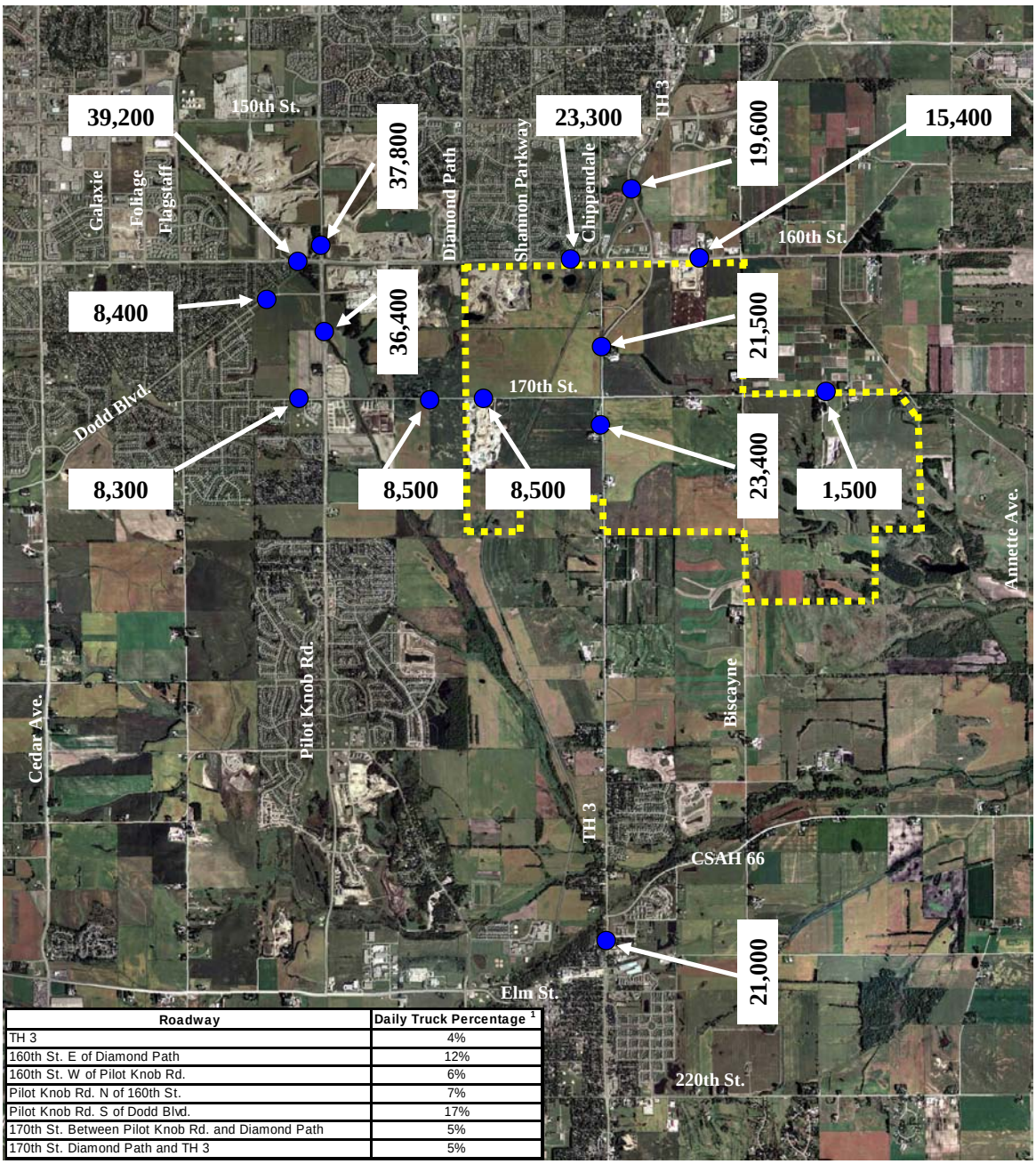
Figure 4-9BR
Year 2015 Daily Traffic Volumes (AADT)
No-Build (Background Growth Only)



