Time Out Market
Miami Beach, Florida

traffic study

prepared for:
Time Out Market

Traf Tech
ENGINEERING, INC.

October 2016

Traf Tech
ENGINEERING, INC.

October 28, 2016

Didier Souillat
CEO of Time Out Market
c/o Monika Entin Esq.
Bercow Radell & Fernandez, P.A.
200 S. Biscayne Boulevard, Suite 850
Miami, Florida 33131

Re: Time Out Market Restaurant–Traffic Study

Dear Didier:

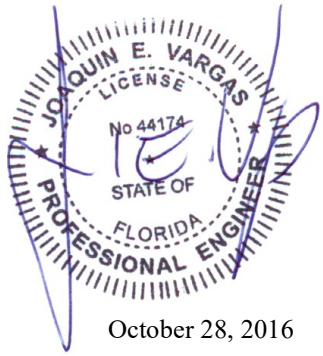
Traf Tech Engineering, Inc. is pleased to provide you with the results of the traffic study conducted for the Time Out Market project located in the City of Miami Beach in Miami-Dade County, Florida.

It has been a pleasure working with you on this project.

Sincerely,

TRAF TECH ENGINEERING, INC.

Joaquin E. Vargas, P.E.
Senior Transportation Engineer



October 28, 2016

8400 North University Drive, Suite 309, Tamarac, Florida 33321
Tel: (954) 582-0988 Fax: (954) 582-0989

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

Time Out Market is a proposed High-turnover (Sit-down) Restaurant planned to occupy the vacant space on the first floor of the existing parking garage building located on the northeast corner of Drexel Avenue and 16th Street in the City of Miami Beach in Miami-Dade County, Florida. The location of the project site is illustrated in Figure 1 on the following page.

Traf Tech Engineering, Inc. was retained by Time Out Market to conduct a traffic study[1] in connection with the proposed restaurant. The study addresses trip generation and the traffic impacts created by the proposed project on the nearby transportation network. This study is divided into seven (7) sections, as listed below:

1. Inventory
2. Existing Conditions
3. Traffic Counts
4. Trip Generation
5. Trip Distribution and Traffic Assignment
6. Traffic Impact Analysis
7. Conclusions and Recommendations

[1] The traffic methodology was discussed and agreed with the City of Miami Beach staff and is included in Appendix A.

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PROJECT LOCATION MAP

FIGURE 1
Time Out Market
Miami Beach, Florida

INVENTORY

Existing Land Use

The commercial space where the Time Out Market will be housed is currently vacant (first floor of the parking garage building).

Proposed Land Use and Access

The proposed restaurant will consist of 456 seats. Pedestrian access to the development is located on Drexel Avenue and on-site parking for future patrons will be provided in the existing parking garage. Appendix B contains a copy of the site plan for the project site.

EXISTING CONDITIONS

This section addresses the existing roadway system located in the vicinity of the project site and nearby intersections.

Roadway System

The roadway system located near the project site includes Washington Avenue, Drexel Avenue, Alton Road, 17th Street, 16th Street, and 15th Street. Near the project site, Washington Avenue, Alton Road, and Drexel Avenue are oriented in the north and south direction. 17th Street, 16th Street, and 15th Street are oriented in the east and west direction. Washington Avenue, Alton Road and 17th Street are four-lane facilities while Drexel Avenue, 16th Street and 15th Street are two-lane roadways.

Nearby Intersections

With the assistance of City of Miami Beach staff, six intersections (including the garage entrance driveway) were identified as the locations that will be impacted the most by the proposed project. These intersections include:

- Washington Avenue & 17th Street (Signalized)
- Washington Avenue & 16th Street (Signalized)
- Washington Avenue & 15th Street (Signalized)
- Drexel Avenue & 16th Street (Signalized)
- 16th Street and Garage Entrance (Stop controlled)
- Alton Road & 16th Street (Signalized)

Figure 2 on the following page shows the existing lane geometry of the six (6) intersections selected for analysis purposes. The number of lanes on the street system surrounding the project site is also depicted in the figure.

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EXISTING LANE GEOMETRY

FIGURE 2
Time Out Market
Miami Beach, Florida

TRAFFIC COUNTS

Traf Tech Engineering, Inc., in association with Traffic Survey Specialists, Inc., collected traffic data at the following locations:

- Washington Avenue & 17th Street (Signalized)
- Washington Avenue & 16th Street (Signalized)
- Washington Avenue & 15th Street (Signalized)
- Drexel Avenue & 16th Street (Signalized)
- 16th Street and Garage Entrance (Stop controlled)
- Alton Road & 16th Street (Signalized)

The intersection turning movement counts performed by Traffic Survey Specialists, Inc., were collected on Friday, March 4, 2016 and August 26, 2016 during the PM peak period (4:00 PM to 7:00 PM).

The existing PM peak hour traffic counts are presented in Figure 3 on the following page. Appendix C contains the traffic data as collected in the field. The signal timing plans for the signalized intersections were obtained from the Miami-Dade County Signals and Signs Division and are included in Appendix C.

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EXISTING TRAFFIC COUNTS
(March 4 and August 26, 2016)

FIGURE 3
Time Out Market
Miami Beach, Florida

TRIP GENERATION

The trip generation for the project was based on information contained in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual (9th Edition)*. According to the subject ITE manual, the most appropriate "land use" category for the proposed land use is: Land Use 932 – High-turnover (Sit-down) Restaurant. Table 1 below summarizes the external trips associated with the proposed Time Out Market Restaurant.

TABLE 1
Trip Generation Summary (Proposed Uses)
Time Out Market

Land Use	Size	Daily Trips	PM Peak Hour		
			Total Trips	Inbound	Outbound
High-Turnover (Sit-Down) Restaurant (LUC 932)	456 Seats	2,202	187	107	80
Gross Trips		**2,202**	**187**	**107**	**80**
Pass-by (Restaurant - 25%)		-551	-48	-24	-24
Subtotal		**1,652**	**139**	**83**	**56**
Transit and Pedestrian Reduction (-10%)		-165	-14	-7	-7
Net New Vehicular Trips		**1,488**	**125**	**76**	**49**

Source: ITE Trip Generation Manual (9th Edition)

As indicated in Table 1, The proposed development is anticipated to generate approximately 2,202 gross daily trips and approximately 187 gross trips (107 inbound and 80 outbound) during the typical PM peak hour. The net new trips (proposed trips minus pass-by and minus transit and pedestrian reduction) include approximately 1,488 new daily trips and approximately 125 additional PM peak hour trips (76 inbound and 49 outbound).

ITE Land Use 932 – High-Turnover (Sit-Down) Restaurant

Weekday Trip Generation
T = 4.83 (X)
Where T = number of weekday trips and
X = number of seats

Weekday PM Peak Hour of Adjacent Street
T = 0.41 (X) (57% inbound and 43% outbound)
Where T = number of weekday PM peak hour trips and
X = number of seats

TRIP DISTRUBUTION AND TRAFFIC ASSIGNMENT

The trip distribution and traffic assignment for the project were based on Miami-Dade County's Cardinal Distribution information for the study area. Table 2 summarizes the County's cardinal distribution data for Traffic Analysis Zone 643, which is applicable to the project site from the latest SERPM data published by Miami-Dade County.

TABLE 2
Project Trip Distribution
Time Out Market

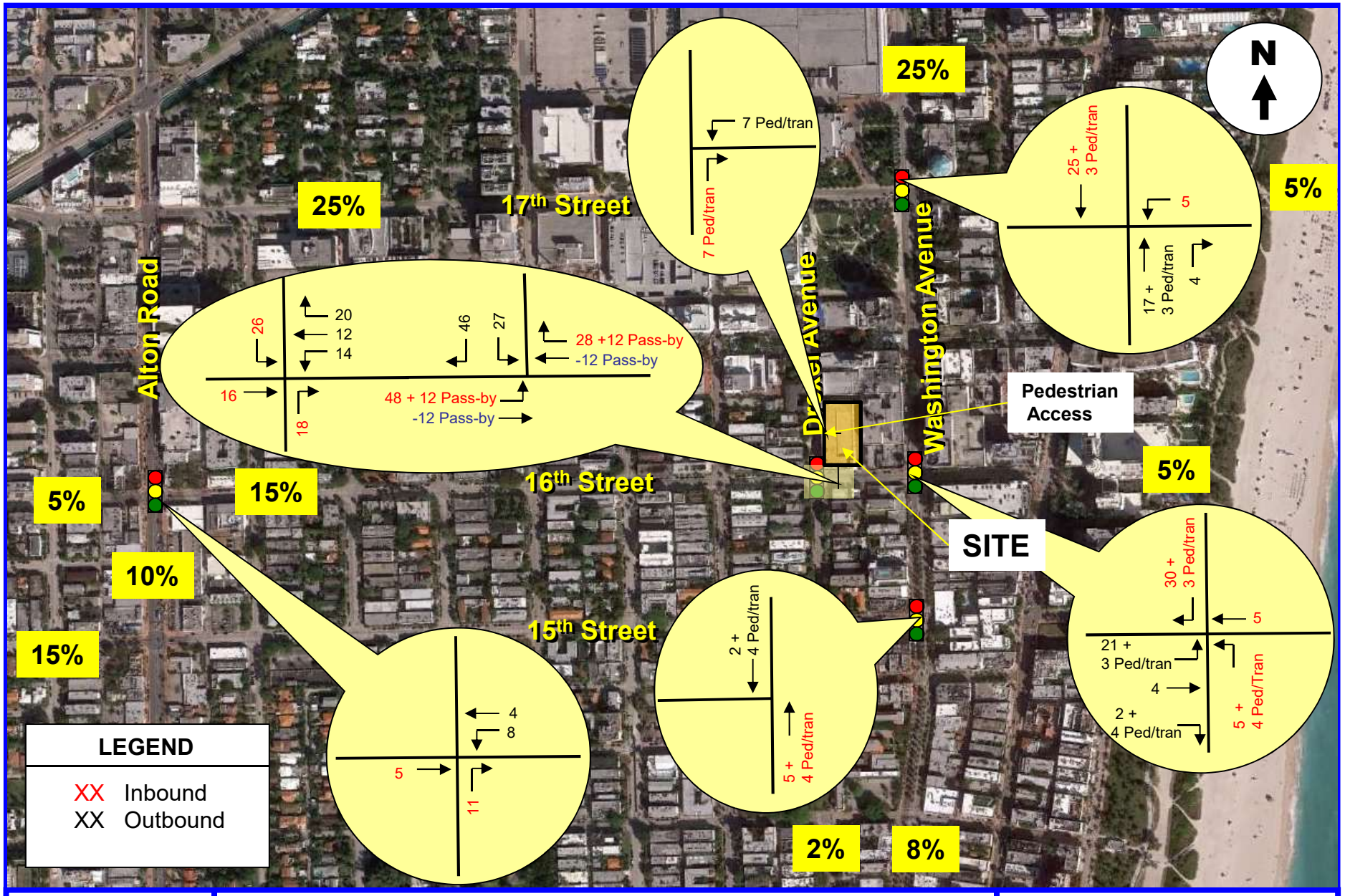
Direction		% of Total Trips
North:	Northwest	15.5
	Northeast	19.9
South:	Southwest	4.3
	Southeast	7.7
East:	Northeast	4.6
	Southeast	0
West:	Northwest	18.9
	Southwest	29.2
	Total	100.00%

Source: Miami-Dade County (2040 SERPM)

Based on the above, the following traffic assignment was assumed for the proposed restaurant development:

- 25% to/from the north via Washington Road
- 8% to/from the south via Washington Road
- 2% to/from the south via Drexel Avenue
- 5% to/from the east via 17th Street
- 5% to/from the east via 16th Street
- 25% to/from the west via 17th Street
- 15% to/from the west via 16th Street
- 15% to/from the west via 15th Street

The new peak hour traffic generated by the project was assigned to the nearby transportation network using the traffic assignment documented above. The new project traffic assignment is summarized in Figure 4.



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PROJECT TRAFFIC ASSIGNMENT

FIGURE 4
Time Out Market
Miami Beach, Florida

TRAFFIC ANALYSIS

This section of the study is divided into three (3) parts. The first part consists of developing the future conditions traffic volumes for the study area. The second part includes level-of-service analyses for existing and future conditions. The third section addresses the projected operating conditions of the project's parking garage driveway.

Future Conditions Traffic Volumes

Two sets of future traffic volumes were developed. The first set includes project buildout conditions without the proposed project and the second set adds the new trips anticipated to be generated by the project.

In order to develop year 2018 traffic volumes (project anticipated to be built and occupied by the year 2018), without the proposed project, two separate analyses were undertaken. The first analysis converts the existing peak hour traffic counts collected in the field during the month of March and August to average peak season conditions. Based on FDOT's Peak Season Factor Category report, a factor of 1.00 and 1.02 are required to convert traffic counts collected during the first week of March and Last week of August to average peak season conditions (refer to Appendix D).

The second analysis includes a growth factor to project 2016 peak season traffic volumes to the year 2018. Based on traffic growth data published by the FDOT for a nearby traffic count stations, minimal traffic growth has occurred during the past five years (refer to Appendix D). However, in order to assess impacts with a conservative approach, and to account for unforeseen approved project (committed trips) that may impact the study intersections, a one and one-half percent (1.5%) growth rate was used for purposes of this study. Moreover, committed development trips associated with several projects were added to the peak season volumes in order to develop 2018 background traffic conditions for the study area.

The new trips generated by the Time Out Market project (refer to Figure 4) were added to the 2018 background traffic in order to develop total traffic conditions. The future traffic projections for the study intersections (peak season adjustments, growth rates, committed development trips and project traffic) are presented in tabular format in Appendix E. Figures 5 and 6 present the year 2018 future traffic volumes for the study area.

Figure 5 includes background traffic only (without the proposed project) and Figure 6 includes the additional traffic anticipated to be generated by the Time Out Market project.

Level of Service Analyses

Intersection capacity/level of service analyses were conducted for the six (6) study intersections and the access driveway. The analyses were undertaken following the capacity/level of service procedures outlined in the Highway Capacity Manual (HCM) using the SYNCHRO software. The results of the capacity analyses are summarized in Tables 3 and 4. As indicated in Tables 3 and 4, all study intersections are currently operating adequately and will continue to operate at a acceptable level of service in the year 2018 with the proposed project in place.

Parking Garage Driveway

The parking garage driveway along 16 Street is projected to operate at level of service "B" (refer to Table 4).

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BACKGROUND TRAFFIC – YEAR 2018

FIGURE 5
Time Out Market
Miami Beach, Florida

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TOTAL TRAFFIC w/PROJECT – YEAR 2018

FIGURE 6
Time Out Market
Miami Beach, Florida

TABLE 3 Intersection Levels of Service – (Signalized Intersections) Time Out Market			
		Future Traffic Conditions	
Intersection	2016 Existing	2018 w/o Project	2018 With Project
Washington Ave & 17th St	C	C	C
Washington Ave & 16th St	B	B	C
Washington Ave & 15th St	B	B	B
Drexel Ave & 16th St	B	B	B
Alton Road & 16th Street	C	C	C

Source: Highway Capacity Manual

TABLE 4 Intersection Levels of Service (Stop-Controlled Intersections) Time Out Market			
		Future Traffic Conditions	
Intersection/Movement	2016 Existing	2018 w/o Project	2018 With Project
Garage Ent. & 16th Street			
- SBL	B	B	B
- SBR	B	B	B

Source: Highway Capacity Manual

The computer printouts of the intersection capacity analyses are contained in Appendix F.

OTHER MODES OF TRANSPORTATION

Throughout much of Miami Beach, and specifically within the immediate area of the proposed Time Out Market project, there are many convenient and cost-effective transportation alternatives for residents, patrons, and visitors alike. Many patrons of the Time Out Market project are likely to avail themselves of alternative travel modes as opposed to the automobile. Several of the more prominent modes in this area include bus transit services, bicycling (including the Deco Bike), and the sidewalk network throughout the surrounding area. Each of these is explained in further detail below.

Miami-Dade Transit

Transit services on Miami Beach are provided by Miami-Dade Transit. There are numerous transit routes serving the immediate study area including 120, 115, 117, and 123 Routes. The nearest bus stop for these services is located at the intersection of Washington Street and 16th Street. These transit routes provide frequent service and access to all of Miami-Dade County as well as connections to other destinations outside of the County.

DecoBike

DecoBike is a bicycle sharing and rental program on Miami Beach. This program offers a network of 100 solar-powered bicycle rental stations and a fleet of 1,000 bicycles which can be rented 24 hours per day. Within the immediate area of the Time Out Market project, there is one convenient DecoBike rental station (Station 159: 15th Street & Washington Ave).

Pedestrian Network

Most of Miami Beach is considered a very walkable environment. Specifically, within the project study area, each of the existing roadways has sidewalks on both sides and crosswalks are present at each of the major signalized intersections. There are many attractive destinations within easy access to the Time Out Market Restaurant and the

project has been designed in such a manner as to provide direct access to this sidewalk network.

In summary, this project is located within an area that provides excellent access to alternative modes of transportation. It is expected that many of the customers of the Time Out Market project will utilize these services as opposed to driving passenger vehicles.

CONCLUSIONS AND RECOMMENDATIONS

Time Out Market is a proposed High-turnover (Sit-down) Restaurant planned to occupy the vacant space on the first floor of the existing parking garage building located on the northeast corner of Drexel Avenue and 16th Street in the City of Miami Beach in Miami-Dade County, Florida.

The proposed restaurant will consist of 456 seats. Pedestrian access to the development is located on Drexel Avenue and on-site parking for future patrons will be provided in the existing parking garage.

Traf Tech Engineering, Inc. was retained by Time Out Market to conduct a traffic study in connection with the proposed restaurant development. The study addresses trip generation and the traffic impacts created by the proposed project on the nearby transportation network. The conclusions of the traffic study are presented below:

- The proposed Time Out Market development is anticipated to generate approximately 2,202 gross daily trips and approximately 187 gross trips (107 inbound and 80 outbound) during the typical PM peak hour. The net new trips (proposed trips minus pass-by and minus transit and pedestrian reduction) include approximately 1,488 new daily trips and approximately 125 additional PM peak hour trips (76 inbound and 49 outbound).

- All study intersections are currently operating adequately and will continue to operate at an acceptable level of service in the year 2018 with the proposed project in place.

- The parking garage driveway along 16 Street is projected to operate at level of service “B”.

APPENDIX A

Traffic Methodology

TO: Time-Out Market

FROM: Joaquin Vargas

DATE: October 5, 2016

SUBJECT: Traffic Methodology for Time Out Market

Time-Out Market is a proposed high-turnover (sit-down) restaurant planned to occupy the vacant space on the first floor of the existing parking garage building located on the northeast corner of Drexel Avenue and 16th Street in the City of Miami Beach in Miami-Dade County, Florida.

A traffic study documenting the impacts of the proposed restaurant will be undertaken. The following is our proposed methodology for the traffic study associated with this project:

- The trip generation for the proposed restaurant will be based on ITE's *Trip Generation Manual* (9th Edition). For the proposed restaurant, ITE LUC 932 – High Turnover Site-Down Restaurant will be used. The number of restaurant seats will be used for trip generation purposes.

- The traffic study will evaluate intersections located in the immediate vicinity of the project. The analyses will be undertaken for the critical PM peak hour (Friday 4PM to 7PM). These intersections are:

    1. Washington Avenue & 17th Street (Signalized)
    2. Washington Avenue & 16th Street (Signalized)
    3. Washington Avenue & 15th Street (Signalized)
    4. Drexel Avenue & 16th Street (Signalized)
    5. 16th Street and Garage Entrance (Stop controlled)
    6. Alton Road & 16th Street (Signalized)

- Traffic circulation will be evaluated in the traffic study, including its impact to the surrounding street system and adjacent driveways, if any.

- For purposes of the traffic study, the build-out year will be 2018. For purposes of traffic growth, FDOT historical traffic data will be used.

- Existing traffic signal timing data and traffic counts will be included in the appendix of the traffic study.

- The traffic study will address any anticipated / proposed impacts onto the existing on-street vehicular parking, if applicable. Any impacts to on-street parking will be discussed with the City's Parking Department.

- Traffic figures will be prepared for the following trip generation scenarios for each of the intersections analyzed:

  1. Existing trips
  2. Proposed site trips distribution
  3. Existing + traffic growth
  4. Future or build-out + traffic growth + site trips

- The presence of transit and nearby routes will be discussed as will the provision and location of bicycle racks.

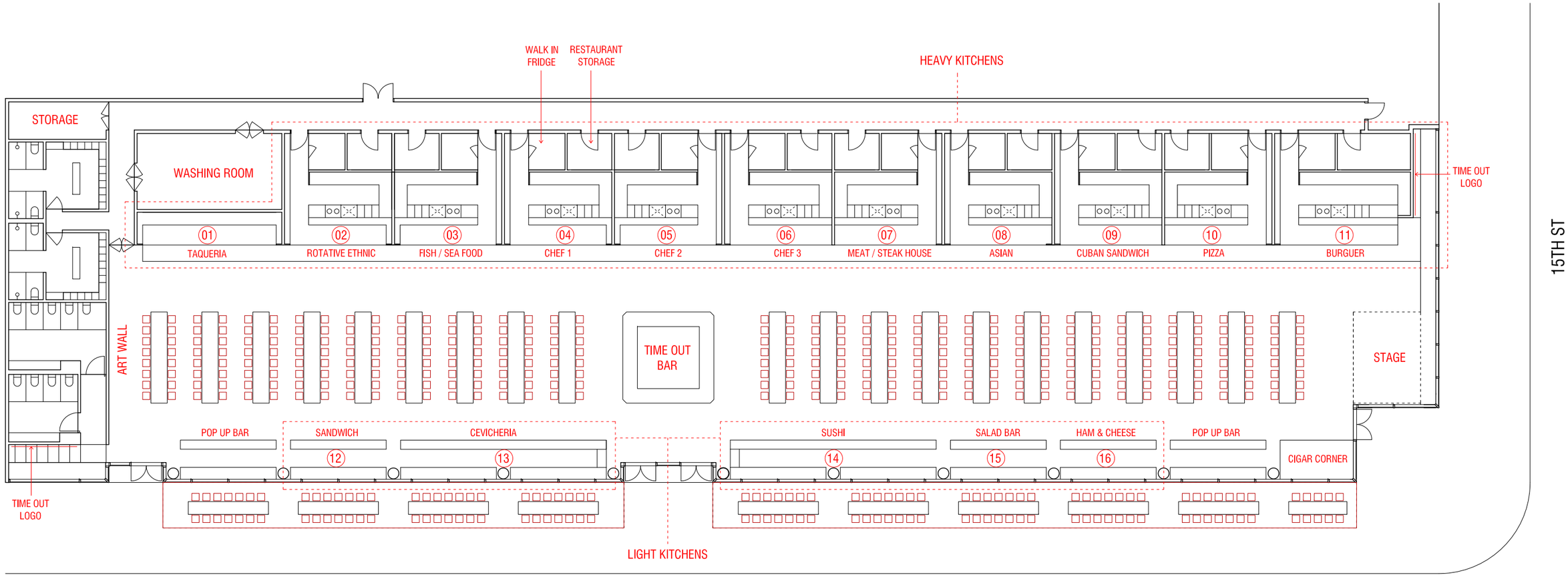
- Provide bicycle racks at the site to encourage other modes of transportation.

- The site plan will also include the location of bicycle parking, garbage pick-up area and place designated for deliveries.

- The submittal of the study will include LOS calculations for review by the peer reviewer.

APPENDIX B

Site Plan
Time Out Market



AREAS

TOTAL AREA TOM: 1590 m² / 17114 sq ft
FOODHALL: **865 m² / 9310 sq ft**
BACK OF THE HOUSE: **725 m² / 7803 sq ft**

HEAVY KITCHEN UNIT: 41m² / 441 sq ft
CUSTOMER SERVICE AREA: 14m² / 150 sq ft
COOKING AREA: 18m² / 194 sq ft
WALK IN FRIDGE: 4m² / 43 sq ft
STORAGE: 5m² / 54 sq ft

LIGHT KITCHEN UNIT: 11m² / 118 sq ft

TIME OUT BAR: 25m² / 269 sq ft

OUTSIDE ESPLANADE: **151 m² / 1625 sq ft**

SEATS

FOODHALL SEATS: **320**
OUTSIDE ESPLANADE: **136**
TOTAL SEATS: 456

PROGRAM

TOTAL KITCHEN UNITS: 16
HEAVY KITCHENS: **11**
LIGHT KITCHENS: 5

BARS: 3
ART WALL
PUBLIC TOILETS

STAFF CHANGING ROOMS
WASHING ROOM
GENERAL STORAGE

MIAMI . DREXEL AVE.

TIME OUT MARKET MIAMI - LAYOUT PLAN

ARCHITECTURE: TIME OUT DESIGN TEAM
LOCATION: DREXEL AVE.
DATE: 04.08.2016 / REVISION V1

01

APPENDIX C

Signal Timing Plan and Traffic Counts

TOD Schedule Report
for 2707: Drexel Av&16 St

Print Date: 8/17/2013

Print Time: 1:51 PM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2707	Drexel Av&16 St	DOW-7		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
-	WBT	-	NBT	-	EBT	-	SBT
0	0	0	0	0	0	0	0

Active Phase Bank: Phase Bank 1

Phase	Walk	Don't Walk	Min Initial	Veh Ext	Max Limit	Max 2	Yellow	Red
	Phase Bank 1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3		
1 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
2 WBT	0 - 5 - 5	0 - 21 - 21	16 - 5 - 5	1 - 1 - 1	40 - 40 - 30	0 - 40 - 40	4	1
3 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4 NBT	0 - 5 - 5	0 - 21 - 21	7 - 7 - 7	2.5 - 2.5 - 2.5	22 - 10 - 10	35 - 35 - 40	4	0.1
5 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
6 EBT	0 - 5 - 5	0 - 21 - 21	16 - 5 - 5	1 - 1 - 1	40 - 40 - 30	0 - 40 - 40	4	1
7 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8 SBT	0 - 5 - 5	0 - 21 - 21	7 - 7 - 7	2.5 - 2.5 - 2.5	22 - 10 - 10	35 - 35 - 40	4	0.1

Current TOD Schedule	Plan	Cycle	1	2	3	4	5	6	7	8	Ring Offset	Offset
			-	WBT	-	NBT	-	EBT	-	SBT		

Last In Service Date: unknown

Permitted Phases

	12345678
Default	-234-6-8
External Permit 0	--------
External Permit 1	--------
External Permit 2	--------

Local TOD Schedule

Time	Plan	DOW
0000	Free	Su M T W Th F S

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-7-----1	SuM T W ThF S

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-7-----1	SuM T W ThF S
0130	TOD OUTPUTS	--------	M T W ThF
0230	TOD OUTPUTS	-7-----1	W
0330	TOD OUTPUTS	-7-----1	M T ThF
0800	TOD OUTPUTS	--------	M T W ThF
0900	TOD OUTPUTS	-7-----1	M T W ThF

*** Settings**

Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

No Calendar Defined/Enabled

TOD Schedule Report

for 2805: Washington Av&15 St

Print Date: 3/24/2014

Print Time: 8:06 AM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2805	Washington Av&15 St	HOLIDAY-2		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
-	SBT	-	-	-	NBT	-	EBT
0	0	0	0	0	0	0	0

Active Phase Bank: Phase Bank 1

Phase		Walk	Don't Walk	Min Initial	Veh Ext	Max Limit	Max 2	Yellow	Red
		Phase Bank 1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3		
1	-	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
2	SBT	7 - 7 - 7	16 - 16 - 16	7 - 7 - 7	1 - 1 - 1	35 - 30 - 30	0 - 30 - 30	4	0.2
3	-	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4	-	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
5	-	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
6	NBT	7 - 7 - 7	16 - 16 - 16	7 - 7 - 7	1 - 1 - 1	35 - 30 - 30	0 - 30 - 30	4	0.2
7	-	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8	EBT	5 - 5 - 5	24 - 24 - 24	5 - 5 - 5	1 - 1 - 1	12 - 15 - 12	31 - 30 - 30	4	0.7

Last In Service Date: 05/13/2010 13:24

Permitted Phases

	12345678
Default	-2---6-8
External Permit 0	--------
External Permit 1	--------
External Permit 2	--------

Current TOD Schedule	Plan	Cycle	Green Time 1 -	2 SBT	3 -	4 -	5 -	6 NBT	7 -	8 EBT	Ring Offset	Offset
	1	70	0	31	0	0	0	31	0	30	0	3
	2	100	0	61	0	0	0	61	0	30	0	97
	3	80	0	41	0	0	0	41	0	30	0	22
	4	100	0	61	0	0	0	61	0	30	0	7
	5	100	0	61	0	0	0	61	0	30	0	2
	6	110	0	71	0	0	0	71	0	30	0	61
	7	90	0	51	0	0	0	51	0	30	0	4
	8	100	0	61	0	0	0	61	0	30	0	23
	9	80	0	41	0	0	0	41	0	30	0	42
	10	90	0	51	0	0	0	51	0	30	0	78
	11	100	0	61	0	0	0	61	0	30	0	46
	12	110	0	71	0	0	0	71	0	30	0	43
	13	80	0	41	0	0	0	41	0	30	0	58
	14	90	0	51	0	0	0	51	0	30	0	28
	15	110	0	71	0	0	0	71	0	30	0	46
	16	150	0	111	0	0	0	111	0	30	0	139
	18	90	0	51	0	0	0	51	0	30	0	85
	19	100	0	61	0	0	0	61	0	30	0	18
	20	110	0	71	0	0	0	71	0	30	0	18
	21	100	0	61	0	0	0	61	0	30	0	0
	22	70	0	31	0	0	0	31	0	30	0	13
	23	70	0	31	0	0	0	31	0	30	0	13

Local TOD Schedule

Time	Plan	DOW
0000	22	Su S
0000	10	M T W Th F
0100	23	M T W Th F
0530	1	Su S
0600	1	M T W Th F
0715	2	M T W Th F
0800	11	M T W Th F
0900	4	M T W Th F
1000	4	Su S
1330	12	M T W Th F
1530	6	M T W Th F
1800	8	M T W Th F
2000	10	Su S

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	8------1	SuM T W ThF S
0100	TOD OUTPUTS	8----3--	SuM T W
0600	TOD OUTPUTS	8-------	M T W ThF
0700	PERMIT	--------	M T W ThF
0800	TOD OUTPUTS	--------	M T W ThF
0900	TOD OUTPUTS	--------	M T W ThF
1330	TOD OUTPUTS	--------	M T W ThF
1530	CONDITIONAL SERVI	--------	M T ThF
2130	TOD OUTPUTS	8------1	SuM T W ThF S
2300	PERMIT	8-------	SuM T W ThF S

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	8------1	SuM T W ThF S
0100	TOD OUTPUTS	8----3--	SuM T W
0200	TOD OUTPUTS	8----3--	ThF S
0600	TOD OUTPUTS	8-------	M T W ThF
0700	TOD OUTPUTS	--------	Su S
0700	PERMIT	--------	M T W ThF
0800	TOD OUTPUTS	--------	M T W ThF
0900	TOD OUTPUTS	--------	M T W ThF
1330	TOD OUTPUTS	--------	M T W ThF
1430	TOD OUTPUTS	--------	W
1530	CONDITIONAL SERVICE	--------	M T ThF
2130	TOD OUTPUTS	8------1	SuM T W ThF S
2300	PERMIT	8-------	SuM T W ThF S

*** Settings**

Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

No Calendar Defined/Enabled

TOD Schedule Report

for 2806: Washington Av&16 St

Print Date: 3/24/2014

Print Time: 8:07 AM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2806	Washington Av&16 St	HOLIDAY-2		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
-	SBT	-	WBT	SBL	NBT	-	EBT
0	0	0	0	0	0	0	0

Active Phase Bank: Phase Bank 1

Phase	Walk	Don't Walk	Min Initial	Veh Ext	Max Limit	Max 2	Yellow	Red
	Phase Bank 1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3		
1 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
2 SBT	7 - 7 - 7	14 - 14 - 14	7 - 7 - 7	1 - 1 - 1	25 - 31 - 25	0 - 28 - 28	4	0.4
3 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4 WBT	5 - 5 - 5	28 - 28 - 28	7 - 7 - 7	2.5 - 2.5 - 2.5	12 - 15 - 12	28 - 28 - 28	4	0.6
5 SBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	5 - 5 - 5	7 - 7 - 7	3	0
6 NBT	7 - 7 - 7	14 - 14 - 14	7 - 7 - 7	1 - 1 - 1	25 - 31 - 25	0 - 28 - 28	4	0.4
7 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8 EBT	5 - 5 - 5	28 - 28 - 28	7 - 7 - 7	2.5 - 2.5 - 2.5	12 - 15 - 12	28 - 28 - 28	4	0.6

Last In Service Date: 05/13/2010 12:37

Permitted Phases

	12345678
Default	-2-456-8
External Permit 0	-2-4-6-8
External Permit 1	-2-4-6-8
External Permit 2	-2-4-6-8

Current TOD Schedule	Plan	Cycle	Green Time 1 -	2 SBT	3 -	4 WBT	5 SBL	6 NBT	7 -	8 EBT	Ring Offset	Offset
	1	70	0	27	0	34	0	27	0	34	0	48
	2	100	0	57	0	34	5	49	0	34	0	92
	3	80	0	37	0	34	5	29	0	34	0	76
	4	100	0	57	0	34	5	49	0	34	0	89
	5	100	0	57	0	34	5	49	0	34	0	55
	6	110	0	67	0	34	5	59	0	34	0	54
	7	90	0	47	0	34	5	39	0	34	0	70
	8	100	0	57	0	34	5	49	0	34	0	22
	9	80	0	37	0	34	5	29	0	34	0	65
	10	90	0	47	0	34	5	39	0	34	0	27
	11	100	0	57	0	34	5	49	0	34	0	54
	12	110	0	67	0	34	5	59	0	34	0	41
	13	80	0	37	0	34	5	29	0	34	0	46
	14	90	0	47	0	34	5	39	0	34	0	54
	15	110	0	67	0	34	5	59	0	34	0	86
	16	150	0	107	0	34	5	99	0	34	0	114
	18	90	0	47	0	34	5	39	0	34	0	57
	19	100	0	57	0	34	5	49	0	34	0	0
	20	110	0	67	0	34	5	59	0	34	0	0
	21	110	0	67	0	34	5	59	0	34	0	0
	22	70	0	27	0	34	5	19	0	34	0	22

Local TOD Schedule

Time	Plan	DOW
0000	22	Su S
0000	10	M T W Th F
0100	Free	M T W Th F
0530	1	Su S
0600	1	M T W Th F
0715	2	M T W Th F
0800	11	M T W Th F
0900	4	M T W Th F
1000	4	Su S
1330	12	M T W Th F
1530	6	M T W Th F
1800	8	M T W Th F
2000	10	Su S

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	8--5----	SuM T W ThF S
0100	TOD OUTPUTS	8--5---1	M T W ThF
0200	TOD OUTPUTS	8--5----	M T W ThF
0600	TOD OUTPUTS	8--5----	M T W ThF
0715	TOD OUTPUTS	--------	SuM T W ThF S
2300	TOD OUTPUTS	8-------	SuM T W ThF S

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	8--5----	SuM T W ThF S
0100	TOD OUTPUTS	8--5---1	M T W ThF
0200	TOD OUTPUTS	8--5----	M T W ThF
0600	TOD OUTPUTS	8--5----	M T W ThF
0715	TOD OUTPUTS	--------	SuM T W ThF S
2300	TOD OUTPUTS	8-------	SuM T W ThF S

*** Settings**

Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

No Calendar Defined/Enabled

TOD Schedule Report

for 2808: Washington Av&17 St

Print Date: 3/24/2014

Print Time: 8:07 AM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2808	Washington Av&17 St	HOLIDAY-2		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
NBL	SBT	EBL	WBT	-	NBT	-	EBT
0	0	0	0	0	0	0	0

Active Phase Bank: Phase Bank 1

Phase		Walk	Don't Walk	Min Initial	Veh Ext	Max Limit	Max 2	Yellow	Red
		Phase Bank 1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3		
1	NBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	5 - 5 - 5	9 - 7 - 9	3.7	2.3
2	SBT	5 - 5 - 5	16 - 16 - 16	5 - 5 - 5	1 - 1 - 1	15 - 15 - 15	0 - 15 - 15	4	2.3
3	EBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	5 - 5 - 5	8 - 5 - 8	3.7	3.4
4	WBT	5 - 5 - 5	18 - 18 - 18	7 - 7 - 7	2.5 - 2.5 - 2.5	10 - 18 - 12	24 - 24 - 24	4	3.4
5	-	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	2.3
6	NBT	5 - 5 - 5	16 - 16 - 16	5 - 5 - 5	1 - 1 - 1	15 - 15 - 15	0 - 15 - 15	4	2.3
7	-	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8	EBT	5 - 5 - 5	18 - 18 - 18	7 - 7 - 7	2.5 - 2.5 - 2.5	10 - 18 - 12	24 - 24 - 24	4	3.4

