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January 9, 2024

Mr. Tim Bryan, P.E.
County Engineer
Madison County Board of Supervisors
3137 S. Liberty Street
Canton, MS 39046

Re: Traffic Analysis for East Stribling Road in Madison County, MS

Dear Tim:

Per your request, I conducted an analysis of the potential office building, restaurant, and gas station/convenience market in the Lake Caroline development. This letter is intended to provide traffic analysis information regarding the potential development of a portion of the Lake Caroline property, located on the east side of Caroline Boulevard, north of Stribling Road. The potential development is anticipated to include a 4,961 SF Convenience Market with 8 automobile fueling positions, 10,000 SF of general office space, and a 7,000 SF restaurant. Access to the proposed development areas of Lake Caroline are primarily from Stribling Road at Caroline Blvd. The location of the project site and study area are shown in **Figure 1-Vicinity Map**. The project site plan for the gas station/convenience market is provided in **Figure 2-Site Plan**. The graphics referenced in this letter are provided as attachments.

Existing Conditions

A field inventory of the project site was conducted to document the existing conditions of the site and traffic control within the project limits. The functional classification of Stribling Road in the study area is a Minor Arterial, based on the FHWA Functional Classification System for the Jackson Urbanized Area. The posted speed limit on Stribling Road is 45 mph. Stribling Road extends ± 3.4 miles between Mannsdale Road/MS Hwy 463 and Catlett Road. The western terminus at MS Hwy 463 has plans to signalize the intersection. The eastern terminus at Catlett Road was modified in 2017/2018 to provide a channelized right turn lane, allowing the eastbound to southbound traffic to not have to come to a complete stop; thus reducing intersection delays. Stribling Road is a 2-lane east/west roadway with ± 22 ft of asphalt. Land uses along Stribling Road are primarily residential/single family homes, with a commercial business (veterinarian) at the Hwy 463/Stribling Road intersection. Other commercial developments include the Mermaid Café and some general office space adjacent to the Mermaid Café to the south.



Above: Stribling Road – Looking east across Caroline Blvd (left).



Above: Stribling Road – Looking west from Muscadine Path at Ashbrooke subdivision.

Residential single family housing has been very popular as Madison County has attracted much of the urban relocation from Jackson. Residential developments continue to thrive in Madison County. In addition to Lake Caroline, adjacent subdivisions along Stribling Road include: Ashbrooke, The Timbers at Ashbrooke, Hatheway Lake, Devlin Springs, Johnstone, and Hartfield. A new development is building multiple subdivisions within the square mile of property located in the southwest corner of Dewees Road/Stribling Road with a plan for 606 single family homes.

Below: Stribling Road – Looking east across Dewees Road adjacent to Fire Station.



Ashbrooke has three entrances/exits along Stribling Road, including:

East access - Timber Drive, a one-way entrance/exit at the Timbers at Ashbrooke that are separated by a +190 ft wide grassed area,

Middle access – Ashbrooke Blvd, also a one-way entrance/exit separated by a 60 ft grassed area, and

Western access – Muscadine Path, has a 4 ft landscaped area with 2 ft curb/gutter on each side.



Above: Looking west along Stribling Road at Timber Drive.

Below: Looking south on Ashbrooke Blvd at one-way northbound exit.





Above: Looking south along Muscadine Path from Stribling Road.

Catlett Road extends north of Gluckstadt Road and has reverse horizontal curves just north of Stribling Road Extension. New residential subdivisions are under construction between Gluckstadt Road and Stribling Road. Subdivisions include: Falls Crossing, Cornerstone, Autumn Crest, Stillhouse Creek, First Colony, and a new subdivision that is under construction south of Falls Crossing. Catlett Road is classified as a Minor Arterial from Gluckstadt Road to Stribling Road. North of Stribling Road, the classification is reduced to a Collector between Stribling Road and Stout Road and the speed limit reduced from 45 mph to 35 mph. This section of roadway has multiple single family homes that have direct access to Catlett Road. The cross section includes 2-10 ft travel lanes.

Below: Looking north on Catlett Road at horizontal curve.



Stout Road terminates at Catlett Road with All-Way Stop control at the intersection. The All-Way plaques are missing from the existing street signs. Stout Road is a 2-lane rural roadway with 2-10 ft travel lanes.



Turning movements were collected on Wednesday, August 9, 2023, at each of the study intersections. The existing peak hour traffic volumes within the study area are shown in **Figure 3**. The detail of the traffic count volumes by 15 minute interval is provided as an attachment to this letter/report.

Traffic volumes were shown to back up southbound starting at 7:02 AM at the Catlett Road/Stribling Road intersection. This traffic queue was likely extending south to the Stribling Road Extension/Catlett Road intersection. This queue extended to Caroline Blvd on Stribling Road at 7:05 AM, Timber Drive at 7:05 AM and Ashbrook Blvd at 7:08 AM. The queue of eastbound/southbound vehicles along Stribling Road and Catlett Road continued until 7:45-7:50 AM when the queue cleared.

One lane of traffic has a peak hour directional capacity (by Florida Department of Transportation Quality/Level of Service Handbook) of 880 vehicles per hour. Volumes in excess of this are considered over capacity. The AM Peak hour volume at the Stribling Road/Catlett Road intersection had 900 vph turning right and 140 vph turning left, for a total of 1,040 vph eastbound. Eastbound traffic was over 200 vehicles each 15 minute interval from 6:45-8:15 AM. The eastbound left turning volume of 140 vph is likely from people avoiding the southbound queue and using northbound Catlett Road to Stout Road as an alternative route.

Madison County has plans to signalize the intersection of Catlett Road/Stribling Road Extension to reduce the intersection delays. With the existing volumes, Stribling Road is over capacity, as is Stribling Road Extension. Widening to a 5-lane cross section is recommended to accommodate existing traffic volumes, concurrent with signalization of the Catlett Road/Stribling Road Extension intersection.

Lake Caroline had 193 vph exit via Caroline Blvd in the AM Peak hour with 96% of the vehicles (185 vph) traveling east on Stribling Road. Ashbrooke subdivision had 300 vph exit in the AM Peak hour on Stribling Road – with 86% (257 vph) traveling east on Stribling Road.

Gluckstadt Road is a parallel route to the south, that has traffic queues in the AM peak hour that extend ± 0.4 miles west of the Bozeman Road/Catlett Road signalized intersection on typical weekdays.



Trip Generation/Assignment

The trip generation characteristics of the proposed Convenience Market with Gas Pumps were calculated using the Institute of Transportation Engineers (ITE), Trip Generation, 11th Edition. The manual identifies two different independent variables for calculating traffic for a Convenience Market with Gas Pumps (Land Use 853): 1) SF of Convenience Market and 2) Number of fueling positions. The average of the two independent variable calculations was used to estimate the site’s trip generation characteristics. The results of the trip generation calculations are shown in **Table 1**.

