

Lubavitch Hebrew Academy Traffic Impact Study

Margate, Florida



Prepared for
LUBAVITCH HEBREW ACADEMY

THOMAS A. HALL, INC.

Prepared by

July 21, 2021

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Introduction

Lubavitch Hebrew Academy proposes to construct an expansion of their existing school in the City of Margate, Florida. The Lubavitch Hebrew Academy is currently housed in 31,282 square feet of building area located on the northeast corner of the intersection of SR 7 (US 441) and NW 15th Street. It is proposed that the existing building be expanded to a total of 49,027 square feet by the construction of a second story on the portion of the building that is currently one story tall. The project has an expected build-out year of 2022.

The Lubavitch Hebrew Academy has a current enrollment of 350 children in Pre-K through 8th Grade. The Academy has always intended to have a maximum enrollment of 400 students, but, as of this date, has not reached that number of enrollees. Hours of operation are expected to continue to be from 8:15 a.m. to 3:45 p.m. Monday through Friday. Aftercare is available until 5:00 p.m.; however, there are only a relative handful of students who remain on campus during this time.

Access to the project site is expected to remain the same as at present. That is, there is an entrance to the Academy's parking lot on the east end of the property that connects to NW 15th Street and an exit from the Academy's parking lot further to the west that also connects to NW 15th Street. In addition, there is a small parking lot (five parking spaces) to the extreme east end of the Academy that has an entrance/exit driveway connection to NW 15th Street. **Figure 1 – Project Site Location**, shows the location of the development.

Section 31-35 of the City of Margate Code of Ordinances provides guidelines for traffic impact studies of new developments in the City of Margate. In Section 31-35(2)c the Code notes that "An applicant for a development permit which will generate in excess of five hundred (500) trips per day according to the trip rates of the "Traffic Review & Impact Planning System," Broward County Office of Planning, 1983, shall be required to submit to the city a traffic impact statement. Any such statement shall be prepared by a professional engineer registered by the state and shall assess the impact of the proposed development on all public streets and intersections within a one-mile radius of the perimeter of that development."

The Lubavitch Hebrew Academy has always intended to have a total of 400 students. The proposed expansion is merely intended to provide more room for better educational facilities. Therefore, the only increase in project trips would be those additional trips that occur as the student population rises from the current 350 students to its intended cap of 400 students. As Table 3 – Daily Trip Generation shows in the report, this always planned increase in student population will result in 206 new daily vehicle trips. This is well below the threshold in the City Code that requires a traffic impact study. In spite of this, a small area traffic impact study has been completed to assess the impacts of the school's traffic upon the project access points and the intersection of SR 7 (US 441) at NW 15th Street.