Last In Service Date: unknown

Permitted Phases

	12345678
Default	1234-6-8
External Permit 0	-2-4-6-8
External Permit 1	-2-4-6-8
External Permit 2	-2-4-6-8

Current TOD Schedule	Plan	Cycle	Green Time 1 NBL	2 SBT	3 EBL	4 WBT	5 -	6 NBT	7 -	8 EBT	Ring Offset	Offset
	1	70	0	21	6	23	0	21	0	36	0	25
	2	90	6	29	6	23	0	41	0	36	0	53
	4	100	6	39	6	23	0	51	0	36	0	54
	5	90	6	29	6	23	0	41	0	36	0	69
	6	90	6	29	6	23	0	41	0	36	0	73
	7	90	6	29	6	23	0	41	0	36	0	59
	11	100	6	39	6	23	0	51	0	36	0	93
	12	110	6	49	6	23	0	61	0	36	0	36
	14	90	6	29	6	23	0	41	0	36	0	73
	15	110	6	49	6	23	0	61	0	36	0	102
	16	150	6	89	6	23	0	101	0	36	0	82
	18	90	6	29	6	23	0	41	0	36	0	29
	19	100	6	39	6	23	0	51	0	36	0	0
	20	110	6	49	6	23	0	61	0	36	0	0
	21	110	6	49	6	23	0	61	0	36	0	0

Local TOD Schedule

Time	Plan	DOW
0000	Free	Su S
0000	Free	M T W Th F
0100	Free	M T W Th F
0530	1	Su S
0600	1	M T W Th F
0715	2	M T W Th F
0800	11	M T W Th F
0900	4	M T W Th F
1000	4	Su S
1330	12	M T W Th F
1530	6	M T W Th F
1800	Free	M T W Th F
2000	Free	Su S

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--------	M T W ThF
0100	TOD OUTPUTS	-------1	M T W ThF
0550	TOD OUTPUTS	---5----	M T W ThF
0600	TOD OUTPUTS	--------	M T W ThF
0720	TOD OUTPUTS	--------	M T W ThF

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-------1	Su S
0000	TOD OUTPUTS	--------	M T W ThF
0100	TOD OUTPUTS	-------1	M T W ThF
0520	TOD OUTPUTS	---5----	Su S
0530	TOD OUTPUTS	--------	Su S
0550	TOD OUTPUTS	---5----	M T W ThF
0600	TOD OUTPUTS	--------	M T W ThF
0605	TOD OUTPUTS	--------	Su S
0720	TOD OUTPUTS	--------	M T W ThF

*** Settings**

Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

No Calendar Defined/Enabled

TOD Schedule Report
for 2645: Alton Rd&16 St

Print Date: 1/24/2014

Print Time: 8:09 AM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2645	Alton Rd&16 St	DOW-6		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
SBL	NBT	-	EBT	-	SBT	-	WBT
0	0	0	0	0	0	0	0

Active Phase Bank: Phase Bank 1

Phase		Walk Phase Bank 1 2 3	Don't Walk 1 2 3	Min Initial 1 2 3	Veh Ext 1 2 3	Max Limit 1 2 3	Max 2 1 2 3	Yellow	Red
1	SBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	5 - 5 - 5	8 - 7 - 18	3	0
2	NBT	7 - 7 - 7	18 - 18 - 18	7 - 7 - 7	1 - 1 - 1	40 - 40 - 40	0 - 0 - 0	4	0.2
3	-	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4	EBT	7 - 7 - 7	26 - 26 - 26	7 - 7 - 7	3.5 - 3.5 - 3.5	12 - 12 - 12	47 - 47 - 47	4	0.6
5	-	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
6	SBT	7 - 7 - 7	18 - 18 - 18	7 - 7 - 7	1 - 1 - 1	40 - 40 - 40	0 - 0 - 0	4	0.2
7	-	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8	WBT	7 - 7 - 7	26 - 26 - 26	7 - 7 - 7	3.5 - 3.5 - 3.5	12 - 12 - 12	47 - 47 - 47	4	0.6

Last In Service Date: unknown

Permitted Phases

	12345678
Default	-2-4-6-8
External Permit 0	--------
External Permit 1	-2-4-6-8
External Permit 2	-2-4-6-8

Current TOD Schedule	Plan	Cycle	Green Time 1 SBL	2 NBT	3 -	4 EBT	5 -	6 SBT	7 -	8 WBT	Ring Offset	Offset
	1	160	0	114	0	37	0	114	0	37	0	21
	2	160	0	114	0	37	0	114	0	37	0	8
	3	120	0	73	0	38	0	73	0	38	0	33
	4	130	0	83	0	38	0	83	0	38	0	50
	5	130	0	84	0	37	0	84	0	37	0	17
	6	130	0	83	0	38	0	83	0	38	0	86
	7	105	0	61	0	35	0	61	0	35	0	20
	8	120	0	73	0	38	0	73	0	38	0	37
	9	120	0	76	0	35	0	76	0	35	0	25
	10	130	0	83	0	38	0	83	0	38	0	0
	11	105	0	61	0	35	0	61	0	35	0	25
	12	105	0	61	0	35	0	61	0	35	0	25
	13	105	0	61	0	35	0	61	0	35	0	20
	14	105	0	61	0	35	0	61	0	35	0	20
	15	130	0	86	0	35	0	86	0	35	0	37
	16	130	0	83	0	38	0	83	0	38	0	101
	17	130	0	83	0	38	0	83	0	38	0	119
	18	90	0	46	0	35	0	46	0	35	0	37
	19	90	0	46	0	35	0	46	0	35	0	15
	20	130	0	83	0	38	0	83	0	38	0	45
	21	90	0	46	0	35	0	46	0	35	0	38
	22	90	0	46	0	35	0	46	0	35	0	25
	23	90	0	46	0	35	0	46	0	35	0	15
	25	140	0	93	0	38	0	93	0	38	0	56
	26	180	0	133	0	38	0	133	0	38	0	152
	27	140	0	93	0	38	0	93	0	38	0	84

Local TOD Schedule

Time	Plan	DOW
0000	8	Su M T W Th S
0000	21	F
0030	11	Su S
0030	21	M T W Th
0600	8	Su M T W Th F S
0800	7	Su S
0800	5	M T W Th F
1000	4	Su
1030	4	S
1515	16	M T W Th F
1615	6	M T W Th F
1830	4	Su M T W Th F S
2000	8	Su M T W Th F S
2330	21	M T W Th

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--------	SuM T W ThF S
0900	TOD OUTPUTS	----4---	M T W ThF
2000	TOD OUTPUTS	--------	M T W ThF

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--------	SuM T W ThF S
0900	TOD OUTPUTS	----4---	M T W ThF
2000	TOD OUTPUTS	--------	M T W ThF

*** Settings**

Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

No Calendar Defined/Enabled

TRAFFIC SURVEY SPECIALISTS, INC.

17TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: ROLANDO MARTINEZ
SIGNALIZED

85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 17STWASH
Page : 1

ALL VEHICLES

	WASHINGTON AVENUE From North				17TH STREET From East				WASHINGTON AVENUE From South				17TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 08/26/16																	
16:00	0	0	36	21	1	20	58	5	1	64	75	24	1	24	72	64	466
16:15	0	1	24	37	0	11	53	4	1	61	66	20	0	19	70	38	405
16:30	0	1	36	19	0	14	60	8	0	68	82	25	1	17	73	59	463
16:45	0	2	32	21	0	16	54	6	1	58	99	26	0	16	69	58	458
Hr Total	0	4	128	98	1	61	225	23	3	251	322	95	2	76	284	219	1792
17:00	0	1	32	23	1	17	79	5	0	87	83	25	0	29	62	58	502
17:15	0	3	28	22	0	22	61	7	0	82	81	21	0	23	47	44	441
17:30	1	1	30	25	0	20	56	4	0	72	93	26	0	25	59	44	456
17:45	0	1	32	15	0	19	63	2	2	80	91	26	0	28	65	58	482
Hr Total	1	6	122	85	1	78	259	18	2	321	348	98	0	105	233	204	1881
18:00	0	0	34	21	0	22	60	2	0	67	90	25	0	22	55	42	440
18:15	0	0	17	17	0	12	42	3	0	71	72	13	0	26	51	37	361
18:30	0	0	38	17	0	16	44	0	2	57	64	17	0	22	55	39	371
18:45	0	1	26	25	0	18	49	2	0	53	44	20	0	28	54	41	361
Hr Total	0	1	115	80	0	68	195	7	2	248	270	75	0	98	215	159	1533
TOTAL	1	11	365	263	2	207	679	48	7	820	940	268	2	279	732	582	5206

TRAFFIC SURVEY SPECIALISTS, INC.

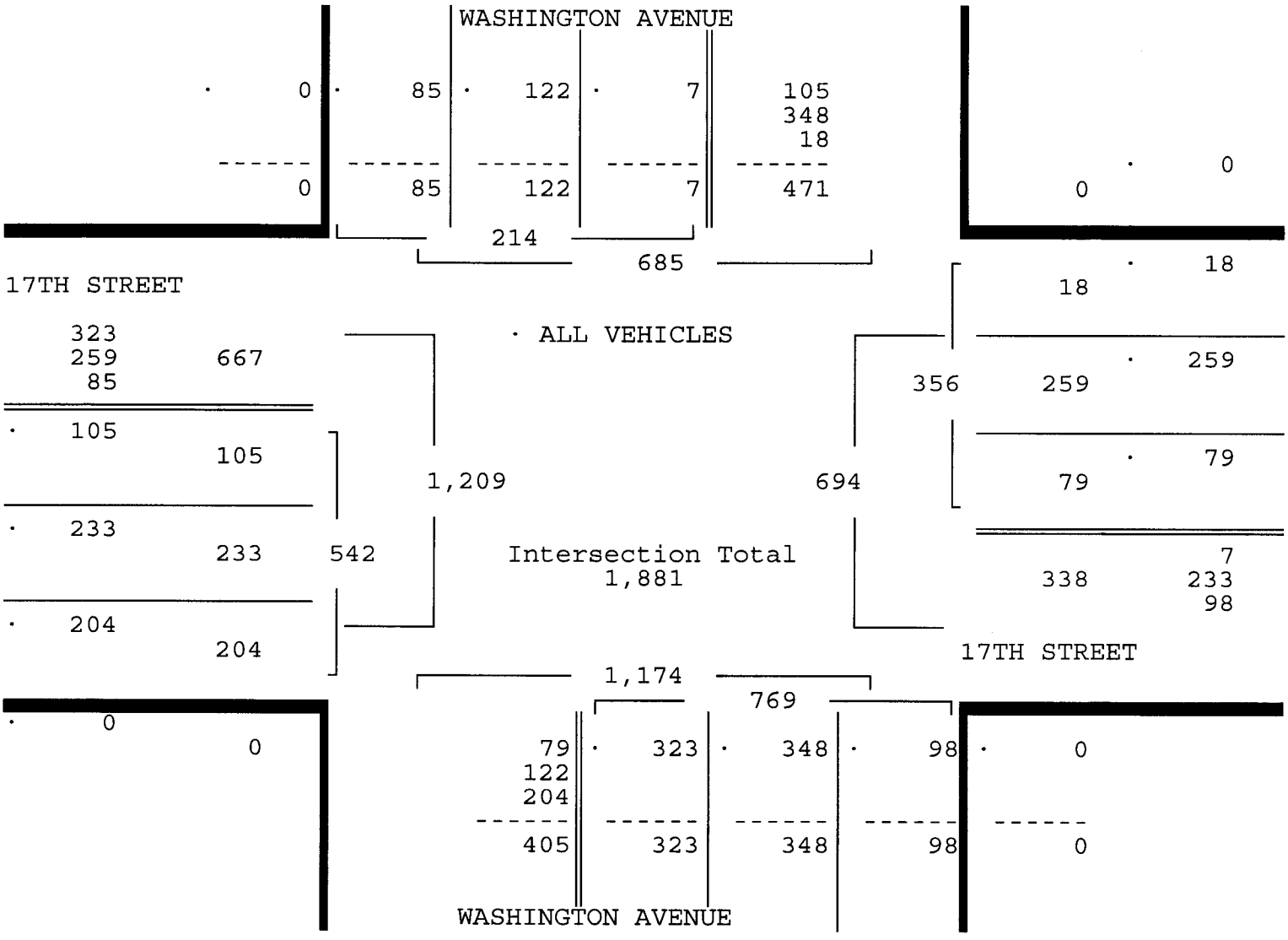
17TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: ROLANDO MARTINEZ
SIGNALIZED

85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 17STWASH
Page : 2

ALL VEHICLES

	WASHINGTON AVENUE From North				17TH STREET From East				WASHINGTON AVENUE From South				17TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 08/26/16																	
Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 19:00 on 08/26/16																	
Peak start 17:00					17:00				17:00				17:00				
Volume	1	6	122	85	1	78	259	18	2	321	348	98	0	105	233	204	
Percent	0%	3%	57%	40%	0%	22%	73%	5%	0%	42%	45%	13%	0%	19%	43%	38%	
Pk total	214				356				769				542				
Highest	17:30				17:00				17:45				17:45				
Volume	1	1	30	25	1	17	79	5	2	80	91	26	0	28	65	58	
Hi total	57				102				199				151				
PHF	.94				.87				.97				.90				



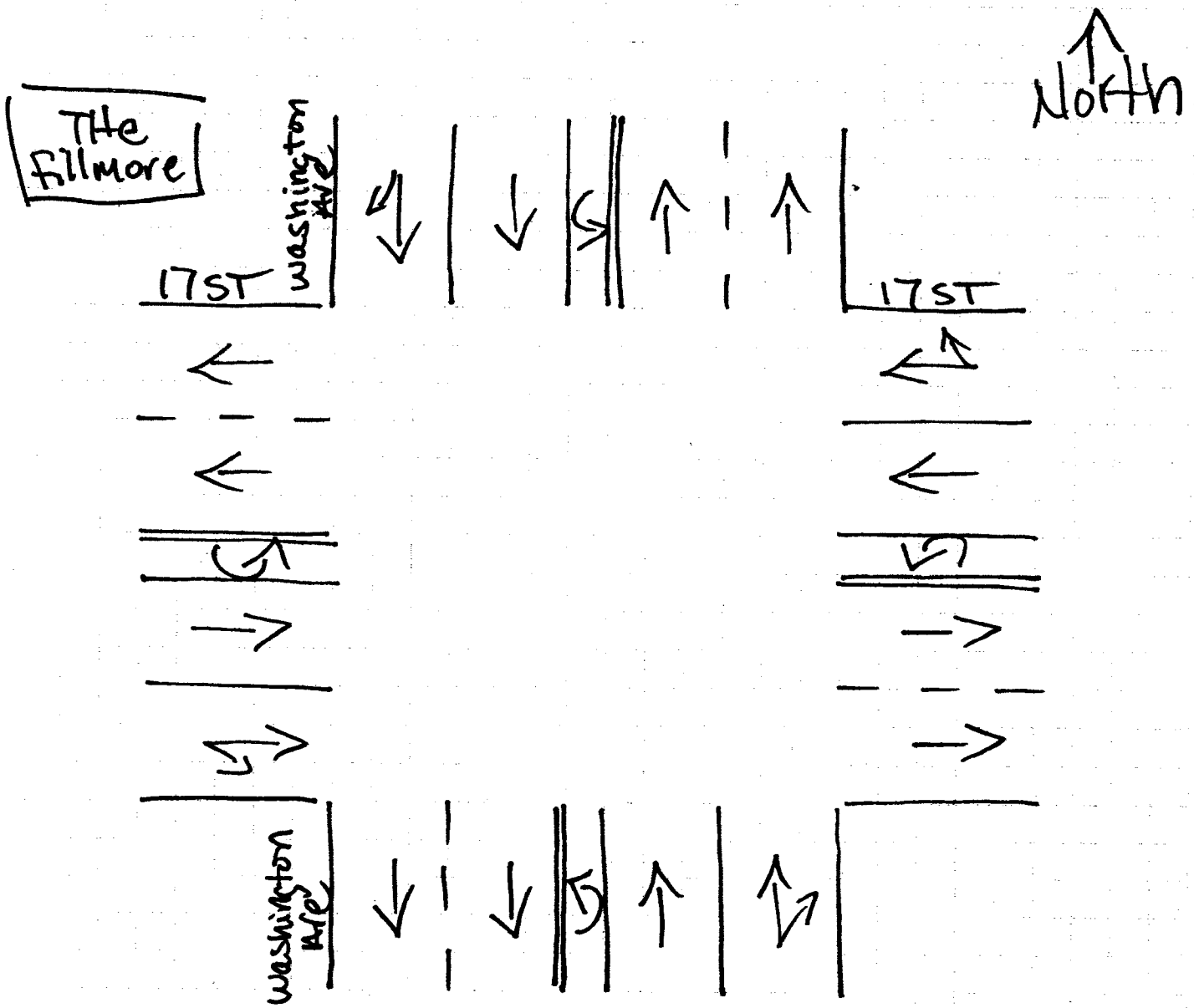
TRAFFIC SURVEY SPECIALISTS, INC.
85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

17TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: ROLANDO MARTINEZ
SIGNALIZED

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 17STWASH
Page : 1

PEDESTRIANS & BIKES

	WASHINGTON AVENUE From North				17TH STREET From East				WASHINGTON AVENUE From South				17TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 08/26/16																	
16:00	0	7	0	5	0	4	0	8	0	2	0	26	0	5	0	4	61
16:15	0	1	0	15	0	2	0	13	0	4	0	21	0	3	0	8	67
16:30	0	5	0	1	0	0	0	16	0	2	0	17	0	2	0	6	49
16:45	0	5	0	7	0	2	0	10	0	1	0	17	0	3	0	5	50
Hr Total	0	18	0	28	0	8	0	47	0	9	0	81	0	13	0	23	227
17:00	0	0	0	0	0	1	0	11	0	7	0	27	0	9	0	15	70
17:15	0	2	0	10	0	0	0	13	0	8	0	32	0	0	0	7	72
17:30	0	2	0	8	0	1	0	16	0	5	0	11	0	6	0	18	67
17:45	0	0	0	5	0	0	0	6	0	1	0	18	0	5	0	16	51
Hr Total	0	4	0	23	0	2	0	46	0	21	0	88	0	20	0	56	260
18:00	0	3	0	5	0	2	0	12	0	4	0	12	0	1	0	2	41
18:15	0	0	0	4	0	0	0	0	0	5	0	16	0	0	0	4	29
18:30	0	3	0	4	0	0	0	0	0	0	0	9	0	1	0	2	19
18:45	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	4	9
Hr Total	0	6	0	16	0	2	0	12	0	9	0	37	0	4	0	12	98
TOTAL	0	28	0	67	0	12	0	105	0	39	0	206	0	37	0	91	585



Miami Beach, Florida
January 20, 2015
drawn by: Luis Palomino
signalized ✓

TRAFFIC SURVEY SPECIALISTS, INC.

16TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO
SIGNALIZED

85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 16STWASH
Page : 1

ALL VEHICLES

	WASHINGTON AVENUE From North				16TH STREET From East				WASHINGTON AVENUE From South				16TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 08/26/16																	
16:00	1	12	111	27	0	20	36	19	4	15	120	16	0	14	39	9	443
16:15	1	16	84	20	0	18	24	21	9	19	107	20	0	14	23	7	383
16:30	1	21	96	28	0	16	32	30	3	12	108	19	0	17	14	12	409
16:45	2	13	117	33	0	18	32	44	4	20	140	20	0	24	28	18	513
Hr Total	5	62	408	108	0	72	124	114	20	66	475	75	0	69	104	46	1748
17:00	1	16	112	24	0	21	30	29	3	9	112	21	0	16	31	9	434
17:15	0	10	100	31	0	17	39	35	4	15	134	19	0	15	24	10	453
17:30	6	20	97	24	0	14	52	25	3	17	139	18	0	16	21	12	464
17:45	3	14	105	29	0	19	37	34	5	12	137	17	0	18	15	5	450
Hr Total	10	60	414	108	0	71	158	123	15	53	522	75	0	65	91	36	1801
18:00	1	14	107	46	0	18	31	30	3	10	130	21	0	13	25	16	465
18:15	3	12	79	27	0	18	42	36	2	15	135	32	0	17	19	10	447
18:30	1	12	90	30	0	23	36	19	6	16	105	23	1	14	25	12	413
18:45	2	10	104	19	0	15	35	17	5	14	102	21	0	8	25	16	393
Hr Total	7	48	380	122	0	74	144	102	16	55	472	97	1	52	94	54	1718
TOTAL	22	170	1202	338	0	217	426	339	51	174	1469	247	1	186	289	136	5267

TRAFFIC SURVEY SPECIALISTS, INC.

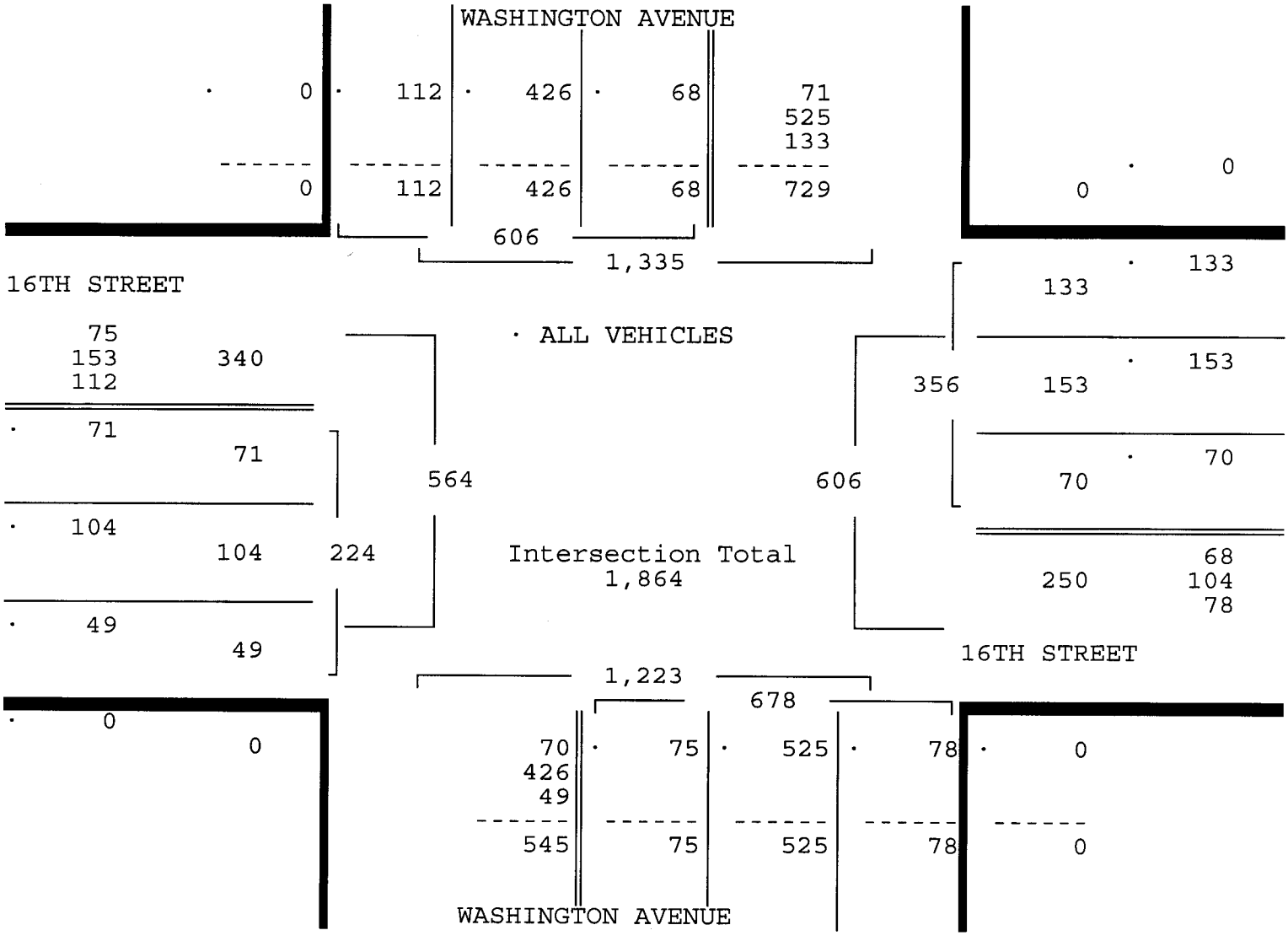
16TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO
SIGNALIZED

85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 16STWASH

ALL VEHICLES

	WASHINGTON AVENUE From North				16TH STREET From East				WASHINGTON AVENUE From South				16TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 08/26/16																	
Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 19:00 on 08/26/16																	
Peak start	16:45				16:45				16:45				16:45				
Volume	9	59	426	112	0	70	153	133	14	61	525	78	0	71	104	49	
Percent	1%	10%	70%	18%	0%	20%	43%	37%	2%	9%	77%	12%	0%	32%	46%	22%	
Pk total	606				356				678				224				
Highest	16:45				16:45				16:45				16:45				
Volume	2	13	117	33	0	18	32	44	4	20	140	20	0	24	28	18	
Hi total	165				94				184				70				
PHF	.92				.95				.92				.80				



TRAFFIC SURVEY SPECIALISTS, INC.

16TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO
SIGNALIZED

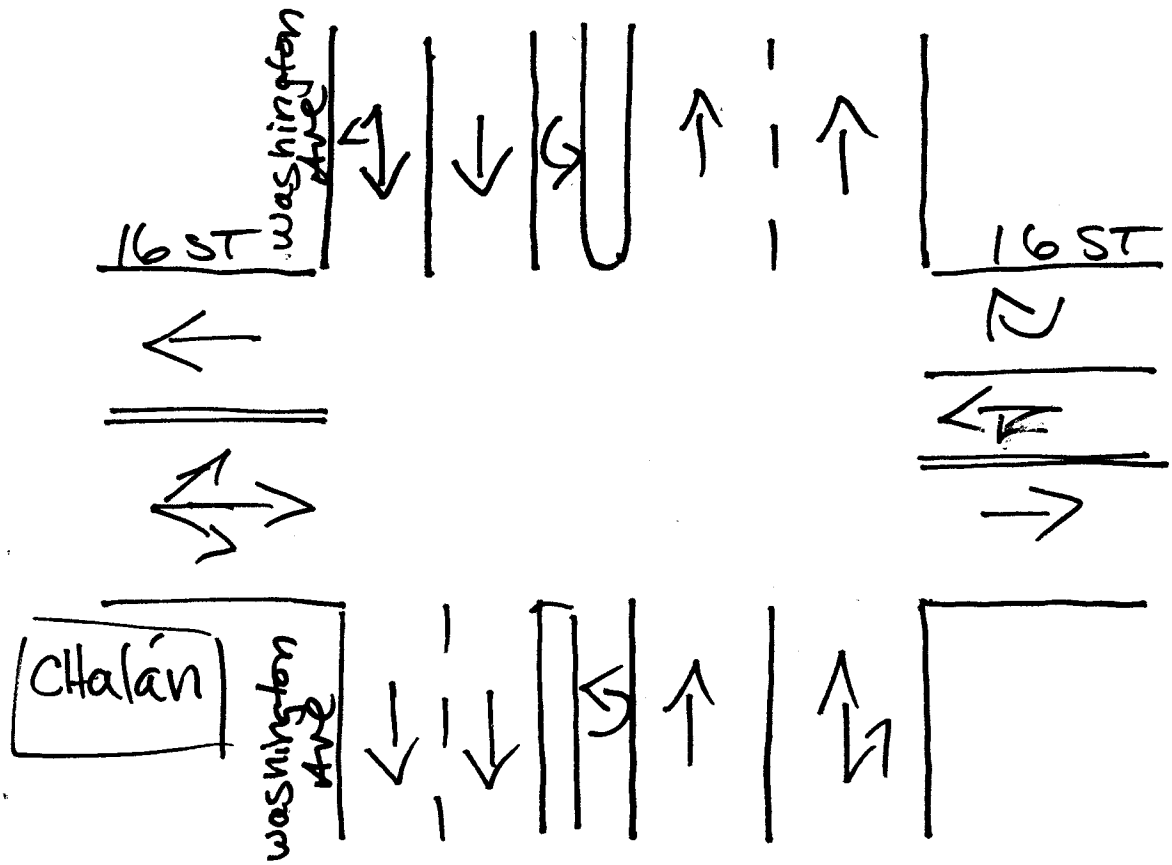
85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 16STWASH

PEDESTRIANS & BIKES

	WASHINGTON AVENUE From North				16TH STREET From East				WASHINGTON AVENUE From South				16TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 08/26/16																	
16:00	0	3	0	29	0	7	0	34	0	6	0	28	0	1	0	63	171
16:15	0	0	0	14	0	4	0	68	0	3	0	20	0	0	0	28	137
16:30	0	2	0	23	0	3	0	33	0	2	0	14	0	2	0	67	146
16:45	0	1	0	11	0	4	0	36	0	2	0	10	0	0	0	64	128
Hr Total	0	6	0	77	0	18	0	171	0	13	0	72	0	3	0	222	582
17:00	0	2	0	22	0	6	0	54	0	0	0	16	0	3	0	66	169
17:15	0	1	0	23	0	1	0	50	0	1	0	20	0	6	0	52	154
17:30	0	4	0	15	0	0	0	51	0	4	0	28	0	4	0	76	182
17:45	0	7	0	22	0	1	0	28	0	11	0	31	0	1	0	48	149
Hr Total	0	14	0	82	0	8	0	183	0	16	0	95	0	14	0	242	654
18:00	0	3	0	21	0	1	0	71	0	6	0	24	0	6	0	63	195
18:15	0	1	0	37	0	5	0	51	0	0	0	21	0	5	0	45	165
18:30	0	7	0	32	0	2	0	26	0	1	0	6	0	4	0	53	131
18:45	0	4	0	24	0	3	0	29	0	0	0	21	0	2	0	69	152
Hr Total	0	15	0	114	0	11	0	177	0	7	0	72	0	17	0	230	643
TOTAL	0	35	0	273	0	37	0	531	0	36	0	239	0	34	0	694	1879

North



Miami Bch, Florida
August 25, 2016
drawn by: Luis Palomino
signalized

TRAFFIC SURVEY SPECIALISTS, INC.
85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

15TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: RICHARD MENDEZ
SIGNALIZED

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 15STWASH

ALL VEHICLES

	WASHINGTON AVENUE From North				----- From East				WASHINGTON AVENUE From South				15TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 08/26/16																	
16:00	2	0	132	13	0	0	0	0	3	9	145	0	0	19	0	30	353
16:15	1	0	107	8	0	0	0	0	2	23	132	0	0	27	0	33	333
16:30	5	0	106	13	0	0	0	0	0	10	129	0	0	18	0	24	305
16:45	3	0	142	15	0	0	0	0	1	14	151	0	0	29	0	22	377
Hr Total	11	0	487	49	0	0	0	0	6	56	557	0	0	93	0	109	1368
17:00	5	0	123	15	0	0	0	0	2	14	126	0	0	21	0	22	328
17:15	7	0	107	14	0	0	0	0	2	10	149	0	0	10	0	22	321
17:30	6	0	108	12	0	0	0	0	2	9	144	0	0	29	0	26	336
17:45	6	0	119	10	0	0	0	0	3	10	134	0	0	24	0	29	335
Hr Total	24	0	457	51	0	0	0	0	9	43	553	0	0	84	0	99	1320
18:00	4	0	118	13	0	0	0	0	1	18	136	0	0	14	0	26	330
18:15	5	0	100	6	0	0	0	0	3	15	146	0	1	24	0	27	327
18:30	7	0	106	14	0	0	0	0	5	23	132	0	0	18	0	16	321
18:45	8	0	108	20	0	0	0	0	5	12	111	0	0	14	0	18	296
Hr Total	24	0	432	53	0	0	0	0	14	68	525	0	1	70	0	87	1274
TOTAL	59	0	1376	153	0	0	0	0	29	167	1635	0	1	247	0	295	3962

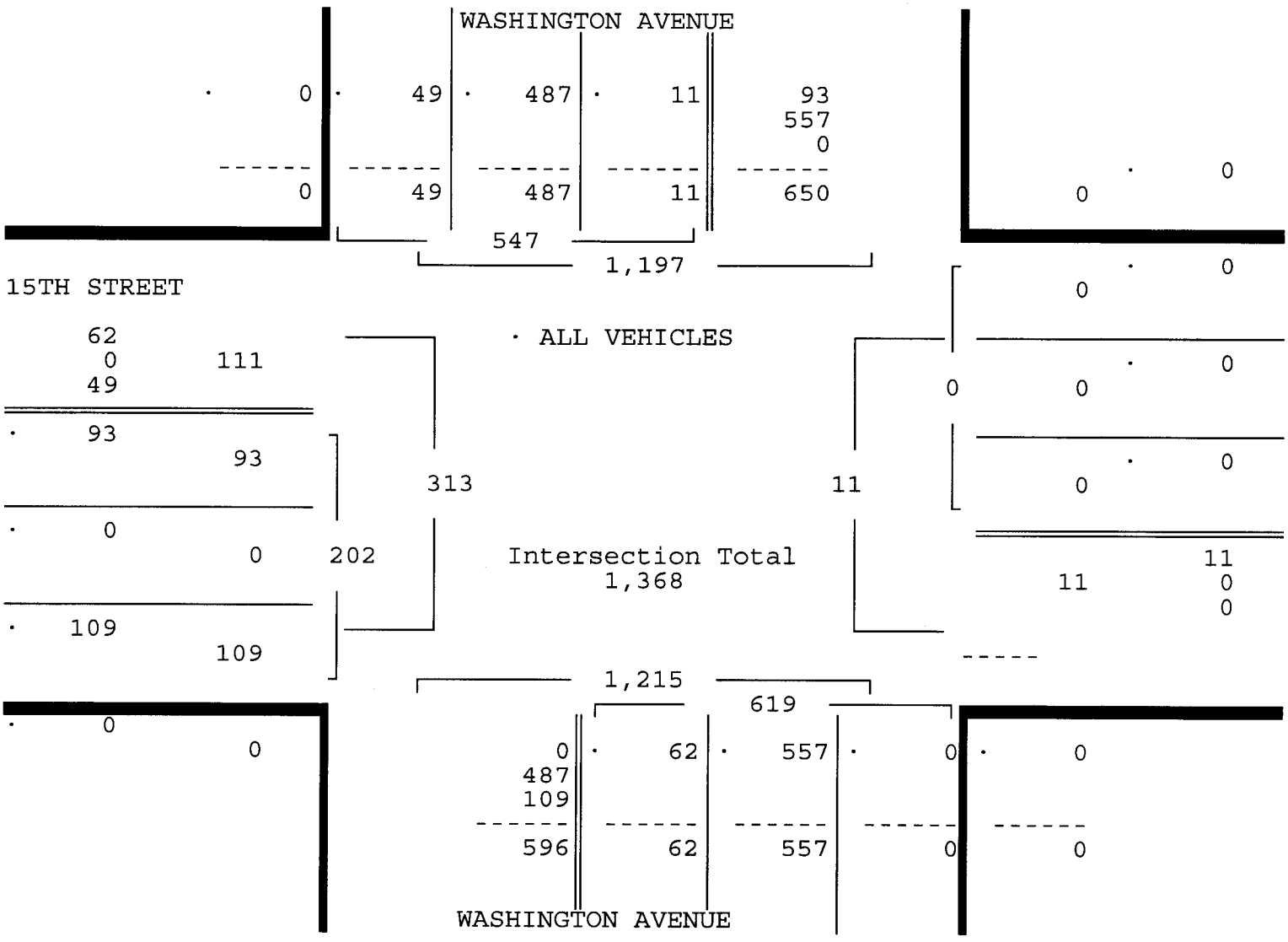
TRAFFIC SURVEY SPECIALISTS, INC.
85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

15TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: RICHARD MENDEZ
SIGNALIZED

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 15STWASH

ALL VEHICLES

	WASHINGTON AVENUE From North				----- From East				WASHINGTON AVENUE From South				15TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 08/26/16																	
Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 19:00 on 08/26/16																	
Peak start	16:00				16:00				16:00				16:00				
Volume	11	0	487	49	0	0	0	0	6	56	557	0	0	93	0	109	
Percent	2%	0%	89%	9%	0%	0%	0%	0%	1%	9%	90%	0%	0%	46%	0%	54%	
Pk total	547				0				619				202				
Highest	16:45				16:00				16:45				16:15				
Volume	3	0	142	15	0	0	0	0	1	14	151	0	0	27	0	33	
Hi total	160				0				166				60				
PHF	.85				.0				.93				.84				



TRAFFIC SURVEY SPECIALISTS, INC.
85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

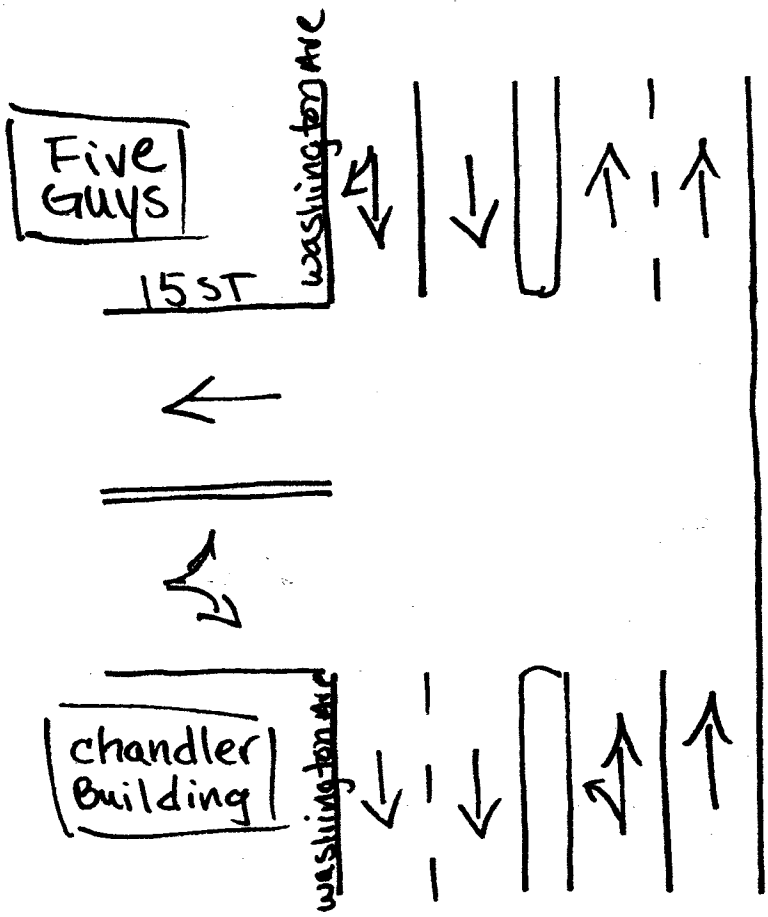
15TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: RICHARD MENDEZ
SIGNALIZED

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 15STWASH
Page : 1

PEDESTRIANS & BIKES

	WASHINGTON AVENUE From North				----- From East				WASHINGTON AVENUE From South				15TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 08/26/16																	
16:00	0	1	0	25	0	0	0	0	0	1	0	19	0	2	0	88	136
16:15	0	2	0	9	0	0	0	0	0	1	0	32	0	0	0	81	125
16:30	0	1	0	16	0	0	0	0	0	2	0	25	0	1	0	53	98
16:45	0	2	0	36	0	0	0	0	0	0	0	17	0	2	0	84	141
Hr Total	0	6	0	86	0	0	0	0	0	4	0	93	0	5	0	306	500
17:00	0	0	0	16	0	0	0	0	0	4	0	21	0	4	0	93	138
17:15	0	3	0	10	0	0	0	0	0	1	0	20	0	3	0	89	126
17:30	0	1	0	16	0	0	0	0	0	0	0	22	0	1	0	72	112
17:45	0	3	0	19	0	0	0	0	0	3	0	20	0	1	0	87	133
Hr Total	0	7	0	61	0	0	0	0	0	8	0	83	0	9	0	341	509
18:00	0	2	0	30	0	0	0	0	0	0	0	28	0	3	0	71	134
18:15	0	1	0	34	0	0	0	0	0	0	0	18	0	5	0	105	163
18:30	0	3	0	19	0	0	0	0	0	0	0	43	0	0	0	94	159
18:45	0	0	0	43	0	0	0	0	0	1	0	40	0	3	0	85	172
Hr Total	0	6	0	126	0	0	0	0	0	1	0	129	0	11	0	355	628
TOTAL	0	19	0	273	0	0	0	0	0	13	0	305	0	25	0	1002	1637

North



Miami beach, Florida
January 20, 2015
drawn by: Luis Palomino
Signalized ✓

TRAFFIC SURVEY SPECIALISTS, INC.
85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

16TH STREET & DREXEL AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
SIGNALIZED

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 16STDREX

ALL VEHICLES

	DREXEL AVENUE From North				16TH STREET From East				DREXEL AVENUE From South				16TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 08/26/16																	
16:00	0	2	3	3	0	5	59	6	0	2	2	5	1	7	58	5	158
16:15	0	0	0	6	0	2	54	7	0	2	2	5	0	6	45	8	137
16:30	0	1	1	4	0	5	59	7	0	1	2	4	0	4	38	2	128
16:45	0	2	0	3	0	3	85	7	0	2	1	7	0	6	58	6	180
Hr Total	0	5	4	16	0	15	257	27	0	7	7	21	1	23	199	21	603
17:00	0	1	0	4	0	4	56	8	0	10	2	8	1	5	48	7	154
17:15	0	4	1	5	0	6	63	12	0	5	1	2	1	6	41	9	156
17:30	0	0	0	8	0	5	87	10	0	3	2	4	0	4	45	5	173
17:45	0	1	1	6	0	8	73	8	0	6	1	4	0	8	33	6	155
Hr Total	0	6	2	23	0	23	279	38	0	24	6	18	2	23	167	27	638
18:00	0	0	0	6	0	4	79	12	1	9	1	4	0	9	53	7	185
18:15	1	3	0	5	0	2	77	11	1	4	0	9	0	4	35	1	153
18:30	0	1	0	5	0	3	83	6	0	6	2	5	0	1	44	1	157
18:45	0	1	1	3	0	5	60	7	0	4	1	4	0	3	41	4	134
Hr Total	1	5	1	19	0	14	299	36	2	23	4	22	0	17	173	13	629
TOTAL	1	16	7	58	0	52	835	101	2	54	17	61	3	63	539	61	1870

TRAFFIC SURVEY SPECIALISTS, INC.

