



Engineering
& Design

Traffic Impact Study


January 27, 2017
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Buckingham Properties
Channingville Road & Nelson Avenue
Village of Wappingers Falls, Dutchess County, New York

Prepared for:

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Project No. 16003191A

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I. Introduction

A. Project Description and Location

(Figure No. 1)

This report has been prepared to evaluate the potential traffic impacts associated with the proposed Buckingham Property Management development (“the Project”), which is planned to be developed on the property located east of Channingville Road and Nelson Avenue approximately 1,300 feet south of Clinton Street in the Village of Wappingers Falls, Dutchess County, New York. The site is proposed to consist of 188 residential dwelling units. As shown on Figure No. 1, access to the development is proposed via a new driveway connection to Nelson Avenue approximately 1,300 south of the Clinton Street and Nelson Avenue intersection.

A Design Year of 2026 has been utilized in completing the traffic analysis in order to evaluate future traffic conditions associated with this proposed development.

B. Scope of Study

This study has been prepared to identify current and future traffic operating conditions on the surrounding roadway network and to assess the potential traffic impacts of the Project.

All available traffic count data for the study area intersections were obtained from previous reports prepared by our office. These data were supplemented with new traffic counts collected by representatives of Colliers Engineering & Design CT, P.C. These data were also compared to count data obtained from the New York State Department of Transportation (NYSDOT). Together these data were utilized to establish the Year 2022 Existing Traffic Volumes representing existing traffic conditions in the vicinity of the site.

The Year 2023 Existing Traffic Volumes were then projected to the 2026 Design Year to take into account background traffic growth. In addition, traffic for other specific potential or approved developments in the area were estimated and then added to the Projected Traffic Volumes to obtain the Year 2026 No-Build Traffic Volumes.

Estimates were then made of the potential traffic that the proposed development would generate during each of the peak hours (see Section III-C for further discussion). The resulting site generated traffic volumes were then added to the roadway system and combined with the Year 2026 No-Build Traffic Volumes resulting in the Year 2026 Build Traffic Volumes.

The Existing, No-Build and Build Traffic Volumes were then compared to roadway capacities based on the procedures from the Highway Capacity Manual to determine existing and future Levels of Service and operating conditions. Recommendations for improvements were made where necessary to serve the existing and/or future traffic volumes.

II. Existing Roadway and Traffic Descriptions

A. Description of Existing Roadways

As shown on Figure No. 1, the proposed Buckingham Properties Development will be accessed from Nelson Avenue via a new driveway connection to be located approximately 1,300 feet south of the Clinton Street and Nelson Avenue intersection. The following is a brief description of the roadways located within the study area. In addition, Section III-F provides a further description of the existing geometrics, traffic control and a summary of the existing and future Levels of Service and any recommended improvements for each of the study area intersections. Appendix "D" contains copies of the capacity analyses which indicate the existing geometrics (including lane widths) and other characteristics for each of the individual intersections studied.

1. Channingville Road/Nelson Avenue

Channingville Road/Nelson Avenue is a two-lane roadway under the Village of Wappingers Falls jurisdiction to the north and under the Town of Poughkeepsie jurisdiction to the south. The roadway originates at a "T" intersection with Reed Avenue and traversing northeast, terminating at a "T" intersection with Delavergne Avenue. The roadway mainly serves residential land uses and one fire station as well as providing access to the New Hamburg Metro-North Train Station. The roadway consists of one lane in each direction and a posted speed limit of 30 mph.

2. NYS Route 9D (Main Street)

NYS Route 9D is classified as a Principal Arterial Other Roadway under New York State Department of Transportation (NYSDOT) jurisdiction. The roadway generally consists of one travel lane per direction in the immediate area that traverses in a north/south direction through Putnam and Southern Dutchess County. South of the site, the roadway provides access to I-84 as well as U.S. Route 9 to the North and east. The posted speed limit is 30 mph and sidewalks are provided along both sides of the roadway. The roadway pavement is generally in good condition with the study area.

3. Delavergne Avenue

Delavergne Avenue is a two-lane roadway under the Village of Wappingers Falls jurisdiction between NYS Route 9D and the Village line approximately 550 ft. west of Nelson Avenue. Beyond the Village line the roadway is under the jurisdiction of the Town of Poughkeepsie. Delavergne Avenue originates at a "T" intersection with NYS Route 9D and traversing west, terminating at a "T" intersection with Sheafe Road. The roadway mainly serves residential land uses along with some commercial land uses closer to the intersection with NYS Route 9D. The posted speed limit is 25 mph and sidewalks are provided along both sides of the roadway closer to the intersection with NYS Route 9D. The roadway pavement is generally in good condition with the study area.

4. Clinton Street

Clinton Street is a two-lane roadway under the Village of Wappingers Falls jurisdiction originating at a “T” intersection with NYS Route 9D and traversing west, terminating at a “T” intersection with Nelson Avenue. The north side of the street serves mainly residential uses while the south side of the street provides access to St. Mary’s Church and its school. The posted speed limit is 20 mph and sidewalks are provided along both sides of the roadway. On street parking is permitted on the north side of the roadway. It should be noted that between Saturday at 4:30 PM and Sunday at 1:30 PM, Clinton Street is one-way westbound in order to accommodate church services and parking. The roadway pavement is generally in good condition with the study area.

5. Reed Avenue

Reed Avenue is a two-lane roadway under the jurisdiction of the Town of Poughkeepsie, originating at a “T” intersection with Main Street/Channingville Road and traversing west, terminating at a “T” intersection with Stone Street. The roadway mainly serves residential land uses and has approximately 10-foot travel lanes with a posted speed limit of 30 mph. The roadway pavement is generally in good condition with the study area.

B. 2023 Existing Traffic Volumes

(Figures No. 2 and 3)

Manual traffic counts were collected by representatives of Colliers Engineering & Design CT, P.C. on January 5, 11, and 12 for the AM and PM Peak Hours to determine the existing traffic volume conditions at the study area intersections. In addition, supplemental counts were collected in January 2023 to update the data. Based on this information, the Year 2023 Existing Traffic Volumes were established for the Weekday Peak AM and Weekday Peak PM Hours at the following study area intersections.

- Delavergne Avenue and NYS Route 9D/W. Main Street
- Clinton Street and NYS Route 9D/W. Main Street
- Nelson Avenue and Clinton Street
- Channingville Road/Main Street and Reed Avenue

Based upon a review of the traffic counts, the peak hours were generally identified as follows:

- | | |
|------------------------|-------------------|
| ▪ Weekday Peak AM Hour | 7:30 AM – 8:30 AM |
| ▪ Weekday Peak PM Hour | 4:30 PM – 5:30 PM |

The resulting Year 2023 Existing Traffic Volumes are shown on Figures No. 2 and 3 for the Weekday Peak AM Hour and Weekday Peak PM Hour, respectively.

III. Evaluation of Future Traffic Conditions

A. 2026 No-Build Traffic Volumes

(Figure No. 4 through 9)

The Year 2023 Existing Traffic Volumes were increased by a growth factor of 2.0% per year to account for general background growth in the area. This growth factor is considered conservatively high based on historical data from NYSDOT, which indicates a lower historical growth level. However, this conservative growth rate was used in order to account for traffic from any other potential or approved developments in the area that could impact the traffic in the study area. The resulting Year 2026 No-Build Traffic Volumes are shown on Figures No. 4 and 5 for the Weekday Peak AM and Weekday Peak PM Hours, respectively.

B. Site Generated Traffic Volumes

(Table No. 1)

Estimates of the amount of traffic to be generated by the proposed residential development during each of the peak hours were developed based on information published by the Institute of Transportation Engineers (ITE) as contained in the report entitled "Trip Generation", 11th Edition, 2021, based on Land Use Category – 220 Multi-Family Housing. Table No. 1 summarizes the trip generation rates and corresponding site generated traffic volumes for the Weekday Peak AM and Weekday Peak PM Hours.

C. Arrival/Departure Distribution

(Figures No. 10 and 11)

It was necessary to establish arrival and departure distributions to assign the site generated traffic volumes to the surrounding roadway network. Based on a review of the Existing Traffic Volumes and the expected travel patterns on the surrounding roadway network, the distributions were identified. The anticipated arrival and departure distributions are shown on Figures No. 10 and 11, respectively.

D. 2026 Build Conditions Traffic Volumes

(Figures No. 12 through 15)

The site generated traffic volumes were assigned to the roadway network based on the arrival and departure distributions referenced above. The resulting site generated traffic volumes for each of the study area intersections are shown on Figures No. 12 and 13 for each of the peak hours, respectively. The site generated traffic volumes were then added to the Year 2026 No-Build Traffic Volumes to obtain the Year 2026 Build Traffic Volumes. The resulting Year 2026 Build Traffic Volumes are shown on Figures No. 14 and 15 for the Weekday Peak AM and Weekday Peak PM Hours, respectively.

E. Description of Analysis Procedures

It was necessary to perform capacity analyses in order to determine existing and future traffic operating conditions at the study area intersections. The following is a brief description of the analysis method utilized in this report:

1. Signalized Intersection Capacity Analysis

The capacity analysis for a signalized intersection was performed in accordance with the procedures described in the Highway Capacity Manual, 6th Edition, dated 2016, published by the Transportation Research Board. The terminology used in identifying traffic flow conditions is Levels of Service. A Level of Service "A" represents the best condition and a Level of Service "F" represents the worst condition. A Level of Service "C" is generally used as a design standard while a Level of Service "D" is acceptable during peak periods. A Level of Service "E" represents an operation near capacity. In order to identify an intersection's Level of Service, the average amount of vehicle delay is computed for each approach to the intersection as well as for the overall intersection.

2. Unsignalized Intersection Capacity Analysis

The unsignalized intersection capacity analysis method utilized in this report was also performed in accordance with the procedures described in the Highway Capacity Manual, 6th Edition, dated 2016. The procedure is based on total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. The average total delay for any particular critical movement is a function of the service rate or capacity of the approach and the degree of saturation. In order to identify the Level of Service, the average amount of vehicle delay is computed for each critical movement to the intersection.

Additional information concerning signalized and unsignalized Levels of Service can be found in Appendix "C" of this report.

F. Results of Analysis

(Table No. 2, Table S-1, Appendix B)

Capacity analyses which take into consideration appropriate truck percentages, pedestrian activity, roadway grades and other factors were performed at the study area intersections utilizing the procedures described above to determine the Levels of Service and average vehicle delays. Summarized below are a description of the existing geometrics, traffic control and a summary of the existing and future Levels of Service as well as any recommended improvements.

Table No. 2 summarizes the results of the capacity analysis for the 2023 Existing, 2026 No-Build and 2026 Build Conditions. Appendix "D" contains copies of the capacity analysis which also indicate the existing geometrics (including lane widths) and other characteristics for each of the individual intersections studied. Table S-1 contained in Appendix "B" provides a summary of the recommended improvements for each of the study area intersections.

1. Delavergne Avenue and NYS Route 9D

Delavergne Avenue intersects with NYS Route 9D at a signalized “T” shaped intersection. All approaches consist of one travel lane and each approach has sidewalks on both sides of the roadway. A crosswalk is provided in the north/south direction crossing Delavergne Avenue; however, the signalized intersection does not have a separate pedestrian phase.

Capacity analysis was conducted for this intersection utilizing the 2023 Existing Traffic Volumes. The analysis results indicate that the intersection is currently operating at an overall Level of Service “A” during the AM and PM Peak Hours.

The capacity analysis was recomputed using the 2026 No-Build and Build Traffic volumes. These results indicate that the intersection is expected to experience Levels of Service “B” or better during the AM and PM Peak Hours under future conditions. As indicated in Table S-1, no improvements are recommended at this intersection.

2. Clinton Street and NYS Route 9D

Clinton Street intersects with NYS Route 9D at an unsignalized “T” shaped intersection controlled by a “Stop” sign on the Clinton Street approach. All approaches to the intersection consist of one lane and sight distances are good for all approaches. Each approach has sidewalks on both sides of the roadway and a crosswalk is provided in the north/south direction crossing Clinton Street.

Capacity analysis was conducted for this intersection utilizing the 2023 Existing Traffic Volumes. The analysis results indicate that the intersection is currently operating at an overall Level of Service “C” during the AM Peak Hour and “D” or better during the PM Peak Hour.

The capacity analysis was recomputed using the 2026 No-Build and Build Traffic volumes. Under the No-Build scenario, the results indicate that the intersection is expected to continue to operate at a Level of Service “C” or better during the AM Peak Hour while a Level of Service “E” or better will be experienced during the PM Peak Hour. Under the Build scenario, the results indicate that the intersection is expected to operate at a Level of Service “D” or better during the AM Peak Hour while a Level of Service “E” or better will be experienced during the PM Peak Hour.

It should be noted that the eastbound left turn movement is the movement that experiences the highest delay for both the No-Build and Build conditions at this location, which is not unusual during peak periods for a side road approach. It should also be noted that the presence of the traffic signal at the NYS Route 9D and Delavergne Avenue intersection provides some gaps along NYS Route 9D which should help accommodate the eastbound left turn movement for the NYS Route 9D and Clinton Street intersection. Furthermore, although this intersection will most likely not meet traffic signal warrants, a separate analysis was completed as a signalized intersection under No-Build and Build scenarios. The analysis results indicate that the intersection would operate at an overall Level of Service “A” for both the time periods during No-Build and Build scenarios if it was signalized. Under this

condition, the eastbound left turn approach would improve to a Level of Service “C” for both time periods during No-Build and Build scenarios. The intersection could be monitored in the future if necessary, to determine if signalization would be warranted. As noted in Table S-1, it is also recommended that the existing tree on the southwest corner of the intersection be pruned in order to maintain proper sight distance for vehicles exiting Clinton Street.

3. Nelson Avenue and Clinton Street

Clinton Street intersects with Nelson Avenue at an unsignalized “T” shaped all-way stop intersection. All approaches to the intersection consist of one lane and sight distances are good for all approaches. There are sidewalks on both sides of Clinton Street as well as on the east side of Nelson Avenue.

Capacity analysis was conducted for this intersection utilizing the 2023 Existing Traffic Volumes. The analysis results indicate that the intersection is currently operating at an overall Level of Service “A” during the AM and PM Peak Hours.

The capacity analysis was recomputed using the 2026 No-Build and Build Traffic volumes. These results indicate that the intersection is expected to experience Levels of Service “A” during the AM and PM Peak Hours under future conditions. Regardless of the Project, it is recommended that a stop bar be striped on the Clinton Street approach at the stop location to better control traffic at the intersection.

4. Channingville Road/Main Street and Reed Avenue

Reed Avenue intersects with Channingville Road/Main Street at an unsignalized “T” shaped all-way stop intersection. All approaches to the intersection consist of one lane and sight distances are good for all approaches.

Capacity analysis was conducted for this intersection utilizing the 2023 Existing Traffic Volumes. The analysis results indicate that the intersection is currently operating at an overall Level of Service “B” during the AM and PM Peak Hours.

The capacity analysis was recomputed using the 2026 No-Build and Build Traffic volumes. These results indicate that the intersection is expected to experience Levels of Service “B” during the AM and PM Peak Hours under future conditions. As noted in Table S-1, although this intersection is an all-way stop intersection, it is recommended that pruning of existing vegetation be completed on the northwest and southwest corners of the Reed Avenue approach to improve sight distances and overall operation of the intersection.

5. Nelson Avenue and Proposed Site Access

The northern Site Access driveway is proposed to intersect with Nelson Avenue at an unsignalized “T” shaped intersection approximately 1,300 feet south of the Clinton Street and Nelson Avenue intersection. All approaches to the intersection will consist of one lane and sight distances are good for all approaches.

The required sight distance for this site access connection is 335 feet and according to field review, the sight distance provided is approximately 420 feet in the north direction and 410 feet in the south direction. However, to achieve greater sight distances, clearing and pruning of the vegetation from both approaches is recommended.

The capacity analysis was recomputed using the 2026 No-Build and Build Traffic volumes. These results indicate that the intersection is expected to experience Levels of Service "A" during the AM and PM Peak Hours under future conditions. It is recommended that the driveway approach to the intersection be "stop" sign controlled and that "Intersection Ahead" signs be posted on the main road.

IV. Parking Analysis

The site plan for the Project prepared by Insite Engineering indicates a total of 277 parking spaces for the proposed 188 dwelling units. This provides a parking ratio of approximately 1.44 spaces per dwelling unit. Based upon a review of the Village Code, as outlined in Section 151-24-Parking and Loading Requirements and summarized in Table 5 of that document, for a multi-family development located within the RMV Zone, one (1) space per dwelling unit is required (see Attachment P-1, contained in Appendix "E"). Thus, the provided parking satisfies the Village Code requirements.

We have also reviewed the amount of parking that is proposed as compared to various other recognized publications regarding recommended parking ratio for this type and size of development, including those published by the Institute of Transportation Engineers (ITE), Parking Generation, 5th Edition, and the Urban Land Institute (ULI). ULI provides general information on suggested parking demand ratios and suggests a ratio of approximately one space per auto owned per dwelling unit.

ITE provides more specific guidance, which accounts for parking ratios per number of dwelling units and number of bedrooms. Attachment P-2 contained in Appendix "E" provides excerpts from the ITE Parking Generation, 5th Edition for multi-family developments. Utilizing this data, Table P-1 contained in Appendix "E" summarizes the computed peak parking demand for the Project for a typical Weekday and Saturday based on the proposed 188 dwelling units. This indicates a parking demand of 227 spaces on a Weekday and 246 spaces on a Saturday prior to any adjustment for mass-transit use, based on proximity to the Metro North Railroad Station. This equates to a parking demand ratio of between 1.21 to 1.31 spaces per dwelling unit. When accounting for nearby mass transit, the Weekday peak parking demand based on ITE is reduced to 201 spaces. Table P-1 also summarizes the computed peak parking demand for the Project based on the proposed 247 bedrooms, which are comprised of 6 studio units, 135 one-bedroom units, 35 two-bedroom units and 12 three-bedroom units. The table indicates a parking demand of 163 spaces on a Weekday and 205 spaces on a Saturday based on the number of bedrooms or a parking demand ratio of 0.66 to 0.83 spaces per bedroom.

In summary, based upon a review of the various publications, the proposed 277 spaces (representing a parking ratio of approximately 1.47 spaces per dwelling unit or 1.12 spaces per bedroom) is in line with the other computed ratios and will satisfy the anticipated parking demand for the proposed Project.

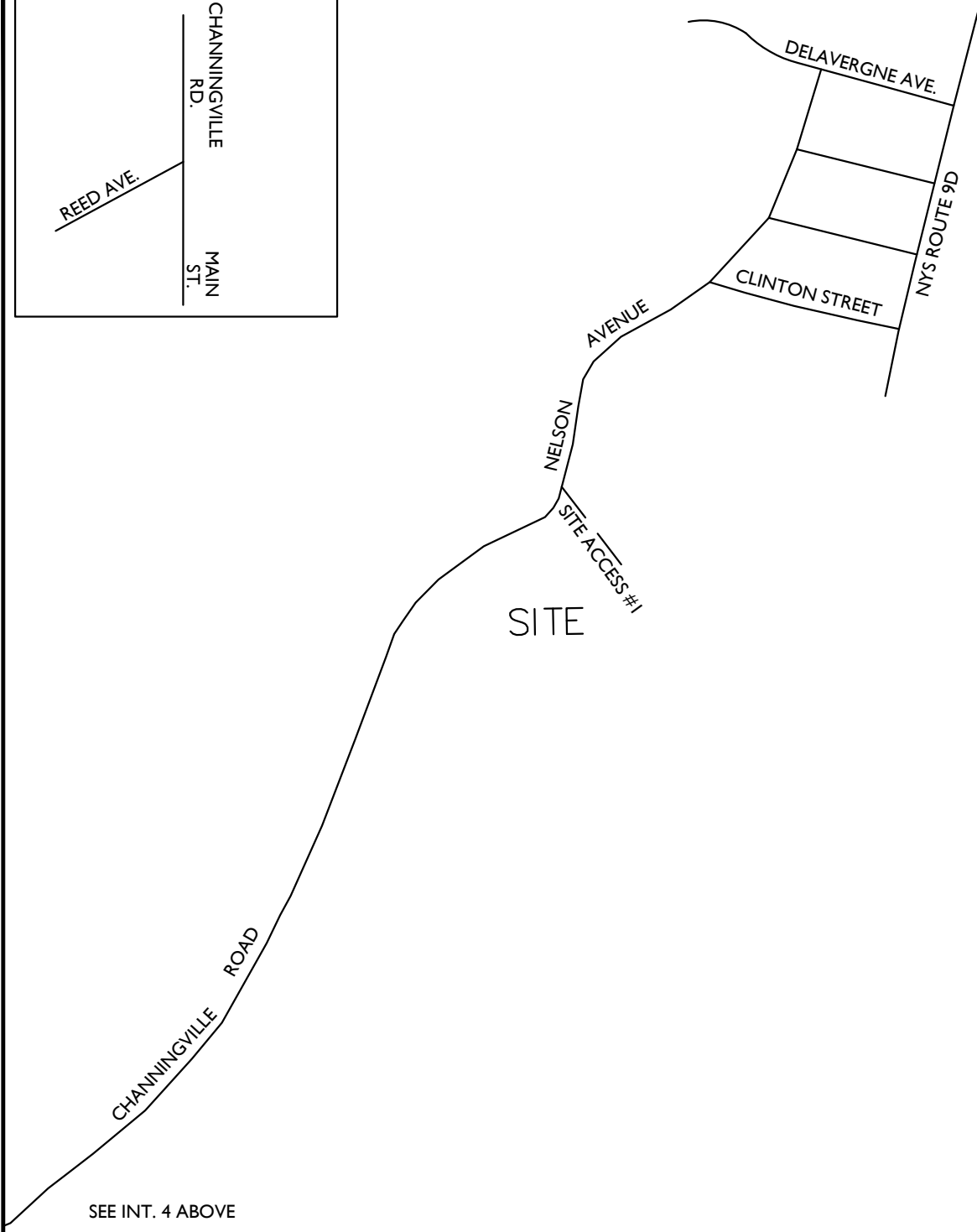
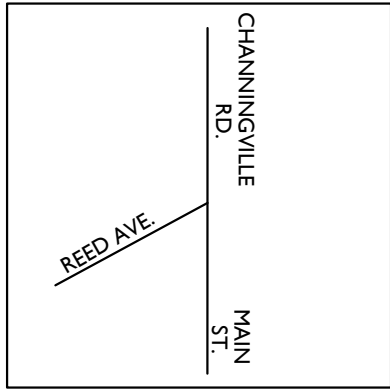
V. Summary and Conclusion

Based on the analysis contained herein, similar Levels of Service and delays will be experienced at the area intersections under the future No-Build and Build Conditions as indicated in the above analysis. The Buckingham Properties Residential Development's traffic is not expected to result in any significant impact in traffic operating conditions on the roadways in the vicinity of the site. The site access driveway connection should be constructed to maximize sight distances entering and exiting which will likely require clearing/pruning of vegetation along the site frontage. In addition, the NYS Route 9D and Clinton Street intersection could be monitored in the future, if necessary, to determine if signalization would be warranted.

