Traffic Impact Study
44th Street/8th Avenue PUD
Georgetown Township, Michigan

Prepared for:

Ed DeVries Properties, Inc.
345 Monroe Avenue
Grand Rapids, MI 49505

Prepared by:

Progressive AE
1811 4 Mile Road NE
Grand Rapids, MI 49525
616/361-2664

April 2006

Project No: 59590101/005

Progressive AE

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Executive Summary

A multiple use development including approximately 92,300 square feet of retail, office, restaurant, and residential uses is proposed on the southwest corner of 44th Street and 8th Avenue in Georgetown Township, Michigan. The study area consists of the 44th Street at 8th Avenue intersection as well as the site driveways.

The analyses summarized in this report identify current traffic conditions within the study area and an estimate of the conditions that can be expected with future growth, including the development of a proposed multiple use development in Georgetown Township. The analyses take into account the highest peak traffic periods that typically occur during the week along this section of 44th Street and 8th Avenue.

In Chapters 2, 3, and 4, the capacity analyses at the 44th Street/8th Avenue intersection and development driveways show that some movements will experience peak hour delays under existing, background, and future conditions. To mitigate these delays, traffic signal timing improvements and minor roadway improvements are suggested.

In Chapter 2, under existing conditions, the suggested improvements include adjusting traffic signal timing at the 44th Street and 8th Avenue intersection. The adjustment will involve lengthening of the cycle length and as a result will mitigate existing delays observed, particularly in the weekday afternoon peak hour. No physical improvements were recommended under existing conditions.

In Chapter 3, under background conditions (future traffic volumes without the proposed development in place), the suggested improvements include traffic signal timing modifications at the 44th Street and 8th Avenue intersection. No physical improvements were recommended as part of the mitigation measures to remedy the conditions for this portion of the analysis, but left turn phasing for the north and south legs of the intersection were added. This measure helps to maintain sufficient green time for north-south left turn movements to keep the entire intersection operating at acceptable levels of service.

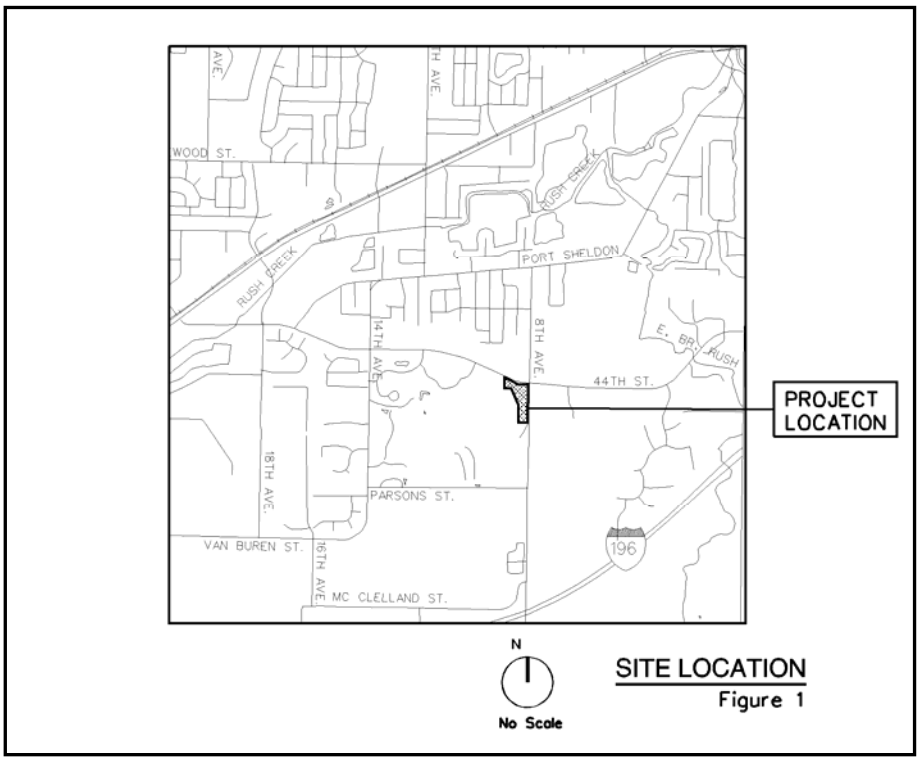
In Chapter 4, the study analyzed traffic volumes under future conditions (with the proposed development in place); the suggested improvements include construction of an eastbound right turn lane to the 44th Street and 8th Avenue intersection. The addition of the right turn lane allows this intersection to operate at acceptable levels of service under these conditions.

The suggested improvements outlined above are illustrated in Figure 11 and within the body of the report.

Chapter 1
Introduction

Progressive Architecture Engineering was retained to complete this traffic impact study for the proposed multiple use development in Georgetown Township, Ottawa County. As shown in Figure 1, the proposed development site is located on the southwest corner of 44th Street and 8th Avenue. The site plan calls for the development of 52,750 square feet of office space, 22,750 square feet of retail space, 15,000 square feet of restaurant space, as well as 20 apartment units.

As proposed, access to the site will be provided by one approach intersecting 44th Street and three approaches intersecting 8th Avenue.



The purpose of this traffic impact study was to analyze the potential impacts of the proposed development and to identify what, if any, roadway improvements may be necessary to mitigate those impacts. The tasks undertaken to complete the analyses include:

1. ***Data Collection.*** Applicable information regarding the existing operating conditions of the adjacent roadways was obtained. This included completion of peak-hour traffic counts, as well as obtaining traffic signal operation information and lane configuration data on 44th Street and 8th Avenue.

2. ***Trip Generation/Distribution.*** The number of trips the proposed project is expected to generate during peak hours was identified. These trips were then assigned to the adjacent roadways based upon patterns followed by existing traffic in the area.

3. ***Levels of Service.*** Capacity calculations were completed at the nearby key intersections to identify existing and future operational characteristics.

4. ***Mitigation.*** Roadway/intersection improvements were identified, if applicable, that will enable the adjacent roadways and nearby intersections to maintain acceptable levels of operation upon completion of the proposed project.

The above tasks were started after discussions with the Ottawa County Road Commission and Georgetown Township to ensure study completeness and to address specific concerns regarding the existing and future conditions of the roadways in the study area. The following chapters outline the results of analyses completed during this study.

Chapter 2
Existing Conditions

The first step in the identification of potential traffic impacts is to determine how well the adjacent roadways are operating under current conditions. These base conditions then provide a comparison to subsequent future conditions analysis. This chapter summarizes the data collection and existing operating conditions analysis procedures.

MAJOR ROADWAYS AND TRAFFIC VOLUMES

44th Street. 44th Street is an east-west arterial roadway running along the north side of the proposed site. Its cross section at the intersection with 8th Avenue has five lanes (two eastbound lanes, two westbound lanes, and one center left turn lane). The speed limit on 44th Street is 55 miles per hour.

8th Avenue. 8th Avenue is a north-south roadway running along the east side of the proposed site. Its cross section at the intersection with 44th Street has four lanes on the south approach (one northbound left turn lane, one northbound through lane, one southbound through lane, and a northbound right turn lane), and three lanes on the north approach (one southbound left turn lane, one southbound through/right lane, one northbound through lane). The 44th Street/8th Avenue intersection is currently operating under traffic signal control. The speed limit on 8th Avenue is 45 miles per hour.

Weekday morning and afternoon traffic counts were taken on April 11, 2006, from 7:00-9:00 AM and 4:00-6:00 PM, at the above locations. These counts indicated that the weekday morning peak hour generally began at 7:15 AM and the weekday afternoon peak hour generally began at 4:45 PM. Figure 2 illustrates the existing peak-hour volumes at the study area intersections.

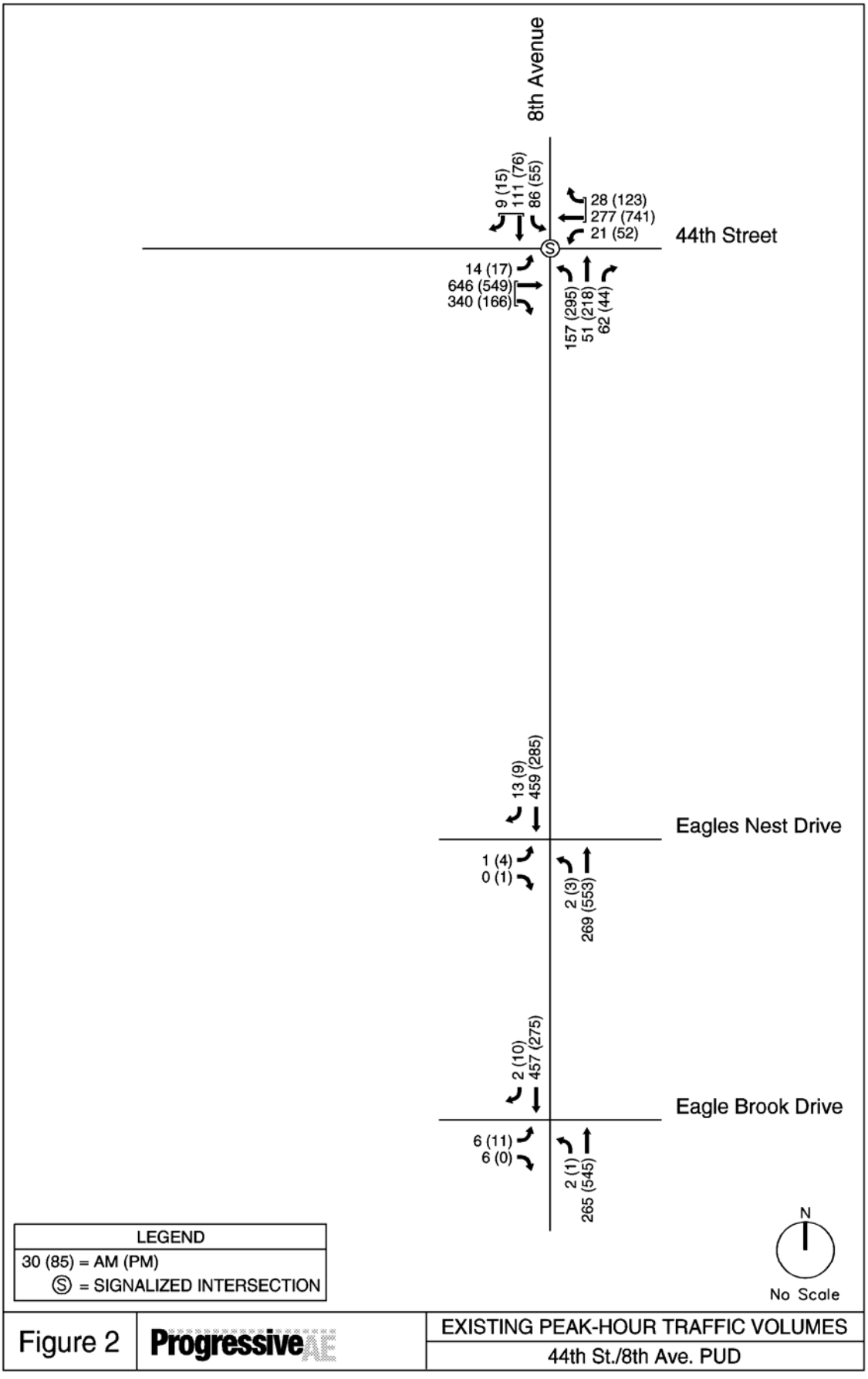


Figure 2 — EXISTING PEAK-HOUR TRAFFIC VOLUMES
44th St./8th Ave. PUD

TIFF 4/13/2006 07:55:09 MMKUSR P:\59590101\PLT\FIGURE 2.DGN

EVALUATION OF EXISTING CONDITIONS

Intersection "level of service" calculations were completed to evaluate the operational efficiency of the key intersections. These calculations were completed using techniques outlined in the 2000 Highway Capacity Manual by the Transportation Research Board.

Level of service (LOS) at signalized and unsignalized intersections relates to the delay, traffic volumes, and intersection geometry. Levels of service are expressed in a range from "A" to "F", with "A" denoting the highest or best operating conditions. Generally, a Level of Service “D” is considered the minimum acceptable service level for signalized intersections in suburban areas. The criteria for determining the levels of service at signalized and unsignalized intersections are outlined in the Appendix.

The existing weekday morning and afternoon peak hours were analyzed at the intersections and existing driveways. Figure 3 illustrates the results of the level of service calculations under existing conditions for the weekday morning and afternoon peak hours. Copies of the computer analyses are included in the appendix of this report.

The analyses indicate that most turning movements at the intersections operate at LOS D or better. The exceptions are as follows:

- The northbound to westbound left turns at the 44th Street/8th Avenue intersection operate at LOS F in the weekday afternoon peak hour under existing conditions.

The delays at the 44th Street/8th Avenue can be improved by increasing the traffic signal cycle length, giving more green time to the north-south movements during the afternoon peak hour. Figure 4 illustrates the new levels of service with the mitigation measures in place.

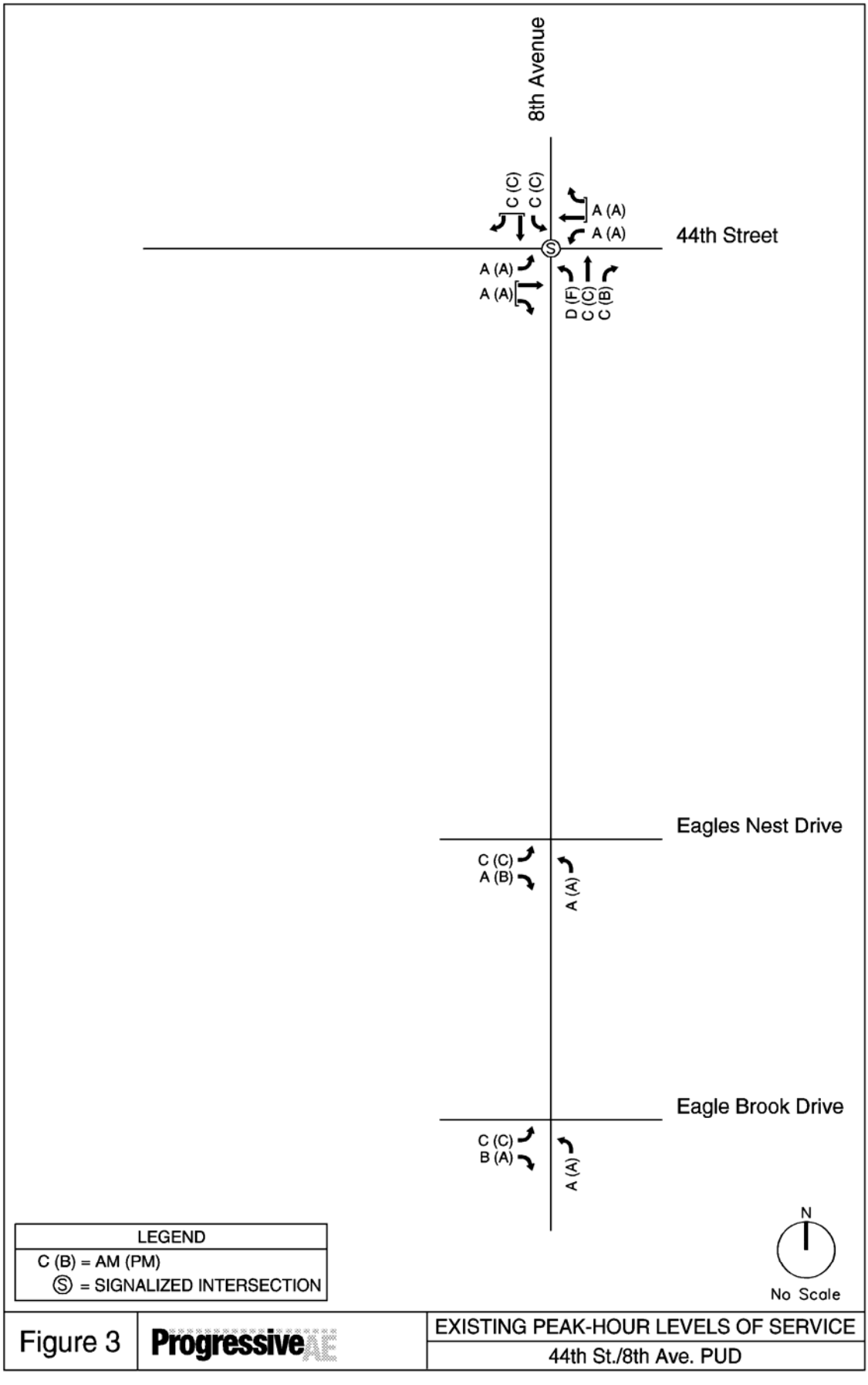


Figure 3 | Progressive AE | EXISTING PEAK-HOUR LEVELS OF SERVICE
44th St./8th Ave. PUD

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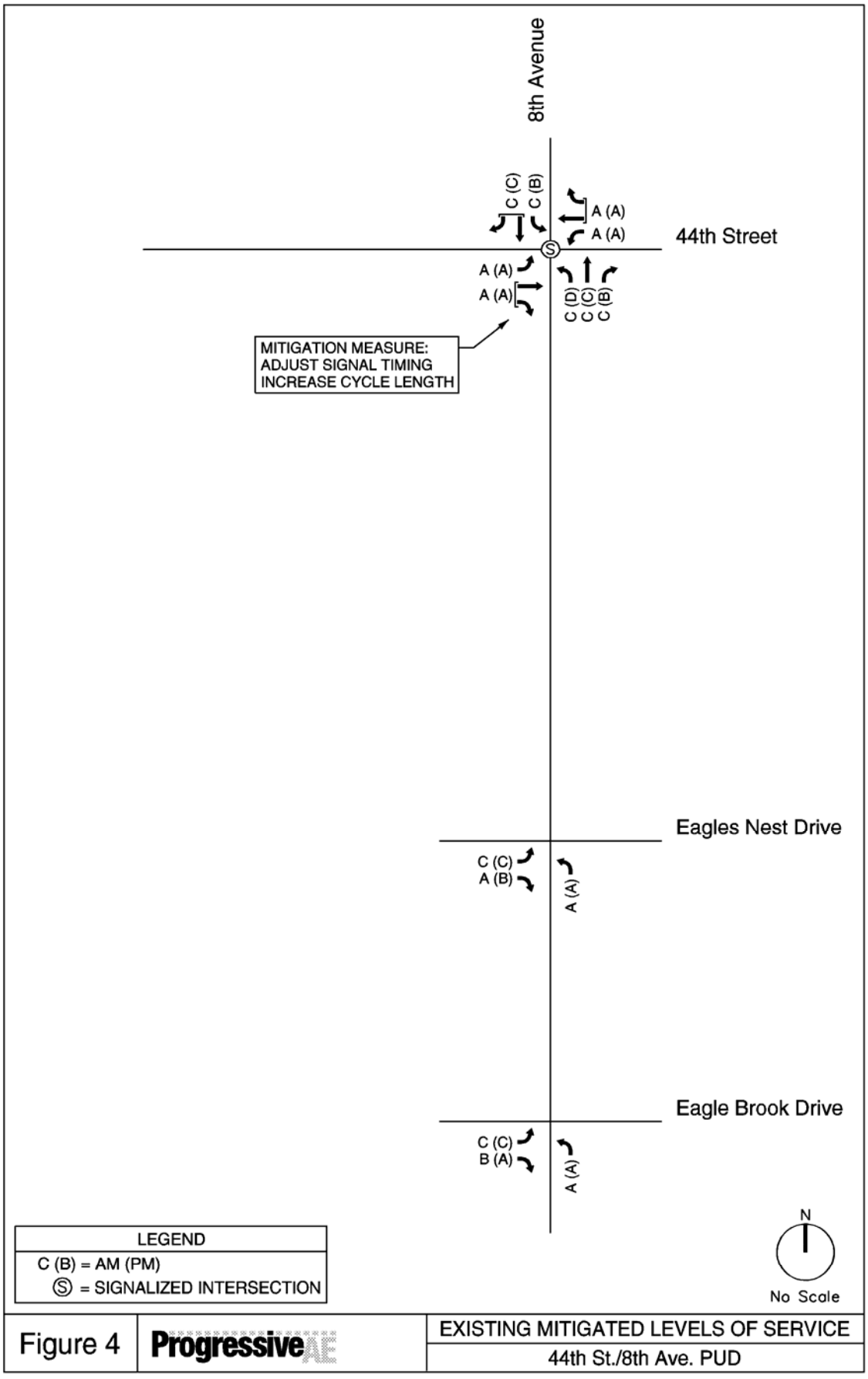

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Chapter 3
Future Background Conditions

This chapter examines the expected future operating conditions of the study area roadways for the year 2012 without the proposed multi-use development in place.

BACKGROUND TRAFFIC

To fully assess the future conditions at any intersection, traffic volume growth factors and/or traffic from other nearby approved/under-construction projects were taken into account. Based on discussions with Georgetown Township, a 32-unit residential condominium development off of Port Sheldon Street has recently been approved for construction. This use is located just north of the study intersection of 44th Street and 8th Avenue, on the south side of Port Sheldon Street. Since this is a residential land use, with a likely destination for the residents to be businesses closer to Grand Rapids, it was estimated that 10% of this site traffic would use the study area intersection. This conservative estimate expects to add 2 trip ends in the weekday morning peak hour, and 3 trip ends in the weekday afternoon peak hour to the study intersections. Traffic volumes for the Eagles Nest apartments were also increased to reflect a 100% occupied condition for this portion of the analysis.

In addition to the above development traffic, the Ottawa County Road Commission directed us to apply a 3 percent per year growth factor to existing volumes.

Background growth traffic was distributed onto the study area intersections. Figure 5 illustrates the expected future peak hour volumes without the proposed project in place.

EVALUATION OF FUTURE BACKGROUND CONDITIONS

Level of service analyses were completed to determine what conditions might be expected in the year 2012 without the proposed development in place. It should be noted that the traffic signal timing adjustments recommended in the previous chapter are assumed as the base condition for the background analysis. The results of these analyses are illustrated in Figure 6.

The analyses indicate that most movements at the intersections continue to operate at LOS D or better. The exceptions are as follows:

- The northbound to westbound left turns at the 44th Street/8th Avenue intersection operate at LOS F in the weekday afternoon peak hour under future conditions without the proposed development in place.