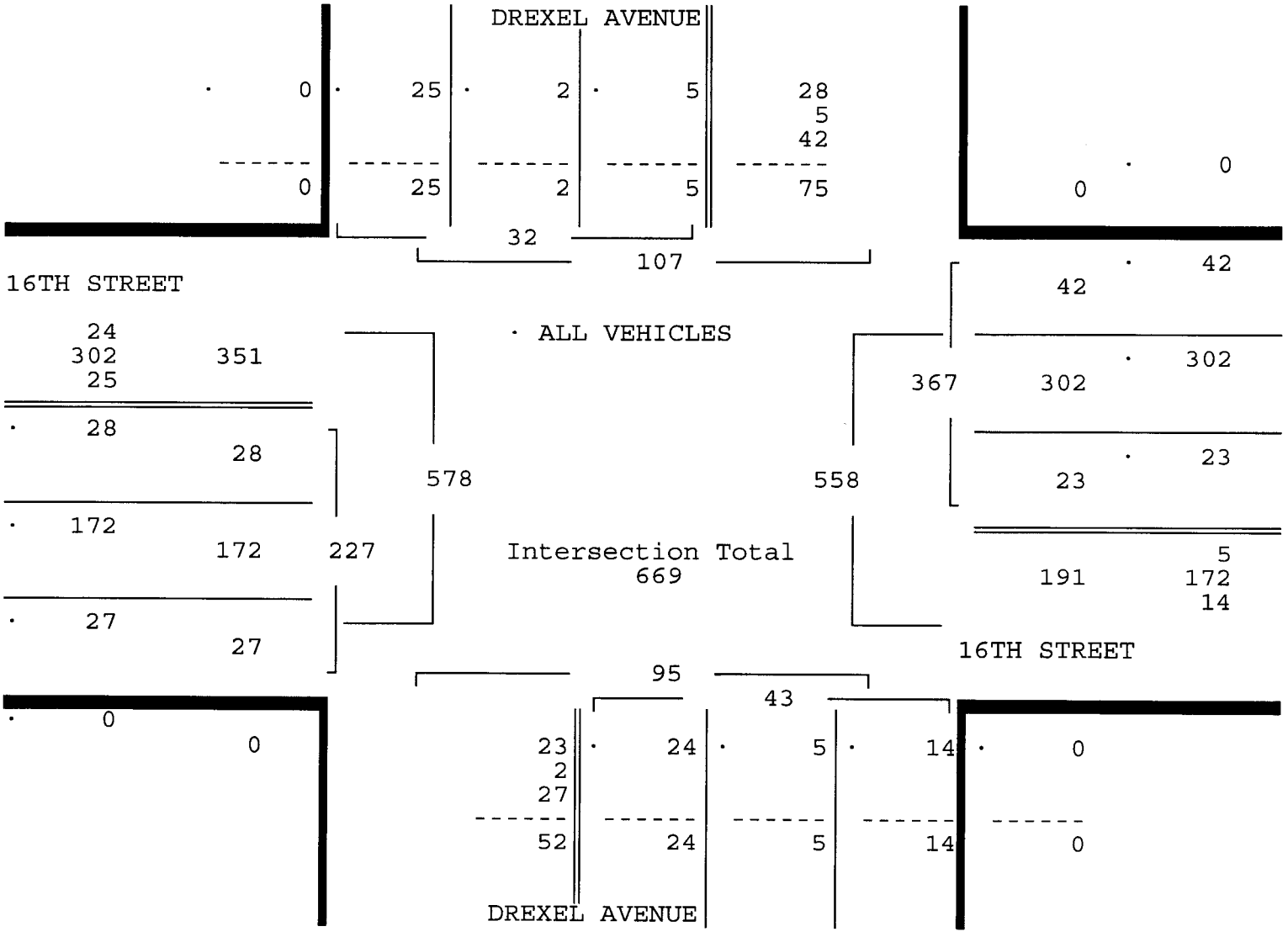
16TH STREET & DREXEL AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
SIGNALIZED

85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 16STDREX
Page : 2

ALL VEHICLES

	DREXEL AVENUE From North				16TH STREET From East				DREXEL AVENUE From South				16TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 08/26/16																	
Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 19:00 on 08/26/16																	
Peak start 17:15					17:15				17:15				17:15				
Volume	0	5	2	25	0	23	302	42	1	23	5	14	1	27	172	27	
Percent	0%	16%	6%	78%	0%	6%	82%	11%	2%	53%	12%	33%	0%	12%	76%	12%	
Pk total	32				367				43				227				
Highest	17:15				17:30				18:00				18:00				
Volume	0	4	1	5	0	5	87	10	1	9	1	4	0	9	53	7	
Hi total	10				102				15				69				
PHF	.80				.90				.72				.82				



TRAFFIC SURVEY SPECIALISTS, INC.
85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

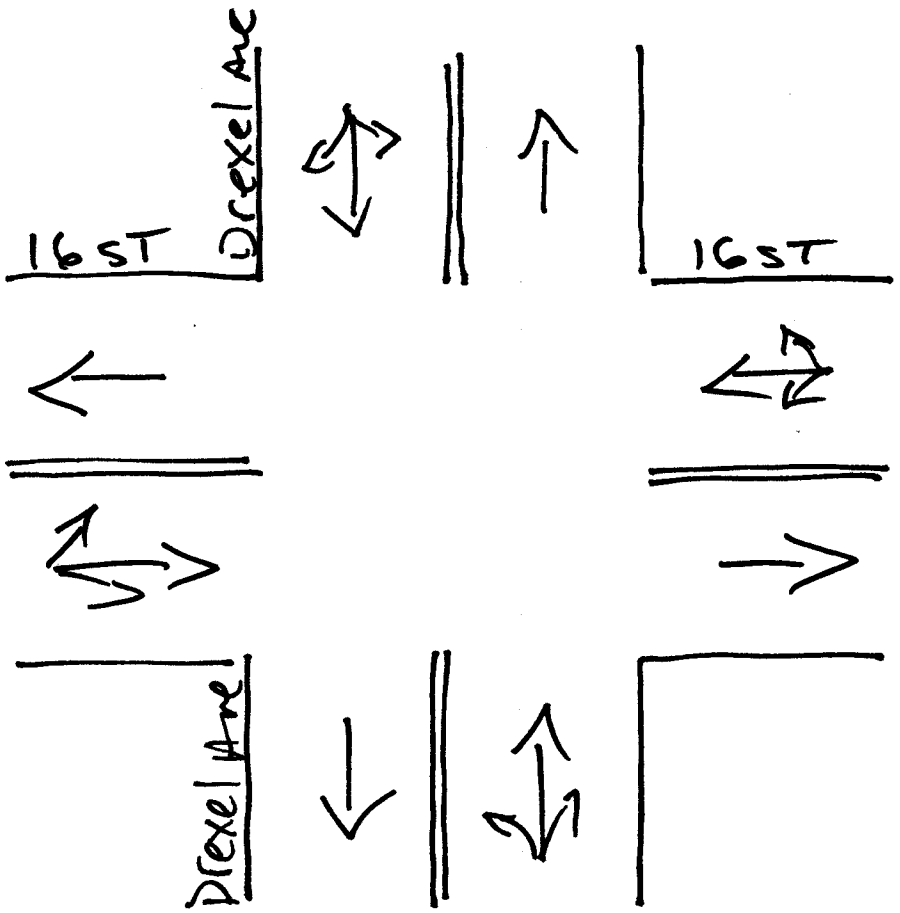
16TH STREET & DREXEL AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
SIGNALIZED

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 16STDREX

PEDESTRIANS & BIKES

	DREXEL AVENUE From North				16TH STREET From East				DREXEL AVENUE From South				16TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 08/26/16																	
16:00	0	10	0	23	0	0	0	3	0	5	0	19	0	0	0	4	64
16:15	0	7	0	14	0	0	0	12	0	7	0	21	0	0	0	14	75
16:30	0	4	0	15	0	0	0	6	0	4	0	13	0	1	0	9	52
16:45	0	5	0	16	0	2	0	18	0	5	0	12	0	0	0	7	65
Hr Total	0	26	0	68	0	2	0	39	0	21	0	65	0	1	0	34	256
17:00	0	4	0	16	0	4	0	3	0	5	0	18	0	2	0	15	67
17:15	0	8	0	17	0	1	0	13	0	5	0	10	0	0	0	10	64
17:30	0	4	0	7	0	0	0	8	0	7	0	19	0	1	0	3	49
17:45	0	10	0	7	0	2	0	7	0	17	0	14	0	2	0	5	64
Hr Total	0	26	0	47	0	7	0	31	0	34	0	61	0	5	0	33	244
18:00	0	6	0	12	0	2	0	10	0	11	0	17	0	1	0	5	64
18:15	0	2	0	29	0	0	0	9	0	3	0	10	0	0	0	12	65
18:30	0	5	0	19	0	0	0	10	0	7	0	17	0	0	0	8	66
18:45	0	5	0	17	0	0	0	12	0	3	0	17	0	0	0	4	58
Hr Total	0	18	0	77	0	2	0	41	0	24	0	61	0	1	0	29	253
TOTAL	0	70	0	192	0	11	0	111	0	79	0	187	0	7	0	96	753

North



Miami Bch, Florida
August 25, 2016
drawn by: Luis Palomino
signalized

TRAFFIC SURVEY SPECIALISTS, INC.
85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

16TH STREET & PARKING GARAGE
MIAMI BEACH, FLORIDA
COUNTED BY: AMBER PALOMINO
NOT SIGNALIZED

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 16STGARA

ALL VEHICLES

	PARKING GARAGE From North				16TH STREET From East				----- From South				16TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 08/26/16																	
16:00	0	0	0	1	0	0	68	3	0	0	0	0	1	2	54	0	129
16:15	0	1	0	5	0	0	58	11	0	0	0	0	1	4	43	0	123
16:30	0	4	0	10	1	0	63	2	0	0	0	0	0	3	39	0	122
16:45	0	5	0	12	0	0	81	6	0	0	0	0	0	2	59	0	165
Hr Total	0	10	0	28	1	0	270	22	0	0	0	0	2	11	195	0	539
17:00	0	4	0	5	0	0	64	9	0	0	0	0	0	0	59	0	141
17:15	0	4	0	5	0	0	75	4	0	0	0	0	0	2	41	0	131
17:30	0	5	0	13	0	0	89	2	0	0	0	0	0	4	45	0	158
17:45	0	2	0	12	0	0	75	2	0	0	0	0	0	1	37	0	129
Hr Total	0	15	0	35	0	0	303	17	0	0	0	0	0	7	182	0	559
18:00	0	3	0	16	0	0	77	2	0	0	0	0	0	1	57	0	156
18:15	0	3	0	12	0	0	80	2	0	0	0	0	0	4	44	0	145
18:30	0	3	0	7	0	0	83	3	0	0	0	0	0	2	49	0	147
18:45	0	3	0	13	0	0	57	4	0	0	0	0	0	2	44	0	123
Hr Total	0	12	0	48	0	0	297	11	0	0	0	0	0	9	194	0	571
TOTAL	0	37	0	111	1	0	870	50	0	0	0	0	2	27	571	0	1669

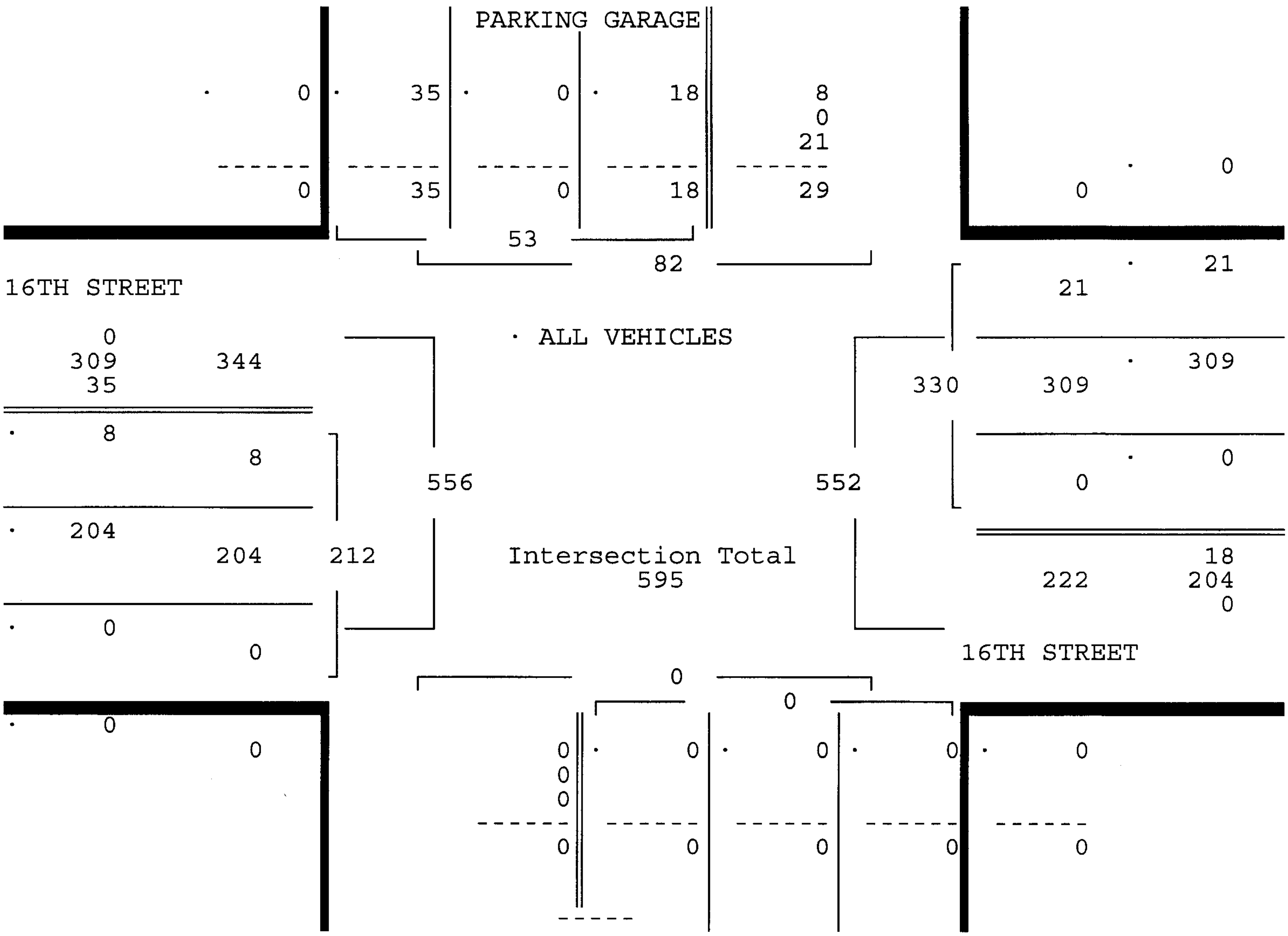
TRAFFIC SURVEY SPECIALISTS, INC.
85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

16TH STREET & PARKING GARAGE
MIAMI BEACH, FLORIDA
COUNTED BY: AMBER PALOMINO
NOT SIGNALIZED

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 16STGARA

ALL VEHICLES

	PARKING GARAGE From North				16TH STREET From East				----- From South				16TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 08/26/16																	
Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 19:00 on 08/26/16																	
Peak start	16:45				16:45				16:45				16:45				
Volume	0	18	0	35	0	0	309	21	0	0	0	0	0	8	204	0	
Percent	0%	34%	0%	66%	0%	0%	94%	6%	0%	0%	0%	0%	0%	4%	96%	0%	
Pk total	53				330				0				212				
Highest	17:30				17:30				16:00				16:45				
Volume	0	5	0	13	0	0	89	2	0	0	0	0	0	2	59	0	
Hi total	18				91				0				61				
PHF	.74				.91				.0				.87				



TRAFFIC SURVEY SPECIALISTS, INC.

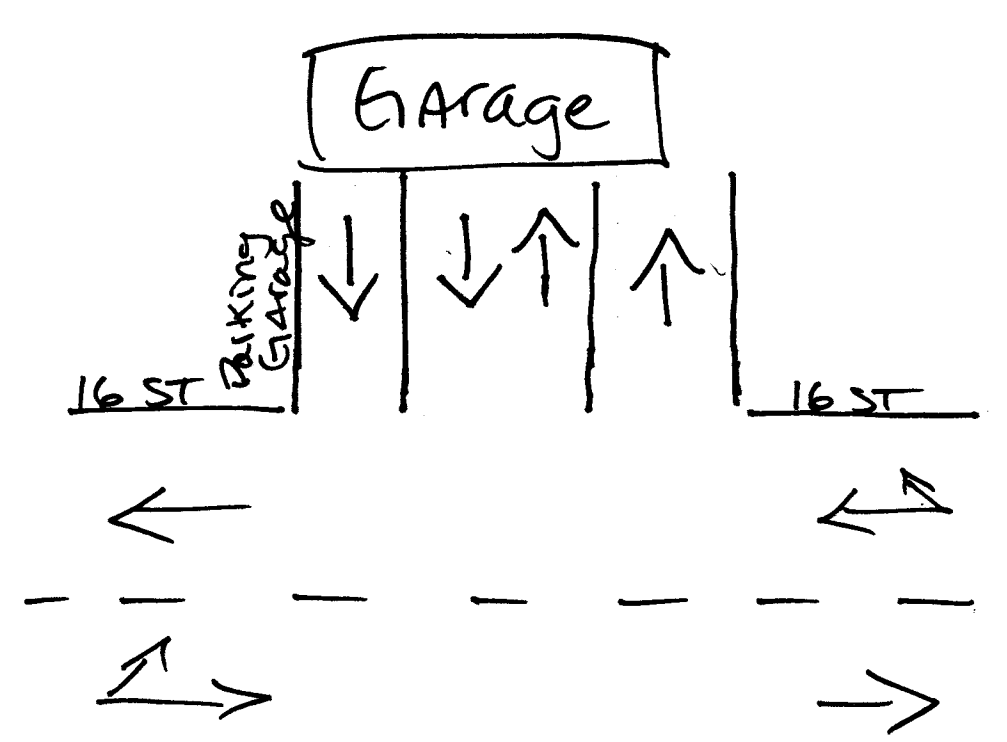
16TH STREET & PARKING GARAGE
MIAMI BEACH, FLORIDA
COUNTED BY: AMBER PALOMINO
NOT SIGNALIZED

85 SE 4TH AVENUE, UNIT 109
DELRAY BEACH, FLORIDA
PHONE (561)272-3255

Site Code : 00160180
Start Date: 08/26/16
File I.D. : 16STGARA
Page : 1

PEDESTRIANS & BIKES

	PARKING GARAGE From North				16TH STREET From East				----- From South				16TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 08/26/16																	
16:00	0	2	0	15	0	0	0	2	0	0	0	0	0	0	0	0	19
16:15	0	4	0	29	0	0	0	0	0	0	0	0	0	0	0	0	33
16:30	0	1	0	16	0	0	0	0	0	0	0	0	0	0	0	0	17
16:45	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	19
Hr Total	0	7	0	79	0	0	0	2	0	0	0	0	0	0	0	0	88
17:00	0	2	0	8	0	0	0	0	0	0	0	0	0	0	0	0	10
17:15	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	6	20
17:30	0	0	0	10	0	0	0	1	0	0	0	0	0	0	0	0	11
17:45	0	3	0	11	0	0	0	0	0	0	0	0	0	0	0	3	17
Hr Total	0	5	0	43	0	0	0	1	0	0	0	0	0	0	0	9	58
18:00	0	2	0	21	0	0	0	3	0	0	0	0	0	0	0	1	27
18:15	0	2	0	27	0	0	0	4	0	0	0	0	0	0	0	1	34
18:30	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	11
18:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2
Hr Total	0	4	0	60	0	0	0	7	0	0	0	0	0	0	0	3	74
TOTAL	0	16	0	182	0	0	0	10	0	0	0	0	0	0	0	12	220



Miami Bch, Florida
August 25, 2016
drawn by: Luis Palomino©
not signalized

Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

16TH STREET & ALTON ROAD
MIAMI BEACH, FLORIDA
COUNTED BY: MARCELLO MINO-WILZEK
SIGNALIZED

Site Code : 00160041
Start Date: 03/04/16
File I.D. : 16STALTR
Page : 1

ALL VEHICLES

	ALTON ROAD From North				16TH STREET From East				ALTON ROAD From South				16TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 03/04/16																	
16:30	0	34	192	15	0	28	12	31	0	14	240	43	0	11	20	12	652
16:45	2	23	174	8	0	21	15	33	0	8	223	36	0	17	15	10	585
17:00	0	35	201	16	0	25	15	28	1	16	221	29	0	9	10	16	622
17:15	2	31	208	14	0	27	12	22	1	9	206	31	0	14	17	11	605
Hr Total	4	123	775	53	0	101	54	114	2	47	890	139	0	51	62	49	2464
17:30	0	28	186	14	1	23	11	36	0	12	234	28	0	14	16	9	612
17:45	0	23	211	6	0	25	23	30	0	11	215	28	0	4	15	8	599
18:00	0	28	172	8	0	22	10	30	0	13	211	28	1	7	13	13	556
18:15	0	29	201	7	0	20	16	28	0	14	226	26	0	9	15	16	607
Hr Total	0	108	770	35	1	90	60	124	0	50	886	110	1	34	59	46	2374
18:30	0	30	197	15	0	24	17	31	1	11	211	20	0	5	10	13	585
18:45	0	29	198	11	0	26	10	28	0	18	247	31	0	8	16	12	634
Hr Total	0	59	395	26	0	50	27	59	1	29	458	51	0	13	26	25	1219
TOTAL	4	290	1940	114	1	241	141	297	3	126	2234	300	1	98	147	120	6057

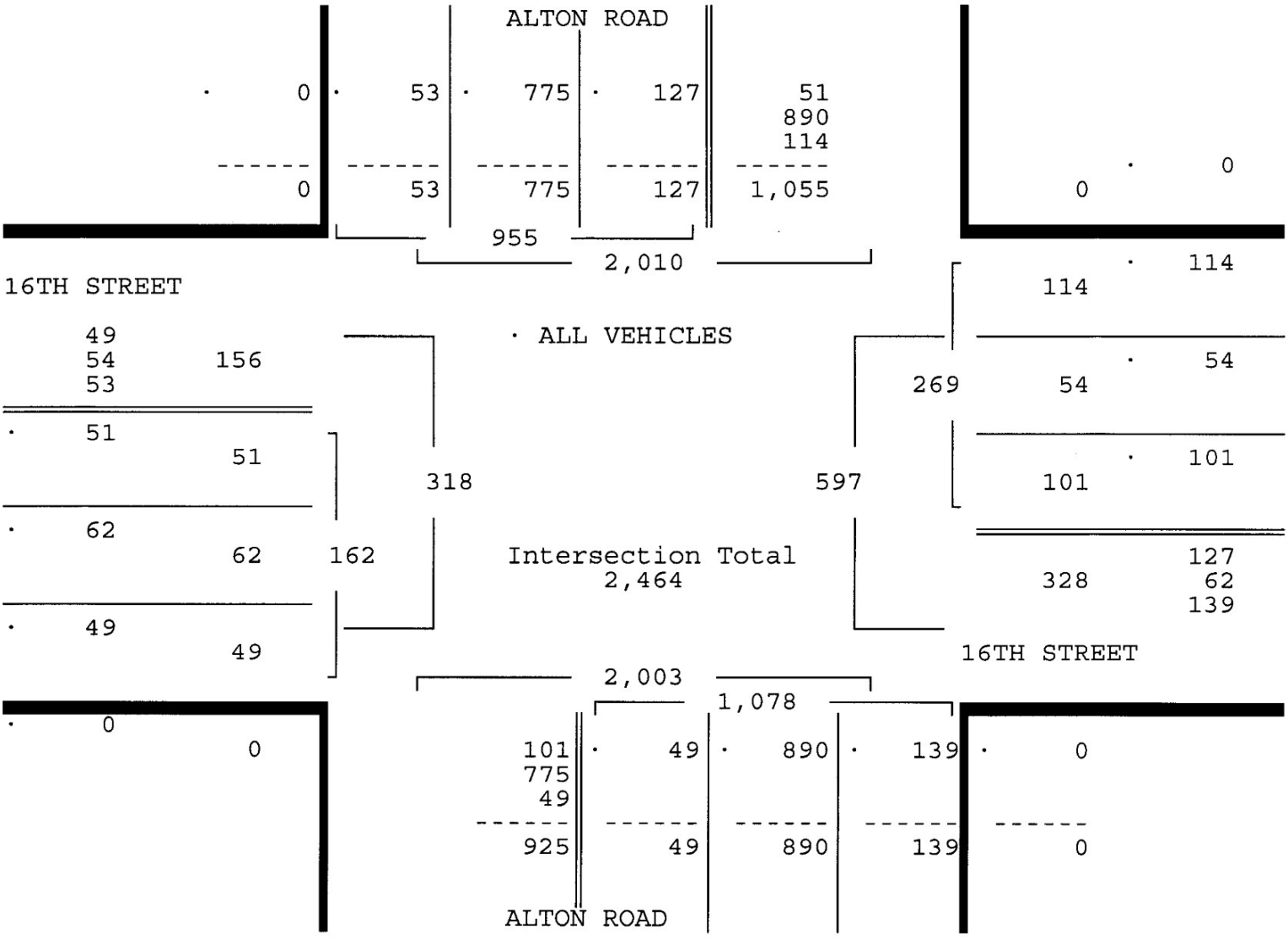
Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

16TH STREET & ALTON ROAD
MIAMI BEACH, FLORIDA
COUNTED BY: MARCELLO MINO-WILZEK
SIGNALIZED

Site Code : 00160041
Start Date: 03/04/16
File I.D. : 16STALTR

ALL VEHICLES

	ALTON ROAD From North				16TH STREET From East				ALTON ROAD From South				16TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 03/04/16																	
Peak Hour Analysis By Entire Intersection for the Period: 16:30 to 19:00 on 03/04/16																	
Peak start 16:30					16:30				16:30				16:30				
Volume	4	123	775	53	0	101	54	114	2	47	890	139	0	51	62	49	
Percent	0%	13%	81%	6%	0%	38%	20%	42%	0%	4%	83%	13%	0%	31%	38%	30%	
Pk total	955				269				1078				162				
Highest	17:15				16:30				16:30				16:30				
Volume	2	31	208	14	0	28	12	31	0	14	240	43	0	11	20	12	
Hi total	255				71				297				43				
PHF	.94				.95				.91				.94				



Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

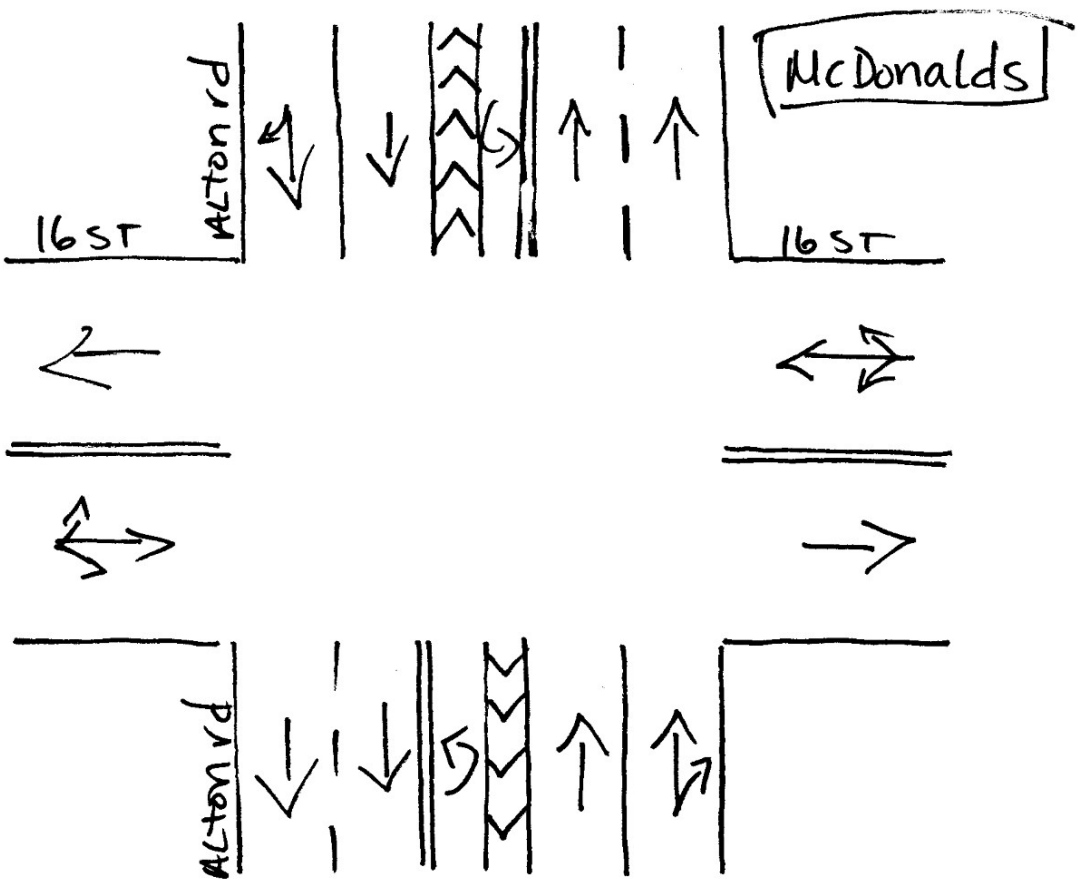
16TH STREET & ALTON ROAD
MIAMI BEACH, FLORIDA
COUNTED BY: MARCELLO MINO-WILZEK
SIGNALIZED

Site Code : 00160041
Start Date: 03/04/16
File I.D. : 16STALTR

PEDESTRIANS & BIKES

	ALTON ROAD From North				16TH STREET From East				ALTON ROAD From South				16TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 03/04/16																	
16:30	0	2	0	7	0	0	0	20	0	0	0	2	0	0	0	5	36
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	0	2	0	7	0	0	0	20	0	0	0	2	0	0	0	5	36
17:30	0	0	0	11	0	0	0	0	0	0	0	8	0	3	0	3	25
17:45	0	0	0	23	0	0	0	9	0	2	0	12	0	2	0	19	67
18:00	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	11	30
18:15	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	14
Hr Total	0	0	0	48	0	0	0	28	0	2	0	20	0	5	0	33	136
18:30	0	0	0	0	0	0	0	26	0	0	0	0	0	0	0	14	40
18:45	0	10	0	28	0	0	0	9	0	1	0	5	0	0	0	13	66
Hr Total	0	10	0	28	0	0	0	35	0	1	0	5	0	0	0	27	106
TOTAL	0	12	0	83	0	0	0	83	0	3	0	27	0	5	0	65	278

North



Miami Beach, Florida
February 24, 2016
drawn by: Luis Palomino
signalized

APPENDIX D

Peak Season Conversion Factors and Growth Rate Calculations

2014 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 8701 MIAMI-DADE SOUTH

MOCF: 0.99

WEEK	DATES	SF	PSCF
1	01/01/2014 - 01/04/2014	0.98	0.99
2	01/05/2014 - 01/11/2014	1.01	1.02
3	01/12/2014 - 01/18/2014	1.03	1.04
4	01/19/2014 - 01/25/2014	1.02	1.03
5	01/26/2014 - 02/01/2014	1.01	1.02
6	02/02/2014 - 02/08/2014	1.00	1.01
7	02/09/2014 - 02/15/2014	1.00	1.01
8	02/16/2014 - 02/22/2014	0.99	1.00
* 9	02/23/2014 - 03/01/2014	0.99	1.00
*10	03/02/2014 - 03/08/2014	0.99	1.00
*11	03/09/2014 - 03/15/2014	0.99	1.00
*12	03/16/2014 - 03/22/2014	0.99	1.00
*13	03/23/2014 - 03/29/2014	0.99	1.00
*14	03/30/2014 - 04/05/2014	0.99	1.00
*15	04/06/2014 - 04/12/2014	0.99	1.00
*16	04/13/2014 - 04/19/2014	0.99	1.00
*17	04/20/2014 - 04/26/2014	0.99	1.00
*18	04/27/2014 - 05/03/2014	0.99	1.00
*19	05/04/2014 - 05/10/2014	0.99	1.00
*20	05/11/2014 - 05/17/2014	0.99	1.00
*21	05/18/2014 - 05/24/2014	0.99	1.00
22	05/25/2014 - 05/31/2014	1.00	1.01
23	06/01/2014 - 06/07/2014	1.01	1.02
24	06/08/2014 - 06/14/2014	1.01	1.02
25	06/15/2014 - 06/21/2014	1.02	1.03
26	06/22/2014 - 06/28/2014	1.02	1.03
27	06/29/2014 - 07/05/2014	1.03	1.04
28	07/06/2014 - 07/12/2014	1.03	1.04
29	07/13/2014 - 07/19/2014	1.04	1.05
30	07/20/2014 - 07/26/2014	1.03	1.04
31	07/27/2014 - 08/02/2014	1.02	1.03
32	08/03/2014 - 08/09/2014	1.02	1.03
33	08/10/2014 - 08/16/2014	1.01	1.02
34	08/17/2014 - 08/23/2014	1.00	1.01
35	08/24/2014 - 08/30/2014	1.01	1.02
36	08/31/2014 - 09/06/2014	1.01	1.02
37	09/07/2014 - 09/13/2014	1.01	1.02
38	09/14/2014 - 09/20/2014	1.01	1.02
39	09/21/2014 - 09/27/2014	1.01	1.02
40	09/28/2014 - 10/04/2014	1.00	1.01
41	10/05/2014 - 10/11/2014	1.00	1.01
42	10/12/2014 - 10/18/2014	0.99	1.00
43	10/19/2014 - 10/25/2014	0.99	1.00
44	10/26/2014 - 11/01/2014	1.00	1.01
45	11/02/2014 - 11/08/2014	1.00	1.01
46	11/09/2014 - 11/15/2014	1.00	1.01
47	11/16/2014 - 11/22/2014	1.00	1.01
48	11/23/2014 - 11/29/2014	1.00	1.01
49	11/30/2014 - 12/06/2014	0.99	1.00
50	12/07/2014 - 12/13/2014	0.99	1.00
51	12/14/2014 - 12/20/2014	0.98	0.99
52	12/21/2014 - 12/27/2014	1.01	1.02
53	12/28/2014 - 12/31/2014	1.03	1.04

