



December 22, 2025

Revised: January 23, 2026

Revised: February 9, 2026

SENT VIA EMAIL

Honorable City Major & Council
City of Lee's Summit
220 SE Green St,
Lee's Summit, MO 64063

RE: Traffic Generation Report and Proposed Driveway
Review
Lee's Summit Senior Community
East Lakewood Way

Dear Honorable City Mayor & Council:

Lee's Summit Senior Community is a proposed Continuing Care Retirement Community located east of Lakewood Way 500-ft north of NE Bowlin Rd on a 9.7-acre Parcel in Lee's Summit, Jackson County, Missouri (Exhibit A). The property is currently undeveloped and proposed to have a main building including a single-story 20-bed memory care, 2-story 52-bed assisted living, and 3-story 104-unit independent senior living facility, as well as 15 2-bedroom villas. We have reviewed the anticipated traffic generation and warrants for improvements and found that this development does not warrant a full traffic impact analysis, signal adjustments, or turn lanes at the site driveways. We have prepared this letter to summarize our review.

Existing Conditions: NE Lakewood Way is a City two-lane asphalt road with roadside ditches that extends from Little Blue Pkwy to NE Woods Chapel Rd. The road is classified as a major collector that parallels I-470. The NE Lakewood Way and Bowlin Rd intersection south of the site is signalized. The speed limit is posted at 45 mph. Exhibit B shows the Missouri Department of Transportation (MoDOT) 2024 Average Annual Daily Traffic (AADT) Map, data is provided in Table 1.

Table 1: NE Lakewood Way Traffic Volume

	AADT (vpd)	AM Peak (vph)		PM Peak (vph)	
		NB	SB	NB	SB
NE Lakewood Way	5890	263	160	369	372

Proposed Development: The proposed development will consist of a total of 172 units of Senior Adult Housing (Continuing Care Retirement Community – ITE 255 per *the Institute of Transportation Engineers Traffic Generation Manual (ITE)*). There will be two entrances to the property. The north driveway will primarily serve the villas, while the south driveway will accommodate the main building. The fitted curve equation was used to calculate the daily vehicle trips based on the average rate. Table 2 provides anticipated traffic generation for the site.

Table 2: Traffic Generation

	Daily (vpd)	AM Peak (vph)		PM Peak (vph)	
		In	Out	In	Out
NE Lakewood Way Property (ITE CODE 255)	425	17	15	22	22

The proposed development will generate 425 vpd and 44 peak hour trips, well below the 1,000 vpd warrant for a traffic impact analysis per *ITE*. The data can further be broken down by each driveway entrance to determine the warrants for right- and left-turn lanes. Projections for both the north and south driveways are provided below:

Table 4: North Drive Peak Hour Trips

	AM Peak Hour, North (Vehicles)	PM Peak Hour, North (Vehicles)
Total Trips In	7	9
Left Turn (Southbound)	4	5
Right Turn (Northbound)	3	4
Total Trips Out	6	9
Right Turn (Northbound)	2	4
Left Turn (Southbound)	4	5

Table 5: South Driveway Peak Hour Trips

	AM Peak Hour, South (Vehicles)	PM Peak Hour, South (Vehicles)
Total Trips In	10	13
Left Turn (Southbound)	6	8
Right Turn (Northbound)	4	5
Total Trips Out	9	13
Right Turn (Northbound)	4	5
Left Turn (Southbound)	5	8

Warrants for right- and left-turn lanes for the north and south driveways were reviewed utilizing *Lee's Summit Access Management Code (AMC)* Section 16. Figure 940.9.2 (Exhibits C and D) for left-turn lane warrants are attached. Warrants for a dedicated left-turn lane are not met. Figure 940.9.8 (Exhibit E and F) for right-turn lanes are attached and shows that a dedicated right-turn lane is not warranted.