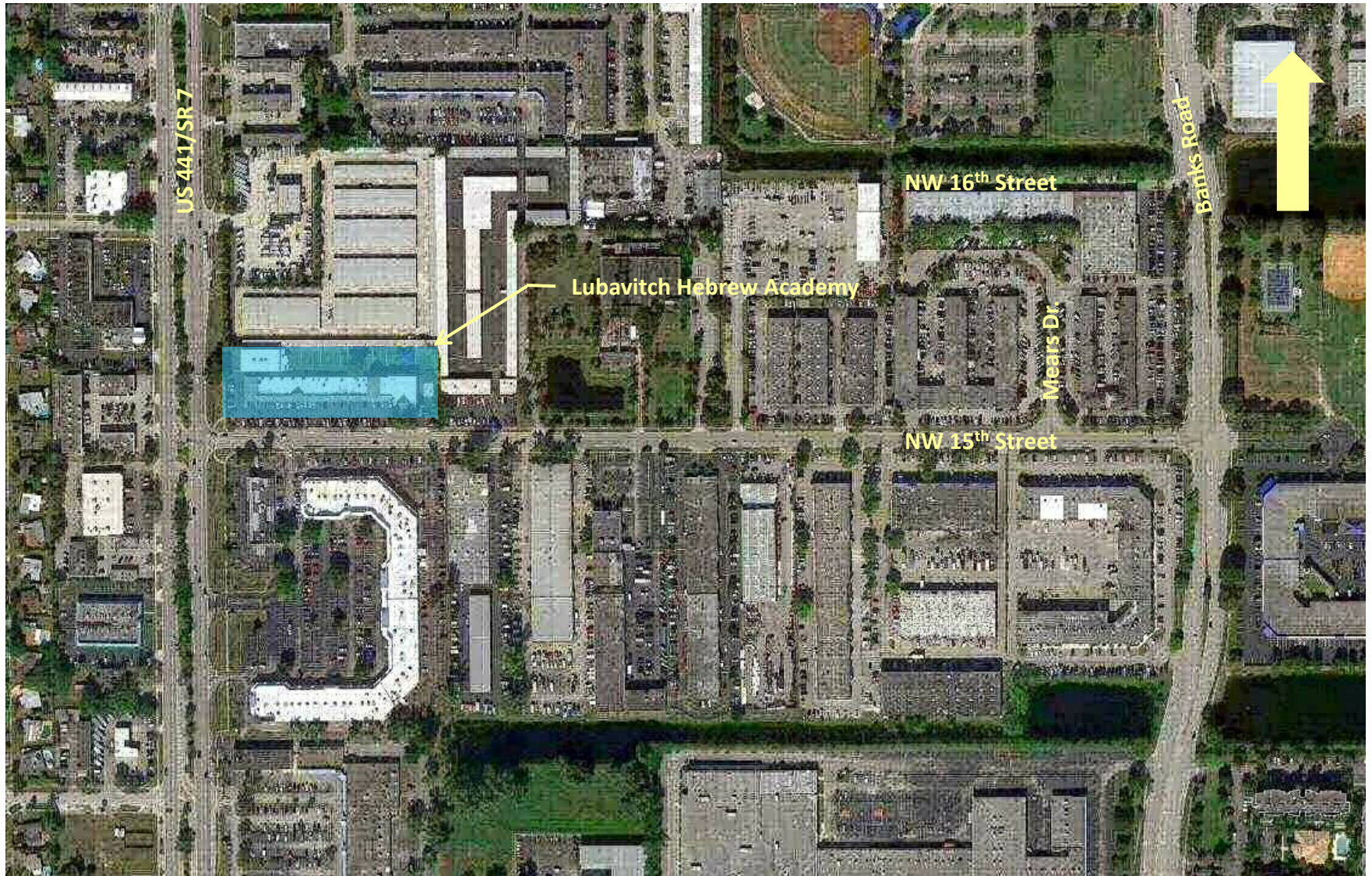


Figure 1 – Site Location
Lubavitch Hebrew Academy
City of Margate, Florida

Thomas A. Hall, Inc.

Data Collection

Five-hour (7:00-9:00 a.m. and 3:00-6:00 p.m.) turning-movement counts were collected in January 2021 at the study area intersection of SR 7 (US 441) at NW 15th Street. In addition, traffic counts were collected at the Academy's driveways for the morning arrival time of Academy students (7:30-8:30 a.m.) and student departure time (3:30-4:30 p.m.). Copies of the traffic counts may be found in **Appendix A – Traffic Counts**.

The turning-movement counts were collected to determine the existing conditions at the significant intersections within the immediate study area.

A preliminary field review was conducted January 19, 2021 to obtain pertinent roadway geometry, pavement markings, signing, etc. In addition to the field review, aerial maps were consulted to verify intersection storage lane lengths and lane assignments.

A description of the studied roadways follows:

SR 7 (US 441) is a six-lane, north-south major arterial with north and southbound left-turn lanes in the median at NW 15th Street. No east-west through or left-turn movements are permitted at the study intersection. The posted speed limit is 45 mph.

NW 15th Street is a two-lane, undivided, east-west collector roadway with a parking lane on both sides of the road. The posted speed limit is 30 mph.

Analyses

Adjustment Factors

The January 2021 turning-movement counts were adjusted to peak season by the application of a Peak Season Conversion Factor (1.03) obtained from the Florida Department of Transportation's (FDOT) *2018 Peak Season Factor Category Report*. **Table 1 – Peak-hour Turning-movement Counts** shows the adjusted peak season, peak-hour morning and afternoon peak-hour traffic volumes within the study area.

An Annual Growth Factor was derived from historic Annual Average Daily Traffic (AADT) reports obtained from FDOT's *2019 Florida Online Traffic Information* for nearby count stations. A five-year growth analysis was conducted for the two nearby count stations on SR 7 (US 441) and Banks Road. A review of the count data, and a comparison of 2014 volumes to 2019 volumes, revealed that there was a 0.92 percent annual growth in traffic volumes in the study area. Copies of the annual growth rate worksheet and seasonal adjustment factors are provided in **Appendix B - Adjustment Factors**.