* PEAK SEASON

Growth Rate Trend Analysis Calcualtions

Description	Station #				
	8566	8567	8531	8514	
Trend Growth Rate(1)	-5.28	-2.87	-0.18	3.54	
Adjusted Growth Rate	0.50	0.50	0.50	3.54	
Average Growth Rate					1.26
Growth Rate Used					**1.50**

Notes:

1: Refer to Trend Analysis Chart

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2015 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 8414 - WASHINGTON AVE, 200 FT N OF 12 ST (2011 OFF SYSTEM CYCLE)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2015	20300 C	N 9800	S 10500	9.00	57.40	17.50
2014	21000 C	N 10000	S 11000	9.00	59.30	13.90
2013	18700 F	N 9200	S 9500	9.00	58.90	16.20
2012	18700 C	N 9200	S 9500	9.00	59.70	16.00

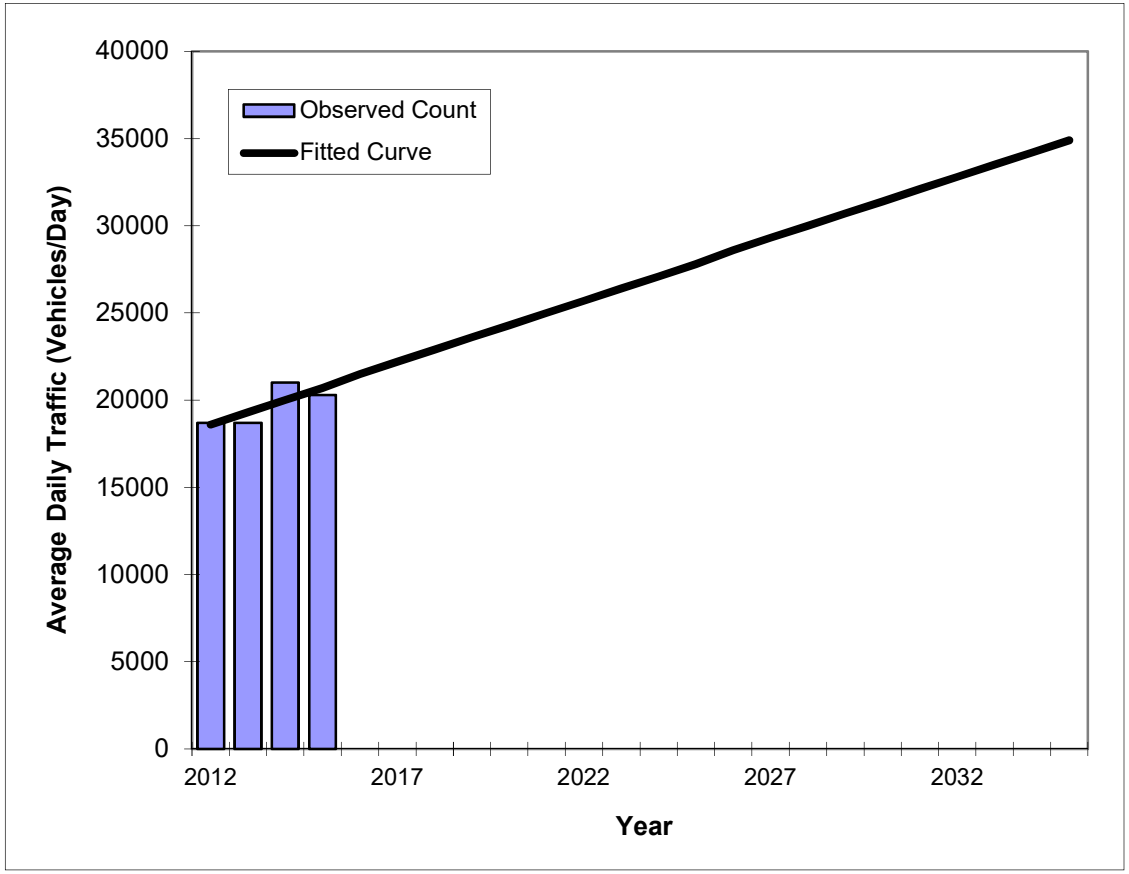
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; F = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends - V2.0

WASHINGTON AVE -- 200' N OF 12 ST

PIN#	0
Location	4

County:	Miami-Dade (87)
Station #:	8414
Highway:	WASHINGTON AVE



Year	Traffic (ADT/AADT) Count*	Trend**
2012	18700	18600
2013	18700	19300
2014	21000	20000
2015	20300	20700
2016 Opening Year Trend		
2016	N/A	21500
2017 Mid-Year Trend		
2017	N/A	22200
2018 Design Year Trend		
2018	N/A	22900
TRANPLAN Forecasts/Trends		

**** Annual Trend Increase:**	710
Trend R-squared:	62.27%
Trend Annual Historic Growth Rate:	3.76%
Trend Growth Rate (2015 to Design Year):	3.54%
Printed:	27-Oct-16
Straight Line Growth Option	

***Axle-Adjusted**

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2015 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 8531 - 17TH ST, 200' EAST OFMERIDIAN AVE (2011 OFF SYSTEM CYCLE)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2015	19000 C	E 8500	W 10500	9.00	57.40	7.10
2014	18700 S	E 9600	W 9100	9.00	59.30	10.70
2013	18900 F	E 9700	W 9200	9.00	58.90	16.20
2012	19000 C	E 9800	W 9200	9.00	59.70	16.00

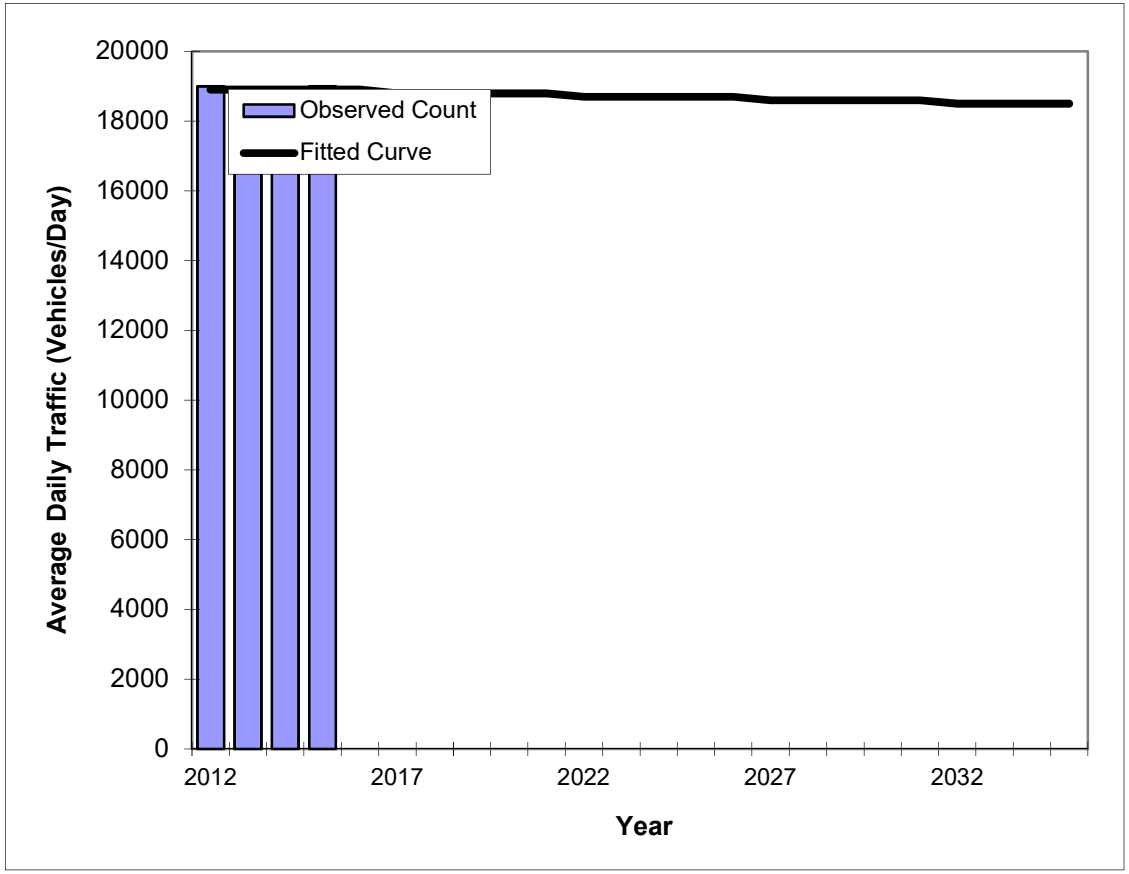
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; F = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends - V2.0

17 ST -- 200' E OF MERIDIAN AVE

PIN#	0
Location	3

County:	Miami-Dade (87)
Station #:	8531
Highway:	17 ST



Year	Traffic (ADT/AADT) Count*	Trend**
2012	19000	18900
2013	18900	18900
2014	18700	18900
2015	19000	18900
2016 Opening Year Trend		
2016	N/A	18900
2017 Mid-Year Trend		
2017	N/A	18800
2018 Design Year Trend		
2018	N/A	18800
TRANPLAN Forecasts/Trends		

**** Annual Trend Increase:**	-20
Trend R-squared:	3.33%
Trend Annual Historic Growth Rate:	0.00%
Trend Growth Rate (2015 to Design Year):	-0.18%
Printed:	27-Oct-16

Straight Line Growth Option

***Axle-Adjusted**

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2015 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 8566 - 15 ST, 200' EAST OFJEFFERSON AVE (2011 OFF SYSTEM CYCLE)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2015	7800 C	E 4700	W 3100	9.00	57.40	7.10
2014	9100 S			9.00	59.30	10.70
2013	9200 F	0	0	9.00	58.90	16.20
2012	9200 C	E 0	W 0	9.00	59.70	16.00

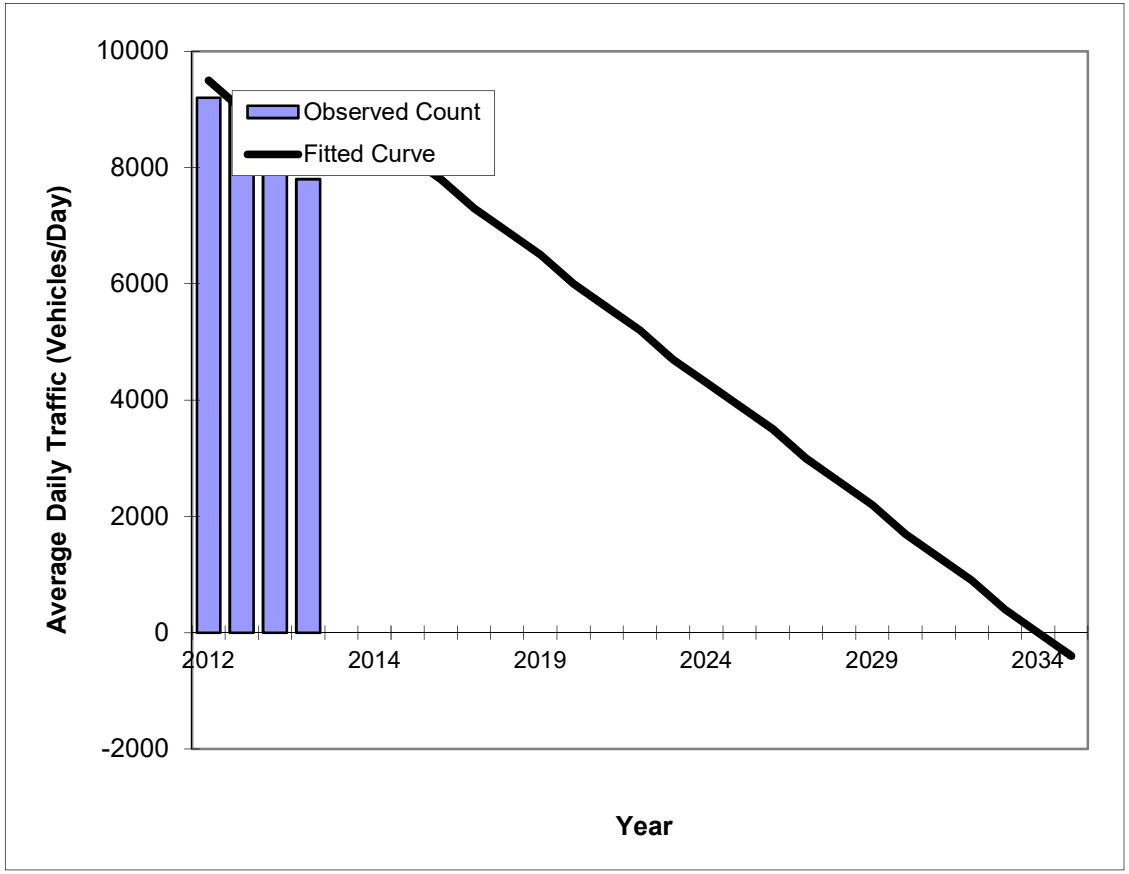
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; F = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends - V2.0

15 ST -- 200' E OF JEFFERSON AVE

PIN#	0
Location	1

County:	Miami-Dade (87)
Station #:	8566
Highway:	15 ST



Year	Traffic (ADT/AADT) Count*	Trend**
2012	9200	9500
2013	9200	9000
2014	9100	8600
2015	7800	8200
2016 Opening Year Trend		
2016	N/A	7800
2017 Mid-Year Trend		
2017	N/A	7300
2018 Design Year Trend		
2018	N/A	6900
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	-430
Trend R-squared:	65.68%
Trend Annual Historic Growth Rate:	-4.56%
Trend Growth Rate (2015 to Design Year):	-5.28%
Printed:	27-Oct-16
Straight Line Growth Option	

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2015 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 8567 - 16 ST, 200' EAST OFMERIDIAN AVE (2011 OFF SYSTEM CYCLE)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2015	9100 C	E 4400	W 4700	9.00	57.40	7.10
2014	9700 S			9.00	59.30	10.70
2013	9800 F	0	0	9.00	58.90	16.20
2012	9900 C	E 0	W 0	9.00	59.70	16.00

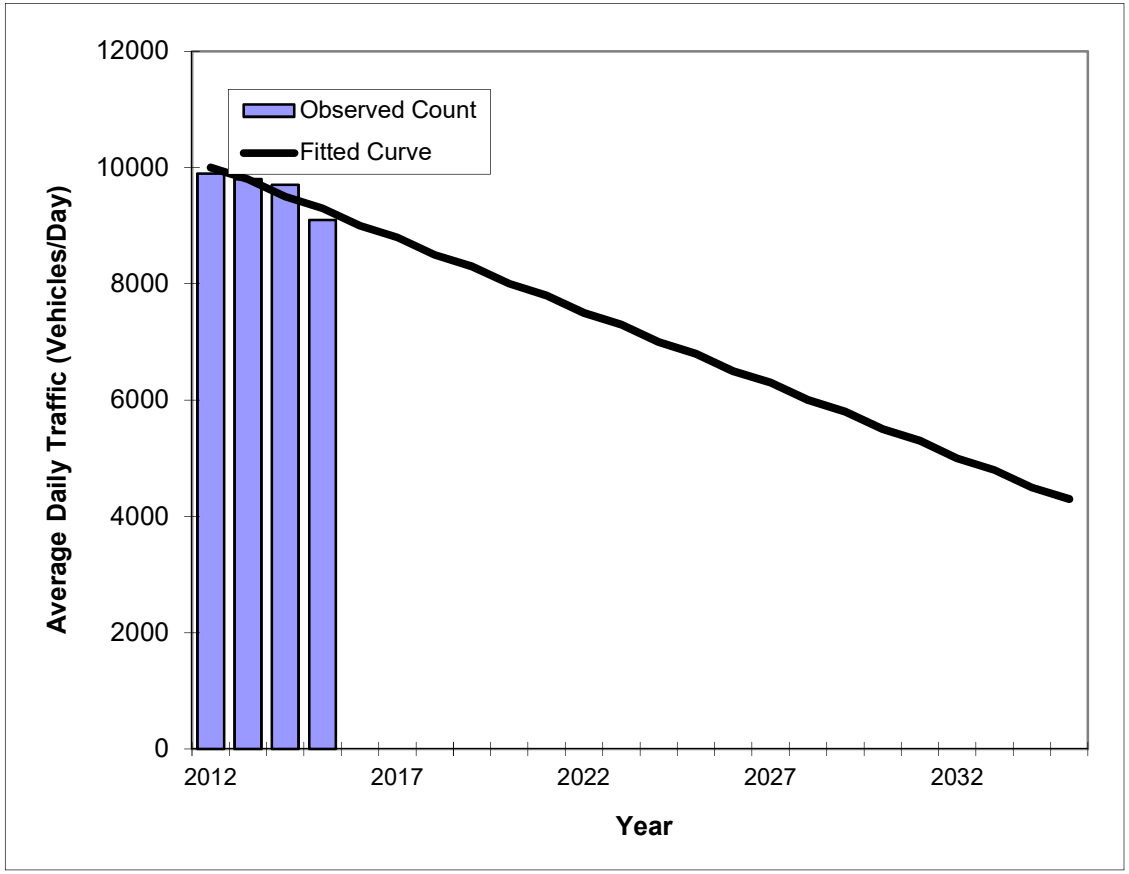
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; F = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends - V2.0

16 ST -- 200' E OF MERIDIAN AVE

PIN#	0
Location	2

County:	Miami-Dade (87)
Station #:	8567
Highway:	16 ST



Year	Traffic (ADT/AADT) Count*	Trend**
2012	9900	10000
2013	9800	9800
2014	9700	9500
2015	9100	9300
2016 Opening Year Trend		
2016	N/A	9000
2017 Mid-Year Trend		
2017	N/A	8800
2018 Design Year Trend		
2018	N/A	8500
TRANPLAN Forecasts/Trends		

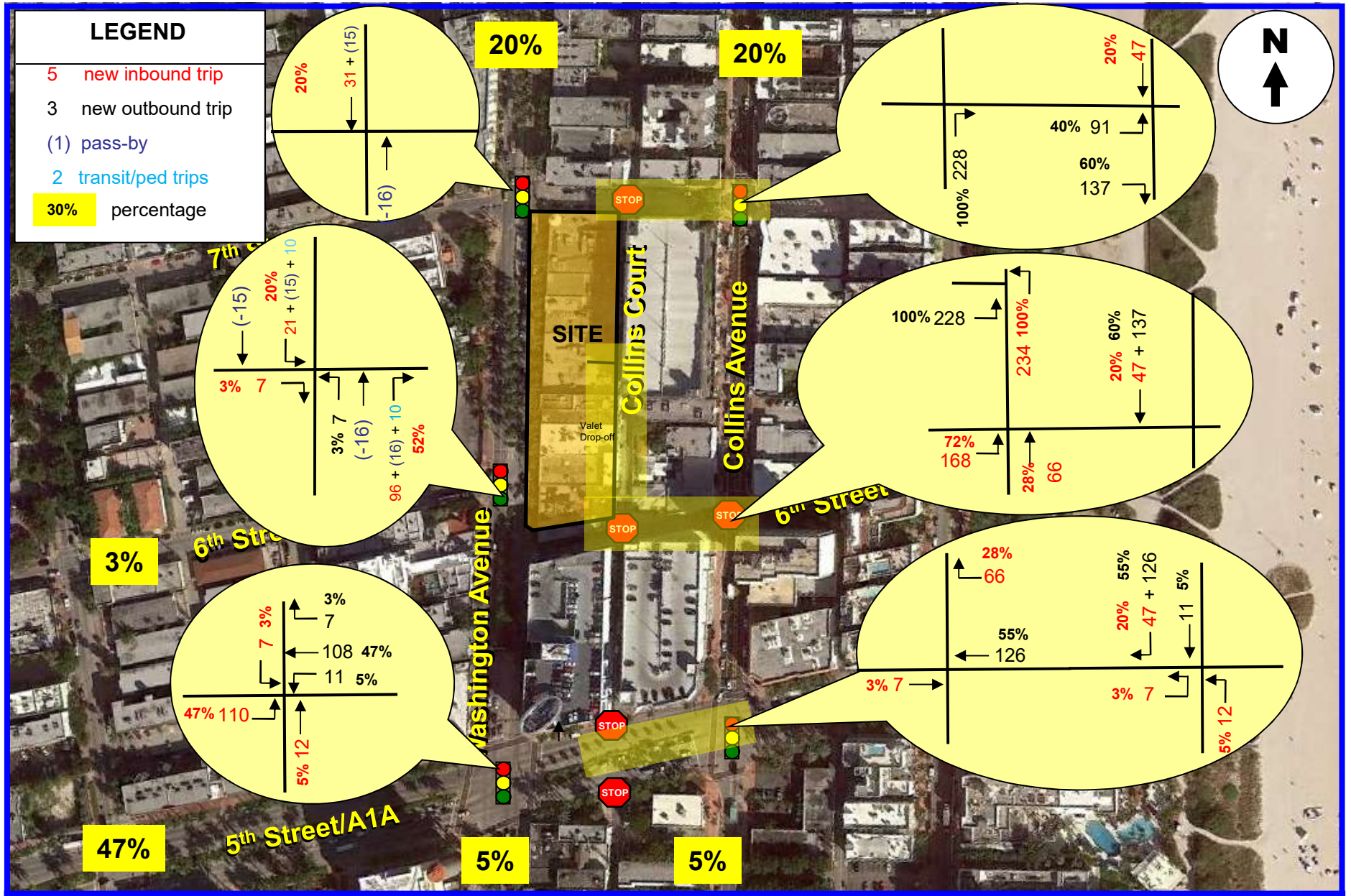
*Axle-Adjusted

** Annual Trend Increase:	-250
Trend R-squared:	80.65%
Trend Annual Historic Growth Rate:	-2.33%
Trend Growth Rate (2015 to Design Year):	-2.87%
Printed:	27-Oct-16

Straight Line Growth Option

APPENDIX E

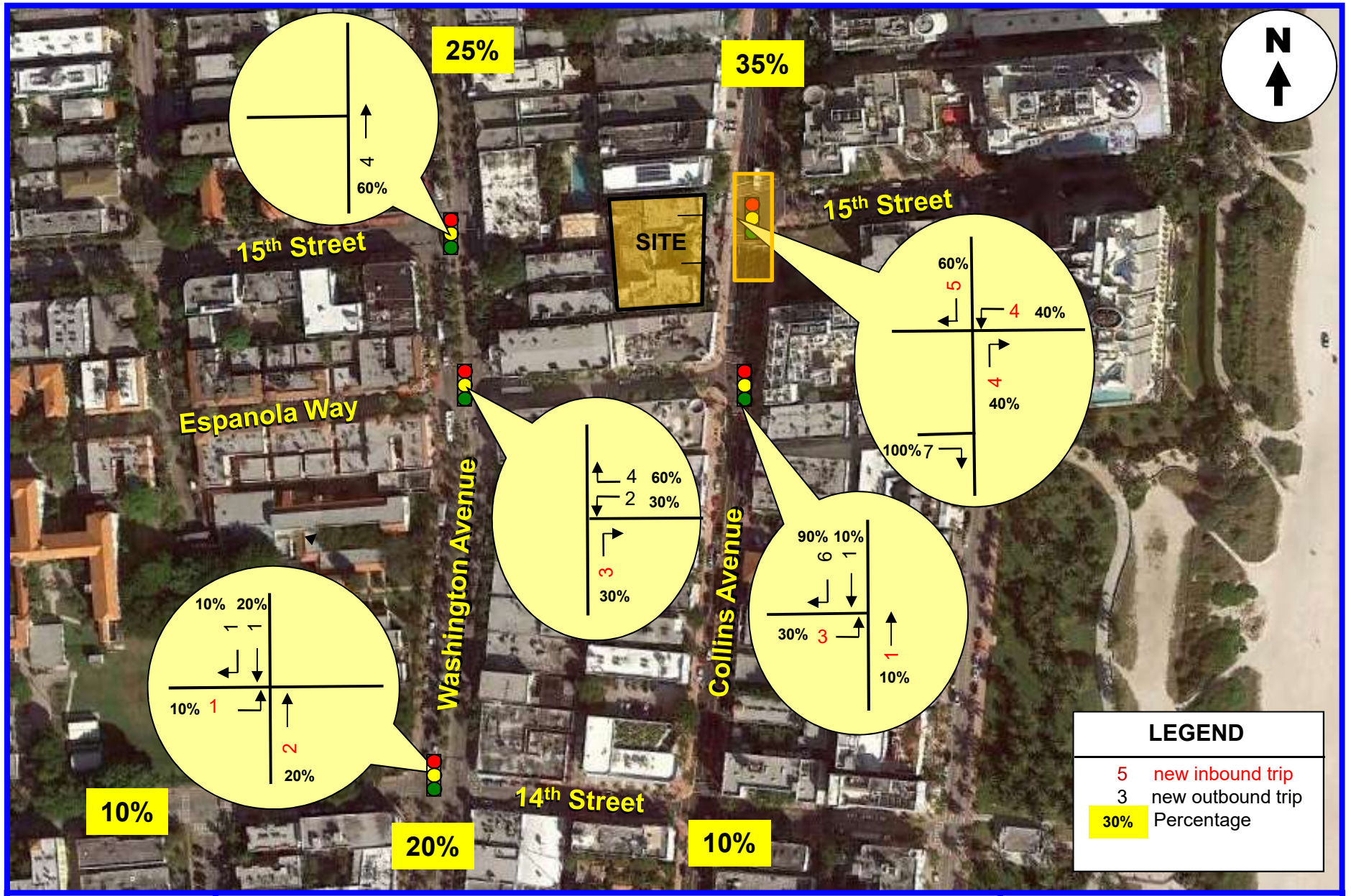
Committed Developments



Traf Tech
ENGINEERING, INC.

NEW PROJECT TRAFFIC ASSIGNMENT
(Weekday New Peak Hour Trips)

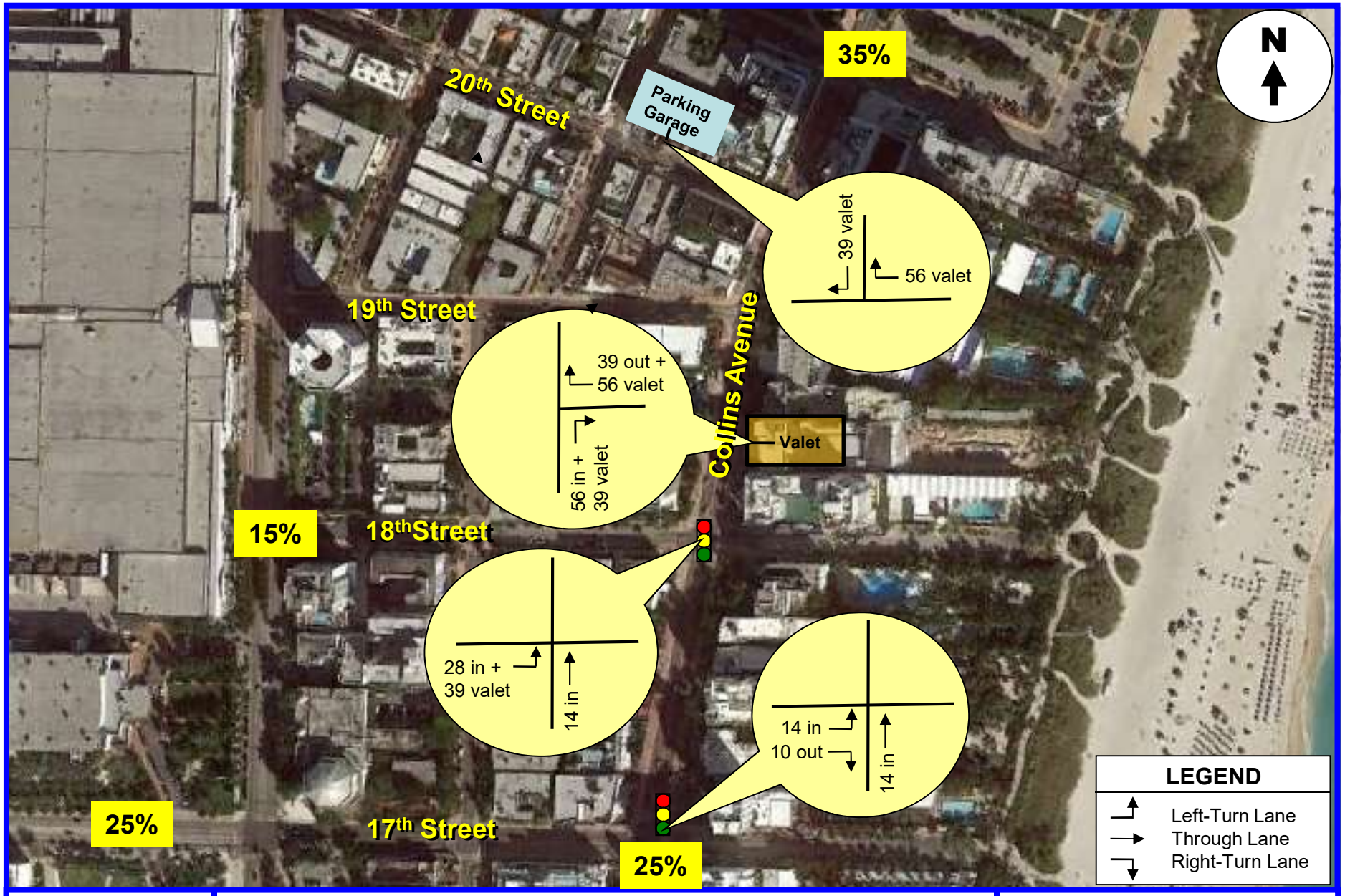
FIGURE 4
601 Washington
Miami Beach, Florida



Traf Tech
ENGINEERING, INC.

NEW PROJECT TRAFFIC ASSIGNMENT
(Weekday New Peak Hour Trips)

FIGURE 4
Haddon Hall
Miami Beach, Florida



Traf Tech
ENGINEERING, INC.

NEW PROJECT TRAFFIC ASSIGNMENT
(Weekday New Peak Hour Trips)

FIGURE 4
Nautilus South Beach
Miami Beach, Florida

APPENDIX F

Future Turning Movement Volumes

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Washington Avenue and 17 Street
PM Peak Hour

Description	Washington Avenue Northbound			Washington Avenue Southbound			17 Street Eastbound			17 Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (8/26/2016)	323	348	98	7	122	85	105	233	204	79	259	18
Season Adjustment Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
2016 Peak Season Traffic	329	355	100	7	124	87	107	238	208	81	264	18
Annual Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Committed Developments												
Haddon Hall		4										
Nautilius								24				
601 Washington					31							
2018 Background Traffic	339	370	103	7	159	89	110	269	214	83	272	19
Time Out Market		17	4		25					5		
Pedestrian and Transit		3			3							
2018 Total Traffic	**339**	**387**	**107**	**7**	**184**	**89**	**110**	**269**	**214**	**88**	**272**	**19**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Washington Avenue and 16 Street
PM Peak Hour

Description	Washington Avenue Northbound			Washington Avenue Southbound			16 Street Eastbound			16 Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (8/26/2016)	75	525	78	68	426	112	71	104	49	70	153	133
Season Adjustment Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
2016 Peak Season Traffic	77	536	80	69	435	114	72	106	50	71	156	136
Annual Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Committed Developments												
Haddon Hall		4										
Nautilius												
601 Washington					31							
2018 Background Traffic	79	556	82	71	479	118	75	109	51	74	161	140
Time Out Market	5					30	21	4	2		5	
Pedestrian and Transit						3	3		4			
2018 Total Traffic	**84**	**556**	**82**	**71**	**479**	**148**	**96**	**113**	**53**	**74**	**166**	**140**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Washington Avenue and 15 Street
PM Peak Hour

Description	Washington Avenue Northbound			Washington Avenue Southbound			15 Street Eastbound			15 Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (8/26/2016)	62	557	0	0	487	49	93	0	109			
Season Adjustment Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
2016 Peak Season Traffic	63	568	0	0	497	50	95	0	111	0	0	0
Annual Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Committed Developments												
Haddon Hall		4										
Nautilius												
601 Washington					31							
2018 Background Traffic	65	589	0	0	543	51	98	0	115	0	0	0
Time Out Market		5			2							
Pedestrian and Transit		4			4							
2018 Total Traffic	**65**	**594**	**0**	**0**	**545**	**51**	**98**	**0**	**115**	**0**	**0**	**0**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Drexel Avenue and 16 Street
PM Peak Hour

Description	Drexel Avenue Northbound			Drexel Avenue Southbound			16 Street Eastbound			16 Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (8/26/2016)	24	5	14	5	2	25	28	172	27	23	302	42
Season Adjustment Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
2016 Peak Season Traffic	24	5	14	5	2	26	29	175	28	23	308	43
Annual Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Committed Developments												
Haddon Hall												
Nautilius												
601 Washington												
2018 Background Traffic	25	5	15	5	2	26	29	181	28	24	317	44
Time Out Market			18	26				16		14	12	20
2018 Total Traffic	**25**	**5**	**33**	**31**	**2**	**26**	**29**	**197**	**28**	**38**	**329**	**64**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

16 Street and Garage Entrance
PM Peak Hour

Description	Garage Entrance Northbound			Garage Entrance Southbound			16 Street Eastbound			16 Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (8/26/2016)				18	0	35	8	204	0	0	309	21
Season Adjustment Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
2016 Peak Season Traffic	0	0	0	18	0	36	8	208	0	0	315	21
Annual Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Committed Developments												
Haddon Hall												
Nautilius												
601 Washington												
2018 Background Traffic	0	0	0	19	0	37	8	214	0	0	325	22
Time Out Market				27		46	48					28
Pass-by							12	-12			-12	12
Pedestrian and Transit				7								7
2018 Total Traffic	**0**	**0**	**0**	**46**	**0**	**83**	**68**	**202**	**0**	**0**	**313**	**62**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Alton Road and 16th Street
PM Peak Hour

Description	Alton Road Northbound			Alton Road Southbound			16th Street Eastbound			16th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (3/4/2016)	49	890	139	127	775	53	51	62	49	101	54	114
Season Adjustment 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
2016 Peak Season Traffic	49	890	139	127	775	53	51	62	49	101	54	114
Annual Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Committed Developments												
Haddon Hall												
Nautilius												
601 Washington												
2018 Background Traffic	50	917	143	131	798	55	53	64	50	104	56	117
Time Out Market			11					5		8	4	
2018 Total Traffic	**50**	**917**	**154**	**131**	**798**	**55**	**53**	**69**	**50**	**112**	**60**	**117**

Traf Tech
ENGINEERING, INC.