**Table 1
Trip Generation**

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Conv. Store/Gas Station	8 fueling pos	2057	216	108	108	182	91	91
Conv. Store/Gas Station	4,961 S.F.	3097	201	101	100	241	121	120
	Average	2,577	210	105	105	213	106	107
Small Office Building	10,000 S.F.	144	17	14	3	22	7	15
High Turn Over Rest-adj	7,000 S.F.	750	67	37	30	63	38	25
	Subtotal Trips	3,471	294	156	138	298	151	147
<u>Pass-by Trips</u>								
Conv. Mkt w/ Gas Pumps	8 fueling pos	1,598	130	65	65	119	59	60
	Net New Trips	1,873	164	91	73	179	92	87

Daily Traffic Generation			
Conv. Store/ Gas Station	[ITE 945]	=	T = 257.13 * X, x-vfp, GFA 4-5.5
Conv. Store/ Gas Station	[ITE 945]	=	T = 624.2 * X, x-gfa, VFP 2-8
Small Office Building	[ITE 712]	=	T = 14.39 * X
High Turnover Sit Down Rest	[ITE 932]	=	T = 107.2 * X
AM Peak Hour Traffic Generation			
Conv. Store/ Gas Station	[ITE 945]	=	T = 27.04 * X ; x-vfp(50%in/50%out), GFA 4-5.5
Conv. Store/ Gas Station	[ITE 945]	=	T = 40.59 * X ; x-gfa (50%in/50%out), VFP 2-8
Small Office Building	[ITE 712]	=	T = 1.67 * X ; (82%in/18%out)
High Turnover Sit Down Rest	[ITE 932]	=	T = 9.57 * X ; (55%in/45%out) adj
PM Peak Hour Traffic Generation			
Conv. Store/ Gas Station	[ITE 945]	=	T = 22.76 * X ; x-vfp(50%in/50%out), , GFA 4-5.5
Conv. Store/ Gas Station	[ITE 945]	=	T = 48.48 * X ; x-gfa (50%in/50%out), VFP 2-8
Small Office Building	[ITE 712]	=	T = 2.16 * X ; (34%in/66%out)
High Turnover Sit Down Rest	[ITE 932]	=	T = 9.05 * X ; (61%in/39%out) adj

Source: ITE Trip Generation, 11th Edition, Trip Generation Handbook, 2nd Edition, Kiser Traffic and Engineering, 2023.

The calculated trips for the Convenience Market with Gas Pumps were developed using both the SF of Convenience Market and the number of fueling positions. An average of the two independent variables was used. Pass by trips were calculated, as Convenience Markets with gas stations have a significant pass by trip rate (in excess of 50%). However, pass by trips do not reduce the volumes at the driveways, just the impacts to the adjacent street network. The site traffic was assigned to the adjacent roadway network based on the demographic distribution of surrounding area and the existing and future roadway network. The site generated traffic volumes are shown in **Figure 4**.



The buildout of the identified projects is planned to be completed in 2026. To forecast traffic to the opening year (2026), the census data for Madison County was researched to compare the population changes since 1990. The historical population changes are listed in **Table 2**.

Table 2 - Historical Population Changes

Location	Population by Year				Compound Annual % Change		
	1990	2000	2010	2020	'90-'00	'00-'10	'10-'20
Madison County, MS	53,794	75,089	95,546	106,871	3.4%	2.4%	1.1%

Source: US Census.gov, Kiser Traffic and Engineering, 2023.

The population changes show a continued increase in population in Madison County from 1990 to 2020, with a 2020 population that has nearly doubled in the last 30 years.

Traffic volume trends were researched on Stribling Road, Catlett Road and Stribling Road Extension through MDOT daily traffic volume records. The MDOT historical count information south and east of the project site is summarized in **Table 3**.

Table 3 – Historical Daily Traffic Volumes by Year

Roadway	Count Year			
	2013	2016	2019	2022
Stribling Rd	7,800	8,200	n/a	12,000
Catlett Road	7,000	7,300	9,700	10,000
Stribling Rd Ext	3800	n/a	8,000	8,600

Source: MDOT 2023. Count locations #451176, #451162, #455349.

Based on MDOT’s traffic records, the daily traffic volumes on Stribling Road have increased at nearly 5% annually since 2013. Similarly, Catlett Road has increased at a 4% compound annual growth over this same 9 year span. Stribling Road Extension shows a 3% compound annual growth from 2019 to 2022. The background traffic (non-site) was increased by 4% annually to account for growth in the area. The projected 2026 Total Traffic is shown in **Figure 5**.

Traffic Impacts

The intersection delays were evaluated using the information provided in the Highway Capacity Manual to evaluate the levels-of-service (LOS) for the study intersections. The LOS analysis included the existing (2023) and future traffic (2026-Total traffic at buildout). The intersections identified in this analysis include the Lake Caroline main entrance at Caroline Blvd, the adjacent Ashbrooke subdivision intersections on Stribling Road, Dewees Road/Stribling Road, Catlett Road/Stribling Road and Stout Road/Catlett Road. A historical count from the Stribling Road Extension/Catlett Road intersection was also included, as this intersection seems to be reducing capacity for southbound traffic in the morning peak and westbound traffic in the PM Peak. The capacity analysis sheets are provided as an attachment to this letter/report. The capacity analysis results are summarized in **Tables 4 & 5**.



Table 4
2023 Existing Traffic - Capacity Analysis Summary

All-Way Stop Intersection	Time Period	Approach LOS				Intersection LOS							
		EB	WB	NB	SB								
Stout Road/ Catlett Road	AM Peak	-	A	A	A	A (7.6)							
	PM Peak	-	A	A	A	A (7.5)							
Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Stribling Road/ Dewees Rd	AM Peak	-	-	A	A	-	-	D	-	D	-	-	-
	PM Peak	-	-	A	A	-	-	C	-	C	-	-	-
Stribling Road/ Muscadine Path	AM Peak	-	-	A	A	-	-	C	-	C	-	-	-
	PM Peak	-	-	A	A	-	-	C	-	B	-	-	-
Stribling Road/ Ashbrooke Blvd	AM Peak	-	-	A	A	-	-	C	-	C	-	-	-
	PM Peak	-	-	A	A	-	-	B	-	B	-	-	-
Stribling Road/ Timber Drive	AM Peak	-	-	A	A	-	-	C	-	C	-	-	-
	PM Peak	-	-	A	A	-	-	B	-	B	-	-	-
Stribling Road/ Caroline Blvd	AM Peak	A	-	-	-	-	A	-	-	-	F	-	B
	PM Peak	A	-	-	-	-	A	-	-	-	E	-	B
Stribling Road/ Catlett Road	AM Peak	D	-	E	-	-	-	A	-	-	-	-	A
	PM Peak	F	-	B	-	-	-	B	-	-	-	-	A
Stribling Road Ext/ Catlett Road	AM Peak	-	-	-	F	-	F	-	-	A	A	-	-
	PM Peak	-	-	-	F	-	F	-	-	A	A	-	-

Source: Kiser Traffic and Engineering, 2023.