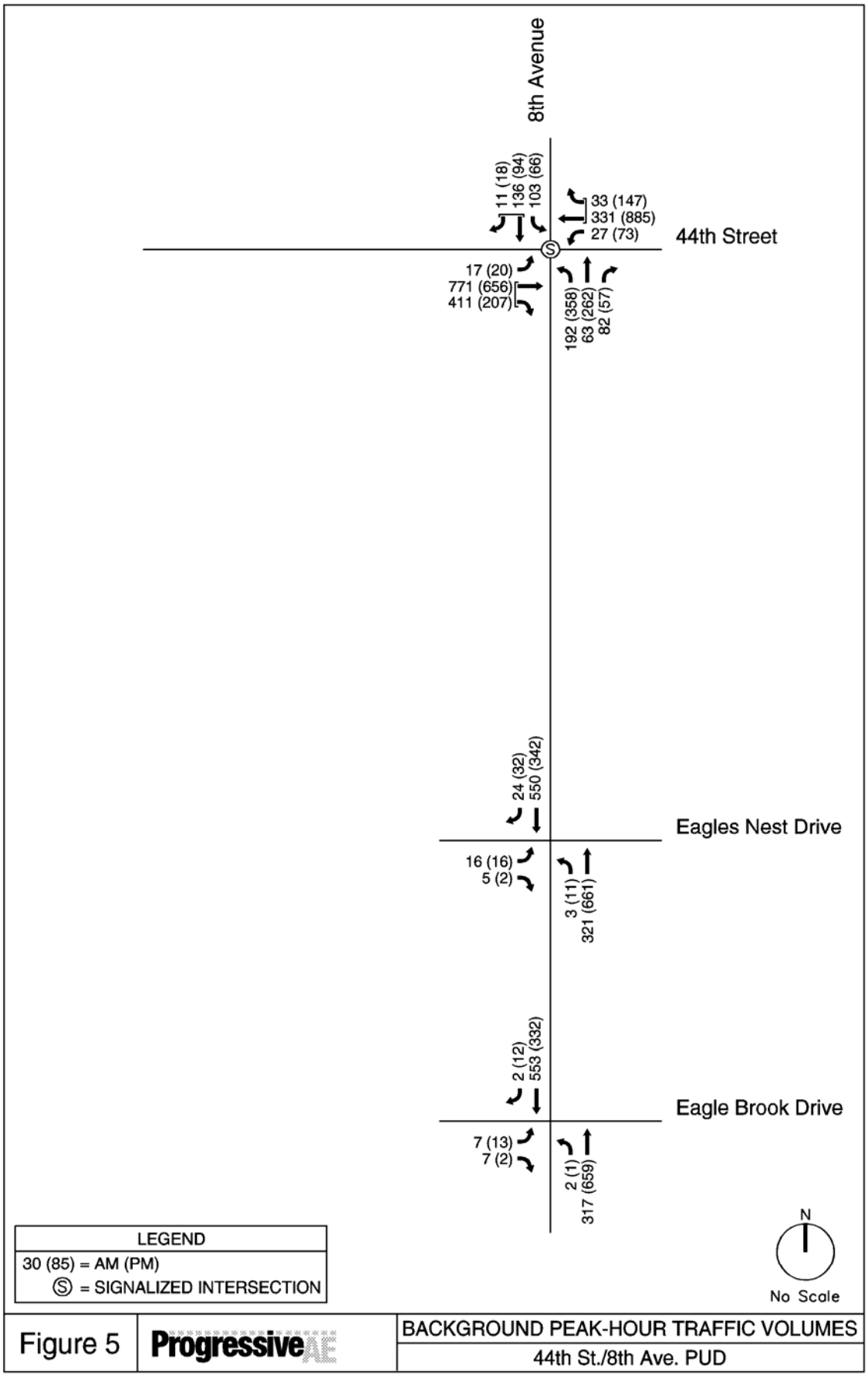

Figure 5 | Progressive AE | BACKGROUND PEAK-HOUR TRAFFIC VOLUMES | 44th St./8th Ave. PUD

TFF 4/14/2006 06:33:36 MINKUSR P:\59590101\PLT\FIGURE 05.DGN

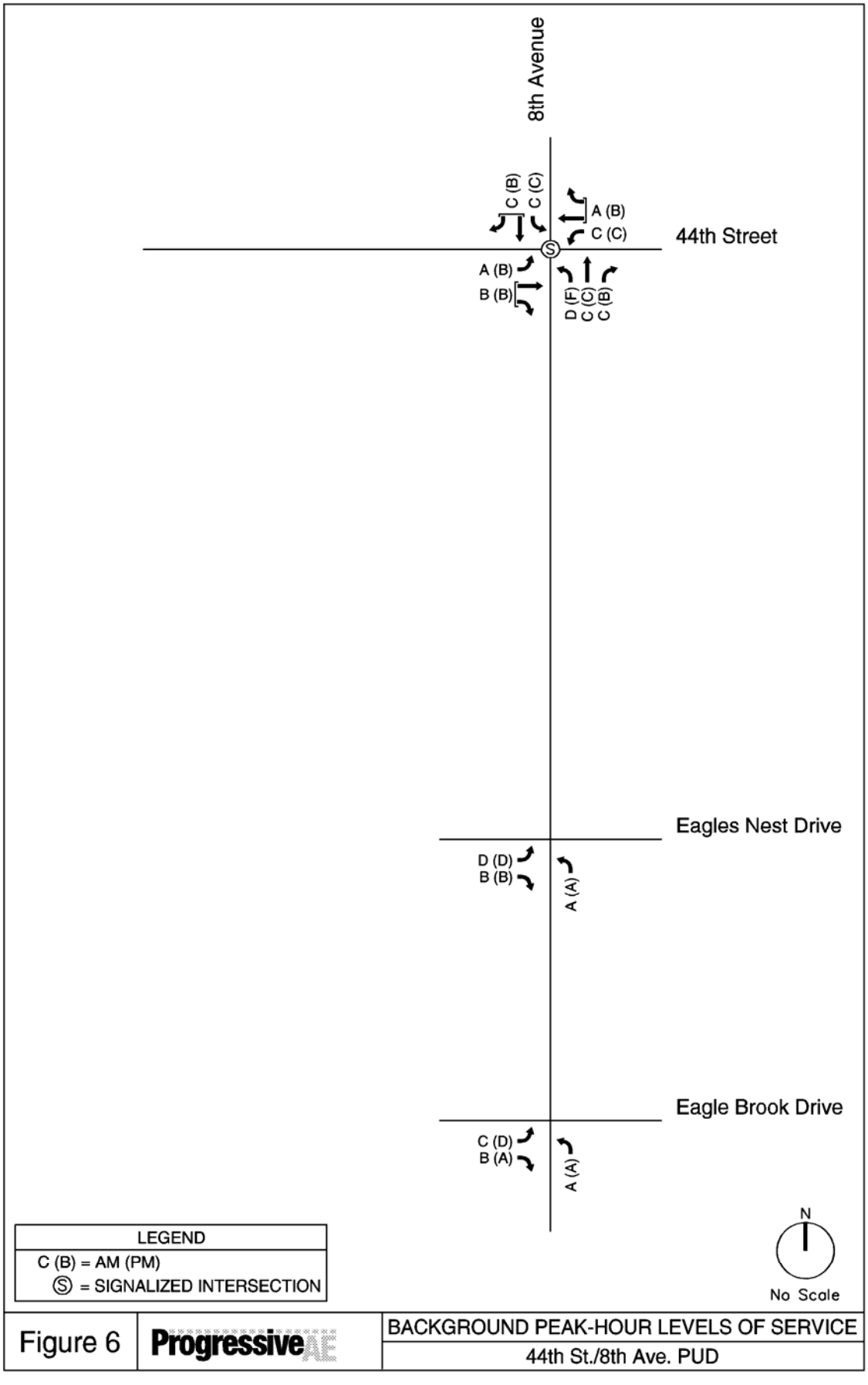

Figure 6 — BACKGROUND PEAK-HOUR LEVELS OF SERVICE
44th St./8th Ave. PUD

TIFF 4/14/2006 08:33:25 MINKUSR P:\59590101\PLT\FIGURE 06.DGN

SUGGESTED ROADWAY IMPROVEMENTS

The delays experienced for the northbound left turns at the 44th Street/8th Avenue intersection can be mitigated with a minor adjustment in signal phasing. The addition of a north-south left turn phase allocates more green time to the left turn movements and allows the northbound movement to again operate at an acceptable level of service. Figure 7 illustrates the levels of service with the mitigation measures in place.

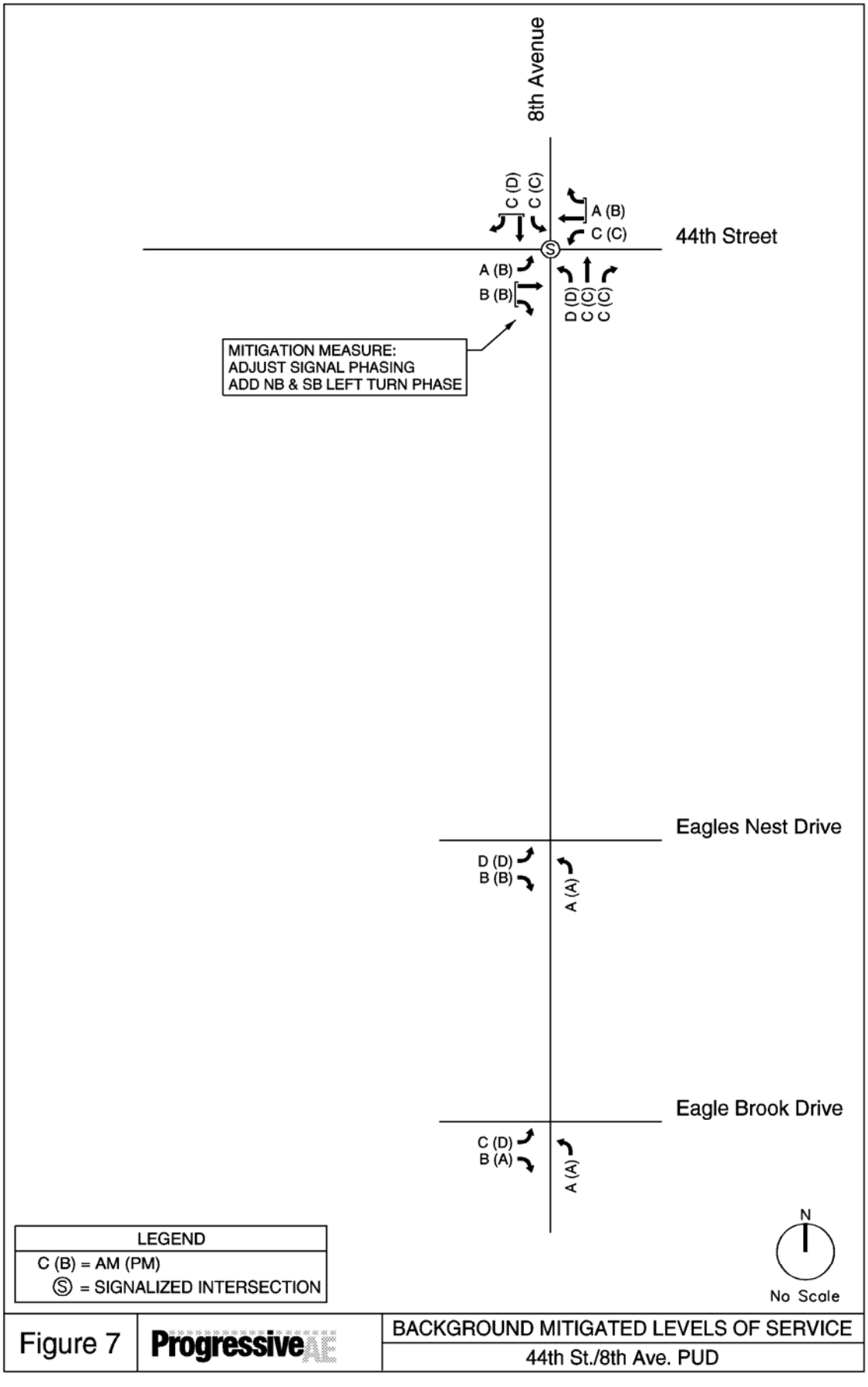

Figure 7 | Progressive AE | BACKGROUND MITIGATED LEVELS OF SERVICE
44th St./8th Ave. PUD

TIFF 4/14/2006 13:07:20 MINKUSR P:\59590101\PLT\FIGURE 07.DGN

Chapter 4
Future Conditions

The purpose of this chapter is to summarize the expected future traffic conditions within the study area with the proposed multi-use development in place. If applicable, it will outline any additional roadway improvements that will be needed to accommodate project traffic during peak hours.

SITE ACCESS

As stated above, the proposed site plan includes a total of four approaches from the two public streets bordering the development. One new approach is proposed, along with two existing driveways, to intersect 8th Avenue. The proposed approaches to 8th Avenue are approximately 370 feet, 530 feet, and 985 feet south of 44th Street, respectively. The northern access is new, while the other two currently serve Eagles nest and Eagle Brook apartment complexes and will be shared access points. The proposed approach intersecting 44th Street will be located approximately 450 feet west of 8th Avenue.

TRIP GENERATION

Vehicle trips that will be generated by the proposed uses were forecast based upon information contained in Trip Generation, Seventh Edition, by the Institute of Transportation Engineers. The data contained in this manual provides trip generation rates for many land uses and is based upon thousands of surveys completed throughout the country. The tables that follow summarize the adjusted trip generation volumes to be used in the study.

Based upon the information in the Trip Generation manual, the proposed project components are expected to generate approximately 316 new weekday morning peak-hour vehicle trips and 305 new weekday afternoon peak-hour vehicle trips onto the study area roadway system. Tables 1 and 2 summarize the vehicle trip generation analyses and the assumed pass-by percentages used based upon the proposed uses.

It should be noted that because this development has a variety of uses, it is likely that some of the traffic generated by various uses will come into the site and stop at more than one shop before leaving. This traffic could be considered as internally captured, which reduces the overall new traffic entering and leaving the site. To provide a more conservative analysis for the future traffic conditions, this internal capture traffic was not taken into account in this analysis.

Table 1
Proposed Project Trip Generation – AM Peak

Land Use	ITE Code	Size	Weekday AM Peak-Hour Trips				
			New[1]		Pass-by[2]		
			In	Out	In	Out	Total[1]
Apartment	220	20 Units	4	11	0	0	15
General Office	710	52,750 SF	99	13	0	0	112
Specialty Retail	814	22,750 SF	11	5	0	0	16
Sit-Down Restaurant	932	15,000 SF	90	83	0	0	173
Totals =			204	112	0	0	316

Table 2
Proposed Project Trip Generation – PM Peak

Land Use	ITE Code	Size	Weekday PM Peak-Hour Trips				
			New[1]		Pass-by[2]		
			In	Out	In	Out	Total[1]
Apartment	220	20 Units	18	12	0	0	30
General Office	710	52,750 SF	23	114	0	0	137
Specialty Retail	814	22,750 SF	23	15	12	12	62
Sit-Down Restaurant	932	15,000 SF	68	32	32	32	164
Totals =			132	173	44	44	393

TRIP DISTRIBUTION

The directional distribution of project-generated traffic was based upon existing travel patterns in the area and at the key intersections. The expected directional distribution to/from the proposed development is approximately as follows:

Weekday Morning and Afternoon Peak Hours

- South on 8th Avenue: 20%
- North on 8th Avenue: 10%
- West on 44th Street: 40%
- East on 44th Street: 30%

Based upon the above distribution patterns, the forecast peak-hour project traffic was assigned to the project access points and the adjacent roadway system. Figure 8 shows the expected trip assignment of site-generated traffic. Note that for clarity, the pass-by trips were separated from the new trips. To get the total site generated trip distribution for each movement, the two sets of volumes should be added together.

1 "New" trips added to roadway system, "Total" is volume at site driveways.
2 Conservative pass-by percentages used; 30% for Specialty Retail and 40% for Sit-Down Restaurant.

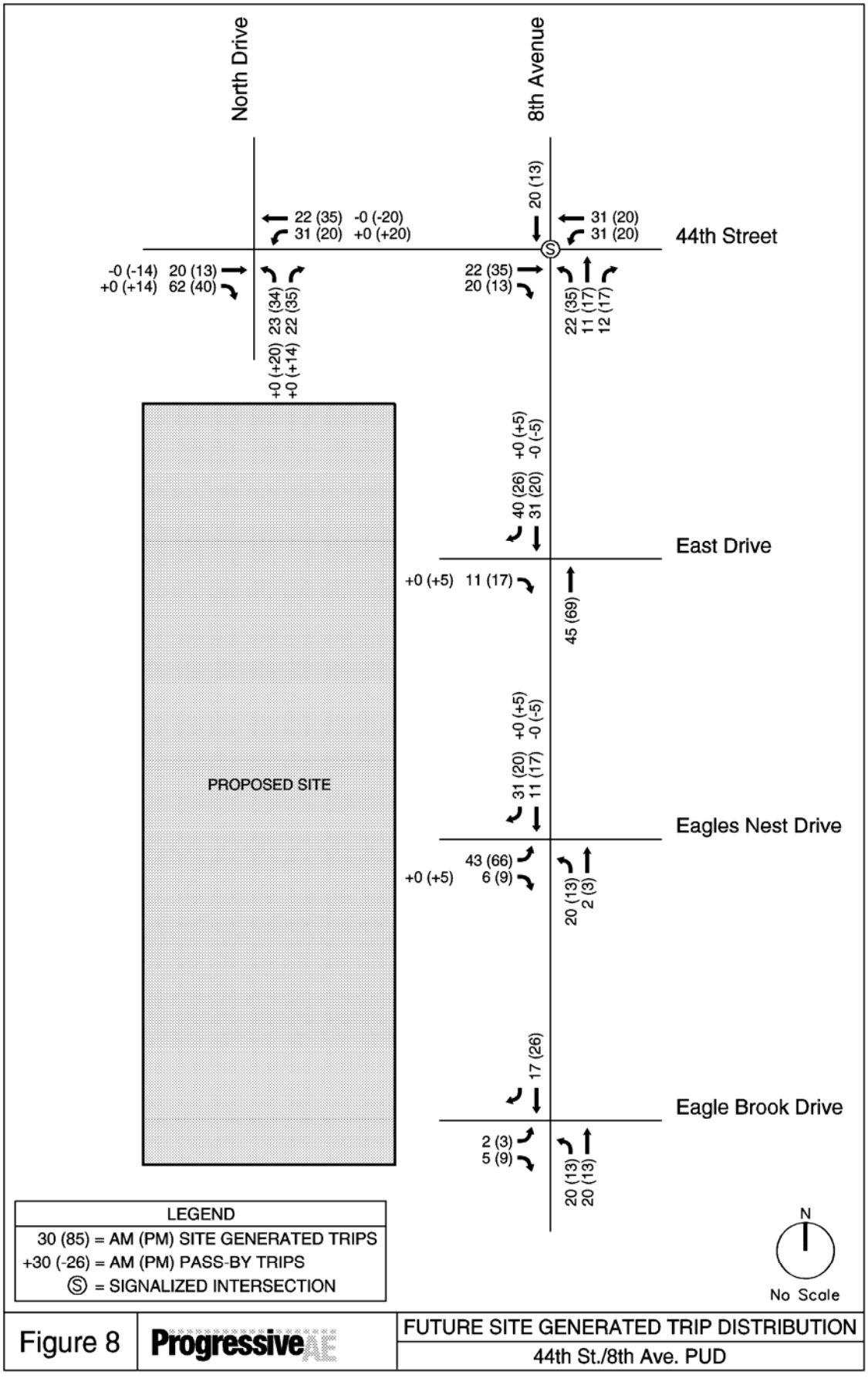

Figure 8 — FUTURE SITE GENERATED TRIP DISTRIBUTION
44th St./8th Ave. PUD

TIFF 4/18/2006 15:07:34 MINKUSR P:\59590101\PLT\FIGURE 08.DGN

EVALUATION OF FUTURE CONDITIONS

The forecast project trips were added to the expected year 2012 background peak-hour volumes to depict the estimated total future volumes during the morning and afternoon peak periods. These total volumes are illustrated in Figure 9.

New level of service analyses were completed for the key intersections for these projected future conditions. Figure 10 illustrates the projected future level of service results at the study area intersections on 44th Street and 8th Avenue under the background mitigated traffic signal or stop sign controlled conditions. Also shown are the projected level of service results for the proposed driveway approaches for the site.

The following assumptions were made for the future analysis:

1. East Drive 1 will have right-in/right-out operation into the site.
2. North Drive will have one entry lane and two exit lanes.
3. Under the base future analysis, all site driveway approaches will be stop controlled.
4. The improvements recommended under existing and background conditions have already been completed under future conditions and will be considered included in the base analysis for the future conditions.

The analyses indicate that most movements at the intersections continue to operate at LOS D or better under future conditions with the recommended improvements from the background analyses in place. The exceptions are as follows:

- The westbound left turns at 44th Street and 8th Avenue intersection will operate at LOS F during the morning and afternoon peak periods under future conditions.
- The left turn movements from the North Drive and existing Eagles Nest Drive driveways will operate at LOS of F during the morning and afternoon peak periods under the future conditions. Left turn movements at unsignalized locations (such as site driveways with very low volumes) frequently are shown to operate poorly by traffic analysis software packages. Since the software packages can't exactly emulate human driving patterns, gaps caused by upstream traffic signals that normal drivers would use to complete their turns are underestimated during the analyses. For this reason, we believe that these movements will operate at better levels than the software indicates.

  Just to use the poor LOS scenario as worst-case, a queuing analysis was completed. The results of this analysis have shown that the duration of the length of the queues at the site driveways would be very minimal. This analysis also showed that all the site driveways appear to have adequate storage to handle the expected queues.