To review the warrants for changes to the traffic signal at the intersection of NE Lakewood Way and Bowlin Rd, we have reviewed the peak hour trips generated for both AM and PM, using the *ITE*. These projections are provided below:

Table 3: AM Impact at Intersection of NE Lakewood Way and Bowlin Rd

	Existing Traffic	Additional Traffic Generation	Impact
	vehicles	vehicles	percent
NE Lakewood Way (northbound)	263	7	3%
NE Lakewood Way (southbound)	160	8	5%

Table 4: PM Impact at Intersection of NE Lakewood Way and Bowlin Rd

	Existing Traffic	Additional Traffic Generation	Impact
	vehicles	vehicles	percent
NE Lakewood Way (northbound)	369	9	2%
NE Lakewood Way (southbound)	372	13	3%

According to the *Federal Highway Administration (FHWA)/ITE Traffic Signal Timing Manual*, 2nd Edition, signal timing should be re-evaluated when peak-hour volumes increase by 5-10 percent, as this level of demand change can affect control delay and progression. Tables 3 and 4 show the impact of the proposed development on the NE Lakewood Way and Bowlin Rd intersection. Values were obtained using the MoDOT AADT Map. Results show retiming of the existing signal is not warranted.

The proposed development will install new curb and gutter along the site frontage to meet local roadway standards. Improvements will include installation of curb and adjustments to the gutter to ensure proper drainage toward the existing inlet system.

The *American Association of State Highway and Transportation Officials (AASHTO)* design manual provides equations for sight distance that have been used to build Table 3.

Table 6: Sight Distance Requirements

South, Left turn from Stop			South, Right turn from Stop			North, Left turn from Stop			North, Right turn from Stop		
Vmajor	45	mph	Vmajor	45	mph	Vmajor	45	mph	Vmajor	45	mph
tg	8.9	s	tg	6.9	s	tg	7.5	s	tg	6.5	s
ISD	589	ft	ISD	456	ft	ISD	496	ft	ISD	430	ft
SSD	360	ft	SSD	360	ft	SSD	360	ft	SSD	360	ft

The minimum stopping sight distance (SSD) and intersection sight distance (ISD) per the *AMC* is analyzed using information on traffic volumes, road elevation profiles, and anticipated future use. Adequate sight distance shall be calculated for turns in and out of the proposed driveway entrances based on MoDOT AADT and Google Earth data (see Exhibit G through J).

Please contact me if you have any questions, comments, or concerns.

Sincerely,

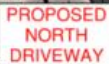


2/9/26

Matthew A. Kriete, P.E.
Missouri Professional Engineer 2007028811
Missouri Engineering Corps # 2004005018

Attachments:

- Exhibit A – Areal Image
- Exhibit B – MoDOT AATD Around Proposed Site
- Exhibit C – North Left-Turn Lane Warrant
- Exhibit D – South Left-Turn Lane Warrant
- Exhibit E – North Right-Turn Lane Warrant
- Exhibit F – South Right-Turn Lane Warrant
- Exhibit G – Proposed Photos at Driveways
- Exhibit H – Sight Triangles



PROPOSED
SOUTH
DRIVEWAY

I-470

Exhibit A: Areal Image of Site Showing Proposed Driveway Locations.

