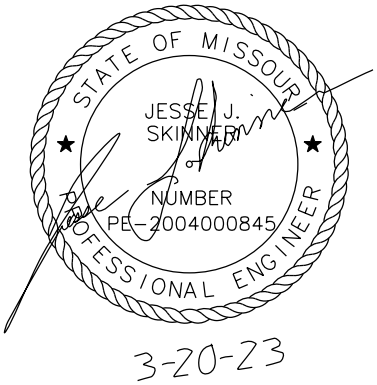
Arborwalk Lot #5

TRAFFIC IMPACT STUDY

March 20, 2023

Prepared For:
Christie Development Associates, LLC
7217 W. 110th Street
Overland Park, KS 66210

Prepared By:
Priority Engineers, Inc.
PO Box 563
Garden City, MO 64747



March 20, 2023

Mr. Garrett Fugate
Christie Development Associates, LLC
7217 W. 110th Street
Overland Park, KS 66210

Re: Arborwalk Lot #5 – Lee's Summit, MO

Dear Mr. Fugate:

In response to your request, Priority Engineers, Inc. has completed a traffic impact study for the above referenced project. The purpose of the analysis is to determine the potential traffic impacts associated with this development on the intersections and streets surrounding this site, primarily during the AM and PM peak hours. The following report documents our analysis and recommendations.

We appreciate the opportunity to work with you on this project. Please contact us with any questions or if you require additional information.

Sincerely,

PRIORITY ENGINEERS, INC.

Jesse J. Skinner, P.E., PTOE
Senior Transportation Engineer

Priority Engineers, Inc.
PO Box 563
Garden City, MO 64747
816.738.4400

Table of Contents

1) INTRODUCTION

The purpose of this study is to examine the potential traffic impacts associated with the proposed Arborwalk Lot # 5 development located at the northwest corner of SW Arboridge Drive and Missouri Route 150. The site is located within the municipal city limits of Lee's Summit, Missouri.

The study area is shown in Figure 1. The site layout is shown in Figure 2.

2) EXISTING CONDITIONS

The existing site is located on the northwest corner of SW Arboridge Drive and Missouri Route 150. The property is currently vacant.

Missouri Route 150 is a four-lane roadway with curb and gutter and median separation. It has a posted speed limit of 45 MPH. The Mid America Regional Council (MARC) has assigned this roadway a functional classification of Principal Arterial. The City of Lee's Summit's Thoroughfare Master Plan identifies Missouri Route 150 as a Major Arterial.

SW Pryor Road, near the intersection with Missouri Route 150, is a two-lane roadway with paved shoulders and an open drainage system. To the north of Missouri Route 150, SW Pryor Road has a posted speed limit of 45 MPH and to the south of Missouri Route 150, it's posted speed limit is 35 MPH. MARC has assigned this roadway a functional classification of Minor Arterial whereas the City of Lee's Summit's Thoroughfare Master Plan identifies it as a Major Arterial.

SW Arborlake Drive is a two-lane road with curb and gutter and an enclosed drainage system. It has a posted speed limit of 25 MPH. SW Stoney Creek Drive is located south of SW Arborlake Drive on the opposite side of Missouri Route 150. It also has a two-lane cross section with curb and gutter and an enclosed drainage system. It has a posted speed limit of 30 MPH. MARC has assigned both roadways a functional classification of Local Road by default. Lee's Summit has previously indicated that SW Arborlake Drive is a commercial collector.

SW Arboridge Drive is a two-lane roadway with curb and gutter and an enclosed drainage system. SW Arboridge Drive has a posted speed limit of 25 MPH. MARC has assigned this roadway a functional classification of Local Road by default, whereas the City of Lee's Summit has previously indicated that the roadway a classification of commercial collector.

The intersections of SW Pryor Road and Missouri Route 150 and SW Arborlake Drive and Missouri Route 150 are both currently controlled by traffic signals. The intersection of Missouri Route 150 and SW Arboridge Drive is controlled by STOP control on the minor movements.

Peak Hour turning movement traffic counts for the intersections of Missouri Route 150 and Pryor Road, Missouri Route 150 and Arboridge, and Missouri Route 150 and Arborlake Drive were collected on August 10th of 2022 between the hours of 7:00 and 9:00 AM and from 4:00 to 6:00 PM. The peak hours were determined to be 7:15 to 8:15 AM and from 4:30 to 5:30 PM. The complete traffic counts are shown in Appendix II. The peak hour traffic volumes and existing lane configurations are shown in Figures 3-7.

3) APPROVED DEVELOPMENT

The City of Lee's Summit has identified the following previously approved developments with as impacting the study area.

Raintree Village

Raintree Village is located to the east of the proposed development on the east side of SW Arboridge Drive. The approved development is approximately 0.1 miles east of the proposed development. The approved development will have a 214-bed assisted living complex when completed. The approved development will have two access points, both on SW Arborwalk Boulevard between SW Arboridge Drive and SW Arborlake Drive. A TIS was not required for this development.

McBee's Coffee N Carwash

This approved development is located in the northeast quadrant of Missouri Route 150 and SW Arborlake Drive, east of the existing Phillips 66. The approved development is approximately 0.4 miles east of the proposed development. The approved development will have an ingress access point from Missouri Route 150 and egress will be accomplished via an access point onto SW Arborwalk Boulevard. The approved development will have an automated carwash when completed. A TIS was not required for this development.

Market Street Center

This approved development is located north of Missouri Route 150 and west of Missouri Route 291 on the south side of SW Market Street. The approved development is approximately 1.75 miles east of the proposed development. When the approved development is constructed, there will be 7,200 SF of commercial building space. The site will have two access points, both onto SW Market Street. A TIS was not provided by the City of Lee's Summit for this development.

Osage (Allera) Residential Development

This approved residential development is located near the southwest quadrant of Missouri Route 150 and SW Pryor Road. The approved development consists of 160 units of single family detached housing. The approved development is approximately 0.5 miles west of the approved development. The TIS was performed for this development and the improvements listed for the intersection of SW Pryor Road and Missouri Route 150 and have already been constructed.

Journey Church International

This approved development consists of an expansion of the existing Church facility located 1601 SW Missouri Route 150. The approved development is approximately 0.1 miles south of the proposed development. The approved development consists of an expansion to the church campus to increase the capacity from a 320-seat auditorium to a 1,200-seat auditorium. The construction of this approved development has already occurred. The approved development has a TIS and the recommended improvements to the intersection of Missouri Route 150 and SW Arboridge Drive have already been constructed. The proposed development was completed prior to collection of turning movement counts at Missouri Route 150 and SW Arboridge Drive.

4) PROPOSED DEVELOPMENT

The proposed site plan is shown in Figure 2. The site will contain a 10,000 SF child care facility, a 4,575 SF convenience store, and an 1,800 SF Automotive Oil Changing facility with six stalls. The convenience store is located adjacent to Missouri Route 150 and the proposed childcare facility is located to the north of the convenience store. The vehicle maintenance building is located to the west of the convenience store.

The proposed site plan provides access from a Right In / Right Out drive on Missouri Route 150 and from a single shared access drive that connects to Arboridge Drive. The previously proposed access onto the Holy Spirt Catholic Church has been removed.

The RI/RO drive is shown on the proposed site plan approximately 400' west of the intersection of Arboridge Drive and Missouri Route 150, near the western edge of the property. The proposed shared drive onto SW Arboridge Drive located between the convenience store and the daycare and is approximately 370' north of the intersection. Addition discussion on these drives is found in Section 9 of this TIS.

5) TRIP GENERATION (APPROVED DEVELOPMENT)

The vehicle trips generated by the approved development were estimated using the Institute of Transportation Engineers' Trip Generation Manuel, 11th Edition. The following Land Uses were utilized: Adult Living Center (Land Use 254), Automated Car Wash (Land Use 948), and Strip Retail Plaza < 40 K (Land Use 822). Since the Journey Church International expansion was completed prior to collection of turning movement counts for this project, additional trip generation was not estimated for this development. The estimated AM and PM peak hour traffic volumes associated with these uses are shown in Table 1.

Table 1: Trip Generation (Approved Development)

			AM Peak			PM Peak		
Land Use	***Intensity***	***ITE CODE***	***Total***	***In***	***Out***	***Total***	***In***	***Out***
Assisted Living (Raintree Village)	214 beds	254	39	23	16	51	20	31
Automated Car Wash (McBee's Coffee N Carwash)	6,502 SF	948				92	46	46
Strip Retail Plaza < 40K (Market Street Center)	7,200 SF	822	23	14	9	62	31	31
Single Family Detached Housing (10th edition)	160 units	210	119	30	89	160	101	59
Total		**2234**	**181**	**67**	**114**	**365**	**198**	**167**

6) TRIP GENERATION (PROPOSED DEVELOPMENT)

The vehicle trips generated by the proposed development were estimated using the Institute of Transportation Engineers' Trip Generation Manuel, 11th Edition. The following Land Uses were utilized: Day Care Center (Land Use 565), Quick Lubrication Vehicle Shop (Land Use 941), and Convenience Store / Gas Station (Land Use 945). With the 11th Edition of the Trip Generation Manual, there are two subcategories associated with the Land Use 945 (GFA) and (VFP). It was determined that for this development that the estimate based upon the subcategory for the vehicle fueling positions had a more conservative (larger) trip generation estimate than the subcategory associated with the size of the building. The more conservative trip generation estimate was selected. Similarly, Land Use 941 has several independent variables, of which service positions was found to generate the most conservative trip generation estimates. The estimated AM and PM peak hour traffic volumes associated with these uses are shown in Table 2.

Table 2: Trip Generation (Subcategory VFP)

			AM Peak			PM Peak		
Land Use	***Intensity***	***Daily***	***Total***	***In***	***Out***	***Total***	***In***	***Out***
Day Care Center	10,000 SF	476	110	58	52	111	52	59
Quick Lubrication Vehicle Shop	6 Servicing Positions	240	18	12	6	29	16	13
Convenience Store/Gas Station (VFP 9-15)	4,575 SF	3118	259	129	130	250	125	125
Total		**3834**	**387**	**199**	**188**	**390**	**193**	**197**

Pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination without a route diversion. For this site, pass-by trips are those drivers who are already traveling eastbound and westbound on Missouri Route 150 who will stop at this development. Pass-by trips were estimated utilizing the Tables provided in Chapter 10 of the Trip Generation Handbook, 3rd Edition. In regards to Land Use 945, ITE data indicates that 75 percent of the PM Peak Hour trips and 76 percent of the AM Peak Hour trips are pass by in nature. Table 3 below shows the anticipated new trips generated by this development after accounting for pass-by.

Table 3: Trip Generation (Pass-By)								
		ITE	AM Peak			PM Peak		
Land Use	***Intensity***	***Code***	***Total***	***In***	***Out***	***Total***	***In***	***Out***
Day Care Center	10,000 SF	565	110	58	52	111	52	59
Quick Lubrication Vehicle Shop	6 Servicing Positions	240	18	12	6	29	16	13
Convenience Store/Gas Station (VFP 9-15)	4,575 SF	945	259	129	130	250	125	125
			-197	*-98*	*-99*	*-188*	*-94*	*-94*
Subtotal			387	199	188	390	193	197
Pass-By Trips			*-197*	*-98*	*-99*	*-188*	*-94*	*-94*
Total New Trips			**190**	**101**	**89**	**202**	**99**	**103**

7) TRIP DISTRIBUTION

Trip generation for the approved developments was distributed via the distribution in the approved TIS when available. For approved developments without a TIS, the development trips were distributed onto the TIS study intersection based upon a review of the surrounding area using the distribution identified for the proposed development.

For the Raintree Village development, it was assumed that 25 percent of the trips would be distributed to SW Arboridge Drive and the remaining trips would be distributed to SW Arborlake Drive before being further distributed.

For the McBee's Coffee N Carwash it was assumed that ten percent of the traffic was to come to and from the intersection of SW Ward Road and SW Arborwalk Boulevard. The remaining traffic was distributed into and out of the study area via the intersection at SW Arborlake Drive with the exception of westbound entering traffic entering from the shared drive from Missouri Route 150.

For the Market Street development, it was assumed that thirty percent of the trips would be entering and exiting the site from the west on Missouri Route 150 and were distributed across the study area accordingly. The approved development trips are shown in Figures 7 and 8 of Appendix I.

Trips generated by the Arborwalk Lot # 5 development were distributed based on existing traffic flows and a general analysis of the surrounding area. The trips were distributed onto the existing street system approximately as follows:

- 10 percent to/from the north on SW Pryor Road
- 10 percent to/from the south on SW Pryor Road
- 5 percent to/from the north on SW Arborlake Drive

- 5 percent to/from the south on SW Stoney Creek Drive
- 10 percent to/from the north on SW Arboridge Drive
- 30 percent to/from the west on Missouri Route 150
- 30 percent to/from the east on Missouri Route 150

The proposed development trips are shown in Figures 11 and 12 of Appendix I.

8) LEVEL OF SERVICE AND VOLUME/CAPACITY ANALYSES

Capacity analysis was used to quantify the impacts of the increased traffic on the intersections studied. The methodology outlined in the Highway Capacity Manual, 6th Edition, was used as a basis to perform the analysis for this study with the exception of the intersection of SW Pryor Road and Missouri Route 150. At this location, a previous TIS has distributed RI/RO traffic from an entrance onto Missouri 150 to the west of the intersection. At the intersection some of this traffic makes a U-turn maneuver to travel westbound. Subsequent revisions to the HCM beyond the 2000 edition do not support U-turning maneuver analysis necessitating the 2000 edition being considered for the approved, proposed and future scenarios. Capacity analysis defines the quality of traffic operation for an intersection using a grading system called Level of Service (LOS). The LOS is defined in terms of average vehicle delay. Levels of service A through F have been established with A representing the best and F the worst.

Table 4: Level of Service Definitions

Level of Service	*Unsignalized Intersection*	*Signalized Intersection*
A	< 10 Seconds	< 10 Seconds
B	< 15 Seconds	< 20 Seconds
C	< 25 Seconds	< 35 Seconds
D	< 35 Seconds	< 55 Seconds
E	< 50 Seconds	< 80 Seconds
F	≥ 50 Seconds	≥ 80 Seconds

The study intersections were evaluated using Synchro, an analysis package based in part on Highway Capacity Manual methods. The analysis reports are included in Appendix II. Signal timing at the intersection of SW Pryor Road and Missouri Route 150 and SW Arborlake Drive / SW Stoney Creek Drive and Missouri Route 150 was based upon observed cycle lengths with optimized splits.

Existing Conditions

The levels of service, lane configuration, and queue lengths for existing conditions are shown in Figures 5 and 6 in Appendix I.

The overall levels of service at each of the signalized intersections was a C or better in both the AM and PM Peak Hour. At the unsignalized intersection of SW Arboridge and Missouri Route 150, both northbound and southbound left turning movement groups have an undesirable level of service in the PM Peak Hour. It is not uncommon for stop controlled minor movements to have undesirable levels of service during peak periods on the major route. The anticipated design queue length associated with both left turning movement groups is one vehicle.

Approved Conditions
The levels of service, lane configuration, and queue lengths for existing conditions are shown in Figures 9 and 10 in Appendix I.

Both Signalized intersections continue to have an overall level of service of C or greater in both Peak Hours. At the unsignalized intersection of SW Arboridge and Missouri Route 150 the left turning minor movement groups continue to have an undesirable level of service without increases in design queue length.

Proposed Conditions
The levels of service, lane configuration, and queue lengths for the proposed conditions are shown in Figures 13 and 14 in Appendix I.

Both existing Signalized intersections continue to have an overall level of service of C or greater in both Peak Hours. The proposed signalized intersection of SW Arboridge and Missouri Route 150 performs with a level of Service A in both Peak hours. Additional discussion on signalization is found in section 10 of this TIS.

All proposed unsignalized intersections perform with an acceptable level of service for STOP controlled minor movements.

Future Conditions
MARC 2040 data predicts an overall population growth rate of approximately one percent per year for the thirty-year period between the 2010 census and a horizon year of 2040. For the purposes of performing a 20-year horizon for this project, the background growth rate was increased to two percent per year for the twenty-year period to account for the large amounts of undeveloped land found to the north and south sides of the Missouri Route 150 corridor further to the west.

Figures 15 through 18 of Appendix I show the Peak Hour traffic volumes, lane configurations and levels of service associated with the 2042 future conditions.

All signalized intersections continue to operate with an acceptable overall level of service.

9) TURN LANES & ACCESS MANAGEMENT

Missouri 150 RI/RO
This intersection was reviewed for a right turn lane using MoDOT EPG section 940.9.9. In the proposed AM Peak Hour there are 1051 advancing vehicles with 103 vehicles turning right. The major road posted speed is 45 MPH, a right turn lane is warranted. In the proposed PM Peak Hour, there are 771 advancing vehicles with 59 of the vehicles turning right. A right turn lane is also warranted for this time period. EPG Section 233.2 requires a 120’ turn lane plus an additional 100’ taper.

Section 940.15 was reviewed for the spacing of RI/RO drives. The proposed drive is desirable in that it is a shared access drive located on the property line, reducing the number of drives accessing Missouri Route 150. The proposed spacing is approximately 400’. The EPG requires a spacing of 220’ to 330’ for RI/RO drives.

The drive meets EPG section 940.16.4 criteria for a Medium Volume Commercial Drive and should have a width of 28' to 42' excluding medians contained within the driveway. The proposed site plan has a width of 30' and meets these criteria.

EPG section 940.16.3 suggest a right-turn approach radius for commercial driveways, in urban areas, with a posted speed limit of 45 MPH or less to be 25'. The proposed site plan has a right turn radius of approximately 25' and complies with the suggested design.

EPG section 940.16.8 specifies a minimum desirable throat length for medium volume commercial / industrial drives to be 60'. The measured throat length is approximately 100'.

South Drive

The shared access drive onto SW Arboridge Drive is approximately 370' north of the intersection of SW Arboridge and Missouri Route 150. The Lee's Summit Access Management Code (AMC) section 16.1.C requires all non-residential collectors with a left turn lane volume of greater than or equal to 30 VPH to have a left turn lane. A left turn lane is warranted. AMC Section 16.1.H requires a minimum left turn lane of 150' plus taper. AMC section 15.1.B requires that connections shall be sufficiently separated to accommodate turn lanes. AMC section 16.1.L dictates that a taper should not encroach the functional area of an intersection.

AMC section 16.2.B requires a right turn lane for collectors with a right turn volume of 100 VPH or greater. A right turn lane is not warranted.

The proposed site plan has a driveway width of 36' and a throat length of approximately 165'. AMC Table 18-1 requires a width of 28' for a low volume drive. The throat length exceeds AMC Table 18-2 requirements. The minimum curb radius allowed by the City of Lee's Summit Design and Construction Manual is 35' for a commercial collector whereas the AMC requires a maximum of 50'. The access point has curb radii of 15' and does not meet the radius requirements.

10) SIGNAL WARRANT ANALYSIS

The intersection of SW Arboridge and Missouri Route 150 was evaluated for a signalization. EPG section 902.3.4 (Warrant 2, Four Hour Vehicular Volumes) was applied to this intersection. Since the posted speed limit is 45 MPH, the 70% factor is appropriate to consider. The maximum point on the curve is a major street volume of 1,000 VPH with a minor street volume of 80 VPH.

Current traffic count data at this intersection was collected between the hours of 7 and 9 AM and 4 and 6 PM with the Peak Hours found to be 7:15 to 8:15 and 4:30 to 5:30. While the current ITE trip generation manual has hourly trip data, there is significant variance between the *Trip Generation Manual's* anticipated Peak of the Adjacent Street and the hourly predicted volumes. For this reason, the Peak Hour of the Adjacent Street trip generation was applied to both AM and PM hours counted. The resulting anticipated traffic volumes are shown in Figure 19 of Appendix 1. The seventy percent factor, four-hour warrant is met. If this intersection was to remain unsignalized the left turning movements, which are undesirable in the existing peak hour, would have excessive delays exceeding 300 seconds.

The intersection of SW Arboridge and Missouri Route 150 is approximately 2,100 feet east of the signalized intersection with SW Ward Road and approximately 1,400' west of the signalized intersection with SW Arborlake Drive / SW Stoney Creek Drive.

11) RECOMMENDATIONS & CONCLUSIONS

This study documents the impact of the proposed Arborwalk Lot # 5 development on adjacent intersections during the AM and PM peak hours.