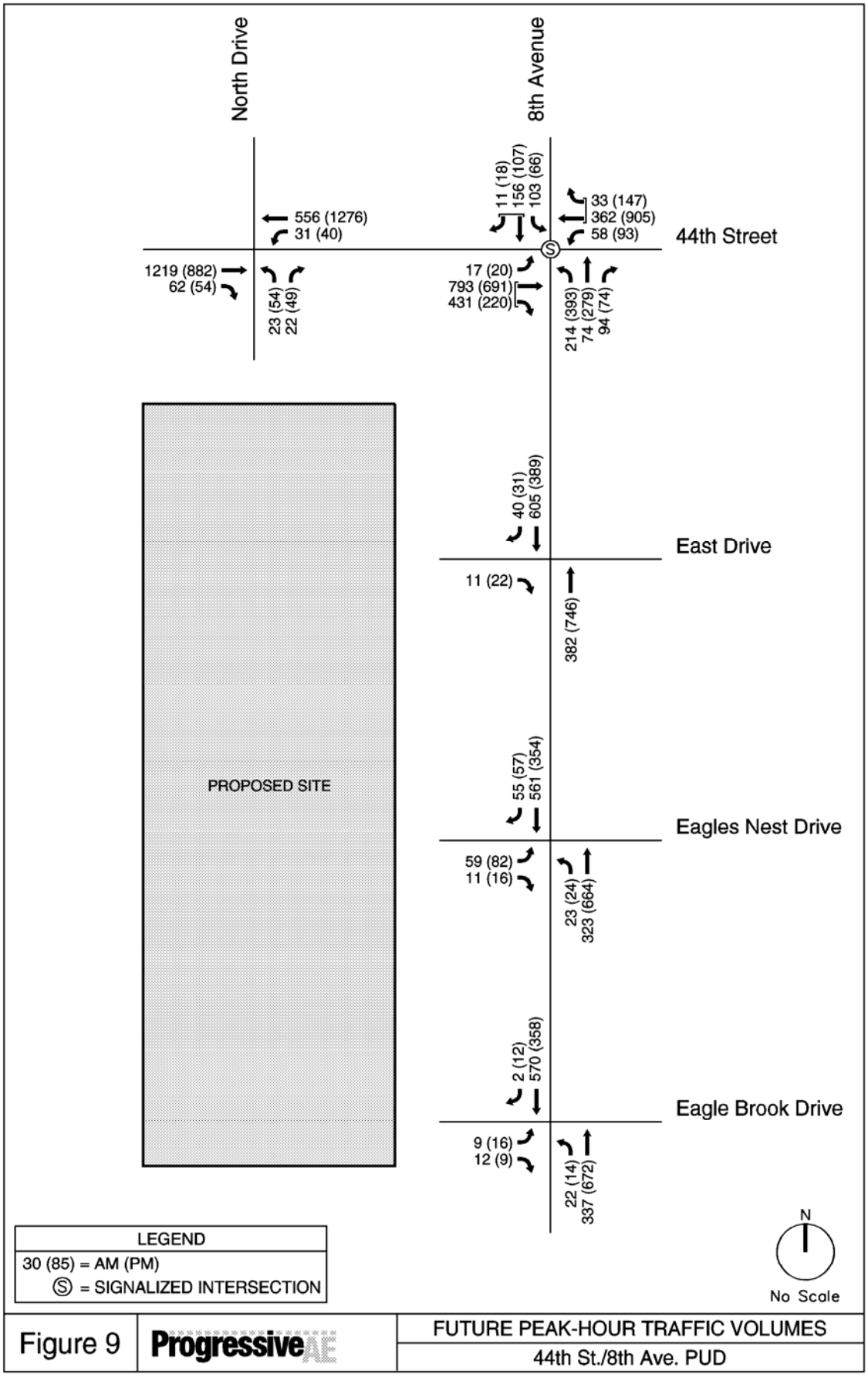

Figure 9 | Progressive AE | FUTURE PEAK-HOUR TRAFFIC VOLUMES | 44th St./8th Ave. PUD

TIFF 4/14/2006 11:36:56 MINKUSR P:\59590101\PLT\FIGURE 09.DGN

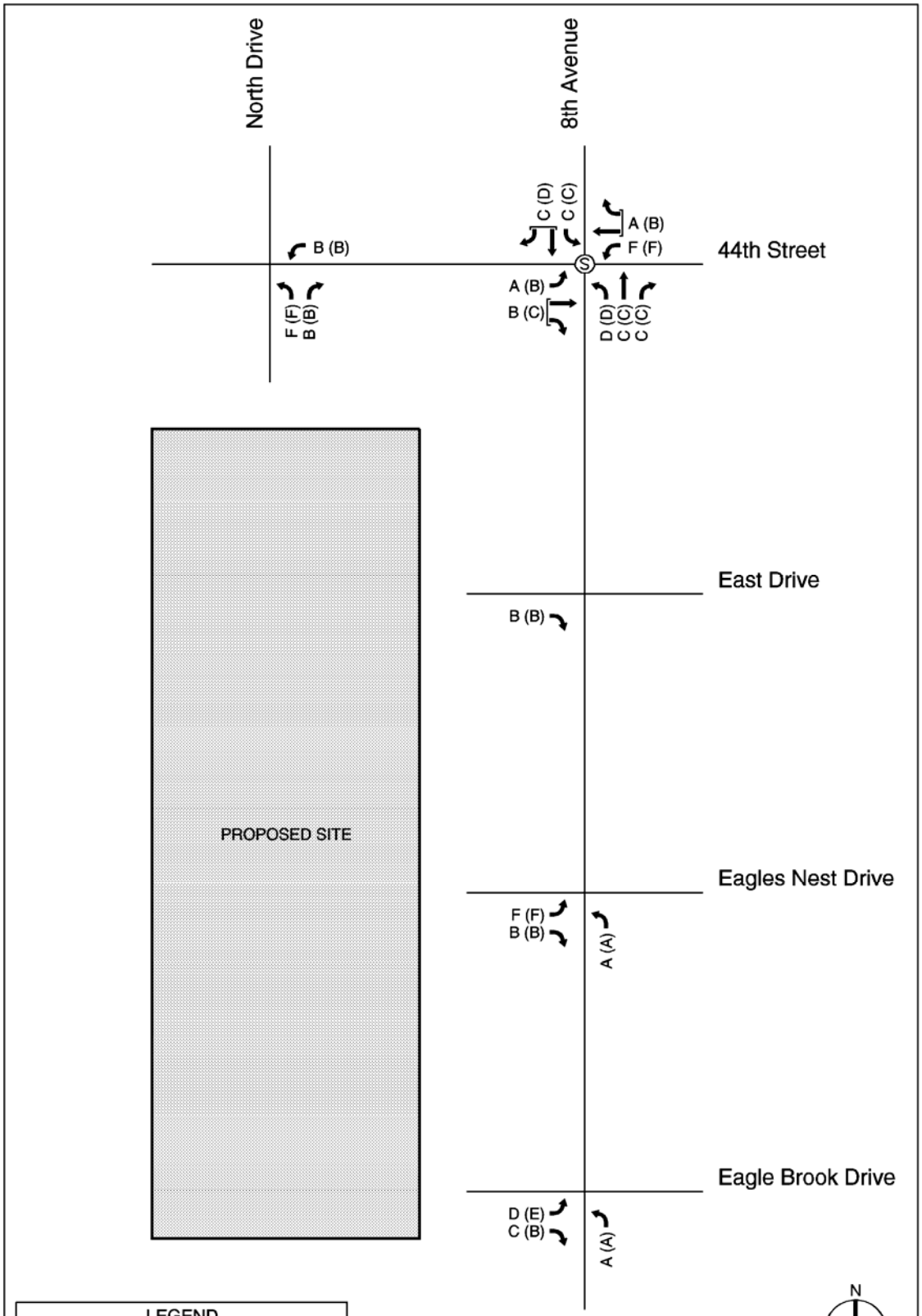

Figure 10 | Progressive AE | FUTURE PEAK-HOUR LEVELS OF SERVICE | 44th St./8th Ave. PUD

TIFF 4/14/2006 11:36:44 MINKUSR P:\59590101\PLT\FIGURE 10.DGN

SUGGESTED ROADWAY IMPROVEMENTS

The results of the existing, background, and future capacity analyses outlined in this report show that intersections adjacent to the project will generally operate at acceptable levels of service with exceptions of certain movements during the two peak periods analyzed.

Because some of the delay is experienced under existing conditions and future background conditions prior to the proposed site in place, improvements were suggested in Chapters 2 and 3 that would mitigate these delays. The suggested improvements noted below are necessary due to the further impacts of the proposed development.

As a part of the analyses, suggested roadway improvements are noted in the following paragraphs.

Lane improvements are recommended at the 44th Street and 8th Avenue intersection. The delays experienced by the westbound left turns can be mitigated with the construction of an eastbound to southbound right turn lane at this intersection.

No improvements are being recommended at the North Drive and Eagles Nest Drives. All site driveways should also be constructed with deceleration tapers for right turns into the site (as currently shown on the proposed site plan). Figure 11 illustrates the levels of service with the proposed mitigation measures in place.

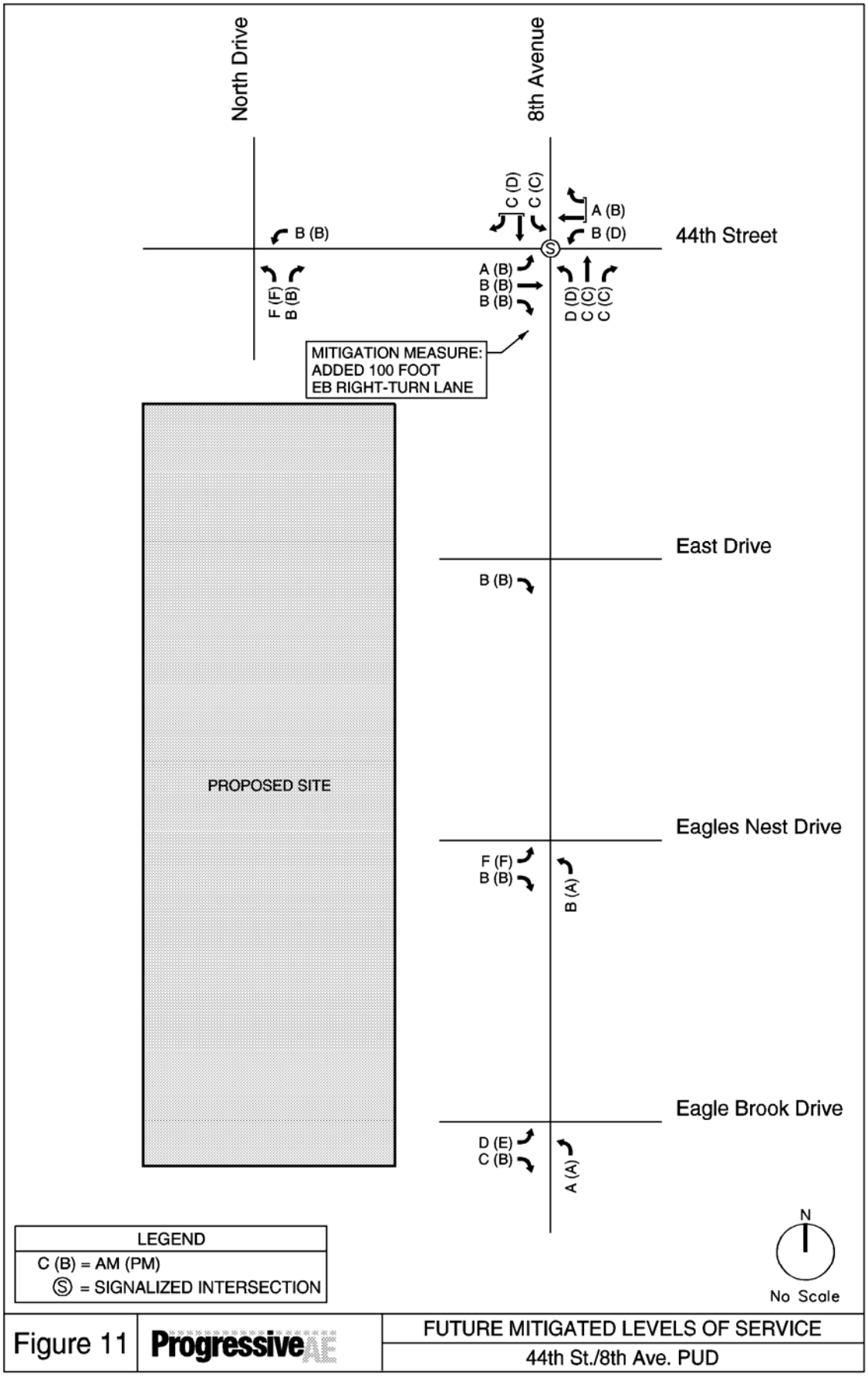

Figure 11 | Progressive AE | FUTURE MITIGATED LEVELS OF SERVICE | 44th St./8th Ave. PUD

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Appendix

- **Level of Service Definitions Signalized Intersections (2000)**
- **Level of Service Definitions Unsignalized Intersections (2000)**
- **Glossary**
- **Analysis Results**

Level of Service Definitions
Signalized Intersections (2000)

Level of Service A: Describes operations with very low average stopped delay, i.e., less than 10.0 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level of Service B: Describes operations with an average stopped delay in the range of 10.0 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

Level of Service C: Describes operations with an average stopped delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level of Service D: Describes operations with an average stopped delay in the range of 35.1 to 55.0 seconds per vehicle. At Level of Service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c (volume/capacity) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E: Describes operations with an average stopped delay in the range of 55.1 to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay in many cases. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are a frequent occurrence.

Level of Service F: Describes operations with an average stopped delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Level of Service Definitions
Unsignalized Intersections (2000)

Level of Service A: Average delay per vehicles for impeded movements is less than 10 seconds. There is little or no delay with typically low sidestreet and/or main street traffic.

Level of Service B: Average stopped delays from 10.1 seconds to 15.0 seconds. Short delays, many acceptable gaps in main street traffic stream.

Level of Service C: Average delay per vehicle ranges from 15.1 to 25.0 seconds. Average traffic delays with frequent gaps in main street traffic.

Level of Service D: Average delays from 25.1 to 35.0 seconds for impeded movements. Long traffic delays for impeded movements due in part to a limited number of acceptable gaps.

Level of Service E: Average delays in the 35.1 to 50.0 second range. May experience very long delays for impeded movements with a very small number of acceptable gaps in the traffic stream.

Level of Service F: Average vehicle delays of over 50.0 seconds. Extreme traffic delays with virtually no acceptable gaps in main street traffic.

Glossary

Approach: A set of lanes accommodating all left-turn, through, and right-turn movements arriving at an intersection from a given direction.

Arterial: Signalized streets that serve primarily through traffic and provide access to abutting properties as a secondary function.

Average Stopped Delay: The total time vehicles are stopped in an intersection approach or lane group during a specified time interval divided by the volume departing from the approach or lane group during the same time period, in seconds per vehicle.

Background Traffic: Traffic volumes that will be on the roadway network without the presence of the proposed development.

Bypass Lane: A one-lane widening on a two-lane roadway that allows through traffic to pass by waiting left-turn traffic.

Capacity: The maximum rate of flow at which persons or vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions; usually expressed as vehicles per hour or persons per hour.

Collector Street: Surface street providing land access and traffic circulation service within residential, commercial, and industrial areas.

Conflicting Traffic Volume: The volume of traffic which conflicts with a specific movement at an intersection.

Corridor: A lineal study area aligned with a roadway facility in which traffic, land use, right-of-way, environmental, and other factors are evaluated to determine future transportation facility needs.

Cycle: Any complete sequence of traffic signal indications.

Cycle Length: The total time for a traffic signal to complete one cycle.

Design Hour Volume: The traffic volume for the design hour, usually a forecast of the relevant peak hour volume, in vehicles per hour.

Diverted Linked Trips: Trips from the traffic volume on roadways within the vicinity of the generator but which requires a diversion from that roadway to another roadway to gain access to the site.

Driveway Offset: Distance between driveways on opposite sides of a roadway, measured parallel to roadway.

Freeway: A multi-lane divided highway having a minimum of two lanes for exclusive use of traffic in each direction and full control of access and egress.

Gaps (Critical Gap): The median time headway between vehicles in a major traffic stream which will permit side-street vehicles to cross through or merge with the major traffic stream.

Green Time: The actual length of the "green" indication for a given movement at a signalized intersection.

Level of Service: A qualitative measure describing operational conditions within a traffic stream; generally described in terms of such factors as speed and travel time, delay, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

Operational Analysis: A use of capacity analysis to determine the prevailing level of service on an existing or projected facility, with known or projected traffic, roadway, and control conditions. This analysis can involve a particular location, such as an intersection or a corridor.

Pass-by Trips: Trips made as intermediate stops on the way from an origin to a primary trip destination.

Passing Sight Distance: The visibility distance required to allow drivers to execute safe passing maneuvers in the opposing traffic lane of a two-lane, two-way highway.

Peak Hour (AM): The one hour period in the morning representing the highest hourly volume of traffic flow on the adjacent public street system.

Peak Hour (PM): The one hour period in the afternoon or evening representing the highest hourly volume of traffic flow on the adjacent public street system.

Peak Hour Factor: The hourly volume during the maximum volume hour of the day divided by four times the peak 15-minute flow within the peak hour; a measure of traffic demand fluctuation within the peak hour.

Phase: The part of the signal cycle allocated to any combination of traffic movements receiving the right-of-way simultaneously during one or more intervals.

Roadway Conditions: Geometric characteristics of a street or highway, including the type of facility, number and width of lanes (by direction), shoulder widths and lateral clearances, design speed, etc.

Service Drive: A roadway (usually private) that provides internal access to two or more uses.

Site Traffic: Existing or projected vehicular traffic generated by the development.

Study Area: The geographic area containing site access points and critical intersections (and connecting highway segments) which are impacted by the site-traffic generated by the development, and should be evaluated.

System Improvements: Added lanes, signal improvements, and other roadway improvements not considered site-related improvements.

Traffic Impact: The adverse impact on intersection Level of Service and/or street and highway safety and operations as determined by the criteria and procedures set forth in this handbook.

Trip (Directional Trip): A single or one-direction vehicle movement with either the origin or the destination (exiting or entering) inside a study site.

Trip Distribution: The distribution or assignment of site traffic into site driveways and study area roadways/intersections based upon expected direction of approach and departure.

Unsignalized Intersection: Any intersection not controlled by traffic signals.

Volume: The number of persons or vehicles passing a point on a lane or roadway during some time interval, such as one hour or during an average day.

Volume-to-Capacity Ratio (V/C): The ratio of demand flow rate to capacity for a traffic facility.

TRAFFIC DATA SPECIALISTS, INC.

Kent City, Michigan
616-498-3835

PROG 2006 04
44TH ST. & 8TH AVE.
GEORGETOWN TWP.
OTTAWA COUNTY

File Name : 44thSt8th
Site Code : 04112006
Start Date : 04/11/2006
Page No : 1

Groups Printed- Unshifted

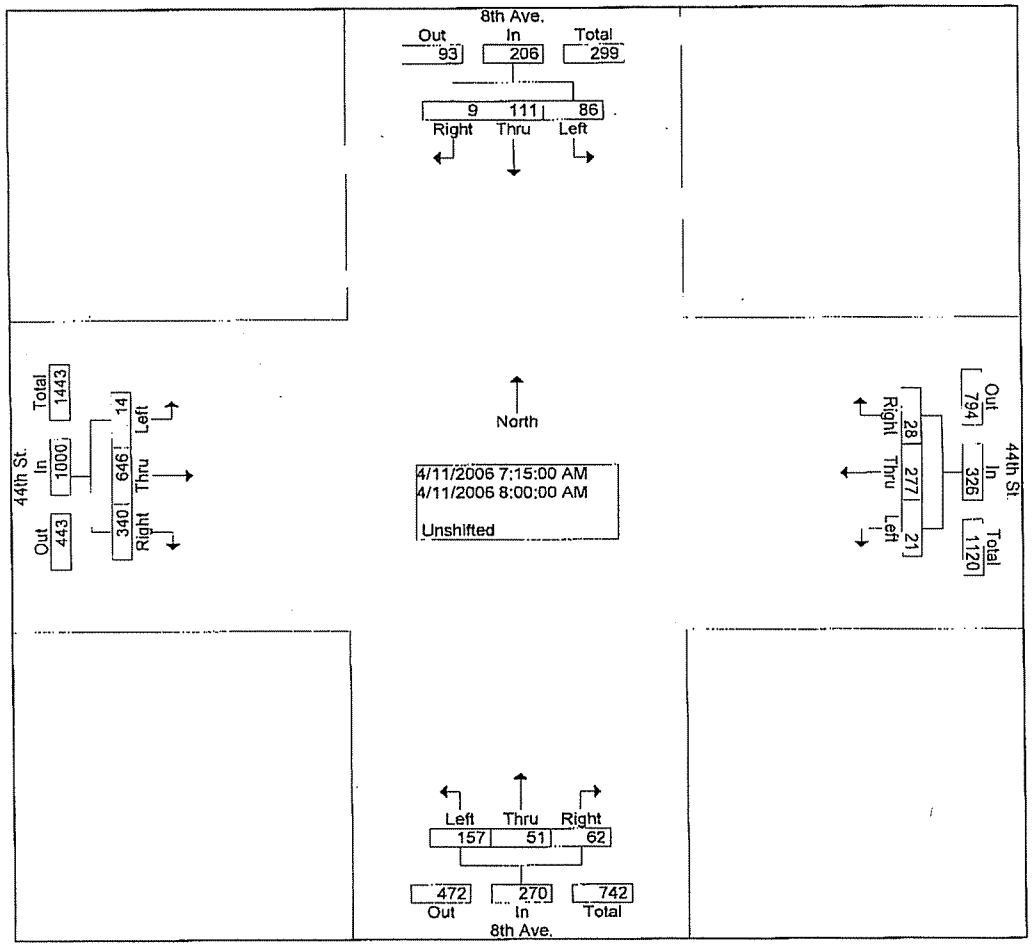
	8th Ave. Southbound				44th St. Westbound				8th Ave. Northbound				44th St. Eastbound						
Start Time	Left	Thru	Right	Truc	Left	Thru	Right	Truc	Left	Thru	Right	Truc	Left	Thru	Right	Truc	Exclu. Total	Inclu. Total	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0			
07:00 AM	14	17	1	0	4	47	6	1	28	8	13	3	1	150	68	6	10	357	367
07:15 AM	27	25	5	0	6	66	8	2	33	11	12	4	4	154	84	8	14	435	449
07:30 AM	25	37	1	0	8	76	7	5	36	11	24	2	3	201	122	8	15	551	566
07:45 AM	18	25	2	0	4	76	7	1	52	16	15	1	4	151	76	11	13	446	459
Total	84	104	9	0	22	265	28	9	149	46	64	10	12	656	350	33	52	1789	1841
08:00 AM	16	24	1	2	3	59	6	4	36	13	11	0	3	140	58	8	14	370	384
08:15 AM	19	12	0	1	2	55	6	2	32	18	14	1	3	149	35	3	7	345	352
08:30 AM	11	18	0	0	3	72	10	6	34	14	11	5	3	149	30	7	18	355	373
08:45 AM	14	12	2	0	5	49	10	3	28	7	7	5	3	133	35	8	16	305	321
Total	60	66	3	3	13	235	32	15	130	52	43	11	12	571	158	26	55	1375	1430
04:00 PM	16	16	4	2	12	148	26	6	47	29	5	7	2	99	25	6	21	429	450
04:15 PM	13	10	2	0	12	133	29	3	53	41	8	4	4	112	31	4	11	448	459
04:30 PM	16	10	3	0	12	152	19	1	53	35	13	5	3	132	38	7	13	486	499
04:45 PM	12	16	2	0	7	170	31	1	56	51	13	4	2	118	35	3	8	513	521
Total	57	52	11	2	43	603	105	11	209	156	39	20	11	461	129	20	53	1876	1929
05:00 PM	13	18	1	0	16	201	30	0	62	51	7	4	1	170	53	2	6	623	629
05:15 PM	9	22	6	0	13	209	32	2	102	69	15	6	9	133	43	4	12	662	674
05:30 PM	21	20	6	0	16	161	30	0	75	47	9	3	5	128	35	5	8	553	561
05:45 PM	14	19	5	0	14	151	31	2	55	33	16	5	2	115	31	2	9	486	495
Total	57	79	18	0	59	722	123	4	294	200	47	18	17	546	162	13	35	2324	2359
Grand Total	258	301	41	5	137	1825	288	39	782	454	193	59	52	2234	799	92	195	7364	7559
Apprch %	43.0	50.2	6.8		6.1	81.1	12.8		54.7	31.8	13.5		1.7	72.4	25.9				
Total %	3.5	4.1	0.6		1.9	24.8	3.9		10.6	6.2	2.6		0.7	30.3	10.9		2.6	97.4	

TRAFFIC DATA SPECIALISTS, INC.

