

# Traffic Impact Study

for the proposed

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## Masonic Care Community

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Town of Henrietta  
Monroe County, New York

January 2022

Project No. 42002

Prepared For:

## The DDS Companies

45 Hendrix Road  
West Henrietta, New York 14586

Prepared By:



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A5.	LEVEL OF SERVICE CALCULATIONS – BACKGROUND CONDITIONS
A6.	LEVEL OF SERVICE CALCULATIONS – FULL DEVELOPMENT CONDITIONS

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## LIST OF REFERENCES

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1. Highway Capacity Manual 6<sup>th</sup> Edition. Transportation Research Board (TRB). The National Academies, Washington, DC. 2016.
2. Trip Generation, 11<sup>th</sup> Edition. Institute of Transportation Engineers (ITE). Washington, DC. 2021.
3. New York State Department of Transportation (NYSDOT) Traffic Data Viewer. 2022. Retrieved from <https://www.dot.ny.gov/tdv>.
4. OnTheMap. U.S. Census Bureau. 2022.
5. Monroe County Traffic Volume Trends. Monroe County Department of Transportation. 2018.
6. A Policy on Geometric Design of Highways and Streets. The American Association of State Highway Transportation Officials (AASHTO). Washington, DC. 2011.
7. NCHRP Report 279, Intersection Channelization Design Guide. TRB. 1985.

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## LIST OF COMMONLY USED ACRONYMS

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AADT: Annual Average Daily Traffic

AASHTO: American Association of State Highway and Transportation Officials

FHWA: Federal Highway Administration

HCM: Highway Capacity Manual

ITE: Institute of Transportation Engineers

LOS: Level of Service

LUC: Land Use Code

MCDOT: Monroe County Department of Transportation

MPH: Miles per Hour

NCHRP: National Cooperative Highway Research Program

NYSDOT: New York State Department of Transportation

SF: Square Feet

TRB: Transportation Research Board

VPD: Vehicles per Day

## EXECUTIVE SUMMARY

### OVERVIEW

The purpose of this report is to evaluate the potential traffic impacts related to the proposed Masonic Care Community at the northeast corner of the intersection of Middle Road/Erie Station Road in the Town of Henrietta, NY. Within this report, the operating characteristics of the proposed access points and impacts to the adjacent roadway network are identified and mitigating measures (if needed) are provided to minimize operational concerns.

To define traffic impact, this analysis establishes existing baseline traffic conditions, projects background traffic flow including area growth, and determines the traffic operations that would result from the proposed project.

The proposed project will be at the northeast corner of the intersection of Middle Road/Erie Station Road in the Town of Henrietta, Monroe County, New York. The project site is bounded by I-90 (NYS Thruway) to the north; undeveloped lands to the east; Erie Station Road to the south; and Middle Road to the west. Land uses in the vicinity of the proposed project include residential and agriculture. The study area consists of the existing intersection of Erie Station Road/Middle Road.

The proposed project will consist of an independent living campus providing multiple living options for seniors totaling 195 units and will be supported by a customized community center offering the latest in senior living amenities and support services. Access to the proposed project will be provided via two full access driveways: one along Erie Station Road and one along Middle Road. **Figure 5** illustrates the proposed site plan.

Construction of the proposed project is anticipated to reach full build-out within three years depending on market conditions. Town of Henrietta personnel were contacted to discuss any other specific projects that are currently approved or under construction that would generate additional traffic in the study area. The proposed Erie Station Road Distribution Facility Traffic Study, prepared by Passero Associates, identified four background projects as part of its analysis. Traffic volumes generated by the background projects identified in that study, as well as the traffic generated from the proposed Erie Station Road Distribution Facility were added to the study intersection. The four remaining projects were:

- 4799 West Henrietta Road Development
- Lehigh Station Road and East River Road Development
- Riverton Parcel "E"
- Howlett Acres Subdivision

To account for normal increases in background traffic growth, including any unforeseen developments in the project study area aside from those identified, a growth rate of 1.0% per year was applied to the existing traffic volumes in the study area. This growth rate was determined using the recommended annual growth rate for the Town of Henrietta, as determined by the Monroe County Department of Transportation in a study of traffic trends along county roadways.

### CONCLUSIONS & RECOMMENDATIONS

This Traffic Impact Study identified and evaluated the potential traffic impacts that can be expected from the proposed Masonic Care Community project in the Town of Henrietta, New York. The results of this study determined that the existing transportation network can

adequately accommodate the projected traffic volumes and resulting minor impacts to study area intersections. The following sets forth the conclusions and recommendations based upon the results of the analyses:

1. Using ITE Trip Generation Manual, the proposed project is expected to generate approximately 21 entering/43 exiting vehicle trips during the AM peak hour and 46 entering/29 exiting vehicle trips during the PM peak hour.
2. The sight distance evaluation performed at both proposed driveway locations resulted in sufficient required Stopping Sight Distances and desirable Intersection Sight Distances.
3. The warrants for a left-turn treatment at both proposed driveway locations were not satisfied during either peak hour studied.
4. The projected minor traffic impacts resulting from full development of the proposed project during both peak hours can be accommodated by the existing transportation network and study area intersections. No capacity improvements are required.

## I. INTRODUCTION

The purpose of this report is to evaluate the potential traffic impacts related to the proposed Masonic Care Community at the northeast corner of the intersection of Middle Road/Erie Station Road in the Town of Henrietta, NY. Within this report, the operating characteristics of the proposed access points and impacts to the adjacent roadway network are identified and mitigating measures (if needed) are provided to minimize operational concerns.

To define traffic impact, this analysis establishes existing baseline traffic conditions, projects background traffic flow including area growth, and determines the traffic operations that would result from the proposed project.

## II. LOCATION

The proposed project will be at the northeast corner of the intersection of Middle Road/Erie Station Road in the Town of Henrietta, Monroe County, New York. The project site is bounded by I-90 (NYS Thruway) to the north; undeveloped lands to the east; Erie Station Road to the south; and Middle Road to the west. Land uses in the vicinity of the proposed project include residential and agriculture. The study area consists of the existing intersection of Erie Station Road/Middle Road.

The project site location and study area are illustrated in **Figure 1** (all figures are included at the end of this report).

## III. EXISTING HIGHWAY SYSTEM

### A. Vehicular Network Description

The following information outlined in **Table I** provides a description of the existing roadway network within the study area. **Figure 2** illustrates the lane geometry at each of the study intersections and the Annual Average Daily Traffic (AADT) volumes on the study roadways. The AADTs reflect the most recently collected data obtained from the New York State Department of Transportation (NYSDOT).

Functional classification of highways within the study area is determined by the NYSDOT and the Federal Highway Administration (FHWA). Definitions of the functional classifications shown in **Table I** are provided after the table.

TABLE I: EXISTING HIGHWAY SYSTEM

ROADWAY	CLASS <sup>1</sup>	AGENCY <sup>2</sup>	SPEED LIMIT <sup>3</sup>	TRAVEL LANES <sup>4</sup>	TRAVEL PATTERN/DIRECTION	EST. AADT & SOURCE <sup>5</sup>
Erie Station Road (CR-71)	16	MCDOT	35	2	Two-way/ East-West	3,142 NYSDOT (2019)
Middle Road (CR-88)	17	MCDOT	45	2	Two-way/ North-South	3,831 NYSDOT (2019)

**Notes:**

1. State Functional Classification of Roadway.
2. Jurisdictional Agency of Roadway.
3. Posted or Statewide Limit in Miles per Hour (mph).
4. Number of travel lanes. Excludes turning/auxiliary lanes developed at intersections.
5. Estimated AADT in Vehicles per Day (vpd). AADT Source (Year).

**Urban Minor Arterial (Class 16)**

An urban minor arterial provide service for trips of moderate length, serve geographic areas that are smaller than higher arterial roadways, and offer connectivity to higher arterial systems. These roadways distribute traffic to smaller geographic areas, provide more land access without disrupting neighborhood access, and provide urban connections for rural collectors.

**Urban Major Collector (Class 17)**

The collector street system provides both land access service and traffic circulation in higher density residential neighborhoods and commercial and industrial areas. The collector street distributes trips from the arterials through the area to their ultimate destination and vice versa (i.e., the collector street also collects traffic from local streets in residential neighborhoods and channels it into the arterial system). The collector street system may also service bus routes. Operating characteristics tend to include higher speeds and more signalized intersections.

**B. Multi-Modal Network Description**

This evaluation reviewed the study area's pedestrian, bicycle, and transit network via field and aerial reconnaissance. A description of the multi-modal infrastructure is described hereafter.

**Pedestrian & Bicycle Facilities**

There are no sidewalk facilities within the study area.

There are no dedicated bicycle lanes or trails, although cyclists are permitted to share the road with motorists on all roadways within the study area.

**Transit Facilities**

Regional Transit Service (RTS) provides regional bus service. No service is provided in the study area.



## IV. EXISTING TRAFFIC CONDITIONS

### **A. Peak Intervals for Analysis**

Given the functional characteristics of the study corridors, adjacent land uses, and the proposed land use for the project site (retirement community), the peak hours selected for analysis are the weekday commuter AM and PM peak periods. The combination of site traffic and adjacent through traffic produces the greatest demand during these time periods.

### **B. Existing Traffic Volume Data**

Turning movement traffic counts were collected by SRF at the Erie Station Road/Middle Road intersection on Thursday, January 13, 2022. Traffic counts were conducted from 7:00-9:00 AM and 4:00-6:00 PM. The peak hour traffic periods generally occurred from 7:00-8:00 AM and 4:15-5:15 PM. The unadjusted weekday AM and PM peak hour volumes are reflected in **Figure 3A**.

It is noted, however, that traffic volumes may be impacted by the COVID-19 pandemic. The NYSDOT released a study in February 2021 that described the effect the COVID-19 pandemic had on traffic in New York State in 2020. The NYSDOT study illustrated the percent difference 2020 weekday ADTs to average weekday ADTs prior to 2020. Additionally, traffic volumes were compared to traffic data obtained in various locations in the study area before the COVID-19 pandemic by the NYSDOT. Both the NYSDOT study and historic counts in the study area were used to adjust the collected data to reflect 2022 representative traffic conditions by increasing the collected traffic volumes. This is consistent with NYSDOT and ITE methodology for adjustments related to collected traffic volumes affected by the COVID-19 pandemic. Seasonal variations were also considered as part of this review.

**Figure 3B** illustrates the representative 2022 weekday AM and PM peak hour base volumes used for analysis purposes in this study.

## V. FUTURE AREA DEVELOPMENT AND LOCAL GROWTH

Construction of the proposed project is anticipated to reach full build-out within three years depending on market conditions. Town of Henrietta personnel were contacted to discuss any other specific projects that are currently approved or under construction that would generate additional traffic in the study area. The proposed Erie Station Road Distribution Facility Traffic Study, prepared by Passero Associates, identified four background projects as part of its analysis. Traffic volumes generated by the background projects identified in that study, as well as the traffic generated from the proposed Erie Station Road Distribution Facility were added to the study intersection. The four remaining projects were:

- 4799 West Henrietta Road Development
- Lehigh Station Road and East River Road Development
- Riverton Parcel "E"
- Howlett Acres Subdivision

To account for normal increases in background traffic growth, including any unforeseen developments in the project study area aside from those identified, a growth rate of 1.0% per year was applied to the existing traffic volumes in the study area. This growth rate was determined using the recommended annual growth rate for the Town of Henrietta, as

determined by the MCDOT in a study of traffic trends along county roadways. All ambient growth materials are included in the Appendices. The background traffic volumes are depicted in **Figure 4**.

## VI. PROPOSED DEVELOPMENT

### A. Project Description

The proposed project will consist of an independent living campus providing multiple living options for seniors totaling 195 units and will be supported by a customized community center offering the latest in senior living amenities and support services. Access to the proposed project will be provided via two full access driveways: one along Erie Station Road and one along Middle Road. **Figure 5** illustrates the proposed site plan.

### B. Site Generated Traffic

The volume of traffic generated by a site is dependent on the intended land use and size of the development. Trip generation is an estimate of the number of trips generated by a specific building or land use. These trips represent the volume of traffic entering and exiting the development. Trip Generation Manual (11<sup>th</sup> Edition) published by the Institute of Transportation Engineers (ITE) is used as a reference for this information. The trip rate for the peak hour of the generator may or may not coincide in time or volume with the trip rate for the peak hour of adjacent street traffic. Volumes generated during the peak hour of the adjacent street traffic and proposed land use, in this case, the weekday commuter AM and PM peaks, represent a more critical volume when analyzing the capacity of the system; those intervals will provide the basis of this analysis.