Roadway	Daily Truck Percentage [1]
TH 3	4%
160th St. E of Diamond Path	12%
160th St. W of Pilot Knob Rd.	6%
Pilot Knob Rd. N of 160th St.	7%
Pilot Knob Rd. S of Dodd Blvd.	17%
170th St. Between Pilot Knob Rd. and Diamond Path	5%
170th St. Diamond Path and TH 3	5%

Data Source: URS Corporation

[1] Truck Percentage drops from Existing at some locations due to reduction of Mining Activities under No Build Scenario

Indicates proposed project site

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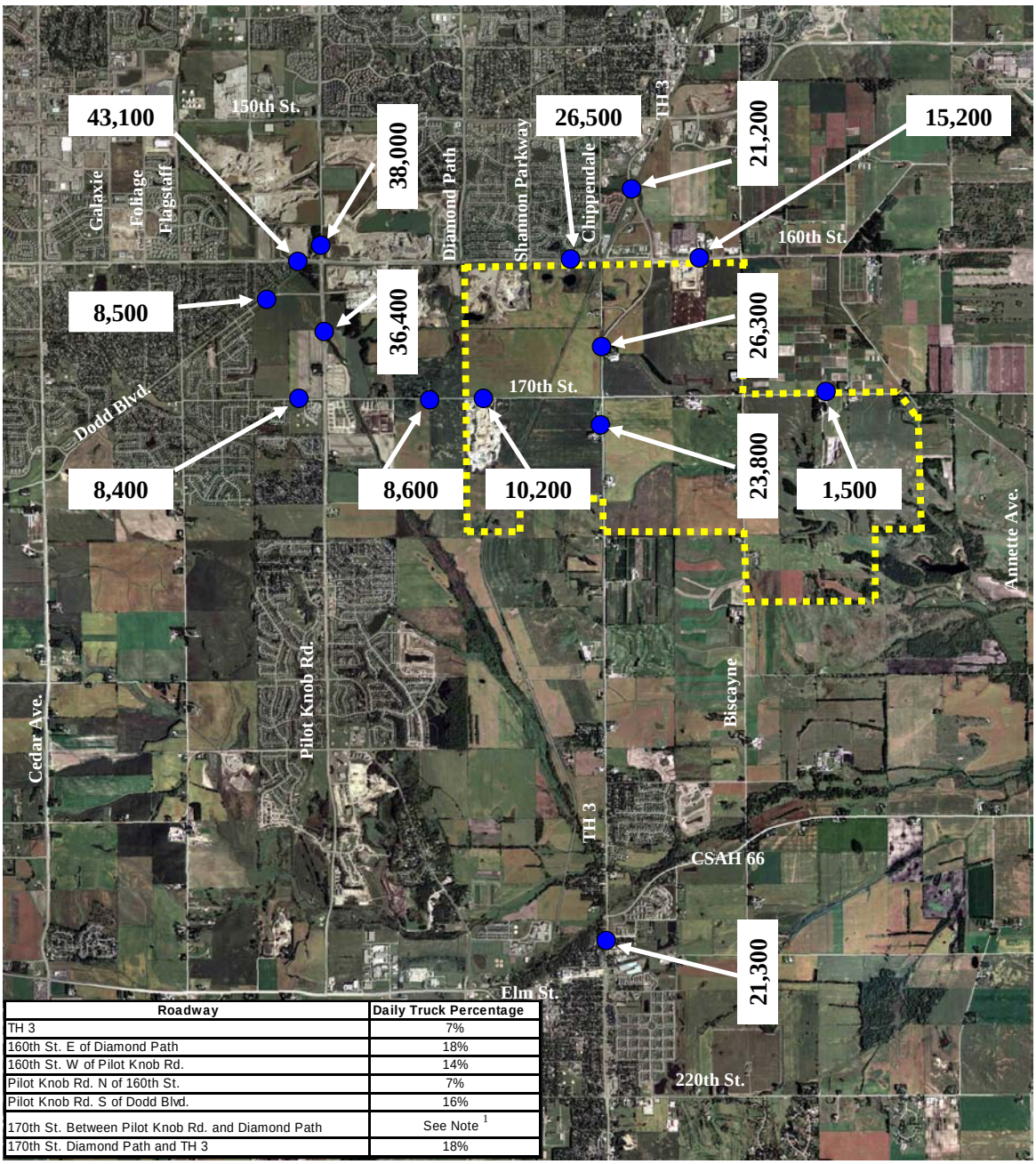
Figure 4-11BR
Year 2015 Daily Traffic Volumes (AADT)
No-Build (Background Growth
Plus Planned Land Developments)