Kent City, Michigan
616-498-3835

File Name : 44thSt8th
Site Code : 04112006
Start Date : 04/11/2006
Page No : 2

	8th Ave. Southbound				44th St. Westbound				8th Ave. Northbound				44th St. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Intersection 07:15 AM																	
Volume	86	111	9	206	21	277	28	326	157	51	62	270	14	646	340	1000	1802
Percent	41.7	53.9	4.4		6.4	85.0	8.6		58.1	18.9	23.0		1.4	64.6	34.0		
07:30 Volume	25	37	1	63	8	76	7	91	36	11	24	71	3	201	122	326	551
Peak Factor																	0.818
High Int.	07:30 AM				07:30 AM				07:45 AM				07:30 AM				
Volume	25	37	1	63	8	76	7	91	52	16	15	83	3	201	122	326	
Peak Factor				0.817				0.896				0.813				0.767	

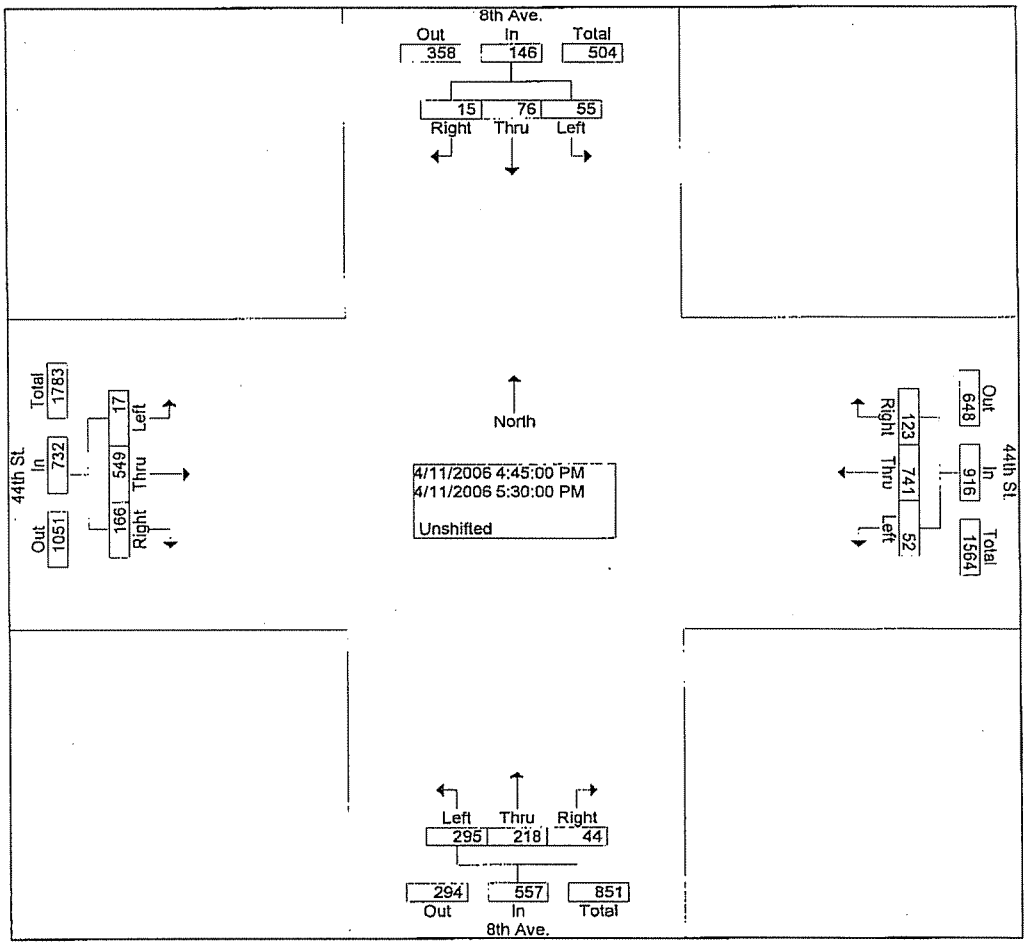


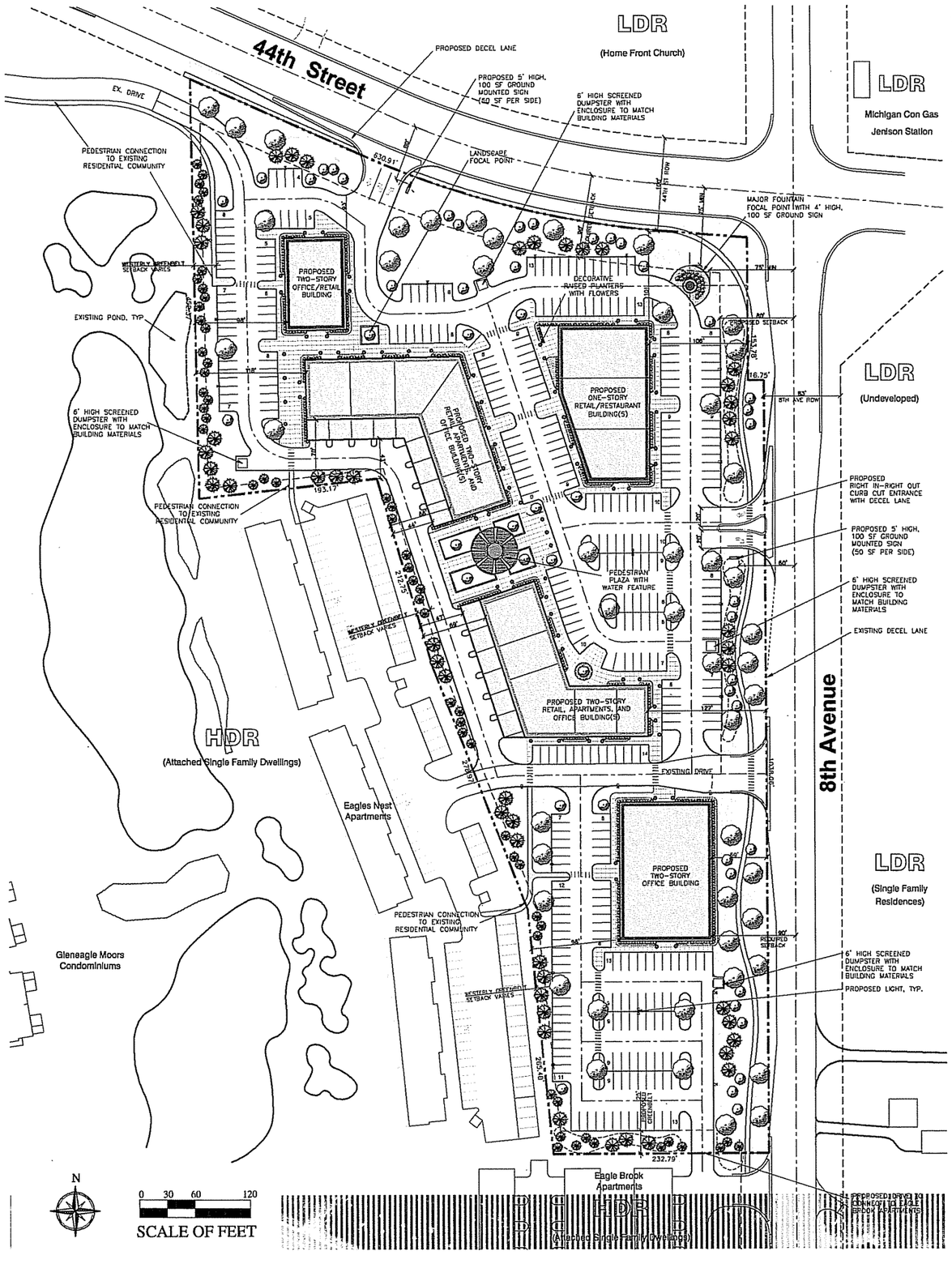
TRAFFIC DATA SPECIALISTS, INC.

Kent City, Michigan
616-498-3835

File Name : 44thSt8th
Site Code : 04112006
Start Date : 04/11/2006
Page No : 3

	8th Ave. Southbound				44th St. Westbound				8th Ave. Northbound				44th St. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection 04:45 PM																	
Volume	55	76	15	146	52	741	123	916	295	218	44	557	17	549	166	732	2351
Percent	37.7	52.1	10.3		5.7	80.9	13.4		53.0	39.1	7.9		2.3	75.0	22.7		
05:15 Volume	9	22	6	37	13	209	32	254	102	69	15	186	9	133	43	185	662
Peak Factor																	0.888
High Int.	05:30 PM				05:15 PM				05:15 PM				05:00 PM				
Volume	21	20	6	47	13	209	32	254	102	69	15	186	1	170	53	224	
Peak Factor				0.777				0.902				0.749				0.817	





DEVELOPMENT STATISTICS

PROPOSED BUILDINGS & PARKING

PROPOSED USE	SIZE	REQUIRED PARKING	PROPOSED PARKING
TWO STORY OFFICE/RETAIL BUILDING	13,000 SF	54 SPACES	50 SPACES
ONE STORY RETAIL/RESTAURANT BUILDING	15,000 SF	75 SPACES	70 SPACES
TWO STORY OFFICE/RETAIL BUILDING	18,000 SF	82 SPACES	
TWO STORY OFFICE/RETAIL BUILDING	14,500 SF	66 SPACES	132 SPACES
20 APARTMENTS	1,800 SF	40 SPACES	40 SPACES
TWO STORY OFFICE BUILDING	30,000 SF	100 SPACES	106 SPACES
		417 SPACES	398 SPACES (95% OF REQUIRED TOTAL FOR CONV. ZONING)

BUILDING SETBACKS:

	REQUIRED	PROPOSED
FRONT YARD	90'	80' & 90'
SIDE YARD	25'	25'
REAR YARD	30'	VARIES

PROPOSED PARKING:

STANDARD SPACES ARE 9' x 20' WITH 24' PARKING ISLES. BARRIER FREE SPACES WILL BE PROVIDED AS REQUIRED.

PUD PROPOSES A 5% REDUCTION IN THE REQUIRED NUMBER OF PARKING SPACES BASED ON SHARED PARKING AND PEDESTRIAN ACCESS TO THE SITE. REDUCED PARKING WILL INCREASE SITE GREEN SPACE AND LANDSCAPED AREAS, AS WELL AS PROVIDE LESS PAVED SURFACES THAT WOULD REQUIRE STORMWATER DETENTION AND MANAGEMENT.

PROPOSED LOT COVERAGE:

PARKING		167,721 S.F.	40%
BUILDING		69,000 S.F.	16%
TOTAL COVERAGE		236,721 S.F.	56%
GROSS OPEN AREA		183,209 S.F.	44%
*NET OPEN SPACE		81,268 S.F.	19%
TOTAL AREA	9.64 ACRES	419,930 S.F.	*AS DEFINED BY PUD ORDINANCE

PROPOSED LANDSCAPE:

ZONE 1 – EAST BUFFER ALONG 8TH AVENUE 1191 L.F. @ 1/25 L.F. = 48 TREES REQ.

KEY	PROPOSED	COMMON NAME	SCIENTIFIC NAME	SIZE
	18	SUGAR MAPLE	ACER SACCHARUM 'GREEN MOUNTAIN'	2" BB
		RED OAK	QUERCUS RUBRA	2" BB
		STERLING SILVER LINDEN	TILIA TOMENTOSA 'STERLING'	2" BB
	13	BLACK HILLS SPRUCE	PICEA GLAUCA DENSATA	5-7' BB
		COLORADO BLUE SPRUCE	PICEA PUNGENS GLAUCA	5-7' BB
	17	AUTUMN BRILLIANCE SERVICEBERRY	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILL.'	2" BB
		WHITE FLOWERING DOGWOOD	CORNUS FLORIDA	2" BB
	48 TREES			

ZONE 2 – NORTH BUFFER ALONG 44TH STREET 630 L.F. @ 1/25 L.F. = 26 TREES REQ.

KEY	PROPOSED	COMMON NAME	SCIENTIFIC NAME	SIZE
	8	RED SUNSET MAPLE	ACER RUBRUM 'RED SUNSET'	2" BB
		SUGAR MAPLE	ACER SACCHARUM 'GREEN MOUNTAIN'	2" BB
	8	BLACK HILLS SPRUCE	PICEA GLAUCA DENSATA	5' BB
		COLORADO BLUE SPRUCE	PICEA PUNGENS GLAUCA	5' BB
	10	AUTUMN BRILLIANCE SERVICEBERRY	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILL.'	2" BB
		WHITE FLOWERING DOGWOOD	CORNUS FLORIDA	2" BB
	25 TREES			

ZONE 3 – WEST BUFFER 1402 L.F. @ 1/20 L.F. = 71 TREES REQ.

KEY	PROPOSED	COMMON NAME	SCIENTIFIC NAME	SIZE
	71	HINOKI FALSE CYPRESS	CHAMAECYPARIS OBTUSA 'GRACILLIS'	5-7' BB
		WICHITA BLUE JUNIPER	JUNIPERUS SCOPULORUM 'WICHITA BLUE'	5-7' BB
		BLACK HILLS SPRUCE	PICEA GLAUCA DENSATA	5-7' BB
		DARK GREEN ARBORVITAE	THUJA OCCIDENTALIS 'NIGRA'	5-7' BB
	71 TREES			

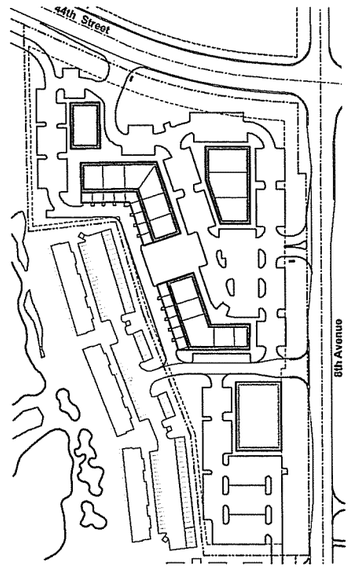
ZONE 4 – SOUTH BUFFER 232 L.F. @ 1/20 L.F. = 12 TREES REQ.

KEY	PROPOSED	COMMON NAME	SCIENTIFIC NAME	SIZE
	12	WICHITA BLUE JUNIPER	JUNIPERUS SCOPULORUM 'WICHITA BLUE'	5' BB
		BLACK HILLS SPRUCE	PICEA GLAUCA DENSATA	5' BB
	12 TREES			

ZONE 5 – INTERIOR LANDSCAPE

KEY	PROPOSED	COMMON NAME	SCIENTIFIC NAME	SIZE
	22	SUGAR MAPLE	ACER SACCHARUM 'GREEN MOUNTAIN'	2" BB
		SKYLINE HONEY LOCUST	GLEDITSIA TRICANTHOS INERMIS 'SKYLINE'	2" BB
		STERLING SILVER LINDEN	TILIA TOMENTOSA 'STERLING'	2" BB
	23	WINTER KING HAWTHORN	CRATAEGUS VIRIDIS 'WINTER KING'	1 1/2" BB
		ARISTOCRAT PEAR	PYRUS CALLERYANA 'ARISTOCRAT'	1 1/2" BB
	551	NIKKO BLUE HYDRANGEA	HYDRANGEA MACROPHYLLA 'NIKKO BLUE'	18-24" HT
		GREEN LUSTRE JAPANESE HOLLY	ILEX CRENATA 'GREEN LUSTRE'	18-24" HT
		GOLDFLAME SPIREA	SPIRAEA X BUMALDA 'GOLDFLAME'	18-24" HT
		EVERLOW YEW	TAXUS X MEDIA 'EVERLOW'	18-24" HT
		RUMBA WEIGELA	WEIGELA FLORIDA 'RUMBA'	18-24" HT
	852	BLUE CLIPS BELLFLOWER	CAMPANULA CARPATICA 'BLUE CLIPS'	1 GAL
		SWEET DREAMS COREOPSIS	COREOPSIS ROSEA 'SWEET DREAMS'	1 GAL
		STELLA D' ORO DAYLILY	HEMEROCALLIS 'STELLA D' ORO'	1 GAL
		GUACAMOLE HOSTA	HOSTA 'GUACAMOLE'	1 GAL
		LITTLE BUNNY FOUNTAIN GRASS	PENNISETUM ALOPECUROIDES 'LITTLE BUNNY'	1 GAL
		VERA JAMESON SEDUM	SEDUM X 'VERA JAMESON'	1 GAL
	71	RAISED PLANT CONTAINER	SEASONAL FLORAL DISPLAY	

PROPOSED PHASING PLAN & OPEN SPACE:



PROPOSED NET OPEN SPACE AREAS:

AREA 1	10,231 S.F.
AREA 2	1,782 S.F.
AREA 3	10,642 S.F.
AREA 4	34,466 S.F.
AREA 5	10,351 S.F.
AREA 6	8,506 S.F.
AREA 7	5,290 S.F.
	81,268 S.F.

PROPOSED PHASING:

- PHASE 1 – APPROX. COMPLETION BY 2008
- PHASE 2 – APPROX. COMPLETION BY 2010
- PHASE 3 – APPROX. COMPLETION BY 2012

PROPOSED SIGNAGE:

ONE PROPOSED GROUND MOUMENT SIGN LOCATED AT CORNER OF 44TH STREET AND 8TH AVENUE, AND ONE PROPOSED GROUND MONUMENT SIGN LOCATED AT EACH ENTRANCE DRIVE (3 TOTAL).

PROPOSED WALL SIGN AREAS TO COMPLY WITH TOWNSHIP SIGN ORDINANCE FOR NS DISTRICT, CHAPTER 25, SECTION 25.6 (B). PUD REQUESTS WAIVER FROM ORDINANCE TO PLACE WALL SIGNS ON SIDES AND BACKS OF BUILDINGS IN ADDITION TO FRONTS OF BUILDINGS.

PROPOSED LIGHTING:

PROPOSED PARKING LOT LIGHTS SHALL BE DEFLECTED AWAY FROM ADJACENT RESIDENTIAL AREAS AND SHALL BE INSTALLED IN SUCH A MANNER AS TO ALLOW THE REDUCTION OF THE AMOUNT OF LIGHT ON OTHER THAN NORMAL PARKING HOURS EACH DAY. THE SOURCE OF ILLUMINATION IN ALL PARKING LOTS ABUTTING A RESIDENTIAL AREA SHALL NOT BE MORE THAN TWENTY-FIVE (25) ABOVE THE PARKING LOT SURFACE.

PROPOSED UTILITY SERVICES:

PUBLIC SEWER AND WATER SERVICE SHALL BE PROVIDED TO PROPOSED BUILDINGS.

Development Proposed By:
Ed DeVries Properties Inc.
1345 Monroe Ave NW, Grand Rapids MI 49505

cad engineering inc.
3232 KNAPP, N.E. • GRAND RAPIDS, MI 49505
TEL: (616) 361-3661

RJM Design Inc.
Land Planning • Landscape Architecture
80 Ottawa NW, Suite 410 Phone: (616) 336-0273
Grand Rapids, MI 49503 Fax: (616) 336-1061

Master Plan for:

44th St. / 8th Ave PUD

Georgetown Township, Michigan

DATE:	ISSUED FOR:
01.23.06	PRELIMINARY TOWNSHIP REVIEW
02.07.06	TOWNSHIP REVIEW
02.13.06	TOWNSHIP REVIEW
02.16.06	PLANNING COMMISSION
03.09.06	PLANNING COMMISSION

P.I.C.	R. JAMES MORGAN
P.M.	R. JAMES MORGAN
DESIGN	R. JAMES MORGAN

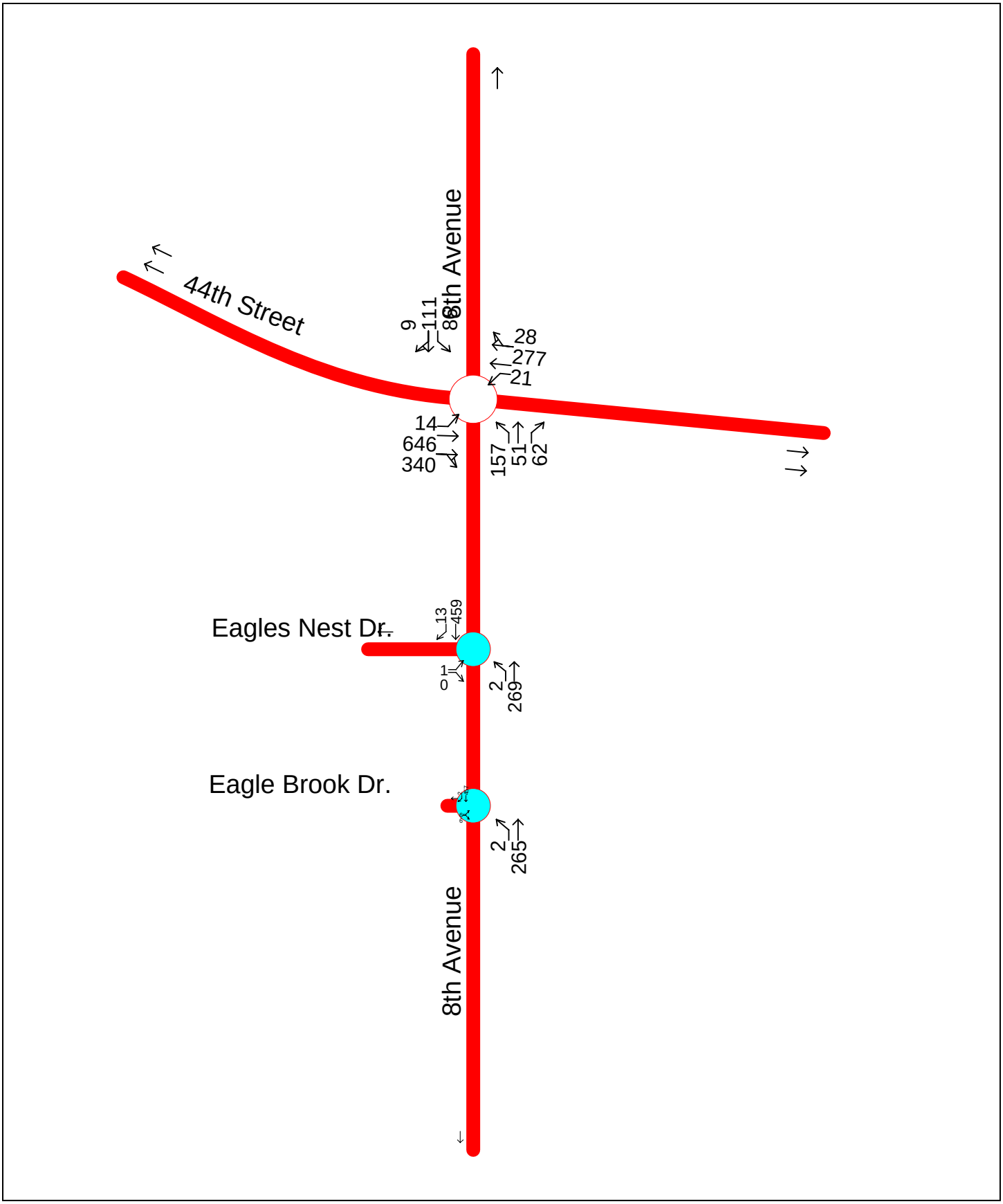
PROJECT NUMBER
05027

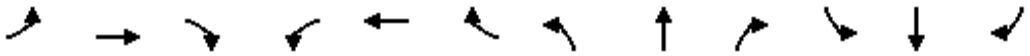
SHEET NAME
PRELIMINARY SITE PLAN

SHEET NUMBER
001

STATE OF MICHIGAN
R. JAMES MORGAN
LANDSCAPE ARCHITECT
NO. 1001
REGISTERED LANDSCAPE ARCHITECT

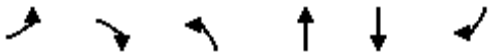
R. James Morgan


44th Street
8th Avenue
9
111
86
28
277
21
14
646
340
157
51
62
Eagles Nest Dr.
13
459
0
1
2
269
Eagle Brook Dr.
2
265
8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3340		1770	3489		1770	1863	1583	1770	1829	
Flt Permitted	0.55	1.00		0.16	1.00		0.59	1.00	1.00	0.72	1.00	
Satd. Flow (perm)	1023	3340		303	3489		1093	1863	1583	1332	1829	
Volume (vph)	14	646	340	21	277	28	157	51	62	86	111	9
Peak-hour factor, PHF	0.88	0.80	0.70	0.66	0.91	0.88	0.75	0.80	0.65	0.80	0.75	0.45
Adj. Flow (vph)	16	808	486	32	304	32	209	64	95	108	148	20
RTOR Reduction (vph)	0	94	0	0	8	0	0	0	73	0	9	0
Lane Group Flow (vph)	16	1200	0	32	328	0	209	64	22	108	159	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	45.1	45.1		45.1	45.1		15.7	15.7	15.7	15.7	15.7	
Effective Green, g (s)	47.2	47.2		47.2	47.2		17.1	17.1	17.1	17.1	17.1	
Actuated g/C Ratio	0.65	0.65		0.65	0.65		0.24	0.24	0.24	0.24	0.24	
Clearance Time (s)	6.1	6.1		6.1	6.1		5.4	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	668	2180		198	2278		259	441	374	315	433	
v/s Ratio Prot		c0.36			0.09			0.03			0.09	
v/s Ratio Perm	0.02			0.11			c0.19		0.01	0.08		
v/c Ratio	0.02	0.55		0.16	0.14		0.81	0.15	0.06	0.34	0.37	
Uniform Delay, d1	4.4	6.8		4.9	4.8		26.0	21.8	21.4	22.9	23.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.0		1.7	0.1		16.6	0.2	0.1	0.7	0.5	
Delay (s)	4.5	7.8		6.6	4.9		42.6	22.0	21.4	23.6	23.6	
Level of Service	A	A		A	A		D	C	C	C	C	
Approach Delay (s)		7.8			5.1			33.6			23.6	
Approach LOS		A			A			C			C	

