

August 23, 2018

Mr. Brian Sartain
CBS Development Group, LLC
1 Laws Crossing
Madison, MS 39110

Re: Traffic Analysis for the Proposed 31 Single Family Homes in Madison County, MS

Dear Mr. Sartain:

Per your request, Neel-Schaffer has conducted an analysis of the proposed residential development on Catlett Road in Madison County, MS. This letter is intended to provide traffic analysis information regarding the development of the property between Falls Crossing and Catlett Road, south of Luebirdia Lane. Development of the 9.2 acre project site is planned to include 31 single family homes. Access to the site is proposed to include a single site driveway on Catlett Road. The existing cross section of Catlett Road adjacent to the site includes a 2-lane roadway with 24 ft of asphalt. The project site plan is provided in **Figure 1-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 posted speed limit on Catlett Road is 45 mph adjacent to the site, while northbound traffic has a curve warning sign with an advisory speed of 30 mph.

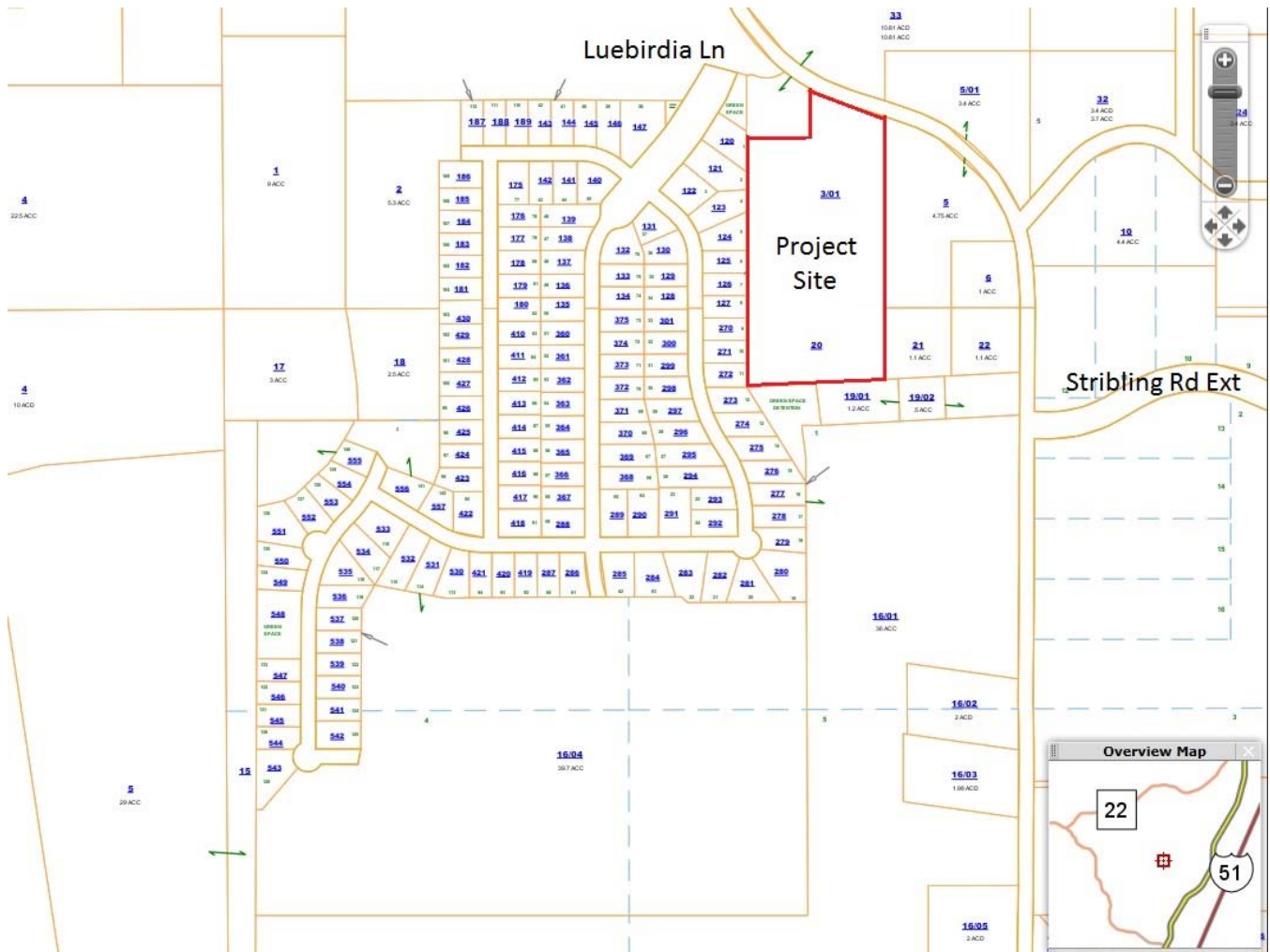
The project site is currently occupied with a single family home with a concrete driveway connecting to Catlett Road at the northeast property corner and a dirt driveway/culvert at the northwest property corner.



Source: Neel-Schaffer, Google Earth, 2018.

Falls Crossing subdivision is adjacent to the site to the west, with approximately 170 residential single family lots. The other land adjacent to the site is either large acre/low density development, or undeveloped property. Higher density developments exist along Stribling Road to the north/west and along Stribling Road Extension, east of the site.

There are significant traffic peaks in the AM and PM peak hours, as most traffic travels southbound in the AM peak and northbound in the PM peak, adjacent to the project site. A peak hour turning movement count was conducted on 8/9/18 at the adjacent intersection of Luebirdia Lane/Catlett Road.



Madison County Tax Map

Source: TSC Maps, Neel-Schaffer, 2018.

The year 2018 peak hour traffic volumes adjacent to the site are shown in **Figure 2**.

Trip Generation/Assignment

The trip generation characteristics of the proposed residential development were calculated using the Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition. The site is planned to be an age restricted community for residents 55 years old and older. ITE has a standard “Single Family Home” rate and a rate for “Senior Adult Housing – Detached.” The two rates yield similar values for peak hour traffic, with daily volumes higher for standard Single Family Homes. An 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	
Single Family Homes	31 D.U.	358	31	8	23	37	23	14	
Senior Adult Housing-det	31 D.U.	167	35	12	23	19	12	7	
	Average	263	33	10	23	28	18	10	
Daily Traffic Generation									
	Single Family Homes	[ITE 210]	=	$\ln(T) = 0.92 * \ln(\# \text{ D.U.}) + 2.72$					
	Sr. Adult Housing-detached	[ITE 251]	=	$\ln(T) = 0.89 * \ln(\# \text{ D.U.}) + 2.06$					
AM Peak Hour Traffic Generation									
	Single Family Homes	[ITE 210]	=	$T = 0.70 * \# \text{ D.U.} + 9.74 ; (25\% \text{ in} / 75\% \text{ out})$					
	Sr. Adult Housing-detached	[ITE 251]	=	$T = 0.17 * \# \text{ D.U.} + 29.95 ; (35\% \text{ in} / 65\% \text{ out})$					
PM Peak Hour Traffic Generation									
	Single Family Homes	[ITE 210]	=	$\ln(T) = 0.90 * \ln(X) + 0.51 ; (63\% \text{ in} / 37\% \text{ out})$					
	Sr. Adult Housing-detached	[ITE 251]	=	$\ln(T) = 0.75 * \ln(X) + 0.35 ; (61\% \text{ in} / 39\% \text{ out})$					

Source: ITE Trip Generation, 9th Edition, Neel-Schaffer, 2018. X = # Dwelling Units

The average of the two independent variable calculations was used for the trip generation of the project site. The project site traffic is shown graphically in **Figure 3**.

Non-site traffic volumes were evaluated based on a review of MDOT historical daily traffic volumes, local traffic counts and census data. The volumes on Catlett Road south of Stribling Road Extension (count station #451162) showed an increase in daily traffic from 7,000 vpd in 2013 to 7,500 vpd in 2017, a 1.74% compound annual growth rate. Local traffic counts from Catlett Road in 2016 and 2018 were compared and identified an average of 3.7% increase (compounded annually). The US census data for Madison County revealed a growth in population from 1990-54,271 to 2015-103,465, a 2.61% compound annual growth rate. The average of the MDOT count, NS count and Census data yielded a 2.7% compound annual growth rate. Non-site traffic was forecast to the horizon year/buildout 2021 using a 2.7% compound annual growth rate. The project site traffic was then added to the non-site traffic to evaluate the impacts to the roadway adjacent to the site for buildout (2021) total traffic. The projected 2021 Total Traffic is shown in **Figure 4**.

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 and future traffic (2021-Non-Site & Total traffic at buildout). The intersections identified in this analysis include the adjacent unsignalized intersection of Luebirdia Ln/Catlett Road, Stribling Road Extension/Catlett Road, and the proposed project site driveway. The capacity analysis sheets are provided as an attachment to this letter/report. The capacity analysis results are summarized in **Table 2**.

Table 2
Capacity Analysis Summary

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
<i>Existing Traffic</i>													
Catlett Road/ Stribling Rd Ext	AM Peak	-	-	-	D	-	D	-	-	-	A	-	-
	PM Peak	-	-	-	C	-	C	-	-	-	A	-	-
Catlett Road/ Luebirdia Ln	AM Peak	C	-	C	-	-	-	A	-	-	-	-	-
	PM Peak	B	-	B	-	-	-	A	-	-	-	-	-
<i>Non-Site Traffic</i>													
Catlett Road/ Stribling Rd Ext	AM Peak	-	-	-	F	-	F	-	-	-	A	-	-
	PM Peak	-	-	-	E	-	E	-	-	-	A	-	-
Catlett Road/ Luebirdia Ln	AM Peak	C	-	C	-	-	-	A	-	-	-	-	-
	PM Peak	B	-	B	-	-	-	A	-	-	-	-	-
<i>2021 Total Traffic</i>													
Catlett Road/ Stribling Rd Ext	AM Peak	-	-	-	F	-	F	-	-	-	A	-	-
	PM Peak	-	-	-	E	-	E	-	-	-	A	-	-
Catlett Road/ Luebirdia Ln	AM Peak	C	-	C	-	-	-	A	-	-	-	-	-
	PM Peak	B	-	B	-	-	-	A	-	-	-	-	-
Catlett Road/ Site Driveway	AM Peak	-	-	-	A	-	-	C	-	C	-	-	-
	PM Peak	-	-	-	A	-	-	B	-	B	-	-	-

Source: Neel-Schaffer, 2018, HCM 2010.

The site driveway is forecast to operate at acceptable levels (from a capacity perspective) with the development of the project site. The non-site traffic analysis and total traffic analysis reveals that the adjacent intersection of Catlett Road with Stribling Road Extension is near capacity with existing traffic. Without the development of the project site, the adjacent intersection is shown to be over capacity with minimal background growth. Signalization of the adjacent intersection, or construction of a roundabout would help to offset these capacity issues, with or without the development of the project site.

Sight Distance

The AASHTO A Policy on Geometric Design of Highway and Streets (Green Book), identifies that the critical design factor is Stopping Sight Distance (SSD). According to the “Green Book”, if the available intersection sight distance for an entering or crossing vehicle is at least equal to the appropriate SSD for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. In some cases, this may require a major road vehicle to stop or slow to accommodate the maneuver of the minor road vehicle. While intersection sight distance is desirable, SSD is a mandatory condition and must be met.



Looking north from proposed site drive on Catlett Road at the vegetation impacts on sight distance.