Roadway	Daily Truck Percentage
TH 3	7%
160th St. E of Diamond Path	18%
160th St. W of Pilot Knob Rd.	14%
Pilot Knob Rd. N of 160th St.	7%
Pilot Knob Rd. S of Dodd Blvd.	16%
170th St. Between Pilot Knob Rd. and Diamond Path	See Note [1]
170th St. Diamond Path and TH 3	18%

Data Source: URS Corporation

[1] – 7-ton Axle Weight Restriction from Pilot Knob to Diamond Path

Indicates proposed project site

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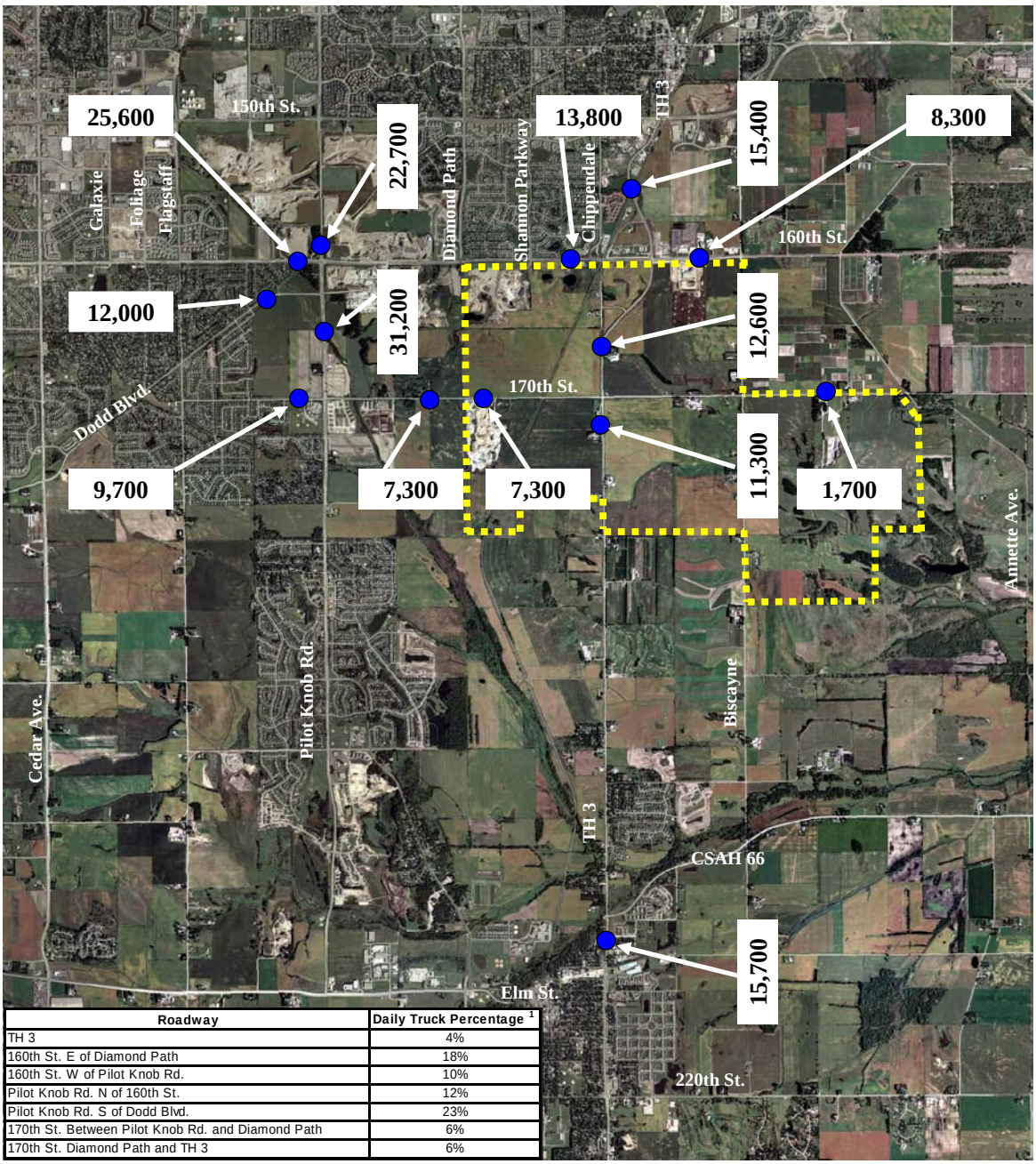
Figure 4-13BR
Year 2015 Daily Traffic Volumes (AADT)
Build (Mining Operation Plus Background Growth Plus Planned Land Developments)