Existing traffic is shown to be operating at acceptable levels west of the Stribling Road/Caroline Blvd intersection. However, the intersections at Caroline Blvd/Stribling Road, Stribling Road/Catlett Road, and Stribling Road Ext/Catlett Road are shown to be operating at LOS E/F in the AM and PM Peak hours.

With over 800 vph eastbound on Stribling Road in the AM Peak hour, the southbound left turn volume from Caroline Blvd of 185 vph has no gaps/capacity to enter traffic. Southbound traffic queues extend from Stribling Road Extension north through the Catlett Rd/Stribling Road intersection and extend west beyond the Ashbrook Blvd/Stribling Road intersection. Additional capacity on Stribling Road, Catlett Road, and Stribling Road Extension is needed. Even with the proposed traffic signal at the Stribling Road Extension/Catlett Road intersection, providing a second eastbound travel lane is needed to accommodate the peak hour traffic volumes.

The Year 2026 Total traffic levels-of-service are listed in **Table 5**.

2026 Total Traffic – Capacity Analysis Summary

All-Way Stop Intersection	Time Period	Approach LOS								Intersection LOS			
		EB			WB			NB			SB		
Stout Road/ Catlett Road	AM Peak	-	A			A		A		A (7.8)			
	PM Peak	-	A			A		A		A (7.5)			
Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Stribling Road/ Deweese Rd	AM Peak	-	-	A	B	-	-	E	-	E	-	-	-
	PM Peak	-	-	A	A	-	-	C	-	C	-	-	-
Stribling Road/ Muscadine Path	AM Peak	-	-	A	A	-	-	C	-	C	-	-	-
	PM Peak	-	-	A	A	-	-	C	-	B	-	-	-
Stribling Road/ Ashbrooke Blvd	AM Peak	-	-	A	A	-	-	C	-	C	-	-	-
	PM Peak	-	-	A	A	-	-	B	-	B	-	-	-
Stribling Road/ Timber Drive	AM Peak	-	-	A	B	-	-	C	-	C	-	-	-
	PM Peak	-	-	A	A	-	-	B	-	B	-	-	-
Stribling Road/ Caroline Blvd	AM Peak	A	-	-	-	-	A	-	-	-	F	-	B
	PM Peak	B	-	-	-	-	A	-	-	-	F	-	C
Stribling Road/ Catlett Road	AM Peak	E	-	F	-	-	-	A	-	-	-	-	A
	PM Peak	F	-	B	-	-	-	B	-	-	-	-	A
Stribling Road Ext/ Catlett Road	AM Peak	-	-	-	F	-	F	-	-	A	B	-	-
	PM Peak	-	-	-	F	-	F	-	-	A	B	-	-
Stribling Road/ Gas Stn Driveway	AM Peak	A	-	-	-	-	A	-	-	-	F	-	B
	PM Peak	B	-	-	-	-	A	-	-	-	F	-	C
Caroline Blvd/ Gas Stn Driveway	AM Peak	-	-	-	-	-	A	-	-	A	-	-	-
	PM Peak	-	-	-	-	-	B	-	-	A	-	-	-

Source: Kiser Traffic and Engineering, 2023.

The 2026 intersection volumes had similar levels-of-service to the 2023 results, with Caroline Blvd/Stribling Road, Catlett Road/Stribling Road and Stribling Road Extension/ Catlett Road each operating over capacity on the minor street.

Signal Warrant Analysis

The Manual on Uniform Traffic Control Devices (MUTCD) outlines the factors for justifying installation of a traffic control signal. Three of the 9 signal warrants are vehicular volume based warrants: 1) eight-hour vehicular volume, 2) four-hour vehicular volume and 3) peak hour. The MUTCD states that a traffic control signal should not be installed unless one or more of the warrants are met. Warrant #1, the eight-hour warrant, is intended for application at locations where a large volume of intersecting traffic is the primary reason to consider installing a traffic control signal. Warrant #2, the four-hour warrant, is intended where the volume of the intersecting traffic is the primary reason to consider installing a traffic control signal. Warrant #3, the peak-hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.



The hourly traffic volumes at the intersection of Caroline Blvd/Stribling Road were compared to the MUTCD threshold volumes for Condition A – Minimum Vehicular Volume and for Condition B-Interruption of Continuous Traffic in Warrant 1, as well as the volume Warrants in #2 and #3. The detail of the hourly volumes and warrant analysis are provided in **Table 6**. The volumes were evaluated for warrant thresholds without the (southbound) minor street right turning volumes.

Table 6
Caroline Blvd/Stribling Road Signal Warrant Analysis – 2023 Existing Traffic

Start Time	Approach						Warrant 1A		Warrant 1B		Warrant #2 Four Hour	Warrant #3 Peak Hour	
	EB	WB	EB+ WB	SB Lt	SB Rt	SB Total	Major-350	Minor-105	Major-525	Minor-53			
06:00 AM	480	222	702	123	7	130	Yes	Yes	Yes	Yes	Yes	-	
07:00 AM	890	306	1,196	164	8	172	Yes	Yes	Yes	Yes	Yes	Yes	
08:00 AM	451	296	747	151	12	163	Yes	Yes	Yes	Yes	Yes	Yes	
09:00 AM	228	237	465	131	11	142	Yes	Yes	-	Yes	-	-	
10:00 AM	206	259	465	127	14	141	Yes	Yes	-	Yes	-	-	
11:00 AM	226	317	543	146	14	160	Yes	Yes	Yes	Yes	Yes	-	
12:00 PM	210	335	545	125	12	137	Yes	Yes	Yes	Yes	Yes	-	
01:00 PM	198	371	569	127	14	141	Yes	Yes	Yes	Yes	Yes	-	
02:00 PM	340	409	749	124	18	142	Yes	Yes	Yes	Yes	Yes	-	
03:00 PM	300	562	862	108	12	120	Yes	Yes	Yes	Yes	Yes	Yes	
04:00 PM	302	763	1,065	119	20	139	Yes	Yes	Yes	Yes	Yes	Yes	
05:00 PM	351	790	1,141	118	20	138	Yes	Yes	Yes	Yes	Yes	Yes	
Subtotal	4,182	4,867	9,049	1,563	162	1,725	12	12	10	12	10	5	
Count date: 8/9/23							Warrant Met?	Yes		Yes		Yes	Yes

Source: Kiser Traffic and Engineering, 2023.
Volumes are in vehicles per hour.

Warrants are based on 70% volume warrant for speeds greater than 40 mph and community with less than 10,000 population, with 1 lane on the major street and 1 lane on the minor. The signal warrant is met for the 8-hour, peak hour, and four-hour warrants with existing traffic, excluding minor street right turn volumes. Signalization is recommended, provided that more capacity is provided on Stribling Road. If additional capacity is not added on Stribling Road, the signal would be mostly ineffective.

Similarly, the intersection of Catlett Road/Stribling Road Extension is planned to be signalized by Madison County. Providing capacity for eastbound/southbound traffic is critical to the flow of traffic in the morning peak hours. Providing 2 eastbound/southbound travel lanes on Stribling Road, Catlett Road and Stribling Road Extension is necessary to accommodate the existing traffic volumes, without the addition of future traffic.