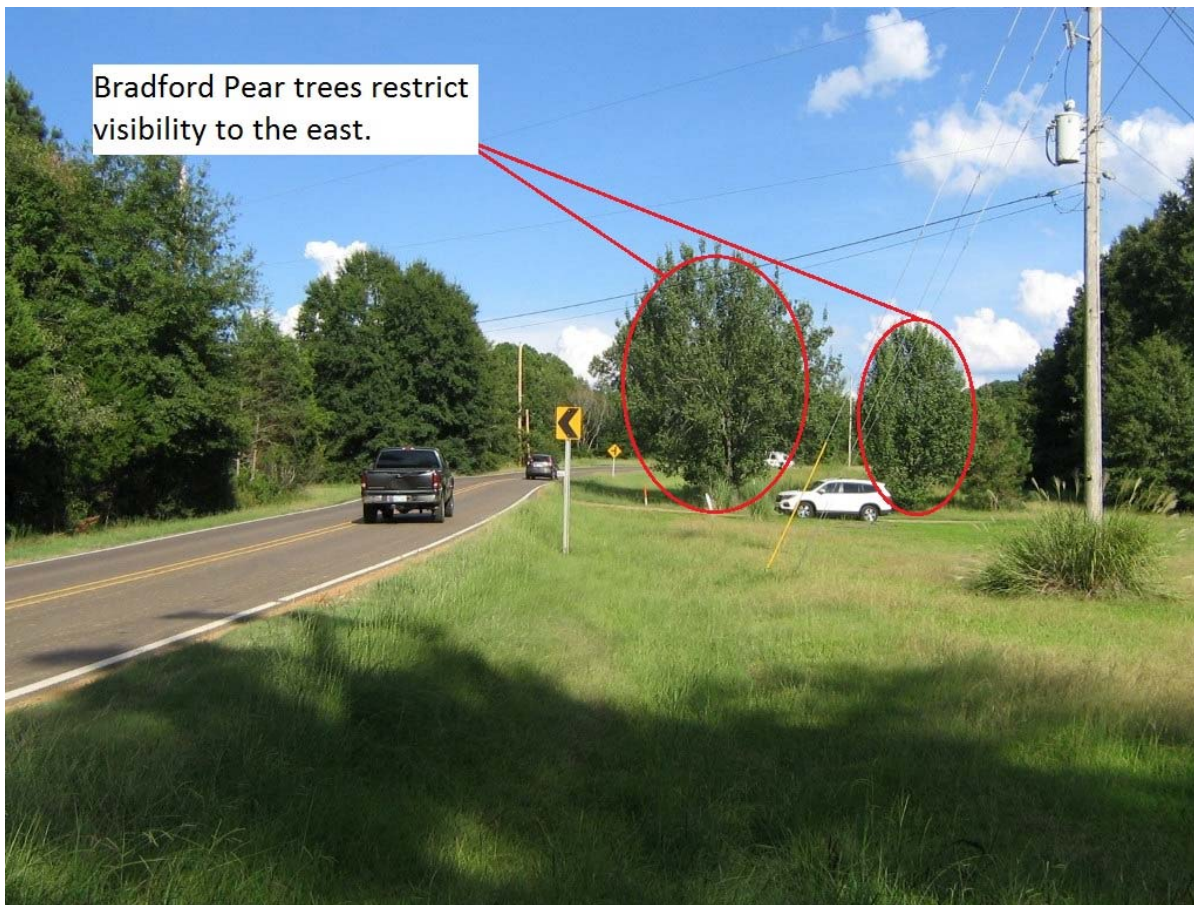
Horizontal curves on Catlett Road along with trees/tall grass present limitations on available sight distance. Intersection sight distance for a major road driver to identify a vehicle entering the roadway is measured from a driver’s eye height of 3.5 ft. The height of object is 4.35 ft, with the top 10 inches of the automobile that would need to be visible for the object to be identified as a vehicle. The sight distance criteria is intended for a major road vehicle identifying an entering/crossing vehicle to allow reciprocal sight distance, allowing each driver to see the other driver, a sight distance of 3.5 ft to 3.5 ft was evaluated. The posted speed on Catlett Road is 45 mph, while northbound traffic has a curve warning sign with a 30 mph speed. Design speed is typically 5-10 mph higher than posted speed. The Stopping Sight Distance requirements outlined in the “Green Book” are listed in **Table 3**.

Table 3 - Stopping Sight Distance

Design Speed (mph)	Stopping Sight Distance (ft)
45	360
50	425
55	495

Note: SSD is for passenger cars on a level roadway.

Source: AASHTO, A Policy on Geometric Design of Highway and Streets, 2011.



Intersection Sight Distance was measured with a measuring wheel in the field from a point 14.5 ft from the edge of traveled way to the right and left for the project site driveway located at the existing culvert/dirt driveway near the northwest property line. The distance was measured from a driver's eye height of 3.5 ft to a height of object of 3.5 ft. The mandatory SSD required would be 425 ft for a 50 mph design speed and 45 mph posted speed limit. The measured Intersection Sight Distance is listed in **Table 4** and is shown in **Figure 5**.

Table 4 - Field Measured Sight Distance

Condition	Major Street	Cross Street	Intersection Sight Distance	
			Left	Right
Existing	Catlett Road	Site Driveway	490'	550'
Trimmed Vegetation	Catlett Road	Site Driveway	600'	730'

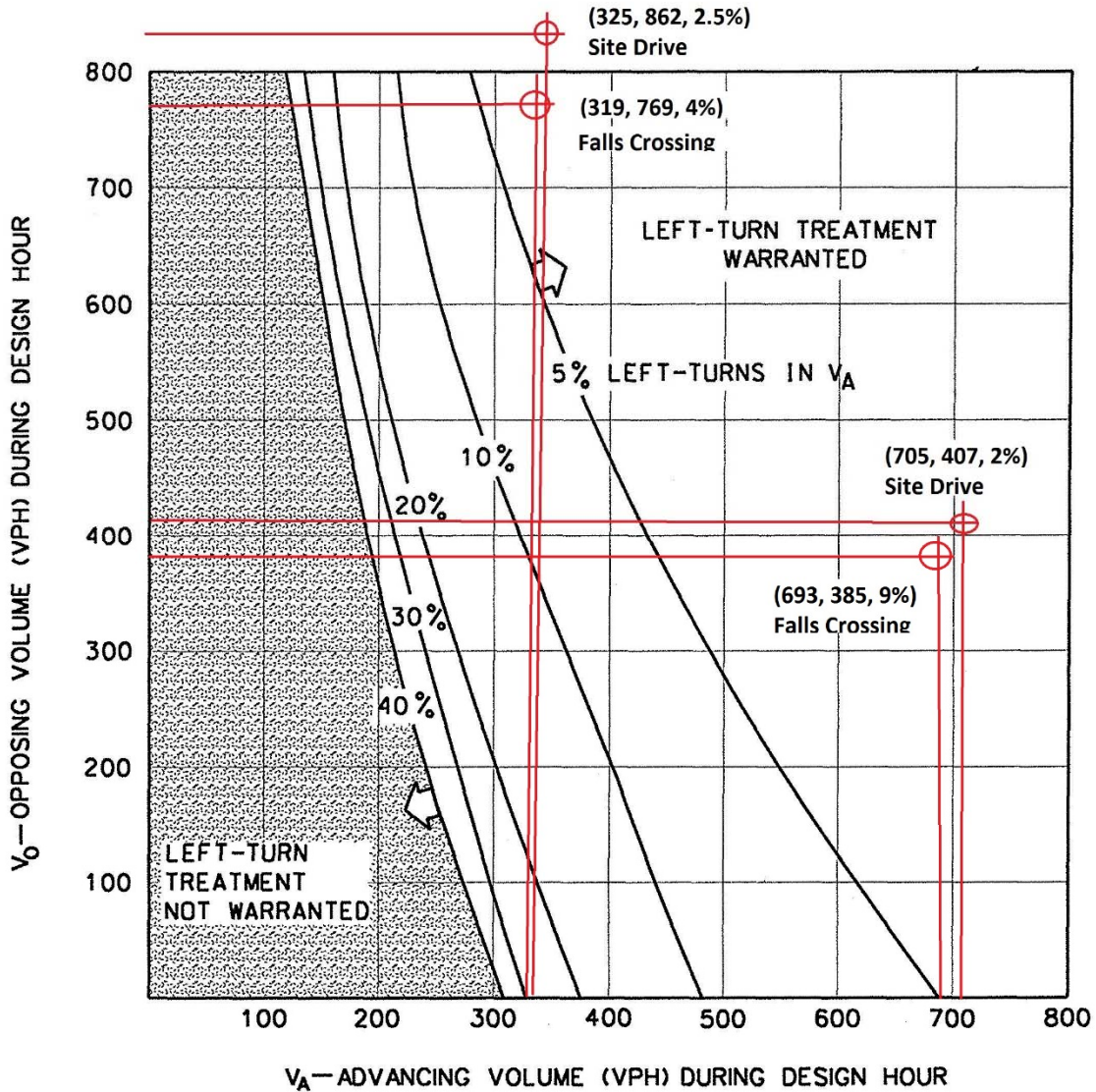
Source: Neel-Schaffer, 2018.

Based on the field measurements, Intersection Sight Distance at the study intersections exceeds the minimum Stopping Sight Distance conditions. Based on the field measurements, an approaching driver traveling at 5 mph over the posted speed would require 425 ft of Stopping Sight Distance. The site driveway was field measured and identified to exceed the minimum requirements for Stopping Sight Distance at 5 mph over the posted speed. While the roadway is posted at 45 mph for the speed limit, State law in Mississippi prohibits County Sheriffs from using radar for speed enforcement in unincorporated areas. The 45 mph posted speed limit is not enforceable, however, the horizontal curves present limitations on speed at the site driveway. Clearing the vegetation/cutting/maintaining the grass in the ditch opposite the site driveway, concurrent with trimming the pine tree limbs that encroach into the line of sight is recommended to increase the intersection sight distance for traffic approaching from the left (north). Additionally, the two Bradford Pear trees are recommended to be removed and grass maintained to the right (east) to increase intersection sight distance to (in excess of) 700 ft. Clearing the vegetation in these sight triangles and maintaining landscaping/grass was measured to increase Intersection Sight Distance to nearly 55 mph design standards for traffic approaching from the left, and in excess of 55 mph criteria from the right.

Auxiliary Turn Lane Warrants

The need for auxiliary turn lanes at the site driveway was evaluated to determine if left turn or right turn ingress lanes were warranted. The MDOT auxiliary turn lane graphs were used to evaluate the site driveway and the adjacent driveway for Falls Crossing (Luebirdia Ln) to see if the existing and proposed driveways would meet the turn lane warrants. The right turn lane warrant is based on the number of right turning vehicles and total volume of traffic in the same direction as the right turning volume. The graph for right turning traffic does not meet the threshold volume if right turning traffic is below 40 vph in the design hour. Neither Falls Crossing nor the project site were counted to have (or forecast to have) more than 15 vph turning right in the peak hours, and therefore would not meet the threshold volumes for construction of a southbound right turn ingress lane.

The left turn lane warrant is based on the volume of traffic on the major street advancing (V_a) and volume of traffic opposing (V_o) the advancing traffic on the adjacent roadway, along with the percentage of left turns in the volume advancing. The volumes were plotted on the graph, and if the plotted point is to the right of the percentage of left turn line on the graph, then a left turn lane is warranted.



Source: Neel-Schaffer, MDOT 2018.

The plotted points for Falls Crossing both (AM & PM peaks) meet the left turn lane warrant, although no left turn lane is currently provided. The site driveway volumes appear to be just at, or marginally below the threshold percentage for meeting the left turn lane warrant, based on the low volume of left turn traffic forecast for the project site. The construction of a center turn lane on Catlett Road for the adjacent subdivision of Falls Crossing would help to improve traffic circulation, as well as benefit the proposed new subdivision. A center turn lane would allow left turns out of the two subdivisions to make the movements as two stage movements, requiring a gap in major street traffic in only one direction at a time. A center turn lane would help to keep northbound traffic flowing more freely and left turning traffic would have less impact on Catlett Road.

Recommendations

No major street capacity related issues were identified with the capacity analysis of the proposed site driveway or the adjacent intersection of Luebirdia Lane based on the traffic count and proposed trip generation of the residential development. The adjacent unsignalized intersection of Stribling Road Extension/Catlett Road is shown to have significant delays on the minor street in the peak hours with a minimal increase in background traffic during the peak hours in year 2021. Modification of the traffic control to a signalized intersection with auxiliary left turn lanes, or construction of a roundabout would mitigate these anticipated delays. According to the Federal Highway Administration (FHWA), roundabouts reduce fatal and life-threatening crashes by more than 80% over conventional signalized intersections and help to reduce travel speeds. The combination of a roundabout and the construction of a center two-way left turn lane (TWLTL) are recommended on Catlett Road to accommodate the existing and background traffic growth and are necessary improvements (without the development of the project site). The project site is not anticipated to have a significant capacity impact on Catlett Road or on adjacent intersections. The sight triangles for the site driveway are recommended to be cleared and maintained, concurrent with the development of the project site and construction of the new site driveway. The recommended improvements are shown graphically in Figure 6.

If you have any questions or comments regarding this analysis, please call me at (601) 948-3071.

Sincerely,

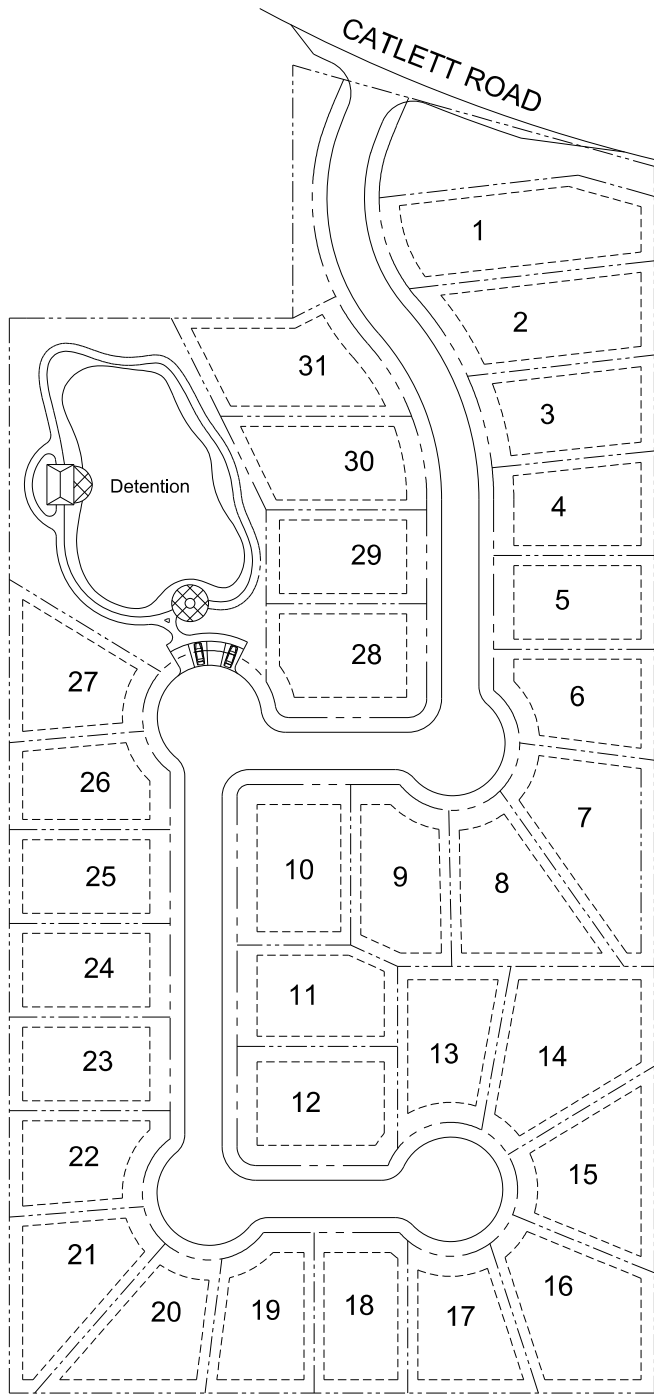
NEEL-SCHAFFER, INC.