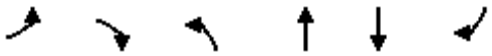
Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	0	2	269	459	13
Peak Hour Factor	0.25	1.00	0.50	0.81	0.70	0.81
Hourly flow rate (vph)	4	0	4	332	656	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					725	
pX, platoon unblocked	0.98	0.98	0.98			
vC, conflicting volume	996	656	672			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	996	647	663			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	263	459	903			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	4	0	4	332	656	16
Volume Left	4	0	4	0	0	0
Volume Right	0	0	0	0	0	16
cSH	263	1700	903	1700	1700	1700
Volume to Capacity	0.02	0.00	0.00	0.20	0.39	0.01
Queue Length 95th (ft)	1	0	0	0	0	0
Control Delay (s)	18.9	0.0	9.0	0.0	0.0	0.0
Lane LOS	C	A	A			
Approach Delay (s)	18.9		0.1		0.0	
Approach LOS	C					

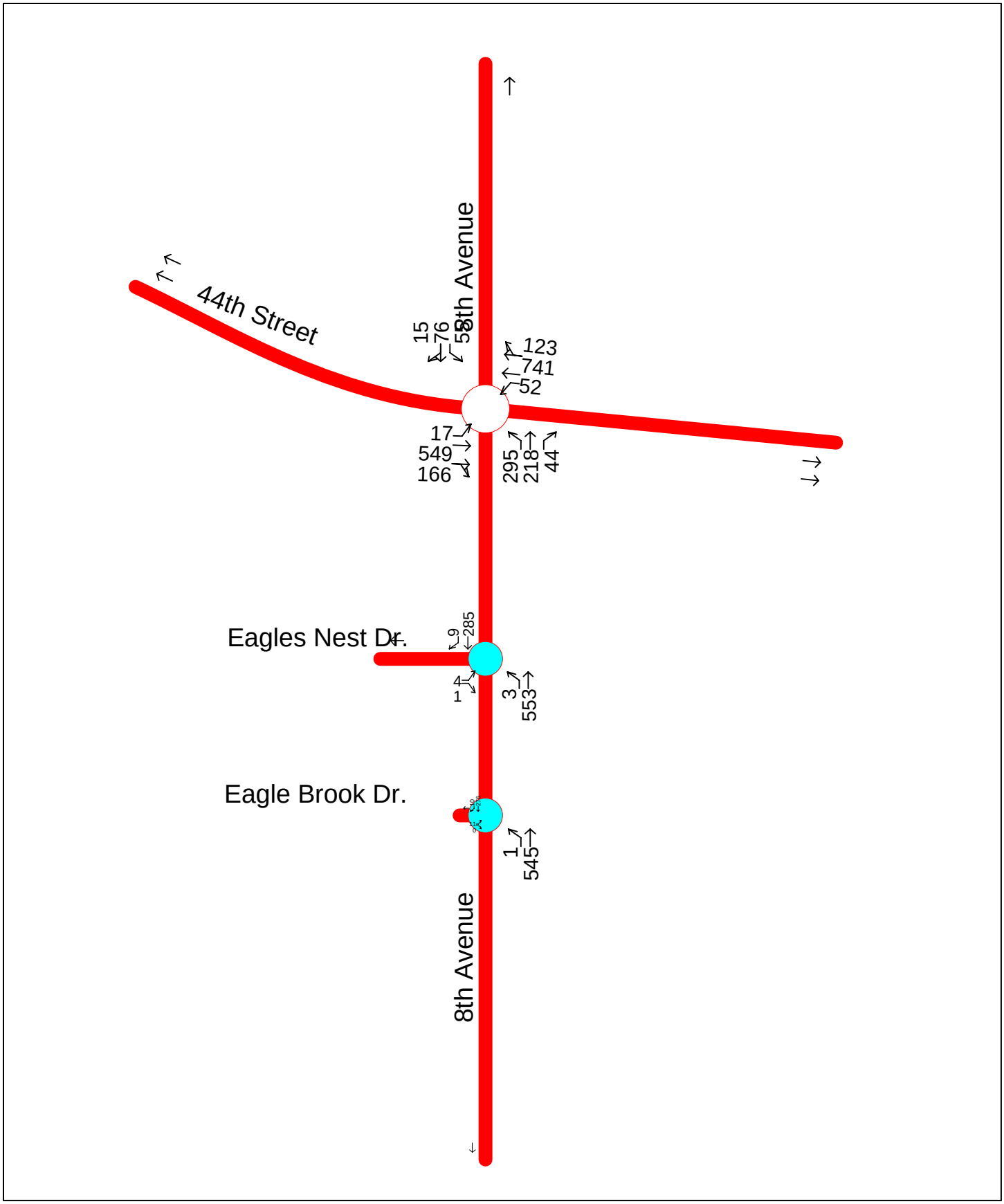
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	6	6	2	265	457	2
Peak Hour Factor	0.38	0.38	0.50	0.82	0.70	0.25
Hourly flow rate (vph)	16	16	4	323	653	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1179	
pX, platoon unblocked						
vC, conflicting volume	984	653	661			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	984	653	661			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	97	100			
cM capacity (veh/h)	274	467	927			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	16	16	4	323	653	8
Volume Left	16	0	4	0	0	0
Volume Right	0	16	0	0	0	8
cSH	274	467	927	1700	1700	1700
Volume to Capacity	0.06	0.03	0.00	0.19	0.38	0.00
Queue Length 95th (ft)	5	3	0	0	0	0
Control Delay (s)	18.9	13.0	8.9	0.0	0.0	0.0
Lane LOS	C	B	A			
Approach Delay (s)	15.9		0.1		0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		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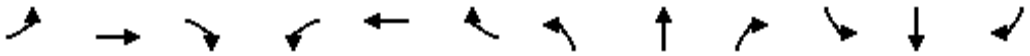


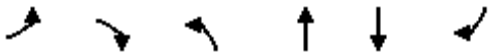
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3412		1770	3469		1770	1863	1583	1770	1803	
Flt Permitted	0.25	1.00		0.27	1.00		0.68	1.00	1.00	0.44	1.00	
Satd. Flow (perm)	457	3412		505	3469		1276	1863	1583	818	1803	
Volume (vph)	17	549	166	52	741	123	295	218	44	55	76	15
Peak-hour factor, PHF	0.47	0.81	0.78	0.81	0.89	0.96	0.72	0.79	0.73	0.65	0.86	0.63
Adj. Flow (vph)	36	678	213	64	833	128	410	276	60	85	88	24
RTOR Reduction (vph)	0	36	0	0	15	0	0	0	42	0	17	0
Lane Group Flow (vph)	36	855	0	64	946	0	410	276	18	85	95	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	45.1	45.1		45.1	45.1		22.1	22.1	22.1	22.1	22.1	
Effective Green, g (s)	47.2	47.2		47.2	47.2		23.5	23.5	23.5	23.5	23.5	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.30	0.30	0.30	0.30	0.30	
Clearance Time (s)	6.1	6.1		6.1	6.1		5.4	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	274	2046		303	2081		381	556	473	244	538	
v/s Ratio Prot		0.25			c0.27			0.15			0.05	
v/s Ratio Perm	0.08			0.13			c0.32		0.01	0.10		
v/c Ratio	0.13	0.42		0.21	0.45		1.08	0.50	0.04	0.35	0.18	
Uniform Delay, d1	6.8	8.4		7.2	8.7		27.6	22.7	19.6	21.6	20.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.6		1.6	0.7		67.9	0.7	0.0	0.9	0.2	
Delay (s)	7.8	9.0		8.8	9.4		95.5	23.4	19.6	22.5	20.6	
Level of Service	A	A		A	A		F	C	B	C	C	
Approach Delay (s)		9.0			9.4			62.7			21.4	
Approach LOS		A			A			E			C	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	78.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	4	1	3	553	285	9
Peak Hour Factor	0.50	0.25	0.75	0.75	0.83	0.45
Hourly flow rate (vph)	8	4	4	737	343	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					725	
pX, platoon unblocked						
vC, conflicting volume	1089	343	363			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1089	343	363			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	100			
cM capacity (veh/h)	238	699	1195			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	8	4	4	737	343	20
Volume Left	8	0	4	0	0	0
Volume Right	0	4	0	0	0	20
cSH	238	699	1195	1700	1700	1700
Volume to Capacity	0.03	0.01	0.00	0.43	0.20	0.01
Queue Length 95th (ft)	3	0	0	0	0	0
Control Delay (s)	20.7	10.2	8.0	0.0	0.0	0.0
Lane LOS	C	B	A			
Approach Delay (s)	17.2		0.0		0.0	
Approach LOS	C					

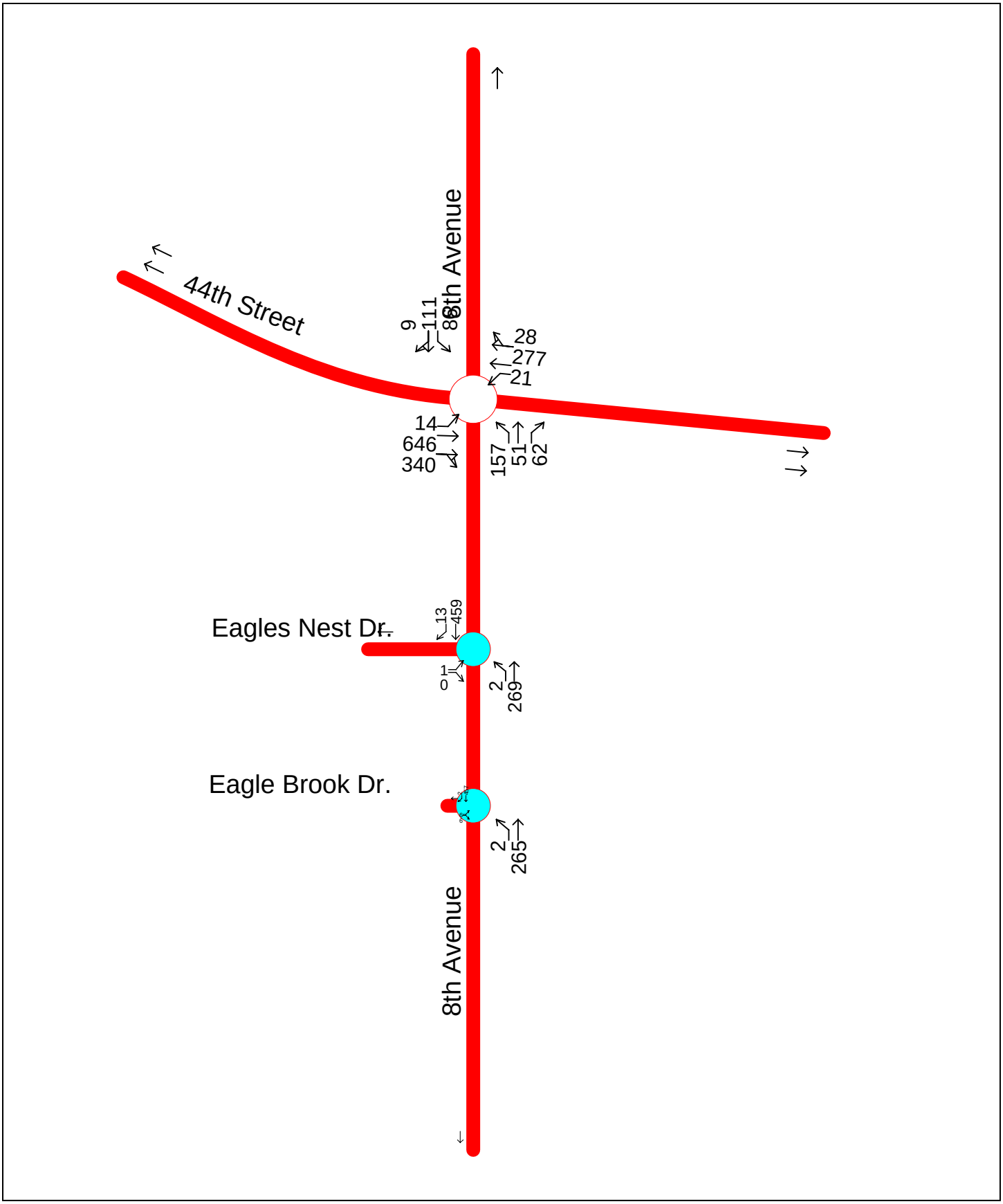
Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	11	0	1	545	276	10
Peak Hour Factor	0.69	1.00	0.25	0.74	0.85	0.50
Hourly flow rate (vph)	16	0	4	736	325	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1179	
pX, platoon unblocked						
vC, conflicting volume	1069	325	345			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1069	325	345			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	100	100			
cM capacity (veh/h)	244	716	1214			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	16	0	4	736	325	20
Volume Left	16	0	4	0	0	0
Volume Right	0	0	0	0	0	20
cSH	244	1700	1214	1700	1700	1700
Volume to Capacity	0.07	0.00	0.00	0.43	0.19	0.01
Queue Length 95th (ft)	5	0	0	0	0	0
Control Delay (s)	20.8	0.0	8.0	0.0	0.0	0.0
Lane LOS	C	A	A			
Approach Delay (s)	20.8		0.0		0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		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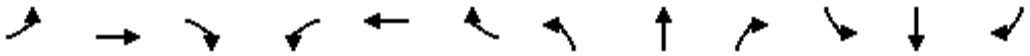
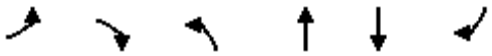


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3340		1770	3489		1770	1863	1583	1770	1829	
Flt Permitted	0.55	1.00		0.15	1.00		0.60	1.00	1.00	0.72	1.00	
Satd. Flow (perm)	1023	3340		287	3489		1111	1863	1583	1332	1829	
Volume (vph)	14	646	340	21	277	28	157	51	62	86	111	9
Peak-hour factor, PHF	0.88	0.80	0.70	0.66	0.91	0.88	0.75	0.80	0.65	0.80	0.75	0.45
Adj. Flow (vph)	16	808	486	32	304	32	209	64	95	108	148	20
RTOR Reduction (vph)	0	84	0	0	7	0	0	0	70	0	7	0
Lane Group Flow (vph)	16	1210	0	32	329	0	209	64	25	108	161	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	45.3	45.3		45.3	45.3		18.9	18.9	18.9	18.9	18.9	
Effective Green, g (s)	47.4	47.4		47.4	47.4		20.3	20.3	20.3	20.3	20.3	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.27	0.27	0.27	0.27	0.27	
Clearance Time (s)	6.1	6.1		6.1	6.1		5.4	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	641	2091		180	2185		298	500	425	357	490	
v/s Ratio Prot		c0.36			0.09			0.03			0.09	
v/s Ratio Perm	0.02			0.11			c0.19		0.02	0.08		
v/c Ratio	0.02	0.58		0.18	0.15		0.70	0.13	0.06	0.30	0.33	
Uniform Delay, d1	5.4	8.3		6.0	5.8		25.0	21.0	20.6	22.1	22.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.2		2.1	0.1		7.3	0.1	0.1	0.5	0.4	
Delay (s)	5.4	9.5		8.1	6.0		32.2	21.1	20.7	22.5	22.6	
Level of Service	A	A		A	A		C	C	C	C	C	
Approach Delay (s)		9.4			6.2			27.3			22.6	
Approach LOS		A			A			C			C	

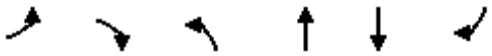
Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	0	2	269	459	13
Peak Hour Factor	0.25	1.00	0.50	0.81	0.70	0.81
Hourly flow rate (vph)	4	0	4	332	656	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					725	
pX, platoon unblocked	0.98	0.98	0.98			
vC, conflicting volume	996	656	672			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	996	647	664			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	263	460	903			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	4	0	4	332	656	16
Volume Left	4	0	4	0	0	0
Volume Right	0	0	0	0	0	16
cSH	263	1700	903	1700	1700	1700
Volume to Capacity	0.02	0.00	0.00	0.20	0.39	0.01
Queue Length 95th (ft)	1	0	0	0	0	0
Control Delay (s)	18.9	0.0	9.0	0.0	0.0	0.0
Lane LOS	C	A	A			
Approach Delay (s)	18.9		0.1		0.0	
Approach LOS	C					

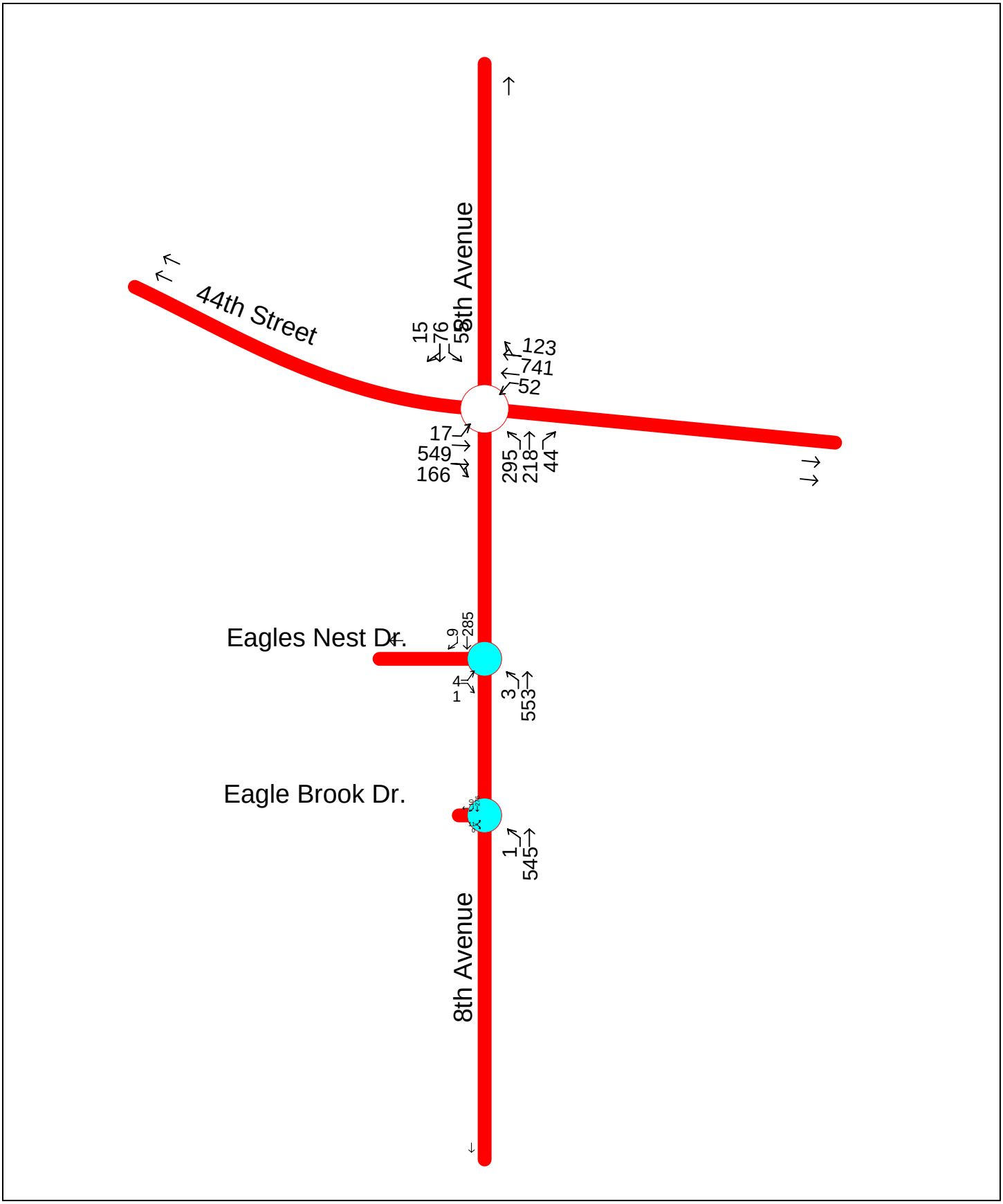
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	6	6	2	265	457	2
Peak Hour Factor	0.38	0.38	0.50	0.82	0.70	0.25
Hourly flow rate (vph)	16	16	4	323	653	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1179	
pX, platoon unblocked						
vC, conflicting volume	984	653	661			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	984	653	661			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	97	100			
cM capacity (veh/h)	274	467	927			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	16	16	4	323	653	8
Volume Left	16	0	4	0	0	0
Volume Right	0	16	0	0	0	8
cSH	274	467	927	1700	1700	1700
Volume to Capacity	0.06	0.03	0.00	0.19	0.38	0.00
Queue Length 95th (ft)	5	3	0	0	0	0
Control Delay (s)	18.9	13.0	8.9	0.0	0.0	0.0
Lane LOS	C	B	A			
Approach Delay (s)	15.9		0.1		0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		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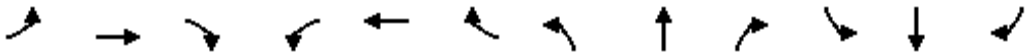
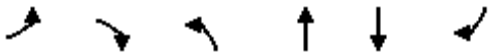


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3412		1770	3469		1770	1863	1583	1770	1803	
Flt Permitted	0.23	1.00		0.26	1.00		0.68	1.00	1.00	0.47	1.00	
Satd. Flow (perm)	428	3412		477	3469		1276	1863	1583	878	1803	
Volume (vph)	17	549	166	52	741	123	295	218	44	55	76	15
Peak-hour factor, PHF	0.47	0.81	0.78	0.81	0.89	0.96	0.72	0.79	0.73	0.65	0.86	0.63
Adj. Flow (vph)	36	678	213	64	833	128	410	276	60	85	88	24
RTOR Reduction (vph)	0	33	0	0	13	0	0	0	39	0	12	0
Lane Group Flow (vph)	36	858	0	64	948	0	410	276	21	85	100	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	45.1	45.1		45.1	45.1		28.4	28.4	28.4	28.4	28.4	
Effective Green, g (s)	47.2	47.2		47.2	47.2		29.8	29.8	29.8	29.8	29.8	
Actuated g/C Ratio	0.56	0.56		0.56	0.56		0.35	0.35	0.35	0.35	0.35	
Clearance Time (s)	6.1	6.1		6.1	6.1		5.4	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	238	1895		265	1926		447	653	555	308	632	
v/s Ratio Prot		0.25			c0.27			0.15			0.06	
v/s Ratio Perm	0.08			0.13			c0.32		0.01	0.10		
v/c Ratio	0.15	0.45		0.24	0.49		0.92	0.42	0.04	0.28	0.16	
Uniform Delay, d1	9.2	11.2		9.7	11.6		26.4	21.0	18.2	19.8	19.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.8		2.1	0.9		23.4	0.4	0.0	0.5	0.1	
Delay (s)	10.5	12.0		11.9	12.5		49.9	21.5	18.2	20.3	19.1	
Level of Service	B	B		B	B		D	C	B	C	B	
Approach Delay (s)		12.0			12.4			36.8			19.6	
Approach LOS		B			B			D			B	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	4	1	3	553	285	9
Peak Hour Factor	0.50	0.25	0.75	0.75	0.83	0.45
Hourly flow rate (vph)	8	4	4	737	343	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					725	
pX, platoon unblocked						
vC, conflicting volume	1089	343	363			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1089	343	363			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	100			
cM capacity (veh/h)	238	699	1195			