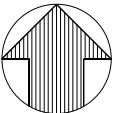
It should also be noted that the additional traffic generated by the proposed development is not expected to significantly impact roadway and pavement conditions in the vicinity of the site as the majority of the traffic volume will be passenger vehicles. However, any impacts to the area roadways as a result of construction activities related to the site should be repaired upon completion of the development.

Traffic Impact Study

Appendix A | Traffic Figures



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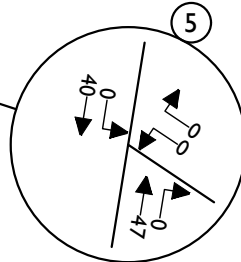
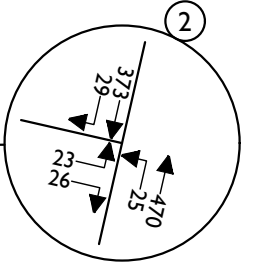
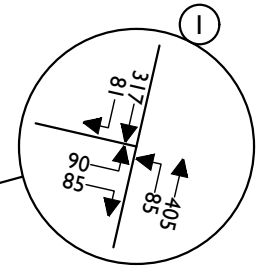
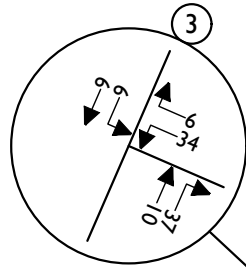
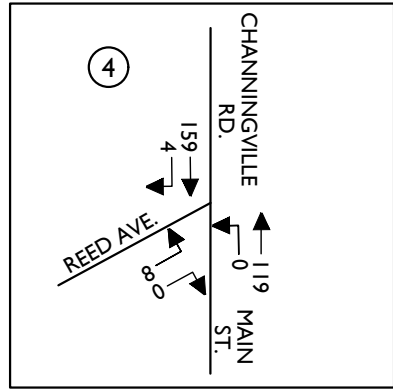
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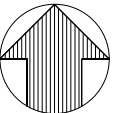
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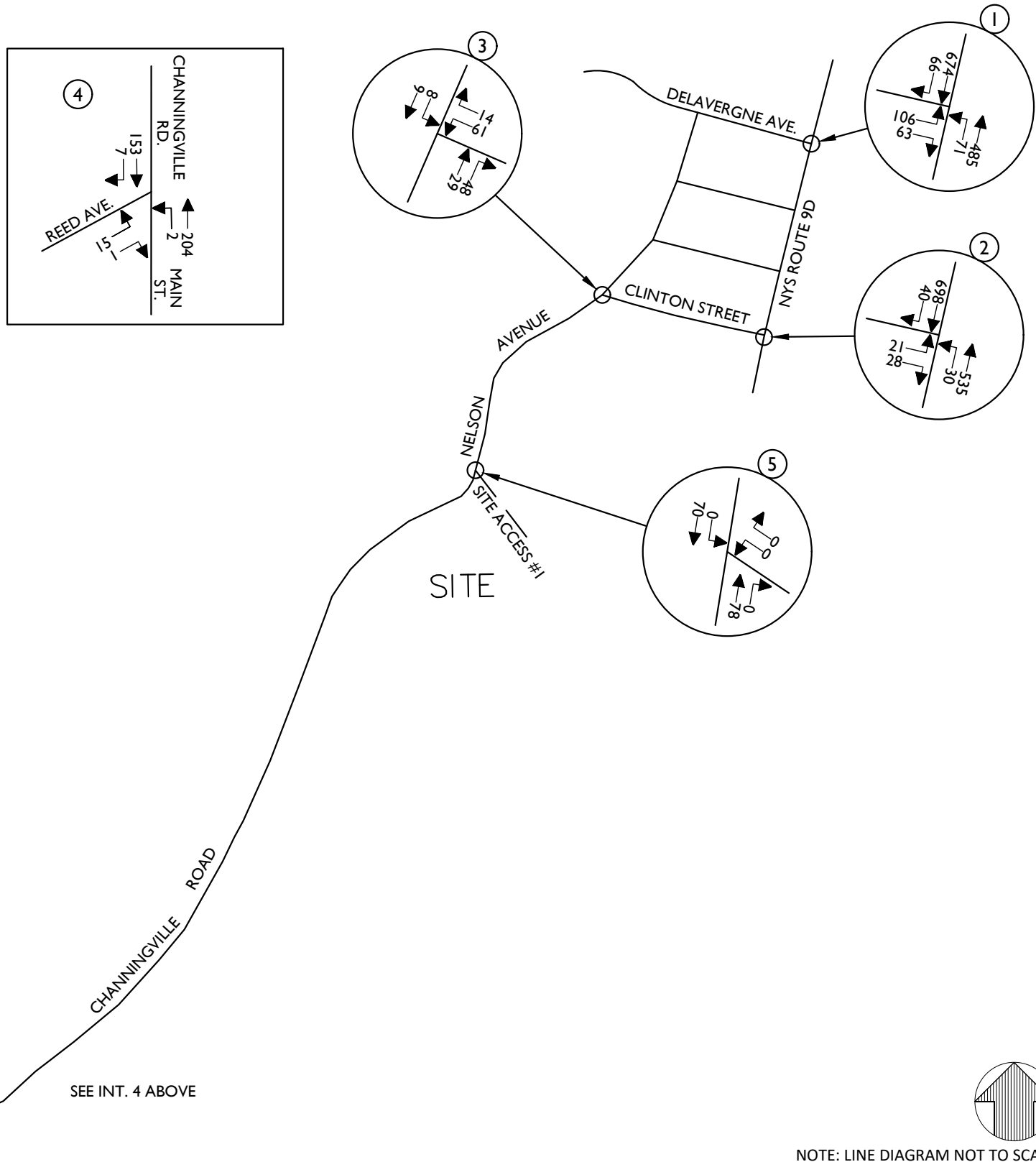
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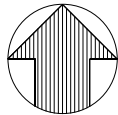
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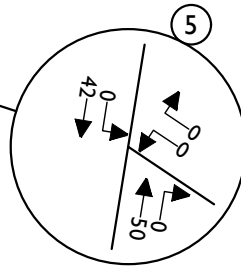
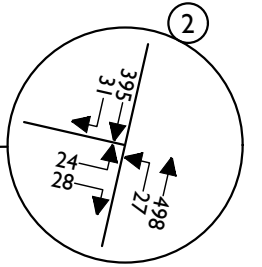
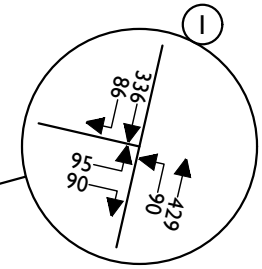
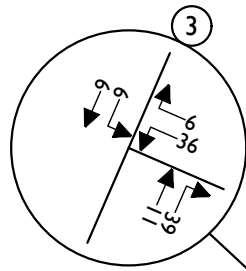
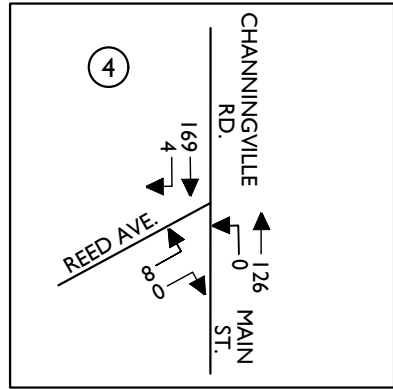
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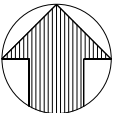
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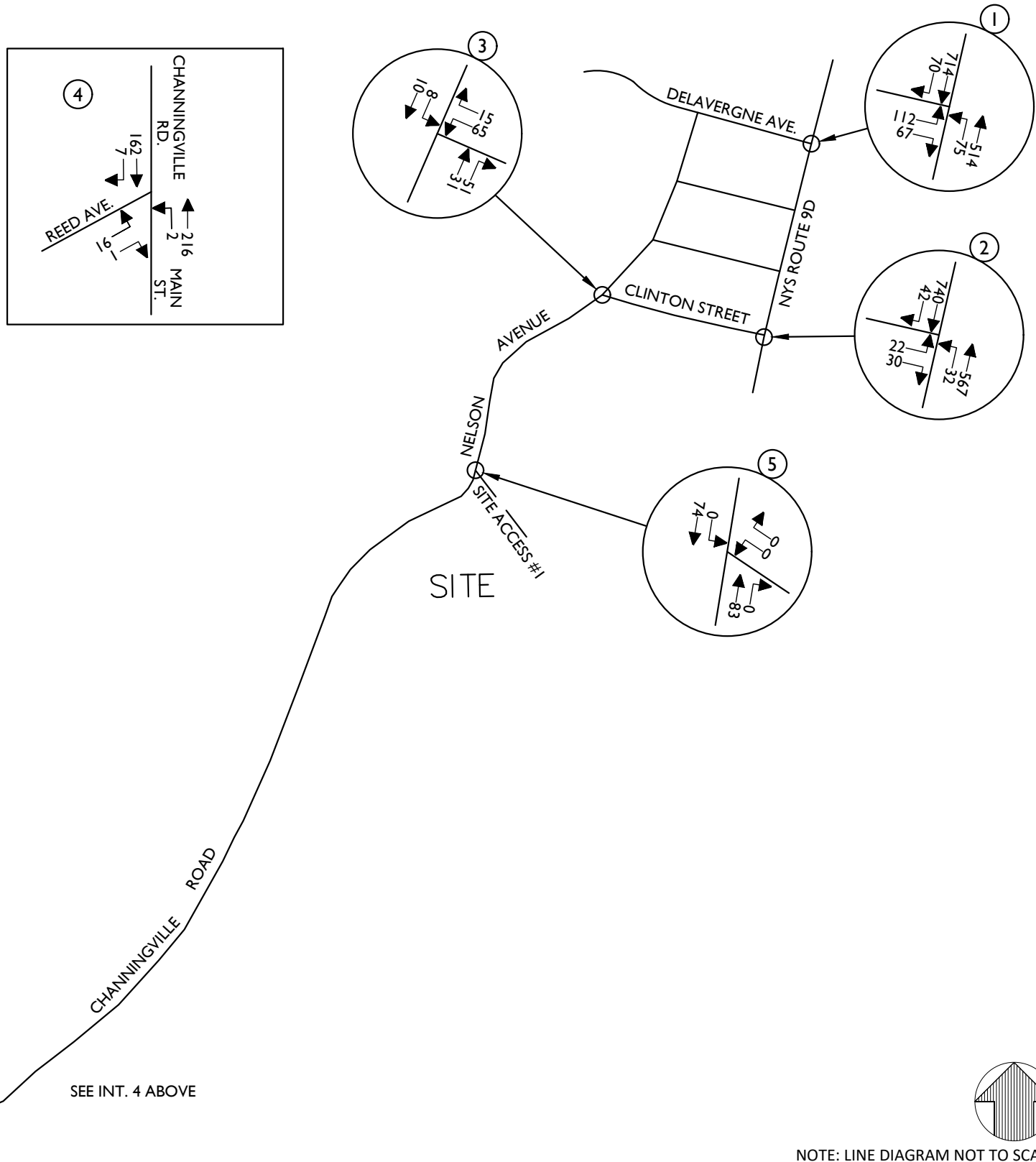
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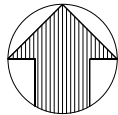
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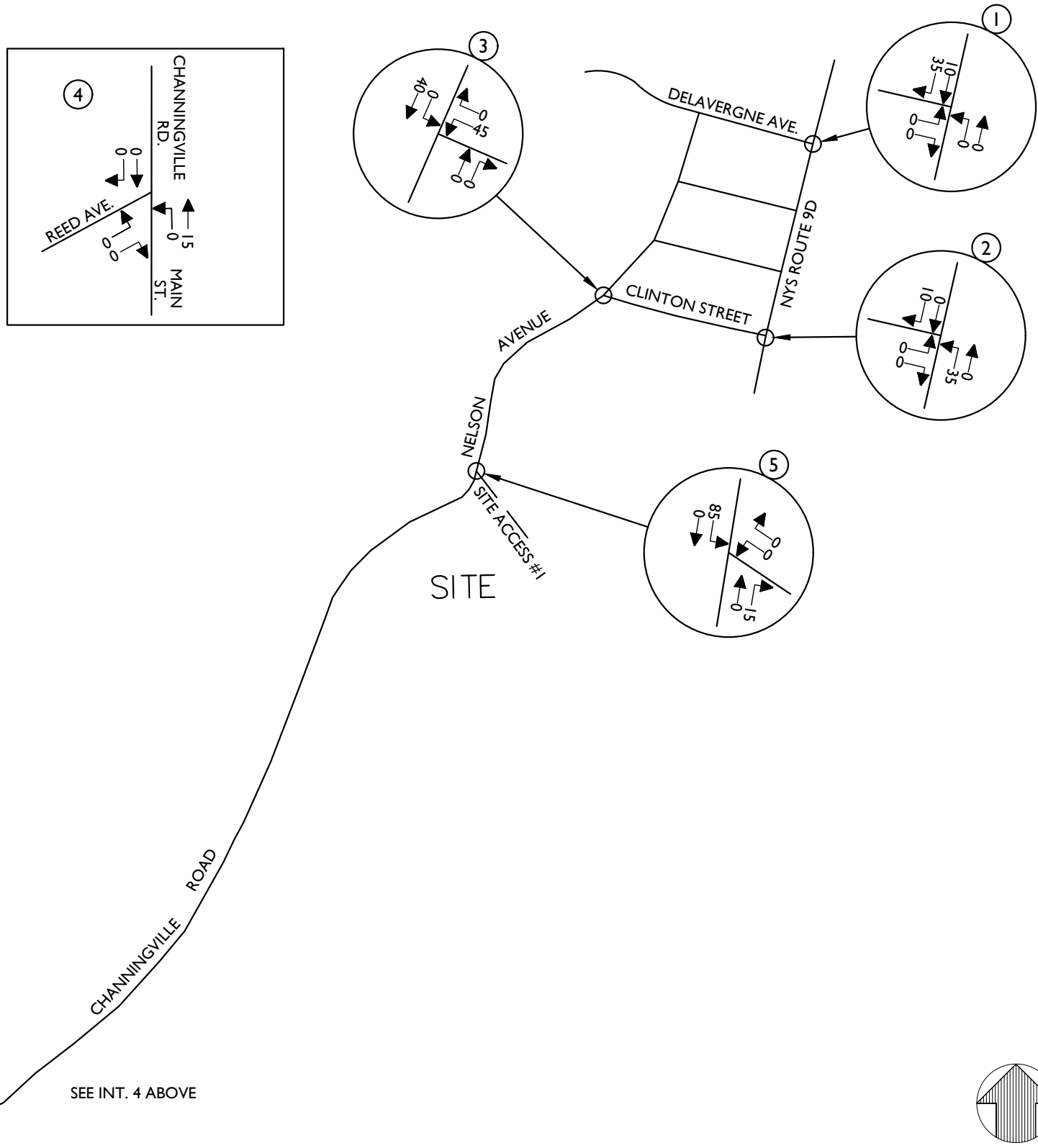
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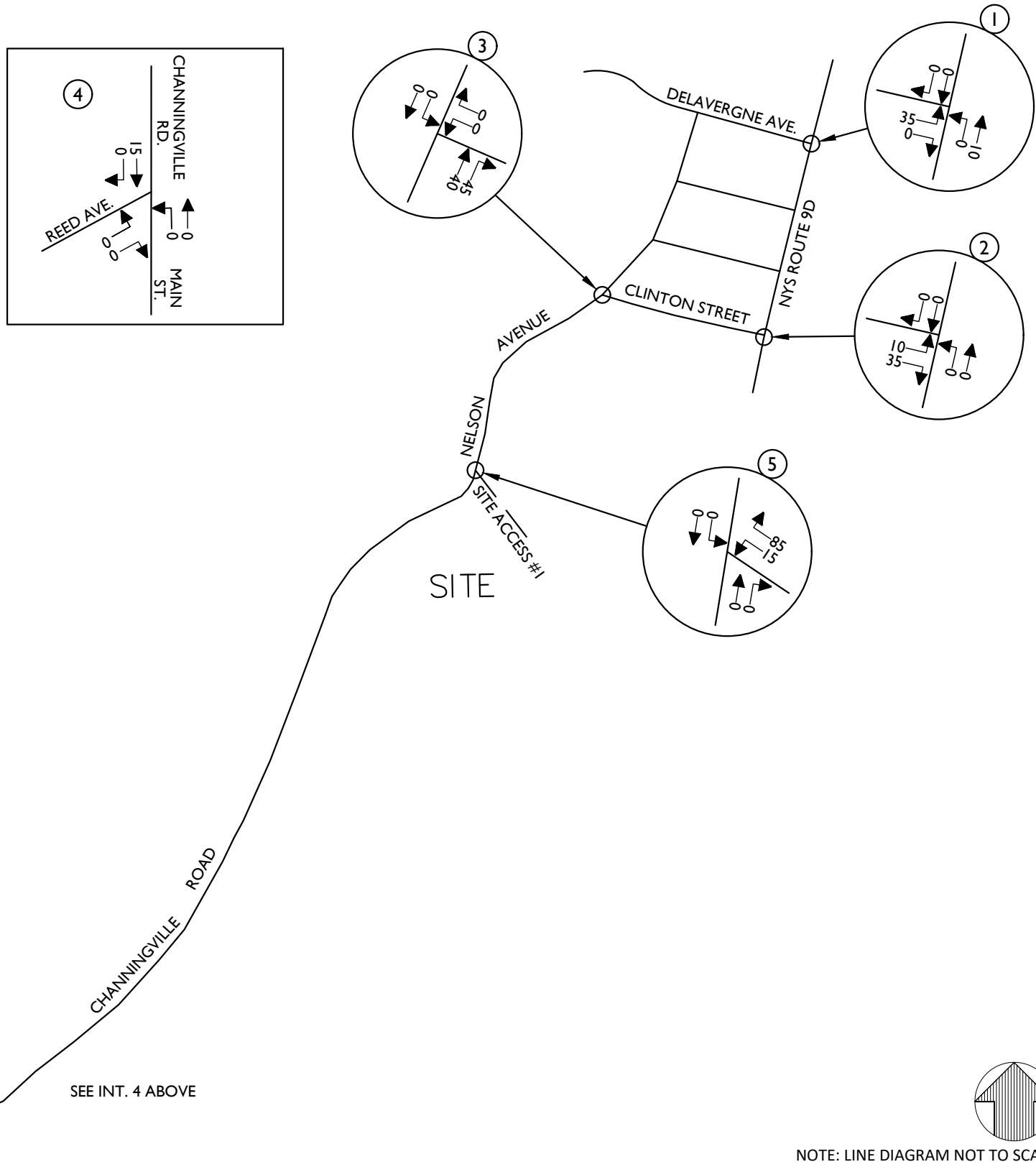
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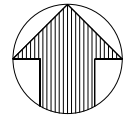
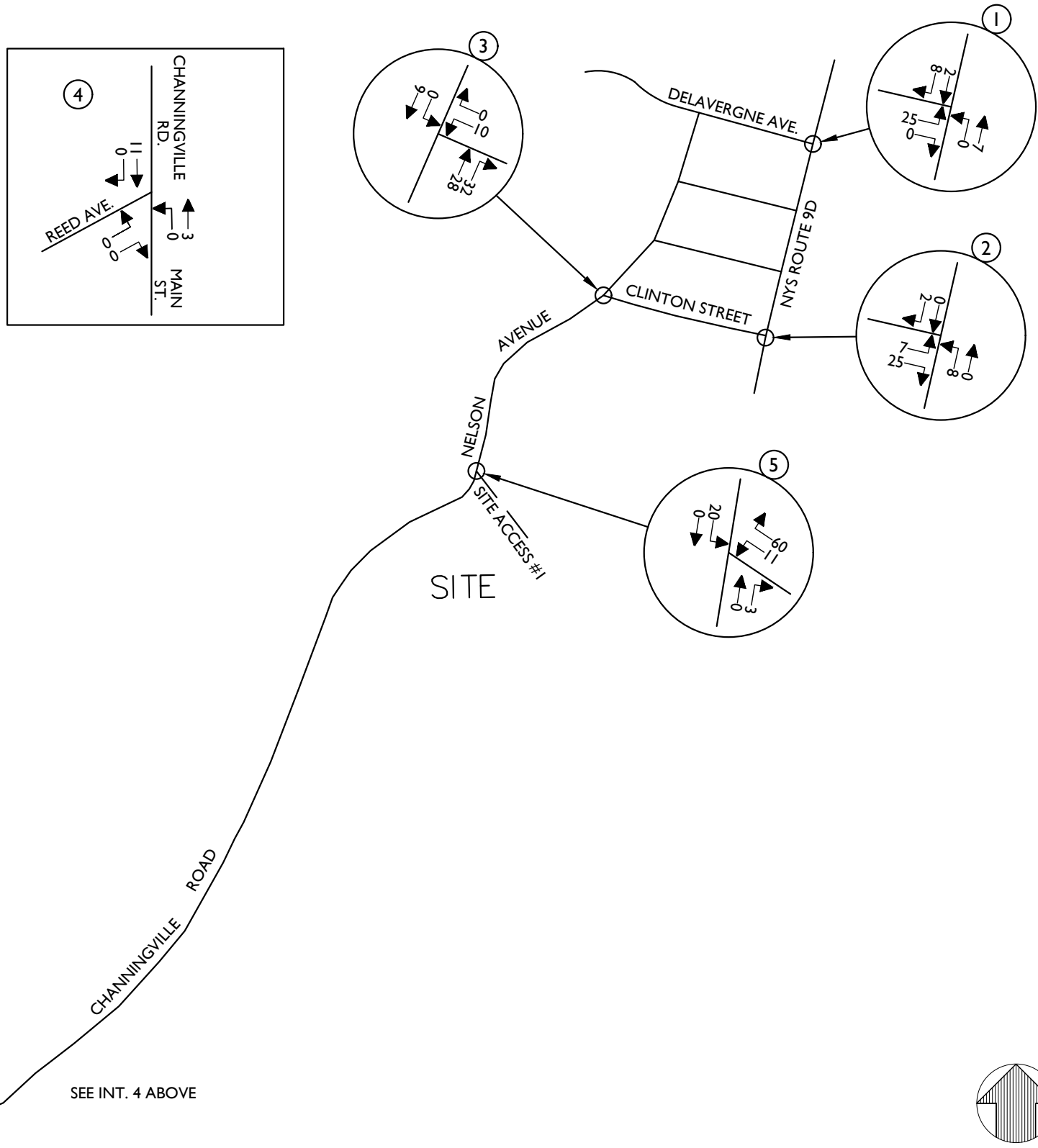
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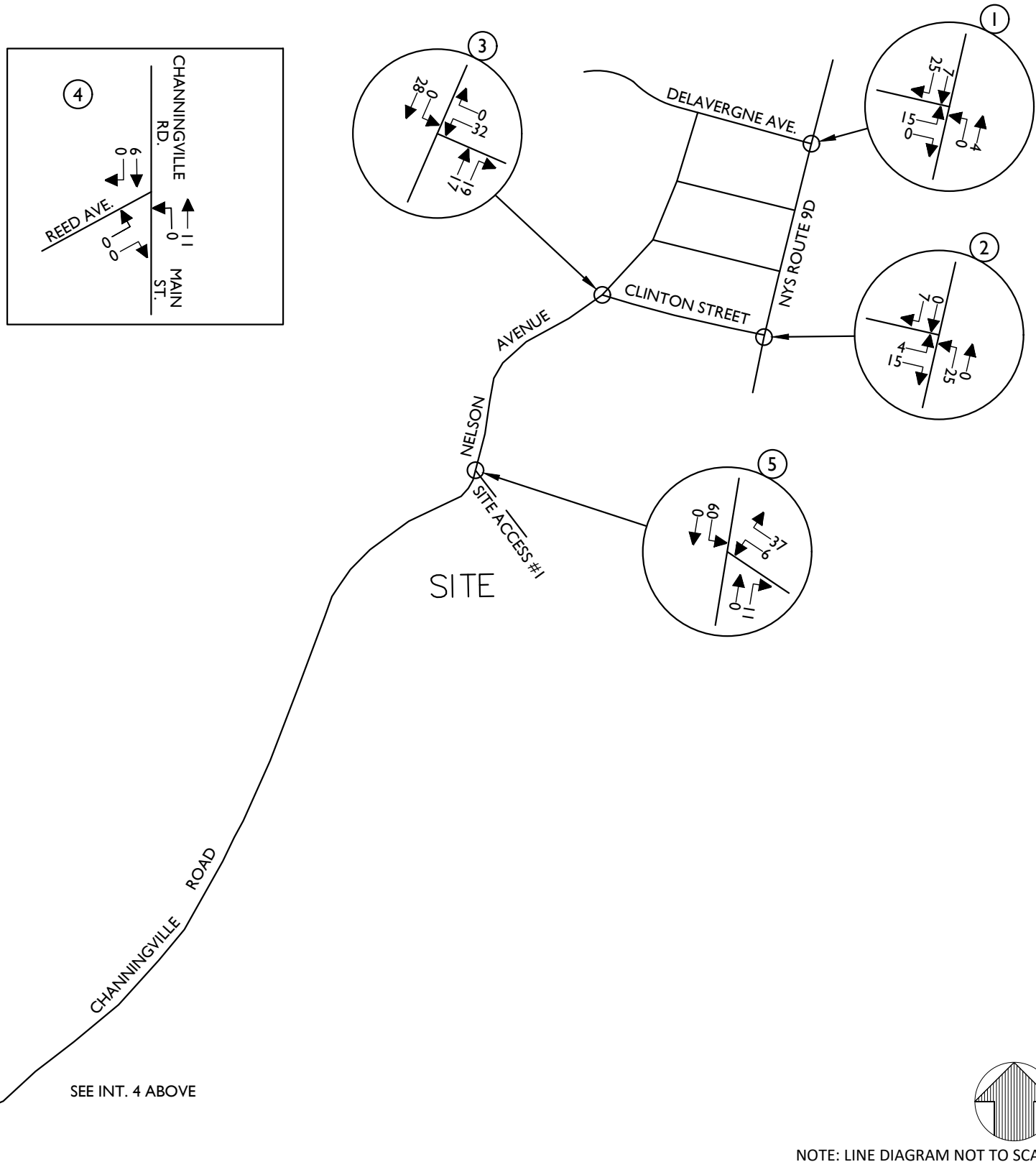
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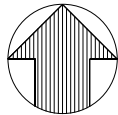
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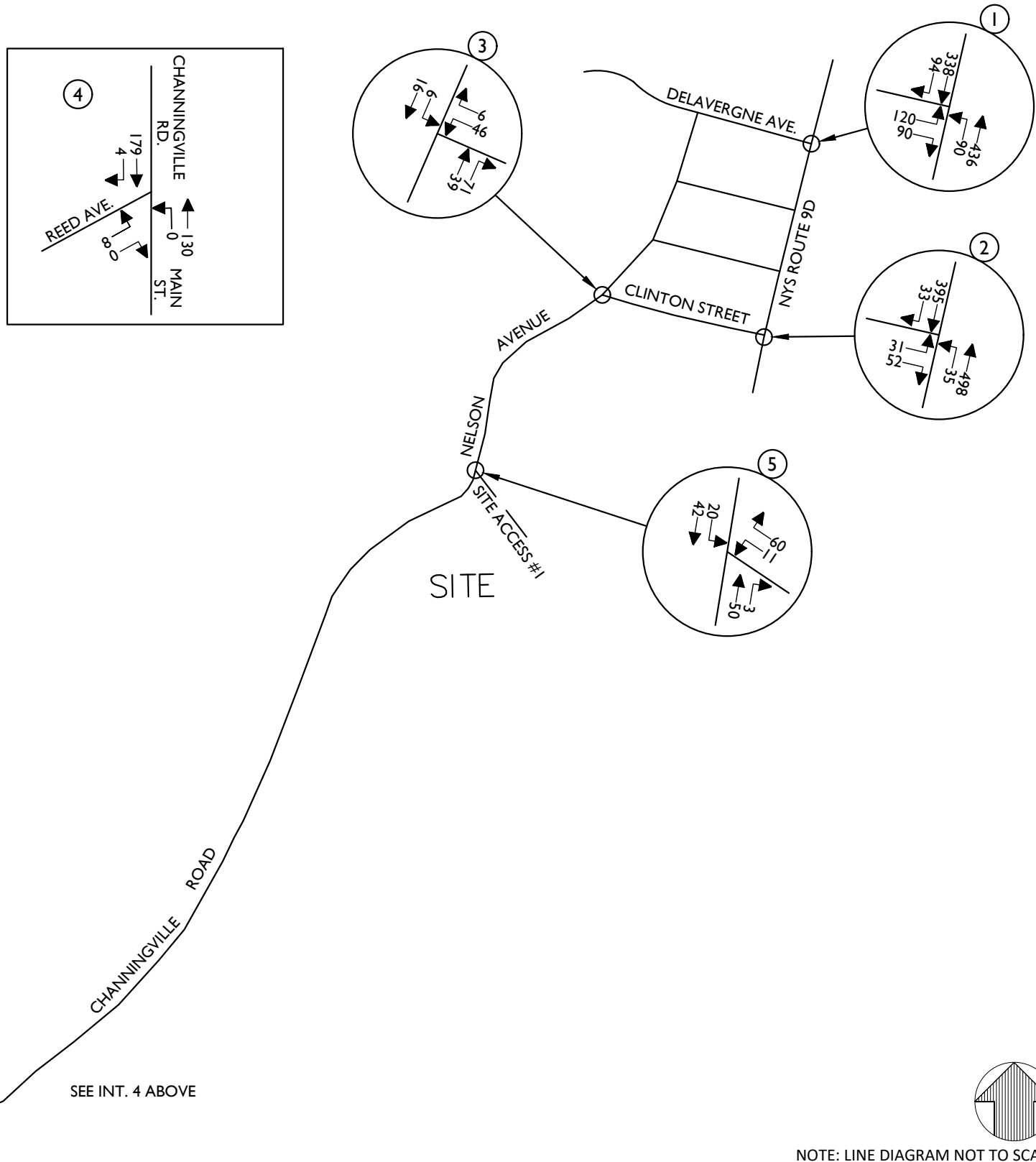
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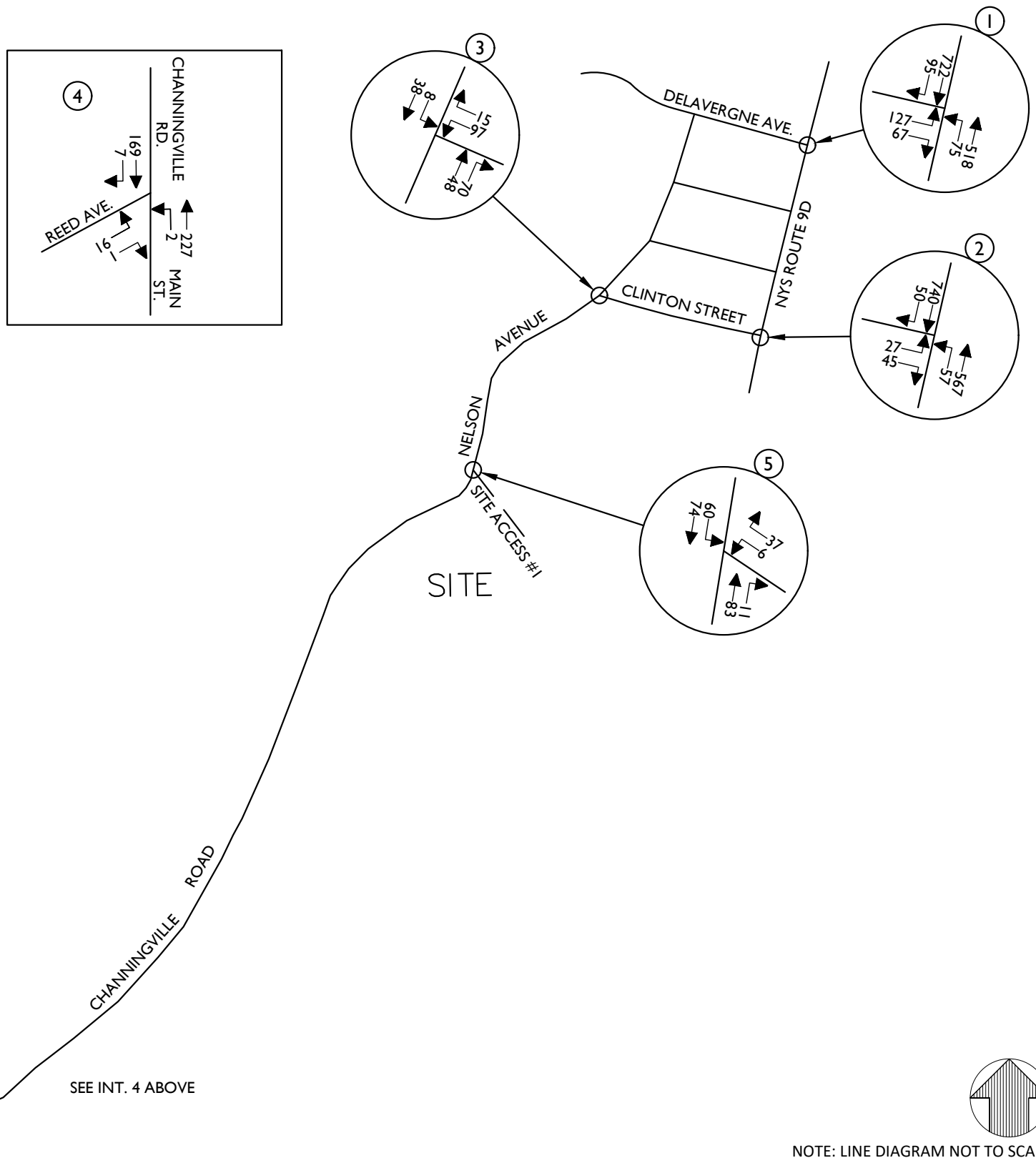
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Traffic Impact Study

