TRAFFIC IMPACT STUDY

For

AMS Equities, LLC
Proposed Silk Lofts II Redevelopment

Property Located at:

157-163 Avenue E
Block 234, Lot 8.01

132, 134-136, 138, 140 Avenue E
Block 458 – Lot 1.02
Block 467 – Lot 23

City of Bayonne, Hudson County, NJ

Prepared by:

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2356-99-001T

CWP

INTRODUCTION

It is proposed to construct one six (6) story mixed-use development (Subdistrict 'A') and one eighteen (18) story mixed-use development (Subdistrict 'B') on two (2) parcels of land currently developed with two (2) parking lots and residential dwellings. Subdistrict 'A' is located on the west side of Avenue E between its intersections with East 18th Street and East 17th Street and Subdistrict 'B' is located along the East side of Avenue E across from its intersection with East 17th Street in Bayonne, Hudson County, New Jersey, see Figure 1, in Appendix A. The sites are designated as Block 234 – Lot 8.01, Block 458 – Lot 1.02 and Block 467 – Lot 23 on the City of Bayonne Tax Maps.

It is proposed to construct a six (6) story mixed-use building with 36 residential units and an eighteen (18) story mixed-use building with 250 residential units with a total of 3,505 SF of ground floor retail space between the two buildings (The Project). The site is located within the Silk Lofts Redevelopment Plan area. Access to the site is currently provided via one (1) full movement driveway and one signalized driveway along the east side of Avenue E providing access to separate surface parking lots. Additionally, two (2) full movement driveways are provided along the west side of Avenue E providing access to one (1) parking lot. These driveways all provide access to surface parking lots for the existing Silk Lofts building. It should be noted that the existing driveway located on the east side of Avenue E at the north end of the Silk Lofts building will remain as existing. It is proposed to provide access via one (1) full movement driveway along the east side of Avenue E. The existing signalized driveway will be removed. Parking will be provided via automated parking spaces within a parking garage on the bottom floors of the 18-story building. The garage will also provide parking for the existing Silk Lofts building with a total of 389 spaces proposed.

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

- A detailed field inspection was conducted to obtain an inventory of existing roadway geometry, traffic control, and location and geometry of existing driveways and intersections.

- Existing traffic data was collected via manual turning movement (MTM) counts during the weekday AM and PM peak periods at the intersection of Avenue E with East 17th Street, Avenue E with East 18th Street and Avenue E with the existing site driveways.

- Estimates of traffic to be generated by the proposed development were prepared utilizing trip generation data as published by the Institute of Transportation Engineers. Site traffic was then assigned to the adjacent street system based upon the anticipated directional distribution.

- Capacity analyses were conducted for the Existing, No Build, and Build conditions.

- The proposed points of ingress and egress were inspected for adequacy of geometric design, spacing and/or alignment to streets and driveways on the opposite side of the street, relationship to other driveways adjacent to the development, and conformance with accepted design standards.

- The parking layout and supply was assessed based on accepted design standards and demand experienced at similar developments.

EXISTING CONDITIONS

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

Existing Roadway Conditions

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

Avenue E is an urban minor arterial roadway under the jurisdiction of the City of Bayonne. In the vicinity of the site the speed limit is not posted and the roadway provides one travel lane in each direction with a general north/south orientation. On-street parking is permitted along both sides of the roadway with curb and sidewalk provided along both sides of the roadway. Avenue E provides a straight horizontal alignment and a relatively flat vertical alignment. The land uses along Avenue E in the vicinity of The Project are a mix of commercial and residential.

East 18th Street is a local roadway under the jurisdiction of Bayonne. In the vicinity of the site the speed limit is not posted and the roadway provides one travel lane for one-way travel in the westbound direction. Parking is permitted along both sides of the roadway with curb and sidewalk provided along both sides of the roadway. East 18th Street provides a straight horizontal alignment and a relatively flat vertical alignment. The land uses along East 18th Street in the vicinity of The Project are comprised of primarily residential developments.

East 17th Street is a local roadway under the jurisdiction of Bayonne. In the vicinity of the site the speed limit is not posted and the roadway provides one travel lane for one-way travel in the eastbound direction. Parking is permitted along both sides of the roadway with curb and sidewalk provided along both sides of the roadway. East 17th Street provides a straight horizontal alignment and a relatively flat vertical alignment. The land uses along East 17th Street in the vicinity of The Project are comprised of primarily residential developments.

Existing Traffic Volumes

Manual turning movement (MTM) counts were conducted on Thursday, March 1, 2018 between 4:30 and 6:30 PM and on Wednesday, March 14, 2018 between 7:00 and 9:00 AM at the intersections of 18th Street with Avenue E, 17th Street with Avenue E and the site driveways with Avenue E. Review of the collected traffic data reveals that the weekday morning peak street hour (PSH) occurs between 7:45–8:45 AM and the evening PSH occurs between 5:00–6:00 PM.

Note that the 2018 counts were increased to better represent existing 2021 traffic volumes by applying a growth rate of 1% per year obtained from the NJDOT Annual Background Growth Rate Table for a period of three (3) years. This is a conservative approach as updated traffic counts will likely show lower traffic volumes resultant from Covid-19. Figure 2, located in the Appendix, shows the existing peak hour traffic volumes at the study intersections. The traffic volumes were balanced through the network in order to perform a more conservative analysis. All MTM counts are contained in Appendix B.

Existing Capacity Analysis

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

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

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

Table I
Level of Service Criteria
for Signalized Intersections

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

Table II
Level of Service Criteria
for Unsignalized Intersections

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

All capacity analyses were performed utilizing the SYNCHRO Software package. Table III summarizes the existing Levels of Service (LOS) and delay in seconds per vehicle.

Table III
Existing Levels of Service

Intersection	Direction/ Movement		AM PSH	PM PSH
Avenue E and East 17th Street/Site Driveway	EB	LTR	B (14)	B (18)
	WB	LR	A (0)	A (0)
	NB	TR	B (11)	A (9)
	SB	LT	A (10)	B (12)
	Overall		B (11)	B (12)
Avenue E and East 18th Street	NB	LT	a (8)	a (9)
Avenue E and West Site Driveway	EB	LR	c (15)	a (0)
	NB	LT	a (0)	a (0)

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

The following are discussions pertaining to each of the existing intersections analyzed. All capacity analysis calculation worksheets are contained in Appendix C.

Avenue E and East 17th Street/Site Driveway

East 17th Street/Site Driveway intersects Avenue E to form a four leg signalized intersection. The eastbound approach of East 17th Street provides a shared left turn/through/right turn lane. The westbound approach of the site driveway provides a shared left turn/right turn lane. The northbound and southbound approaches of Avenue E provide a shared through/right turn lane and a shared left turn/through lane respectively.

A review of the existing analysis reveals that the intersection operates at overall Levels of Service "B" during the analyzed peak periods. See Table III for the individual movement Levels of Service and delays.

Avenue E and East 18th Street

East 18th Street intersects Avenue E to form an unsignalized T-intersection. The northbound and southbound approaches of Avenue E provide a shared left turn/through lane and a shared through/right turn lane respectively.

A review of the existing analysis reveals that the individual intersection movements operate at Levels of Service "A" during the analyzed peak periods. See Table III for the individual movement Levels of Service and delays.

Avenue E and West Site Driveway

The west site driveways intersect Avenue E to form two unsignalized T-intersections. In order to perform a more conservative analysis the west site driveways were analyzed is if they operated as one full movement driveway. The eastbound approach of the site driveway provides one lane for left and right turns. The northbound and southbound approaches of Avenue E provide a shared left turn/through lane and a shared through/right turn lane respectively.

A review of the existing analysis reveals that the individual intersection movements operate at Levels of Service "C" or better during the analyzed peak periods. See Table III for the individual movement Levels of Service and delays.

FUTURE CONDITIONS

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

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

Future 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. Figure 3, in Appendix A, shows the No Build traffic volumes.

Traffic Generation

Estimates of future traffic volumes were developed utilizing data as published in the Institute of Transportation Engineers (ITE) publication *Trip Generation, 10th Edition* for Land Use Code (LUC) 221 Multifamily Housing (Mid-Rise), LUC 222 – Multifamily Housing (High-Rise) and LUC 820 – Shopping Center.

