

TRAFFIC IMPACT STUDY

For

Proposed CVS Pharmacy

Property Located at:

Block 729 – Lot 1

Clark Avenue (CR 531) & Randolph Road
City of Plainfield, Union County, NJ

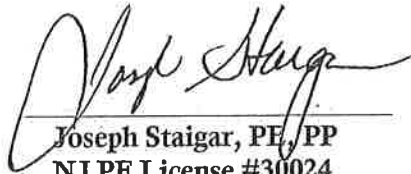
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February 17, 2020

2340-99-008T

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PLANNING DIVISION

INTRODUCTION

It is proposed to construct a 14,823 SF CVS Pharmacy on a parcel of land located in the southwest quadrant of the intersection of Park Avenue (CR 531) and Randolph Road in the City of Plainfield, Union County, New Jersey (see Figure 1 in Appendix A). The site is designated as Block 729 – Lot 1 on the City of Plainfield Tax Maps. It is proposed to subdivide the site, with the northern portion of the lot accommodating construction of a 14,823 SF CVS Pharmacy with a drive-through (The Project), while maintaining the existing parking lot in the southern portion of the site. The site is located within the PO-1 – Professional Office Zone. Access to the site is currently provided via a full movement driveway along Randolph Road and a full movement driveway along Laramie Road. It is proposed to reconstruct the existing driveway along Randolph Road, construct a new full movement driveway along Park Avenue, and maintain the full movement driveway along Laramie Road to the remainder of the existing parking lot.

Dynamic Traffic LLC has been retained to prepare this study to assess the traffic impact associated with the construction of The Project on the adjacent roadway network. This study documents the methodology, analyses, findings and conclusions of our study and includes:

- A detailed field inspection was conducted to obtain an inventory of existing roadway geometry, traffic control, and location and geometry of existing driveways and intersections.
- Existing traffic data was collected via manual turning movement (MTM) counts during the weekday AM, weekday PM, and Saturday midday peak periods at the intersection of Park Avenue (CR 531) & Randolph Road.
- Projections of traffic to be generated by the proposed development were prepared utilizing trip generation data as published by the Institute of Transportation Engineers. Site traffic was then assigned to the adjacent street system based upon the anticipated directional distribution.
- Capacity analyses were conducted for the Existing, No Build, and Build conditions for the study intersections.
- The proposed points of ingress and egress were inspected for adequacy of geometric design, spacing and/or alignment to streets and driveways on the opposite side of the street, relationship to other driveways adjacent to the development, and conformance with accepted design standards.
- The site plan was reviewed for sufficiency in accommodating large wheel base vehicles such as delivery trucks, refuse trucks, and emergency vehicles.
- The parking layout and supply was assessed based on local requirements.

EXISTING CONDITIONS

A review of the existing roadway conditions surrounding the proposed site was conducted to provide the basis for assessing the traffic impact of the development. This included field investigations of the surrounding roadways and intersections, collection of traffic volume data, and intersection analyses.

Existing Roadway Conditions

The following are descriptions of the roadways in the study area:

Park Avenue (CR 531) is an Urban Minor Arterial roadway under Union County jurisdiction with a general north/south orientation. In the vicinity of the site the posted speed limit is 25 MPH and the roadway provides one travel lane in each direction. On-street parking is prohibited along the property frontage. Curb and sidewalk are provided along both sides of the roadway. Park Avenue provides a straight horizontal alignment along the site frontage with an approximate 30° bend to the northwest just north of the intersection with Randolph Road. Park Avenue provides a relatively flat vertical alignment. The land uses along Park Avenue in the vicinity of The Project are mixed institutional (hospital) and residential.

Randolph Road is an Urban Major Collector roadway under the City of Plainfield jurisdiction with a general east/west orientation. In the vicinity of the site the posted speed limit is 25 MPH and the roadway provides one travel lane in each direction. On-street parking is prohibited along the property frontage. Curb and sidewalk are provided along both sides of the roadway. Randolph Road provides a straight horizontal alignment and a relatively flat vertical alignment. The land uses along Randolph Road in the vicinity of The Project are mixed institutional (hospital) and residential.

Existing Traffic Volumes

Manual turning movement (MTM) counts were conducted at the intersection of Park Avenue (CR 531) and Randolph Road on the following dates and times:

- Wednesday, September 25, 2019 from 7:00 to 9:00 AM and 4:30 to 6:30 PM
- Saturday, October 5, 2019 from 11:00 AM to 2:00 PM

Review of the collected traffic data reveals that the weekday morning peak street hour (PSH) occurs between 7:15 – 8:15 AM, the weekday evening PSH occurs between 5:15 – 6:15 PM, and the Saturday PSH occurs between 1:00 – 2:00 PM. Figure 2, located in Appendix A, shows the existing peak hour traffic volumes at the study intersections. All traffic counts are contained in Appendix B.

Existing Capacity Analysis

The methodology utilized in the capacity analyses is described in the *Highway Capacity Manual*, published by the Transportation Research Board. In general, the term Level of Service (LOS) is used to provide a “qualitative” evaluation of capacity based upon certain “quantitative” calculations related to empirical values, such as traffic volume and intersection control.

At the signalized intersections, factors that affect the various approach capacities include width of approach, number of lanes, signal “green time”, turning percentages, truck volumes, etc. However, delays cannot be related to capacity in a simple one-to-one fashion. For example, it is possible to have delays in the Level of Service “F” range without exceeding roadway capacity. Substantial delays can exist without exceeding capacity if one or more of the following conditions exist: long signal cycle lengths; a particular traffic movement experiences a long red time; or progressive movement for a particular lane group is poor. Table I describes the level of service ranges for signalized intersections.

An unsignalized (STOP sign controlled) driveway or side street along a through route is seldom critical from an overall capacity standpoint, however, it may be of great significance to the capacity of the minor cross-route, and it may influence the quality of traffic flow on both. When analyzing an unsignalized intersection, it is assumed that both the major street through and right turn movements are unimpeded and have the right-of-way over all side street traffic and left turns from the major street. All other turning movements in the intersection cross, merge with, or are otherwise impeded by major street movements. Traffic delays at unsignalized intersections are determined by sequentially processing these impeded movements. Table II describes the level of service ranges for unsignalized (stop controlled) intersections.

Table I
Level of Service Criteria
for Signalized Intersections

Level of Service	Average Control Delay (seconds per vehicle)
A	0.0 to 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	greater than 80.0

Table II
Level of Service Criteria
for Unsignalized Intersections

Level of Service	Average Control Delay (seconds per vehicle)
a	0.0 to 10.0
b	10.1 to 15.0
c	15.1 to 25.0
d	25.1 to 35.0
e	35.1 to 50.0
f	greater than 50.0

It should be noted that the analyses within the *Highway Capacity Manual* assume a random arrival for all the movements, which may not be the case if an adjacent traffic signal is present that platoons vehicles, such as the signalized intersection of Park Avenue and Randolph Road.

All capacity analyses were performed utilizing Synchro 10 software. Table III summarizes the existing levels of service (LOS) and delays. All capacity analysis calculation worksheets are contained in Appendix C.

**Table III
Existing Levels of Service**

Intersection	Direction/ Movement		AM PSH	PM PSH	SAT PSH
Park Avenue (CR 531) & Randolph Road	EB	LTR	D (41)	C (30)	C (31)
	WB	LTR	D (36)	C (33)	C (30)
	NB	LTR	A (5)	A (5)	A (5)
	SB	LTR	A (5)	A (5)	A (5)
	Overall		B (16)	B (11)	B (11)

A (#) - Signalized Intersection Level of Service (seconds of delay per vehicle)

The following is a discussion pertaining to the existing intersection analyzed. It should be noted that the existing percentage of trucks, pedestrians, and peak hour factors were used in the existing analysis.

Park Avenue (CR 531) & Randolph Road

Randolph Road intersects Park Avenue (CR 531) to form a four-leg intersection controlled by a two-phase traffic signal operating on a 70-second background cycle length. Both the northbound and southbound approaches of Park Avenue provide a shared left turn/through lane and a shared through/right turn lane. Both the eastbound and westbound approaches of Randolph Road provide a single shared left turn/through/right turn lane.

A review of the existing analysis reveals that the intersection operates at an overall level of service “B” and all movements operate at levels of service “D” or better during the analyzed peak periods. See Table III for the individual movement levels of service and delays.

FUTURE CONDITIONS

Traffic volumes and operational analyses were developed for both the 2021 No Build and Build conditions. The No Build conditions provide a baseline for assessing the impact of the site development traffic on the roadway system. The process of developing the No Build and Build traffic volumes and the subsequent analyses is outlined below.

Regardless of whether the subject site is developed or not, traffic volumes on the surrounding roadways are expected to increase as a result of developments throughout the region. A growth rate for roadways within the study area was obtained from the NJDOT Annual Background Growth Rate Table, which indicates a growth rate of 1.0% per year.

Through consultation with the City of Plainfield Planning Board staff, there is one development in the vicinity of the site that has been approved but not yet constructed that is identified as a potential significant traffic generator (discussed below).

- A mixed-use development consisting of approximately 120 residential units and approximately 186,000 SF of medical office known as “Muhlenberg Medical Arts Complex”, located east of the site along Randolph Road has been approved but not yet constructed. Projections of the associated traffic volumes were gathered from the *Traffic Impact Study* prepared for that development by this firm, and dated November 16, 2017. The Adjacent Development Traffic Volumes anticipated to pass the site are shown on Figure 3.

Future 2021 No Build traffic volumes were developed by applying the background growth rate of 1.0% for two (2) years to the study area roadways existing traffic volumes and adding the adjacent development traffic volumes. Figure 4, in Appendix A, shows the 2021 No Build traffic volumes.

Traffic Generation

Trip generation projections for The Project were prepared utilizing trip generation research data as published under Land Use Code 881 – Pharmacy/Drug Store with Drive-Through Window (KSF) in the Institute of Transportation Engineers’ (ITE) publication, *Trip Generation, 10th Edition*. This publication sets forth trip generation rates based on traffic counts conducted at research sites throughout the country. Note that conservatively 15,000 SF was utilized in projecting the trip generation for The Project.

