Final Traffic Impact Study

Carriage Hill Estates

Town of Brunswick, NY

CME Project No. 04-164

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CHAPTER I
INTRODUCTION

This report summarizes the results of a Traffic Impact Study for the Carriage Hill Estates, a proposed residential development located in the Town of Brunswick, Rensselaer County, New York. The project site is located on NYS Route 2 and Pinewoods Avenue as shown on Figure 1.1. The purpose of this report is to document existing traffic conditions in the study area, determine the projected traffic impact of the proposed project, and offer mitigation measures if warranted.

A. Planned Project

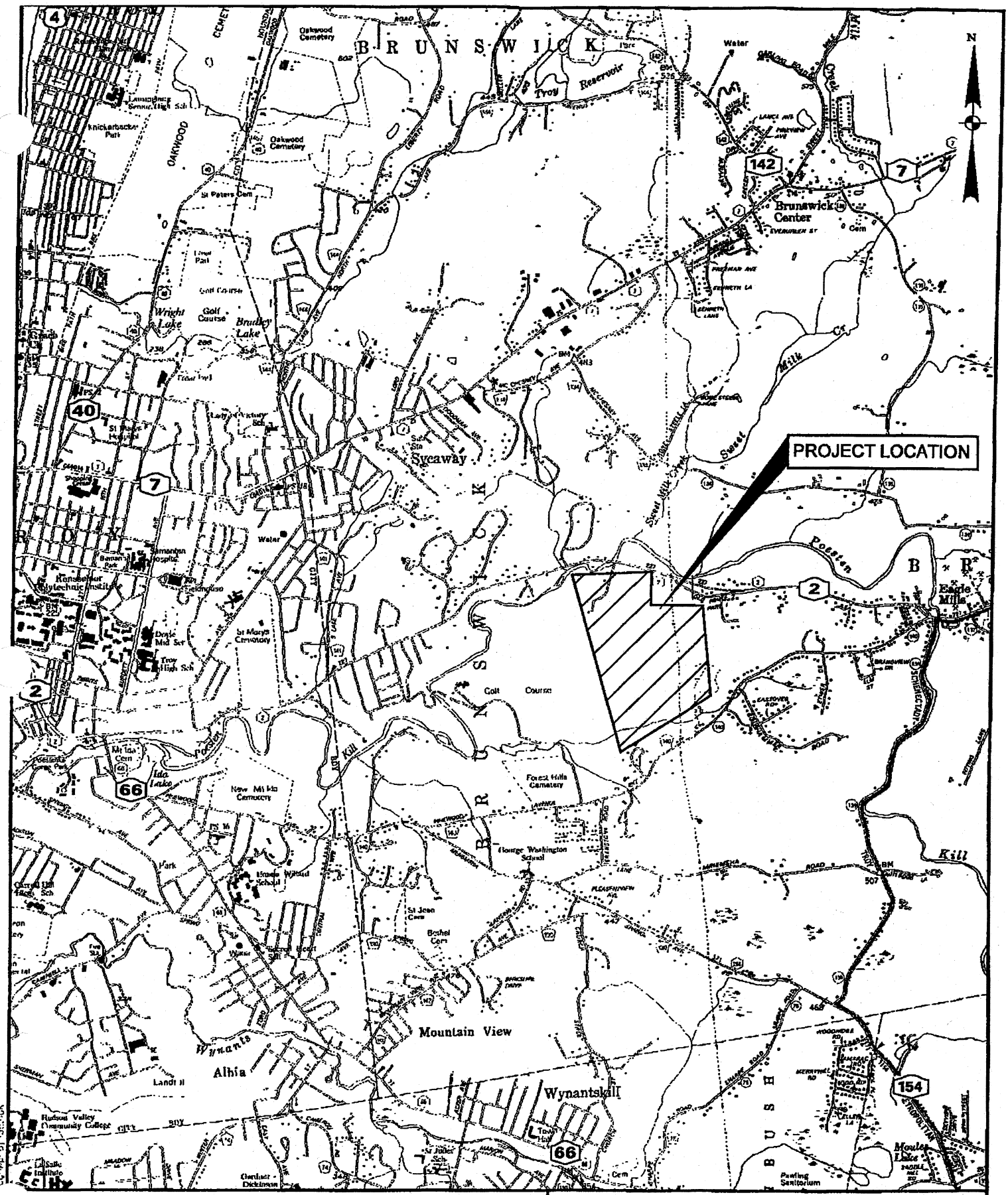
The proposed project consists of the construction of 106 single family residential homes (87 homes on ¼ acre lots and 19 homes on 3 to 4 acre lots) and 204 senior apartment units. Access to the site will be provided via a site access road connecting between NYS Route 2 and Pinewoods Avenue. The site access road will become a dedicated public road. It is anticipated that full build-out of the project site will occur by 2009.

B. Study Area and Methodology

The study area for this analysis includes the following intersections:

- NYS Route 2/South Lake Avenue
- Pinewoods Avenue/Pawling Avenue (NYS Route 66)
- NYS Route 2/Pawling Avenue (NYS Route 66)

The potential traffic impact of the proposed project was determined by documenting the existing traffic conditions in the area, projecting future traffic volumes, including the peak hour trip generation of the site, and determining the operating conditions of the study area intersections after development of the proposed project.



PROJECT LOCATION MAP

CARRIAGE HILL ESTATES
TOWN OF BRUNSWICK, NEW YORK

CREIGHTON MANNING ENGINEERING, LLP
17 COMPUTER DRIVE WEST, ALBANY, NY 12205

PROJECT: 04-164	DATE: 10/4	FIGURE: 1.1

CHAPTER II

EXISTING CONDITIONS

A. Roadways Serving the Site

- NYS Route 2 – NYS Route 2 is state-maintained roadway providing east-west access through the project area. The adjacent land uses along NYS Route 2 are generally residential in the vicinity of the project site. The 2003 *Highway Sufficiency Ratings* (HSR), published by the New York State Department of Transportation (NYSDOT), indicates that in the study area, NYS Route 2 is classified as an urban principal arterial with average annual daily traffic volumes of approximately 4,500 vehicles. In the study area, NYS Route 2 consists of a single 12-foot travel lane in each direction with 3-foot shoulders. At the project site NYS Route 2 has a posted speed limit of 55-mph.

- Pinewoods Avenue – Pinewoods Avenue is County Road 140 extending east from Pawling Avenue to NYS Route 2 in Eagle Mills. The adjacent land uses along Pinewoods Avenue are generally residential. Pinewoods Avenue provides a single 10-foot travel lane in each direction with shoulders less than 1-foot wide in the vicinity of the project site with a posted speed limit of 30-mph.

- Pawling Avenue (NYS Route 66) – Pawling Avenue is state-maintained roadway extending in a southeast direction from NYS Route 2, through Troy and Wynantskill, towards the southeast corner of Rensselaer County. The 2003 HSR indicates that in the study area, Pawling Avenue is classified as an urban minor arterial with average annual daily traffic volumes of approximately 17,000 vehicles. In the study area near NYS Route 2 and Pinewoods Avenue, Pawling Avenue provides a single 22-foot travel lane in each direction with on-street parking and a posted speed limit of 30-mph.

- South Lake Avenue – South Lake Avenue is County Road 141, extending north from NYS Route 2 to Route 7. South Lake Avenue provides a single 12-foot travel lane in each direction with a posted speed limit of 30-mph. The adjacent land uses along South Lake Avenue are generally residential.

B. Study Area Intersections

Intersection traffic control and geometry in the study area are as follows:

- NYS Route 2/ South Lake Avenue – This is an unsignalized "T"-type intersection with the southbound approach of South Lake Avenue operating under stop sign control. Each intersection approach provides a single lane for shared travel movements.

- Pinewoods Avenue/ Pawling Avenue – This is a four-way intersection operating with a three-phase pre-timed traffic signal with an 89 second cycle length. The northbound approach of Pawling Avenue provides a single lane for left-turn and through movements and on-street parking. The right turn maneuver from Pawling Avenue to Pinewoods Avenue is prohibited. The southbound approach of Pawling Avenue provides two lanes; an exclusive left-turn lane and a shared through/right turn lane. Parking is prohibited on this approach immediately adjacent to the intersection. The eastbound Sheldon Avenue and westbound Pinewoods Avenue approaches each provide single lanes for shared travel movements. Left-turns from Pinewoods Avenue onto Pawling Avenue are prohibited.

- NYS Route 2/ Pawling Avenue – This is a three leg intersection operating with a three-phase pre-timed traffic signal with an 81 second cycle length. This intersection has a raised center median that splits the NYS Route 2 eastbound and westbound intersection approaches. The eastbound approach of NYS Route 2 is turned to intersect as a north/south roadway and provides an exclusive left turn lane for vehicles to continue east on NYS Route 2 and a through travel lane for vehicles heading southeast on Pawling Avenue. The westbound approach of NYS Route 2 provides two travel lanes; a left-turn lane directing vehicles onto Pawling Avenue and a through lane controlled with a yield sign for vehicles continuing on NYS Route 2 westbound. On-street parking is allowed along the NYS Route 2 westbound through approach. The northbound approach of Pawling Avenue provides two lanes; a through lane for vehicles traveling westbound on NYS Route 2 and a right turn lane for vehicles traveling east on NYS Route 2.

  This intersection is currently being studied by Laberge Group for the City of Troy as part of a NYS Route 2 corridor study which proposes to make improvements to this intersection. The preferred alternative currently being considered is the conversion of the intersection from traffic signal controlled to a roundabout. The City of Troy is expected to render a decision on the final improvements to this intersection late 2004, with completion of the project expected in the fall of 2006. The installation of a roundabout at this intersection would modify the intersection approaches to a typical east/west and north/south configuration.

C. Existing Traffic Conditions

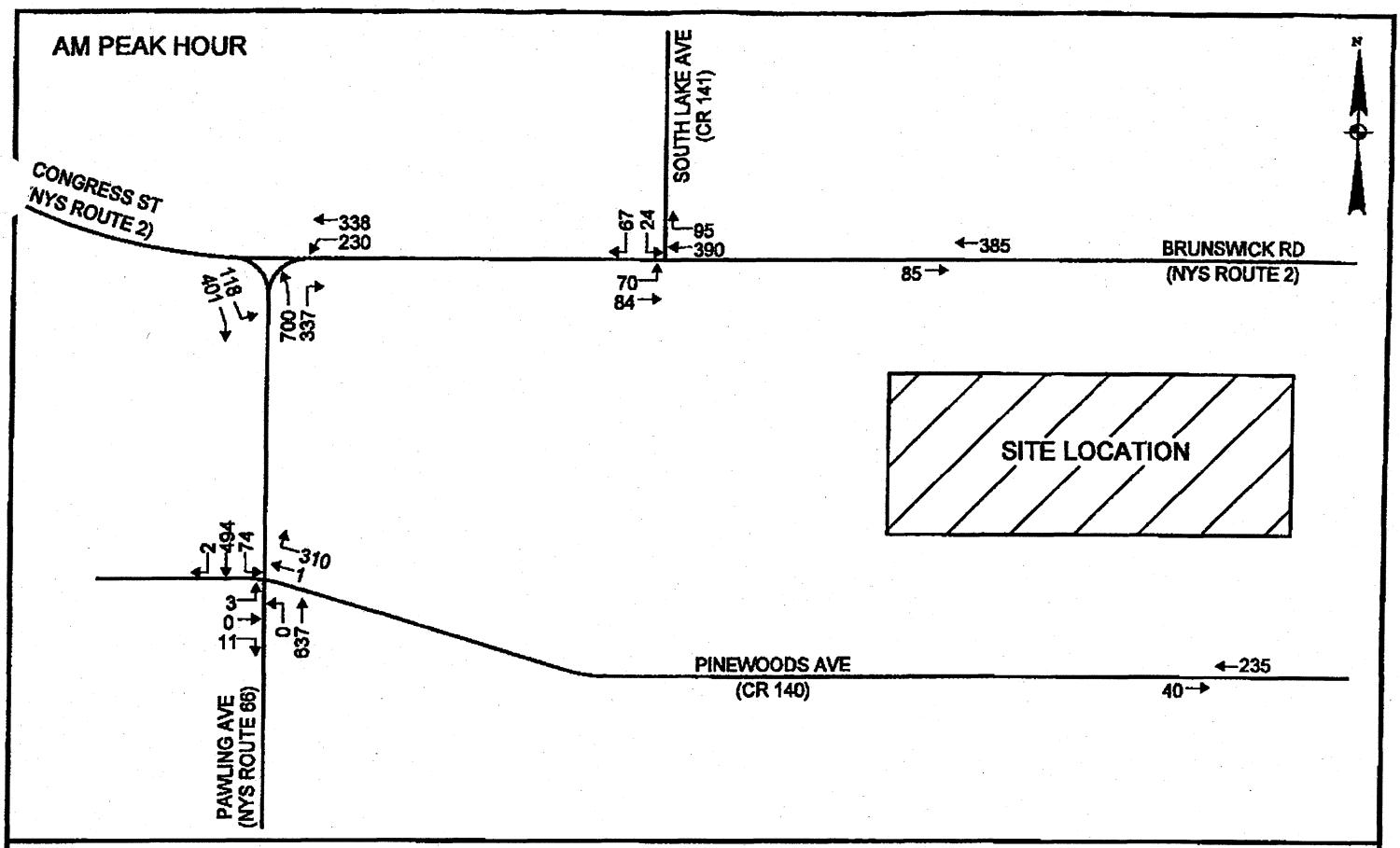
It is anticipated that the combination of existing traffic and the hourly trip generation of the proposed residential development will be greatest during the weekday morning and afternoon commuter periods. Weekday turning movement traffic counts were conducted at the study area intersections on Thursday, October 7, 2004 during the morning peak period from 7:00 to 9:00 a.m. and during the afternoon peak period from 4:00 to 6:00 p.m. The existing traffic volumes serve as the base conditions from

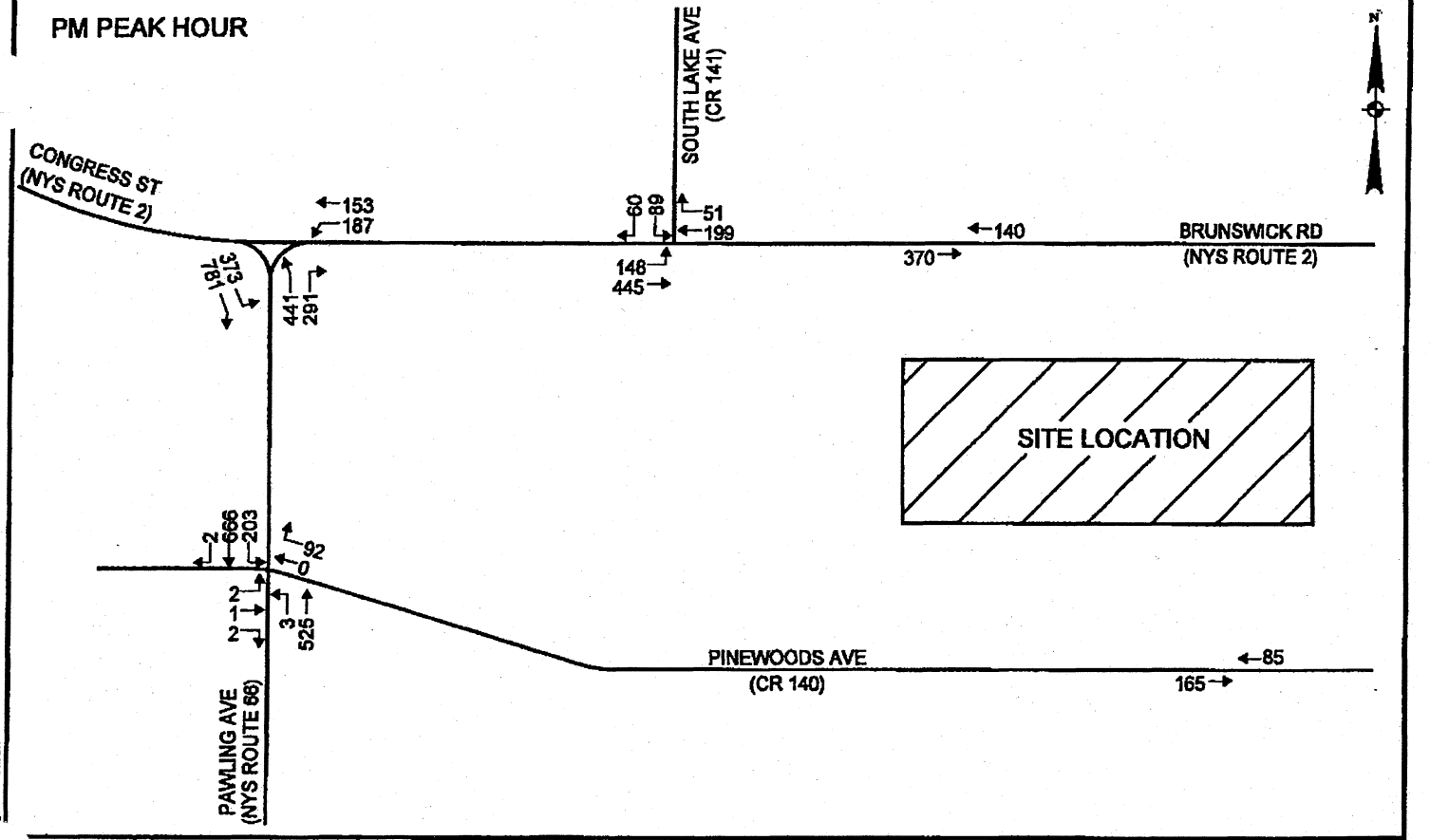
which all traffic forecasts are made and are shown on Figure 2.1. The raw turning movement count data is included in Appendix A.

Automatic traffic recorders (ATR's) were also installed on NYS Route 2 and Pinewoods Road to record directional traffic volumes and speed data for a period of several days. This data indicated that the two-way traffic volume on NYS Route 2, near the proposed site driveway, is approximately 470 vehicles during the AM peak hour and 510 vehicles during the PM peak hour. The 85th percentile speed recorded on NYS Route 2 was approximately 55 mph. The two-way traffic volume on Pinewoods Avenue, near the proposed site driveway, is approximately 275 vehicles during the AM peak hour and 250 vehicles during the PM peak hour. The 85th-percentile speed recorded on Pinewoods Avenue was approximately 48 mph with approximately 6% of the drivers observing the 30 mph posted speed limit.

The following observations are evident form the traffic count data:

- In general, the morning peak hour occurred from 7:30 to 8:30 a.m. and the afternoon peak hour occurred from 4:30 to 5:30 p.m.
- Heavy vehicle traffic volumes account for approximately 1 to 7% of the traffic on NYS Route 2. No heavy vehicle traffic was observed on Pinewoods Avenue during the peak hours.





2004 EXISTING TRAFFIC VOLUMES

CARRIAGE HILL ESTATES
TOWN OF BRUNSWICK, NEW YORK

CREIGHTON MANNING ENGINEERING, LLP
17 COMPUTER DRIVE WEST, ALBANY, NY 12205

PROJECT: 04-164	DATE: 10/04	FIGURE: 2.1

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CHAPTER III
TRAFFIC FORECASTS

To evaluate the impact of the proposed development, traffic projections were prepared for the expected year of completion. For purposes of this analysis, it was assumed that the proposed project would be fully developed by the year 2009. To evaluate the impact of the proposed development, a comparison was made between the future traffic volumes in 2009 with and without the proposed residential development. Table 3.1 describes the various traffic forecasts contained at the end of this chapter.

Table 3.1 - Summary of Peak Hour Traffic Projections

Figure Description	Figure Number
2009 No-Build Traffic Volumes – AM and PM Peak Hours	Figure 3.1
Trip Distribution – Entering and Exiting	Figure 3.2
Trip Assignment – AM and PM Peak Hours	Figure 3.3
2009 Build Traffic Volumes – AM and PM Peak Hours	Figure 3.4

A. 2009 No-Build Traffic Volumes

The 2009 No-Build traffic volumes are based on an analysis of the existing traffic growth trends and other potential traffic generating projects in the area. These volumes represent traffic that would exist regardless of the construction of Carriage Hill Estates. Historical traffic volumes published by NYSDOT in the *2003 Traffic Volume Report* indicates that traffic volumes on NYS Route 2 in the vicinity of the project site are increasing by one percent per year or less. Therefore, the 2009 No-Build traffic volumes were estimated by applying a one percent growth rate for five years to the traffic volumes at the studied intersections. In addition, traffic volumes from another potential 56-unit residential development on NYS Route 2 west of South Lake Avenue were added to the background traffic volumes. The resulting 2009 No-Build traffic volumes are shown on Figure 3.1.

B. Trip Generation

Trip generation determines the quantity of traffic expected to travel to/from the site. The Institute of Transportation Engineers (ITE) *Trip Generation*, 7th edition, provides trip generation data for various land uses based on studies of similar existing developments located across the country. Land use code 210 (Single-Family Detached Housing) and land use code 252 (Senior Adult Housing-Attached) were used to estimate the number of trips generated by proposed 310 housing units. The peak hour trip generation estimate is summarized in Table 3.2.

Table 3.2 - Trip Generation Summary

	AM Peak Hour			PM Peak Hour		
Land Use	**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**
106 Single Family Units	21	63	84	71	42	113
204 Senior Adult Housing Units	7	9	16	13	9	22
Total Trips	**28**	**72**	**100**	**84**	**51**	**135**

The proposed Carriage Hill Estates development is expected to generate approximately 100 new trips during the AM peak hour and approximately 135 new trips during the PM peak hour. This trip generation estimate assumes full build-out and occupancy of all 310 housing units.

C. Trip Distribution

Trip distribution describes where traffic originates or where traffic is destined. Traffic generated by the proposed project was distributed based on the existing travel patterns observed at the study area intersections, an estimate of the expected travel patterns of residents of the development, and a review of the site layout as compared to the two proposed site access locations. In general, approximately 60% of the site traffic will travel to and from the site via NYS Route 2 west of Pawling Avenue, approximately 10% of the site traffic will travel to and from South Lake Avenue, and 10% will travel to and from NYS Route 2 east of the site. The remaining 20% of the site traffic will travel to and from the south using Pawling Avenue and other roadway connections to the south. Due to turning restrictions at the Pawling Avenue/Pinewoods Avenue intersection it is expected that approximately 10% of traffic will use the side streets when traveling between Pawling Avenue and Pinewoods Avenue traveling to and from

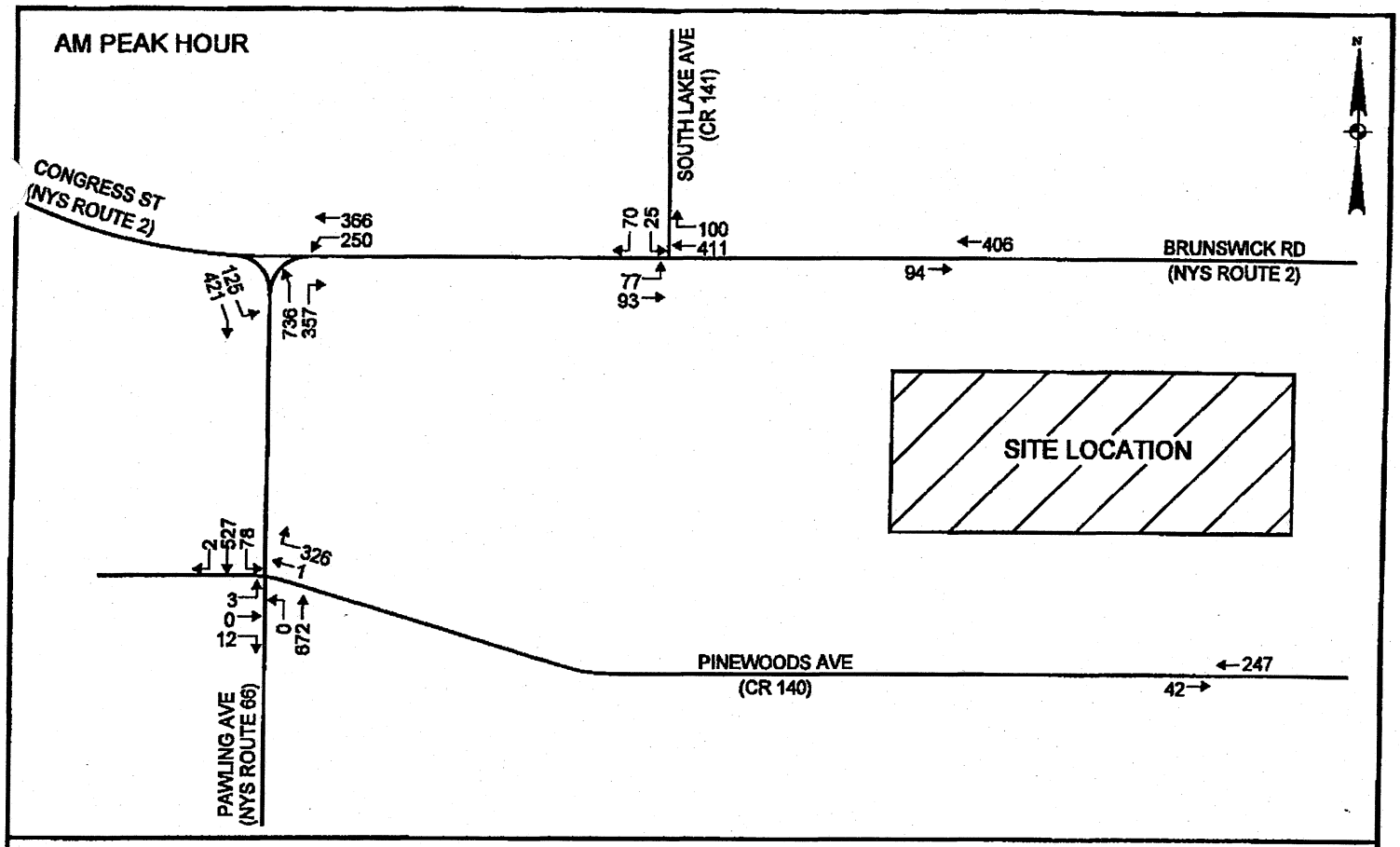
destinations south of the site. Based on the site plan, the largest cluster of single family homes is proposed at the southern end of the site, therefore; it is expected that the highest percentage of site traffic will utilize the access driveway on Pinewoods Avenue. The expected trip distribution percentages are shown on Figure 3.2.