Table IV
Trip Generation

Land Use	AM PSH			PM PSH		
	In	Out	Total	In	Out	Total
3,505 SF of Retail Space	2	1	3	6	7	13
36 Mid-Rise Residential Units	1	6	7	4	2	6
250 High-Rise Residential Units	6	48	54	34	14	48
Total	**9**	**55**	**64**	**44**	**23**	**67**

It should be noted that both ITE and NJDOT define a "significant" increase in traffic as 100 or more peak hour trips. As shown in Table IV, the subject property will generate less than 70% of this threshold.

Once the magnitude of traffic to be generated by the site is known, it is necessary to assign that traffic to the adjacent street system. The distribution of new traffic to the surrounding roadways is based on the location of primary arterial roadways, major signalized intersections and existing traffic patterns. Located in Appendix A, Figure 4 illustrates the total site generated volumes assigned to the study area network. Figure 5 illustrates the re-routed traffic due to the parking lot/driveway changes. The site generated volumes and the re-routed volumes were added to the No Build traffic volumes to generate the Build traffic volumes, which are shown in Figure 6.

Under future conditions the existing site driveway that is the fourth leg to the intersection of Avenue E with East 17th Street will be removed and relocated at the south end of the site and the intersection of Avenue E and East 17th Street will become a T-Intersection. It should also be noted that the existing traffic volumes utilizing both the west site driveway and the existing site driveway adjacent East 17th Street were re-routed to the new driveway at the south end of the site which will provide access to the new parking area for the existing Silk Lofts building.

Future Capacity Analysis

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

Table V
Future Levels of Service

Intersection	Direction/ Movement		AM PSH		PM PSH	
			No Build	Build	No Build	Build
Avenue E and East 17th Street	EB	LTR	B (14)	B (16)	B (18)	B (14)
	WB	LR	A (0)	-	A (0)	-
	NB	TR	B (11)	A (6)	A (9)	A (6)
	SB	LT	A (10)	A (5)	B (12)	A (8)
	Overall		B (11)	A (7)	B (12)	A (8)
Avenue E and East 18th Street	NB	LT	a (8)	a (8)	a (9)	a (9)
Avenue E and the West Site Driveway	EB	LR	c (16)	-	a (0)	-
	NB	LT	a (0)	-	a (0)	-
Avenue E and the Site Driveway	WB	LR	-	b (14)	-	b (14)
	SB	LT	-	a (8)	-	a (8)

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

Avenue E and East 17th Street

With the addition of the new site traffic and the removal of the site driveway as the fourth leg of the intersection, the intersection will operate with overall Levels of Service "A" during the studied peak hours, improving from the no build Levels of Service. See Table V for the individual movement Levels of Service and delays.

Avenue E and East 18th Street

With the addition of the site traffic, the individual intersection movements will operate with Levels of Service "A" during the studied peak hours. See Table V for the individual movement Levels of Service and delays.

Avenue E and the Site Driveway

The site driveway is proposed to intersect Avenue E to form an unsignalized T-intersection with the site driveway under stop control. The westbound approach of the site driveway will provide one lane for left and right turns. The northbound and southbound approaches of Avenue E will provide a shared through/right turn lane and a shared left turn/through lane respectively.

The individual intersection movements will operate with Levels of Service "B" or better during the studied peak hours. See Table V for the individual movement Levels of Service and delays.

SITE PLAN

Site Access and Circulation

The site plan was reviewed with respect to the site access and on-site circulation design. As noted previously, access to The Project will be provided via one (1) full movement driveway along the east side of Avenue E.

As mentioned previously, automated parking will be provided. Upon arriving, vehicles will enter from Avenue E into a motor court, where the vehicle will be guided into one of four (4) transfer rooms. Each transfer room provides a lift that will deliver the vehicle to its designated parking space. Similarly, upon leaving, the lift will retrieve the vehicle from its parking space, and deliver it to the respective transfer room. The vehicle will then be driven into the motor court where the owner can retrieve it, and exit onto Avenue E. This layout offers sufficient geometry to allow safe and efficient access of the site and appropriately segregates automated parking staging from the public right-of-way.

Parking

The City of Bayonne adopted a redevelopment plan which sets forth a parking requirement of 1 parking space per each new dwelling unit, 3 parking spaces per 1,000 SF of floor area for commercial uses and 25 parking spaces for visitors. This equates to a parking requirement of 286 parking spaces for the proposed 286 residential units, 11 parking spaces for the proposed 3,505 SF of commercial space, 85 parking spaces for the existing Silk Lofts building and the 25 visitor spaces for a total parking requirement of 382 parking spaces whereas 389 spaces are provided.

FINDINGS & CONCLUSIONS

Findings

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

- The proposed 36 mid-rise residential units, 250 high-rise residential units and 3,505 SF of retail space, will generate 9 entering trips and 55 exiting trips during the morning peak hour and 44 entering trips and 23 exiting trips during the evening peak hour.

- Access to the site will be provided via one (1) full movement driveway along the east side of Avenue E. The driveway located on the north side of the Silk Lofts building will remain as existing.

- With the addition of the site generated traffic, the intersection of East 17th Street and Avenue E will operate at overall Level of Service "A" during the peak hours studied, improving from the no build Levels of Service.

- With the addition of the site generated traffic, the individual intersection movements of East 18th Street and Avenue E will operate at Level of Service "A" during the peak hours studied.

- With the addition of the site generated traffic, the intersection of Avenue E and the site driveway will operate at Levels of Service "B" or better during the peak hours studied.

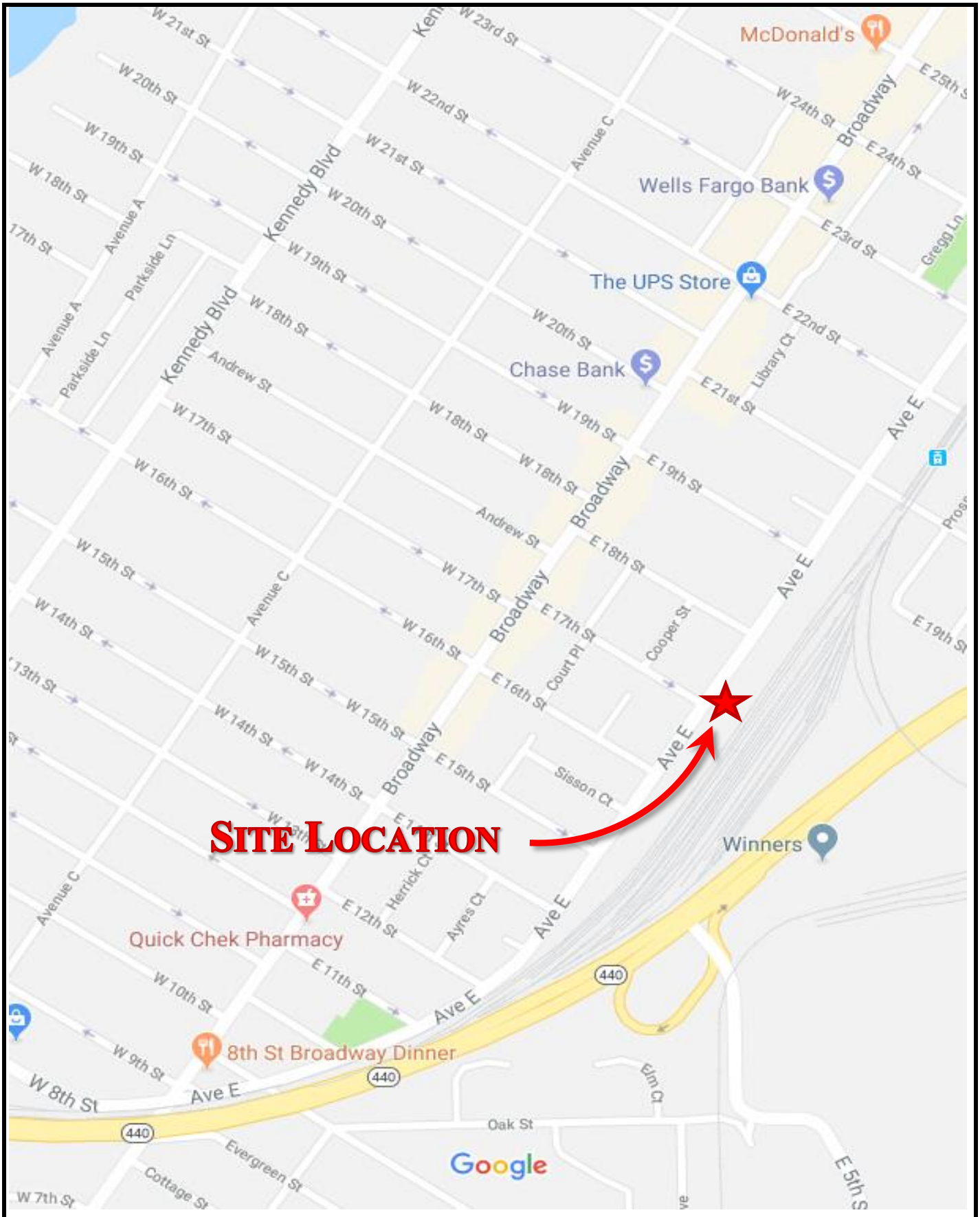
- As proposed, The Project's site driveways and internal circulation have been designed to provide for safe and efficient movement of automobiles.