According to studies conducted by ITE, traffic associated with a Pharmacy/Drug Store is not 100% newly generated. Rather, a portion of the traffic is diverted from the existing traffic stream on the adjacent roadway network. This is because the CVS Pharmacy is not exclusively a destination land use, instead patrons stop on their way to/from other locations such as home or work. ITE identifies a 49% passby traffic percentage during the weekday evening peak hour. To note is that the 49% passby rate has also been accepted by NJDOT. It should also be noted that while there is no passby data published by ITE or NJDOT during the weekday morning and Saturday midday peak periods, there will realistically be passby traffic during both of these peak hours. As such, the weekday evening passby percentage of 49% was applied to both the weekday morning and Saturday midday peak periods, respectively. Table IV details the traffic volumes associated with the subject project taking into account the passby credits.

Table IV
Trip Generation Considering Passby Traffic

Trip Type		AM PSH			PM PSH			SAT PSH		
		In	Out	Total	In	Out	Total	In	Out	Total
15,000 SF Pharmacy with Drive-Through	Total	31	27	57	77	77	154	64	67	131
	Passby	15	13	28	38	37	75	31	33	64
	New (Primary)	16	14	30	39	40	79	33	34	67

Once the magnitude of traffic to be generated by the site is known, it is necessary to assign that traffic to the adjacent street system. The distribution of new traffic to the surrounding roadways is based on the location of primary arterial roadways, major signalized intersections and existing traffic patterns. Table V summarizes the anticipated trip distribution for The Project.

Table V
Trip Distribution

To/From	Percentage
Randolph Road – East	5%
Randolph Road – West	20%
Park Avenue (CR 531) – North	40%
Park Avenue (CR 531) – South	35%
Total	100%

Located in Appendix A, Figure 5 illustrates the primary site generated volumes, Figure 6 illustrates the passby site generated volumes, and Figure 7 illustrates the total site generated volumes assigned to the study area network. The site generated volumes were added to the No Build traffic volumes to generate the Build traffic volumes, which are shown in Figure 8.

Future Capacity Analysis

Operational conditions at the study intersections were analyzed under the No Build and Build conditions and are summarized in Table VI.

Table VI
Future Levels of Service

Intersection	Direction/ Movement		AM PSH		PM PSH		SAT PSH	
			No Build	Build	No Build	Build	No Build	Build
Park Avenue (CR 531) & Randolph Road	EB	LTR	D (52)	D (53)	C (30)	C (34)	D (37)	D (42)
	WB	LTR	D (48)	D (46)	F (83)	F (87)	F (80)	F (83)
	NB	LTR	A (5)	A (6)	A (6)	A (6)	A (6)	A (6)
	SB	LTR	A (6)	A (6)	A (6)	A (6)	A (7)	A (7)
	Overall		C (21)	C (21)	C (26)	C (28)	C (24)	C (26)
Park Avenue (CR 531) & Site Driveway	EB	LR	-	c (16)	-	c (19)	-	c (19)
	NB	L	-	a (8)	-	a (9)	-	a (9)
Randolph Road & Site Driveway	WB	L	-	a (8)	-	a (8)	-	a (8)
	NB	LR	-	b (11)	-	b (11)	-	b (11)

a (#) - Unsignalized Intersection Level of Service (seconds of delay per vehicle)

A (#) - Signalized Intersection Level of Service (seconds of delay per vehicle)

Park Avenue (CR 531) & Randolph Road

With the addition of site generated traffic, the overall intersection is anticipated to operate at level of service “C” during the analyzed peak hours (similar to the No Build condition). The northbound and southbound Park Avenue approaches are anticipated to operate at levels of service “A”. The eastbound and westbound approaches of Randolph Road are anticipated to operate at levels of service similar to the No Build condition ranging from “C” to “F” with a maximum increase in delay of 5 seconds on any movement compared to the No Build condition. It should be noted that if minor signal timing modifications were implemented, the westbound movements from Randolph Road could operate better than No Build conditions while maintaining the level of service for all other approaches. See Table VI for the individual movement levels of service and delays.

Park Avenue (CR 531) & Site Driveway

The site driveway is proposed to intersect Park Avenue to form an unsignalized T-intersection with the site driveway operating under stop control. The northbound approach of Park Avenue is proposed to provide a shared left turn/through lane, while the southbound approach is proposed to provide a shared through/right turn lane. The eastbound approach of the site driveway is proposed to provide a shared left turn/right turn lane.

As designed, the driveway is anticipated to operate at levels of service “C” or better during the studied peak hours. See Table VI for the individual movement levels of service and delays.

Randolph Road & Site Driveway

The site driveway is proposed to intersect Randolph Road to form an unsignalized T-intersection with the site driveway operating under stop control. The eastbound approach of Randolph Road is proposed to provide a shared through/right turn lane, while the westbound approach is proposed to provide a shared left turn/through lane. The northbound approach of the site driveway is proposed to provide a shared left turn/right turn lane.

As designed, the driveway is anticipated to operate at levels of service “B” or better during the studied peak hours. See Table VI for the individual movement levels of service and delays.

SITE PLAN

Site Access and Circulation

The site plan was reviewed with respect to the site access and on-site circulation design. As noted previously, access to the proposed pharmacy will be provided via a reconstructed full movement driveway along Randolph Road and a newly constructed full movement driveway along Park Avenue.

The parking lot will be serviced by two-way parking aisles with widths of 24' and 30', which satisfy the Ordinance's requirement of 24' for two-way parking aisles with 90 degree parking. Additionally, the parking lot will feature a one-way circulation aisle around the rear of the building with a width of 22', which satisfies the Ordinance requirement of 18' for one-way parking aisles with 60 degree parking. Review of the site plan design indicates that the site can sufficiently accommodate large wheel base vehicles, such as a single unit truck (SU), a tractor trailer (WB-50), a refuse truck (SU), a fire engine, along with the automobile traffic anticipated.

Parking

The City of Plainfield Ordinance sets forth a parking requirement of 1 parking space per 300 square feet for retail sales and service uses. This equates to a parking requirement of 50 spaces for the proposed 14,823 SF CVS Pharmacy. The site as proposed provides 50 parking spaces and; therefore, the Ordinance requirement is satisfied. Additionally, the Ordinance sets forth a requirement of 1 loading space for commercial business uses between 10,001 and 23,999 SF in size such as the Project. It is proposed to provide one loading space, thereby satisfying the Ordinance requirement.

It is proposed to provide perpendicular parking stalls with dimensions of 9'x18' and angled parking stalls with dimensions of 9'x23', which satisfy the Ordinance minimum requirement of 9'x18'. It should be noted that industry standards recommend stall widths of between 8'9" and 9' and a length of 18' for high-turnover land uses such as the CVS Pharmacy, which is met as designed. Additionally, the proposed loading zone is 15' wide and approximately 60' long, which satisfies the Ordinance minimum requirement of 10'x45' for commercial business loading stalls.

FINDINGS & CONCLUSIONS

Findings

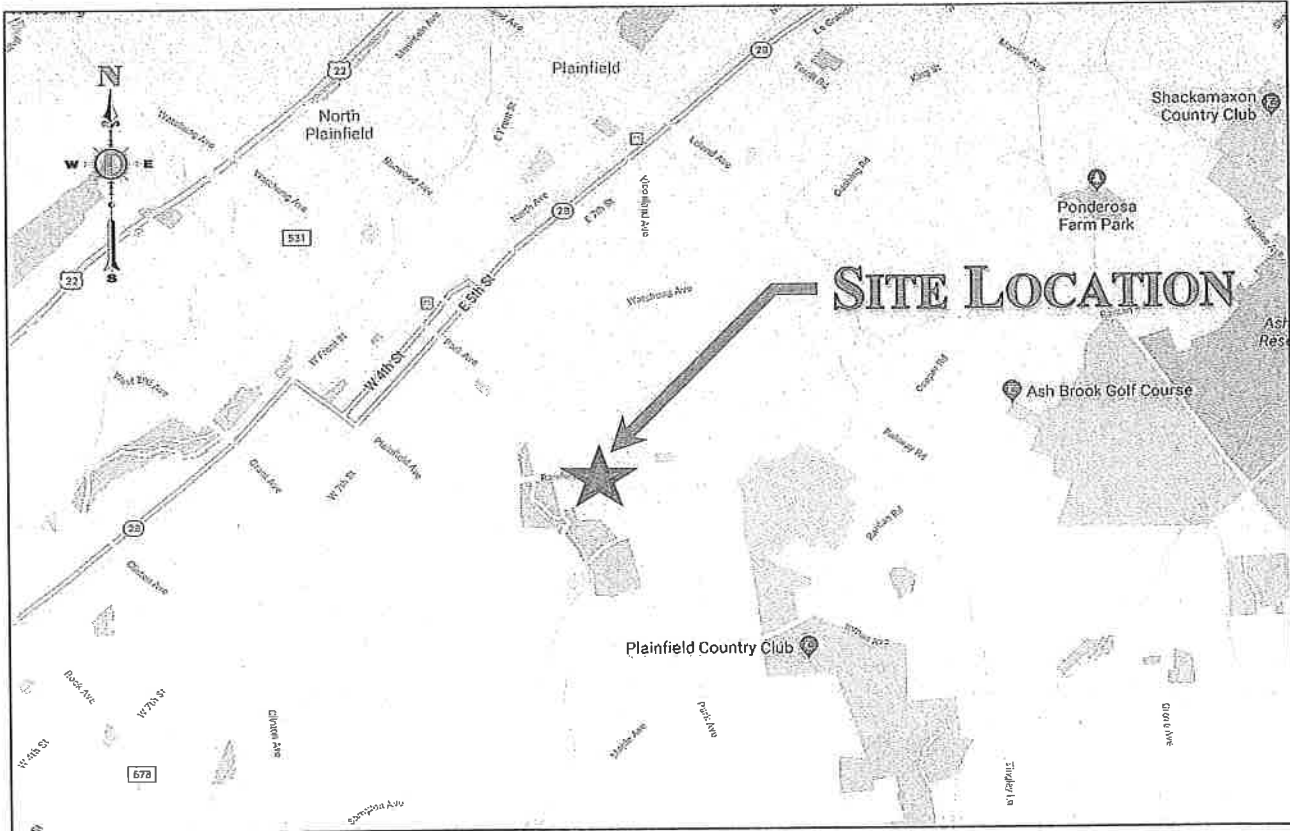
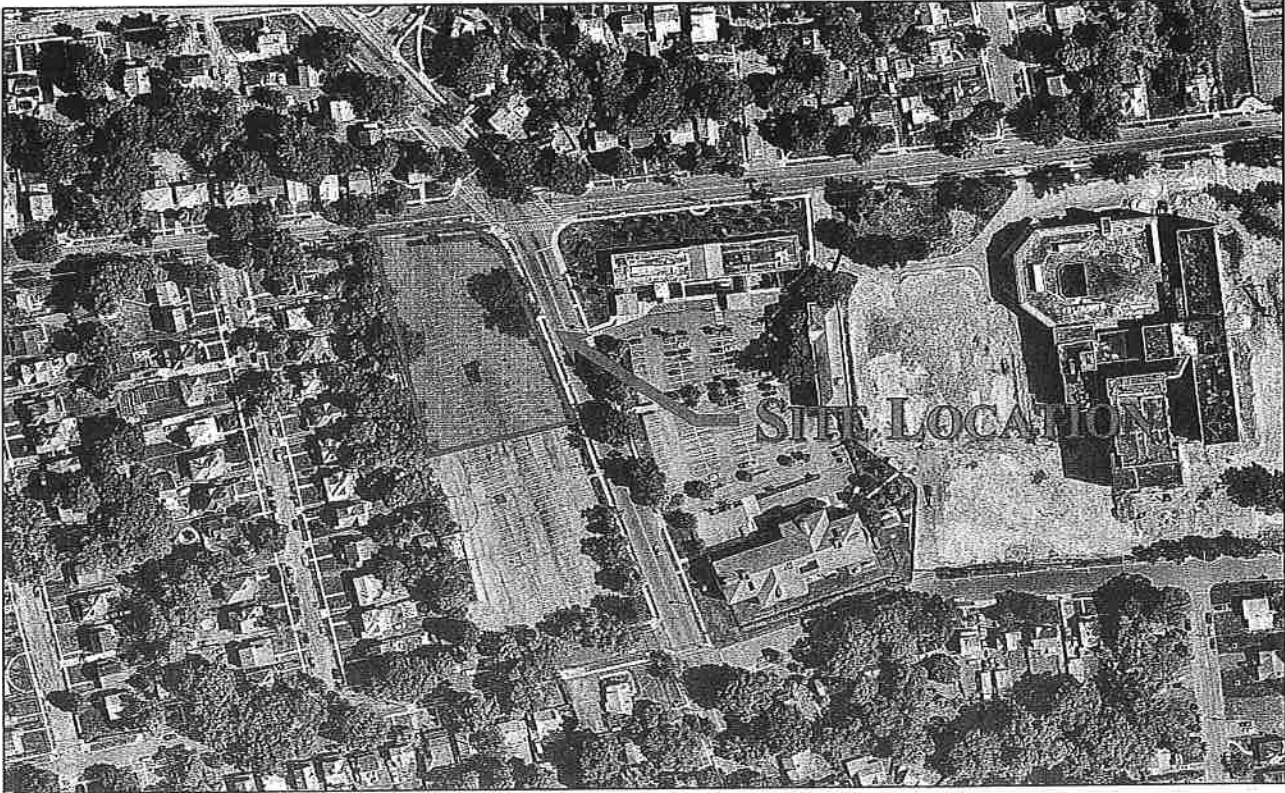
Based upon the detailed analyses as documented herein, the following findings are noted:

- The proposed CVS Pharmacy w/ Drive-Thru will generate 16 entering trips and 14 exiting trips during the weekday morning peak hour, 39 entering trips and 40 exiting trips during the evening peak hour, and 33 entering trips and 34 exiting trips during the Saturday peak hour that are “new” to the adjacent roadway network.
- Access to the site is proposed to be provided via reconstruction of the existing driveway along Randolph Road and a new full movement driveway along Park Avenue.
- With the addition of site generated traffic, the intersection of Park Avenue and Randolph Road is anticipated to operate at overall level of service “C” during the studied peak hours. All movements are anticipated to generally operate at levels of service similar to the No Build condition with nominal changes in delay during the studied peak hours.
- The proposed site driveway along Park Avenue is anticipated to operate at levels of service “C” or better during the studied peak hours.
- The proposed site driveway along Randolph Road is anticipated to operate at levels of service “B” or better during the studied peak hours.
- The Project’s site driveways and internal circulation have been designed to provide for safe and efficient movement of automobiles and large wheel base vehicles.
- The proposed parking supply and design is sufficient to support the projected demand and satisfies the Ordinance requirements.

Conclusions

Based upon our Traffic Impact Study as detailed in the body of this report, it is the professional opinion of Dynamic Traffic LLC that the adjacent street system of the City of Plainfield and Union County will not experience any significant degradation in operating conditions with the construction of The Project. The site driveways are located to provide safe and efficient access to the adjacent roadway system. The site plan as proposed provides for good circulation throughout the site and provides adequate parking to accommodate The Project’s needs.

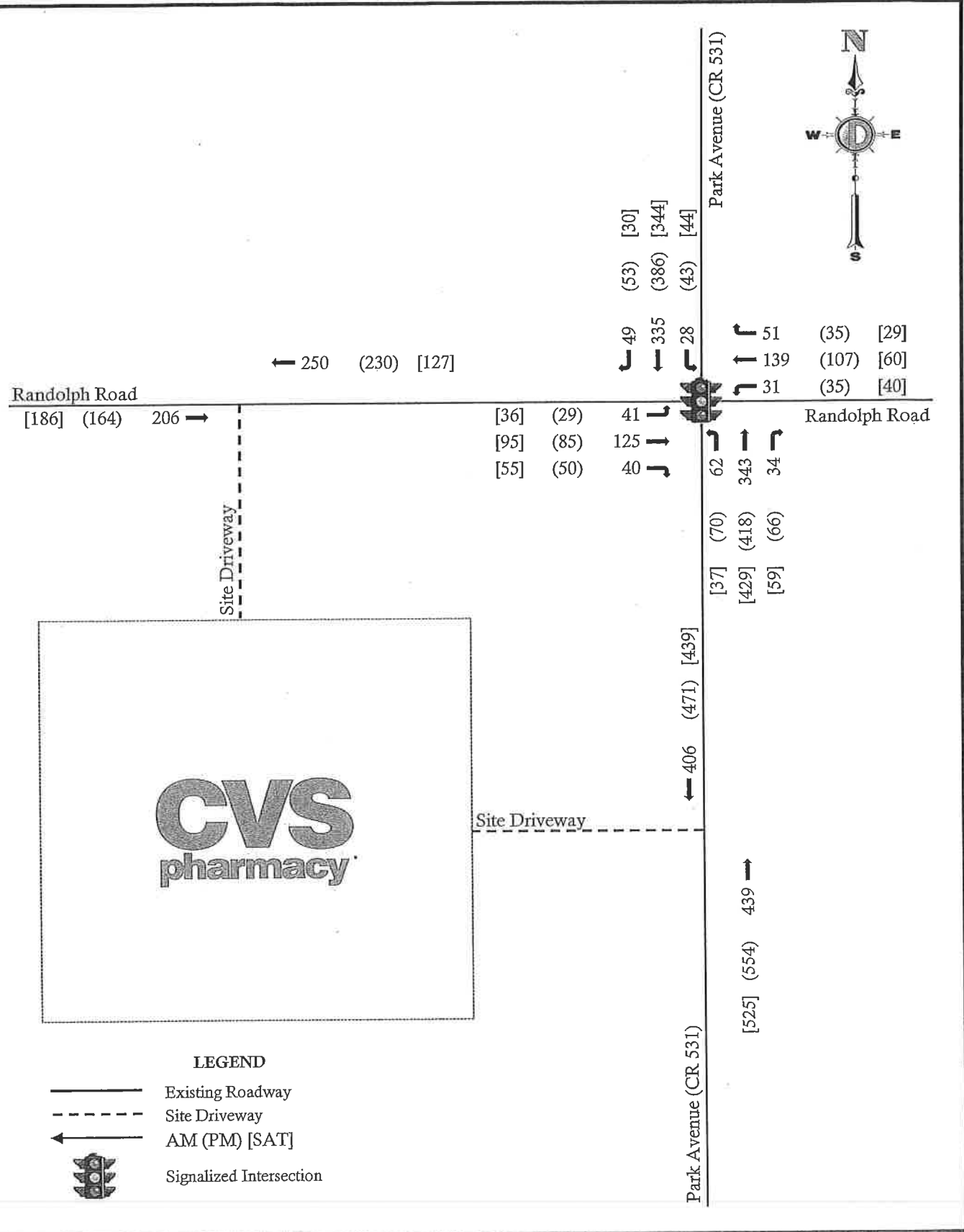
Appendix A
Traffic Volume Figures



Proposed CVS Pharmacy
 Traffic Impact Study
 2340-99-008T
 2/17/2020

Figure 1

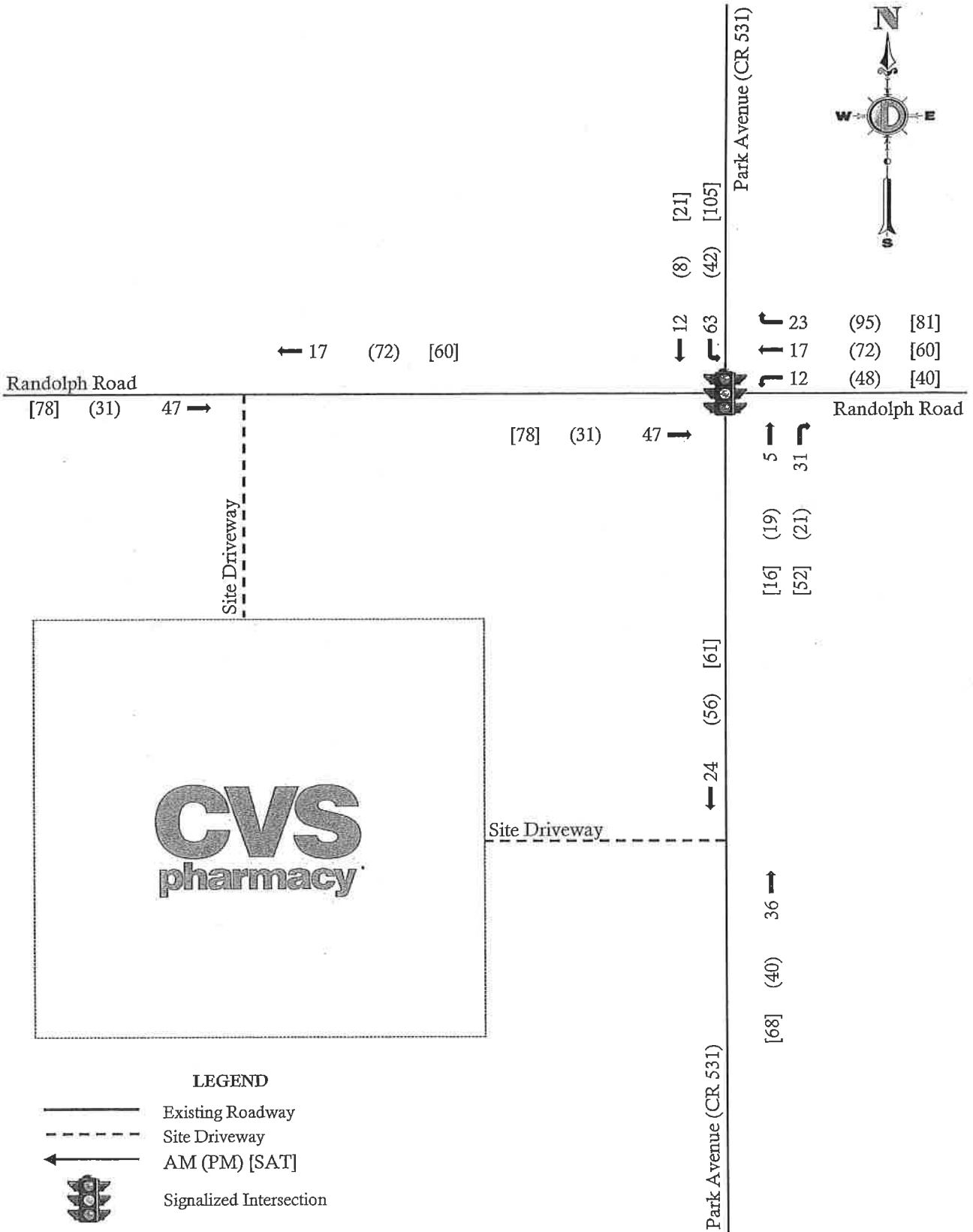
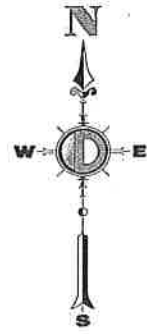
Site Location Map



