Dynamic Traffic, LLC
1904 Main Street
Lake Como, NJ
T. 732.681.0760

December 9, 2022
Via Fed-Ex

Montgomery Township Planning Department
100 Community Drive
Skillman, NJ 08558

Attn: Lori Savon, PP, AICP, Planning Director

RE: Traffic & Parking Assessment
Proposed Assisted Living Facility
East Hartwick Drive & Village Drive
Montgomery Township, Somerset County, New Jersey
DT#4496 22-02230

Dear Ms. Savon:

Dynamic Traffic has prepared the following assessment to determine the traffic impact and adequacy of access, circulation, and parking associated with redevelopment of a site located at the northwest corner of the intersection of East Hartwick Drive and Village Drive in the Township of Montgomery, Somerset County, New Jersey (see Figure 1). The site is designated as Block 28003 – Lot 211 on the Township Tax Maps. The site is currently vacant. It is proposed to raze the existing site and construct a 34,444 SF, 80-unit assisted living facility (The Project). Access to the site is proposed to be provided via two (2) full-movement driveways along East Hartwick Drive and one (1) emergency access driveway along Village Drive.

Existing Conditions

East Hartwick Drive is a local roadway under Montgomery Township jurisdiction. In the vicinity of the site, the speed limit is unposted (25 MPH statutory) and the roadway provides one lane of travel in each direction. On-street parking is not permitted along either side of the roadway. Curb is provided along both sides of the roadway and sidewalk is provided along both sides of the roadway to the north of the site and along the west side of the roadway along the site frontage. East Hartwick Drive provides a curved horizontal alignment and an uphill vertical alignment from east to west. The land uses along East Hartwick Drive in the vicinity of The Project are primarily residential.

Village Drive (formerly known as Research Road) is a local roadway under Montgomery Township jurisdiction. 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 permitted along both sides of the roadway. Curb is provided along both sides of the roadway. Sidewalk is not provided along either side of the roadway. Village Drive currently provides a straight horizontal alignment and a relatively flat vertical alignment. The land uses along Village Drive in the vicinity of The Project are primarily residential.

Georgetown-Franklin Turnpike (CR 518) is an Urban Minor Arterial roadway under Somerset County jurisdiction. In the vicinity of the site the posted speed limit is 45 MPH and the roadway provides one travel lane in each direction. On-street parking is prohibited along both sides of the roadway. Curb is provided along the both sides of the roadway. Sidewalk is not provided along either side of the roadway. Georgetown-Franklin Turnpike provides a straight horizontal alignment and a relatively flat vertical alignment. The land uses along Georgetown-Franklin Turnpike in the vicinity of The Project are mixed residential and agricultural.

Existing Traffic Volumes

Manual turning movement (MTM) counts were conducted on Thursday, October 12, 2017 from 7:00 to 9:00 AM and from 4:30 to 6:30 PM and on Saturday, October 14, 2017 from 11:00 AM to 2:00 PM at the intersection of Research Road with Georgetown-Franklin Turnpike (CR 518). Review of the collected traffic data reveals that the weekday morning peak street hour (PSH) occurs between 7:45 - 8:45 AM, the weekday evening PSH occurs between 4:30 - 5:30 PM and the Saturday PSH occurs between 11:30 AM - 12:30 PM. Note that the 2017 counts were increased to better represent existing 2022 traffic volumes by applying a growth rate of 1.0% per year obtained from the NJDOT Annual Background Growth Rate Table for a period of five years.

In order to confirm the grown 2017 traffic volumes are an accurate reflection of current traffic conditions, the adjusted 2017 traffic volumes were compared to current count data. Specifically, this firm conducted MTM counts on Tuesday, July 26, 2022 from 4:30 PM to 6:30 PM and Saturday, July 30, 2022 from 11:00 AM to 2:00 PM at the adjacent intersection of U.S. Route 206 and Georgetown-Franklin Turnpike/Washington Street (CR 518). The adjusted 2017 traffic volumes were then compared to the existing 2022 traffic counts as summarized in the table below.

Table I
Traffic Count Comparison

Location	Date	CR 518 Peak Hour Traffic Volume				% Difference	
		As-Counted		With Background Growth [1]			
		PM	SAT	PM	SAT	PM	SAT
CR 518 b/w Village Drive & U.S. Route 206	Oct. 2017	1,139	818	1,197	860	-20%	-36%
	July 2022	1,000	633	1,000	633		

[1]2017 data increased by 1.0% per NJDOT Annual Background Growth Rate Table compounded annually for five years.

As seen above, the adjusted 2017 traffic volumes were found to be higher in both the weekday PM and Saturday peak hours than the existing 2022 traffic volumes. As such, no further adjustment was applied to the adjusted 2017 volumes which represent a conservative estimate of current conditions. Figure 2 shows the existing peak hour traffic volumes at the study intersection. The manual turning movement count data is appended.

Future Traffic Volumes

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 Montgomery Township staff, there are several developments in the vicinity of the site that have been approved but not yet constructed that are identified as potential significant traffic generators, shown below. It is assumed that the background growth rate is adequate to account for the traffic associated with all developments not listed hereafter.

- A residential townhome development, known as Country Classics, located along the northbound side of US Route 206 just north of Montgomery Center, is currently under construction. The 115-unit development will replace an existing 38,000 SF office / warehouse / flex-space building. Projections for the increase in traffic associated with the residential development were obtained from the Traffic Impact Assessment completed by Dolan & Dean Consulting Engineers, LLC and dated August 20, 2019. The traffic volumes for this development in the vicinity of The Project are shown on Figure 3.

- Montgomery Walk is an approved mixed-use development that will replace the Village Shopper II development. It will consist of 50 multifamily housing units and 56,000 square feet of commercial retail. Traffic associated with the change of use is obtained from the Traffic Impact Analysis for Montgomery Walk completed by McDonough & Rea Associates and dated January 16, 2018. The traffic volumes for this development in the vicinity of The Project are shown on Figure 4.

- A car dealership, known as Baker Auto, located at the northwestern corner of US Route 206 and Airport Road has been approved. Traffic generated by the 28,170 SF site is found in the Traffic Impact Study completed by Harlyn Associates and dated June 20, 2016. The traffic volumes for this development in the vicinity of The Project are shown on Figure 5.

- An 8,040 SF expansion of the existing Enrollment Management Association campus has been approved. The office is located at the northwest corner of Georgetown Franklin Turnpike and Vreeland Drive. The increase in traffic affiliated with this improvement is provided in the Traffic Statement executed by Langan Engineering and Environmental Services and dated December 19, 2016. The traffic volumes for this development in the vicinity of The Project are shown on Figure 6.

- A residential development consisting of 107 townhomes, 40 condominiums and 86 apartment units known as Montgomery Crossing, located along Village Drive just north of Georgetown Franklin Turnpike, has been approved. Traffic projections for this development were obtained from the Traffic Impact Study, prepared by Dynamic Traffic, dated March 5, 2018. The traffic volumes for this development in the vicinity of The Project are shown on Figure 7.

- A mixed-use development known as Montgomery Promenade, at the southwest corner of US Route 206 and Georgetown Franklin Turnpike (CR 518) has been approved. It will consist of 34-single family dwelling units and 320,000 square feet of commercial retail space. Traffic projections for this development were obtained from the Traffic Impact Analysis prepared by Atlantic Traffic & Design Engineers, Inc. and dated December 28, 2017. Because this development is not approved, No Build and Build scenarios have been prepared with and without the traffic generation from this proposed development. The traffic volumes for this development in the vicinity of The Project are shown on Figure 9 and the rerouted traffic volumes associated with the roadway improvements included with the construction of this development are shown separately on Figure 10.

Future 2024 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. Figures 8 and 11, show the 2024 No Build traffic volumes without and with the Montgomery Promenade Development, respectively.

Site Generated Traffic

Trip generation projections for The Project were made utilizing trip generation research data as published under Land Use Code 254 – Assisted Living in the Institute of Transportation Engineers' (ITE) publication, *Trip Generation, 11th Edition.* This publication sets forth trip generation rates based on empirical traffic count data conducted at numerous research sites. The following table shows the anticipated trip generation for The Project.

Table II
Trip Generation

Use	AM PSH			PM PSH			Sat PSH		
	In	Out	Total	In	Out	Total	In	Out	Total
80-Unit Assisted Living Facility	8	6	14	7	12	19	10	12	22

Once the magnitude of the site generated traffic is known, it is necessary to assign the 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. Figures 12 and 13 illustrate the Traffic Trip Distribution and Site Generated Volumes, respectively. The Site Generated Volumes assigned to the study area network were added to the No Build traffic volumes without the Montgomery Promenade development to generate the Build traffic volumes without the Montgomery Promenade development, which are shown in Figure 14. The re-routed site-generated volumes associated with the construction of the Montgomery Promenade development are shown on Figure 15. These volumes were then added to the Build traffic volumes without the Montgomery Promenade development to generate the Build traffic volumes with the Montgomery Promenade development, which are shown on Figure 16.

Capacity Analysis

Capacity analyses were conducted for the intersection of Georgetown-Franklin Turnpike and Village Drive under the No Build and Build conditions. The analyses were performed for the weekday morning, evening, and Saturday midday peak hours. The analyses have been conducted utilizing methodologies set forth in the *Highway Capacity Manual, 6th Edition*. The following tables summarize the results of the capacity analyses and the capacity analysis worksheets are appended to this letter.

Table III
Future Levels of Service without Montgomery Promenade Development

Intersection	Direction/ Movement		AM PSH		PM PSH		Sat PSH	
			No Build	Build	No Build	Build	No Build	Build
Georgetown-Franklin Turnpike (CR 518) & Village Drive	EB	L	A (4)	A (4)	A (4)	A (3)	A (4)	A (4)
		T	A (6)	A (6)	A (5)	A (5)	A (5)	A (5)
	WB	TR	A (5)	A (5)	A (5)	A (4)	A (5)	A (4)
	SB	L	C (34)	C (35)	C (33)	C (34)	C (33)	C (34)
		R	B (14)	B (14)	B (14)	B (14)	B (13)	B (13)
	Overall		**A (8)**	**A (7)**	**A (6)**	**A (6)**	**A (6)**	**A (7)**

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

Table IV
Future Levels of Service with Montgomery Promenade Development

Intersection	Direction/ Movement		AM PSH		PM PSH		Sat PSH	
			No Build	Build	No Build	Build	No Build	Build
Georgetown-Franklin Turnpike (CR 518) & Village Drive	EB	L	B (15)	B (15)	B (15)	B (15)	B (16)	B (16)
		T	C (27)	C (27)	D (37)	D (41)	C (34)	C (34)
		R	A (1)	A (1)	A (3)	A (3)	A (4)	A (4)
	WB	L	A (8)	A (8)	B (20)	C (23)	B (15)	B (15)
		TR	B (15)	B (15)	B (11)	B (12)	B (10)	B (11)
	NB	L	C (26)	C (26)	F (113)	F (94)	E (71)	E (69)
		TR	A (1)	A (10)	A (1)	A (6)	A (1)	A (7)
	SB	L	D (41)	D (42)	D (39)	D (45)	D (40)	D (41)
		TR	A (1)	A (1)	A (1)	A (1)	A (1)	A (1)
	Overall		**C (21)**	**C (21)**	**D (38)**	**D (37)**	**C (30)**	**C (30)**

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

Georgetown-Franklin Turnpike (CR 518) & Village Drive

Village Drive intersects Georgetown-Franklin Turnpike (CR 518) to form a three-leg intersection controlled by a two-phase traffic signal operating on an 80-second background cycle length. Georgetown-Franklin Turnpike provides a shared through/right turn lane in the westbound direction and one dedicated left turn lane and one dedicated through lane in the eastbound direction. Village Drive Road provides one dedicated left turn lane and one dedicated right turn lane in the southbound direction. It should be noted that the intersection has been built in anticipation of a connection with a new northbound leg of Village Drive in association with the Montgomery Promenade Development. However, the roadway has not yet been constructed south of the intersection, so there are no vehicular movements associated with this leg of the intersection.

With the addition of the traffic from the subject project, the levels of service remain unchanged from the No Build condition both without and with the Montgomery Promenade Development. See Tables III and IV for the individual movement levels of service and delays.

Site Access, Parking and Circulation

The site plan was reviewed with respect to the site access and on-site circulation design. As previously noted, access to the site is proposed to be provided via two (2) full-movement driveways along East East Hartwick Drive and one (1) emergency access driveway along Village Drive.

The parking lot will be serviced by parking aisles with a width of 24', which satisfy the Ordinance's minimum requirement of 24'. These aisles will allow for two-way circulation and 90 degree parking. Review of the site plan design indicates that the site can sufficiently accommodate a large wheel base vehicle, such as a single unit truck (SU), along with the automobile traffic anticipated.

The Montgomery Township Ordinance sets forth a parking requirement of 1 parking space per 3 units for assisted living facilities. This equates to a parking requirement of 27 spaces for the proposed 80-unit assisted living facility. The site as proposed provides 42 parking spaces, inclusive of one make-ready electric vehicle charging space and two handicap spaces, and the Ordinance requirement is satisfied.

It is proposed to provide parking stalls with dimensions of 9'x18', which does not satisfy the Ordinance minimum requirement of 9'x20'. It should be noted that industry standards recommend stall widths of between 8'6" and 8'9" and a length of 18' for low to moderate-turnover land uses such as The Project, which is met as designed.

Conclusion

Based upon our Traffic Impact Assessment as detailed in the body of this report, it is the professional opinion of Dynamic Traffic that the adjacent street system of Montgomery Township and Somerset County will not experience any significant degradation in operating conditions with the redevelopment of the site. 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.

If you have any questions on the above, please do not hesitate to contact me.

Sincerely,

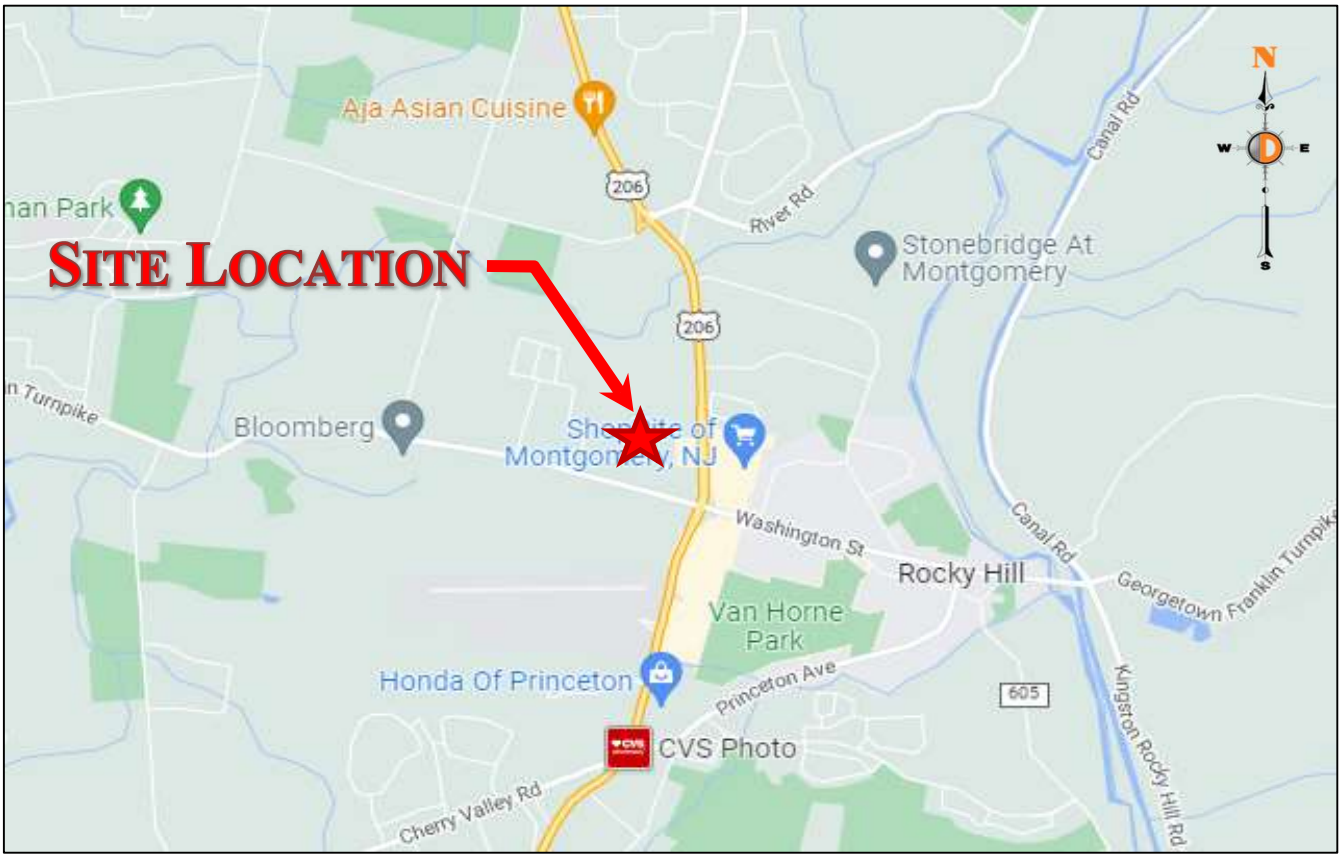
Dynamic Traffic, LLC

Nick Verderese, PE
Senior Principal
NJ PE License 38991

Kevin Savage, PE, PTOE
Project Manager
NJ PE License 55728

JTT
Enclosures

c: Christopher Wade (via email w/ enclosure)
Jeffrey Haberman, PE, PP (via email w/enclosure)