Conclusions

Based upon our Traffic Impact Study as detailed in the body of this report, it is the professional opinion of Dynamic Traffic, LLC that the adjacent street system of the City of Bayonne will not experience any significant degradation in operating conditions with the construction of The Project. No off-site traffic signalization is warranted based upon the projected traffic volumes generated by the proposed mixed-use building. 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.

Technical Appendix

Appendix A
Traffic Volume Figures



Proposed Silk Lofts II Redevelopment
Traffic Impact Study
2356-99-001T
7/1/2021

Figure 1

Site Location Map

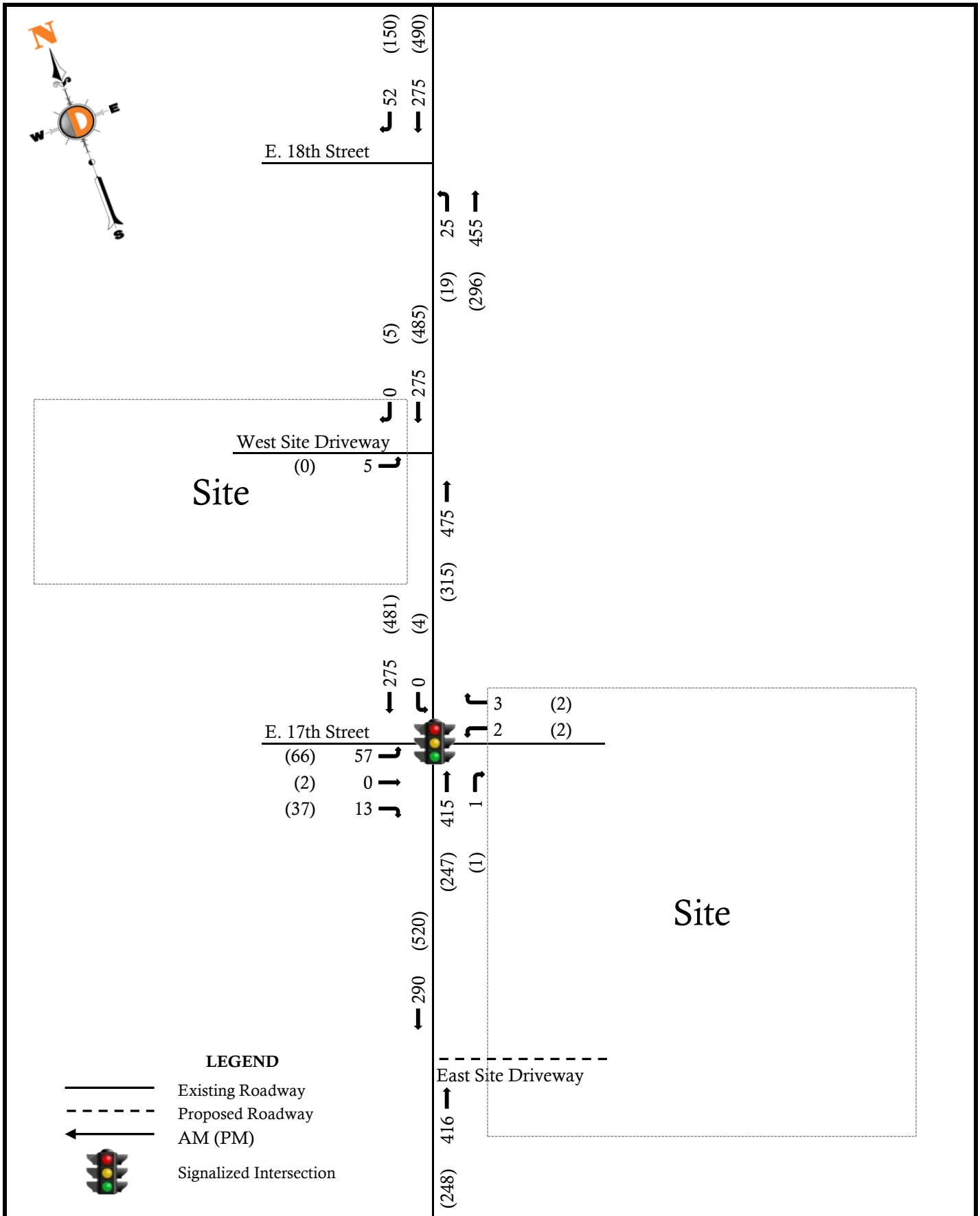


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Figure 2

Existing Traffic Volumes

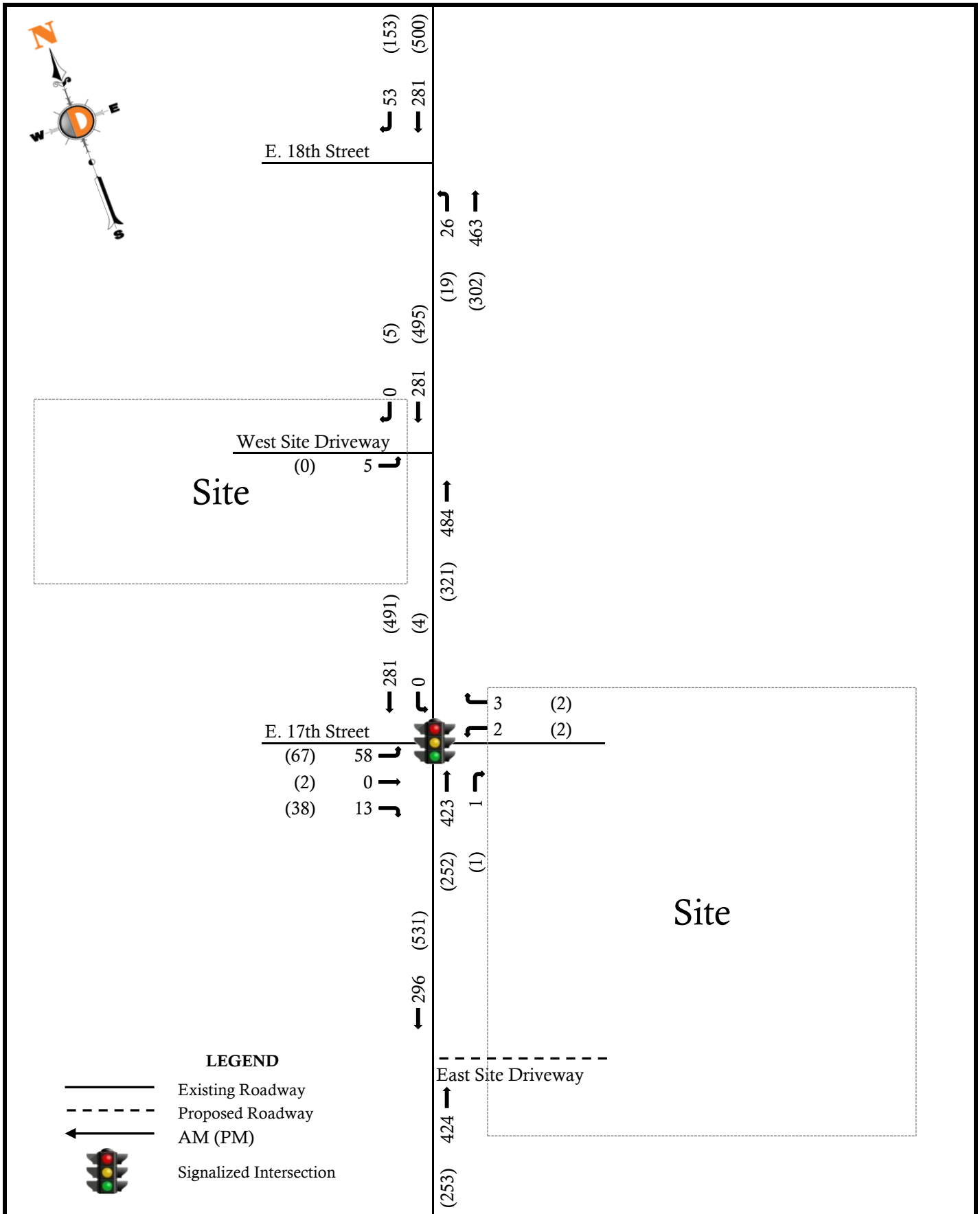

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Figure 3

No Build Traffic Volumes

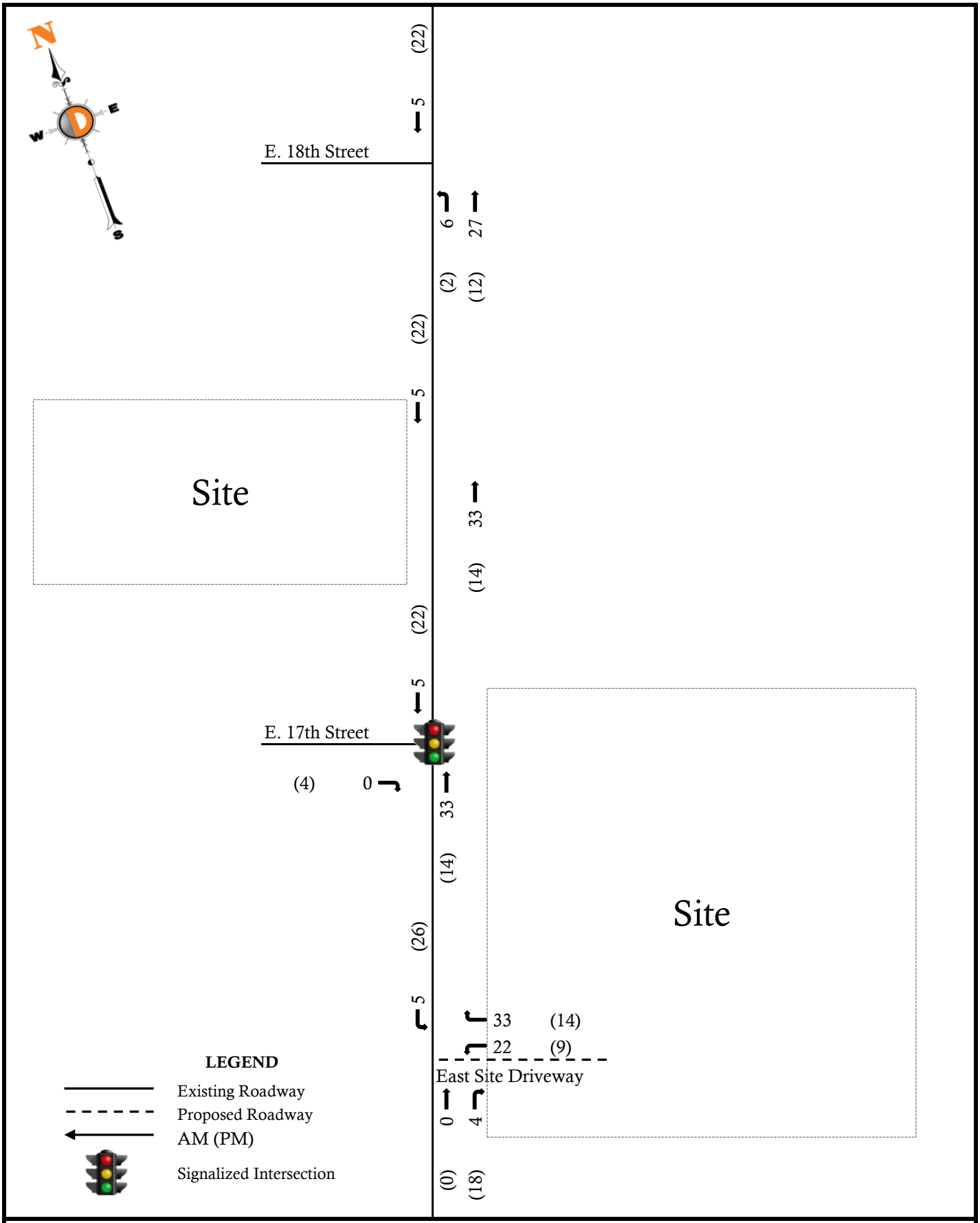

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Figure 4

Site Generated Trips

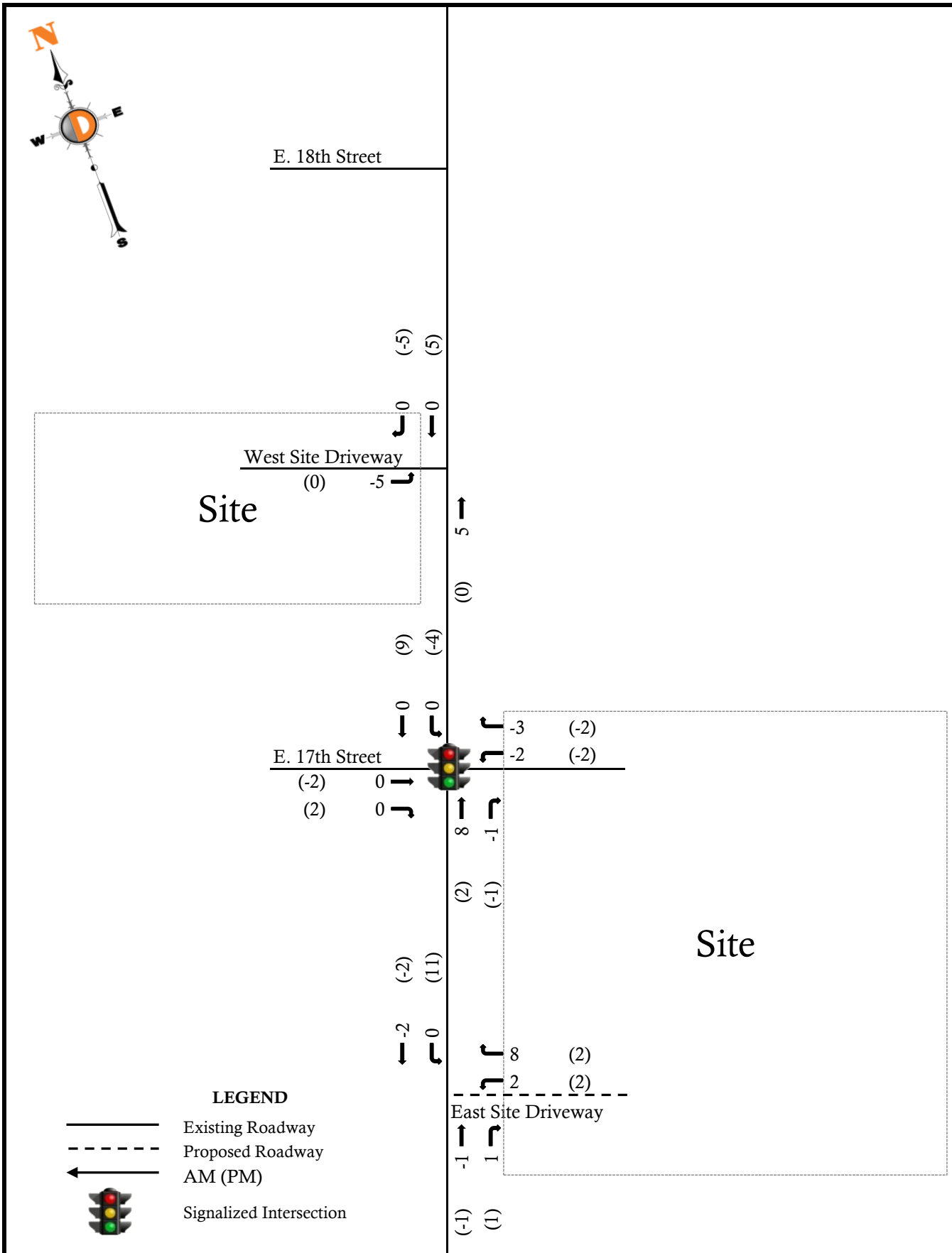

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Figure 5

Re-Routed Trips

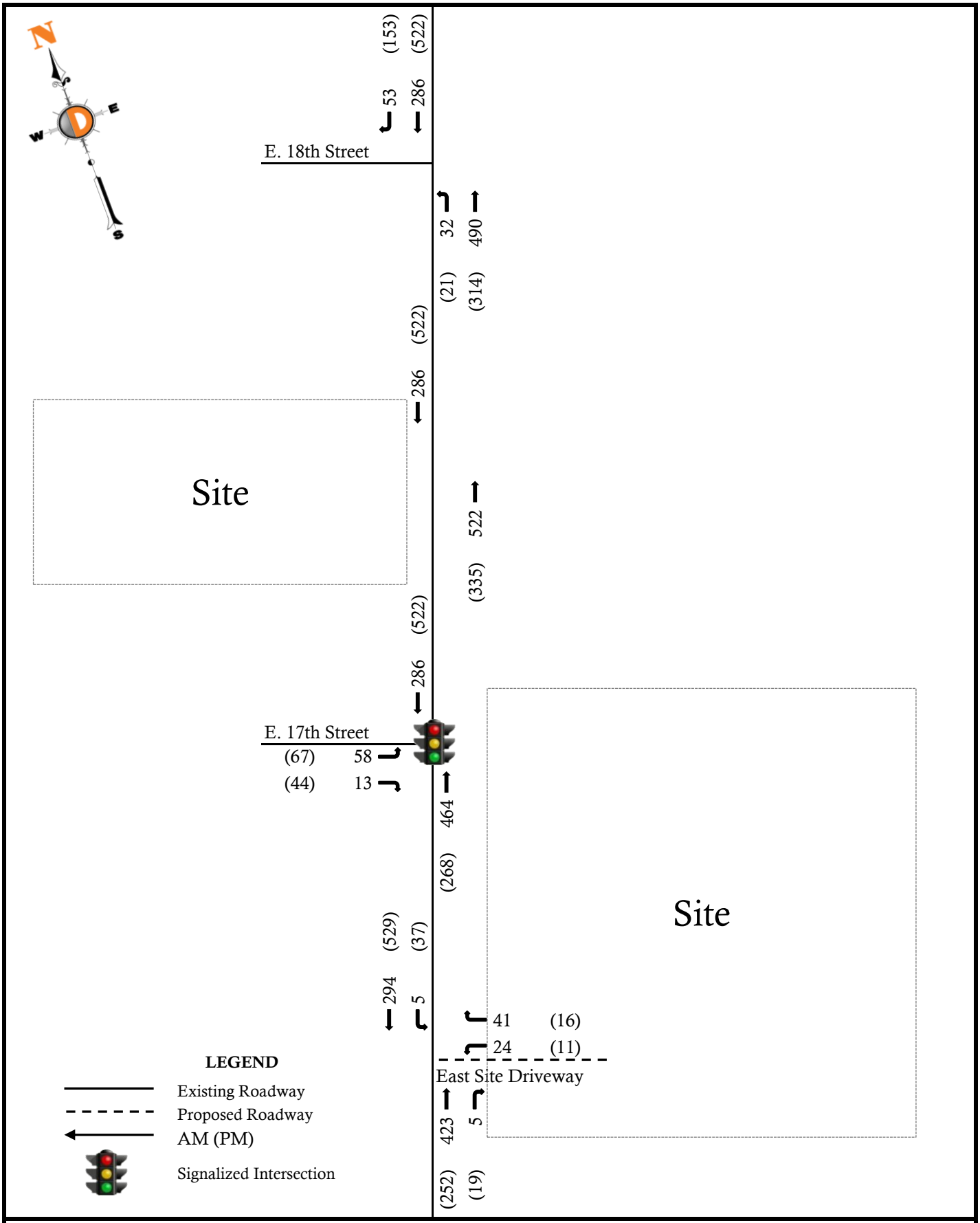

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Figure 6

Build Traffic Volumes

Appendix B
Traffic Counts