Appendix B | Tables

**Table No. 1
Hourly Trip Generation Rates (HTGR) and
Anticipated Site Generated Traffic Volumes**

Buckingham Property Management Village of Wappingers Falls, NY	Entry		Exit		Total Volume
	HTGR ¹	Volume	HTGR1	HTGR ¹	
Residential (188 dwelling units)					
Peak AM Hour	0.12	23	0.38	71	94
Peak PM Hour	0.38	71	0.23	43	114

NOTES:

- 1) THE HOURLY TRIP GENERATION RATES (HTGR) ARE BASED ON DATA PUBLISHED BY THE INSTITUTE OF TRANSPORTATION ENGINEERS (ITE) AS CONTAINED IN THE TRIP GENERATION HANDBOOK, 11TH EDITION, 2021. ITE LAND USE CODE - 220 MULTI-FAMILY HOUSING.

**Table No. 2
Level of Service Summary Table**

			2023 Existing		2026 No-Build		2026 Build					
			AM	PM	AM	PM	AM	PM				
1	Delavergne Avenue & NYS Route 9D	Signalized										
			Delavergne Avenue	EB	LR	C [34.5]	C [34.2]	C [34.5]	C [34.2]	C [34.4]	C [34.2]	
			NYS Route 9D	NB	LTR	A [4.8]	A [5.0]	A [5.2]	A [5.7]	A [5.8]	A [6.5]	
			NYS Route 9D	SB	LTR	A [4.5]	A [6.3]	A [4.8]	A [7.1]	A [5.4]	A [8.0]	
			Overall			A [9.6]	A [9.0]	A [9.9]	A [9.7]	B [10.8]	B [10.7]	
2	Clinton Street & NYS Route 9D	Unsignalized	Clinton Street	EB	LR	C [20.7]	D [30.6]	C [22.8]	E [35.6]	D [26.0]	E [45.2]	
			NYS Route 9D	NB	LT	A [9.3]	A [9.8]	A [9.4]	B [10.0]	A [9.5]	B [10.2]	
			<u>With Traffic Signal</u>									
			Clinton Street	EB	LR	-	-	C [28.3]	C [25.8]	C [28.1]	C [26.3]	
		NYS Route 9D	NB	LT	-	-	A [3.7]	A [3.7]	A [4.7]	A [4.3]		
		NYS Route 9D	SB	TR	-	-	A [3.5]	A [5.3]	A [4.4]	A [5.9]		
		Overall			-	-	A [5.4]	A [5.5]	A [7.2]	A [6.3]		
3	Nelson Avenue & Clinton Street	Unsignalized	Clinton Street	WB	LR	A [8.4]	A [8.2]	A [8.1]	A [8.2]	A [8.1]	A [8.3]	
			Nelson Avenue	NEB	TR	A [7.0]	A [8.7]	A [8.4]	A [8.9]	A [8.5]	A [9.0]	
			Nelson Avenue	SWB	LT	A [7.3]	A [8.5]	A [8.6]	A [8.6]	A [8.7]	A [8.7]	
			OVERALL			A [7.7]	A [8.6]	A [8.5]	A [8.7]	A [8.6]	A [8.8]	
4	Channingville Road/Main Street & Reed Avenue	Unsignalized	Reed Avenue	EB	LR	A [8.0]	B [12.9]	B [12.5]	B [13.4]	B [12.8]	B [13.7]	
			Main Street	NB	LT	A [8.3]	A [7.6]	A [0.0]	A [7.6]	A [0.0]	A [7.7]	
			Channingville Road	SB	LT	A [8.4]	A [7.6]	A [0.0]	A [7.6]	A [0.0]	A [7.7]	
			OVERALL			A [8.3]	A [7.5]	A [7.8]	A [7.6]	A [8.0]	A [8.2]	
5	Nelson Avenue & Site Access	Unsignalized	Site Access	NW	LR	-	-	-	-	A [9.0]	A [9.2]	
			Nelson Avenue	SB	LT	-	-	-	-	A [7.4]	A [7.5]	

NOTES:

- 1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

**TABLE S-1
SUMMARY OF RECOMMENDED IMPROVEMENTS**

Intersection		Traffic Control	Recommended Improvements
1	Delavergne Avenue & NYS Route 9D	Signalized	No improvements recommended at this location
2	Clinton Street & NYS Route 9D	Unsignalized	Prune existing tree on the southwest corner of the intersection
3	Nelson Avenue & Clinton Street	Unsignalized	Provide striping for a Stop Bar
4	Channingville Road/Main Street & Reed Avenue	Unsignalized	Prune existing vegetation on northwest and southwest corners of the Reed Avenue approach to the intersection
5	Nelson Avenue & Site Access	Unsignalized	Construct driveway connection to maximize sight distances entering and exiting driveway. This may require clearing/pruning of vegetation along Site frontage.

Traffic Impact Study

Appendix C | Level of Service Standards

Level of Service Standards

Level of Service for Signalized Intersections

Level of Service (LOS) can be characterized for the entire intersection, each intersection approach, and each lane group. Control delay alone is used to characterize LOS for the entire intersection or an approach. Control delay and volume-to-capacity (v/c) ratio are used to characterize LOS for a lane group. Delay quantifies the increase in travel time due to traffic signal control. It is also a measure of driver discomfort and fuel consumption. The volume-to-capacity ratio quantifies the degree to which a phase's capacity is utilized by a lane group.

- **LOS A** describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
- **LOS B** describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
- **LOS C** describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate.
- **LOS D** describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long.
- **LOS E** describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long.
- **LOS F** describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long.

A lane group can incur a delay less than 80 s/veh when the volume-to-capacity ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and volume-to-capacity ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicates that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80 s/veh represents failure from a delay perspective).

The Level of Service Criteria for signalized intersections are given in Exhibit 19-8 from the *Highway Capacity Manual, 6th Edition* published by the Transportation Research Board.

Exhibit 19-8 LOS by Volume-to-Capacity Ratio

Control Delay (s/veh)	$v/c \leq 1.0$	$v/c \geq 1.0$
≤ 10	A	F
>10-20	B	F
>20-35	C	F
>35-55	D	F
>55-80	E	F
>80	F	F

For approach-based and intersection wide assessments, LOS is defined solely by control delay.

Level of Service Criteria For Two-Way Stop-Controlled (TWSC) Unsignalized Intersections

Level of Service (LOS) for a two-way stop-controlled (TWSC) intersection is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns. LOS is not defined for the intersection as a whole or for major-street approaches.

The Level of Service Criteria for TWSC unsignalized intersections are given in Exhibit 20-2 from the Highway Capacity Manual, 6th Edition published by the Transportation Research Board.

Exhibit 20-2 LOS by Volume-to-Capacity Ratio

Control Delay (s/veh)	$v/c \leq 1.0$	$v/c \geq 1.0$
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole.

As Exhibit 20-2 notes, LOS F is assigned to the movement if the volume-to-capacity ratio for the movement exceeds 1.0, regardless of the control delay.

The Level of Service Criteria for unsignalized intersections are somewhat different from the criteria for signalized intersections.

Level of Service Criteria For All-Way Stop-Controlled (AWSC) Unsignalized Intersections

The Levels of Service (LOS) for all-way stop-controlled (AWSC) intersections are given in Exhibit 21-8. As the exhibit notes, LOS F is assigned if the volume-to-capacity (v/c) ratio of a lane exceeds 1.0, regardless of the control delay. For assessment of LOS at the approach and intersection levels, LOS is based solely on control delay.

The Level of Service Criteria for AWSC unsignalized intersections are given in Exhibit 21-8 from the *Highway Capacity Manual, 6th Edition* published by the Transportation Research Board.

Exhibit 21-8 LOS by Volume-to-Capacity Ratio

Control Delay (s/veh)	v/c ≤ 1.0	v/c ≥ 1.0
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

For approaches and intersection wide assessment, LOS is defined solely by control delay.

Traffic Impact Study

Appendix D | Capacity Analysis

2023 Existing Traffic Volumes
1: NYS Route 9D & Delavergne Avenue

Weekday Peak AM Hour
01/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	90	85	85	405	317	81
Future Volume (vph)	90	85	85	405	317	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	16	12	12
Grade (%)	2%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.935				0.973	
Fl _t Protected	0.975			0.991		
Satd. Flow (prot)	1590	0	0	1977	1666	0
Fl _t Permitted	0.975			0.868		
Satd. Flow (perm)	1590	0	0	1732	1666	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	52				26	
Link Speed (mph)	30			40	40	
Link Distance (ft)	318			1043	324	
Travel Time (s)	7.2			17.8	5.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	14%	14%	6%	11%	8%
Adj. Flow (vph)	95	89	89	426	334	85
Shared Lane Traffic (%)						
Lane Group Flow (vph)	184	0	0	515	419	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	1.01	1.01	0.85	1.01	1.01
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	1	1	
Detector Template			Left			
Leading Detector (ft)	35		20	6	6	
Trailing Detector (ft)	-5		0	0	0	
Detector 1 Position(ft)	-5		0	0	0	
Detector 1 Size(ft)	40		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	23.0		23.0	23.0	23.0	
Total Split (s)	30.0		60.0	60.0	60.0	
Total Split (%)	33.3%		66.7%	66.7%	66.7%	
Maximum Green (s)	25.0		55.0	55.0	55.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	

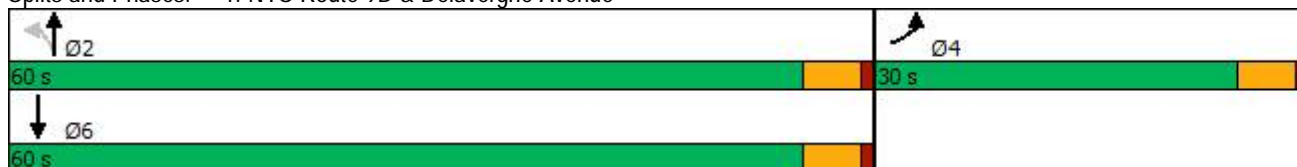


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		Max	Max	Max	
Walk Time (s)					7.0	
Flash Dont Walk (s)					11.0	
Pedestrian Calls (#/hr)					0	
v/c Ratio	0.68			0.41	0.35	
Control Delay	34.5			5.9	5.1	
Queue Delay	0.0			0.0	0.0	
Total Delay	34.5			5.9	5.1	
Queue Length 50th (ft)	59			76	53	
Queue Length 95th (ft)	122			167	123	
Internal Link Dist (ft)	238			963	244	
Turn Bay Length (ft)						
Base Capacity (vph)	558			1255	1214	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.33			0.41	0.35	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 76.1
 Natural Cycle: 50
 Control Type: Semi Act-Uncoord