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

Attachments: Figure 1 – Site Plan
Figure 2 – Existing Traffic
Figure 3 – Site Traffic
Figure 4 – 2021 Total Traffic
Figure 5 – Intersection Sight Distance
Figure 6 – Recommended Improvements

Project Photographs (A1-A4)
Volume Calculation Sheets (A5-A7)
Traffic count – Catlett Road/Stribling Road Extension (A8-A11)
Traffic count – Catlett Road/Luebirdia Lane (A12-A16)
HCM Capacity Analysis Sheets (A17-A30)



N.T.S.

S:\Projects\14670-Catlett-Rd-SFH\Cadd\SITEPLAN.dgn

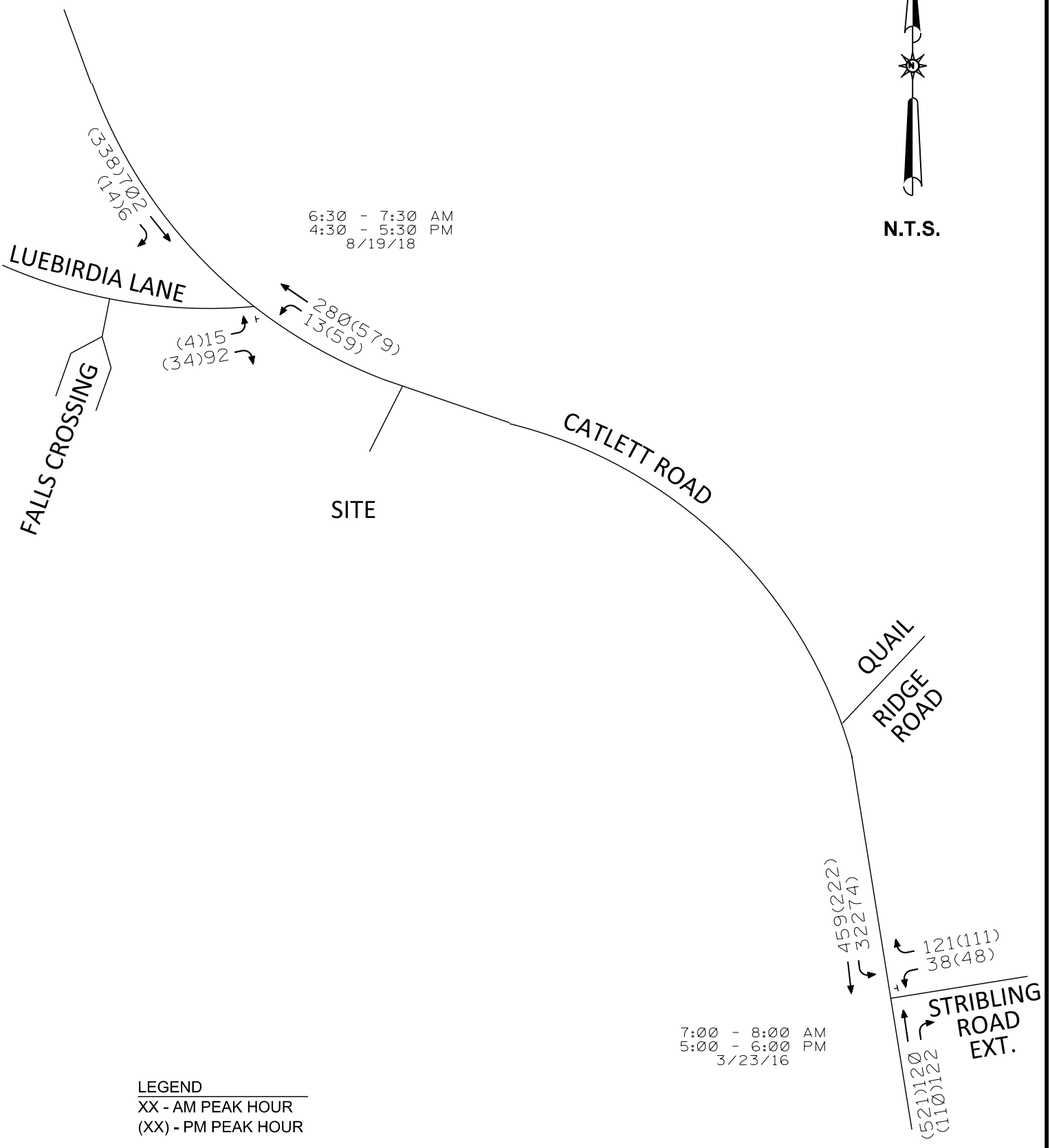


N.T.S.

6:30 - 7:30 AM
4:30 - 5:30 PM
8/19/18

7:00 - 8:00 AM
5:00 - 6:00 PM
3/23/16

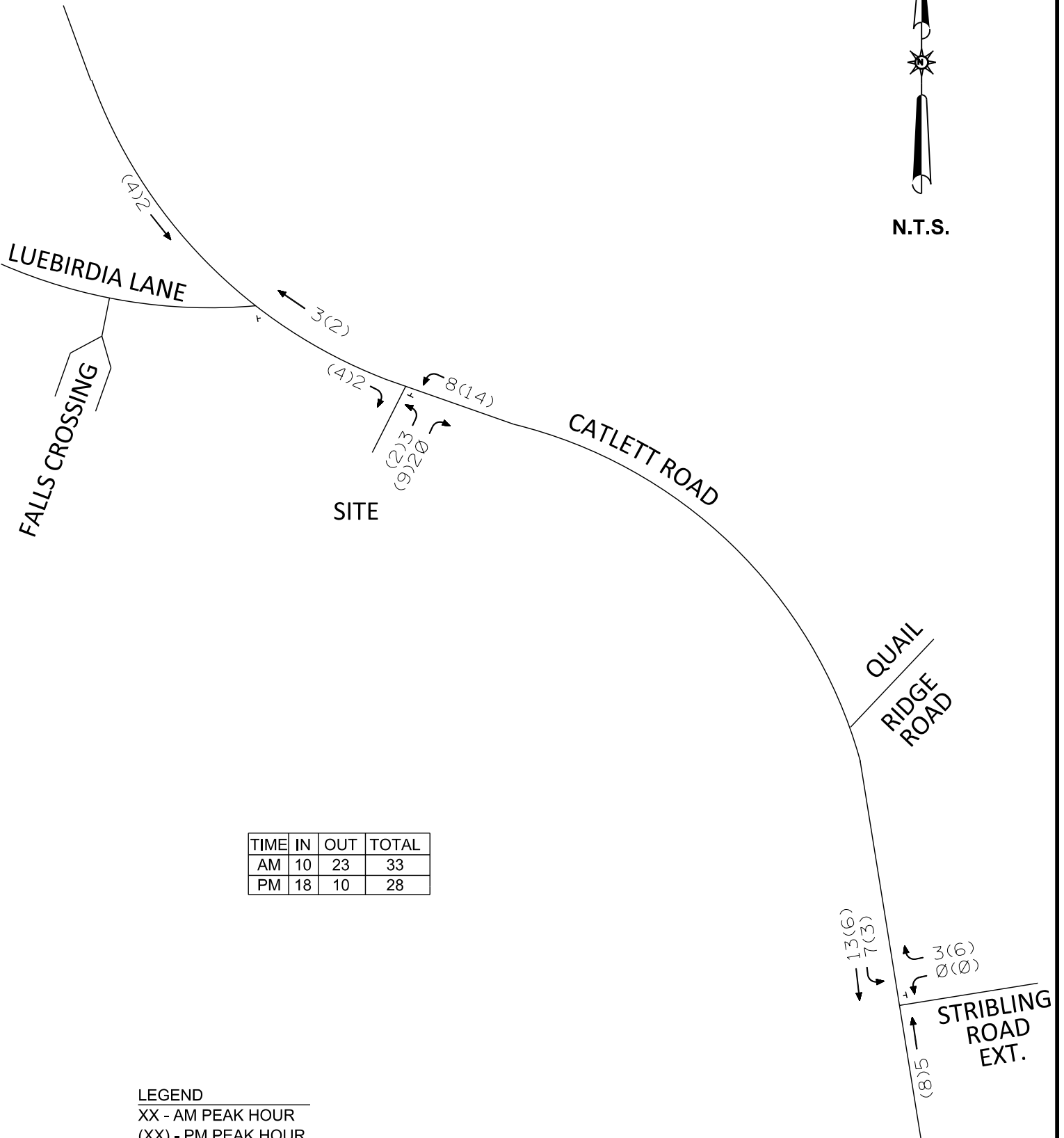
LEGEND
XX - AM PEAK HOUR
(XX) - PM PEAK HOUR



S:\Projects\14670-Catlett-Rd-SFHcadd\figure2_existingtraffic.dgn



N.T.S.