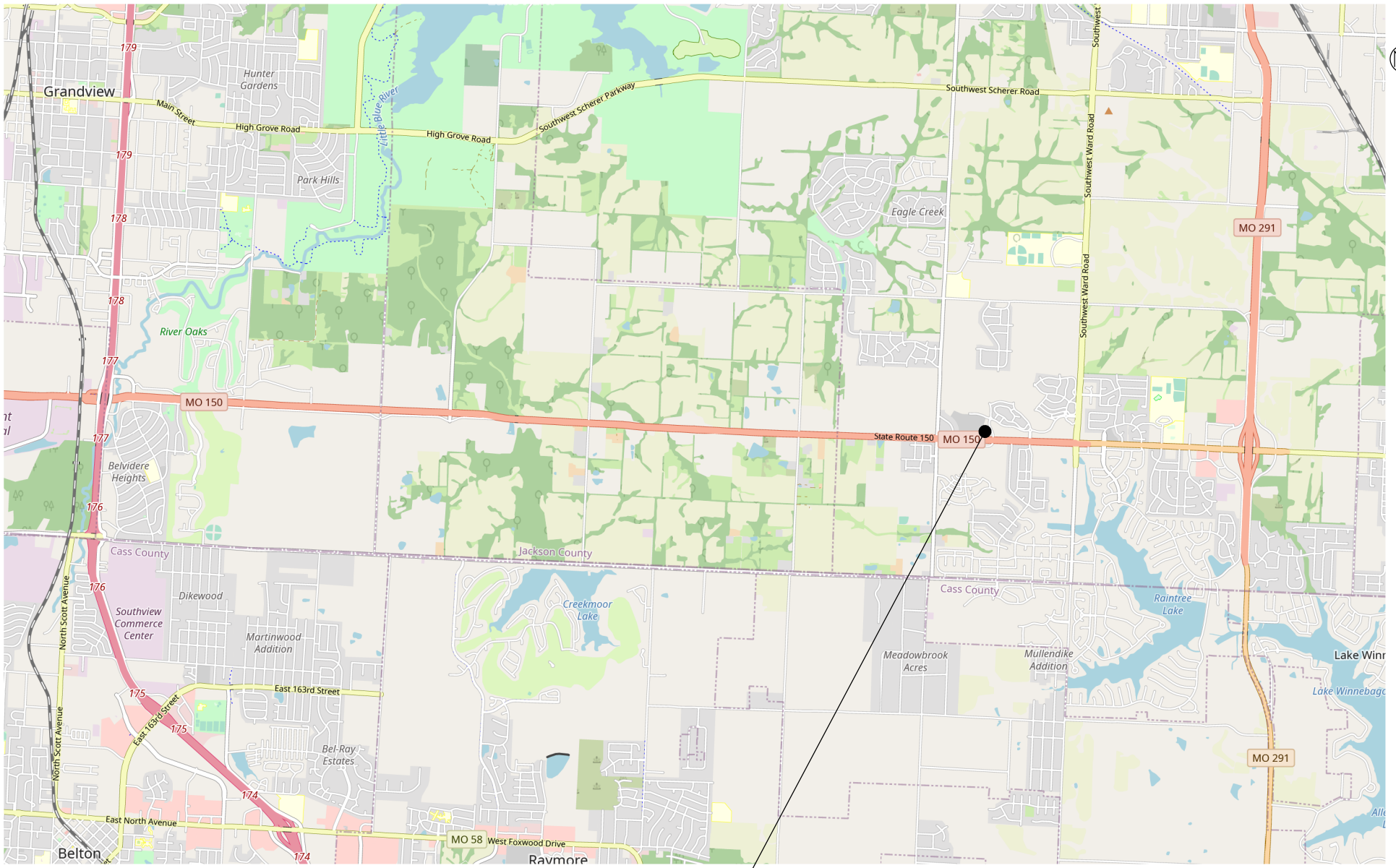
The existing intersection of SW Arboridge Drive and Missouri Route 150 has an undesirable level of service in the PM Peak Hour for minor road left turning movement groups. When the proposed development traffic is added to this intersection, the associated delay becomes excessive in both Peak Hours. The proposed development traffic will exceed the minor route minimum threshold for signalization under Warrant 2, Four Hour Vehicular Volumes. The existing traffic on the major route already exceeds the major route threshold for this warrant. A signal should be installed at this location in conjunction with the construction of the proposed development. If a signal is not installed in conjunction with the proposed development, consideration should be given to restricting left turn movements at this intersection. This would be accomplished by extending the existing median on Missouri Route 150 through the intersection.

The proposed RI/RO on Missouri meets MoDOT requirements for a right turn lane and a 120' long turn lane plus with a 100' taper should be constructed in conjunction with the development.

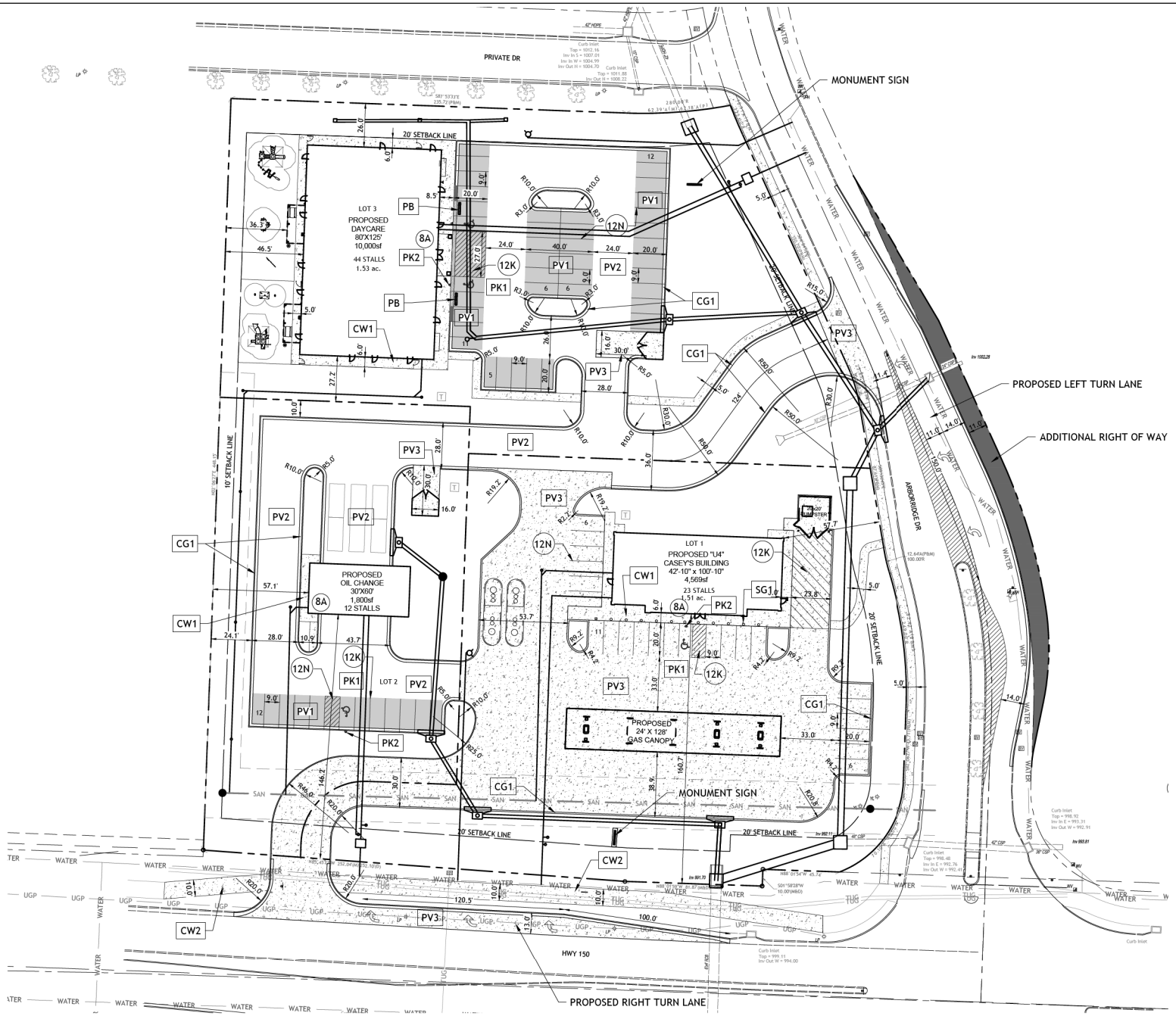
The proposed drives onto SW Arboridge Drive conforms with the Lee's Summit AMC. The radii at this proposed connection is less than minimum requirements of City of Lee's Summit Design and Construction Manual and the left lane taper extends into the functional area of the future signalized intersection of SW Arboridge and Missouri Route 150. A left turn lane is warranted at this drive to meet the AMC's requirements.

There will be geometric modification on SW Arboridge associated with the construction of the south entrance. The City of Lee's Summit Design and Construction Manual specifies a minimum horizontal curvature radii of 200' for Commercial or Residential Local Streets. When the design of the drive is finalized, minimum curvature on SW Arboridge should be met and site distance verified for the proposed drive.

APPENDIX I



Project Location	Arborwalk Lee's Summit, MO	No Scale Figure 1	priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



Site Plan

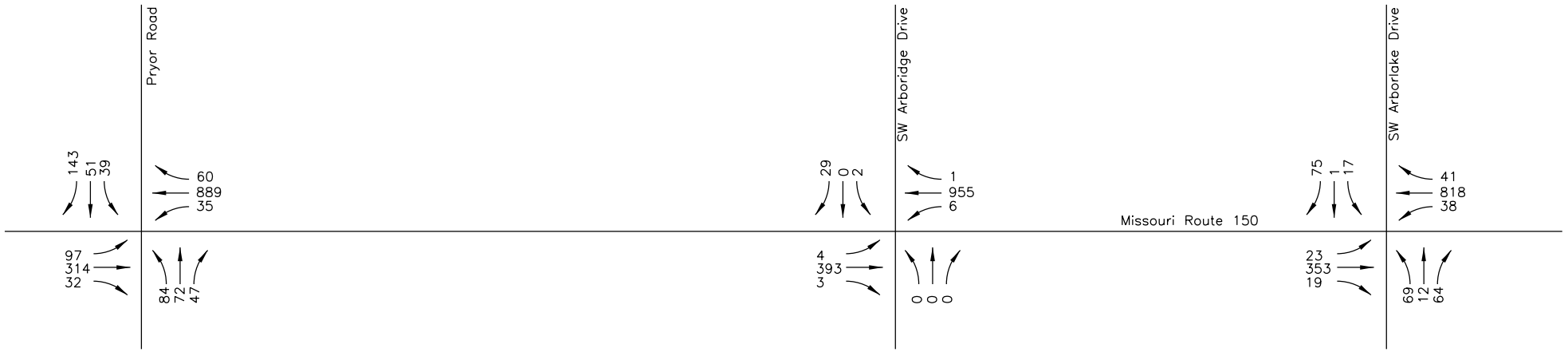
Arborwalk
Lee's Summit, MO

No Scale

Figure 2

SM Engineering
5507 High Meadow Circle
Manhattan Kansas, 66503
smcivilengr@gmail.com
785.341.9747

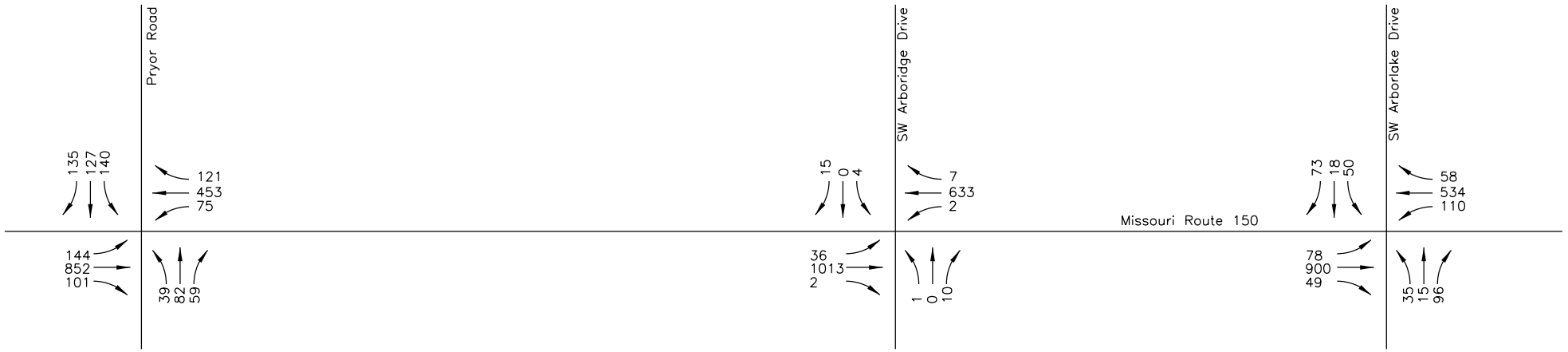
priority ENGINEERS
PO Box 563
Garden City, MO 64747
816.738.4400



LEGEND

Total Volume

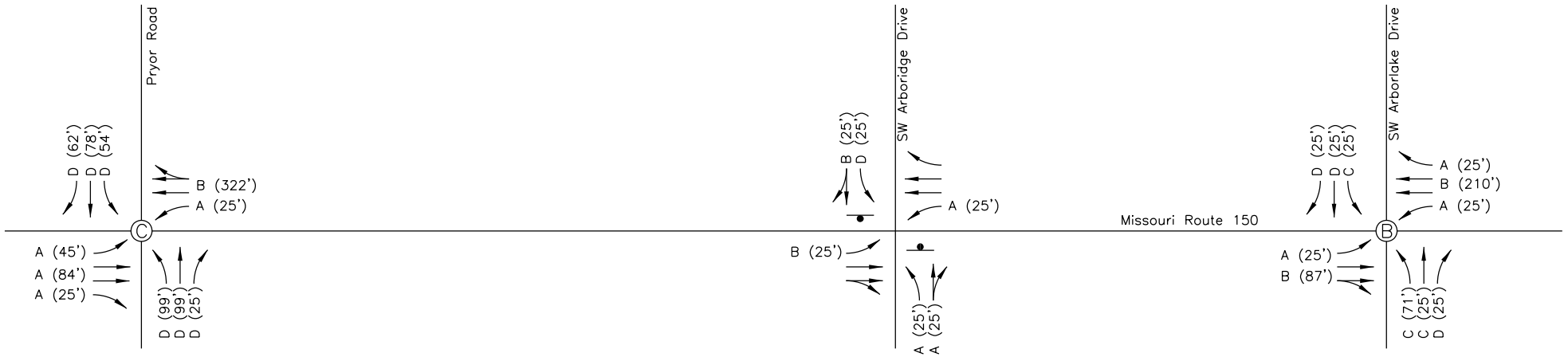
Existing AM Peak Hour Traffic Volumes	Arborwalk Lee's Summit, MO	No Scale Figure 3	priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



LEGEND

Total Volume

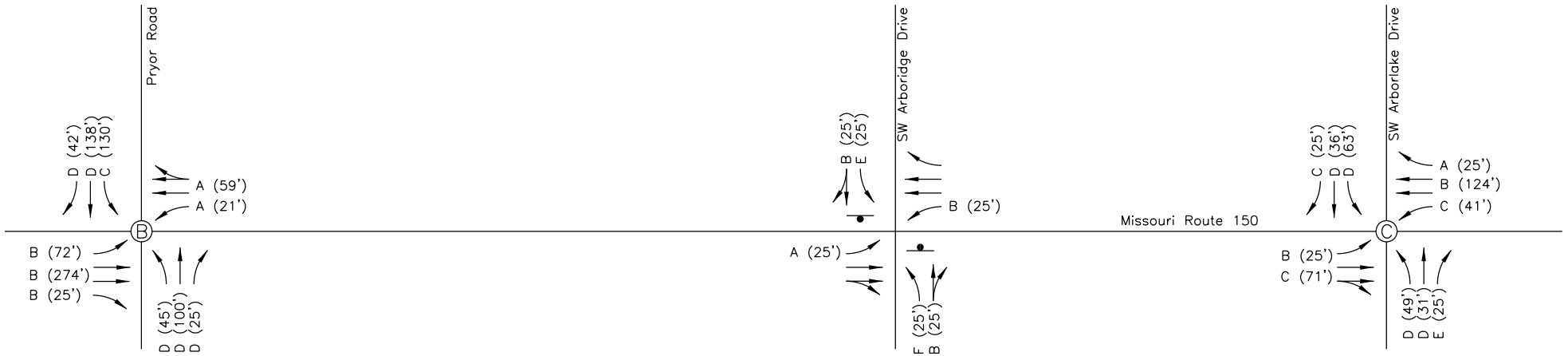
Existing PM Peak Hour Traffic Volumes	Arborwalk Lee's Summit, MO	No Scale	priority ENGINEERS
		Figure 4	PO Box 563 Garden City, MO 64747 816.738.4400



LEGEND

- HCM LOS (95th Percentile Queue)
- Stop Sign
- Traffic Signal LOS
- Ⓐ Roundabout LOS

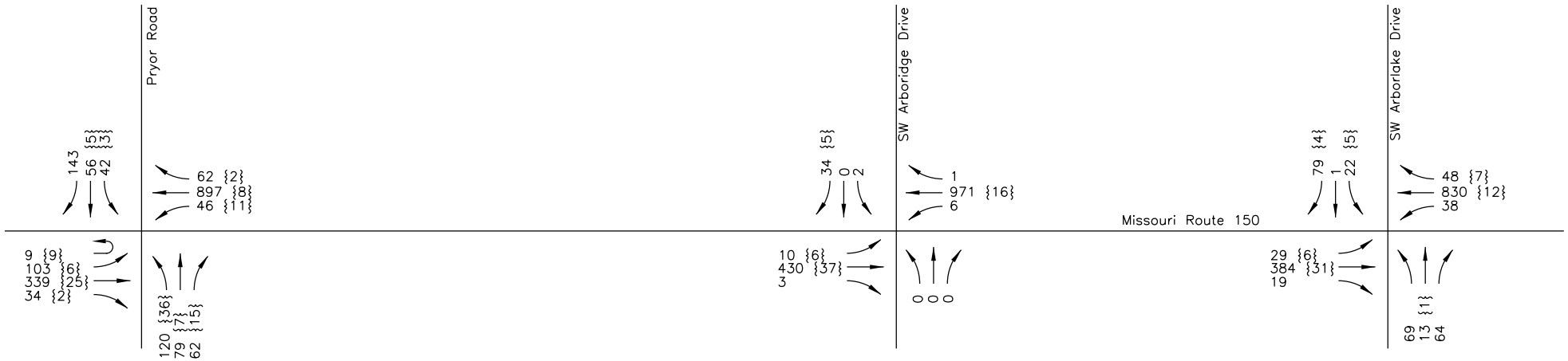
Existing AM Peak Hour Lane Configuration & Levels of Service	Arborwalk Lee's Summit, MO	No Scale Figure 5	priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



LEGEND

- HCM LOS (95th Percentile Queue)
- Stop Sign
- Traffic Signal LOS
- Ⓐ Roundabout LOS

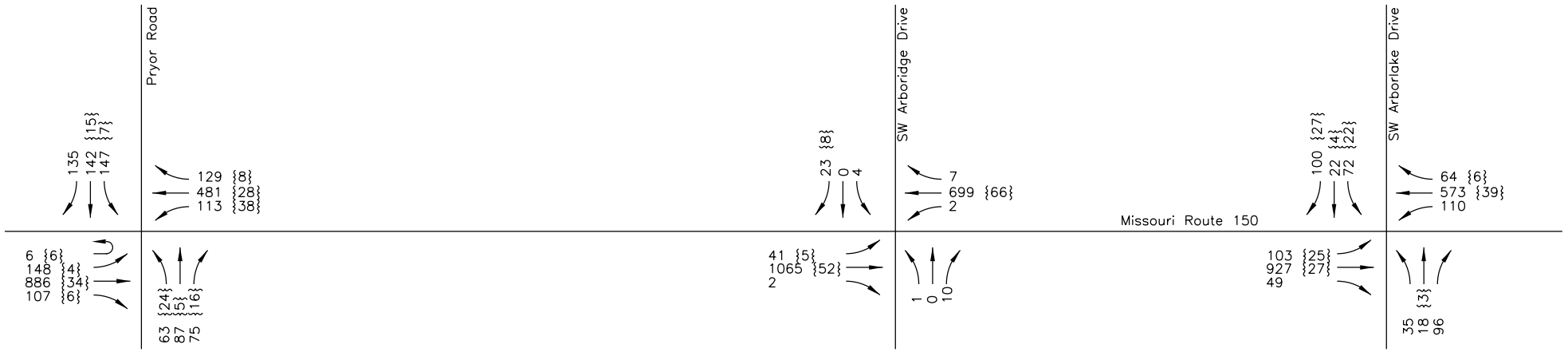
Existing PM Peak Hour Lane Configuration & Levels of Service	Arborwalk Lee's Summit, MO	No Scale Figure 6	priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