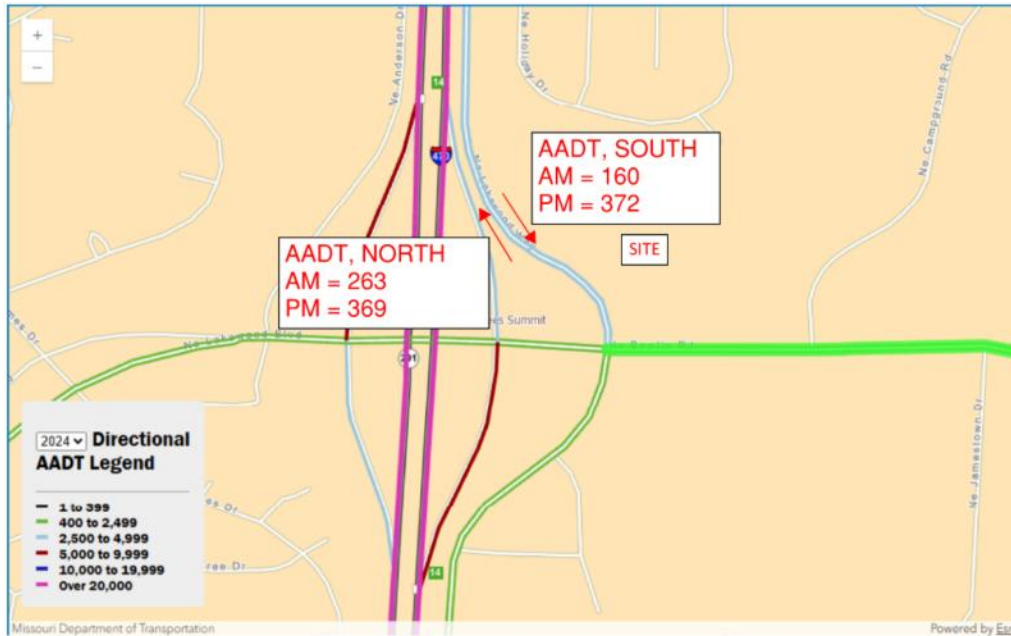


Exhibit B: MoDOT AADT Around Proposed Site

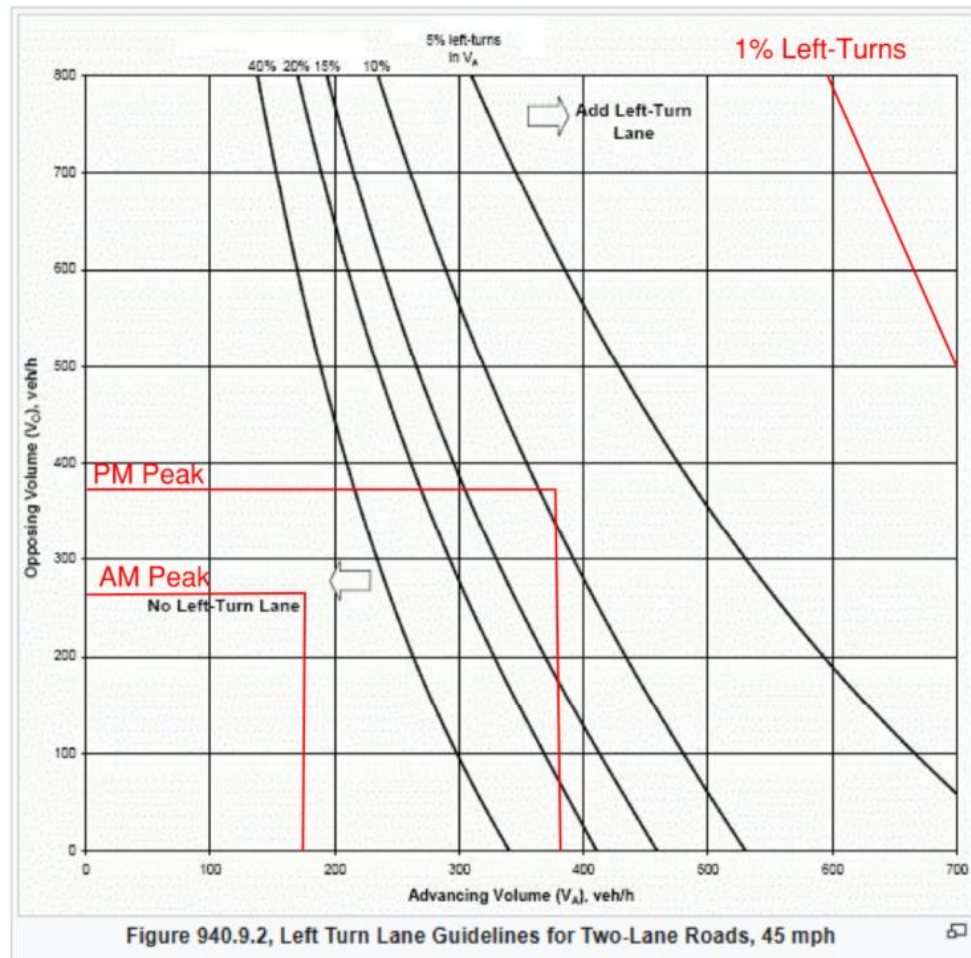


Exhibit C
Volume Guidelines for Left-Turn lanes at Unsignalized Intersections on Two-Lane Highways (45 mph) at
North Driveway
Figure 940.9.2