**Table II** shows the total site generated trips for full development of the project. All trip generation information has been included in the Appendices.

TABLE II: SITE GENERATED TRIPS

DESCRIPTION	ITE LUC	SIZE	AM PEAK HOUR		PM PEAK HOUR	
			ENTER	EXIT	ENTER	EXIT
Senior Adult Housing	251	195 units	21	43	46	29

Using ITE Trip Generation Manual, the proposed project is expected to generate approximately 21 entering/43 exiting vehicle trips during the AM peak hour and 46 entering/29 exiting vehicle trips during the PM peak hour.

### C. Site Traffic Distribution

The cumulative effect of site-generated traffic on the transportation network is dependent on the origins and destinations of that traffic and the location of the access drives serving the site. The proposed arrival/departure distribution of traffic generated by the proposed project is considered a function of several parameters, including:

- Population centers using Census Data
- Commercial centers
- Proposed access locations

- Access to I-90 and I-390
- Existing traffic patterns
- Existing traffic conditions and controls

**Figure 6** shows the anticipated trip distribution pattern percentages for the traffic from the project site. **Figure 7** illustrates the peak hour project site-generated traffic based on those percentages.

## VII. FULL DEVELOPMENT VOLUMES

Proposed design hour traffic volumes are developed for the AM and PM peak hours by combining the background traffic conditions (**Figure 4**) and the new site generated traffic volumes (**Figure 7**) to yield the traffic volumes under full development conditions. The resulting design hour volumes for the proposed project are illustrated in **Figure 8** under full build-out conditions.

## VIII. CAPACITY ANALYSIS

### A. *Description of Capacity Analysis*

Capacity analysis is a technique used for determining a measure of effectiveness for a section of roadway and/or intersection based on the number of vehicles during a specific time period. The measure of effectiveness used for the capacity analysis is referred to as a Level of Service (LOS). Levels of Service are calculated to provide an indication of the amount of delay that a motorist experiences while traveling along a roadway or through an intersection. Since the most amount of delay to motorists usually occurs at intersections, capacity analysis focuses on intersections, as opposed to highway segments.

Six Levels of Service are defined for analysis purposes. They are assigned letter designations, from "A" to "F", with LOS "A" representing the conditions with little to no delay, and LOS "F" conditions with very long delays. Suggested ranges of service capacity and an explanation of Levels of Service are included in the Appendices. LOS "C" or better is generally desirable, but LOS "D" for signalized locations and LOS "E" for unsignalized are generally acceptable during peak periods so long as the volume to capacity ratio ( $v/c$ ) is below 1.0.

The standard procedure for capacity analysis of signalized and unsignalized intersections is outlined in the Highway Capacity Manual (HCM 2016) published by the Transportation Research Board (TRB). Traffic analysis software, Synchro 11, which is based on procedures and methodologies contained in the HCM, was used to analyze operating conditions at study area intersections. The procedure yields a Level of Service based on the HCM as an indicator of how well intersections operate.

### B. *Capacity Analysis Results*

Existing and background operating conditions during the peak study periods are evaluated to determine a basis for comparison with the projected future conditions. The future traffic conditions generated by the proposed project were analyzed to assess the operation of the study area intersections. Capacity results for existing, background, and full development conditions are listed in **Table III**. The discussion following the table summarizes capacity conditions.

INTERSECTION	2022 EXISTING BASE CONDITIONS					2024 BACKGROUND CONDITIONS					2024 FULL BUILD CONDITIONS				
	AM		PM				AM		PM			AM		PM	
1. MIDDLE ROAD/PROPOSED DRIVEWAY															
WB - Proposed Driveway		NA	—		NA		NA	—		NA		B	10.5	B	10.0
SB - Middle Road			—					—				A	7.9	A	7.7
2. ERIE STATION ROAD/PROPOSED DRIVEWAY															
EB - Erie Station Road		NA	—		NA		NA	—		NA		A	7.6	A	7.6
SB - Proposed Driveway			—					—				B	10.1	B	10.2
3. ERIE STATION ROAD/MIDDLE ROAD															
EB - Erie Station Road		A	9.6	B	10.3		B	10.1	B	11.2		B	10.3	B	11.5
WB - Erie Station Road		A	8.6	A	9.4		A	9.1	B	10.1		A	9.2	B	10.3
NB - Middle Road		A	9.0	A	8.8		A	9.5	A	9.3		A	9.6	A	9.4
SB - Middle Road		A	8.1	B	10.5		A	8.5	B	11.9		A	8.5	B	12.2

Notes:

1. A (0.0) = Level of Service (Delay in seconds per vehicle)
2. EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound
3. N/A = Approach does not exist and/or was not analyzed during this condition

### 1. Middle Road/Proposed Driveway

All movements are projected to operate at LOS “B” or better under full build conditions during both peak hours studied. No capacity improvements are warranted nor recommended. The driveway shall be stop-controlled on the westbound exiting approach from the project site.

### 2. Erie Station Road/Proposed Driveway

All movements are projected to operate at LOS “B” or better under full build conditions during both peak hours studied. No capacity improvements are warranted nor recommended. The driveway shall be stop-controlled on the southbound exiting approach from the project site.

### 3. Erie Station Road/Middle Road

All movements operate at LOS “B” or better under existing and projected background conditions. No changes in LOS are projected between background and full build conditions. Therefore, no capacity improvements are recommended based on the minor traffic impacts associated with the proposed project.

## IX. SIGHT DISTANCE EVALUATION

Sight distance was investigated at the proposed driveways along Erie Station Road and Middle Road. Sight distance is provided at intersections to allow drivers to perceive the presence of potentially conflicting vehicles. This should occur in sufficient time for a motorist to stop or adjust their speed, as appropriate, to avoid a collision at the intersection. Sight distance is also provided at intersections to allow the drivers of stopped vehicles a sufficient view of the intersecting highway to anticipate and avoid potential incidents. If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate Stopping Sight Distance (SSD) for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. To enhance traffic operations, Intersection Sight Distances (ISD) that exceed SSD are desirable along the major road.

A Policy on Geometric Design of Highways and Streets published by the American Association of State Highway and Transportation Officials (AASHTO) in 2011 was used as a reference to establish the required SSD and desirable ISD.

The required SSD and desirable ISD for a left turn from a stop are based on the design speed (posted plus 5 MPH) for a given section of roadway. **Table IV** depicts the results.

**TABLE IV: SIGHT DISTANCE REQUIREMENT AND MEASUREMENTS**

INTERSECTION	POSTED SPEED	DESIGN SPEED	REQUIRED SSD	DESIRABLE ISD	AVAILABLE SIGHT DISTANCE TO THE:	
					LEFT	RIGHT
Erie Station Road/ Proposed Driveway	35 mph	40 mph	305'	445'	ISD: >500' SSD: >500'	ISD: >500' SSD: >500'
Middle Road/ Proposed Driveway	45 mph	50 mph	425'	555'	ISD: >600' SSD: >600'	ISD: >600' SSD: >600'

The available sight distances exceed the required SSD and desirable ISD. No mitigation is required. Any brush and foliage along the sight lines should be maintained to ensure maximum visibility at the site access locations.

## X. LEFT TURN TREATMENT WARRANT INVESTIGATION

Volume warrants for left turn treatments along Middle Road and Erie Station Road at proposed driveways were investigated using NCHRP Report 279: Intersection Channelization Design Guide (1985) published by the Transportation Research Board (TRB). Provisions for left turn lane facilities should be established where traffic volumes are high enough and safety considerations are sufficient to warrant the additional lane. This investigation analyzes warrants during the peak hours of study. All supporting calculations are included in the Appendices.

The warrants are based, in part, on the design speed for a given section of roadway (e.g., posted speed plus 5 MPH).

When consider the combination of traffic volumes and the design speed for the given roadways, the warrants for a left-turn treatment are not satisfied at the proposed driveways. Thus, no treatment is recommended.

## XI. CONCLUSIONS & RECOMMENDATIONS

This Traffic Impact Study identified and evaluated the potential traffic impacts that can be expected from the proposed Masonic Care Community project in the Town of Henrietta, New York. The results of this study determined that the existing transportation network can adequately accommodate the projected traffic volumes and resulting minor impacts to study area intersections. The following sets forth the conclusions and recommendations based upon the results of the analyses:

1. Using ITE Trip Generation Manual, the proposed project is expected to generate approximately 21 entering/43 exiting vehicle trips during the AM peak hour and 46 entering/29 exiting vehicle trips during the PM peak hour.
2. The sight distance evaluation performed at both proposed driveway locations resulted in sufficient required Stopping Sight Distances and desirable Intersection Sight Distances.
3. The warrants for a left-turn treatment at both proposed driveway locations were not satisfied during either peak hour studied.
4. The projected minor traffic impacts resulting from full development of the proposed project during both peak hours can be accommodated by the existing transportation network and study area intersections. No capacity improvements are required.

## XII. FIGURES

**Figures 1 through 8** are included on the following pages.



FIGURE 1: SITE LOCATION AND STUDY AREA

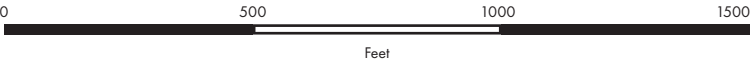


Key

- 1 Study Intersection
- 1 Proposed Intersection
- Study Area
- Site Location

PROPOSED  
MASONIC CARE COMMUNITY

TOWN OF HENRIETTA, MONROE COUNTY, NEW YORK

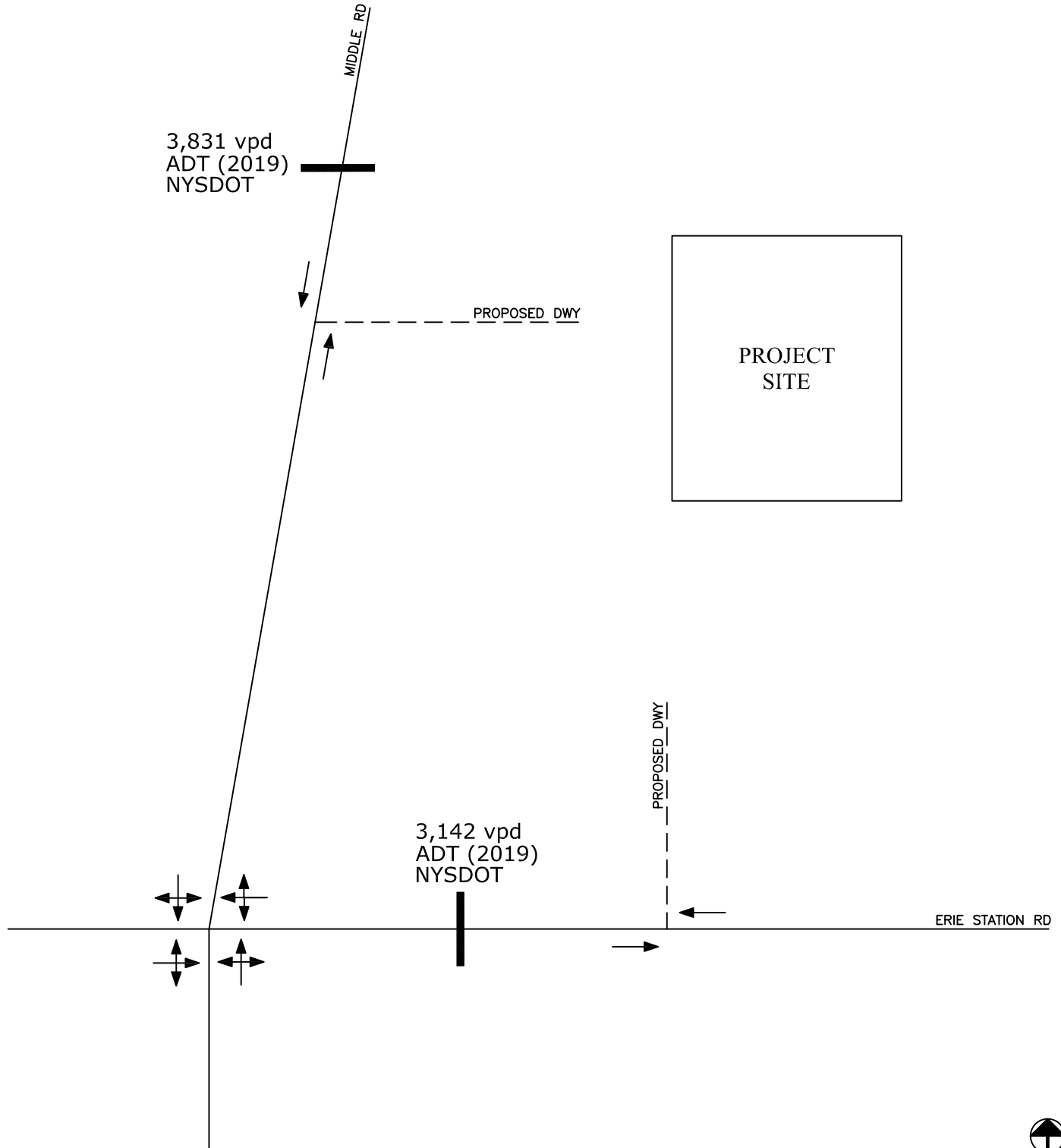


Project No: 42002



Notes:

1. All AADT volumes by those noted:
  - 1.1. NYSDOT = New York State Department of Transportation
2. vpd = Vehicles per Day



KEY

## FIGURE 2

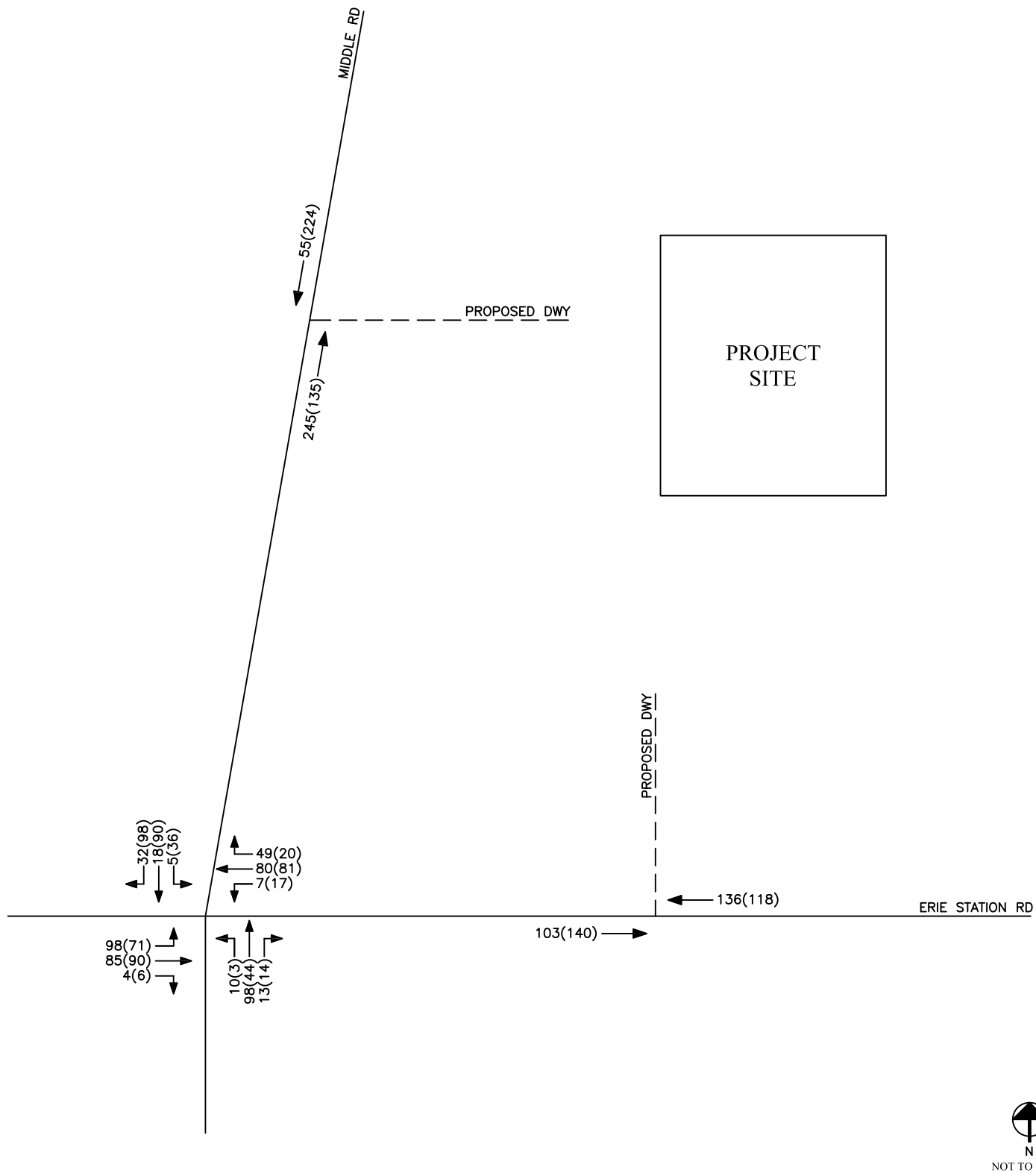
LANE GEOMETRY &  
AVERAGE DAILY TRAFFIC

PROPOSED MASONIC CARE  
COMMUNITY,  
TOWN OF HENRIETTA, NY



Transportation Planning / Engineering / Design  
www.srfa.net / (585) 272-4660





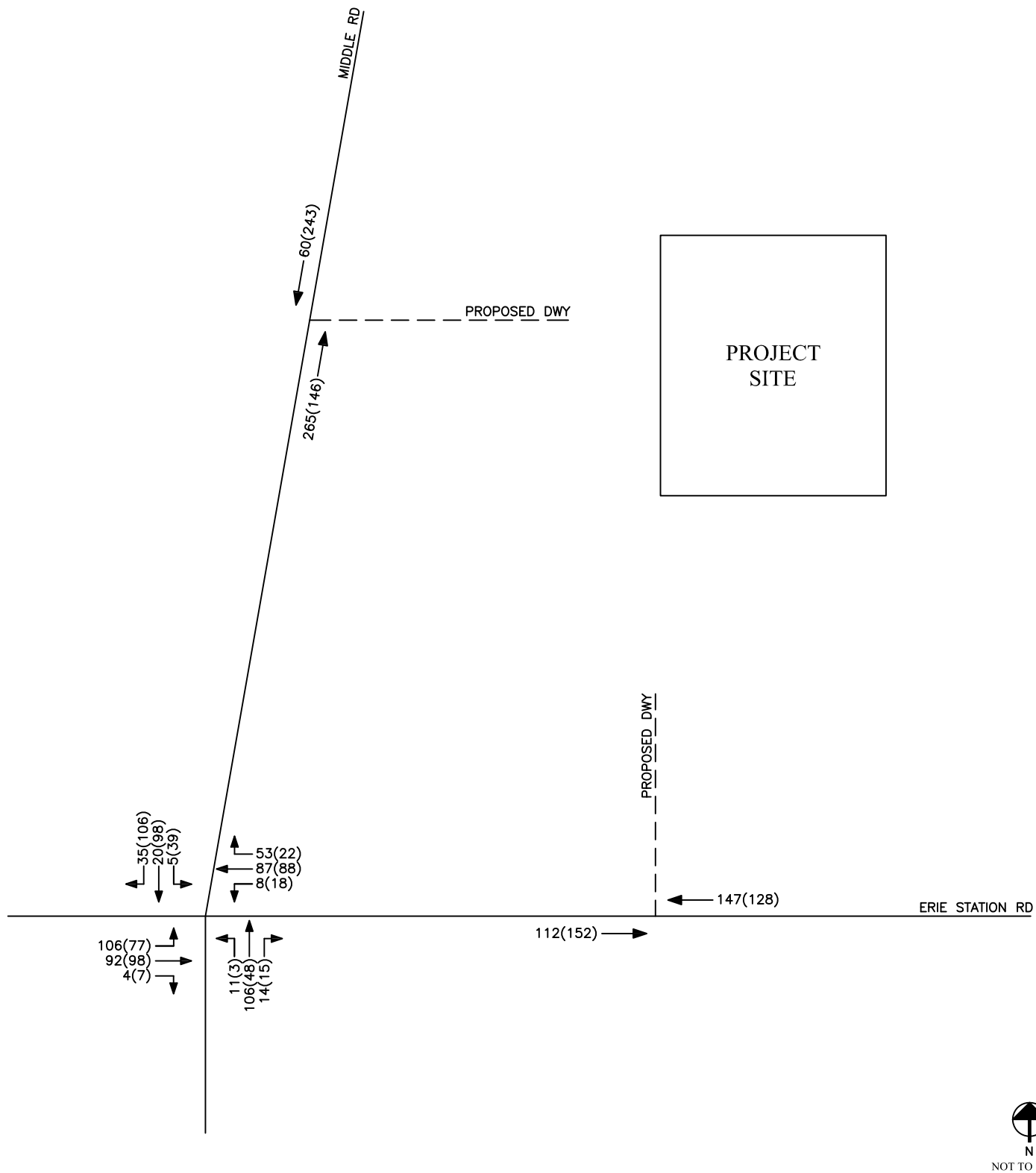
## FIGURE 3A

PEAK HOUR VOLUMES  
2022 UNADJUSTED CONDITIONS

PROPOSED MASONIC CARE  
COMMUNITY,  
TOWN OF HENRIETTA, NY



Transportation Planning / Engineering / Design  
www.srfa.net / (585) 272-4660



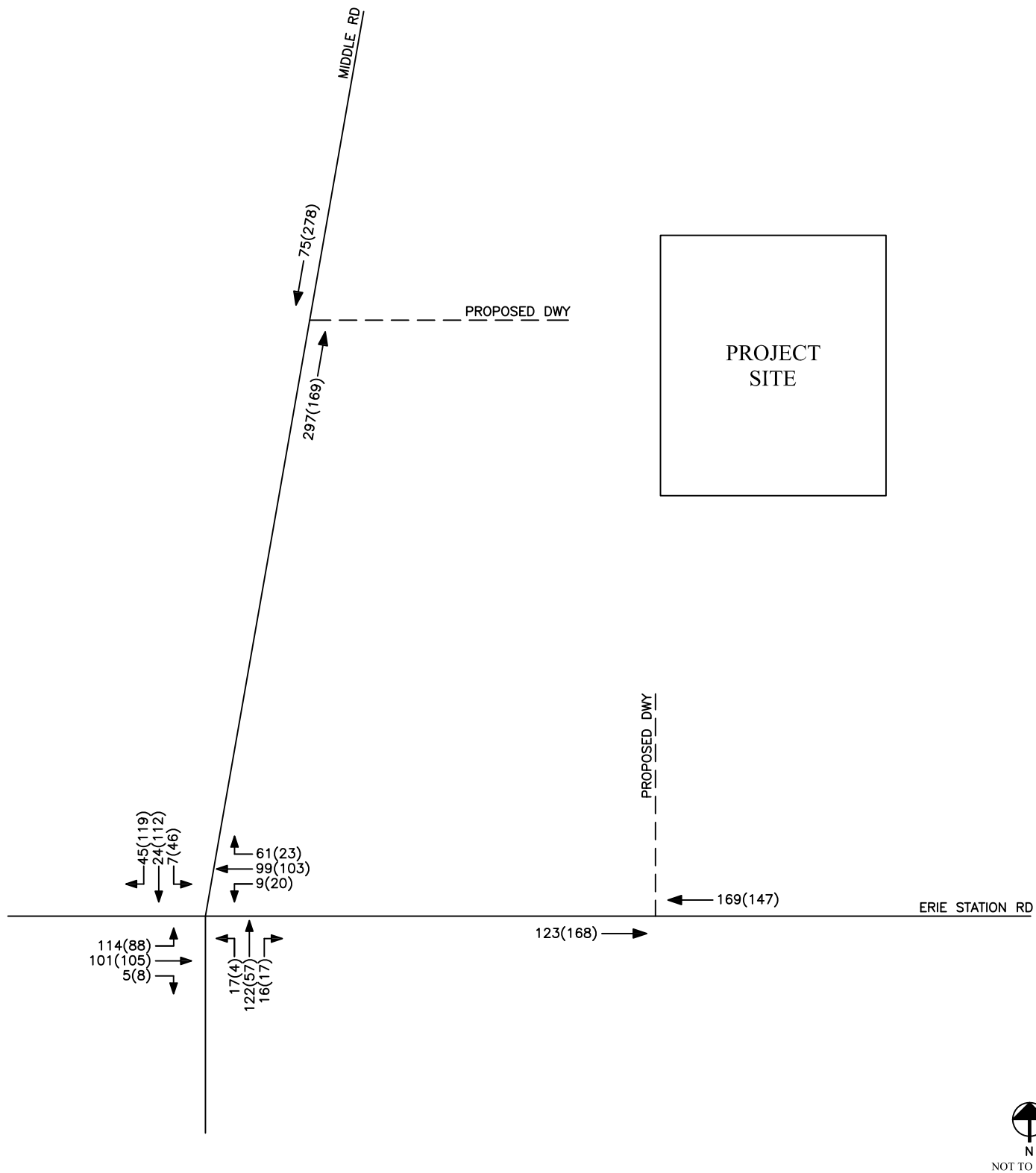
**FIGURE 3B**

PEAK HOUR VOLUMES  
2022 EXISTING BASE CONDITIONS

PROPOSED MASONIC CARE  
COMMUNITY,  
TOWN OF HENRIETTA, NY



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**FIGURE 4**

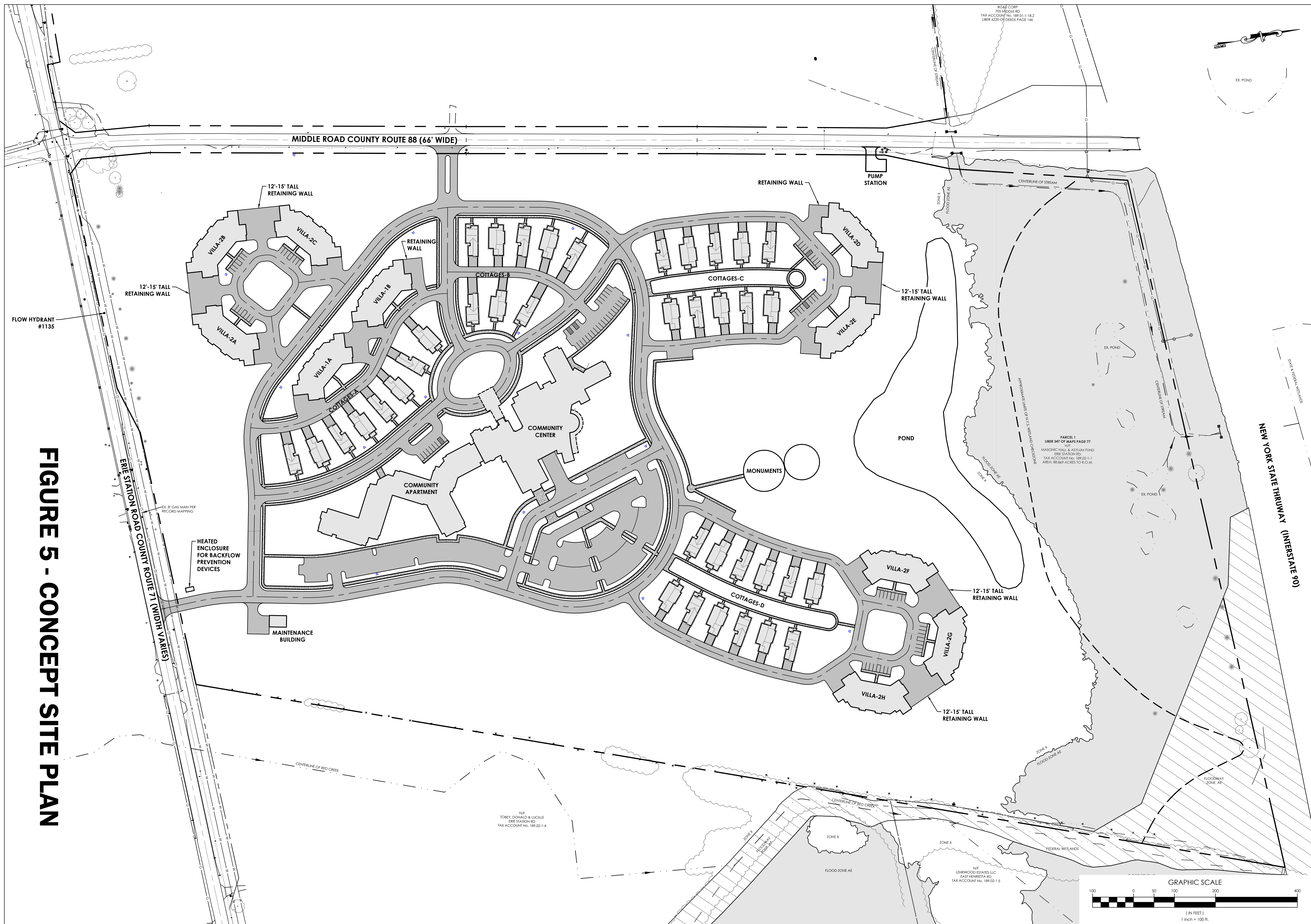
PEAK HOUR VOLUMES  
2024 BACKGROUND CONDITIONS

PROPOSED MASONIC CARE  
COMMUNITY,  