Dynamic Traffic, LLC

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

E/W:E 17th Street/Driveway
N/S: Avenue E
Town/County: Bayonne/Hudson
Job #: 2356-99-001T

File Name : Avenue E & E 17th St & Driveway AM
Site Code : 00000000
Start Date : 3/14/2018
Page No : 1

Groups Printed- Cars - Trucks

	East 17th Street Eastbound					Driveway Westbound					Avenue E Northbound					Avenue E 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
07:00 AM	12	0	3	0	15	0	0	1	0	1	0	55	0	0	55	0	33	0	0	33	104
07:15 AM	11	0	1	0	12	1	0	2	0	3	0	81	0	0	81	0	42	0	0	42	138
07:30 AM	17	0	2	0	19	0	0	0	0	0	0	65	0	0	65	1	42	0	0	43	127
07:45 AM	16	0	4	0	20	1	0	1	0	2	0	86	0	0	86	0	69	0	0	69	177
Total	56	0	10	0	66	2	0	4	0	6	0	287	0	0	287	1	186	0	0	187	546
08:00 AM	9	0	1	0	10	0	0	0	0	0	0	91	1	0	92	0	66	0	0	66	168
08:15 AM	16	0	4	0	20	0	0	2	0	2	0	126	0	0	126	0	64	0	0	64	212
08:30 AM	14	0	4	0	18	1	0	0	0	1	0	100	0	0	100	0	68	0	0	68	187
08:45 AM	13	0	4	0	17	0	0	1	0	1	0	65	1	0	66	0	74	0	0	74	158
Total	52	0	13	0	65	1	0	3	0	4	0	382	2	0	384	0	272	0	0	272	725
Grand Total	108	0	23	0	131	3	0	7	0	10	0	669	2	0	671	1	458	0	0	459	1271
Apprch %	82.4	0	17.6	0		30	0	70	0		0	99.7	0.3	0		0.2	99.8	0	0		
Total %	8.5	0	1.8	0	10.3	0.2	0	0.6	0	0.8	0	52.6	0.2	0	52.8	0.1	36	0	0	36.1	
Cars	108	0	22	0	130	3	0	7	0	10	0	660	2	0	662	1	449	0	0	450	1252