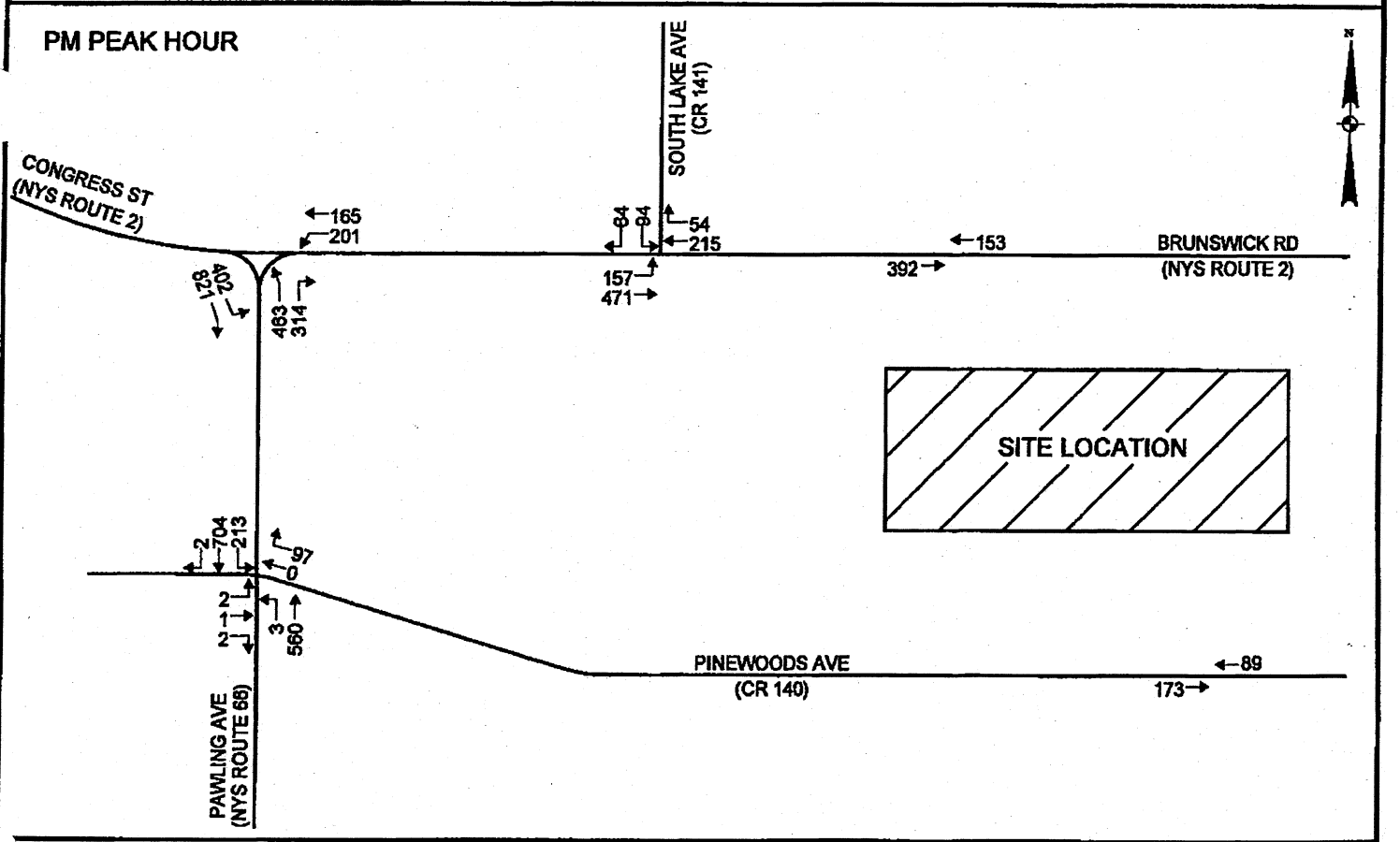
D. Trip Assignment

Trip assignment combines the results of the trip generation and trip distribution and determines the specific path and roadway that will be used between various origin/destination pairs. The resulting trip assignment for the proposed Carriage Hill Estates in shown on Figure 3.3.

E. 2009 Build Traffic Volumes

The results of the site generated traffic assignment were added to the 2009 No-Build traffic volumes to develop the 2009 Build traffic volumes. The Build traffic volumes are shown on Figure 3.4. These traffic volumes represent the condition that would exist after the full build-out of proposed 310 housing units.





2009 NO-BUILD
TRAFFIC VOLUMES

CARRIAGE HILL ESTATES
TOWN OF BRUNSWICK, NEW YORK

CREIGHTON MANNING ENGINEERING, LLP
17 COMPUTER DRIVE WEST, ALBANY, NY 12205

PROJECT: 04-164	DATE: 10/04	FIGURE: 3.1

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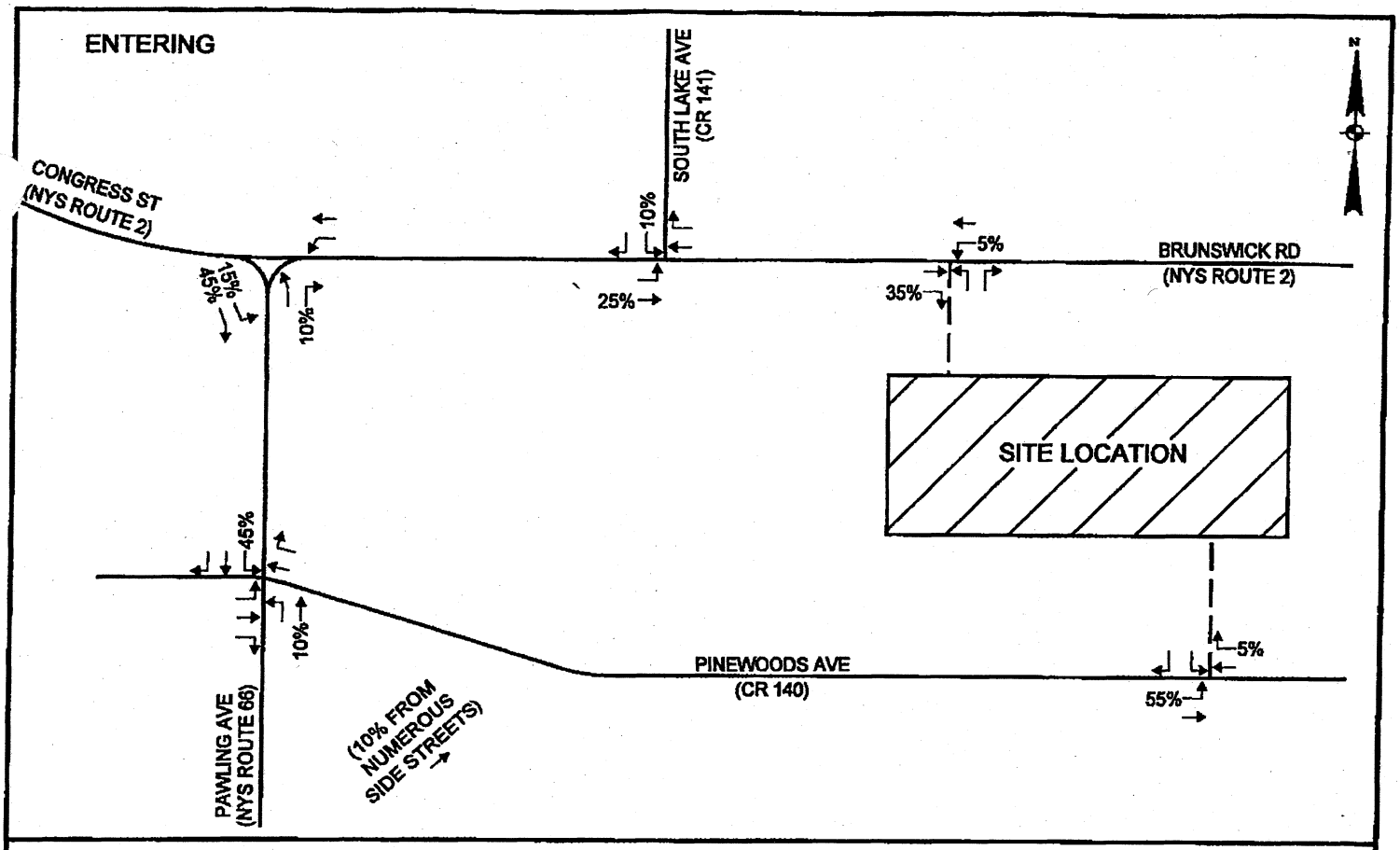

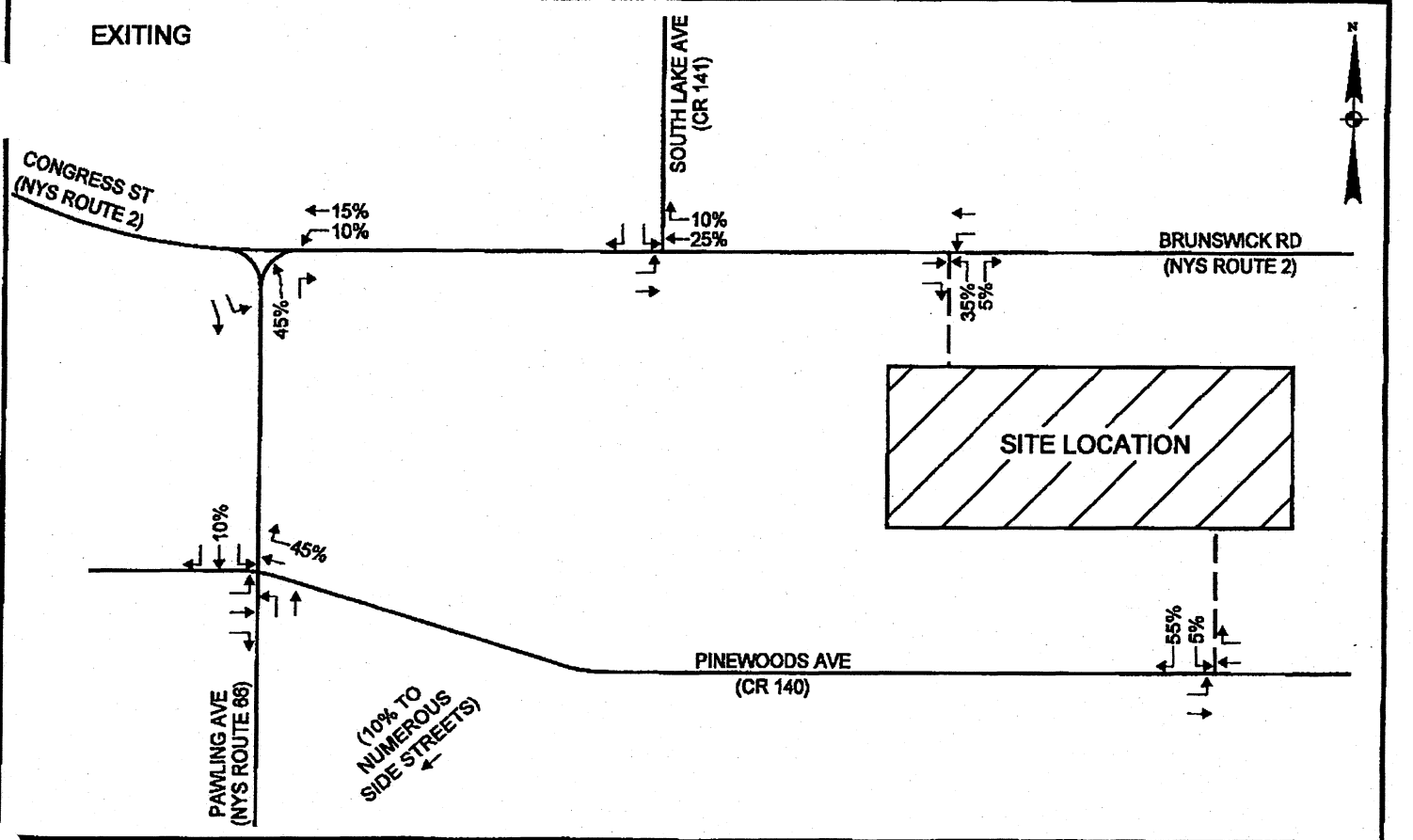

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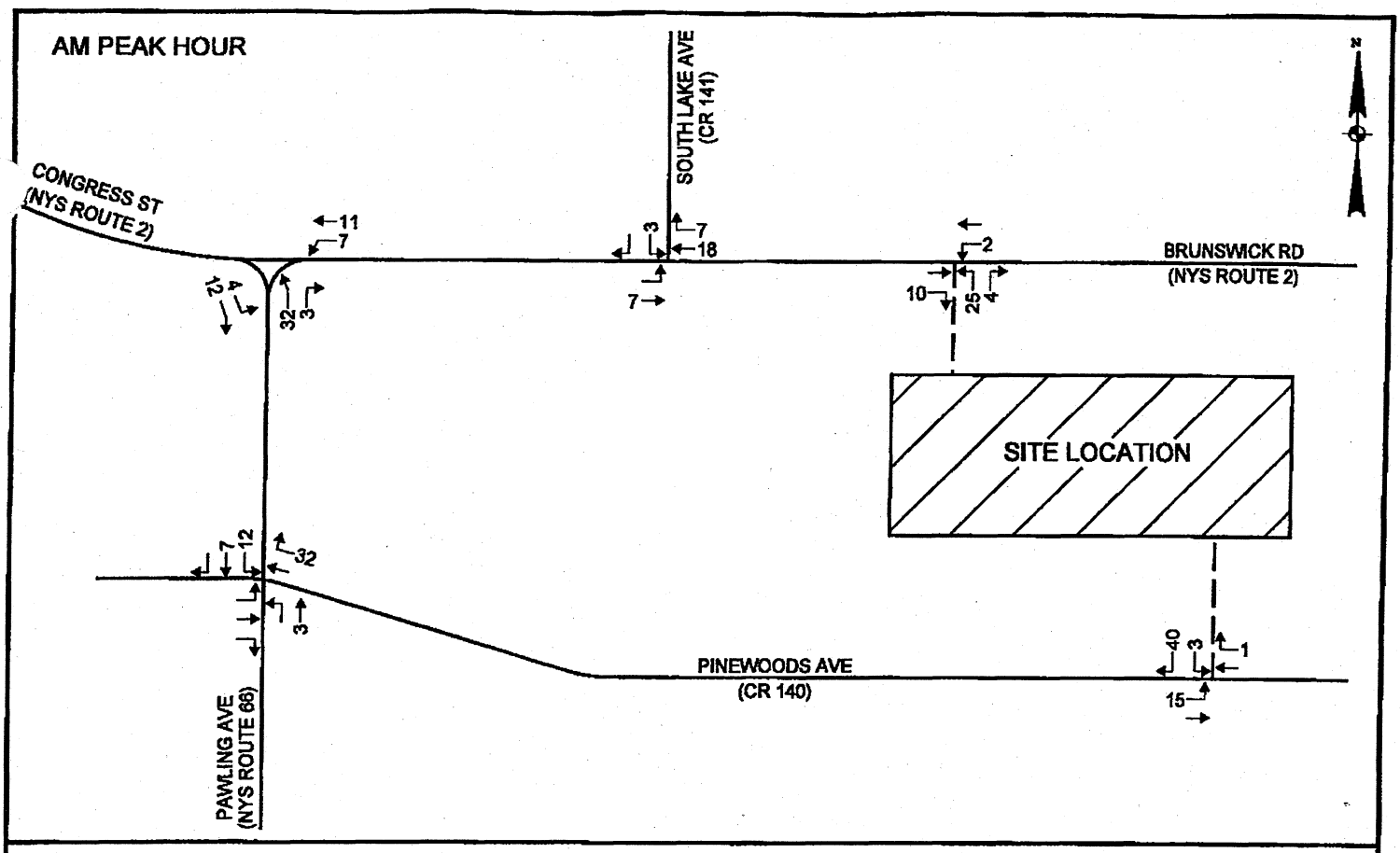
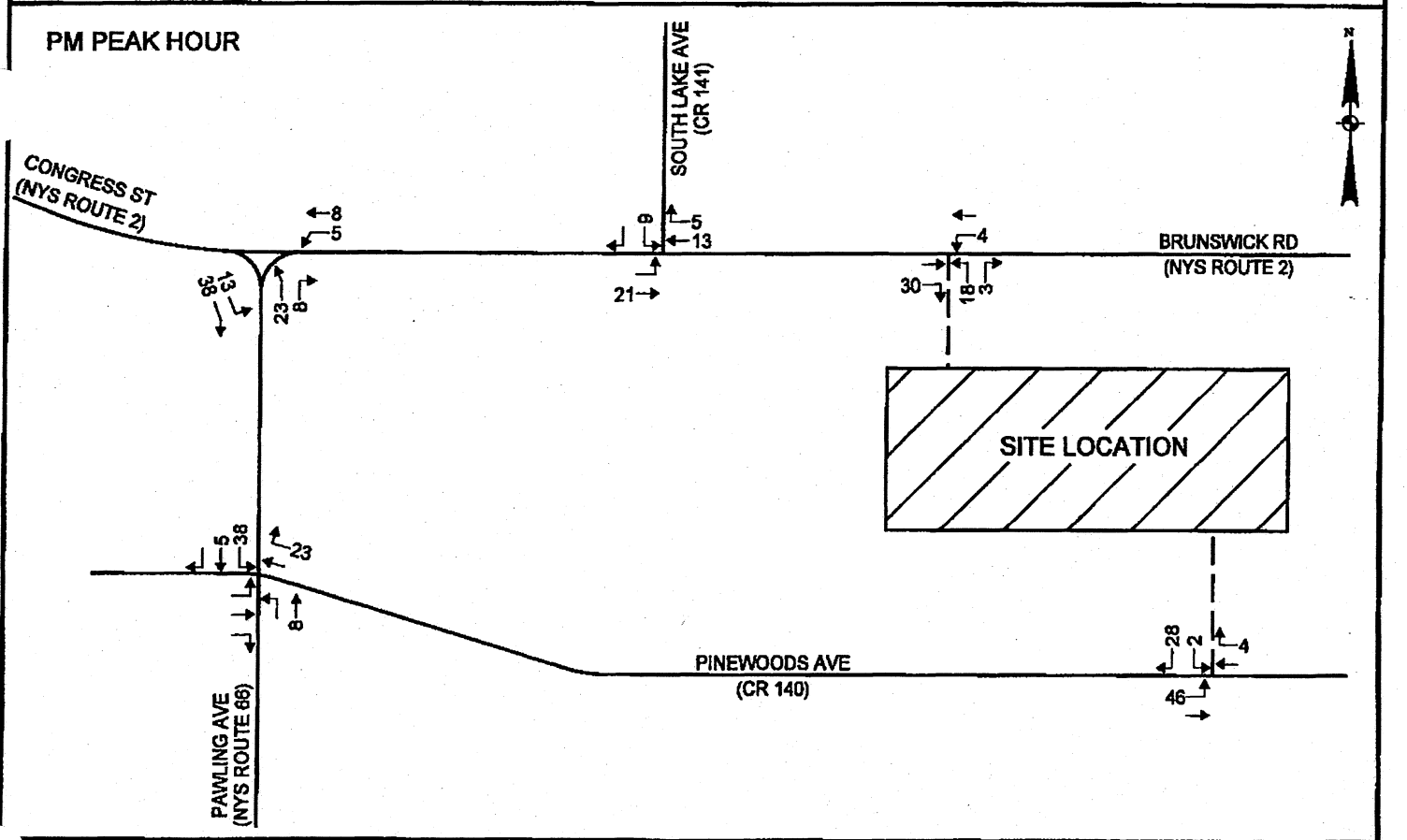
TRIP DISTRIBUTION

CARRIAGE HILL ESTATES
TOWN OF BRUNSWICK, NEW YORK

CREIGHTON MANNING ENGINEERING, LLP
17 COMPUTER DRIVE WEST, ALBANY, NY 12205

PROJECT: 04-164	DATE: 10/04	FIGURE: 3.2



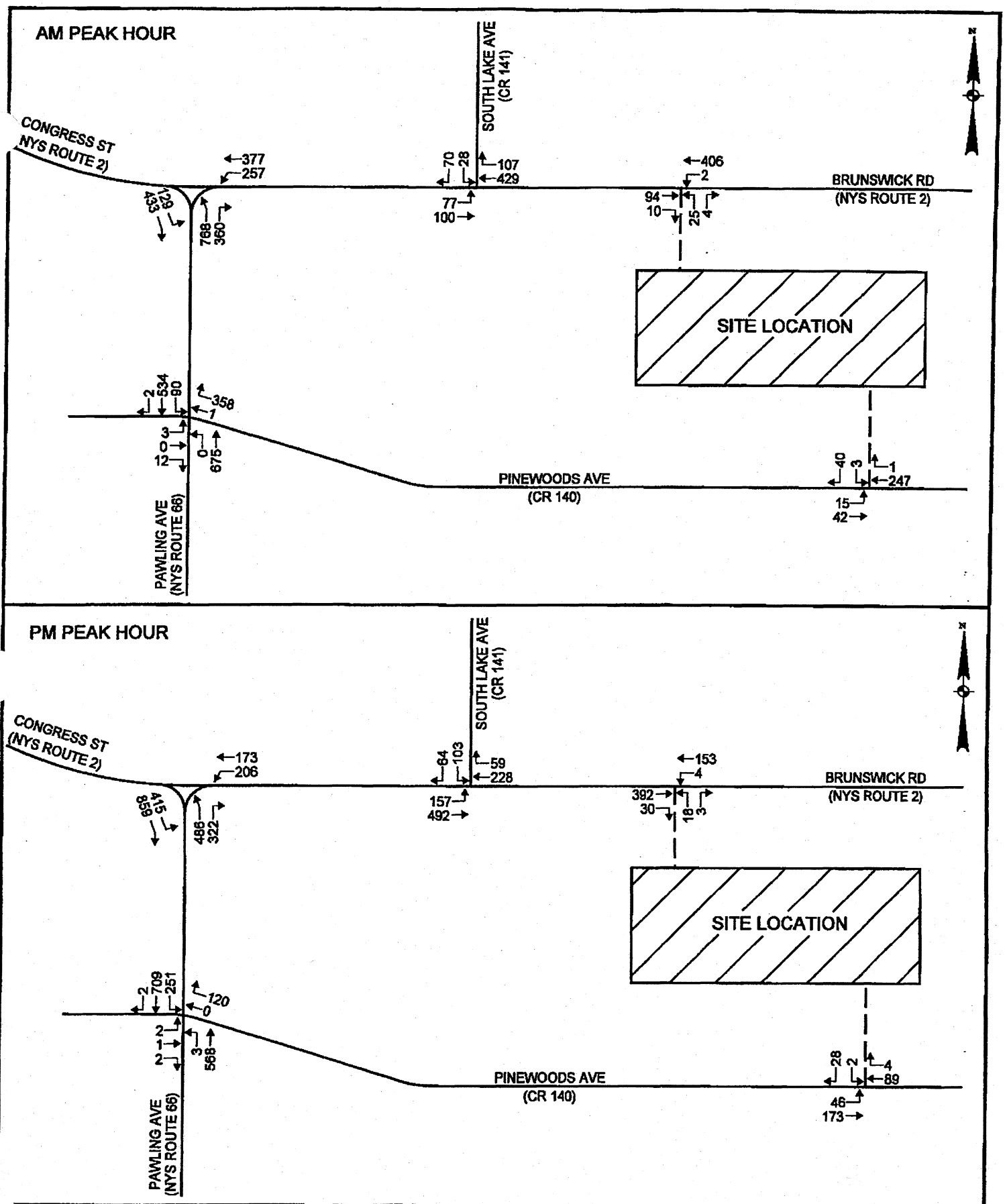


TRIP ASSIGNMENT

CARRIAGE HILL ESTATES
TOWN OF BRUNSWICK, NEW YORK

CREIGHTON MANNING ENGINEERING, LLP
17 COMPUTER DRIVE WEST, ALBANY, NY 12205

PROJECT: 04-164	DATE: 10/04	FIGURE: 3.3



2009 BUILD
TRAFFIC VOLUMES

CARRIAGE HILL ESTATES
TOWN OF BRUNSWICK, NEW YORK

CREIGHTON MANNING ENGINEERING, LLP
17 COMPUTER DRIVE WEST, ALBANY, NY 12205

PROJECT: 04-164	DATE: 10/04	FIGURE: 3.4

CHAPTER IV
ANALYSIS

A. Capacity/Level of Service Analysis

Intersection Level of Service (LOS) and capacity analysis relate traffic volumes to the physical characteristics of an intersection. Intersection evaluations were made using the latest version of the highway capacity software (HCS 4.1e) which automates the procedures contained in the *2000 Highway Capacity Manual*. Appendix B contains detailed descriptions of LOS criteria for unsignalized intersections and the detailed HCS level of service reports.