Splits and Phases: 1: NYS Route 9D & Delavergne Avenue



2023 Existing Traffic Volumes
1: NYS Route 9D & Delavergne Avenue

Weekday Peak AM Hour
01/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	90	85	85	405	317	81
Future Volume (veh/h)	90	85	85	405	317	81
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1813	1669	1687	1877	1731	1776
Adj Flow Rate, veh/h	95	89	89	426	334	85
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	14	14	6	11	8
Cap, veh/h	115	108	225	1044	971	247
Arrive On Green	0.14	0.14	0.73	0.73	0.73	0.73
Sat Flow, veh/h	837	784	231	1431	1331	339
Grp Volume(v), veh/h	185	0	515	0	0	419
Grp Sat Flow(s),veh/h/ln	1630	0	1662	0	0	1670
Q Serve(g_s), s	8.3	0.0	0.0	0.0	0.0	6.8
Cycle Q Clear(g_c), s	8.3	0.0	7.7	0.0	0.0	6.8
Prop In Lane	0.51	0.48	0.17			0.20
Lane Grp Cap(c), veh/h	225	0	1268	0	0	1218
V/C Ratio(X)	0.82	0.00	0.41	0.00	0.00	0.34
Avail Cap(c_a), veh/h	540	0	1268	0	0	1218
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	31.6	0.0	3.8	0.0	0.0	3.7
Incr Delay (d2), s/veh	2.9	0.0	1.0	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	2.0	0.0	0.0	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.5	0.0	4.8	0.0	0.0	4.5
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	185			515	419	
Approach Delay, s/veh	34.5			4.8	4.5	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		60.0		15.4		60.0
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		55.0		25.0		55.0
Max Q Clear Time (g_c+I1), s		9.7		10.3		8.8
Green Ext Time (p_c), s		0.7		0.3		0.5

Intersection Summary

HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	23	26	25	470	373	29
Future Volume (vph)	23	26	25	470	373	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			3%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.928				0.990	
Flt Protected	0.977			0.998		
Satd. Flow (prot)	1338	0	0	1726	1783	0
Flt Permitted	0.977			0.998		
Satd. Flow (perm)	1338	0	0	1726	1783	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	904			139	1043	
Travel Time (s)	20.5			3.2	23.7	
Peak Hour Factor	0.62	0.62	0.95	0.95	0.83	0.83
Heavy Vehicles (%)	20%	34%	50%	6%	6%	6%
Adj. Flow (vph)	37	42	26	495	449	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	0	0	521	484	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	23	26	25	470	373	29
Future Vol, veh/h	23	26	25	470	373	29
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, %	2	-	-	3	-1	-
Peak Hour Factor	62	62	95	95	83	83
Heavy Vehicles, %	20	34	50	6	6	6
Mvmt Flow	37	42	26	495	449	35

Major/Minor

	Minor2	Major1	Major2		
Conflicting Flow All	1014	467	484	0	0
Stage 1	467	-	-	-	-
Stage 2	547	-	-	-	-
Critical Hdwy	7	6.74	4.6	-	-
Critical Hdwy Stg 1	6	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-
Follow-up Hdwy	3.68	3.606	2.65	-	-
Pot Cap-1 Maneuver	219	521	870	-	-
Stage 1	565	-	-	-	-
Stage 2	513	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	210	521	870	-	-
Mov Cap-2 Maneuver	210	-	-	-	-
Stage 1	542	-	-	-	-
Stage 2	513	-	-	-	-

Approach

	EB	NB	SB
HCM Control Delay, s	20.7	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt

	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	870	-	307	-
HCM Lane V/C Ratio	0.03	-	0.257	-
HCM Control Delay (s)	9.3	0	20.7	-
HCM Lane LOS	A	A	C	-
HCM 95th %tile Q(veh)	0.1	-	1	-



Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	34	6	10	37	6	6
Future Volume (vph)	34	6	10	37	6	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%		-4%			0%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.980		0.895			
Flt Protected	0.959					0.976
Satd. Flow (prot)	1263	0	1407	0	0	1854
Flt Permitted	0.959					0.976
Satd. Flow (perm)	1263	0	1407	0	0	1854
Link Speed (mph)	30		30			30
Link Distance (ft)	904		626			620
Travel Time (s)	20.5		14.2			14.1
Peak Hour Factor	0.59	0.59	0.80	0.80	0.88	0.88
Heavy Vehicles (%)	46%	0%	10%	27%	0%	0%
Adj. Flow (vph)	58	10	13	46	7	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	0	59	0	0	14
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.97	0.97	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	34	6	10	37	6	6
Future Vol, veh/h	34	6	10	37	6	6
Peak Hour Factor	0.59	0.59	0.80	0.80	0.88	0.88
Heavy Vehicles, %	46	0	10	27	0	0
Mvmt Flow	58	10	13	46	7	7
Number of Lanes	1	0	1	0	0	1

Approach	WB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	NE		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SW	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.4	7	7.3
HCM LOS	A	A	A

Lane	NELn1	WBLn1	SWLn1
Vol Left, %	0%	85%	50%
Vol Thru, %	21%	0%	50%
Vol Right, %	79%	15%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	47	40	12
LT Vol	0	34	6
Through Vol	10	0	6
RT Vol	37	6	0
Lane Flow Rate	59	68	14
Geometry Grp	1	1	1
Degree of Util (X)	0.061	0.092	0.016
Departure Headway (Hd)	3.726	4.887	4.163
Convergence, Y/N	Yes	Yes	Yes
Cap	950	734	850
Service Time	1.792	2.913	2.235
HCM Lane V/C Ratio	0.062	0.093	0.016
HCM Control Delay	7	8.4	7.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0.3	0

2023 Existing Traffic Volumes
 4: Main Street /Channingville Road & Reed Avenue

Weekday Peak AM Hour
 01/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	0	0	119	159	4
Future Volume (vph)	8	0	0	119	159	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	9%			6%	-12%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.997	
Flt Protected	0.950					
Satd. Flow (prot)	1724	0	0	1722	1929	0
Flt Permitted	0.950					
Satd. Flow (perm)	1724	0	0	1722	1929	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	572			413	453	
Travel Time (s)	13.0			9.4	10.3	
Peak Hour Factor	0.67	0.67	0.68	0.68	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	7%	3%	50%
Adj. Flow (vph)	12	0	0	175	206	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	175	211	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	0.93	0.93
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	0	0	119	159	4
Future Vol, veh/h	8	0	0	119	159	4
Peak Hour Factor	0.67	0.67	0.68	0.68	0.77	0.77
Heavy Vehicles, %	0	0	0	7	3	50
Mvmt Flow	12	0	0	175	206	5
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8	8.3	8.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	0%	100%	0%
Vol Thru, %	100%	0%	98%
Vol Right, %	0%	0%	2%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	119	8	163
LT Vol	0	8	0
Through Vol	119	0	159
RT Vol	0	0	4
Lane Flow Rate	175	12	212
Geometry Grp	1	1	1
Degree of Util (X)	0.204	0.016	0.24
Departure Headway (Hd)	4.198	4.935	4.089
Convergence, Y/N	Yes	Yes	Yes
Cap	849	730	872
Service Time	2.252	2.935	2.139
HCM Lane V/C Ratio	0.206	0.016	0.243
HCM Control Delay	8.3	8	8.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.8	0	0.9

2026 No-Build Traffic Volumes
1: NYS Route 9D & Delavergne Avenue

Weekday Peak AM Hour
01/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	95	90	90	429	336	86
Future Volume (vph)	95	90	90	429	336	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	16	12	12
Grade (%)	2%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.934				0.972	
Fl _t Protected	0.975			0.991		
Satd. Flow (prot)	1588	0	0	1977	1665	0
Fl _t Permitted	0.975			0.859		
Satd. Flow (perm)	1588	0	0	1714	1665	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	53				26	
Link Speed (mph)	30			40	40	
Link Distance (ft)	318			1043	324	
Travel Time (s)	7.2			17.8	5.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	14%	14%	6%	11%	8%
Adj. Flow (vph)	100	95	95	452	354	91
Shared Lane Traffic (%)						
Lane Group Flow (vph)	195	0	0	547	445	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	1.01	1.01	0.85	1.01	1.01
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	1	1	
Detector Template			Left			
Leading Detector (ft)	35		20	6	6	
Trailing Detector (ft)	-5		0	0	0	
Detector 1 Position(ft)	-5		0	0	0	
Detector 1 Size(ft)	40		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	23.0		23.0	23.0	23.0	
Total Split (s)	30.0		60.0	60.0	60.0	
Total Split (%)	33.3%		66.7%	66.7%	66.7%	
Maximum Green (s)	25.0		55.0	55.0	55.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	

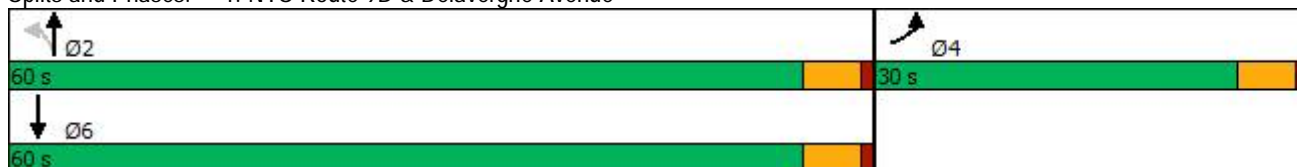


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		Max	Max	Max	
Walk Time (s)					7.0	
Flash Dont Walk (s)					11.0	
Pedestrian Calls (#/hr)					0	
v/c Ratio	0.69			0.44	0.37	
Control Delay	35.2			6.5	5.5	
Queue Delay	0.0			0.0	0.0	
Total Delay	35.2			6.5	5.5	
Queue Length 50th (ft)	64			86	60	
Queue Length 95th (ft)	129			190	138	
Internal Link Dist (ft)	238			963	244	
Turn Bay Length (ft)						
Base Capacity (vph)	555			1233	1205	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.35			0.44	0.37	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 76.7
 Natural Cycle: 50
 Control Type: Semi Act-Uncoord

Splits and Phases: 1: NYS Route 9D & Delavergne Avenue



2026 No-Build Traffic Volumes
1: NYS Route 9D & Delavergne Avenue

Weekday Peak AM Hour
01/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	95	90	90	429	336	86
Future Volume (veh/h)	95	90	90	429	336	86
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1813	1669	1687	1877	1731	1776
Adj Flow Rate, veh/h	100	95	95	452	354	91
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	14	14	6	11	8
Cap, veh/h	121	114	222	1028	961	247
Arrive On Green	0.15	0.15	0.72	0.72	0.72	0.72
Sat Flow, veh/h	831	790	231	1421	1328	341
Grp Volume(v), veh/h	196	0	547	0	0	445
Grp Sat Flow(s),veh/h/ln	1629	0	1651	0	0	1670
Q Serve(g_s), s	8.9	0.0	0.0	0.0	0.0	7.6
Cycle Q Clear(g_c), s	8.9	0.0	8.6	0.0	0.0	7.6
Prop In Lane	0.51	0.48	0.17			0.20
Lane Grp Cap(c), veh/h	236	0	1250	0	0	1208
V/C Ratio(X)	0.83	0.00	0.44	0.00	0.00	0.37
Avail Cap(c_a), veh/h	536	0	1250	0	0	1208
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	31.6	0.0	4.1	0.0	0.0	4.0
Incr Delay (d2), s/veh	2.9	0.0	1.1	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	2.3	0.0	0.0	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.5	0.0	5.2	0.0	0.0	4.8
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	196			547	445	
Approach Delay, s/veh	34.5			5.2	4.8	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		60.0		16.0		60.0
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		55.0		25.0		55.0
Max Q Clear Time (g_c+I1), s		10.6		10.9		9.6
Green Ext Time (p_c), s		0.7		0.3		0.5

Intersection Summary

HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

2026 No-Build Traffic Volumes
2: NYS Route 9D & Clinton Street

Weekday Peak AM Hour
01/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	28	27	498	395	31
Future Volume (vph)	24	28	27	498	395	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			3%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.928				0.990	
Flt Protected	0.977			0.997		
Satd. Flow (prot)	1338	0	0	1724	1783	0
Flt Permitted	0.977			0.997		
Satd. Flow (perm)	1338	0	0	1724	1783	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	904			139	1043	
Travel Time (s)	20.5			3.2	23.7	
Peak Hour Factor	0.62	0.62	0.95	0.95	0.83	0.83
Heavy Vehicles (%)	20%	34%	50%	6%	6%	6%
Adj. Flow (vph)	39	45	28	524	476	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	0	552	513	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection

Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	24	28	27	498	395	31
Future Vol, veh/h	24	28	27	498	395	31
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, %	2	-	-	3	-1	-
Peak Hour Factor	62	62	95	95	83	83
Heavy Vehicles, %	20	34	50	6	6	6
Mvmt Flow	39	45	28	524	476	37

Major/Minor

	Minor2	Major1		Major2		
Conflicting Flow All	1075	495	513	0	-	0
Stage 1	495	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Critical Hdwy	7	6.74	4.6	-	-	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.68	3.606	2.65	-	-	-
Pot Cap-1 Maneuver	199	501	847	-	-	-
Stage 1	546	-	-	-	-	-
Stage 2	493	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	190	501	847	-	-	-
Mov Cap-2 Maneuver	190	-	-	-	-	-
Stage 1	520	-	-	-	-	-
Stage 2	493	-	-	-	-	-

Approach

	EB	NB	SB
HCM Control Delay, s	22.8	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt

	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	847	-	285	-
HCM Lane V/C Ratio	0.034	-	0.294	-
HCM Control Delay (s)	9.4	0	22.8	-
HCM Lane LOS	A	A	C	-
HCM 95th %tile Q(veh)	0.1	-	1.2	-



Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	36	6	11	39	6	6
Future Volume (vph)	36	6	11	39	6	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%		-4%			0%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981		0.895			
Flt Protected	0.959					0.976
Satd. Flow (prot)	1262	0	1408	0	0	1854
Flt Permitted	0.959					0.976
Satd. Flow (perm)	1262	0	1408	0	0	1854
Link Speed (mph)	30		30			30
Link Distance (ft)	904		626			620
Travel Time (s)	20.5		14.2			14.1
Peak Hour Factor	0.59	0.59	0.80	0.80	0.88	0.88
Heavy Vehicles (%)	46%	0%	10%	27%	0%	0%
Adj. Flow (vph)	61	10	14	49	7	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	0	63	0	0	14
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.97	0.97	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	36	6	11	39	6	6
Future Vol, veh/h	36	6	11	39	6	6
Peak Hour Factor	0.59	0.59	0.80	0.80	0.88	0.88
Heavy Vehicles, %	46	0	10	27	0	0
Mvmt Flow	61	10	14	49	7	7
Number of Lanes	1	0	1	0	0	1

Approach	WB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	NE		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SW	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.5	7.1	7.3
HCM LOS	A	A	A

Lane	NELn1	WBLn1	SWLn1
Vol Left, %	0%	86%	50%
Vol Thru, %	22%	0%	50%
Vol Right, %	78%	14%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	50	42	12
LT Vol	0	36	6
Through Vol	11	0	6
RT Vol	39	6	0
Lane Flow Rate	62	71	14
Geometry Grp	1	1	1
Degree of Util (X)	0.065	0.097	0.016
Departure Headway (Hd)	3.736	4.901	4.173
Convergence, Y/N	Yes	Yes	Yes
Cap	947	732	848
Service Time	1.807	2.926	2.248
HCM Lane V/C Ratio	0.065	0.097	0.017
HCM Control Delay	7.1	8.5	7.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0.3	0

2026 No-Build Traffic Volumes
 4: Main Street /Channingville Road & Reed Avenue

Weekday Peak AM Hour
 01/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	0	0	126	169	4
Future Volume (vph)	8	0	0	126	169	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	9%			6%	-12%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.997	
Flt Protected	0.950					
Satd. Flow (prot)	1724	0	0	1722	1930	0
Flt Permitted	0.950					
Satd. Flow (perm)	1724	0	0	1722	1930	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	572			413	453	
Travel Time (s)	13.0			9.4	10.3	
Peak Hour Factor	0.67	0.67	0.68	0.68	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	7%	3%	50%
Adj. Flow (vph)	12	0	0	185	219	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	185	224	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	0.93	0.93
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	0	0	126	169	4
Future Vol, veh/h	8	0	0	126	169	4
Peak Hour Factor	0.67	0.67	0.68	0.68	0.77	0.77
Heavy Vehicles, %	0	0	0	7	3	50
Mvmt Flow	12	0	0	185	219	5
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.1	8.4	8.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	0%	100%	0%
Vol Thru, %	100%	0%	98%
Vol Right, %	0%	0%	2%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	126	8	173
LT Vol	0	8	0
Through Vol	126	0	169
RT Vol	0	0	4
Lane Flow Rate	185	12	225
Geometry Grp	1	1	1
Degree of Util (X)	0.217	0.017	0.256
Departure Headway (Hd)	4.208	4.987	4.097
Convergence, Y/N	Yes	Yes	Yes
Cap	847	722	869
Service Time	2.268	2.987	2.153
HCM Lane V/C Ratio	0.218	0.017	0.259
HCM Control Delay	8.4	8.1	8.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.8	0.1	1

2026 Build Traffic Volumes
1: NYS Route 9D & Delavergne Avenue

Weekday Peak AM Hour
01/25/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	90	90	436	338	94
Future Volume (vph)	120	90	90	436	338	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	16	12	12
Grade (%)	2%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.942				0.971	
Flt Protected	0.972			0.991		
Satd. Flow (prot)	1601	0	0	1978	1664	0
Flt Permitted	0.972			0.858		
Satd. Flow (perm)	1601	0	0	1712	1664	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	42				29	
Link Speed (mph)	30			40	40	
Link Distance (ft)	318			1043	324	
Travel Time (s)	7.2			17.8	5.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	14%	14%	6%	11%	8%
Adj. Flow (vph)	126	95	95	459	356	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	221	0	0	554	455	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	1.01	1.01	0.85	1.01	1.01
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	1	1	
Detector Template			Left			
Leading Detector (ft)	35		20	6	6	
Trailing Detector (ft)	-5		0	0	0	
Detector 1 Position(ft)	-5		0	0	0	
Detector 1 Size(ft)	40		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	23.0		23.0	23.0	23.0	
Total Split (s)	30.0		60.0	60.0	60.0	
Total Split (%)	33.3%		66.7%	66.7%	66.7%	
Maximum Green (s)	25.0		55.0	55.0	55.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	

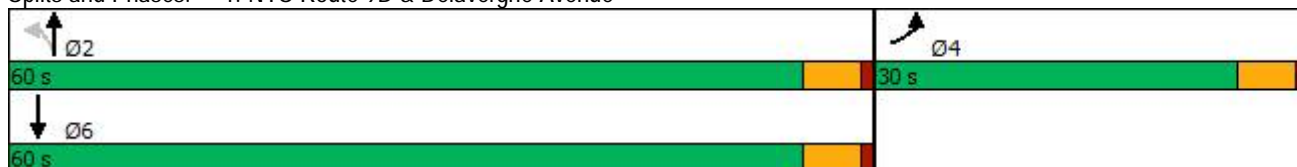


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		Max	Max	Max	
Walk Time (s)					7.0	
Flash Dont Walk (s)					11.0	
Pedestrian Calls (#/hr)					0	
v/c Ratio	0.72			0.46	0.39	
Control Delay	38.3			7.5	6.3	
Queue Delay	0.0			0.0	0.0	
Total Delay	38.3			7.5	6.3	
Queue Length 50th (ft)	83			99	69	
Queue Length 95th (ft)	154			215	157	
Internal Link Dist (ft)	238			963	244	
Turn Bay Length (ft)						
Base Capacity (vph)	539			1202	1177	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.41			0.46	0.39	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 78.6
 Natural Cycle: 50
 Control Type: Semi Act-Uncoord

Splits and Phases: 1: NYS Route 9D & Delavergne Avenue



2026 Build Traffic Volumes
1: NYS Route 9D & Delavergne Avenue

Weekday Peak AM Hour
01/25/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	120	90	90	436	338	94
Future Volume (veh/h)	120	90	90	436	338	94
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1813	1669	1687	1877	1731	1776
Adj Flow Rate, veh/h	126	95	95	459	356	99
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	14	14	6	11	8
Cap, veh/h	149	113	216	1012	926	257
Arrive On Green	0.16	0.16	0.71	0.71	0.71	0.71
Sat Flow, veh/h	931	702	227	1424	1303	362
Grp Volume(v), veh/h	222	0	554	0	0	455
Grp Sat Flow(s),veh/h/ln	1640	0	1651	0	0	1666
Q Serve(g_s), s	10.2	0.0	0.0	0.0	0.0	8.4
Cycle Q Clear(g_c), s	10.2	0.0	9.4	0.0	0.0	8.4
Prop In Lane	0.57	0.43	0.17			0.22
Lane Grp Cap(c), veh/h	263	0	1227	0	0	1183
V/C Ratio(X)	0.84	0.00	0.45	0.00	0.00	0.38
Avail Cap(c_a), veh/h	530	0	1227	0	0	1183
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	31.6	0.0	4.6	0.0	0.0	4.5
Incr Delay (d2), s/veh	2.9	0.0	1.2	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	2.7	0.0	0.0	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.4	0.0	5.8	0.0	0.0	5.4
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	222			554	455	
Approach Delay, s/veh	34.4			5.8	5.4	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		60.0		17.4		60.0
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		55.0		25.0		55.0
Max Q Clear Time (g_c+I1), s		11.4		12.2		10.4
Green Ext Time (p_c), s		0.7		0.3		0.5

Intersection Summary

HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	31	52	35	498	395	33
Future Volume (vph)	31	52	35	498	395	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			3%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.915				0.990	
Flt Protected	0.982			0.997		
Satd. Flow (prot)	1312	0	0	1713	1783	0
Flt Permitted	0.982			0.997		
Satd. Flow (perm)	1312	0	0	1713	1783	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	904			139	1043	
Travel Time (s)	20.5			3.2	23.7	
Peak Hour Factor	0.62	0.62	0.95	0.95	0.83	0.83
Heavy Vehicles (%)	20%	34%	50%	6%	6%	6%
Adj. Flow (vph)	50	84	37	524	476	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	134	0	0	561	516	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection

Int Delay, s/veh	3.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	31	52	35	498	395	33
Future Vol, veh/h	31	52	35	498	395	33
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, %	2	-	-	3	-1	-
Peak Hour Factor	62	62	95	95	83	83
Heavy Vehicles, %	20	34	50	6	6	6
Mvmt Flow	50	84	37	524	476	40

Major/Minor

	Minor2	Major1		Major2		
Conflicting Flow All	1094	496	516	0	-	0
Stage 1	496	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Critical Hdwy	7	6.74	4.6	-	-	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.68	3.606	2.65	-	-	-
Pot Cap-1 Maneuver	194	501	844	-	-	-
Stage 1	546	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	182	501	844	-	-	-
Mov Cap-2 Maneuver	182	-	-	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	483	-	-	-	-	-

Approach

	EB	NB	SB
HCM Control Delay, s	26	0.6	0
HCM LOS	D		

Minor Lane/Major Mvmt

	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	844	-	303	-
HCM Lane V/C Ratio	0.044	-	0.442	-
HCM Control Delay (s)	9.5	0	26	-
HCM Lane LOS	A	A	D	-
HCM 95th %tile Q(veh)	0.1	-	2.2	-



Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	46	6	39	71	6	16
Future Volume (vph)	46	6	39	71	6	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%		-4%			0%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.985		0.913			
Flt Protected	0.958					0.986
Satd. Flow (prot)	1255	0	1463	0	0	1873
Flt Permitted	0.958					0.986
Satd. Flow (perm)	1255	0	1463	0	0	1873
Link Speed (mph)	30		30			30
Link Distance (ft)	904		626			620
Travel Time (s)	20.5		14.2			14.1
Peak Hour Factor	0.59	0.59	0.80	0.80	0.88	0.88
Heavy Vehicles (%)	46%	0%	10%	27%	0%	0%
Adj. Flow (vph)	78	10	49	89	7	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	0	138	0	0	25
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.97	0.97	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	46	6	39	71	6	16
Future Vol, veh/h	46	6	39	71	6	16
Peak Hour Factor	0.59	0.59	0.80	0.80	0.88	0.88
Heavy Vehicles, %	46	0	10	27	0	0
Mvmt Flow	78	10	49	89	7	18
Number of Lanes	1	0	1	0	0	1

Approach	WB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	NE		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SW	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.9	7.6	7.5
HCM LOS	A	A	A

Lane	NELn1	WBLn1	SWLn1
Vol Left, %	0%	88%	27%
Vol Thru, %	35%	0%	73%
Vol Right, %	65%	12%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	110	52	22
LT Vol	0	46	6
Through Vol	39	0	16
RT Vol	71	6	0
Lane Flow Rate	138	88	25
Geometry Grp	1	1	1
Degree of Util (X)	0.147	0.124	0.03
Departure Headway (Hd)	3.855	5.071	4.329
Convergence, Y/N	Yes	Yes	Yes
Cap	913	702	832
Service Time	1.953	3.135	2.329
HCM Lane V/C Ratio	0.151	0.125	0.03
HCM Control Delay	7.6	8.9	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.4	0.1

2026 Build Traffic Volumes
 4: Main Street /Channingville Road & Reed Avenue

Weekday Peak AM Hour
 01/25/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	0	0	130	179	4
Future Volume (vph)	8	0	0	130	179	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	9%			6%	-12%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.997	
Flt Protected	0.950					
Satd. Flow (prot)	1724	0	0	1722	1931	0
Flt Permitted	0.950					
Satd. Flow (perm)	1724	0	0	1722	1931	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	572			413	453	
Travel Time (s)	13.0			9.4	10.3	
Peak Hour Factor	0.67	0.67	0.68	0.68	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	7%	3%	50%
Adj. Flow (vph)	12	0	0	191	232	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	191	237	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	0.93	0.93
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	0	0	130	179	4
Future Vol, veh/h	8	0	0	130	179	4
Peak Hour Factor	0.67	0.67	0.68	0.68	0.77	0.77
Heavy Vehicles, %	0	0	0	7	3	50
Mvmt Flow	12	0	0	191	232	5
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.1	8.5	8.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	0%	100%	0%
Vol Thru, %	100%	0%	98%
Vol Right, %	0%	0%	2%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	130	8	183
LT Vol	0	8	0
Through Vol	130	0	179
RT Vol	0	0	4
Lane Flow Rate	191	12	238
Geometry Grp	1	1	1
Degree of Util (X)	0.224	0.017	0.271
Departure Headway (Hd)	4.218	5.027	4.102
Convergence, Y/N	Yes	Yes	Yes
Cap	843	716	870
Service Time	2.28	3.027	2.16
HCM Lane V/C Ratio	0.227	0.017	0.274
HCM Control Delay	8.5	8.1	8.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.9	0.1	1.1



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	60	50	3	20	42
Future Volume (vph)	11	60	50	3	20	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		-1%			-2%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.886		0.993			
Flt Protected	0.992					0.984
Satd. Flow (prot)	1637	0	1859	0	0	1851
Flt Permitted	0.992					0.984
Satd. Flow (perm)	1637	0	1859	0	0	1851
Link Speed (mph)	30		30			30
Link Distance (ft)	271		250			586
Travel Time (s)	6.2		5.7			13.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	65	54	3	22	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	0	57	0	0	68
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.99	0.99	0.99	0.99
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	60	50	3	20	42
Future Vol, veh/h	11	60	50	3	20	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	65	54	3	22	46
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.1	7.4	7.6
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	15%	32%
Vol Thru, %	94%	0%	68%
Vol Right, %	6%	85%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	53	71	62
LT Vol	0	11	20
Through Vol	50	0	42
RT Vol	3	60	0
Lane Flow Rate	58	77	67
Geometry Grp	1	1	1
Degree of Util (X)	0.065	0.079	0.078
Departure Headway (Hd)	4.088	3.672	4.179
Convergence, Y/N	Yes	Yes	Yes
Cap	874	965	856
Service Time	2.123	1.733	2.211
HCM Lane V/C Ratio	0.066	0.08	0.078
HCM Control Delay	7.4	7.1	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0.3	0.3

2026 No-Build Traffic Volumes (W/ Improvements)
2: NYS Route 9D & Clinton Street

Weekday Peak AM Hour
01/20/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	28	27	498	395	31
Future Volume (vph)	24	28	27	498	395	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			3%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.928				0.990	
Flt Protected	0.977			0.997		
Satd. Flow (prot)	1338	0	0	1724	1783	0
Flt Permitted	0.977			0.967		
Satd. Flow (perm)	1338	0	0	1672	1783	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	45				7	
Link Speed (mph)	30			30	30	
Link Distance (ft)	904			139	1043	
Travel Time (s)	20.5			3.2	23.7	
Peak Hour Factor	0.62	0.62	0.95	0.95	0.83	0.83
Heavy Vehicles (%)	20%	34%	50%	6%	6%	6%
Adj. Flow (vph)	39	45	28	524	476	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	0	552	513	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	0.99	0.99
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	1	1	
Detector Template			Left			
Leading Detector (ft)	40		20	6	6	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	40		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	6.0		10.0	10.0	10.0	
Minimum Split (s)	11.0		15.0	15.0	15.0	
Total Split (s)	35.0		45.0	45.0	45.0	
Total Split (%)	43.8%		56.3%	56.3%	56.3%	
Maximum Green (s)	30.0		40.0	40.0	40.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	

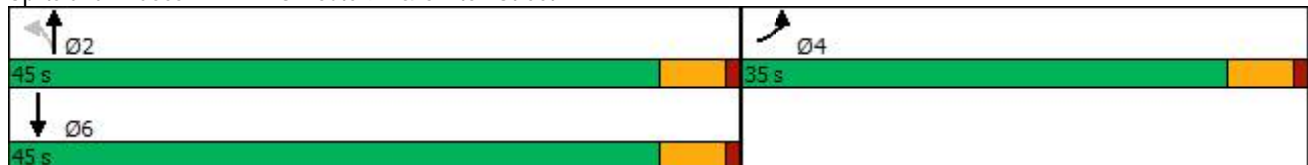


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		Max	Max	Max	
v/c Ratio	0.42			0.43	0.38	
Control Delay	19.7			5.0	4.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	19.7			5.0	4.4	
Queue Length 50th (ft)	12			58	50	
Queue Length 95th (ft)	26			135	100	
Internal Link Dist (ft)	824			59	963	
Turn Bay Length (ft)						
Base Capacity (vph)	711			1271	1357	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.12			0.43	0.38	

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 58.2
 Natural Cycle: 40
 Control Type: Semi Act-Uncoord

Splits and Phases: 2: NYS Route 9D & Clinton Street



2026 No-Build Traffic Volumes (W/ Improvements)
2: NYS Route 9D & Clinton Street

Weekday Peak AM Hour
01/20/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	28	27	498	395	31
Future Volume (veh/h)	24	28	27	498	395	31
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1580	1373	1106	1758	1849	1849
Adj Flow Rate, veh/h	39	45	28	524	476	37
Peak Hour Factor	0.62	0.62	0.95	0.95	0.83	0.83
Percent Heavy Veh, %	20	34	50	6	6	6
Cap, veh/h	52	60	97	1236	1247	97
Arrive On Green	0.08	0.08	0.74	0.74	0.74	0.74
Sat Flow, veh/h	648	748	37	1679	1694	132
Grp Volume(v), veh/h	85	0	552	0	0	513
Grp Sat Flow(s),veh/h/ln	1413	0	1717	0	0	1826
Q Serve(g_s), s	3.2	0.0	0.0	0.0	0.0	5.6
Cycle Q Clear(g_c), s	3.2	0.0	6.6	0.0	0.0	5.6
Prop In Lane	0.46	0.53	0.05			0.07
Lane Grp Cap(c), veh/h	113	0	1333	0	0	1344
V/C Ratio(X)	0.75	0.00	0.41	0.00	0.00	0.38
Avail Cap(c_a), veh/h	780	0	1333	0	0	1344
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	24.5	0.0	2.8	0.0	0.0	2.6
Incr Delay (d2), s/veh	3.8	0.0	1.0	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.2	0.0	0.0	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.3	0.0	3.7	0.0	0.0	3.5
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	85			552	513	
Approach Delay, s/veh	28.3			3.7	3.5	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		45.0		9.3		45.0
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		40.0		30.0		40.0
Max Q Clear Time (g_c+I1), s		8.6		5.2		7.6
Green Ext Time (p_c), s		0.7		0.1		0.6

Intersection Summary

HCM 6th Ctrl Delay	5.4
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

2026 Build Traffic Volumes (W/ Improvements)
2: NYS Route 9D & Clinton Street

Weekday Peak AM Hour
01/20/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	31	52	35	498	395	33
Future Volume (vph)	31	52	35	498	395	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			3%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.915				0.990	
Flt Protected	0.982			0.997		
Satd. Flow (prot)	1312	0	0	1713	1783	0
Flt Permitted	0.982			0.953		
Satd. Flow (perm)	1312	0	0	1638	1783	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	84				8	
Link Speed (mph)	30			30	30	
Link Distance (ft)	904			139	1043	
Travel Time (s)	20.5			3.2	23.7	
Peak Hour Factor	0.62	0.62	0.95	0.95	0.83	0.83
Heavy Vehicles (%)	20%	34%	50%	6%	6%	6%
Adj. Flow (vph)	50	84	37	524	476	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	134	0	0	561	516	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	0.99	0.99
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	1	1	
Detector Template			Left			
Leading Detector (ft)	40		20	6	6	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	40		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	6.0		10.0	10.0	10.0	
Minimum Split (s)	11.0		15.0	15.0	15.0	
Total Split (s)	35.0		45.0	45.0	45.0	
Total Split (%)	43.8%		56.3%	56.3%	56.3%	
Maximum Green (s)	30.0		40.0	40.0	40.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	

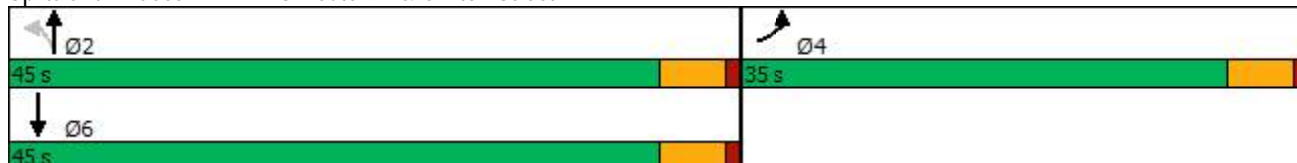


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		Max	Max	Max	
v/c Ratio	0.54			0.46	0.39	
Control Delay	19.2			5.8	4.9	
Queue Delay	0.0			0.0	0.0	
Total Delay	19.2			5.8	4.9	
Queue Length 50th (ft)	16			63	53	
Queue Length 95th (ft)	29			161	115	
Internal Link Dist (ft)	824			59	963	
Turn Bay Length (ft)						
Base Capacity (vph)	713			1228	1338	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.19			0.46	0.39	

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 58.6
 Natural Cycle: 40
 Control Type: Semi Act-Uncoord

Splits and Phases: 2: NYS Route 9D & Clinton Street



2026 Build Traffic Volumes (W/ Improvements)
2: NYS Route 9D & Clinton Street

Weekday Peak AM Hour
01/20/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	52	35	498	395	33
Future Volume (veh/h)	31	52	35	498	395	33
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1580	1373	1106	1758	1849	1849
Adj Flow Rate, veh/h	50	84	37	524	476	40
Peak Hour Factor	0.62	0.62	0.95	0.95	0.83	0.83
Percent Heavy Veh, %	20	34	50	6	6	6
Cap, veh/h	61	103	106	1158	1187	100
Arrive On Green	0.12	0.12	0.71	0.71	0.71	0.71
Sat Flow, veh/h	518	870	55	1642	1682	141
Grp Volume(v), veh/h	135	0	561	0	0	516
Grp Sat Flow(s),veh/h/ln	1398	0	1697	0	0	1824
Q Serve(g_s), s	5.3	0.0	0.0	0.0	0.0	6.6
Cycle Q Clear(g_c), s	5.3	0.0	7.8	0.0	0.0	6.6
Prop In Lane	0.37	0.62	0.07			0.08
Lane Grp Cap(c), veh/h	165	0	1265	0	0	1287
V/C Ratio(X)	0.82	0.00	0.44	0.00	0.00	0.40
Avail Cap(c_a), veh/h	739	0	1265	0	0	1287
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	3.6	0.0	0.0	3.4
Incr Delay (d2), s/veh	3.7	0.0	1.1	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	1.8	0.0	0.0	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.1	0.0	4.7	0.0	0.0	4.4
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	135			561	516	
Approach Delay, s/veh	28.1			4.7	4.4	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		45.0		11.7		45.0
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		40.0		30.0		40.0
Max Q Clear Time (g_c+I1), s		9.8		7.3		8.6
Green Ext Time (p_c), s		0.7		0.3		0.6

Intersection Summary

HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

2023 Existing Traffic Volumes
1: NYS Route 9D & Delavergne Avenue

Weekday Peak PM Hour
01/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	106	63	71	485	674	66
Future Volume (vph)	106	63	71	485	674	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	16	12	12
Grade (%)	2%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.950				0.988	
Fl _t Protected	0.970			0.994		
Satd. Flow (prot)	1756	0	0	2088	1831	0
Fl _t Permitted	0.970			0.839		
Satd. Flow (perm)	1756	0	0	1762	1831	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	33				10	
Link Speed (mph)	30			40	40	
Link Distance (ft)	318			1043	324	
Travel Time (s)	7.2			17.8	5.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	113	67	76	516	717	70
Shared Lane Traffic (%)						
Lane Group Flow (vph)	180	0	0	592	787	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	1.01	1.01	0.85	1.01	1.01
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	1	1	
Detector Template			Left			
Leading Detector (ft)	35		20	6	6	
Trailing Detector (ft)	-5		0	0	0	
Detector 1 Position(ft)	-5		0	0	0	
Detector 1 Size(ft)	40		20	6	6	
Detector 1 Type	CI+Ex		CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	23.0		23.0	23.0	23.0	
Total Split (s)	30.0		60.0	60.0	60.0	
Total Split (%)	33.3%		66.7%	66.7%	66.7%	
Maximum Green (s)	25.0		55.0	55.0	55.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	

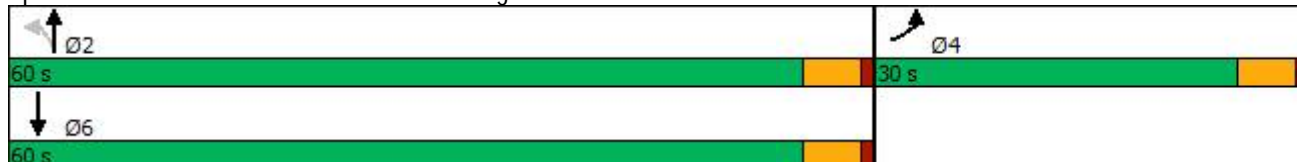


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		Max	Max	Max	
Walk Time (s)					7.0	
Flash Dont Walk (s)					11.0	
Pedestrian Calls (#/hr)					0	
v/c Ratio	0.65			0.46	0.59	
Control Delay	35.9			6.3	7.9	
Queue Delay	0.0			0.0	0.0	
Total Delay	35.9			6.3	7.9	
Queue Length 50th (ft)	66			92	139	
Queue Length 95th (ft)	127			194	297	
Internal Link Dist (ft)	238			963	244	
Turn Bay Length (ft)						
Base Capacity (vph)	600			1278	1330	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.30			0.46	0.59	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	76
Natural Cycle:	60
Control Type:	Semi Act-Uncoord

Splits and Phases: 1: NYS Route 9D & Delavergne Avenue



2023 Existing Traffic Volumes
1: NYS Route 9D & Delavergne Avenue

Weekday Peak PM Hour
01/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	106	63	71	485	674	66
Future Volume (veh/h)	106	63	71	485	674	66
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1921	1847	1864	1939	1864	1864
Adj Flow Rate, veh/h	113	67	76	516	717	70
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	140	83	165	1094	1233	120
Arrive On Green	0.13	0.13	0.74	0.74	0.74	0.74
Sat Flow, veh/h	1092	648	149	1483	1672	163
Grp Volume(v), veh/h	181	0	592	0	0	787
Grp Sat Flow(s),veh/h/ln	1749	0	1632	0	0	1835
Q Serve(g_s), s	7.5	0.0	0.8	0.0	0.0	14.7
Cycle Q Clear(g_c), s	7.5	0.0	15.5	0.0	0.0	14.7
Prop In Lane	0.62	0.37	0.13			0.09
Lane Grp Cap(c), veh/h	224	0	1259	0	0	1354
V/C Ratio(X)	0.81	0.00	0.47	0.00	0.00	0.58
Avail Cap(c_a), veh/h	587	0	1259	0	0	1354
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	31.6	0.0	3.7	0.0	0.0	4.5
Incr Delay (d2), s/veh	2.6	0.0	1.3	0.0	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	2.2	0.0	0.0	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.2	0.0	5.0	0.0	0.0	6.3
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	181			592	787	
Approach Delay, s/veh	34.2			5.0	6.3	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		60.0		14.6		60.0
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		55.0		25.0		55.0
Max Q Clear Time (g_c+I1), s		17.5		9.5		16.7
Green Ext Time (p_c), s		0.9		0.3		0.9

Intersection Summary

HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	28	30	535	698	40
Future Volume (vph)	21	28	30	535	698	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			3%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.923				0.993	
Flt Protected	0.979			0.997		
Satd. Flow (prot)	1666	0	0	1825	1842	0
Flt Permitted	0.979			0.997		
Satd. Flow (perm)	1666	0	0	1825	1842	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	904			139	1043	
Travel Time (s)	20.5			3.2	23.7	
Peak Hour Factor	0.87	0.87	0.97	0.97	0.89	0.89
Heavy Vehicles (%)	2%	2%	6%	2%	3%	2%
Adj. Flow (vph)	24	32	31	552	784	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	0	0	583	829	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection

Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	21	28	30	535	698	40
Future Vol, veh/h	21	28	30	535	698	40
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, %	2	-	-	3	-1	-
Peak Hour Factor	87	87	97	97	89	89
Heavy Vehicles, %	2	2	6	2	3	2
Mvmt Flow	24	32	31	552	784	45

Major/Minor

	Minor2	Major1		Major2		
Conflicting Flow All	1421	807	829	0	-	0
Stage 1	807	-	-	-	-	-
Stage 2	614	-	-	-	-	-
Critical Hdwy	6.82	6.42	4.16	-	-	-
Critical Hdwy Stg 1	5.82	-	-	-	-	-
Critical Hdwy Stg 2	5.82	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.254	-	-	-
Pot Cap-1 Maneuver	128	365	786	-	-	-
Stage 1	401	-	-	-	-	-
Stage 2	504	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	365	786	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	378	-	-	-	-	-
Stage 2	504	-	-	-	-	-

Approach

	EB	NB	SB
HCM Control Delay, s	30.6	0.5	0
HCM LOS	D		

Minor Lane/Major Mvmt

	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	786	-	196	-
HCM Lane V/C Ratio	0.039	-	0.287	-
HCM Control Delay (s)	9.8	0	30.6	-
HCM Lane LOS	A	A	D	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-



Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	61	14	29	48	8	9
Future Volume (vph)	61	14	29	48	8	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%		-4%			0%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.975		0.916			
Flt Protected	0.961					0.977
Satd. Flow (prot)	1698	0	1699	0	0	1856
Flt Permitted	0.961					0.977
Satd. Flow (perm)	1698	0	1699	0	0	1856
Link Speed (mph)	30		30			30
Link Distance (ft)	904		626			620
Travel Time (s)	20.5		14.2			14.1
Peak Hour Factor	0.82	0.82	0.66	0.66	0.61	0.61
Heavy Vehicles (%)	4%	0%	2%	6%	0%	0%
Adj. Flow (vph)	74	17	44	73	13	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	91	0	117	0	0	28
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.97	0.97	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	61	14	29	48	8	9
Future Vol, veh/h	61	14	29	48	8	9
Peak Hour Factor	0.82	0.82	0.66	0.66	0.61	0.61
Heavy Vehicles, %	4	0	2	6	0	0
Mvmt Flow	74	17	44	73	13	15
Number of Lanes	1	0	1	0	0	1

Approach	WB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	NE		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SW	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.8	7.3	7.5
HCM LOS	A	A	A

Lane	NELn1	WBLn1	SWLn1
Vol Left, %	0%	81%	47%
Vol Thru, %	38%	0%	53%
Vol Right, %	62%	19%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	77	75	17
LT Vol	0	61	8
Through Vol	29	0	9
RT Vol	48	14	0
Lane Flow Rate	117	91	28
Geometry Grp	1	1	1
Degree of Util (X)	0.121	0.108	0.033
Departure Headway (Hd)	3.741	4.269	4.244
Convergence, Y/N	Yes	Yes	Yes
Cap	948	835	835
Service Time	1.801	2.317	2.314
HCM Lane V/C Ratio	0.123	0.109	0.034
HCM Control Delay	7.3	7.8	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.4	0.1

2023 Existing Traffic Volumes
 4: Main Street /Channingville Road & Reed Avenue

Weekday Peak PM Hour
 01/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	1	2	204	153	7
Future Volume (vph)	15	1	2	204	153	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	9%			6%	-12%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.994	
Flt Protected	0.954					
Satd. Flow (prot)	1721	0	0	1807	1964	0
Flt Permitted	0.954					
Satd. Flow (perm)	1721	0	0	1807	1964	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	572			413	453	
Travel Time (s)	13.0			9.4	10.3	
Peak Hour Factor	0.67	0.67	0.87	0.87	0.78	0.78
Heavy Vehicles (%)	0%	0%	0%	2%	2%	0%
Adj. Flow (vph)	22	1	2	234	196	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	23	0	0	236	205	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	0.93	0.93
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	1	2	204	153	7
Future Vol, veh/h	15	1	2	204	153	7
Peak Hour Factor	0.67	0.67	0.87	0.87	0.78	0.78
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	22	1	2	234	196	9
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.2	8.7	8.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	1%	94%	0%
Vol Thru, %	99%	0%	96%
Vol Right, %	0%	6%	4%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	206	16	160
LT Vol	2	15	0
Through Vol	204	0	153
RT Vol	0	1	7
Lane Flow Rate	237	24	205
Geometry Grp	1	1	1
Degree of Util (X)	0.269	0.033	0.235
Departure Headway (Hd)	4.096	4.992	4.126
Convergence, Y/N	Yes	Yes	Yes
Cap	867	721	859
Service Time	2.166	2.992	2.201
HCM Lane V/C Ratio	0.273	0.033	0.239
HCM Control Delay	8.7	8.2	8.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.1	0.1	0.9