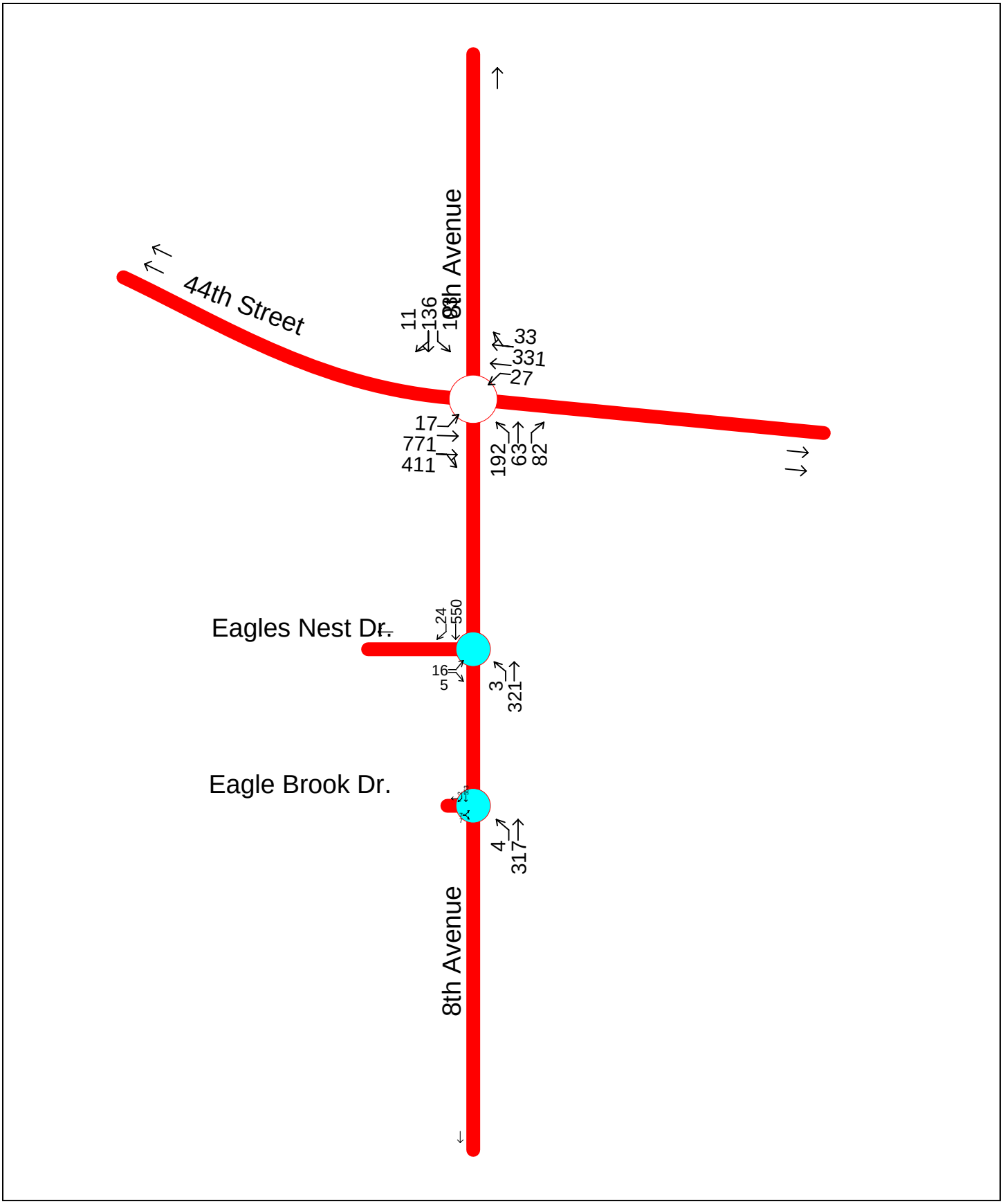
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	8	4	4	737	343	20
Volume Left	8	0	4	0	0	0
Volume Right	0	4	0	0	0	20
cSH	238	699	1195	1700	1700	1700
Volume to Capacity	0.03	0.01	0.00	0.43	0.20	0.01
Queue Length 95th (ft)	3	0	0	0	0	0
Control Delay (s)	20.7	10.2	8.0	0.0	0.0	0.0
Lane LOS	C	B	A			
Approach Delay (s)	17.2		0.0		0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	11	0	1	545	276	10
Peak Hour Factor	0.69	1.00	0.25	0.74	0.85	0.50
Hourly flow rate (vph)	16	0	4	736	325	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1179	
pX, platoon unblocked						
vC, conflicting volume	1069	325	345			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1069	325	345			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	100	100			
cM capacity (veh/h)	244	716	1214			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	16	0	4	736	325	20
Volume Left	16	0	4	0	0	0
Volume Right	0	0	0	0	0	20
cSH	244	1700	1214	1700	1700	1700
Volume to Capacity	0.07	0.00	0.00	0.43	0.19	0.01
Queue Length 95th (ft)	5	0	0	0	0	0
Control Delay (s)	20.8	0.0	8.0	0.0	0.0	0.0
Lane LOS	C	A	A			
Approach Delay (s)	20.8		0.0		0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		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8th Avenue
11
136
33
331
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192
63
82
Eagles Nest Dr.
24
550
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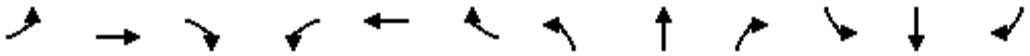
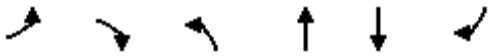
3
321
Eagle Brook Dr.
4
317
8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3338		1770	3489		1770	1863	1583	1770	1830	
Flt Permitted	0.51	1.00		0.09	1.00		0.55	1.00	1.00	0.71	1.00	
Satd. Flow (perm)	955	3338		161	3489		1019	1863	1583	1314	1830	
Volume (vph)	17	771	411	27	331	33	192	63	82	103	136	11
Peak-hour factor, PHF	0.88	0.80	0.70	0.66	0.91	0.88	0.75	0.80	0.65	0.80	0.75	0.45
Adj. Flow (vph)	19	964	587	41	364	38	256	79	126	129	181	24
RTOR Reduction (vph)	0	93	0	0	8	0	0	0	68	0	6	0
Lane Group Flow (vph)	19	1458	0	41	394	0	256	79	58	129	199	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	45.3	45.3		45.3	45.3		22.5	22.5	22.5	22.5	22.5	
Effective Green, g (s)	47.4	47.4		47.4	47.4		23.9	23.9	23.9	23.9	23.9	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.30	0.30	0.30	0.30	0.30	
Clearance Time (s)	6.1	6.1		6.1	6.1		5.4	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	571	1995		96	2085		307	561	477	396	552	
v/s Ratio Prot		c0.44			0.11			0.04			0.11	
v/s Ratio Perm	0.02			0.25			c0.25		0.04	0.10		
v/c Ratio	0.03	0.73		0.43	0.19		0.83	0.14	0.12	0.33	0.36	
Uniform Delay, d1	6.5	11.4		8.6	7.2		25.8	20.2	20.1	21.5	21.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	2.4		13.3	0.2		17.4	0.1	0.1	0.5	0.4	
Delay (s)	6.7	13.8		21.9	7.4		43.2	20.3	20.2	21.9	22.1	
Level of Service	A	B		C	A		D	C	C	C	C	
Approach Delay (s)		13.7			8.8			33.0			22.0	
Approach LOS		B			A			C			C	

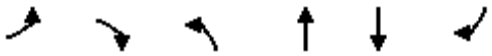
Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	16	5	3	321	550	24
Peak Hour Factor	0.25	1.00	0.50	0.81	0.70	0.81
Hourly flow rate (vph)	64	5	6	396	786	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					725	
pX, platoon unblocked	0.95	0.95	0.95			
vC, conflicting volume	1194	786	815			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1203	776	807			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	67	99	99			
cM capacity (veh/h)	193	380	781			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	64	5	6	396	786	30
Volume Left	64	0	6	0	0	0
Volume Right	0	5	0	0	0	30
cSH	193	380	781	1700	1700	1700
Volume to Capacity	0.33	0.01	0.01	0.23	0.46	0.02
Queue Length 95th (ft)	34	1	1	0	0	0
Control Delay (s)	32.7	14.6	9.6	0.0	0.0	0.0
Lane LOS	D	B	A			
Approach Delay (s)	31.4		0.1		0.0	
Approach LOS	D					

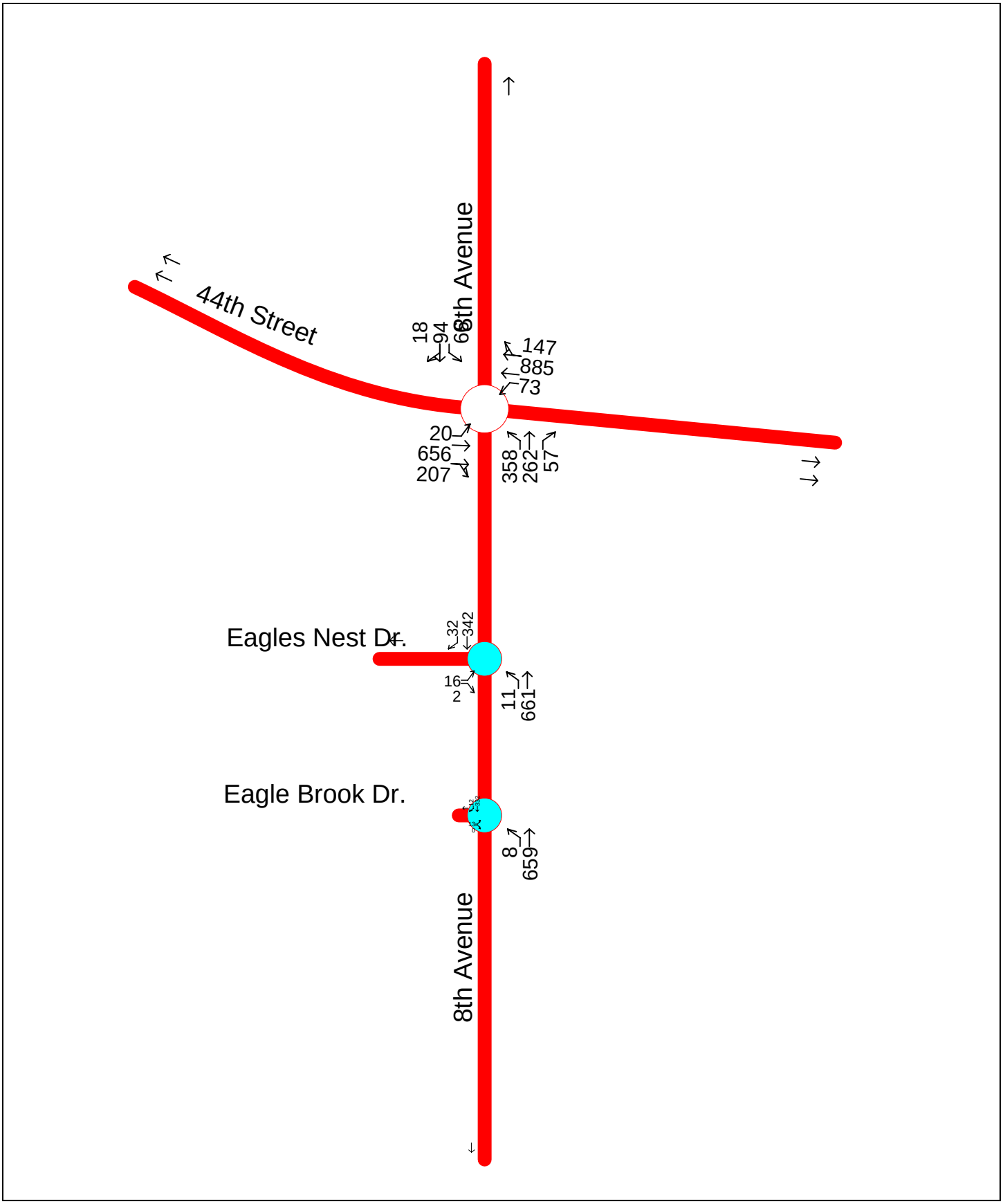
Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	7	7	4	317	553	2
Peak Hour Factor	0.38	0.38	0.50	0.82	0.70	0.25
Hourly flow rate (vph)	18	18	8	387	790	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1179	
pX, platoon unblocked						
vC, conflicting volume	1193	790	798			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1193	790	798			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	95	99			
cM capacity (veh/h)	205	390	824			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	18	18	8	387	790	8
Volume Left	18	0	8	0	0	0
Volume Right	0	18	0	0	0	8
cSH	205	390	824	1700	1700	1700
Volume to Capacity	0.09	0.05	0.01	0.23	0.46	0.00
Queue Length 95th (ft)	7	4	1	0	0	0
Control Delay (s)	24.3	14.7	9.4	0.0	0.0	0.0
Lane LOS	C	B	A			
Approach Delay (s)	19.5		0.2		0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		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Eagles Nest Dr.
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16
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Eagle Brook Dr.
8
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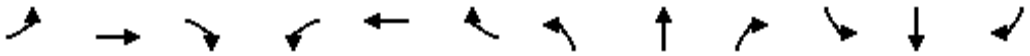
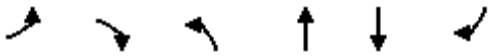
8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3408		1770	3468		1770	1863	1583	1770	1804	
Flt Permitted	0.16	1.00		0.19	1.00		0.66	1.00	1.00	0.41	1.00	
Satd. Flow (perm)	303	3408		345	3468		1224	1863	1583	768	1804	
Volume (vph)	20	656	207	73	885	147	358	262	57	66	94	18
Peak-hour factor, PHF	0.47	0.81	0.78	0.81	0.89	0.96	0.72	0.79	0.73	0.65	0.86	0.63
Adj. Flow (vph)	43	810	265	90	994	153	497	332	78	102	109	29
RTOR Reduction (vph)	0	36	0	0	14	0	0	0	49	0	11	0
Lane Group Flow (vph)	43	1039	0	90	1133	0	497	332	29	102	127	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	45.0	45.0		45.0	45.0		30.6	30.6	30.6	30.6	30.6	
Effective Green, g (s)	47.1	47.1		47.1	47.1		32.0	32.0	32.0	32.0	32.0	
Actuated g/C Ratio	0.54	0.54		0.54	0.54		0.37	0.37	0.37	0.37	0.37	
Clearance Time (s)	6.1	6.1		6.1	6.1		5.4	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	164	1843		187	1875		450	684	582	282	663	
v/s Ratio Prot		0.30			c0.33			0.18			0.07	
v/s Ratio Perm	0.14			0.26			c0.41		0.02	0.13		
v/c Ratio	0.26	0.56		0.48	0.60		1.10	0.49	0.05	0.36	0.19	
Uniform Delay, d1	10.7	13.2		12.4	13.6		27.5	21.2	17.7	20.1	18.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.9	1.3		8.6	1.5		73.9	0.5	0.0	0.8	0.1	
Delay (s)	14.6	14.5		21.0	15.1		101.5	21.8	17.8	20.9	18.9	
Level of Service	B	B		C	B		F	C	B	C	B	
Approach Delay (s)		14.5			15.5			65.1			19.7	
Approach LOS		B			B			E			B	

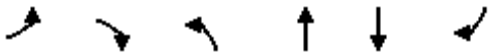
Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	16	2	11	661	342	32
Peak Hour Factor	0.50	0.25	0.75	0.75	0.83	0.45
Hourly flow rate (vph)	32	8	15	881	412	71
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					725	
pX, platoon unblocked						
vC, conflicting volume	1323	412	483			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1323	412	483			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	81	99	99			
cM capacity (veh/h)	170	640	1080			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	32	8	15	881	412	71
Volume Left	32	0	15	0	0	0
Volume Right	0	8	0	0	0	71
cSH	170	640	1080	1700	1700	1700
Volume to Capacity	0.19	0.01	0.01	0.52	0.24	0.04
Queue Length 95th (ft)	17	1	1	0	0	0
Control Delay (s)	31.0	10.7	8.4	0.0	0.0	0.0
Lane LOS	D	B	A			
Approach Delay (s)	27.0		0.1		0.0	
Approach LOS	D					

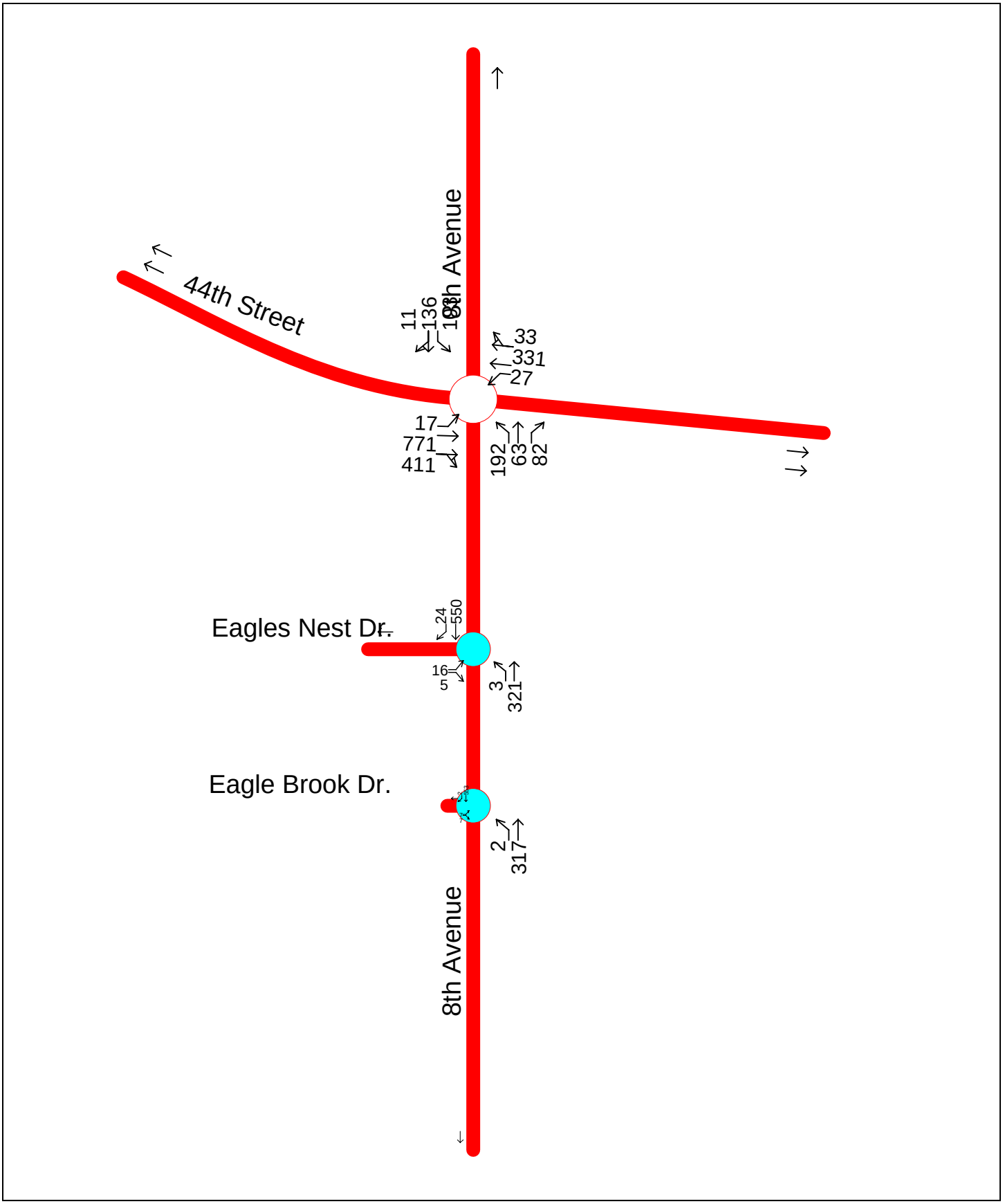
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	13	0	8	659	332	12
Peak Hour Factor	0.69	1.00	0.25	0.74	0.85	0.50
Hourly flow rate (vph)	19	0	32	891	391	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1179	
pX, platoon unblocked						
vC, conflicting volume	1345	391	415			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1345	391	415			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	88	100	97			
cM capacity (veh/h)	162	658	1144			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	19	0	32	891	391	24
Volume Left	19	0	32	0	0	0
Volume Right	0	0	0	0	0	24
cSH	162	1700	1144	1700	1700	1700
Volume to Capacity	0.12	0.00	0.03	0.52	0.23	0.01
Queue Length 95th (ft)	10	0	2	0	0	0
Control Delay (s)	30.1	0.0	8.2	0.0	0.0	0.0
Lane LOS	D	A	A			
Approach Delay (s)	30.1		0.3		0.0	
Approach LOS	D					

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		


44th Street
8th Avenue
11
136
33
331
27
17
771
411
192
63
82
Eagles Nest Dr.
24
550
16
5
3
321
Eagle Brook Dr.
2
317
8th Avenue

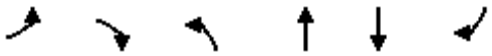
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3338		1770	3489		1770	1863	1583	1770	1830	
Flt Permitted	0.51	1.00		0.08	1.00		0.44	1.00	1.00	0.71	1.00	
Satd. Flow (perm)	943	3338		158	3489		811	1863	1583	1314	1830	
Volume (vph)	17	771	411	27	331	33	192	63	82	103	136	11
Peak-hour factor, PHF	0.88	0.80	0.70	0.66	0.91	0.88	0.75	0.80	0.65	0.80	0.75	0.45
Adj. Flow (vph)	19	964	587	41	364	38	256	79	126	129	181	24
RTOR Reduction (vph)	0	85	0	0	7	0	0	0	98	0	6	0
Lane Group Flow (vph)	19	1466	0	41	395	0	256	79	28	129	199	0
Turn Type	Perm			Perm			pm+pt		Perm	pm+pt		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	45.1	45.1		45.1	45.1		22.7	17.1	17.1	20.3	15.9	
Effective Green, g (s)	47.2	47.2		47.2	47.2		25.5	18.5	18.5	23.1	17.3	
Actuated g/C Ratio	0.57	0.57		0.57	0.57		0.31	0.22	0.22	0.28	0.21	
Clearance Time (s)	6.1	6.1		6.1	6.1		5.4	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	533	1887		89	1972		328	413	351	395	379	
v/s Ratio Prot		c0.44			0.11		c0.07	0.04		0.02	0.11	
v/s Ratio Perm	0.02			0.26			c0.17		0.02	0.07		
v/c Ratio	0.04	0.78		0.46	0.20		0.78	0.19	0.08	0.33	0.52	
Uniform Delay, d1	8.1	14.1		10.7	8.9		25.4	26.4	25.8	23.6	29.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	3.2		16.2	0.2		11.4	0.2	0.1	0.5	1.3	
Delay (s)	8.2	17.3		26.9	9.1		36.8	26.6	25.9	24.0	30.7	
Level of Service	A	B		C	A		D	C	C	C	C	
Approach Delay (s)		17.2			10.8			32.1			28.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	16	5	3	321	550	24
Peak Hour Factor	0.25	1.00	0.50	0.81	0.70	0.81
Hourly flow rate (vph)	64	5	6	396	786	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					725	
pX, platoon unblocked	0.94	0.94	0.94			
vC, conflicting volume	1194	786	815			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1207	771	803			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	66	99	99			
cM capacity (veh/h)	188	375	769			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	64	5	6	396	786	30
Volume Left	64	0	6	0	0	0
Volume Right	0	5	0	0	0	30
cSH	188	375	769	1700	1700	1700
Volume to Capacity	0.34	0.01	0.01	0.23	0.46	0.02
Queue Length 95th (ft)	35	1	1	0	0	0
Control Delay (s)	33.7	14.7	9.7	0.0	0.0	0.0
Lane LOS	D	B	A			
Approach Delay (s)	32.3		0.1		0.0	
Approach LOS	D					