SITE

TIME	IN	OUT	TOTAL
AM	10	23	33
PM	18	10	28

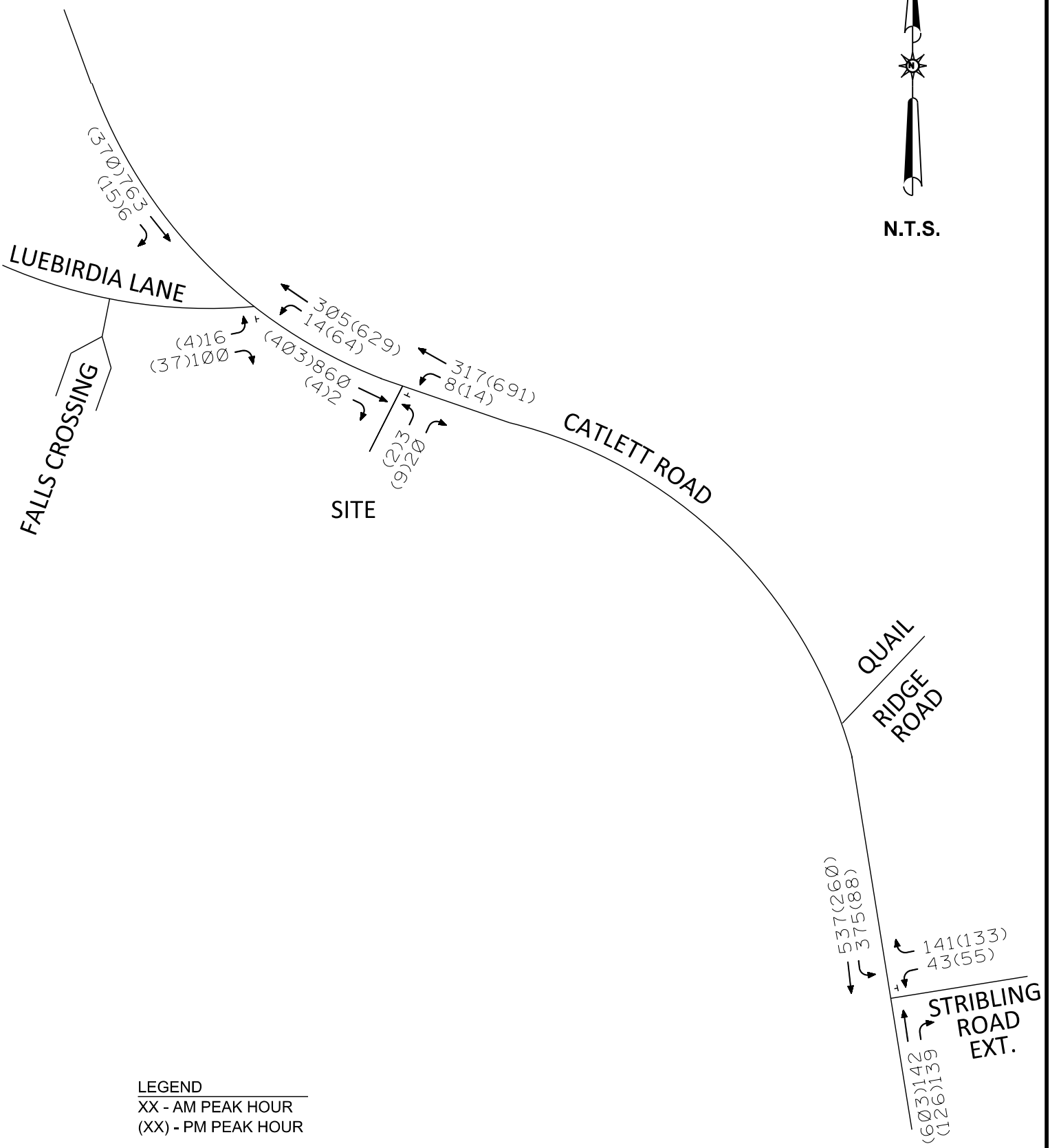
LEGEND

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

S:\Projects\14670-Catlett-Rd-SFH\cadd\FIGURE 3 SITE TRAFFIC.dgn

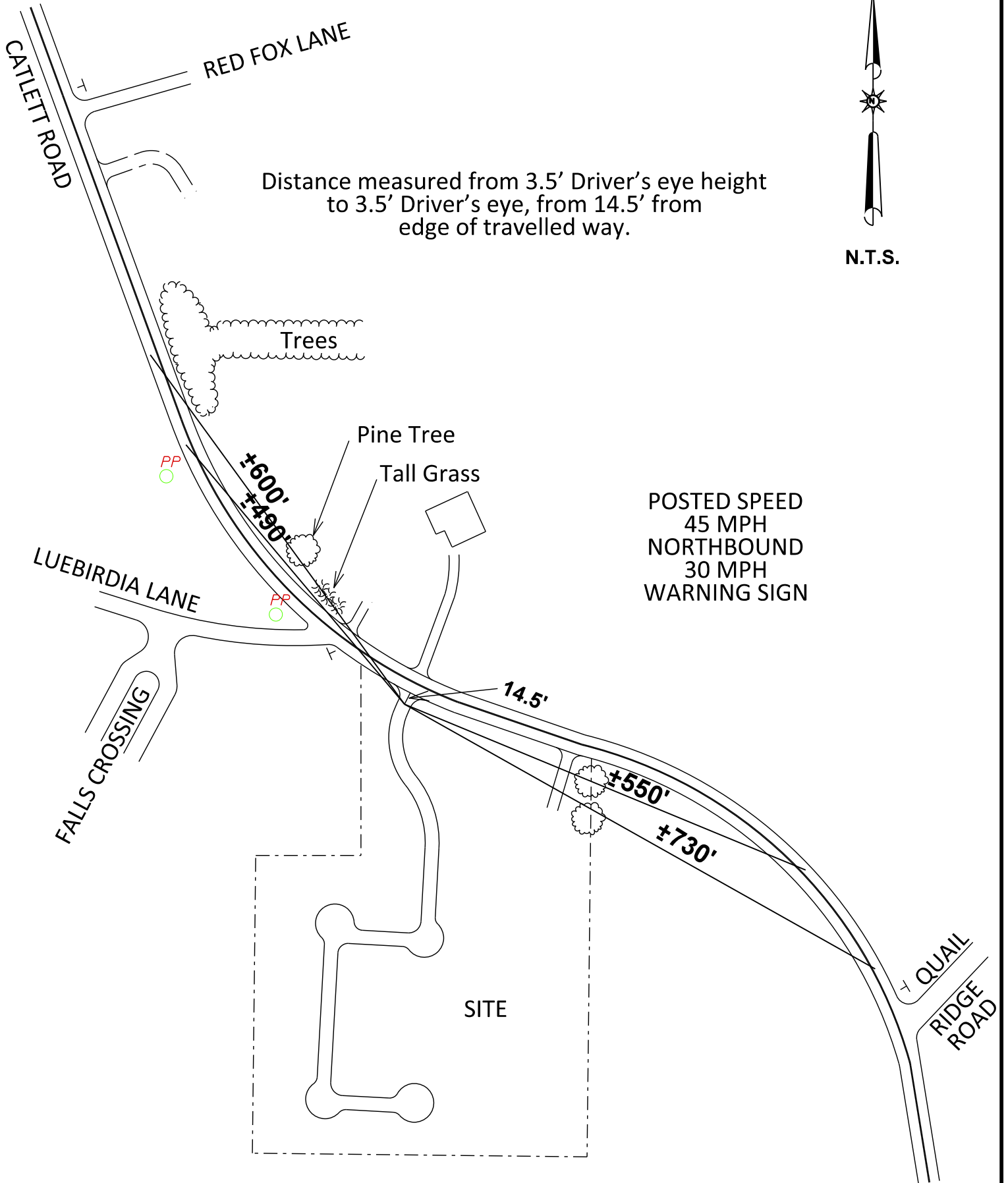


N.T.S.

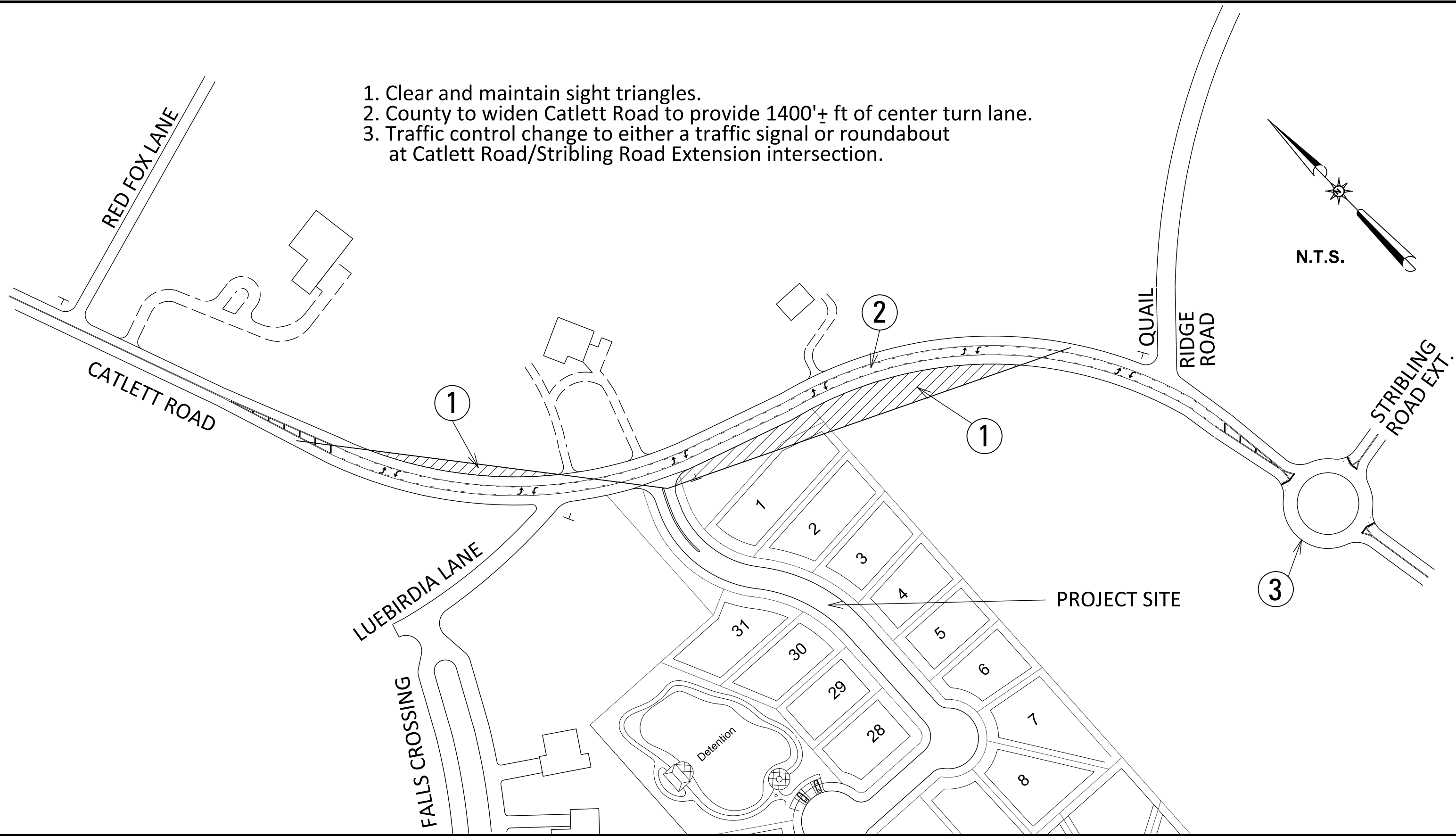


LEGEND
 XX - AM PEAK HOUR
 (XX) - PM PEAK HOUR

S:\Projects\14670-Catlett-Rd-SFH\cadd\FIGURE 4 TOTAL TRAFFIC.dgn



1. Clear and maintain sight triangles.
2. County to widen Catlett Road to provide 1400'± ft of center turn lane.
3. Traffic control change to either a traffic signal or roundabout at Catlett Road/Stribling Road Extension intersection.



S:\Projects\14670-Catlett-Rd-SFH\cadd\figure 6 Improvements.dgn



Above: Gravel driveway opposite Luebirdia Lane across Catlett Road.
Below: Looking northwest from proposed site driveway on Catlett Road.





Above: Looking east on Catlett Road from proposed site driveway.
Below: Looking east on Catlett Road from Luebirdia Lane.





Above: Looking west on Catlett Road from Quail Ridge Road area.

Below: Looking east/southeast on Catlett Road at Luebirdia Lane and proposed site drive.





Above: Falls Crossing Entrance.

Below: Looking west on Luebirdia Lane from Catlett Road.



Luebirdia Ln/Catlett Road

Seasonal Adjustment Factor 1
 Annual Growth Factor 2.7%
 Base Year 2018
 Horizon Year 1 2021

Start Time	Northbound			Southbound			Eastbound			Westbound			Total		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
AM Peak Hour															
2018 Existing Traffic	13	280	0	0	702	6	15	0	92	0	0	0	0	0	1,108
2021 Non-Site Traffic	14	303	0	0	760	6	16	0	100	0	0	0	0	0	1,199
Site Traffic	0	2	0	0	3	0	0	0	0	0	0	0	0	0	5
2021 Total Traffic	14	305	0	0	763	6	16	0	100	0	0	0	0	0	1,204
PM Peak Hour															
2018 Existing Traffic	59	579	0	0	338	14	4	0	34	0	0	0	0	0	1,028
2021 Non-Site Traffic	64	627	0	0	366	15	4	0	37	0	0	0	0	0	1,113
Site Traffic	0	2	0	0	4	0	0	0	0	0	0	0	0	0	6
2021 Total Traffic	64	629	0	0	370	15	4	0	37	0	0	0	0	0	1,119

Source: Neel-Schaffer, 2018.

Project Site/Catlett Road

Seasonal Adjustment Factor 1
 Annual Growth Factor 2.7%
 Base Year 2018
 Horizon Year 1 2021

Start Time	Northbound			Southbound			Eastbound			Westbound			Total		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
AM Peak Hour															
2018 Existing Traffic	0	293	0	0	794	0	0	0	0	0	0	0	0	0	1,087
2021 Non-Site Traffic	0	317	0	0	860	0	0	0	0	0	0	0	0	0	1,177
Site Traffic	8	0	0	0	0	2	3	0	20	0	0	0	0	0	33
2021 Total Traffic	8	317	0	0	860	2	3	0	20	0	0	0	0	0	1,210
PM Peak Hour															
2018 Existing Traffic	0	638	0	0	372	0	0	0	0	0	0	0	0	0	1,010
2021 Non-Site Traffic	0	691	0	0	403	0	0	0	0	0	0	0	0	0	1,094
Site Traffic	14	0	0	0	0	4	2	0	9	0	0	0	0	0	29
2021 Total Traffic	14	691	0	0	403	4	2	0	9	0	0	0	0	0	1,123

Source: Neel-Schaffer, 2018.

Stribling Road Ext./Catlett Road

Seasonal Adjustment Factor 1
 Annual Growth Factor 2.7%
 Base Year 2016
 Horizon Year 1 2021

Start Time	Northbound			Southbound			Eastbound			Westbound			Total		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
AM Peak Hour															
2016 Existing Traffic	0	120	122	322	459	0	0	0	0	0	0	0	38	0	121
2021 Non-Site Traffic	0	137	139	368	524	0	0	0	0	0	0	0	43	0	138
Site Traffic	0	5	0	7	13	0	0	0	0	0	0	0	0	0	3
2021 Total Traffic	0	142	139	375	537	0	0	0	0	0	0	0	43	0	141
PM Peak Hour															
2016 Existing Traffic	0	521	110	74	222	0	0	0	0	0	0	0	48	0	111
2021 Non-Site Traffic	0	595	126	85	254	0	0	0	0	0	0	0	55	0	127
Site Traffic	0	8	0	3	6	0	0	0	0	0	0	0	0	0	6
2021 Total Traffic	0	603	126	88	260	0	0	0	0	0	0	0	55	0	133

Source: Neel-Schaffer, 2018.