LEGEND

Total Volume {Approved Developments}

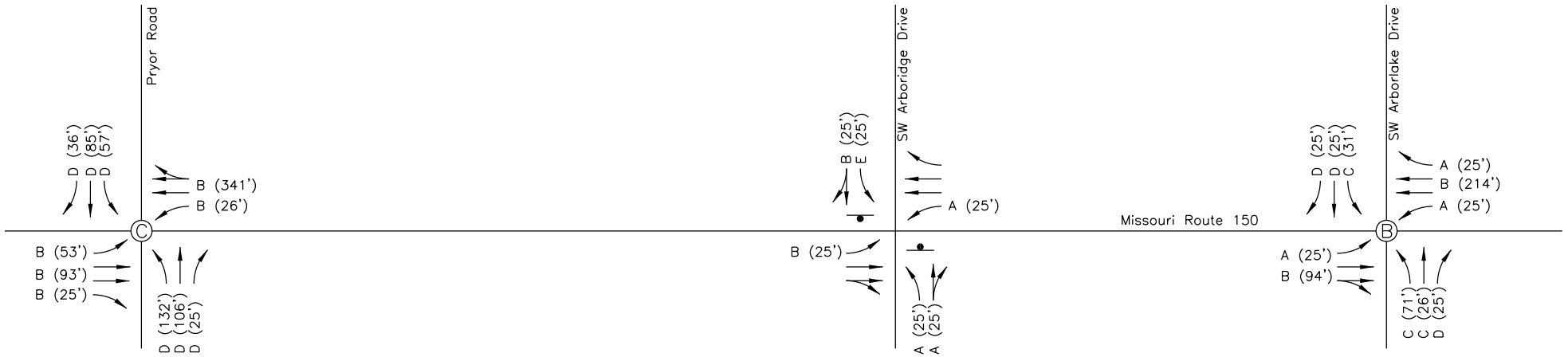
Existing + Approved Development AM Peak Hour Traffic Volumes	Arborwalk Lee's Summit, MO	No Scale Figure 7	priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



LEGEND

Total Volume {Approved Developments}

Existing + Approved Development PM Peak Hour Traffic Volumes	Arborwalk Lee's Summit, MO	No Scale Figure 8	priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



Existing + Approved Development
AM Peak Hour
Lane Configuration &
Levels of Service

Arborwalk
Lee's Summit, MO

No Scale

Figure 9

priority ENGINEERS
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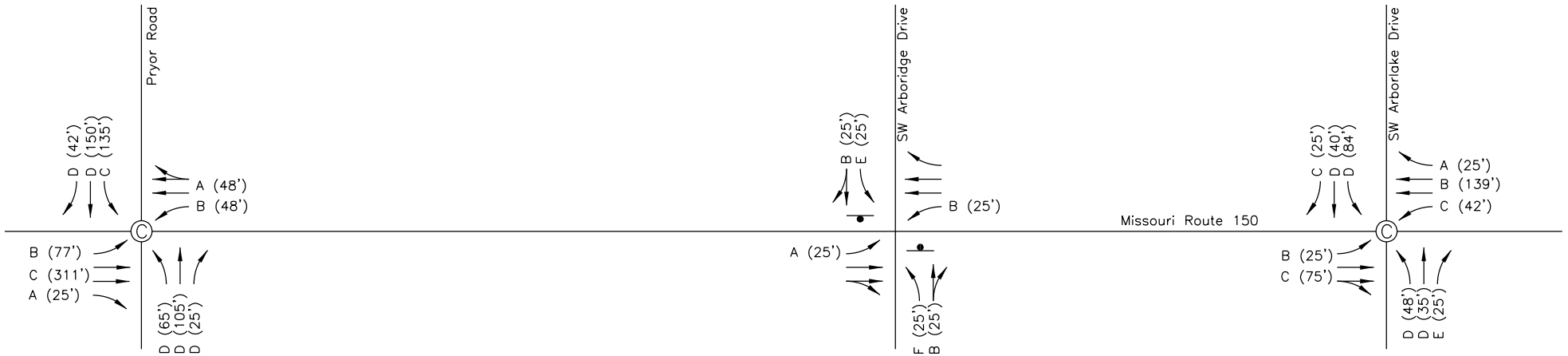

Existing + Approved Development
PM Peak Hour
Lane Configuration &
Levels of Service

Arborwalk
Lee's Summit, MO

No Scale

Figure 10

priority ENGINEERS
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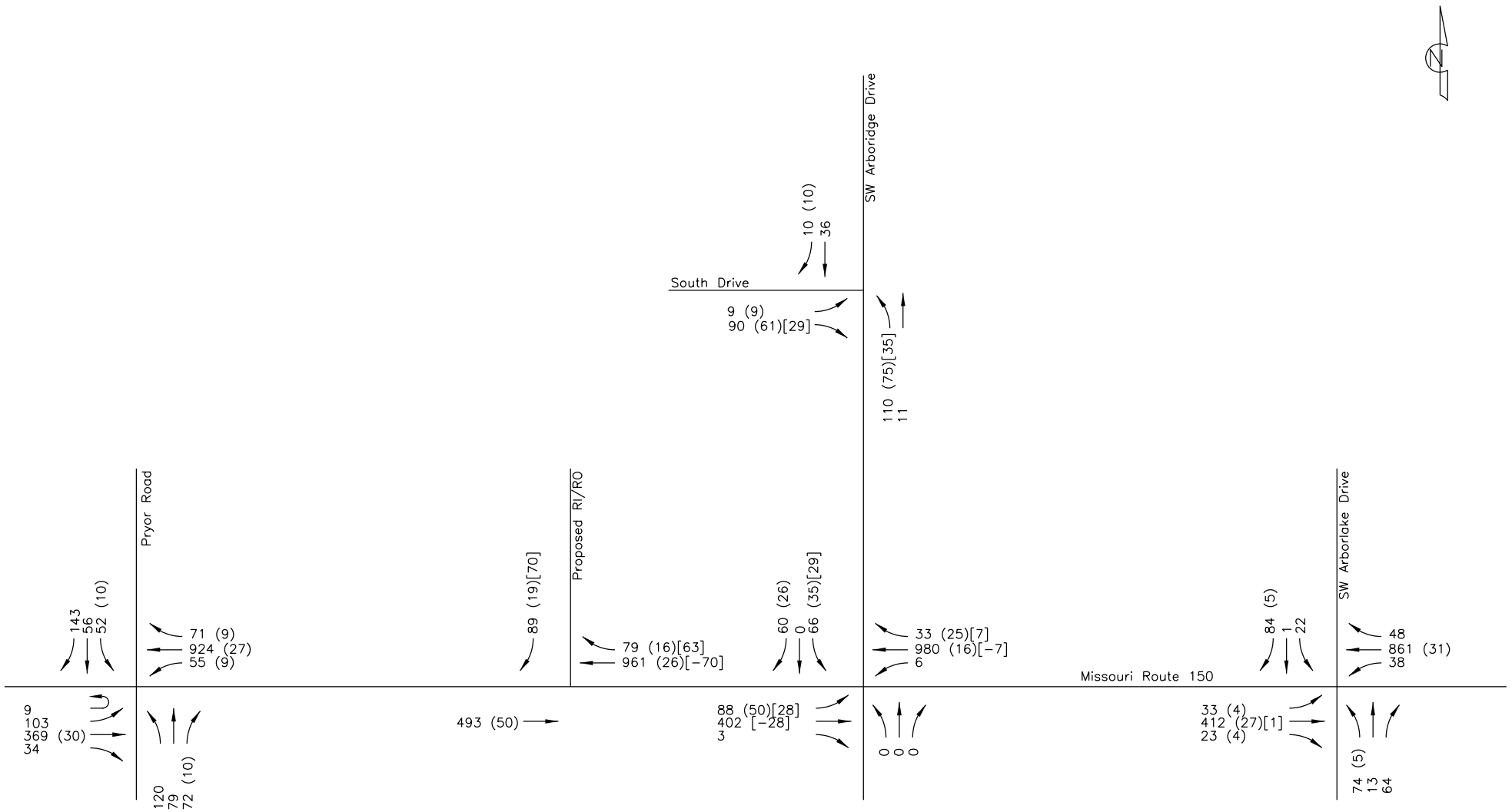
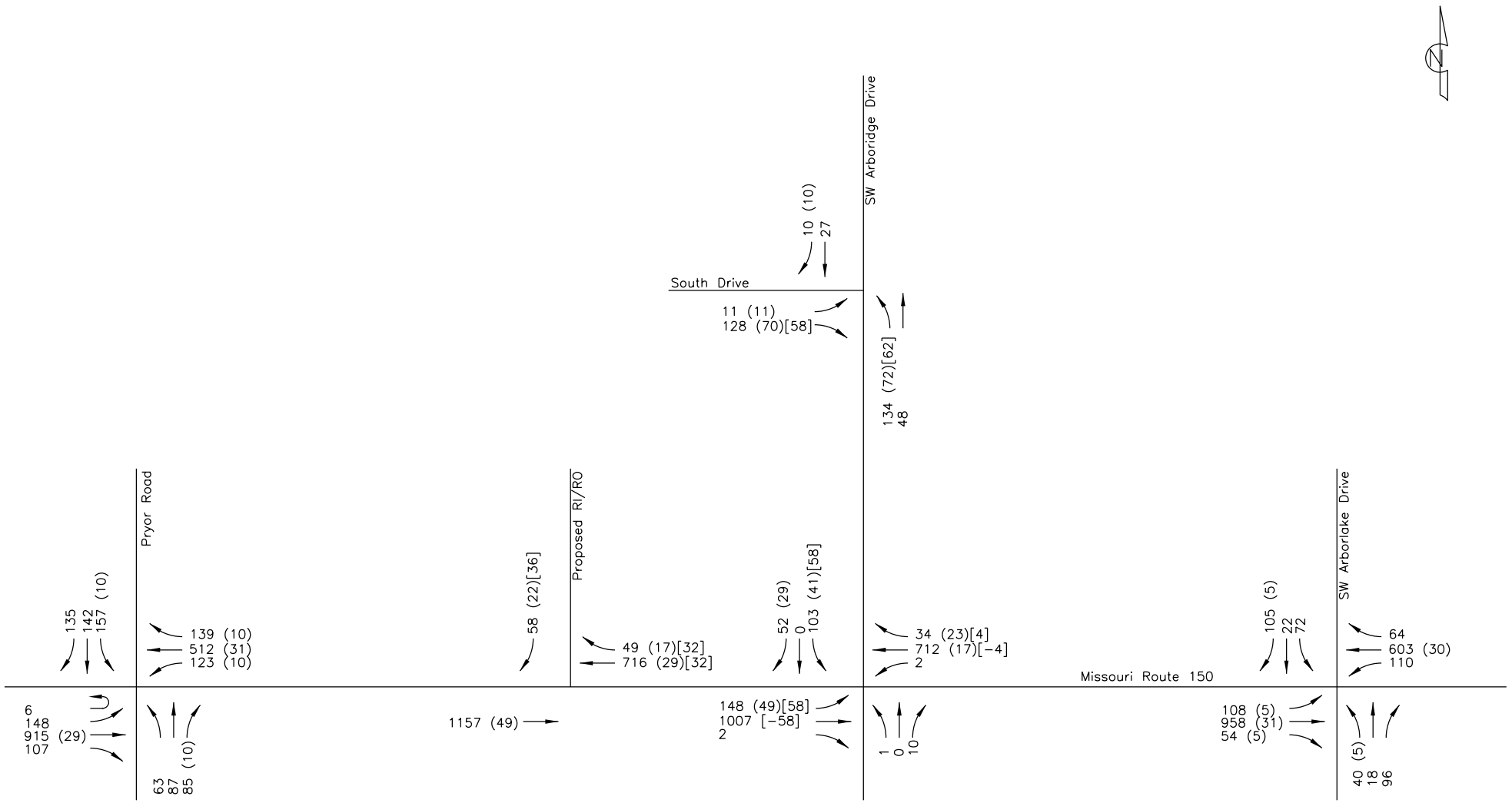
816.738.4400



LEGEND

Total Volume (Site Generated)[Pass-By]

Existing + Approved + Proposed Development AM Peak Hour Traffic Volumes	Arborwalk Lee's Summit, MO	No Scale Figure 11	priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



Existing + Approved + Proposed Development
PM Peak Hour
Traffic Volumes

Arborwalk
Lee's Summit, MO

No Scale

Figure 12

priority ENGINEERS
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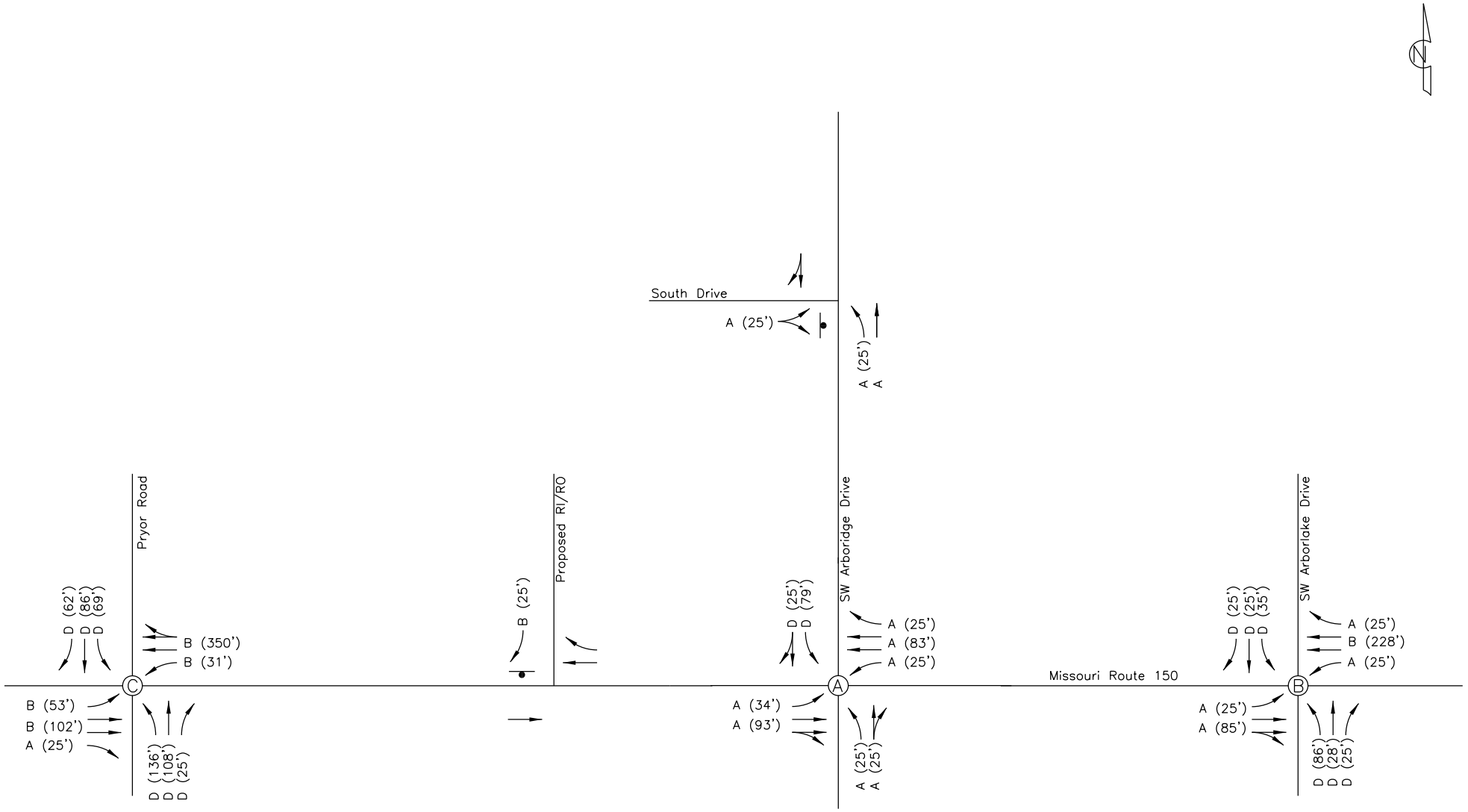
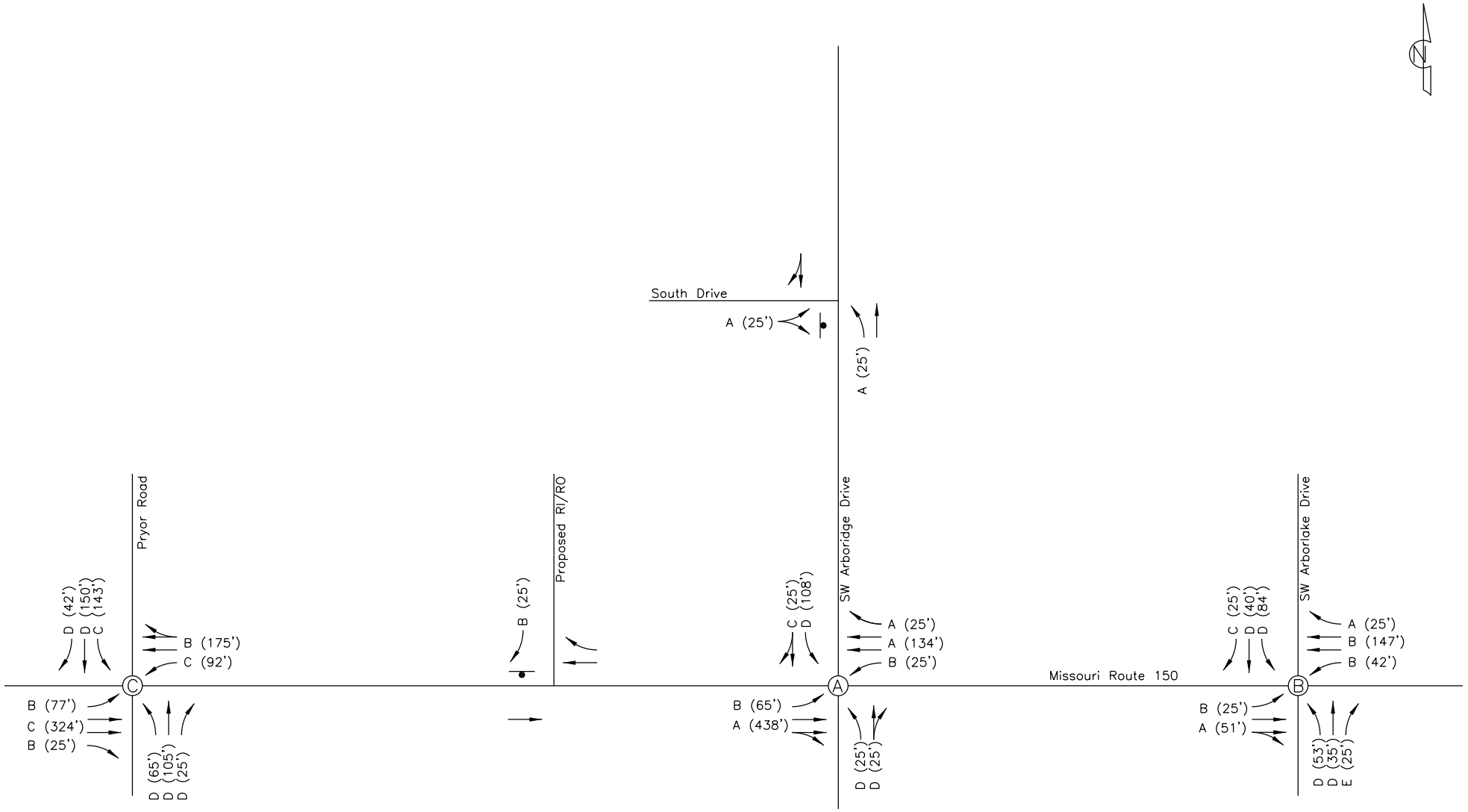
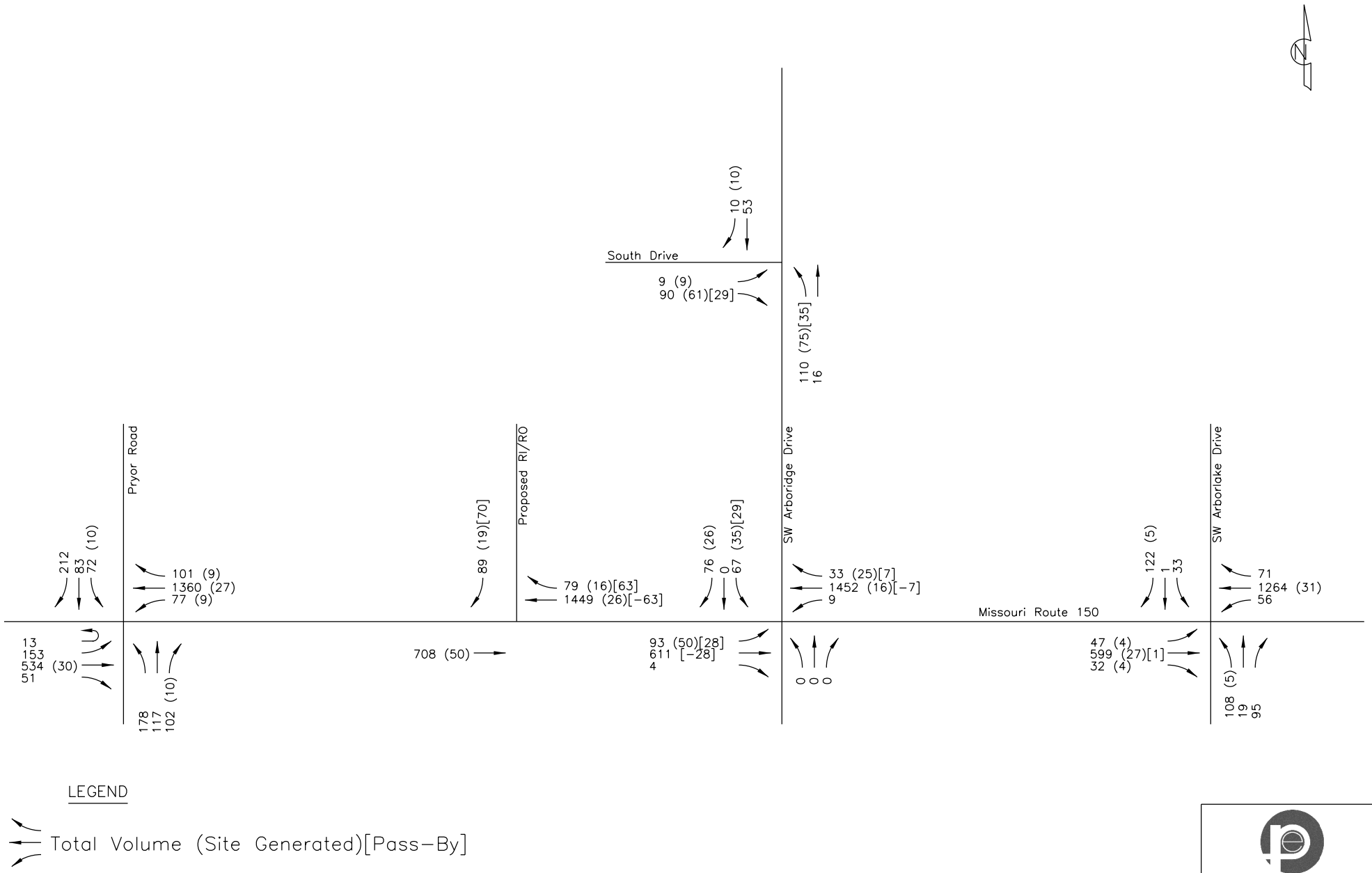
Garden City, MO 64747
816.738.4400