Proposed CVS Pharmacy
 Traffic Impact Study
 2340-99-008T
 2/17/2020

Figure 2

Existing Traffic Volumes



Proposed CVS Pharmacy
 Traffic Impact Study
 2340-99-008T
 2/17/2020

Figure 3

Adjacent Development Traffic Volumes
 [Muhlenberg Medical Arts Complex]

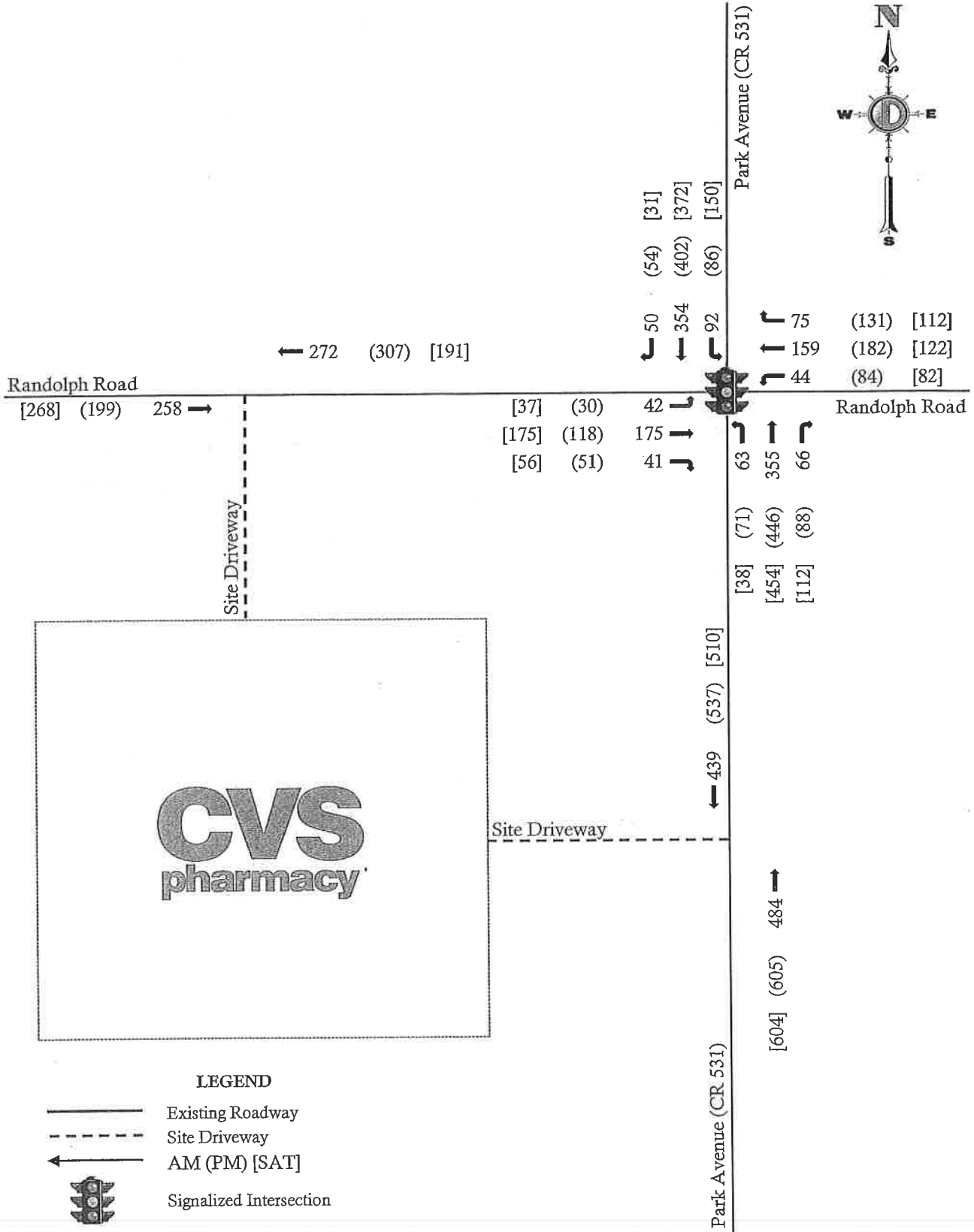
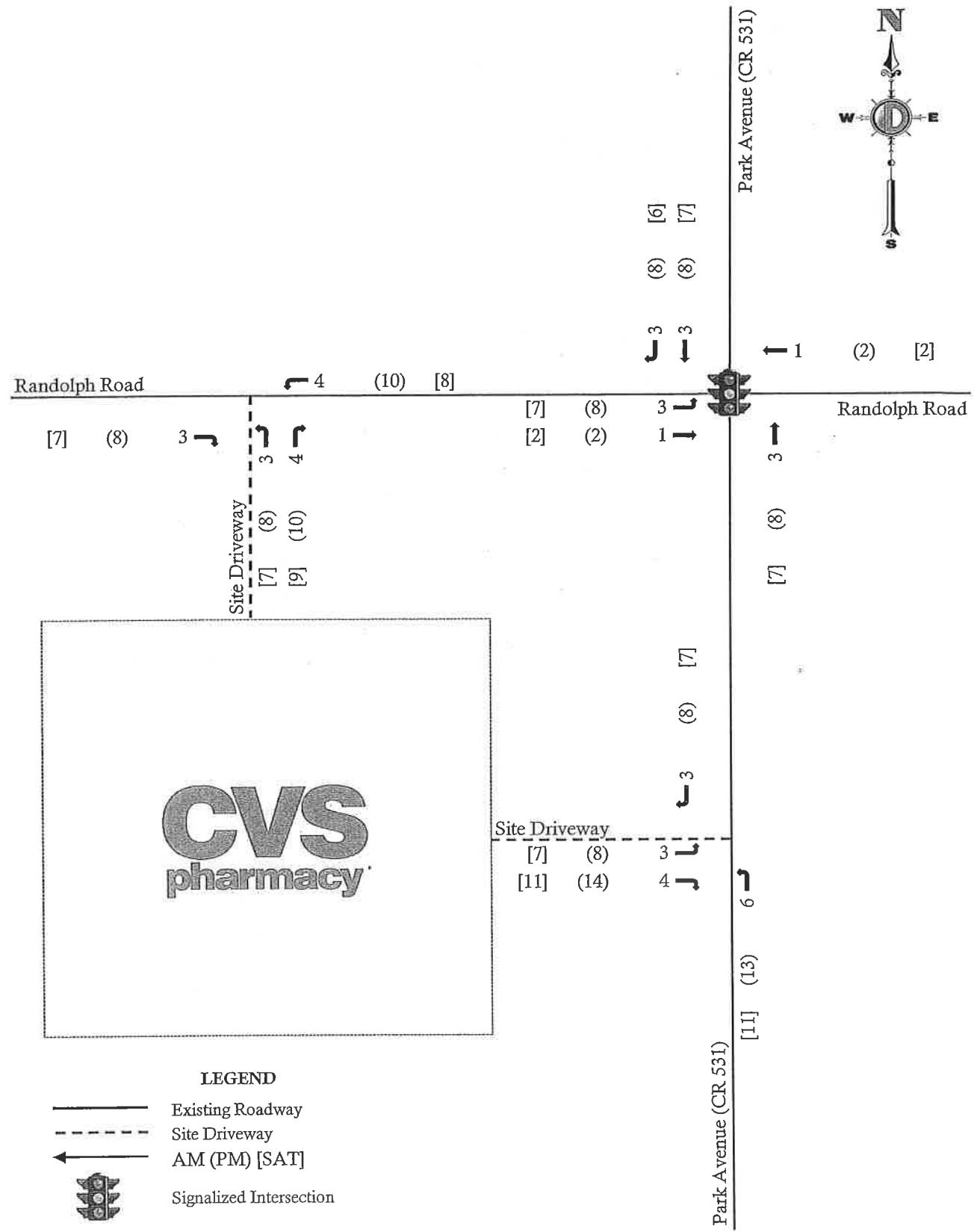