TOWN OF HENRIETTA, NY



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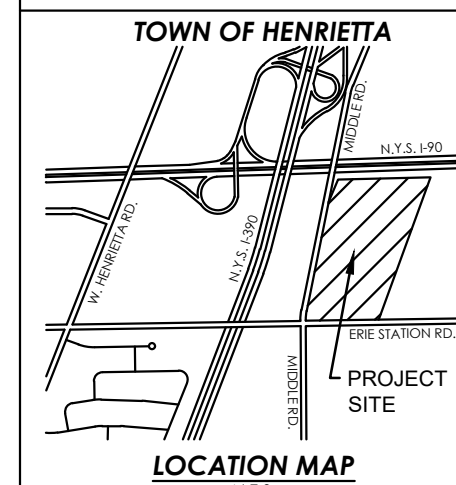




**45 HENDRIX RD  
WEST HENRIETTA, NY 14586  
PHONE-(585)359-7540  
FAX-(585)359-7541**

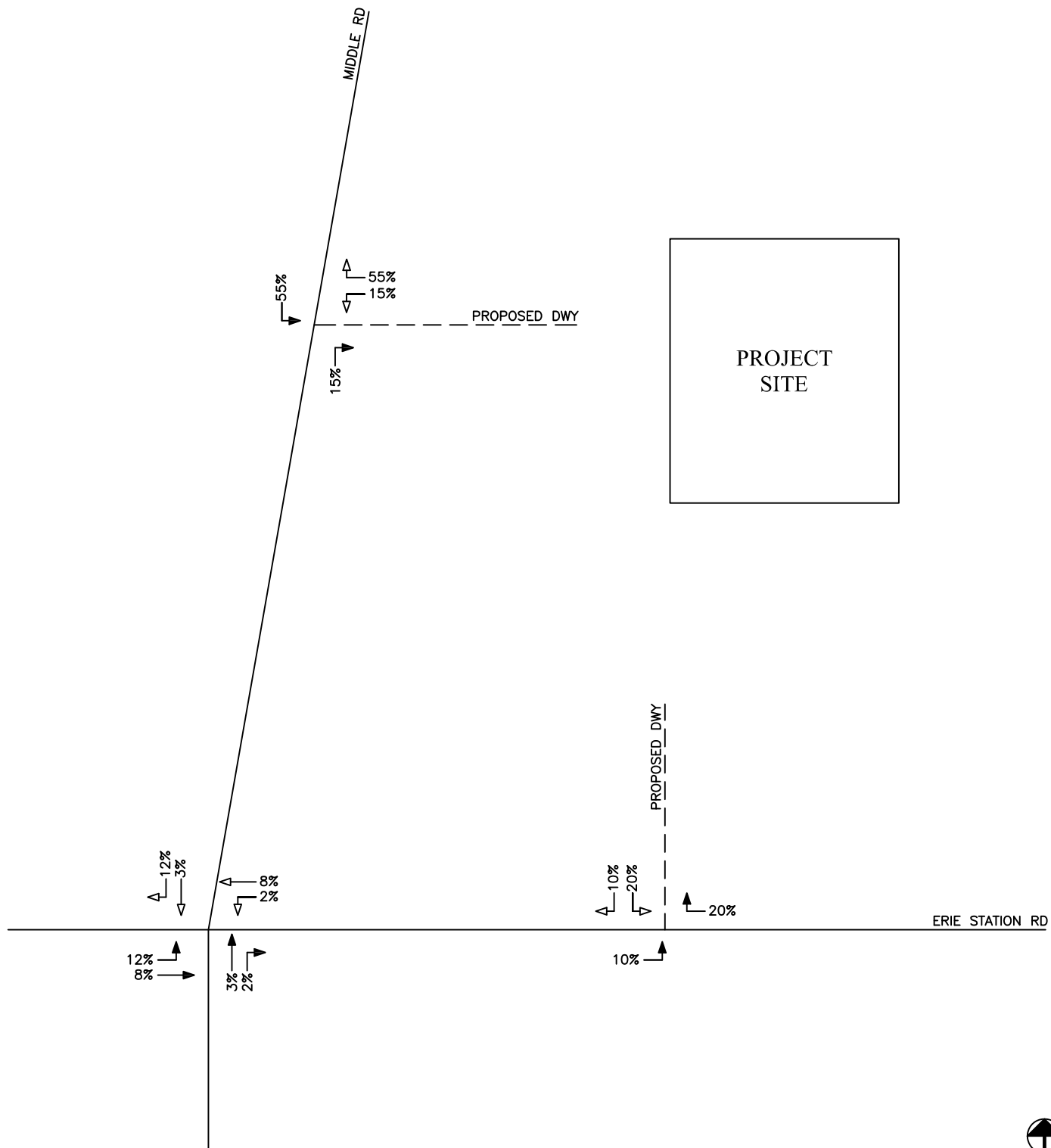


2150 BECKER STREET  
UTICA, NY 13501



<b>00</b>	<b>REV:</b>	<b>MASONIC CARE COMMUNITY</b> TOWN OF HENRIETTA, MONROE COUNTY, NEW YORK  <b>SITE &amp; UTILITY PLAN</b>	<b>REV</b>	<b>DESCRIPTION</b>	<b>DATE</b>
<b>C1</b>	<b>DRAWING NO:</b>		<b>DRAWING TITLE:</b>		
	DRAWN BY: CEK   APPROVED BY: RWK   PROJ. NO: 72210089				





NOT TO SCALE

# KEY

00(00) = AM(PM)

→ = ENTERING TRIPS

→ = EXITING TRIPS

PROJECT NO: 42002

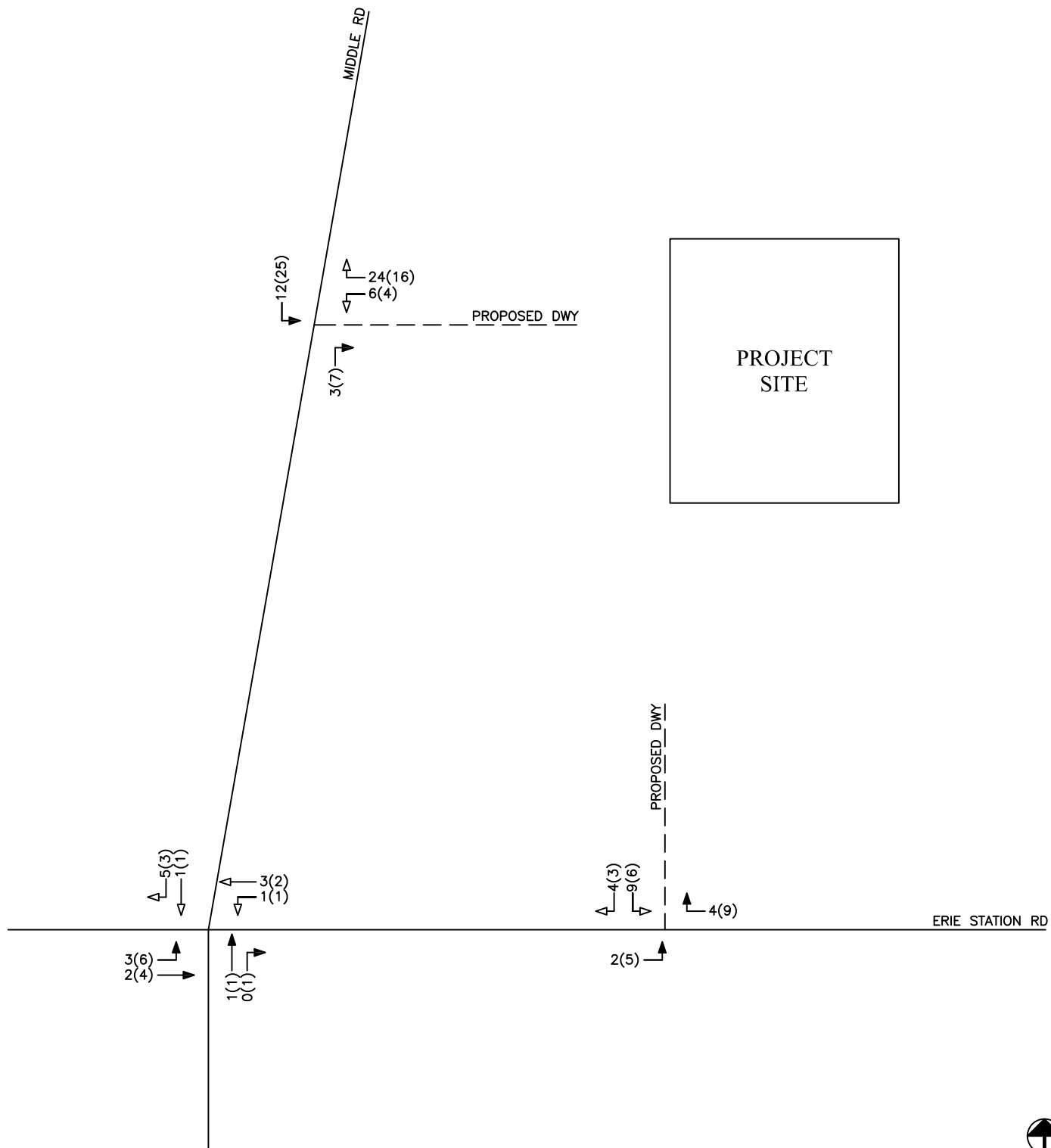
## FIGURE 6

### TRIP DISTRIBUTION

PROPOSED MASONIC CARE  
COMMUNITY,  
TOWN OF HENRIETTA, NY



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# KEY

00(00) = AM(PM)  
 → = ENTERING TRIPS  
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PROJECT NO: 42002