Proposed Assisted Living Facility
Traffic & Parking Assessment
4496 22-02230

Figure 1

Site Location Map

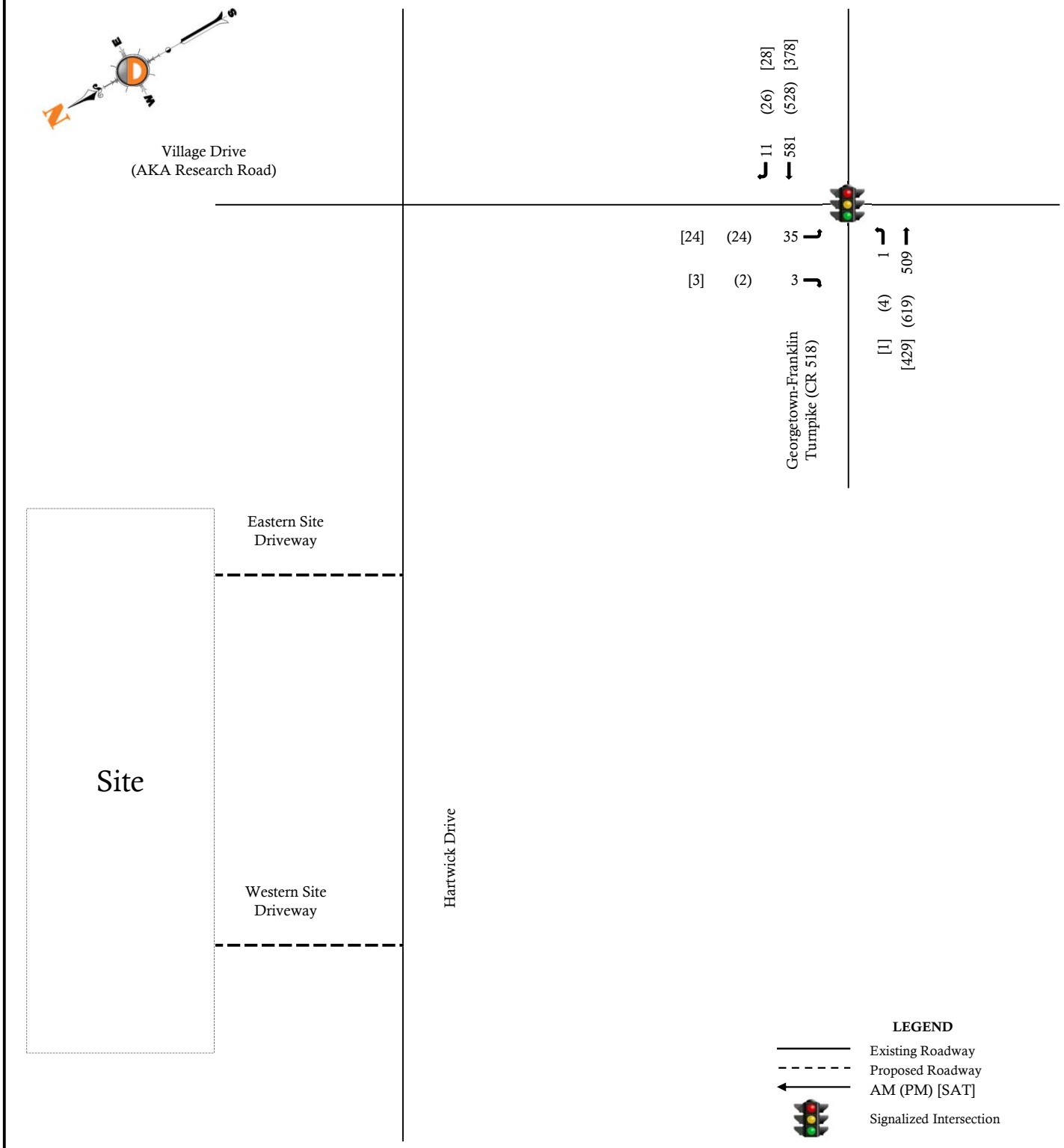


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Figure 2

Existing Traffic Volumes

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Figure 3

Adjacent Development Traffic Volumes
[Country Classics - Residential Development]

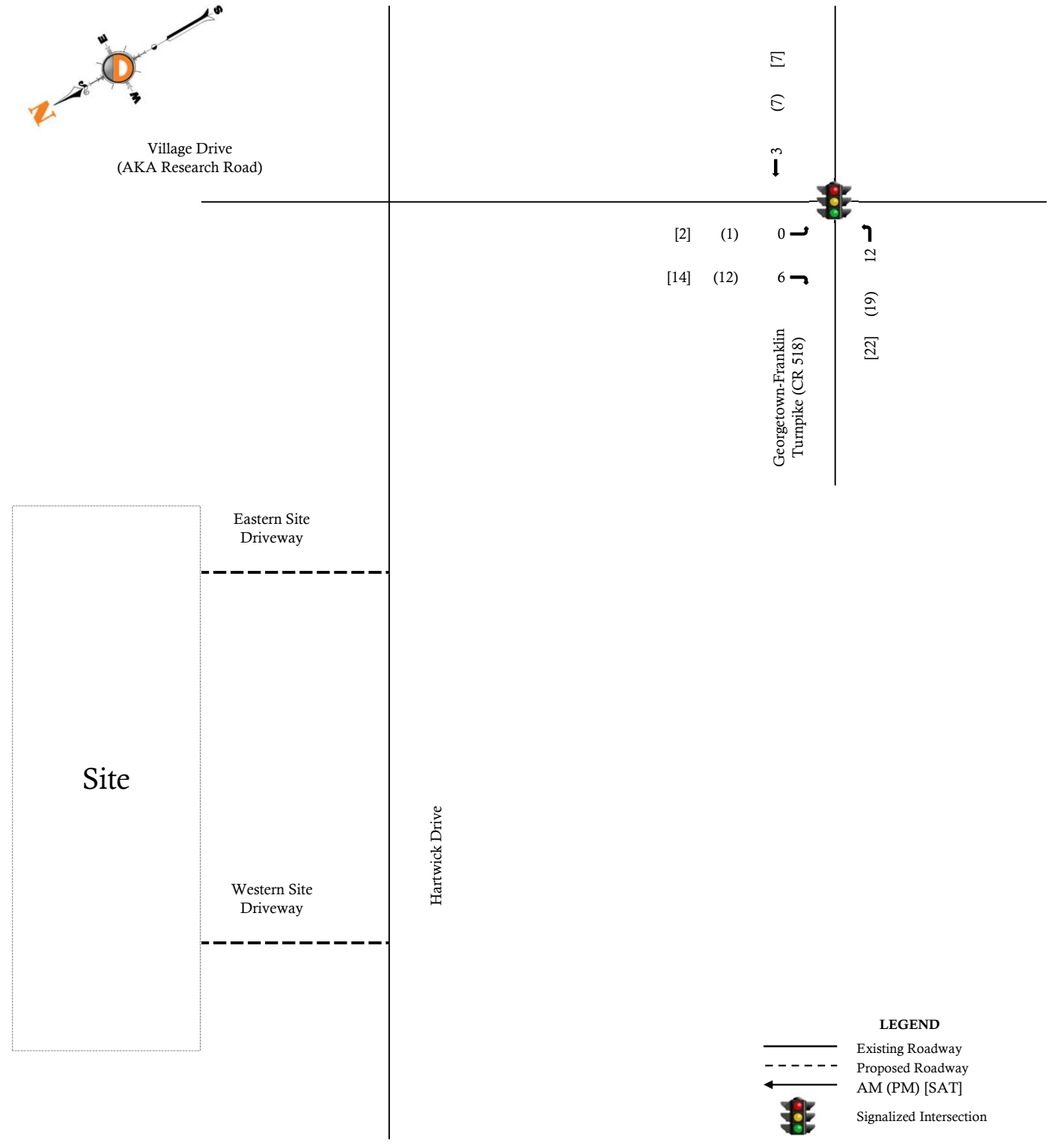

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Figure 4

Adjacent Development Traffic Volumes
[Montgomery Walk - Mixed-use Development]

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Figure 5

Adjacent Development Traffic Volumes
[Baker Auto - Car Dealership]

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Figure 6

Adjacent Development Traffic Volumes
[Enrollment Management Expansion]

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Figure 7

Adjacent Development Traffic Volumes
[Montgomery Crossing]

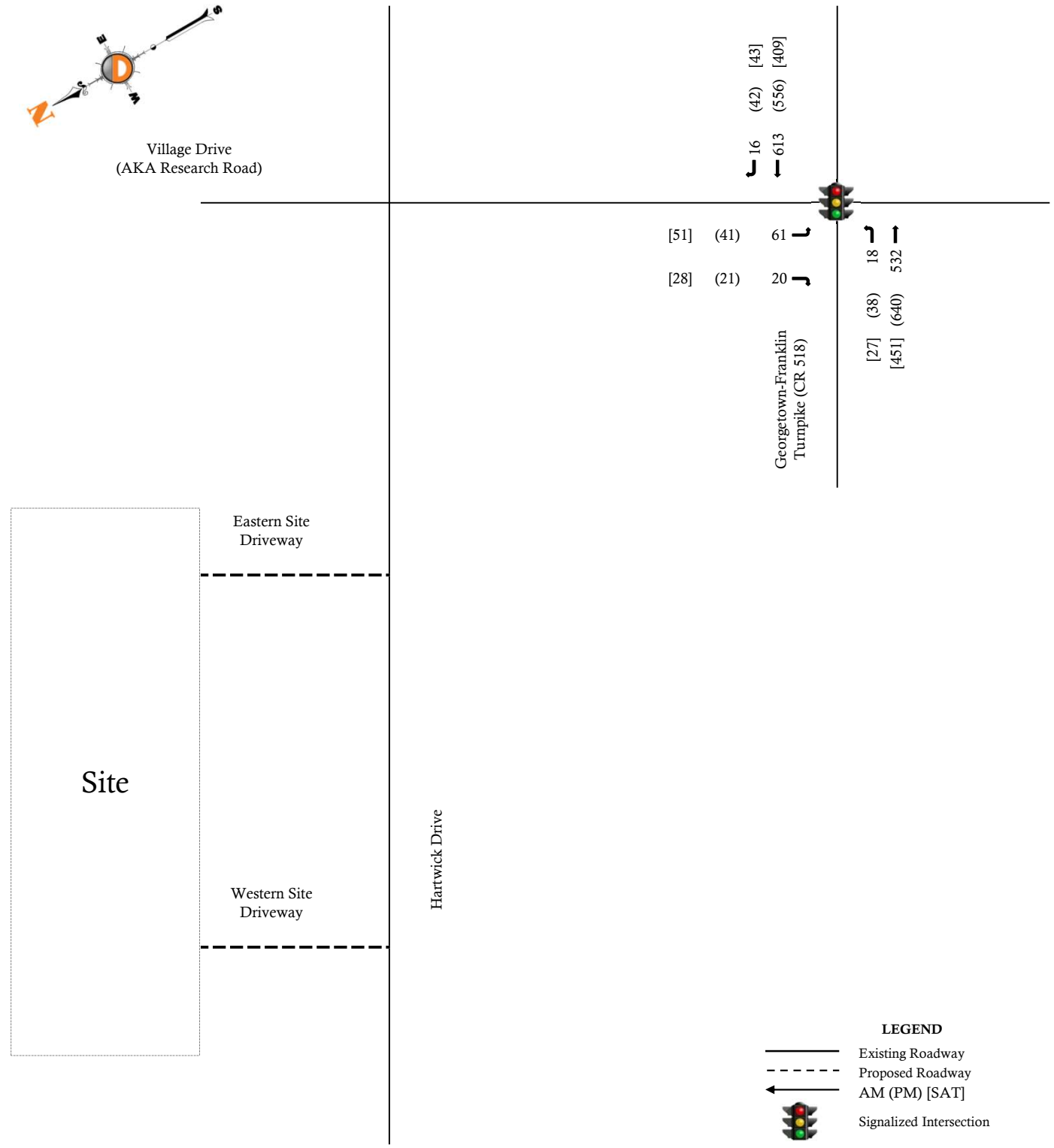

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Figure 8

No Build Traffic Volumes
(without Mongtomery Promenade)

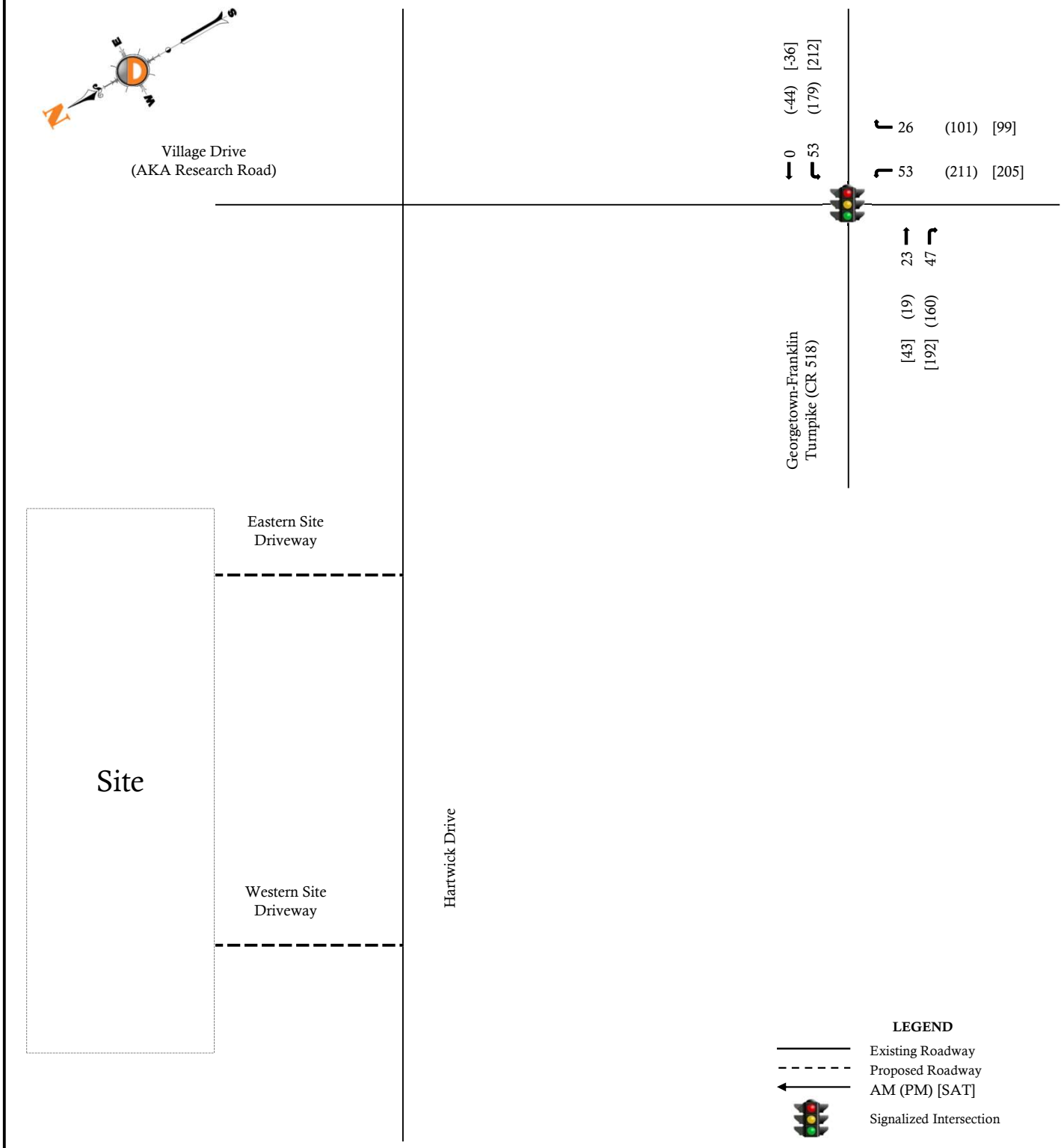

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Figure 9

Adjacent Development Traffic Volumes
[Montgomery Promenade]

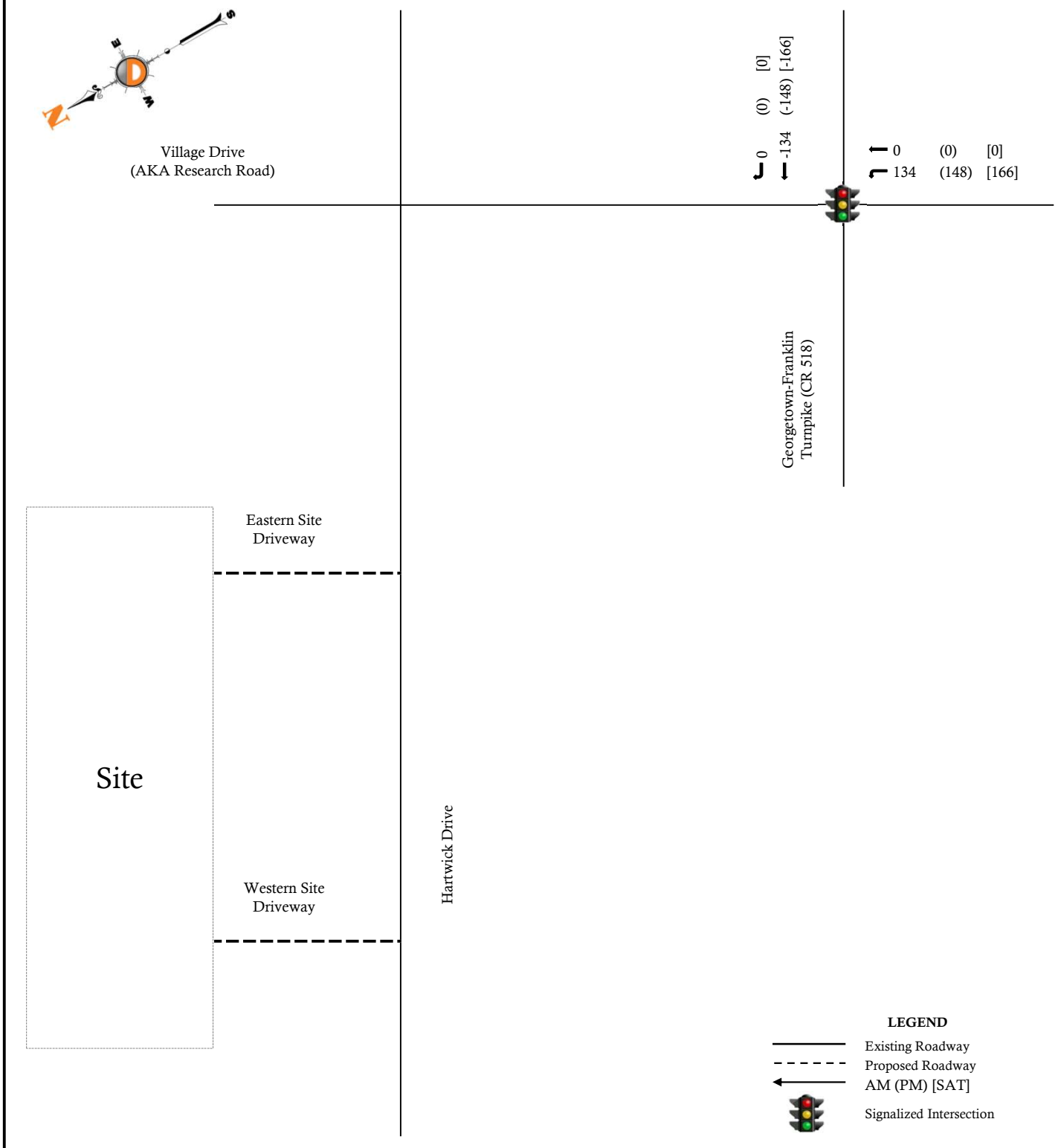

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Figure 10

Re-Routed Traffic Volumes
(associated with construction of Montgomery Promenade)