Neel-Schaffer
P.O. Box 22625
Jackson, MS 39225

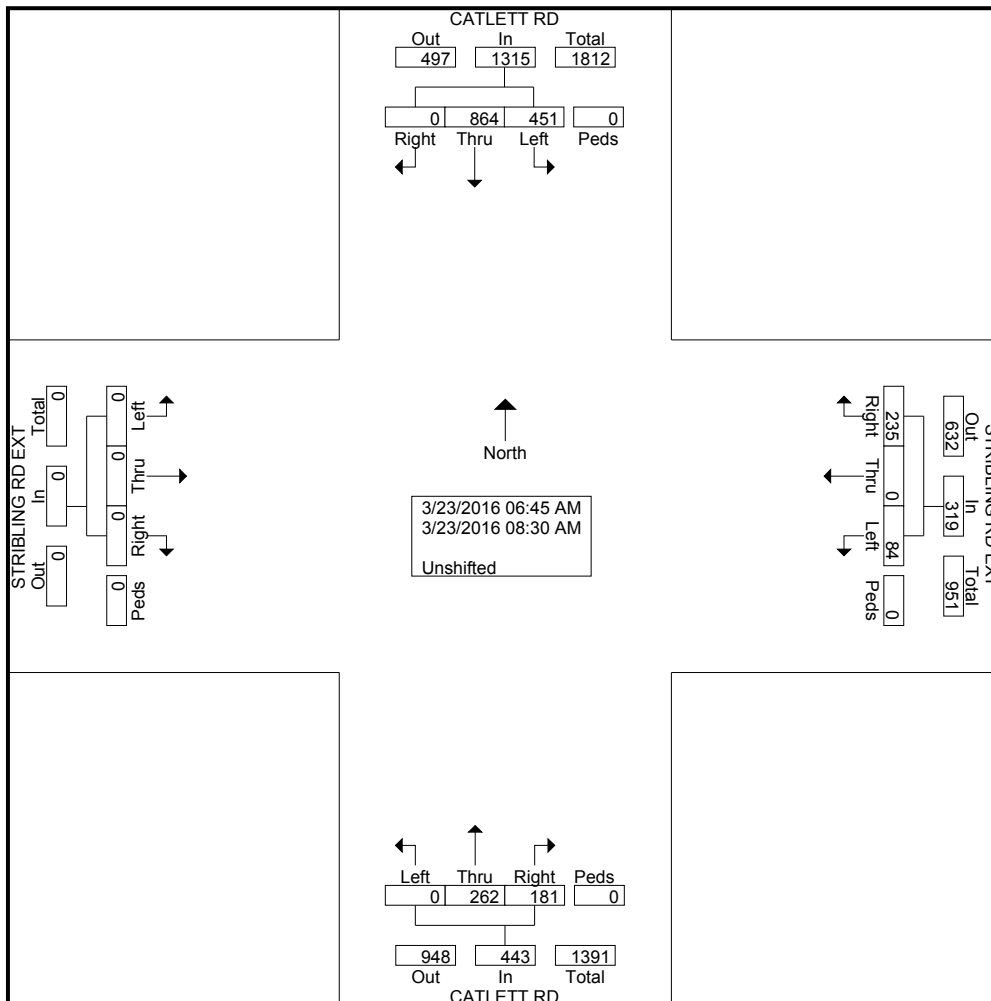
A8

Intersection: Catlett Rd/Stribling Rd Ext
Counter: J. Coleman
County/State: Madison/MS
Weather: Clear/Dry

File Name : 25-Catlett at Stribling Ext 645-845
Site Code : 00000000
Start Date : 3/23/2016
Page No : 1

Groups Printed- Unshifted

Start Time	CATLETT RD Northbound					CATLETT RD Southbound					STRIBLING RD EXT Eastbound					STRIBLING RD EXT Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
06:45 AM	0	35	17	0	52	42	120	0	0	162	0	0	0	0	0	4	0	25	0	29	243
Total	0	35	17	0	52	42	120	0	0	162	0	0	0	0	0	4	0	25	0	29	243
07:00 AM	0	30	19	0	49	57	142	0	0	199	0	0	0	0	0	6	0	46	0	52	300
07:15 AM	0	28	35	0	63	103	115	0	0	218	0	0	0	0	0	10	0	18	0	28	309
07:30 AM	0	33	35	0	68	77	111	0	0	188	0	0	0	0	0	7	0	17	0	24	280
07:45 AM	0	29	33	0	62	85	91	0	0	176	0	0	0	0	0	15	0	40	0	55	293
Total	0	120	122	0	242	322	459	0	0	781	0	0	0	0	0	38	0	121	0	159	1182
08:00 AM	0	33	20	0	53	60	122	0	0	182	0	0	0	0	0	14	0	44	0	58	293
08:15 AM	0	35	14	0	49	13	83	0	0	96	0	0	0	0	0	17	0	40	0	57	202
08:30 AM	0	39	8	0	47	14	80	0	0	94	0	0	0	0	0	11	0	5	0	16	157
Grand Total	0	262	181	0	443	451	864	0	0	1315	0	0	0	0	0	84	0	235	0	319	2077
Apprch %	0	59.1	40.9	0		34.3	65.7	0	0		0	0	0	0		26.3	0	73.7	0		
Total %	0	12.6	8.7	0	21.3	21.7	41.6	0	0	63.3	0	0	0	0	0	4	0	11.3	0	15.4	



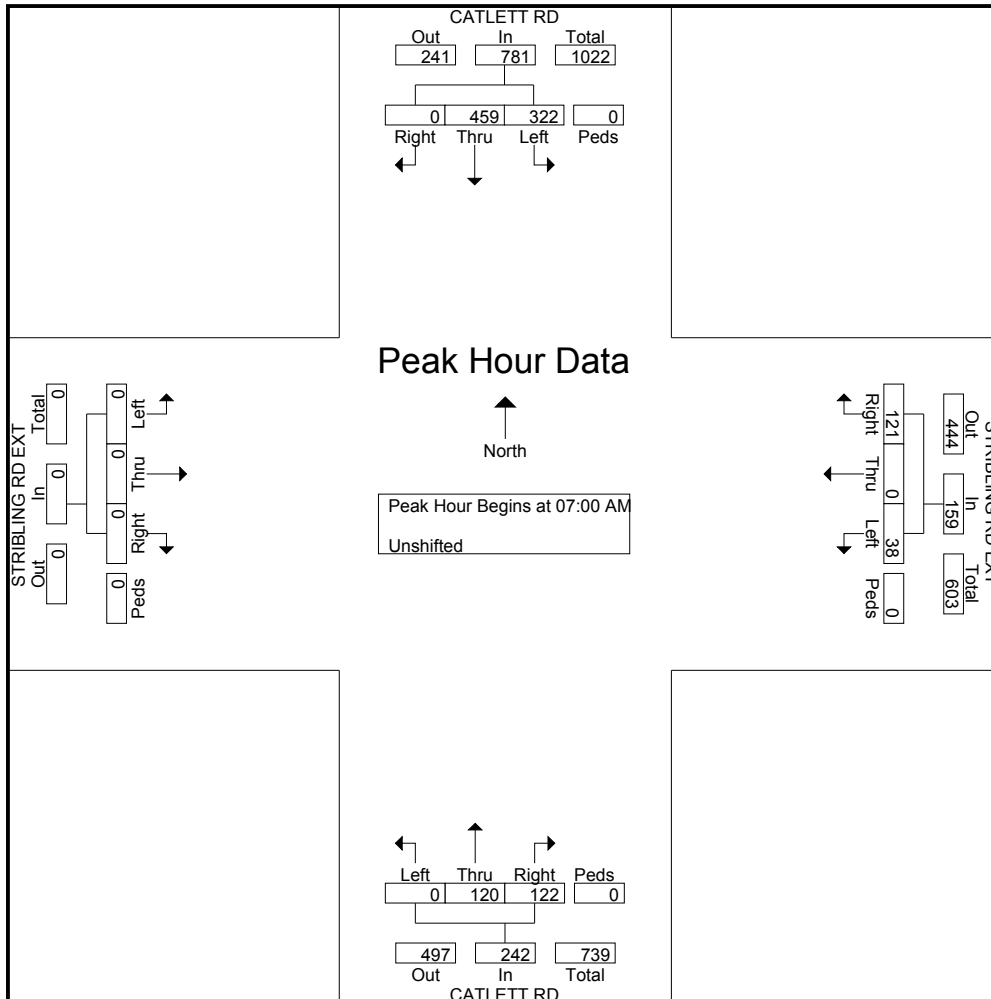
Neel-Schaffer
P.O. Box 22625
Jackson, MS 39225

A9

Intersection: Catlett Rd/Stribling Rd Ext
Counter: J. Coleman
County/State: Madison/MS
Weather: Clear/Dry

File Name : 25-Catlett at Stribling Ext 645-845
Site Code : 00000000
Start Date : 3/23/2016
Page No : 2

Start Time	CATLETT RD Northbound					CATLETT RD Southbound					STRIBLING RD EXT Eastbound					STRIBLING RD EXT Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 06:45 AM to 08:30 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	30	19	0	49	57	142	0	0	199	0	0	0	0	0	6	0	46	0	52	300
07:15 AM	0	28	35	0	63	103	115	0	0	218	0	0	0	0	0	10	0	18	0	28	309
07:30 AM	0	33	35	0	68	77	111	0	0	188	0	0	0	0	0	7	0	17	0	24	280
07:45 AM	0	29	33	0	62	85	91	0	0	176	0	0	0	0	0	15	0	40	0	55	293
Total Volume	0	120	122	0	242	322	459	0	0	781	0	0	0	0	0	38	0	121	0	159	1182
% App. Total	0	49.6	50.4	0		41.2	58.8	0	0		0	0	0	0		23.9	0	76.1	0		
PHF	.000	.909	.871	.000	.890	.782	.808	.000	.000	.896	.000	.000	.000	.000	.000	.633	.000	.658	.000	.723	.956



Neel-Schaffer

P.O. Box 22625
Jackson, MS 39225

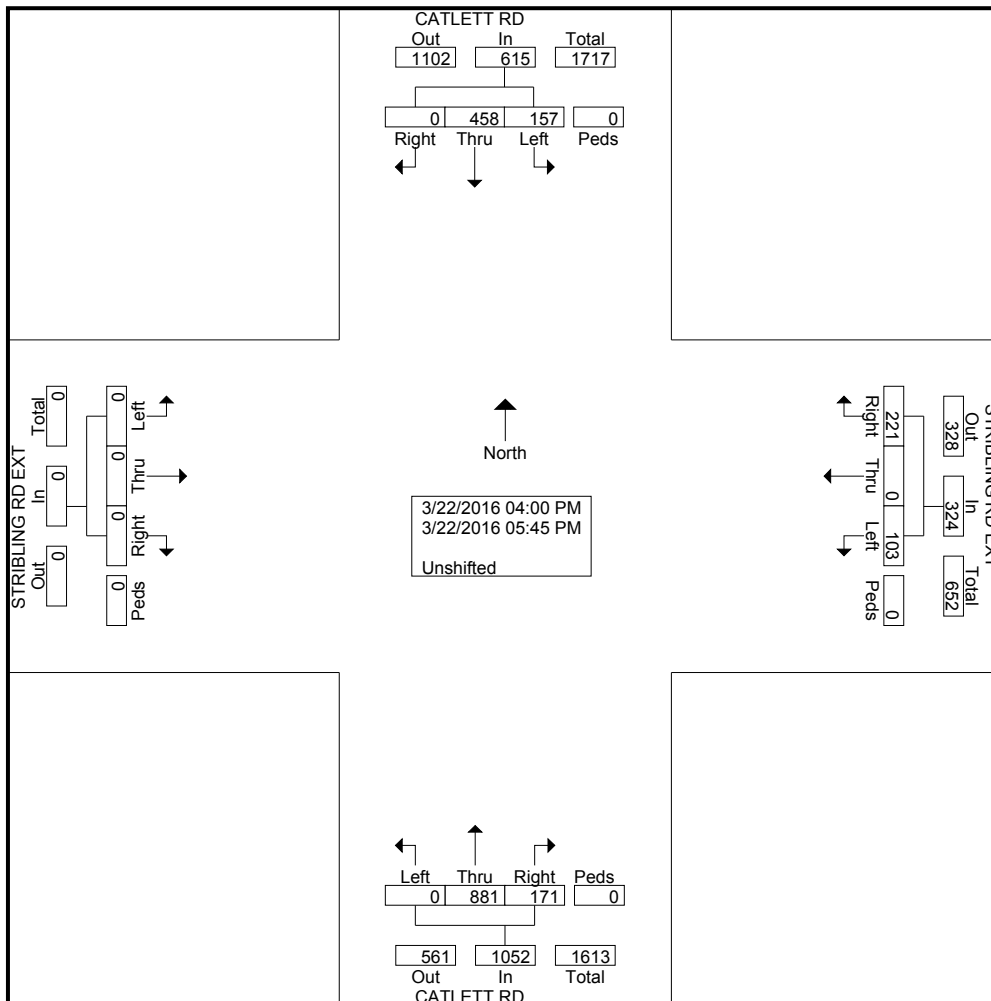
A10

Intersection: Catlett Rd/Stribling Rd Ext
Counter: J. Coleman
County/State: Madison/MS
Weather: Clear/Dry

File Name : 25-Catlett at Stribling Ext 1600-1800
Site Code : 00000000
Start Date : 3/22/2016
Page No : 1