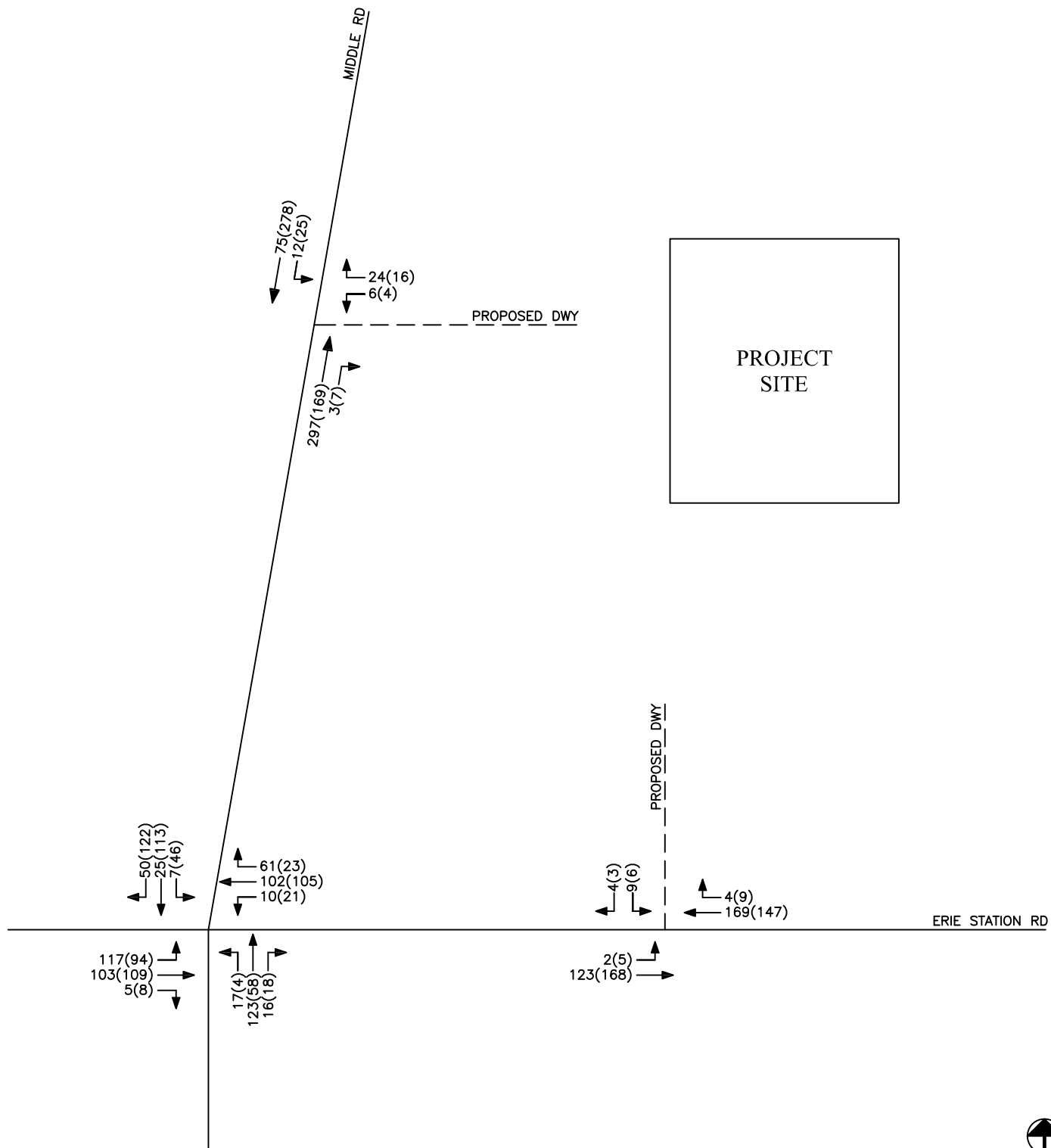
## FIGURE 7

SITE GENERATED TRIPS

PROPOSED MASONIC CARE  
 COMMUNITY,  
 TOWN OF HENRIETTA, NY



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KEY

00(00) = AM(PM)

PROJECT NO: 42002

## FIGURE 8

PEAK HOUR VOLUMES  
FULL DEVELOPMENT CONDITIONS

PROPOSED MASONIC CARE  
COMMUNITY,  
TOWN OF HENRIETTA, NY



# APPENDICES

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# A1

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## Collected Traffic Volume Data



# SRF ASSOCIATES, D.P.C.

3495 Winton Place, Building E, Suite 110  
Rochester, New York 14623

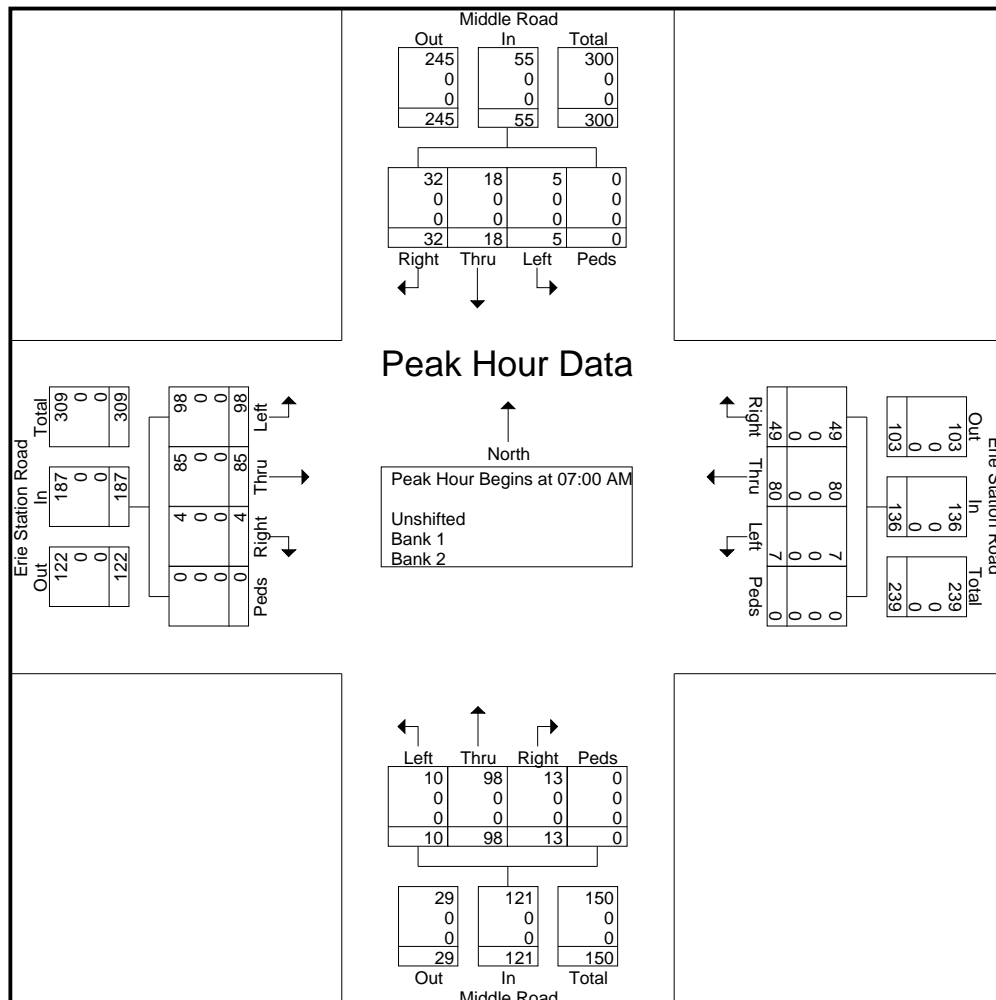
File Name : Erie Station at Middle - AM

Site Code : 00042002

Start Date : 1/13/2022

Page No : 2

	Middle Road Southbound					Erie Station Road Westbound					Middle Road Northbound					Erie Station Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	10	5	1	0	16	5	17	2	0	24	4	16	2	0	22	0	30	31	0	61	123
07:15 AM	5	4	1	0	10	17	19	2	0	38	3	18	4	0	25	1	22	24	0	47	120
07:30 AM	7	7	0	0	14	14	28	1	0	43	4	31	1	0	36	3	17	20	0	40	133
07:45 AM	10	2	3	0	15	13	16	2	0	31	2	33	3	0	38	0	16	23	0	39	123
Total Volume	32	18	5	0	55	49	80	7	0	136	13	98	10	0	121	4	85	98	0	187	499
% App. Total	58.2	32.7	9.1	0		36	58.8	5.1	0		10.7	81	8.3	0		2.1	45.5	52.4	0		
PHF	.800	.643	.417	.000	.859	.721	.714	.875	.000	.791	.813	.742	.625	.000	.796	.333	.708	.790	.000	.766	.938
Unshifted	32	18	5	0	55	49	80	7	0	136	13	98	10	0	121	4	85	98	0	187	499
% Unshifted	100	100	100	0	100	100	100	100	0	100	100	100	100	0	100	100	100	100	0	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0