The relative impact of the proposed project can be determined by comparing the level of service during the 2009 design year for the No-Build and Build traffic volume conditions. Table 4.1 illustrates the results of the level of service calculations for the study area intersections and the site driveway intersections.

Table 4.1 – Level of Service Summary

Intersection Approach		Control	AM Peak Hour				PM Peak Hour			
			2004 Existing	2009 No-Build	2009 Build	2009 Build w/ Imp.	2004 Existing	2009 No-Build	2009 Build	2009 Build w/ Imp.
Pawling/Pinewoods Ave		S								
Sheldon Ave EB	LTR		C (31.5)	C (31.6)	C (31.6)	C (28.0)	C (31.3)	C (31.3)	C (31.3)	C (27.9)
Pinewoods Ave WB	TR		E (57.9)	E (66.2)	F (92.9)	D (50.0)	C (34.1)	C (34.5)	D (36.9)	C (31.6)
Pawling Ave NB	LT		B (17.5)	B (18.4)	B (18.5)	B (18.5)	B (14.4)	B (15.0)	B (15.1)	B (15.1)
Pawling Ave SB	L		A (7.1)	A (7.5)	A (7.9)	A (10.0)	A (7.7)	A (8.3)	A (9.4)	B (12.5)
	TR		A (7.2)	A (7.7)	A (7.8)	A (10.3)	A (7.7)	A (8.1)	A (8.2)	B (10.9)
Overall Intersection Delay			B (18.5)	C (20.3)	C (25.1)	B (19.7)	B (11.3)	B (11.9)	B (12.6)	B (13.9)
NYS Route 2/Pawling Ave		S								
NYS Route 2 WB	L		C (33.9)	D (35.7)	D (36.4)	D (48.0)	C (30.1)	C (30.7)	C (31.0)	D (39.6)
Pawling Avenue NB	T		E (55.1)	E (69.0)	F (84.2)	D (46.1)	C (22.5)	C (23.3)	C (24.2)	C (33.1)
	R		A (5.1)	A (5.3)	A (5.3)	A (5.0)	A (4.8)	A (4.9)	A (4.9)	A (9.1)
NYS Route 2 EB (SB)	L		C (32.3)	C (32.7)	C (33.0)	D (35.7)	F (>120)	F (>120)	F (>120)	D (39.1)
	T		A (7.0)	A (7.1)	A (7.2)	A (5.9)	B (10.5)	B (11.1)	B (11.8)	A (8.9)
Overall Intersection Delay			C (32.0)	D (37.9)	D (44.6)	C (30.4)	D (35.5)	D (42.5)	D (45.5)	C (22.9)
NYS Route 2/Pawling Avenue		R								
NYS Route 2 EB	TR		--	A (1.8)	A (1.8)	--	--	A (3.0)	A (3.6)	--
Pawling Avenue NB	LR		--	D (25.2)	D (32.4)	--	--	B (12.0)	B (13.8)	--
NYS Route 2 WB	LT		--	C (18.0)	C (22.2)	--	--	A (5.4)	A (6.0)	--
NYS Route 2/South Lake Rd		U								
NYS Route 2 EB	LT		A (9.1)	A (9.2)	A (9.4)	--	A (8.3)	A (8.4)	A (8.5)	--
South Lake Ave SB	LR		C (15.1)	C (16.0)	C (17.0)	--	E (47.8)	F (70.5)	F (104.2)	--
NYS Route 2/Site Access Rd		U								
NYS Route 2 WB	LT		--	--	A (7.4)	--	--	--	A (8.3)	--
Site Access Road NB	LR		--	--	B (13.0)	--	--	--	B (13.6)	--
Pinewoods Ave/Site Access Rd		U								
Pinewoods Ave EB	LT		--	--	A (7.9)	--	--	--	A (7.5)	--
Site Access Rd SB	LR		--	--	B (10.3)	--	--	--	A (9.1)	--

Key: X (Y.Y) = Level of Service (Delay, seconds per vehicle)
S = Signalized intersection, U = Unsignalized intersection, R= Roundabout
NB, SB, WB, EB = Northbound, Southbound, Westbound, Eastbound intersection approaches
LTR = Left-turn, through, and/or right-turn movements
-- = Not Applicable

The following observations are evident from this analysis:

- Pawling/Pinewoods Ave – The level of service analysis indicates that this intersection operates at level of service B conditions in the existing conditions and level of service C conditions in the No-Build conditions during the AM peak hour with the Pinewoods Avenue westbound approach operating at a level of service E. During the PM peak hour this intersection operates at overall level of service B conditions with all approaches operating at level of service C or better in the existing and No-Build conditions. With the additional traffic expected with the proposed project, this intersection will operate at a level of service C during the AM peak hour and will continue to operate at level of service B during the PM peak hour. The intersection will experience an increase in vehicle delay on the Pinewoods Avenue westbound approach during both peak hours. To improve the overall operating conditions at this intersection it is recommended that the signal

timings at this pre-timed intersection be adjusted to better service the vehicles at this intersection. With the improved timings, the intersection will operate at level of service B during both peak hours with the Pinewoods Avenue westbound intersection approach improving to a level of service D during the AM peak hour and level of service C during the PM peak hour. Signal timing modifications will result in level of service at or better than the existing conditions.

- NYS Route 2/Pawling Ave –The level of service analysis indicates that in the existing and No-Build conditions this intersection is experiencing level of service E conditions on the Pawling Avenue northbound intersection approach during the AM peak hour and level of service F conditions on the NYS Route 2 eastbound (southbound) approach during the PM peak hour. The level of service analysis indicates that improvements are currently warranted at this intersection. As noted previously, improvements to include the installation of a roundabout at this intersection are currently being considered by the City of Troy. This intersection was analyzed with a roundabout using the Rodel analysis software. The analysis is summarized in Table 4.1 and indicates that a one lane roundabout would operate at level of service D or better during the AM peak hour and level of service B or better during the PM peak hour. In general, the installation of a roundabout would improve the overall operations of this intersection during the peak hours of the No-Build and Build conditions by reducing vehicle delays experienced. The decrease in delay is especially noticeable during the PM peak hour where the level of service F conditions would improve to level of service A conditions on the NYS Route 2 eastbound approach. Improvements to the roundabout would not be required as a result of this project.

  If a roundabout is not constructed at this intersection signal timing improvements will be required to maintain acceptable operating conditions at this intersection. These timing changes are warranted in the existing conditions. The signal timing modifications would result in overall level of service C operations during the AM and PM peak hours with all intersection approaches operating at level of service D or better conditions.

- NYS Route 2/South Lake Rd – The level of service analysis indicates that the South Lake Avenue stop sign approach will operate at level of service C conditions during the AM peak hour through the build conditions. During the PM peak hour the South Lake Road intersection approach will experience an increase in vehicle delay with the additional traffic generated by the proposed residential development. The levels of service experienced at this intersection with or without the project during the PM peak hour are likely similar at other unsignalized intersections in the corridor. The higher vehicle delay at this intersection is limited to the PM peak hour and does not require the installation of a traffic signal. It is recommended that stop sign control remain as the appropriate control at this intersection.

- NYS Route 2/Site Access Rd – The proposed site access road is expected to operate at good levels of service with short vehicle delays. Stop sign control on the northbound site access road intersection approach is the recommended control at this intersection.

- Pinewoods Ave/Site Access Rd – The proposed site access road is expected to operate at good levels of service with short vehicle delays. Stop sign control on the southbound site access road intersection approach is the recommended control at this intersection.

The small percentage of traffic expected to use side roads to travel to and from the site on Pinewoods Road via Pawling Avenue is not expected to impact the operating of any side road intersections. It is expected that this traffic will be dispersed among numerous side roads. This travel pattern exists due to the turning restrictions at the Pinewoods Avenue/Pawling Avenue intersection which limits movements to and from Pinewoods Avenue and Pawling Avenue at the signalized intersection. Similarly, a small percentage of the site traffic is expected to enter and exit the site from east on NYS Route 2 and Pinewoods Avenue. This small percentage of traffic will not effect the operation of intersections east of the site.

B. Sight Distance Evaluation

An evaluation of the available sight distance at the proposed site access road intersections with NYS Route 2 and Pinewoods Avenue was conducted. The intersection sight distance was measured from the perspective of a driver exiting the site access roads looking in both directions along NYS Route 2 and Pinewoods Avenue. In addition, the left-turn sight distance for vehicles traveling along NYS Route 2 westbound and along Pinewoods Avenue eastbound, making a left-turn into the site was also measured. The speed limit on NYS Route 2 in the vicinity of the site access road is 55 mph. The posted speed limit on Pinewoods Avenue at the site access road is 30 mph. Speed data collected by CME indicated that the 85th percentile speeds on NYS Route 2 is approximately 55-mph consistent with the posted speed limit. The 85th percentile speed on Pinewoods Avenue was measured to be 48-mph. The sight distance measurements obtained in the field were compared to the guidelines presented in the American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 2001 for a 55-mph

design speed on NYS Route 2 and for a 50-mph design speed on Pinewoods Avenue. The results are summarized in Table 4.2.

Table 4.2 – Sight Distance Summary

Intersection	Design Speed		Intersection Sight Distance (feet)		
			Right-Turn from site driveway [1]	Left-Turn from site driveway [2]	Left-Turn from Major Road [3]
NYS Route 2/Site Access Road	55-mph	Available	995	640	995
		Desirable	530	610	445
Pinewoods Avenue/Site Access Road	50-mph	Available	730	920	775
		Desirable	480	555	405

[1] = Sight distance looking left along major road for vehicles to complete a right-turn from the site driveway.
[2] = Sight distance looking right along major road for vehicles to complete a left-turn from the site driveway.
[3] = Sight distance looking straight on major road for vehicles to complete a left-turn onto the site driveway.

The results of the sight distance evaluation at the site driveways indicates that all the sight distance measurements exceed the AASHTO desirable sight distances for the 55 and 50-mph design speed on NYS Route 2 and Pinewoods Avenue. No sight distance related mitigation is necessary.

C. Accident Analysis

Accident data was obtained at the three study area intersections from the NYSDOT for the latest available three year period from June 1, 1999 through May 31, 2002. Table 4.3 summarizes the accident data.

Table 4.3 – Summary of Accidents

Intersection	Type of Accident			
	Non-reportable	Property Damage	Personal Injury	Totals
NYS Route 2/South Lake Avenue	0	1	1	2
NYS Route 2/Pawling Avenue	12	3	1	16
Pinewoods Avenue/Pawling Avenue	3	2	4	9

The two accidents at the NYS Route 2/South Lake Avenue intersection included a property damage collision with an animal and a personal injury right-angle accident caused by a left-turning vehicle failing to yield right-of-way. There are no patterns of accidents with respect to a particular type of accident, location, weather, or time of day.

Of the 16 accidents at the Pawling Avenue/NYS Route 2 intersection, 12 are

non-reportable meaning there was minimal or no property damage and no injuries recorded. The four reportable accidents at the Pawling Avenue/NYS Route 2 intersection include two right-angle collisions and two rear end collisions. There is no pattern of accidents with respect to a particular type of accident, location, weather, or time of day. Improvements to this intersection are currently in the approval stages by the City of Troy. The preferred alternative to construct a roundabout will reduce the congestion and improve vehicle flow at this intersection, which is expected to reduce the number of accidents experienced at this intersection.

The six reportable accidents at the Pawling Avenue/Pinewood intersection include three rear-end collisions, one accident involving three vehicles caused by icy pavement conditions, one collision with a pedestrian, and one collision of unknown type and cause. The available data does not show a clear pattern with respect to the type of accident, location, weather, or time of day.

Based on the NYSDOT accident records there are no prevalent patterns of accidents recorded at the study area intersections. No accident related mitigation is required due to the development of the Carriage Hill Estates.

CHAPTER V

CONCLUSIONS

Based on the results of the Traffic Impact Study completed for the proposed Carriage Hill Estates, the following conclusions and recommendations are offered:

1. The proposed 310 residential units are expected to generate approximately 100 trips during the AM peak hour and 135 trips during the PM peak hour. Access to and from the site will be provided via a town dedicated road intersecting with NYS Route 2 and Pinewoods Avenue.

2. Drivers at the intersection of Pawling Avenue/Pinewoods Avenue currently experience some delay on the Pinewoods Avenue westbound approach. The delay will increase with the additional traffic generated by the proposed project. The delays on the Pinewoods Avenue intersection approach can be mitigated with modifications to the traffic signal timing. Minor modifications to the signal timings will result in overall levels of service B during both peak hours with the Pinewoods Avenue approach operating at a level of service D during the AM peak hour and level of service C during the PM peak hour.

3. The NYS Route 2/Pawling Avenue intersection currently operates with level of service E conditions on the Pawling Avenue approach during the AM peak hour and level of service F conditions on the NYS Route 2 eastbound (southbound) approach during the PM peak hour. These intersection delays will continue to increase in the No-Build and Build conditions. The City of Troy is currently considering improvements to this intersection. The preferred alternative recommends installation a roundabout at this intersection. With a roundabout, the overall operation of this intersection would be improved and no additional mitigation would be required due to the project. If a roundabout is not constructed, signal timing modifications are required at this intersection to maintain acceptable operating conditions. These timing changes are warranted regardless of the development of the project and would result in overall level of service C operations during the AM and PM peak hours with all intersection approaches operating at level of service D or better conditions.

4. The site access road intersections with NYS Route 2 and Pinewoods Avenue are expected to operate with good levels of service and short vehicle delays. Stop sign control on the site access road intersection approaches is the recommended control at these intersections.

5. Sight distance measured at the site access road intersections with NYS Route 2 and Pinewoods Avenue exceed the recommended distances by AASHTO for the 85th percentile speeds of 55-mph and 50-mph, respectively. No sight distance related mitigation is required.

6. Based on NYSDOT accident records, there are no prevalent patterns of accidents recorded at the study area intersections. No accident related mitigation is required due to the development of the Carriage Hill Estates.

The above analysis indicates that the proposed 310 residential units proposed in the Carriage Hill Estates development will result in acceptable operating conditions at the study area intersections with modifications to the signal timings at two intersections. No geometric improvements to the intersections are required.

Appendix A – Turning Movement Counts

Traffic Impact Study
Carriage Hill Estates
Town of Brunswick, New York

Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

Project: Carriage Hill Estates
Counted by: EAD
Location:
Other:

File Name : tm4164a1
Site Code : 00041641
Start Date : 10/7/04
Page No : 1

Groups Printed- Passenger Veh - Heavy Veh

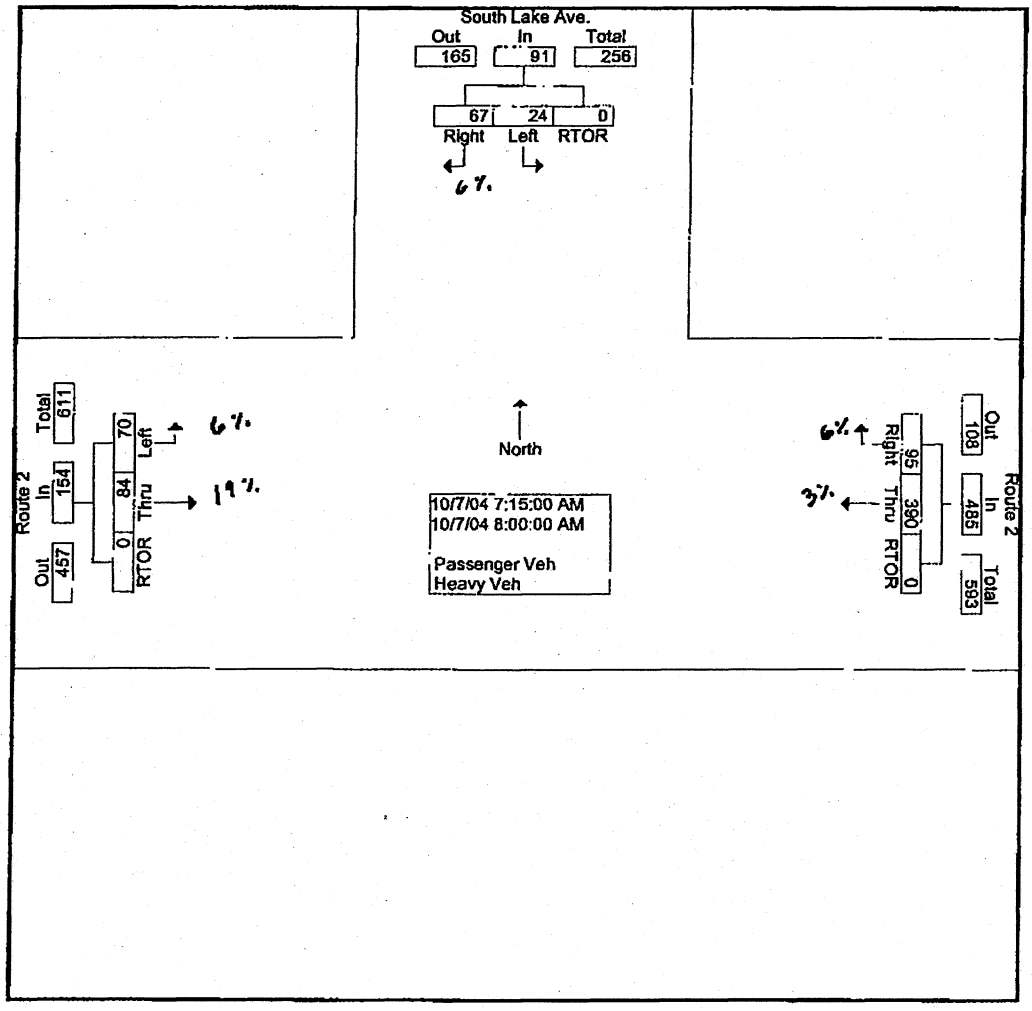
	South Lake Ave. Southbound				Route 2 Westbound				Northbound				Route 2 Eastbound				
Start Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	6	0	16	0	0	55	12	0	0	0	0	0	5	20	0	0	114
07:15 AM	3	0	14	0	0	75	30	0	0	0	0	0	18	28	0	0	168
07:30 AM	5	0	21	0	0	114	19	0	0	0	0	0	14	20	0	0	193
07:45 AM	7	0	17	0	0	81	18	0	0	0	0	0	24	22	0	0	169
Total	21	0	68	0	0	325	79	0	0	0	0	0	61	90	0	0	644
08:00 AM	9	0	15	0	0	120	28	0	0	0	0	0	14	14	0	0	200
08:15 AM	4	0	14	0	0	82	17	0	0	0	0	0	14	20	0	0	151
08:30 AM	2	0	8	0	0	73	11	0	0	0	0	0	21	13	0	0	128
08:45 AM	3	0	8	0	0	85	7	0	0	0	0	0	12	23	0	0	138
Total	18	0	45	0	0	360	63	0	0	0	0	0	61	70	0	0	617
Grand Total	39	0	113	0	0	685	142	0	0	0	0	0	122	160	0	0	1261
Apprch %	25.7	0.0	74.3	0.0	0.0	82.8	17.2	0.0	0.0	0.0	0.0	0.0	43.3	56.7	0.0	0.0	
Total %	3.1	0.0	9.0	0.0	0.0	54.3	11.3	0.0	0.0	0.0	0.0	0.0	9.7	12.7	0.0	0.0	

Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164a1
Site Code : 00041641
Start Date : 10/7/04
Page No : 2

Passenger / Heavy Veh.

Start Time	South Lake Ave. Southbound Left	Thru	Right	RTOR	App. Total	Route 2 Westbound Left	Thru	Right	RTOR	App. Total	Northbound Left	Thru	Right	RTOR	App. Total	Route 2 Eastbound Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection 07:15 AM																					
Volume	24	0	67	0	91	0	390	95	0	485	0	0	0	0	0	70	84	0	0	154	730
Percent	26.4	0.0	73.6	0.0		0.0	80.4	19.6	0.0		0.0	0.0	0.0	0.0		45.5	54.5	0.0	0.0		
08:00 Volume	9	0	15	0	24	0	120	28	0	148	0	0	0	0	0	14	14	0	0	28	200
Peak Factor																					0.913
High Int.	07:30 AM					08:00 AM										07:15 AM					
Volume	5	0	21	0	26	0	120	28	0	148	0	0	0	0	0	18	28	0	0	46	
Peak Factor					0.875					0.819										0.837	



Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164a1
Site Code : 00041641
Start Date : 10/7/04
Page No : 1

Groups Printed- Heavy Veh

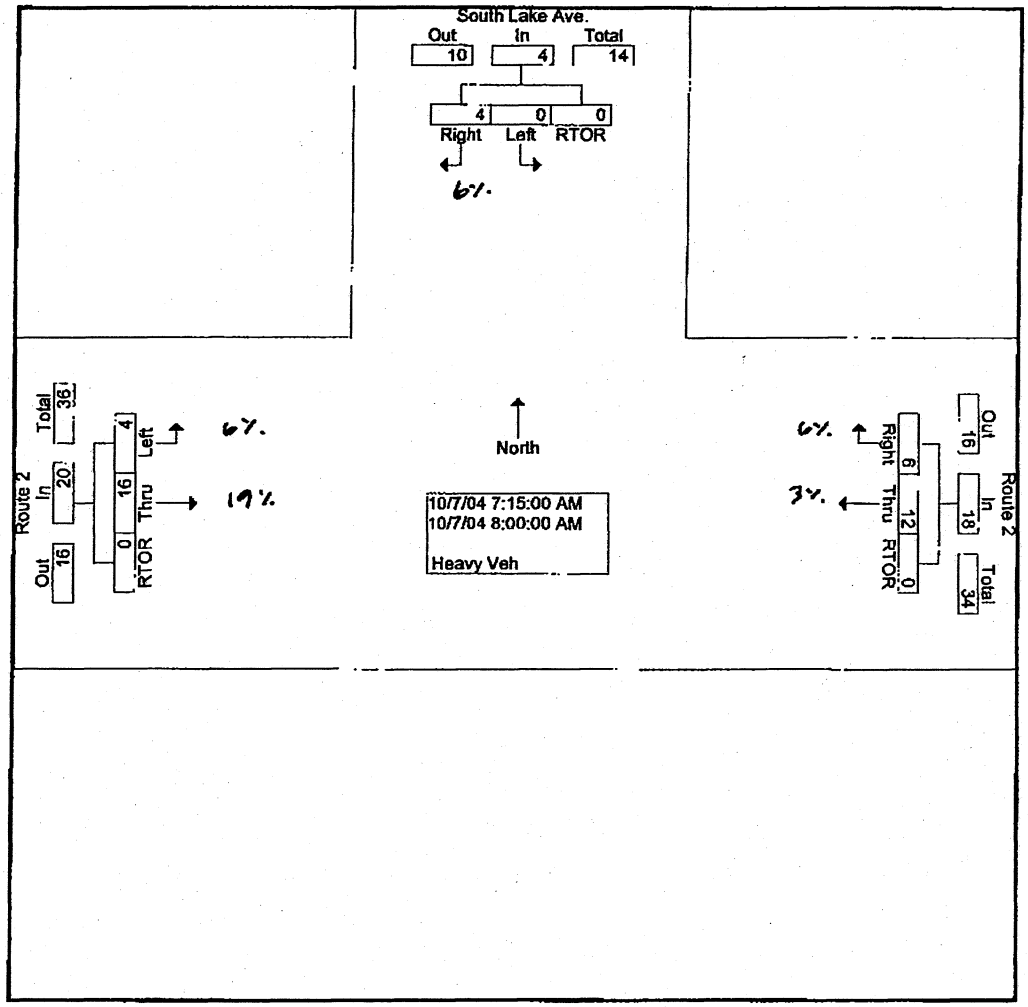
	South Lake Ave. Southbound				Route 2 Westbound				Northbound				Route 2 Eastbound				
Start Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	0	0	2	0	0	2	1	0	0	0	0	0	0	2	0	0	7
07:15 AM	0	0	0	0	0	3	2	0	0	0	0	0	1	7	0	0	13
07:30 AM	0	0	2	0	0	5	2	0	0	0	0	0	2	5	0	0	16
07:45 AM	0	0	1	0	0	1	2	0	0	0	0	0	1	3	0	0	8
Total	0	0	5	0	0	11	7	0	0	0	0	0	4	17	0	0	44
08:00 AM	0	0	1	0	0	3	0	0	0	0	0	0	0	1	0	0	5
08:15 AM	0	0	0	0	0	4	0	0	0	0	0	0	2	5	0	0	11
08:30 AM	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	5
08:45 AM	0	0	0	0	0	6	0	0	0	0	0	0	1	1	0	0	8
Total	0	0	2	0	0	17	0	0	0	0	0	0	3	7	0	0	29
Grand Total	0	0	7	0	0	28	7	0	0	0	0	0	7	24	0	0	73
Apprch %	0.0	0.0	100.0	0.0	0.0	80.0	20.0	0.0	0.0	0.0	0.0	0.0	22.6	77.4	0.0	0.0	
Total %	0.0	0.0	9.6	0.0	0.0	38.4	9.6	0.0	0.0	0.0	0.0	0.0	9.6	32.9	0.0	0.0	

Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164a1
Site Code : 00041641
Start Date : 10/7/04
Page No : 2

Heavy Veh.