Roadway	Daily Truck Percentage [1]
TH 3	4%
160th St. E of Diamond Path	18%
160th St. W of Pilot Knob Rd.	10%
Pilot Knob Rd. N of 160th St.	12%
Pilot Knob Rd. S of Dodd Blvd.	23%
170th St. Between Pilot Knob Rd. and Diamond Path	6%
170th St. Diamond Path and TH 3	6%

Data Source: URS Corporation

[1] Truck Percentage drops from Existing at some locations due to reduction of Mining Activities under No Build Scenario

Indicates proposed project site

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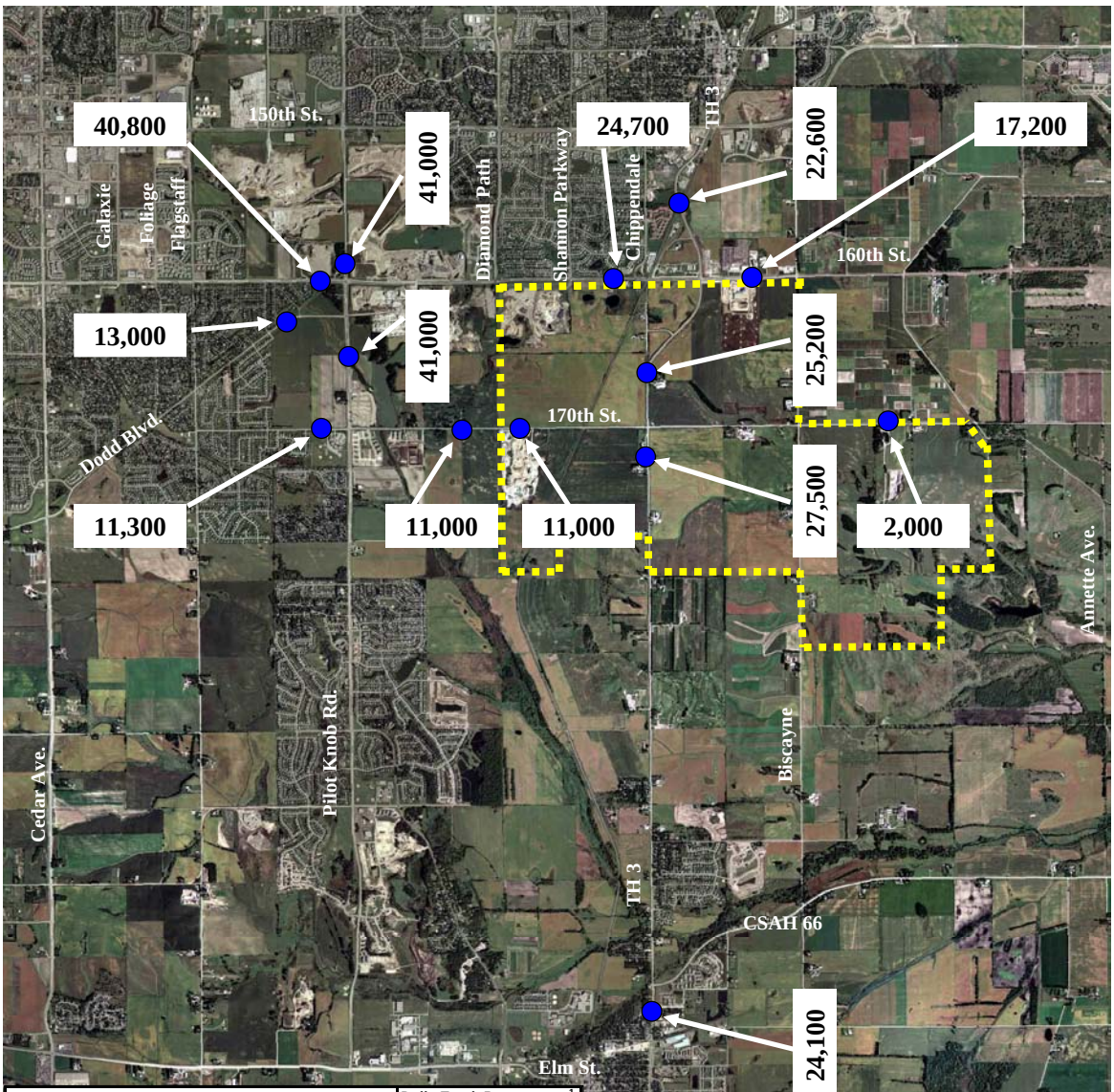
Figure 4-21BR
Year 2025 Daily Traffic Volumes (AADT)
No-Build (Background Growth Only)



Roadway	Daily Truck Percentage [1]
TH 3	4%
160th St. E of Diamond Path	11%
160th St. W of Pilot Knob Rd.	6%
Pilot Knob Rd. N of 160th St.	7%
Pilot Knob Rd. S of Dodd Blvd.	18%
170th St. Between Pilot Knob Rd. and Diamond Path	4%
170th St. Diamond Path A14and TH 3	4%

Data Source: URS Corporation

[1] Truck Percentage drops from Existing at some locations due to reduction of Mining Activities under No Build Scenario