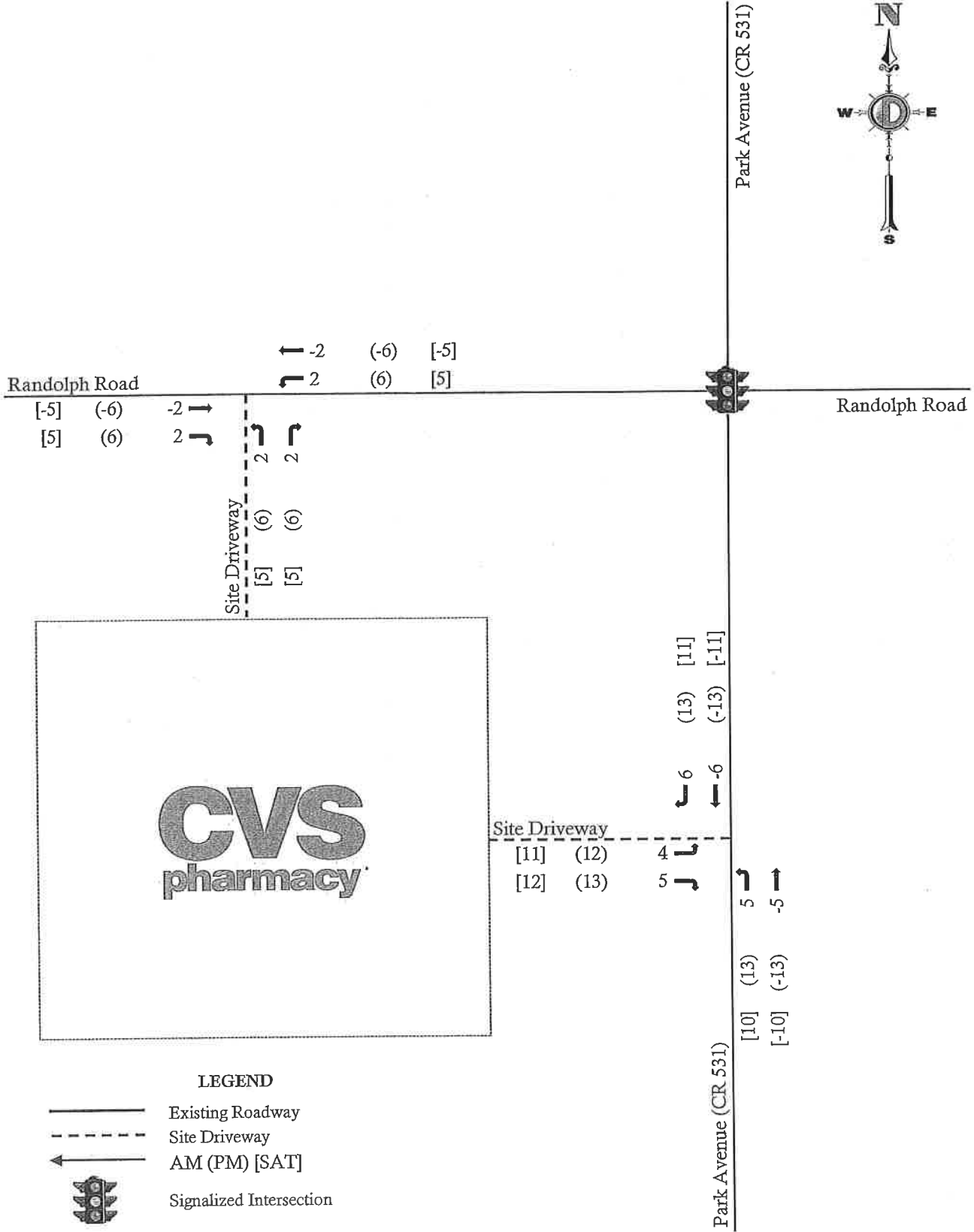
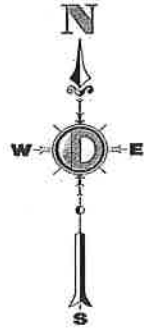
Figure 4

No Build Traffic Volumes



Proposed CVS Pharmacy
 Traffic Impact Study
 2340-99-008T
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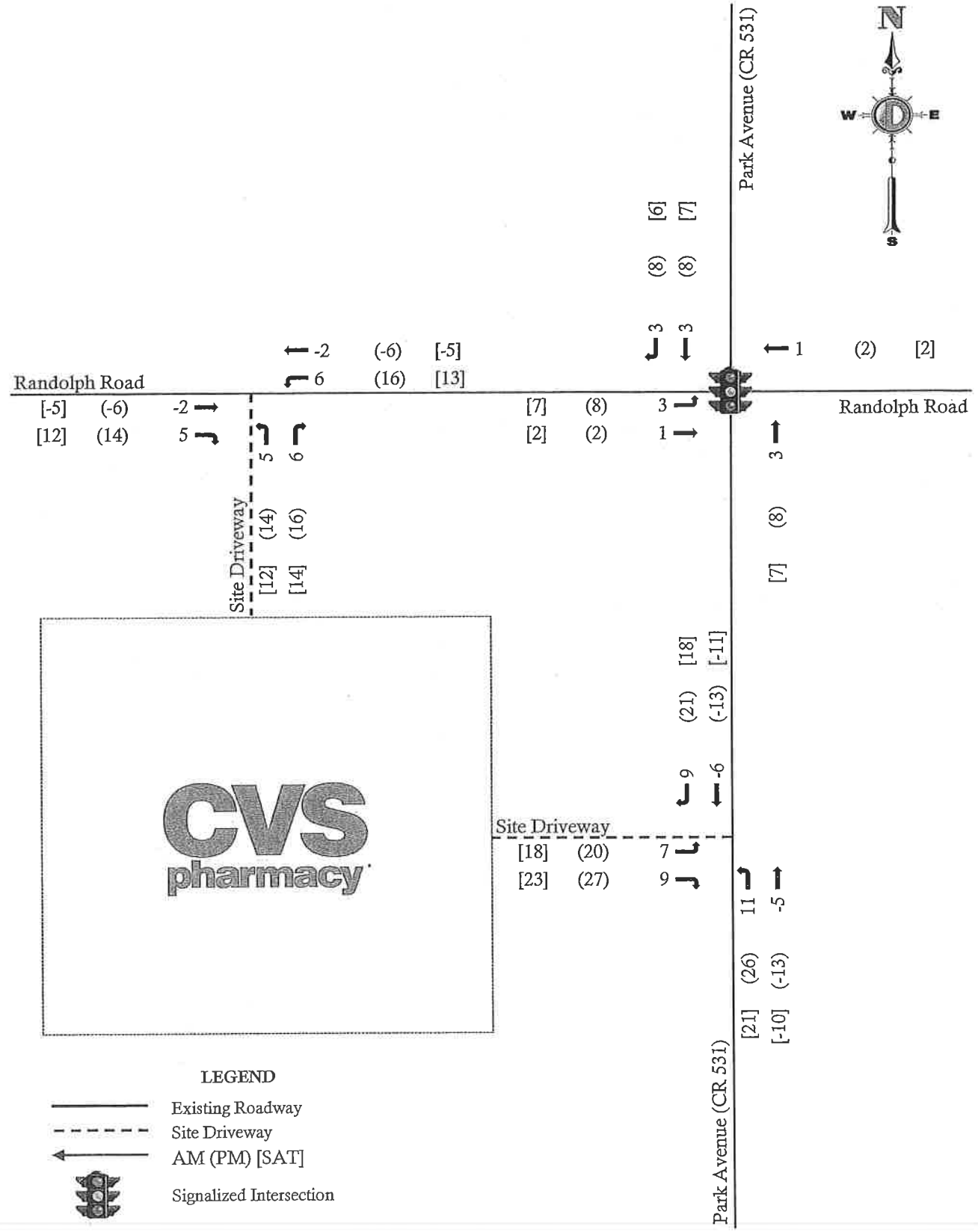
Figure 5
Primary Site Generated Trips

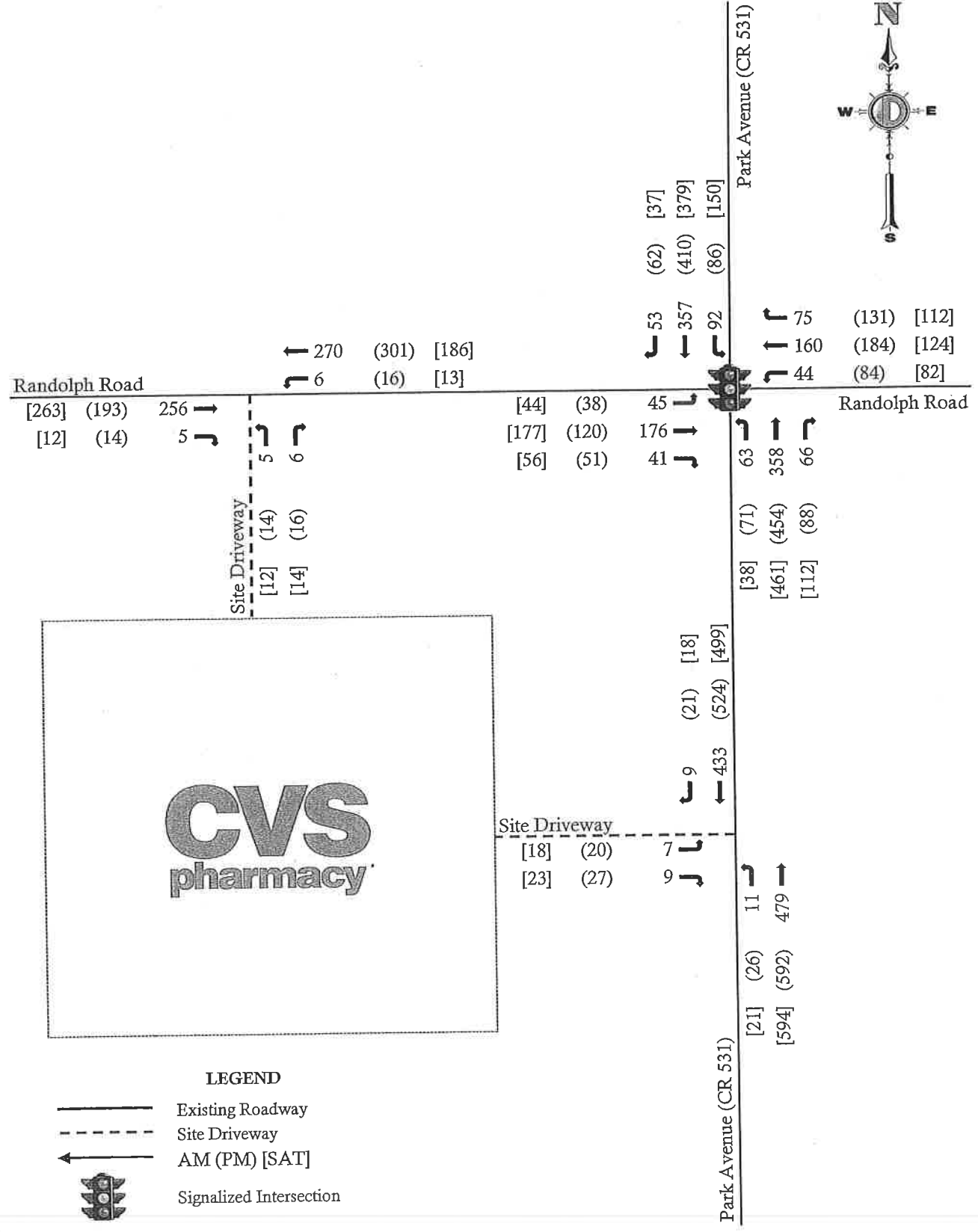


CVS
pharmacy

LEGEND

- Existing Roadway
- Site Driveway
- AM (PM) [SAT]
- Signalized Intersection





Proposed CVS Pharmacy
 Traffic Impact Study
 2340-99-008T
 2/17/2020

Figure 8
Build Traffic Volumes

Appendix B
Traffic Counts

Dynamic Traffic, LLC

1904 Main Street, Lake Como, NJ 07719
245 Main Street - Suite 110, Chester, NJ 07930
732-681-0760

E/W: Randolph Rd
N/S: Park Ave
Town/County: Plainfield/Morris
Job #: 2340-99-008T