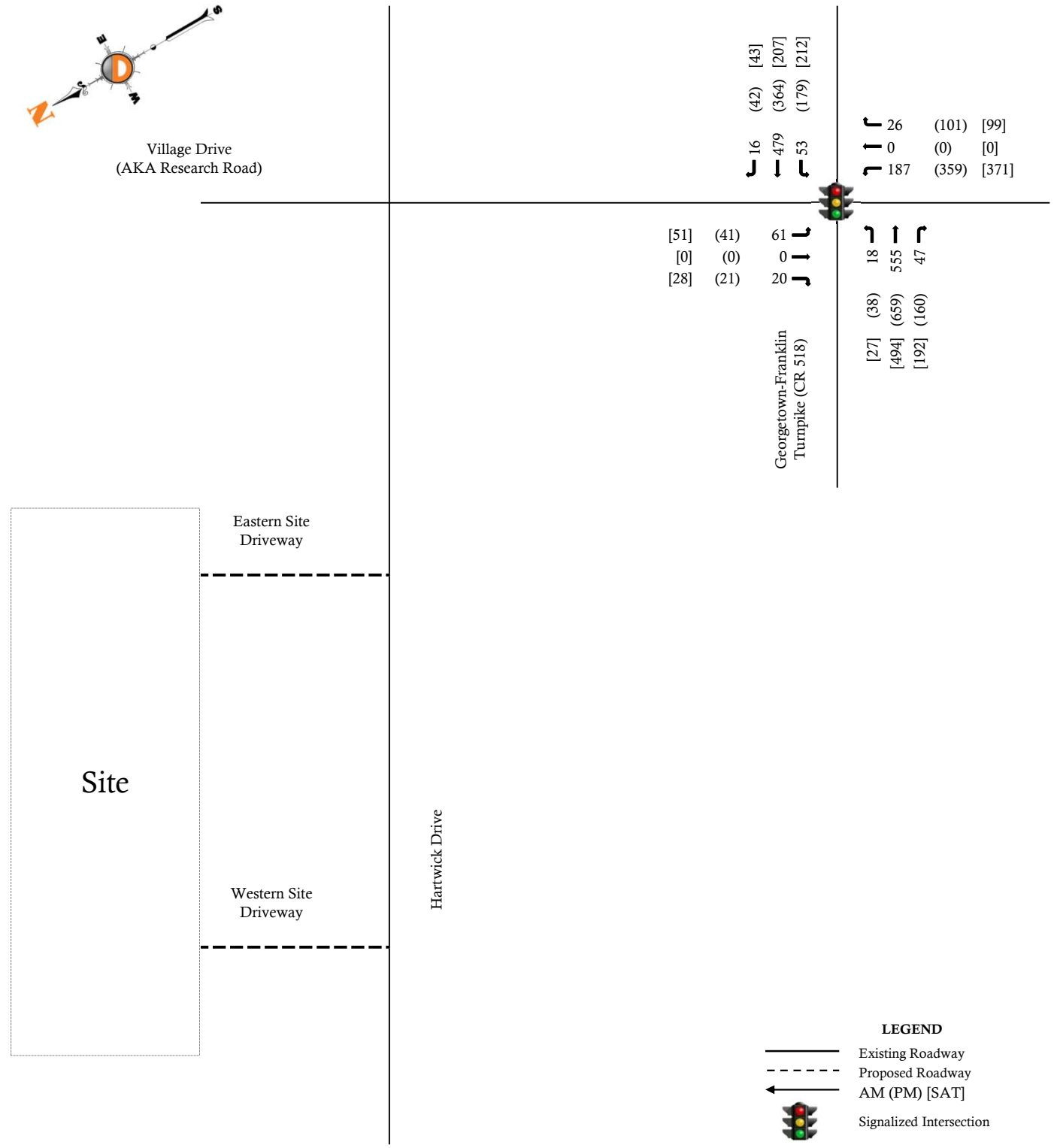

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Figure 11

No Build Traffic Volumes
(with Montgomery Promenade)

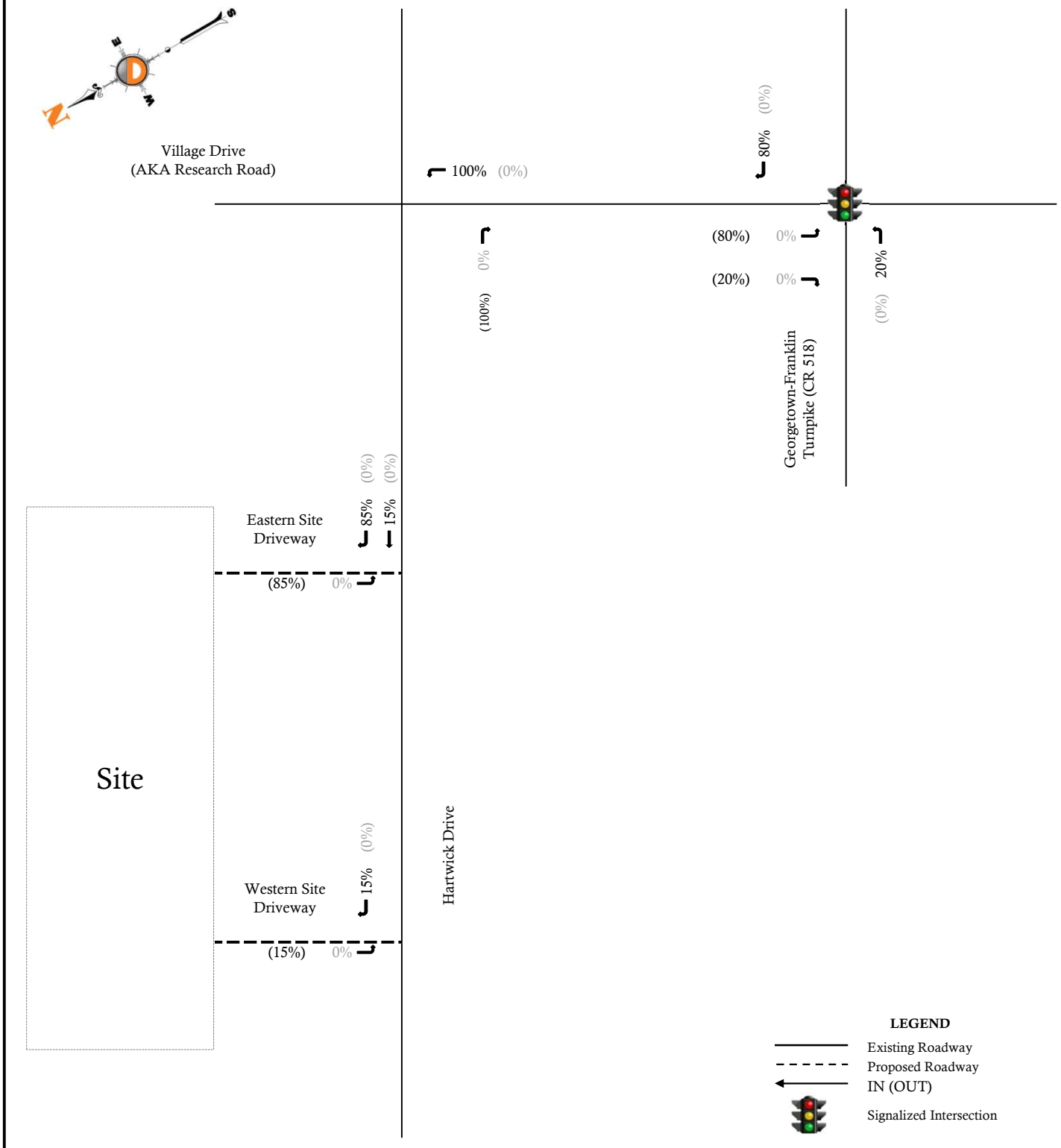

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Figure 12

Percent Distribution

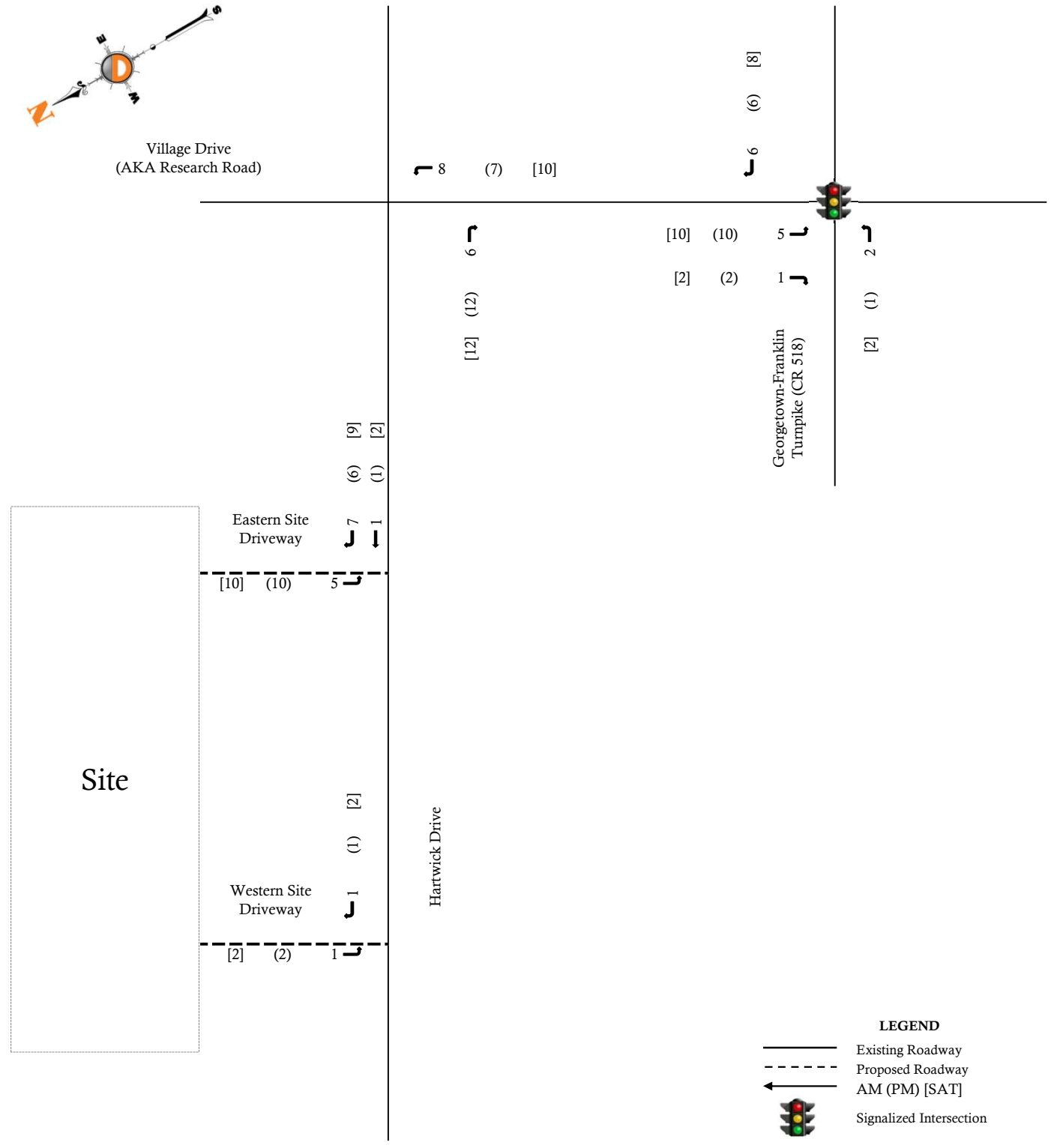

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Figure 13

Site Generated Trips

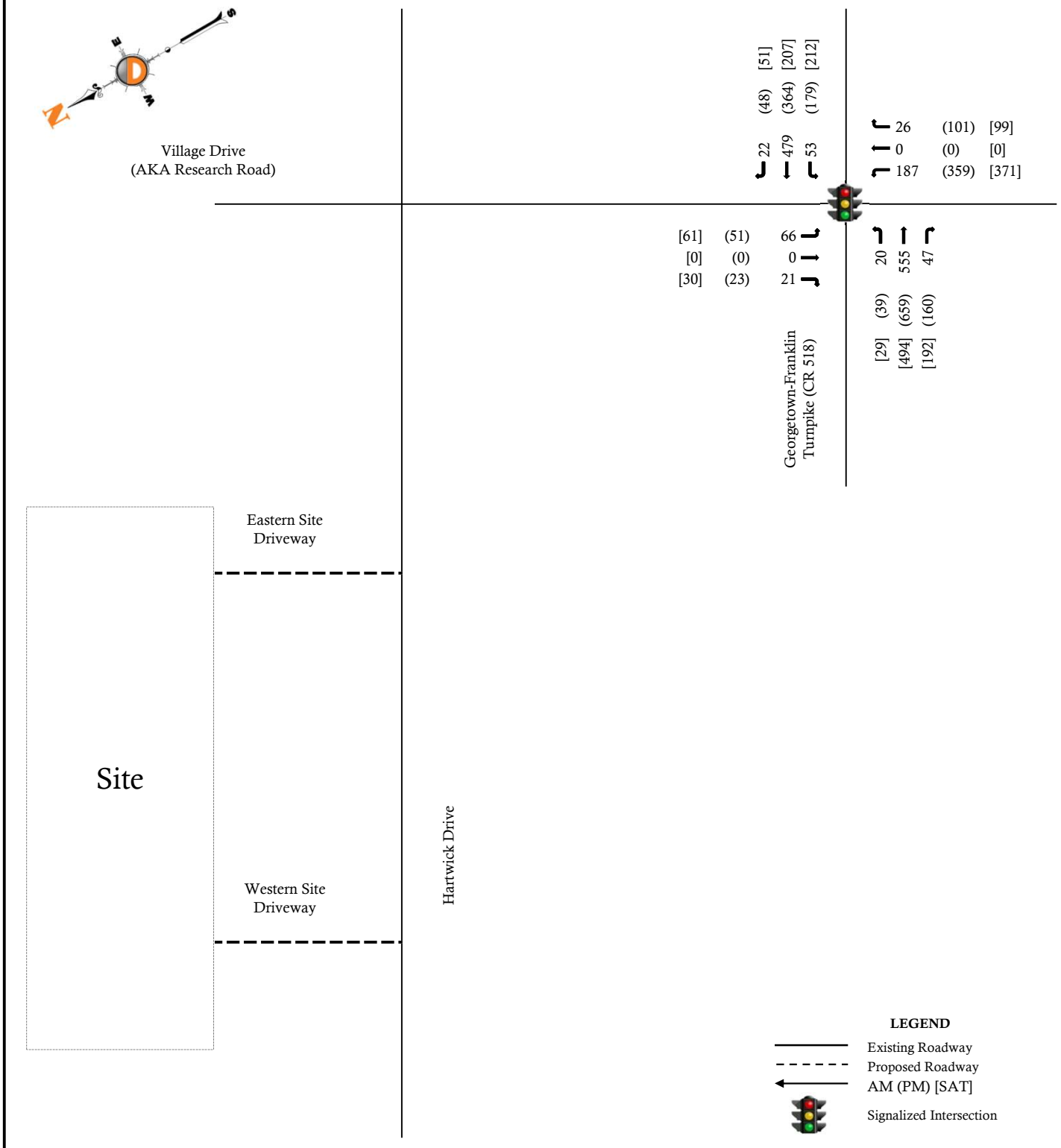

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Figure 14

Build Traffic Volumes
(without Montgomery Promenade)

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Figure 15

Re-Routed Site-Generated Volumes
(associated with construction of Montgomery Promenade)