Existing + Approved + Proposed Development AM Peak Hour Lane Configuration & Levels of Service	Arborwalk Lee's Summit, MO	No Scale Figure 13	priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



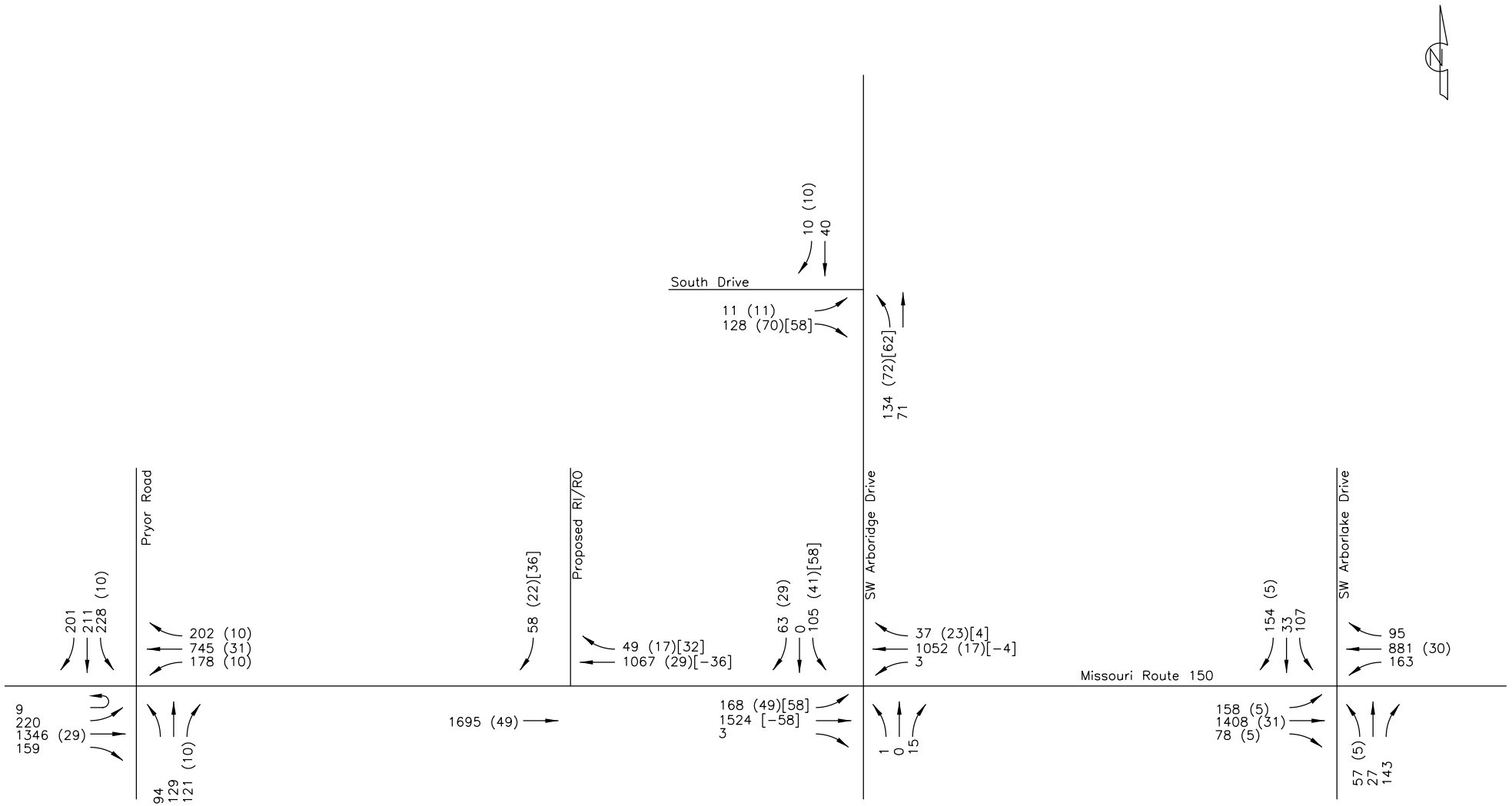
Existing + Approved + Proposed Development PM Peak Hour Lane Configuration & Levels of Service	Arborwalk Lee's Summit, MO	No Scale Figure 14	priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



LEGEND

Total Volume (Site Generated)[Pass-By]

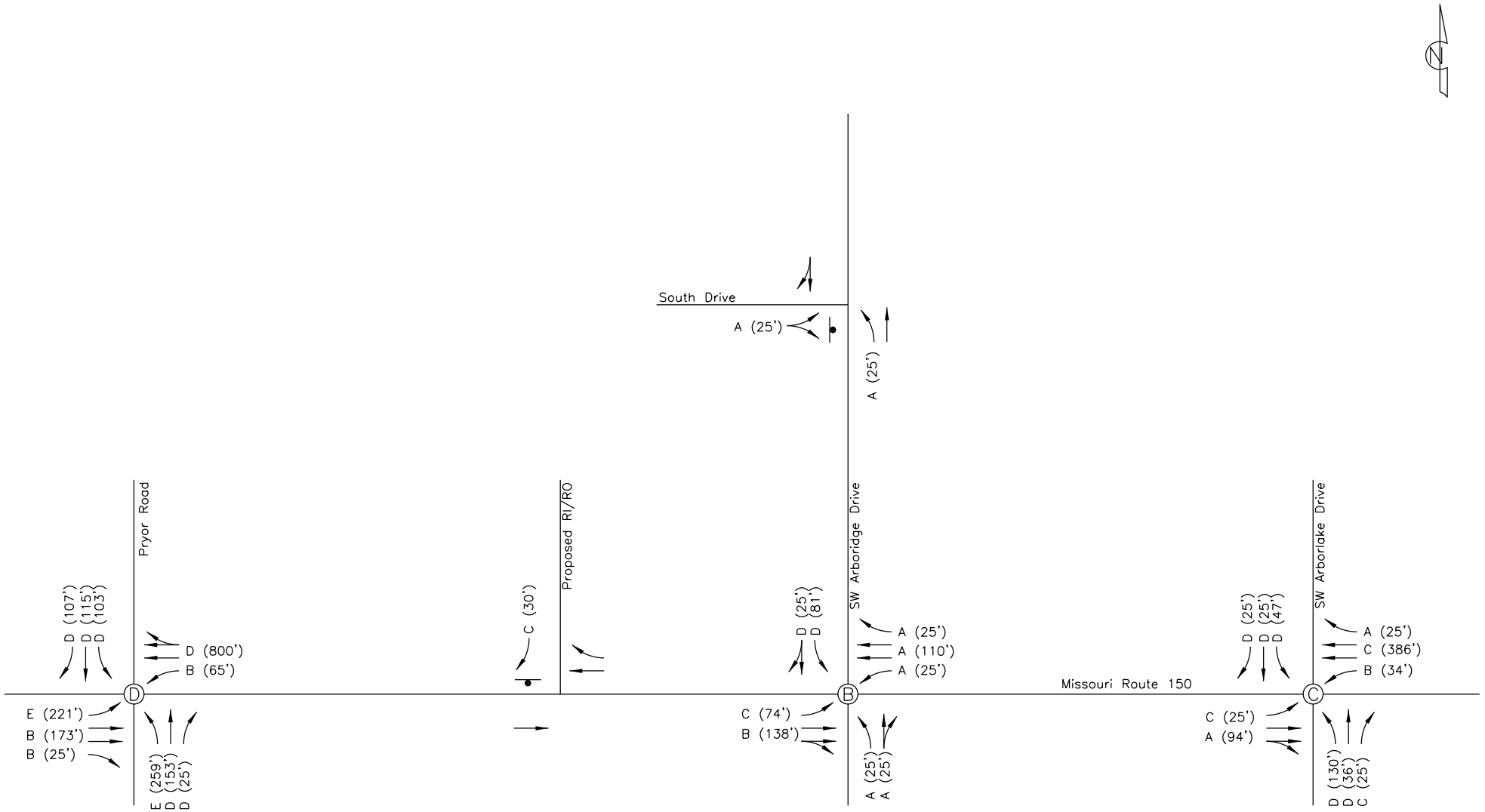
Future (2042) AM Peak Hour Traffic Volumes	Arborwalk Lee's Summit, MO	No Scale Figure 15	priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



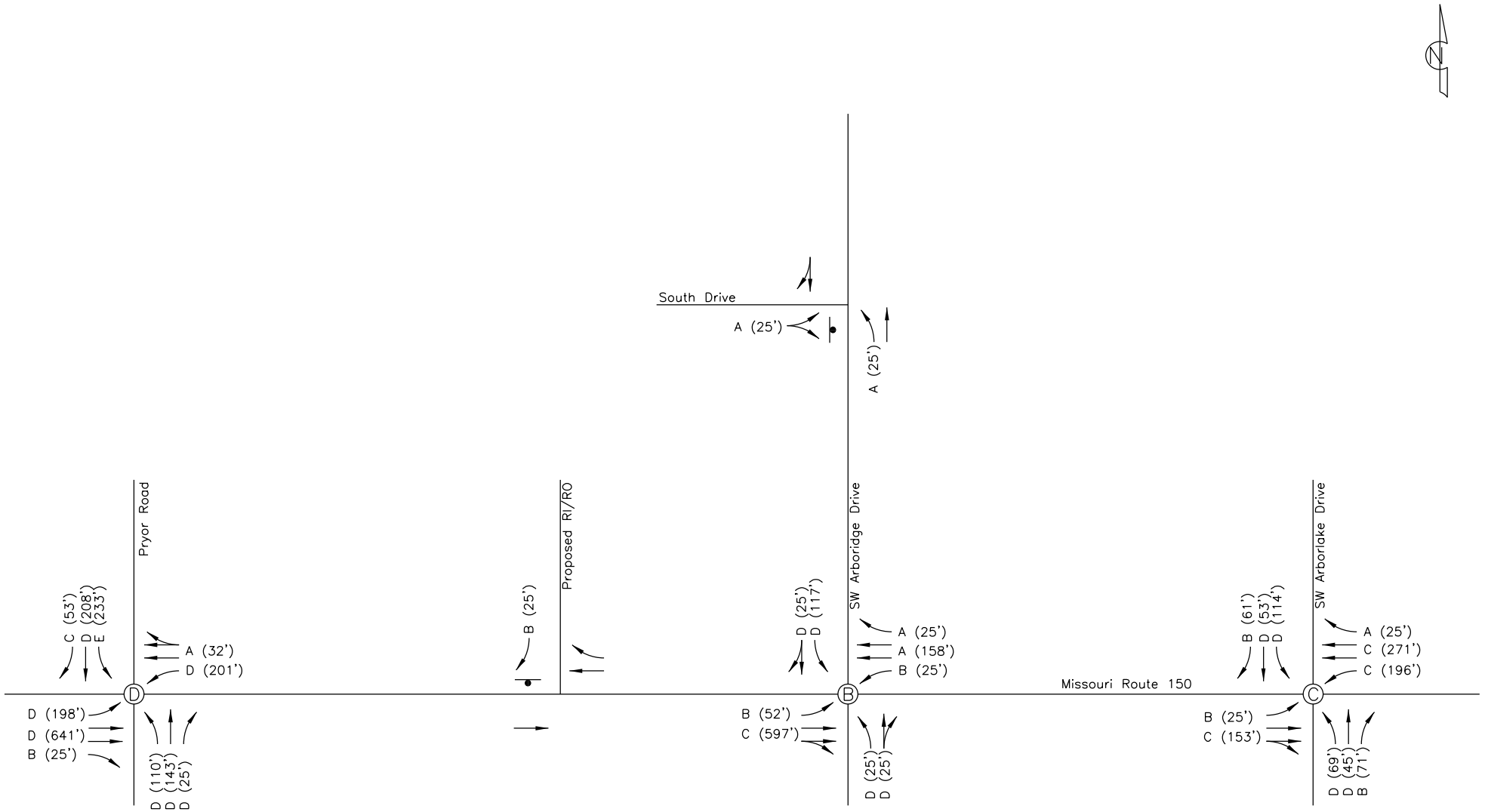
LEGEND

Total Volume (Site Generated)[Pass-By]

Future (2042) PM Peak Hour Traffic Volumes	Arborwalk Lee's Summit, MO	No Scale Figure 16	Priority Engineers PO Box 563 Garden City, MO 64747 816.738.4400



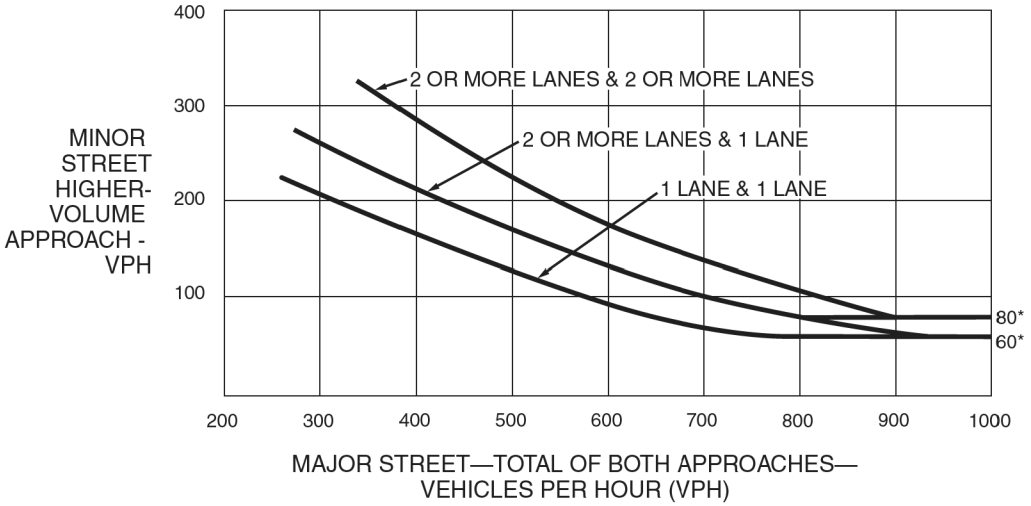
Future (2042) AM Peak Hour Lane Configuration & Levels of Service	Arborwalk Lee's Summit, MO	No Scale Figure 17	priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



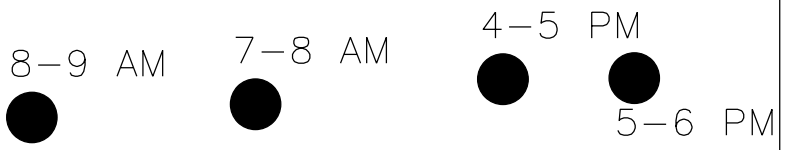
Future (2042) PM Peak Hour Lane Configuration & Levels of Service	Arborwalk Lee's Summit, MO	No Scale Figure 18	priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.



Signal Warrant Analysis	Arborwalk Lee's Summit, MO	No Scale Figure 19	priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400

APPENDIX II

M 150 and Pryor Road 8/9/2022

Time	PED	SB Right	SB Thru	SB Left	SB UTrn	Bike	PED	WB Right	WB Thru	WB Left	WB Utrn	Bike	PED	NB Right	NB Thru	NB Left	NB UTrn	Bike	PED	EB Right	EB Thru	EB Left	EB UTrn	Bike	15 min Total	Hourly total	Study hourly total
07:00	0	22	8	5	0	0	0	9	217	9	0	0	0	7	13	27	0	0	0	5	63	26	0	0	411		
07:15	0	36	5	10	0	0	0	12	230	10	0	0	0	7	17	22	0	0	0	4	63	19	0	0	435		
07:30	0	48	12	14	0	0	0	23	255	13	0	0	0	14	15	22	0	0	0	4	81	24	0	0	525		
07:45	0	28	20	12	0	0	0	14	188	7	0	0	0	14	17	17	0	0	0	11	93	31	1	0	453	1824	4705
08:00	0	31	14	3	0	0	0	11	186	5	0	0	1	12	23	23	0	0	0	13	89	23	0	0	433	1846	4758
08:15	0	21	8	14	0	0	0	17	141	10	0	0	0	13	17	20	0	0	0	6	79	16	1	0	363	1774	4623
08:30	0	28	11	14	0	2	0	15	134	17	0	0	0	13	17	13	0	0	0	9	77	16	0	0	364	1613	4208
08:45	0	27	11	20	0	0	0	19	121	7	1	0	0	13	14	14	0	0	0	7	76	12	0	0	342	1502	3921
Total	0	143	51	39	0	0	0	60	859	35	0	0	1	47	72	84	0	0	0	32	326	97	1	0	1846		
# Trucks		4	2	1	0			2	51	3	0			0	2	0	0			1	30	2	0				
Truck %		3%	4%	3%	0%			3%	6%	9%	0%			0%	3%	0%	0%			3%	9%	2%	0%				

M 150 and Arborwalk 8/9/2022

Time	PED	SB Right	SB Thru	SB Left	SB UTrn	Bike	PED	WB Right	WB Thru	WB Left	WB Utrn	Bike	PED	NB Right	NB Thru	NB Left	NB UTrn	Bike	PED	EB Right	EB Thru	EB Left	EB UTrn	Bike			
07:00	0	19	0	7	0	0	0	9	181	6	0	1	0	19	4	15	0	0	0	1	60	4	1	0	326		
07:15	0	21	0	2	0	0	1	6	216	5	0	0	0	11	4	15	0	0	0	5	73	2	1	0	361		
07:30	0	22	0	4	0	0	0	14	239	13	0	0	0	13	2	22	0	0	0	5	102	3	1	0	440		
07:45	0	18	0	9	0	0	1	12	186	9	0	0	0	20	4	14	0	0	0	4	96	11	1	0	384	1511	
08:00	0	14	1	2	0	0	0	9	176	11	0	0	0	20	2	18	0	0	0	5	82	4	0	0	344	1529	
08:15	0	12	3	5	0	0	0	12	165	7	0	0	0	19	7	4	0	0	0	9	93	6	0	0	342	1510	
08:30	0	10	4	6	0	0	0	10	145	8	0	0	0	22	3	6	0	0	0	6	91	5	1	0	317	1387	
08:45	0	11	0	5	0	0	1	6	121	11	0	0	0	22	2	6	0	0	1	3	102	2	0	0	291	1294	
Total	0	75	1	17	0	0	0	2	41	817	38	0	0	0	0	64	12	69	0	0	0	0	19	353	20	3	0
# Trucks		1	1	0	0				3	49	3	0				0	0	0	0				0	34	2	0	
Truck %		1%	100%	0%	0%				7%	6%	8%	0%				0%	0%	0%	0%				0%	10%	10%	0%	