% Cars	100	0	95.7	0	99.2	100	0	100	0	100	0	98.7	100	0	98.7	100	98	0	0	98	98.5
Trucks	0	0	1	0	1	0	0	0	0	0	0	9	0	0	9	0	9	0	0	9	19
% Trucks	0	0	4.3	0	0.8	0	0	0	0	0	0	1.3	0	0	1.3	0	2	0	0	2	1.5

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04:30 PM	13	0	8	0	21	0	0	0	0	0	0	64	0	0	64	0	104	0	0	104	189
04:45 PM	16	0	6	0	22	0	0	0	0	0	0	55	1	0	56	1	123	0	0	124	202
Total	29	0	14	0	43	0	0	0	0	0	0	119	1	0	120	1	227	0	0	228	391
05:00 PM	11	1	9	0	21	0	0	1	0	1	0	67	1	0	68	1	125	0	0	126	216
05:15 PM	14	1	10	0	25	1	0	0	0	1	0	58	0	0	58	2	112	0	0	114	198
05:30 PM	22	0	7	0	29	0	0	0	0	0	0	58	0	0	58	0	118	0	0	118	205
05:45 PM	17	0	10	0	27	1	0	1	0	2	0	57	0	0	57	1	112	0	0	113	199
Total	64	2	36	0	102	2	0	2	0	4	0	240	1	0	241	4	467	0	0	471	818
06:00 PM	16	1	2	0	19	0	0	0	0	0	0	49	0	0	49	2	118	0	0	120	188
06:15 PM	13	0	7	0	20	1	0	0	0	1	0	67	0	0	67	0	122	0	0	122	210
Grand Total	122	3	59	0	184	3	0	2	0	5	0	475	2	0	477	7	934	0	0	941	1607
Apprch %	66.3	1.6	32.1	0		60	0	40	0		0	99.6	0.4	0		0.7	99.3	0	0		
Total %	7.6	0.2	3.7	0	11.4	0.2	0	0.1	0	0.3	0	29.6	0.1	0	29.7	0.4	58.1	0	0	58.6	
Cars	120	3	59	0	182	3	0	2	0	5	0	473	2	0	475	7	932	0	0	939	1601
% Cars	98.4	100	100	0	98.9	100	0	100	0	100	0	99.6	100	0	99.6	100	99.8	0	0	99.8	99.6
Trucks	2	0	0	0	2	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2	6
% Trucks	1.6	0	0	0	1.1	0	0	0	0	0	0	0.4	0	0	0.4	0	0.2	0	0	0.2	0.4