# SRF ASSOCIATES, D.P.C.

3495 Winton Place, Building E, Suite 110  
Rochester, New York 14623

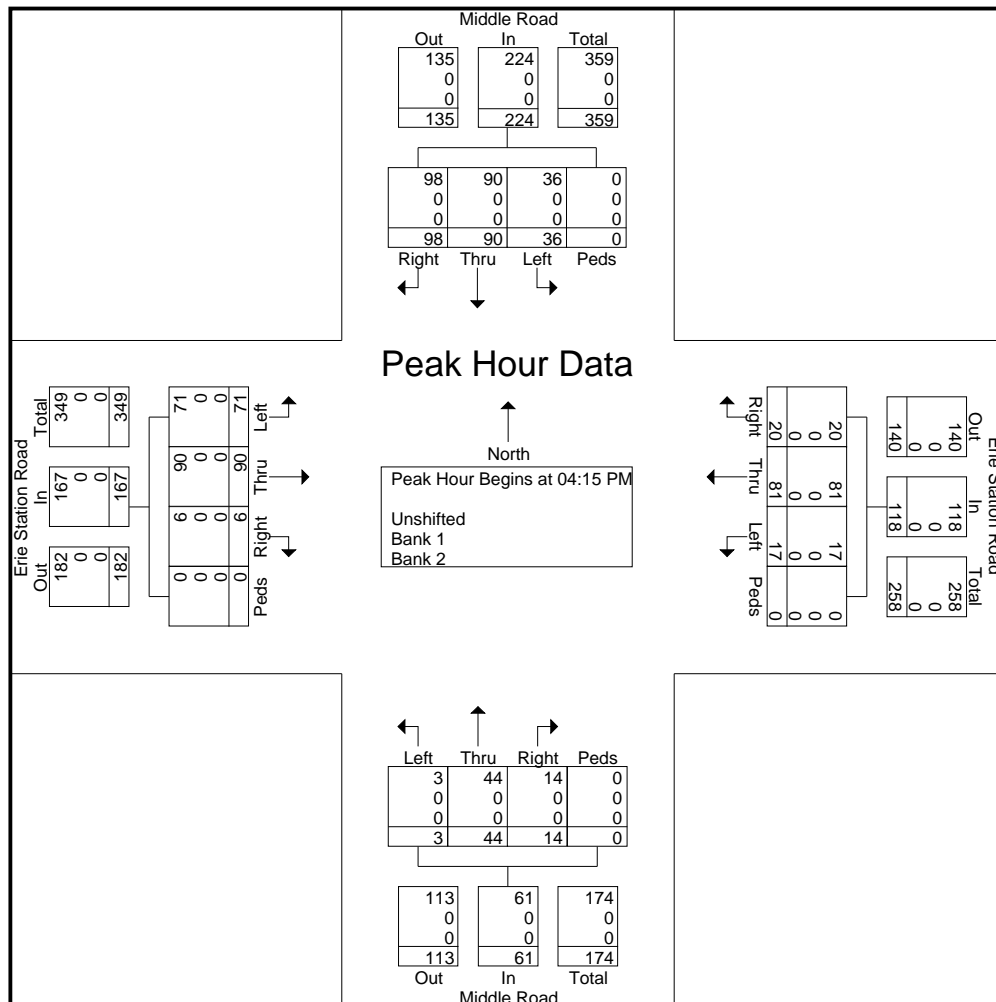
File Name : Erie Station at Middle - PM

Site Code : 00042002

Start Date : 1/13/2022

Page No : 2

	Middle Road Southbound					Erie Station Road Westbound					Middle Road Northbound					Erie Station Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	21	23	3	0	47	4	19	1	0	24	3	11	2	0	16	0	17	27	0	44	131
04:30 PM	20	15	13	0	48	6	21	4	0	31	5	11	0	0	16	2	22	13	0	37	132
04:45 PM	24	32	9	0	65	8	25	6	0	39	1	12	1	0	14	3	26	19	0	48	166
05:00 PM	33	20	11	0	64	2	16	6	0	24	5	10	0	0	15	1	25	12	0	38	141
Total Volume	98	90	36	0	224	20	81	17	0	118	14	44	3	0	61	6	90	71	0	167	570
% App. Total	43.8	40.2	16.1	0		16.9	68.6	14.4	0		23	72.1	4.9	0		3.6	53.9	42.5	0		
PHF	.742	.703	.692	.000	.862	.625	.810	.708	.000	.756	.700	.917	.375	.000	.953	.500	.865	.657	.000	.870	.858
Unshifted	98	90	36	0	224	20	81	17	0	118	14	44	3	0	61	6	90	71	0	167	570
% Unshifted	100	100	100	0	100	100	100	100	0	100	100	100	100	0	100	100	100	100	0	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



# **A2**

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## **Miscellaneous Traffic Data and Calculations**

**Background Trips from Passero Report - Erie Station Distribution Facility (ESDF)**

Middle Road/ Erie Station Road	AM Existing	AM Background	Difference	ESDF	Total Bkgd Trips
SR	28	34	6	3	<b>9</b>
ST	57	61	4		<b>4</b>
SL	13	14	1		<b>1</b>
WR	84	90	6		<b>6</b>
WT	98	104	6	4	<b>10</b>
WL	55	56	1		<b>1</b>
NR	83	84	1		<b>1</b>
NT	152	165	13		<b>13</b>
NL	62	68	6		<b>6</b>
ER	24	25	1		<b>1</b>
ET	101	103	2	4	<b>6</b>
EL	105	107	2	3	<b>5</b>

PM Existing	PM Background	Difference	ESDF	Total Bkgd Trips
54	60	6	4	<b>10</b>
186	198	12		<b>12</b>
82	88	6		<b>6</b>
18	19	1		<b>1</b>
116	124	8	5	<b>13</b>
13	14	1		<b>1</b>
8	9	1		<b>1</b>
75	83	8		<b>8</b>
39	40	1		<b>1</b>
25	26	1		<b>1</b>
146	148	2	3	<b>5</b>
91	98	7	2	<b>9</b>

# MONROE COUNTY TRAFFIC VOLUME TRENDS

June 20, 2018

Page 2

growth by location. That explains the recommended growth rate of 0.5% in towns that continue to show declines.

**Table 1**

<b>Town</b>	<b>Avg Growth Rate Weighted by ADT (% per Yr)</b>	<b>Avg Growth Rate Unweighted Avg (% per Yr)</b>	<b>Recommended Annual Growth Rate (% per Yr)</b>
Hamlin	-8.5	-6.9	0.5
Clarkson	-3.3	-6.6	0.5
Riga	-1.5	-2.0	0.5
Mendon	-0.8	-1.4	0.5
Rochester*	-0.8	-0.5	0.5
Penfield	-0.3	-0.1	0.5
Pittsford	-0.2	-0.6	0.5
Perinton	0.5	0.7	0.5
Parma	0.6	-0.3	0.5
Wheatland	-0.2	1.8	1.0
Henrietta	0.6	1.0	1.0
Irondequoit	1.1	1.3	1.0
Webster	1.6	0.1	1.0
Greece	1.7	1.0	1.5
Brighton	2.1	2.7	2.0
Chili	3.0	2.1	2.0
Sweden	3.4	2.0	2.0
Gates	2.3	3.4	2.5
Ogden	5.0	4.9	3.0
Rush	5.4	4.5	3.0
City Only*	-0.8	-0.5	0.5
County Only	1.2	0.8	1.0
City+County	0.2	0.3	0.5

\* Judgment is needed when selecting an annual growth rate for City streets within the City of Rochester. Instead of using a uniform 0.5% per year rate throughout the City, the growth rate of the nearest adjacent suburb may be more appropriate. For areas on the west side, Gates' 2.5% per year may be too high. We do recommend 1.5% per year growth around the University of Rochester area. For areas on the northeast side, Irondequoit's 1.0% per year may be appropriate. 1.0% per year is suitable for the other areas within the City, including the CBD.

The recommended annual growth rates shown in Table 1 are appropriate for projecting future traffic volumes on County roads and City streets when more specific growth data is not available. As noted in the discussion above, they should be applied as straight annual growth rates and not compounded.

JRP/dph

H:\Sub\T\TRAFFIC VOLUME TRENDS\County Volume Trends 2018 Summary jrp memo.doc



# Land Use: 251

## Senior Adult Housing—Single-Family

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### Description

Senior adult housing—single-family sites are independent living developments that are called various names including retirement communities, age-restricted housing, and active adult communities. The development has a specific age restriction for its residents, typically a minimum of 55 years of age for at least one resident of the household.

Residents in these communities are typically considered active and requiring little to no medical supervision. The percentage of retired residents varies by development. The development may include amenities such as a golf course, swimming pool, 24-hour security, transportation, and common recreational facilities. They generally lack centralized dining and on-site health facilities.

The dwelling units can be either detached or attached. The types of housing types represented by sites in the database include traditional single-family detached homes, patio homes, duplexes, and townhouses. Single-family attached housing includes any single-family housing unit that shares a wall with an adjoining dwelling unit, whether the walls are for living space, a vehicle garage, or storage space.

Senior adult housing—multifamily (Land Use 252), congregate care facility (Land Use 253), assisted living (Land Use 254), and continuing care retirement community (Land Use 255) are related land uses.

### Additional Data

***Caution should be used when applying trip rates for this land use as it may contain a wide variety of studies ranging from communities with very active, working residents to communities with older, retired residents. As more data become available, consideration will be given to future stratification of this land use.***

Many factors affected the trip rates for detached senior adult housing. Factors such as the average age of residents, development location and size, affluence of residents, employment status, and vehicular access should be taken into consideration when conducting an analysis. Some developments were located within close proximity to medical facilities, restaurants, shopping centers, banks, and recreational activities.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

For the six sites for which data were provided for both occupied dwelling units and total dwelling units, an average of 98 percent of the units were occupied.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Delaware, Florida, Maryland, New Jersey, New York, Pennsylvania, Virginia, and Washington.

### **Source Numbers**

221, 289, 398, 421, 500, 550, 598, 601, 602, 629, 930, 1015, 1060, 1074

## PROJECT DETAILS

Project Name:	Masonic Care Community	Type of Project:	Senior Community
Project No:	42002	City:	Henrietta
Country:	United States	Built-up Area(Sq.ft):	
Analyst Name:	David Kruse, AICP, PTP	Clients Name:	DDS
Date:	1/12/2022	ZIP/Postal Code:	
State/Province:	New York	No. of Scenarios:	2
Analysis Region:			

## SCENARIO SUMMARY

Scenarios	Name	No. of Land Uses	Phases of Development	No. of Years to Project Traffic	User Group	Estimated New Vehicle Trips		
						Entry	Exit	Total
Scenario - 1	AM Peak Hour	1	1	0		21	43	64
Scenario - 2	PM Peak Hour	1	1	0		46	29	75

**Scenario - 1**

Scenario Name: AM Peak Hour

User Group:

Dev. phase: 1

No. of Years to Project 0

Traffic :

Analyst Note:

Warning:

**VEHICLE TRIPS BEFORE REDUCTION**

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
251 - Senior Adult Housing - Single-Family	General Urban/Suburban	Dwelling Units	195	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	21	43	64
Data Source: Trip Generation Manual, 11th Ed					$\ln(T) = 0.76\ln(X) + 0.16$	33%	67%	

**VEHICLE TO PERSON TRIP CONVERSION****BASELINE SITE VEHICLE CHARACTERISTICS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
251 - Senior Adult Housing - Single-Family	100	100	1	1	33	67

**ESTIMATED BASELINE SITE PERSON TRIPS:**

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
251 - Senior Adult Housing - Single-Family	21	43	0	0	21	43
	64		0		64	

**NEW VEHICLE TRIPS**

Land Use	New Vehicle Trips		
	Entry	Exit	Total
251 - Senior Adult Housing - Single-Family	21	43	64

**RESULTS**

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	21	43	64
External Vehicle Trips	21	43	64
New Vehicle Trips	21	43	64

**Scenario - 2**

Scenario Name: PM Peak Hour

User Group:

Dev. phase: 1

No. of Years to Project 0

Traffic :

Analyst Note:

Warning:

**VEHICLE TRIPS BEFORE REDUCTION**

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
251 - Senior Adult Housing - Single-Family	General Urban/Suburban	Dwelling Units	195	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	46	29	75
Data Source: Trip Generation Manual, 11th Ed					$\ln(T) = 0.78\ln(X) + 0.20$	61%	39%	

**VEHICLE TO PERSON TRIP CONVERSION****BASELINE SITE VEHICLE CHARACTERISTICS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
251 - Senior Adult Housing - Single-Family	100	100	1	1	61	39

**ESTIMATED BASELINE SITE PERSON TRIPS:**

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
251 - Senior Adult Housing - Single-Family	46	29	0	0	46	29
	75		0		75	

**NEW VEHICLE TRIPS**

Land Use	New Vehicle Trips		
	Entry	Exit	Total
251 - Senior Adult Housing - Single-Family	46	29	75

**RESULTS**

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	46	29	75
External Vehicle Trips	46	29	75
New Vehicle Trips	46	29	75

PROJECT:  
LOCATION:  
PEAK HOUR:

Proposed Masonic Care Community  
Middle Road/Erie Station Road, Town of Henrietta, New York  
AM Peak

Figure Number:

3A
3B

4
6
7
8

LOCATION NUMBER	INTERSECTION DESCRIPTION	2022 Collected Volumes	2022 Adjusted Volumes	Num of yrs		Bkgd Projects	Total Bkgd Volumes	Proposed Project				Total Site Trips	Full Build Volumes
				3	1.00%			Enter Dist. %	Exit Dist. %	Trips IN 21	Trips OUT 43		
1	Middle Road/ Proposed Driveway		0.923										
	SR ST SL	55	60	61	14	75	55%			12		12	75 12
	WR WT WL							55%	55%		24	24	24
	NR NT NL	245	265	273	24	297	15%	15%		3	6	3	3 297
	ER ET EL												
2	Erie Station Road/ Proposed Driveway												
	SR ST SL								10%		4	4	4
	WR WT WL	136	147	152	17	169	20%		20%	4	9	4	4 169
	NR NT NL												
	ER ET EL	103	112	115	8	123	10%						
3	Middle Road/ Erie Station Road												
	SR	32	35	36	9	45		12%			5	5	50
	ST	18	20	20	4	24		3%			1	1	25
	SL	5	5	6	1	7							7
	WR	49	53	55	6	61							61
	WT	80	87	89	10	99		8%			3	3	102
	WL	7	8	8	1	9		2%	2%		1	1	10
	NR	13	14	15	1	16	2%			0		0	16
	NT	98	106	109	13	122	3%			1		1	123
	NL	10	11	11	6	17							17
	ER	4	4	4	1	5							5
	ET	85	92	95	6	101	8%			2		2	103
	EL	98	106	109	5	114	12%			3		3	117