M 150 and Arborridge 8/9/2022

Time	PED	SB Right	SB Thru	SB Left	SB UTrn	Bike	PED	WB Right	WB Thru	WB Left	WB Utrn	Bike	PED	NB Right	NB Thru	NB Left	NB UTrn	Bike	PED	EB Right	EB Thru	EB Left	EB UTrn	Bike			
07:00	0	6	0	0	0	0	0	0	217	0	0	0	0	0	0	0	0	0	0	0	69	1	0	0	293		
07:15	0	10	0	0	0	0	0	0	253	0	0	0	0	0	0	0	0	0	0	0	74	0	1	0	338		
07:30	0	8	0	2	0	0	0	0	285	0	0	0	0	0	0	0	0	0	0	0	107	1	0	0	403		
07:45	0	5	0	0	0	0	0	0	220	1	0	0	0	0	0	0	0	0	0	1	108	1	0	0	336	1370	
08:00	0	6	0	0	0	0	0	1	197	5	0	0	0	0	0	0	0	0	0	2	93	2	0	0	306	1383	
08:15	0	3	0	0	0	0	0	3	176	4	0	0	0	1	0	2	0	1	0	2	101	2	0	0	294	1339	
08:30	0	3	0	0	0	0	0	1	164	2	0	0	0	0	0	0	0	0	0	0	100	2	0	1	272	1208	
08:45	0	4	0	1	0	0	0	0	132	3	0	0	0	0	0	1	0	0	0	0	110	2	0	0	253	1125	
Total	0	29	0	2	0	0	0	1	955	6	0	0	0	0	0	0	0	0	0	3	382	4	1	0	1383		
# Trucks		0	0	0				0	51	1	0			0	0	0	0			0	33	1	0				
Truck %		0%	0%	0%				0%	5%	17%	0%			0%	0%	0%	0%			0%	9%	25%	0%				

M 150 and Pryor Road 8/9/2022

Time	PED	SB Right	SB Thru	SB Left	SB UTm	Bike		PED	WB Right	WB Thru	WB Left	WB Utm	Bike		PED	NB Right	NB Thru	NB Left	NB UTm	Bike		PED	EB Right	EB Thru	EB Left	EB UTm	Bike	15 min Total	Hourly total	Study hourly total
16:00	0	36	28	24	0	0		0	32	100	9	0	0		0	18	16	2	0	0		0	14	156	24	0	0	459		
16:15	0	21	27	22	0	0		0	25	101	21	0	0		1	9	16	8	0	0		0	18	182	29	1	0	480		
16:30	0	32	31	38	0	0		0	13	123	17	0	0		0	14	28	8	0	0		0	21	182	42	0	0	549		
16:45	0	49	34	28	0	0		0	29	96	18	0	0		0	10	15	7	0	0		0	20	223	36	0	0	565	2053	5479
17:00	0	29	23	36	0	0		0	39	109	13	0	0		0	13	24	12	0	0		0	32	203	34	1	0	568	2162	5765
17:15	0	25	39	35	0	0		0	37	113	25	0	0		0	21	15	12	0	0		0	28	228	32	0	0	610	2292	6044
17:30	0	31	27	35	0	0		0	27	103	12	0	0		0	18	16	11	0	0		0	27	180	33	0	0	520	2263	6040
17:45	0	29	34	51	0	0		0	33	88	15	0	0		0	13	18	7	0	0		0	28	176	30	0	0	522	2220	5946
Total	0	135	127	137	0	0	0	0	118	441	73	0	0	0	0	58	82	39	0	0	0	0	101	836	144	1	0	2292		
# Trucks		6	3	2	0				1	18	1	0				0	0	0	0				1	18	3	0				
Truck %		4%	2%	1%	0%				1%	4%	1%	0%				0%	0%	0%	0%				1%	2%	2%	0%				

M 150 and Arborwalk 8/9/2022

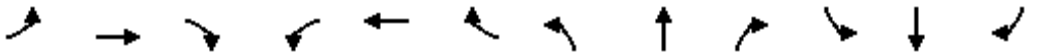
Time	PED	SB Right	SB Thru	SB Left	SB UTm	Bike		PED	WB Right	WB Thru	WB Left	WB Utm	Bike		PED	NB Right	NB Thru	NB Left	NB UTm	Bike		PED	EB Right	EB Thru	EB Left	EB UTm	Bike			
16:00	0	12	6	17	0	0		0	16	111	22	0	1		0	23	3	12	0	0		0	7	168	24	0	0	421		
16:15	0	7	3	16	0	0		0	11	155	20	0	0		0	17	5	2	0	0		0	14	204	12	0	0	466		
16:30	0	14	2	6	0	0		0	13	125	28	0	0		0	25	1	7	0	0		0	19	203	16	1	0	460		
16:45	0	19	6	18	1	0		0	17	125	32	1	0		1	16	4	6	0	0		0	4	237	19	0	0	505	1852	
17:00	0	13	4	15	0	0		0	13	141	22	0	0		0	24	5	10	0	0		0	12	224	21	0	0	504	1935	
17:15	0	26	6	11	0	0		0	15	133	28	0	0		0	31	5	11	0	0		0	14	236	22	0	0	538	2007	
17:30	1	10	5	14	0	0		0	15	135	31	0	0		0	22	3	4	0	0		0	18	215	18	1	0	491	2038	
17:45	0	18	6	15	0	0		0	21	119	30	0	0		0	18	4	10	0	0		0	8	217	14	0	0	480	2013	
Total	0	72	18	50	1	0	0	0	58	524	110	1	0	0	1	96	15	34	0	0	0	0	49	900	78	1	0	2007		
# Trucks		1	1	1	0				0	23	0	0				0	0	0	0				0	15	1	0				
Truck %		1%	6%	2%	0%				0%	4%	0%	0%				0%	0%	0%	0%				0%	2%	1%	0%				

M 150 and Arborridge 8/9/2022

Time	PED	SB Right	SB Thru	SB Left	SB UTm	Bike		PED	WB Right	WB Thru	WB Left	WB Utm	Bike		PED	NB Right	NB Thru	NB Left	NB UTm	Bike		PED	EB Right	EB Thru	EB Left	EB UTm	Bike			
16:00	0	4	0	0	0	0		0	2	136	0	0	0		0	2	0	1	0	0		0	0	199	4	0	0	348		
16:15	0	3	0	4	0	0		0	1	157	1	0	0		0	1	0	0	0	0		0	2	223	5	1	0	398		
16:30	0	0	0	0	0	0		0	2	154	0	0	0		0	4	0	0	0	0		0	0	244	7	0	0	411		
16:45	0	6	0	3	0	0		0	0	148	0	1	0		0	0	0	1	0	0		0	0	252	6	0	0	417	1574	
17:00	0	5	0	1	0	0		0	1	156	0	1	0		0	5	0	0	0	0		0	1	263	9	0	0	442	1668	
17:15	0	4	0	0	0	0		0	4	175	2	0	0		0	1	0	0	0	0		0	1	274	14	0	0	475	1745	
17:30	0	3	0	2	0	0		0	1	144	2	1	0		0	1	0	1	0	0		0	2	243	5	0	0	405	1739	
17:45	0	4	0	2	0	0		0	2	134	5	1	0		0	0	0	0	0	0		0	7	231	5	0	0	391	1713	
Total	0	15	0	4	0	0	0	0	7	633	2	2	0	0	0	10	0	1	0	0	0	0	2	1033	36	0	0	1745		
# Trucks		0	0	0					0	31	0	0				0	0	0	0				0	17	0	0				
Truck %		0%	0%	0%	0%				0%	5%	0%	0%				0%	0%	0%	0%				0%	2%	0%	0%	0%			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	105	341	35	38	1031	91	78	51	42	55	155
v/c Ratio	0.30	0.16	0.03	0.06	0.54	0.40	0.33	0.16	0.23	0.36	0.57
Control Delay	8.4	9.8	0.1	6.9	16.5	41.0	47.3	1.1	38.0	53.7	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	9.8	0.1	6.9	16.5	41.0	47.3	1.1	38.0	53.7	16.2
Queue Length 50th (ft)	22	55	0	8	226	53	51	0	24	37	0
Queue Length 95th (ft)	45	84	0	20	322	99	99	0	54	78	62
Internal Link Dist (ft)		1541			2007		1778			1399	
Turn Bay Length (ft)	225		100	200		50		50	45		50
Base Capacity (vph)	403	2108	1047	618	1912	234	414	457	180	353	428
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.16	0.03	0.06	0.54	0.39	0.19	0.11	0.23	0.16	0.36

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	314	32	35	889	60	84	72	47	39	51	143
Future Volume (vph)	97	314	32	35	889	60	84	72	47	39	51	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3312	1568	1656	3379		1770	1863	1583	1770	1827	1568
Flt Permitted	0.20	1.00	1.00	0.55	1.00		0.54	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	365	3312	1568	953	3379		1000	1863	1583	1316	1827	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	341	35	38	966	65	91	78	51	42	55	155
RTOR Reduction (vph)	0	0	14	0	3	0	0	0	45	0	0	141
Lane Group Flow (vph)	105	341	21	38	1028	0	91	78	6	42	55	14
Heavy Vehicles (%)	2%	9%	3%	9%	6%	3%	2%	2%	2%	2%	4%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2			8		8	4		4
Actuated Green, G (s)	74.1	66.4	66.4	64.3	61.5		19.5	13.3	13.3	12.7	9.9	9.9
Effective Green, g (s)	74.1	66.4	66.4	64.3	61.5		19.5	13.3	13.3	12.7	9.9	9.9
Actuated g/C Ratio	0.68	0.61	0.61	0.59	0.56		0.18	0.12	0.12	0.12	0.09	0.09
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	346	2012	952	578	1901		222	226	192	164	165	142
v/s Ratio Prot	c0.02	0.10		0.00	c0.30		c0.02	0.04		0.01	0.03	
v/s Ratio Perm	0.18		0.01	0.04			c0.05		0.00	0.02		0.01
v/c Ratio	0.30	0.17	0.02	0.07	0.54		0.41	0.35	0.03	0.26	0.33	0.10
Uniform Delay, d1	8.2	9.4	8.5	9.5	15.0		38.9	44.0	42.3	43.7	46.6	45.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2	0.0	0.0	1.1		1.2	0.9	0.1	0.8	1.2	0.3
Delay (s)	8.7	9.6	8.6	9.5	16.1		40.2	44.9	42.4	44.6	47.8	45.9
Level of Service	A	A	A	A	B		D	D	D	D	D	D
Approach Delay (s)		9.3			15.9			42.4			46.1	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	109.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	393	3	6	955	1	0	0	0	2	0	29
Future Vol, veh/h	4	393	3	6	955	1	0	0	0	2	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	175	-	-	250	-	160	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	427	3	7	1038	1	0	0	0	2	0	32

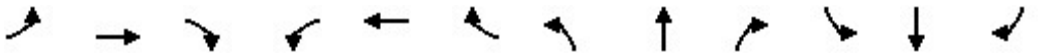
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1039	0	0	430	0	0	970	1490	215	1274	1490	519
Stage 1	-	-	-	-	-	-	437	437	-	1052	1052	-
Stage 2	-	-	-	-	-	-	533	1053	-	222	438	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	665	-	-	1126	-	-	208	123	790	124	123	502
Stage 1	-	-	-	-	-	-	568	578	-	242	302	-
Stage 2	-	-	-	-	-	-	498	301	-	760	577	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	665	-	-	1126	-	-	193	122	790	123	122	502
Mov Cap-2 Maneuver	-	-	-	-	-	-	193	122	-	123	122	-
Stage 1	-	-	-	-	-	-	565	575	-	241	300	-
Stage 2	-	-	-	-	-	-	464	299	-	755	574	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	0	14.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	665	-	-	1126	-	-	123	502
HCM Lane V/C Ratio	-	-	0.007	-	-	0.006	-	-	0.018	0.063
HCM Control Delay (s)	0	0	10.4	-	-	8.2	-	-	34.8	12.7
HCM Lane LOS	A	A	B	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	-	0.1	0.2

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	25	405	41	889	45	75	13	70	18	1	82
v/c Ratio	0.06	0.20	0.06	0.40	0.04	0.32	0.05	0.19	0.10	0.01	0.31
Control Delay	6.3	9.8	6.2	10.5	0.1	31.3	35.3	1.1	28.4	38.0	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	9.8	6.2	10.5	0.1	31.3	35.3	1.1	28.4	38.0	3.0
Queue Length 50th (ft)	4	58	7	107	0	34	6	0	8	1	0
Queue Length 95th (ft)	13	87	18	210	0	71	24	0	25	6	0
Internal Link Dist (ft)		1340		3250			205			235	
Turn Bay Length (ft)	200		200		200	30		100	200		200
Base Capacity (vph)	385	2061	635	2233	1045	242	492	539	188	227	503
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.20	0.06	0.40	0.04	0.31	0.03	0.13	0.10	0.00	0.16

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	353	19	38	818	41	69	12	64	17	1	75
Future Volume (veh/h)	23	353	19	38	818	41	69	12	64	17	1	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1870	1781	1811	1796	1870	1870	1870	1870	418	1870
Adj Flow Rate, veh/h	25	384	21	41	889	45	75	13	70	18	1	82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	2	8	6	7	2	2	2	2	100	2
Cap, veh/h	356	1750	95	601	1912	846	275	199	169	223	32	119
Arrive On Green	0.03	0.55	0.55	0.04	0.56	0.56	0.05	0.11	0.11	0.02	0.08	0.08
Sat Flow, veh/h	1668	3210	175	1697	3441	1522	1781	1870	1585	1781	418	1585
Grp Volume(v), veh/h	25	199	206	41	889	45	75	13	70	18	1	82
Grp Sat Flow(s),veh/h/ln	1668	1664	1720	1697	1721	1522	1781	1870	1585	1781	418	1585
Q Serve(g_s), s	0.5	5.1	5.1	0.9	12.8	1.1	3.2	0.5	3.4	0.8	0.2	4.2
Cycle Q Clear(g_c), s	0.5	5.1	5.1	0.9	12.8	1.1	3.2	0.5	3.4	0.8	0.2	4.2
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	907	938	601	1912	846	275	199	169	223	32	119
V/C Ratio(X)	0.07	0.22	0.22	0.07	0.46	0.05	0.27	0.07	0.41	0.08	0.03	0.69
Avail Cap(c_a), veh/h	413	907	938	641	1912	846	335	476	403	294	96	365
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	9.7	9.7	7.5	11.0	8.4	32.8	33.2	34.5	34.1	35.4	37.2
Incr Delay (d2), s/veh	0.1	0.6	0.5	0.0	0.8	0.1	0.5	0.1	1.6	0.2	0.4	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.7	1.7	0.3	4.2	0.4	1.4	0.2	1.4	0.3	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.7	10.2	10.2	7.6	11.8	8.5	33.4	33.3	36.1	34.2	35.8	44.0
LnGrp LOS	A	B	B	A	B	A	C	C	D	C	D	D
Approach Vol, veh/h		430			975			158			101	
Approach Delay, s/veh		10.1			11.5			34.6			42.2	
Approach LOS		B			B			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	51.9	10.3	12.2	9.0	51.0	7.7	14.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	45.0	7.0	19.0	5.0	45.0	5.0	21.0
Max Q Clear Time (g_c+I1), s	2.5	14.8	5.2	6.2	2.9	7.1	2.8	5.4
Green Ext Time (p_c), s	0.0	6.6	0.0	0.2	0.0	2.3	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	157	926	110	82	624	42	89	64	152	138	147
v/c Ratio	0.30	0.47	0.12	0.25	0.36	0.21	0.47	0.21	0.58	0.46	0.38
Control Delay	11.5	16.3	0.9	6.1	8.9	30.5	50.1	1.5	40.6	43.2	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	16.3	0.9	6.1	8.9	30.5	50.1	1.5	40.6	43.2	7.6
Queue Length 50th (ft)	37	197	0	6	45	21	55	0	79	83	0
Queue Length 95th (ft)	72	274	10	21	59	45	100	0	130	138	42
Internal Link Dist (ft)		1541			2007		1778			1399	
Turn Bay Length (ft)	225		100	200		50		50	45		50
Base Capacity (vph)	536	1976	956	328	1745	201	335	419	262	416	474
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.47	0.12	0.25	0.36	0.21	0.27	0.15	0.58	0.33	0.31

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	852	101	75	453	121	39	82	59	140	127	135
Future Volume (vph)	144	852	101	75	453	121	39	82	59	140	127	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3375		1770	1863	1583	1770	1863	1553
Flt Permitted	0.37	1.00	1.00	0.23	1.00		0.67	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	689	3539	1583	433	3375		1246	1863	1583	814	1863	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	157	926	110	82	492	132	42	89	64	152	138	147
RTOR Reduction (vph)	0	0	52	0	21	0	0	0	58	0	0	123
Lane Group Flow (vph)	157	926	58	82	603	0	42	89	6	152	138	24
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2			8		8	4		4
Actuated Green, G (s)	61.7	52.3	52.3	52.3	47.6		13.0	10.0	10.0	25.0	16.0	16.0
Effective Green, g (s)	61.7	52.3	52.3	52.3	47.6		13.0	10.0	10.0	25.0	16.0	16.0
Actuated g/C Ratio	0.62	0.52	0.52	0.52	0.48		0.13	0.10	0.10	0.25	0.16	0.16
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	526	1850	827	289	1606		177	186	158	289	298	248
v/s Ratio Prot	c0.03	c0.26		0.01	0.18		0.01	0.05		c0.05	0.07	
v/s Ratio Perm	0.16		0.04	0.13			0.02		0.00	c0.08		0.02
v/c Ratio	0.30	0.50	0.07	0.28	0.38		0.24	0.48	0.04	0.53	0.46	0.09
Uniform Delay, d1	12.1	15.4	11.8	20.6	16.7		38.8	42.5	40.7	31.0	38.1	35.8
Progression Factor	1.00	1.00	1.00	0.40	0.55		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.0	0.2	0.5	0.7		0.7	1.9	0.1	1.7	1.1	0.2
Delay (s)	12.5	16.4	12.0	8.9	9.9		39.5	44.5	40.8	32.7	39.2	36.0
Level of Service	B	B	B	A	A		D	D	D	C	D	D
Approach Delay (s)		15.5			9.8			42.2			35.9	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	1013	2	2	633	7	1	0	10	4	0	15
Future Vol, veh/h	36	1013	2	2	633	7	1	0	10	4	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	175	-	-	250	-	160	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	5	2	2	2	2	2	2	2
Mvmt Flow	39	1101	2	2	688	8	1	0	11	4	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	696	0	0	1103	0	0	1528	1880	552	1321	1873	344
Stage 1	-	-	-	-	-	-	1180	1180	-	692	692	-
Stage 2	-	-	-	-	-	-	348	700	-	629	1181	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	896	-	-	629	-	-	80	70	477	115	71	652
Stage 1	-	-	-	-	-	-	202	262	-	400	443	-
Stage 2	-	-	-	-	-	-	641	440	-	437	262	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	896	-	-	629	-	-	75	67	477	108	68	652
Mov Cap-2 Maneuver	-	-	-	-	-	-	75	67	-	108	68	-
Stage 1	-	-	-	-	-	-	193	250	-	382	442	-
Stage 2	-	-	-	-	-	-	623	439	-	408	250	-

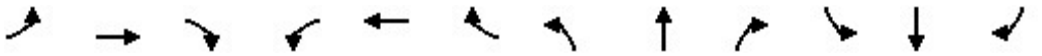
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	16.4	16.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	75	477	896	-	-	629	-	-	108	652
HCM Lane V/C Ratio	0.014	0.023	0.044	-	-	0.003	-	-	0.04	0.025
HCM Control Delay (s)	53.7	12.7	9.2	-	-	10.7	-	-	39.7	10.7
HCM Lane LOS	F	B	A	-	-	B	-	-	E	B
HCM 95th %tile Q(veh)	0	0.1	0.1	-	-	0	-	-	0.1	0.1

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	85	1031	120	580	63	38	16	104	54	20	79
v/c Ratio	0.16	0.50	0.30	0.26	0.06	0.23	0.13	0.40	0.31	0.13	0.27
Control Delay	3.7	4.8	9.4	9.5	0.1	37.8	45.6	6.1	39.8	44.8	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.7	4.8	9.4	9.5	0.1	37.8	45.6	6.1	39.8	44.8	2.3
Queue Length 50th (ft)	8	60	21	87	0	21	10	0	30	12	0
Queue Length 95th (ft)	m16	71	41	124	0	49	31	13	63	36	0
Internal Link Dist (ft)		1340		3250			205			235	
Turn Bay Length (ft)	200		200		200	30		100	200		200
Base Capacity (vph)	539	2047	409	2212	1068	167	335	419	173	322	419
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.50	0.29	0.26	0.06	0.23	0.05	0.25	0.31	0.06	0.19