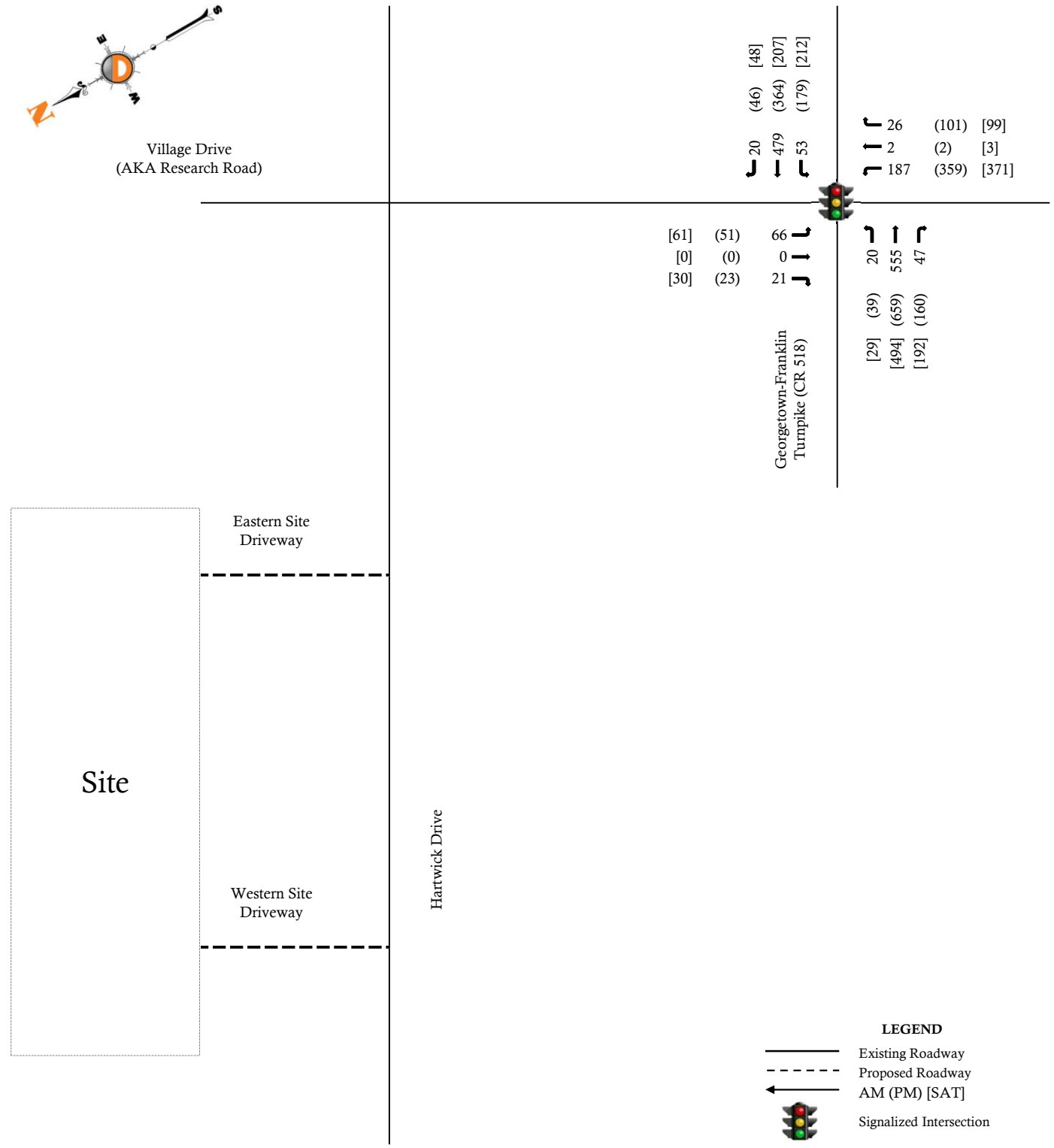

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Figure 16

Build Traffic Volumes
(with Montgomery Promenade)

Dynamic Traffic, LLC

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

E/W: Georgetown Franklin Turnpike
N/S: Research Road
Town/County: Montgomery/Somerset
Job #: 0043-14-015T

File Name : Georgetown Franklin Tpke & Research Rd AM & PM
Site Code : 00000000
Start Date : 10/12/2017
Page No : 1

Groups Printed- Cars - Trucks

	Georgetown Franklin Turnpike Eastbound				Georgetown Franklin Turnpike Westbound				Research Road Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	71	0	71	0	115	0	115	9	0	2	11	197
07:15 AM	0	107	0	107	0	95	2	97	11	0	1	12	216
07:30 AM	1	114	0	115	0	113	4	117	13	0	0	13	245
07:45 AM	0	118	0	118	0	137	1	138	12	0	2	14	270
Total	1	410	0	411	0	460	7	467	45	0	5	50	928
08:00 AM	0	121	0	121	0	153	5	158	7	0	1	8	287
08:15 AM	1	130	0	131	0	131	3	134	5	0	0	5	270
08:30 AM	0	115	0	115	0	132	1	133	9	0	0	9	257
08:45 AM	0	129	0	129	0	113	2	115	6	0	0	6	250
Total	1	495	0	496	0	529	11	540	27	0	1	28	1064
*** BREAK ***													
04:30 PM	2	173	0	175	0	127	3	130	4	0	2	6	311
04:45 PM	0	129	0	129	0	126	4	130	3	0	0	3	262
Total	2	302	0	304	0	253	7	260	7	0	2	9	573
05:00 PM	2	146	0	148	0	130	9	139	4	0	0	4	291
05:15 PM	0	141	0	141	0	119	9	128	12	0	0	12	281
05:30 PM	0	143	0	143	0	125	5	130	7	0	0	7	280
05:45 PM	0	135	0	135	0	115	12	127	9	0	0	9	271
Total	2	565	0	567	0	489	35	524	32	0	0	32	1123
06:00 PM	2	174	0	176	0	115	7	122	11	0	1	12	310
06:15 PM	1	117	0	118	0	124	11	135	8	0	0	8	261
Grand Total	9	2063	0	2072	0	1970	78	2048	130	0	9	139	4259
Apprch %	0.4	99.6	0		0	96.2	3.8		93.5	0	6.5		
Total %	0.2	48.4	0	48.6	0	46.3	1.8	48.1	3.1	0	0.2	3.3	
Cars	9	1996	0	2005	0	1911	74	1985	125	0	8	133	4123
% Cars	100	96.8	0	96.8	0	97	94.9	96.9	96.2	0	88.9	95.7	96.8
Trucks	0	67	0	67	0	59	4	63	5	0	1	6	136
% Trucks	0	3.2	0	3.2	0	3	5.1	3.1	3.8	0	11.1	4.3	3.2

Dynamic Traffic, LLC

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

E/W: Georgetown Franklin Turnpike
N/S: Research Road
Town/County: Montgomery/Somerset
Job #: 0043-14-015T

File Name : Georgetown Franklin Tpke & Research Rd AM & PM
Site Code : 00000000
Start Date : 10/12/2017
Page No : 2

	Georgetown Franklin Turnpike Eastbound				Georgetown Franklin Turnpike Westbound				Research Road Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	0	118	0	118	0	137	1	138	**12**	0	**2**	**14**	270
08:00 AM	0	121	0	121	0	**153**	**5**	**158**	7	0	1	8	**287**
08:15 AM	**1**	**130**	0	**131**	0	131	3	134	5	0	0	5	270
08:30 AM	0	115	0	115	0	132	1	133	9	0	0	9	257
Total Volume	1	484	0	485	0	553	10	563	33	0	3	36	1084
% App. Total	0.2	99.8	0		0	98.2	1.8		91.7	0	8.3		
PHF	.250	.931	.000	.926	.000	.904	.500	.891	.688	.000	.375	.643	.944
Cars	1	457	0	458	0	532	9	541	31	0	3	34	1033
% Cars	100	94.4	0	94.4	0	96.2	90.0	96.1	93.9	0	100	94.4	95.3
Trucks	0	27	0	27	0	21	1	22	2	0	0	2	51
% Trucks	0	5.6	0	5.6	0	3.8	10.0	3.9	6.1	0	0	5.6	4.7
Peak Hour Analysis From 12:00 PM to 06:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	**2**	**173**	0	**175**	0	127	3	130	4	0	**2**	6	**311**
04:45 PM	0	129	0	129	0	126	4	130	3	0	0	3	262
05:00 PM	2	146	0	148	0	**130**	**9**	**139**	4	0	0	4	291
05:15 PM	0	141	0	141	0	119	9	128	**12**	0	0	**12**	281
Total Volume	4	589	0	593	0	502	25	527	23	0	2	25	1145
% App. Total	0.7	99.3	0		0	95.3	4.7		92	0	8		
PHF	.500	.851	.000	.847	.000	.965	.694	.948	.479	.000	.250	.521	.920
Cars	4	575	0	579	0	491	25	516	22	0	2	24	1119
% Cars	100	97.6	0	97.6	0	97.8	100	97.9	95.7	0	100	96.0	97.7
Trucks	0	14	0	14	0	11	0	11	1	0	0	1	26
% Trucks	0	2.4	0	2.4	0	2.2	0	2.1	4.3	0	0	4.0	2.3

Dynamic Traffic, LLC

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

E/W: Georgetown Franklin Turnpike
N/S: Research Road
Town/County: Montgomery/Somerset
Job #: 0043-14-015T

File Name : Georgetown Franklin Tpke & Research Rd SAT
Site Code : 00000000
Start Date : 10/12/2017
Page No : 1

Groups Printed- Cars - Trucks

	Georgetown Franklin Turnpike Eastbound				Georgetown Franklin Turnpike Westbound				Research Road Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	0	90	0	90	0	66	5	71	9	0	0	9	170
11:15 AM	0	80	0	80	0	93	1	94	10	0	0	10	184
11:30 AM	1	71	0	72	0	85	5	90	5	0	0	5	167
11:45 AM	0	103	0	103	0	99	5	104	4	0	3	7	214
Total	1	344	0	345	0	343	16	359	28	0	3	31	735
12:00 PM	0	132	0	132	0	81	7	88	7	0	0	7	227
12:15 PM	0	102	0	102	0	95	10	105	7	0	0	7	214
12:30 PM	0	80	0	80	0	74	3	77	5	0	0	5	162
12:45 PM	0	69	0	69	0	81	8	89	9	0	0	9	167
Total	0	383	0	383	0	331	28	359	28	0	0	28	770
01:00 PM	0	78	0	78	0	90	9	99	8	0	0	8	185
01:15 PM	0	60	0	60	0	91	10	101	1	0	2	3	164
01:30 PM	0	69	0	69	0	79	4	83	8	0	0	8	160
01:45 PM	0	79	0	79	0	95	3	98	3	0	0	3	180
Total	0	286	0	286	0	355	26	381	20	0	2	22	689
Grand Total	1	1013	0	1014	0	1029	70	1099	76	0	5	81	2194
Apprch %	0.1	99.9	0		0	93.6	6.4		93.8	0	6.2		
Total %	0	46.2	0	46.2	0	46.9	3.2	50.1	3.5	0	0.2	3.7	
Cars	1	995	0	996	0	1012	67	1079	75	0	5	80	2155
% Cars	100	98.2	0	98.2	0	98.3	95.7	98.2	98.7	0	100	98.8	98.2
Trucks	0	18	0	18	0	17	3	20	1	0	0	1	39
% Trucks	0	1.8	0	1.8	0	1.7	4.3	1.8	1.3	0	0	1.2	1.8

	Georgetown Franklin Turnpike Eastbound				Georgetown Franklin Turnpike Westbound				Research Road Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:30 AM													
11:30 AM	**1**	71	0	72	0	85	5	90	5	0	0	5	167
11:45 AM	0	103	0	103	0	**99**	5	104	4	0	**3**	**7**	214
12:00 PM	0	**132**	0	**132**	0	81	7	88	**7**	0	0	7	**227**
12:15 PM	0	102	0	102	0	95	**10**	**105**	7	0	0	7	214
Total Volume	1	408	0	409	0	360	27	387	23	0	3	26	822
% App. Total	0.2	99.8	0		0	93	7		88.5	0	11.5		
PHF	.250	.773	.000	.775	.000	.909	.675	.921	.821	.000	.250	.929	.905
Cars	1	398	0	399	0	357	26	383	23	0	3	26	808
% Cars	100	97.5	0	97.6	0	99.2	96.3	99.0	100	0	100	100	98.3
Trucks	0	10	0	10	0	3	1	4	0	0	0	0	14
% Trucks	0	2.5	0	2.4	0	0.8	3.7	1.0	0	0	0	0	1.7

Dynamic Traffic, LLC

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

E/W: CR 518
N/S: Route 206
Town/County: Montgomery/Somerset
Job #: 2334-22-01462

File Name : Rt 206 & CR 518 - PM
Site Code : 00000000
Start Date : 7/26/2022
Page No : 1

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

	Georgetown Franklin Turnpike (CR 518) Eastbound					Washington Street (CR 518) Westbound					Route 206 Northbound					Route 206 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:30 PM	31	67	21	0	119	17	70	41	0	128	20	183	13	0	216	54	102	31	0	187	650
04:45 PM	34	52	23	0	109	12	53	30	0	95	24	160	18	0	202	51	101	27	0	179	585
Total	65	119	44	0	228	29	123	71	0	223	44	343	31	0	418	105	203	58	0	366	1235
05:00 PM	36	76	21	0	133	10	56	35	0	101	27	174	21	0	222	45	104	28	0	177	633
05:15 PM	39	85	29	0	153	17	48	44	0	109	28	196	14	0	238	51	102	30	1	184	684
05:30 PM	28	74	20	0	122	7	66	48	0	121	27	188	19	0	234	48	110	29	0	187	664
05:45 PM	35	82	23	0	140	10	66	44	0	120	27	157	28	1	213	56	116	20	0	192	665
Total	138	317	93	0	548	44	236	171	0	451	109	715	82	1	907	200	432	107	1	740	2646
06:00 PM	40	50	13	0	103	12	47	40	0	99	26	176	15	0	217	54	113	27	0	194	613
06:15 PM	27	48	12	0	87	4	70	36	0	110	24	155	19	0	198	47	118	37	0	202	597
Grand Total	270	534	162	0	966	89	476	318	0	883	203	1389	147	1	1740	406	866	229	1	1502	5091
Apprch %	28	55.3	16.8	0		10.1	53.9	36	0		11.7	79.8	8.4	0.1		27	57.7	15.2	0.1		
Total %	5.3	10.5	3.2	0	19	1.7	9.3	6.2	0	17.3	4	27.3	2.9	0	34.2	8	17	4.5	0	29.5	
Cars	268	529	162	0	959	88	469	318	0	875	203	1362	146	1	1712	400	845	228	1	1474	5020
% Cars	99.3	99.1	100	0	99.3	98.9	98.5	100	0	99.1	100	98.1	99.3	100	98.4	98.5	97.6	99.6	100	98.1	98.6
Trucks (SU)	2	3	0	0	5	1	7	0	0	8	0	12	1	0	13	4	11	1	0	16	42
% Trucks (SU)	0.7	0.6	0	0	0.5	1.1	1.5	0	0	0.9	0	0.9	0.7	0	0.7	1	1.3	0.4	0	1.1	0.8
Trucks (TT)	0	2	0	0	2	0	0	0	0	0	0	15	0	0	15	2	10	0	0	12	29
% Trucks (TT)	0	0.4	0	0	0.2	0	0	0	0	0	0	1.1	0	0	0.9	0.5	1.2	0	0	0.8	0.6

Dynamic Traffic, LLC

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

E/W: CR 518
N/S: Route 206
Town/County: Montgomery/Somerset
Job #: 2334-22-01462

File Name : Rt 206 & CR 518 - PM
Site Code : 00000000
Start Date : 7/26/2022

	Georgetown Franklin Turnpike (CR 518) Eastbound					Washington Street (CR 518) Westbound					Route 206 Northbound					Route 206 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	36	76	21	0	133	10	56	35	0	101	27	174	21	0	222	45	104	28	0	177	633
05:15 PM	39	85	29	0	153	17	48	44	0	109	28	196	14	0	238	51	102	30	1	184	684
05:30 PM	28	74	20	0	122	7	66	48	0	121	27	188	19	0	234	48	110	29	0	187	664
05:45 PM	35	82	23	0	140	10	66	44	0	120	27	157	28	1	213	56	116	20	0	192	665
Total Volume	138	317	93	0	548	44	236	171	0	451	109	715	82	1	907	200	432	107	1	740	2646
% App. Total	25.2	57.8	17	0		9.8	52.3	37.9	0		12	78.8	9	0.1		27	58.4	14.5	0.1		
PHF	.885	.932	.802	.000	.895	.647	.894	.891	.000	.932	.973	.912	.732	.250	.953	.893	.931	.892	.250	.964	.967
Cars	136	315	93	0	544	44	233	171	0	448	109	705	81	1	896	196	419	107	1	723	2611
% Cars	98.6	99.4	100	0	99.3	100	98.7	100	0	99.3	100	98.6	98.8	100	98.8	98.0	97.0	100	100	97.7	98.7
Trucks (SU)	2	2	0	0	4	0	3	0	0	3	0	3	1	0	4	3	7	0	0	10	21
% Trucks (SU)	1.4	0.6	0	0	0.7	0	1.3	0	0	0.7	0	0.4	1.2	0	0.4	1.5	1.6	0	0	1.4	0.8
Trucks (TT)	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	1	6	0	0	7	14
% Trucks (TT)	0	0	0	0	0	0	0	0	0	0	0	1.0	0	0	0.8	0.5	1.4	0	0	0.9	0.5

Dynamic Traffic, LLC

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

E/W: CR 518
N/S: Route 206
Town/County: Montgomery/Somerset
Job #: 2334-22-01462

File Name : Rt 206 & CR 518 - SAT
Site Code : 00000000
Start Date : 7/30/2022
Page No : 1

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

	Georgetown Franklin Turnpike (CR 518) Eastbound					Georgetown Franklin Turnpike (CR 518) Westbound					Route 206 Northbound					Route 206 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	30	35	7	0	72	17	32	32	0	81	23	167	11	0	201	53	104	23	2	182	536
11:15 AM	34	40	9	0	83	20	37	37	0	94	25	136	17	0	178	53	114	32	0	199	554
11:30 AM	22	37	10	0	69	12	36	48	0	96	13	147	14	0	174	65	92	29	2	188	527
11:45 AM	19	41	16	0	76	17	31	46	0	94	19	134	15	0	168	61	118	33	0	212	550
Total	105	153	42	0	300	66	136	163	0	365	80	584	57	0	721	232	428	117	4	781	2167
12:00 PM	18	27	9	0	54	20	35	50	0	105	15	129	19	0	163	63	108	26	0	197	519
12:15 PM	24	34	11	0	69	13	36	36	0	85	17	119	10	0	146	54	132	24	0	210	510
12:30 PM	20	44	19	0	83	15	15	34	0	64	19	153	24	0	196	54	92	35	0	181	524
12:45 PM	28	28	12	0	68	8	32	32	0	72	22	148	16	0	186	63	122	32	0	217	543
Total	90	133	51	0	274	56	118	152	0	326	73	549	69	0	691	234	454	117	0	805	2096
01:00 PM	19	32	9	0	60	15	40	38	0	93	18	149	13	0	180	53	122	21	0	196	529
01:15 PM	24	28	14	0	66	15	24	44	0	83	15	149	15	0	179	52	125	22	0	199	527
01:30 PM	18	30	6	0	54	13	35	35	0	83	15	166	13	0	194	50	102	26	1	179	510
01:45 PM	21	6	12	0	39	11	32	24	0	67	21	207	12	0	240	48	110	24	0	182	528
Total	82	96	41	0	219	54	131	141	0	326	69	671	53	0	793	203	459	93	1	756	2094
Grand Total	277	382	134	0	793	176	385	456	0	1017	222	1804	179	0	2205	669	1341	327	5	2342	6357
Apprch %	34.9	48.2	16.9	0		17.3	37.9	44.8	0		10.1	81.8	8.1	0		28.6	57.3	14	0.2		
Total %	4.4	6	2.1	0	12.5	2.8	6.1	7.2	0	16	3.5	28.4	2.8	0	34.7	10.5	21.1	5.1	0.1	36.8	
Cars	277	379	131	0	787	170	379	451	0	1000	220	1788	178	0	2186	654	1317	326	5	2302	6275
% Cars	100	99.2	97.8	0	99.2	96.6	98.4	98.9	0	98.3	99.1	99.1	99.4	0	99.1	97.8	98.2	99.7	100	98.3	98.7
Trucks (SU)	0	3	2	0	5	6	6	3	0	15	2	11	1	0	14	12	15	1	0	28	62
% Trucks (SU)	0	0.8	1.5	0	0.6	3.4	1.6	0.7	0	1.5	0.9	0.6	0.6	0	0.6	1.8	1.1	0.3	0	1.2	1
Trucks (TT)	0	0	1	0	1	0	0	2	0	2	0	5	0	0	5	3	9	0	0	12	20
% Trucks (TT)	0	0	0.7	0	0.1	0	0	0.4	0	0.2	0	0.3	0	0	0.2	0.4	0.7	0	0	0.5	0.3