Indicates proposed project site

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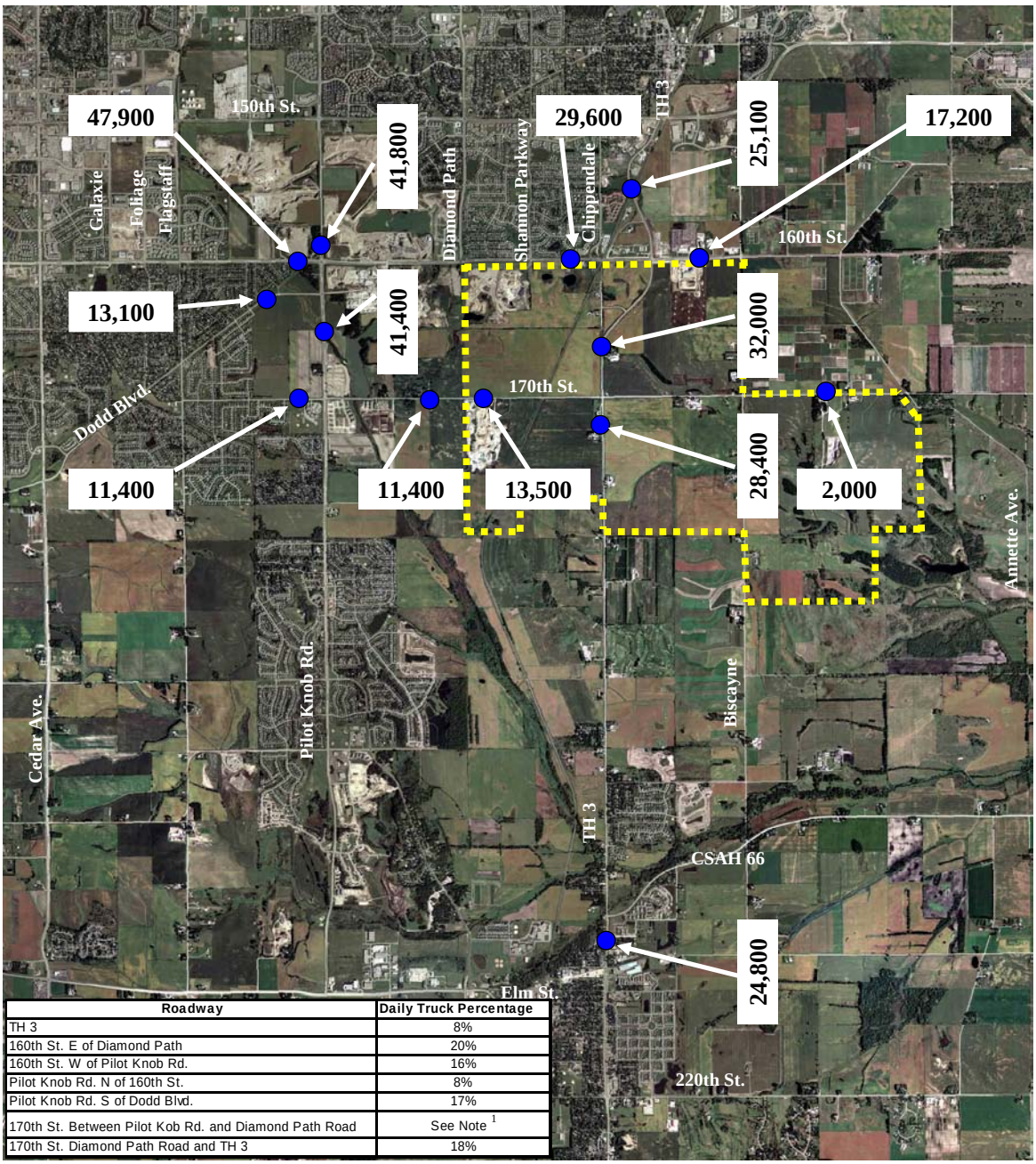
Figure 4-23BR
Year 2025 Daily Traffic Volumes (AADT)
No-Build (Background Growth
Plus Planned Land Developments)



Roadway	Daily Truck Percentage
TH 3	8%
160th St. E of Diamond Path	20%
160th St. W of Pilot Knob Rd.	16%
Pilot Knob Rd. N of 160th St.	8%
Pilot Knob Rd. S of Dodd Blvd.	17%
170th St. Between Pilot Kob Rd. and Diamond Path Road	See Note [1]
170th St. Diamond Path Road and TH 3	18%

Data Source: URS Corporation

[1] – 7-ton Axle Weight Restriction from Pilot Knob to Diamond Path

Indicates proposed project site

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Figure 4-25BR
Year 2025 Daily Traffic Volumes (AADT)
Build (Mining Operation Plus Background Growth Plus Planned Land Developments)