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	900	49	110	534	58	35	15	96	50	18	73
Future Volume (veh/h)	78	900	49	110	534	58	35	15	96	50	18	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1841	1870	1870	1870	1870	1870	1811	1870
Adj Flow Rate, veh/h	85	978	53	120	580	63	38	16	104	54	20	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	4	2	2	2	2	2	6	2
Cap, veh/h	646	1508	82	571	1679	761	212	126	107	217	133	117
Arrive On Green	0.17	0.44	0.44	0.21	0.48	0.48	0.03	0.07	0.07	0.04	0.07	0.07
Sat Flow, veh/h	1781	3428	186	1781	3497	1585	1781	1870	1585	1781	1811	1585
Grp Volume(v), veh/h	85	507	524	120	580	63	38	16	104	54	20	79
Grp Sat Flow(s),veh/h/ln	1781	1777	1837	1781	1749	1585	1781	1870	1585	1781	1811	1585
Q Serve(g_s), s	0.0	22.4	22.4	0.0	10.3	1.5	2.0	0.8	4.5	2.8	1.0	3.1
Cycle Q Clear(g_c), s	0.0	22.4	22.4	0.0	10.3	1.5	2.0	0.8	4.5	2.8	1.0	3.1
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	646	782	808	571	1679	761	212	126	107	217	133	117
V/C Ratio(X)	0.13	0.65	0.65	0.21	0.35	0.08	0.18	0.13	0.97	0.25	0.15	0.68
Avail Cap(c_a), veh/h	646	782	808	571	1679	761	243	337	285	236	326	285
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.4	21.9	21.9	20.8	16.2	7.0	41.4	43.9	21.8	41.2	43.4	18.5
Incr Delay (d2), s/veh	0.1	4.1	4.0	0.2	0.6	0.2	0.4	0.4	34.7	0.6	0.5	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	9.4	9.7	1.9	3.9	0.8	0.9	0.4	3.5	1.3	0.5	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.5	26.1	25.9	21.0	16.8	7.2	41.8	44.3	56.5	41.8	43.9	25.2
LnGrp LOS	B	C	C	C	B	A	D	D	E	D	D	C
Approach Vol, veh/h		1116			763			158			153	
Approach Delay, s/veh		25.1			16.6			51.7			33.5	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.4	54.0	9.3	13.4	27.4	50.0	9.9	12.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	48.0	5.0	18.0	9.0	44.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	12.3	4.0	5.1	2.0	24.4	4.8	6.5
Green Ext Time (p_c), s	0.0	4.1	0.0	0.2	0.1	6.1	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	24.6
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	122	368	37	50	1042	130	86	67	46	61	155
v/c Ratio	0.37	0.19	0.04	0.09	0.57	0.51	0.33	0.17	0.24	0.40	0.51
Control Delay	10.0	11.5	0.1	7.5	18.7	43.1	47.4	1.0	37.4	55.2	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	11.5	0.1	7.5	18.7	43.1	47.4	1.0	37.4	55.2	9.3
Queue Length 50th (ft)	27	62	0	11	240	77	56	0	26	41	0
Queue Length 95th (ft)	53	93	0	26	341	132	106	0	57	85	36
Internal Link Dist (ft)		1541			2007		1778			1399	
Turn Bay Length (ft)	225		100	200		50		50	45		50
Base Capacity (vph)	389	1946	977	574	1814	258	416	501	191	340	447
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.19	0.04	0.09	0.57	0.50	0.21	0.13	0.24	0.18	0.35

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	103	339	34	46	897	62	120	79	62	42	56
Future Volume (vph)	9	103	339	34	46	897	62	120	79	62	42	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1770	3312	1568	1656	3379		1770	1863	1583	1770	1827
Flt Permitted		0.18	1.00	1.00	0.53	1.00		0.48	1.00	1.00	0.70	1.00
Satd. Flow (perm)		344	3312	1568	928	3379		902	1863	1583	1306	1827
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	112	368	37	50	975	67	130	86	67	46	61
RTOR Reduction (vph)	0	0	0	16	0	4	0	0	0	58	0	0
Lane Group Flow (vph)	0	122	368	21	50	1038	0	130	86	9	46	61
Heavy Vehicles (%)	2%	2%	9%	3%	9%	6%	3%	2%	2%	2%	2%	4%
Turn Type	custom	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA
Protected Phases		1	6		5	2		3	8		7	4
Permitted Phases	1	6		6	2			8		8	4	
Actuated Green, G (s)		71.5	63.3	63.3	62.9	59.0		23.9	15.1	15.1	14.1	10.2
Effective Green, g (s)		71.5	63.3	63.3	62.9	59.0		23.9	15.1	15.1	14.1	10.2
Actuated g/C Ratio		0.65	0.57	0.57	0.57	0.54		0.22	0.14	0.14	0.13	0.09
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		329	1902	900	555	1809		264	255	216	183	169
v/s Ratio Prot		c0.03	0.11		0.00	c0.31		c0.04	0.05		0.01	0.03
v/s Ratio Perm		0.21		0.01	0.05			c0.07		0.01	0.02	
v/c Ratio		0.37	0.19	0.02	0.09	0.57		0.49	0.34	0.04	0.25	0.36
Uniform Delay, d1		9.9	11.2	10.1	10.5	17.2		36.6	43.0	41.3	43.0	46.9
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.7	0.2	0.0	0.1	1.3		1.4	0.8	0.1	0.7	1.3
Delay (s)		10.6	11.5	10.2	10.5	18.5		38.0	43.8	41.4	43.7	48.3
Level of Service		B	B	B	B	B		D	D	D	D	D
Approach Delay (s)			11.2			18.1			40.6			46.2
Approach LOS			B			B			D			D

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	143
Future Volume (vph)	143
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1568
Flt Permitted	1.00
Satd. Flow (perm)	1568
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	155
RTOR Reduction (vph)	141
Lane Group Flow (vph)	14
Heavy Vehicles (%)	3%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	10.2
Effective Green, g (s)	10.2
Actuated g/C Ratio	0.09
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	145
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.10
Uniform Delay, d1	45.8
Progression Factor	1.00
Incremental Delay, d2	0.3
Delay (s)	46.1
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	430	3	6	971	1	0	0	0	2	0	34
Future Vol, veh/h	10	430	3	6	971	1	0	0	0	2	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	175	-	-	250	-	160	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	467	3	7	1055	1	0	0	0	2	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1056	0	0	470	0	0	1033	1561	235	1325	1561	528
Stage 1	-	-	-	-	-	-	491	491	-	1069	1069	-
Stage 2	-	-	-	-	-	-	542	1070	-	256	492	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	655	-	-	1088	-	-	187	111	767	114	111	495
Stage 1	-	-	-	-	-	-	528	546	-	236	296	-
Stage 2	-	-	-	-	-	-	492	296	-	726	546	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	655	-	-	1088	-	-	170	108	767	112	108	495
Mov Cap-2 Maneuver	-	-	-	-	-	-	170	108	-	112	108	-
Stage 1	-	-	-	-	-	-	519	537	-	232	294	-
Stage 2	-	-	-	-	-	-	452	294	-	714	537	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	0	14.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	655	-	-	1088	-	-	112	495
HCM Lane V/C Ratio	-	-	0.017	-	-	0.006	-	-	0.019	0.075
HCM Control Delay (s)	0	0	10.6	-	-	8.3	-	-	37.8	12.9
HCM Lane LOS	A	A	B	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	-	-	0.1	-	-	0	-	-	0.1	0.2

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	32	438	41	902	52	75	14	70	24	1	86
v/c Ratio	0.09	0.21	0.07	0.42	0.05	0.32	0.05	0.19	0.13	0.01	0.32
Control Delay	6.4	9.9	6.2	11.9	0.1	31.3	35.4	1.1	28.9	38.0	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	9.9	6.2	11.9	0.1	31.3	35.4	1.1	28.9	38.0	3.2
Queue Length 50th (ft)	6	64	7	159	0	34	6	0	11	1	0
Queue Length 95th (ft)	15	94	18	214	0	71	26	0	31	6	1
Internal Link Dist (ft)		1340		3250			205			235	
Turn Bay Length (ft)	200		200		200	30		100	200		200
Base Capacity (vph)	370	2063	616	2146	1011	242	492	539	187	227	503
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.21	0.07	0.42	0.05	0.31	0.03	0.13	0.13	0.00	0.17

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	384	19	38	830	48	69	13	64	22	1	79
Future Volume (veh/h)	29	384	19	38	830	48	69	13	64	22	1	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1870	1781	1811	1796	1870	1870	1870	1870	418	1870
Adj Flow Rate, veh/h	32	417	21	41	902	52	75	14	70	24	1	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	2	8	6	7	2	2	2	2	100	2
Cap, veh/h	354	1753	88	580	1889	836	278	194	165	235	33	124
Arrive On Green	0.03	0.54	0.54	0.04	0.55	0.55	0.05	0.10	0.10	0.03	0.08	0.08
Sat Flow, veh/h	1668	3225	162	1697	3441	1522	1781	1870	1585	1781	418	1585
Grp Volume(v), veh/h	32	215	223	41	902	52	75	14	70	24	1	86
Grp Sat Flow(s),veh/h/ln	1668	1664	1723	1697	1721	1522	1781	1870	1585	1781	418	1585
Q Serve(g_s), s	0.7	5.6	5.6	0.9	13.3	1.3	3.2	0.6	3.4	1.0	0.2	4.4
Cycle Q Clear(g_c), s	0.7	5.6	5.6	0.9	13.3	1.3	3.2	0.6	3.4	1.0	0.2	4.4
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	354	905	936	580	1889	836	278	194	165	235	33	124
V/C Ratio(X)	0.09	0.24	0.24	0.07	0.48	0.06	0.27	0.07	0.42	0.10	0.03	0.69
Avail Cap(c_a), veh/h	402	905	936	620	1889	836	337	474	402	297	96	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.7	9.9	9.9	7.7	11.4	8.7	32.7	33.5	34.8	33.7	35.3	37.2
Incr Delay (d2), s/veh	0.1	0.6	0.6	0.1	0.9	0.1	0.5	0.2	1.7	0.2	0.4	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.9	1.9	0.3	4.4	0.4	1.4	0.3	1.4	0.4	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.8	10.5	10.5	7.7	12.3	8.9	33.3	33.6	36.5	33.9	35.6	44.0
LnGrp LOS	A	B	B	A	B	A	C	C	D	C	D	D
Approach Vol, veh/h		470			995			159			111	
Approach Delay, s/veh		10.4			11.9			34.7			41.7	
Approach LOS		B			B			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	51.4	10.3	12.5	9.1	51.0	8.1	14.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	45.0	7.0	19.0	5.0	45.0	5.0	21.0
Max Q Clear Time (g_c+I1), s	2.7	15.3	5.2	6.4	2.9	7.6	3.0	5.4
Green Ext Time (p_c), s	0.0	6.7	0.0	0.2	0.0	2.5	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	168	963	116	123	663	68	95	82	160	154	147
v/c Ratio	0.39	0.56	0.14	0.40	0.40	0.28	0.49	0.26	0.51	0.50	0.37
Control Delay	14.7	20.6	1.3	11.9	9.4	30.7	50.1	2.1	35.1	44.5	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	20.6	1.3	11.9	9.4	30.7	50.1	2.1	35.1	44.5	7.4
Queue Length 50th (ft)	44	224	0	9	47	32	58	0	80	93	0
Queue Length 95th (ft)	77	311	13	48	65	65	105	0	135	150	42
Internal Link Dist (ft)		1541			2007		1778			1399	
Turn Bay Length (ft)	225		100	200		50		50	45		50
Base Capacity (vph)	469	1716	852	344	1656	244	335	419	316	409	469
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.56	0.14	0.36	0.40	0.28	0.28	0.20	0.51	0.38	0.31

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	148	886	107	113	481	129	63	87	75	147	142
Future Volume (vph)	6	148	886	107	113	481	129	63	87	75	147	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1770	3539	1583	1770	3375		1770	1863	1583	1770	1863
Flt Permitted		0.34	1.00	1.00	0.21	1.00		0.66	1.00	1.00	0.49	1.00
Satd. Flow (perm)		640	3539	1583	382	3375		1228	1863	1583	911	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	161	963	116	123	523	140	68	95	82	160	154
RTOR Reduction (vph)	0	0	0	61	0	21	0	0	0	72	0	0
Lane Group Flow (vph)	0	168	963	55	123	642	0	68	95	10	160	154
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%
Turn Type	custom	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA
Protected Phases		1	6		5	2		3	8		7	4
Permitted Phases	1	6		6	2			8		8	4	
Actuated Green, G (s)		54.1	47.3	47.3	54.1	47.3		17.0	11.6	11.6	26.8	16.5
Effective Green, g (s)		54.1	47.3	47.3	54.1	47.3		17.0	11.6	11.6	26.8	16.5
Actuated g/C Ratio		0.54	0.47	0.47	0.54	0.47		0.17	0.12	0.12	0.27	0.16
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		423	1673	748	301	1596		238	216	183	332	307
v/s Ratio Prot		0.03	c0.27		c0.03	0.19		0.02	0.05		c0.05	c0.08
v/s Ratio Perm		0.19		0.03	0.19			0.03		0.01	0.08	
v/c Ratio		0.40	0.58	0.07	0.41	0.40		0.29	0.44	0.05	0.48	0.50
Uniform Delay, d1		17.8	19.1	14.4	23.6	17.1		35.8	41.2	39.3	29.6	38.0
Progression Factor		1.00	1.00	1.00	0.56	0.54		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.6	1.4	0.2	0.9	0.7		0.7	1.4	0.1	1.1	1.3
Delay (s)		18.5	20.5	14.6	14.0	9.9		36.5	42.6	39.4	30.7	39.3
Level of Service		B	C	B	B	A		D	D	D	C	D
Approach Delay (s)			19.7			10.6			39.8			35.1
Approach LOS			B			B			D			D

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	135
Future Volume (vph)	135
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1553
Flt Permitted	1.00
Satd. Flow (perm)	1553
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	147
RTOR Reduction (vph)	123
Lane Group Flow (vph)	24
Heavy Vehicles (%)	4%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	16.5
Effective Green, g (s)	16.5
Actuated g/C Ratio	0.16
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	256
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.09
Uniform Delay, d1	35.4
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	35.6
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	1065	2	2	699	7	1	0	10	4	0	23
Future Vol, veh/h	41	1065	2	2	699	7	1	0	10	4	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	175	-	-	250	-	160	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	5	2	2	2	2	2	2	2
Mvmt Flow	45	1158	2	2	760	8	1	0	11	4	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	768	0	0	1160	0	0	1633	2021	580	1433	2014	380
Stage 1	-	-	-	-	-	-	1249	1249	-	764	764	-
Stage 2	-	-	-	-	-	-	384	772	-	669	1250	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	842	-	-	598	-	-	67	57	458	95	58	618
Stage 1	-	-	-	-	-	-	183	243	-	362	411	-
Stage 2	-	-	-	-	-	-	611	407	-	413	243	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	842	-	-	598	-	-	62	54	458	89	55	618
Mov Cap-2 Maneuver	-	-	-	-	-	-	62	54	-	89	55	-
Stage 1	-	-	-	-	-	-	173	230	-	343	410	-
Stage 2	-	-	-	-	-	-	584	406	-	382	230	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	17.7	16.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	62	458	842	-	-	598	-	-	89	618
HCM Lane V/C Ratio	0.018	0.024	0.053	-	-	0.004	-	-	0.049	0.04
HCM Control Delay (s)	64.1	13.1	9.5	-	-	11	-	-	47.5	11.1
HCM Lane LOS	F	B	A	-	-	B	-	-	E	B
HCM 95th %tile Q(veh)	0.1	0.1	0.2	-	-	0	-	-	0.2	0.1

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	112	1061	120	623	70	38	20	104	78	24	109
v/c Ratio	0.21	0.53	0.31	0.30	0.07	0.22	0.16	0.40	0.44	0.15	0.37
Control Delay	4.2	4.8	10.1	10.7	0.1	37.3	45.9	5.9	44.2	44.7	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.2	4.8	10.1	10.7	0.1	37.3	45.9	5.9	44.2	44.7	5.5
Queue Length 50th (ft)	11	63	21	99	0	21	12	0	43	15	0
Queue Length 95th (ft)	20	75	42	139	0	48	35	13	84	40	16
Internal Link Dist (ft)		1340		3250			205			235	
Turn Bay Length (ft)	200		200		200	30		100	200		200
Base Capacity (vph)	522	2019	387	2095	1020	170	335	419	177	322	419
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.53	0.31	0.30	0.07	0.22	0.06	0.25	0.44	0.07	0.26

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	927	49	110	573	64	35	18	96	72	22	100
Future Volume (veh/h)	103	927	49	110	573	64	35	18	96	72	22	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1841	1870	1870	1870	1870	1870	1811	1870
Adj Flow Rate, veh/h	112	1008	53	120	623	70	38	20	104	78	24	109
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	4	2	2	2	2	2	6	2
Cap, veh/h	623	1511	79	543	1644	745	215	126	107	234	154	135
Arrive On Green	0.17	0.44	0.44	0.20	0.47	0.47	0.03	0.07	0.07	0.05	0.08	0.08
Sat Flow, veh/h	1781	3434	181	1781	3497	1585	1781	1870	1585	1781	1811	1585
Grp Volume(v), veh/h	112	522	539	120	623	70	38	20	104	78	24	109
Grp Sat Flow(s),veh/h/ln	1781	1777	1838	1781	1749	1585	1781	1870	1585	1781	1811	1585
Q Serve(g_s), s	0.0	23.3	23.3	0.0	11.5	1.7	2.0	1.0	4.5	4.0	1.2	4.4
Cycle Q Clear(g_c), s	0.0	23.3	23.3	0.0	11.5	1.7	2.0	1.0	4.5	4.0	1.2	4.4
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	623	782	809	543	1644	745	215	126	107	234	154	135
V/C Ratio(X)	0.18	0.67	0.67	0.22	0.38	0.09	0.18	0.16	0.97	0.33	0.16	0.81
Avail Cap(c_a), veh/h	623	782	809	543	1644	745	246	337	285	234	326	285
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	22.2	22.2	22.5	17.1	7.5	41.4	43.9	21.9	40.7	42.4	18.9
Incr Delay (d2), s/veh	0.1	4.5	4.3	0.2	0.7	0.3	0.4	0.6	33.8	0.8	0.5	10.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	9.8	10.1	2.0	4.4	0.9	0.9	0.5	3.5	1.8	0.6	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.0	26.7	26.5	22.7	17.8	7.7	41.8	44.5	55.7	41.5	42.9	29.7
LnGrp LOS	B	C	C	C	B	A	D	D	E	D	D	C
Approach Vol, veh/h		1173			813			162			211	
Approach Delay, s/veh		25.5			17.6			51.0			35.6	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.2	53.0	9.3	14.5	26.2	50.0	11.0	12.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	6.0	47.0	5.0	18.0	9.0	44.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	13.5	4.0	6.4	2.0	25.3	6.0	6.5
Green Ext Time (p_c), s	0.1	4.4	0.0	0.3	0.1	6.2	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	122	401	37	63	1064	130	86	78	57	61	155
v/c Ratio	0.37	0.20	0.04	0.11	0.58	0.52	0.34	0.23	0.30	0.41	0.57
Control Delay	10.0	11.4	0.1	7.5	18.6	44.6	48.5	2.2	40.3	56.5	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	11.4	0.1	7.5	18.6	44.6	48.5	2.2	40.3	56.5	16.4
Queue Length 50th (ft)	27	68	0	14	248	79	58	0	33	42	0
Queue Length 95th (ft)	53	102	0	31	350	136	108	5	69	86	62
Internal Link Dist (ft)		1541			1744		1778			1399	
Turn Bay Length (ft)	225		100	200		50		50	45		50
Base Capacity (vph)	371	1972	988	565	1847	253	373	426	187	299	386
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.20	0.04	0.11	0.58	0.51	0.23	0.18	0.30	0.20	0.40

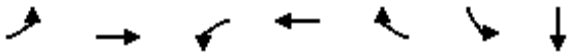
Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	103	369	34	58	924	55	120	79	72	52	56
Future Volume (vph)	9	103	369	34	58	924	55	120	79	72	52	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1770	3312	1568	1656	3382		1770	1863	1583	1770	1827
Flt Permitted		0.18	1.00	1.00	0.52	1.00		0.48	1.00	1.00	0.70	1.00
Satd. Flow (perm)		337	3312	1568	899	3382		902	1863	1583	1306	1827
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	112	401	37	63	1004	60	130	86	78	57	61
RTOR Reduction (vph)	0	0	0	15	0	3	0	0	0	68	0	0
Lane Group Flow (vph)	0	122	401	22	63	1061	0	130	86	10	57	61
Heavy Vehicles (%)	2%	2%	9%	3%	9%	6%	3%	2%	2%	2%	2%	4%
Turn Type	custom	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA
Protected Phases		1	6		5	2		3	8		7	4
Permitted Phases	1	6		6	2			8		8	4	
Actuated Green, G (s)		73.7	65.5	65.5	65.1	61.2		23.9	15.1	15.1	14.1	10.2
Effective Green, g (s)		73.7	65.5	65.5	65.1	61.2		23.9	15.1	15.1	14.1	10.2
Actuated g/C Ratio		0.66	0.58	0.58	0.58	0.54		0.21	0.13	0.13	0.13	0.09
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		325	1930	913	546	1841		259	250	212	179	165
v/s Ratio Prot		c0.03	0.12		0.00	c0.31		c0.04	0.05		0.01	0.03
v/s Ratio Perm		0.22		0.01	0.06			c0.07		0.01	0.03	
v/c Ratio		0.38	0.21	0.02	0.12	0.58		0.50	0.34	0.05	0.32	0.37
Uniform Delay, d1		9.9	11.1	9.9	10.3	17.0		37.7	44.2	42.4	44.4	48.1
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.7	0.2	0.0	0.1	1.3		1.5	0.8	0.1	1.0	1.4
Delay (s)		10.6	11.4	10.0	10.4	18.3		39.3	45.0	42.5	45.4	49.5
Level of Service		B	B	A	B	B		D	D	D	D	D
Approach Delay (s)			11.1			17.9			41.8			47.3
Approach LOS			B			B			D			D