File Name : Randolph Rd and Park Ave - AMPM
Site Code : 00000000
Start Date : 9/25/2019
Page No : 1

Groups Printed- Cars - Trucks (SU) - Trucks (TT)

Start Time	Randolph Road Eastbound					Randolph Road Westbound					Park Avenue (CR 531) Northbound					Park Avenue (CR 531) Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	5	18	10	1	34	2	22	9	2	35	13	73	12	1	99	10	49	4	2	65	233
07:15 AM	9	27	10	2	48	7	27	11	2	47	13	81	12	0	106	10	68	8	0	86	287
07:30 AM	13	38	9	2	62	9	35	18	1	63	18	78	8	0	104	6	91	8	1	106	335
07:45 AM	6	23	11	2	42	8	40	10	1	59	19	100	6	1	126	9	95	17	0	121	348
Total	33	106	40	7	186	26	124	48	6	204	63	332	38	2	435	35	303	37	3	378	1203
08:00 AM	13	37	10	1	61	7	37	12	0	56	12	84	8	0	104	3	81	16	0	100	321
08:15 AM	5	23	7	0	35	6	26	11	0	43	16	82	7	0	105	5	50	12	0	67	250
08:30 AM	7	13	8	1	29	7	48	10	2	67	23	92	5	0	120	4	57	8	0	69	285
08:45 AM	4	18	11	2	35	8	43	5	0	56	14	76	10	0	100	2	57	8	0	67	258
Total	29	91	36	4	160	28	154	38	2	222	65	334	30	0	429	14	245	44	0	303	1114
*** BREAK ***																					
04:30 PM	5	19	19	2	45	17	27	6	1	51	22	88	13	1	124	10	85	13	1	109	329
04:45 PM	4	18	13	0	35	11	28	5	1	45	18	98	18	1	135	10	96	11	0	117	332
Total	9	37	32	2	80	28	55	11	2	96	40	186	31	2	259	20	181	24	1	226	661
05:00 PM	9	21	10	0	40	10	25	5	4	44	22	106	20	2	150	8	93	6	0	107	341
05:15 PM	4	17	16	1	38	14	25	7	0	46	15	109	14	0	138	10	100	11	0	121	343
05:30 PM	8	16	10	1	35	1	31	12	1	45	15	105	20	0	140	11	87	9	0	107	327
05:45 PM	7	25	9	0	41	10	30	10	2	52	18	101	17	0	136	15	102	16	0	133	362
Total	28	79	45	2	154	35	111	34	7	187	70	421	71	2	564	44	382	42	0	468	1373
06:00 PM	10	27	15	0	52	10	21	6	2	39	22	103	15	0	140	7	97	17	0	121	352
06:15 PM	11	31	15	0	57	9	32	12	0	53	19	98	10	1	128	7	68	13	0	88	326
Grand Total	120	371	183	15	689	136	497	149	19	801	279	1474	195	7	1955	127	1276	177	4	1584	5029
Apprch %	17.4	53.8	26.6	2.2		17	62	18.6	2.4		14.3	75.4	10	0.4		8	80.6	11.2	0.3		
Total %	2.4	7.4	3.6	0.3	13.7	2.7	9.9	3	0.4	15.9	5.5	29.3	3.9	0.1	38.9	2.5	25.4	3.5	0.1	31.5	
Cars	111	361	183	15	670	136	497	142	19	794	274	1469	193	7	1943	116	1248	163	3	1530	4937
% Cars	92.5	97.3	100	100	97.2	100	100	95.3	100	99.1	98.2	99.7	99	100	99.4	91.3	97.8	92.1	75	96.6	98.2
Trucks (SU)	0	3	0	0	3	0	0	7	0	7	5	5	2	0	12	3	18	0	1	22	44
% Trucks (SU)	0	0.8	0	0	0.4	0	0	4.7	0	0.9	1.8	0.3	1	0	0.6	2.4	1.4	0	25	1.4	0.9
Trucks (TT)	9	7	0	0	16	0	0	0	0	0	0	0	0	0	0	8	10	14	0	32	48
% Trucks (TT)	7.5	1.9	0	0	2.3	0	0	0	0	0	0	0	0	0	0	6.3	0.8	7.9	0	2	1

Dynamic Traffic, LLC

1904 Main Street, Lake Como, NJ 07719
 245 Main Street - Suite 110, Chester, NJ 07930
 732-681-0760

E/W: Randolph Rd
 N/S: Park Ave
 Town/County: Plainfield/Union
 Job #: 2340-99-008T

File Name : Randolph Rd and Park Ave - SAT
 Site Code : 00000000
 Start Date : 10/5/2019
 Page No : 1

Groups Printed- Cars - Trucks (SU) - Trucks (TT)

Start Time	Randolph Road Eastbound					Randolph Road Westbound					Park Avenue (CR 531) Northbound					Park Avenue (CR 531) Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
11:00 AM	3	17	12	1	33	5	14	8	0	27	6	82	9	0	97	8	56	4	0	68	225
11:15 AM	10	17	7	1	35	14	13	8	0	35	8	83	12	0	103	8	83	4	0	95	268
11:30 AM	6	17	9	0	32	12	24	1	0	37	11	64	12	0	87	7	81	11	0	99	255
11:45 AM	4	17	13	4	38	7	18	8	0	33	13	94	9	0	116	10	76	6	1	93	280
Total	23	68	41	6	138	38	69	25	0	132	38	323	42	0	403	33	296	25	1	355	1028
12:00 PM	8	20	10	1	39	14	24	15	0	53	28	90	13	0	131	6	82	6	0	94	317
12:15 PM	10	18	8	0	36	8	22	11	2	43	7	112	10	0	129	6	74	11	0	91	299
12:30 PM	11	20	19	1	51	7	12	7	3	29	16	101	12	1	130	5	73	6	0	84	294
12:45 PM	9	21	23	1	54	6	10	6	0	22	10	87	15	0	112	9	76	14	1	100	288
Total	38	79	60	3	180	35	68	39	5	147	61	390	50	1	502	26	305	37	1	369	1198
01:00 PM	10	21	14	0	45	9	17	4	3	33	8	120	19	2	149	12	88	9	0	109	336
01:15 PM	11	25	17	0	53	13	14	13	1	41	10	109	12	0	131	12	85	6	3	106	331
01:30 PM	8	21	13	0	42	8	13	7	0	28	12	114	14	1	141	11	73	7	0	91	302
01:45 PM	7	28	11	3	49	10	16	5	1	32	7	86	14	2	109	9	98	8	4	119	309
Total	36	95	55	3	189	40	60	29	5	134	37	429	59	5	530	44	344	30	7	425	1278
Grand Total	97	242	156	12	507	113	197	93	10	413	136	1142	151	6	1435	103	945	92	9	1149	3504
Apprch %	19.1	47.7	30.8	2.4		27.4	47.7	22.5	2.4		9.5	79.6	10.5	0.4		9	82.2	8	0.8		
Total %	2.8	6.9	4.5	0.3	14.5	3.2	5.6	2.7	0.3	11.8	3.9	32.6	4.3	0.2	41	2.9	27	2.6	0.3	32.8	
Cars	94	242	156	12	504	112	196	84	10	402	136	1127	148	6	1417	98	938	89	9	1134	3457
% Cars	96.9	100	100	100	99.4	99.1	99.5	90.3	100	97.3	100	98.7	98	100	98.7	95.1	99.3	96.7	100	98.7	98.7
Trucks (SU)	3	0	0	0	3	1	1	6	0	8	0	14	3	0	17	2	6	3	0	11	39
% Trucks (SU)	3.1	0	0	0	0.6	0.9	0.5	6.5	0	1.9	0	1.2	2	0	1.2	1.9	0.6	3.3	0	1	1.1
Trucks (TT)	0	0	0	0	0	0	0	3	0	3	0	1	0	0	1	3	1	0	0	4	8
% Trucks (TT)	0	0	0	0	0	0	0	3.2	0	0.7	0	0.1	0	0	0.1	2.9	0.1	0	0	0.3	0.2

Appendix C

Capacity Analysis



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Volume (vph)	41	125	40	31	139	51	62	343	34	28	335	49
Future Volume (vph)	41	125	40	31	139	51	62	343	34	28	335	49
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Width (ft)	12	16	12	12	16	12	12	11	12	12	10	12
Grade (%)		2%			0%			-2%			-2%	
Storage Length (ft)	0		0	0		0	0		120	0		75
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		184			858			324			1199	
Travel Time (s)		5.0			23.4			8.8			32.7	
Confl. Peds. (#/hr)	1		1	1		1	7		4	4		7
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	10%	4%	0%	0%	0%	4%	2%	1%	3%	11%	4%	12%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	221	0	0	237	0	0	473	0	0	443	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		44.0	44.0		44.0	44.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		50.0	50.0		50.0	50.0	
Total Split (s)	20.0	20.0		20.0	20.0		50.0	50.0		50.0	50.0	
Total Split (%)	28.6%	28.6%		28.6%	28.6%		71.4%	71.4%		71.4%	71.4%	
Maximum Green (s)	14.0	14.0		14.0	14.0		44.0	44.0		44.0	44.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	5	5		4	4		0	0		0	0	
Act Effct Green (s)		11.7			11.7			46.3			46.3	
Actuated g/C Ratio		0.17			0.17			0.66			0.66	
v/c Ratio		0.74			0.69			0.22			0.21	
Control Delay		41.1			35.8			5.1			4.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		41.1			35.8			5.1			4.8	
LOS		D			D			A			A	
Approach Delay		41.1			35.8			5.1			4.8	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		83			88			35			31	