PROJECT:  
LOCATION:  
PEAK HOUR:

Proposed Masonic Care Community  
Middle Road/Erie Station Road, Town of Henrietta, New York  
PM Peak

Figure Number: 3A 3B 4 6 7 8

LOCATION NUMBER	INTERSECTION DESCRIPTION	2022 Collected Volumes	2022 Adjusted Volumes	Num of yrs		Bkgd Projects	Total Bkgd Volumes	Proposed Project				Total Site Trips	Full Build Volumes
				3	1.00%			Enter Dist. %	Exit Dist. %	Trips IN	Trips OUT		
1	Middle Road/ Proposed Driveway		0.923							46	29		
	SR ST SL	224	243	250	28	278	55%			25		25	278
	WR WT WL							55%	55%		16	16	16
	NR NT NL	135	146	151	18	169	15%	15%		7	4	7	169
	ER ET EL												
2	Erie Station Road/ Proposed Driveway												
	SR ST SL								10%		3	3	3
	WR WT WL	118	128	132	15	147	20%			9		9	147
	NR NT NL												
	ER ET EL	140	152	156	12	168	10%			5		5	168
3	Middle Road/ Erie Station Road												
	SR	98	106	109	10	119		12%		3		3	122
	ST	90	98	100	12	112		3%		1		1	113
	SL	36	39	40	6	46							46
	WR	20	22	22	1	23							23
	WT	81	88	90	13	103		8%			2	2	105
	WL	17	18	19	1	20		2%	2%		1	1	21
	NR	14	15	16	1	17	2%			1		1	18
	NT	44	48	49	8	57	3%			1		1	58
	NL	3	3	3	1	4							4
	ER	6	7	7	1	8							8
	ET	90	98	100	5	105	8%			4		4	109
	EL	71	77	79	9	88	12%			6		6	94

# **Guideline for determining left-turn Lane at a two-way stop-controlled intersection** **TWO LANE ROADWAY**

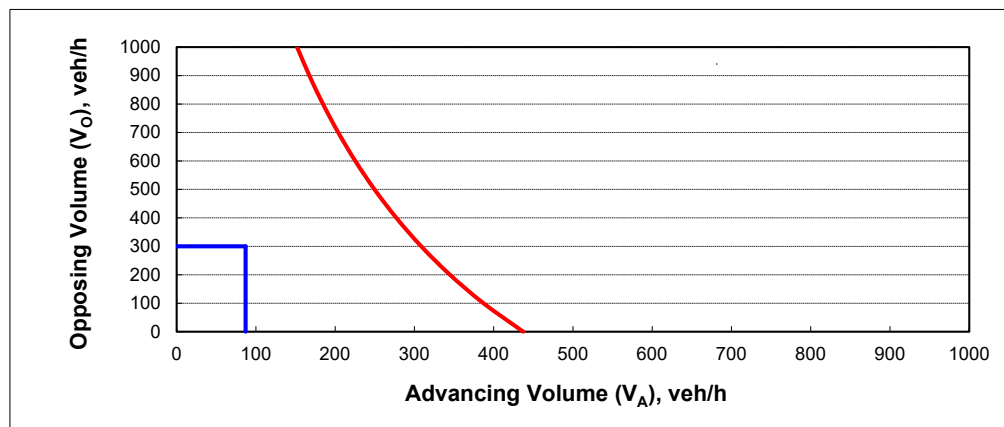
## **INPUT**

Variable	Value
Major Approach	Middle Road @ Proposed Dwy
Approach	Southbound (AM Peak)
Design Speed Limit - MPH	50
Percent of left-turns in advancing volume ( $V_A$ ), %:	14%
Advancing volume ( $V_A$ ), veh/h:	87
Opposing volume ( $V_O$ ), veh/h:	300

## **CALIBRATION CONSTANTS**

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

PLOT - LINE 1		PLOT - LINE 2	
0	300	87	0
87	300	87	300



## **OUTPUT**

Variable	Value
Limiting advancing volume ( $V_A$ ), veh/h:	309
<b>Guidance for determining the need for a major-road left-turn bay:</b>	
<b>Southbound (AM Peak) Left-turn treatment NOT warranted at Middle Road @ Proposed Dwy Intersection</b>	

$\rho$	0.015
$f =$	0.79
Wait Time	1.203 s
Service Rate	976 veh/h
Arrival Rate	309 veh/h

$V_O$	Time_tw
0	0.0
100	0.4
200	0.8
300	1.2
400	1.7
500	2.2
600	2.8
700	3.5
800	4.2
900	5.0
1000	5.8

$V_O$	Serv_rate
0	1200
100	1121
200	1046
300	976
400	910
500	848
600	789
700	735
800	683
900	635
1000	590

% LT veh.	14%	10%	15%	20%	40%
$V_O$	$V_A$	$V_A$	$V_A$	$V_A$	$V_A$
0	437	503	422	377	308
100	387	445	374	334	273
200	345	396	333	297	243
300	309	355	298	266	217
400	277	319	268	239	195
500	250	287	241	215	176
600	225	259	218	194	159
700	204	234	197	176	143
800	185	212	178	159	130
900	167	192	162	144	118
1000	152	175	147	131	107



# **Guideline for determining left-turn Lane at a two-way stop-controlled intersection** **TWO LANE ROADWAY**

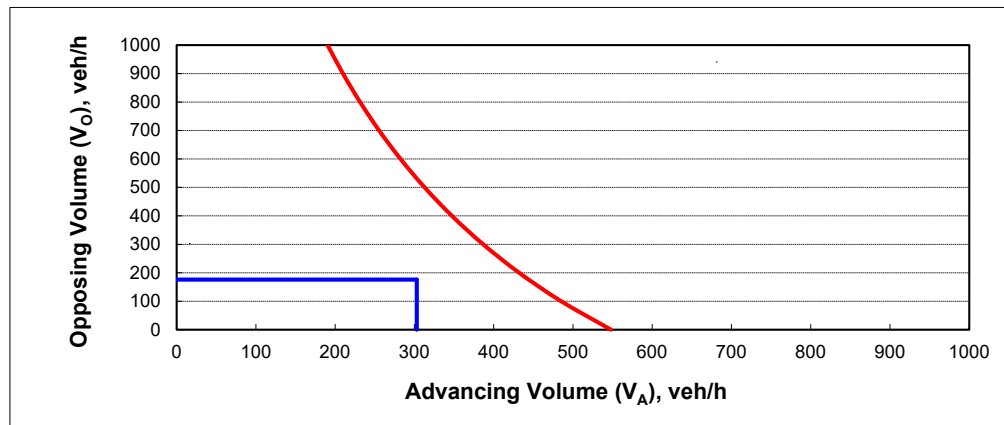
## **INPUT**

Variable	Value
Major Approach	Middle Road @ Proposed Dwy
Approach	Southbound (PM Peak)
Design Speed Limit - MPH	50
Percent of left-turns in advancing volume ( $V_A$ ), %:	8%
Advancing volume ( $V_A$ ), veh/h:	303
Opposing volume ( $V_O$ ), veh/h:	176

## **CALIBRATION CONSTANTS**

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

PLOT - LINE 1		PLOT - LINE 2	
0	176	303	0
303	176	303	176



## **OUTPUT**

Variable	Value
Limiting advancing volume ( $V_A$ ), veh/h:	444
<b>Guidance for determining the need for a major-road left-turn bay:</b>	
<b>Southbound (PM Peak) Left-turn treatment NOT warranted at Middle Road @ Proposed Dwy Intersection</b>	

$\rho$	0.015
$f =$	0.79
Wait Time	0.664 s
Service Rate	1064 veh/h
Arrival Rate	444 veh/h

$V_O$	Time_tw
0	0.0
100	0.4
200	0.8
300	1.2
400	1.7
500	2.2
600	2.8
700	3.5
800	4.2
900	5.0
1000	5.8

$V_O$	Serv_rate
0	1200
100	1121
200	1046
300	976
400	910
500	848
600	789
700	735
800	683
900	635
1000	590

% LT veh.	8%	10%	15%	20%	40%
$V_O$	$V_A$	$V_A$	$V_A$	$V_A$	$V_A$
0	548	503	422	377	308
100	485	445	374	334	273
200	432	396	333	297	243
300	387	355	298	266	217
400	347	319	268	239	195
500	313	287	241	215	176
600	282	259	218	194	159
700	255	234	197	176	143
800	231	212	178	159	130
900	210	192	162	144	118
1000	190	175	147	131	107

# **Guideline for determining left-turn Lane at a two-way stop-controlled intersection** **TWO LANE ROADWAY**

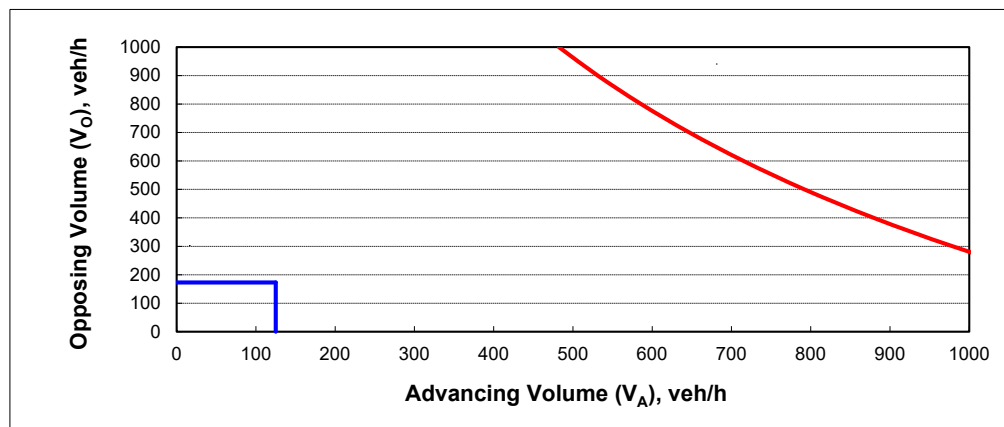
## **INPUT**

Variable	Value
Major Approach	Erie Station Road @ Proposed Dwy
Approach	Eastbound (AM Peak)
Design Speed Limit - MPH	40
Percent of left-turns in advancing volume ( $V_A$ ), %:	2%
Advancing volume ( $V_A$ ), veh/h:	125
Opposing volume ( $V_O$ ), veh/h:	173

## **CALIBRATION CONSTANTS**

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

PLOT - LINE 1		PLOT - LINE 2	
0	173	125	0
125	173	125	173



## **OUTPUT**

Variable	Value
Limiting advancing volume ( $V_A$ ), veh/h:	1128
<b>Guidance for determining the need for a major-road left-turn bay:</b>	
<b>Eastbound (AM Peak) Left-turn treatment NOT warranted at Erie Station Road @ Proposed Dwy Intersec</b>	

$\rho$	0.02
$f =$	0.79
Wait Time	0.652 s
Service Rate	1066 veh/h
Arrival Rate	1128 veh/h

$V_O$	Time_tw
0	0.0
100	0.4
200	0.8
300	1.2
400	1.7
500	2.2
600	2.8
700	3.5
800	4.2
900	5.0
1000	5.8

$V_O$	Serv_rate
0	1200
100	1121
200	1046
300	976
400	910
500	848
600	789
700	735
800	683
900	635
1000	590

% LT veh.	2%	10%	15%	20%	40%
$V_O$	$V_A$	$V_A$	$V_A$	$V_A$	$V_A$
0	1388	580	488	435	355
100	1229	514	432	385	315
200	1094	458	385	343	280
300	979	410	344	307	251
400	879	368	309	276	225
500	792	331	278	248	203
600	715	299	251	224	183
700	647	271	227	203	166
800	586	245	206	184	150
900	531	222	187	167	136
1000	482	202	169	151	124