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	112.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	143
Future Volume (vph)	143
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1568
Flt Permitted	1.00
Satd. Flow (perm)	1568
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	155
RTOR Reduction (vph)	141
Lane Group Flow (vph)	14
Heavy Vehicles (%)	3%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	10.2
Effective Green, g (s)	10.2
Actuated g/C Ratio	0.09
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	142
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.10
Uniform Delay, d1	46.9
Progression Factor	1.00
Incremental Delay, d2	0.3
Delay (s)	47.2
Level of Service	D
Approach Delay (s)	
Approach LOS	

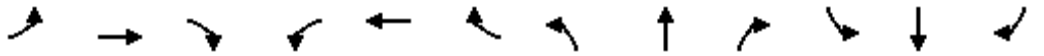
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT
Lane Group Flow (vph)	96	440	7	1065	36	72	65
v/c Ratio	0.28	0.19	0.01	0.52	0.04	0.21	0.13
Control Delay	7.2	7.1	3.3	8.1	0.1	36.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	7.1	3.3	8.1	0.1	36.2	0.6
Queue Length 50th (ft)	18	45	1	70	0	39	0
Queue Length 95th (ft)	34	93	m2	83	m0	79	0
Internal Link Dist (ft)		183		1340			257
Turn Bay Length (ft)	175		250		160	200	
Base Capacity (vph)	356	2356	627	2056	1015	336	491
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.19	0.01	0.52	0.04	0.21	0.13

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	402	3	6	980	33	0	0	0	66	0	60
Future Volume (veh/h)	88	402	3	6	980	33	0	0	0	66	0	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	96	437	3	7	1065	36	0	0	0	72	0	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	454	2247	15	628	2073	925	141	131	0	278	0	301
Arrive On Green	0.05	0.62	0.62	0.02	1.00	1.00	0.00	0.00	0.00	0.06	0.00	0.19
Sat Flow, veh/h	1781	3618	25	1781	3554	1585	1781	1870	0	1781	0	1585
Grp Volume(v), veh/h	96	215	225	7	1065	36	0	0	0	72	0	65
Grp Sat Flow(s),veh/h/ln	1781	1777	1866	1781	1777	1585	1781	1870	0	1781	0	1585
Q Serve(g_s), s	2.1	5.2	5.2	0.2	0.0	0.0	0.0	0.0	0.0	3.6	0.0	3.5
Cycle Q Clear(g_c), s	2.1	5.2	5.2	0.2	0.0	0.0	0.0	0.0	0.0	3.6	0.0	3.5
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	1104	1159	628	2073	925	141	131	0	278	0	301
V/C Ratio(X)	0.21	0.19	0.19	0.01	0.51	0.04	0.00	0.00	0.00	0.26	0.00	0.22
Avail Cap(c_a), veh/h	513	1104	1159	701	2073	925	228	337	0	278	0	301
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.2	8.2	8.2	8.3	0.0	0.0	0.0	0.0	0.0	37.7	0.0	34.2
Incr Delay (d2), s/veh	0.2	0.4	0.4	0.0	0.8	0.1	0.0	0.0	0.0	2.2	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.8	1.9	0.1	0.2	0.0	0.0	0.0	0.0	1.7	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.5	8.6	8.5	8.3	0.8	0.1	0.0	0.0	0.0	39.9	0.0	35.8
LnGrp LOS	A	A	A	A	A	A	A	A	A	D	A	D
Approach Vol, veh/h		536			1108			0			137	
Approach Delay, s/veh		8.4			0.9			0.0			38.0	
Approach LOS		A			A						D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	64.3	0.0	25.0	6.9	68.1	12.0	13.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	44.0	5.0	19.0	5.0	47.0	6.0	18.0
Max Q Clear Time (g_c+I1), s	4.1	2.0	0.0	5.5	2.2	7.2	5.6	0.0
Green Ext Time (p_c), s	0.1	8.8	0.0	0.2	0.0	2.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	36	473	41	936	52	80	14	70	24	1	91
v/c Ratio	0.09	0.21	0.06	0.40	0.05	0.47	0.07	0.22	0.15	0.02	0.36
Control Delay	4.5	7.0	5.0	10.2	0.1	46.2	42.8	1.6	36.7	44.0	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.5	7.0	5.0	10.2	0.1	46.2	42.8	1.6	36.7	44.0	4.0
Queue Length 50th (ft)	5	47	7	164	0	45	8	0	13	1	0
Queue Length 95th (ft)	13	85	17	228	0	86	28	0	35	6	2
Internal Link Dist (ft)		1340		3250			205			235	
Turn Bay Length (ft)	200		200		200	30		100	200		200
Base Capacity (vph)	396	2253	655	2348	1091	172	353	433	159	180	433
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.21	0.06	0.40	0.05	0.47	0.04	0.16	0.15	0.01	0.21

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	412	23	38	861	48	74	13	64	22	1	84
Future Volume (veh/h)	33	412	23	38	861	48	74	13	64	22	1	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1870	1781	1811	1796	1870	1870	1870	1870	418	1870
Adj Flow Rate, veh/h	36	448	25	41	936	52	80	14	70	24	1	91
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	2	8	6	7	2	2	2	2	100	2
Cap, veh/h	366	1919	107	655	2068	915	259	193	164	217	32	123
Arrive On Green	0.06	1.00	1.00	0.03	0.60	0.60	0.05	0.10	0.10	0.02	0.08	0.08
Sat Flow, veh/h	1668	3205	178	1697	3441	1522	1781	1870	1585	1781	418	1585
Grp Volume(v), veh/h	36	232	241	41	936	52	80	14	70	24	1	91
Grp Sat Flow(s),veh/h/ln	1668	1664	1720	1697	1721	1522	1781	1870	1585	1781	418	1585
Q Serve(g_s), s	0.8	0.0	0.0	0.9	14.9	1.4	4.1	0.7	4.1	1.2	0.2	5.6
Cycle Q Clear(g_c), s	0.8	0.0	0.0	0.9	14.9	1.4	4.1	0.7	4.1	1.2	0.2	5.6
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	366	996	1029	655	2068	915	259	193	164	217	32	123
V/C Ratio(X)	0.10	0.23	0.23	0.06	0.45	0.06	0.31	0.07	0.43	0.11	0.03	0.74
Avail Cap(c_a), veh/h	396	996	1029	682	2068	915	259	355	301	263	79	301
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.9	0.0	0.0	6.9	10.9	8.2	39.9	40.5	42.1	40.9	42.7	45.1
Incr Delay (d2), s/veh	0.1	0.5	0.5	0.0	0.7	0.1	0.7	0.2	1.8	0.2	0.4	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.2	0.3	5.0	0.5	1.8	0.3	1.7	0.5	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	0.5	0.5	7.0	11.7	8.4	40.5	40.7	43.8	41.1	43.0	53.6
LnGrp LOS	A	A	A	A	B	A	D	D	D	D	D	D
Approach Vol, veh/h		509			1029			164			116	
Approach Delay, s/veh		1.1			11.3			42.0			50.9	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	66.1	11.0	13.7	9.4	65.9	8.4	16.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	47.0	5.0	19.0	5.0	47.0	5.0	19.0
Max Q Clear Time (g_c+I1), s	2.8	16.9	6.1	7.6	2.9	2.0	3.2	6.1
Green Ext Time (p_c), s	0.0	7.1	0.0	0.2	0.0	2.7	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	90	110	11	36	10
Future Vol, veh/h	9	90	110	11	36	10
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	-	150	-	-	-
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	10	98	120	12	39	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	297	45	50	0	-	0
Stage 1	45	-	-	-	-	-
Stage 2	252	-	-	-	-	-
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	694	1025	1557	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	641	1025	1557	-	-	-
Mov Cap-2 Maneuver	641	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	790	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	6.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1557	-	972	-	-
HCM Lane V/C Ratio	0.077	-	0.111	-	-
HCM Control Delay (s)	7.5	-	9.2	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	493	961	79	0	89
Future Vol, veh/h	0	493	961	79	0	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	120	-	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	0	536	1045	86	0	97

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	523
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	499
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	499
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	499
HCM Lane V/C Ratio	-	-	-	0.194
HCM Control Delay (s)	-	-	-	13.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	168	995	116	134	708	68	95	92	171	154	147
v/c Ratio	0.39	0.58	0.14	0.46	0.44	0.29	0.49	0.29	0.55	0.50	0.37
Control Delay	15.0	21.0	1.3	24.1	9.8	31.3	50.1	2.6	36.8	44.2	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	21.0	1.3	24.1	9.8	31.3	50.1	2.6	36.8	44.2	7.3
Queue Length 50th (ft)	44	234	0	35	120	33	58	0	87	93	0
Queue Length 95th (ft)	77	324	13	92	175	65	105	2	143	150	42
Internal Link Dist (ft)		1541			1744		1778			1399	
Turn Bay Length (ft)	225		100	200		50		50	45		50
Base Capacity (vph)	462	1710	850	326	1618	237	335	419	312	409	469
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.58	0.14	0.41	0.44	0.29	0.28	0.22	0.55	0.38	0.31

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	148	915	107	123	512	139	63	87	85	157	142
Future Volume (vph)	6	148	915	107	123	512	139	63	87	85	157	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1770	3539	1583	1770	3374		1770	1863	1583	1770	1863
Flt Permitted		0.32	1.00	1.00	0.19	1.00		0.66	1.00	1.00	0.48	1.00
Satd. Flow (perm)		591	3539	1583	355	3374		1228	1863	1583	900	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	161	995	116	134	557	151	68	95	92	171	154
RTOR Reduction (vph)	0	0	0	61	0	22	0	0	0	81	0	0
Lane Group Flow (vph)	0	168	995	55	134	686	0	68	95	11	171	154
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%
Turn Type	custom	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA
Protected Phases		1	6		5	2		3	8		7	4
Permitted Phases	1	6		6	2			8		8	4	
Actuated Green, G (s)		55.3	47.2	47.2	53.3	46.2		16.6	11.6	11.6	26.8	16.7
Effective Green, g (s)		55.3	47.2	47.2	53.3	46.2		16.6	11.6	11.6	26.8	16.7
Actuated g/C Ratio		0.55	0.47	0.47	0.53	0.46		0.17	0.12	0.12	0.27	0.17
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		422	1670	747	289	1558		230	216	183	329	311
v/s Ratio Prot		0.03	c0.28		c0.03	0.20		0.01	0.05		c0.05	0.08
v/s Ratio Perm		0.19		0.03	0.21			0.03		0.01	c0.09	
v/c Ratio		0.40	0.60	0.07	0.46	0.44		0.30	0.44	0.06	0.52	0.50
Uniform Delay, d1		18.2	19.4	14.4	25.9	18.2		36.2	41.2	39.3	29.8	37.8
Progression Factor		1.00	1.00	1.00	1.22	0.52		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.6	1.6	0.2	1.1	0.8		0.7	1.4	0.1	1.4	1.2
Delay (s)		18.8	21.0	14.6	32.6	10.3		36.9	42.6	39.5	31.2	39.1
Level of Service		B	C	B	C	B		D	D	D	C	D
Approach Delay (s)			20.1			13.8			40.0			35.1
Approach LOS			C			B			D			D

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

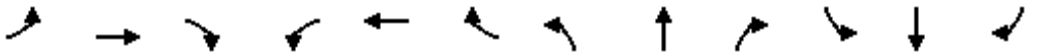
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	135
Future Volume (vph)	135
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1553
Flt Permitted	1.00
Satd. Flow (perm)	1553
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	147
RTOR Reduction (vph)	122
Lane Group Flow (vph)	25
Heavy Vehicles (%)	4%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	16.7
Effective Green, g (s)	16.7
Actuated g/C Ratio	0.17
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	259
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.09
Uniform Delay, d1	35.3
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	35.4
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	161	1097	2	774	37	1	11	112	57
v/c Ratio	0.42	0.50	0.01	0.47	0.04	0.01	0.03	0.27	0.08
Control Delay	8.6	10.2	14.5	14.0	0.1	38.0	0.2	34.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	10.2	14.5	14.0	0.1	38.0	0.2	34.5	0.2
Queue Length 50th (ft)	15	78	0	98	0	1	0	60	0
Queue Length 95th (ft)	65	438	m2	134	0	5	0	108	0
Internal Link Dist (ft)		183		1340			301		257
Turn Bay Length (ft)	175		250		160	200		200	
Base Capacity (vph)	441	2179	292	1661	883	137	474	409	710
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.50	0.01	0.47	0.04	0.01	0.02	0.27	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	1007	2	2	712	34	1	0	10	103	0	52
Future Volume (veh/h)	148	1007	2	2	712	34	1	0	10	103	0	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1826	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	161	1095	2	2	774	37	1	0	11	112	0	57
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	5	2	2	2	2	2	2	2
Cap, veh/h	395	1601	3	391	1587	725	142	0	208	322	0	349
Arrive On Green	0.16	0.88	0.88	0.20	0.91	0.91	0.00	0.00	0.13	0.09	0.00	0.22
Sat Flow, veh/h	1781	3639	7	1781	3469	1585	1781	0	1585	1781	0	1585
Grp Volume(v), veh/h	161	535	562	2	774	37	1	0	11	112	0	57
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	1781	1735	1585	1781	0	1585	1781	0	1585
Q Serve(g_s), s	6.0	9.1	9.1	0.0	3.4	0.2	0.0	0.0	0.6	5.5	0.0	2.9
Cycle Q Clear(g_c), s	6.0	9.1	9.1	0.0	3.4	0.2	0.0	0.0	0.6	5.5	0.0	2.9
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	395	782	822	391	1587	725	142	0	208	322	0	349
V/C Ratio(X)	0.41	0.68	0.68	0.01	0.49	0.05	0.01	0.00	0.05	0.35	0.00	0.16
Avail Cap(c_a), veh/h	499	782	822	391	1587	725	228	0	285	322	0	349
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.96	0.96	0.96	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.2	3.9	3.9	17.3	2.5	1.4	45.0	0.0	38.0	35.9	0.0	31.6
Incr Delay (d2), s/veh	0.7	4.8	4.6	0.0	1.0	0.1	0.0	0.0	0.1	3.0	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	2.5	2.6	0.0	1.0	0.1	0.0	0.0	0.2	2.6	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.9	8.7	8.5	17.3	3.5	1.5	45.0	0.0	38.1	38.9	0.0	32.6
LnGrp LOS	B	A	A	B	A	A	D	A	D	D	A	C
Approach Vol, veh/h		1258			813			12			169	
Approach Delay, s/veh		9.9			3.4			38.7			36.7	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.1	51.7	6.1	28.0	15.9	50.0	15.0	19.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	14.0	35.0	5.0	22.0	5.0	44.0	9.0	18.0
Max Q Clear Time (g_c+I1), s	8.0	5.4	2.0	4.9	2.0	11.1	7.5	2.6
Green Ext Time (p_c), s	0.2	5.5	0.0	0.2	0.0	7.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	9.7
HCM 6th LOS	A

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	117	1100	120	655	70	43	20	104	78	24	114
v/c Ratio	0.23	0.55	0.32	0.31	0.07	0.25	0.16	0.40	0.44	0.15	0.39
Control Delay	3.1	3.7	10.7	10.9	0.1	38.0	45.9	5.9	44.2	44.7	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.1	3.7	10.7	10.9	0.1	38.0	45.9	5.9	44.2	44.7	6.3
Queue Length 50th (ft)	9	50	21	105	0	23	12	0	43	15	0
Queue Length 95th (ft)	13	51	42	147	0	53	35	13	84	40	20
Internal Link Dist (ft)		1340		3250			205			235	
Turn Bay Length (ft)	200		200		200	30		100	200		200
Base Capacity (vph)	506	2017	374	2095	1020	170	335	419	177	322	419
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.55	0.32	0.31	0.07	0.25	0.06	0.25	0.44	0.07	0.27

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	958	54	110	603	64	40	18	96	72	22	105
Future Volume (veh/h)	108	958	54	110	603	64	40	18	96	72	22	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1841	1870	1870	1870	1870	1870	1811	1870
Adj Flow Rate, veh/h	117	1041	59	120	655	70	43	20	104	78	24	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	4	2	2	2	2	2	6	2
Cap, veh/h	611	1504	85	610	1644	745	219	126	107	234	150	131
Arrive On Green	0.34	0.88	0.88	0.20	0.47	0.47	0.03	0.07	0.07	0.05	0.08	0.08
Sat Flow, veh/h	1781	3419	194	1781	3497	1585	1781	1870	1585	1781	1811	1585
Grp Volume(v), veh/h	117	541	559	120	655	70	43	20	104	78	24	114
Grp Sat Flow(s),veh/h/ln	1781	1777	1835	1781	1749	1585	1781	1870	1585	1781	1811	1585
Q Serve(g_s), s	0.0	9.3	9.4	0.0	12.2	1.7	2.2	1.0	4.5	4.0	1.2	4.6
Cycle Q Clear(g_c), s	0.0	9.3	9.4	0.0	12.2	1.7	2.2	1.0	4.5	4.0	1.2	4.6
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	611	782	808	610	1644	745	219	126	107	234	150	131
V/C Ratio(X)	0.19	0.69	0.69	0.20	0.40	0.09	0.20	0.16	0.97	0.33	0.16	0.87
Avail Cap(c_a), veh/h	611	782	808	610	1644	745	246	337	285	234	326	285
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.8	3.9	3.9	13.3	17.3	7.4	41.3	43.9	21.9	40.7	42.6	19.1
Incr Delay (d2), s/veh	0.1	4.4	4.2	0.2	0.7	0.3	0.4	0.6	33.8	0.8	0.5	15.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.4	2.5	1.4	4.7	0.9	1.0	0.5	3.5	1.8	0.6	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.9	8.3	8.2	13.4	18.0	7.6	41.7	44.5	55.7	41.5	43.1	34.6
LnGrp LOS	B	A	A	B	B	A	D	D	E	D	D	C
Approach Vol, veh/h		1217			845			167			216	
Approach Delay, s/veh		8.6			16.5			50.7			38.1	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.2	53.0	9.5	14.3	26.2	50.0	11.0	12.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	6.0	47.0	5.0	18.0	9.0	44.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	14.2	4.2	6.6	2.0	11.4	6.0	6.5
Green Ext Time (p_c), s	0.1	4.7	0.0	0.3	0.1	7.7	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	128	134	48	27	10
Future Vol, veh/h	11	128	134	48	27	10
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	-	150	-	-	-
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	12	139	146	52	29	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	379	35	40	0	-	0
Stage 1	35	-	-	-	-	-
Stage 2	344	-	-	-	-	-
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	623	1038	1570	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	718	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	565	1038	1570	-	-	-
Mov Cap-2 Maneuver	565	-	-	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	718	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	5.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1570	-	974	-	-
HCM Lane V/C Ratio	0.093	-	0.155	-	-
HCM Control Delay (s)	7.5	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.5	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	1157	716	49	0	58
Future Vol, veh/h	0	1157	716	49	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	120	-	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	0	1258	778	53	0	63

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	389
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	610
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	610
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	610
HCM Lane V/C Ratio	-	-	-	0.103
HCM Control Delay (s)	-	-	-	11.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	180	580	55	84	1588	193	127	111	78	90	230
v/c Ratio	0.82	0.31	0.06	0.20	0.93	0.81	0.48	0.28	0.44	0.49	0.70
Control Delay	53.1	14.5	0.1	18.4	37.7	74.3	52.6	1.8	56.2	57.3	23.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	14.5	0.1	18.4	37.7	74.3	52.6	1.8	56.2	57.3	23.2
Queue Length 50th (ft)	79	115	0	31	543	141	89	0	54	63	27
Queue Length 95th (ft)	#221	173	0	65	#800	#259	153	0	103	115	107
Internal Link Dist (ft)		1541			1744		1778			1399	
Turn Bay Length (ft)	225		100	200		50		50	45		50
Base Capacity (vph)	222	1877	971	422	1706	237	381	476	176	290	410
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.31	0.06	0.20	0.93	0.81	0.33	0.23	0.44	0.31	0.56