Dynamic Traffic, LLC

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

E/W: CR 518
N/S: Route 206
Town/County: Montgomery/Somerset
Job #: 2334-22-01462

File Name : Rt 206 & CR 518 - SAT
Site Code : 00000000
Start Date : 7/30/2022
Page No : 2

	Georgetown Franklin Turnpike (CR 518) Eastbound					Georgetown Franklin Turnpike (CR 518) Westbound					Route 206 Northbound					Route 206 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	30	35	7	0	72	17	32	32	0	81	23	167	11	0	201	53	104	23	2	182	536
11:15 AM	34	40	9	0	83	20	37	37	0	94	25	136	17	0	178	53	114	32	0	199	554
11:30 AM	22	37	10	0	69	12	36	48	0	96	13	147	14	0	174	65	92	29	2	188	527
11:45 AM	19	41	16	0	76	17	31	46	0	94	19	134	15	0	168	61	118	33	0	212	550
Total Volume	105	153	42	0	300	66	136	163	0	365	80	584	57	0	721	232	428	117	4	781	2167
% App. Total	35	51	14	0		18.1	37.3	44.7	0		11.1	81	7.9	0		29.7	54.8	15	0.5		
PHF	.772	.933	.656	.000	.904	.825	.919	.849	.000	.951	.800	.874	.838	.000	.897	.892	.907	.886	.500	.921	.978
Cars	105	153	42	0	300	64	132	161	0	357	80	579	57	0	716	224	424	117	4	769	2142
% Cars	100	100	100	0	100	97.0	97.1	98.8	0	97.8	100	99.1	100	0	99.3	96.6	99.1	100	100	98.5	98.8
Trucks (SU)	0	0	0	0	0	2	4	1	0	7	0	4	0	0	4	8	3	0	0	11	22
% Trucks (SU)	0	0	0	0	0	3.0	2.9	0.6	0	1.9	0	0.7	0	0	0.6	3.4	0.7	0	0	1.4	1.0
Trucks (TT)	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	1	0	0	1	3
% Trucks (TT)	0	0	0	0	0	0	0	0.6	0	0.3	0	0.2	0	0	0.1	0	0.2	0	0	0.1	0.1

TRAFFIC SIGNAL TIMING

REVISED AUGUST 22, 2007

WITHOUT PEDESTRIAN ACTUATION – 80-SECOND CYCLE

PHASE	SIGNAL INDICATIONS 1-4, 9	5,6	7,8,10*	P1,P2	P3,P4,P7,P8	P5,P6*	TIME (SEC.)
1. CR 518 ROW	G	R	R	W	DW	W	42-32
PED CLEARANCE	G	R	R	FDW	DW	FDW	18
CHANGE	Y	R	R	DW	DW	DW	5
CLEARANCE	R	R	R	DW	DW	DW	2
2. RESEARCH WAY ROW	R	G	G	DW	DW	DW	7-17
CHANGE	R	Y	Y	DW	DW	DW	4
CLEARANCE	R	R	R	DW	DW	DW	2

WITH PEDESTRIAN ACTUATION – 80-SECOND CYCLE

PHASE	SIGNAL INDICATIONS 1-4	5,6	7,8*	P1,P2	P3,P4,P7,P8	P5,P6*	TIME (SEC.)
1. CR 518 ROW	G	R	R	W	DW	W	28
PED CLEARANCE	G	R	R	FDW	DW	FDW	18
CHANGE	Y	R	R	DW	DW	DW	5
CLEARANCE	R	R	R	DW	DW	DW	2
2. RESEARCH WAY ROW	R	G	G	DW	W	DW	7
PED CLEARANCE	R	G	G	DW	FDW	DW	14
CHANGE	R	Y	Y	DW	DW	DW	4
CLEARANCE	R	R	R	DW	DW	DW	2

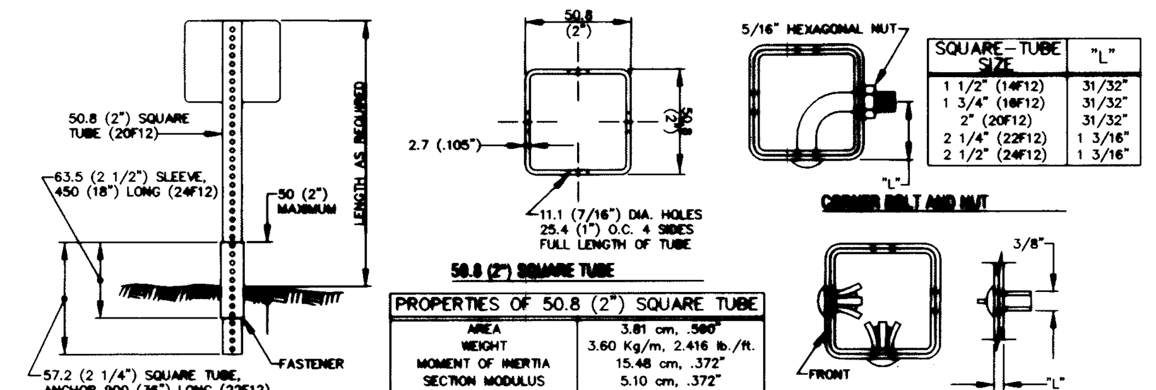
NOTES:

MANUAL CONTROL AND MEMORY CIRCUITS ARE TO BE DISCONNECTED.

IF NO ACTUATION OCCURS, SIGNAL SHALL REST IN PHASE 1 – CR 518 ROW.

* SIGNAL HEADS 7, 8, 10, P5 AND P6 ARE FOR FUTURE USE. THEY SHOULD NOT BE CONNECTED TO POWER, AND THEY SHOULD REMAIN BAGGED.

EMERGENCY FLASHING OPERATION: SIGNAL FACES 1-4, 9 – YELLOW
SIGNAL FACES 5, 6 – RED
PEDESTRIAN SIGNALS – DARK



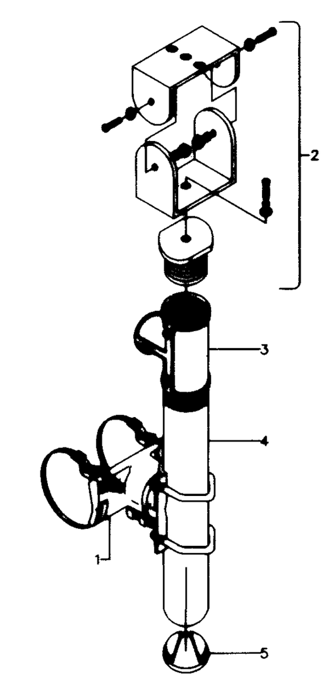
PROPERTIES OF 50.8 (2") SQUARE TUBE	
AREA	3.81 cm, .590"
WEIGHT	3.60 Kg/m, 2.416 lb./ft.
MOMENT OF INERTIA	15.48 cm, .372"
SECTION MODULUS	5.10 cm, .372"
RADIUS OF GYRATION	2.02 cm, .794"
TORSIONAL FACTOR (J)	20.81 cm, .500"

SQUARE-TUBE SIZE	"L"
1 1/2" (14F12)	31/32"
1 3/4" (16F12)	31/32"
2" (20F12)	31/32"
2 1/4" (22F12)	1 3/16"
2 1/2" (24F12)	1 3/16"

GENERAL NOTES

1. SQUARE-TUBE SUPPORTS ARE TO BE THE TELESPAR SYSTEM BY THE UNISTRUT CORPORATION OR AN APPROVED EQUAL, AND ONLY TYPE III BREAKAWAY UNITS SHALL BE USED.
2. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-307 AND NUTS TO A-563, GRADE A, AND SHALL BE ELECTROGALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM B-633, TYPE III, SC 1.
3. THE POSTS SHALL BE 50.8 (2") TUBES FORMED FROM 2.7 (.105") THICK STEEL CAREFULLY ROLLED TO SIZE, CORNER-WELDED BY HIGH-FREQUENCY RESISTANCE WELDING AND EXTERNALLY SCARFED TO AGREE WITH THE CORNER RADII. THE POSTS SHALL HAVE 11.1 (7/16") DIAMETER HOLES SPACED 25.4 (1") ON CENTER ALONG THE CENTER LINE OF EACH SIDE.
4. THE ANCHOR TUBE SHALL BE A 57.2 (2 1/4") SQUARE TUBE, 750 (30") TO 1200 (48") LONG, INSTALLED IN SOIL 50 (2") TO 75 (3") ABOVE THE GROUND BUT NOT HIGHER THAN 100 (4"). THE UPPER SIGNPOST SHALL TELESCOPE INSIDE THE ANCHOR APPROXIMATELY 200 (8") TO 300 (12").
5. A TUBE-REINFORCED SLEEVE, 63.5 (2 1/2") SQUARE AND 450 (18") LONG, SHALL BE INSTALLED OVER THE 57.2 (2 1/4") SQUARE ANCHOR AND FLUSH WITH THE TOP.
6. GALVANIZED SIGNPOSTS SHALL BE ROLL FORMED FROM STEEL CONFORMING TO ASTM SPECIFICATION A-446 WITH ZINC COATING DESIGNATION G-90.

SQUARE-TUBE SUPPORT FOR PERMANENT SIGN
N.T.S.



NOTE
CAMERA EXTENSION ARM SHALL BE: "EXTENDED MAST ARM SENSOR BRACKET TILT & PAN FOR CAMERA MOUNTING WITH BAND MOUNTED ASTRO-BRAC" AS MANUFACTURED BY PELCO PRODUCTS, INC. OF EDMOND OKLAHOMA.

ITEM	PELCO PART NO.	DESCRIPTION	COAT	QTY.
1	AB-3004-L	ASTRO-BRAC CLAMP KIT, BAND MOUNT	ALO	1
2	SH-0515	CAMERA MOUNT SUBASSEMBLY	ALO	1
3	SE-0458	SERRATED TEE, ALUM., 1-1/2"	PNC	1
4	AB-2003-L	GUSSET TUBE, ALUM. W/VINYL INSERT, 1-1/2" x LENGTH	ALO	1
5	AB-0260	TUBE CAP	PXX	1
	AB-0173-L-L	MASTARM SENSOR BRACKET, TILT & PAN W/BAND MOUNT ASTRO-BRAC		

SUPPORT TUBE	
-1	23"
-2	37"
-3	46"
-4	58"
-5	74"

BAND LENGTH	POLE DIA.
29"	4"-8.6"
36"	4"-10.8"
42"	4"-12.7"
48"	4"-14.6"
56"	4"-17.2"

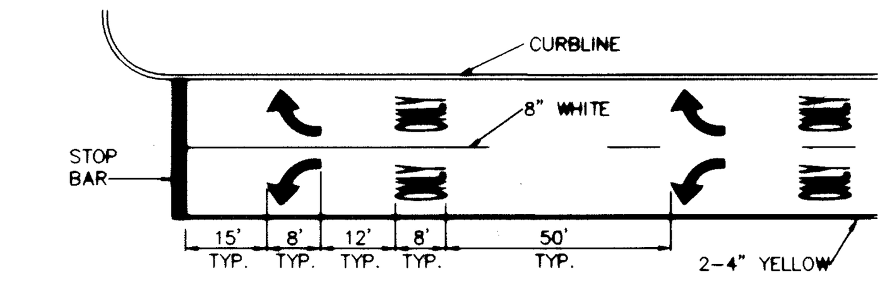
MATERIAL COATING LEGEND	
COATING	CODE
ALODINE	ALO
NO COATING	PNC
PAINTED	PXX

NOTE
SPECIFY SUPPORT TUBE AND BAND LENGTH REQUIRED; FOR EXAMPLE, AB-0173-1-42 FOR 23" TUBE AND 42" BAND.

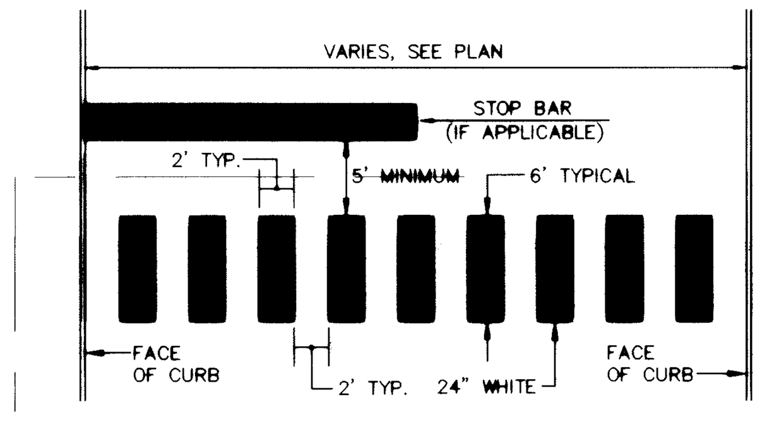
CAMERA EXTENSION ARM
N.T.S.

TO BE CONSTRUCTED

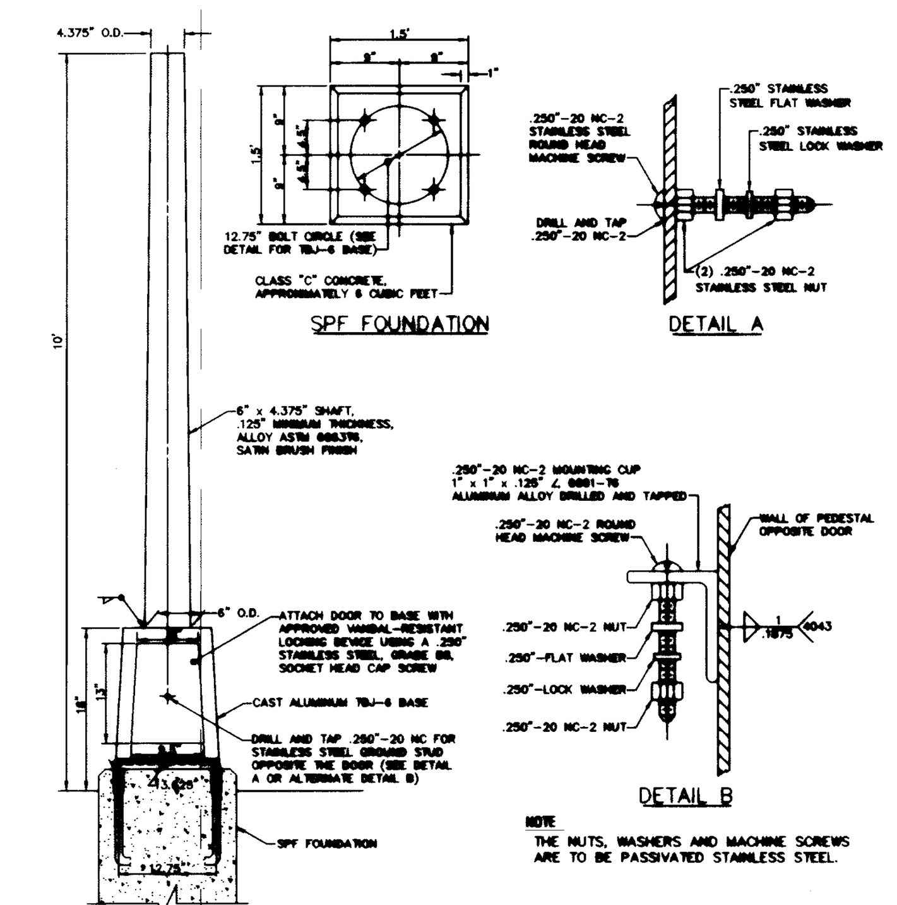
ITEM	QUANTITY	UNIT
CONTROLLER ASSEMBLY, 8 PHASE, WITH ITB, P-CABINET (SEE NOTE 9)	1	U
METER CABINET, TYPE T	1	U
TRAFFIC SIGNAL STANDARD, TYPE T	4	U
TRAFFIC SIGNAL ASSEMBLY, TYPE 20M-2	4	U
TRAFFIC SIGNAL ASSEMBLY, TYPE C-1	2	U
PEDESTRIAN SIGNAL ASSEMBLY, TYPE W-1	7	U
PEDESTAL ASSEMBLY, TYPE P-W1-D10	1	U
PEDESTRIAN PUSH BUTTON ASSEMBLY, WITH SIGN R10-3e (L/R)	4	U
VIDEO DETECTION SYSTEM W/ 2 CAMERAS	1	LS



TYPICAL SPACING – ARROW & ONLY
N.T.S.



TYPICAL STRIPING FOR CROSSWALK ZONE
N.T.S.