	South Lake Ave. Southbound					Route 2 Westbound					Northbound					Route 2 Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection 07:15 AM																					
Volume	0	0	4	0	4	0	12	6	0	18	0	0	0	0	0	4	16	0	0	20	42
Percent	0.0	0.0	100.0	0.0		0.0	66.7	33.3	0.0		0.0	0.0	0.0	0.0		20.0	80.0	0.0	0.0		
07:30 Volume	0	0	2	0	2	0	5	2	0	7	0	0	0	0	0	2	5	0	0	7	16
Peak Factor																					0.656
High Int. 07:30 AM						07:30 AM										07:15 AM					
Volume	0	0	2	0	2	0	5	2	0	7	0	0	0	0	0	1	7	0	0	8	
Peak Factor					0.500					0.643										0.625	



Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

Project: Carriage Hill Estates
Counted by: MBH
Location:
Other:

File Name : tm4164a2
Site Code : 00041642
Start Date : 10/7/04
Page No : 1

Groups Printed- Passenger Veh - Heavy Veh

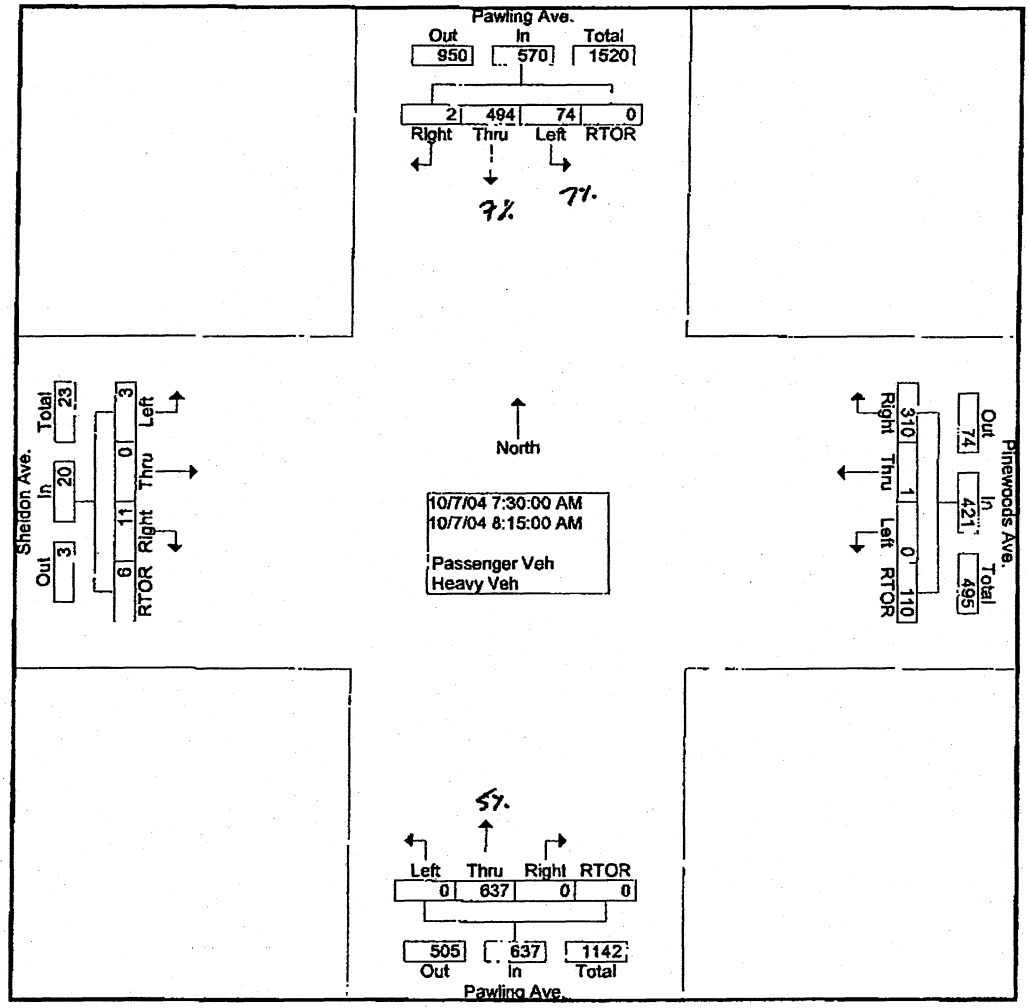
	Pawling Ave. Southbound				Pinewoods Ave. Westbound				Pawling Ave. Northbound				Sheldon Ave. Eastbound				
Start Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	12	82	1	0	0	1	32	12	0	86	0	0	1	0	1	0	228
07:15 AM	21	98	0	0	0	0	59	22	0	139	0	0	1	0	1	0	341
07:30 AM	22	161	1	0	0	0	78	40	0	137	0	0	0	0	4	3	446
07:45 AM	22	131	1	0	0	0	86	26	0	176	0	0	0	0	3	0	445
Total	77	472	3	0	0	1	255	100	0	538	0	0	2	0	9	3	1460
08:00 AM	15	89	0	0	0	1	73	23	0	164	0	0	0	0	3	3	371
08:15 AM	15	113	0	0	0	0	73	21	0	160	0	0	3	0	1	0	386
08:30 AM	20	106	0	0	0	0	46	25	0	116	0	0	0	0	0	0	313
08:45 AM	8	91	0	0	0	0	44	28	2	133	0	0	0	1	0	0	307
Total	58	399	0	0	0	1	236	97	2	573	0	0	3	1	4	3	1377
Grand Total	135	871	3	0	0	2	491	197	2	1111	0	0	5	1	13	6	2837
Apprch %	13.4	86.3	0.3	0.0	0.0	0.3	71.2	28.6	0.2	99.8	0.0	0.0	20.0	4.0	52.0	24.0	
Total %	4.8	30.7	0.1	0.0	0.0	0.1	17.3	6.9	0.1	39.2	0.0	0.0	0.2	0.0	0.5	0.2	

Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164a2
Site Code : 00041642
Start Date : 10/7/04
Page No : 2

Passenger / Heavy Veh.

	Pawling Ave. Southbound					Pinewoods Ave. Westbound					Pawling Ave. Northbound					Sheldon Ave. Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection 07:30 AM																					
Volume	74	494	2	0	570	0	1	310	110	421	0	637	0	0	637	3	0	11	6	20	1648
Percent	13.0	86.7	0.4	0.0		0.0	0.2	73.6	26.1		0.0	100.0	0.0	0.0		15.0	0.0	55.0	30.0		
07:30 Volume	22	161	1	0	184	0	0	78	40	118	0	137	0	0	137	0	0	4	3	7	446
Peak Factor																					0.924
High Int. 07:30 AM						07:30 AM					07:45 AM					07:30 AM					
Volume	22	161	1	0	184	0	0	78	40	118	0	176	0	0	176	0	0	4	3	7	
Peak Factor					0.774					0.892					0.905					0.714	



Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164a2
Site Code : 00041642
Start Date : 10/7/04
Page No : 1

Groups Printed- Heavy Veh

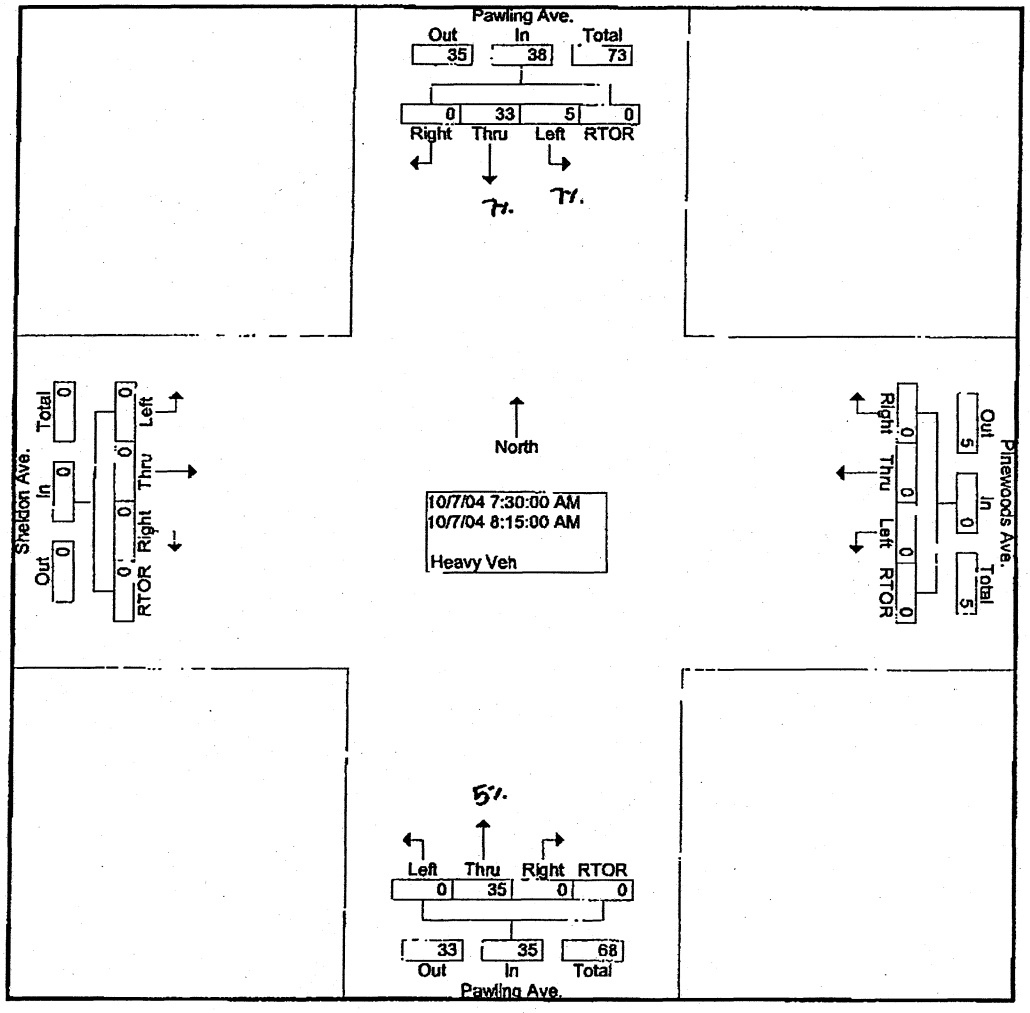
	Pawling Ave. Southbound				Pinewoods Ave. Westbound				Pawling Ave. Northbound				Sheldon Ave. Eastbound				
Start Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
07:15 AM	0	7	0	0	0	0	0	0	0	3	0	0	0	0	0	0	10
07:30 AM	1	9	0	0	0	0	0	0	0	8	0	0	0	0	0	0	18
07:45 AM	4	9	0	0	0	0	0	0	0	15	0	0	0	0	0	0	28
Total	5	29	0	0	0	0	0	0	0	26	0	0	0	0	0	0	60
08:00 AM	0	7	0	0	0	0	0	0	0	8	0	0	0	0	0	0	15
08:15 AM	0	8	0	0	0	0	0	0	0	4	0	0	0	0	0	0	12
08:30 AM	0	7	0	0	0	0	1	0	0	6	0	0	0	0	0	0	14
08:45 AM	0	3	0	0	0	0	0	0	0	6	0	0	0	0	0	0	9
Total	0	25	0	0	0	0	1	0	0	24	0	0	0	0	0	0	50
Grand Total	5	54	0	0	0	0	1	0	0	50	0	0	0	0	0	0	110
Apprch %	8.5	91.5	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	4.5	49.1	0.0	0.0	0.0	0.0	0.9	0.0	0.0	45.5	0.0	0.0	0.0	0.0	0.0	0.0	

Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164a2
Site Code : 00041642
Start Date : 10/7/04
Page No : 2

Heavy Veh

	Pawling Ave. Southbound					Pinewoods Ave. Westbound					Pawling Ave. Northbound					Sheldon Ave. Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection 07:30 AM																					
Volume	5	33	0	0	38	0	0	0	0	0	0	35	0	0	35	0	0	0	0	0	73
Percent	13.2	86.8	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
07:45 Volume	4	9	0	0	13	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	28
Peak Factor																					0.652
High Int. 07:45 AM											07:45 AM										
Volume	4	9	0	0	13	0	0	0	0	0	0	15	0	0	15						
Peak Factor					0.731										0.583						



Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

Project: Carriage Hill Estates
Counted by: FBW
cation:
Other:

File Name : tm4164a3
Site Code : 00041643
Start Date : 10/7/04
Page No : 1

Groups Printed- Passenger Veh - Heavy Veh

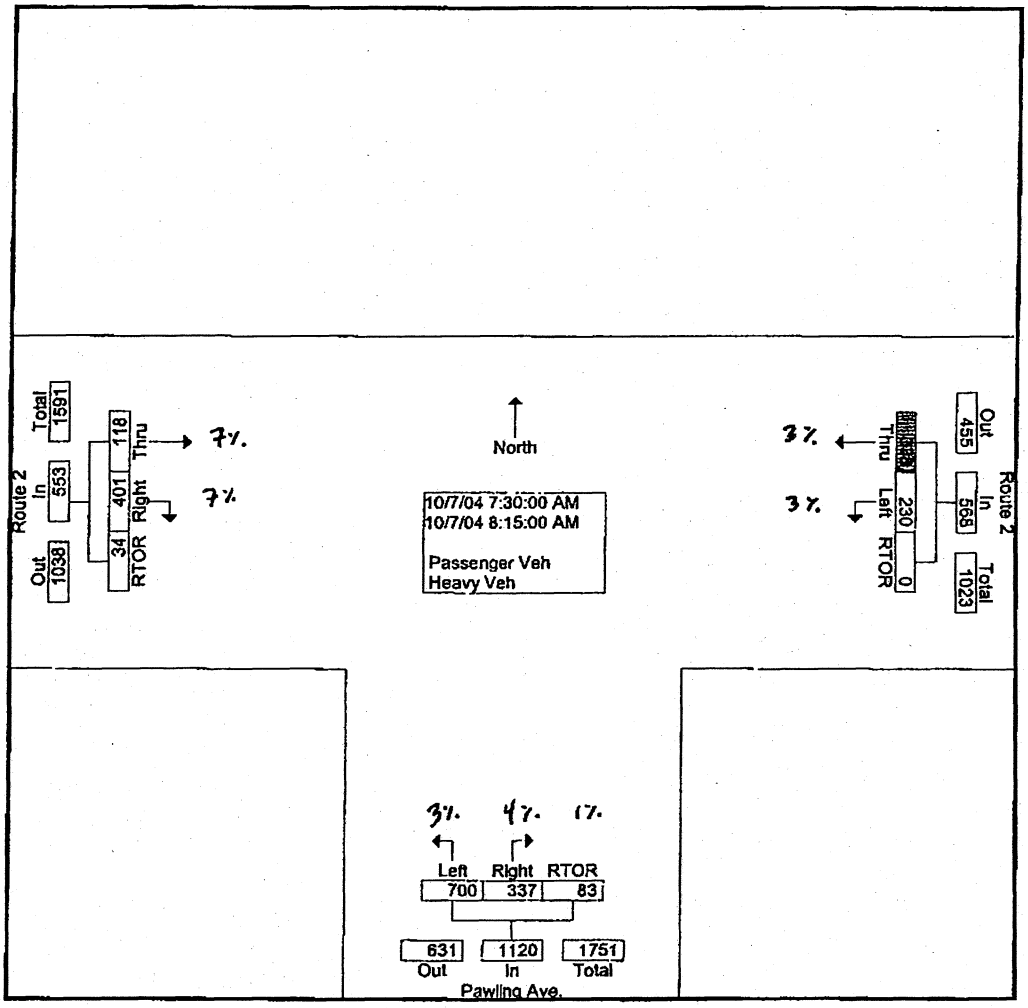
	Pawling Ave. Southbound				Route 2 Westbound				Pawling Ave. Northbound				Route 2 Eastbound				
Start Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	0	0	0	0	42	52	0	0	103	0	28	7	0	15	66	8	321
07:15 AM	0	0	0	0	50	65	0	0	143	0	57	16	0	18	83	7	439
07:30 AM	0	0	0	0	73	93	0	0	166	0	57	14	0	32	116	4	555
07:45 AM	0	0	0	0	60	83	0	0	181	0	105	22	0	29	113	6	599
Total	0	0	0	0	225	293	0	0	593	0	247	59	0	94	378	25	1914
08:00 AM	0	0	0	0	48	85	0	0	181	0	111	23	0	32	84	9	573
08:15 AM	0	0	0	0	49	77	0	0	172	0	64	24	0	25	88	15	514
08:30 AM	0	0	0	0	43	73	0	0	159	0	43	14	0	28	87	4	451
08:45 AM	0	0	0	0	39	79	0	0	163	0	39	10	0	28	77	4	439
Total	0	0	0	0	179	314	0	0	675	0	257	71	0	113	336	32	1977
Grand Total	0	0	0	0	404	607	0	0	1268	0	504	130	0	207	714	57	3891
Apprch %	0.0	0.0	0.0	0.0	40.0	60.0	0.0	0.0	66.7	0.0	26.5	6.8	0.0	21.2	73.0	5.8	
Total %	0.0	0.0	0.0	0.0	10.4	15.6	0.0	0.0	32.6	0.0	13.0	3.3	0.0	5.3	18.4	1.5	

Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164a3
Site Code : 00041643
Start Date : 10/7/04
Page No : 2

Passenger / Heavy Veh.

	Pawling Ave. Southbound					Route 2 Westbound					Pawling Ave. Northbound					Route 2 Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	0	0	0	0	0	230	338	0	0	568	700	0	337	83	1120	0	118	401	34	553	2241
Percent	0.0	0.0	0.0	0.0		40.5	59.5	0.0	0.0		62.5	0.0	30.1	7.4		0.0	21.3	72.5	6.1		
07:45 Volume	0	0	0	0	0	60	83	0	0	143	181	0	105	22	308	0	29	113	6	148	599
Peak Factor																					0.935
High Int.						07:30 AM					08:00 AM					07:30 AM					
Volume	0	0	0	0	0	73	93	0	0	166	181	0	111	23	315	0	32	116	4	152	
Peak Factor										0.855					0.889					0.910	



Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164a3
Site Code : 00041643
Start Date : 10/7/04
Page No : 1

Groups Printed- Heavy Veh

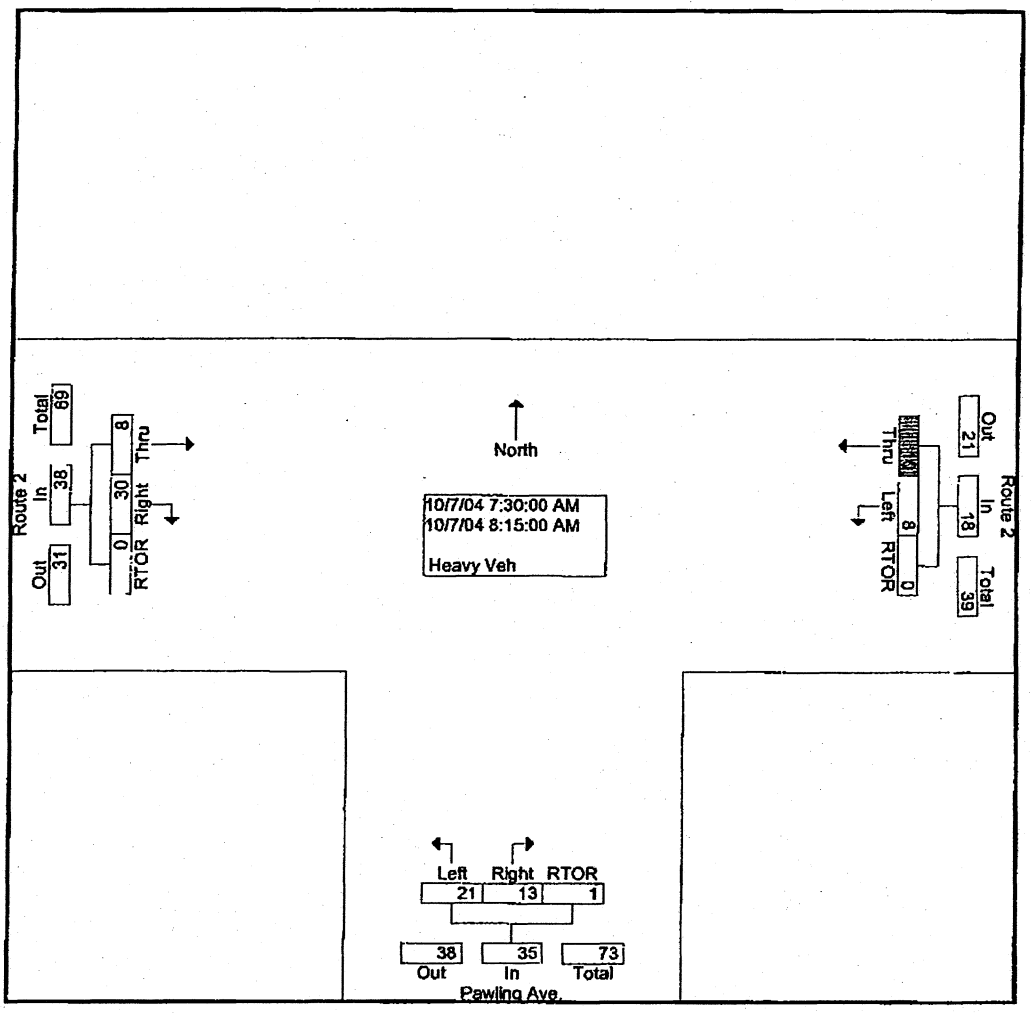
	Pawling Ave. Southbound				Route 2 Westbound				Pawling Ave. Northbound				Route 2 Eastbound				
Start Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	0	0	0	0	3	2	0	0	2	0	2	1	0	1	9	0	20
07:15 AM	0	0	0	0	0	0	0	0	2	0	4	1	0	2	5	0	14
07:30 AM	0	0	0	0	1	6	0	0	4	0	3	0	0	2	7	0	23
07:45 AM	0	0	0	0	3	1	0	0	8	0	5	1	0	2	11	0	31
Total	0	0	0	0	7	9	0	0	16	0	14	3	0	7	32	0	88
08:00 AM	0	0	0	0	3	1	0	0	6	0	5	0	0	2	5	0	22
08:15 AM	0	0	0	0	1	2	0	0	3	0	0	0	0	2	7	0	15
08:30 AM	0	0	0	0	1	2	0	0	6	0	0	0	0	1	7	1	18
08:45 AM	0	0	0	0	1	3	0	0	5	0	0	0	0	3	2	0	14
Total	0	0	0	0	6	8	0	0	20	0	5	0	0	8	21	1	69
Grand Total	0	0	0	0	13	17	0	0	36	0	19	3	0	15	53	1	157
Apprch %	0.0	0.0	0.0	0.0	43.3	56.7	0.0	0.0	62.1	0.0	32.8	5.2	0.0	21.7	76.8	1.4	
Total %	0.0	0.0	0.0	0.0	8.3	10.8	0.0	0.0	22.9	0.0	12.1	1.9	0.0	9.6	33.8	0.6	

Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164a3
Site Code : 00041643
Start Date : 10/7/04
Page No : 2

Heavy Veh.