APPENDIX G

Intersection Capacity Analyses

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	238	208	81	264	18	329	355	100	7	124	87
Future Volume (vph)	107	238	208	81	264	18	329	355	100	7	124	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.4		7.4	7.4		6.0	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.94		1.00	1.00		1.00	0.98		1.00	0.96	
Flpb, ped/bikes	0.99	1.00		0.95	1.00		0.98	1.00		0.97	1.00	
Frt	1.00	0.93		1.00	0.99		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1760	3099		1676	3496		1732	3369		1717	3187	
Flt Permitted	0.38	1.00		0.48	1.00		0.50	1.00		0.47	1.00	
Satd. Flow (perm)	710	3099		843	3496		903	3369		855	3187	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	115	256	224	87	284	19	354	382	108	8	133	94
RTOR Reduction (vph)	0	151	0	0	6	0	0	25	0	0	67	0
Lane Group Flow (vph)	115	329	0	87	297	0	354	465	0	8	160	0
Confl. Peds. (#/hr)	23		88	88		23	56		46	46		56
Confl. Bikes (#/hr)			21			4			2			20
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	3	8			4		1	6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	29.3	29.3		14.8	14.8		47.0	47.0		25.8	25.8	
Effective Green, g (s)	29.3	29.3		14.8	14.8		47.0	47.0		25.8	25.8	
Actuated g/C Ratio	0.33	0.33		0.16	0.16		0.52	0.52		0.29	0.29	
Clearance Time (s)	7.1	7.4		7.4	7.4		6.0	6.3		6.3	6.3	
Vehicle Extension (s)	2.0	2.5		2.5	2.5		2.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	317	1008		138	574		611	1759		245	913	
v/s Ratio Prot	0.03	c0.11			0.08		c0.10	0.14			0.05	
v/s Ratio Perm	0.09			c0.10			c0.20			0.01		
v/c Ratio	0.36	0.33		0.63	0.52		0.58	0.26		0.03	0.18	
Uniform Delay, d1	22.2	22.9		35.1	34.3		13.2	11.9		23.1	24.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1		7.9	0.6		0.8	0.4		0.2	0.4	
Delay (s)	22.5	23.0		43.0	34.9		14.0	12.3		23.4	24.5	
Level of Service	C	C		D	C		B	B		C	C	
Approach Delay (s)		22.9			36.7			13.0			24.5	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

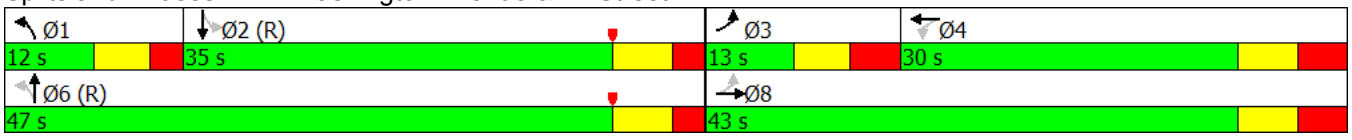
1: Washington Avenue & 17 Street

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	107	238	81	264	329	355	7	124
Future Volume (vph)	107	238	81	264	329	355	7	124
Turn Type	pm+pt	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases	3	8		4	1	6		2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	4	4	1	6	2	2
Switch Phase								
Minimum Initial (s)	5.0	7.0	7.0	7.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.1	30.4	30.4	30.4	11.0	27.3	29.3	29.3
Total Split (s)	13.0	43.0	30.0	30.0	12.0	47.0	35.0	35.0
Total Split (%)	14.4%	47.8%	33.3%	33.3%	13.3%	52.2%	38.9%	38.9%
Yellow Time (s)	3.7	4.0	4.0	4.0	3.7	4.0	4.0	4.0
All-Red Time (s)	3.4	3.4	3.4	3.4	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.1	7.4	7.4	7.4	6.0	6.3	6.3	6.3
Lead/Lag	Lead		Lag	Lag	Lead		Lag	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	28.2	27.9	14.8	14.8	48.7	48.4	27.3	27.3
Actuated g/C Ratio	0.31	0.31	0.16	0.16	0.54	0.54	0.30	0.30
v/c Ratio	0.36	0.43	0.63	0.52	0.57	0.27	0.03	0.22
Control Delay	22.6	12.2	53.5	35.8	18.7	12.5	33.1	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	12.2	53.5	35.8	18.7	12.5	33.1	18.7
LOS	C	B	D	D	B	B	C	B
Approach Delay		14.2		39.7		15.1		19.2
Approach LOS		B		D		B		B

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 73 (81%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 20.0 Intersection LOS: B
Intersection Capacity Utilization 83.1% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Washington Avenue & 17 Street



1: Washington Avenue & 17 Street

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	115	480	87	303	354	490	8	227
v/c Ratio	0.36	0.43	0.63	0.52	0.57	0.27	0.03	0.22
Control Delay	22.6	12.2	53.5	35.8	18.7	12.5	33.1	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	12.2	53.5	35.8	18.7	12.5	33.1	18.7
Queue Length 50th (ft)	46	55	47	82	115	69	3	30
Queue Length 95th (ft)	70	76	88	110	228	127	18	73
Internal Link Dist (ft)		319		336		1078		264
Turn Bay Length (ft)	210		215		200		150	
Base Capacity (vph)	321	1392	211	884	626	1872	325	1272
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.34	0.41	0.34	0.57	0.26	0.02	0.18

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	106	50	71	156	136	77	536	80	69	435	114
Future Volume (veh/h)	72	106	50	71	156	136	77	536	80	69	435	114
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.91	0.99		0.91	0.93		0.79	0.94		0.81
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	80	118	56	79	173	151	86	596	89	77	483	127
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	150	61	142	291	515	454	1602	238	519	1602	415
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	1.00	1.00	1.00	0.04	0.61	0.61
Sat Flow, veh/h	210	483	196	319	937	1446	751	2973	441	1774	2639	683
Grp Volume(v), veh/h	254	0	0	252	0	151	86	353	332	77	321	289
Grp Sat Flow(s),veh/h/ln	888	0	0	1256	0	1446	751	1770	1645	1774	1770	1552
Q Serve(g_s), s	14.1	0.0	0.0	0.0	0.0	8.3	0.6	0.0	0.0	2.0	9.6	9.9
Cycle Q Clear(g_c), s	32.1	0.0	0.0	18.0	0.0	8.3	3.0	0.0	0.0	2.0	9.6	9.9
Prop In Lane	0.31		0.22	0.31		1.00	1.00		0.27	1.00		0.44
Lane Grp Cap(c), veh/h	319	0	0	434	0	515	454	953	886	519	1074	942
V/C Ratio(X)	0.80	0.00	0.00	0.58	0.00	0.29	0.19	0.37	0.37	0.15	0.30	0.31
Avail Cap(c_a), veh/h	322	0	0	436	0	517	454	953	886	526	1074	942
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.90	0.90	0.90	0.95	0.95	0.95
Uniform Delay (d), s/veh	39.8	0.0	0.0	31.5	0.0	25.8	0.1	0.0	0.0	9.3	10.4	10.4
Incr Delay (d2), s/veh	12.5	0.0	0.0	1.7	0.0	0.2	0.8	1.0	1.1	0.0	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	0.0	6.7	0.0	3.4	0.2	0.3	0.3	1.0	4.8	4.4
LnGrp Delay(d),s/veh	52.3	0.0	0.0	33.2	0.0	26.0	0.9	1.0	1.1	9.4	11.0	11.2
LnGrp LOS	D			C		C	A	A	A	A	B	B
Approach Vol, veh/h		254			403			771			687	
Approach Delay, s/veh		52.3			30.5			1.0			10.9	
Approach LOS		D			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		71.2		38.8	7.5	63.7		38.8
Change Period (Y+Rc), s		* 4.4		* 4.6	3.0	* 4.4		* 4.6
Max Green Setting (Gmax), s		* 67		* 34	5.0	* 59		* 34
Max Q Clear Time (g_c+I1), s		11.9		20.0	4.0	5.0		34.1
Green Ext Time (p_c), s		3.4		2.8	0.0	3.4		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	16.0
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

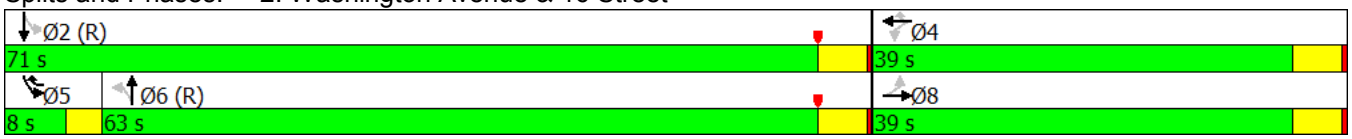
2: Washington Avenue & 16 Street

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	72	106	71	156	136	77	536	69	435
Future Volume (vph)	72	106	71	156	136	77	536	69	435
Turn Type	Perm	NA	Perm	NA	pm+ov	Perm	NA	pm+pt	NA
Protected Phases		8		4	5		6	5	2
Permitted Phases	8		4		4	6		2	
Detector Phase	8	8	4	4	5	6	6	5	2
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0
Minimum Split (s)	37.6	37.6	37.6	37.6	9.0	25.4	25.4	9.0	25.4
Total Split (s)	39.0	39.0	39.0	39.0	8.0	63.0	63.0	8.0	71.0
Total Split (%)	35.5%	35.5%	35.5%	35.5%	7.3%	57.3%	57.3%	7.3%	64.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	0.6	0.6	0.6	0.6	0.0	0.4	0.4	0.0	0.4
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6		4.6	3.0	4.4	4.4	3.0	4.4
Lead/Lag					Lead	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)		26.3		26.3	34.2	65.4	65.4	76.1	74.7
Actuated g/C Ratio		0.24		0.24	0.31	0.59	0.59	0.69	0.68
v/c Ratio		1.02		0.78	0.29	0.24	0.35	0.17	0.29
Control Delay		101.3		54.7	10.4	14.6	12.5	7.9	7.7
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		101.3		54.7	10.4	14.6	12.5	7.9	7.7
LOS		F		D	B	B	B	A	A
Approach Delay		101.3		38.1			12.7		7.7
Approach LOS		F		D			B		A

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 54 (49%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 26.6 Intersection LOS: C
Intersection Capacity Utilization 90.7% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Washington Avenue & 16 Street



Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	254	252	151	86	685	77	610
v/c Ratio	1.02	0.78	0.29	0.24	0.35	0.17	0.29
Control Delay	101.3	54.7	10.4	14.6	12.5	7.9	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.3	54.7	10.4	14.6	12.5	7.9	7.7
Queue Length 50th (ft)	~176	166	27	32	137	16	73
Queue Length 95th (ft)	#283	233	61	80	221	41	132
Internal Link Dist (ft)	170	490			480		1078
Turn Bay Length (ft)				120		100	
Base Capacity (vph)	324	427	523	364	1963	440	2088
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.59	0.29	0.24	0.35	0.17	0.29

Intersection Summary

~ 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.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	95	111	63	568	497	50
Future Volume (vph)	95	111	63	568	497	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7			4.2	4.2	
Lane Util. Factor	1.00			0.95	0.95	
Frpb, ped/bikes	0.94			1.00	0.95	
Flpb, ped/bikes	1.00			0.98	1.00	
Frt	0.93			1.00	0.99	
Flt Protected	0.98			1.00	1.00	
Satd. Flow (prot)	1579			3441	3311	
Flt Permitted	0.98			0.82	1.00	
Satd. Flow (perm)	1579			2843	3311	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	106	123	70	631	552	56
RTOR Reduction (vph)	44	0	0	0	4	0
Lane Group Flow (vph)	185	0	0	701	604	0
Confl. Peds. (#/hr)	86	93	306			306
Confl. Bikes (#/hr)		4				5
Turn Type	Prot		Perm	NA	NA	
Protected Phases	8			6	2	
Permitted Phases			6			
Actuated Green, G (s)	16.3			84.8	84.8	
Effective Green, g (s)	16.3			84.8	84.8	
Actuated g/C Ratio	0.15			0.77	0.77	
Clearance Time (s)	4.7			4.2	4.2	
Vehicle Extension (s)	1.0			1.0	1.0	
Lane Grp Cap (vph)	233			2191	2552	
v/s Ratio Prot	c0.12				0.18	
v/s Ratio Perm				c0.25		
v/c Ratio	0.79			0.32	0.24	
Uniform Delay, d1	45.2			3.8	3.5	
Progression Factor	1.00			1.00	0.68	
Incremental Delay, d2	15.7			0.4	0.2	
Delay (s)	60.9			4.2	2.6	
Level of Service	E			A	A	
Approach Delay (s)	60.9			4.2	2.6	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

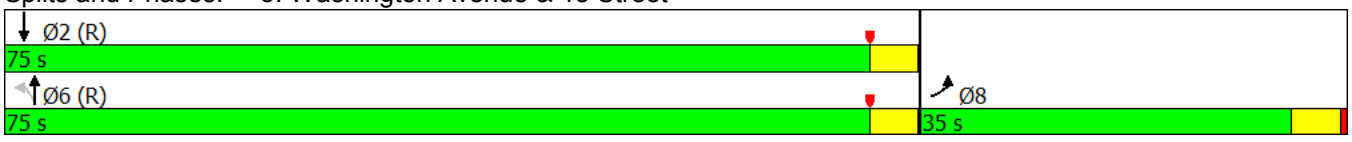
3: Washington Avenue & 15 Street

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	95	63	568	497
Future Volume (vph)	95	63	568	497
Turn Type	Prot	Perm	NA	NA
Protected Phases	8		6	2
Permitted Phases		6		
Detector Phase	8	6	6	2
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	7.0
Minimum Split (s)	33.7	27.2	27.2	27.2
Total Split (s)	35.0	75.0	75.0	75.0
Total Split (%)	31.8%	68.2%	68.2%	68.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	0.7	0.2	0.2	0.2
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.7		4.2	4.2
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	16.3		84.8	84.8
Actuated g/C Ratio	0.15		0.77	0.77
v/c Ratio	0.82		0.32	0.24
Control Delay	57.4		4.9	2.9
Queue Delay	0.0		0.0	0.0
Total Delay	57.4		4.9	2.9
LOS	E		A	A
Approach Delay	57.4		4.9	2.9
Approach LOS	E		A	A

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 61 (55%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 11.9 Intersection LOS: B
Intersection Capacity Utilization 71.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Washington Avenue & 15 Street



Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	229	701	608
v/c Ratio	0.82	0.32	0.24
Control Delay	57.4	4.9	2.9
Queue Delay	0.0	0.0	0.0
Total Delay	57.4	4.9	2.9
Queue Length 50th (ft)	124	65	33
Queue Length 95th (ft)	195	122	58
Internal Link Dist (ft)	422	646	480
Turn Bay Length (ft)			
Base Capacity (vph)	472	2194	2556
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.49	0.32	0.24

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	29	175	28	23	308	43	24	5	14	5	2	26
Future Volume (veh/h)	29	175	28	23	308	43	24	5	14	5	2	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.87	0.95		0.88	0.96		0.93	0.95		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	32	194	31	26	342	48	27	6	16	6	2	29
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	559	82	115	604	81	419	109	189	153	81	471
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	97	1397	205	48	1509	203	699	273	471	121	203	1177
Grp Volume(v), veh/h	257	0	0	416	0	0	49	0	0	37	0	0
Grp Sat Flow(s),veh/h/ln	1699	0	0	1761	0	0	1443	0	0	1501	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0	7.2	0.0	0.0	0.7	0.0	0.0	0.6	0.0	0.0
Prop In Lane	0.12		0.12	0.06		0.12	0.55		0.33	0.16		0.78
Lane Grp Cap(c), veh/h	781	0	0	800	0	0	717	0	0	705	0	0
V/C Ratio(X)	0.33	0.00	0.00	0.52	0.00	0.00	0.07	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	781	0	0	800	0	0	717	0	0	705	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	0.0	0.0	9.4	0.0	0.0	7.4	0.0	0.0	7.4	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.0	2.4	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.0	4.0	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.0
LnGrp Delay(d),s/veh	9.5	0.0	0.0	11.8	0.0	0.0	7.6	0.0	0.0	7.5	0.0	0.0
LnGrp LOS	A			B			A			A		
Approach Vol, veh/h		257			416			49			37	
Approach Delay, s/veh		9.5			11.8			7.6			7.5	
Approach LOS		A			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		20.0		20.0		20.0		20.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		16.0		16.0		16.0		16.0
Max Q Clear Time (g_c+I1), s		2.7		6.0		2.6		9.2
Green Ext Time (p_c), s		0.3		3.1		0.3		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.5
HCM 2010 LOS	B

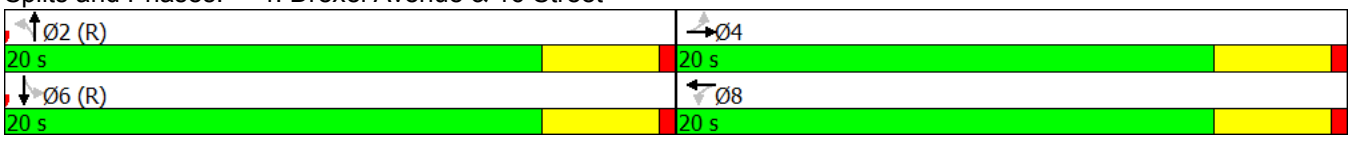
4: Drexel Avenue & 16 Street

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	29	175	23	308	24	5	5	2
Future Volume (vph)	29	175	23	308	24	5	5	2
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		4.0		4.0		4.0		4.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
Act Effct Green (s)		16.0		16.0		16.0		16.0
Actuated g/C Ratio		0.40		0.40		0.40		0.40
v/c Ratio		0.38		0.58		0.08		0.06
Control Delay		9.8		12.9		6.2		4.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		9.8		12.9		6.2		4.5
LOS		A		B		A		A
Approach Delay		9.8		12.9		6.2		4.5
Approach LOS		A		B		A		A

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 40
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 43.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Drexel Avenue & 16 Street



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	257	416	49	37
v/c Ratio	0.38	0.58	0.08	0.06
Control Delay	9.8	12.9	6.2	4.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.8	12.9	6.2	4.5
Queue Length 50th (ft)	35	64	4	1
Queue Length 95th (ft)	74	127	17	12
Internal Link Dist (ft)	176	70	207	304
Turn Bay Length (ft)				
Base Capacity (vph)	678	715	618	634
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	0.38	0.58	0.08	0.06

Intersection Summary

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↑		↰	↱
Traffic Vol, veh/h	8	208	315	21	18	36
Future Vol, veh/h	8	208	315	21	18	36
Conflicting Peds, #/hr	51	0	0	51	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	231	350	23	20	40

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	424	0	-	0	663	413
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	250	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1135	-	-	-	426	639
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1135	-	-	-	387	612
Mov Cap-2 Maneuver	-	-	-	-	387	-
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	752	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1135	-	-	-	387	612
HCM Lane V/C Ratio	0.008	-	-	-	0.052	0.065
HCM Control Delay (s)	8.2	0	-	-	14.8	11.3
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.2

HCM 2010 Signalized Intersection Summary 10/27/2016
6: Alton Road & 16th Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	62	49	101	54	114	49	890	139	127	775	53
Future Volume (veh/h)	51	62	49	101	54	114	49	890	139	127	775	53
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.98	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	0.82	1.00	1.00	0.82	1.00	1.00	0.82	1.00	1.00	0.82
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1710	1676	1676	1710	1676	1676	1710
Adj Flow Rate, veh/h	57	69	54	112	60	127	54	989	154	141	861	59
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	123	85	139	70	126	313	1600	249	233	1750	120
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	255	409	284	336	233	420	544	2506	390	441	2740	188
Grp Volume(v), veh/h	180	0	0	299	0	0	54	628	515	141	500	420
Grp Sat Flow(s),veh/h/ln	948	0	0	989	0	0	544	1593	1303	441	1593	1336
Q Serve(g_s), s	0.0	0.0	0.0	18.7	0.0	0.0	7.5	30.6	30.7	36.5	21.5	21.5
Cycle Q Clear(g_c), s	20.3	0.0	0.0	39.0	0.0	0.0	29.1	30.6	30.7	67.2	21.5	21.5
Prop In Lane	0.32		0.30	0.37		0.42	1.00		0.30	1.00		0.14
Lane Grp Cap(c), veh/h	321	0	0	335	0	0	313	1017	832	233	1017	853
V/C Ratio(X)	0.56	0.00	0.00	0.89	0.00	0.00	0.17	0.62	0.62	0.61	0.49	0.49
Avail Cap(c_a), veh/h	321	0	0	335	0	0	313	1017	832	233	1017	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	0.0	0.0	46.4	0.0	0.0	20.1	14.0	14.1	34.1	12.4	12.4
Incr Delay (d2), s/veh	2.5	0.0	0.0	24.9	0.0	0.0	1.2	2.8	3.4	11.2	1.7	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	0.0	13.0	0.0	0.0	1.2	14.1	11.8	5.1	9.9	8.4
LnGrp Delay(d),s/veh	40.9	0.0	0.0	71.3	0.0	0.0	21.3	16.8	17.5	45.3	14.1	14.4
LnGrp LOS	D			E			C	B	B	D	B	B
Approach Vol, veh/h		180			299			1197			1061	
Approach Delay, s/veh		40.9			71.3			17.3			18.4	
Approach LOS		D			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		87.0		43.0		87.0		43.0
Change Period (Y+Rc), s		* 4.2		* 4.6		* 4.2		* 4.6
Max Green Setting (Gmax), s		* 83		* 38		* 83		* 38
Max Q Clear Time (g_c+I1), s		32.7		22.3		69.2		41.0
Green Ext Time (p_c), s		9.5		2.4		6.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

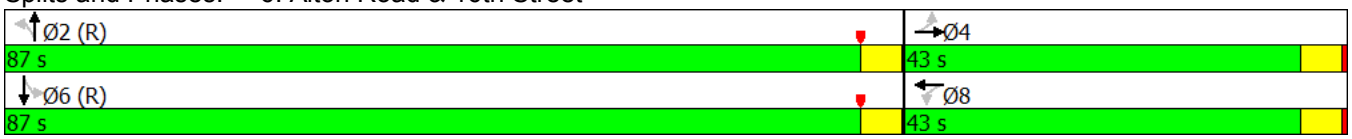
6: Alton Road & 16th Street

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	51	62	101	54	49	890	127	775
Future Volume (vph)	51	62	101	54	49	890	127	775
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	38.0	38.0	38.0	38.0	79.0	79.0	79.0	79.0
Total Split (s)	43.0	43.0	43.0	43.0	87.0	87.0	87.0	87.0
Total Split (%)	33.1%	33.1%	33.1%	33.1%	66.9%	66.9%	66.9%	66.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.6	0.6	0.6	0.6	0.2	0.2	0.2	0.2
Lost Time Adjust (s)		-0.6		-0.6	-0.2	-0.2	-0.2	-0.2
Total Lost Time (s)		4.0		4.0	4.0	4.0	4.0	4.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)		35.1		35.1	86.9	86.9	86.9	86.9
Actuated g/C Ratio		0.27		0.27	0.67	0.67	0.67	0.67
v/c Ratio		0.52		0.90	0.18	0.55	0.64	0.44
Control Delay		41.1		69.5	11.4	12.9	30.6	11.4
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		41.1		69.5	11.4	12.9	30.6	11.4
LOS		D		E	B	B	C	B
Approach Delay		41.1		69.5		12.8		14.0
Approach LOS		D		E		B		B

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 86 (66%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 21.3 Intersection LOS: C
Intersection Capacity Utilization 76.1% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 6: Alton Road & 16th Street



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	180	299	54	1143	141	920
v/c Ratio	0.52	0.90	0.18	0.55	0.64	0.44
Control Delay	41.1	69.5	11.4	12.9	30.6	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.1	69.5	11.4	12.9	30.6	11.4
Queue Length 50th (ft)	114	217	17	253	67	184
Queue Length 95th (ft)	187	#368	40	324	#200	238
Internal Link Dist (ft)	277	359		207		547
Turn Bay Length (ft)			115		115	
Base Capacity (vph)	386	373	301	2102	223	2121
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.80	0.18	0.54	0.63	0.43

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	269	214	83	272	19	339	370	103	7	159	89
Future Volume (vph)	110	269	214	83	272	19	339	370	103	7	159	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.4		7.4	7.4		6.0	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.94		1.00	1.00		1.00	0.98		1.00	0.96	
Flpb, ped/bikes	0.99	1.00		0.95	1.00		0.98	1.00		0.97	1.00	
Frt	1.00	0.93		1.00	0.99		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1760	3122		1681	3495		1736	3371		1718	3231	
Flt Permitted	0.38	1.00		0.46	1.00		0.47	1.00		0.46	1.00	
Satd. Flow (perm)	707	3122		814	3495		857	3371		840	3231	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	118	289	230	89	292	20	365	398	111	8	171	96
RTOR Reduction (vph)	0	151	0	0	6	0	0	26	0	0	71	0
Lane Group Flow (vph)	118	368	0	89	306	0	365	483	0	8	196	0
Confl. Peds. (#/hr)	23		88	88		23	56		46	46		56
Confl. Bikes (#/hr)			21			4			2			20
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	3	8			4		1	6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	30.9	30.9		15.3	15.3		45.4	45.4		23.8	23.8	
Effective Green, g (s)	30.9	30.9		15.3	15.3		45.4	45.4		23.8	23.8	
Actuated g/C Ratio	0.34	0.34		0.17	0.17		0.50	0.50		0.26	0.26	
Clearance Time (s)	7.1	7.4		7.4	7.4		6.0	6.3		6.3	6.3	
Vehicle Extension (s)	2.0	2.5		2.5	2.5		2.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	342	1071		138	594		584	1700		222	854	
v/s Ratio Prot	0.03	c0.12			0.09		c0.11	0.14			0.06	
v/s Ratio Perm	0.09			c0.11			c0.21			0.01		
v/c Ratio	0.35	0.34		0.64	0.52		0.62	0.28		0.04	0.23	
Uniform Delay, d1	21.1	22.0		34.8	34.0		14.3	12.9		24.6	25.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		8.8	0.6		1.5	0.4		0.3	0.6	
Delay (s)	21.3	22.1		43.6	34.5		15.8	13.3		24.9	26.6	
Level of Service	C	C		D	C		B	B		C	C	
Approach Delay (s)		22.0			36.6			14.4			26.5	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

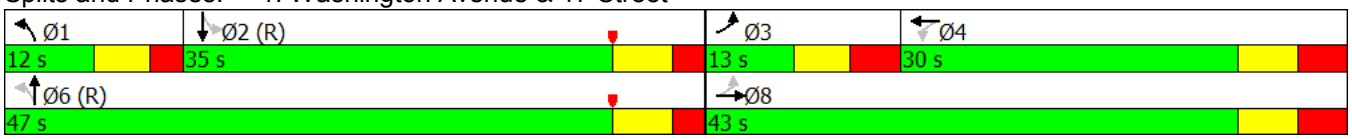
1: Washington Avenue & 17 Street

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	110	269	83	272	339	370	7	159
Future Volume (vph)	110	269	83	272	339	370	7	159
Turn Type	pm+pt	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases	3	8		4	1	6		2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	4	4	1	6	2	2
Switch Phase								
Minimum Initial (s)	5.0	7.0	7.0	7.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.1	30.4	30.4	30.4	11.0	27.3	29.3	29.3
Total Split (s)	13.0	43.0	30.0	30.0	12.0	47.0	35.0	35.0
Total Split (%)	14.4%	47.8%	33.3%	33.3%	13.3%	52.2%	38.9%	38.9%
Yellow Time (s)	3.7	4.0	4.0	4.0	3.7	4.0	4.0	4.0
All-Red Time (s)	3.4	3.4	3.4	3.4	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.1	7.4	7.4	7.4	6.0	6.3	6.3	6.3
Lead/Lag	Lead		Lag	Lag	Lead		Lag	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	31.1	30.8	15.3	15.3	45.8	45.5	23.8	23.8
Actuated g/C Ratio	0.35	0.34	0.17	0.17	0.51	0.51	0.26	0.26
v/c Ratio	0.34	0.42	0.64	0.52	0.62	0.29	0.04	0.29
Control Delay	21.5	12.2	54.7	35.4	21.2	13.4	33.0	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	12.2	54.7	35.4	21.2	13.4	33.0	20.6
LOS	C	B	D	D	C	B	C	C
Approach Delay		13.9		39.7		16.7		20.9
Approach LOS		B		D		B		C

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 73 (81%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 20.6 Intersection LOS: C
Intersection Capacity Utilization 83.7% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Washington Avenue & 17 Street



1: Washington Avenue & 17 Street

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	519	89	312	365	509	8	267
v/c Ratio	0.34	0.42	0.64	0.52	0.62	0.29	0.04	0.29
Control Delay	21.5	12.2	54.7	35.4	21.2	13.4	33.0	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	12.2	54.7	35.4	21.2	13.4	33.0	20.6
Queue Length 50th (ft)	47	62	48	84	121	74	3	40
Queue Length 95th (ft)	70	84	89	111	239	135	17	86
Internal Link Dist (ft)		319		336		1078		264
Turn Bay Length (ft)	210		215		200		150	
Base Capacity (vph)	344	1408	205	888	586	1766	290	1180
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.37	0.43	0.35	0.62	0.29	0.03	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	109	51	74	161	140	79	556	82	71	479	118
Future Volume (veh/h)	75	109	51	74	161	140	79	556	82	71	479	118
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.91	1.00		0.91	0.94		0.79	0.94		0.81
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	83	121	57	82	179	156	88	618	91	79	532	131
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	145	58	142	288	518	431	1600	234	510	1623	395
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	1.00	1.00	1.00	0.04	0.61	0.61
Sat Flow, veh/h	200	462	185	316	920	1446	721	2980	437	1774	2681	653
Grp Volume(v), veh/h	261	0	0	261	0	156	88	366	343	79	349	314
Grp Sat Flow(s),veh/h/ln	848	0	0	1236	0	1446	721	1770	1647	1774	1770	1565
Q Serve(g_s), s	15.1	0.0	0.0	0.0	0.0	8.6	1.0	0.0	0.0	2.1	10.7	10.9
Cycle Q Clear(g_c), s	34.0	0.0	0.0	18.9	0.0	8.6	4.3	0.0	0.0	2.1	10.7	10.9
Prop In Lane	0.32		0.22	0.31		1.00	1.00		0.27	1.00		0.42
Lane Grp Cap(c), veh/h	308	0	0	430	0	518	431	950	884	510	1071	947
V/C Ratio(X)	0.85	0.00	0.00	0.61	0.00	0.30	0.20	0.38	0.39	0.15	0.33	0.33
Avail Cap(c_a), veh/h	308	0	0	430	0	518	431	950	884	517	1071	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.89	0.89	0.89	0.93	0.93	0.93
Uniform Delay (d), s/veh	40.7	0.0	0.0	31.7	0.0	25.7	0.1	0.0	0.0	9.4	10.7	10.7
Incr Delay (d2), s/veh	18.8	0.0	0.0	2.2	0.0	0.2	0.9	1.0	1.1	0.0	0.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	0.0	0.0	7.1	0.0	3.5	0.3	0.3	0.3	1.0	5.4	4.9
LnGrp Delay(d),s/veh	59.6	0.0	0.0	33.9	0.0	26.0	1.1	1.0	1.1	9.4	11.4	11.6
LnGrp LOS	E			C		C	A	A	A	A	B	B
Approach Vol, veh/h		261			417			797			742	
Approach Delay, s/veh		59.6			30.9			1.1			11.3	
Approach LOS		E			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		71.0		39.0	7.6	63.4		39.0
Change Period (Y+Rc), s		* 4.4		* 4.6	3.0	* 4.4		* 4.6
Max Green Setting (Gmax), s		* 67		* 34	5.0	* 59		* 34
Max Q Clear Time (g_c+I1), s		12.9		20.9	4.1	6.3		36.0
Green Ext Time (p_c), s		3.6		2.8	0.0	3.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.0
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

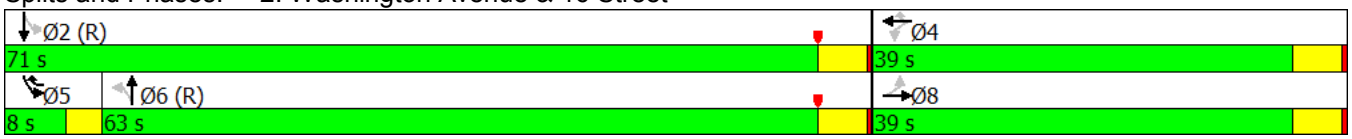
2: Washington Avenue & 16 Street

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	75	109	74	161	140	79	556	71	479
Future Volume (vph)	75	109	74	161	140	79	556	71	479
Turn Type	Perm	NA	Perm	NA	pm+ov	Perm	NA	pm+pt	NA
Protected Phases		8		4	5		6	5	2
Permitted Phases	8		4		4	6		2	
Detector Phase	8	8	4	4	5	6	6	5	2
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0
Minimum Split (s)	37.6	37.6	37.6	37.6	9.0	25.4	25.4	9.0	25.4
Total Split (s)	39.0	39.0	39.0	39.0	8.0	63.0	63.0	8.0	71.0
Total Split (%)	35.5%	35.5%	35.5%	35.5%	7.3%	57.3%	57.3%	7.3%	64.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	0.6	0.6	0.6	0.6	0.0	0.4	0.4	0.0	0.4
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6		4.6	3.0	4.4	4.4	3.0	4.4
Lead/Lag					Lead	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)		27.2		27.2	35.2	64.4	64.4	75.2	73.8
Actuated g/C Ratio		0.25		0.25	0.32	0.59	0.59	0.68	0.67
v/c Ratio		1.03		0.78	0.29	0.26	0.37	0.18	0.32
Control Delay		102.8		54.0	11.2	15.7	13.1	8.4	8.4
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		102.8		54.0	11.2	15.7	13.1	8.4	8.4
LOS		F		D	B	B	B	A	A
Approach Delay		102.8		38.0			13.4		8.4
Approach LOS		F		D			B		A

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 54 (49%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 26.9 Intersection LOS: C
Intersection Capacity Utilization 91.9% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 2: Washington Avenue & 16 Street



Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	261	261	156	88	709	79	663
v/c Ratio	1.03	0.78	0.29	0.26	0.37	0.18	0.32
Control Delay	102.8	54.0	11.2	15.7	13.1	8.4	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.8	54.0	11.2	15.7	13.1	8.4	8.4
Queue Length 50th (ft)	~184	172	31	33	146	17	85
Queue Length 95th (ft)	#292	239	66	85	234	43	150
Internal Link Dist (ft)	170	490			480		1078
Turn Bay Length (ft)				120		100	
Base Capacity (vph)	321	429	531	342	1943	428	2083
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.61	0.29	0.26	0.36	0.18	0.32

Intersection Summary

~ 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.