2026 No-Build Traffic Volumes
1: NYS Route 9D & Delavergne Avenue

Weekday Peak PM Hour
01/24/2023



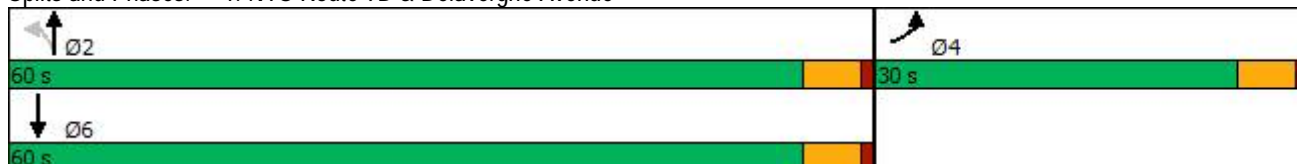
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	112	67	75	514	714	70
Future Volume (vph)	112	67	75	514	714	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	16	12	12
Grade (%)	2%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.950			0.988		
Fl _t Protected	0.970			0.994		
Satd. Flow (prot)	1756	0	0	2088	1831	0
Fl _t Permitted	0.970			0.801		
Satd. Flow (perm)	1756	0	0	1683	1831	0
Right Turn on Red	Yes			Yes		
Satd. Flow (RTOR)	33			10		
Link Speed (mph)	30			40	40	
Link Distance (ft)	318			1043	324	
Travel Time (s)	7.2			17.8	5.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	119	71	80	547	760	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	190	0	0	627	834	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	1.01	1.01	0.85	1.01	1.01
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		1	1	
Detector Template	Left					
Leading Detector (ft)	35		20	6	6	
Trailing Detector (ft)	-5		0	0	0	
Detector 1 Position(ft)	-5		0	0	0	
Detector 1 Size(ft)	40		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4		2		6	
Permitted Phases	2					
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	23.0		23.0	23.0	23.0	
Total Split (s)	30.0		60.0	60.0	60.0	
Total Split (%)	33.3%		66.7%	66.7%	66.7%	
Maximum Green (s)	25.0		55.0	55.0	55.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0		0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		Max	Max	Max	
Walk Time (s)					7.0	
Flash Dont Walk (s)					11.0	
Pedestrian Calls (#/hr)					0	
v/c Ratio	0.66			0.52	0.63	
Control Delay	36.4			7.3	8.8	
Queue Delay	0.0			0.0	0.0	
Total Delay	36.4			7.3	8.8	
Queue Length 50th (ft)	71			106	161	
Queue Length 95th (ft)	134			228	342	
Internal Link Dist (ft)	238			963	244	
Turn Bay Length (ft)						
Base Capacity (vph)	597			1212	1322	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.32			0.52	0.63	

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	76.5
Natural Cycle:	65
Control Type:	Semi Act-Uncoord

Splits and Phases: 1: NYS Route 9D & Delavergne Avenue



2026 No-Build Traffic Volumes
1: NYS Route 9D & Delavergne Avenue

Weekday Peak PM Hour
01/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	112	67	75	514	714	70
Future Volume (veh/h)	112	67	75	514	714	70
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1921	1847	1864	1939	1864	1864
Adj Flow Rate, veh/h	119	71	80	547	760	74
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	146	87	156	1043	1225	119
Arrive On Green	0.13	0.13	0.73	0.73	0.73	0.73
Sat Flow, veh/h	1090	650	139	1424	1672	163
Grp Volume(v), veh/h	191	0	627	0	0	834
Grp Sat Flow(s),veh/h/ln	1749	0	1564	0	0	1835
Q Serve(g_s), s	8.0	0.0	2.2	0.0	0.0	16.7
Cycle Q Clear(g_c), s	8.0	0.0	19.0	0.0	0.0	16.7
Prop In Lane	0.62	0.37	0.13			0.09
Lane Grp Cap(c), veh/h	235	0	1200	0	0	1344
V/C Ratio(X)	0.81	0.00	0.52	0.00	0.00	0.62
Avail Cap(c_a), veh/h	582	0	1200	0	0	1344
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	31.6	0.0	4.1	0.0	0.0	4.9
Incr Delay (d2), s/veh	2.6	0.0	1.6	0.0	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	2.6	0.0	0.0	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.2	0.0	5.7	0.0	0.0	7.1
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	191			627	834	
Approach Delay, s/veh	34.2			5.7	7.1	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		60.0		15.1		60.0
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		55.0		25.0		55.0
Max Q Clear Time (g_c+I1), s		21.0		10.0		18.7
Green Ext Time (p_c), s		1.0		0.3		1.0

Intersection Summary

HCM 6th Ctrl Delay	9.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

2026 No-Build Traffic Volumes
2: NYS Route 9D & Clinton Street

Weekday Peak PM Hour
01/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	30	32	567	740	42
Future Volume (vph)	22	30	32	567	740	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			3%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.922				0.993	
Flt Protected	0.979			0.997		
Satd. Flow (prot)	1665	0	0	1825	1842	0
Flt Permitted	0.979			0.997		
Satd. Flow (perm)	1665	0	0	1825	1842	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	904			139	1043	
Travel Time (s)	20.5			3.2	23.7	
Peak Hour Factor	0.87	0.87	0.97	0.97	0.89	0.89
Heavy Vehicles (%)	2%	2%	6%	2%	3%	2%
Adj. Flow (vph)	25	34	33	585	831	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	0	618	878	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	22	30	32	567	740	42
Future Vol, veh/h	22	30	32	567	740	42
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, %	2	-	-	3	-1	-
Peak Hour Factor	87	87	97	97	89	89
Heavy Vehicles, %	2	2	6	2	3	2
Mvmt Flow	25	34	33	585	831	47

Major/Minor

	Minor2	Major1	Major2		
Conflicting Flow All	1506	855	878	0	0
Stage 1	855	-	-	-	-
Stage 2	651	-	-	-	-
Critical Hdwy	6.82	6.42	4.16	-	-
Critical Hdwy Stg 1	5.82	-	-	-	-
Critical Hdwy Stg 2	5.82	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.254	-	-
Pot Cap-1 Maneuver	113	341	753	-	-
Stage 1	379	-	-	-	-
Stage 2	483	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	106	341	753	-	-
Mov Cap-2 Maneuver	106	-	-	-	-
Stage 1	354	-	-	-	-
Stage 2	483	-	-	-	-

Approach

	EB	NB	SB
HCM Control Delay, s	35.6	0.5	0
HCM LOS	E		

Minor Lane/Major Mvmt

	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	753	-	176	-
HCM Lane V/C Ratio	0.044	-	0.34	-
HCM Control Delay (s)	10	0	35.6	-
HCM Lane LOS	B	A	E	-
HCM 95th %tile Q(veh)	0.1	-	1.4	-






Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	65	15	31	51	8	10
Future Volume (vph)	65	15	31	51	8	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%		-4%			0%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.975		0.916			
Flt Protected	0.961					0.978
Satd. Flow (prot)	1698	0	1699	0	0	1858
Flt Permitted	0.961					0.978
Satd. Flow (perm)	1698	0	1699	0	0	1858
Link Speed (mph)	30		30			30
Link Distance (ft)	904		626			620
Travel Time (s)	20.5		14.2			14.1
Peak Hour Factor	0.82	0.82	0.66	0.66	0.61	0.61
Heavy Vehicles (%)	4%	0%	2%	6%	0%	0%
Adj. Flow (vph)	79	18	47	77	13	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	97	0	124	0	0	29
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.97	0.97	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	65	15	31	51	8	10
Future Vol, veh/h	65	15	31	51	8	10
Peak Hour Factor	0.82	0.82	0.66	0.66	0.61	0.61
Heavy Vehicles, %	4	0	2	6	0	0
Mvmt Flow	79	18	47	77	13	16
Number of Lanes	1	0	1	0	0	1

Approach	WB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	NE		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SW	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.9	7.4	7.5
HCM LOS	A	A	A

Lane	NELn1	WBLn1	SWLn1
Vol Left, %	0%	81%	44%
Vol Thru, %	38%	0%	56%
Vol Right, %	62%	19%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	82	80	18
LT Vol	0	65	8
Through Vol	31	0	10
RT Vol	51	15	0
Lane Flow Rate	124	98	30
Geometry Grp	1	1	1
Degree of Util (X)	0.13	0.116	0.035
Departure Headway (Hd)	3.754	4.282	4.256
Convergence, Y/N	Yes	Yes	Yes
Cap	944	831	831
Service Time	1.82	2.337	2.333
HCM Lane V/C Ratio	0.131	0.118	0.036
HCM Control Delay	7.4	7.9	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.4	0.1

2026 No-Build Traffic Volumes
 4: Main Street /Channingville Road & Reed Avenue

Weekday Peak PM Hour
 01/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	1	2	216	162	7
Future Volume (vph)	16	1	2	216	162	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	9%			6%	-12%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.994	
Flt Protected	0.954					
Satd. Flow (prot)	1722	0	0	1807	1964	0
Flt Permitted	0.954					
Satd. Flow (perm)	1722	0	0	1807	1964	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	572			413	453	
Travel Time (s)	13.0			9.4	10.3	
Peak Hour Factor	0.67	0.67	0.87	0.87	0.78	0.78
Heavy Vehicles (%)	0%	0%	0%	2%	2%	0%
Adj. Flow (vph)	24	1	2	248	208	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	0	0	250	217	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	0.93	0.93
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	1	2	216	162	7
Future Vol, veh/h	16	1	2	216	162	7
Peak Hour Factor	0.67	0.67	0.87	0.87	0.78	0.78
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	24	1	2	248	208	9
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.2	8.9	8.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	1%	94%	0%
Vol Thru, %	99%	0%	96%
Vol Right, %	0%	6%	4%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	218	17	169
LT Vol	2	16	0
Through Vol	216	0	162
RT Vol	0	1	7
Lane Flow Rate	251	25	217
Geometry Grp	1	1	1
Degree of Util (X)	0.286	0.036	0.249
Departure Headway (Hd)	4.11	5.05	4.142
Convergence, Y/N	Yes	Yes	Yes
Cap	864	713	856
Service Time	2.184	3.05	2.223
HCM Lane V/C Ratio	0.291	0.035	0.254
HCM Control Delay	8.9	8.2	8.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.2	0.1	1

2026 Build Traffic Volumes
1: NYS Route 9D & Delavergne Avenue

Weekday Peak PM Hour
01/24/2023



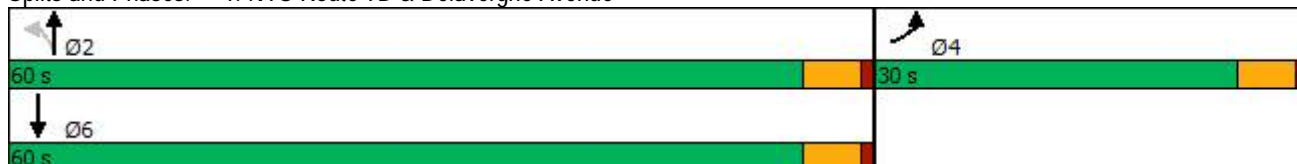
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	127	67	75	518	722	95
Future Volume (vph)	127	67	75	518	722	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	16	12	12
Grade (%)	2%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.953				0.984	
Fl _t Protected	0.968			0.994		
Satd. Flow (prot)	1758	0	0	2088	1824	0
Fl _t Permitted	0.968			0.760		
Satd. Flow (perm)	1758	0	0	1596	1824	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	29				14	
Link Speed (mph)	30			40	40	
Link Distance (ft)	318			1043	324	
Travel Time (s)	7.2			17.8	5.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	135	71	80	551	768	101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	206	0	0	631	869	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	1.01	1.01	0.85	1.01	1.01
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	1	1	
Detector Template			Left			
Leading Detector (ft)	35		20	6	6	
Trailing Detector (ft)	-5		0	0	0	
Detector 1 Position(ft)	-5		0	0	0	
Detector 1 Size(ft)	40		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	23.0		23.0	23.0	23.0	
Total Split (s)	30.0		60.0	60.0	60.0	
Total Split (%)	33.3%		66.7%	66.7%	66.7%	
Maximum Green (s)	25.0		55.0	55.0	55.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		Max	Max	Max	
Walk Time (s)					7.0	
Flash Dont Walk (s)					11.0	
Pedestrian Calls (#/hr)					0	
v/c Ratio	0.68			0.56	0.67	
Control Delay	37.9			8.4	10.0	
Queue Delay	0.0			0.0	0.0	
Total Delay	37.9			8.4	10.0	
Queue Length 50th (ft)	81			118	183	
Queue Length 95th (ft)	148			257	394	
Internal Link Dist (ft)	238			963	244	
Turn Bay Length (ft)						
Base Capacity (vph)	588			1136	1303	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.35			0.56	0.67	

Intersection Summary
 Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 77.4
 Natural Cycle: 65
 Control Type: Semi Act-Uncoord

Splits and Phases: 1: NYS Route 9D & Delavergne Avenue



2026 Build Traffic Volumes
1: NYS Route 9D & Delavergne Avenue

Weekday Peak PM Hour
01/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	127	67	75	518	722	95
Future Volume (veh/h)	127	67	75	518	722	95
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1921	1847	1864	1939	1864	1864
Adj Flow Rate, veh/h	135	71	80	551	768	101
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	164	86	147	990	1170	154
Arrive On Green	0.14	0.14	0.72	0.72	0.72	0.72
Sat Flow, veh/h	1145	602	129	1365	1614	212
Grp Volume(v), veh/h	207	0	631	0	0	869
Grp Sat Flow(s),veh/h/ln	1755	0	1495	0	0	1826
Q Serve(g_s), s	8.7	0.0	3.8	0.0	0.0	18.9
Cycle Q Clear(g_c), s	8.7	0.0	22.7	0.0	0.0	18.9
Prop In Lane	0.65	0.34	0.13			0.12
Lane Grp Cap(c), veh/h	252	0	1137	0	0	1324
V/C Ratio(X)	0.82	0.00	0.56	0.00	0.00	0.66
Avail Cap(c_a), veh/h	578	0	1137	0	0	1324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	31.6	0.0	4.6	0.0	0.0	5.5
Incr Delay (d2), s/veh	2.6	0.0	2.0	0.0	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	2.9	0.0	0.0	5.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.2	0.0	6.5	0.0	0.0	8.0
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	207			631	869	
Approach Delay, s/veh	34.2			6.5	8.0	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		60.0		15.9		60.0
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		55.0		25.0		55.0
Max Q Clear Time (g_c+I1), s		24.7		10.7		20.9
Green Ext Time (p_c), s		1.0		0.3		1.1

Intersection Summary

HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	45	57	567	740	50
Future Volume (vph)	27	45	57	567	740	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			3%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.915				0.991	
Flt Protected	0.982			0.995		
Satd. Flow (prot)	1657	0	0	1819	1838	0
Flt Permitted	0.982			0.995		
Satd. Flow (perm)	1657	0	0	1819	1838	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	904			139	1043	
Travel Time (s)	20.5			3.2	23.7	
Peak Hour Factor	0.87	0.87	0.97	0.97	0.89	0.89
Heavy Vehicles (%)	2%	2%	6%	2%	3%	2%
Adj. Flow (vph)	31	52	59	585	831	56
Shared Lane Traffic (%)						
Lane Group Flow (vph)	83	0	0	644	887	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	0.99	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	27	45	57	567	740	50
Future Vol, veh/h	27	45	57	567	740	50
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, %	2	-	-	3	-1	-
Peak Hour Factor	87	87	97	97	89	89
Heavy Vehicles, %	2	2	6	2	3	2
Mvmt Flow	31	52	59	585	831	56

Major/Minor

	Minor2	Major1	Major2		
Conflicting Flow All	1562	859	887	0	0
Stage 1	859	-	-	-	-
Stage 2	703	-	-	-	-
Critical Hdwy	6.82	6.42	4.16	-	-
Critical Hdwy Stg 1	5.82	-	-	-	-
Critical Hdwy Stg 2	5.82	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.254	-	-
Pot Cap-1 Maneuver	104	339	747	-	-
Stage 1	377	-	-	-	-
Stage 2	454	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	92	339	747	-	-
Mov Cap-2 Maneuver	92	-	-	-	-
Stage 1	333	-	-	-	-
Stage 2	454	-	-	-	-

Approach

	EB	NB	SB
HCM Control Delay, s	45.2	0.9	0
HCM LOS	E		

Minor Lane/Major Mvmt

	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	747	-	169	-
HCM Lane V/C Ratio	0.079	-	0.49	-
HCM Control Delay (s)	10.2	0	45.2	-
HCM Lane LOS	B	A	E	-
HCM 95th %tile Q(veh)	0.3	-	2.4	-



Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	97	15	48	70	8	38
Future Volume (vph)	97	15	48	70	8	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	3%		-4%			0%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.982		0.920			
Flt Protected	0.958					0.991
Satd. Flow (prot)	1702	0	1708	0	0	1883
Flt Permitted	0.958					0.991
Satd. Flow (perm)	1702	0	1708	0	0	1883
Link Speed (mph)	30		30			30
Link Distance (ft)	904		626			620
Travel Time (s)	20.5		14.2			14.1
Peak Hour Factor	0.82	0.82	0.66	0.66	0.61	0.61
Heavy Vehicles (%)	4%	0%	2%	6%	0%	0%
Adj. Flow (vph)	118	18	73	106	13	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	136	0	179	0	0	75
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.02	1.02	0.97	0.97	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Stop			Stop

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	97	15	48	70	8	38
Future Vol, veh/h	97	15	48	70	8	38
Peak Hour Factor	0.82	0.82	0.66	0.66	0.61	0.61
Heavy Vehicles, %	4	0	2	6	0	0
Mvmt Flow	118	18	73	106	13	62
Number of Lanes	1	0	1	0	0	1

Approach	WB	NE	SW
Opposing Approach		SW	NE
Opposing Lanes	0	1	1
Conflicting Approach Left	NE		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SW	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.6	8	7.9
HCM LOS	A	A	A

Lane	NELn1	WBLn1	SWLn1
Vol Left, %	0%	87%	17%
Vol Thru, %	41%	0%	83%
Vol Right, %	59%	13%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	118	112	46
LT Vol	0	97	8
Through Vol	48	0	38
RT Vol	70	15	0
Lane Flow Rate	179	137	75
Geometry Grp	1	1	1
Degree of Util (X)	0.198	0.175	0.093
Departure Headway (Hd)	3.995	4.601	4.446
Convergence, Y/N	Yes	Yes	Yes
Cap	901	781	808
Service Time	2.006	2.617	2.46
HCM Lane V/C Ratio	0.199	0.175	0.093
HCM Control Delay	8	8.6	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.6	0.3

2026 Build Traffic Volumes
 4: Main Street /Channingville Road & Reed Avenue

Weekday Peak PM Hour
 01/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	1	2	227	169	7
Future Volume (vph)	16	1	2	227	169	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	9%			6%	-12%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.995	
Flt Protected	0.954					
Satd. Flow (prot)	1722	0	0	1807	1966	0
Flt Permitted	0.954					
Satd. Flow (perm)	1722	0	0	1807	1966	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	572			413	453	
Travel Time (s)	13.0			9.4	10.3	
Peak Hour Factor	0.67	0.67	0.87	0.87	0.78	0.78
Heavy Vehicles (%)	0%	0%	0%	2%	2%	0%
Adj. Flow (vph)	24	1	2	261	217	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	0	0	263	226	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	0.93	0.93
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	1	2	227	169	7
Future Vol, veh/h	16	1	2	227	169	7
Peak Hour Factor	0.67	0.67	0.87	0.87	0.78	0.78
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	24	1	2	261	217	9
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.3	9	8.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	1%	94%	0%
Vol Thru, %	99%	0%	96%
Vol Right, %	0%	6%	4%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	229	17	176
LT Vol	2	16	0
Through Vol	227	0	169
RT Vol	0	1	7
Lane Flow Rate	263	25	226
Geometry Grp	1	1	1
Degree of Util (X)	0.301	0.036	0.26
Departure Headway (Hd)	4.116	5.096	4.153
Convergence, Y/N	Yes	Yes	Yes
Cap	863	707	853
Service Time	2.193	3.096	2.236
HCM Lane V/C Ratio	0.305	0.035	0.265
HCM Control Delay	9	8.3	8.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.3	0.1	1



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	37	83	11	60	74
Future Volume (vph)	6	37	83	11	60	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		-1%			-2%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885		0.984			
Flt Protected	0.993					0.978
Satd. Flow (prot)	1637	0	1842	0	0	1840
Flt Permitted	0.993					0.978
Satd. Flow (perm)	1637	0	1842	0	0	1840
Link Speed (mph)	30		30			30
Link Distance (ft)	271		250			586
Travel Time (s)	6.2		5.7			13.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	40	90	12	65	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	102	0	0	145
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	0.99	0.99	0.99	0.99
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection

Int Delay, s/veh 3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			B
Traffic Vol, veh/h	6	37	83	11	60	74
Future Vol, veh/h	6	37	83	11	60	74
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	-	-1	-	-	-2
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	40	90	12	65	80

Major/Minor

	Minor1	Major1	Major2		
Conflicting Flow All	306	96	0	0	102
Stage 1	96	-	-	-	-
Stage 2	210	-	-	-	-
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	686	960	-	-	1490
Stage 1	928	-	-	-	-
Stage 2	825	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	654	960	-	-	1490
Mov Cap-2 Maneuver	654	-	-	-	-
Stage 1	928	-	-	-	-
Stage 2	787	-	-	-	-

Approach

	WB	NB	SB
HCM Control Delay, s	9.2	0	3.4
HCM LOS	A		

Minor Lane/Major Mvmt

	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	901	1490
HCM Lane V/C Ratio	-	-	0.052	0.044
HCM Control Delay (s)	-	-	9.2	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