	Pawling Ave. Southbound					Route 2 Westbound					Pawling Ave. Northbound					Route 2 Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	0	0	0	0	0	8	10	0	0	18	21	0	13	1	35	0	8	30	0	38	91
Percent	0.0	0.0	0.0	0.0		44.4	55.6	0.0	0.0		60.0	0.0	37.1	2.9		0.0	21.1	78.9	0.0		
07:45 Volume	0	0	0	0	0	3	1	0	0	4	8	0	5	1	14	0	2	11	0	13	31
Peak Factor																					0.734
High Int.						07:30 AM					07:45 AM					07:45 AM					
Volume	0	0	0	0	0	1	6	0	0	7	8	0	5	1	14	0	2	11	0	13	
Peak Factor										0.643					0.625					0.731	



Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

Project: Carriage Hill Estates
Counted by: EAD
Location:
Other:

File Name : tm4164p1
Site Code : 00041641
Start Date : 10/7/04
Page No : 1

Groups Printed- Passenger Veh - Heavy Veh

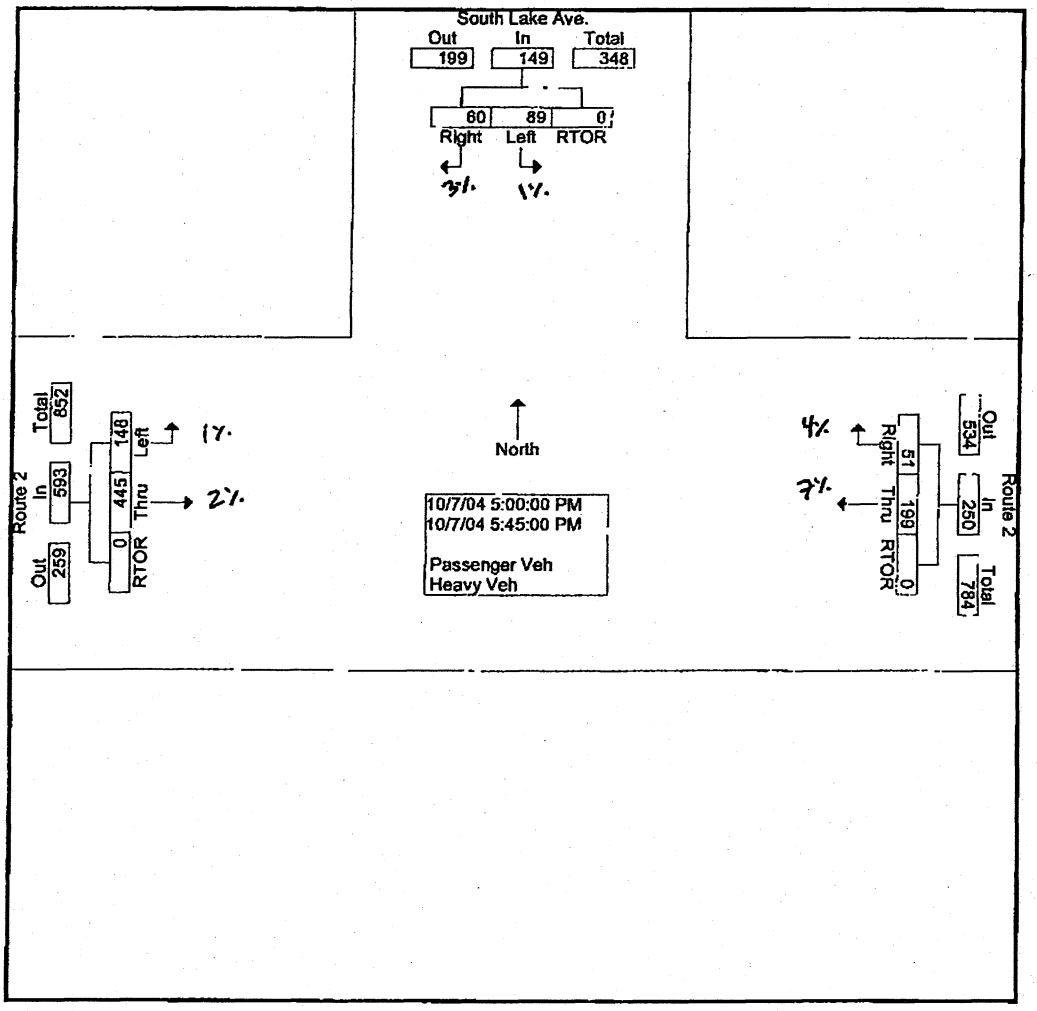
	South Lake Ave. Southbound				Route 2 Westbound				Northbound				Route 2 Eastbound				
Start Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	21	0	17	0	0	57	7	0	0	0	0	0	25	80	0	0	207
04:15 PM	15	0	11	0	0	36	13	0	0	0	0	0	42	84	0	0	201
04:30 PM	6	0	20	0	0	38	12	0	0	0	0	0	35	108	0	0	219
04:45 PM	14	0	22	0	0	35	14	0	0	0	0	0	26	92	0	0	203
Total	56	0	70	0	0	166	46	0	0	0	0	0	128	364	0	0	830
05:00 PM	15	0	10	0	0	44	13	0	0	0	0	0	38	131	0	0	251
05:15 PM	36	0	17	0	0	46	9	0	0	0	0	0	38	113	0	0	259
05:30 PM	22	0	14	0	0	58	20	0	0	0	0	0	27	102	0	0	243
05:45 PM	16	0	19	0	0	51	9	0	0	0	0	0	45	99	0	0	239
Total	89	0	60	0	0	199	51	0	0	0	0	0	148	445	0	0	992
Grand Total	145	0	130	0	0	365	97	0	0	0	0	0	276	809	0	0	1822
Apprch %	52.7	0.0	47.3	0.0	0.0	79.0	21.0	0.0	0.0	0.0	0.0	0.0	25.4	74.6	0.0	0.0	
Total %	8.0	0.0	7.1	0.0	0.0	20.0	5.3	0.0	0.0	0.0	0.0	0.0	15.1	44.4	0.0	0.0	

Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164p1
Site Code : 00041641
Start Date : 10/7/04
Page No : 2

Passenger / Heavy Veh.

	South Lake Ave. Southbound					Route 2 Westbound					Northbound					Route 2 Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 05:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	05:00 PM																				
Volume	89	0	60	0	149	0	199	51	0	250	0	0	0	0	0	148	445	0	0	593	992
Percent	59.7	0.0	40.3	0.0		0.0	79.6	20.4	0.0		0.0	0.0	0.0	0.0		25.0	75.0	0.0	0.0		
05:15 Volume	36	0	17	0	53	0	46	9	0	55	0	0	0	0	0	38	113	0	0	151	259
Peak Factor																					0.958
High Int.	05:15 PM					05:30 PM										05:00 PM					
Volume	36	0	17	0	53	0	58	20	0	78	0	0	0	0	0	38	131	0	0	169	
Peak Factor					0.703					0.801										0.877	



Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164p1
Site Code : 00041641
Start Date : 10/7/04
Page No : 1

Groups Printed- Heavy Veh

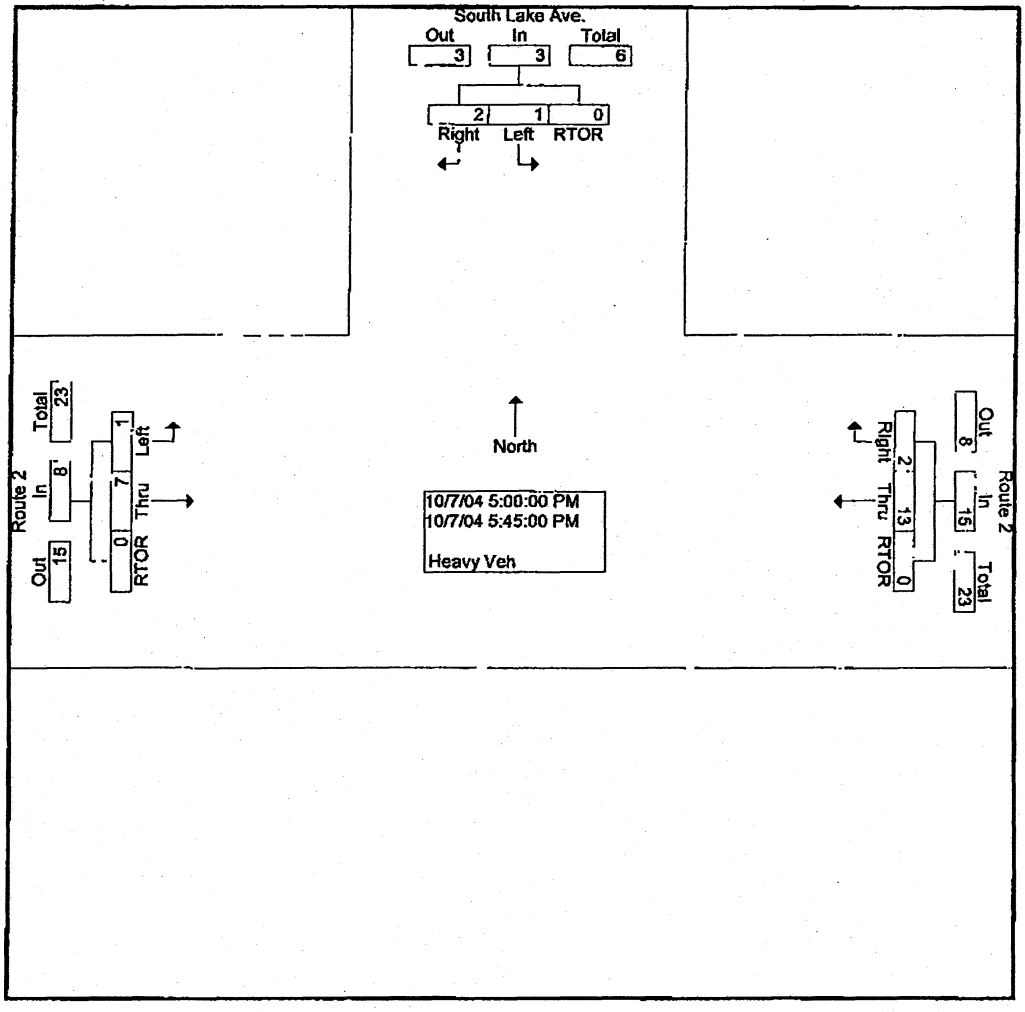
	South Lake Ave. Southbound				Route 2 Westbound				Northbound				Route 2 Eastbound				
Start Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	4
04:15 PM	1	0	0	0	0	1	1	0	0	0	0	0	2	3	0	0	8
04:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
Total	1	0	0	0	0	4	1	0	0	0	0	0	2	7	0	0	15
05:00 PM	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	3
05:15 PM	0	0	2	0	0	4	0	0	0	0	0	0	0	2	0	0	8
05:30 PM	0	0	0	0	0	5	1	0	0	0	0	0	0	3	0	0	9
05:45 PM	0	0	0	0	0	4	0	0	0	0	0	0	1	1	0	0	6
Total	1	0	2	0	0	13	2	0	0	0	0	0	1	7	0	0	26
Grand Total	2	0	2	0	0	17	3	0	0	0	0	0	3	14	0	0	41
Apprch %	50.0	0.0	50.0	0.0	0.0	85.0	15.0	0.0	0.0	0.0	0.0	0.0	17.6	82.4	0.0	0.0	
Total %	4.9	0.0	4.9	0.0	0.0	41.5	7.3	0.0	0.0	0.0	0.0	0.0	7.3	34.1	0.0	0.0	

Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164p1
Site Code : 00041641
Start Date : 10/7/04
Page No : 2

Heavy Veh.

	South Lake Ave. Southbound					Route 2 Westbound					Northbound					Route 2 Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 05:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	05:00 PM																				
Volume	1	0	2	0	3	0	13	2	0	15	0	0	0	0	0	1	7	0	0	8	26
Percent	33.3	0.0	66.7	0.0		0.0	86.7	13.3	0.0		0.0	0.0	0.0	0.0		12.5	87.5	0.0	0.0		
05:30 Volume	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	0	3	0	0	3	9
Peak Factor																					0.722
High Int.	05:15 PM					05:30 PM										05:30 PM					
Volume	0	0	2	0	2	0	5	1	0	6	0	0	0	0	0	0	3	0	0	3	
Peak Factor					0.375					0.625										0.667	



Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

Project: Carriage Hill Estates
Counted by: MBH
Location:
Other:

File Name : tm4164p2
Site Code : 00041642
Start Date : 10/7/04
Page No : 1

Groups Printed- Passenger Veh - Heavy Veh

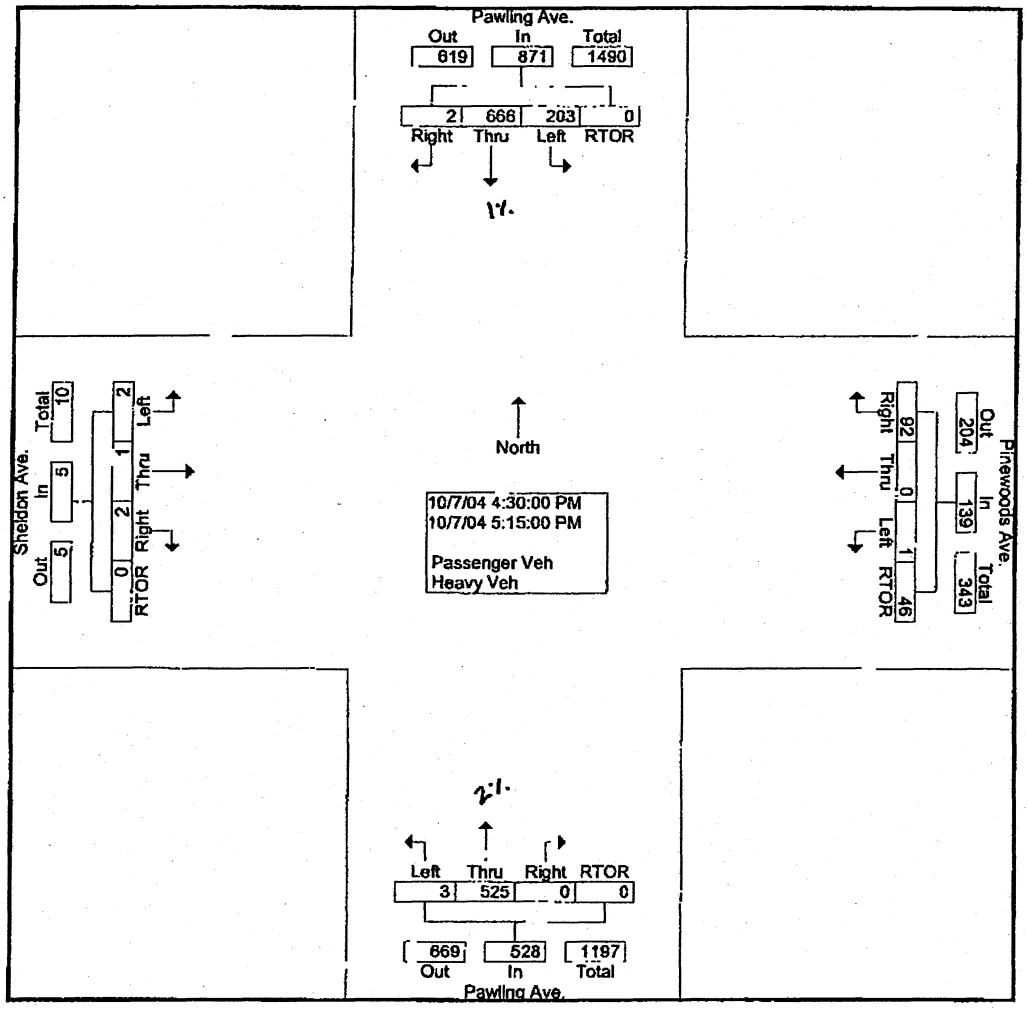
	Pawling Ave. Southbound				Pinewoods Ave. Westbound				Pawling Ave. Northbound				Sheldon Ave. Eastbound				
Start Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	45	166	0	0	0	0	18	2	1	138	0	0	0	0	2	0	370
04:15 PM	45	151	0	0	0	0	16	7	1	136	0	0	0	0	1	0	357
04:30 PM	50	190	0	0	0	0	16	7	1	126	0	0	0	0	0	0	390
04:45 PM	53	166	2	0	0	0	30	20	1	123	0	0	1	0	0	0	396
Total	193	673	2	0	0	0	78	36	4	523	0	0	1	0	3	0	1513
05:00 PM	56	162	0	0	1	0	26	9	1	134	0	0	1	1	1	0	392
05:15 PM	44	148	0	0	0	0	20	10	0	142	0	0	0	0	1	0	365
05:30 PM	46	160	0	0	0	0	26	11	1	127	0	0	0	0	1	0	372
05:45 PM	48	156	0	0	0	0	36	8	1	151	0	0	0	0	1	0	402
Total	195	626	0	0	1	0	108	38	3	554	0	0	1	1	4	0	1531
Grand Total	388	1299	2	0	1	0	186	74	7	1077	0	0	2	1	7	0	3044
Apprch %	23.0	76.9	0.1	0.0	0.4	0.0	71.3	28.4	0.6	99.4	0.0	0.0	20.0	10.0	70.0	0.0	
Total %	12.7	42.7	0.1	0.0	0.0	0.0	6.1	2.4	0.2	35.4	0.0	0.0	0.1	0.0	0.2	0.0	

Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164p2
Site Code : 00041642
Start Date : 10/7/04
Page No : 2

Passenger / Heavy Veh.

	Pawling Ave. Southbound					Pinewoods Ave. Westbound					Pawling Ave. Northbound					Sheldon Ave. Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersection 04:30 PM																					
Volume	203	666	2	0	871	1	0	92	46	139	3	525	0	0	528	2	1	2	0	5	1543
Percent	23.3	76.5	0.2	0.0		0.7	0.0	66.2	33.1		0.6	99.4	0.0	0.0		40.0	20.0	40.0	0.0		
04:45 Volume	53	166	2	0	221	0	0	30	20	50	1	123	0	0	124	1	0	0	0	1	396
Peak Factor																					0.974
High Int.	04:30 PM					04:45 PM					05:15 PM					05:00 PM					
Volume	50	190	0	0	240	0	0	30	20	50	0	142	0	0	142	1	1	1	0	3	
Peak Factor					0.907					0.695					0.930					0.417	



Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164p2
Site Code : 00041642
Start Date : 10/7/04
Page No : 1

Groups Printed- Heavy Veh

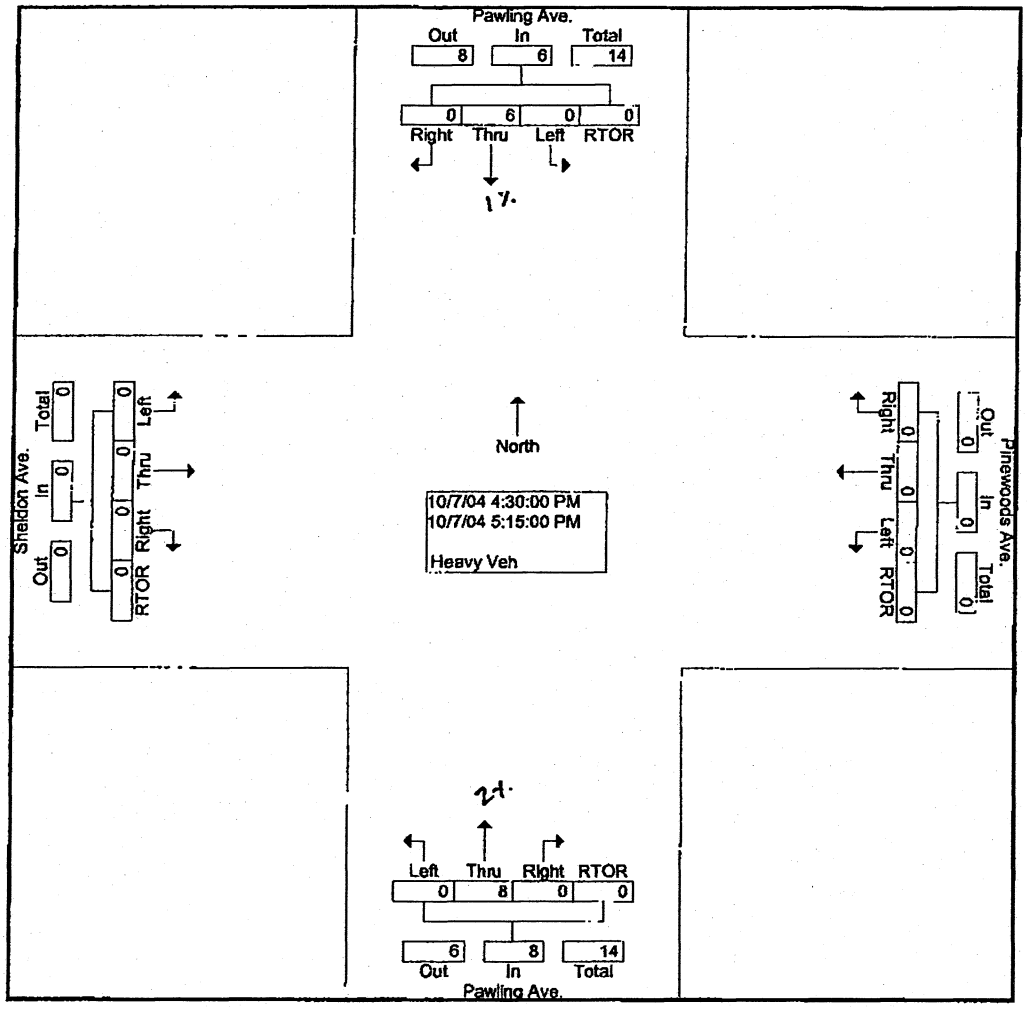
	Pawling Ave. Southbound				Pinewoods Ave. Westbound				Pawling Ave. Northbound				Sheldon Ave. Eastbound				
Start Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	0	6	0	0	0	0	0	0	0	4	0	0	0	0	0	0	10
04:15 PM	0	2	0	0	0	0	1	0	0	3	0	0	0	0	0	0	6
04:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
04:45 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
Total	0	9	0	0	0	0	1	0	0	12	0	0	0	0	0	0	22
05:00 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
05:15 PM	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5
05:30 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
05:45 PM	0	2	0	0	0	0	2	0	0	2	0	0	0	0	0	0	6
Total	0	9	0	0	0	0	2	0	0	6	0	0	0	0	0	0	17
Grand Total	0	18	0	0	0	0	3	0	0	18	0	0	0	0	0	0	39
Apprch %	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total %	0.0	46.2	0.0	0.0	0.0	0.0	7.7	0.0	0.0	46.2	0.0	0.0	0.0	0.0	0.0	0.0	

Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tm4164p2
Site Code : 00041642
Start Date : 10/7/04
Page No : 2

Heavy Veh.