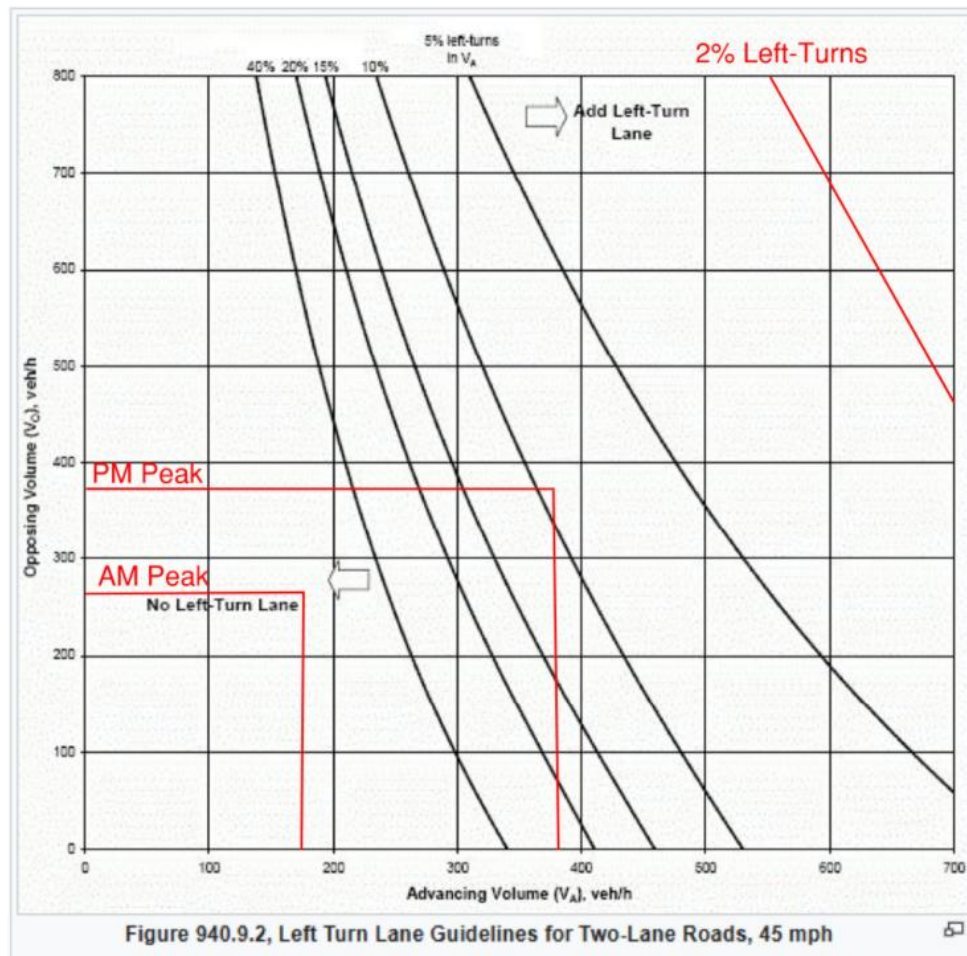
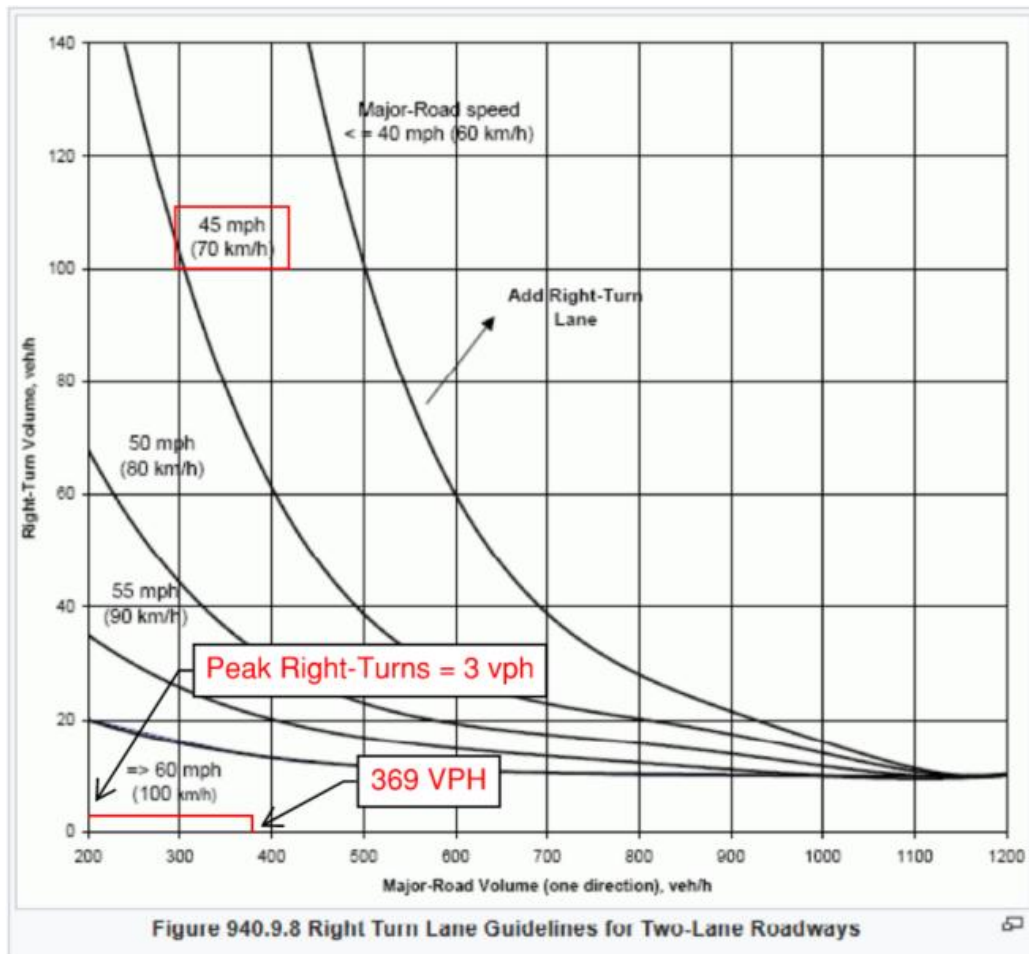