2026 No-Build Traffic Volumes (W/ Improvements)
2: NYS Route 9D & Clinton Street

Weekday Peak PM Hour
01/20/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	30	32	567	740	42
Future Volume (vph)	22	30	32	567	740	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			3%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.922				0.993	
Flt Protected	0.979			0.997		
Satd. Flow (prot)	1665	0	0	1825	1842	0
Flt Permitted	0.979			0.939		
Satd. Flow (perm)	1665	0	0	1719	1842	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	34				5	
Link Speed (mph)	30			30	30	
Link Distance (ft)	904			139	1043	
Travel Time (s)	20.5			3.2	23.7	
Peak Hour Factor	0.87	0.87	0.97	0.97	0.89	0.89
Heavy Vehicles (%)	2%	2%	6%	2%	3%	2%
Adj. Flow (vph)	25	34	33	585	831	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	0	618	878	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	0.99	0.99
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	1	1	
Detector Template			Left			
Leading Detector (ft)	40		20	6	6	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	40		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	7			2	6	
Permitted Phases			2			
Detector Phase	7		2	2	6	
Switch Phase						
Minimum Initial (s)	6.0		10.0	10.0	10.0	
Minimum Split (s)	11.0		15.0	15.0	15.0	
Total Split (s)	35.0		45.0	45.0	45.0	
Total Split (%)	43.8%		56.3%	56.3%	56.3%	
Maximum Green (s)	30.0		40.0	40.0	40.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	

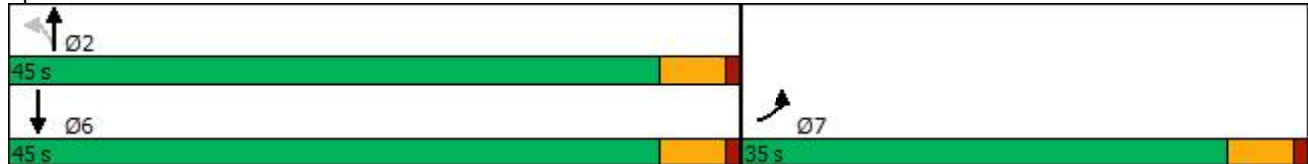


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		Max	Max	Max	
v/c Ratio	0.28			0.44	0.58	
Control Delay	16.7			4.2	5.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	16.7			4.2	5.6	
Queue Length 50th (ft)	8			67	116	
Queue Length 95th (ft)	34			135	232	
Internal Link Dist (ft)	824			59	963	
Turn Bay Length (ft)						
Base Capacity (vph)	878			1416	1519	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.07			0.44	0.58	

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 58
 Natural Cycle: 45
 Control Type: Semi Act-Uncoord

Splits and Phases: 2: NYS Route 9D & Clinton Street



2026 No-Build Traffic Volumes (W/ Improvements)
2: NYS Route 9D & Clinton Street

Weekday Peak PM Hour
01/20/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	30	32	567	740	42
Future Volume (veh/h)	22	30	32	567	740	42
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1847	1847	1758	1817	1894	1909
Adj Flow Rate, veh/h	25	34	33	585	831	47
Peak Hour Factor	0.87	0.87	0.97	0.97	0.89	0.89
Percent Heavy Veh, %	2	2	6	2	3	2
Cap, veh/h	45	62	102	1266	1327	75
Arrive On Green	0.07	0.07	0.75	0.75	0.75	0.75
Sat Flow, veh/h	685	932	42	1694	1776	100
Grp Volume(v), veh/h	60	0	618	0	0	878
Grp Sat Flow(s),veh/h/ln	1645	0	1736	0	0	1876
Q Serve(g_s), s	1.9	0.0	0.0	0.0	0.0	11.9
Cycle Q Clear(g_c), s	1.9	0.0	7.0	0.0	0.0	11.9
Prop In Lane	0.42	0.57	0.05			0.05
Lane Grp Cap(c), veh/h	109	0	1368	0	0	1402
V/C Ratio(X)	0.55	0.00	0.45	0.00	0.00	0.63
Avail Cap(c_a), veh/h	922	0	1368	0	0	1402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	24.2	0.0	2.6	0.0	0.0	3.2
Incr Delay (d2), s/veh	1.6	0.0	1.1	0.0	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.2	0.0	0.0	2.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.8	0.0	3.7	0.0	0.0	5.3
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	60			618	878	
Approach Delay, s/veh	25.8			3.7	5.3	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		45.0		8.5		45.0
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		40.0		30.0		40.0
Max Q Clear Time (g_c+I1), s		9.0		3.9		13.9
Green Ext Time (p_c), s		0.8		0.1		1.1

Intersection Summary

HCM 6th Ctrl Delay	5.5
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

2026 Build Traffic Volumes (W/ Improvements)
2: NYS Route 9D & Clinton Street

Weekday Peak PM Hour
01/20/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	45	57	567	740	50
Future Volume (vph)	27	45	57	567	740	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			3%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.915				0.991	
Flt Protected	0.982			0.995		
Satd. Flow (prot)	1657	0	0	1819	1838	0
Flt Permitted	0.982			0.879		
Satd. Flow (perm)	1657	0	0	1607	1838	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	52				6	
Link Speed (mph)	30			30	30	
Link Distance (ft)	904			139	1043	
Travel Time (s)	20.5			3.2	23.7	
Peak Hour Factor	0.87	0.87	0.97	0.97	0.89	0.89
Heavy Vehicles (%)	2%	2%	6%	2%	3%	2%
Adj. Flow (vph)	31	52	59	585	831	56
Shared Lane Traffic (%)						
Lane Group Flow (vph)	83	0	0	644	887	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	0.99	0.99
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	1	1	
Detector Template			Left			
Leading Detector (ft)	40		20	6	6	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	40		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	6.0		10.0	10.0	10.0	
Minimum Split (s)	11.0		15.0	15.0	15.0	
Total Split (s)	35.0		45.0	45.0	45.0	
Total Split (%)	43.8%		56.3%	56.3%	56.3%	
Maximum Green (s)	30.0		40.0	40.0	40.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	

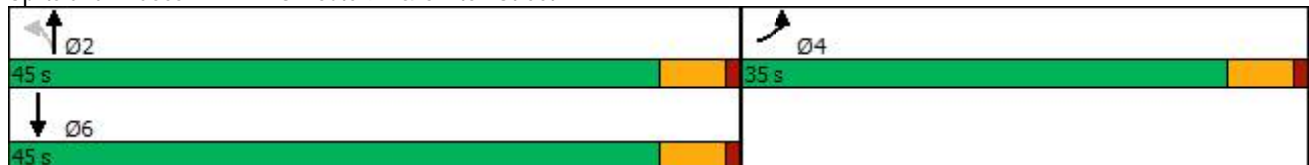


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		Max	Max	Max	
v/c Ratio	0.35			0.52	0.63	
Control Delay	16.3			5.8	7.0	
Queue Delay	0.0			0.0	0.0	
Total Delay	16.3			5.8	7.0	
Queue Length 50th (ft)	10			75	119	
Queue Length 95th (ft)	41			164	250	
Internal Link Dist (ft)	824			59	963	
Turn Bay Length (ft)						
Base Capacity (vph)	883			1232	1411	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.09			0.52	0.63	

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 57.9
 Natural Cycle: 50
 Control Type: Semi Act-Uncoord

Splits and Phases: 2: NYS Route 9D & Clinton Street



2026 Build Traffic Volumes (W/ Improvements)
2: NYS Route 9D & Clinton Street

Weekday Peak PM Hour
01/20/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	45	57	567	740	50
Future Volume (veh/h)	27	45	57	567	740	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1847	1847	1758	1817	1894	1909
Adj Flow Rate, veh/h	31	52	59	585	831	56
Peak Hour Factor	0.87	0.87	0.97	0.97	0.89	0.89
Percent Heavy Veh, %	2	2	6	2	3	2
Cap, veh/h	48	80	135	1153	1292	87
Arrive On Green	0.08	0.08	0.74	0.74	0.74	0.74
Sat Flow, veh/h	603	1012	85	1565	1755	118
Grp Volume(v), veh/h	84	0	644	0	0	887
Grp Sat Flow(s),veh/h/ln	1635	0	1649	0	0	1873
Q Serve(g_s), s	2.7	0.0	0.0	0.0	0.0	12.9
Cycle Q Clear(g_c), s	2.7	0.0	7.9	0.0	0.0	12.9
Prop In Lane	0.37	0.62	0.09			0.06
Lane Grp Cap(c), veh/h	130	0	1287	0	0	1379
V/C Ratio(X)	0.65	0.00	0.50	0.00	0.00	0.64
Avail Cap(c_a), veh/h	903	0	1287	0	0	1379
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	24.3	0.0	2.9	0.0	0.0	3.6
Incr Delay (d2), s/veh	2.0	0.0	1.4	0.0	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.6	0.0	0.0	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.3	0.0	4.3	0.0	0.0	5.9
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	84			644	887	
Approach Delay, s/veh	26.3			4.3	5.9	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		45.0		9.3		45.0
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		40.0		30.0		40.0
Max Q Clear Time (g_c+I1), s		9.9		4.7		14.9
Green Ext Time (p_c), s		1.0		0.1		1.1

Intersection Summary

HCM 6th Ctrl Delay	6.3
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Traffic Impact Study

Appendix E | Parking Data

**TABLE P-1
SUMMARY OF PARKING RATIOS FOR MULTI-FAMILY DEVELOPMENTS
BASED ON ITE PARKING GENERATION 5TH EDITION**

	COMPUTED PARKING RATIO	ITE PEAK PARKING DEMAND ²	ITE PEAK PARKING DEMAND ADJUSTED FOR MASS TRANSIT ²
188 DWELLING UNITS¹			
WEEKDAY	1.21	227	201
SATURDAY	1.31	246	-
283 BEDROOMS¹			
WEEKDAY	0.66	187	164
SATURDAY	0.82	232	-

NOTES:

- 1) NUMBER OF DWELLING UNITS & BEDROOMS BASED ON SITE PLAN PREPARED BY INSITE ENGINEERING.
- 2) BASED ON ITE PARKING GENERATION 5TH EDITION PARKING DEMAND DATA FOR LAND USE 220 - MULTIFAMILY HOUSING (LOW-RISE). NOTE SATURDAY PARKING DEMAND DATA FOR NEARBY MASS-TRANSIT IS NOT PROVIDED.

Attachment P-1 | Village Code Off-Street Parking Requirements

§ 151-24. Parking and loading requirements.

- A. Intent. This article establishes requirements for parking and loading for new construction and for the expansion or change to existing uses. The purpose of this article is to ensure that structures and land uses have an adequate level of parking to avoid congestion on surrounding streets while avoiding excessive on-site parking.
- B. Applicability.
 - (1) Parking and loading requirements shall apply to all zoning districts.
 - (2) All structures and land uses hereafter erected, enlarged, created, changed, or extended shall be provided with the amount of parking space(s) and loading and unloading space(s) to meet the needs of persons making use of such structures or land.
- C. Front yard parking. Parking is prohibited in the front yard in any district for all existing structures and uses or structures and uses as they may be changed under this code.
- D. Parking evaluation process.
 - (1) Required parking facilities shall be completed before a certificate of occupancy shall be issued.
 - (2) The building department and the Planning Board shall make a determination of the required number of parking spaces and the size and location of loading and unloading zones based on the Parking Table¹ and parking criteria below.
 - (3) The Planning Board shall have the authority during site plan and special permit review to regulate the number of spaces and alter the size and location of loading zones required by the building department.
- E. Parking criteria.
 - (1) The proposed parking shall not result in any adverse impacts on the subject site or within the district.
 - (2) On-site parking shall be balanced against lot size, dimensional limitations and topography.
 - (3) Parking should be located on the same lot as the use it is intended to serve if practicable.
 - (4) On-street parking spaces may be used as an alternative to on-site parking where availability can be demonstrated.
 - (5) The availability of public parking within a reasonable distance from use.

1. Editor's Note: Table 5, Parking Table is included as an attachment to this chapter.

- (6) The availability of off site private parking.
 - (7) The availability of shared parking.
- F. Shared parking requirements. Shared parking is allowed either on the same, adjacent or nearby parcels, provided that:
- (1) There is a covenant on the separate parcel or lot guaranteeing the maintenance of the required off-street parking facilities during the existence of any of the principal uses having beneficial use of the shared parking. Said covenant shall:
 - (a) Be executed by the owner of said lot or parcel of land and the parties having beneficial use thereof;
 - (b) Be enforceable by any one or all of the parties having beneficial use thereof; and
 - (c) Be enforceable against the owner, the parties having beneficial use, and their heirs, successors and assigns.
- G. Land dedication. An applicant for a building permit may offer to grant and convey to the Village appropriately located and developed land for parking. If the Planning Board finds that the proposed land is appropriate for parking, the Board of Trustees, at its discretion, may accept such land.
- H. Screening.
- (1) Off-street parking areas for all nonresidential uses and apartment buildings located within 50 feet of the VM, VR, or R Districts or a single-family or a multifamily dwelling shall be shielded by wall, fencing or other suitable material which shall serve to screen noise and uncontrolled entrance. **[Amended 9-30-2015 by L.L. No. 3-2015]**
 - (2) Parking lots shall be screened from all street or rights-of-way in such a manner as to facilitate adequate sight distance at points of egress.
- I. Parking lot landscaping requirements.
- (1) Buffer planting shall be installed between the parking lot and adjacent properties.
 - (2) Buffer planting shall be installed between the parking lot and the street.
 - (3) If existing trees and vegetation are left on the site, these may be used in lieu of new plantings.
 - (4) Consideration should be given to green infrastructure techniques such as bioretention areas.
- J. Parking lots with more than 40 cars shall be designed in accordance with the following:

- (1) One tree planted on the perimeter of the parking lot for every 10 cars or fraction thereof.
- (2) One tree planted in the interior of a parking lot (on traffic islands) for every 10 cars or fraction thereof.
- (3) Internal traffic islands, including one for every 20 cars or part thereof to reduce the impact of the parking area and provide safety for vehicles moving within the area.
- (4) Consideration should be given to green infrastructure techniques, such as bioretention areas.

K. New plantings shall comply with the following sizes:

- (1) Major tree: 3 1/2 inches in caliper.
- (2) Flowering tree: 2 1/2 inches in caliper.
- (3) Evergreen tree: four to six feet in height.
- (4) Shrub: two to three feet in height or spread.

L. Parking space size.

- (1) Perpendicular parking (90°).
 - (a) Each parking space shall be nine feet by 18 feet.
 - (b) The minimum aisle width shall be 24 feet for two-way traffic.
 - (c) The minimum aisle width shall be 22 feet for one-way traffic.
- (2) Angled parking (60°).
 - (a) Each parking space shall be nine feet by 22 feet.
 - (b) The minimum aisle width shall be 23 feet for two-way traffic.
 - (c) The minimum aisle width shall be 15 feet for one-way traffic.

M. Stacked parking restrictions.

- (1) Except as otherwise provided herein, parking facilities shall be designed so that each motor vehicle may proceed to and from the parking space provided for it without the moving of any other motor vehicle.
- (2) Stacked or valet parking may be allowed at the discretion of the Planning Board if an attendant is present to move vehicles. If stacked parking is used for required parking spaces, a written guarantee must be filed with the Village ensuring that an attendant will always be present when the lot is in operation. The requirements for minimum or maximum spaces continue to apply for stacked parking.

- (3) Tandem parking is allowed for single-family detached dwelling units.

N. Loading areas.

- (1) Off-street loading facilities shall be provided for each commercial or industrial use unless it is demonstrated that the use does not require a dedicated loading area.
- (2) Off-street loading facilities shall be so arranged as not to interfere with pedestrian or motor traffic on the public street or highway.
- (3) Any required off-street loading berth shall have a clear area not less than 12 feet in width by 25 feet in length.

Table 5: Parking Table

Numbers Listed in Parking Table are Considered a Minimum

a. RESIDENTIAL

	RMU	R	VR	VM	VC	CMU
Dwelling, One Family	2 per unit	3 per unit	4 per unit	5 per unit	NA	NA
Dwelling, Two Family	1 per unit	NA	1 per unit	1 per unit	1 per unit	1 per unit
Dwelling, Multi Family	1 per unit	NA	1 per unit	1 per unit	1 per unit	1 per unit
Dwelling, Supported Living	1 per unit	1 per unit	1 per unit	1 per unit	1 per unit	1 per unit
Dwelling, Street Level	1 per unit	1 per unit	1 per unit	1 per unit	NA	NA
Dwelling, Accessory	1 per unit	1 per unit	1 per unit	1 per unit	1 per unit	1 per unit
Home Occupation 1	None	None	None	None	None	None
Home Occupation 2	1 per employee	1 per employee	1 per employee	1 per employee	1 per employee	1 per employee
Manufactured Home/Manufactured Home Park	NA	NA	1 per unit	NA	NA	NA

b. LODGING

Hotel (no room limit)	1 per room	NA	NA	NA	1 per room	1 per room
Inn (up to 12 rooms)	Per SPR	NA	Per SPR	Per SPR	Per SPR	Per SPR
Bed & Breakfast (up to 5 rooms)	Per SPR	Per SPR	Per SPR	Per SPR	Per SPR	Per SPR

c. COMMERCIAL

Amusement Centers/Arcades	NA	NA	NA	NA	NA	Per SPR
Amusement Facility, Accessory	NA	NA	NA	NA	NA	Per SPR
Conference Center	1 per 400 gfa	NA	NA	NA	1 per 400 gfa	1 per 400 gfa
Daycare Center	None	NA	NA	NA	None	None
Fitness Center	1 per 400 gfa	NA	1 per 400 gfa	NA	1 per 400 gfa	1 per 400 gfa
Funeral Home	NA	NA	1 per 4 seats	NA	Per SPR	Per SPR
Indoor Recreation	Per SPR	NA	NA	NA	Per SPR	Per SPR
Marina	NA	NA	NA	NA	Per SPR	Per SPR
Medical Clinic	NA	NA	NA	NA	1 per 500 gfa	Per SPR
Office, Business	X	NA	NA	Per SPR	Per SPR	Per SPR
Office, Medical	X	NA	1 per 500 gfa	Per SPR	Per SPR	Per SPR
Office, Professional	X	NA	1 per 500 gfa	Per SPR	Per SPR	Per SPR
Outdoor Recreation	Per SPR	NA	Per SPR	NA	NA	Per SPR
Restaurant	NA	NA	1 per 400 gfa	Per SPR	None	Per SPR
Retail	NA	NA	1 per 400 gfa	Per SPR	None	Per SPR
Shopping Center	NA	NA	NA	NA	NA	Per SPR
Theater	NA	NA	NA	NA	None	Per SPR
Tavern	NA	NA	NA	1 per 400 gfa	None	Per SPR

1. NA = Not Applicable as use is not allowed
2. Per SPR = As determined by Site Plan Review
3. gfa = Gross Floor Area
4. None = no parking required

d. OTHER: AGRICULTURE

	RMU	R	VR	VM	VC	CMU
Animal Hospital	NA	NA	NA	NA	Per SPR	Per SPR
Kennel	NA	NA	NA	NA	NA	Per SPR
Garden Nursery	NA	NA	NA	Per SPR	Per SPR	Per SPR

e. AUTOMOTIVE

Towing/Automobile Service	NA	NA	NA	NA	NA	Per SPR
Car Wash	NA	NA	NA	NA	NA	Per SPR
Drive-Through Facility	NA	NA	NA	NA	NA	Per SPR
Gasoline/Convenience Station	NA	NA	NA	NA	NA	Per SPR
Auto Sales	NA	NA	NA	NA	NA	Per SPR

f. MUNICIPAL/CIVIC

Club or Lodge	NA	NA	NA	1 per 500 gfa	Per SPR	Per SPR
Education Facility	NA	NA	NA	NA	Per SPR	Per SPR
Hospital	NA	NA	NA	NA	1 per 400 gfa	Per SPR
Library	NA	NA	NA	NA	1 per 400 gfa	Per SPR
Museum	NA	NA	NA	1 per 400 gfa	Per SPR	Per SPR
Parking Structure	NA	NA	NA	NA	NA	NA
Religious Assembly	NA	NA	1 per 400 gfa	1 per 400 gfa	1 per 400 gfa	Per SPR
Municipal/Institutional	1 per 1000 gfa	1 per 1000 gfa	1 per 1000 gfa	1 per 1000 gfa	1 per 1000 gfa	1 per 1000 gfa

g. INDUSTRIAL

Laboratory	NA	NA	NA	NA	NA	Per SPR
Light Industrial Facility	NA	NA	NA	NA	NA	Per SPR
Heavy Equipment Facility	NA	NA	NA	NA	NA	Per SPR
Technology/Research Facility	NA	NA	NA	NA	Per SPR	Per SPR
Utility Distribution	NA	NA	NA	NA	NA	Per SPR
Wholesale Distribution	NA	NA	NA	NA	NA	Per SPR

Attachment P-2 | ITE Parking Data

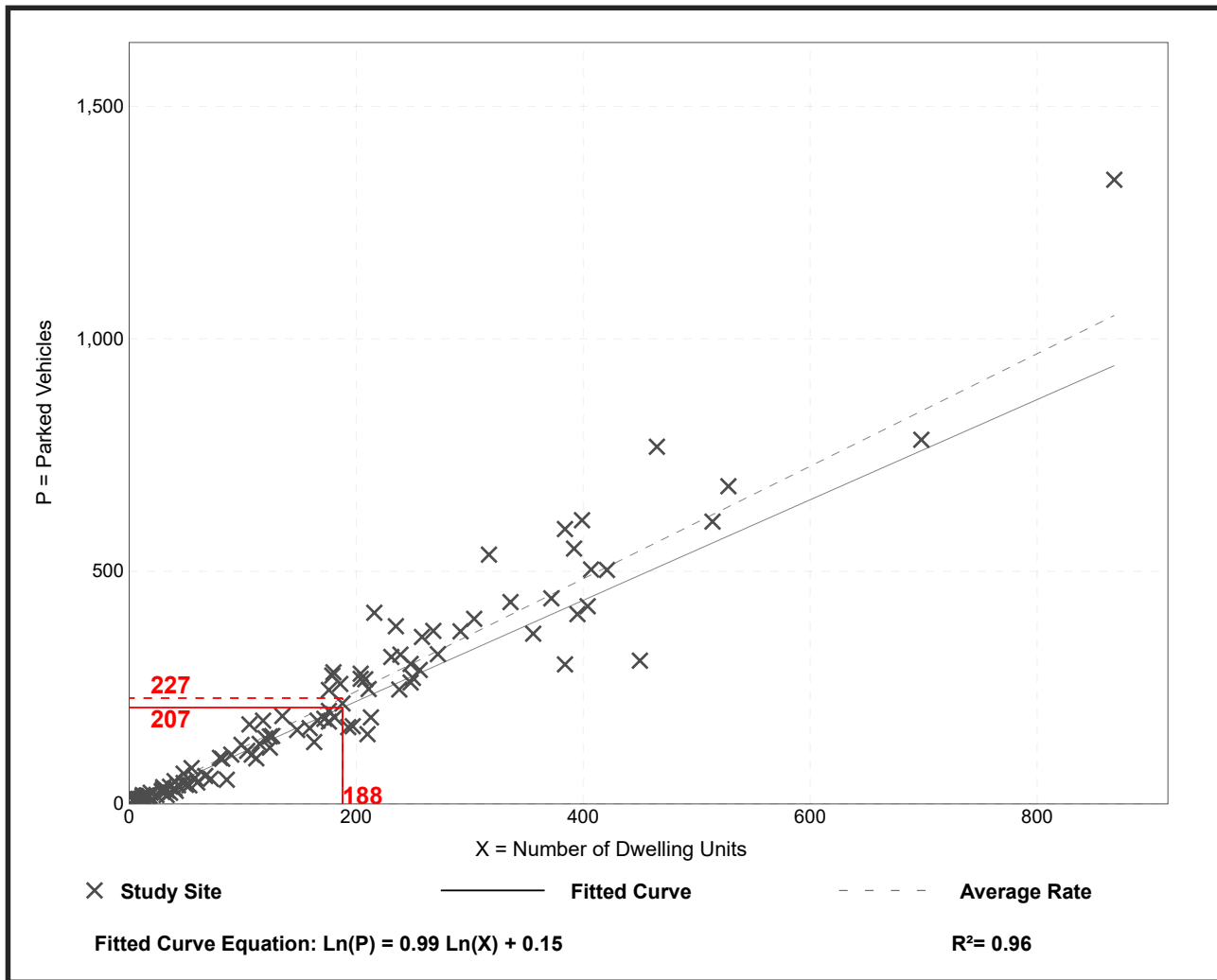
Multifamily Housing (Low-Rise) (220)