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Town/County: Bayonne/Hudson
Job #: 2356-99-001T

File Name : Ave E & E 18th St & Driveways PM
Site Code : 00000000
Start Date : 3/1/2018
Page No : 1

Groups Printed- Cars - Trucks

	Northelry Driveway Eastbound					Southerly Driveway Westbound					Avenue E Northbound					Avenue E Southbound					
Start Time	Left In	Right In	Left Out	Right Out	App. Total	Left In	Right In	Left Out	Right Out	App. Total	Left to E 18th	Thru	Right	E 18th St Peds	App. Total	Left	Thru	Right to E 18th	Peds	App. Total	Int. Total
04:30 PM	1	0	0	0	1	0	1	0	0	1	3	0	0	4	7	0	0	28	0	28	37
04:45 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	6	11	0	0	33	0	33	44
Total	1	0	0	0	1	0	1	0	0	1	8	0	0	10	18	0	0	61	0	61	81
05:00 PM	0	0	1	0	1	0	2	0	0	2	4	0	0	4	8	0	0	30	0	30	41
05:15 PM	1	0	0	0	1	0	1	0	0	1	6	0	0	6	12	0	0	38	0	38	52
05:30 PM	2	0	0	1	3	0	1	0	0	1	4	0	0	7	11	0	0	38	0	38	53
05:45 PM	0	0	0	0	0	0	1	0	0	1	4	0	0	7	11	0	0	40	0	40	52
Total	3	0	1	1	5	0	5	0	0	5	18	0	0	24	42	0	0	146	0	146	198
06:00 PM	1	0	0	0	1	1	0	0	0	1	4	0	0	8	12	0	0	31	0	31	45
06:15 PM	0	0	0	0	0	0	0	1	0	1	5	0	0	6	11	0	0	31	0	31	43
Grand Total	5	0	1	1	7	1	6	1	0	8	35	0	0	48	83	0	0	269	0	269	367
Apprch %	71.4	0	14.3	14.3		12.5	75	12.5	0		42.2	0	0	57.8		0	0	100	0		
Total %	1.4	0	0.3	0.3	1.9	0.3	1.6	0.3	0	2.2	9.5	0	0	13.1	22.6	0	0	73.3	0	73.3	
Cars	5	0	1	1	7	1	6	1	0	8	35	0	0	48	83	0	0	269	0	269	367
% Cars	100	0	100	100	100	100	100	100	0	100	100	0	0	100	100	0	0	100	0	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Dynamic Traffic, LLC

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

E/W: E 18th Street/Driveways
N/S: Avenue E
Town/County: Bayonne/Hudson
Job #: 2356-99-001T

File Name : Ave E & E 18th St & Driveways AM
Site Code : 00000000
Start Date : 3/14/2018
Page No : 1

Groups Printed- Cars - Trucks

	Northelry Driveway Eastbound					Southerly Driveway Westbound					Avenue E Northbound					Avenue E Southbound					
Start Time	Left In	Right In	Left Out	Right Out	App. Total	Left In	Right In	Left Out	Right Out	App. Total	Left to E 18th	Thru	Right	E 18th St Peds	App. Total	Left	Thru	Right to E 18th	Peds	App. Total	Int. Total
07:00 AM	0	0	0	2	2	0	0	1	0	1	5	0	0	7	12	0	0	10	0	10	25
07:15 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	5	8	0	0	9	0	9	17
07:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	5	8	0	0	7	0	7	15
07:45 AM	0	0	0	0	0	0	0	2	0	2	9	0	0	3	12	0	0	18	0	18	32
Total	0	0	0	2	2	0	0	3	0	3	20	0	0	20	40	0	0	44	0	44	89
08:00 AM	0	0	0	0	0	0	0	1	0	1	3	0	0	2	5	0	0	9	0	9	15
08:15 AM	0	0	0	0	0	0	0	1	0	1	10	0	0	0	10	0	0	16	0	16	27
08:30 AM	0	0	0	0	0	0	0	1	0	1	2	0	0	3	5	0	0	7	0	7	13
08:45 AM	1	0	0	1	2	0	0	0	0	0	4	0	0	0	4	0	0	15	0	15	21
Total	1	0	0	1	2	0	0	3	0	3	19	0	0	5	24	0	0	47	0	47	76
Grand Total	1	0	0	3	4	0	0	6	0	6	39	0	0	25	64	0	0	91	0	91	165
Apprch %	25	0	0	75		0	0	100	0		60.9	0	0	39.1		0	0	100	0		
Total %	0.6	0	0	1.8	2.4	0	0	3.6	0	3.6	23.6	0	0	15.2	38.8	0	0	55.2	0	55.2	
Cars	1	0	0	3	4	0	0	6	0	6	38	0	0	25	63	0	0	88	0	88	161
% Cars	100	0	0	100	100	0	0	100	0	100	97.4	0	0	100	98.4	0	0	96.7	0	96.7	97.6
Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3	0	3	4
% Trucks	0	0	0	0	0	0	0	0	0	0	2.6	0	0	0	1.6	0	0	3.3	0	3.3	2.4

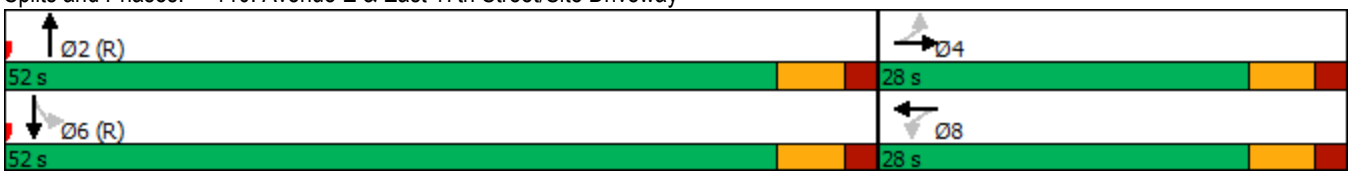
Appendix C
Capacity Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	0	13	2	0	3	0	415	1	0	275	0
Future Volume (vph)	57	0	13	2	0	3	0	415	1	0	275	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		387			108			180			161	
Travel Time (s)		10.6			2.9			4.9			4.4	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	8%	0%	0%	0%	0%	2%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	5	0	0	473	0	0	313	0
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Minimum Split (s)	28.0	28.0		28.0	28.0			52.0		52.0	52.0	
Total Split (s)	28.0	28.0		28.0	28.0			52.0		52.0	52.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%			65.0%		65.0%	65.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		22.0			22.0			46.0			46.0	
Actuated g/C Ratio		0.28			0.28			0.58			0.58	
v/c Ratio		0.19			0.01			0.44			0.29	
Control Delay		14.1			0.0			11.3			9.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.1			0.0			11.3			9.6	
LOS		B			A			B			A	
Approach Delay		14.1						11.3			9.6	
Approach LOS		B						B			A	
Queue Length 50th (ft)		15			0			123			73	
Queue Length 95th (ft)		46			0			184			114	
Internal Link Dist (ft)		307			28			100			81	
Turn Bay Length (ft)												
Base Capacity (vph)		420			479			1071			1081	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.19			0.01			0.44			0.29	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 80	

Control Type: Pretimed
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 10.9 Intersection LOS: B
Intersection Capacity Utilization 66.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 110: Avenue E & East 17th Street/Site Driveway



Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	25	455	275	52
Future Vol, veh/h	0	0	25	455	275	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	88	88	88	88
Heavy Vehicles, %	0	0	4	2	1	2
Mvmt Flow	0	0	28	517	313	59

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	916	343	372	0	-	0
Stage 1	343	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	305	704	1176	-	-	-
Stage 1	723	-	-	-	-	-
Stage 2	568	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	295	704	1176	-	-	-
Mov Cap-2 Maneuver	295	-	-	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	568	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1176	-	-	-	-
HCM Lane V/C Ratio	0.024	-	-	-	-
HCM Control Delay (s)	8.1	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	0	0	475	275	0
Future Vol, veh/h	5	0	0	475	275	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	5	0	0	516	299	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	815	299	299	0	-	0
Stage 1	299	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	350	745	1274	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	603	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	350	745	1274	-	-	-
Mov Cap-2 Maneuver	350	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	603	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.4	0	0
HCM LOS	C		

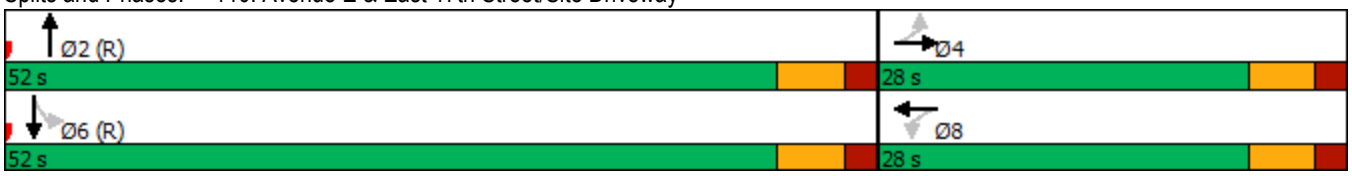
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1274	-	350	-	-
HCM Lane V/C Ratio	-	-	0.016	-	-
HCM Control Delay (s)	0	-	15.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	2	37	2	0	2	0	247	1	4	481	0
Future Volume (vph)	66	2	37	2	0	2	0	247	1	4	481	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		387			108			180			161	
Travel Time (s)		10.6			2.9			4.9			4.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	110	0	0	4	0	0	261	0	0	510	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Minimum Split (s)	28.0	28.0		28.0	28.0			52.0		52.0	52.0	
Total Split (s)	28.0	28.0		28.0	28.0			52.0		52.0	52.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%			65.0%		65.0%	65.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		22.0			22.0			46.0			46.0	
Actuated g/C Ratio		0.28			0.28			0.58			0.58	
v/c Ratio		0.26			0.01			0.24			0.47	
Control Delay		17.9			0.0			9.1			11.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		17.9			0.0			9.1			11.7	
LOS		B			A			A			B	
Approach Delay		17.9						9.1			11.7	
Approach LOS		B						A			B	
Queue Length 50th (ft)		29			0			59			136	
Queue Length 95th (ft)		69			0			97			208	
Internal Link Dist (ft)		307			28			100			81	
Turn Bay Length (ft)												
Base Capacity (vph)		425			476			1080			1090	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.26			0.01			0.24			0.47	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 80	

Control Type: Pretimed
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 11.6 Intersection LOS: B
Intersection Capacity Utilization 66.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 110: Avenue E & East 17th Street/Site Driveway



Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	19	296	490	150
Future Vol, veh/h	0	0	19	296	490	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	95	95	95	95
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	0	0	20	312	516	158

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	947	595	674	0	-	0
Stage 1	595	-	-	-	-	-
Stage 2	352	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	292	508	927	-	-	-
Stage 1	555	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	284	508	927	-	-	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	541	-	-	-	-	-
Stage 2	716	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	927	-	-	-	-
HCM Lane V/C Ratio	0.022	-	-	-	-
HCM Control Delay (s)	9	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	315	485	5
Future Vol, veh/h	0	0	0	315	485	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	0	0	0	342	527	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	872	530	532	0	-	0
Stage 1	530	-	-	-	-	-
Stage 2	342	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	324	553	1046	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	324	553	1046	-	-	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	724	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

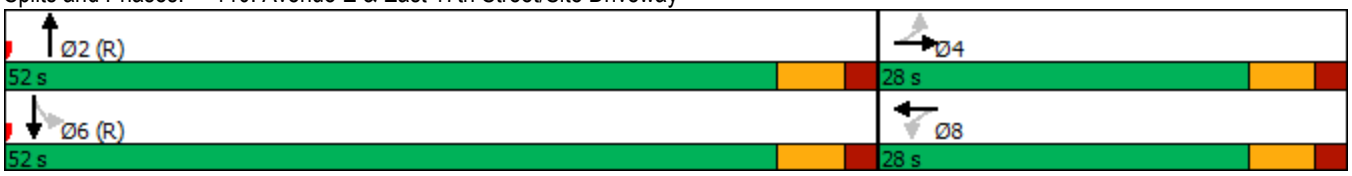
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1046	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	0	13	2	0	3	0	423	1	0	281	0
Future Volume (vph)	58	0	13	2	0	3	0	423	1	0	281	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		387			108			180			161	
Travel Time (s)		10.6			2.9			4.9			4.4	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	8%	0%	0%	0%	0%	2%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	81	0	0	5	0	0	482	0	0	319	0
Turn Type	Perm	NA		Perm	NA			NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Minimum Split (s)	28.0	28.0		28.0	28.0			52.0		52.0	52.0	
Total Split (s)	28.0	28.0		28.0	28.0			52.0		52.0	52.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%			65.0%		65.0%	65.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		22.0			22.0			46.0			46.0	
Actuated g/C Ratio		0.28			0.28			0.58			0.58	
v/c Ratio		0.19			0.01			0.45			0.30	
Control Delay		14.2			0.0			11.4			9.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.2			0.0			11.4			9.6	
LOS		B			A			B			A	
Approach Delay		14.2						11.4			9.6	
Approach LOS		B						B			A	
Queue Length 50th (ft)		15			0			126			75	
Queue Length 95th (ft)		46			0			188			117	
Internal Link Dist (ft)		307			28			100			81	
Turn Bay Length (ft)												
Base Capacity (vph)		419			479			1071			1081	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.19			0.01			0.45			0.30	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 80	

Control Type: Pretimed
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 66.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 110: Avenue E & East 17th Street/Site Driveway



Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	26	463	281	53
Future Vol, veh/h	0	0	26	463	281	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	88	88	88	88
Heavy Vehicles, %	0	0	4	2	1	2
Mvmt Flow	0	0	30	526	319	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	935	349	379	0	-	0
Stage 1	349	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	297	699	1169	-	-	-
Stage 1	719	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	286	699	1169	-	-	-
Mov Cap-2 Maneuver	286	-	-	-	-	-
Stage 1	693	-	-	-	-	-
Stage 2	560	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1169	-	-	-	-
HCM Lane V/C Ratio	0.025	-	-	-	-
HCM Control Delay (s)	8.2	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	0	0	484	281	0
Future Vol, veh/h	5	0	0	484	281	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	5	0	0	526	305	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	831	305	305	0	-	0
Stage 1	305	-	-	-	-	-
Stage 2	526	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	342	740	1267	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	597	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	342	740	1267	-	-	-
Mov Cap-2 Maneuver	342	-	-	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	597	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	0	0
HCM LOS	C		