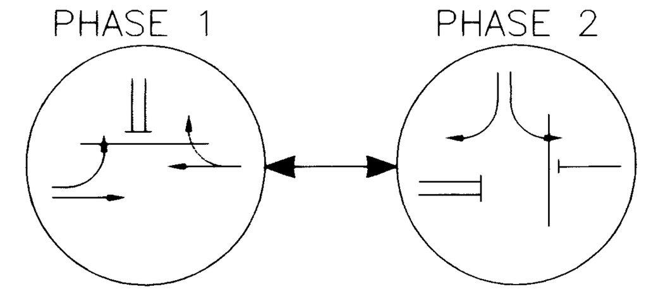
PEDESTAL SIGNAL ASSEMBLY DETAILS
WITH TBJ-6 BASE AND SPF FOUNDATION
N.T.S.

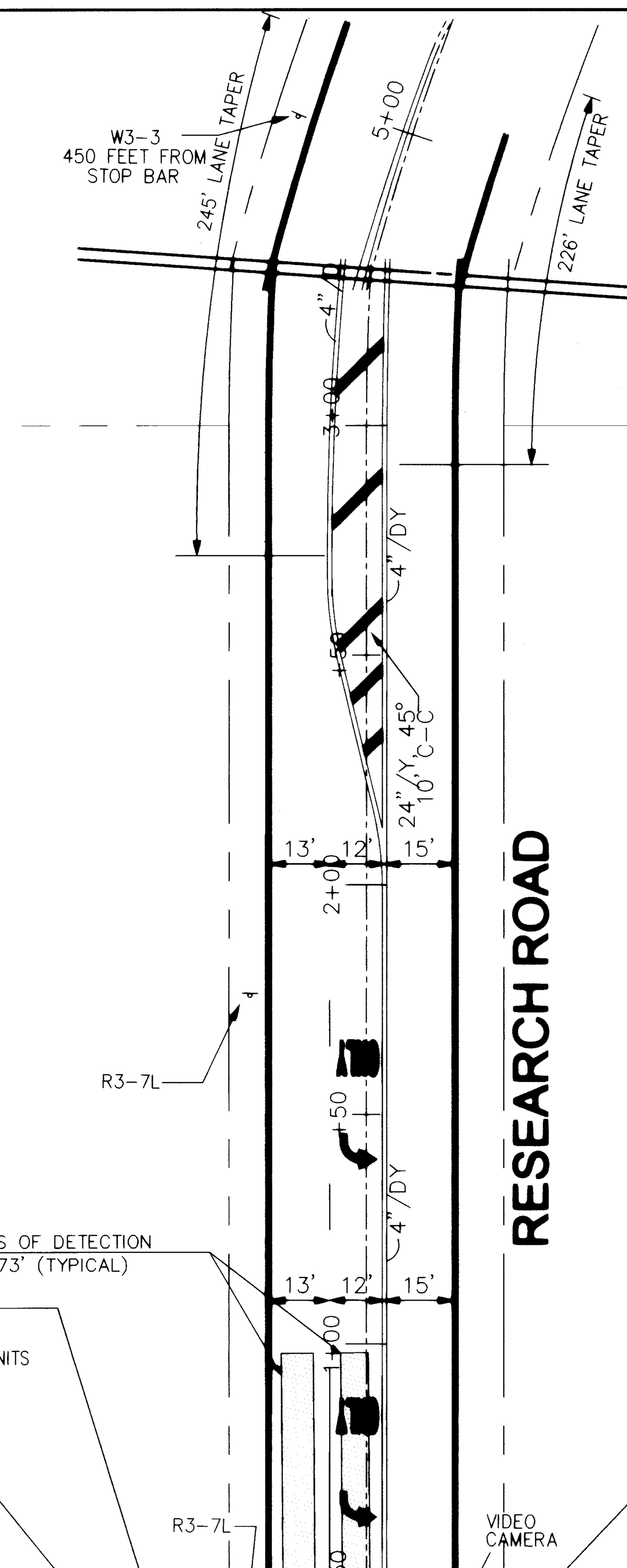
GENERAL NOTES

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
2. ALL PAVEMENT MARKINGS SHOWN ON THIS PLAN ARE CONSIDERED "TEMPORARY" AND SHALL BE APPLIED USING LATEX PAINT.
3. THE COST FOR R10-3e SIGNS SHALL BE INCLUDED IN THE PRICE BID FOR THE ITEM "PEDESTRIAN PUSH BUTTON ASSEMBLY".
4. SEE TRAFFIC SIGNAL UNDERGROUND PLAN FOR APPROXIMATE UNDERGROUND UTILITY LOCATIONS.
5. EXISTING STRIPING THAT DOES NOT CONFORM TO THIS PLAN IS TO BE REMOVED BY A METHOD THAT DOES NOT DAMAGE THE ROADWAY SURFACE.
6. PERMANENT SIGNS ARE TO BE MOUNTED ON SQUARE TUBE SUPPORTS OF THE "TELESPAR SYSTEM" BY THE UNISTRUT CORPORATION AND ONLY TYPE III BREAKAWAY UNITS SHALL BE USED. (SEE DETAIL.)
7. SIGN FACINGS SHALL BE "WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING FOR VISUAL IMPACT PERFORMANCE" MADE WITH 3M BRAND SCOTCHLITE PRISMATIC LENS REFLECTIVE SHEETING (DIAMOND GRADE).
8. ALL VEHICLE & PEDESTRIAN INDICATIONS SHALL BE 'LED' LAMPS. ALL PEDESTRIAN INDICATIONS SHALL BE "PEDESTRIAN COUNTDOWN" UNITS (SEE SPECIFICATIONS).
9. THE ITEM "CONTROLLER ASSEMBLY, 8 PHASE W/ITB, P-CABINET" IS TO INCLUDE AN UNINTERRUPTABLE POWER SOURCE AND A RED L.E.D. BATTERY BACK-UP INDICATOR LIGHT (SEE SPECIFICATIONS FOR DETAILS).
10. CAMERAS TYPE SB ARE TO BE INCLUDED IN THE PRICE BID FOR THE ITEM "VIDEO DETECTION SYSTEM". (SEE SPECIFICATIONS FOR DETAILS)
11. SIGN W1-7 IS TO BE TEMPORARILY MOUNTED. THIS SIGN WILL BE REMOVED BY OTHERS WHEN THE NORTHBOUND APPROACH IS OPENED TO TRAFFIC.

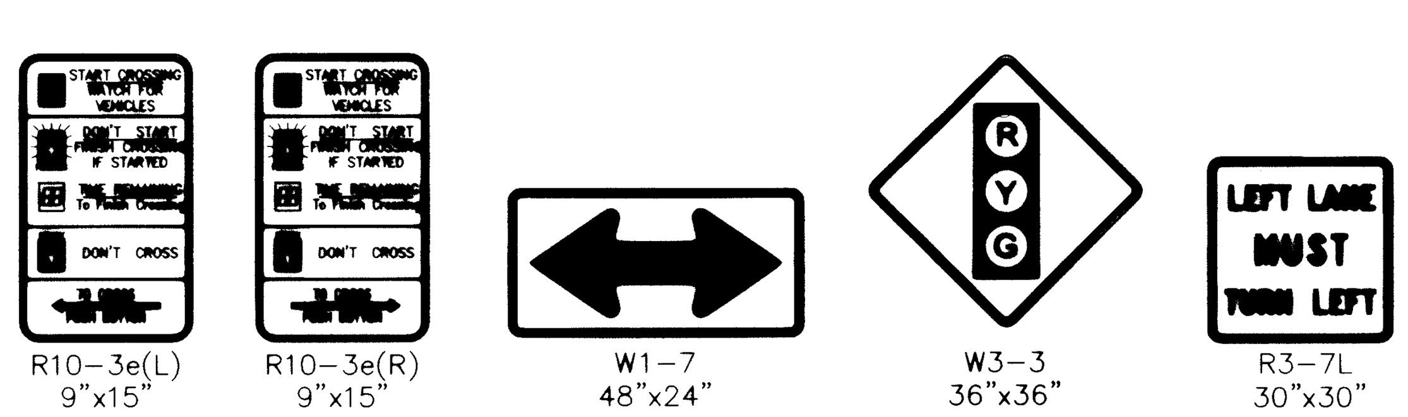
PHASING DIAGRAM

PHASE 1 PHASE 2





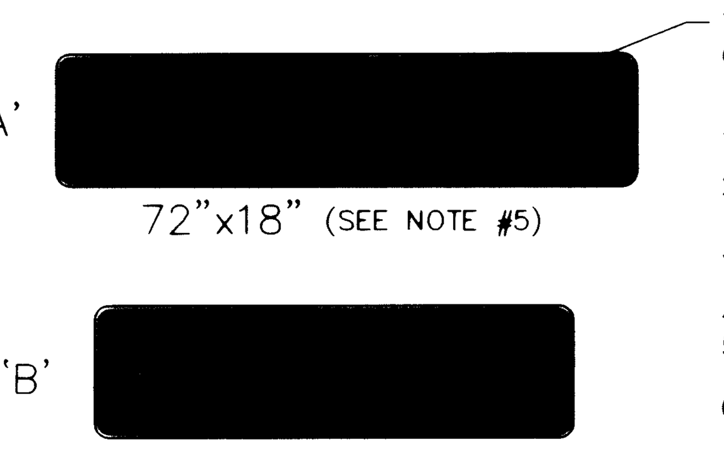
SIGN DETAILS



R10-3e(L) 9"x15" BLACK ON REFLECTIVE WHITE | R10-3e(R) 9"x15" BLACK ON REFLECTIVE WHITE | W1-7 48"x24" | W3-3 36"x36" | R3-7L 30"x30"

(PRESSURE-SENSITIVE MOUNT ABOVE PEDESTRIAN PUSH BUTTONS)

OVERHEAD STREET NAME SIGN DETAILS



'A' 72"x18" (SEE NOTE #5)

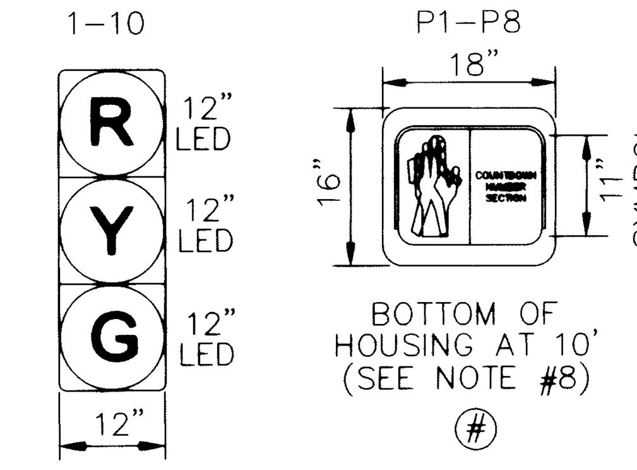
'B' 72"x18" (SEE NOTE #5)

YELLOW ON BLUE COUNTY ROUTE MARKER

NOTES

1. SIGN 'A' AND 'B' ARE TO BE DOUBLE SIDED.
2. THESE SIGNS ARE TO BE MOUNTED ON THE MAST ARMS IN THE POSITIONS SHOWN ON THE PLAN.
3. THE COST FOR THE MOUNTING BRACKETS IS TO BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM 72"x18" SIGNS.
4. SIGNS A & B ARE TO BE WHITE ON GREEN.
5. THE MAXIMUM SIGN LENGTH IS 72". PROPER SIGN PRACTICES SHALL GOVERN.
6. SIGN FACINGS SHALL BE "WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING FOR VISUAL IMPACT PERFORMANCE" MADE WITH 3M BRAND SCOTCHLITE PRISMATIC LENS REFLECTIVE SHEETING (DIAMOND GRADE).

SIGNAL FACES



NOTES:

1. SIGNAL HEADS 7, 8, 10, P5 AND P6 ARE FOR FUTURE USE AND SHALL BE BAGGED.
2. SIGNAL HEADS 9 AND 10 ARE TO BE MOUNTED AT 12 FEET FROM GROUND TO THE BOTTOM OF THE SIGNAL HOUSING.

SOMERSET COUNTY SIGNAL NO. 13007

No.	Revision	Date
1	PER COUNTY COMMENTS	10/20/06
2	PER COUNTY COMMENTS	2/12/07
3	REVISED INTERSECTION GEOMETRY	5/23/07
4	PER COUNTY COMMENTS	8/24/07
5	PER COUNTY COMMENTS	11/16/07
6	PER COUNTY COMMENTS	4/02/08

BMS DRAWN | PND CKD

BRIAN M. STANKUS, P.E., PTOE

NEW JERSEY PROFESSIONAL ENGINEER No.: GE-44625

TRAFFIC SIGNAL LAYOUT PLAN

Orth-Rodgers and Associates, Inc.
TRANSPORTATION * ENGINEERS * PLANNERS
NJ Certificate of Authorization No. 24GA28015700
Executive Offices 18 Campus Blvd, Suite 210 Newtown Square, PA 19073 (610) 355-1932
230 South Broad Street Philadelphia, PA 19102 (215) 735-1932
810 Bear Tavern Road, Suite 307, West Trenton, NJ 08628 (609) 530-0888
301 Lindenwood Drive, Suite 130, Malvern PA 19355 (610) 407-9700
4999 Louise Drive, Mechanicsburg, PA 17055 (717) 691-7700

COUNTY ROUTE 518 (GEORGETOWN-FRANKLIN TURNPIKE) AND RESEARCH ROAD

MONTGOMERY TOWNSHIP SOMERSET COUNTY NEW JERSEY

30' 0' 30' SCALE

DWG: 06029LTS.dwg

DATE: MAY 4, 2006

FILENAME: G:\TRAFFIC\13007_518_&_RESEARCH RD\ORA_CR518-Research_signal.dwg
PLOTTED: Apr 02, 2009 – 11:40am
Orth-Rodgers and Associates, Inc.

Georgetown-Franklin Turnpike (County Route 518) & Research Road
Montgomery Township

TIMING SCHEDULE
WITHOUT PEDESTRIAN ACTUATION

	PHASE	INDICATION # 1,2,9	3,4	5,6	7,8,10	P1 - P2	P3 - P4	P5 - P6	P7 - P8	TIMING MAX 1
A	COUNTY ROUTE 518 EB/WB ROW	G	G	R	R	W	DW	W	DW	31
	PEDESTRIAN CLEARANCE	G	G	R	R	FDW	DW	FDW	DW	19
	CHANGE	Y	Y	R	R	DW	DW	DW	DW	5
	CLEARANCE	R	R	R	R	DW	DW	DW	DW	2
B	RESEARCH ROAD NB/SB ROW	R	R	G	G	DW	DW	DW	DW	7 - 17
	CHANGE	R	R	Y	Y	DW	DW	DW	DW	3
	CLEARANCE	R	R	R	R	DW	DW	DW	DW	3
	EMERGENCY FLASH	**Y**	**Y**	**R**	**R**	**DARK**	**DARK**	**DARK**	**DARK**	-

WITH PEDESTRIAN ACTUATION (80s BACKGROUND CYCLE)

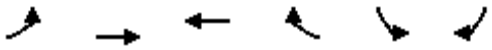
	PHASE	INDICATION # 1,2,9	3,4	5,6	7,8,10	P1 - P2	P3 - P4	P5 - P6	P7 - P8	TIMING MAX 1
A	COUNTY ROUTE 518 EB/WB ROW	G	G	R	R	W	DW	W	DW	27
	PEDESTRIAN CLEARANCE	G	G	R	R	FDW	DW	FDW	DW	19
	CHANGE	Y	Y	R	R	DW	DW	DW	DW	5
	CLEARANCE	R	R	R	R	DW	DW	DW	DW	2
B	RESEARCH ROAD NB/SB ROW	R	R	G	G	DW	W	DW	W	7
	PEDESTRIAN CLEARANCE	R	R	G	G	DW	FDW	DW	FDW	14
	CHANGE	R	R	Y	Y	DW	DW	DW	DW	3
	CLEARANCE	R	R	R	R	DW	DW	DW	DW	3
	EMERGENCY FLASH	**Y**	**Y**	**R**	**R**	**DARK**	**DARK**	**DARK**	**DARK**	-

SIGNAL SEQUENCE NOTES

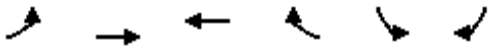
1. Manual Control to be disconnected.
2. Vehicle extension is to be set at 2 seconds.
3. Signal shall rest in Phase A - County Route 518 EB/WB ROW and shall be set to operate in "free float" mode.
4. Phase B - Opossum Road NB/SB ROW may be skipped in the absence of demand.
5. Signal Heads 7, 8 & 10 and Pedestrian Heads P5 & P6 are for future use. They should not be connected to power and should remain bagged.