2340-99-008T

Existing - AM
10: Park Avenue (CR 531) & Randolph Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		#150			153			57			52	
Internal Link Dist (ft)		104			778			244			1119	
Turn Bay Length (ft)												
Base Capacity (vph)		353			408			2105			2107	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.63			0.58			0.22			0.21	

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%); Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 16.1
 Intersection Capacity Utilization 78.7%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Park Avenue (CR 531) & Randolph Road

Ø2 (R)		Ø4
50 s		20 s
Ø6 (R)		Ø8
50 s		20 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (vph)	29	85	50	35	107	35	70	418	66	43	386	53
Future Volume (vph)	29	85	50	35	107	35	70	418	66	43	386	53
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Width (ft)	12	16	12	12	16	12	12	11	12	12	10	12
Grade (%)		2%			0%			-2%			-2%	
Storage Length (ft)	0		0	0		0	0		120	0		75
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		184			858			324			1199	
Travel Time (s)		5.0			23.4			8.8			32.7	
Confl. Peds. (#/hr)							2		5	5		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	0%	0%	0%	0%	3%	0%	0%	0%	2%	1%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	171	0	0	183	0	0	577	0	0	502	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		44.0	44.0		44.0	44.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		50.0	50.0		50.0	50.0	
Total Split (s)	20.0	20.0		20.0	20.0		50.0	50.0		50.0	50.0	
Total Split (%)	28.6%	28.6%		28.6%	28.6%		71.4%	71.4%		71.4%	71.4%	
Maximum Green (s)	14.0	14.0		14.0	14.0		44.0	44.0		44.0	44.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	2	2		5	5		0	0		0	0	
Act Effct Green (s)		10.3			10.3			47.7			47.7	
Actuated g/C Ratio		0.15			0.15			0.68			0.68	
v/c Ratio		0.55			0.59			0.27			0.23	
Control Delay		29.5			33.1			4.7			4.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		29.5			33.1			4.7			4.6	
LOS		C			C			A			A	
Approach Delay		29.5			33.1			4.7			4.6	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		58			68			37			32	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		107			120			70			60	
Internal Link Dist (ft)		104			778			244			1119	
Turn Bay Length (ft)												
Base Capacity (vph)		408			411			2167			2162	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.42			0.45			0.27			0.23	

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 11.2 Intersection LOS: B
 Intersection Capacity Utilization 84.9% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 10: Park Avenue (CR 531) & Randolph Road

↑ Ø2 (R) 50 s	↓ Ø6 (R) 50 s	→ Ø4 20 s	← Ø8 20 s
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (vph)	36	95	55	40	60	29	37	429	59	44	344	30
Future Volume (vph)	36	95	55	40	60	29	37	429	59	44	344	30
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Width (ft)	12	16	12	12	16	12	12	11	12	12	10	12
Grade (%)		2%			0%			-2%			-2%	
Storage Length (ft)	0		0	0		0	0		120	0		75
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		184			858			324			1199	
Travel Time (s)		5.0			23.4			8.8			32.7	
Confl. Peds. (#/hr)	7		5	5		7	3		5	5		3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	2%	10%	0%	1%	2%	2%	0%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	196	0	0	136	0	0	553	0	0	440	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		44.0	44.0		44.0	44.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		50.0	50.0		50.0	50.0	
Total Split (s)	20.0	20.0		20.0	20.0		50.0	50.0		50.0	50.0	
Total Split (%)	28.6%	28.6%		28.6%	28.6%		71.4%	71.4%		71.4%	71.4%	
Maximum Green (s)	14.0	14.0		14.0	14.0		44.0	44.0		44.0	44.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	3	3		5	5		5	5		5	5	
Act Effct Green (s)		10.4			10.4			47.6			47.6	
Actuated g/C Ratio		0.15			0.15			0.68			0.68	
v/c Ratio		0.60			0.51			0.24			0.20	
Control Delay		31.3			29.6			4.6			4.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		31.3			29.6			4.6			4.6	
LOS		C			C			A			A	
Approach Delay		31.3			29.6			4.6			4.6	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		69			47			36			28	

2340-99-008T

Existing - Saturday
10: Park Avenue (CR 531) & Randolph Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		122			92			65			53	
Internal Link Dist (ft)		104			778			244			1119	
Turn Bay Length (ft)												
Base Capacity (vph)		429			353			2324			2166	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.46			0.39			0.24			0.20	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 11.1

Intersection Capacity Utilization 63.5%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service B

Splits and Phases: 10: Park Avenue (CR 531) & Randolph Road

 50 s	 20 s
 50 s	 20 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	175	41	44	159	75	63	355	66	92	354	50
Future Volume (vph)	42	175	41	44	159	75	63	355	66	92	354	50
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Width (ft)	12	16	12	12	16	12	12	11	12	12	10	12
Grade (%)		2%			0%			-2%			-2%	
Storage Length (ft)	0		0	0		0	0		120	0		75
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		184			858			324			1199	
Travel Time (s)		5.0			23.4			8.8			32.7	
Confl. Peds. (#/hr)	1		1	1		1	7		4	4		7
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	10%	4%	0%	0%	0%	4%	2%	1%	3%	11%	4%	12%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	277	0	0	299	0	0	521	0	0	534	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		44.0	44.0		44.0	44.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		50.0	50.0		50.0	50.0	
Total Split (s)	20.0	20.0		20.0	20.0		50.0	50.0		50.0	50.0	
Total Split (%)	28.6%	28.6%		28.6%	28.6%		71.4%	71.4%		71.4%	71.4%	
Maximum Green (s)	14.0	14.0		14.0	14.0		44.0	44.0		44.0	44.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	5	5		4	4		0	0		0	0	
Act Effct Green (s)		13.1			13.1			44.9			44.9	
Actuated g/C Ratio		0.19			0.19			0.64			0.64	
v/c Ratio		0.85			0.84			0.26			0.31	
Control Delay		52.2			48.0			5.4			6.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		52.2			48.0			5.4			6.0	
LOS		D			D			A			A	
Approach Delay		52.2			48.0			5.4			6.0	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		110			114			41			45	

2340-99-008T

No Build - AM
10: Park Avenue (CR 531) & Randolph Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		#230			#235			61			68	
Internal Link Dist (ft)		104			778			244			1119	
Turn Bay Length (ft)												
Base Capacity (vph)		345			377			2001			1727	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.80			0.79			0.26			0.31	

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 21.3
 Intersection Capacity Utilization 99.4%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Park Avenue (CR 531) & Randolph Road

Ø2 (R)		Ø4
50 s		20 s
Ø6 (R)		Ø8
50 s		20 s



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	30	118	51	84	182	131	71	446	88	86	402	54
Future Volume (vph)	30	118	51	84	182	131	71	446	88	86	402	54
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Width (ft)	12	16	12	12	16	12	12	11	12	12	10	12
Grade (%)		2%			0%			-2%			-2%	
Storage Length (ft)	0		0	0		0	0		120	0		75
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		184			858			324			1199	
Travel Time (s)		5.0			23.4			8.8			32.7	
Confl. Peds. (#/hr)							2		5	5		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	0%	0%	0%	0%	3%	0%	0%	0%	2%	1%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	207	0	0	414	0	0	631	0	0	565	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		44.0	44.0		44.0	44.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		50.0	50.0		50.0	50.0	
Total Split (s)	20.0	20.0		20.0	20.0		50.0	50.0		50.0	50.0	
Total Split (%)	28.6%	28.6%		28.6%	28.6%		71.4%	71.4%		71.4%	71.4%	
Maximum Green (s)	14.0	14.0		14.0	14.0		44.0	44.0		44.0	44.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	2	2		5	5		0	0		0	0	
Act Effct Green (s)		14.0			14.0			44.0			44.0	
Actuated g/C Ratio		0.20			0.20			0.63			0.63	
v/c Ratio		0.57			1.03			0.32			0.32	
Control Delay		29.7			82.7			6.0			6.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		29.7			82.7			6.0			6.2	
LOS		C			F			A			A	
Approach Delay		29.7			82.7			6.0			6.2	
Approach LOS		C			F			A			A	
Queue Length 50th (ft)		72			~177			52			48	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		136			#349			76			72	
Internal Link Dist (ft)		104			778			244			1119	
Turn Bay Length (ft)												
Base Capacity (vph)		361			401			1982			1767	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.57			1.03			0.32			0.32	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%); Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 26.2

Intersection Capacity Utilization 109.6%

Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 10: Park Avenue (CR 531) & Randolph Road

Ø2 (R)		Ø4
50 s		20 s
Ø6 (R)		Ø8
50 s		20 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	175	56	82	122	112	38	454	112	150	372	31
Future Volume (vph)	37	175	56	82	122	112	38	454	112	150	372	31
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Width (ft)	12	16	12	12	16	12	12	11	12	12	10	12
Grade (%)		2%			0%			-2%			-2%	
Storage Length (ft)	0		0	0		0	0		120	0		75
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		184			858			324			1199	
Travel Time (s)		5.0			23.4			8.8			32.7	
Confl. Peds. (#/hr)	7		5	5		7	3		5	5		3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	2%	10%	0%	1%	2%	2%	0%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	282	0	0	332	0	0	636	0	0	583	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		44.0	44.0		44.0	44.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		50.0	50.0		50.0	50.0	
Total Split (s)	20.0	20.0		20.0	20.0		50.0	50.0		50.0	50.0	
Total Split (%)	28.6%	28.6%		28.6%	28.6%		71.4%	71.4%		71.4%	71.4%	
Maximum Green (s)	14.0	14.0		14.0	14.0		44.0	44.0		44.0	44.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	3	3		5	5		5	5		5	5	
Act Effct Green (s)		14.0			14.0			44.0			44.0	
Actuated g/C Ratio		0.20			0.20			0.63			0.63	
v/c Ratio		0.72			1.01			0.30			0.38	
Control Delay		37.1			80.1			5.6			7.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		37.1			80.1			5.6			7.0	
LOS		D			F			A			A	
Approach Delay		37.1			80.1			5.6			7.0	
Approach LOS		D			F			A			A	
Queue Length 50th (ft)		108			~132			49			53	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		#212			#291			73			82	
Internal Link Dist (ft)		104			778			244			1119	
Turn Bay Length (ft)												
Base Capacity (vph)		390			330			2114			1537	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.72			1.01			0.30			0.38	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 24.4