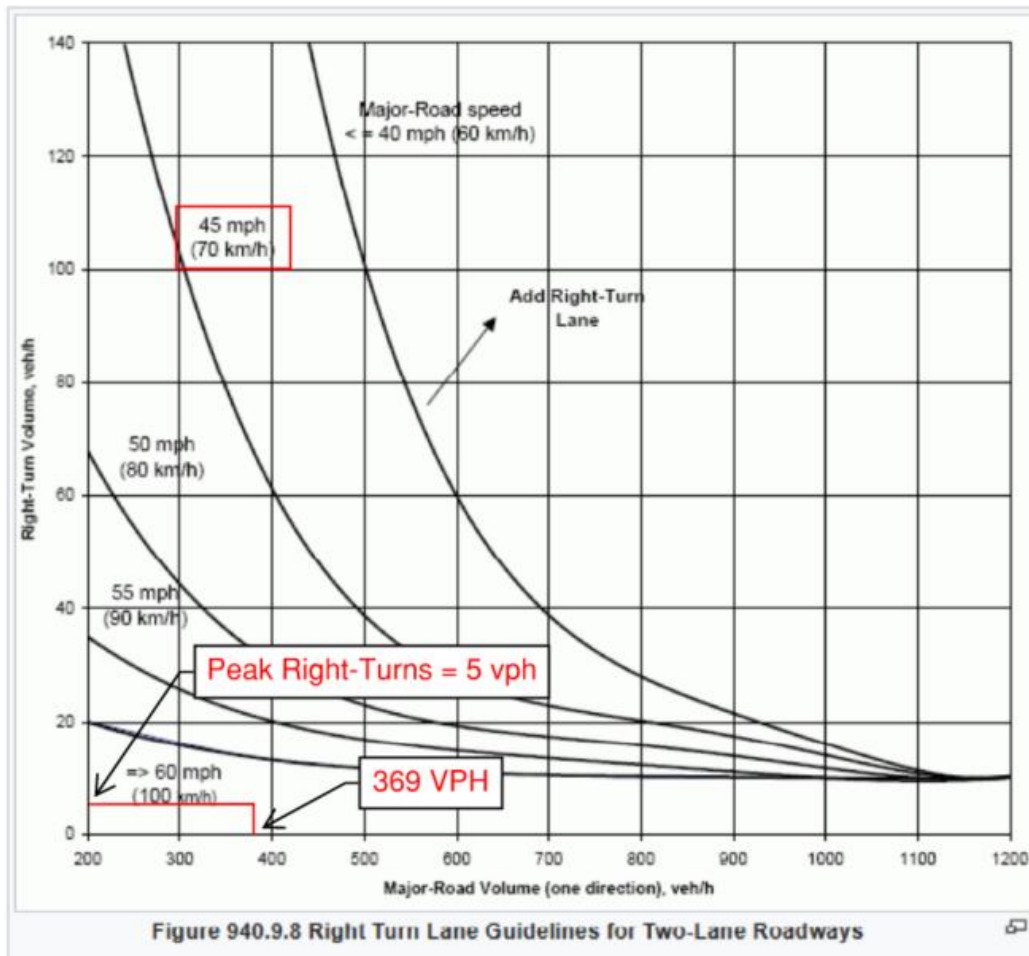
Exhibit D
Volume Guidelines for Left-Turn lanes at Unsignalized Intersections on Two-Lane Highways (45 mph) at
South Driveway
Figure 940.9.2