	Pawling Ave. Southbound					Pinewoods Ave. Westbound					Pawling Ave. Northbound					Sheldon Ave. Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersection	04:30 PM																				
Volume	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	14
Percent	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
05:15 Volume	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
Peak Factor																					0.700
High Int.	05:15 PM										04:30 PM										
Volume	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4						
Peak Factor					0.500										0.500						



Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

Project: Carriage Hill Estates
Counted by: FBW
Location:
Other:

File Name : tn4164p3
Site Code : 00041643
Start Date : 10/7/04
Page No : 1

Groups Printed- Passenger Veh - Heavy Veh

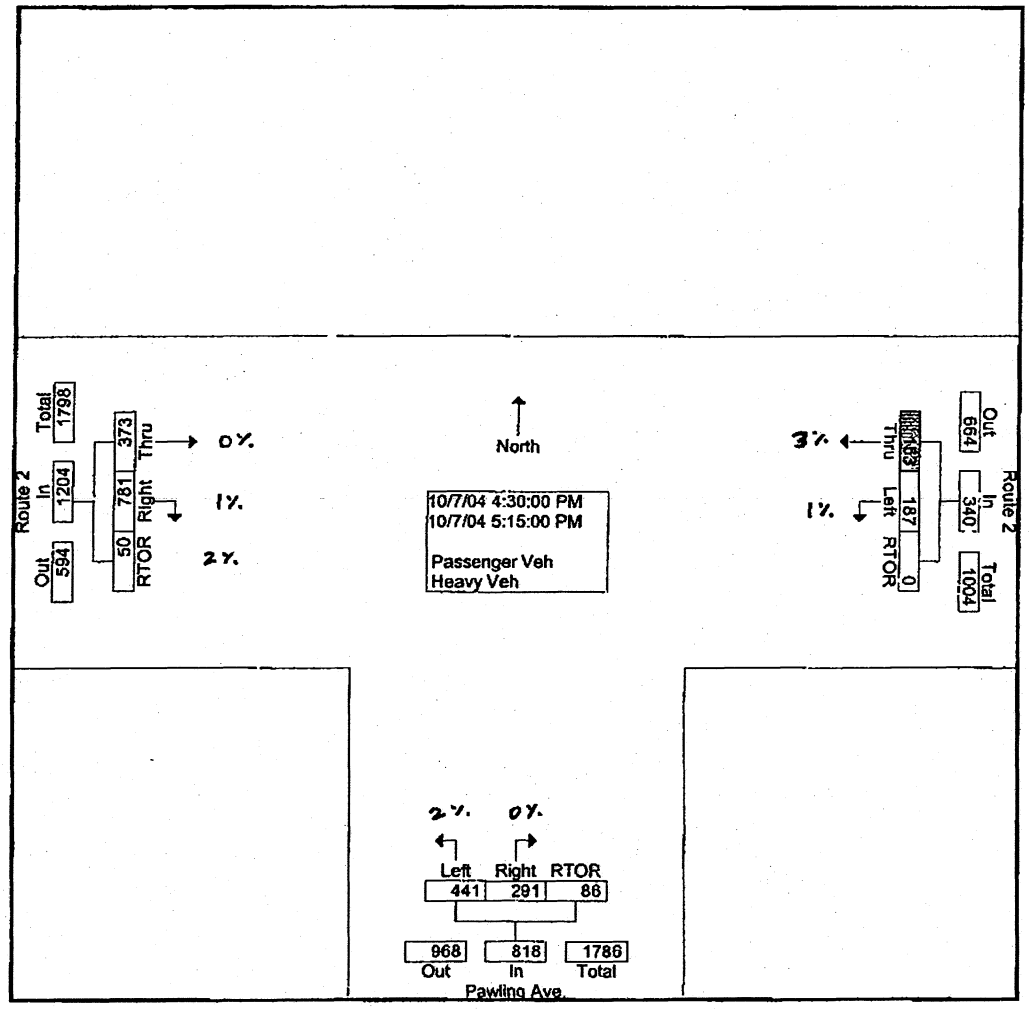
	Southbound				Route 2 Westbound				Pawling Ave. Northbound				Route 2 Eastbound				
Start Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	0	0	0	0	45	53	0	0	113	0	52	12	0	72	185	8	540
04:15 PM	0	0	0	0	45	41	0	0	95	0	77	10	0	70	158	9	505
04:30 PM	0	0	0	0	50	39	0	0	101	0	68	22	0	97	191	9	577
04:45 PM	0	0	0	0	51	30	0	0	105	0	60	24	0	93	198	14	573
Total	0	0	0	0	191	163	0	0	414	0	257	68	0	332	730	40	2195
05:00 PM	0	0	0	0	42	40	0	0	107	0	84	24	0	95	206	14	612
05:15 PM	0	0	0	0	44	44	0	0	128	0	79	16	0	88	188	13	600
05:30 PM	0	0	0	0	53	47	0	0	100	0	69	15	0	93	177	7	561
05:45 PM	0	0	0	0	50	47	0	0	123	0	62	22	0	91	177	11	583
Total	0	0	0	0	189	178	0	0	458	0	294	77	0	367	748	45	2356
Grand Total	0	0	0	0	380	341	0	0	872	0	551	145	0	699	1478	85	4551
Apprch %	0.0	0.0	0.0	0.0	52.7	47.3	0.0	0.0	55.6	0.0	35.1	9.2	0.0	30.9	65.3	3.8	
Total %	0.0	0.0	0.0	0.0	8.3	7.5	0.0	0.0	19.2	0.0	12.1	3.2	0.0	15.4	32.5	1.9	

Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tn4164p3
Site Code : 00041643
Start Date : 10/7/04
Page No : 2

Passenger / Heavy Veh.

	Southbound					Route 2 Westbound					Pawling Ave. Northbound					Route 2 Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersection 04:30 PM																					
Volume	0	0	0	0	0	187	153	0	0	340	441	0	291	86	818	0	373	781	50	1204	2362
Percent	0.0	0.0	0.0	0.0		55.0	45.0	0.0	0.0		53.9	0.0	35.6	10.5		0.0	31.0	64.9	4.2		
05:00 Volume	0	0	0	0	0	42	40	0	0	82	107	0	84	24	215	0	95	206	14	315	612
Peak Factor																					0.965
High Int.						04:30 PM					05:15 PM					05:00 PM					
Volume	0	0	0	0	0	50	39	0	0	89	128	0	79	16	223	0	95	206	14	315	
Peak Factor										0.955					0.917					0.956	



Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tn4164p3
Site Code : 00041643
Start Date : 10/7/04
Page No : 1

Groups Printed- Heavy Veh

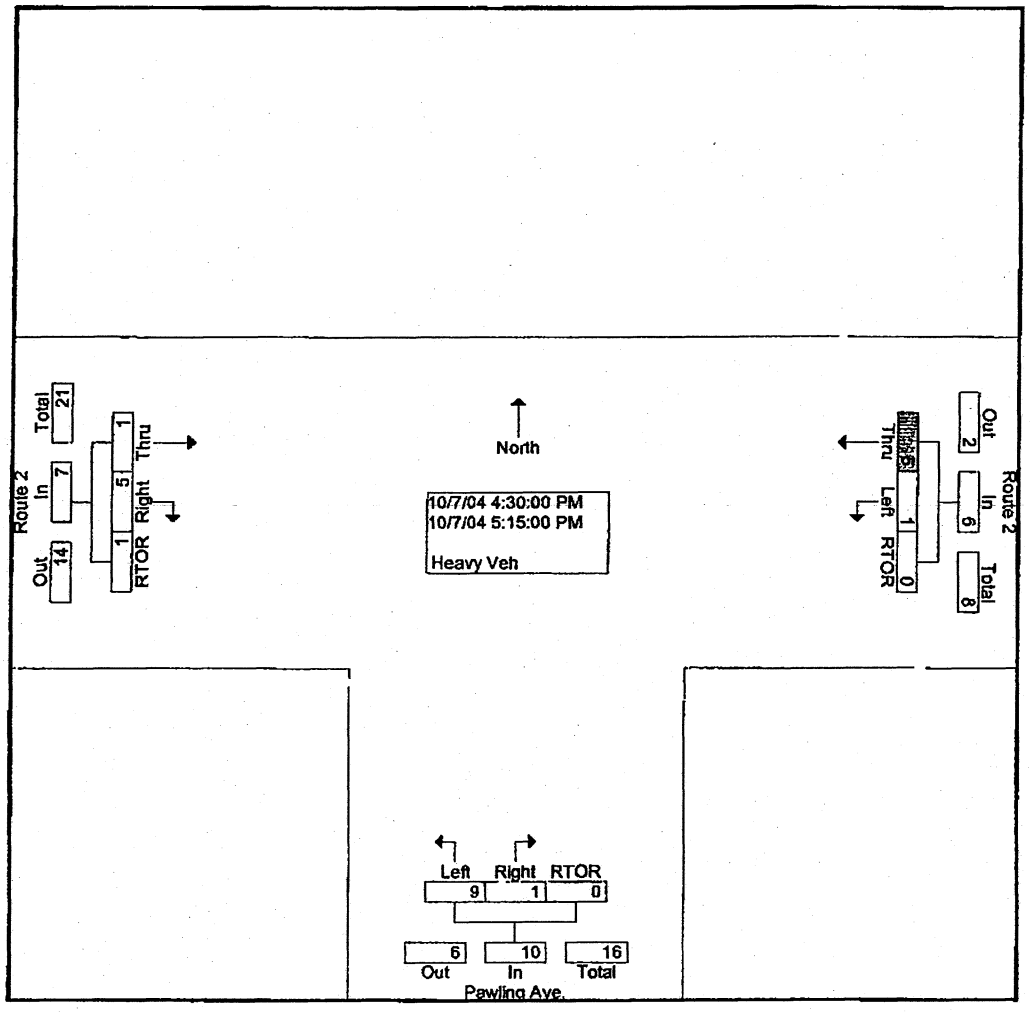
	Southbound				Route 2 Westbound				Pawling Ave. Northbound				Route 2 Eastbound				
Start Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	0	0	0	0	1	1	0	0	3	0	0	0	0	1	2	0	8
04:15 PM	0	0	0	0	0	1	0	0	1	0	3	0	0	2	2	0	9
04:30 PM	0	0	0	0	0	1	0	0	4	0	0	0	0	0	0	0	5
04:45 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	1	1	0	4
Total	0	0	0	0	1	4	0	0	9	0	3	0	0	4	5	0	26
05:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	4
05:15 PM	0	0	0	0	1	3	0	0	3	0	1	0	0	0	2	0	10
05:30 PM	0	0	0	0	0	4	0	0	1	0	1	0	0	1	2	0	9
05:45 PM	0	0	0	0	0	0	0	0	1	0	1	1	0	1	2	0	6
Total	0	0	0	0	1	7	0	0	6	0	3	1	0	2	8	1	29
Grand Total	0	0	0	0	2	11	0	0	15	0	6	1	0	6	13	1	55
Apprch %	0.0	0.0	0.0	0.0	15.4	84.6	0.0	0.0	68.2	0.0	27.3	4.5	0.0	30.0	65.0	5.0	
Total %	0.0	0.0	0.0	0.0	3.6	20.0	0.0	0.0	27.3	0.0	10.9	1.8	0.0	10.9	23.6	1.8	

Creighton Mannning Engineering, LLP
17 Computer Drive West
Albany, NY 12205
Turning Movement Count

File Name : tn4164p3
Site Code : 00041643
Start Date : 10/7/04
Page No : 2

Heavy Veh.

	Southbound					Route 2 Westbound					Pawling Ave. Northbound					Route 2 Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersection 04:30 PM																					
Volume	0	0	0	0	0	1	5	0	0	6	9	0	1	0	10	0	1	5	1	7	23
Percent	0.0	0.0	0.0	0.0		16.7	83.3	0.0	0.0		90.0	0.0	10.0	0.0		0.0	14.3	71.4	14.3		
05:15 Volume	0	0	0	0	0	1	3	0	0	4	3	0	1	0	4	0	0	2	0	2	10
Peak Factor																					0.575
High Int.						05:15 PM					04:30 PM					05:00 PM					
Volume	0	0	0	0	0	1	3	0	0	4	4	0	0	0	4	0	0	2	1	3	
Peak Factor										0.375					0.625					0.583	



Creighton Manning Engineering
17 Computer Drive West
Albany, NY 12205
(518)446-0396

Automatic Traffic Recorder

Special Speed Study Final Report

Site ID : 04-164-1
Info 1 : Pinewood Ave., near
Info 2 : Eagle Ridge Dr.

Data Starts : 10:00 on 10/22/04
Data Ends : 10:00 on 10/25/04
Adj. Factor : 1.000%

Date Time	#1 0-19.9	#2 20-24.9	#3 25-29.9	#4 30-34.9	#5 35-39.9	#6 40-44.9	#7 45-49.9	#8 50-54.9	#9 55-59.9	#10 60-64.9	#11 65-69.9	#12 70-74.9	#13 75-79.9	#14 80-84.9	#15 85-89.9	#16 Other	Error	Total
Grand Total #1	14	14	17	186	844	1175	631	155	31	3	3	2	2	0	0	2	0	3079
Percent	0%	0%	1%	6%	27%	38%	20%	5%	1%	0%	0%	0%	0%	0%	0%	0%	0%	49%
Cum. Percent	0%	0%	1%	7%	34%	73%	93%	98%	99%	99%	99%	99%	99%	99%	99%	100%		
Average Hour	0	0	0	2	11	16	8	2	0	0	0	0	0	0	0	0	0	42
ADT: 1012	Avg Speed: 41.9mph				50% Speed: 42.1mph					67% Speed: 44.2mph				85% Speed: 47.9mph				
Grand Total #9	2	4	22	177	775	1120	780	252	65	14	4	2	0	0	0	0	0	3217
Percent	0%	0%	1%	6%	24%	35%	24%	8%	2%	0%	0%	0%	0%	0%	0%	0%	0%	51%
Cum. Percent	0%	0%	0%	6%	30%	65%	89%	97%	99%	99%	99%	100%						
Average Hour	0	0	0	2	10	15	10	3	0	0	0	0	0	0	0	0	0	44
ADT: 1057	Avg Speed: 43.0mph				50% Speed: 42.9mph					67% Speed: 45.4mph				85% Speed: 49.0mph				
Co. ..ned Total	16	18	39	363	1619	2295	1411	407	96	17	7	4	2	0	0	2	0	6296
Percent	0%	0%	1%	6%	26%	36%	22%	6%	2%	0%	0%	0%	0%	0%	0%	0%	0%	
Cum. Percent	0%	0%	1%	6%	32%	69%	91%	97%	99%	99%	99%	99%	99%	99%	99%	100%		
Average Hour	0	0	0	4	22	31	19	5	1	0	0	0	0	0	0	0	0	86
ADT: 2069	Avg Speed: 42.4mph				50% Speed: 42.4mph					67% Speed: 44.7mph				85% Speed: 48.5mph				

Creighton Manning Engineering
17 Computer Drive West
Albany, NY 12205
(518)446-0396
Automatic Traffic Recorder

****

Special Speed Study Final Report

****

Site ID : 04-164
Info 1 : RT 2, approx. 100'
Info 2 : from Shippey Ln.

Data Starts : 19:00 on 10/18/04
Data Ends : 17:00 on 10/20/04
Adj. Factor : 1.000%

****

Date	Time	#1 0-19.9	#2 20-24.9	#3 25-29.9	#4 30-34.9	#5 35-39.9	#6 40-44.9	#7 45-49.9	#8 50-54.9	#9 55-59.9	#10 60-64.9	#11 65-69.9	#12 70-74.9	#13 75-79.9	#14 80-84.9	#15 85-89.9	#16 Other	Error	Total
Grand Total #1		15	18	16	27	62	431	1523	1913	735	128	21	3	2	1	1	1	0	4897
	Percent	0%	0%	0%	1%	1%	9%	31%	39%	15%	3%	0%	0%	0%	0%	0%	0%	0%	51%
	Cum. Percent	0%	0%	1%	1%	2%	11%	42%	81%	96%	99%	99%	99%	99%	99%	99%	100%		
	Average Hour	0	0	0	0	1	9	32	40	15	2	0	0	0	0	0	0	0	104
ADT: 2500		Avg Speed: 50.5mph				50% Speed: 51.0mph				67% Speed: 53.1mph					85% Speed: 56.2mph				
Grand Total #9		10	11	15	24	141	706	1789	1489	426	62	12	4	2	2	3	3	0	4699
	Percent	0%	0%	0%	1%	3%	15%	38%	32%	9%	1%	0%	0%	0%	0%	0%	0%	0%	49%
	Cum. Percent	0%	0%	0%	1%	4%	19%	57%	89%	98%	99%	99%	99%	99%	99%	99%	100%		
	Average Hour	0	0	0	0	3	15	38	31	9	1	0	0	0	0	0	0	0	99
ADT: 2399		Avg Speed: 48.9mph				50% Speed: 49.0mph				67% Speed: 51.6mph					85% Speed: 54.4mph				
Co..ned Total		25	29	31	51	203	1137	3312	3402	1161	190	33	7	4	3	4	4	0	9596
	Percent	0%	0%	0%	1%	2%	12%	35%	35%	12%	2%	0%	0%	0%	0%	0%	0%	0%	
	Cum. Percent	0%	0%	0%	1%	3%	15%	49%	85%	97%	99%	99%	99%	99%	99%	99%	100%		
	Average Hour	0	0	0	1	4	24	70	72	24	4	0	0	0	0	0	0	0	204
ADT: 4900		Avg Speed: 49.7mph				50% Speed: 50.1mph				67% Speed: 52.5mph					85% Speed: 55.0mph				

Appendix B - Level of Service Analysis

Traffic Impact Study
Carriage Hill Estates
Town of Brunswick, New York

LOS Definitions

The following is an excerpt from the 2000 Highway Capacity Manual (HCM).

Level of Service for Signalized Intersections

The portion of total delay attributed to the control facility is quantified. This delay is called control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Level of Service (LOS) criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a 15-minute analysis period. The criteria are given below. Delay may be measured in the field or estimated using procedures presented in Chapter 9 of the HCM. Delay is a complex measure and is dependent upon a number of variables, including the quality of progression, the cycle length, the green ratio, and the *v/c* ratio for the lane group in question.

LOS A describes operations with very low control delay, up to 10 sec per vehicle. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

LOS B describes operations with control delay greater than 10 and up to 20 sec per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay.

LOS C describes operations with control delay greater than 20 and up to 35 sec per vehicle. These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

LOS D describes operations with control delay greater than 35 and up to 55 sec per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high *v/c* ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

LOS E describes operations with control delay greater than 55 and up to 80 sec per vehicle. This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high *v/c* ratios. Individual cycle failures are frequent occurrences.

LOS F describes operations with delay in excess of 80 sec per vehicle. This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high *v/c* ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Level of Service Criteria for Unsignalized Intersections

Four measures are used to describe the performance of two-way stop controlled intersections: control delay, delay to major street through vehicles, queue length, and v/c ratio. The primary measure that is used to provide an estimate of LOS is control delay. This measure can be estimated for any movement on the minor (i.e., stop-controlled) street. By summing delay estimates for individual movements, a delay estimate for each minor street movement and minor street approach can be achieved. The level of service criteria is given in Exhibit 17-2/22.

For all-way stop controlled (AWSC) intersections, the average control delay (in seconds per vehicle) is used as the primary measure of performance. Control delay is the increased time of travel for a vehicle approaching and passing through an AWSC intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection.

Exhibit 17-2/22: Level-of-Service Criteria for Stop Controlled Intersections

Level of Service	Control Delay (sec/veh)
A	$\leq$ 10.0
B	>10.0 and $\leq$ 15.0
C	>15.0 and $\leq$ 25.0
D	>25.0 and $\leq$ 35.0
E	>35.0 and $\leq$ 50.0
F	>50.0

SHORT REPORT

General Information		Site Information	
Analyst	EAD	Intersection	Pawling/Pinewoods Ave.
Agency or Co.	CME, PAWPINEexam	Area Type	All other areas
Date Performed	10/22/04	Jurisdiction	Town of Brunswick
Time Period	AM Peak Hour	Analysis Year	2004 Existing

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Lane group		LTR			TR			LT		L	TR	
Volume (vph)	3	0	11		1	310	0	637		74	494	2
% Heavy veh	0	0	0		0	0	0	5		7	7	0
PHF	0.71	0.71	0.71		0.89	0.89	0.90	0.90		0.77	0.77	0.77
Actuated (P/A)	P	P	P		P	P	P	P		P	P	P
Startup lost time		2.0			2.0			2.0		2.0	2.0	
Ext. eff. green		2.0			2.0			2.0		2.0	2.0	
Arrival type		3			3			3		3	3	
Unit Extension		3.0			3.0			3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		6	0		110	0			0		0
Lane Width		12.0			12.0			14.0		11.0	11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0			0			0		0	0	
Unit Extension		3.0			3.0			3.0		3.0	3.0	

Phasing	EW Perm	02	03	04	SB Only	NS Perm	07	08
Timing	G = 15.0	G =	G =	G =	G = 10.0	G = 49.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 89.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate		11			225			708		96	645	
Lane group cap.		218			277			1063		452	1234	
v/c ratio		0.05			0.81			0.67		0.21	0.52	
Green ratio		0.17			0.17			0.55		0.72	0.72	
Unif. delay d1		31.0			35.6			14.2		6.0	5.6	
Delay factor k		0.50			0.50			0.50		0.50	0.50	
Increm. delay d2		0.4			22.3			3.3		1.1	1.6	
PF factor		1.000			1.000			1.000		1.000	1.000	
Control delay		31.5			57.9			17.5		7.1	7.2	
Lane group LOS		C			E			B		A	A	
Apprch. delay	31.5			57.9			17.5			7.2		
Approach LOS	C			E			B			A		
Intersec. delay	18.5			Intersection LOS			B					

SHORT REPORT

General Information

Analyst	EAD
Agency or Co.	CME, PAWPINEnbam
Date Performed	11/4/04
Time Period	AM Peak Hour

Site Information

Intersection	Pawling/Pinewoods Ave.
Area Type	All other areas
Jurisdiction	Town of Brunswick
Analysis Year	2009 No-Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Lane group		LTR			TR			LT		L	TR	
Volume (vph)	3	0	12		1	326	0	672		78	527	2
% Heavy veh	0	0	0		0	0	0	5		7	7	0
PHF	0.71	0.71	0.71		0.89	0.89	0.90	0.90		0.77	0.77	0.77
Actuated (P/A)	P	P	P		P	P	P	P		P	P	P
Startup lost time		2.0			2.0			2.0		2.0	2.0	
Ext. eff. green		2.0			2.0			2.0		2.0	2.0	
Arrival type		3			3			3		3	3	
Unit Extension		3.0			3.0			3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		6	0		110	0			0		0
Lane Width		12.0			12.0			14.0		11.0	11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0			0			0		0	0	
Unit Extension		3.0			3.0			3.0		3.0	3.0	

Phasing	EW Perm	02	03	04	SB Only	NS Perm	07	08
Timing	G = 15.0	G =	G =	G =	G = 10.0	G = 49.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 89.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate		12			243			743		101	687	
Lane group cap.		204			277			1063		438	1234	
v/c ratio		0.06			0.88			0.70		0.23	0.56	
Green ratio		0.17			0.17			0.55		0.72	0.72	
Unif. delay d1		31.1			36.1			14.6		6.3	5.9	
Delay factor k		0.50			0.50			0.50		0.50	0.50	
Increm. delay d2		0.6			30.1			3.8		1.2	1.8	
PF factor		1.000			1.000			1.000		1.000	1.000	
Control delay		31.6			66.2			18.4		7.5	7.7	
Lane group LOS		C			E			B		A	A	
Apprch. delay	31.6			66.2			18.4			7.6		
Approach LOS	C			E			B			A		
Intersec. delay	20.3			Intersection LOS						C		

SHORT REPORT

General Information

Analyst	EAD
Agency or Co.	CME, PAWPINEbdam
Date Performed	11/4/04
Time Period	AM Peak Hour

Site Information

Intersection	Pawling/Pinewoods Ave.
Area Type	All other areas
Jurisdiction	Town of Brunswick
Analysis Year	2009 Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Lane group		LTR			TR			LT		L	TR	
Volume (vph)	3	0	12		1	358	0	675		90	534	2
% Heavy veh	0	0	0		0	0	0	5		7	7	0
PHF	0.71	0.71	0.71		0.89	0.89	0.90	0.90		0.77	0.77	0.77
Actuated (P/A)	P	P	P		P	P	P	P		P	P	P
Startup lost time		2.0			2.0			2.0		2.0	2.0	
Ext. eff. green		2.0			2.0			2.0		2.0	2.0	
Arrival type		3			3			3		3	3	
Unit Extension		3.0			3.0			3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		6	0		110	0			0		0
Lane Width		12.0			12.0			14.0		11.0	11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0			0			0		0	0	
Unit Extension		3.0			3.0			3.0		3.0	3.0	

Phasing	EW Perm	02	03	04	SB Only	NS Perm	07	08
Timing	G = 15.0	G =	G =	G =	G = 10.0	G = 49.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 89.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate		12			279			746		117	697	
Lane group cap.		202			277			1063		437	1234	
v/c ratio		0.06			1.01			0.70		0.27	0.56	
Green ratio		0.17			0.17			0.55		0.72	0.72	
Unif. delay d1		31.1			37.0			14.6		6.4	5.9	
Delay factor k		0.50			0.50			0.50		0.50	0.50	
Increm. delay d2		0.6			55.9			3.9		1.5	1.9	
PF factor		1.000			1.000			1.000		1.000	1.000	
Control delay		31.6			92.9			18.5		7.9	7.8	
Lane group LOS		C			F			B		A	A	
Apprch. delay	31.6			92.9			18.5			7.8		
Approach LOS	C			F			B			A		
Intersec. delay	25.1			Intersection LOS			C					

SHORT REPORT

General Information		Site Information	
Analyst	EAD	Intersection	Pawling/Pinewoods Ave.
Agency or Co.	CME, PAWPINEbdamimp	Area Type	All other areas
Date Performed	11/4/04	Jurisdiction	Town of Brunswick
Time Period	AM Peak Hour	Analysis Year	2009 Build w/ imp.