Converting the intersection of Stribling Road/Catlett Road to accommodate the major movements is recommended. This would provide 2 eastbound lanes that would transition into 2 southbound lanes, with the north approach converted to the minor street and stop controlled at the intersection. This would allow the >1,000 vph in the AM Peak hour to free flow without yielding/stopping at Catlett Road, while the ±50 vph southbound on Catlett Road would have to stop and not have the right-of-way, as currently is assigned.

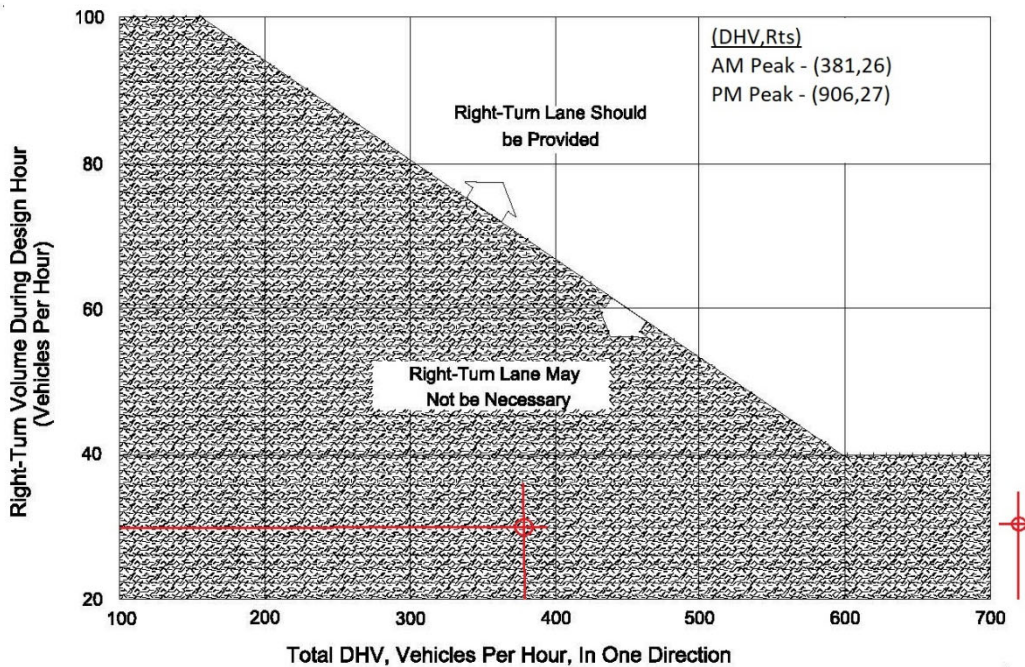


Auxiliary Turn Lane Warrants

The existing roadway cross section of Stribling Road is a 2-lane roadway adjacent to the project site. The proposed site driveway on Stribling Road was evaluated to see if an auxiliary right turn or left turn lane is warranted.

Left turn and Right turning volumes were plotted to determine if threshold volumes will justify constructing a right turn ingress lanes and/or a left turn ingress lane at the proposed project site driveway. The volumes are plotted for right-turn lanes at unsignalized intersections on 2-lane roadways.

For additional information, see NCHRP Report 457 *Evaluating Intersection Improvements*.

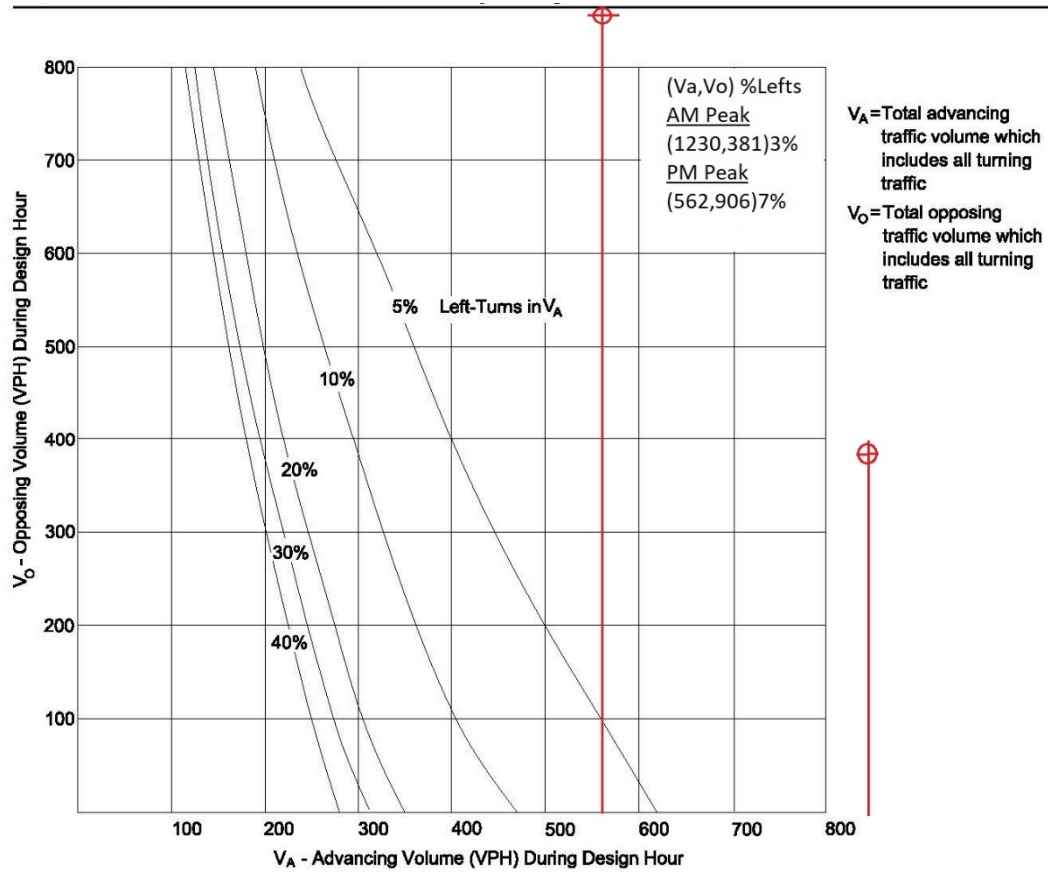


RIGHT-TURN LANES AT NON-SIGNALIZED INTERSECTIONS ON 2-LANE ROADWAYS

Source: NCHRP Report 457, Kiser Traffic and Engineering, 2023.

The right turn lane analysis identified that a right turn lane is not anticipated to be warranted on Stribling Road at the proposed site driveway.

The left turn volumes were plotted for Volume Advancing (Va) and Volume Opposing (Vo), along with the percentage of left turning vehicles in the Volume Advancing.



LEFT-TURN LANES AT NON-SIGNALIZED INTERSECTIONS ON 2-LANE ROADWAYS (45 mph – 50 mph)

Source: NCHRP Report 457, Kiser Traffic and Engineering, 2023.