Design Speed = 45 miles per hour
Major-Road Volume = 369 vehicles per hour
Right Turns, North Entrance = 3 vehicles per hour

The figure indicates that right-turn lane is not necessary for the north entrance, unless other factors (e.g., high crash rate) indicate a lane is needed.

Exhibit E
Guidelines for Right-Turn Lanes at Unsignalized Intersections on Two-Lane Highways at North Driveway
Figure 940.9.8



Design Speed = 45 miles per hour
Major-Road Volume = 369 vehicles per hour
Right Turns, South Entrance = 5 vehicles per hour

The figure indicates that right-turn lane is not necessary for the south entrance, unless other factors (e.g., high crash rate) indicate a lane is needed.

Exhibit F
Guidelines for Right-Turn Lanes at Unsignalized Intersections on Two-Lane Highways at South Driveway
Figure 940.9.8

Exhibit G: Proposed Photos at Driveways



Proposed North Driveway Looking North. Obtained from Google Earth Street View.



Proposed North Driveway Looking South. Obtained from Google Earth Street View.



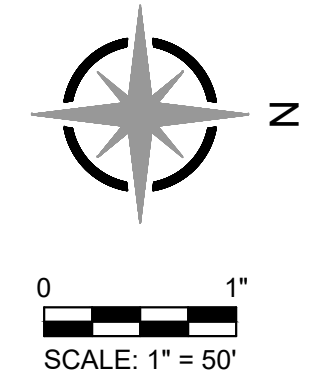
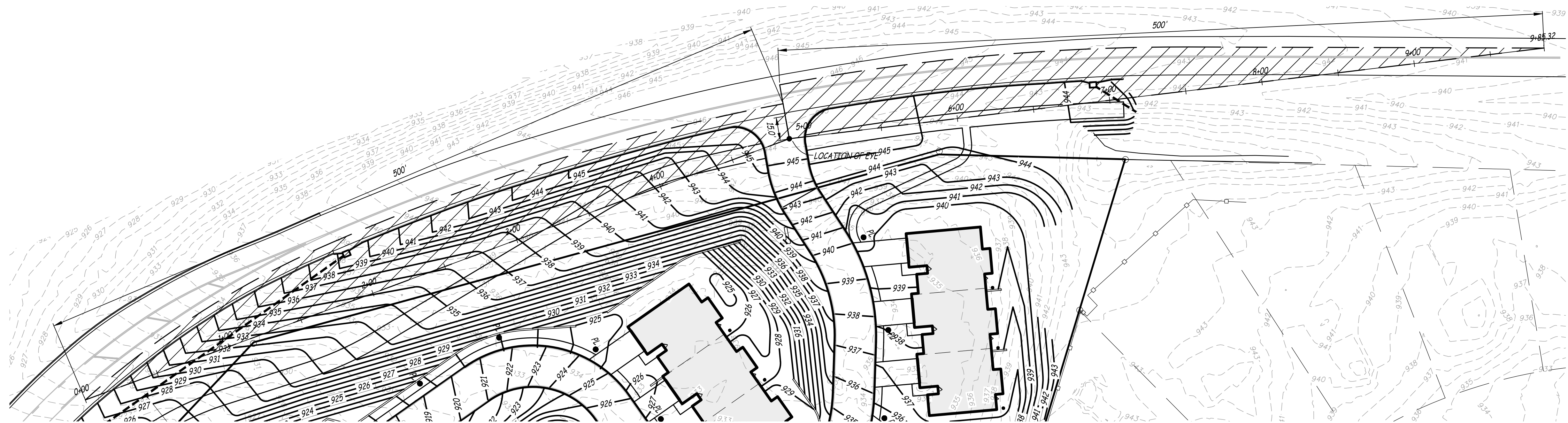
Proposed South Driveway Looking North. Obtained from Google Earth Street View.