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Lane group		LTR			TR			LT		L	TR	
Volume (vph)	3	0	12		1	358	0	675		90	534	2
% Heavy veh	0	0	0		0	0	0	5		7	7	0
PHF	0.71	0.71	0.71		0.89	0.89	0.90	0.90		0.77	0.77	0.77
Actuated (P/A)	P	P	P		P	P	P	P		P	P	P
Startup lost time		2.0			2.0			2.0		2.0	2.0	
Ext. eff. green		2.0			2.0			2.0		2.0	2.0	
Arrival type		3			3			3		3	3	
Unit Extension		3.0			3.0			3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		6	0		110	0			0		0
Lane Width		12.0			12.0			14.0		11.0	11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0			0			0		0	0	
Unit Extension		3.0			3.0			3.0		3.0	3.0	

Phasing	EW Perm	02	03	04	SB Only	NS Perm	07	08
Timing	G = 19.0	G =	G =	G =	G = 6.0	G = 49.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 89.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate		12			279			746		117	697	
Lane group cap.		316			351			1063		364	1157	
v/c ratio		0.04			0.79			0.70		0.32	0.60	
Green ratio		0.21			0.21			0.55		0.67	0.67	
Unif. delay d1		27.8			33.2			14.6		7.7	8.0	
Delay factor k		0.50			0.50			0.50		0.50	0.50	
Increm. delay d2		0.2			16.8			3.9		2.3	2.3	
PF factor		1.000			1.000			1.000		1.000	1.000	
Control delay		28.0			50.0			18.5		10.0	10.3	
Lane group LOS		C			D			B		B	B	
Apprch. delay	28.0			50.0			18.5			10.2		
Approach LOS	C			D			B			B		
Intersec. delay	19.7			Intersection LOS						B		

SHORT REPORT

General Information

Analyst	EAD
Agency or Co.	CME, PAWPINEexpm
Date Performed	10/22/04
Time Period	PM Peak Hour

Site Information

Intersection	Pawling/Pinewoods Ave.
Area Type	All other areas
Jurisdiction	Town of Brunswick
Analysis Year	2004 Existing

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Lane group		LTR			TR			LT		L	TR	
Volume (vph)	2	1	2		0	92	3	525		203	666	2
% Heavy veh	0	0	0		0	0	0	2		0	1	0
PHF	0.42	0.42	0.42		0.70	0.70	0.93	0.93		0.91	0.91	0.91
Actuated (P/A)	P	P	P		P	P	P	P		P	P	P
Startup lost time		2.0			2.0			2.0		2.0	2.0	
Ext. eff. green		2.0			2.0			2.0		2.0	2.0	
Arrival type		3			3			3		3	3	
Unit Extension		3.0			3.0			3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		0	0		46	0			0		0
Lane Width		12.0			12.0			14.0		11.0	11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0			0			0		0	0	
Unit Extension		3.0			3.0			3.0		3.0	3.0	

Phasing	EW Perm	02	03	04	SB Only	NS Perm	07	08
Timing	G = 15.0	G =	G =	G =	G = 10.0	G = 49.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 89.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate		12			66			568		223	736	
Lane group cap.		275			277			1092		593	1307	
v/c ratio		0.04			0.24			0.52		0.38	0.56	
Green ratio		0.17			0.17			0.55		0.72	0.72	
Unif. delay d1		31.0			32.1			12.6		5.9	5.9	
Delay factor k		0.50			0.50			0.50		0.50	0.50	
Increm. delay d2		0.3			2.0			1.8		1.8	1.8	
PF factor		1.000			1.000			1.000		1.000	1.000	
Control delay		31.3			34.1			14.4		7.7	7.7	
Lane group LOS		C			C			B		A	A	
Apprch. delay	31.3			34.1			14.4			7.7		
Approach LOS	C			C			B			A		
Intersec. delay	11.3			Intersection LOS						B		

SHORT REPORT

General Information		Site Information	
Analyst	EAD	Intersection	Pawling/Pinewoods Ave.
Agency or Co.	CME, PAWPINEnbpm	Area Type	All other areas
Date Performed	11/4/04	Jurisdiction	Town of Brunswick
Time Period	PM Peak Hour	Analysis Year	2009 No-Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Lane group		LTR			TR			LT		L	TR	
Volume (vph)	2	1	2		0	97	3	560		213	704	2
% Heavy veh	0	0	0		0	0	0	2		0	1	0
PHF	0.42	0.42	0.42		0.70	0.70	0.93	0.93		0.91	0.91	0.91
Actuated (P/A)	P	P	P		P	P	P	P		P	P	P
Startup lost time		2.0			2.0			2.0		2.0	2.0	
Ext. eff. green		2.0			2.0			2.0		2.0	2.0	
Arrival type		3			3			3		3	3	
Unit Extension		3.0			3.0			3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		0	0		46	0			0		0
Lane Width		12.0			12.0			14.0		11.0	11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0			0			0		0	0	
Unit Extension		3.0			3.0			3.0		3.0	3.0	

Phasing	EW Perm	02	03	04	SB Only	NS Perm	07	08
Timing	G = 15.0	G =	G =	G =	G = 10.0	G = 49.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 — Cycle Length C = 89.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate		12			73			605		234	778	
Lane group cap.		275			277			1092		574	1307	
v/c ratio		0.04			0.26			0.55		0.41	0.60	
Green ratio		0.17			0.17			0.55		0.72	0.72	
Unif. delay d1		31.0			32.2			12.9		6.2	6.1	
Delay factor k		0.50			0.50			0.50		0.50	0.50	
Increm. delay d2		0.3			2.3			2.0		2.1	2.0	
PF factor		1.000			1.000			1.000		1.000	1.000	
Control delay		31.3			34.5			15.0		8.3	8.1	
Lane group LOS		C			C			B		A	A	
Apprch. delay		31.3			34.5			15.0			8.2	
Approach LOS		C			C			B			A	
Intersec. delay		11.9			Intersection LOS						B	

SHORT REPORT

General Information		Site Information	
Analyst	EAD	Intersection	Pawling/Pinewoods Ave.
Agency or Co.	CME, PAWPINEbdpm	Area Type	All other areas
Date Performed	11/4/04	Jurisdiction	Town of Brunswick
Time Period	PM Peak Hour	Analysis Year	2009 Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Lane group		LTR			TR			LT		L	TR	
Volume (vph)	2	1	2		0	120	3	568		251	709	2
% Heavy veh	0	0	0		0	0	0	2		0	1	0
PHF	0.42	0.42	0.42		0.70	0.70	0.93	0.93		0.91	0.91	0.91
Actuated (P/A)	P	P	P		P	P	P	P		P	P	P
Startup lost time		2.0			2.0			2.0		2.0	2.0	
Ext. eff. green		2.0			2.0			2.0		2.0	2.0	
Arrival type		3			3			3		3	3	
Unit Extension		3.0			3.0			3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		0	0		46	0			0		0
Lane Width		12.0			12.0			14.0		11.0	11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0			0			0		0	0	
Unit Extension		3.0			3.0			3.0		3.0	3.0	

Phasing	EW Perm	02	03	04	SB Only	NS Perm	07	08
Timing	G = 15.0	G =	G =	G =	G = 10.0	G = 49.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 89.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate		12			106			614		276	784	
Lane group cap.		272			277			1092		570	1307	
v/c ratio		0.04			0.38			0.56		0.48	0.60	
Green ratio		0.17			0.17			0.55		0.72	0.72	
Unif. delay d1		31.0			32.9			13.0		6.5	6.2	
Delay factor k		0.50			0.50			0.50		0.50	0.50	
Increm. delay d2		0.3			4.0			2.1		2.9	2.0	
PF factor		1.000			1.000			1.000		1.000	1.000	
Control delay		31.3			36.9			15.1		9.4	8.2	
Lane group LOS		C			D			B		A	A	
Apprch. delay	31.3			36.9			15.1			8.5		
Approach LOS	C			D			B			A		
Intersec. delay	12.6			Intersection LOS			B					

SHORT REPORT

General Information

Analyst	*EAD*
Agency or Co.	*CME, PAWPINEbdpmimp*
Date Performed	*11/4/04*
Time Period	*PM Peak Hour*

Site Information

Intersection	*Pawling/Pinewoods Ave.*
Area Type	*All other areas*
Jurisdiction	*Town of Brunswick*
Analysis Year	*2009 Build w/ imp.*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	*0*	*1*	*0*	*0*	*1*	*0*	*0*	*1*	*0*	*1*	*1*	*0*
Lane group		*LTR*			*TR*			*LT*		*L*	*TR*	
Volume (vph)	*2*	*1*	*2*		*0*	*120*	*3*	*568*		*251*	*709*	*2*
% Heavy veh	*0*	*0*	*0*		*0*	*0*	*0*	*2*		*0*	*1*	*0*
PHF	*0.42*	*0.42*	*0.42*		*0.70*	*0.70*	*0.93*	*0.93*		*0.91*	*0.91*	*0.91*
Actuated (P/A)	*P*	*P*	*P*		*P*	*P*	*P*	*P*		*P*	*P*	*P*
Startup lost time		*2.0*			*2.0*			*2.0*		*2.0*	*2.0*	
Ext. eff. green		*2.0*			*2.0*			*2.0*		*2.0*	*2.0*	
Arrival type		*3*			*3*			*3*		*3*	*3*	
Unit Extension		*3.0*			*3.0*			*3.0*		*3.0*	*3.0*	
Ped/Bike/RTOR Volume	*0*		*0*	*0*		*46*	*0*			*0*		*0*
Lane Width		*12.0*			*12.0*			*14.0*		*11.0*	*11.0*	
Parking/Grade/Parking	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking/hr												
Bus stops/hr		*0*			*0*			*0*		*0*	*0*	
Unit Extension		*3.0*			*3.0*			*3.0*		*3.0*	*3.0*	

Phasing	EW Perm	02	03	04	SB Only	NS Perm	07	08
Timing	G = *19.0*	G =	G =	G =	G = *6.0*	G = *49.0*	G =	G =
	Y = *5*	Y =	Y =	Y =	Y = *5*	Y = *5*	Y =	Y =

Duration of Analysis (hrs) = *0.25* | Cycle Length C = *89.0*

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate		*12*			*106*			*614*		*276*	*784*	
Lane group cap.		*350*			*351*			*1092*		*492*	*1226*	
v/c ratio		*0.03*			*0.30*			*0.56*		*0.56*	*0.64*	
Green ratio		*0.21*			*0.21*			*0.55*		*0.67*	*0.67*	
Unif. delay d1		*27.7*			*29.4*			*13.0*		*7.9*	*8.3*	
Delay factor k		*0.50*			*0.50*			*0.50*		*0.50*	*0.50*	
Increm. delay d2		*0.2*			*2.2*			*2.1*		*4.6*	*2.6*	
PF factor		*1.000*			*1.000*			*1.000*		*1.000*	*1.000*	
Control delay		*27.9*			*31.6*			*15.1*		*12.5*	*10.9*	
Lane group LOS		*C*			*C*			*B*		*B*	*B*	
Apprch. delay	*27.9*			*31.6*			*15.1*			*11.3*		
Approach LOS	*C*			*C*			*B*			*B*		
Intersec. delay	*13.9*			Intersection LOS			*B*					

SHORT REPORT

General Information		Site Information	
Analyst	EAD	Intersection	NYS Route 2/Pawling Ave.
Agency or Co.	CME, RT2PAWexam2	Area Type	All other areas
Date Performed	10/26/04	Jurisdiction	Town of Brunswick
Time Period	AM Peak Hour	Analysis Year	2004 Existing

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	0	0	1	0	0	0	1	1	1	1	0
Lane group				L				T	R	L	T	
Volume (vph)				230				700	337	118	401	
% Heavy veh				0				0	0	0	0	
PHF				0.86				0.89	0.89	0.91	0.91	
Actuated (P/A)				P				P	P	P	P	
Startup lost time				2.0				2.0	2.0	2.0	2.0	
Ext. eff. green				2.0				2.0	2.0	2.0	2.0	
Arrival type				3				3	3	3	3	
Unit Extension				3.0				3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0						0		83			
Lane Width				16.0				13.0	14.0	13.0	14.0	
Parking/Grade/Parking	N		N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr				3				3	4	7	7	
Unit Extension				3.0				3.0	3.0	3.0	3.0	

Phasing	WB Only	02	03	04	SB Only	Thru & RT	07	08
Timing	G = 18.0	G =	G =	G =	G = 15.0	G = 33.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 — Cycle Length C = 81.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate				267				787	285	130	441	
Lane group cap.				449				790	1172	336	1289	
v/c ratio				0.59				1.00	0.24	0.39	0.34	
Green ratio				0.22				0.41	0.69	0.19	0.65	
Unif. delay d1				28.2				23.9	4.6	29.0	6.2	
Delay factor k				0.50				0.50	0.50	0.50	0.50	
Increm. delay d2				5.7				31.1	0.5	3.3	0.7	
PF factor				1.000				1.000	1.000	1.000	1.000	
Control delay				33.9				55.1	5.1	32.3	7.0	
Lane group LOS				C				E	A	C	A	
Apprch. delay				33.9			41.8			12.7		
Approach LOS				C			D			B		
Intersec. delay	32.0			Intersection LOS						C		

SHORT REPORT

General Information

Analyst	EAD
Agency or Co.	CME, RT2PAWnbam2
Date Performed	11/4/04
Time Period	AM Peak Hour

Site Information

Intersection	NYS Route 2/Pawling Ave.
Area Type	All other areas
Jurisdiction	Town of Brunswick
Analysis Year	2009 No-Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	0	0	1	0	0	0	1	1	1	1	0
Lane group				L				T	R	L	T	
Volume (vph)				250				736	357	125	421	
% Heavy veh				0				0	0	0	0	
PHF				0.86				0.89	0.89	0.91	0.91	
Actuated (P/A)				P				P	P	P	P	
Startup lost time				2.0				2.0	2.0	2.0	2.0	
Ext. eff. green				2.0				2.0	2.0	2.0	2.0	
Arrival type				3				3	3	3	3	
Unit Extension				3.0				3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0						0		83			
Lane Width				16.0				13.0	14.0	13.0	14.0	
Parking/Grade/Parking	N		N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr				3				3	4	7	7	
Unit Extension				3.0				3.0	3.0	3.0	3.0	

Phasing	WB Only	02	03	04	SB Only	Thru & RT	07	08
Timing	G = 18.0	G =	G =	G =	G = 15.0	G = 33.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 81.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate				291				827	308	137	463	
Lane group cap.				449				790	1172	336	1289	
v/c ratio				0.65				1.05	0.26	0.41	0.36	
Green ratio				0.22				0.41	0.69	0.19	0.65	
Unif. delay d1				28.6				24.0	4.7	29.1	6.3	
Delay factor k				0.50				0.50	0.50	0.50	0.50	
Increm. delay d2				7.1				45.0	0.5	3.6	0.8	
PF factor				1.000				1.000	1.000	1.000	1.000	
Control delay				35.7				69.0	5.3	32.7	7.1	
Lane group LOS				D				E	A	C	A	
Apprch. delay				35.7			51.7			13.0		
Approach LOS				D			D			B		
Intersec. delay	37.9			Intersection LOS						D		

SHORT REPORT

General Information		Site Information	
Analyst	*EAD*	Intersection	*NYS Route 2/Pawling Ave.*
Agency or Co.	*CME, RT2PAWbdam2*	Area Type	*All other areas*
Date Performed	*11/4/04*	Jurisdiction	*Town of Brunswick*
Time Period	*AM Peak Hour*	Analysis Year	*2009 Build*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*1*	*1*	*1*	*1*	*0*
Lane group				*L*				*T*	*R*	*L*	*T*	
Volume (vph)				*257*				*768*	*360*	*129*	*433*	
% Heavy veh				*0*				*0*	*0*	*0*	*0*	
PHF				*0.86*				*0.89*	*0.89*	*0.91*	*0.91*	
Actuated (P/A)				*P*				*P*	*P*	*P*	*P*	
Startup lost time				*2.0*				*2.0*	*2.0*	*2.0*	*2.0*	
Ext. eff. green				*2.0*				*2.0*	*2.0*	*2.0*	*2.0*	
Arrival type				*3*				*3*	*3*	*3*	*3*	
Unit Extension				*3.0*				*3.0*	*3.0*	*3.0*	*3.0*	
Ped/Bike/RTOR Volume	*0*						*0*		*83*			
Lane Width				*16.0*				*13.0*	*14.0*	*13.0*	*14.0*	
Parking/Grade/Parking	*N*		*N*	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking/hr												
Bus stops/hr				*3*				*3*	*4*	*7*	*7*	
Unit Extension				*3.0*				*3.0*	*3.0*	*3.0*	*3.0*	

Phasing	WB Only	02	03	04	SB Only	Thru & RT	07	08
Timing	G = *18.0*	G =	G =	G =	G = *15.0*	G = *33.0*	G =	G =
	Y = *5*	Y =	Y =	Y =	Y = *5*	Y = *5*	Y =	Y =

Duration of Analysis (hrs) = *0.25* Cycle Length C = *81.0*

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate				*299*				*863*	*311*	*142*	*476*	
Lane group cap.				*449*				*790*	*1172*	*336*	*1289*	
v/c ratio				*0.67*				*1.09*	*0.27*	*0.42*	*0.37*	
Green ratio				*0.22*				*0.41*	*0.69*	*0.19*	*0.65*	
Unif. delay d1				*28.8*				*24.0*	*4.7*	*29.2*	*6.4*	
Delay factor k				*0.50*				*0.50*	*0.50*	*0.50*	*0.50*	
Increm. delay d2				*7.6*				*60.2*	*0.6*	*3.9*	*0.8*	
PF factor				*1.000*				*1.000*	*1.000*	*1.000*	*1.000*	
Control delay				*36.4*				*84.2*	*5.3*	*33.0*	*7.2*	
Lane group LOS				*D*				*F*	*A*	*C*	*A*	
Approch. delay				*36.4*				*63.3*		*13.1*		
Approach LOS				*D*				*E*		*B*		
Intersec. delay	*44.6*			Intersection LOS						*D*		

SHORT REPORT

General Information		Site Information	
Analyst	EAD	Intersection	NYS Route 2/Pawling Ave.
Agency or Co.	CME, RT2PAWbdam2imp2	Area Type	All other areas
Date Performed	11/4/04	Jurisdiction	Town of Brunswick
Time Period	AM Peak Hour	Analysis Year	2009 Build w/Imp

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	0	0	1	0	0	0	1	1	1	1	0
Lane group				L				T	R	L	T	
Volume (vph)				257				768	360	129	433	
% Heavy veh				0				0	0	0	0	
PHF				0.86				0.89	0.89	0.91	0.91	
Actuated (P/A)				P				P	P	P	P	
Startup lost time				2.0				2.0	2.0	2.0	2.0	
Ext. eff. green				2.0				2.0	2.0	2.0	2.0	
Arrival type				3				3	3	3	3	
Unit Extension				3.0				3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0						0		83			
Lane Width				16.0				13.0	14.0	13.0	14.0	
Parking/Grade/Parking	N		N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr				3				3	4	7	7	
Unit Extension				3.0				3.0	3.0	3.0	3.0	

Phasing	WB Only	02	03	04	SB Only	Thru & RT	07	08
Timing	G = 16.0	G =	G =	G =	G = 15.0	G = 39.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 — Cycle Length C = 85.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB		SB		
Adj. flow rate				299			863	311	142	476	
Lane group cap.				380			890	1196	320	1367	
v/c ratio				0.79			0.97	0.26	0.44	0.35	
Green ratio				0.19			0.46	0.71	0.18	0.69	
Unif. delay d1				32.9			22.4	4.5	31.3	5.2	
Delay factor k				0.50			0.50	0.50	0.50	0.50	
Increm. delay d2				15.1			23.7	0.5	4.4	0.7	
PF factor				1.000			1.000	1.000	1.000	1.000	
Control delay				48.0			46.1	5.0	35.7	5.9	
Lane group LOS				D			D	A	D	A	
Apprch. delay				48.0			35.2		12.8		
Approach LOS				D			D		B		
Intersec. delay	30.4			Intersection LOS					C		

SHORT REPORT

General Information

Analyst	EAD
Agency or Co.	CME, RT2PAWexpm2
Date Performed	10/26/04
Time Period	PM Peak Hour

Site Information

Intersection	NYS Route 2/Pawling Ave.
Area Type	All other areas
Jurisdiction	Town of Brunswick
Analysis Year	2004 Existing

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	0	0	1	0	0	0	1	1	1	1	0
Lane group				L				T	R	L	T	
Volume (vph)				187				441	291	373	781	
% Heavy veh				1				2	0	1	2	
PHF				0.96				0.92	0.92	0.96	0.96	
Actuated (P/A)				P				P	P	P	P	
Startup lost time				2.0				2.0	2.0	2.0	2.0	
Ext. eff. green				2.0				2.0	2.0	2.0	2.0	
Arrival type				3				3	3	3	3	
Unit Extension				3.0				3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0						0		86			
Lane Width				16.0				13.0	14.0	13.0	14.0	
Parking/Grade/Parking	N		N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr				0				0	0	0	0	
Unit Extension				3.0				3.0	3.0	3.0	3.0	

Phasing	WB Only	02	03	04	SB Only	Thru & RT	07	08
Timing	G = 18.0	G =	G =	G =	G = 15.0	G = 33.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 — Cycle Length C = 81.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate				195				479	223	389	814	
Lane group cap.				450				784	1191	342	1300	
v/c ratio				0.43				0.61	0.19	1.14	0.63	
Green ratio				0.22				0.41	0.69	0.19	0.65	
Unif. delay d1				27.1				18.9	4.4	33.0	8.2	
Delay factor k				0.50				0.50	0.50	0.50	0.50	
Increm. delay d2				3.0				3.5	0.3	91.3	2.3	
PF factor				1.000				1.000	1.000	1.000	1.000	
Control delay				30.1				22.5	4.8	124.3	10.5	
Lane group LOS				C				C	A	F	B	
Apprch. delay				30.1			16.9			47.3		
Approach LOS				C			B			D		
Intersec. delay	35.5			Intersection LOS						D		

SHORT REPORT

General Information

Analyst	EAD
Agency or Co.	CME, RT2PAWnbpm2
Date Performed	11/4/04
Time Period	PM Peak Hour

Site Information

Intersection	NYS Route 2/Pawling Ave.
Area Type	All other areas
Jurisdiction	Town of Brunswick
Analysis Year	2009 No-Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	0	0	1	0	0	0	1	1	1	1	0
Lane group				L				T	R	L	T	
Volume (vph)				201				463	314	402	821	
% Heavy veh				1				2	0	1	2	
PHF				0.96				0.92	0.92	0.96	0.96	
Actuated (P/A)				P				P	P	P	P	
Startup lost time				2.0				2.0	2.0	2.0	2.0	
Ext. eff. green				2.0				2.0	2.0	2.0	2.0	
Arrival type				3				3	3	3	3	
Unit Extension				3.0				3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0						0		86			
Lane Width				16.0				13.0	14.0	13.0	14.0	
Parking/Grade/Parking	N		N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr				0				0	0	0	0	
Unit Extension				3.0				3.0	3.0	3.0	3.0	

Phasing	WB Only	02	03	04	SB Only	Thru & RT	07	08
Timing	G = 18.0	G =	G =	G =	G = 15.0	G = 33.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 81.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate				209				503	248	419	855	
Lane group cap.				450				784	1191	342	1300	
v/c ratio				0.46				0.64	0.21	1.23	0.66	
Green ratio				0.22				0.41	0.69	0.19	0.65	
Unif. delay d1				27.3				19.3	4.5	33.0	8.5	
Delay factor k				0.50				0.50	0.50	0.50	0.50	
Increm. delay d2				3.4				4.0	0.4	124.6	2.6	
PF factor				1.000				1.000	1.000	1.000	1.000	
Control delay				30.7				23.3	4.9	157.6	11.1	
Lane group LOS				C				C	A	F	B	
Approch. delay				30.7			17.2			59.3		
Approach LOS				C			B			E		
Intersec. delay	42.5			Intersection LOS						D		

SHORT REPORT

General Information

Analyst	EAD
Agency or Co.	CME, RT2PAWbdpm2
Date Performed	11/4/04
Time Period	PM Peak Hour

Site Information

Intersection	NYS Route 2/Pawling Ave.
Area Type	All other areas
Jurisdiction	Town of Brunswick
Analysis Year	2009 Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	0	0	1	0	0	0	1	1	1	1	0
Lane group				L				T	R	L	T	
Volume (vph)				206				486	322	415	859	
% Heavy veh				1				2	0	1	2	
PHF				0.96				0.92	0.92	0.96	0.96	
Actuated (P/A)				P				P	P	P	P	
Startup lost time				2.0				2.0	2.0	2.0	2.0	
Ext. eff. green				2.0				2.0	2.0	2.0	2.0	
Arrival type				3				3	3	3	3	
Unit Extension				3.0				3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0						0		86			
Lane Width				16.0				13.0	14.0	13.0	14.0	
Parking/Grade/Parking	N		N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr				0				0	0	0	0	
Unit Extension				3.0				3.0	3.0	3.0	3.0	

Phasing	WB Only	02	03	04	SB Only	Thru & RT	07	08
Timing	G = 18.0	G =	G =	G =	G = 15.0	G = 33.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 81.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate				215				528	257	432	895	
Lane group cap.				450				784	1191	342	1300	
v/c ratio				0.48				0.67	0.22	1.26	0.69	
Green ratio				0.22				0.41	0.69	0.19	0.65	
Unif. delay d1				27.4				19.6	4.5	33.0	8.8	
Delay factor k				0.50				0.50	0.50	0.50	0.50	
Increm. delay d2				3.6				4.6	0.4	139.8	3.0	
PF factor				1.000				1.000	1.000	1.000	1.000	
Control delay				31.0				24.2	4.9	172.8	11.8	
Lane group LOS				C				C	A	F	B	
Approach. delay				31.0				17.9		64.2		
Approach LOS				C				B		E		
Intersec. delay	45.5			Intersection LOS						D		

SHORT REPORT

General Information

Analyst	EAD
Agency or Co.	CME, RT2PAWbdpm2imp2
Date Performed	11/4/04
Time Period	PM Peak Hour

Site Information

Intersection	NYS Route 2/Pawling Ave.
Area Type	All other areas
Jurisdiction	Town of Brunswick
Analysis Year	2009 Build w/imp.