The plotted points are to the right of the referenced percentage of left turning vehicles, identifying that a left turn lane is anticipated to be needed.

Recommendations

Existing Eastbound traffic volumes are shown to be over capacity for the AM Peak hour along Stribling Road from Stribling Road/Caroline Blvd to Stribling Road Extension/Catlett Road. All 3 of the vehicular volume based signal warrants are met with existing traffic at the Caroline Blvd/Stribling Road intersection, without using minor street right turning volumes. The 8-hour signal warrant is met for all 12-hours counts, the 4-hour signal warrant is met for 10 hours, and the peak hour signal warrant is met for 5 hours. However, signalization by itself is not anticipated to solve the capacity issues. Constructing a second eastbound travel lane is recommended, along with converting the primary movement to free-flow at the Stribling Road/Catlett Road intersection. This would include either removing the residential structure at the intersection in the southwest quadrant or extending the horizontal curve south of the existing residence.



January 9, 2024

The recommended improvements are shown graphically in **Figures 6a-c**. The geometric improvements/signal installations improve the intersection levels-of-service from Stribling Road/Caroline Blvd east to Stribling Road Extension/Catlett Road to LOS C or better. To accommodate additional southbound left turn storage, the brick entry at Caroline Blvd is recommended to be modified.



An alternative to the conventional traffic signal was considered for the Stribling Road Extension/Catlett Road intersection to have a *Florida T intersection*. This would allow southbound traffic to be free-flow continuously, with the traffic signal only stopping northbound and westbound traffic. This intersection concept is shown in **Figure 7**. If you have any questions or comments regarding this analysis, please call me at (601) 948-3071.

The area has been rural and developing with suburban residential developments. Providing a multi-use path/pedestrian accommodations along Stribling Road, Catlett Road and Stribling Road Extension would provide a safer environment for bicycle/pedestrian activity, as the developments are constructing 3 homes per acre. Also providing street lighting would also improve the safety of the roadways at night, concurrent with the widening to 5 lanes from Caroline Boulevard east.

Sincerely,

Kiser Traffic and Engineering, LLC

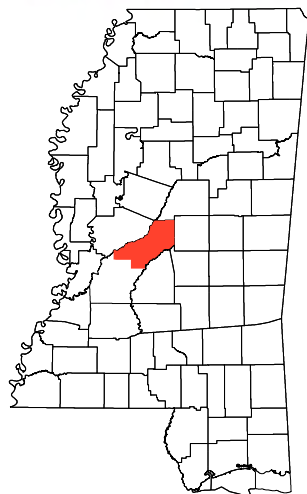
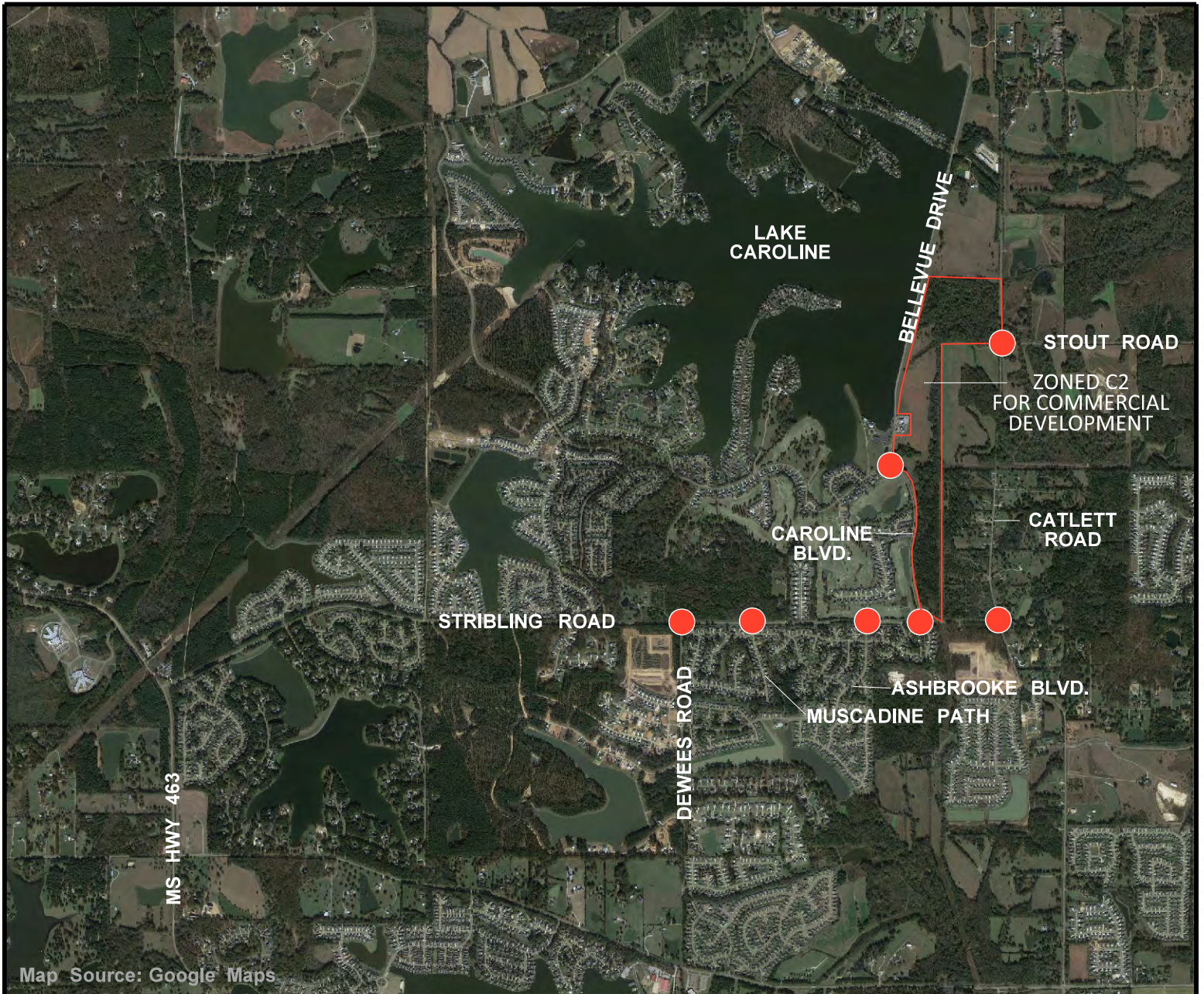
A handwritten signature in blue ink, reading "Jonathan Kiser".