Proposed South Driveway Looking South. Obtained from Google Earth Street View.

Exhibit H: Sight Triangles

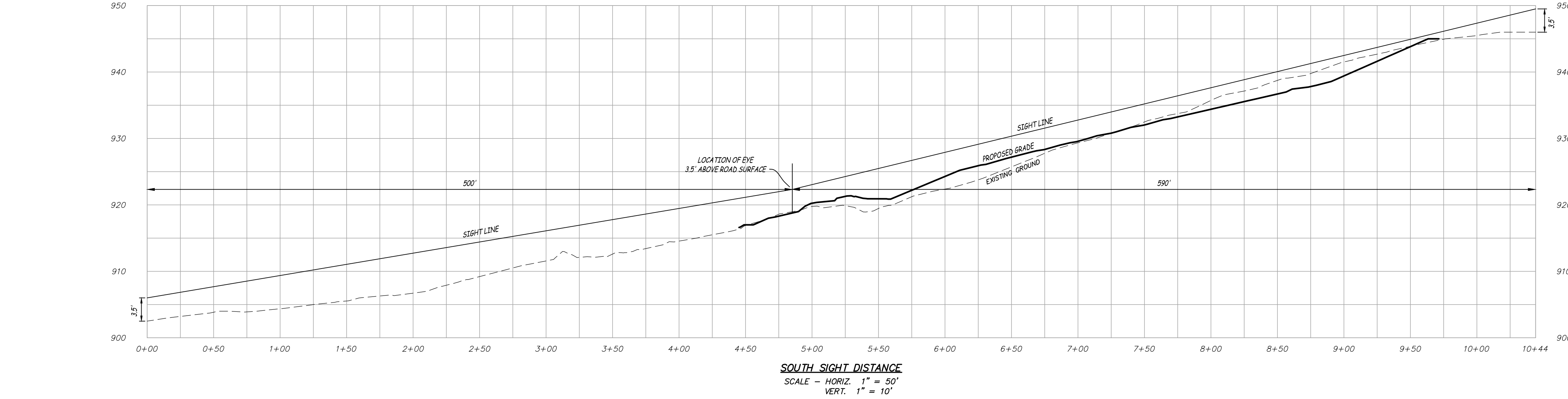
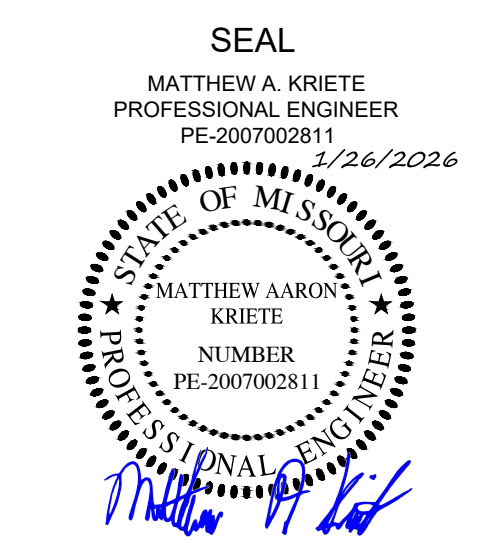
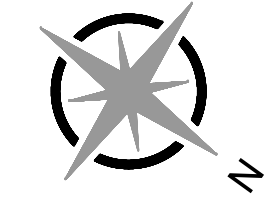
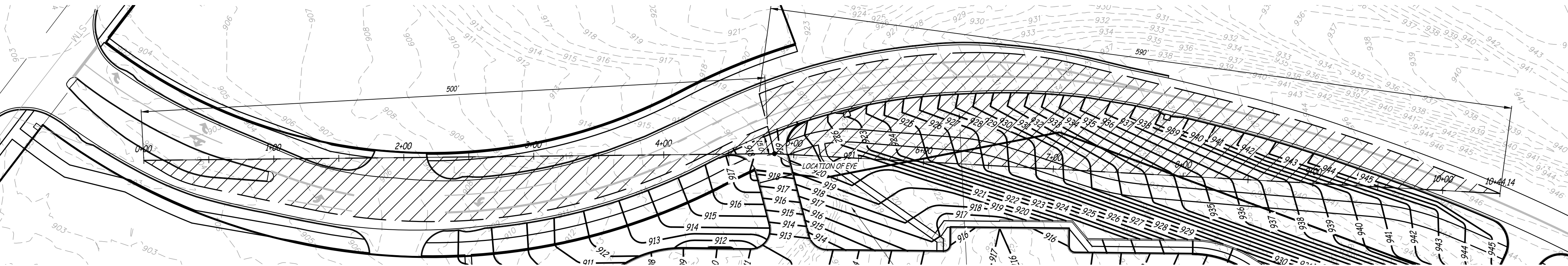
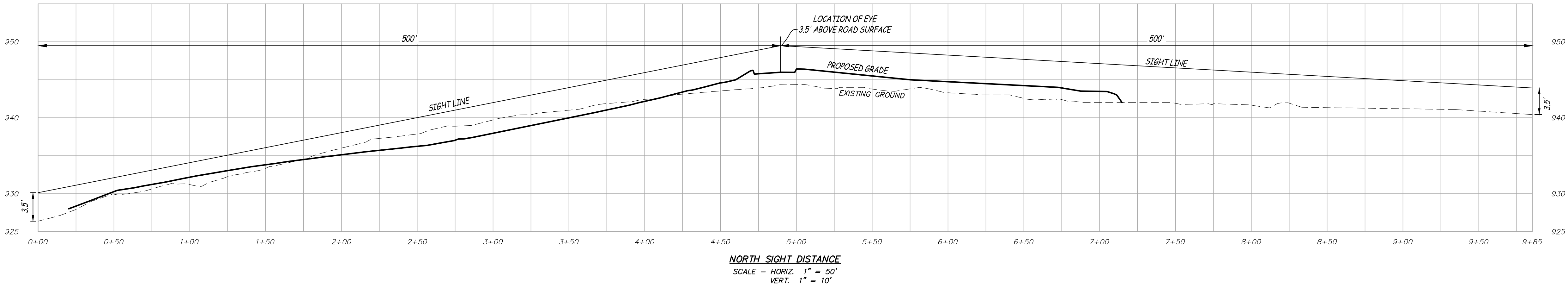
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ARCHITECTURAL CORPORATION
MISSOURI CERTIFICATE
OF AUTHORITY NO. 000073