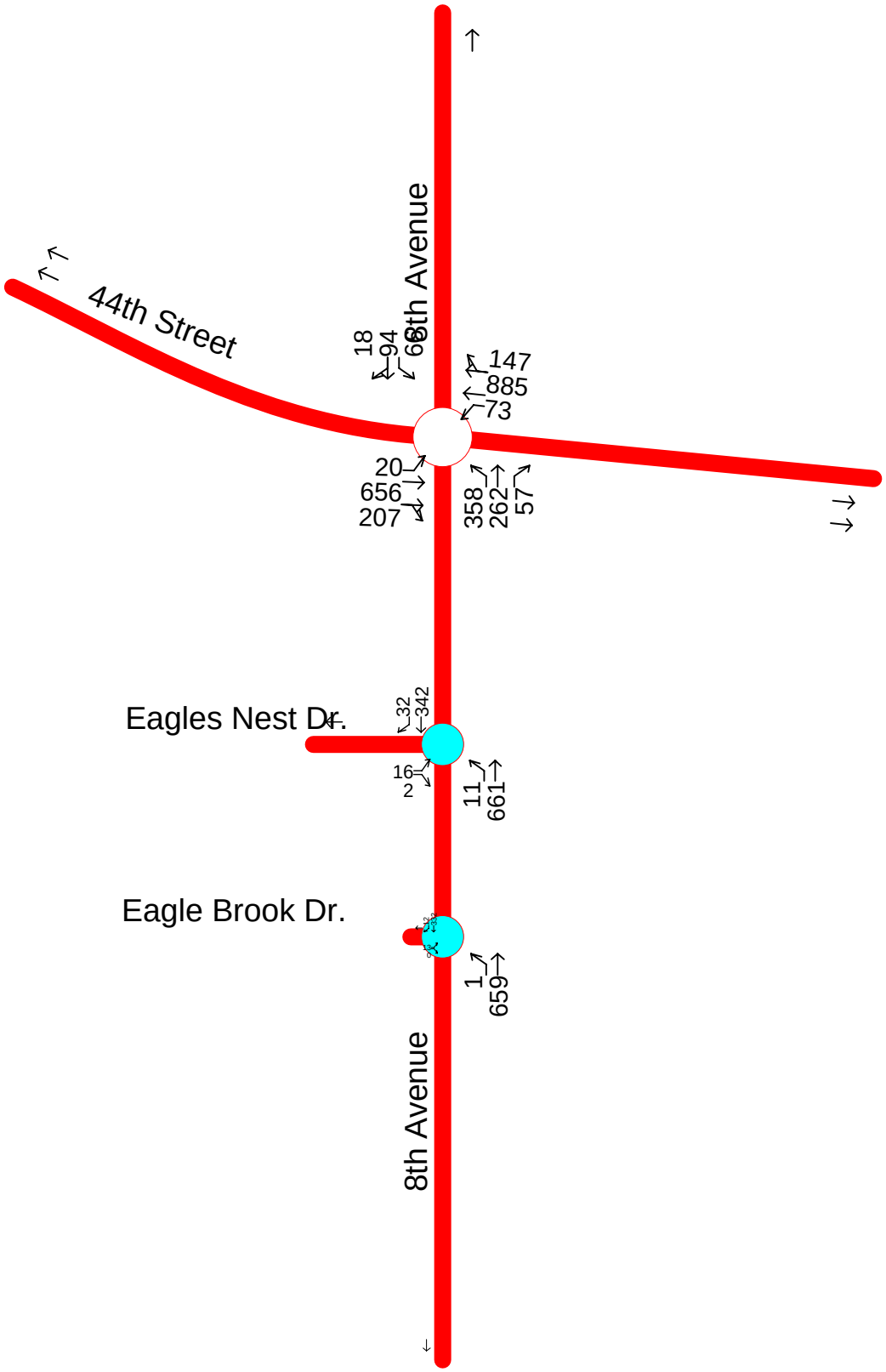
Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	7	7	2	317	553	2
Peak Hour Factor	0.38	0.38	0.50	0.82	0.70	0.25
Hourly flow rate (vph)	18	18	4	387	790	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1179	
pX, platoon unblocked	0.98	0.98	0.98			
vC, conflicting volume	1185	790	798			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1189	785	793			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	95	100			
cM capacity (veh/h)	202	384	809			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	18	18	4	387	790	8
Volume Left	18	0	4	0	0	0
Volume Right	0	18	0	0	0	8
cSH	202	384	809	1700	1700	1700
Volume to Capacity	0.09	0.05	0.00	0.23	0.46	0.00
Queue Length 95th (ft)	7	4	0	0	0	0
Control Delay (s)	24.6	14.9	9.5	0.0	0.0	0.0
Lane LOS	C	B	A			
Approach Delay (s)	19.7		0.1		0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		


44th Street
8th Avenue
18
94
66
147
885
73
20
656
207
358
262
57
Eagles Nest Dr.
32
342
16
2
11
661
Eagle Brook Dr.
1
659
8th Avenue

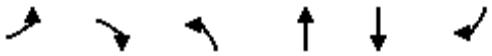
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3408		1770	3468		1770	1863	1583	1770	1804	
Flt Permitted	0.15	1.00		0.17	1.00		0.45	1.00	1.00	0.47	1.00	
Satd. Flow (perm)	274	3408		317	3468		841	1863	1583	884	1804	
Volume (vph)	20	656	207	73	885	147	358	262	57	66	94	18
Peak-hour factor, PHF	0.47	0.81	0.78	0.81	0.89	0.96	0.72	0.79	0.73	0.65	0.86	0.63
Adj. Flow (vph)	43	810	265	90	994	153	497	332	78	102	109	29
RTOR Reduction (vph)	0	32	0	0	12	0	0	0	57	0	12	0
Lane Group Flow (vph)	43	1043	0	90	1135	0	497	332	21	102	126	0
Turn Type	Perm			Perm			pm+pt		Perm	pm+pt		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	45.0	45.0		45.0	45.0		36.3	23.3	23.3	21.9	14.3	
Effective Green, g (s)	47.1	47.1		47.1	47.1		37.7	24.7	24.7	24.7	15.7	
Actuated g/C Ratio	0.51	0.51		0.51	0.51		0.41	0.27	0.27	0.27	0.17	
Clearance Time (s)	6.1	6.1		6.1	6.1		5.4	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	139	1730		161	1760		522	496	421	321	305	
v/s Ratio Prot		0.31			c0.33		c0.18	0.18		0.03	0.07	
v/s Ratio Perm	0.16			0.28			c0.20		0.01	0.05		
v/c Ratio	0.31	0.60		0.56	0.64		0.95	0.67	0.05	0.32	0.41	
Uniform Delay, d1	13.3	16.2		15.7	16.7		24.3	30.4	25.3	26.5	34.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.7	1.6		13.3	1.8		27.6	3.4	0.0	0.6	0.9	
Delay (s)	19.0	17.8		29.0	18.6		51.9	33.8	25.4	27.1	35.3	
Level of Service	B	B		C	B		D	C	C	C	D	
Approach Delay (s)		17.8			19.3			43.0			31.8	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	92.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	16	2	11	661	342	32
Peak Hour Factor	0.50	0.25	0.75	0.75	0.83	0.45
Hourly flow rate (vph)	32	8	15	881	412	71
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					725	
pX, platoon unblocked						
vC, conflicting volume	1323	412	483			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1323	412	483			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	81	99	99			
cM capacity (veh/h)	170	640	1080			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	32	8	15	881	412	71
Volume Left	32	0	15	0	0	0
Volume Right	0	8	0	0	0	71
cSH	170	640	1080	1700	1700	1700
Volume to Capacity	0.19	0.01	0.01	0.52	0.24	0.04
Queue Length 95th (ft)	17	1	1	0	0	0
Control Delay (s)	31.0	10.7	8.4	0.0	0.0	0.0
Lane LOS	D	B	A			
Approach Delay (s)	27.0		0.1		0.0	
Approach LOS	D					

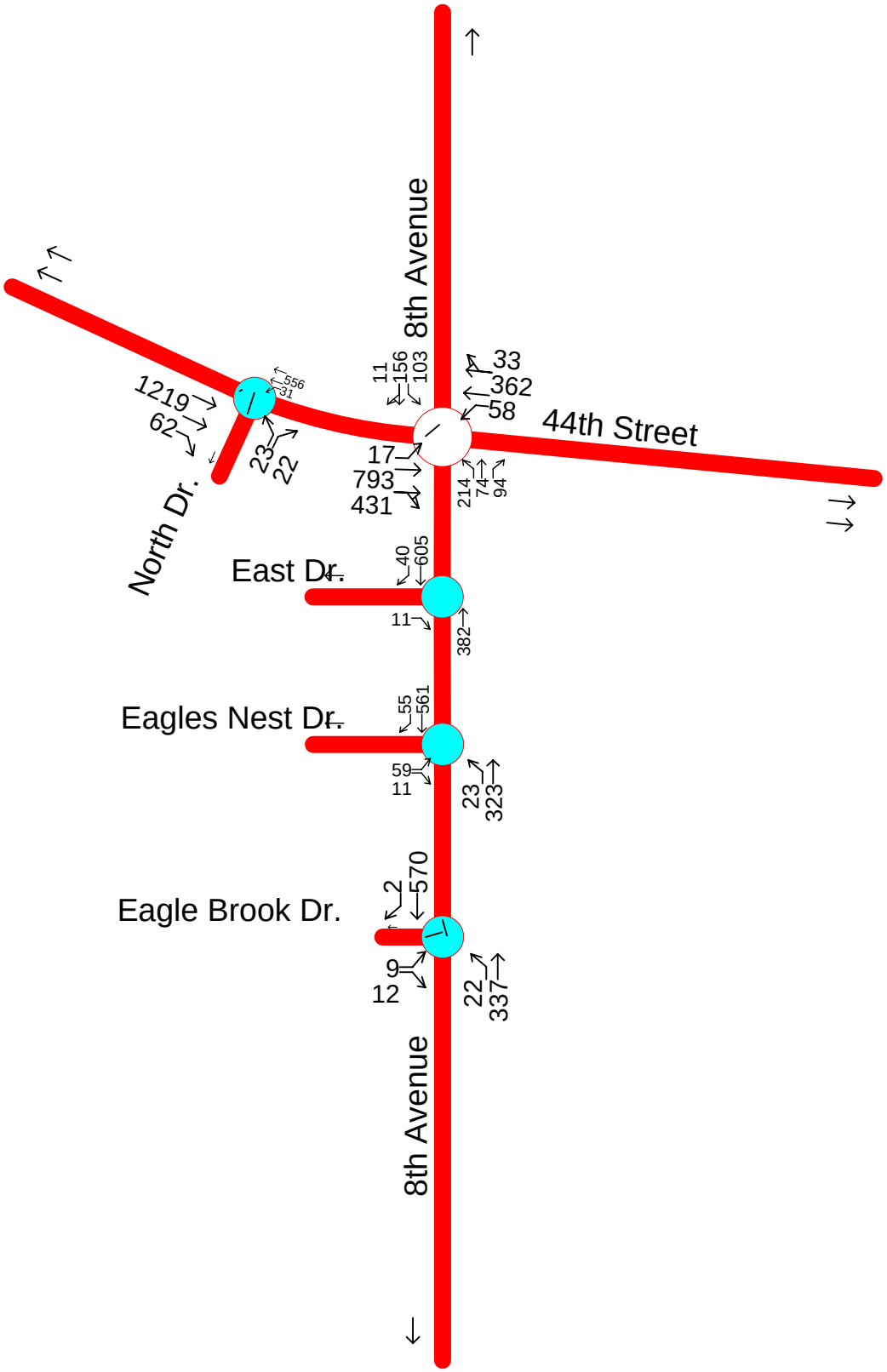
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	13	0	1	659	332	12
Peak Hour Factor	0.69	1.00	0.25	0.74	0.85	0.50
Hourly flow rate (vph)	19	0	4	891	391	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1179	
pX, platoon unblocked						
vC, conflicting volume	1289	391	415			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1289	391	415			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	100	100			
cM capacity (veh/h)	180	658	1144			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	19	0	4	891	391	24
Volume Left	19	0	4	0	0	0
Volume Right	0	0	0	0	0	24
cSH	180	1700	1144	1700	1700	1700
Volume to Capacity	0.10	0.00	0.00	0.52	0.23	0.01
Queue Length 95th (ft)	9	0	0	0	0	0
Control Delay (s)	27.3	0.0	8.2	0.0	0.0	0.0
Lane LOS	D	A	A			
Approach Delay (s)	27.3		0.0		0.0	
Approach LOS	D					

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		


8th Avenue
44th Street
North Dr.
East Dr.
Eagles Nest Dr.
Eagle Brook Dr.
8th Avenue
1219
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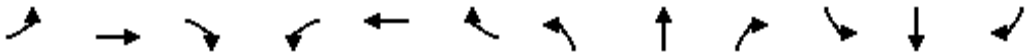
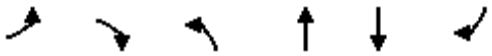


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3336		1770	3493		1770	1863	1583	1770	1834	
Flt Permitted	0.48	1.00		0.08	1.00		0.39	1.00	1.00	0.70	1.00	
Satd. Flow (perm)	900	3336		158	3493		736	1863	1583	1299	1834	
Volume (vph)	17	793	431	58	362	33	214	74	94	103	156	11
Peak-hour factor, PHF	0.88	0.80	0.70	0.66	0.91	0.88	0.75	0.80	0.65	0.80	0.75	0.45
Adj. Flow (vph)	19	991	616	88	398	38	285	92	145	129	208	24
RTOR Reduction (vph)	0	91	0	0	7	0	0	0	105	0	5	0
Lane Group Flow (vph)	19	1516	0	88	429	0	285	92	40	129	227	0
Turn Type	Perm			Perm			pm+pt		Perm	pm+pt		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	45.1	45.1		45.1	45.1		23.8	18.2	18.2	21.4	17.0	
Effective Green, g (s)	47.2	47.2		47.2	47.2		26.6	19.6	19.6	24.2	18.4	
Actuated g/C Ratio	0.56	0.56		0.56	0.56		0.31	0.23	0.23	0.29	0.22	
Clearance Time (s)	6.1	6.1		6.1	6.1		5.4	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	502	1861		88	1949		317	432	367	404	399	
v/s Ratio Prot		0.45			0.12		c0.07	0.05		0.02	0.12	
v/s Ratio Perm	0.02			c0.56			c0.21		0.03	0.07		
v/c Ratio	0.04	0.81		1.00	0.22		0.90	0.21	0.11	0.32	0.57	
Uniform Delay, d1	8.4	15.2		18.7	9.4		26.8	26.3	25.6	23.3	29.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	4.1		95.9	0.3		26.4	0.2	0.1	0.5	1.9	
Delay (s)	8.6	19.2		114.6	9.7		53.2	26.5	25.7	23.7	31.4	
Level of Service	A	B		F	A		D	C	C	C	C	
Approach Delay (s)		19.1			27.3			40.9			28.7	
Approach LOS		B			C			D			C	

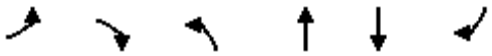
Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	59	11	23	323	561	55
Peak Hour Factor	0.25	1.00	0.50	0.81	0.70	0.81
Hourly flow rate (vph)	236	11	46	399	801	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					725	
pX, platoon unblocked						
vC, conflicting volume	1292	801	869			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1292	801	869			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	97	94			
cM capacity (veh/h)	169	384	775			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	236	11	46	399	801	68
Volume Left	236	0	46	0	0	0
Volume Right	0	11	0	0	0	68
cSH	169	384	775	1700	1700	1700
Volume to Capacity	1.39	0.03	0.06	0.23	0.47	0.04
Queue Length 95th (ft)	362	2	5	0	0	0
Control Delay (s)	260.9	14.6	9.9	0.0	0.0	0.0
Lane LOS	F	B	A			
Approach Delay (s)	249.9		1.0		0.0	
Approach LOS	F					

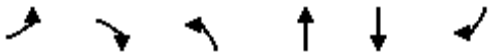
Intersection Summary			
Average Delay	39.8		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	9	12	22	337	570	2
Peak Hour Factor	0.38	0.38	0.50	0.82	0.70	0.25
Hourly flow rate (vph)	24	32	44	411	814	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1179	
pX, platoon unblocked						
vC, conflicting volume	1313	814	822			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1313	814	822			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	92	95			
cM capacity (veh/h)	165	378	807			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	24	32	44	411	814	8
Volume Left	24	0	44	0	0	0
Volume Right	0	32	0	0	0	8
cSH	165	378	807	1700	1700	1700
Volume to Capacity	0.14	0.08	0.05	0.24	0.48	0.00
Queue Length 95th (ft)	12	7	4	0	0	0
Control Delay (s)	30.4	15.4	9.7	0.0	0.0	0.0
Lane LOS	D	C	A			
Approach Delay (s)	21.8		0.9		0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	11	0	382	605	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	12	0	415	658	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					377	
pX, platoon unblocked	0.94	0.94	0.94			
vC, conflicting volume	1073	658	701			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1078	634	681			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	227	448	854			

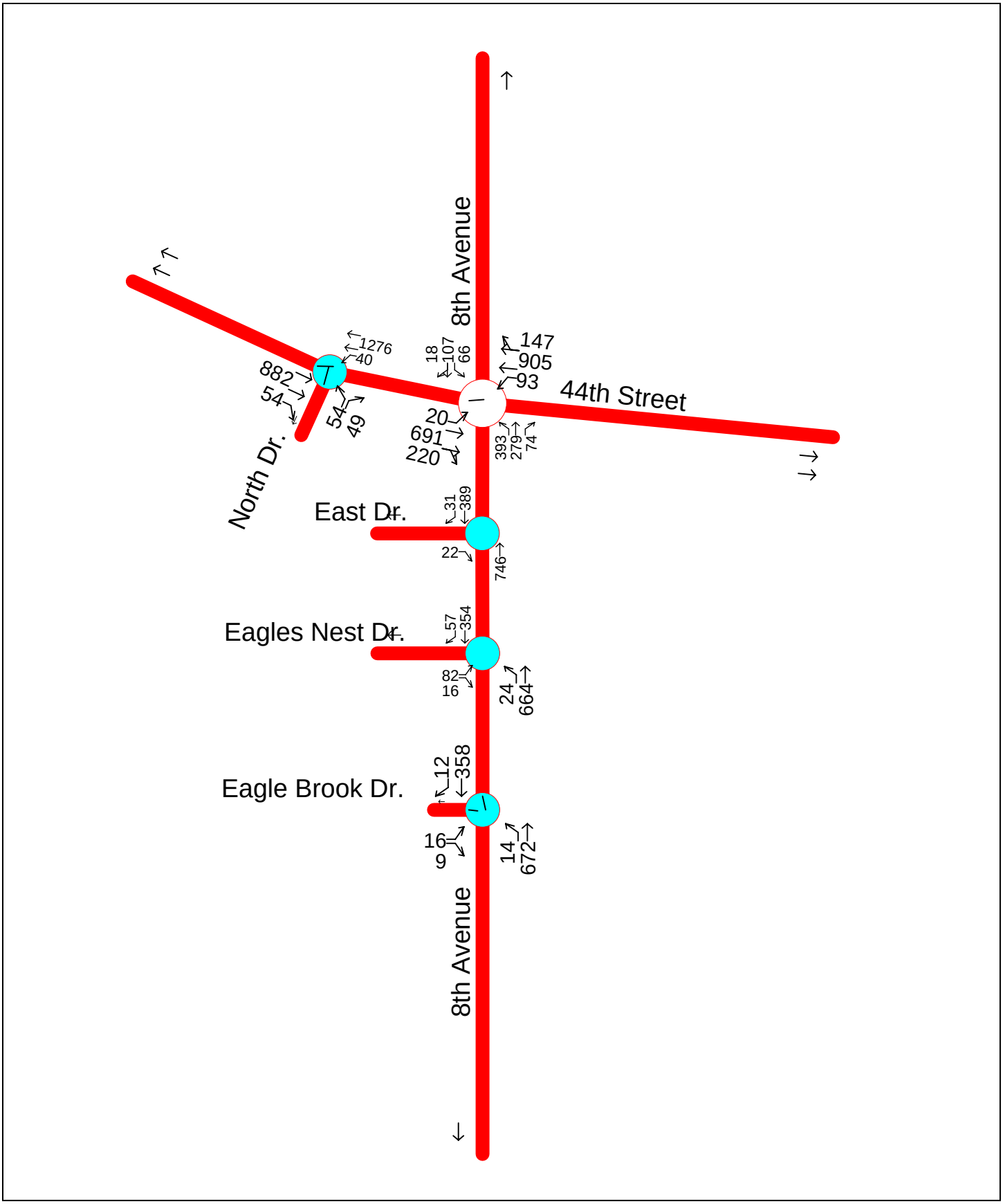
Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	12	415	658	43
Volume Left	0	0	0	0
Volume Right	12	0	0	43
cSH	448	1700	1700	1700
Volume to Capacity	0.03	0.24	0.39	0.03
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	13.2	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s)	13.2	0.0	0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1219	62	31	556	23	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1325	67	34	604	25	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				455		
pX, platoon unblocked					0.97	
vC, conflicting volume			1392		1695	662
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1392		1684	662
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		67	94
cM capacity (veh/h)			487		77	404

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	662	662	67	34	302	302	25	24
Volume Left	0	0	0	34	0	0	25	0
Volume Right	0	0	67	0	0	0	0	24
cSH	1700	1700	1700	487	1700	1700	77	404
Volume to Capacity	0.39	0.39	0.04	0.07	0.18	0.18	0.33	0.06
Queue Length 95th (ft)	0	0	0	6	0	0	31	5
Control Delay (s)	0.0	0.0	0.0	12.9	0.0	0.0	73.3	14.5
Lane LOS				B			F	B
Approach Delay (s)	0.0			0.7			44.6	
Approach LOS							E	

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		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Eagles Nest Dr.
Eagle Brook Dr.
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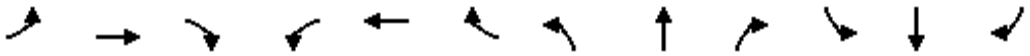