Jonathan A. Kiser, P.E., PTOE, PTP
Professional Traffic Engineer &
Transportation Planner

- Attachments:
- Figure 1 – Vicinity Map
 - Figure 2 – Site Plan
 - Figure 3 – Existing Traffic
 - Figure 4 – Site Traffic Assignment
 - Figure 5 – Year 2026 Total Traffic
 - Figure 6a-c – Recommended Improvements
 - Figure 7 – Recommended Improvements

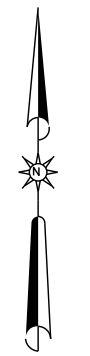


Volume Calculation Sheets	A1-A10
Traffic counts	B1-48
Stribling Rd/Deweese Road	B1-5
Stribling Rd/Muscadine Path	B6-10
Stribling Rd/Ashbrooke Blvd	B11-15
Stribling Rd/Timber Drive	B16-20
Stribling Rd/Caroline Blvd	B21-26
Stribling Rd/Catlett Rd	B27-32
Stout Rd/Catlett Rd	B33-38
Caroline Blvd/Bellevue	B39-43
Stribling Rd Ext/Catlett Rd	B44-48
HCM Capacity Analysis Sheets	C1-44
AM/PM Peak Existing	C1-16
AM/PM Peak Year 2026 Total	C17-36
AM/PM Peak Year 2026 Total – Improved	C37-44



MADISON COUNTY

STUDY AREA/
INTERSECTIONS



N.T.S.

VICINITY MAP

FIGURE

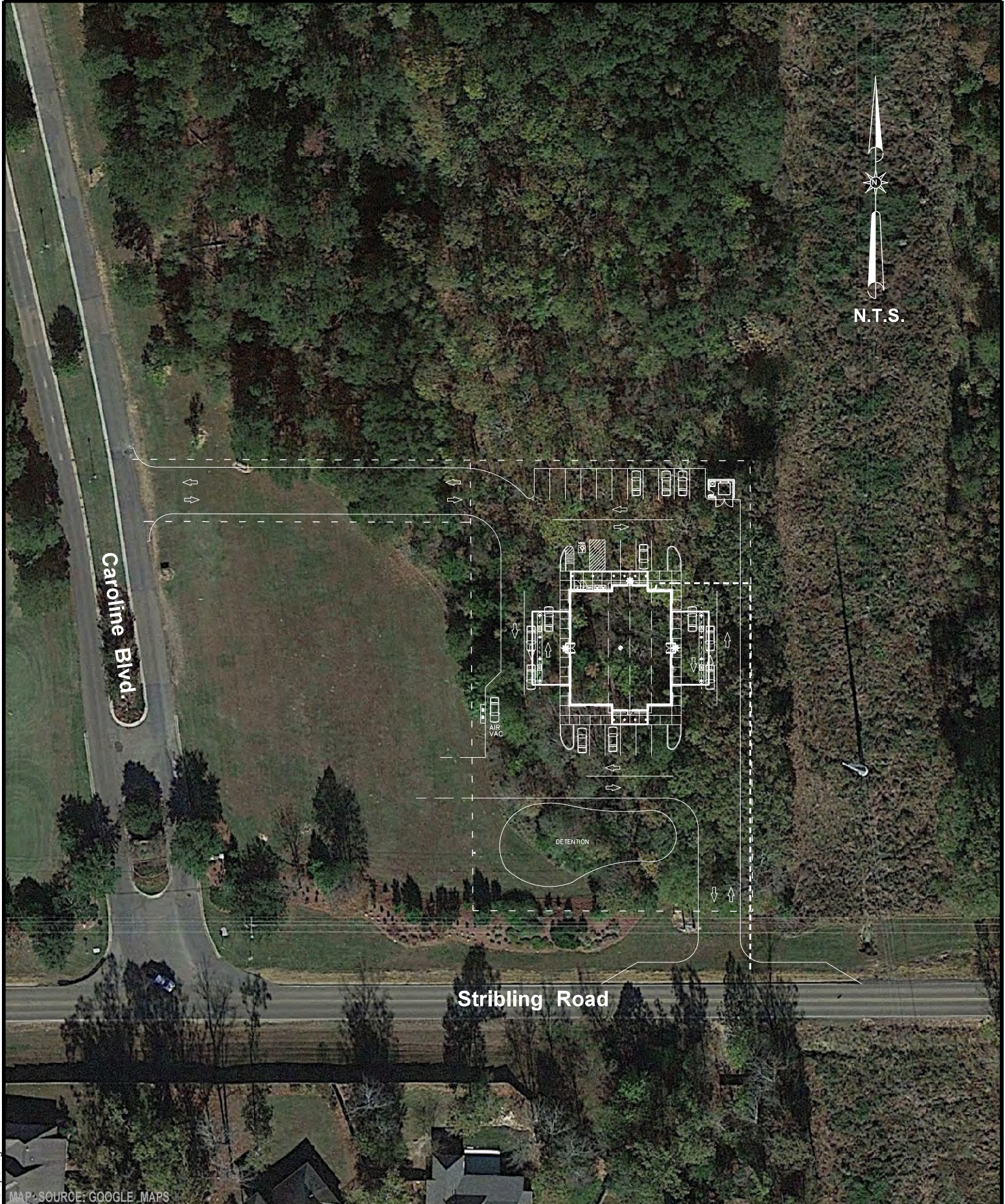
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KISER
TRAFFIC AND
ENGINEERING



N.T.S.