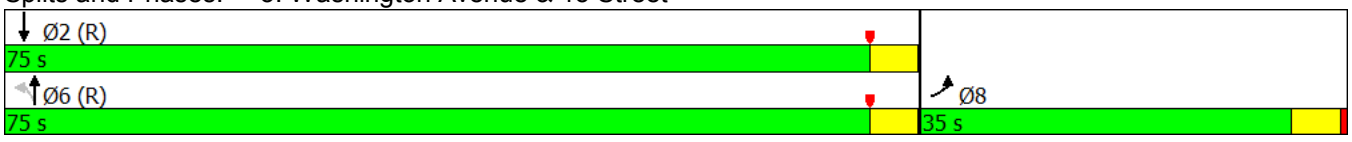
3: Washington Avenue & 15 Street

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	98	65	589	543
Future Volume (vph)	98	65	589	543
Turn Type	Prot	Perm	NA	NA
Protected Phases	8		6	2
Permitted Phases		6		
Detector Phase	8	6	6	2
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	7.0
Minimum Split (s)	33.7	27.2	27.2	27.2
Total Split (s)	35.0	75.0	75.0	75.0
Total Split (%)	31.8%	68.2%	68.2%	68.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	0.7	0.2	0.2	0.2
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.7		4.2	4.2
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	16.8		84.3	84.3
Actuated g/C Ratio	0.15		0.77	0.77
v/c Ratio	0.83		0.34	0.26
Control Delay	57.2		5.2	3.1
Queue Delay	0.0		0.0	0.0
Total Delay	57.2		5.2	3.1
LOS	E		A	A
Approach Delay	57.2		5.2	3.1
Approach LOS	E		A	A

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 61 (55%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 11.9 Intersection LOS: B
Intersection Capacity Utilization 72.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Washington Avenue & 15 Street



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	98	115	65	589	543	51
Future Volume (vph)	98	115	65	589	543	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7			4.2	4.2	
Lane Util. Factor	1.00			0.95	0.95	
Frpb, ped/bikes	0.93			1.00	0.95	
Flpb, ped/bikes	1.00			0.98	1.00	
Frt	0.93			1.00	0.99	
Flt Protected	0.98			1.00	1.00	
Satd. Flow (prot)	1578			3449	3325	
Flt Permitted	0.98			0.81	1.00	
Satd. Flow (perm)	1578			2812	3325	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	109	128	72	654	603	57
RTOR Reduction (vph)	45	0	0	0	4	0
Lane Group Flow (vph)	192	0	0	726	656	0
Confl. Peds. (#/hr)	86	93	306			306
Confl. Bikes (#/hr)		4				5
Turn Type	Prot		Perm	NA	NA	
Protected Phases	8			6	2	
Permitted Phases			6			
Actuated Green, G (s)	16.8			84.3	84.3	
Effective Green, g (s)	16.8			84.3	84.3	
Actuated g/C Ratio	0.15			0.77	0.77	
Clearance Time (s)	4.7			4.2	4.2	
Vehicle Extension (s)	1.0			1.0	1.0	
Lane Grp Cap (vph)	241			2155	2548	
v/s Ratio Prot	c0.12				0.20	
v/s Ratio Perm				c0.26		
v/c Ratio	0.80			0.34	0.26	
Uniform Delay, d1	45.0			4.0	3.7	
Progression Factor	1.00			1.00	0.68	
Incremental Delay, d2	15.5			0.4	0.2	
Delay (s)	60.5			4.5	2.8	
Level of Service	E			A	A	
Approach Delay (s)	60.5			4.5	2.8	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	237	726	660
v/c Ratio	0.83	0.34	0.26
Control Delay	57.2	5.2	3.1
Queue Delay	0.0	0.0	0.0
Total Delay	57.2	5.2	3.1
Queue Length 50th (ft)	129	70	37
Queue Length 95th (ft)	201	131	65
Internal Link Dist (ft)	422	646	480
Turn Bay Length (ft)			
Base Capacity (vph)	473	2152	2551
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.50	0.34	0.26

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	29	181	28	24	317	44	25	5	15	5	2	26
Future Volume (veh/h)	29	181	28	24	317	44	25	5	15	5	2	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.87	0.95		0.88	0.96		0.93	0.96		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	32	201	31	27	352	49	28	6	17	6	2	29
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	563	80	116	604	81	418	106	192	153	81	471
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	95	1407	200	50	1509	202	696	266	481	121	203	1177
Grp Volume(v), veh/h	264	0	0	428	0	0	51	0	0	37	0	0
Grp Sat Flow(s),veh/h/ln	1701	0	0	1760	0	0	1442	0	0	1501	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.2	0.0	0.0	7.5	0.0	0.0	0.7	0.0	0.0	0.6	0.0	0.0
Prop In Lane	0.12		0.12	0.06		0.11	0.55		0.33	0.16		0.78
Lane Grp Cap(c), veh/h	781	0	0	800	0	0	716	0	0	705	0	0
V/C Ratio(X)	0.34	0.00	0.00	0.54	0.00	0.00	0.07	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	781	0	0	800	0	0	716	0	0	705	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	0.0	0.0	9.5	0.0	0.0	7.4	0.0	0.0	7.4	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	2.6	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.0	4.3	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.0
LnGrp Delay(d),s/veh	9.6	0.0	0.0	12.0	0.0	0.0	7.6	0.0	0.0	7.5	0.0	0.0
LnGrp LOS	A			B			A			A		
Approach Vol, veh/h		264			428			51			37	
Approach Delay, s/veh		9.6			12.0			7.6			7.5	
Approach LOS		A			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		20.0		20.0		20.0		20.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		16.0		16.0		16.0		16.0
Max Q Clear Time (g_c+I1), s		2.7		6.2		2.6		9.5
Green Ext Time (p_c), s		0.3		3.2		0.3		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

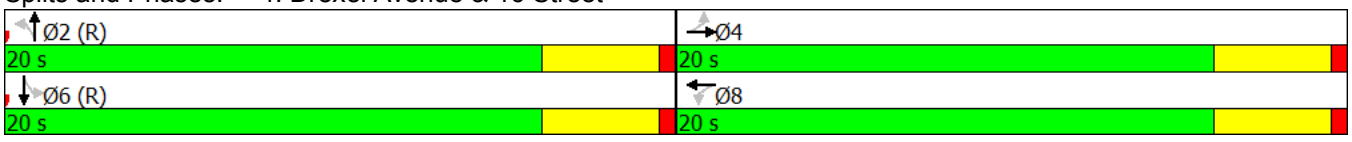
4: Drexel Avenue & 16 Street

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	29	181	24	317	25	5	5	2
Future Volume (vph)	29	181	24	317	25	5	5	2
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		4.0		4.0		4.0		4.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
Act Effct Green (s)		16.0		16.0		16.0		16.0
Actuated g/C Ratio		0.40		0.40		0.40		0.40
v/c Ratio		0.39		0.60		0.08		0.06
Control Delay		10.0		13.3		6.2		4.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		10.0		13.3		6.2		4.5
LOS		A		B		A		A
Approach Delay		10.0		13.3		6.2		4.5
Approach LOS		A		B		A		A

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 40
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 11.3 Intersection LOS: B
Intersection Capacity Utilization 44.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Drexel Avenue & 16 Street



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	264	428	51	37
v/c Ratio	0.39	0.60	0.08	0.06
Control Delay	10.0	13.3	6.2	4.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.0	13.3	6.2	4.5
Queue Length 50th (ft)	36	67	4	1
Queue Length 95th (ft)	76	132	18	12
Internal Link Dist (ft)	176	70	207	304
Turn Bay Length (ft)				
Base Capacity (vph)	678	714	617	634
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	0.39	0.60	0.08	0.06

Intersection Summary

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↑		↰	↱
Traffic Vol, veh/h	8	214	325	22	19	37
Future Vol, veh/h	8	214	325	22	19	37
Conflicting Peds, #/hr	51	0	0	51	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	238	361	24	21	41

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	437	0	-	0	681	424
Stage 1	-	-	-	-	424	-
Stage 2	-	-	-	-	257	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1123	-	-	-	416	630
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	786	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1123	-	-	-	378	603
Mov Cap-2 Maneuver	-	-	-	-	378	-
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	746	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1123	-	-	-	378	603
HCM Lane V/C Ratio	0.008	-	-	-	0.056	0.068
HCM Control Delay (s)	8.2	0	-	-	15.1	11.4
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.2

6: Alton Road & 16th Street

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	53	64	104	56	50	917	131	798
Future Volume (vph)	53	64	104	56	50	917	131	798
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	38.0	38.0	38.0	38.0	79.0	79.0	79.0	79.0
Total Split (s)	43.0	43.0	43.0	43.0	87.0	87.0	87.0	87.0
Total Split (%)	33.1%	33.1%	33.1%	33.1%	66.9%	66.9%	66.9%	66.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.6	0.6	0.6	0.6	0.2	0.2	0.2	0.2
Lost Time Adjust (s)		-0.6		-0.6	-0.2	-0.2	-0.2	-0.2
Total Lost Time (s)		4.0		4.0	4.0	4.0	4.0	4.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)		35.4		35.4	86.6	86.6	86.6	86.6
Actuated g/C Ratio		0.27		0.27	0.67	0.67	0.67	0.67
v/c Ratio		0.54		0.92	0.20	0.57	0.70	0.45
Control Delay		41.9		74.3	11.6	13.2	36.3	11.6
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		41.9		74.3	11.6	13.2	36.3	11.6
LOS		D		E	B	B	D	B
Approach Delay		41.9		74.3		13.2		14.9
Approach LOS		D		E		B		B

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 86 (66%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 22.4 Intersection LOS: C
Intersection Capacity Utilization 77.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 6: Alton Road & 16th Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	64	50	104	56	117	50	917	143	131	798	55
Future Volume (veh/h)	53	64	50	104	56	117	50	917	143	131	798	55
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.98	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	0.82	1.00	1.00	0.82	1.00	1.00	0.82	1.00	1.00	0.82
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1710	1676	1676	1710	1676	1676	1710
Adj Flow Rate, veh/h	59	71	56	116	62	130	56	1019	159	146	887	61
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	122	86	139	69	123	302	1600	249	222	1749	120
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	256	408	286	335	228	412	530	2506	390	427	2740	188
Grp Volume(v), veh/h	186	0	0	308	0	0	56	647	531	146	516	432
Grp Sat Flow(s),veh/h/ln	950	0	0	975	0	0	530	1593	1303	427	1593	1335
Q Serve(g_s), s	0.0	0.0	0.0	17.8	0.0	0.0	8.2	32.2	32.3	41.3	22.5	22.5
Cycle Q Clear(g_c), s	21.2	0.0	0.0	39.0	0.0	0.0	30.7	32.2	32.3	73.6	22.5	22.5
Prop In Lane	0.32		0.30	0.38		0.42	1.00		0.30	1.00		0.14
Lane Grp Cap(c), veh/h	321	0	0	331	0	0	302	1017	832	222	1017	853
V/C Ratio(X)	0.58	0.00	0.00	0.93	0.00	0.00	0.19	0.64	0.64	0.66	0.51	0.51
Avail Cap(c_a), veh/h	321	0	0	331	0	0	302	1017	832	222	1017	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	0.0	0.0	47.3	0.0	0.0	20.8	14.3	14.4	36.8	12.6	12.6
Incr Delay (d2), s/veh	2.9	0.0	0.0	32.4	0.0	0.0	1.4	3.0	3.7	14.3	1.8	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	0.0	14.0	0.0	0.0	1.3	14.9	12.4	5.7	10.4	8.8
LnGrp Delay(d),s/veh	41.6	0.0	0.0	79.7	0.0	0.0	22.1	17.4	18.1	51.1	14.4	14.7
LnGrp LOS	D			E			C	B	B	D	B	B
Approach Vol, veh/h		186			308			1234			1094	
Approach Delay, s/veh		41.6			79.7			17.9			19.4	
Approach LOS		D			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		87.0		43.0		87.0		43.0
Change Period (Y+Rc), s		* 4.2		* 4.6		* 4.2		* 4.6
Max Green Setting (Gmax), s		* 83		* 38		* 83		* 38
Max Q Clear Time (g_c+I1), s		34.3		23.2		75.6		41.0
Green Ext Time (p_c), s		10.2		2.4		4.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

6: Alton Road & 16th Street

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	186	308	56	1178	146	948
v/c Ratio	0.54	0.92	0.20	0.57	0.70	0.45
Control Delay	41.9	74.3	11.6	13.2	36.3	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	74.3	11.6	13.2	36.3	11.6
Queue Length 50th (ft)	117	224	18	276	77	200
Queue Length 95th (ft)	195	#388	42	340	#220	248
Internal Link Dist (ft)	277	359		207		547
Turn Bay Length (ft)			115		115	
Base Capacity (vph)	378	365	287	2081	210	2099
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.84	0.20	0.57	0.70	0.45

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	269	214	88	272	19	339	387	107	7	184	89
Future Volume (vph)	110	269	214	88	272	19	339	387	107	7	184	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.4		7.4	7.4		6.0	6.3		6.3	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.94		1.00	1.00		1.00	0.98		1.00	0.97	
Flpb, ped/bikes	0.99	1.00		0.95	1.00		0.98	1.00		0.97	1.00	
Frt	1.00	0.93		1.00	0.99		1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1760	3122		1681	3495		1739	3372		1720	3259	
Flt Permitted	0.39	1.00		0.46	1.00		0.45	1.00		0.45	1.00	
Satd. Flow (perm)	717	3122		814	3495		833	3372		823	3259	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	118	289	230	95	292	20	365	416	115	8	198	96
RTOR Reduction (vph)	0	150	0	0	6	0	0	26	0	0	71	0
Lane Group Flow (vph)	118	369	0	95	306	0	365	506	0	8	223	0
Confl. Peds. (#/hr)	23		88	88		23	56		46	46		56
Confl. Bikes (#/hr)			21			4			2			20
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	3	8			4		1	6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	31.3	31.3		15.8	15.8		45.0	45.0		23.3	23.3	
Effective Green, g (s)	31.3	31.3		15.8	15.8		45.0	45.0		23.3	23.3	
Actuated g/C Ratio	0.35	0.35		0.18	0.18		0.50	0.50		0.26	0.26	
Clearance Time (s)	7.1	7.4		7.4	7.4		6.0	6.3		6.3	6.3	
Vehicle Extension (s)	2.0	2.5		2.5	2.5		2.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	346	1085		142	613		574	1686		213	843	
v/s Ratio Prot	0.03	c0.12			0.09		c0.11	0.15			0.07	
v/s Ratio Perm	0.09			c0.12			c0.21			0.01		
v/c Ratio	0.34	0.34		0.67	0.50		0.64	0.30		0.04	0.26	
Uniform Delay, d1	20.8	21.7		34.7	33.5		14.5	13.2		25.0	26.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		10.3	0.5		1.7	0.5		0.3	0.8	
Delay (s)	21.1	21.8		44.9	34.0		16.2	13.7		25.3	27.3	
Level of Service	C	C		D	C		B	B		C	C	
Approach Delay (s)		21.7			36.5			14.7			27.2	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	26.8
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

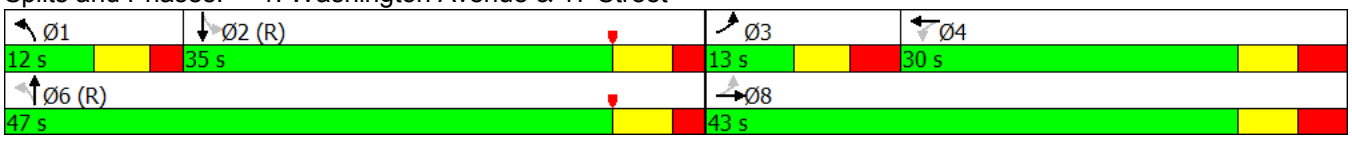
1: Washington Avenue & 17 Street

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	110	269	88	272	339	387	7	184
Future Volume (vph)	110	269	88	272	339	387	7	184
Turn Type	pm+pt	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases	3	8		4	1	6		2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	4	4	1	6	2	2
Switch Phase								
Minimum Initial (s)	5.0	7.0	7.0	7.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.1	30.4	30.4	30.4	11.0	27.3	29.3	29.3
Total Split (s)	13.0	43.0	30.0	30.0	12.0	47.0	35.0	35.0
Total Split (%)	14.4%	47.8%	33.3%	33.3%	13.3%	52.2%	38.9%	38.9%
Yellow Time (s)	3.7	4.0	4.0	4.0	3.7	4.0	4.0	4.0
All-Red Time (s)	3.4	3.4	3.4	3.4	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.1	7.4	7.4	7.4	6.0	6.3	6.3	6.3
Lead/Lag	Lead		Lag	Lag	Lead		Lag	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	31.6	31.3	15.8	15.8	45.3	45.0	23.3	23.3
Actuated g/C Ratio	0.35	0.35	0.18	0.18	0.50	0.50	0.26	0.26
v/c Ratio	0.34	0.42	0.66	0.50	0.63	0.31	0.04	0.32
Control Delay	21.0	12.0	55.2	34.5	22.4	13.9	33.0	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	12.0	55.2	34.5	22.4	13.9	33.0	21.8
LOS	C	B	E	C	C	B	C	C
Approach Delay		13.7		39.4		17.4		22.1
Approach LOS		B		D		B		C

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 73 (81%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 20.9 Intersection LOS: C
Intersection Capacity Utilization 83.7% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Washington Avenue & 17 Street



1: Washington Avenue & 17 Street

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	519	95	312	365	531	8	294
v/c Ratio	0.34	0.42	0.66	0.50	0.63	0.31	0.04	0.32
Control Delay	21.0	12.0	55.2	34.5	22.4	13.9	33.0	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	12.0	55.2	34.5	22.4	13.9	33.0	21.8
Queue Length 50th (ft)	46	61	51	83	123	79	4	47
Queue Length 95th (ft)	69	82	93	109	#261	144	17	95
Internal Link Dist (ft)		319		336		1078		264
Turn Bay Length (ft)	210		215		200		150	
Base Capacity (vph)	348	1413	207	895	576	1756	282	1181
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.37	0.46	0.35	0.63	0.30	0.03	0.25

Intersection Summary

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

HCM 2010 Signalized Intersection Summary 10/28/2016
2: Washington Avenue & 16 Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	113	53	74	166	140	84	556	82	71	479	148
Future Volume (veh/h)	96	113	53	74	166	140	84	556	82	71	479	148
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.91	1.00		0.91	0.94		0.79	0.94		0.81
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	107	126	59	82	184	156	93	618	91	79	532	164
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	131	52	147	305	518	416	1600	234	510	1523	464
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	1.00	1.00	1.00	0.04	0.61	0.61
Sat Flow, veh/h	236	420	166	332	976	1446	704	2980	437	1774	2515	767
Grp Volume(v), veh/h	292	0	0	266	0	156	93	366	343	79	373	323
Grp Sat Flow(s),veh/h/ln	822	0	0	1308	0	1446	704	1770	1647	1774	1770	1513
Q Serve(g_s), s	16.3	0.0	0.0	0.0	0.0	8.6	1.4	0.0	0.0	2.1	11.6	11.8
Cycle Q Clear(g_c), s	34.4	0.0	0.0	18.1	0.0	8.6	5.6	0.0	0.0	2.1	11.6	11.8
Prop In Lane	0.37		0.20	0.31		1.00	1.00		0.27	1.00		0.51
Lane Grp Cap(c), veh/h	302	0	0	452	0	518	416	950	884	510	1071	916
V/C Ratio(X)	0.97	0.00	0.00	0.59	0.00	0.30	0.22	0.38	0.39	0.15	0.35	0.35
Avail Cap(c_a), veh/h	302	0	0	452	0	518	416	950	884	517	1071	916
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.89	0.89	0.89	0.92	0.92	0.92
Uniform Delay (d), s/veh	43.2	0.0	0.0	31.6	0.0	25.7	0.2	0.0	0.0	9.4	10.8	10.9
Incr Delay (d2), s/veh	42.8	0.0	0.0	1.7	0.0	0.2	1.1	1.0	1.1	0.0	0.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	0.0	0.0	7.1	0.0	3.5	0.4	0.3	0.3	1.0	5.8	5.1
LnGrp Delay(d),s/veh	86.0	0.0	0.0	33.3	0.0	26.0	1.3	1.0	1.1	9.4	11.7	11.9
LnGrp LOS	F			C		C	A	A	A	A	B	B
Approach Vol, veh/h		292			422			802			775	
Approach Delay, s/veh		86.0			30.6			1.1			11.5	
Approach LOS		F			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		71.0		39.0	7.6	63.4		39.0
Change Period (Y+Rc), s		* 4.4		* 4.6	3.0	* 4.4		* 4.6
Max Green Setting (Gmax), s		* 67		* 34	5.0	* 59		* 34
Max Q Clear Time (g_c+I1), s		13.8		20.1	4.1	7.6		36.4
Green Ext Time (p_c), s		3.8		3.1	0.0	3.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

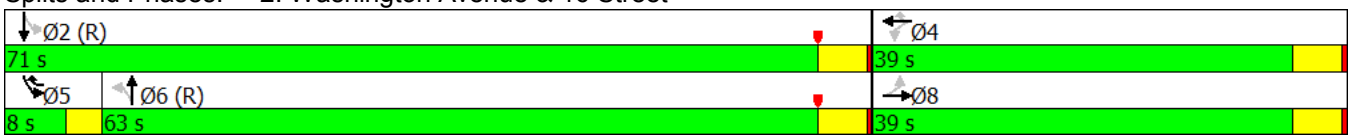
2: Washington Avenue & 16 Street

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	96	113	74	166	140	84	556	71	479
Future Volume (vph)	96	113	74	166	140	84	556	71	479
Turn Type	Perm	NA	Perm	NA	pm+ov	Perm	NA	pm+pt	NA
Protected Phases		8		4	5		6	5	2
Permitted Phases	8		4		4	6		2	
Detector Phase	8	8	4	4	5	6	6	5	2
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0
Minimum Split (s)	37.6	37.6	37.6	37.6	9.0	25.4	25.4	9.0	25.4
Total Split (s)	39.0	39.0	39.0	39.0	8.0	63.0	63.0	8.0	71.0
Total Split (%)	35.5%	35.5%	35.5%	35.5%	7.3%	57.3%	57.3%	7.3%	64.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	0.6	0.6	0.6	0.6	0.0	0.4	0.4	0.0	0.4
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6		4.6	3.0	4.4	4.4	3.0	4.4
Lead/Lag					Lead	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min
Act Effct Green (s)		34.4		34.4	42.7	56.9	56.9	68.0	66.6
Actuated g/C Ratio		0.31		0.31	0.39	0.52	0.52	0.62	0.61
v/c Ratio		0.85		0.60	0.25	0.31	0.42	0.21	0.38
Control Delay		56.4		36.7	8.8	23.6	19.6	11.4	11.6
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		56.4		36.7	8.8	23.6	19.6	11.4	11.6
LOS		E		D	A	C	B	B	B
Approach Delay		56.4		26.4			20.0		11.6
Approach LOS		E		C			C		B

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 54 (49%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 23.0 Intersection LOS: C
Intersection Capacity Utilization 93.4% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 2: Washington Avenue & 16 Street



Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	292	266	156	93	709	79	696
v/c Ratio	0.85	0.60	0.25	0.31	0.42	0.21	0.38
Control Delay	56.4	36.7	8.8	23.6	19.6	11.4	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.4	36.7	8.8	23.6	19.6	11.4	11.6
Queue Length 50th (ft)	182	154	27	42	174	22	115
Queue Length 95th (ft)	277	222	59	104	269	48	176
Internal Link Dist (ft)	170	490			480		1078
Turn Bay Length (ft)				120		100	
Base Capacity (vph)	368	483	624	320	1815	379	1899
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.55	0.25	0.29	0.39	0.21	0.37

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	98	115	65	594	545	51
Future Volume (vph)	98	115	65	594	545	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7			4.2	4.2	
Lane Util. Factor	1.00			0.95	0.95	
Frpb, ped/bikes	0.93			1.00	0.95	
Flpb, ped/bikes	1.00			0.98	1.00	
Frt	0.93			1.00	0.99	
Flt Protected	0.98			1.00	1.00	
Satd. Flow (prot)	1578			3450	3326	
Flt Permitted	0.98			0.81	1.00	
Satd. Flow (perm)	1578			2814	3326	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	109	128	72	660	606	57
RTOR Reduction (vph)	45	0	0	0	4	0
Lane Group Flow (vph)	192	0	0	732	659	0
Confl. Peds. (#/hr)	86	93	306			306
Confl. Bikes (#/hr)		4				5
Turn Type	Prot		Perm	NA	NA	
Protected Phases	8			6	2	
Permitted Phases			6			
Actuated Green, G (s)	16.8			84.3	84.3	
Effective Green, g (s)	16.8			84.3	84.3	
Actuated g/C Ratio	0.15			0.77	0.77	
Clearance Time (s)	4.7			4.2	4.2	
Vehicle Extension (s)	1.0			1.0	1.0	
Lane Grp Cap (vph)	241			2156	2548	
v/s Ratio Prot	c0.12				0.20	
v/s Ratio Perm				c0.26		
v/c Ratio	0.80			0.34	0.26	
Uniform Delay, d1	45.0			4.1	3.7	
Progression Factor	1.00			1.00	0.71	
Incremental Delay, d2	15.5			0.4	0.2	
Delay (s)	60.5			4.5	2.9	
Level of Service	E			A	A	
Approach Delay (s)	60.5			4.5	2.9	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

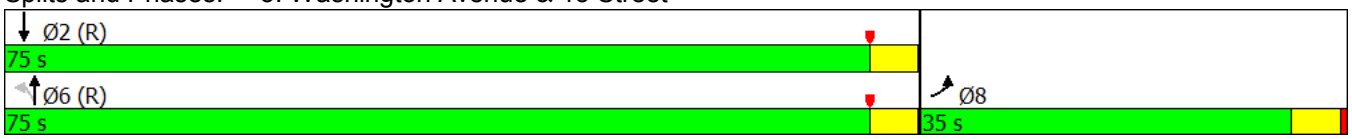
3: Washington Avenue & 15 Street

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	98	65	594	545
Future Volume (vph)	98	65	594	545
Turn Type	Prot	Perm	NA	NA
Protected Phases	8		6	2
Permitted Phases		6		
Detector Phase	8	6	6	2
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	7.0
Minimum Split (s)	33.7	27.2	27.2	27.2
Total Split (s)	35.0	75.0	75.0	75.0
Total Split (%)	31.8%	68.2%	68.2%	68.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	0.7	0.2	0.2	0.2
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.7		4.2	4.2
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	16.8		84.3	84.3
Actuated g/C Ratio	0.15		0.77	0.77
v/c Ratio	0.83		0.34	0.26
Control Delay	57.2		5.2	3.2
Queue Delay	0.0		0.0	0.0
Total Delay	57.2		5.2	3.2
LOS	E		A	A
Approach Delay	57.2		5.2	3.2
Approach LOS	E		A	A

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 61 (55%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 11.9 Intersection LOS: B
Intersection Capacity Utilization 72.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Washington Avenue & 15 Street



Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	237	732	663
v/c Ratio	0.83	0.34	0.26
Control Delay	57.2	5.2	3.2
Queue Delay	0.0	0.0	0.0
Total Delay	57.2	5.2	3.2
Queue Length 50th (ft)	129	71	42
Queue Length 95th (ft)	201	132	67
Internal Link Dist (ft)	422	646	480
Turn Bay Length (ft)			
Base Capacity (vph)	473	2160	2552
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.50	0.34	0.26

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	29	197	28	38	329	64	25	5	33	31	2	26
Future Volume (veh/h)	29	197	28	38	329	64	25	5	33	31	2	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.87	0.95		0.88	0.96		0.93	0.96		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	32	219	31	42	366	71	28	6	37	34	2	29
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	575	76	129	554	102	308	98	306	394	57	253
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	90	1438	189	79	1386	255	457	246	765	642	143	632
Grp Volume(v), veh/h	282	0	0	479	0	0	71	0	0	65	0	0
Grp Sat Flow(s),veh/h/ln	1717	0	0	1720	0	0	1467	0	0	1417	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.5	0.0	0.0	9.0	0.0	0.0	1.1	0.0	0.0	1.0	0.0	0.0
Prop In Lane	0.11		0.11	0.09		0.15	0.39		0.52	0.52		0.45
Lane Grp Cap(c), veh/h	787	0	0	786	0	0	712	0	0	704	0	0
V/C Ratio(X)	0.36	0.00	0.00	0.61	0.00	0.00	0.10	0.00	0.00	0.09	0.00	0.00
Avail Cap(c_a), veh/h	787	0	0	786	0	0	712	0	0	704	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.5	0.0	0.0	9.9	0.0	0.0	7.5	0.0	0.0	7.5	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	3.5	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.0	5.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0
LnGrp Delay(d),s/veh	9.8	0.0	0.0	13.4	0.0	0.0	7.8	0.0	0.0	7.8	0.0	0.0
LnGrp LOS	A			B			A			A		
Approach Vol, veh/h		282			479			71			65	
Approach Delay, s/veh		9.8			13.4			7.8			7.8	
Approach LOS		A			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		20.0		20.0		20.0		20.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		16.0		16.0		16.0		16.0
Max Q Clear Time (g_c+I1), s		3.1		6.5		3.0		11.0
Green Ext Time (p_c), s		0.6		3.5		0.6		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

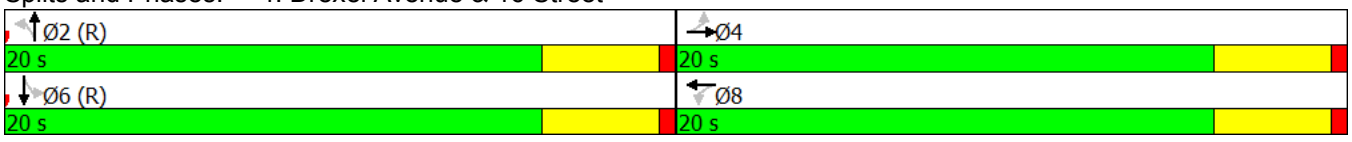
4: Drexel Avenue & 16 Street

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	29	197	38	329	25	5	31	2
Future Volume (vph)	29	197	38	329	25	5	31	2
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		4.0		4.0		4.0		4.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max
Act Effct Green (s)		16.0		16.0		16.0		16.0
Actuated g/C Ratio		0.40		0.40		0.40		0.40
v/c Ratio		0.42		0.69		0.11		0.11
Control Delay		10.4		16.2		5.3		5.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		10.4		16.2		5.3		5.7
LOS		B		B		A		A
Approach Delay		10.4		16.2		5.3		5.7
Approach LOS		B		B		A		A

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 40
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 40
Control Type: Pretimed
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 12.8 Intersection LOS: B
Intersection Capacity Utilization 49.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Drexel Avenue & 16 Street



4: Drexel Avenue & 16 Street

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	282	479	71	65
v/c Ratio	0.42	0.69	0.11	0.11
Control Delay	10.4	16.2	5.3	5.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.4	16.2	5.3	5.7
Queue Length 50th (ft)	39	77	4	5
Queue Length 95th (ft)	82	#192	20	20
Internal Link Dist (ft)	176	70	207	304
Turn Bay Length (ft)				
Base Capacity (vph)	679	699	621	601
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.42	0.69	0.11	0.11

Intersection Summary

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

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↑		↰	↱
Traffic Vol, veh/h	68	202	313	62	46	83
Future Vol, veh/h	68	202	313	62	46	83
Conflicting Peds, #/hr	51	0	0	51	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	224	348	69	51	92

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	468	0	-	0	810	433
Stage 1	-	-	-	-	433	-
Stage 2	-	-	-	-	377	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1094	-	-	-	349	623
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	694	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1094	-	-	-	295	597
Mov Cap-2 Maneuver	-	-	-	-	295	-
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	612	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1094	-	-	-	295	597
HCM Lane V/C Ratio	0.069	-	-	-	0.173	0.154
HCM Control Delay (s)	8.5	0	-	-	19.7	12.1
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6	0.5

HCM 2010 Signalized Intersection Summary 10/28/2016

6: Alton Road & 16th Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	69	50	112	60	117	50	917	154	131	798	55
Future Volume (veh/h)	53	69	50	112	60	117	50	917	154	131	798	55
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.98	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	0.82	1.00	1.00	0.82	1.00	1.00	0.82	1.00	1.00	0.82
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1710	1676	1676	1710	1676	1676	1710
Adj Flow Rate, veh/h	59	77	56	124	67	130	56	1019	171	146	887	61
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	131	85	141	68	116	302	1581	265	218	1749	120
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	252	436	283	341	227	387	530	2477	415	422	2740	188
Grp Volume(v), veh/h	192	0	0	321	0	0	56	655	535	146	516	432
Grp Sat Flow(s),veh/h/ln	971	0	0	955	0	0	530	1593	1299	422	1593	1335
Q Serve(g_s), s	0.0	0.0	0.0	17.5	0.0	0.0	8.2	32.8	33.0	42.3	22.5	22.5
Cycle Q Clear(g_c), s	21.5	0.0	0.0	39.0	0.0	0.0	30.7	32.8	33.0	75.3	22.5	22.5
Prop In Lane	0.31		0.29	0.39		0.40	1.00		0.32	1.00		0.14
Lane Grp Cap(c), veh/h	328	0	0	325	0	0	302	1017	829	218	1017	853
V/C Ratio(X)	0.59	0.00	0.00	0.99	0.00	0.00	0.19	0.64	0.65	0.67	0.51	0.51
Avail Cap(c_a), veh/h	328	0	0	325	0	0	302	1017	829	218	1017	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	0.0	0.0	48.5	0.0	0.0	20.8	14.4	14.5	37.6	12.6	12.6
Incr Delay (d2), s/veh	3.0	0.0	0.0	46.5	0.0	0.0	1.4	3.1	3.9	15.3	1.8	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	0.0	15.7	0.0	0.0	1.3	15.3	12.6	5.8	10.4	8.8
LnGrp Delay(d),s/veh	41.9	0.0	0.0	95.0	0.0	0.0	22.1	17.6	18.3	52.9	14.4	14.7
LnGrp LOS	D			F			C	B	B	D	B	B
Approach Vol, veh/h		192			321			1246			1094	
Approach Delay, s/veh		41.9			95.0			18.1			19.6	
Approach LOS		D			F			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		87.0		43.0		87.0		43.0
Change Period (Y+Rc), s		* 4.2		* 4.6		* 4.2		* 4.6
Max Green Setting (Gmax), s		* 83		* 38		* 83		* 38
Max Q Clear Time (g_c+I1), s		35.0		23.5		77.3		41.0
Green Ext Time (p_c), s		10.3		2.5		3.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

6: Alton Road & 16th Street

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	53	69	112	60	50	917	131	798
Future Volume (vph)	53	69	112	60	50	917	131	798
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	38.0	38.0	38.0	38.0	79.0	79.0	79.0	79.0
Total Split (s)	43.0	43.0	43.0	43.0	87.0	87.0	87.0	87.0
Total Split (%)	33.1%	33.1%	33.1%	33.1%	66.9%	66.9%	66.9%	66.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.6	0.6	0.6	0.6	0.2	0.2	0.2	0.2
Lost Time Adjust (s)		-0.6		-0.6	-0.2	-0.2	-0.2	-0.2
Total Lost Time (s)		4.0		4.0	4.0	4.0	4.0	4.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)		37.5		37.5	84.5	84.5	84.5	84.5
Actuated g/C Ratio		0.29		0.29	0.65	0.65	0.65	0.65
v/c Ratio		0.52		0.92	0.20	0.59	0.74	0.46
Control Delay		40.4		73.3	12.3	14.4	43.2	12.5
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		40.4		73.3	12.3	14.4	43.2	12.5
LOS		D		E	B	B	D	B
Approach Delay		40.4		73.3		14.3		16.6
Approach LOS		D		E		B		B

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 86 (66%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 23.6 Intersection LOS: C
Intersection Capacity Utilization 78.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 6: Alton Road & 16th Street

6: Alton Road & 16th Street

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	192	321	56	1190	146	948
v/c Ratio	0.52	0.92	0.20	0.59	0.74	0.46
Control Delay	40.4	73.3	12.3	14.4	43.2	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	73.3	12.3	14.4	43.2	12.5
Queue Length 50th (ft)	117	231	20	304	87	217
Queue Length 95th (ft)	201	#418	42	344	#227	248
Internal Link Dist (ft)	277	359		207		547
Turn Bay Length (ft)			115		115	
Base Capacity (vph)	390	366	277	2043	197	2065
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.88	0.20	0.58	0.74	0.46

Intersection Summary

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

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November 16, 2016

Thomas R. Mooney, Director
City of Miami Beach Planning Department
1700 Convention Center Drive, 2nd Floor
Miami Beach, Florida 33139
Phone: (305) 673-7550, Fax: (786) 394-4799

Reference: Noise Study
Time Out Market
1601 Drexel Avenue
Miami Beach, Florida 33139

Dear Mr. Mooney,

This report provides an assessment of potential noise and sound impact at the above referenced property in conjunction with the Applicant's request for a conditional use permit for a Neighborhood Impact Establishment. This study is based on two site visits during which we were able to inspect the neighborhood, take photographs and gather acoustical measurement data for analysis.

Satellite images, architectural drawings, photographs and acoustical measurements in graphic format are provided to support our findings and recommendations. I welcome any comments or questions you and your staff may have pertaining to our sound study and look forward to assisting in any way possible.

Respectfully submitted,

Donald J. Washburn
President

Time Out Market - 1601 Drexel Avenue

Property Analysis

The subject property consists of a five-story structure which was constructed in 2012. Its footprint is approximately 164,000 ft.^{2} and it occupies approximately 285 feet of the southern half of the block along the east side of Drexel Avenue. The ground floor is designed for retail facilities while the upper four floors represent a parking lot. The parking lot's entrance and exit faces 16th Street.

The Applicant is seeking a Conditional Use Permit as a ground floor, inside restaurant with outdoor seating along the east side of Drexel Avenue. A mixture of DJ / live entertainment level music is planned for the interior space but no loudspeakers are planned for the exterior seating areas. Floor plans and elevations are provided below showing details for both areas of the establishment.

The surrounding neighborhood is in great part residential in nature with apartment and condominium properties along the west side of Drexel Avenue and the three remaining corners of the 16th Street and Drexel Avenue intersection. Commercial properties extend east along 16th Street while apartment buildings continue west along both sides of 16th Street. Records obtained from the Miami-Dade Property Appraiser's web site have been utilized to assist in our analysis of potential noise impact on nearby residential properties. The properties most potentially affected are the apartments due west of the Time Out Market building and the apartment located on the southwest corner of the Drexel Avenue - 16th Street intersection.

Acoustical Data Analysis

Acoustical measurements were conducted at two locations identified as significant just after midnight on Friday, November 11, 2016. This allowed us to assess typical noise levels present in the area around the subject property. Location A, just in front of 1610 Drexel, was chosen as it represents an area where ambient noise levels are among the lowest in the neighborhood. Location B, on the southwest corner of the Drexel Avenue and 16th Street, provided access to traffic noise which is present during both daytime and nighttime hours. Data from these two locations are provided in two graphs (pages 5 and 6) which represent simultaneous measurements at both locations. The measurement period extended over 78 minutes beginning at 12:27 a.m. A-weighted and C-weighted measurements show the differences registered at the two locations.

Location B shows significantly higher sound levels are present at the corner than in the middle of the block along Drexel Avenue. During the entire measurement period, I noticed that music from a nightclub located on the north side of 16th Street just east of the proposed restaurant. Near the end of the on-site noise study, I walked east along the south side of 16th Street and was able to identify the nightclub as *Do Not Sit On The Furniture*. Its address is 423 16th Street.

When the club's front door opened to allow guests to enter or leave, sound levels across the street registered as high as 108 dBC. When the door was closed, music registered between 85 and 90 dBC. Significantly, low frequency (bass) energy was audible at Location B, registering between 70 and 80 dBC depending on the type of music and whether the club's doors were open. This represents a significant source of noise pollution for the residents of the apartments along the south side of 16th Street. It's unlikely that noise associated with the future restaurant would ever approach these levels. The club is licensed to operate until 5:00 a.m.

An industry standard computer design program called **E.A.S.E.** (**E**nhanced **A**coustic **S**imulator for **E**ngineers) was used to design the restaurant's sound system as well as evaluate the potential for music playing inside the restaurant to impact the residential properties across Drexel Avenue. The sound system performance is provided below in the EASE 4.4.8 Sound System Design section of this report beginning on page 7.

While no outdoor loudspeakers will be installed along the sidewalk along Drexel Avenue, operable windows will be located along the west face of the restaurant. The potential for music exiting the restaurant through these operable windows and impacting the residential properties has been evaluated using the EASE modeling program (see page 13). It indicates that music played at the sound system's maximum operational sound pressure level (85 dBC) may reach approximately 74 dBA (windows open) and 58 dBA (windows closed) along the west side of Drexel. With windows open, the music would be very audible in the early morning where the average ambient noise level (L_{90} = 47.4 dBA) is quite a bit lower. Daytime ambient noise levels will be significantly higher, which would indicate that music from the restaurant will not be an annoyance during the day. I am recommending that the operable windows be closed no later than 10:00 p.m. to avoid creating any problems with the neighbors.

I have conducted multiple noise studies in this area and have noticed that there is often very regular pedestrian and vehicle traffic along Drexel Avenue. This is due to people gaining access to Lincoln Road with its restaurants and other retail establishments. While the vehicular traffic can at times be quite loud, pedestrians walking along the sidewalk on both sides of Drexel, most notably on the east side, generate very little noise. Since patrons of the Time Out Market will be parking within the structure above the restaurant, they will be walking from the garage entrance to one of the entrances to the restaurant. This will more than likely generate little substantial noise and can therefore be dismissed as an issue related to noise.