Peak Period Parking Demand vs: Dwelling Units
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban (no nearby rail transit)
Peak Period of Parking Demand: 11:00 p.m. - 6:00 a.m.
 Number of Studies: 119
 Avg. Num. of Dwelling Units: 156

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.21	0.58 - 2.50	1.03 / 1.52	1.16 - 1.26	0.27 (22%)

Data Plot and Equation



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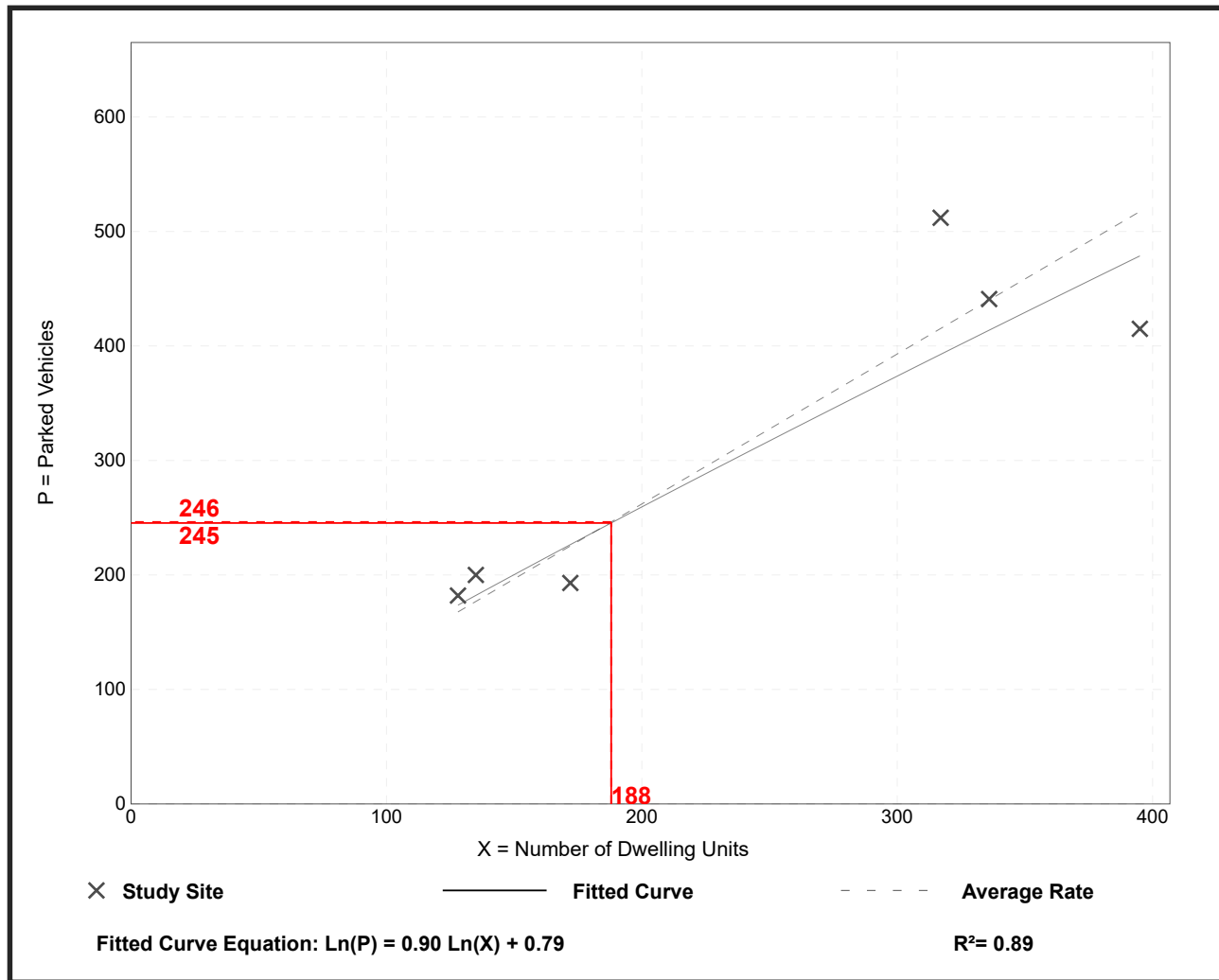
Multifamily Housing (Low-Rise) (220)

Peak Period Parking Demand vs: Dwelling Units
On a: Saturday
Setting/Location: General Urban/Suburban (no nearby rail transit)
Peak Period of Parking Demand: 11:00 p.m. - 7:00 a.m.
 Number of Studies: 6
 Avg. Num. of Dwelling Units: 247

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.31	1.05 - 1.62	1.18 / 1.61	***	0.23 (18%)

Data Plot and Equation



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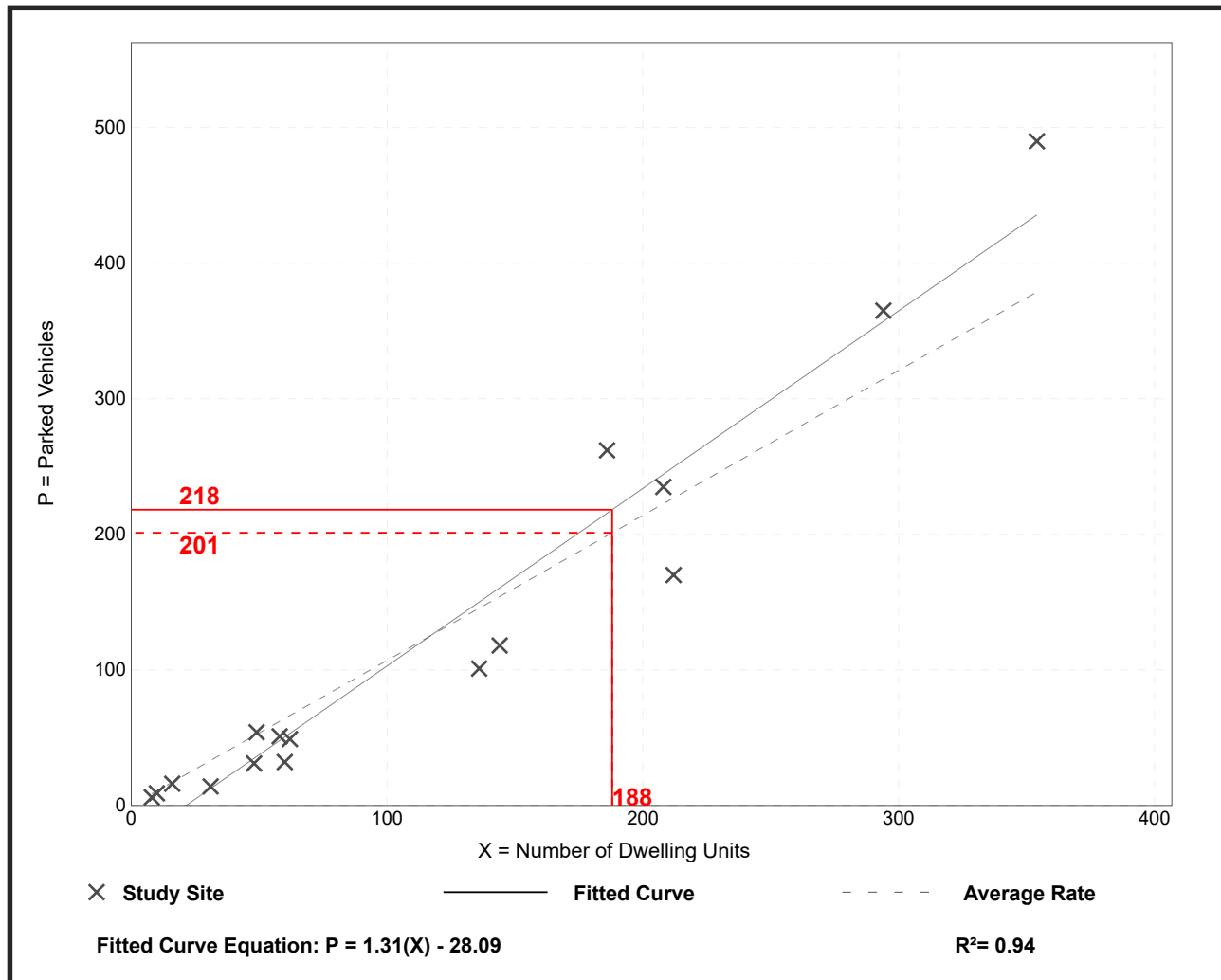
Multifamily Housing (Low-Rise) (220)

Peak Period Parking Demand vs: Dwelling Units
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban (< 1/2 mile to rail transit)
Peak Period of Parking Demand: 11:00 p.m. - 6:00 a.m.
 Number of Studies: 16
 Avg. Num. of Dwelling Units: 117

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.07	0.45 - 1.41	0.77 / 1.31	***	0.29 (27%)

Data Plot and Equation



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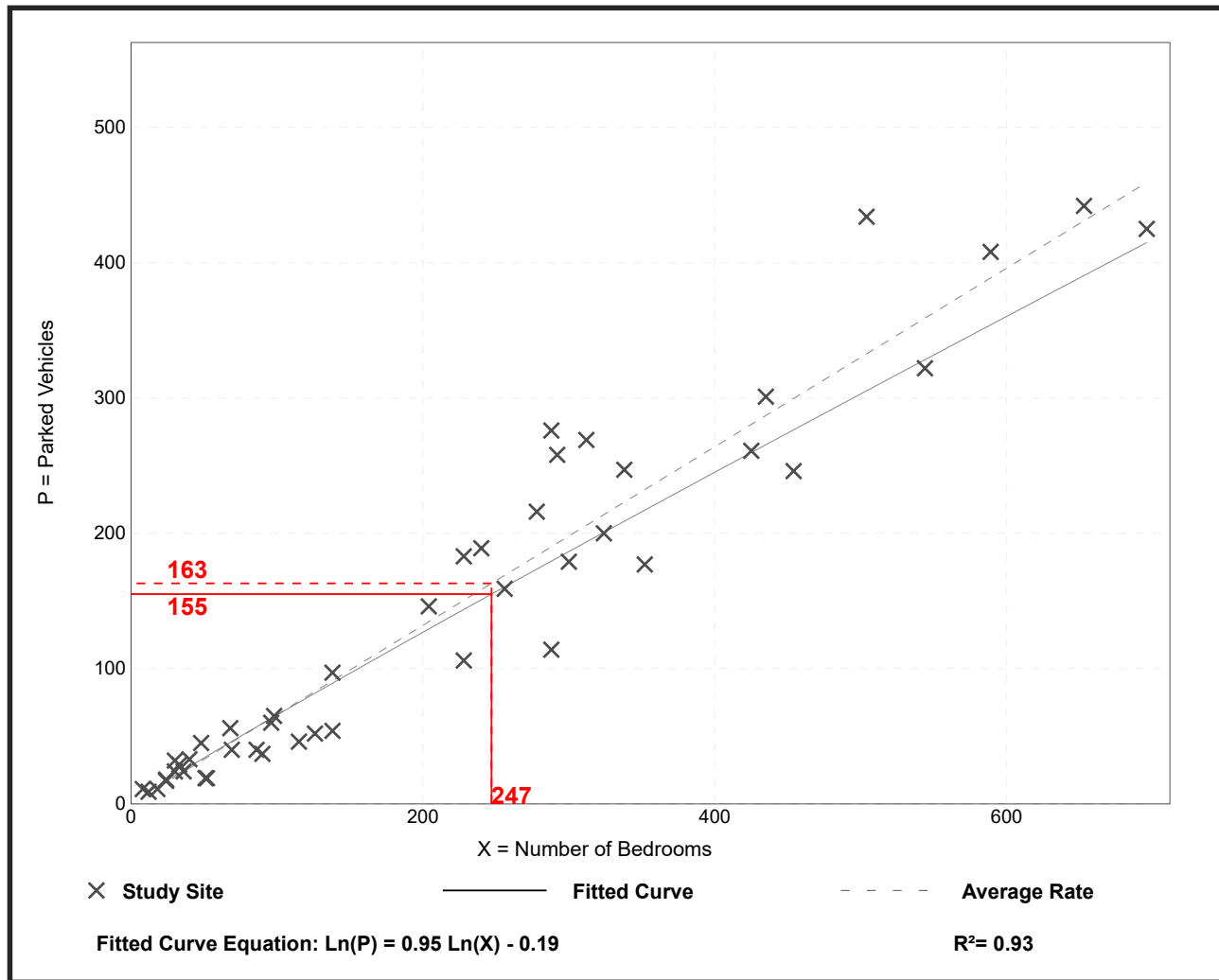
Multifamily Housing (Low-Rise) (220)

Peak Period Parking Demand vs: Bedrooms
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban (no nearby rail transit)
Peak Period of Parking Demand: 11:00 p.m. - 6:00 a.m.
 Number of Studies: 45
 Avg. Num. of Bedrooms: 215

Peak Period Parking Demand per Bedroom

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.66	0.37 - 1.38	0.61 / 0.86	0.62 - 0.70	0.15 (23%)

Data Plot and Equation



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Multifamily Housing (Low-Rise) (220)

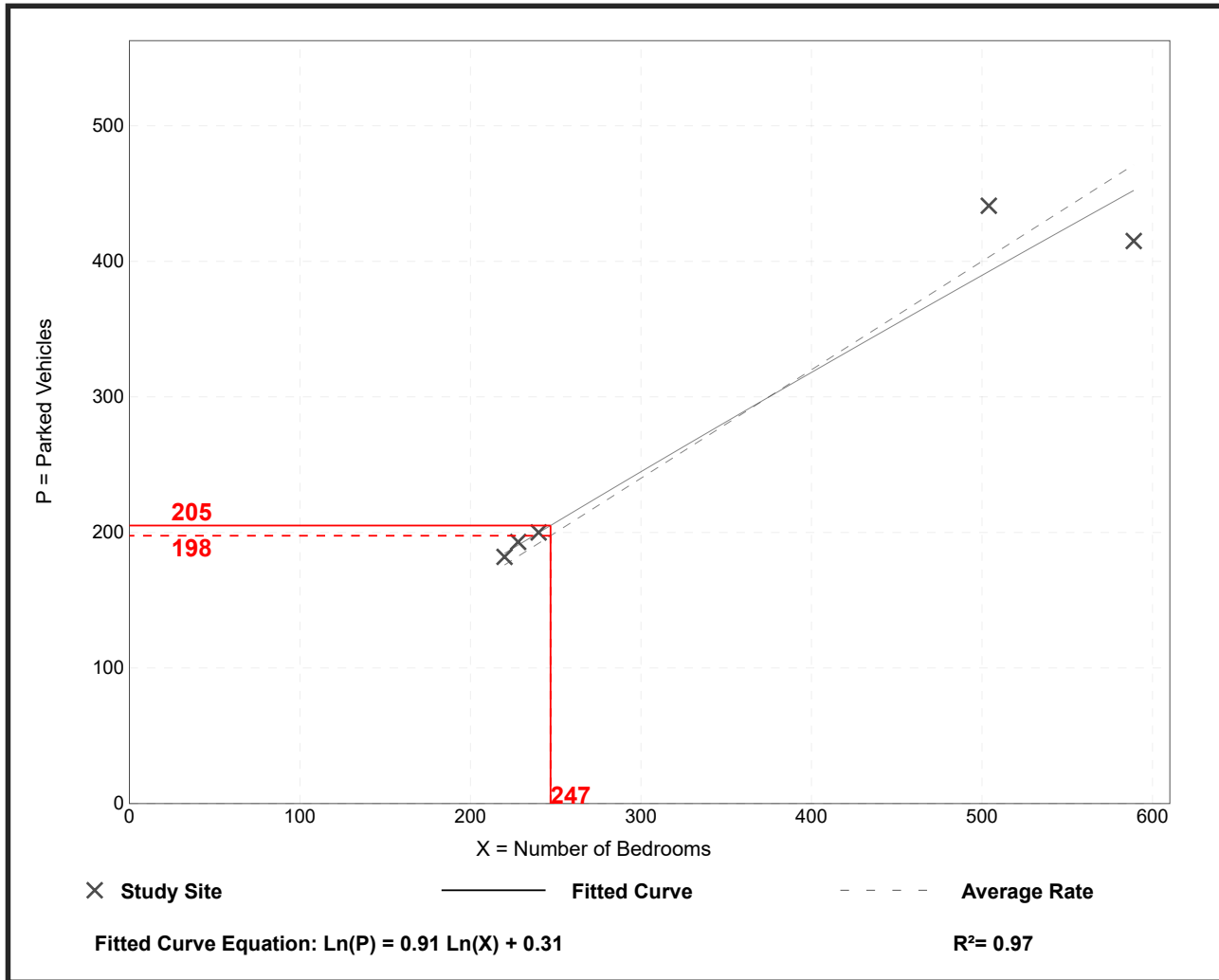
Peak Period Parking Demand vs: Bedrooms
On a: Saturday
Setting/Location: General Urban/Suburban (no nearby rail transit)
Peak Period of Parking Demand: 11:00 p.m. - 7:00 a.m.
 Number of Studies: 5
 Avg. Num. of Bedrooms: 356

Peak Period Parking Demand per Bedroom

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.80	0.70 - 0.88	0.82 / 0.88	***	0.08 (10%)

Data Plot and Equation

Caution – Small Sample Size



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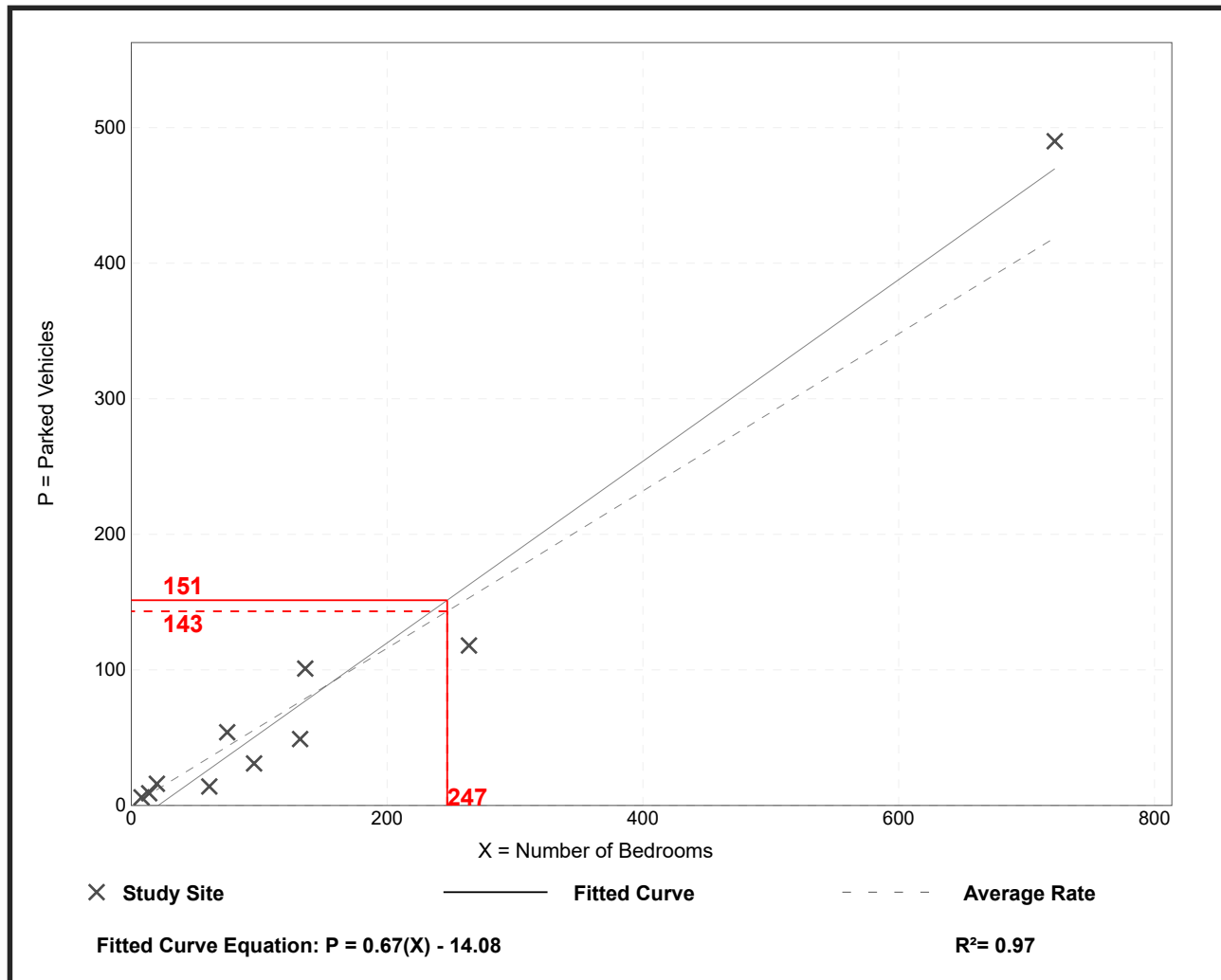
Multifamily Housing (Low-Rise) (220)

Peak Period Parking Demand vs: Bedrooms
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban (< 1/2 mile to rail transit)
Peak Period of Parking Demand: 11:00 p.m. - 6:00 a.m.
 Number of Studies: 10
 Avg. Num. of Bedrooms: 153

Peak Period Parking Demand per Bedroom

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.58	0.23 - 0.80	0.42 / 0.77	***	0.17 (29%)

Data Plot and Equation



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