Caroline Blvd

Stribling Road

DETENTION

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MAP SOURCE: GOOGLE MAPS



SITE PLAN

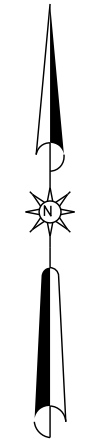
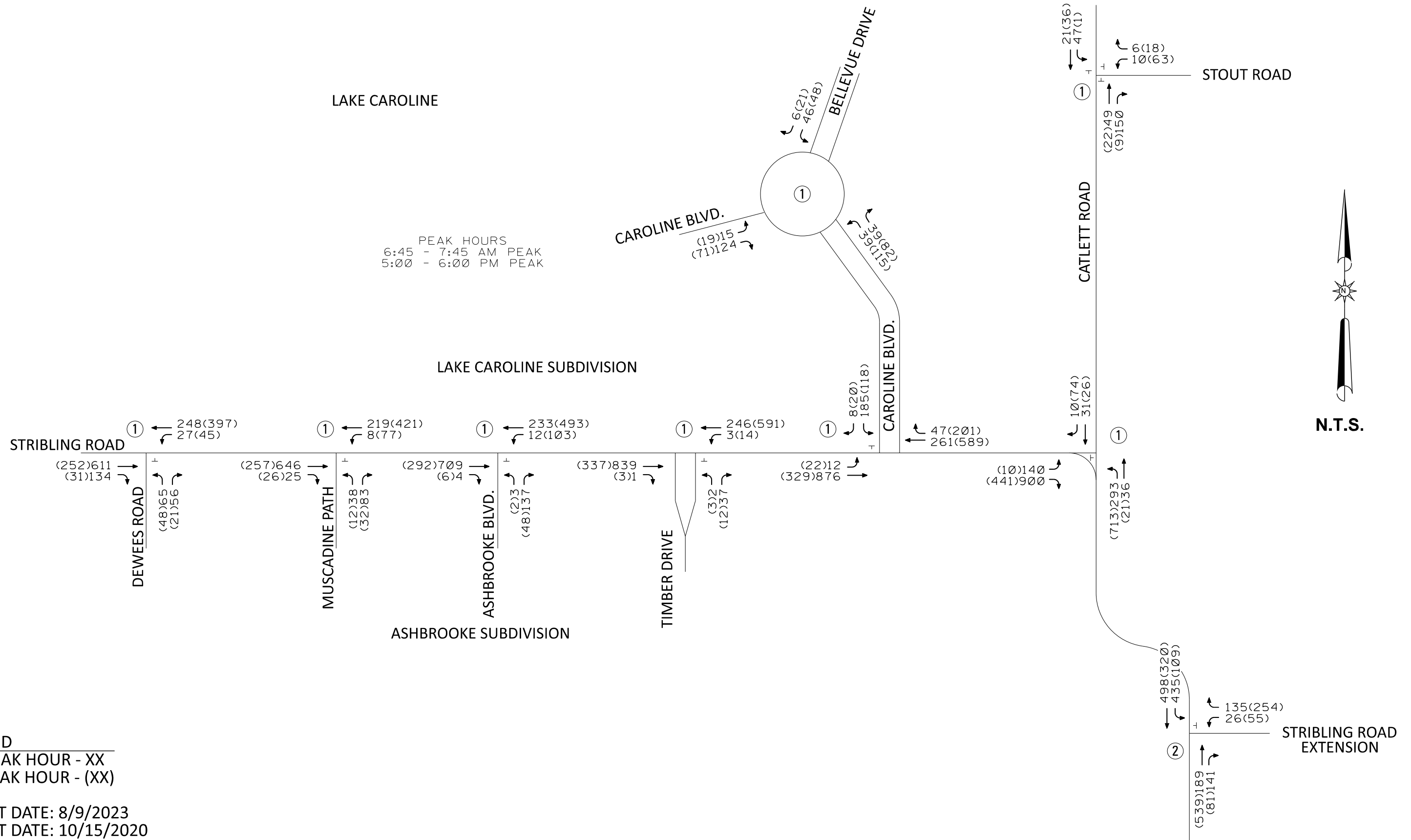
FIGURE 2

C:\Kiser\CADD\#204_Madison\existingtraffic.dgn

LEGEND
AM PEAK HOUR - XX
PM PEAK HOUR - (XX)

① COUNT DATE: 8/9/2023
② COUNT DATE: 10/15/2020

PEAK HOURS
6:45 - 7:45 AM PEAK
5:00 - 6:00 PM PEAK



N.T.S.



KISER
TRAFFIC AND
ENGINEERING

EXISTING TRAFFIC

FIGURE

3

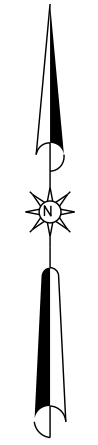
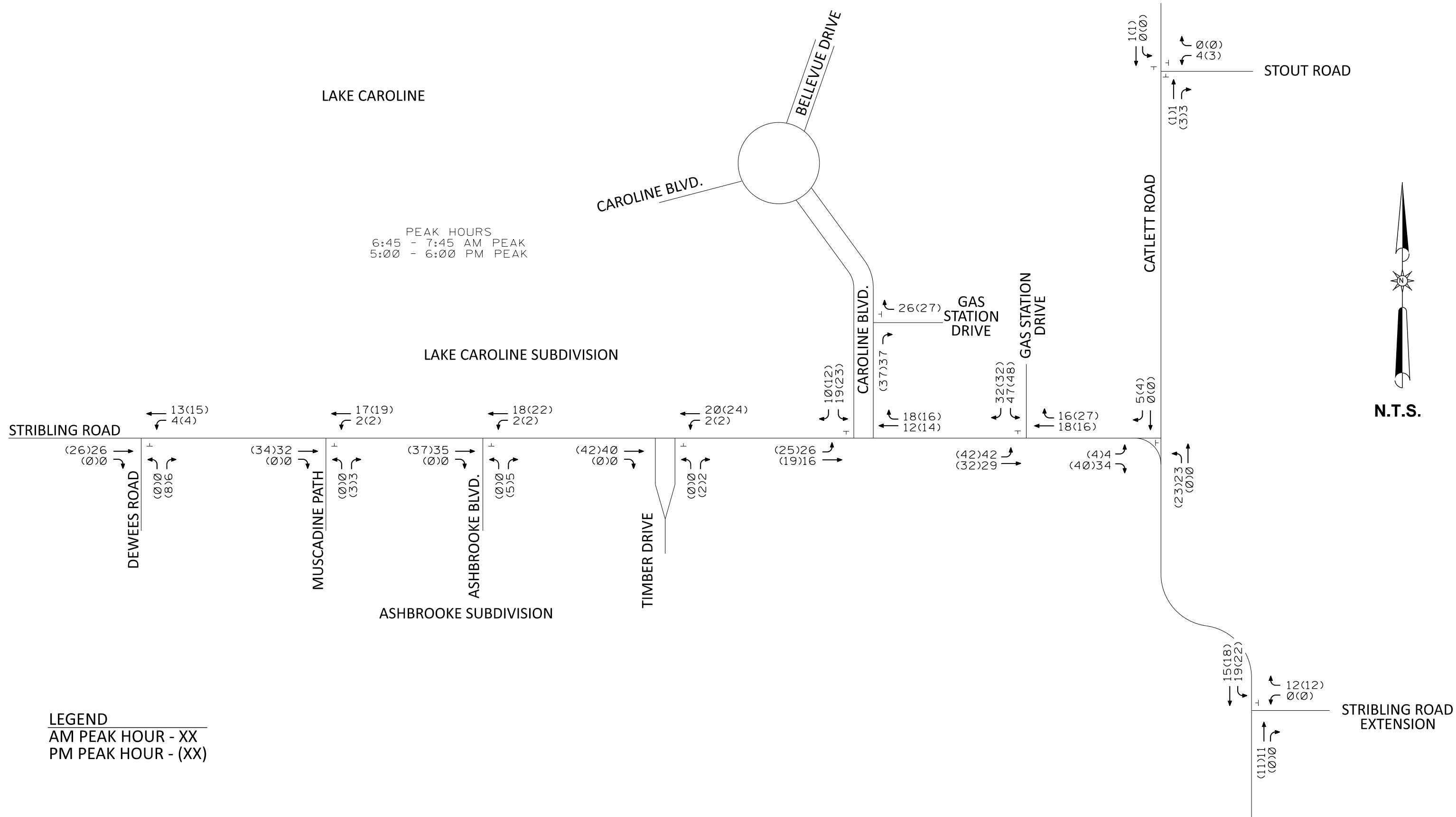
C:\Kiser\CADD\#204_Madison\site\traffic.dgn