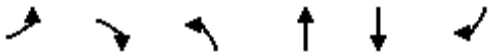
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3436		1770	3462		1770	1863	1583	1770	1822	
Flt Permitted	0.16	1.00		0.10	1.00		0.45	1.00	1.00	0.58	1.00	
Satd. Flow (perm)	295	3436		179	3462		844	1863	1583	1072	1822	
Volume (vph)	20	691	220	93	905	147	393	279	74	66	107	18
Peak-hour factor, PHF	0.92	0.65	0.86	0.81	0.96	0.92	0.79	0.92	0.73	0.92	0.92	0.92
Adj. Flow (vph)	22	1063	256	115	943	160	497	303	101	72	116	20
RTOR Reduction (vph)	0	21	0	0	13	0	0	0	72	0	7	0
Lane Group Flow (vph)	22	1298	0	115	1090	0	497	303	29	72	129	0
Turn Type	Perm			Perm			pm+pt		Perm	pm+pt		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	45.0	45.0		45.0	45.0		37.3	25.3	25.3	20.9	14.3	
Effective Green, g (s)	47.1	47.1		47.1	47.1		38.7	26.7	26.7	23.7	15.7	
Actuated g/C Ratio	0.50	0.50		0.50	0.50		0.41	0.28	0.28	0.25	0.17	
Clearance Time (s)	6.1	6.1		6.1	6.1		5.4	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	148	1725		90	1738		536	530	451	330	305	
v/s Ratio Prot		0.38			0.31		c0.19	0.16		0.02	0.07	
v/s Ratio Perm	0.07			c0.64			c0.19		0.02	0.04		
v/c Ratio	0.15	0.75		1.28	0.63		0.93	0.57	0.06	0.22	0.42	
Uniform Delay, d1	12.6	18.7		23.3	17.0		23.7	28.7	24.4	27.3	35.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.1	3.1		186.6	1.7		22.2	1.5	0.1	0.3	0.9	
Delay (s)	14.7	21.8		210.0	18.7		45.9	30.2	24.5	27.6	35.9	
Level of Service	B	C		F	B		D	C	C	C	D	
Approach Delay (s)		21.7			36.7			38.2			33.1	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	93.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	82	16	24	664	354	57
Peak Hour Factor	0.50	0.25	0.75	0.75	0.83	0.45
Hourly flow rate (vph)	164	64	32	885	427	127
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					725	
pX, platoon unblocked						
vC, conflicting volume	1376	427	553			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1376	427	553			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	90	97			
cM capacity (veh/h)	155	628	1017			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	164	64	32	885	427	127
Volume Left	164	0	32	0	0	0
Volume Right	0	64	0	0	0	127
cSH	155	628	1017	1700	1700	1700
Volume to Capacity	1.06	0.10	0.03	0.52	0.25	0.07
Queue Length 95th (ft)	211	8	2	0	0	0
Control Delay (s)	147.3	11.4	8.7	0.0	0.0	0.0
Lane LOS	F	B	A			
Approach Delay (s)	109.2		0.3		0.0	
Approach LOS	F					

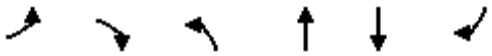
Intersection Summary			
Average Delay	14.8		
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	16	9	14	672	358	12
Peak Hour Factor	0.69	1.00	0.25	0.74	0.85	0.50
Hourly flow rate (vph)	23	9	56	908	421	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1179	
pX, platoon unblocked						
vC, conflicting volume	1441	421	445			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1441	421	445			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	99	95			
cM capacity (veh/h)	139	632	1115			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	23	9	56	908	421	24
Volume Left	23	0	56	0	0	0
Volume Right	0	9	0	0	0	24
cSH	139	632	1115	1700	1700	1700
Volume to Capacity	0.17	0.01	0.05	0.53	0.25	0.01
Queue Length 95th (ft)	14	1	4	0	0	0
Control Delay (s)	36.1	10.8	8.4	0.0	0.0	0.0
Lane LOS	E	B	A			
Approach Delay (s)	29.0		0.5		0.0	
Approach LOS	D					

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	22	0	746	389	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	24	0	811	423	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					377	
pX, platoon unblocked	0.95	0.95	0.95			
vC, conflicting volume	1234	423	457			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1245	394	429			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	100			
cM capacity (veh/h)	183	624	1076			

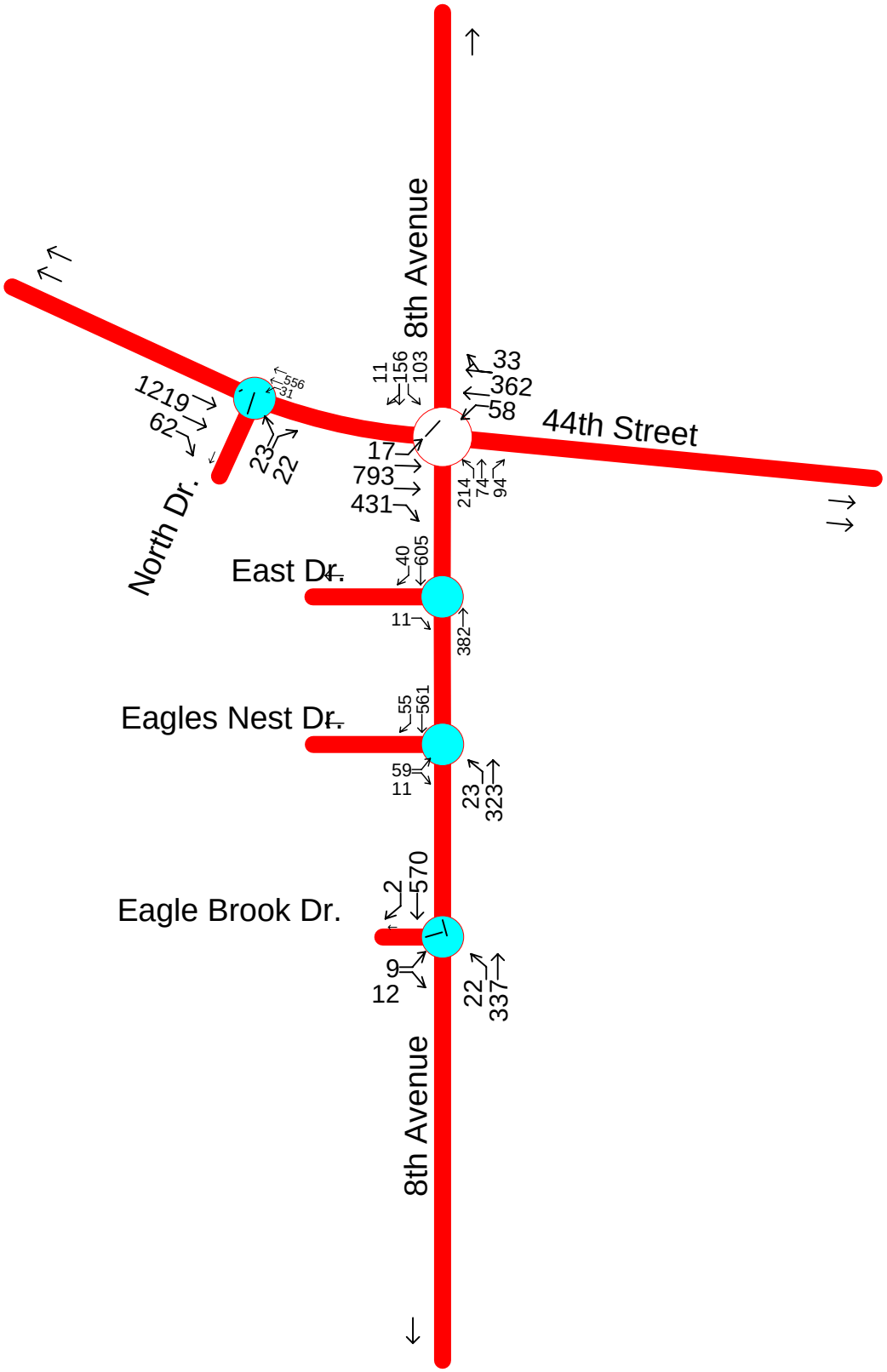
Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	24	811	423	34
Volume Left	0	0	0	0
Volume Right	24	0	0	34
cSH	624	1700	1700	1700
Volume to Capacity	0.04	0.48	0.25	0.02
Queue Length 95th (ft)	3	0	0	0
Control Delay (s)	11.0	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s)	11.0	0.0	0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	882	54	40	1276	54	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	959	59	43	1387	59	53
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				452		
pX, platoon unblocked					0.79	
vC, conflicting volume			1017		1739	479
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1017		1669	479
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		9	90
cM capacity (veh/h)			678		64	532

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	479	479	59	43	693	693	59	53
Volume Left	0	0	0	43	0	0	59	0
Volume Right	0	0	59	0	0	0	0	53
cSH	1700	1700	1700	678	1700	1700	64	532
Volume to Capacity	0.28	0.28	0.03	0.06	0.41	0.41	0.91	0.10
Queue Length 95th (ft)	0	0	0	5	0	0	109	8
Control Delay (s)	0.0	0.0	0.0	10.7	0.0	0.0	195.1	12.5
Lane LOS				B			F	B
Approach Delay (s)	0.0			0.3			108.2	
Approach LOS							F	

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		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East Dr.
Eagles Nest Dr.
Eagle Brook Dr.
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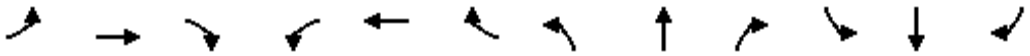
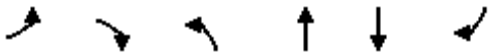


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.98	
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	3493		1770	1863	1583	1770	1834	
Flt Permitted	0.48	1.00	1.00	0.22	1.00		0.39	1.00	1.00	0.70	1.00	
Satd. Flow (perm)	900	3539	1583	410	3493		736	1863	1583	1299	1834	
Volume (vph)	17	793	431	58	362	33	214	74	94	103	156	11
Peak-hour factor, PHF	0.88	0.80	0.70	0.66	0.91	0.88	0.75	0.80	0.65	0.80	0.75	0.45
Adj. Flow (vph)	19	991	616	88	398	38	285	92	145	129	208	24
RTOR Reduction (vph)	0	0	200	0	7	0	0	0	105	0	5	0
Lane Group Flow (vph)	19	991	416	88	429	0	285	92	40	129	227	0
Turn Type	Perm		Perm	Perm			pm+pt		Perm	pm+pt		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)	45.1	45.1	45.1	45.1	45.1		23.8	18.2	18.2	21.4	17.0	
Effective Green, g (s)	47.2	47.2	47.2	47.2	47.2		26.6	19.6	19.6	24.2	18.4	
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.56		0.31	0.23	0.23	0.29	0.22	
Clearance Time (s)	6.1	6.1	6.1	6.1	6.1		5.4	5.4	5.4	5.4	5.4	
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)	502	1974	883	229	1949		317	432	367	404	399	
v/s Ratio Prot		c0.28			0.12		c0.07	0.05		0.02	0.12	
v/s Ratio Perm	0.02		0.26	0.21			c0.21		0.03	0.07		
v/c Ratio	0.04	0.50	0.47	0.38	0.22		0.90	0.21	0.11	0.32	0.57	
Uniform Delay, d1	8.4	11.5	11.2	10.5	9.4		26.8	26.3	25.6	23.3	29.5	
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	0.1	0.9	1.8	4.8	0.3		26.4	0.2	0.1	0.5	1.9	
Delay (s)	8.6	12.4	13.0	15.3	9.7		53.2	26.5	25.7	23.7	31.4	
Level of Service	A	B	B	B	A		D	C	C	C	C	
Approach Delay (s)		12.6			10.6			40.9			28.7	
Approach LOS		B			B			D			C	

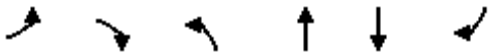
Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	59	11	23	323	561	55
Peak Hour Factor	0.25	1.00	0.50	0.81	0.70	0.81
Hourly flow rate (vph)	236	11	46	399	801	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					725	
pX, platoon unblocked						
vC, conflicting volume	1292	801	869			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1292	801	869			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	97	94			
cM capacity (veh/h)	169	384	775			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	236	11	46	399	801	68
Volume Left	236	0	46	0	0	0
Volume Right	0	11	0	0	0	68
cSH	169	384	775	1700	1700	1700
Volume to Capacity	1.39	0.03	0.06	0.23	0.47	0.04
Queue Length 95th (ft)	362	2	5	0	0	0
Control Delay (s)	260.9	14.6	9.9	0.0	0.0	0.0
Lane LOS	F	B	A			
Approach Delay (s)	249.9		1.0		0.0	
Approach LOS	F					

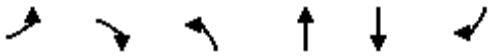
Intersection Summary			
Average Delay	39.8		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	9	12	22	337	570	2
Peak Hour Factor	0.38	0.38	0.50	0.82	0.70	0.25
Hourly flow rate (vph)	24	32	44	411	814	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1179	
pX, platoon unblocked						
vC, conflicting volume	1313	814	822			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1313	814	822			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	92	95			
cM capacity (veh/h)	165	378	807			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	24	32	44	411	814	8
Volume Left	24	0	44	0	0	0
Volume Right	0	32	0	0	0	8
cSH	165	378	807	1700	1700	1700
Volume to Capacity	0.14	0.08	0.05	0.24	0.48	0.00
Queue Length 95th (ft)	12	7	4	0	0	0
Control Delay (s)	30.4	15.4	9.7	0.0	0.0	0.0
Lane LOS	D	C	A			
Approach Delay (s)	21.8		0.9		0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	11	0	382	605	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	12	0	415	658	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					377	
pX, platoon unblocked	0.94	0.94	0.94			
vC, conflicting volume	1073	658	701			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1078	634	681			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	227	448	854			

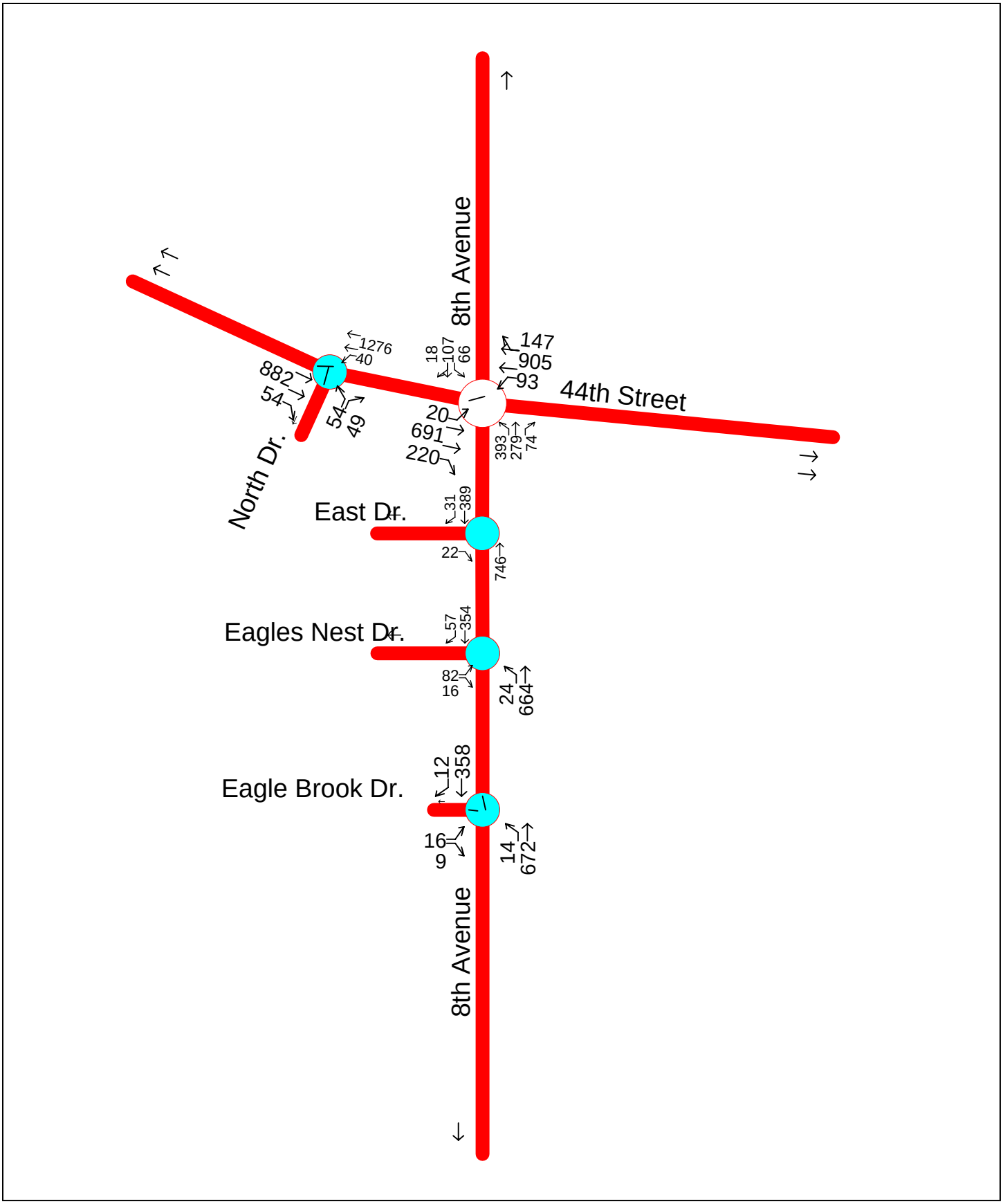
Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	12	415	658	43
Volume Left	0	0	0	0
Volume Right	12	0	0	43
cSH	448	1700	1700	1700
Volume to Capacity	0.03	0.24	0.39	0.03
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	13.2	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s)	13.2	0.0	0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1219	62	31	556	23	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1325	67	34	604	25	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				455		
pX, platoon unblocked					0.97	
vC, conflicting volume			1392		1695	662
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1392		1684	662
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		67	94
cM capacity (veh/h)			487		77	404

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	662	662	67	34	302	302	25	24
Volume Left	0	0	0	34	0	0	25	0
Volume Right	0	0	67	0	0	0	0	24
cSH	1700	1700	1700	487	1700	1700	77	404
Volume to Capacity	0.39	0.39	0.04	0.07	0.18	0.18	0.33	0.06
Queue Length 95th (ft)	0	0	0	6	0	0	31	5
Control Delay (s)	0.0	0.0	0.0	12.9	0.0	0.0	73.3	14.5
Lane LOS				B			F	B
Approach Delay (s)	0.0			0.7			44.6	
Approach LOS							E	

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		


8th Avenue
44th Street
North Dr.
East Dr.
Eagles Nest Dr.
Eagle Brook Dr.
8th Avenue
882
54
1276
40
54
49
18
107
66
20
691
220
147
905
93
393
279
74
31
389
22
746
57
354
82
16
24
664
12
358
16
9
14
672

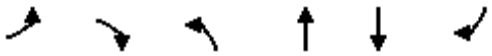
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
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	3462		1770	1863	1583	1770	1822	
Flt Permitted	0.16	1.00	1.00	0.17	1.00		0.45	1.00	1.00	0.58	1.00	
Satd. Flow (perm)	295	3539	1583	320	3462		844	1863	1583	1072	1822	
Volume (vph)	20	691	220	93	905	147	393	279	74	66	107	18
Peak-hour factor, PHF	0.92	0.65	0.86	0.81	0.96	0.92	0.79	0.92	0.73	0.92	0.92	0.92
Adj. Flow (vph)	22	1063	256	115	943	160	497	303	101	72	116	20
RTOR Reduction (vph)	0	0	82	0	13	0	0	0	72	0	7	0
Lane Group Flow (vph)	22	1063	174	115	1090	0	497	303	29	72	129	0
Turn Type	Perm		Perm	Perm			pm+pt		Perm	pm+pt		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2		2	6			8		8	4		
Actuated Green, G (s)	45.0	45.0	45.0	45.0	45.0		37.3	25.3	25.3	20.9	14.3	
Effective Green, g (s)	47.1	47.1	47.1	47.1	47.1		38.7	26.7	26.7	23.7	15.7	
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.50		0.41	0.28	0.28	0.25	0.17	
Clearance Time (s)	6.1	6.1	6.1	6.1	6.1		5.4	5.4	5.4	5.4	5.4	
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)	148	1777	795	161	1738		536	530	451	330	305	
v/s Ratio Prot		0.30			0.31		c0.19	0.16		0.02	0.07	
v/s Ratio Perm	0.07		0.11	c0.36			c0.19		0.02	0.04		
v/c Ratio	0.15	0.60	0.22	0.71	0.63		0.93	0.57	0.06	0.22	0.42	
Uniform Delay, d1	12.6	16.6	13.1	18.1	17.0		23.7	28.7	24.4	27.3	35.0	
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	2.1	1.5	0.6	23.6	1.7		22.2	1.5	0.1	0.3	0.9	
Delay (s)	14.7	18.1	13.7	41.7	18.7		45.9	30.2	24.5	27.6	35.9	
Level of Service	B	B	B	D	B		D	C	C	C	D	
Approach Delay (s)		17.2			20.9			38.2			33.1	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	93.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	82	16	24	664	354	57
Peak Hour Factor	0.50	0.25	0.75	0.75	0.83	0.45
Hourly flow rate (vph)	164	64	32	885	427	127
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					725	
pX, platoon unblocked						
vC, conflicting volume	1376	427	553			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1376	427	553			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	90	97			
cM capacity (veh/h)	155	628	1017			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	164	64	32	885	427	127
Volume Left	164	0	32	0	0	0
Volume Right	0	64	0	0	0	127
cSH	155	628	1017	1700	1700	1700
Volume to Capacity	1.06	0.10	0.03	0.52	0.25	0.07
Queue Length 95th (ft)	211	8	2	0	0	0
Control Delay (s)	147.3	11.4	8.7	0.0	0.0	0.0
Lane LOS	F	B	A			
Approach Delay (s)	109.2		0.3		0.0	
Approach LOS	F					

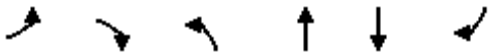
Intersection Summary			
Average Delay	14.8		
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	16	9	14	672	358	12
Peak Hour Factor	0.69	1.00	0.25	0.74	0.85	0.50
Hourly flow rate (vph)	23	9	56	908	421	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1179	
pX, platoon unblocked						
vC, conflicting volume	1441	421	445			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1441	421	445			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	99	95			
cM capacity (veh/h)	139	632	1115			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	23	9	56	908	421	24
Volume Left	23	0	56	0	0	0
Volume Right	0	9	0	0	0	24
cSH	139	632	1115	1700	1700	1700
Volume to Capacity	0.17	0.01	0.05	0.53	0.25	0.01
Queue Length 95th (ft)	14	1	4	0	0	0
Control Delay (s)	36.1	10.8	8.4	0.0	0.0	0.0
Lane LOS	E	B	A			
Approach Delay (s)	29.0		0.5		0.0	
Approach LOS	D					

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	22	0	746	389	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	24	0	811	423	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					377	
pX, platoon unblocked	0.95	0.95	0.95			
vC, conflicting volume	1234	423	457			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1245	394	429			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	100			
cM capacity (veh/h)	183	624	1076			

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	24	811	423	34
Volume Left	0	0	0	0
Volume Right	24	0	0	34
cSH	624	1700	1700	1700
Volume to Capacity	0.04	0.48	0.25	0.02
Queue Length 95th (ft)	3	0	0	0
Control Delay (s)	11.0	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s)	11.0	0.0	0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	882	54	40	1276	54	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	959	59	43	1387	59	53
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				452		
pX, platoon unblocked					0.79	
vC, conflicting volume			1017		1739	479
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1017		1669	479
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		9	90
cM capacity (veh/h)			678		64	532

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	479	479	59	43	693	693	59	53
Volume Left	0	0	0	43	0	0	59	0
Volume Right	0	0	59	0	0	0	0	53
cSH	1700	1700	1700	678	1700	1700	64	532
Volume to Capacity	0.28	0.28	0.03	0.06	0.41	0.41	0.91	0.10
Queue Length 95th (ft)	0	0	0	5	0	0	109	8
Control Delay (s)	0.0	0.0	0.0	10.7	0.0	0.0	195.1	12.5
Lane LOS				B			F	B
Approach Delay (s)	0.0			0.3			108.2	
Approach LOS							F	

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		