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	0	0	1	0	0	0	1	1	1	1	0
Lane group				L				T	R	L	T	
Volume (vph)				206				486	322	415	859	
% Heavy veh				1				2	0	1	2	
PHF				0.96				0.92	0.92	0.96	0.96	
Actuated (P/A)				P				P	P	P	P	
Startup lost time				2.0				2.0	2.0	2.0	2.0	
Ext. eff. green				2.0				2.0	2.0	2.0	2.0	
Arrival type				3				3	3	3	3	
Unit Extension				3.0				3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0						0		86			
Lane Width				16.0				13.0	14.0	13.0	14.0	
Parking/Grade/Parking	N		N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr				0				0	0	0	0	
Unit Extension				3.0				3.0	3.0	3.0	3.0	

Phasing	WB Only	02	03	04	SB Only	Thru & RT	07	08
Timing	G = 15.0	G =	G =	G =	G = 25.0	G = 30.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 — Cycle Length C = 85.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB		SB		
Adj. flow rate				215			528	257	432	895	
Lane group cap.				357			679	1014	543	1403	
v/c ratio				0.60			0.78	0.25	0.80	0.64	
Green ratio				0.18			0.35	0.59	0.29	0.71	
Unif. delay d1				32.3			24.5	8.5	27.6	6.7	
Delay factor k				0.50			0.50	0.50	0.50	0.50	
Increm. delay d2				7.3			8.5	0.6	11.5	2.2	
PF factor				1.000			1.000	1.000	1.000	1.000	
Control delay				39.6			33.1	9.1	39.1	8.9	
Lane group LOS				D			C	A	D	A	
Apprch. delay				39.6			25.2		18.7		
Approach LOS				D			C		B		
Intersec. delay	22.9			Intersection LOS					C		

12:11:04 Carraige Hill 2009 No-build 29

E	(m)	10.00	5.40	4.90
L'	(m)	73.00	8.00	6.00
V	(m)	3.80	3.80	3.80
RAD	(m)	25.00	14.00	18.00
PHI	(d)	20.00	20.00	20.00
DIA	(m)	35.00	35.00	35.00
GRAD SEP		0	0	0

TIME PERIOD	min	90
TIME SLICE	min	15
RESULTS PERIOD	min	15 75
TIME COST	$/hr	15.00
FLOW PERIOD	min	15 75
FLOW TYPE	pcu/veh	VEH
FLOW PEAK	am/op/pm	AM

LEG NAME	PCU	FLOWS (1st exit 2nd etc...U)	FLOF	CL	FLOW RATIO	FLOW TIME
Rt 2 EB	1.09	421 125 0	1.00	50	0.75 1.125 0.75	15 45 75
Pawl NB	1.09	357 736 0	1.00	50	0.75 1.125 0.75	15 45 75
Rt 2 WB	1.09	366 250 0	1.00	50	0.75 1.125 0.75	15 45 75

MODE 2

FLOW	veh	546	1093	616
CAPACITY	veh	2300	1270	845
AVE DELAY	mins	0.03	0.42	0.30
MAX DELAY	mins	0.04	0.81	0.52
AVE QUEUE	veh	0	8	3
MAX QUEUE	veh	0	14	5

AVDEL	s	17.7
L O S		C
VEH HRS		11.1
COST	$	166.4

F1mode F2direct F3peak CtrlF3rev F4fact F6stats F8econ F9prnt F10run Esc

A (1.8) D (25.2) C (18.0)

12:11:04 Carraige Hill 2009 No-build 30

E	(m)	10.00	5.40	4.90
L'	(m)	73.00	8.00	6.00
V	(m)	3.80	3.80	3.80
RAD	(m)	25.00	14.00	18.00
PHI	(d)	20.00	20.00	20.00
DIA	(m)	35.00	35.00	35.00
GRAD SEP		0	0	0

TIME PERIOD	min	90
TIME SLICE	min	15
RESULTS PERIOD	min	15 75
TIME COST	$/hr	15.00
FLOW PERIOD	min	15 75
FLOW TYPE	pcu/veh	VEH
FLOW PEAK	am/op/pm	PM

LEG NAME	PCU	FLOWS (1st exit 2nd etc...U)	FLOF	CL	FLOW RATIO	FLOW TIME
Rt 2 EB	1.09	821 402 0	1.00	50	0.75 1.125 0.75	15 45 75
Pawl NB	1.09	314 463 0	1.00	50	0.75 1.125 0.75	15 45 75
Rt 2 WB	1.09	165 201 0	1.00	50	0.75 1.125 0.75	15 45 75

MODE 2

FLOW	veh	1223	777	366
CAPACITY	veh	2343	1101	1008
AVE DELAY	mins	0.05	0.20	0.09
MAX DELAY	mins	0.07	0.32	0.13
AVE QUEUE	veh	1	3	1
MAX QUEUE	veh	1	4	1

AVDEL	s	6.4
L O S		A
VEH HRS		4.2
COST	$	63.1

F1mode F2direct F3peak CtrlF3rev F4fact F6stats F8econ F9prnt F10run Esc

A (3.0) B (12.0) A (5.4)

Untitled

26:9:05 Carraige Hill 2009 Build 39

E	(m)	10.00	5.40	4.90
L'	(m)	73.00	8.50	6.00
V	(m)	3.80	3.80	3.80
RAD	(m)	25.00	14.00	18.00
PHI	(d)	20.00	20.00	20.00
DIA	(m)	35.00	35.00	35.00
GRAD SEP		0	0	0

TIME PERIOD	min		90
TIME SLICE	min		15
RESULTS PERIOD	min	15	75
TIME COST	$/hr		15.00
FLOW PERIOD	min	15	75
FLOW TYPE	pcu/veh		VEH
FLOW PEAK	am/op/pm		AM

LEG NAME	PCU	FLOWS (1st exit 2nd etc...U)			FLOF	CL	FLOW RATIO	FLOW TIME
Rt 2 EB	1.09	433	129	0	1.00	50	0.75 1.125 0.75	15 45 75
Pawl NB	1.09	360	768	0	1.00	50	0.75 1.125 0.75	15 45 75
Rt 2 WB	1.09	377	257	0	1.00	50	0.75 1.125 0.75	15 45 75

MODE 2

FLOW	veh	562	1128	634
CAPACITY	veh	2294	1274	826
AVE DELAY	mins	0.03	0.54	0.37
MAX DELAY	mins	0.04	1.09	0.68
AVE QUEUE	veh	0	11	4
MAX QUEUE	veh	0	20	7

AVDEL s	22.4
L O S	C
VEH HRS	14.5
COST $	216.8

F1mode F2direct F3peak CtrlF3rev F4fact F6stats F8econ F9prnt F10run Esc

A (1.3) D (32.4) C(22.2)

26:9:05 Carraige Hill 2009 Build 40

E	(m)	10.00	5.40	4.90
L'	(m)	73.00	8.50	6.00
V	(m)	3.80	3.80	3.80
RAD	(m)	25.00	14.00	18.00
PHI	(d)	20.00	20.00	20.00
DIA	(m)	35.00	35.00	35.00
GRAD SEP		0	0	0

TIME PERIOD	min		90
TIME SLICE	min		15
RESULTS PERIOD	min	15	75
TIME COST	$/hr		15.00
FLOW PERIOD	min	15	75
FLOW TYPE	pcu/veh		VEH
FLOW PEAK	am/op/pm		PM

LEG NAME	PCU	FLOWS (1st exit 2nd etc...U)			FLOF	CL	FLOW RATIO	FLOW TIME
Rt 2 EB	1.09	859	415	0	1.00	50	0.75 1.125 0.75	15 45 75
Pawl NB	1.09	322	486	0	1.00	50	0.75 1.125 0.75	15 45 75
Rt 2 WB	1.09	173	206	0	1.00	50	0.75 1.125 0.75	15 45 75

MODE 2

FLOW	veh	1274	808	379
CAPACITY	veh	2338	1099	994
AVE DELAY	mins	0.06	0.23	0.10
MAX DELAY	mins	0.08	0.37	0.13
AVE QUEUE	veh	1	3	1
MAX QUEUE	veh	2	5	1

AVDEL s	7.1
L O S	A
VEH HRS	4.8
COST $	72.7

F1mode F2direct F3peak CtrlF3rev F4fact F6stats F8econ F9prnt F10run Esc

A (3.6) B (13.8) A (6.0)

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EAD*	Intersection	*Bruswick Rd/South Lake Ave*
Agency/Co.	*CME, RT2CR141exam*	Jurisdiction	*Town of Brunswick*
Date Performed	*10/24/04*	Analysis Year	*2004 Existing*
Analysis Time Period	*AM Peak Hour*		

Project Description	*04-164, Carriage Hill Estates*
East/West Street: *Brunswick Rd (Rt 2)*	North/South Street: *South Lake Ave (CR 141)*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*70*	*84*	*0*	*0*	*390*	*95*
Peak-hour factor, PHF	*0.84*	*0.84*	*1.00*	*1.00*	*0.82*	*0.82*
Hourly Flow Rate (veh/h)	*83*	*100*	*0*	*0*	*476*	*115*
Proportion of heavy vehicles, P_{HV}	*6*	–	–	*0*	–	–
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*0*	*24*	*0*	*67*
Peak-hour factor, PHF	*1.00*	*1.00*	*1.00*	*0.88*	*1.00*	*0.88*
Hourly Flow Rate (veh/h)	*0*	*0*	*0*	*27*	*0*	*76*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*6*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
Volume, v (vph)	*83*						*103*	
Capacity, c_m (vph)	*965*						*460*	
v/c ratio	*0.09*						*0.22*	
Queue length (95%)	*0.28*						*0.85*	
Control Delay (s/veh)	*9.1*						*15.1*	
LOS	*A*						*C*	
Approach delay (s/veh)	–	–				*15.1*		
Approach LOS	–	–				*C*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	EAD	Intersection	Bruswick Rd/South Lake Ave
Agency/Co.	CME, RT2CR141nbam	Jurisdiction	Town of Brunswick
Date Performed	11/4/04	Analysis Year	2009 No-Build
Analysis Time Period	AM Peak Hour		

Project Description	04-164, Carriage Hill Estates
East/West Street: Brunswick Rd (Rt 2)	North/South Street: South Lake Ave (CR 141)
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	77	93	0	0	411	100
Peak-hour factor, PHF	0.84	0.84	1.00	1.00	0.82	0.82
Hourly Flow Rate (veh/h)	91	111	0	0	501	121
Proportion of heavy vehicles, P_{HV}	6	–	–	0	–	–
Median type	Undivided					
RT Channelized?			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	0	0	0	25	0	70
Peak-hour factor, PHF	1.00	1.00	1.00	0.88	1.00	0.88
Hourly Flow Rate (veh/h)	0	0	0	28	0	80
Proportion of heavy vehicles, P_{HV}	0	0	0	0	0	6
Percent grade (%)		0			0	
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
Volume, v (vph)	91						108	
Capacity, c_m (vph)	940						436	
v/c ratio	0.10						0.25	
Queue length (95%)	0.32						0.97	
Control Delay (s/veh)	9.2						16.0	
LOS	A						C	
Approach delay (s/veh)	–	–					16.0	
Approach LOS	–	–					C	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EAD*	Intersection	*Bruswick Rd/South Lake Ave*
Agency/Co.	*CME, RT2CR141bdam*	Jurisdiction	*Town of Brunswick*
Date Performed	*11/4/04*	Analysis Year	*2009 Build*
Analysis Time Period	*AM Peak Hour*		

Project Description	*04-164, Carriage Hill Estates*
East/West Street: *Brunswick Rd (Rt 2)*	North/South Street: *South Lake Ave (CR 141)*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*77*	*100*	*0*	*0*	*429*	*107*
Peak-hour factor, PHF	*0.84*	*0.84*	*1.00*	*1.00*	*0.82*	*0.82*
Hourly Flow Rate (veh/h)	*91*	*119*	*0*	*0*	*523*	*130*
Proportion of heavy vehicles, P_{HV}	*6*	–	–	*0*	–	–
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*0*	*28*	*0*	*70*
Peak-hour factor, PHF	*1.00*	*1.00*	*1.00*	*0.88*	*1.00*	*0.88*
Hourly Flow Rate (veh/h)	*0*	*0*	*0*	*32*	*0*	*80*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*6*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
Volume, v (vph)	*91*						*112*	
Capacity, c_m (vph)	*915*						*412*	
v/c ratio	*0.10*						*0.27*	
Queue length (95%)	*0.33*						*1.09*	
Control Delay (s/veh)	*9.4*						*17.0*	
LOS	*A*						*C*	
Approach delay (s/veh)	--	--					*17.0*	
Approach LOS	--	--					*C*	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EAD*	Intersection	*Bruswick Rd/South Lake Ave*
Agency/Co.	*CME, RT2CR141expm*	Jurisdiction	*Town of Brunswick*
Date Performed	*10/24/04*	Analysis Year	*2004 Existing*
Analysis Time Period	*PM Peak Hour*		

Project Description	*04-164, Carriage Hill Estates*
East/West Street: *Brunswick Rd (Rt 2)*	North/South Street: *South Lake Ave (CR 141)*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*148*	*445*	*0*	*0*	*199*	*51*
Peak-hour factor, PHF	*0.88*	*0.88*	*1.00*	*1.00*	*0.80*	*0.80*
Hourly Flow Rate (veh/h)	*168*	*505*	*0*	*0*	*248*	*63*
Proportion of heavy vehicles, P_{HV}	*1*	–	–	*0*	–	–
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*0*	*89*	*0*	*60*
Peak-hour factor, PHF	*1.00*	*1.00*	*1.00*	*0.70*	*1.00*	*0.70*
Hourly Flow Rate (veh/h)	*0*	*0*	*0*	*126*	*0*	*85*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*1*	*0*	*3*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
Volume, v (vph)	*168*						*211*	
Capacity, c_m (vph)	*1255*						*282*	
v/c ratio	*0.13*						*0.75*	
Queue length (95%)	*0.46*						*5.50*	
Control Delay (s/veh)	*8.3*						*47.8*	
LOS	*A*						*E*	
Approach delay (s/veh)	–	–					*47.8*	
Approach LOS	–	–					*E*	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	EAD	Intersection	Bruswick Rd/South Lake Ave
Agency/Co.	CME, RT2CR141nbpm	Jurisdiction	Town of Brunswick
Date Performed	11/4/04	Analysis Year	2009 No-Build
Analysis Time Period	PM Peak Hour		

Project Description	04-164, Carriage Hill Estates
East/West Street: Brunswick Rd (Rt 2)	North/South Street: South Lake Ave (CR 141)
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	157	471	0	0	215	54
Peak-hour factor, PHF	0.88	0.88	1.00	1.00	0.80	0.80
Hourly Flow Rate (veh/h)	179	535	0	0	268	67
Proportion of heavy vehicles, P_{HV}	1	–	–	0	–	–
Median type	Undivided					
RT Channelized?			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	0	0	0	94	0	64
Peak-hour factor, PHF	1.00	1.00	1.00	0.70	1.00	0.70
Hourly Flow Rate (veh/h)	0	0	0	133	0	91
Proportion of heavy vehicles, P_{HV}	0	0	0	1	0	3
Percent grade (%)		0			0	
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
Volume, v (vph)	179						224	
Capacity, c_m (vph)	1230						256	
v/c ratio	0.15						0.88	
Queue length (95%)	0.51						7.38	
Control Delay (s/veh)	8.4						70.5	
LOS	A						F	
Approach delay (s/veh)	--	--				70.5		
Approach LOS	--	--				F		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	EAD	Intersection	Bruswick Rd/South Lake Ave
Agency/Co.	CME, RT2CR141bdpm	Jurisdiction	Town of Brunswick
Date Performed	11/4/04	Analysis Year	2009 Build
Analysis Time Period	PM Peak Hour		

Project Description	04-164, Carriage Hill Estates
East/West Street:	Brunswick Rd (Rt 2)
North/South Street:	South Lake Ave (CR 141)
Intersection Orientation:	East-West
Study Period (hrs):	0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	157	492	0	0	228	59
Peak-hour factor, PHF	0.88	0.88	1.00	1.00	0.80	0.80
Hourly Flow Rate (veh/h)	179	559	0	0	284	73
Proportion of heavy vehicles, P_{HV}	1	–	–	0	–	–
Median type	Undivided					
RT Channelized?			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	0	0	0	103	0	64
Peak-hour factor, PHF	1.00	1.00	1.00	0.70	1.00	0.70
Hourly Flow Rate (veh/h)	0	0	0	146	0	91
Proportion of heavy vehicles, P_{HV}	0	0	0	1	0	3
Percent grade (%)		0			0	
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
Volume, v (veh)	179						237	
Capacity, c_m (vph)	1207						236	
v/c ratio	0.15						1.00	
Queue length (95%)	0.52						9.49	
Control Delay (s/veh)	8.5						104.2	
LOS	A						F	
Approach delay (s/veh)	–	–					104.2	
Approach LOS	–	–					F	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	EAD	Intersection	Bruswick Rd/Site Access Road
Agency/Co.	CME, RT2SARbdam	Jurisdiction	Town of Brunswick
Date Performed	11/4/04	Analysis Year	2009 Build
Analysis Time Period	AM Peak Hour		

Project Description	04-164, Carriage Hill Estates
East/West Street:	Brunswick Rd (Rt 2)
North/South Street:	Site Access Road
Intersection Orientation:	East-West
Study Period (hrs):	0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	94	10	2	406	0
Peak-hour factor, PHF	1.00	0.84	0.84	0.82	0.82	1.00
Hourly Flow Rate (veh/h)	0	112	11	2	495	0
Proportion of heavy vehicles, P_{HV}	0	–	–	0	–	–
Median Type	Undivided					
RT Channelized?			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	25	0	4	0	0	0
Peak-hour factor, PHF	0.75	1.00	0.75	1.00	1.00	1.00
Hourly Flow Rate (veh/h)	33	0	5	0	0	0
Proportion of heavy vehicles, P_{HV}	0	0	0	0	0	0
Percent grade (%)		0			0	
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
Volume, v (vph)		2		38				
Capacity, c_m (vph)		1477		489				
v/c ratio		0.00		0.08				
Queue length (95%)		0.00		0.25				
Control Delay (s/veh)		7.4		13.0				
LOS		A		B				
Approach delay (s/veh)	–	–	13.0					
Approach LOS	–	–	B					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	EAD	Intersection	Bruswick Rd/Site Access Road
Agency/Co.	CME, RT2SARbdpm	Jurisdiction	Town of Brunswick
Date Performed	11/4/04	Analysis Year	2009 Build
Analysis Time Period	PM Peak Hour		

Project Description: 04-164, Carriage Hill Estates

East/West Street: Brunswick Rd (Rt 2) | North/South Street: Site Access Road

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	392	30	4	153	0
Peak-hour factor, PHF	1.00	0.88	0.88	0.80	0.80	1.00
Hourly Flow Rate (veh/h)	0	446	34	4	191	0
Proportion of heavy vehicles, P_{HV}	0	–	–	0	–	–
Median type	Undivided					
RT Channelized?			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	18	0	3	0	0	0
Peak-hour factor, PHF	0.75	1.00	0.75	1.00	1.00	1.00
Hourly Flow Rate (veh/h)	24	0	4	0	0	0
Proportion of heavy vehicles, P_{HV}	0	0	0	0	0	0
Percent grade (%)		0			0	
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
Volume, v (vph)		4		28				
Capacity, c_m (vph)		1093		447				
v/c ratio		0.00		0.06				
Queue length (95%)		0.01		0.20				
Control Delay (s/veh)		8.3		13.6				
LOS		A		B				
Approach delay (s/veh)	–	–	13.6					
Approach LOS	–	–	B					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EAD*	Intersection	*Pinewoods Ave/Site Access Road*
Agency/Co.	*CME, CR140SARbdam*	Jurisdiction	*Town of Brunswick*
Date Performed	*11/4/04*	Analysis Year	*2009 Build*
Analysis Time Period	*AM Peak Hour*		

Project Description *04-164, Carriage Hill Estates*

East/West Street: *Pinewoods Ave (CR 140)* | North/South Street: *Site Access Road*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*15*	*42*	*0*	*0*	*247*	*1*
Peak-hour factor, PHF	*1.00*	*0.88*	*1.00*	*1.00*	*0.80*	*1.00*
Hourly Flow Rate (veh/h)	*15*	*47*	*0*	*0*	*308*	*1*
Proportion of heavy vehicles, P_{HV}	*0*	–	–	*0*	–	–
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*0*	*3*	*0*	*40*
Peak-hour factor, PHF	*0.75*	*1.00*	*0.75*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*0*	*0*	*3*	*0*	*40*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
Volume, v (vph)	*15*						*43*	
Capacity, c_m (vph)	*1263*						*727*	
v/c ratio	*0.01*						*0.06*	
Queue length (95%)	*0.04*						*0.19*	
Control Delay (s/veh)	*7.9*						*10.3*	
LOS	*A*						*B*	
Approach delay (s/veh)	--	--					*10.3*	
Approach LOS	--	--					*B*	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*EAD*	Intersection	*Pinewoods Ave/Site Access Road*
Agency/Co.	*CME, CR140SARbdpm*	Jurisdiction	*Town of Brunswick*
Date Performed	*11/4/04*	Analysis Year	*2009 Build*
Analysis Time Period	*PM Peak Hour*		

Project Description	*04-164, Carriage Hill Estates*
East/West Street: *Pinewoods Ave (CR 140)*	North/South Street: *Site Access Road*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*46*	*173*	*0*	*0*	*89*	*4*
Peak-hour factor, PHF	*1.00*	*0.88*	*1.00*	*1.00*	*0.80*	*1.00*
Hourly Flow Rate (veh/h)	*46*	*196*	*0*	*0*	*111*	*4*
Proportion of heavy vehicles, P_{HV}	*0*	–	–	*0*	–	–
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LT*					*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*0*	*2*	*0*	*28*
Peak-hour factor, PHF	*0.75*	*1.00*	*0.75*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*0*	*0*	*2*	*0*	*28*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
Volume, v (vph)	*46*						*30*	
Capacity, c_m (vph)	*1487*						*909*	
v/c ratio	*0.03*						*0.03*	
Queue length (95%)	*0.10*						*0.10*	
Control Delay (s/veh)	*7.5*						*9.1*	
LOS	*A*						*A*	
Approach delay (s/veh)	–	–				*9.1*		
Approach LOS	–	–				*A*		