LEE'S SUMMIT SENIOR COMMUNITY
5101 NE LAKEWOOD WAY
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI 64064

STARK WILSON DUNCAN ARCHITECTS INC
315 NICHOLS RD. STE 228 - KANSAS CITY, MO 64112 - T 816.531.1698 - WWW.SWDARCHITECTS.COM



SITE DISTANCE NOTE

1. THE CONSTRUCTED PRODUCT WILL PROVIDE THE INTERSECTION SIGHT DISTANCE AS PROPOSED ON PLAN, AND FIELD VERIFICATION WILL BE CONDUCTED AND RESULTS PROVIDED TO THE COUNTY PRIOR TO FINAL SITE ACCEPTANCE.
2. HIGHWAY 76 SPEED LIMIT = 45 MPH
3. REQUIRED SOUTH DRIVEWAY RIGHT SIGHT DISTANCE = $1.47 \times 45 \text{ MPH} \times (6.5 + (0.1 \times 4\%)) = 456 \text{ FEET DESIGN (SHOWN AS 500 FEET)}$
4. REQUIRED SOUTH DRIVEWAY LEFT SIGHT DISTANCE = $1.47 \times 45 \text{ MPH} \times (7.5 + (0.2 \times 7\%)) = 589 \text{ FEET DESIGN (SHOWN AS 590 FEET)}$
5. REQUIRED NORTH DRIVEWAY RIGHT SIGHT DISTANCE = $1.47 \times 45 \text{ MPH} \times 6.5 = 430 \text{ FEET DESIGN (SHOWN AS 500 FEET)}$
6. REQUIRED NORTH DRIVEWAY LEFT SIGN DISTANCE = $1.47 \times 45 \text{ MPH} \times 7.5 = 496 \text{ FEET DESIGN (SHOWN AS 500 FEET)}$
7. EYE HEIGHT = 3.5'
8. OBJECT HEIGHT = 3.5'



PROJECT NO.: 2510

C3.01

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