Intersection Capacity Utilization 116.5%

Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 10: Park Avenue (CR 531) & Randolph Road

 50 s	 50 s	 20 s	 20 s
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	45	176	41	44	160	75	63	358	66	92	357	53
Future Volume (vph)	45	176	41	44	160	75	63	358	66	92	357	53
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Width (ft)	12	16	12	12	16	12	12	11	12	12	10	12
Grade (%)		2%			0%			-2%			-2%	
Storage Length (ft)	0		0	0		0	0		120	0		75
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		184			858			324			1199	
Travel Time (s)		5.0			23.4			8.8			32.7	
Confl. Peds. (#/hr)	1		1	1		1	7		4	4		7
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	10%	4%	0%	0%	0%	4%	2%	1%	3%	11%	4%	12%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	281	0	0	300	0	0	524	0	0	540	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		44.0	44.0		44.0	44.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		50.0	50.0		50.0	50.0	
Total Split (s)	20.0	20.0		20.0	20.0		50.0	50.0		50.0	50.0	
Total Split (%)	28.6%	28.6%		28.6%	28.6%		71.4%	71.4%		71.4%	71.4%	
Maximum Green (s)	14.0	14.0		14.0	14.0		44.0	44.0		44.0	44.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	5	5		4	4		0	0		0	0	
Act Effct Green (s)		13.3			13.3			44.7			44.7	
Actuated g/C Ratio		0.19			0.19			0.64			0.64	
v/c Ratio		0.86			0.83			0.26			0.31	
Control Delay		53.2			46.4			5.5			6.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		53.2			46.4			5.5			6.0	
LOS		D			D			A			A	
Approach Delay		53.2			46.4			5.5			6.0	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		112			114			41			45	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		#236			#236			62			69	
Internal Link Dist (ft)		104			778			244			1119	
Turn Bay Length (ft)												
Base Capacity (vph)		342			378			1990			1718	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.82			0.79			0.26			0.31	

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 21.3
 Intersection Capacity Utilization 99.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Park Avenue (CR 531) & Randolph Road

50 s	20 s
50 s	20 s



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (vph)	38	120	51	84	184	131	71	454	88	86	410	62
Future Volume (vph)	38	120	51	84	184	131	71	454	88	86	410	62
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Width (ft)	12	16	12	12	16	12	12	11	12	12	10	12
Grade (%)		2%			0%			-2%			-2%	
Storage Length (ft)	0		0	0		0	0		120	0		75
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		184			858			324			1199	
Travel Time (s)		5.0			23.4			8.8			32.7	
Confl. Peds. (#/hr)							2		5	5		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	7%	0%	0%	0%	0%	3%	0%	0%	0%	2%	1%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	218	0	0	416	0	0	639	0	0	582	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		44.0	44.0		44.0	44.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		50.0	50.0		50.0	50.0	
Total Split (s)	20.0	20.0		20.0	20.0		50.0	50.0		50.0	50.0	
Total Split (%)	28.6%	28.6%		28.6%	28.6%		71.4%	71.4%		71.4%	71.4%	
Maximum Green (s)	14.0	14.0		14.0	14.0		44.0	44.0		44.0	44.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	2	2		5	5		0	0		0	0	
Act Effct Green (s)		14.0			14.0			44.0			44.0	
Actuated g/C Ratio		0.20			0.20			0.63			0.63	
v/c Ratio		0.66			1.05			0.32			0.33	
Control Delay		34.4			86.5			6.0			6.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		34.4			86.5			6.0			6.3	
LOS		C			F			A			A	
Approach Delay		34.4			86.5			6.0			6.3	
Approach LOS		C			F			A			A	
Queue Length 50th (ft)		79			~188			53			49	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		#164			#353			77			74	
Internal Link Dist (ft)		104			778			244			1119	
Turn Bay Length (ft)								1977			1766	
Base Capacity (vph)		331			398			1977			1766	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.66			1.05			0.32			0.33	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 27.5

Intersection Capacity Utilization 109.2%

Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 10: Park Avenue (CR 531) & Randolph Road

Ø2 (R) 50 s	Ø4 20 s
Ø6 (R) 50 s	Ø8 20 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	177	56	82	124	112	38	461	112	150	379	37
Future Volume (vph)	44	177	56	82	124	112	38	461	112	150	379	37
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Width (ft)	12	16	12	12	16	12	12	11	12	12	10	12
Grade (%)		2%			0%			-2%			-2%	
Storage Length (ft)	0		0	0		0	0		120	0		75
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25				25
Link Distance (ft)		184			858			324				1199
Travel Time (s)		5.0			23.4			8.8				32.7
Confl. Peds. (#/hr)	7		5	5		7	3		5	5		3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	2%	10%	0%	1%	2%	2%	0%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	0	0	335	0	0	643	0	0	596	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		44.0	44.0		44.0	44.0	
Minimum Split (s)	13.0	13.0		13.0	13.0		50.0	50.0		50.0	50.0	
Total Split (s)	20.0	20.0		20.0	20.0		50.0	50.0		50.0	50.0	
Total Split (%)	28.6%	28.6%		28.6%	28.6%		71.4%	71.4%		71.4%	71.4%	
Maximum Green (s)	14.0	14.0		14.0	14.0		44.0	44.0		44.0	44.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	3	3		5	5		5	5		5	5	
Act Effct Green (s)		14.0			14.0			44.0			44.0	
Actuated g/C Ratio		0.20			0.20			0.63			0.63	
v/c Ratio		0.78			1.02			0.30			0.39	
Control Delay		41.7			83.3			5.7			7.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		41.7			83.3			5.7			7.0	
LOS		D			F			A			A	
Approach Delay		41.7			83.3			5.7			7.0	
Approach LOS		D			F			A			A	
Queue Length 50th (ft)		113			~136			50			55	







Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		#230			#295			74				83
Internal Link Dist (ft)		104			778			244				1119
Turn Bay Length (ft)												
Base Capacity (vph)		374			329			2111				1537
Starvation Cap Reductn		0			0			0				0
Spillback Cap Reductn		0			0			0				0
Storage Cap Reductn		0			0			0				0
Reduced v/c Ratio		0.78			1.02			0.30				0.39

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 25.7
 Intersection Capacity Utilization 114.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Park Avenue (CR 531) & Randolph Road

 Ø2 (R) 50 s	 Ø4 20 s
 Ø6 (R) 50 s	 Ø8 20 s

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	7	9	11	479	433	9
Future Vol, veh/h	7	9	11	479	433	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	1	3	2
Mvmt Flow	8	10	13	544	492	10

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1067	497	502	0	-	0
Stage 1	497	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	246	573	1062	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	242	573	1062	-	-	-
Mov Cap-2 Maneuver	242	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	566	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.6	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1062	-	358	-	-
HCM Lane V/C Ratio	0.012	-	0.051	-	-
HCM Control Delay (s)	8.4	0	15.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection

Int Delay, s/veh 1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			Y	Y	
Traffic Vol, veh/h	20	27	26	592	524	21
Future Vol, veh/h	20	27	26	592	524	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	0	1	2
Mvmt Flow	21	28	27	617	546	22

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1228	557	568	0	-	0
Stage 1	557	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	197	530	1004	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	189	530	1004	-	-	-
Mov Cap-2 Maneuver	189	-	-	-	-	-
Stage 1	550	-	-	-	-	-
Stage 2	508	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.3	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1004	-	300	-	-
HCM Lane V/C Ratio	0.027	-	0.163	-	-
HCM Control Delay (s)	8.7	0	19.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	18	23	21	594	499	18
Future Vol, veh/h	18	23	21	594	499	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	1	0	2
Mvmt Flow	19	25	23	639	537	19

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1232	547	556	0	-	0
Stage 1	547	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	196	537	1015	-	-	-
Stage 1	580	-	-	-	-	-
Stage 2	500	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	189	537	1015	-	-	-
Mov Cap-2 Maneuver	189	-	-	-	-	-
Stage 1	560	-	-	-	-	-
Stage 2	500	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.2	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1015	-	297	-	-
HCM Lane V/C Ratio	0.022	-	0.148	-	-
HCM Control Delay (s)	8.6	0	19.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	256	5	6	270	5	6
Future Vol, veh/h	256	5	6	270	5	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	2	2	3	2	2
Mvmt Flow	281	5	7	297	5	7

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	286	0	595
Stage 1	-	-	-	-	284
Stage 2	-	-	-	-	311
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1276	-	501
Stage 1	-	-	-	-	764
Stage 2	-	-	-	-	800
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	1276	-	497
Mov Cap-2 Maneuver	-	-	-	-	497
Stage 1	-	-	-	-	764
Stage 2	-	-	-	-	794

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	611	-	-	1276	-
HCM Lane V/C Ratio	0.02	-	-	0.005	-
HCM Control Delay (s)	11	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.001	0

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	193	14	16	301	14	16
Future Vol, veh/h	193	14	16	301	14	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	2	2	1	2	2
Mvmt Flow	219	16	18	342	16	18

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	235	0	605
Stage 1	-	-	-	-	227
Stage 2	-	-	-	-	378
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1332	-	505
Stage 1	-	-	-	-	811
Stage 2	-	-	-	-	753
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	1332	-	497
Mov Cap-2 Maneuver	-	-	-	-	497
Stage 1	-	-	-	-	811
Stage 2	-	-	-	-	740

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	627	-	-	1332	-
HCM Lane V/C Ratio	0.054	-	-	0.014	-
HCM Control Delay (s)	11.1	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %ile Q(veh)	0.2	-	-	0	0

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶			↷	↶	↷
Traffic Vol, veh/h	263	12	13	186	12	14
Future Vol, veh/h	263	12	13	186	12	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	2	2	2	2	2
Mvmt Flow	280	13	14	198	13	15

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	293	0	513
Stage 1	-	-	-	-	287
Stage 2	-	-	-	-	226
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1269	-	556
Stage 1	-	-	-	-	762
Stage 2	-	-	-	-	865
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	1269	-	549
Mov Cap-2 Maneuver	-	-	-	-	549
Stage 1	-	-	-	-	762
Stage 2	-	-	-	-	854

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	642	-	-	1269	-
HCM Lane V/C Ratio	0.043	-	-	0.011	-
HCM Control Delay (s)	10.9	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-