Groups Printed- Unshifted

Start Time	CATLETT RD Northbound					CATLETT RD Southbound					STRIBLING RD EXT Eastbound					STRIBLING RD EXT Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	72	18	0	90	18	59	0	0	77	0	0	0	0	0	12	0	26	0	38	205
04:15 PM	0	97	12	0	109	21	48	0	0	69	0	0	0	0	0	9	0	29	0	38	216
04:30 PM	0	97	10	0	107	21	56	0	0	77	0	0	0	0	0	18	0	28	0	46	230
04:45 PM	0	94	21	0	115	23	73	0	0	96	0	0	0	0	0	16	0	27	0	43	254
Total	0	360	61	0	421	83	236	0	0	319	0	0	0	0	0	55	0	110	0	165	905
05:00 PM	0	127	32	0	159	14	56	0	0	70	0	0	0	0	0	13	0	26	0	39	268
05:15 PM	0	139	25	0	164	18	52	0	0	70	0	0	0	0	0	12	0	30	0	42	276
05:30 PM	0	136	25	0	161	22	56	0	0	78	0	0	0	0	0	14	0	28	0	42	281
05:45 PM	0	119	28	0	147	20	58	0	0	78	0	0	0	0	0	9	0	27	0	36	261
Total	0	521	110	0	631	74	222	0	0	296	0	0	0	0	0	48	0	111	0	159	1086
Grand Total	0	881	171	0	1052	157	458	0	0	615	0	0	0	0	0	103	0	221	0	324	1991
Apprch %	0	83.7	16.3	0		25.5	74.5	0	0		0	0	0	0		31.8	0	68.2	0		
Total %	0	44.2	8.6	0	52.8	7.9	23	0	0	30.9	0	0	0	0	0	5.2	0	11.1	0	16.3	



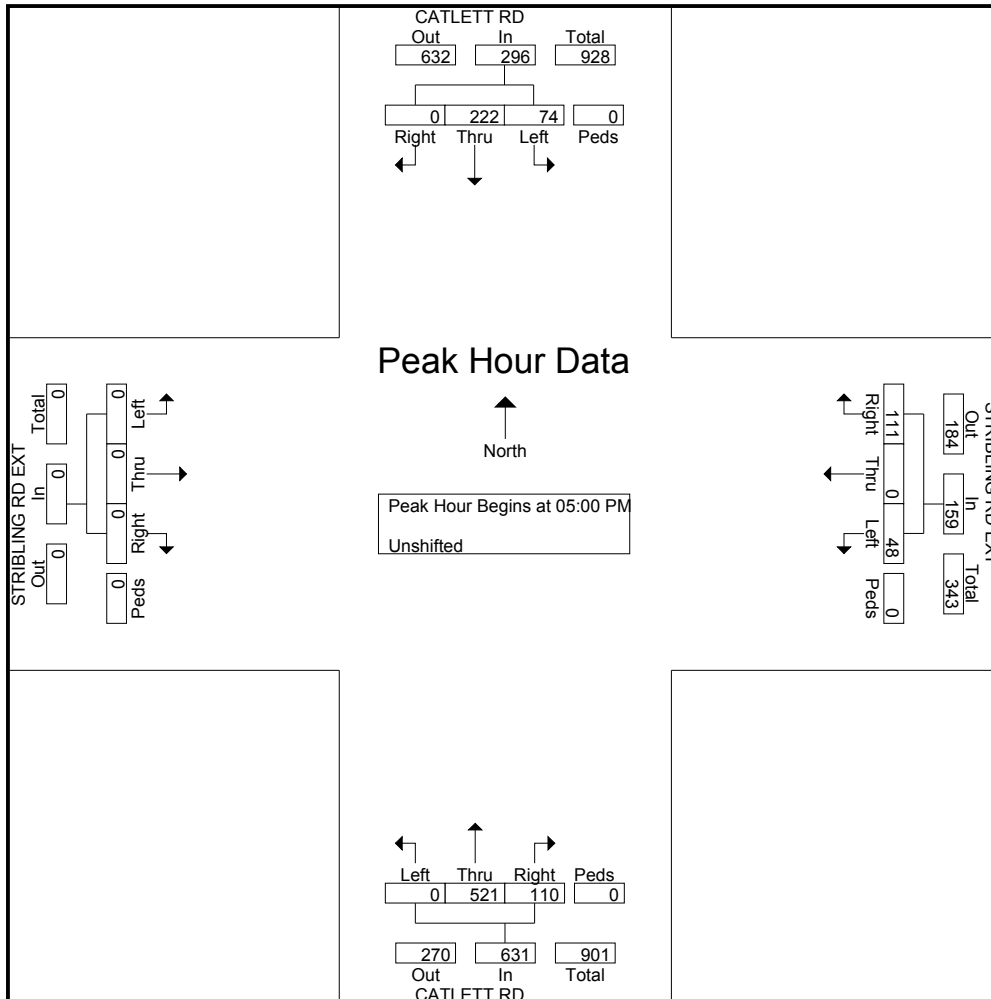
Neel-Schaffer
P.O. Box 22625
Jackson, MS 39225

A11

Intersection: Catlett Rd/Stribling Rd Ext
Counter: J. Coleman
County/State: Madison/MS
Weather: Clear/Dry

File Name : 25-Catlett at Stribling Ext 1600-1800
Site Code : 00000000
Start Date : 3/22/2016
Page No : 2

Start Time	CATLETT RD Northbound					CATLETT RD Southbound					STRIBLING RD EXT Eastbound					STRIBLING RD EXT Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	127	32	0	159	14	56	0	0	70	0	0	0	0	0	13	0	26	0	39	268
05:15 PM	0	139	25	0	164	18	52	0	0	70	0	0	0	0	0	12	0	30	0	42	276
05:30 PM	0	136	25	0	161	22	56	0	0	78	0	0	0	0	0	14	0	28	0	42	281
05:45 PM	0	119	28	0	147	20	58	0	0	78	0	0	0	0	0	9	0	27	0	36	261
Total Volume	0	521	110	0	631	74	222	0	0	296	0	0	0	0	0	48	0	111	0	159	1086
% App. Total	0	82.6	17.4	0		25	75	0	0		0	0	0	0		30.2	0	69.8	0		
PHF	.000	.937	.859	.000	.962	.841	.957	.000	.000	.949	.000	.000	.000	.000	.000	.857	.000	.925	.000	.946	.966



Neel-Schaffer
P.O. Box 22625
Jackson, MS 39225

A12

Intersection: Catlett Rd/Luebirdia Ln
Counter: T. Kiser (Video)
County/State: Madison/MS
Weather: Light rain 11:45-12:45

File Name : Catlett-Luebirdia-Ln
Site Code : 00000000
Start Date : 8/9/2018
Page No : 1

Groups Printed- Unshifted

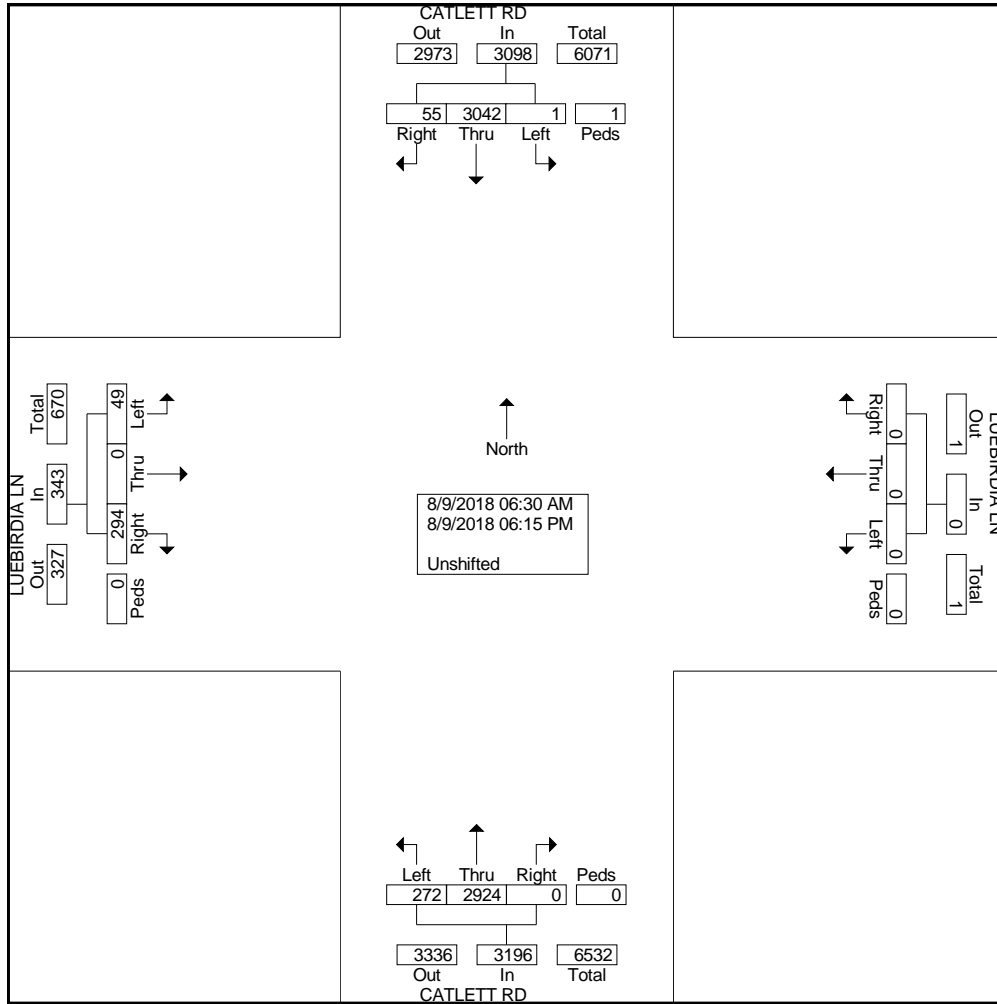
Start Time	CATLETT RD Southbound					LUEBIRDIA LN Westbound					CATLETT RD Northbound					LUEBIRDIA LN Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
06:30 AM	0	137	0	0	137	0	0	0	0	0	0	103	0	0	103	6	0	21	0	27	267
06:45 AM	0	161	0	0	161	0	0	0	0	0	3	76	0	0	79	3	0	22	0	25	265
Total	0	298	0	0	298	0	0	0	0	0	3	179	0	0	182	9	0	43	0	52	532
07:00 AM	0	216	4	0	220	0	0	0	0	0	7	52	0	0	59	3	0	35	0	38	317
07:15 AM	0	188	2	0	190	0	0	0	0	0	3	49	0	0	52	3	0	14	0	17	259
07:30 AM	0	196	3	0	199	0	0	0	0	0	4	43	0	0	47	3	0	16	0	19	265
07:45 AM	0	188	3	0	191	0	0	0	0	0	10	52	0	0	62	0	0	12	0	12	265
Total	0	788	12	0	800	0	0	0	0	0	24	196	0	0	220	9	0	77	0	86	1106
08:00 AM	0	116	2	1	119	0	0	0	0	0	4	81	0	0	85	2	0	14	0	16	220
08:15 AM	0	99	1	0	100	0	0	0	0	0	3	65	0	0	68	0	0	6	0	6	174
08:30 AM	0	88	0	0	88	0	0	0	0	0	3	56	0	0	59	1	0	11	0	12	159
08:45 AM	0	72	1	0	73	0	0	0	0	0	6	32	0	0	38	0	0	10	0	10	121
Total	0	375	4	1	380	0	0	0	0	0	16	234	0	0	250	3	0	41	0	44	674
*** BREAK ***																					
11:00 AM	0	83	1	0	84	0	0	0	0	0	5	47	0	0	52	1	0	6	0	7	143
11:15 AM	0	57	0	0	57	0	0	0	0	0	5	57	0	0	62	2	0	6	0	8	127
11:30 AM	0	80	2	0	82	0	0	0	0	0	6	62	0	0	68	0	0	5	0	5	155
11:45 AM	0	76	1	0	77	0	0	0	0	0	6	61	0	0	67	3	0	9	0	12	156
Total	0	296	4	0	300	0	0	0	0	0	22	227	0	0	249	6	0	26	0	32	581
12:00 PM	0	63	0	0	63	0	0	0	0	0	7	77	0	0	84	0	0	6	0	6	153
12:15 PM	0	71	0	0	71	0	0	0	0	0	13	64	0	0	77	1	0	4	0	5	153
12:30 PM	1	75	2	0	78	0	0	0	0	0	10	57	0	0	67	1	0	3	0	4	149
12:45 PM	0	59	1	0	60	0	0	0	0	0	2	73	0	0	75	0	0	6	0	6	141
Total	1	268	3	0	272	0	0	0	0	0	32	271	0	0	303	2	0	19	0	21	596
*** BREAK ***																					
03:00 PM	0	66	0	0	66	0	0	0	0	0	4	67	0	0	71	2	0	5	0	7	144
03:15 PM	0	55	2	0	57	0	0	0	0	0	7	75	0	0	82	1	0	6	0	7	146
03:30 PM	0	78	2	0	80	0	0	0	0	0	10	92	0	0	102	0	0	4	0	4	186
03:45 PM	0	60	1	0	61	0	0	0	0	0	7	153	0	0	160	1	0	4	0	5	226
Total	0	259	5	0	264	0	0	0	0	0	28	387	0	0	415	4	0	19	0	23	702
04:00 PM	0	60	1	0	61	0	0	0	0	0	9	165	0	0	174	1	0	6	0	7	242
04:15 PM	0	72	2	0	74	0	0	0	0	0	9	107	0	0	116	3	0	6	0	9	199
04:30 PM	0	84	2	0	86	0	0	0	0	0	11	145	0	0	156	0	0	6	0	6	248
04:45 PM	0	94	4	0	98	0	0	0	0	0	17	138	0	0	155	1	0	8	0	9	262
Total	0	310	9	0	319	0	0	0	0	0	46	555	0	0	601	5	0	26	0	31	951
05:00 PM	0	70	5	0	75	0	0	0	0	0	15	143	0	0	158	3	0	10	0	13	246
05:15 PM	0	90	3	0	93	0	0	0	0	0	16	153	0	0	169	0	0	10	0	10	272
05:30 PM	0	80	3	0	83	0	0	0	0	0	13	136	0	0	149	1	0	10	0	11	243
05:45 PM	0	82	1	0	83	0	0	0	0	0	18	137	0	0	155	2	0	5	0	7	245
Total	0	322	12	0	334	0	0	0	0	0	62	569	0	0	631	6	0	35	0	41	1006
06:00 PM	0	56	4	0	60	0	0	0	0	0	20	156	0	0	176	4	0	4	0	8	244
06:15 PM	0	70	2	0	72	0	0	0	0	0	19	150	0	0	169	1	0	4	0	5	246
Grand Total	1	3042	55	1	3099	0	0	0	0	0	272	2924	0	0	3196	49	0	294	0	343	6638
Apprch %	0	98.2	1.8	0		0	0	0	0		8.5	91.5	0	0		14.3	0	85.7	0		
Total %	0	45.8	0.8	0	46.7	0	0	0	0	0	4.1	44	0	0	48.1	0.7	0	4.4	0	5.2	