# **Guideline for determining left-turn Lane at a two-way stop-controlled intersection** **TWO LANE ROADWAY**

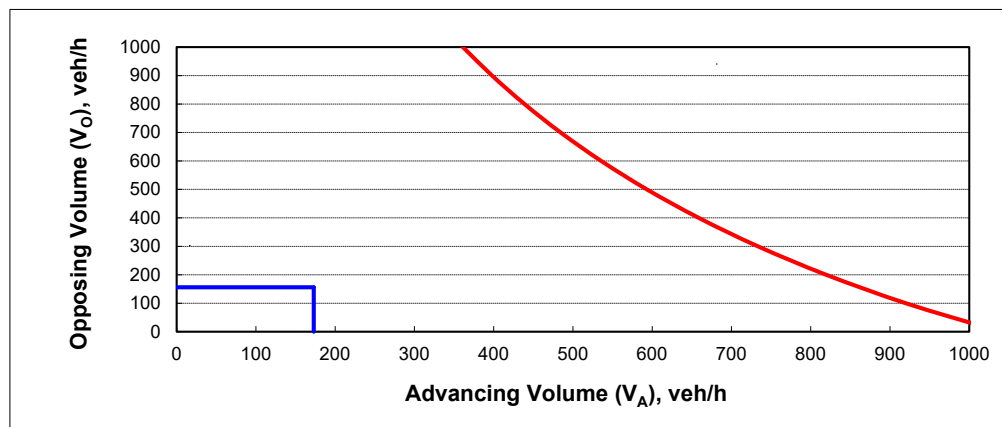
## INPUT

Variable	Value
Major Approach	Erie Station Road @ Proposed Dwy
Approach	Eastbound (PM Peak)
Design Speed Limit - MPH	40
Percent of left-turns in advancing volume ( $V_A$ ), %:	3%
Advancing volume ( $V_A$ ), veh/h:	173
Opposing volume ( $V_O$ ), veh/h:	156

## CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

PLOT - LINE 1		PLOT - LINE 2	
0	156	173	0
173	156	173	156



## OUTPUT

Variable	Value
Limiting advancing volume ( $V_A$ ), veh/h:	862
Guidance for determining the need for a major-road left-turn bay:	
Eastbound (PM Peak) Left-turn treatment NOT warranted at Erie Station Road @ Proposed Dwy Intersec	

$\rho$	0.02
$f =$	0.79
Wait Time	0.583 s
Service Rate	1078 veh/h
Arrival Rate	862 veh/h

$V_O$	Time_tw
0	0.0
100	0.4
200	0.8
300	1.2
400	1.7
500	2.2
600	2.8
700	3.5
800	4.2
900	5.0
1000	5.8

$V_O$	Serv_rate
0	1200
100	1121
200	1046
300	976
400	910
500	848
600	789
700	735
800	683
900	635
1000	590

% LT veh.	3%	10%	15%	20%	40%
$V_O$	$V_A$	$V_A$	$V_A$	$V_A$	$V_A$
0	1039	580	488	435	355
100	920	514	432	385	315
200	820	458	385	343	280
300	733	410	344	307	251
400	659	368	309	276	225
500	593	331	278	248	203
600	536	299	251	224	183
700	484	271	227	203	166
800	439	245	206	184	150
900	398	222	187	167	136
1000	361	202	169	151	124

# **A3**

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## **Level of Service: Criteria and Definitions**

# Level of Service Criteria

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## Highway Capacity Manual 2016

### **SIGNALIZED INTERSECTIONS**

Level of Service is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. Level of Service for signalized intersections is defined in terms of delay specifically, average total delay per vehicle for a 15-minute analysis period. The ranges are as follows:

Level of Service	Control Delay per vehicle (seconds)
A	< 10
B	10 – 20
C	20 – 35
D	35 – 55
E	55 – 80
F	>80

### **UNSIGNALIZED INTERSECTIONS**

Level of Service for unsignalized intersections is also defined in terms of delay. However, the delay criteria are different from a signalized intersection. The primary reason for this is driver expectation that a signalized intersection is designed to carry higher volumes than an unsignalized intersection. The total delay threshold for any given Level of Service is less for an unsignalized intersection than for a signalized intersection. The ranges are as follows:

Level of Service	Control Delay per vehicle (seconds)
A	< 10
B	10 – 15
C	15 – 25
D	25 – 35
E	35 – 50
F	>50

# A4

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## **Level of Service Calculations: Existing Conditions**





Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	106	92	4	8	87	53	11	106	14	5	20	35
Future Vol, veh/h	106	92	4	8	87	53	11	106	14	5	20	35
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	113	98	4	9	93	56	12	113	15	5	21	37
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.6	8.6	9	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	52%	5%	8%
Vol Thru, %	81%	46%	59%	33%
Vol Right, %	11%	2%	36%	58%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	131	202	148	60
LT Vol	11	106	8	5
Through Vol	106	92	87	20
RT Vol	14	4	53	35
Lane Flow Rate	139	215	157	64
Geometry Grp	1	1	1	1
Degree of Util (X)	0.187	0.28	0.196	0.082
Departure Headway (Hd)	4.827	4.694	4.474	4.646
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	741	763	800	767
Service Time	2.871	2.734	2.515	2.697
HCM Lane V/C Ratio	0.188	0.282	0.196	0.083
HCM Control Delay	9	9.6	8.6	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	1.1	0.7	0.3

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	77	98	7	18	88	22	3	48	15	39	98	106
Future Vol, veh/h	77	98	7	18	88	22	3	48	15	39	98	106
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	114	8	21	102	26	3	56	17	45	114	123
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.3	9.4	8.8	10.5
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	42%	14%	16%
Vol Thru, %	73%	54%	69%	40%
Vol Right, %	23%	4%	17%	44%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	182	128	243
LT Vol	3	77	18	39
Through Vol	48	98	88	98
RT Vol	15	7	22	106
Lane Flow Rate	77	212	149	283
Geometry Grp	1	1	1	1
Degree of Util (X)	0.108	0.297	0.207	0.369
Departure Headway (Hd)	5.069	5.046	4.999	4.698
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	698	705	710	760
Service Time	3.161	3.127	3.086	2.768
HCM Lane V/C Ratio	0.11	0.301	0.21	0.372
HCM Control Delay	8.8	10.3	9.4	10.5
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.4	1.2	0.8	1.7



# A5

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**Level of Service Calculations:  
Background Conditions**

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	114	101	5	9	99	61	17	122	16	7	24	45
Future Vol, veh/h	114	101	5	9	99	61	17	122	16	7	24	45
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	107	5	10	105	65	18	130	17	7	26	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.1	9.1	9.5	8.5
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	52%	5%	9%
Vol Thru, %	79%	46%	59%	32%
Vol Right, %	10%	2%	36%	59%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	155	220	169	76
LT Vol	17	114	9	7
Through Vol	122	101	99	24
RT Vol	16	5	61	45
Lane Flow Rate	165	234	180	81
Geometry Grp	1	1	1	1
Degree of Util (X)	0.228	0.315	0.231	0.108
Departure Headway (Hd)	4.972	4.84	4.623	4.8
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	717	740	771	740
Service Time	3.037	2.898	2.684	2.874
HCM Lane V/C Ratio	0.23	0.316	0.233	0.109
HCM Control Delay	9.5	10.1	9.1	8.5
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.9	1.4	0.9	0.4

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	88	105	8	20	103	23	4	57	17	46	112	119
Future Vol, veh/h	88	105	8	20	103	23	4	57	17	46	112	119
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	102	122	9	23	120	27	5	66	20	53	130	138
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.2	10.1	9.3	11.9
HCM LOS	B	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	44%	14%	17%
Vol Thru, %	73%	52%	71%	40%
Vol Right, %	22%	4%	16%	43%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	78	201	146	277
LT Vol	4	88	20	46
Through Vol	57	105	103	112
RT Vol	17	8	23	119
Lane Flow Rate	91	234	170	322
Geometry Grp	1	1	1	1
Degree of Util (X)	0.136	0.347	0.251	0.445
Departure Headway (Hd)	5.408	5.349	5.324	4.979
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	662	673	674	728
Service Time	3.448	3.383	3.36	2.979
HCM Lane V/C Ratio	0.137	0.348	0.252	0.442
HCM Control Delay	9.3	11.2	10.1	11.9
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0.5	1.6	1	2.3




# A6

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**Level of Service Calculations:  
Full Development Conditions**




HCM 6th TWSC  
1: Middle Road & Proposed Driveway

Masonic Care Community  
2024 Full AM





Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	24	297	3	12	75
Future Vol, veh/h	6	24	297	3	12	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	94	80	80	94
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	8	30	316	4	15	80
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	428	318	0	0	320	0
Stage 1	318	-	-	-	-	-
Stage 2	110	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	588	727	-	-	1251	-
Stage 1	742	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	580	727	-	-	1251	-
Mov Cap-2 Maneuver	580	-	-	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	908	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.5	0		1.3		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	692	1251	-	
HCM Lane V/C Ratio	-	-	0.054	0.012	-	
HCM Control Delay (s)	-	-	10.5	7.9	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	

HCM 6th TWSC  
2: Erie Station Road & Proposed Driveway

Masonic Care Community  
2024 Full AM

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	123	169	4	9	4
Future Vol, veh/h	2	123	169	4	9	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	94	94	80	80	80
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	3	131	180	5	11	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	185	0	-	0	320	183
Stage 1	-	-	-	-	183	-
Stage 2	-	-	-	-	137	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1402	-	-	-	678	865
Stage 1	-	-	-	-	853	-
Stage 2	-	-	-	-	895	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1402	-	-	-	677	865
Mov Cap-2 Maneuver	-	-	-	-	677	-
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	895	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		10.1		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1402	-	-	-	726	
HCM Lane V/C Ratio	0.002	-	-	-	0.022	
HCM Control Delay (s)	7.6	0	-	-	10.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	117	103	5	10	102	61	17	123	16	7	25	50
Future Vol, veh/h	117	103	5	10	102	61	17	123	16	7	25	50
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	124	110	5	11	109	65	18	131	17	7	27	53
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.3	9.2	9.6	8.5
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	52%	6%	9%
Vol Thru, %	79%	46%	59%	30%
Vol Right, %	10%	2%	35%	61%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	156	225	173	82
LT Vol	17	117	10	7
Through Vol	123	103	102	25
RT Vol	16	5	61	50
Lane Flow Rate	166	239	184	87
Geometry Grp	1	1	1	1
Degree of Util (X)	0.231	0.324	0.238	0.117
Departure Headway (Hd)	5.008	4.867	4.657	4.817
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	712	735	766	736
Service Time	3.077	2.93	2.723	2.896
HCM Lane V/C Ratio	0.233	0.325	0.24	0.118
HCM Control Delay	9.6	10.3	9.2	8.5
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.9	1.4	0.9	0.4

HCM 6th TWSC  
1: Middle Road & Proposed Driveway




Masonic Care Community  
2024 Full PM

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	16	169	7	25	278
Future Vol, veh/h	4	16	169	7	25	278
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	17	184	8	27	302
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	544	188	0	0	192	0
Stage 1	188	-	-	-	-	-
Stage 2	356	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	500	854	-	-	1381	-
Stage 1	844	-	-	-	-	-
Stage 2	709	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	489	854	-	-	1381	-
Mov Cap-2 Maneuver	489	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	693	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10	0		0.6		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	743	1381	-	
HCM Lane V/C Ratio	-	-	0.029	0.02	-	
HCM Control Delay (s)	-	-	10	7.7	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-	







HCM 6th TWSC  
2: Erie Station Road & Proposed Driveway

Masonic Care Community  
2024 Full PM

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	168	147	9	6	3
Future Vol, veh/h	5	168	147	9	6	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	183	160	10	7	3
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	170	0	-	0	358	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	193	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1407	-	-	-	640	879
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	840	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1407	-	-	-	637	879
Mov Cap-2 Maneuver	-	-	-	-	637	-
Stage 1	-	-	-	-	861	-
Stage 2	-	-	-	-	840	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.2	0		10.2		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1407	-	-	-	701	
HCM Lane V/C Ratio	0.004	-	-	-	0.014	
HCM Control Delay (s)	7.6	0	-	-	10.2	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	94	109	8	21	105	23	4	58	18	46	113	122
Future Vol, veh/h	94	109	8	21	105	23	4	58	18	46	113	122
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	127	9	24	122	27	5	67	21	53	131	142
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.5	10.3	9.4	12.2
HCM LOS	B	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	45%	14%	16%
Vol Thru, %	72%	52%	70%	40%
Vol Right, %	23%	4%	15%	43%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	211	149	281
LT Vol	4	94	21	46
Through Vol	58	109	105	113
RT Vol	18	8	23	122
Lane Flow Rate	93	245	173	327
Geometry Grp	1	1	1	1
Degree of Util (X)	0.141	0.367	0.259	0.454
Departure Headway (Hd)	5.471	5.39	5.379	5.004
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	655	667	667	719
Service Time	3.512	3.423	3.415	3.034
HCM Lane V/C Ratio	0.142	0.367	0.259	0.455
HCM Control Delay	9.4	11.5	10.3	12.2
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0.5	1.7	1	2.4