Summary

Sound generated by the activities associated with the Time Out Market will most likely never impact the surrounding residential properties. Based on the measurements taken on November 11, the projected operational conditions outlined by the restaurant's operators and previously observed noise levels, I believe that the new dining establishment will not adversely affect the area. Indeed, I am far more concerned about the impact that music emitted by the nightclub as *Do Not Sit on The Furniture* currently has on the apartments which run along 16th Street.

In my professional opinion, the proposed Time Out Market restaurant venue will have little adverse impact on neighboring residential properties nor will it present any violations of the City of Miami Beach's Noise Ordinance.

Respectfully submitted,

Donald J. Washburn

Donald J. Washburn
President

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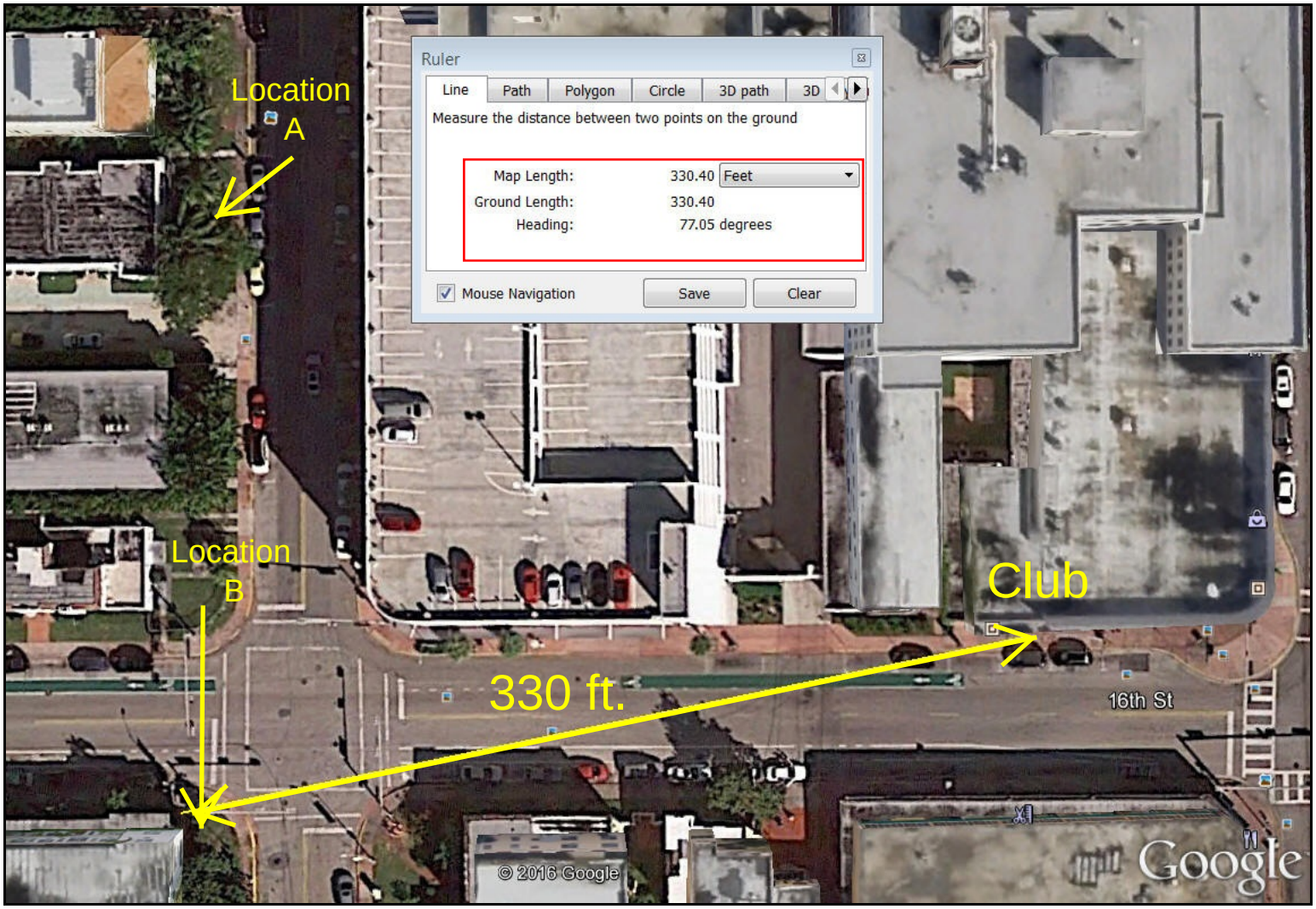
1601 Drexel Avenue, Miami Beach, Florida



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Time Out Market Miami Beach Ambient Noise Level Measurement - A-weighted

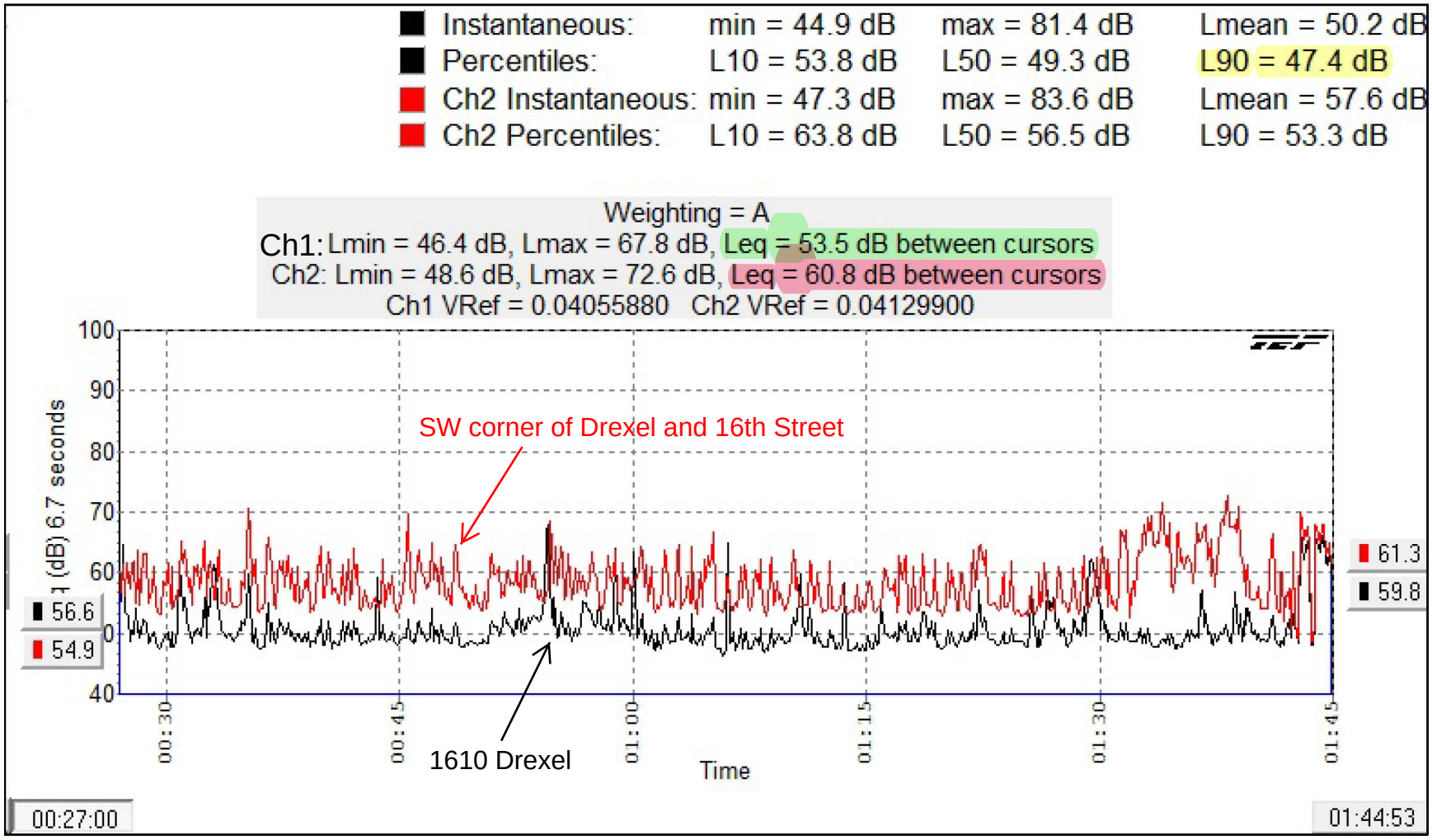

Figure 1 - Ch. 1 measured on west side of Drexel Avenue mid-block. Ch. 2 measured on SW corner of Drexel & 16th Street.

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Time Out Market Miami Beach Ambient Noise Level Measurement - C-weighted

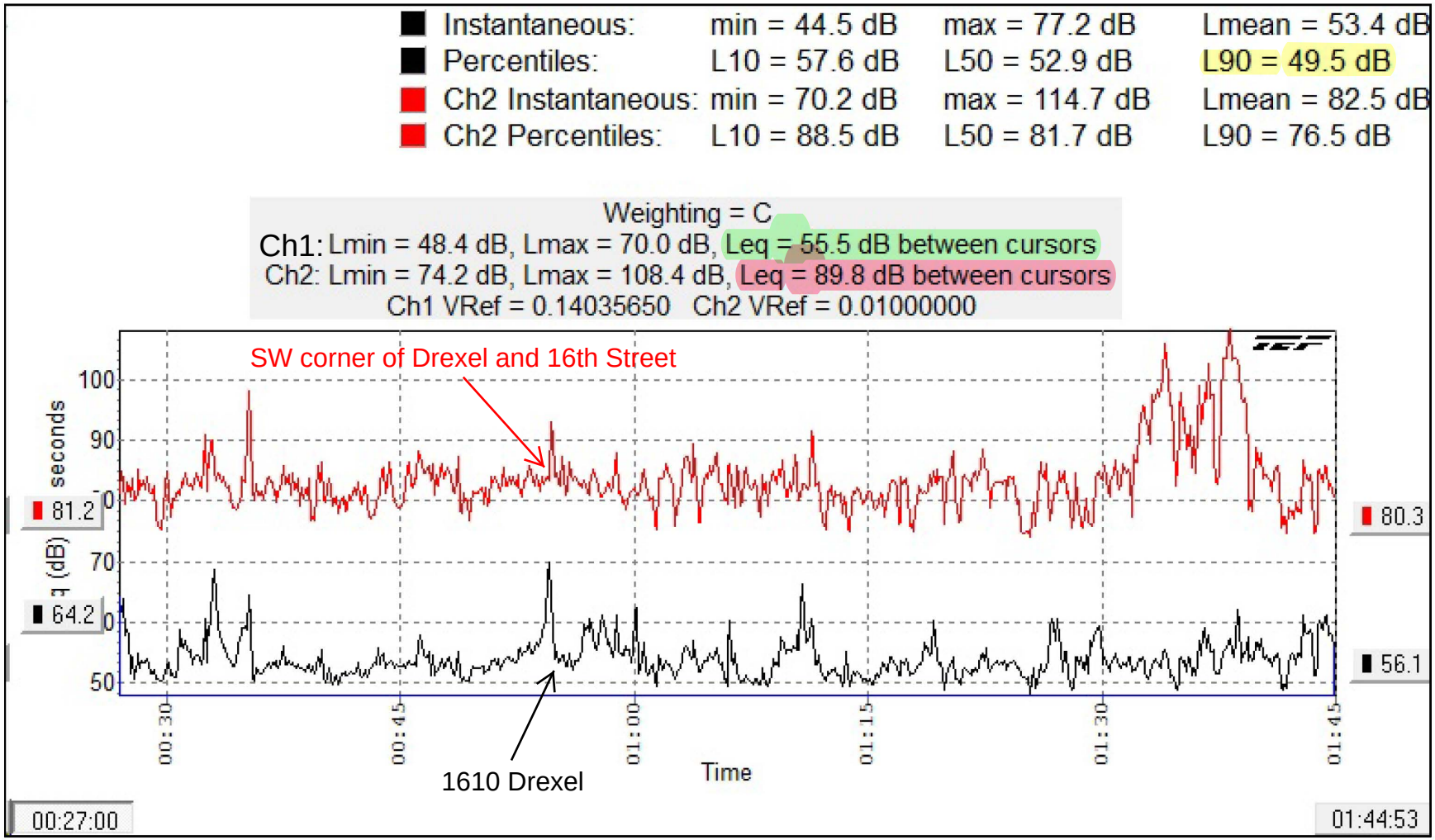
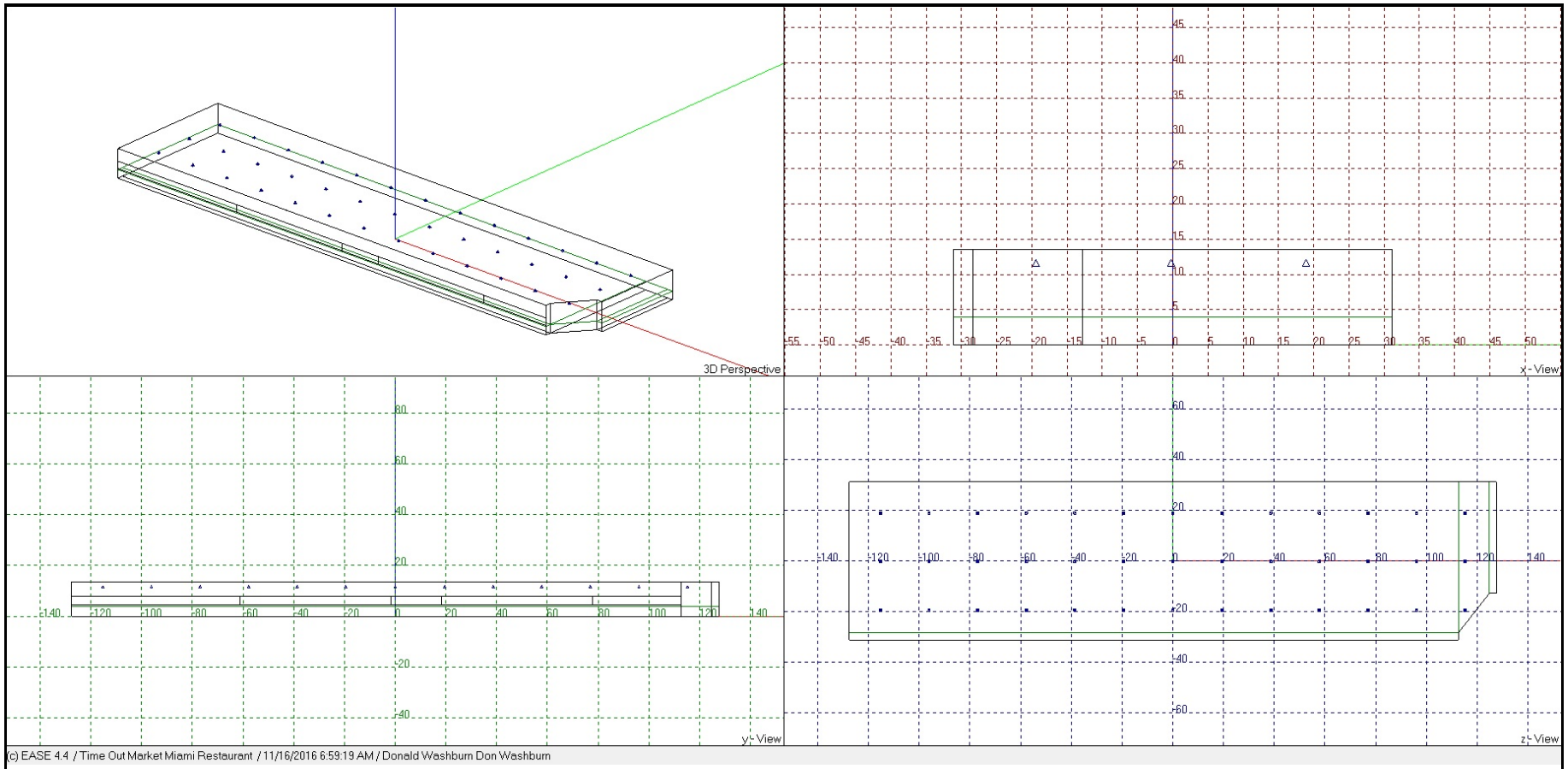


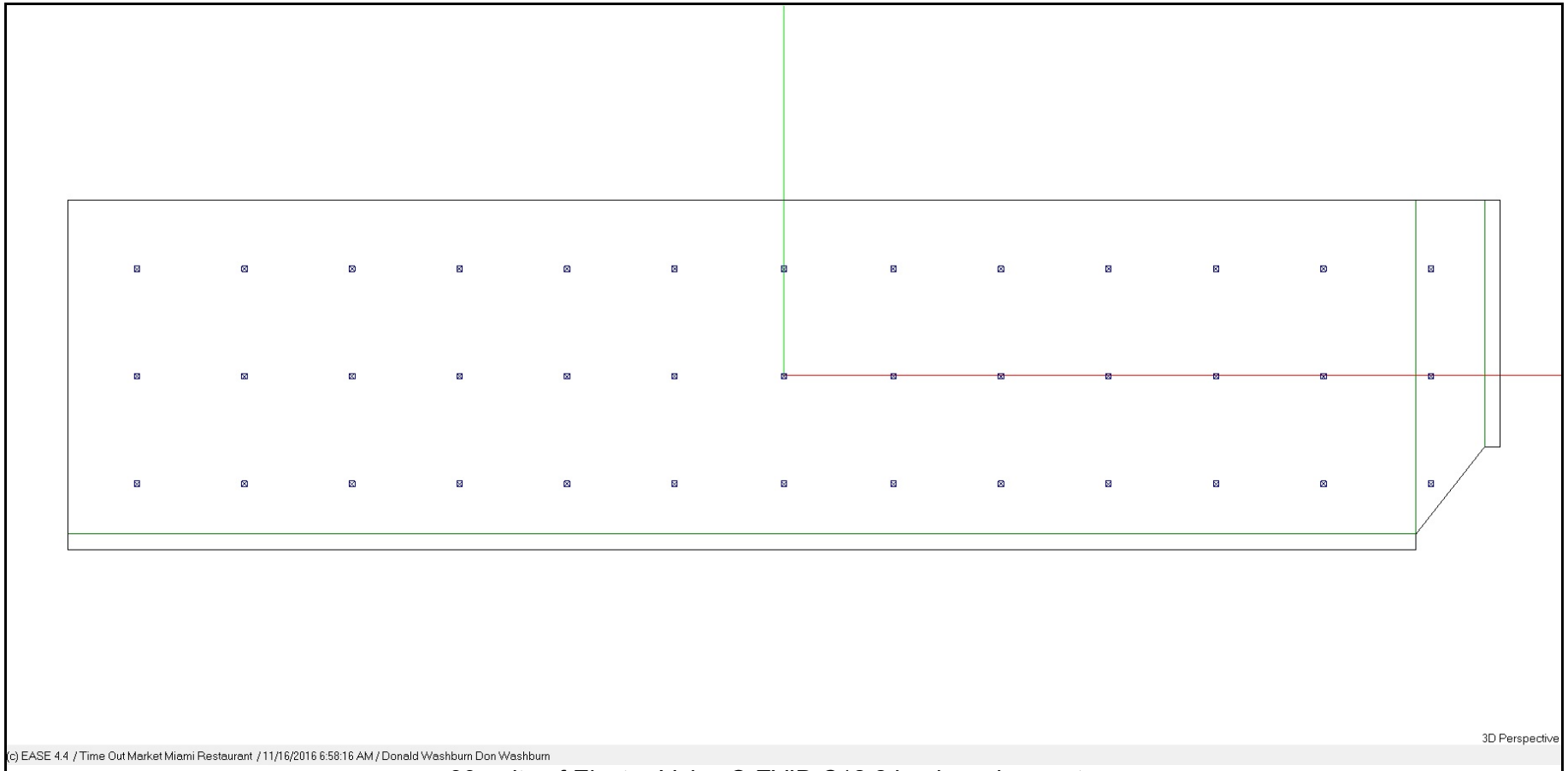
Figure 2 - Ch. 1 measured on west side of Drexel Avenue mid-block. Ch. 2 measured on SW corner of Drexel & 16th Street

EASE 4.4.8 Sound System Design



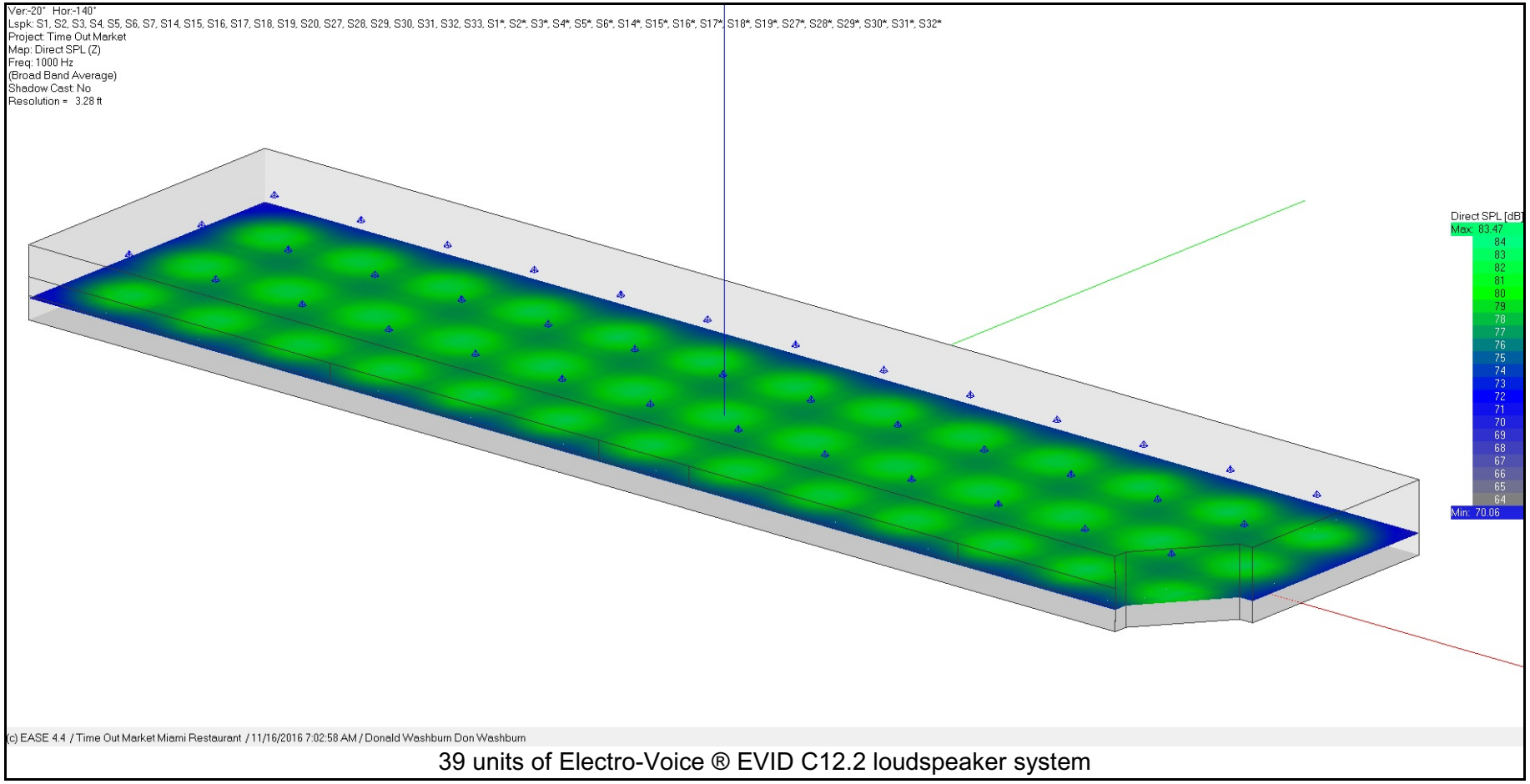
Omni-View of Room and Loudspeaker Layout

Loudspeaker Layout



39 units of Electro-Voice ® EVID C12.2 loudspeaker system

Full Bandwidth Sound Level Distribution



39 units of Electro-Voice ® EVID C12.2 loudspeaker system

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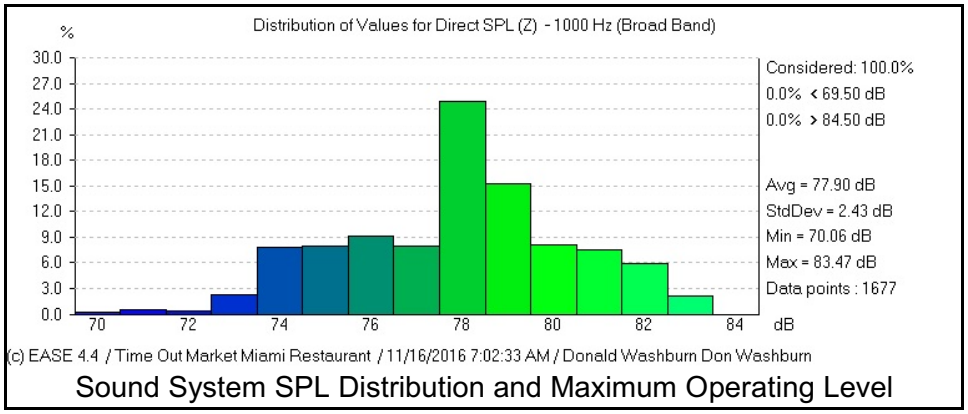
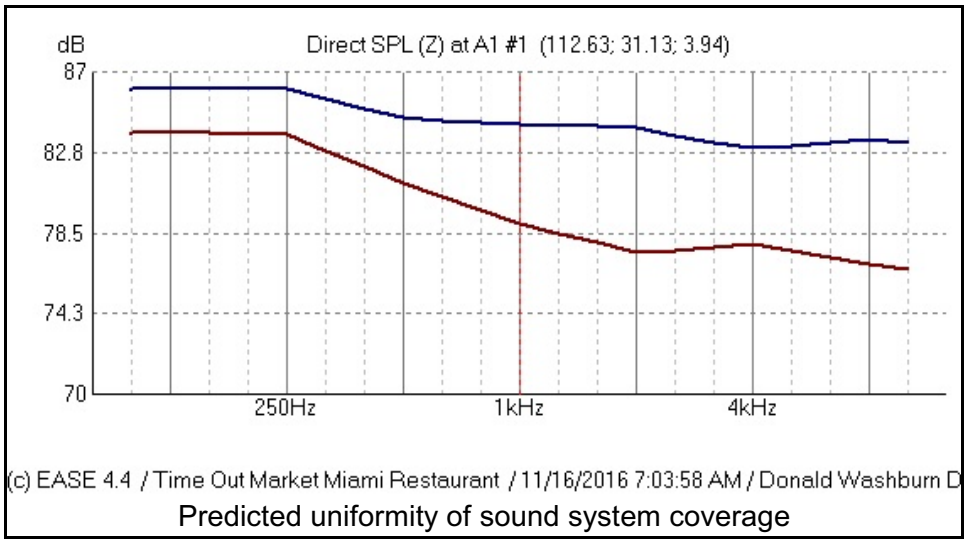
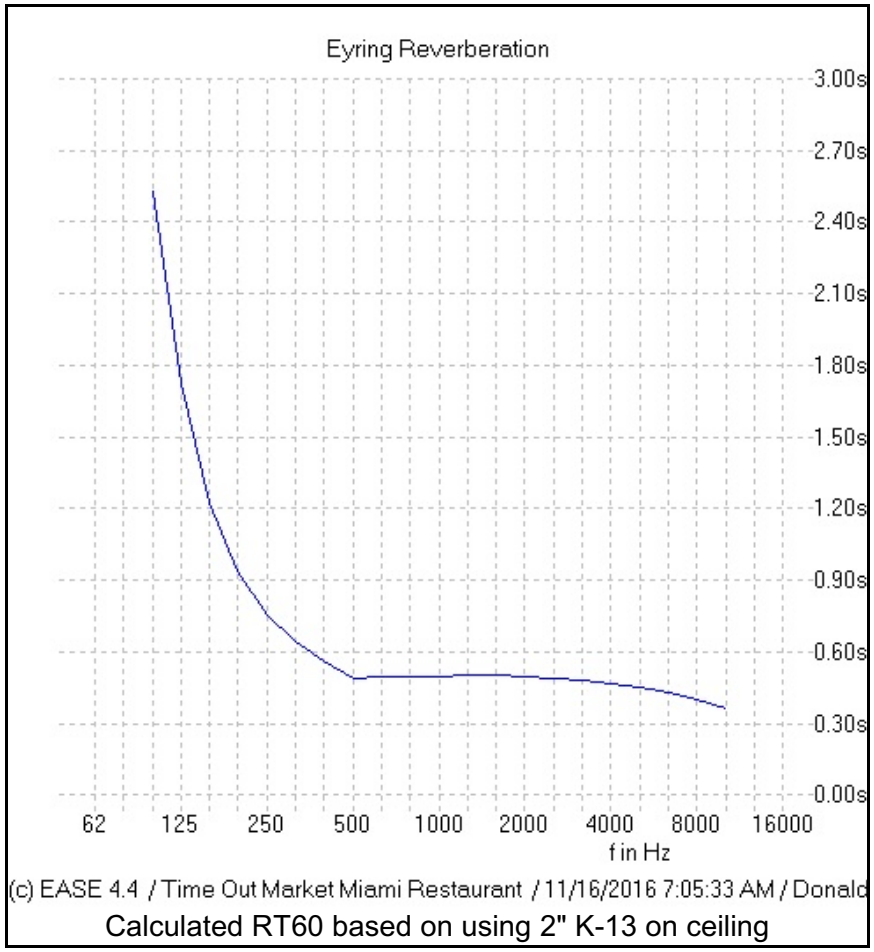
EASE 4.4.8 Sound System Design Predictive Graphs



Sound System SPL Distribution and Maximum Operating Level



Predicted uniformity of sound system coverage



Calculated RT60 based on using 2" K-13 on ceiling

EV Innovative Design

EVID C12.2 Ceiling

12" Two-Way Coaxial Ceiling Loudspeaker System

Key Features:

- **High 100 dB Sensitivity**
- **Wide, Smooth 85 Hz - 18 kHz Frequency Response**
- **High 100W Power Handling**
- **4 Pin Quick Disconnect Phoenix Connector**
- **Integrated 3/8" Threaded Rod and Pendant Mount Rigging Points for use in Open Ceiling Installations**
- **64W Transformer with Automatic Saturation Compensation for 70V/100V Operation**
- **Includes Tile Bridge and Mounting Ring for Easy Installation into Tile Ceilings**

General Description:

The Electro-Voice ® EVID C12.2 loudspeaker system is a high efficiency two-way ceiling loudspeaker package for high ceiling applications. The loudspeaker features the EVID 920-8B transducer, a 12" coaxial with high power handling and 100 dB sensitivity. The integrated 64W transformer allows for use in 70V/100V applications, and includes automatic saturation compensation. Transformer tap selection is via a convenient switch on the front baffle. The perforated grille is finished in semi-gloss white powder-coated enamel. The baffle and bezel are constructed from UL 94V-0 rated ABS. The rear enclosure is constructed from heavy gauge steel, and is has a durable black powder-coat that blends in when used in open ceiling applications. The rear enclosure provides an optimum internal volume for extended low-frequency performance. The C12.2 can be suspended by an integrated 3/8" rigging point for use with threaded rod, or it can be mounted using the 3 pendant mount tabs on the rear enclosure. A rear cover, with provisions for a junction box fitting, provides access to a 4-pin phoenix type connector that allows direct connection to the speaker with 12 gauge wire and provides pass through to additional speakers. A tile bridge is included for safe suspension of the C12.2 ceiling systems in a drop ceiling that uses mineral wool, or other fiber-based ceiling tiles.

Technical Specifications:

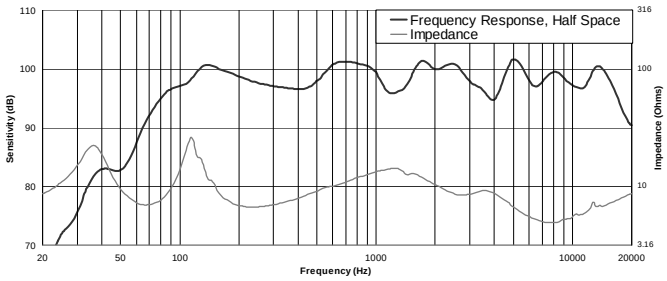
Freq. Response (-3 dB):	85 Hz - 18 kHz
Freq. Range (-10 dB):	65 Hz - 20 kHz
Axial Sensitivity:	100 dB (SPL 1W/1m)
Max Calculated SPL:	126 dB
Power Handling (8 Ohms):	100W RMS
Power Handling (70V):	Up to 64W
Power Handling (100V):	Up to 64W
Impedance:	8 Ohms nominal (transformer bypass)
Crossover Frequency:	2 kHz
Rec. Highpass Frequency:	60 Hz
Transducer:	920-8B, 12 in. (305 mm) High-Efficiency Coaxial Driver
Transformer Taps:	70V: 4, 8, 16, 32 or 64W with ASC 100V: 8, 16, 32 or 64W with ASC Bypass: 8 Ohms Nominal
Connectors:	Phoenix type removable, with screw terminals and "loop-thru", accepts 12 AWG wire
Enclosure Material:	Backcan: Powdercoated Steel Baffle/Bezel: UL 94V-O rated ABS
Grille:	Perforated powder coated steel with safety tether
Mounting System:	Integrated 4-point toggle anchors Integrated 3-point pendant mount Integrated 3/8" threaded rod Additional secondary mount
Support Hardware:	Tile bridge, backing plate support, cutout template, paint shield
Dim (Depth x Dia.):	13.12" x 16.31" (333mm x 414mm)
Cutout Diameter Size:	15.35" (390mm)
Net Weight:	29.3 lbs (13.3 kg)
Shipping Weight:	39.1 lbs (17.7 kg)

All Specifications based on Half Space Environment in ceiling.

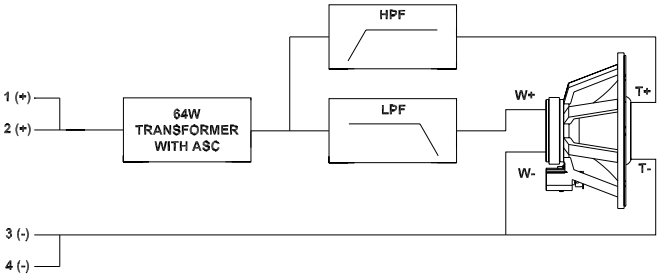
Architects' & Engineers' Specifications:

The EVID C12.2 loudspeaker system shall be comprised of a UL 94V-0 fire rated ABS baffle/bezel assembly, black powder-coated steel rear enclosure, white powder-coated grille with safety tether, 64W transformer with 8 ohm bypass and automatic saturation compensation, and Evid 920-8B 12" coaxial transducer. The loudspeaker shall meet the following criteria: power rating shall be 100 watts of EIA RS-426A pink noise (6 dB crest factor). Frequency response, uniform from 85 Hz to 18 kHz. Pressure sensitivity, 100 dB SPL at 1 meter (3.3 feet) on axis with one watt of pink noise (ref. 20µPa). Minimum impedance, 5.0 ohms. The loudspeaker shall be 333 mm (13.12 in.) deep and 414 mm (16.31 in.) in diameter. Weight shall be 13.3 kg. (29.3 lb) The coaxial ceiling loudspeaker shall be the Electro-Voice ® model EVID C12.2.

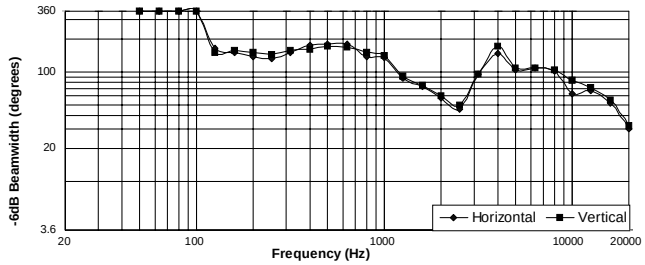
Frequency Response:



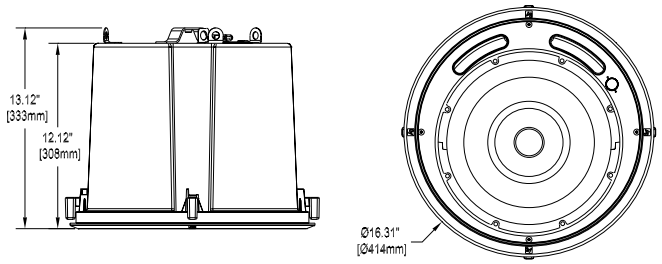
Block Diagram:



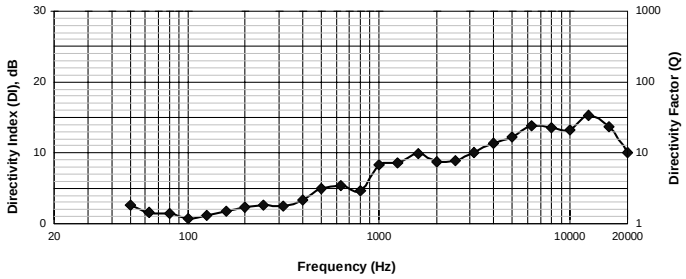
Beamwidth:



Dimension Drawings:



Directivity:



Performance Match:

- CPS-1 Power Amplifier
- CPS-2 Power Amplifier
- CPS-2T Power Amplifier
- MA-1206 Mixer Amplifier
- MA-1212 Mixer Amplifier

EVID C12.2 Part Numbers

• 301920-000	EVID 12.2, 12" Coaxial Speaker System, Consists of CE-12 and EVID 920-8B Assembled, 64W Transformer with Automatic Saturation Comphensation
• 301921-100	CE-12, 12" Enclosure for EVID 920-8B, Includes 64W Transformer with Automatic Saturation Comphensation
• 301922-100	EVID 920-8B, High-Efficiency 12" Coaxial Driver, 100 dB Sensitivity, 200W Power Handling

12000 Portland Avenue South, Burnsville, MN 55337
Phone:952/884-4051, Fax:952/884-0043
www.electrovoice.com

Part Number LIT000073 Rev C

U.S.A. and Canada only. For customer orders, contact Customer Service at:
800/392-3497 Fax: 800/955-6831
Europe, Africa, and Middle East only. For customer orders, contact Customer Service at:
+ 49 9421-706 0 Fax: + 49 9421-706 265
Other International locations. For customer orders, contact Customer Service at:
+ 1 952 884-4051 Fax: + 1 952 887-9212
For warranty repair or service information, contact the Service Repair department at:
800/685-2606
For technical assistance, contact Technical Support at: **866/78AUDIO**

Specifications subject to change without notice.