Intersection Summary

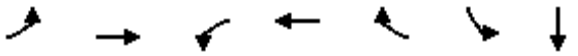
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	13	153	534	51	77	1360	101	178	117	102	72	83
Future Volume (vph)	13	153	534	51	77	1360	101	178	117	102	72	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1770	3312	1568	1656	3377		1770	1863	1583	1770	1827
Flt Permitted		0.07	1.00	1.00	0.43	1.00		0.75	1.00	1.00	0.75	1.00
Satd. Flow (perm)		137	3312	1568	756	3377		1406	1863	1583	1406	1827
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	166	580	55	84	1478	110	193	127	111	78	90
RTOR Reduction (vph)	0	0	0	25	0	4	0	0	0	95	0	0
Lane Group Flow (vph)	0	180	580	30	84	1584	0	193	127	16	78	90
Heavy Vehicles (%)	2%	2%	9%	3%	9%	6%	3%	2%	2%	2%	2%	4%
Turn Type	custom	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA
Protected Phases		1	6		5	2		3	8		7	4
Permitted Phases	1	6		6	2			8		8	4	
Actuated Green, G (s)		64.2	64.2	64.2	58.4	58.4		16.3	16.3	16.3	12.6	12.6
Effective Green, g (s)		64.2	64.2	64.2	58.4	58.4		16.3	16.3	16.3	12.6	12.6
Actuated g/C Ratio		0.55	0.55	0.55	0.50	0.50		0.14	0.14	0.14	0.11	0.11
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		214	1836	869	412	1703		232	262	222	175	198
v/s Ratio Prot		c0.07	0.18		0.01	c0.47		c0.08	0.07		0.03	c0.05
v/s Ratio Perm		0.39		0.02	0.10			0.04		0.01	0.02	
v/c Ratio		0.84	0.32	0.04	0.20	0.93		0.83	0.48	0.07	0.45	0.45
Uniform Delay, d1		31.3	13.9	11.7	16.0	26.8		48.1	45.9	43.2	48.4	48.4
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		24.6	0.5	0.1	0.2	10.5		21.7	1.4	0.1	1.8	1.7
Delay (s)		55.9	14.4	11.8	16.3	37.3		69.8	47.3	43.3	50.2	50.0
Level of Service		E	B	B	B	D		E	D	D	D	D
Approach Delay (s)			23.4			36.2			56.4			49.5
Approach LOS			C			D			E			D

Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	115.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	212
Future Volume (vph)	212
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1568
Flt Permitted	1.00
Satd. Flow (perm)	1568
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	230
RTOR Reduction (vph)	170
Lane Group Flow (vph)	60
Heavy Vehicles (%)	3%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	12.6
Effective Green, g (s)	12.6
Actuated g/C Ratio	0.11
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	170
v/s Ratio Prot	
v/s Ratio Perm	0.04
v/c Ratio	0.35
Uniform Delay, d1	47.8
Progression Factor	1.00
Incremental Delay, d2	1.3
Delay (s)	49.1
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

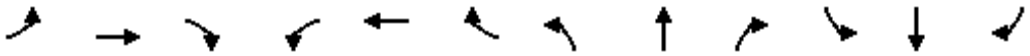


Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT
Lane Group Flow (vph)	101	668	10	1578	36	73	83
v/c Ratio	0.58	0.28	0.02	0.76	0.04	0.23	0.19
Control Delay	35.9	7.2	1.3	7.5	0.1	37.3	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	7.2	1.3	7.5	0.1	37.3	0.9
Queue Length 50th (ft)	18	72	1	98	0	40	0
Queue Length 95th (ft)	#74	138	m1	110	m0	81	0
Internal Link Dist (ft)		183		1340			257
Turn Bay Length (ft)	175		250		160	200	
Base Capacity (vph)	173	2397	501	2088	1027	318	447
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.28	0.02	0.76	0.04	0.23	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	611	4	9	1452	33	0	0	0	67	0	76
Future Volume (veh/h)	93	611	4	9	1452	33	0	0	0	67	0	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	664	4	10	1578	36	0	0	0	73	0	83
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	458	1738	10	636	1706	761	140	131	0	260	0	285
Arrive On Green	0.16	0.48	0.48	0.32	0.96	0.96	0.00	0.00	0.00	0.05	0.00	0.18
Sat Flow, veh/h	1781	3621	22	1781	3554	1585	1781	1870	0	1781	0	1585
Grp Volume(v), veh/h	101	326	342	10	1578	36	0	0	0	73	0	83
Grp Sat Flow(s),veh/h/ln	1781	1777	1866	1781	1777	1585	1781	1870	0	1781	0	1585
Q Serve(g_s), s	0.0	11.7	11.7	0.0	15.9	0.1	0.0	0.0	0.0	3.7	0.0	4.5
Cycle Q Clear(g_c), s	0.0	11.7	11.7	0.0	15.9	0.1	0.0	0.0	0.0	3.7	0.0	4.5
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	458	853	896	636	1706	761	140	131	0	260	0	285
V/C Ratio(X)	0.22	0.38	0.38	0.02	0.93	0.05	0.00	0.00	0.00	0.28	0.00	0.29
Avail Cap(c_a), veh/h	458	853	896	636	1706	761	227	337	0	260	0	285
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.73	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.8	16.6	16.6	9.3	1.4	1.0	0.0	0.0	0.0	38.6	0.0	35.5
Incr Delay (d2), s/veh	0.2	1.3	1.2	0.0	7.7	0.1	0.0	0.0	0.0	2.7	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.6	4.9	0.1	2.5	0.1	0.0	0.0	0.0	1.8	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	17.9	17.8	9.3	9.1	1.1	0.0	0.0	0.0	41.3	0.0	38.0
LnGrp LOS	C	B	B	A	A	A	A	A	A	D	A	D
Approach Vol, veh/h		769			1624			0			156	
Approach Delay, s/veh		18.1			8.9			0.0			39.5	
Approach LOS		B			A						D	

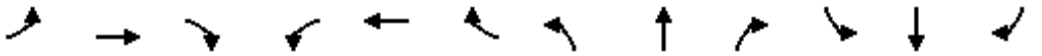
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	54.0	0.0	24.0	22.0	54.0	11.0	13.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	48.0	5.0	18.0	5.0	48.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	17.9	0.0	6.5	2.0	13.7	5.7	0.0
Green Ext Time (p_c), s	0.1	14.3	0.0	0.3	0.0	3.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	51	686	61	1374	77	117	21	103	36	1	133
v/c Ratio	0.22	0.35	0.15	0.66	0.08	0.61	0.10	0.27	0.20	0.02	0.42
Control Delay	12.6	9.1	9.8	15.1	0.2	52.4	44.1	1.8	37.1	43.0	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	9.1	9.8	15.1	0.2	52.4	44.1	1.8	37.1	43.0	4.0
Queue Length 50th (ft)	11	79	15	290	0	67	13	0	20	1	0
Queue Length 95th (ft)	17	94	34	386	0	#130	36	0	47	6	0
Internal Link Dist (ft)		1340		3250			205			235	
Turn Bay Length (ft)	200		200		200	30		100	200		200
Base Capacity (vph)	231	1950	413	2096	991	192	335	472	180	171	472
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.35	0.15	0.66	0.08	0.61	0.06	0.22	0.20	0.01	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	599	32	56	1264	71	108	19	95	33	1	122
Future Volume (veh/h)	47	599	32	56	1264	71	108	19	95	33	1	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1870	1781	1811	1796	1870	1870	1870	1870	418	1870
Adj Flow Rate, veh/h	51	651	35	61	1374	77	117	21	103	36	1	133
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	2	8	6	7	2	2	2	2	100	2
Cap, veh/h	321	1815	98	414	1652	731	289	229	194	260	44	165
Arrive On Green	0.25	1.00	1.00	0.04	0.48	0.48	0.05	0.12	0.12	0.03	0.10	0.10
Sat Flow, veh/h	1668	3212	173	1697	3441	1522	1781	1870	1585	1781	418	1585
Grp Volume(v), veh/h	51	337	349	61	1374	77	117	21	103	36	1	133
Grp Sat Flow(s),veh/h/ln	1668	1664	1721	1697	1721	1522	1781	1870	1585	1781	418	1585
Q Serve(g_s), s	0.0	0.0	0.0	2.1	34.6	1.9	5.0	1.0	4.4	1.8	0.2	8.2
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.1	34.6	1.9	5.0	1.0	4.4	1.8	0.2	8.2
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	940	972	414	1652	731	289	229	194	260	44	165
V/C Ratio(X)	0.16	0.36	0.36	0.15	0.83	0.11	0.40	0.09	0.53	0.14	0.02	0.81
Avail Cap(c_a), veh/h	321	940	972	430	1652	731	289	337	285	293	75	285
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	0.0	0.0	16.3	22.5	6.5	38.4	38.9	21.3	38.1	40.2	43.8
Incr Delay (d2), s/veh	0.2	1.0	1.0	0.2	5.1	0.3	0.9	0.2	2.2	0.2	0.2	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.3	0.3	0.8	13.6	1.0	2.7	0.5	2.4	0.8	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.5	1.0	1.0	16.4	27.6	6.7	39.3	39.1	23.6	38.4	40.4	52.7
LnGrp LOS	C	A	A	B	C	A	D	D	C	D	D	D
Approach Vol, veh/h		737			1512			241			170	
Approach Delay, s/veh		2.9			26.1			32.5			49.6	
Approach LOS		A			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.6	54.0	11.0	16.4	10.1	62.5	9.2	18.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	48.0	5.0	18.0	5.0	48.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	36.6	7.0	10.2	4.1	2.0	3.8	6.4
Green Ext Time (p_c), s	0.0	6.9	0.0	0.2	0.0	4.2	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	90	110	16	53	10
Future Vol, veh/h	9	90	110	16	53	10
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	-	150	-	-	-
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	10	98	120	17	58	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	321	64	69	0	-	0
Stage 1	64	-	-	-	-	-
Stage 2	257	-	-	-	-	-
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	673	1000	1532	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	786	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	621	1000	1532	-	-	-
Mov Cap-2 Maneuver	621	-	-	-	-	-
Stage 1	884	-	-	-	-	-
Stage 2	786	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	6.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1532	-	947	-	-
HCM Lane V/C Ratio	0.078	-	0.114	-	-
HCM Control Delay (s)	7.5	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	708	1449	79	0	89
Future Vol, veh/h	0	708	1449	79	0	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	120	-	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	0	770	1575	86	0	97

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	788
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	334
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	334
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	20.1
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	334
HCM Lane V/C Ratio	-	-	-	0.29
HCM Control Delay (s)	-	-	-	20.1
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	1.2

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	249	1463	173	193	1030	102	140	132	248	229	218
v/c Ratio	0.76	0.98	0.22	0.77	0.71	0.55	0.59	0.33	0.92	0.61	0.44
Control Delay	48.6	47.6	1.5	44.4	8.2	52.2	50.7	2.2	77.9	44.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	47.6	1.5	44.4	8.2	52.2	50.7	2.2	77.9	44.5	7.0
Queue Length 50th (ft)	105	474	0	80	131	61	85	0	153	139	0
Queue Length 95th (ft)	#198	#641	16	#201	32	110	143	0	#233	208	53
Internal Link Dist (ft)		1541			1744		1778			1399	
Turn Bay Length (ft)	225		100	200		50		50	45		50
Base Capacity (vph)	326	1498	802	252	1446	187	298	445	269	420	528
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.98	0.22	0.77	0.71	0.55	0.47	0.30	0.92	0.55	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	220	1346	159	178	745	202	94	129	121	228	211
Future Volume (vph)	9	220	1346	159	178	745	202	94	129	121	228	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1770	3539	1583	1770	3374		1770	1863	1583	1770	1863
Flt Permitted		0.25	1.00	1.00	0.13	1.00		0.62	1.00	1.00	0.44	1.00
Satd. Flow (perm)		459	3539	1583	240	3374		1147	1863	1583	819	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	239	1463	173	193	810	220	102	140	132	248	229
RTOR Reduction (vph)	0	0	0	102	0	24	0	0	0	114	0	0
Lane Group Flow (vph)	0	249	1463	71	193	1006	0	102	140	18	248	229
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%
Turn Type	custom	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA
Protected Phases		1	6		5	2		3	8		7	4
Permitted Phases	1	6		6	2			8		8	4	
Actuated Green, G (s)		41.1	41.1	41.1	41.0	41.0		14.0	14.0	14.0	20.1	20.1
Effective Green, g (s)		41.1	41.1	41.1	41.0	41.0		14.0	14.0	14.0	20.1	20.1
Actuated g/C Ratio		0.41	0.41	0.41	0.41	0.41		0.14	0.14	0.14	0.20	0.20
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		319	1454	650	249	1383		191	260	221	269	374
v/s Ratio Prot		0.08	c0.41		0.08	c0.30		0.03	c0.08		c0.10	0.12
v/s Ratio Perm		0.24		0.04	0.24			0.05		0.01	c0.08	
v/c Ratio		0.78	1.01	0.11	0.78	0.73		0.53	0.54	0.08	0.92	0.61
Uniform Delay, d1		29.1	29.4	18.2	23.6	24.8		40.6	40.0	37.4	38.0	36.4
Progression Factor		1.00	1.00	1.00	1.14	0.24		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		11.7	25.1	0.3	11.7	2.8		2.9	2.1	0.2	34.7	3.0
Delay (s)		40.8	54.6	18.5	38.6	8.8		43.4	42.1	37.6	72.7	39.4
Level of Service		D	D	B	D	A		D	D	D	E	D
Approach Delay (s)			49.4			13.5			40.9			49.3
Approach LOS			D			B			D			D

Intersection Summary			
HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	201
Future Volume (vph)	201
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1553
Flt Permitted	1.00
Satd. Flow (perm)	1553
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	218
RTOR Reduction (vph)	174
Lane Group Flow (vph)	44
Heavy Vehicles (%)	4%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	20.1
Effective Green, g (s)	20.1
Actuated g/C Ratio	0.20
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	312
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.14
Uniform Delay, d1	32.8
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	33.1
Level of Service	C
Approach Delay (s)	
Approach LOS	

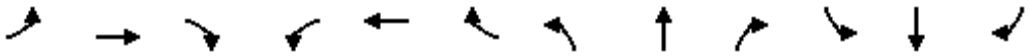
Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	183	1660	3	1143	40	1	16	114	68
v/c Ratio	0.66	0.72	0.02	0.64	0.04	0.01	0.05	0.38	0.12
Control Delay	25.1	5.9	10.0	11.3	0.1	35.0	0.3	40.3	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	5.9	10.0	11.3	0.1	35.0	0.3	40.3	0.4
Queue Length 50th (ft)	36	11	0	117	0	1	0	64	0
Queue Length 95th (ft)	m52	m#597	m1	158	m0	5	0	117	0
Internal Link Dist (ft)		183		1340			301		257
Turn Bay Length (ft)	175		250		160	200		200	
Base Capacity (vph)	293	2321	164	1800	938	145	472	300	559
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.72	0.02	0.64	0.04	0.01	0.03	0.38	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	1524	3	3	1052	37	1	0	15	105	0	63
Future Volume (veh/h)	168	1524	3	3	1052	37	1	0	15	105	0	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1826	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	183	1657	3	3	1143	40	1	0	16	114	0	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	5	2	2	2	2	2	2	2
Cap, veh/h	377	1747	3	324	1710	781	141	0	208	246	0	285
Arrive On Green	0.17	0.96	0.96	0.20	0.99	0.99	0.00	0.00	0.13	0.05	0.00	0.18
Sat Flow, veh/h	1781	3639	7	1781	3469	1585	1781	0	1585	1781	0	1585
Grp Volume(v), veh/h	183	809	851	3	1143	40	1	0	16	114	0	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1869	1781	1735	1585	1781	0	1585	1781	0	1585
Q Serve(g_s), s	6.6	20.3	20.4	0.0	1.4	0.0	0.0	0.0	0.9	5.0	0.0	3.7
Cycle Q Clear(g_c), s	6.6	20.3	20.4	0.0	1.4	0.0	0.0	0.0	0.9	5.0	0.0	3.7
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	377	853	897	324	1710	781	141	0	208	246	0	285
V/C Ratio(X)	0.49	0.95	0.95	0.01	0.67	0.05	0.01	0.00	0.08	0.46	0.00	0.24
Avail Cap(c_a), veh/h	402	853	897	324	1710	781	228	0	285	246	0	285
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.88	0.88	0.88	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.0	1.4	1.4	18.7	0.4	0.2	45.0	0.0	38.1	40.0	0.0	35.1
Incr Delay (d2), s/veh	1.0	20.6	19.9	0.0	1.8	0.1	0.0	0.0	0.2	6.1	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	5.6	5.7	0.0	0.6	0.0	0.0	0.0	0.4	3.1	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.9	22.0	21.4	18.7	2.2	0.3	45.0	0.0	38.3	46.1	0.0	37.1
LnGrp LOS	B	C	C	B	A	A	D	A	D	D	A	D
Approach Vol, veh/h		1843			1186			17			182	
Approach Delay, s/veh		21.2			2.2			38.7			42.7	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	55.3	6.1	24.0	15.9	54.0	11.0	19.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	10.0	43.0	5.0	18.0	5.0	48.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	8.6	3.4	2.0	5.7	2.0	22.4	7.0	2.9
Green Ext Time (p_c), s	0.1	9.8	0.0	0.2	0.0	13.0	0.0	0.0

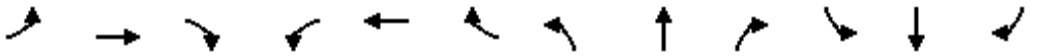
Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	172	1615	177	958	103	62	29	155	116	36	167
v/c Ratio	0.37	0.75	0.88	0.48	0.11	0.38	0.21	0.56	0.76	0.27	0.42
Control Delay	3.8	9.2	68.7	14.9	0.6	42.5	46.3	19.4	69.8	48.0	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.8	9.2	68.7	14.9	0.6	42.5	46.3	19.4	69.8	48.0	10.8
Queue Length 50th (ft)	11	120	64	200	0	34	18	26	65	22	18
Queue Length 95th (ft)	m11	153	#196	271	6	69	45	71	114	53	61
Internal Link Dist (ft)		1340		3250			205			235	
Turn Bay Length (ft)	200		200		200	30		100	200		200
Base Capacity (vph)	468	2150	201	1983	975	163	335	277	152	322	393
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.75	0.88	0.48	0.11	0.38	0.09	0.56	0.76	0.11	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	1408	78	163	881	95	57	27	143	107	33	154
Future Volume (veh/h)	158	1408	78	163	881	95	57	27	143	107	33	154
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1841	1870	1870	1870	1870	1870	1811	1870
Adj Flow Rate, veh/h	172	1530	85	177	958	103	62	29	155	116	36	167
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	4	2	2	2	2	2	6	2
Cap, veh/h	607	1575	87	450	1469	666	193	94	396	203	103	470
Arrive On Green	0.48	0.92	0.92	0.20	0.42	0.42	0.04	0.05	0.05	0.05	0.06	0.06
Sat Flow, veh/h	1781	3424	189	1781	3497	1585	1781	1870	1585	1781	1811	1585
Grp Volume(v), veh/h	172	791	824	177	958	103	62	29	155	116	36	167
Grp Sat Flow(s),veh/h/ln	1781	1777	1836	1781	1749	1585	1781	1870	1585	1781	1811	1585
Q Serve(g_s), s	0.0	32.5	35.0	3.0	21.9	2.8	3.3	1.5	1.2	5.0	1.9	1.2
Cycle Q Clear(g_c), s	0.0	32.5	35.0	3.0	21.9	2.8	3.3	1.5	1.2	5.0	1.9	1.2
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	607	817	845	450	1469	666	193	94	396	203	103	470
V/C Ratio(X)	0.28	0.97	0.98	0.39	0.65	0.15	0.32	0.31	0.39	0.57	0.35	0.36
Avail Cap(c_a), veh/h	607	817	845	450	1469	666	205	337	602	203	326	666
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	0.66	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	3.5	3.6	32.0	23.2	9.0	42.6	45.8	15.7	43.7	45.4	13.5
Incr Delay (d2), s/veh	0.2	18.9	19.9	0.6	2.3	0.5	0.9	1.9	0.6	3.8	2.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	5.7	6.2	3.4	8.7	1.5	1.5	0.7	2.1	3.0	0.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.9	22.4	23.5	32.5	25.4	9.5	43.5	47.7	16.3	47.5	47.4	13.9
LnGrp LOS	B	C	C	C	C	A	D	D	B	D	D	B
Approach Vol, veh/h		1787			1238			246			319	
Approach Delay, s/veh		22.1			25.1			26.9			29.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	48.0	10.3	11.7	26.0	52.0	11.0	11.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	11.0	42.0	5.0	18.0	7.0	46.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	23.9	5.3	3.9	5.0	37.0	7.0	3.5
Green Ext Time (p_c), s	0.3	6.3	0.0	0.6	0.1	6.2	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	128	134	71	40	10
Future Vol, veh/h	11	128	134	71	40	10
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	-	150	-	-	-
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	12	139	146	77	43	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	418	49	54	0	-	0
Stage 1	49	-	-	-	-	-
Stage 2	369	-	-	-	-	-
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	591	1020	1551	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	535	1020	1551	-	-	-
Mov Cap-2 Maneuver	535	-	-	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	699	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	4.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1551	-	952	-	-
HCM Lane V/C Ratio	0.094	-	0.159	-	-
HCM Control Delay (s)	7.6	-	9.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.6	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	1695	1067	49	0	58
Future Vol, veh/h	0	1695	1067	49	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	120	-	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	0	1842	1160	53	0	63

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	580
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	458
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	458
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	458
HCM Lane V/C Ratio	-	-	-	0.138
HCM Control Delay (s)	-	-	-	14.1
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.5