SITE TRAFFIC

FIGURE

4



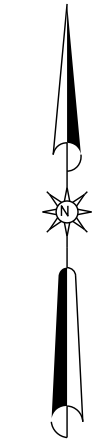
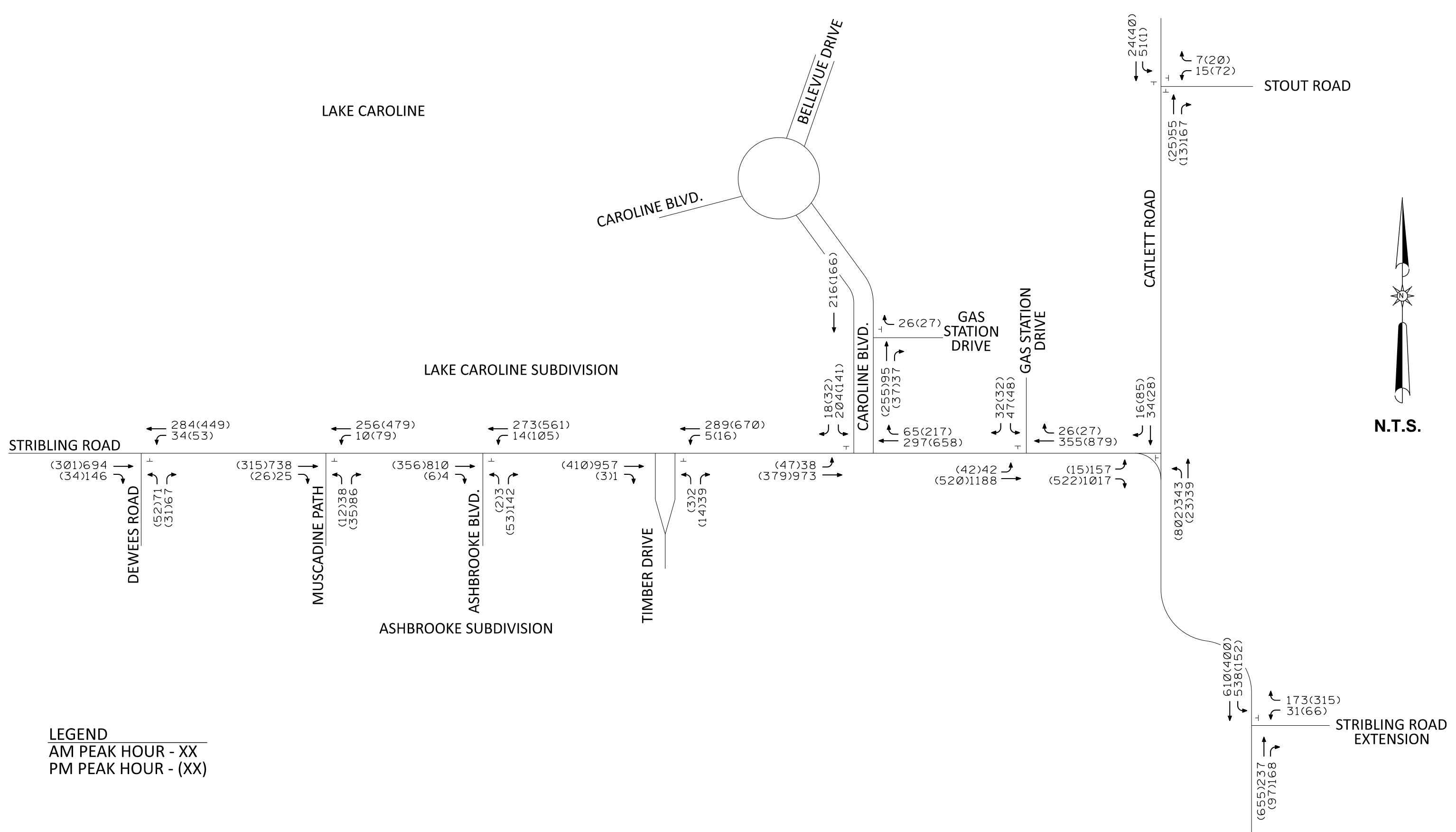
N.T.S.

C:\Kiser\CADD\#204_Madison\totaltraffic.dgn



YEAR 2026 TOTAL TRAFFIC

FIGURE 5



N.T.S.



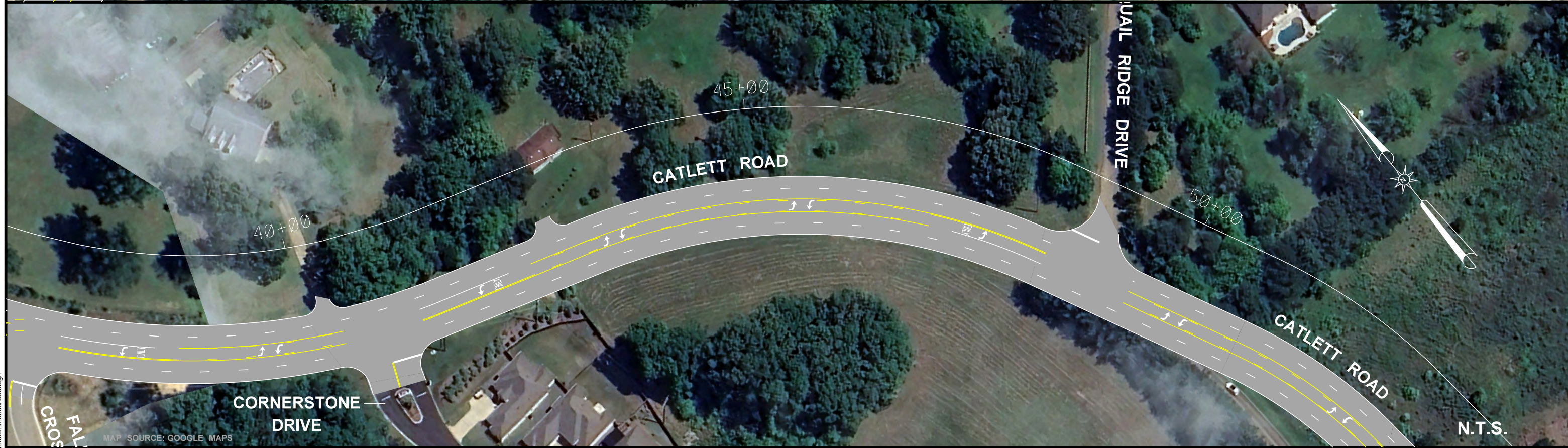
RECOMMENDED IMPROVEMENTS

FIGURE
6a

C:\Kiser\CADD\#204_Madison\recommendationsheets.dgn



N.T.S.



C:\Kiser\CADD\#204_Madison\recommendationsheets.dgn



RECOMMENDED IMPROVEMENTS

FIGURE 6b

MAP SOURCE: GOOGLE MAPS

N.T.S.



N.T.S.

RECOMMENDED IMPROVEMENTS

FIGURE
6c

C:\Kiser\CADD\#204 Madison\recommendationsheets.dgn

MAP SOURCE: GOOGLE MAPS





C:\Kiser\CADD\#204_Madison\recommendsheets.dgn

MAP SOURCE: GOOGLE MAPS



RECOMMENDED IMPROVEMENTS

FIGURE
7