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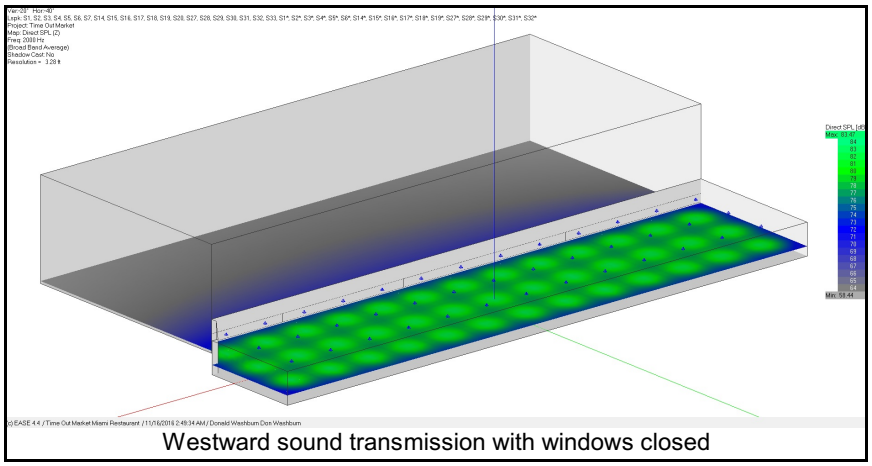
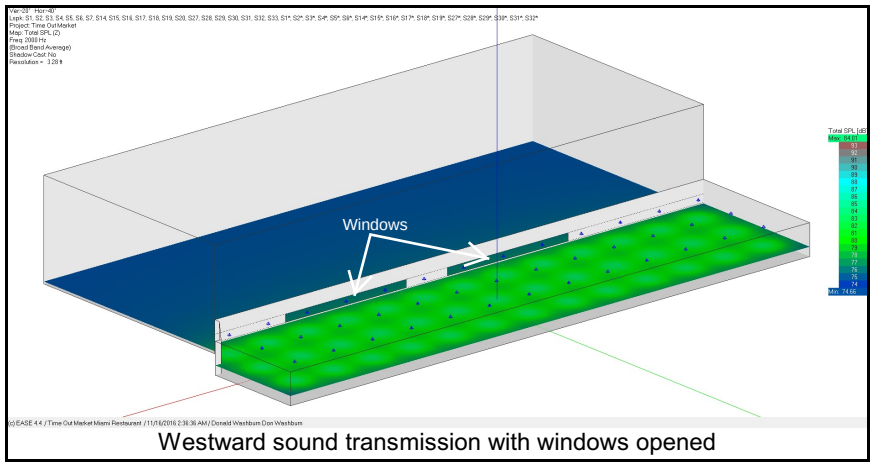
Time Out Market Acoustical Analysis

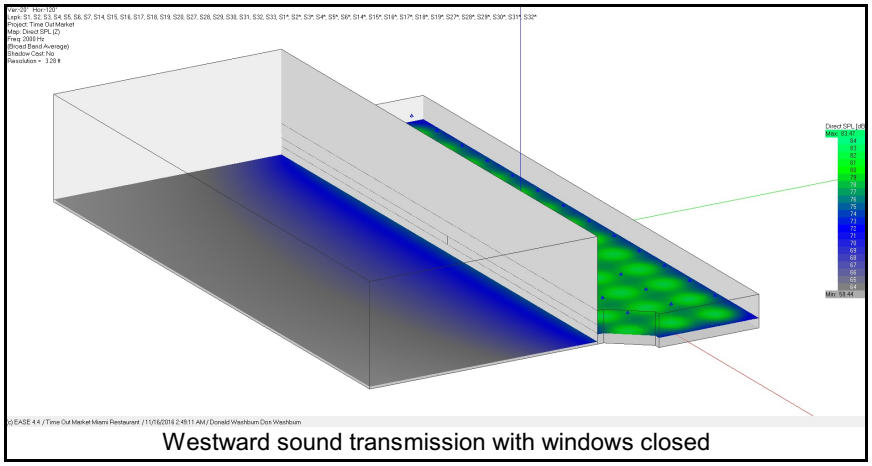
Music generated by the interior sound system, as observed outside the west side of the building when the six window systems are closed, results in an average sound pressure level along the west side of Drexel Avenue of about 58 decibels. When the six window systems are opened, the outside sound level rises to about 74 decibels. This would indicated that the windows should be closed during the evening, perhaps starting at 8:00 p.m. The figures below illustrate these conditions.



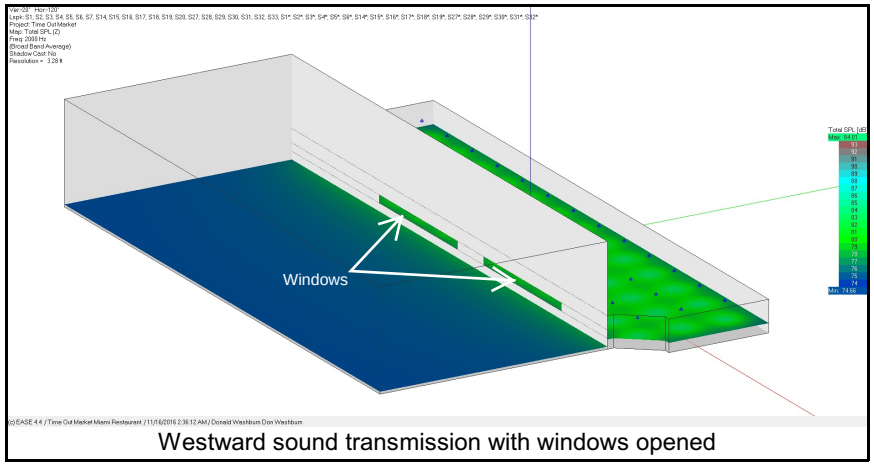
Westward sound transmission with windows closed



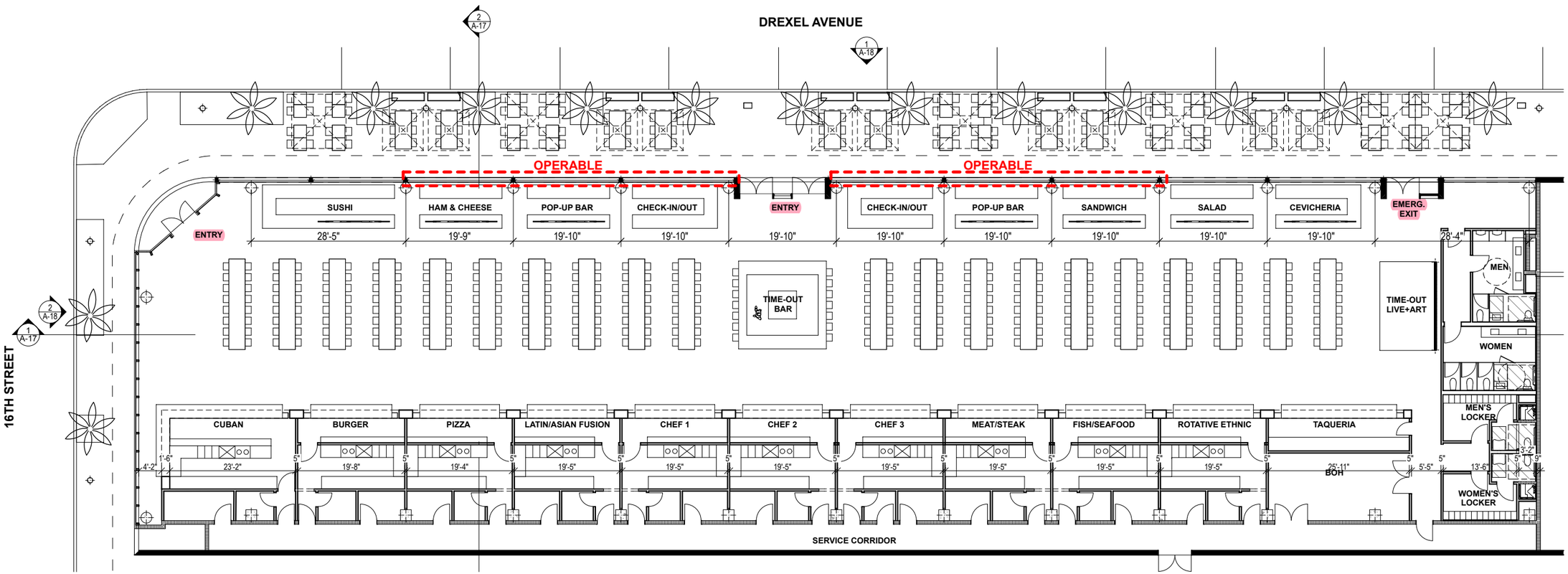
Westward sound transmission with windows opened



Westward sound transmission with windows closed



Westward sound transmission with windows opened



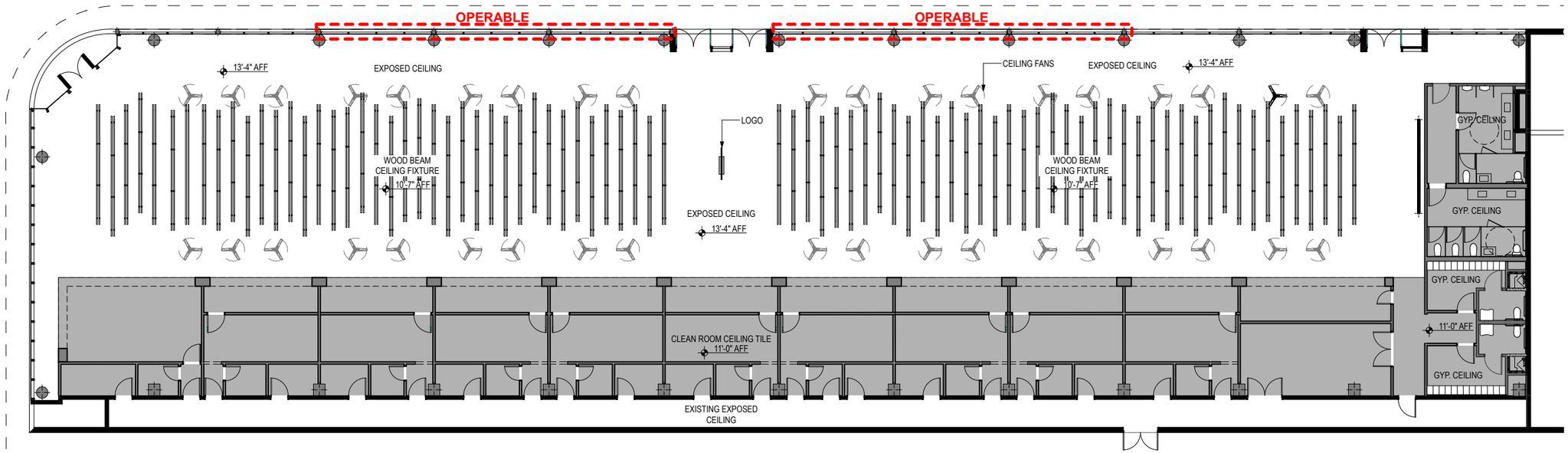
NOTE

1. LANDSCAPE IS NOT APPLICABLE. ALL EXISTING STREET LANDSCAPE MATERIAL, LIGHTING, IRRIGATION, CURBS, AS WELL AS UNDERGROUND AND OVER HEAD UTILITIES WILL REMAIN AS IS.

2. HARDSCAPE IS NOT APPLICABLE. ALL EXISTING PAVING MATERIAL WILL REMAIN AS IS.

1 GROUND LEVEL FLOOR PLAN

SCALE: 1" = 20'



1 GROUND LEVEL REFLECTED CEILING PLAN
SCALE: 1" = 20'

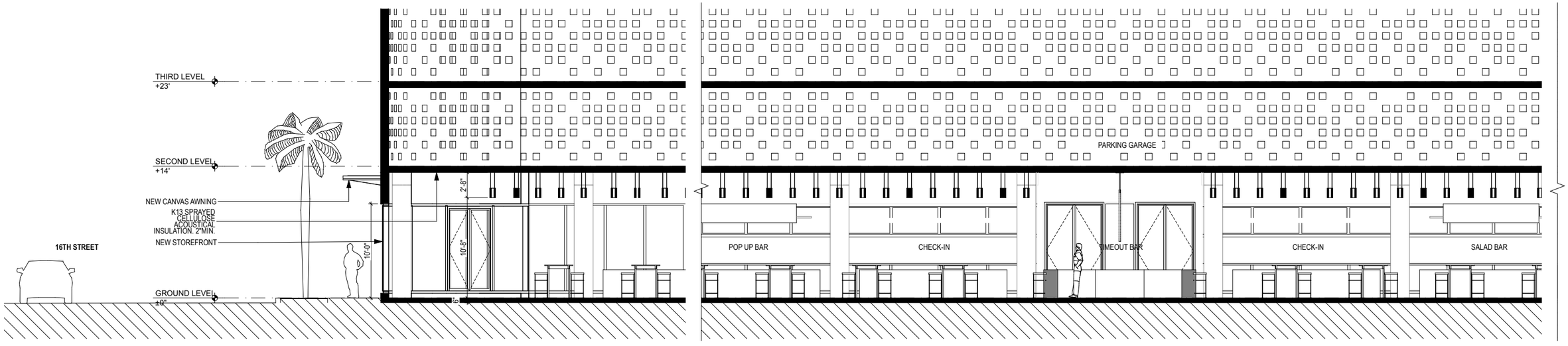
A-16

REFLECTED CEILING PLAN

PB SUBMITTAL

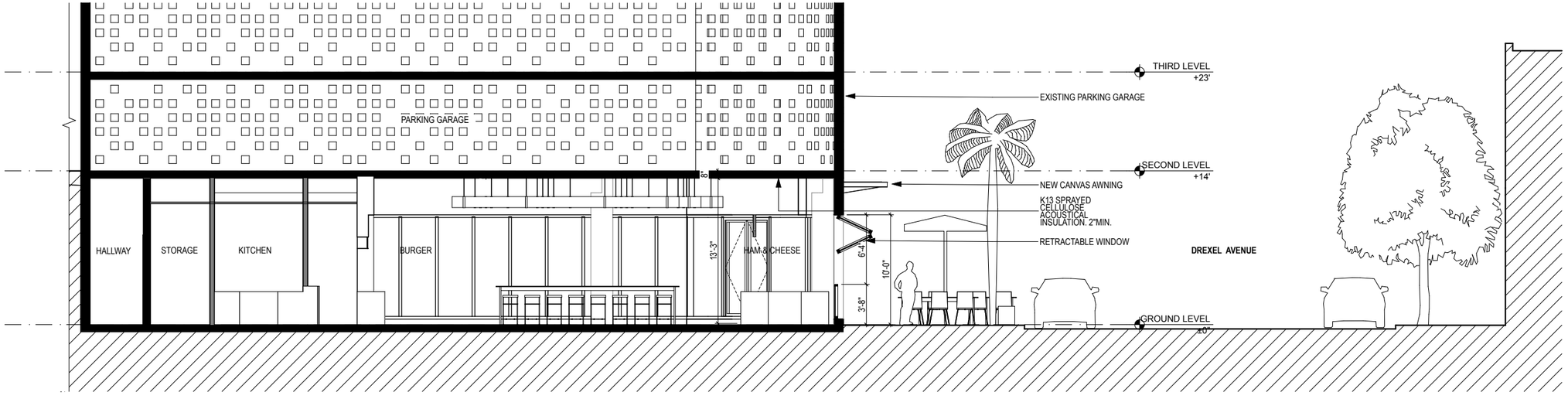
1601 DREXEL AVE :: MIAMI BEACH, FL 33139

11/15/2016



SECTION A
SCALE: 3/32" = 1'-0"

1



SECTION B
SCALE: 3/32" = 1'-0"

2

A-17

SECTIONS

P B SUBMITTAL

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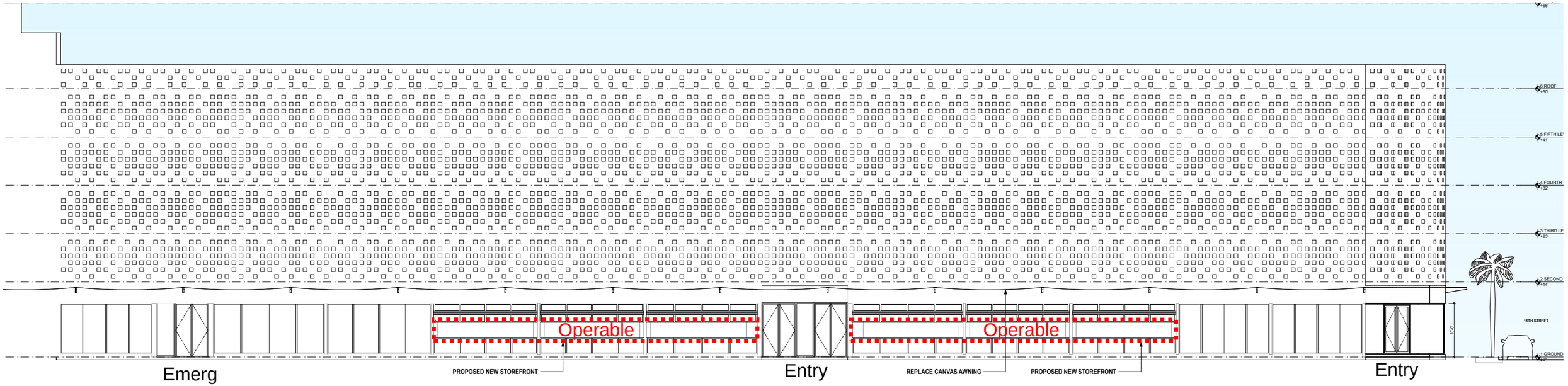
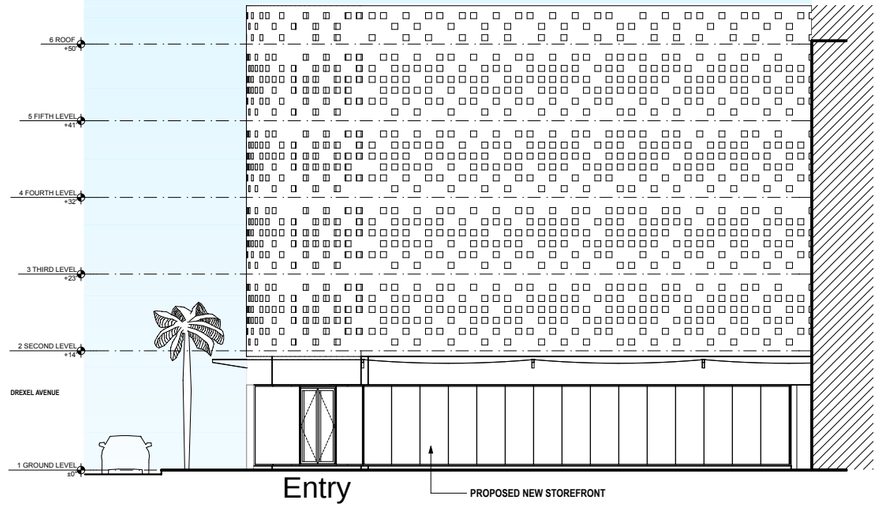
11/15/2016



WEST ELEVATION 1

NOT TO SCALE



SOUTH ELEVATION 2

NOT TO SCALE

A-18

WEST & SOUTH ELEVATION

P B S U B M I T T A L

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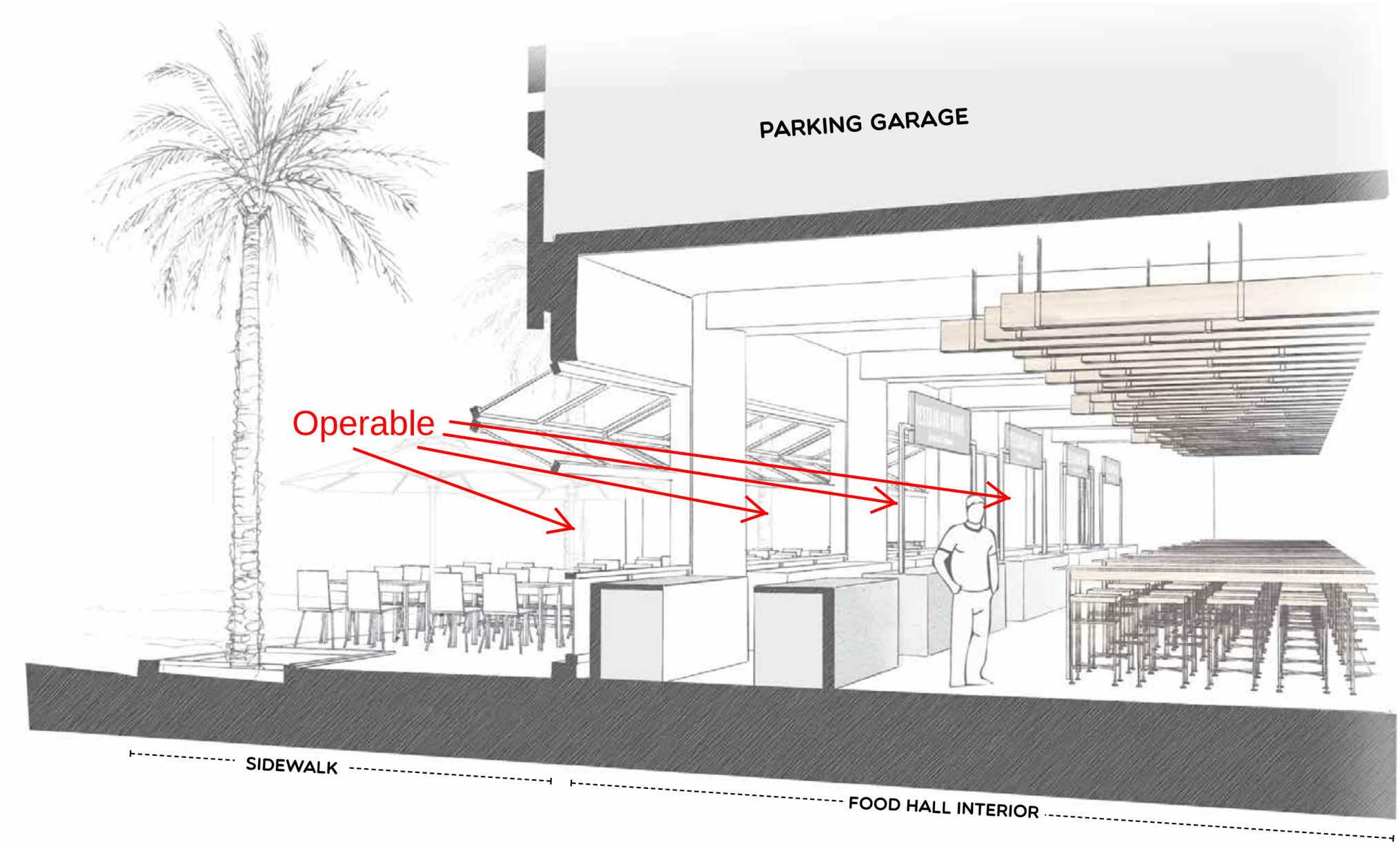

STOREFRONT SECTION 1
SCALE: 1' = 1'-0"

A-19
STOREFRONT SECTION

P B S U B M I T T A L
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Phone: 954-983-2788 • Fax: 954-983-2789
E-mail: audiobug1@aol.com

NOISE LEVEL ANALYSIS TERMS

Sound Pressure Level (SPL) = The RMS sound pressure expressed in dB re 20 microPa, the lowest threshold of hearing for 1 kHz for a healthy auditory system. [As points of reference, 0 dB-SPL equals the threshold of hearing, while 140 dB-SPL equals irreparable hearing damage.] See: **inverse square law** below. 1 Pascal = 94 dB SPL. Average face-to-face conversation equals approximately 65 dB SPL.

Decibel (dB) = means of expressing power ratios, i.e. the difference between two sound levels, or an absolute sound level expressed in Sound Pressure Level (SPL) referenced to a standard pressure, i.e. 94 dB SPL = 1 Pascal.

dBA = "A" weighted sound pressure level. Please refer to the attached discussion of weighting filters and their applications.

SLM = Sound Level Meter. Device used to measure sound pressure levels.

$\mathbf{L_{min}}$ = Lowest, or softest, Sound Pressure Level measured during the test period.

$\mathbf{L_{max}}$ = Highest, or loudest, Sound Pressure Level measured during the test period.

$\mathbf{L_{eq}}$ = Equivalent continuous sound level. The steady level which would produce the same sound energy over the test period as the specified time-varying sound. This figure is useful for studying long-term trends in environmental noise. A single L_{eq} number is often used to define an entire measurement period.

$\mathbf{L_{10}}$ = Sound level exceeded 10% of the measurement period. Highest of the Ln figures.

$\mathbf{L_{50}}$ = Sound level exceeded 50% of the measurement period. Median of the Ln figures.

$\mathbf{L_{90}}$ = Sound level exceeded 90% of the measurement period. Lowest of the Ln figures. This figure is most commonly used in estimating true ambient noise level.

$\mathbf{L_{mean}}$ = Mathematically averaged Sound Pressure Level.

NC = Noise Criteria, a standardized method of characterizing noise loudness. Extensively used in the analysis of noise and vibration.

Sone = a subjective unit of loudness for an average listener equal to the loudness of a 1 kHz. sound that has an intensity 40 decibels above the listener's own threshold of hearing.

Phon = the unit of loudness on a scale beginning at zero for the faintest audible sound (0.00002 Pascals) and corresponding to the decibel scale of sound intensity with the number of phons of a given sound being equal to the decibels of a pure 1 kHz tone judged by the average listener to be equal in loudness to the given sound.

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Inverse Square Law = inverse square law Sound Pressure Level. Sound propagates in all directions to form a spherical field, thus sound energy is inversely proportional to the square of the distance, i.e., doubling the distance quarters the sound energy (the inverse square law), so SPL is attenuated 6 dB for each doubling of distance from the source.

Noise Reduction Coefficient (NRC) = The average of the individual sound absorption coefficients at 250, 500, 1000 and 2000 Hz, to the nearest .05.

Impact Insulation Class (IIC) = Single-number rating that indicates the amount of impact noise isolation provided by a floor/ceiling assembly. The higher the number, the better the floor/ceiling assembly.

Sound Transmission Class (STC) = A single-number rating that indicates the sound transmission loss of a partition or ceiling system between adjacent closed rooms. STC Ratings are:

25 Normal speech can be understood quite clearly
30 Loud speech can be understood fairly well
35 Loud speech is audible but not intelligible
42 Loud speech is audible as a murmur
45 Must strain to hear loud speech
48 Some loud speech is barely audible
50 Loud speech is not audible

Definitions

1) **sonic**: utilizing, produced by, or relating to sound waves; broadly: of or involving sound: having a frequency within the audibility range of the human ear: of, relating to, or being the speed of sound in air or about 761 miles per hour (1224 kilometers per hour) at sea level at 59°F (15°C)
2) **subsonic**: of, relating to, or being a speed less than that of sound in air
3) **supersonic**: of, being, or relating to speeds from one to five times the speed of sound in air
4) **hypersonic**: of or relating to speed five or more times that of sound in air
5) **audio**: of or relating to acoustic, mechanical, or electrical frequencies corresponding to normally audible sound waves which are of frequencies approximately from 20 to 20,000 hertz
6) **infrasonic**: having or relating to a frequency below the audibility range of the human ear (< 20 Hz)
7) **ultrasonic**: having a frequency above the human ear's audibility limit of about 20,000 hertz
8) **audible**: heard or capable of being heard
9) **intelligible**: capable of being understood or comprehended
10) **aural**: heard or perceived with the ear

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11) **auditory**: of, relating to, or experienced through the sense of hearing

12) **acoustic**: of or relating to the sense or organs of hearing, to sound, or to the science of sounds

13) **vibration**: a periodic motion of the particles of an elastic body or medium in alternately opposite directions from the position of equilibrium when that equilibrium has been disturbed (as when a stretched cord produces musical tones or particles of air transmit sounds to the ear)

14) **noise**:
- **1** loud, confused, or senseless shouting or outcry
- **2** **a:** SOUND; *esp.* **:** one that lacks agreeable musical quality or is noticeably unpleasant
  - **b:** any sound that is undesired or interferes with one's hearing of something
  - **c:** an unwanted signal or a disturbance (as static or a variation of voltage) in an electronic device or instrument (as radio or television); *broadly* **:** a disturbance interfering with the operation of a usu. mechanical device or system
  - **d:** electromagnetic radiation (as light or radio waves) that is composed of several frequencies and that involves random changes in frequency or amplitude
  - **e:** irrelevant or meaningless data or output occurring along with desired information

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Sound Level Meter Weighting Networks

The following brief description of how the various weighting networks are used is intended to provide the reader an understanding of the purposes for and applications of standard weighting networks found in professional sound level meters. The information is an extract from "The New Audio Cyclopedia, Handbook for Sound Engineers", edited by Glen Ballou. It can be found on page 21 of that reference publication.

1.16 Weighting Networks

Sound level meters come with one or more weighting networks built in. The question confronting the user is, "Which one should I use?" The frequency responses of the three standard networks (A, B and C) are shown in figure 1-16. In the simplest terms, these different curves are designed to give readings of sound pressure level that will correspond, at least roughly, with human response to the sound. As we shall see in Chapter 2 "Psycho Acoustics," the Fletcher-Munson curves show that the human ear is less sensitive at lower frequencies than at a frequency of 1 kHz. This effect is greater for lower-level sounds than for louder sounds. Therefore, it makes sense to reduce the sensitivity of the sound level meter (chiefly in the lower frequencies) so that its readings follow the characteristics of the ear more closely.

The A-weighted curve of Fig. 1-16 is based on the 40 phon Fletcher-Munson equal-loudness contour and is to be preferred for measuring lower-level sounds such as background noise. The B-weighted curve is based on the 70-phon equal-loudness contour and is suitable for measuring sounds of intermediate level. Measurements taken with the A and B weighting are called *weighted sound levels*. The C weighting is essentially flat and is used for very loud sounds. It is also used when *sound pressure levels* are to be measured and generally when the sound level meter feeds a signal to other instruments for analysis.

Table 1-4. Use of Weighting Networks

Sound Level Range, in dB	Recommended Weighting Network
20 - 55	A
55 - 85	B
85 - 140	C

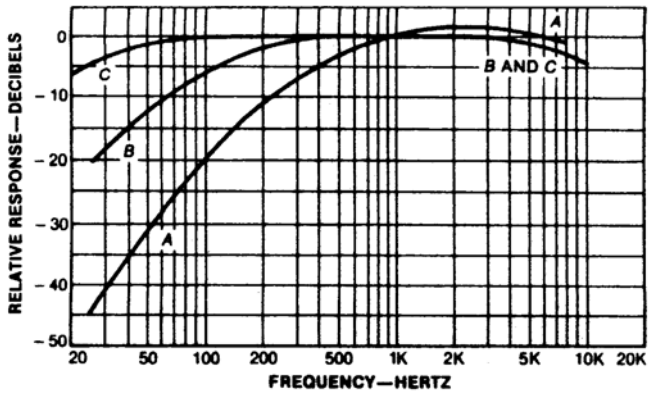
Table 1-4 gives general suggestions as to which weighting to use for different sound level ranges.

When comparing different sound levels, such as in Table 1-5, it may be expedient to use the A-weighting for the entire range rather than to shift weighting in the midst of a series of measurements to be directly compared.

Table 1-5. Typical A-Weighted Sound Levels

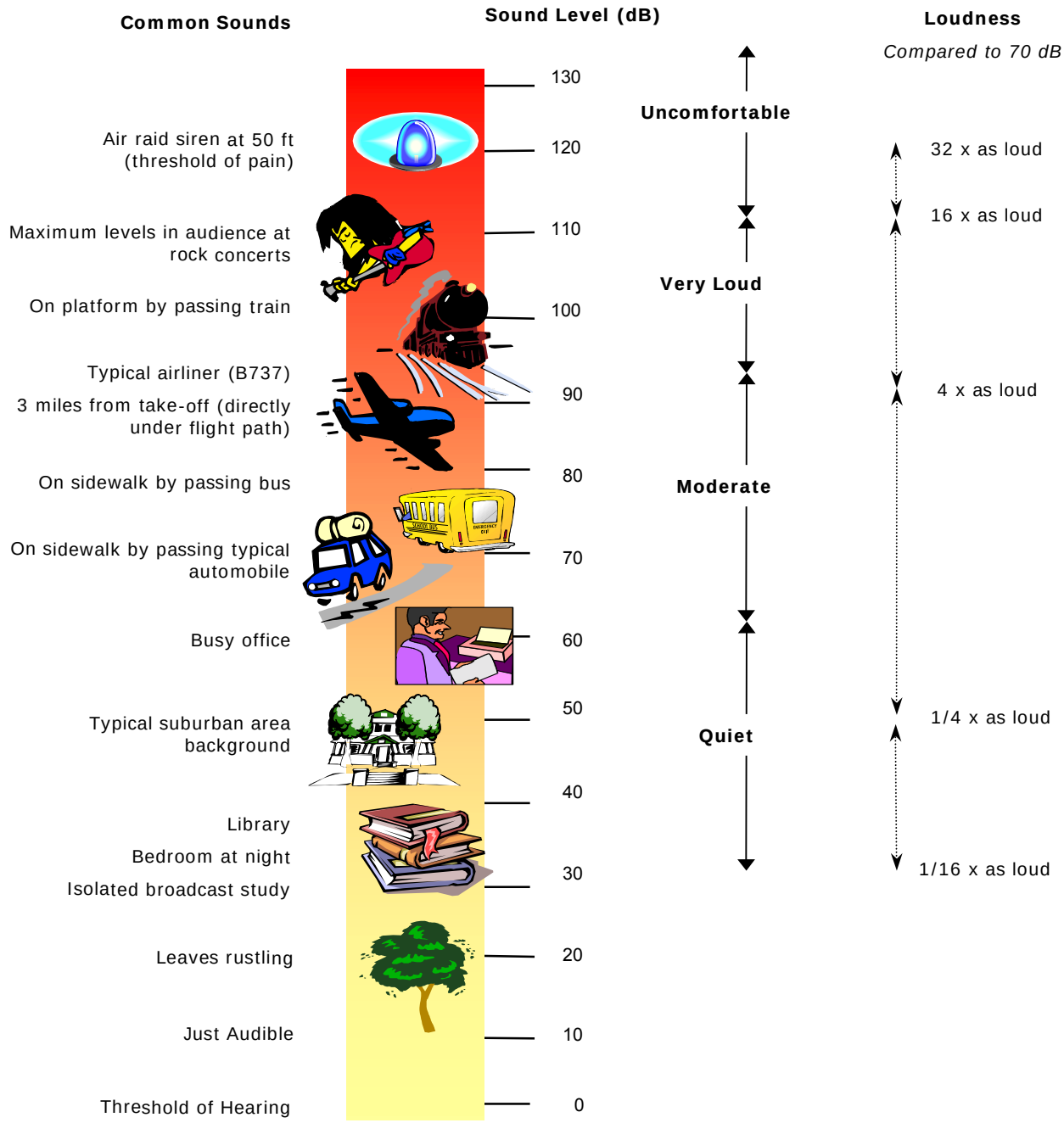
Sound Source	Sound Pressure Level, Decibels, (A-Weighted)
Jet airplane taking off (200 ft.)	120
Subway train (20 ft.)	90
Freight Train (100 ft.)	70
Speech (1 ft.)	70
Shopping Mall	60
Average residence with TV	50
Quiet residential area at night	40
Soft whisper	30
Recording studio background noise	30
Threshold of hearing	20

Figure 1.16 - Weighting Networks



Frequency Response Characteristics in the American National Standard Specification for Sound Level Meters, ANSI-31.4-1971.

Typical Sound Levels



Source: Handbook of Environmental Acoustics, James P. Cowan, 1994