HOURS OF OPERATION

MAX 1 TO OPERATE AT ALL TIMES



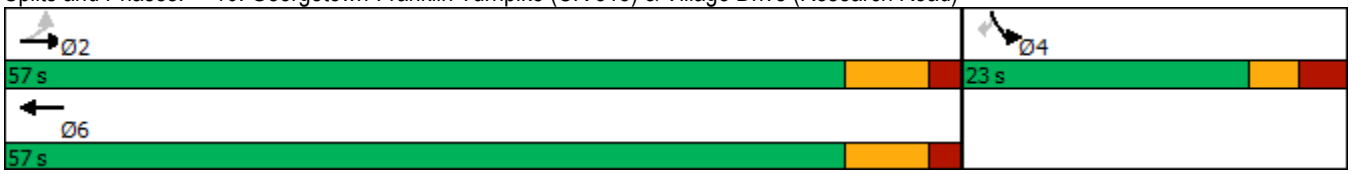
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	18	532	613	16	61	20
Future Volume (vph)	18	532	613	16	61	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	13
Grade (%)		0%	0%		4%	
Storage Length (ft)	145			0	160	0
Storage Lanes	1			0	1	1
Taper Length (ft)	55				40	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.997			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1745	1733	1758	0	1669	1635
Flt Permitted	0.375				0.950	
Satd. Flow (perm)	689	1733	1758	0	1669	1635
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3			21
Link Speed (mph)		45	45		25	
Link Distance (ft)		915	712		568	
Travel Time (s)		13.9	10.8		15.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	6%	4%	10%	6%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	566	669	0	65	21
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	50.0	50.0	50.0		7.0	7.0
Minimum Split (s)	57.0	57.0	57.0		13.0	13.0
Total Split (s)	57.0	57.0	57.0		23.0	23.0
Total Split (%)	71.3%	71.3%	71.3%		28.8%	28.8%
Maximum Green (s)	50.0	50.0	50.0		17.0	17.0
Yellow Time (s)	5.0	5.0	5.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Recall Mode	Min	Min	Min		None	None
Act Effct Green (s)	54.7	54.7	54.7		8.1	8.1
Actuated g/C Ratio	0.76	0.76	0.76		0.11	0.11
v/c Ratio	0.04	0.43	0.50		0.35	0.10
Control Delay	3.8	5.6	6.4		34.4	13.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	3.8	5.6	6.4		34.4	13.9
LOS	A	A	A		C	B

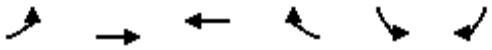


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach Delay		5.6	6.4		29.4	
Approach LOS		A	A		C	
Queue Length 50th (ft)	2	84	108		27	0
Queue Length 95th (ft)	8	163	209		62	19
Internal Link Dist (ft)		835	632		488	
Turn Bay Length (ft)	145				160	
Base Capacity (vph)	525	1320	1339		395	403
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.04	0.43	0.50		0.16	0.05

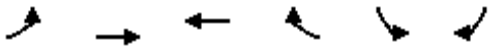
Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 71.8			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 7.5		Intersection LOS: A	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 10: Georgetown-Franklin Turnpike (CR 518) & Village Drive (Research Road)





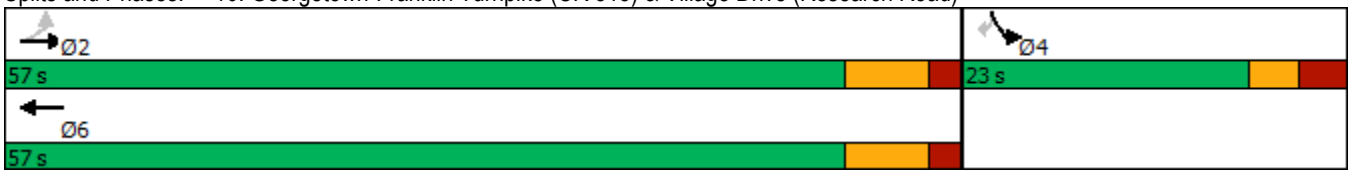
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	38	640	556	42	41	21
Future Volume (vph)	38	640	556	42	41	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	13
Grade (%)		0%	0%		4%	
Storage Length (ft)	145			0	160	0
Storage Lanes	1			0	1	1
Taper Length (ft)	55				40	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.990			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1745	1801	1785	0	1701	1635
Flt Permitted	0.395				0.950	
Satd. Flow (perm)	725	1801	1785	0	1701	1635
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			9			23
Link Speed (mph)		45	45		25	
Link Distance (ft)		915	712		568	
Travel Time (s)		13.9	10.8		15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	4%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	696	650	0	45	23
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	50.0	50.0	50.0		7.0	7.0
Minimum Split (s)	57.0	57.0	57.0		13.0	13.0
Total Split (s)	57.0	57.0	57.0		23.0	23.0
Total Split (%)	71.3%	71.3%	71.3%		28.8%	28.8%
Maximum Green (s)	50.0	50.0	50.0		17.0	17.0
Yellow Time (s)	5.0	5.0	5.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Recall Mode	Min	Min	Min		None	None
Act Effct Green (s)	58.7	58.7	58.7		7.5	7.5
Actuated g/C Ratio	0.82	0.82	0.82		0.11	0.11
v/c Ratio	0.07	0.47	0.44		0.25	0.12
Control Delay	3.5	5.1	4.8		32.7	14.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	3.5	5.1	4.8		32.7	14.1
LOS	A	A	A		C	B

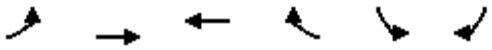


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach Delay		5.0	4.8		26.4	
Approach LOS		A	A		C	
Queue Length 50th (ft)	4	110	97		18	0
Queue Length 95th (ft)	13	202	179		47	20
Internal Link Dist (ft)		835	632		488	
Turn Bay Length (ft)	145				160	
Base Capacity (vph)	597	1483	1471		405	407
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.07	0.47	0.44		0.11	0.06

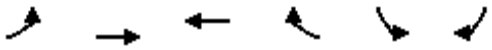
Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 71.3			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 5.9		Intersection LOS: A	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 10: Georgetown-Franklin Turnpike (CR 518) & Village Drive (Research Road)





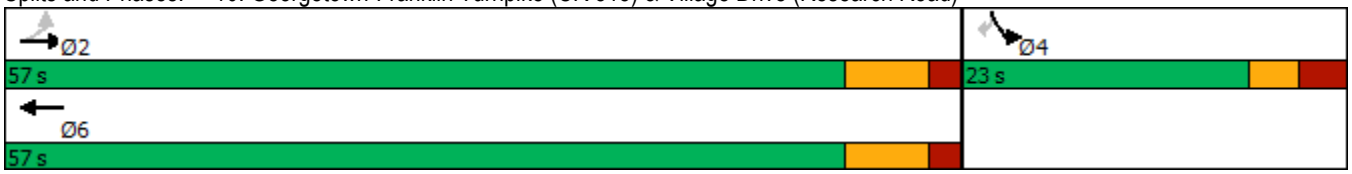
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	27	451	409	43	51	28
Future Volume (vph)	27	451	409	43	51	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	13
Grade (%)		0%	0%		4%	
Storage Length (ft)	145			0	160	0
Storage Lanes	1			0	1	1
Taper Length (ft)	55				40	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.987			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1745	1783	1790	0	1769	1635
Flt Permitted	0.479				0.950	
Satd. Flow (perm)	880	1783	1790	0	1769	1635
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			13			31
Link Speed (mph)		45	45		25	
Link Distance (ft)		915	712		568	
Travel Time (s)		13.9	10.8		15.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	3%	1%	4%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	496	496	0	56	31
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	50.0	50.0	50.0		7.0	7.0
Minimum Split (s)	57.0	57.0	57.0		13.0	13.0
Total Split (s)	57.0	57.0	57.0		23.0	23.0
Total Split (%)	71.3%	71.3%	71.3%		28.8%	28.8%
Maximum Green (s)	50.0	50.0	50.0		17.0	17.0
Yellow Time (s)	5.0	5.0	5.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Recall Mode	Min	Min	Min		None	None
Act Effct Green (s)	54.9	54.9	54.9		7.7	7.7
Actuated g/C Ratio	0.77	0.77	0.77		0.11	0.11
v/c Ratio	0.04	0.36	0.36		0.30	0.15
Control Delay	3.6	4.8	4.7		33.4	13.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	3.6	4.8	4.7		33.4	13.1
LOS	A	A	A		C	B

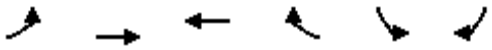


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach Delay		4.7	4.7		26.2	
Approach LOS		A	A		C	
Queue Length 50th (ft)	3	67	65		23	0
Queue Length 95th (ft)	11	126	122		55	23
Internal Link Dist (ft)		835	632		488	
Turn Bay Length (ft)	145				160	
Base Capacity (vph)	674	1367	1375		419	411
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.04	0.36	0.36		0.13	0.08

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 71.6			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 6.4		Intersection LOS: A	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 10: Georgetown-Franklin Turnpike (CR 518) & Village Drive (Research Road)



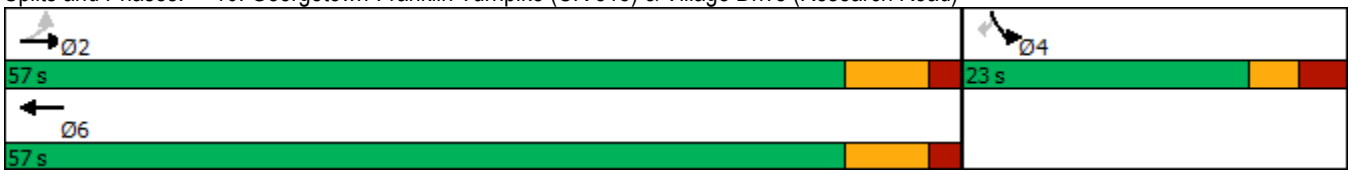


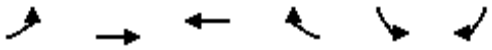
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	555	479	22	66	21
Future Volume (vph)	20	555	479	22	66	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	13
Grade (%)		0%	0%		4%	
Storage Length (ft)	145			0	160	0
Storage Lanes	1			0	1	1
Taper Length (ft)	55				40	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.994			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1745	1733	1751	0	1669	1635
Flt Permitted	0.454				0.950	
Satd. Flow (perm)	834	1733	1751	0	1669	1635
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			5			22
Link Speed (mph)		45	45		25	
Link Distance (ft)		915	712		568	
Travel Time (s)		13.9	10.8		15.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	6%	4%	10%	6%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	590	533	0	70	22
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	50.0	50.0	50.0		7.0	7.0
Minimum Split (s)	57.0	57.0	57.0		13.0	13.0
Total Split (s)	57.0	57.0	57.0		23.0	23.0
Total Split (%)	71.3%	71.3%	71.3%		28.8%	28.8%
Maximum Green (s)	50.0	50.0	50.0		17.0	17.0
Yellow Time (s)	5.0	5.0	5.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Recall Mode	Min	Min	Min		None	None
Act Effct Green (s)	54.4	54.4	54.4		8.2	8.2
Actuated g/C Ratio	0.76	0.76	0.76		0.11	0.11
v/c Ratio	0.03	0.45	0.40		0.37	0.11
Control Delay	3.9	5.9	5.4		34.7	13.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	3.9	5.9	5.4		34.7	13.7
LOS	A	A	A		C	B

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach Delay		5.9	5.4		29.6	
Approach LOS		A	A		C	
Queue Length 50th (ft)	2	91	77		29	0
Queue Length 95th (ft)	9	176	150		65	19
Internal Link Dist (ft)		835	632		488	
Turn Bay Length (ft)	145				160	
Base Capacity (vph)	633	1315	1330		396	404
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.03	0.45	0.40		0.18	0.05

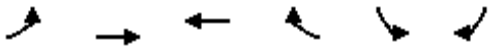
Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 71.7			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 7.4		Intersection LOS: A	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 10: Georgetown-Franklin Turnpike (CR 518) & Village Drive (Research Road)





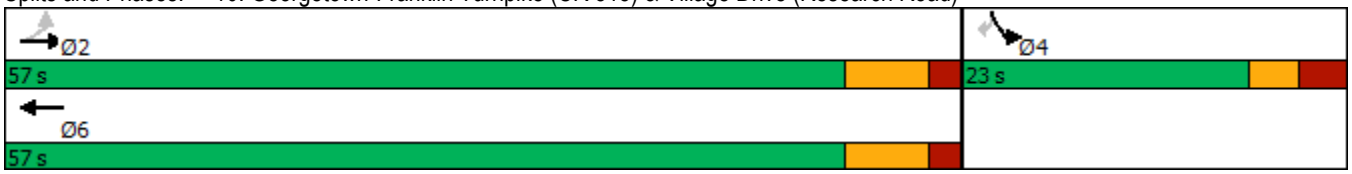
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	39	659	364	48	51	23
Future Volume (vph)	39	659	364	48	51	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	13
Grade (%)		0%	0%		4%	
Storage Length (ft)	145			0	160	0
Storage Lanes	1			0	1	1
Taper Length (ft)	55				40	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.984			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1745	1801	1776	0	1701	1635
Flt Permitted	0.504				0.950	
Satd. Flow (perm)	926	1801	1776	0	1701	1635
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			16			25
Link Speed (mph)		45	45		25	
Link Distance (ft)		915	712		568	
Travel Time (s)		13.9	10.8		15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	4%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	716	448	0	55	25
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	50.0	50.0	50.0		7.0	7.0
Minimum Split (s)	57.0	57.0	57.0		13.0	13.0
Total Split (s)	57.0	57.0	57.0		23.0	23.0
Total Split (%)	71.3%	71.3%	71.3%		28.8%	28.8%
Maximum Green (s)	50.0	50.0	50.0		17.0	17.0
Yellow Time (s)	5.0	5.0	5.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Recall Mode	Min	Min	Min		None	None
Act Effct Green (s)	58.7	58.7	58.7		7.7	7.7
Actuated g/C Ratio	0.82	0.82	0.82		0.11	0.11
v/c Ratio	0.06	0.48	0.31		0.30	0.13
Control Delay	3.4	5.4	3.8		33.5	13.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	3.4	5.4	3.8		33.5	13.7
LOS	A	A	A		C	B

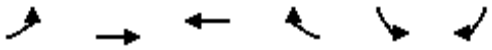


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach Delay		5.3	3.8		27.3	
Approach LOS		A	A		C	
Queue Length 50th (ft)	4	116	56		23	0
Queue Length 95th (ft)	14	220	108		54	20
Internal Link Dist (ft)		835	632		488	
Turn Bay Length (ft)	145				160	
Base Capacity (vph)	760	1479	1461		404	407
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.06	0.48	0.31		0.14	0.06

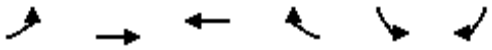
Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 71.5			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 10: Georgetown-Franklin Turnpike (CR 518) & Village Drive (Research Road)





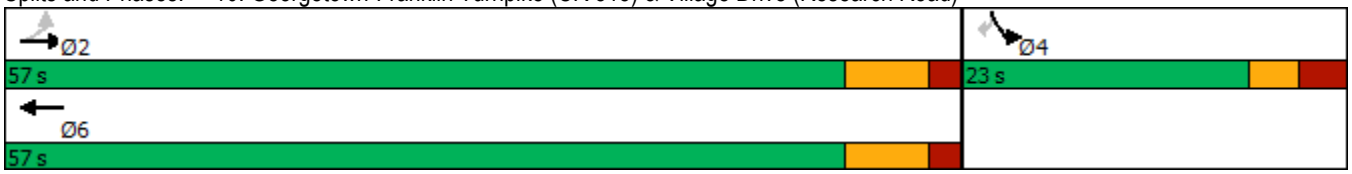
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	29	494	207	51	61	30
Future Volume (vph)	29	494	207	51	61	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	13
Grade (%)		0%	0%		4%	
Storage Length (ft)	145			0	160	0
Storage Lanes	1			0	1	1
Taper Length (ft)	55				40	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1745	1783	1759	0	1769	1635
Flt Permitted	0.586				0.950	
Satd. Flow (perm)	1076	1783	1759	0	1769	1635
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			30			33
Link Speed (mph)		45	45		25	
Link Distance (ft)		915	712		568	
Travel Time (s)		13.9	10.8		15.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	3%	1%	4%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	543	283	0	67	33
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	50.0	50.0	50.0		7.0	7.0
Minimum Split (s)	57.0	57.0	57.0		13.0	13.0
Total Split (s)	57.0	57.0	57.0		23.0	23.0
Total Split (%)	71.3%	71.3%	71.3%		28.8%	28.8%
Maximum Green (s)	50.0	50.0	50.0		17.0	17.0
Yellow Time (s)	5.0	5.0	5.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Recall Mode	Min	Min	Min		None	None
Act Effct Green (s)	54.4	54.4	54.4		8.0	8.0
Actuated g/C Ratio	0.76	0.76	0.76		0.11	0.11
v/c Ratio	0.04	0.40	0.21		0.34	0.16
Control Delay	3.7	5.3	3.6		34.0	12.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	3.7	5.3	3.6		34.0	12.7
LOS	A	A	A		C	B

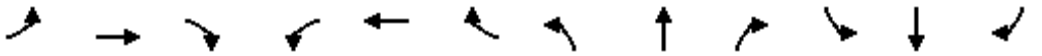


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach Delay		5.2	3.6		26.9	
Approach LOS		A	A		C	
Queue Length 50th (ft)	3	78	29		28	0
Queue Length 95th (ft)	11	149	62		63	23
Internal Link Dist (ft)		835	632		488	
Turn Bay Length (ft)	145				160	
Base Capacity (vph)	819	1357	1347		421	414
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.04	0.40	0.21		0.16	0.08

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 71.4			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 7.0		Intersection LOS: A	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 10: Georgetown-Franklin Turnpike (CR 518) & Village Drive (Research Road)



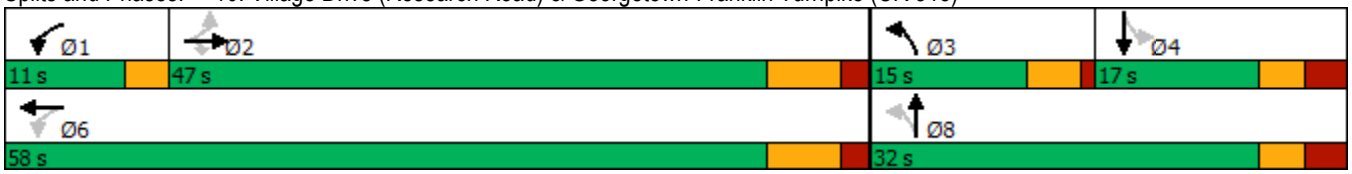


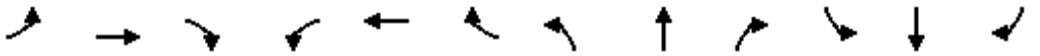
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	555	47	53	479	16	187	0	26	61	0	20
Future Volume (vph)	18	555	47	53	479	16	187	0	26	61	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	11	12	12	12	12	12	13
Grade (%)		0%			0%			0%			4%	
Storage Length (ft)	145		245	0		0	0		0	160		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	55			25			25			40		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	1733	1615	1805	1754	0	1805	1615	0	1669	1583	0
Flt Permitted	0.456			0.237			0.455			0.739		
Satd. Flow (perm)	838	1733	1615	450	1754	0	864	1615	0	1298	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			127		3			341			335	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		915			712			325			568	
Travel Time (s)		13.9			10.8			8.9			15.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	6%	0%	0%	4%	10%	0%	0%	0%	6%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	590	50	56	527	0	199	28	0	65	21	0
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	1.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0	4.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	47.0	47.0	47.0	11.0	58.0		15.0	32.0		17.0	17.0	
Total Split (%)	52.2%	52.2%	52.2%	12.2%	64.4%		16.7%	35.6%		18.9%	18.9%	
Maximum Green (s)	40.0	40.0	40.0	8.0	51.0		10.5	26.0		11.0	11.0	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0		3.5	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0		1.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	3.0	7.0		4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	3.0	2.0		3.0	3.0		2.0	2.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Act Effct Green (s)	32.3	32.3	32.3	41.8	37.6		22.2	20.6		9.5	9.5	
Actuated g/C Ratio	0.45	0.45	0.45	0.58	0.52		0.31	0.29		0.13	0.13	
v/c Ratio	0.05	0.76	0.06	0.14	0.57		0.49	0.04		0.38	0.04	
Control Delay	14.8	26.7	0.1	8.1	15.1		25.8	0.1		40.9	0.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.8	26.7	0.1	8.1	15.1		25.8	0.1		40.9	0.1	
LOS	B	C	A	A	B		C	A		D	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		24.3			14.4			22.6			30.9	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	5	250	0	11	159		70	0		29	0	
Queue Length 95th (ft)	19	413	0	26	259		148	0		76	0	
Internal Link Dist (ft)		835			632			245			488	
Turn Bay Length (ft)	145		245							160		
Base Capacity (vph)	494	1022	1004	421	1294		415	829		210	537	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.58	0.05	0.13	0.41		0.48	0.03		0.31	0.04	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 71.9			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 20.7		Intersection LOS: C	
Intersection Capacity Utilization 66.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 10: Village Drive (Research Road) & Georgetown-Franklin Turnpike (CR 518)