Neel-Schaffer
P.O. Box 22625
Jackson, MS 39225

A13

Intersection: Catlett Rd/Luebirdia Ln
Counter: T. Kiser (Video)
County/State: Madison/MS
Weather: Light rain 11:45-12:45

File Name : Catlett-Luebirdia-Ln
Site Code : 00000000
Start Date : 8/9/2018
Page No : 2



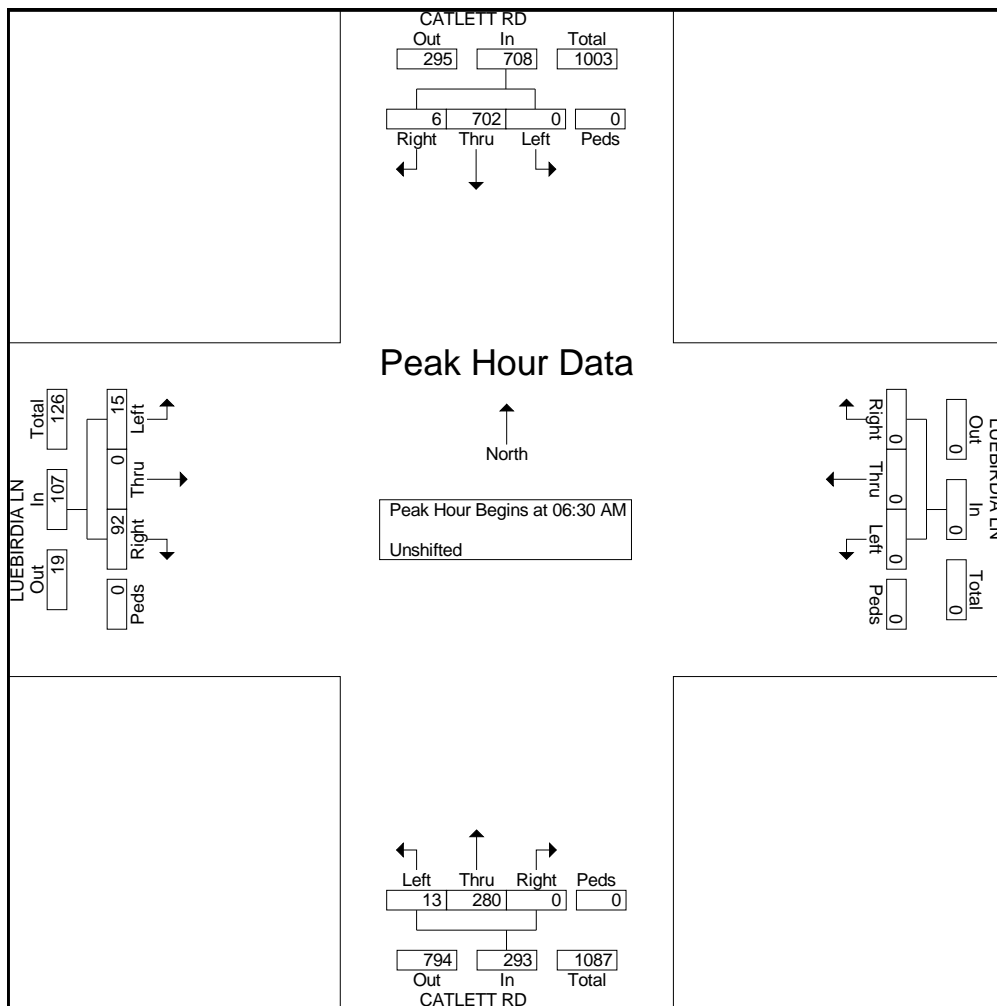
Neel-Schaffer
P.O. Box 22625
Jackson, MS 39225

A14

Intersection: Catlett Rd/Luebirdia Ln
Counter: T. Kiser (Video)
County/State: Madison/MS
Weather: Light rain 11:45-12:45

File Name : Catlett-Luebirdia-Ln
Site Code : 00000000
Start Date : 8/9/2018
Page No : 3

Start Time	CATLETT RD Southbound					LUEBIRDIA LN Westbound					CATLETT RD Northbound					LUEBIRDIA LN Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 06:30 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:30 AM																					
06:30 AM	0	137	0	0	137	0	0	0	0	0	0	103	0	0	103	6	0	21	0	27	267
06:45 AM	0	161	0	0	161	0	0	0	0	0	3	76	0	0	79	3	0	22	0	25	265
07:00 AM	0	216	4	0	220	0	0	0	0	0	7	52	0	0	59	3	0	35	0	38	317
07:15 AM	0	188	2	0	190	0	0	0	0	0	3	49	0	0	52	3	0	14	0	17	259
Total Volume	0	702	6	0	708	0	0	0	0	0	13	280	0	0	293	15	0	92	0	107	1108
% App. Total	0	99.2	0.8	0		0	0	0	0		4.4	95.6	0	0		14	0	86	0		
PHF	.000	.813	.375	.000	.805	.000	.000	.000	.000	.000	.464	.680	.000	.000	.711	.625	.000	.657	.000	.704	.874



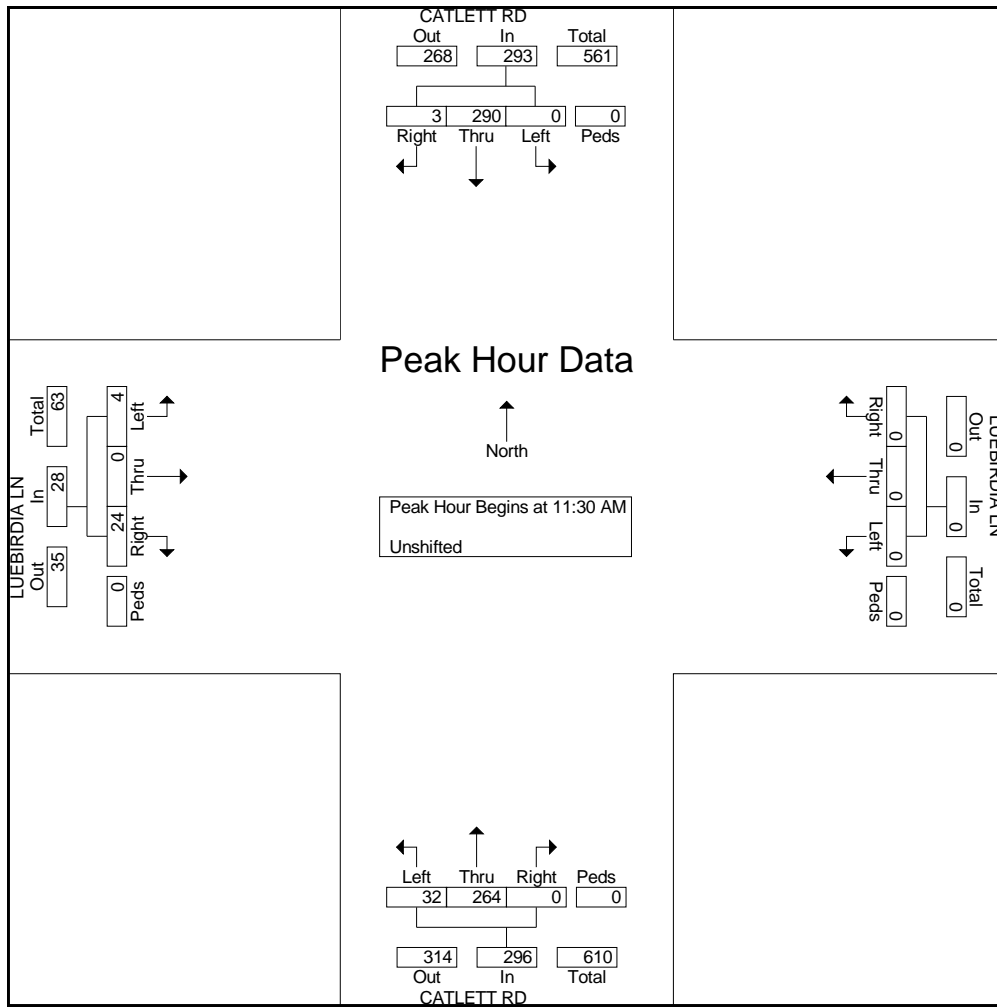
Neel-Schaffer
P.O. Box 22625
Jackson, MS 39225

A15

Intersection: Catlett Rd/Luebirdia Ln
Counter: T. Kiser (Video)
County/State: Madison/MS
Weather: Light rain 11:45-12:45

File Name : Catlett-Luebirdia-Ln
Site Code : 00000000
Start Date : 8/9/2018
Page No : 4

Start Time	CATLETT RD Southbound					LUEBIRDIA LN Westbound					CATLETT RD Northbound					LUEBIRDIA LN Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	0	80	2	0	82	0	0	0	0	0	6	62	0	0	68	0	0	5	0	5	155
11:45 AM	0	76	1	0	77	0	0	0	0	0	6	61	0	0	67	3	0	9	0	12	156
12:00 PM	0	63	0	0	63	0	0	0	0	0	7	77	0	0	84	0	0	6	0	6	153
12:15 PM	0	71	0	0	71	0	0	0	0	0	13	64	0	0	77	1	0	4	0	5	153
Total Volume	0	290	3	0	293	0	0	0	0	0	32	264	0	0	296	4	0	24	0	28	617
% App. Total	0	99	1	0		0	0	0	0		10.8	89.2	0	0		14.3	0	85.7	0		
PHF	.000	.906	.375	.000	.893	.000	.000	.000	.000	.000	.615	.857	.000	.000	.881	.333	.000	.667	.000	.583	.989