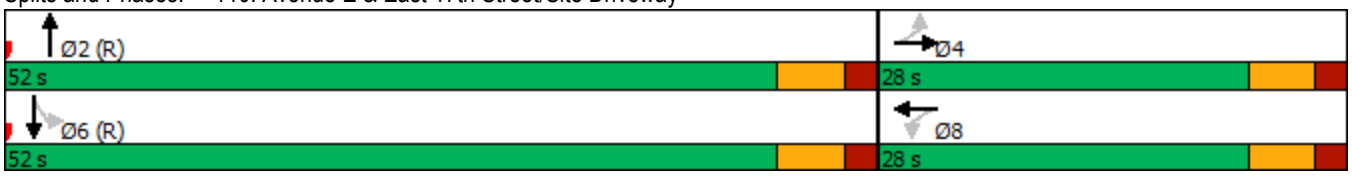
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1267	-	342	-	-
HCM Lane V/C Ratio	-	-	0.016	-	-
HCM Control Delay (s)	0	-	15.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	2	38	2	0	2	0	252	1	4	491	0
Future Volume (vph)	67	2	38	2	0	2	0	252	1	4	491	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		387			108			180			161	
Travel Time (s)		10.6			2.9			4.9			4.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	113	0	0	4	0	0	266	0	0	521	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Minimum Split (s)	28.0	28.0		28.0	28.0			52.0		52.0	52.0	
Total Split (s)	28.0	28.0		28.0	28.0			52.0		52.0	52.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%			65.0%		65.0%	65.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		22.0			22.0			46.0			46.0	
Actuated g/C Ratio		0.28			0.28			0.58			0.58	
v/c Ratio		0.27			0.01			0.25			0.48	
Control Delay		18.1			0.0			9.2			11.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		18.1			0.0			9.2			11.8	
LOS		B			A			A			B	
Approach Delay		18.1						9.2			11.8	
Approach LOS		B						A			B	
Queue Length 50th (ft)		30			0			60			140	
Queue Length 95th (ft)		71			0			99			214	
Internal Link Dist (ft)		307			28			100			81	
Turn Bay Length (ft)												
Base Capacity (vph)		425			475			1080			1090	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.27			0.01			0.25			0.48	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 80	

Control Type: Pretimed
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 11.8 Intersection LOS: B
Intersection Capacity Utilization 66.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 110: Avenue E & East 17th Street/Site Driveway



Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	19	302	500	153
Future Vol, veh/h	0	0	19	302	500	153
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	95	95	95	95
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	0	0	20	318	526	161

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	965	607	687	0	-	0
Stage 1	607	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	285	500	916	-	-	-
Stage 1	548	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	277	500	916	-	-	-
Mov Cap-2 Maneuver	277	-	-	-	-	-
Stage 1	533	-	-	-	-	-
Stage 2	712	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	916	-	-	-	-
HCM Lane V/C Ratio	0.022	-	-	-	-
HCM Control Delay (s)	9	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-

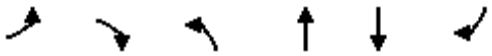
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	321	495	5
Future Vol, veh/h	0	0	0	321	495	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	0	0	0	349	538	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	890	541	543	0	-	0
Stage 1	541	-	-	-	-	-
Stage 2	349	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	316	545	1036	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	316	545	1036	-	-	-
Mov Cap-2 Maneuver	316	-	-	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	719	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1036	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	58	13	0	464	286	0
Future Volume (vph)	58	13	0	464	286	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	25			25	25	
Link Distance (ft)	387			180	161	
Travel Time (s)	10.6			4.9	4.4	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	8%	0%	2%	1%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	81	0	0	527	325	0
Turn Type	Perm			NA	NA	
Protected Phases				2	6	
Permitted Phases	4					
Detector Phase	4			2	6	
Switch Phase						
Minimum Initial (s)	7.0			7.0	7.0	
Minimum Split (s)	13.0			13.0	13.0	
Total Split (s)	26.0			54.0	54.0	
Total Split (%)	32.5%			67.5%	67.5%	
Yellow Time (s)	4.0			4.0	4.0	
All-Red Time (s)	2.0			2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	6.0			6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None			Min	Min	
Act Effct Green (s)	8.1			31.2	31.2	
Actuated g/C Ratio	0.19			0.75	0.75	
v/c Ratio	0.23			0.38	0.23	
Control Delay	16.4			5.9	4.9	
Queue Delay	0.0			0.0	0.0	
Total Delay	16.4			5.9	4.9	
LOS	B			A	A	
Approach Delay	16.4			5.9	4.9	
Approach LOS	B			A	A	
Queue Length 50th (ft)	18			68	37	
Queue Length 95th (ft)	43			137	76	
Internal Link Dist (ft)	307			100	81	
Turn Bay Length (ft)						
Base Capacity (vph)	891			1846	1863	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.09			0.29	0.17	

Intersection Summary	
Area Type:	Other

Cycle Length: 80	
Actuated Cycle Length: 41.7	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.38	
Intersection Signal Delay: 6.5	Intersection LOS: A
Intersection Capacity Utilization 40.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 110: Avenue E & East 17th Street

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	32	490	286	53
Future Vol, veh/h	0	0	32	490	286	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	88	88	88	88
Heavy Vehicles, %	0	0	4	2	1	2
Mvmt Flow	0	0	36	557	325	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	984	355	385	0	-	0
Stage 1	355	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	278	693	1163	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	265	693	1163	-	-	-
Mov Cap-2 Maneuver	265	-	-	-	-	-
Stage 1	682	-	-	-	-	-
Stage 2	535	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1163	-	-	-	-
HCM Lane V/C Ratio	0.031	-	-	-	-
HCM Control Delay (s)	8.2	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-

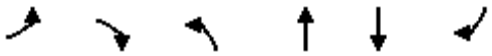
Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	41	423	5	5	294
Future Vol, veh/h	24	41	423	5	5	294
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	26	45	460	5	5	320

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	793	463	0	0	465	0
Stage 1	463	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	360	603	-	-	1107	-
Stage 1	638	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	358	603	-	-	1107	-
Mov Cap-2 Maneuver	358	-	-	-	-	-
Stage 1	638	-	-	-	-	-
Stage 2	729	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	481	1107	-
HCM Lane V/C Ratio	-	-	0.147	0.005	-
HCM Control Delay (s)	-	-	13.8	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	67	44	0	268	522	0
Future Volume (vph)	67	44	0	268	522	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	25			25	25	
Link Distance (ft)	387			180	161	
Travel Time (s)	10.6			4.9	4.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	0	0	282	549	0
Turn Type	Perm			NA	NA	
Protected Phases				2	6	
Permitted Phases	4					
Detector Phase	4			2	6	
Switch Phase						
Minimum Initial (s)	7.0			7.0	7.0	
Minimum Split (s)	13.0			13.0	13.0	
Total Split (s)	26.0			54.0	54.0	
Total Split (%)	32.5%			67.5%	67.5%	
Yellow Time (s)	4.0			4.0	4.0	
All-Red Time (s)	2.0			2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	6.0			6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None			Min	Min	
Act Effct Green (s)	8.3			27.0	27.0	
Actuated g/C Ratio	0.20			0.64	0.64	
v/c Ratio	0.32			0.23	0.45	
Control Delay	14.0			6.0	7.8	
Queue Delay	0.0			0.0	0.0	
Total Delay	14.0			6.0	7.8	
LOS	B			A	A	
Approach Delay	14.0			6.0	7.8	
Approach LOS	B			A	A	
Queue Length 50th (ft)	17			31	73	
Queue Length 95th (ft)	52			72	157	
Internal Link Dist (ft)	307			100	81	
Turn Bay Length (ft)						
Base Capacity (vph)	870			1875	1894	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.13			0.15	0.29	

Intersection Summary	
Area Type:	Other

Cycle Length: 80	
Actuated Cycle Length: 42.1	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 8.0	Intersection LOS: A
Intersection Capacity Utilization 43.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 110: Avenue E & East 17th Street

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	21	314	522	153
Future Vol, veh/h	0	0	21	314	522	153
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	95	95	95	95
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	0	0	22	331	549	161

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1005	630	710	0	-	0
Stage 1	630	-	-	-	-	-
Stage 2	375	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	270	485	899	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	262	485	899	-	-	-
Mov Cap-2 Maneuver	262	-	-	-	-	-
Stage 1	519	-	-	-	-	-
Stage 2	699	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	899	-	-	-	-
HCM Lane V/C Ratio	0.025	-	-	-	-
HCM Control Delay (s)	9.1	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	16	252	19	37	529
Future Vol, veh/h	11	16	252	19	37	529
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	17	274	21	40	575

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	940	285	0	0	295	0
Stage 1	285	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	295	759	-	-	1278	-
Stage 1	768	-	-	-	-	-
Stage 2	521	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	281	759	-	-	1278	-
Mov Cap-2 Maneuver	281	-	-	-	-	-
Stage 1	768	-	-	-	-	-
Stage 2	497	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	448	1278	-
HCM Lane V/C Ratio	-	-	0.066	0.031	-
HCM Control Delay (s)	-	-	13.6	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-