Table 6-1. AM Peak Hour Overall Intersection Level of Service Summary

INTERSECTION	2004 Existing	2005 No-Build (Background)	2005 Build (Mining + Background)	2015 No-Build (Background)	2015 No-Build (Background + Planned Developments)[1]	2015 Build (Mining + Background + Planned Developments)[1]	2025 No-Build (Background)	2025 No-Build (Background + Planned Developments)[1]	2025 Build (Mining + Background + Planned Developments)[1]	2015 No-Build (Background + Planned Developments w/ Improvement)[2]	2015 Build (Mining + Background + Planned Developments w/ Mitigation Option 1[3]	2025 No-Build (Background + Planned Developments w/ Improvement)[4]	2025 Build (Mining + Background + Planned Developments w/ Mitigation Option 1[5]	2025 Build (Mining + Background + Planned Developments w/ Mitigation Option 2[6]
TH 3 at 150th Street	C	C	C	C	C	D	C	D	D	C	C	C	C	C
150th Street at Pilot Knob Road	D	D	D	D	E	E	D	E	E	C	D	D	D	D
160th Street at Cedar Avenue	C	D	D	D	D	E	D	E	F	C	D	C	D	D
160th Street at Galaxie	A	A	A	A	A	A	A	A	B	A	A	A	A	A
160th Street at Foliage	A	A	A	A	A	B	A	A	B	A	A	A	A	A
160th Street at Flagstaff	B	B	B	B	B	C	B	B	B	B	B	B	B	B
160th Street at Pilot Knob Road	C	C	C	C	C	D	C	D	E	C	C	C	D	D
160th Street at A.I. Mining Access	A/C	A/C	A/B	A/A	B	B	A/A	B	~~B~~ C	B	B	B	B	B
160th Street at Diamond Path	A/B	A/C	A/B	A/A	A	B	A/B	A	B	A	B	A	B	B
160th Street at Shannon Parkway	A/B	A/B	A/C	A/A	A/C	A/D	A/A	A/C	A/D	A/CC	A/D	A/C	A/E	A/E
160th Street at Chippendale	A/A	A/A	A/A	A/A	A/B	A/C	A/A	A/C	A/C	A/A	A/B	A/B	A/D	A/D
160th Street at TH 3	C	C	C	C	C	D	C	C	D	C	C	C	C	D
160th Street at Biscayne Avenue	A/B	A/B	A/B	A/B	A/B	A/C	A/B	A/C	A/C	A/B	A/A	A/C	A/C	C
Pilot Knob Rd at Dodd Boulevard	B	C	C	C	D	D	E	F	F	C	C	D	D	D
Pilot Knob Road at 170th Street	B	B	B	B	C	~~D~~ C	C	D	~~E~~ D	C	~~D~~ C	C	~~D~~ C	C
TH 3 at 170th Street	A/D	A/C	A/C	A/D	F/F	F/F	C/F	F/F	F/F	B	D	B	F	D
170th Street at Biscayne Avenue	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A
TH 3 at CSAH 66	A/A	A/A	A/B	A/B	A/C	A/C	A/C	A/E	B/F	A/C	A/C	B/F	B/F	B/F
TH 3 at Elm Street	B	B	B	B	B	B	B	B	B	B	B	B	B	B
TH 3 at 220th Street	B	B	B	B	B	B	B	B	B	B	B	B	B	B

[1]Includes all improvement measures identified in Section 5.1
[2]Includes all improvement measures identified in Section 5.1 and 5.2.1
[3]Includes all improvement measures identified in Section 5.1, Section 5.2.1, Section 5.2.2 and Section 5.3.1
[4]Includes all improvement measures identified in Section 5.1, Section 5.2.2
[5]Includes all improvements measures identified in Section 5.1, Section 5.2.2, Section 5.3.1 and Section 5.3.2
[6]Includes all improvement measures identified in Section 5.1, 5.2.1, Section 5.2.2 and Section 5.4.1

Source: URS Corporation