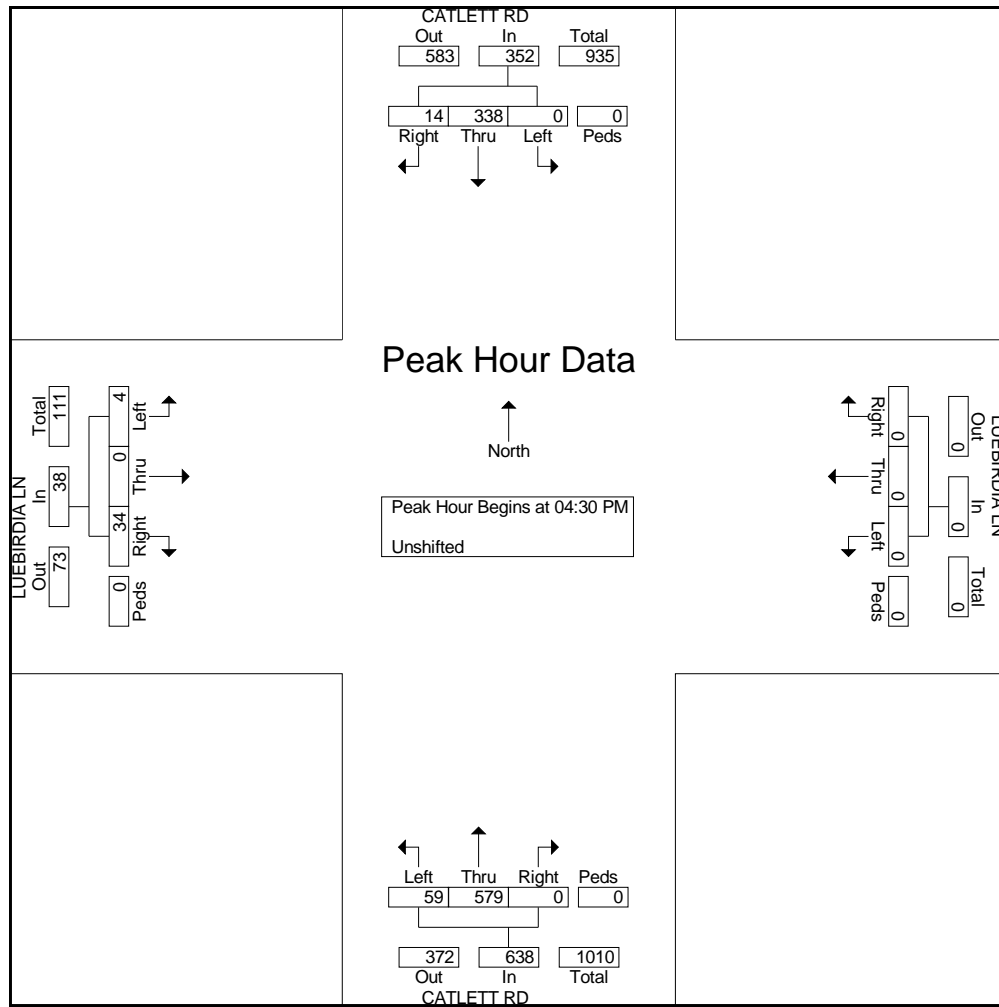
Neel-Schaffer
P.O. Box 22625
Jackson, MS 39225

A16

Intersection: Catlett Rd/Luebirdia Ln
Counter: T. Kiser (Video)
County/State: Madison/MS
Weather: Light rain 11:45-12:45

File Name : Catlett-Luebirdia-Ln
Site Code : 00000000
Start Date : 8/9/2018
Page No : 5

Start Time	CATLETT RD Southbound					LUEBIRDIA LN Westbound					CATLETT RD Northbound					LUEBIRDIA LN Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	84	2	0	86	0	0	0	0	0	11	145	0	0	156	0	0	6	0	6	248
04:45 PM	0	94	4	0	98	0	0	0	0	0	17	138	0	0	155	1	0	8	0	9	262
05:00 PM	0	70	5	0	75	0	0	0	0	0	15	143	0	0	158	3	0	10	0	13	246
05:15 PM	0	90	3	0	93	0	0	0	0	0	16	153	0	0	169	0	0	10	0	10	272
Total Volume	0	338	14	0	352	0	0	0	0	0	59	579	0	0	638	4	0	34	0	38	1028
% App. Total	0	96	4	0		0	0	0	0		9.2	90.8	0	0		10.5	0	89.5	0		
PHF	.000	.899	.700	.000	.898	.000	.000	.000	.000	.000	.868	.946	.000	.000	.944	.333	.000	.850	.000	.731	.945



Intersection						
Int Delay, s/veh	6.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	121	120	122	322	459
Future Vol, veh/h	38	121	120	122	322	459
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	132	130	133	350	499

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1396	197	0	0	263
Stage 1	197	-	-	-	-
Stage 2	1199	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	156	844	-	-	1301
Stage 1	836	-	-	-	-
Stage 2	286	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	98	844	-	-	1301
Mov Cap-2 Maneuver	98	-	-	-	-
Stage 1	836	-	-	-	-
Stage 2	180	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.3	0	3.6
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	299	1301
HCM Lane V/C Ratio	-	-	0.578	0.269
HCM Control Delay (s)	-	-	32.3	8.8
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	3.4	1.1

Intersection

Int Delay, s/veh 2

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	15	92	13	280	702	6
Future Vol, veh/h	15	92	13	280	702	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	100	14	304	763	7

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	1099	766	770	0	-	0
Stage 1	766	-	-	-	-	-
Stage 2	333	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	235	403	844	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	726	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	230	403	844	-	-	-
Mov Cap-2 Maneuver	230	-	-	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	711	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s 19.4 0.4 0
HCM LOS C

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	844	-	365	-	-
HCM Lane V/C Ratio	0.017	-	0.319	-	-
HCM Control Delay (s)	9.3	0	19.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.3	-	-

Intersection

Int Delay, s/veh 4.1

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations						
Traffic Vol, veh/h	48	111	521	110	74	222
Future Vol, veh/h	48	111	521	110	74	222
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	121	566	120	80	241

Major/Minor Minor1 Major1 Major2

Conflicting Flow All	1028	626	0	0	686	0
Stage 1	626	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	259	484	-	-	908	-
Stage 1	533	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	233	484	-	-	908	-
Mov Cap-2 Maneuver	233	-	-	-	-	-
Stage 1	533	-	-	-	-	-
Stage 2	607	-	-	-	-	-

Approach WB NB SB

HCM Control Delay, s	23.4	0	2.3
HCM LOS	C		

Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT

Capacity (veh/h)	-	-	365	908	-
HCM Lane V/C Ratio	-	-	0.473	0.089	-
HCM Control Delay (s)	-	-	23.4	9.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.4	0.3	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	4	34	59	579	338	14
Future Vol, veh/h	4	34	59	579	338	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	37	64	629	367	15

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1133	375	383	0	-	0
Stage 1	375	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	224	671	1175	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	205	671	1175	-	-	-
Mov Cap-2 Maneuver	205	-	-	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	424	-	-	-	-	-




Approach	EB	NB	SB
HCM Control Delay, s	12.2	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1175	-	541	-	-
HCM Lane V/C Ratio	0.055	-	0.076	-	-
HCM Control Delay (s)	8.2	0	12.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-

HCM 2010 TWSC
201: Catlett Road & Stribling Rd Ext

Intersection						
Int Delay, s/veh	14.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	138	137	139	368	524
Future Vol, veh/h	43	138	137	139	368	524
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	150	149	151	400	570
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1594	224	0	0	300	0
Stage 1	224	-	-	-	-	-
Stage 2	1370	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	118	815	-	-	1261	-
Stage 1	813	-	-	-	-	-
Stage 2	236	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	63	815	-	-	1261	-
Mov Cap-2 Maneuver	63	-	-	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	126	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	91.5	0	3.8			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	212	1261	-	
HCM Lane V/C Ratio	-	-	0.928	0.317	-	
HCM Control Delay (s)	-	-	91.5	9.2	0	
HCM Lane LOS	-	-	F	A	A	
HCM 95th %tile Q(veh)	-	-	7.7	1.4	-	

HCM 2010 TWSC
203: Catlett Road & Luebirdia Ln

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	100	14	303	760	6
Future Vol, veh/h	16	100	14	303	760	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	109	15	329	826	7

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1189	829	833	0	-	0
Stage 1	829	-	-	-	-	-
Stage 2	360	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	208	370	800	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	203	370	800	-	-	-
Mov Cap-2 Maneuver	203	-	-	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	690	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.3	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	800	-	332	-	-
HCM Lane V/C Ratio	0.019	-	0.38	-	-
HCM Control Delay (s)	9.6	0	22.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.7	-	-

HCM 2010 TWSC
201: Catlett Road & Stribling Rd Ext

Intersection

Int Delay, s/veh 5.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	127	595	126	85	254
Future Vol, veh/h	55	127	595	126	85	254
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	138	647	137	92	276

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1176	715	0	0	784
Stage 1	715	-	-	-	-
Stage 2	461	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	211	431	-	-	834
Stage 1	485	-	-	-	-
Stage 2	635	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	184	431	-	-	834
Mov Cap-2 Maneuver	184	-	-	-	-
Stage 1	485	-	-	-	-
Stage 2	552	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	35.7	0	2.5
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	307	834
HCM Lane V/C Ratio	-	-	0.644	0.111
HCM Control Delay (s)	-	-	35.7	9.9
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	4.2	0.4

HCM 2010 TWSC
203: Catlett Road & Luebirdia Ln

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	4	37	64	627	366	15
Future Vol, veh/h	4	37	64	627	366	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	40	70	682	398	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1227	406	414	0	-	0
Stage 1	406	-	-	-	-	-
Stage 2	821	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	197	645	1145	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	178	645	1145	-	-	-
Mov Cap-2 Maneuver	178	-	-	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	390	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1145	-	514	-	-
HCM Lane V/C Ratio	0.061	-	0.087	-	-
HCM Control Delay (s)	8.3	0	12.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.3	-	-

HCM 2010 TWSC
201: Catlett Road & Stribling Rd Ext

Intersection						
Int Delay, s/veh	17.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	43	141	142	139	375	537
Future Vol, veh/h	43	141	142	139	375	537
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	153	154	151	408	584

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1629	230	0	0	305
Stage 1	230	-	-	-	-
Stage 2	1399	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	112	809	-	-	1256
Stage 1	808	-	-	-	-
Stage 2	228	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	58	809	-	-	1256
Mov Cap-2 Maneuver	58	-	-	-	-
Stage 1	808	-	-	-	-
Stage 2	118	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	111.4	0	3.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	201	1256
HCM Lane V/C Ratio	-	-	0.995	0.325
HCM Control Delay (s)	-	-	111.4	9.2
HCM Lane LOS	-	-	F	A
HCM 95th %tile Q(veh)	-	-	8.6	1.4

HCM 2010 TWSC
202: Site Drive & Catlett Road

Intersection							
Int Delay, s/veh	0.4						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations							
Traffic Vol, veh/h	860	2	8	317	3	20	
Future Vol, veh/h	860	2	8	317	3	20	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	-	-	-	0	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	935	2	9	345	3	22	
Major/Minor	Major1	Major2	Minor1				
Conflicting Flow All	0	0	937	0	1298	936	
Stage 1	-	-	-	-	936	-	
Stage 2	-	-	-	-	362	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518	3.318	
Pot Cap-1 Maneuver	-	-	731	-	178	321	
Stage 1	-	-	-	-	382	-	
Stage 2	-	-	-	-	704	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	-	731	-	175	321	
Mov Cap-2 Maneuver	-	-	-	-	175	-	
Stage 1	-	-	-	-	382	-	
Stage 2	-	-	-	-	693	-	
Approach	EB	WB	NB				
HCM Control Delay, s	0	0.2	18.6				
HCM LOS				C			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT		
Capacity (veh/h)	289	-	-	731	-		
HCM Lane V/C Ratio	0.087	-	-	0.012	-		
HCM Control Delay (s)	18.6	-	-	10	0		
HCM Lane LOS	C	-	-	A	A		
HCM 95th %tile Q(veh)	0.3	-	-	0	-		

HCM 2010 TWSC
203: Catlett Road & Luebirdia Ln

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	16	100	14	305	763	6
Future Vol, veh/h	16	100	14	305	763	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	109	15	332	829	7

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1195	833	836	0	-	0
Stage 1	833	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	206	369	798	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	201	369	798	-	-	-
Mov Cap-2 Maneuver	201	-	-	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	688	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.4	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	798	-	331	-	-
HCM Lane V/C Ratio	0.019	-	0.381	-	-
HCM Control Delay (s)	9.6	0	22.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.7	-	-

HCM 2010 TWSC
201: Catlett Road & Stribling Rd Ext

Intersection						
Int Delay, s/veh	6.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	133	603	126	88	260
Future Vol, veh/h	55	133	603	126	88	260
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	145	655	137	96	283
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1198	724	0	0	792	0
Stage 1	724	-	-	-	-	-
Stage 2	474	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	205	426	-	-	829	-
Stage 1	480	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	177	426	-	-	829	-
Mov Cap-2 Maneuver	177	-	-	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	38.6	0	2.5			
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	302	829	-	
HCM Lane V/C Ratio	-	-	0.677	0.115	-	
HCM Control Delay (s)	-	-	38.6	9.9	0	
HCM Lane LOS	-	-	E	A	A	
HCM 95th %tile Q(veh)	-	-	4.6	0.4	-	

HCM 2010 TWSC
202: Site Drive & Catlett Road

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	403	4	14	691	2	9
Future Vol, veh/h	403	4	14	691	2	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	438	4	15	751	2	10

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	442	0	1222 440
Stage 1	-	-	-	-	440 -
Stage 2	-	-	-	-	782 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1118	-	198 617
Stage 1	-	-	-	-	649 -
Stage 2	-	-	-	-	451 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1118	-	193 617
Mov Cap-2 Maneuver	-	-	-	-	193 -
Stage 1	-	-	-	-	649 -
Stage 2	-	-	-	-	441 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	441	-	-	1118	-
HCM Lane V/C Ratio	0.027	-	-	0.014	-
HCM Control Delay (s)	13.4	-	-	8.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 2010 TWSC
203: Catlett Road & Luebirdia Ln

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	4	37	64	629	370	15
Future Vol, veh/h	4	37	64	629	370	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	40	70	684	402	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1233	410	418	0	-	0
Stage 1	410	-	-	-	-	-
Stage 2	823	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	195	642	1141	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	176	642	1141	-	-	-
Mov Cap-2 Maneuver	176	-	-	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	388	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1141	-	510	-	-
HCM Lane V/C Ratio	0.061	-	0.087	-	-
HCM Control Delay (s)	8.4	0	12.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.3	-	-