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	659	160	179	364	42	359	0	101	41	0	21
Future Volume (vph)	38	659	160	179	364	42	359	0	101	41	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	11	12	12	12	12	12	13
Grade (%)		0%			0%			0%			4%	
Storage Length (ft)	145		245	0		0	0		0	160		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	55			25			25			40		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.984			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	1801	1615	1805	1775	0	1805	1615	0	1701	1583	0
Flt Permitted	0.507			0.120			0.426			0.816		
Satd. Flow (perm)	931	1801	1615	228	1775	0	809	1615	0	1461	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			174		11			290			379	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		915			712			325			568	
Travel Time (s)		13.9			10.8			8.9			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	4%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	716	174	195	442	0	390	110	0	45	23	0
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	1.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0	4.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	47.0	47.0	47.0	11.0	58.0		15.0	32.0		17.0	17.0	
Total Split (%)	52.2%	52.2%	52.2%	12.2%	64.4%		16.7%	35.6%		18.9%	18.9%	
Maximum Green (s)	40.0	40.0	40.0	8.0	51.0		10.5	26.0		11.0	11.0	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0		3.5	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0		1.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	3.0	7.0		4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	3.0	2.0		3.0	3.0		2.0	2.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Act Effct Green (s)	33.3	33.3	33.3	48.6	44.4		19.0	17.4		9.2	9.2	
Actuated g/C Ratio	0.44	0.44	0.44	0.64	0.59		0.25	0.23		0.12	0.12	
v/c Ratio	0.10	0.90	0.21	0.62	0.42		1.12	0.18		0.25	0.04	
Control Delay	14.7	37.1	3.3	19.7	10.7		113.1	0.7		39.3	0.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.7	37.1	3.3	19.7	10.7		113.1	0.7		39.3	0.1	
LOS	B	D	A	B	B		F	A		D	A	

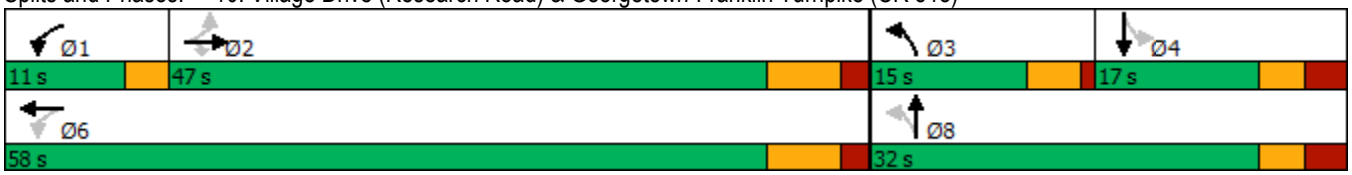
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		29.8			13.5			88.4			26.1	
Approach LOS		C			B			F			C	
Queue Length 50th (ft)	12	339	0	40	119		~225	0		24	0	
Queue Length 95th (ft)	33	#591	35	#125	201		#424	0		57	0	
Internal Link Dist (ft)		835			632			245			488	
Turn Bay Length (ft)	145		245							160		
Base Capacity (vph)	519	1004	977	322	1265		349	770		223	563	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.71	0.18	0.61	0.35		1.12	0.14		0.20	0.04	

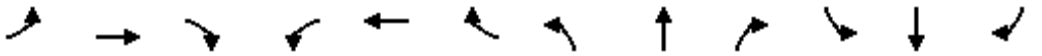
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 75.5			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay: 38.5		Intersection LOS: D	
Intersection Capacity Utilization 85.3%		ICU Level of Service E	
Analysis Period (min) 15			

~ 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: Village Drive (Research Road) & Georgetown-Franklin Turnpike (CR 518)





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	494	192	212	207	43	371	0	99	51	0	28
Future Volume (vph)	27	494	192	212	207	43	371	0	99	51	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	11	12	12	12	12	12	13
Grade (%)		0%			0%			0%			4%	
Storage Length (ft)	145		245	0		0	0		0	160		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	55			25			25			40		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.974			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	1783	1615	1805	1762	0	1805	1615	0	1769	1583	0
Flt Permitted	0.591			0.207			0.441			0.687		
Satd. Flow (perm)	1085	1783	1615	393	1762	0	838	1615	0	1279	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			211		19			366			550	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		915			712			325			568	
Travel Time (s)		13.9			10.8			8.9			15.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	3%	0%	0%	1%	4%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	543	211	233	274	0	408	109	0	56	31	0
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	1.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0	4.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	47.0	47.0	47.0	11.0	58.0		15.0	32.0		17.0	17.0	
Total Split (%)	52.2%	52.2%	52.2%	12.2%	64.4%		16.7%	35.6%		18.9%	18.9%	
Maximum Green (s)	40.0	40.0	40.0	8.0	51.0		10.5	26.0		11.0	11.0	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0		3.5	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0		1.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	3.0	7.0		4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	3.0	2.0		3.0	3.0		2.0	2.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Act Effct Green (s)	26.0	26.0	26.0	41.4	37.2		22.2	20.7		9.2	9.2	
Actuated g/C Ratio	0.36	0.36	0.36	0.58	0.52		0.31	0.29		0.13	0.13	
v/c Ratio	0.08	0.84	0.29	0.60	0.30		1.00	0.15		0.34	0.05	
Control Delay	15.6	34.0	3.6	15.0	10.4		71.2	0.4		39.7	0.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.6	34.0	3.6	15.0	10.4		71.2	0.4		39.7	0.1	
LOS	B	C	A	B	B		E	A		D	A	

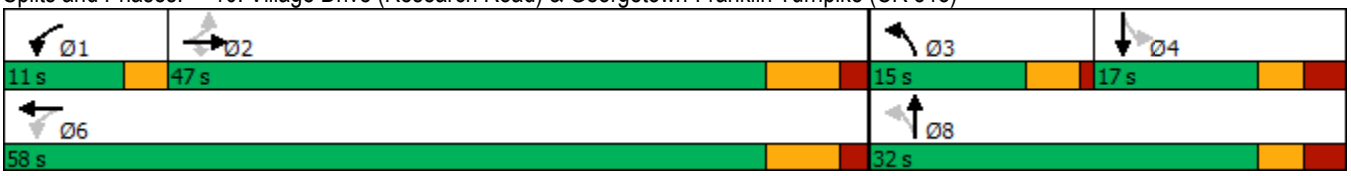
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		25.1			12.6			56.3			25.6	
Approach LOS		C			B			E			C	
Queue Length 50th (ft)	9	222	0	48	62		157	0		24	0	
Queue Length 95th (ft)	26	358	38	89	112		#444	0		68	0	
Internal Link Dist (ft)		835			632			245			488	
Turn Bay Length (ft)	145		245							160		
Base Capacity (vph)	641	1053	1041	394	1285		410	845		207	718	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.52	0.20	0.59	0.21		1.00	0.13		0.27	0.04	

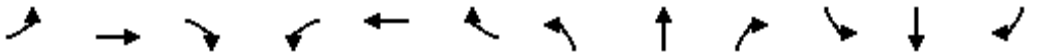
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 71.6			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 30.3		Intersection LOS: C	
Intersection Capacity Utilization 79.1%		ICU Level of Service D	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 10: Village Drive (Research Road) & Georgetown-Franklin Turnpike (CR 518)



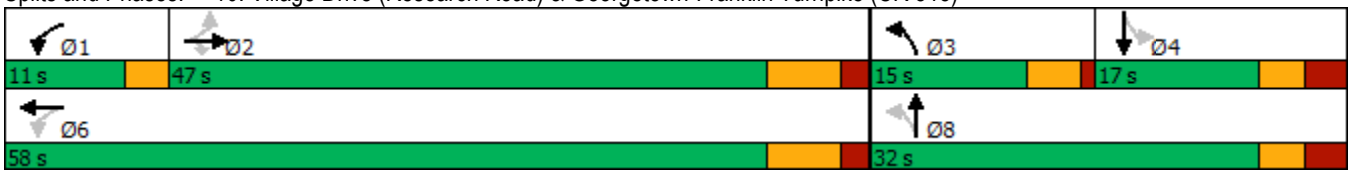


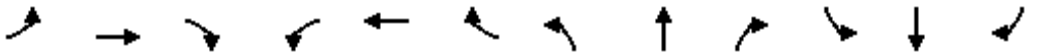
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	555	47	53	479	20	187	2	26	66	0	21
Future Volume (vph)	20	555	47	53	479	20	187	2	26	66	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	11	12	12	12	12	12	13
Grade (%)		0%			0%			0%			4%	
Storage Length (ft)	145		245	0		0	0		0	160		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	55			25			25			40		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.994			0.860			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	1733	1615	1805	1751	0	1805	1634	0	1669	1583	0
Flt Permitted	0.452			0.236			0.457			0.738		
Satd. Flow (perm)	830	1733	1615	448	1751	0	868	1634	0	1296	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			127		4			28			335	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		915			712			325			568	
Travel Time (s)		13.9			10.8			8.9			15.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	6%	0%	0%	4%	10%	0%	0%	0%	6%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	590	50	56	531	0	199	30	0	70	22	0
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	1.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0	4.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	47.0	47.0	47.0	11.0	58.0		15.0	32.0		17.0	17.0	
Total Split (%)	52.2%	52.2%	52.2%	12.2%	64.4%		16.7%	35.6%		18.9%	18.9%	
Maximum Green (s)	40.0	40.0	40.0	8.0	51.0		10.5	26.0		11.0	11.0	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0		3.5	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0		1.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	3.0	7.0		4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	3.0	2.0		3.0	3.0		2.0	2.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Act Effct Green (s)	32.3	32.3	32.3	41.8	37.6		22.2	20.6		9.6	9.6	
Actuated g/C Ratio	0.45	0.45	0.45	0.58	0.52		0.31	0.29		0.13	0.13	
v/c Ratio	0.06	0.76	0.06	0.14	0.58		0.49	0.06		0.40	0.04	
Control Delay	14.9	26.7	0.1	8.2	15.3		25.8	10.0		41.7	0.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.9	26.7	0.1	8.2	15.3		25.8	10.0		41.7	0.1	
LOS	B	C	A	A	B		C	A		D	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		24.4			14.6			23.7			31.8	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	6	252	0	11	162		71	1		32	0	
Queue Length 95th (ft)	21	413	0	26	262		148	21		80	0	
Internal Link Dist (ft)		835			632			245			488	
Turn Bay Length (ft)	145		245							160		
Base Capacity (vph)	488	1020	1003	420	1290		416	642		209	537	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.58	0.05	0.13	0.41		0.48	0.05		0.33	0.04	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 72			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 21.0		Intersection LOS: C	
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 10: Village Drive (Research Road) & Georgetown-Franklin Turnpike (CR 518)





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	659	160	179	364	46	359	2	101	51	0	23
Future Volume (vph)	39	659	160	179	364	46	359	2	101	51	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	11	12	12	12	12	12	13
Grade (%)		0%			0%			0%			4%	
Storage Length (ft)	145		245	0		0	0		0	160		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	55			25			25			40		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.983			0.853			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	1801	1615	1805	1774	0	1805	1621	0	1701	1583	0
Flt Permitted	0.505			0.118			0.451			0.685		
Satd. Flow (perm)	928	1801	1615	224	1774	0	857	1621	0	1226	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			174		12			110			380	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		915			712			325			568	
Travel Time (s)		13.9			10.8			8.9			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	4%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	716	174	195	446	0	390	112	0	55	25	0
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	1.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0	4.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	47.0	47.0	47.0	11.0	58.0		15.0	32.0		17.0	17.0	
Total Split (%)	52.2%	52.2%	52.2%	12.2%	64.4%		16.7%	35.6%		18.9%	18.9%	
Maximum Green (s)	40.0	40.0	40.0	8.0	51.0		10.5	26.0		11.0	11.0	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0		3.5	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0		1.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	3.0	7.0		4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	3.0	2.0		3.0	3.0		2.0	2.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Act Effct Green (s)	34.8	34.8	34.8	50.0	45.9		22.3	20.8		9.4	9.4	
Actuated g/C Ratio	0.43	0.43	0.43	0.62	0.57		0.28	0.26		0.12	0.12	
v/c Ratio	0.10	0.92	0.22	0.66	0.44		1.06	0.22		0.38	0.05	
Control Delay	15.2	40.6	3.3	22.5	11.8		93.9	6.7		44.9	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.2	40.6	3.3	22.5	11.8		93.9	6.7		44.9	0.2	
LOS	B	D	A	C	B		F	A		D	A	

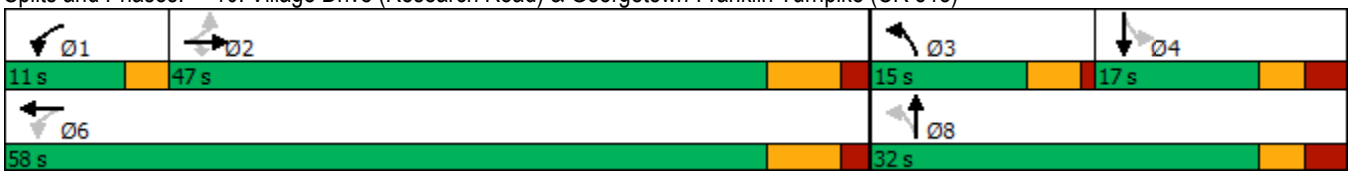
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		32.5			15.1			74.5			31.0	
Approach LOS		C			B			E			C	
Queue Length 50th (ft)	13	344	0	40	123		~217	1		29	0	
Queue Length 95th (ft)	34	#591	35	#128	202		#418	38		67	0	
Internal Link Dist (ft)		835			632			245			488	
Turn Bay Length (ft)	145		245							160		
Base Capacity (vph)	482	936	922	304	1179		368	620		174	552	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.76	0.19	0.64	0.38		1.06	0.18		0.32	0.05	

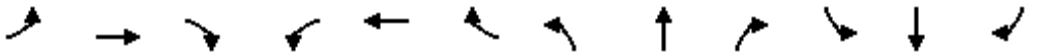
Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 80.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 37.0	Intersection LOS: D
Intersection Capacity Utilization 85.3%	ICU Level of Service E
Analysis Period (min) 15	

~ 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: Village Drive (Research Road) & Georgetown-Franklin Turnpike (CR 518)





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	494	192	212	207	48	371	3	99	61	0	30
Future Volume (vph)	29	494	192	212	207	48	371	3	99	61	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	11	12	12	12	12	12	13
Grade (%)		0%			0%			0%			4%	
Storage Length (ft)	145		245	0		0	0		0	160		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	55			25			25			40		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.972			0.854			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	1783	1615	1805	1758	0	1805	1623	0	1769	1583	0
Flt Permitted	0.588			0.206			0.448			0.685		
Satd. Flow (perm)	1080	1783	1615	391	1758	0	851	1623	0	1275	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			211		22			109			550	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		915			712			325			568	
Travel Time (s)		13.9			10.8			8.9			15.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	3%	0%	0%	1%	4%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	543	211	233	280	0	408	112	0	67	33	0
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		3	8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	1.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0	4.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	47.0	47.0	47.0	11.0	58.0		15.0	32.0		17.0	17.0	
Total Split (%)	52.2%	52.2%	52.2%	12.2%	64.4%		16.7%	35.6%		18.9%	18.9%	
Maximum Green (s)	40.0	40.0	40.0	8.0	51.0		10.5	26.0		11.0	11.0	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0		3.5	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0		1.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	3.0	7.0		4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	3.0	2.0		3.0	3.0		2.0	2.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Act Effct Green (s)	26.1	26.1	26.1	41.6	37.3		22.5	20.9		9.5	9.5	
Actuated g/C Ratio	0.36	0.36	0.36	0.58	0.52		0.31	0.29		0.13	0.13	
v/c Ratio	0.08	0.84	0.29	0.61	0.30		0.99	0.20		0.40	0.05	
Control Delay	15.8	34.2	3.6	15.3	10.5		69.1	6.5		41.3	0.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.8	34.2	3.6	15.3	10.5		69.1	6.5		41.3	0.1	
LOS	B	C	A	B	B		E	A		D	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		25.3			12.7			55.6			27.7	
Approach LOS		C			B			E			C	
Queue Length 50th (ft)	10	226	0	49	64		158	1		29	0	
Queue Length 95th (ft)	27	358	38	89	114		#443	39		78	0	
Internal Link Dist (ft)		835			632			245			488	
Turn Bay Length (ft)	145		245							160		
Base Capacity (vph)	635	1048	1036	391	1276		413	687		206	717	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.52	0.20	0.60	0.22		0.99	0.16		0.33	0.05	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 72			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 30.3		Intersection LOS: C	
Intersection Capacity Utilization 79.1%		ICU Level of Service D	
Analysis Period (min) 15			

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

Splits and Phases: 10: Village Drive (Research Road) & Georgetown-Franklin Turnpike (CR 518)