Table 1
Peak-Hour Turning-Movement Counts
Lubavitch Hebrew Academy

Intersection	Adjustment	Uturn	From West			Uturn	From East			Uturn	From South			Uturn	From North			Total
			Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
SR 7 (US 441) at NW 15th Street AM Peak Hour	Raw Count	0	1	0	11	0	0	0	124	20	9	1541	94	2	104	1440	15	3361
	PSCF	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
	2021 Peak Season Volume	0	1	0	11	0	0	0	128	21	9	1,587	97	2	107	1,483	15	3,462
	Annual Compound Growth	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	-
	2022 Background Traffic	0	1	0	11	0	0	0	129	21	9	1,602	98	2	108	1,497	16	3,494
	Additional Project Traffic								14				8		8			30
	Total Future Traffic	0	1	0	11	0	0	0	143	21	9	1,602	106	2	116	1,497	16	3,524
NW 15th Street at Project Entrance AM Peak Hour	Raw Count	0	81	140	0	0	0	105	45	0	0	0	0	0	0	0	0	371
	PSCF	1.03	1	1.03	1.03	1.03	1.03	1.03	1	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
	2021 Peak Season Volume	0	81	144	0	0	0	108	45	0	0	0	0	0	0	0	0	382
	Annual Compound Growth	0.920%	0.000%	0.920%	0.920%	0.920%	0.920%	0.920%	0.000%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	-
	2022 Background Traffic	0	81	146	0	0	0	109	45	0	0	0	0	0	0	0	0	381
	Additional Project Traffic		16	5					7									28
	Total Future Traffic	0	97	151	0	0	0	109	52	0	0	0	0	0	0	0	0	409
NW 15th Street at Project Exit AM Peak Hour	Raw Count	0	0	204	0	0	0	60	0	0	0	0	0	0	17	0	64	345
	PSCF	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1	1.03	1	1.03
	2021 Peak Season Volume	0	0	210	0	0	0	62	0	0	0	0	0	0	17	0	64	355
	Annual Compound Growth	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.000%	0.920%	0.000%	-
	2022 Background Traffic	0	0	212	0	0	0	62	0	0	0	0	0	0	17	0	64	355
	Additional Project Traffic			16											5		14	35
	Total Future Traffic	0	0	228	0	0	0	62	0	0	0	0	0	0	22	0	78	390
SR 7 (US 441) at NW 15th Street PM Peak Hour	Raw Count	0	1	0	2	0	0	1	98	46	18	1465	35	8	135	1459	4	3272
	PSCF	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
	2021 Peak Season Volume	0	1	0	2	0	0	1	101	47	19	1,509	36	8	139	1,503	4	3,370
	Annual Compound Growth	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	-
	2022 Background Traffic	0	1	0	2	0	0	1	102	48	19	1,523	36	8	140	1,517	4	3,401
	Additional Project Traffic								11				2		2			15
	Total Future Traffic	0	1	0	2	0	0	1	113	48	19	1,523	38	8	142	1,517	4	3,416
NW 15th Street at Project Entrance PM Peak Hour	Raw Count	0	2	205	0	0	0	79	63	0	0	0	0	0	0	0	0	349
	PSCF	1.03	1	1.03	1.03	1.03	1.03	1.03	1	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
	2021 Peak Season Volume	0	2	211	0	0	0	81	63	0	0	0	0	0	0	0	0	359
	Annual Compound Growth	0.920%	0.000%	0.920%	0.920%	0.920%	0.920%	0.920%	0.000%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	-
	2022 Background Traffic	0	2	213	0	0	0	82	63	0	0	0	0	0	0	0	0	360
	Additional Project Traffic		4	5					11									20
	Total Future Traffic	0	6	218	0	0	0	82	74	0	0	0	0	0	0	0	0	380
NW 15th Street at Project Exit PM Peak Hour	Raw Count	0	0	170	0	0	0	16	0	0	0	0	0	0	35	0	82	303
	PSCF	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1	1.03	1	1.03
	2021 Peak Season Volume	0	0	175	0	0	0	16	0	0	0	0	0	0	35	0	82	312
	Annual Compound Growth	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.920%	0.000%	0.920%	0.000%	-
	2022 Background Traffic	0	0	177	0	0	0	17	0	0	0	0	0	0	35	0	82	310
	Additional Project Traffic			4											5		11	20
	Total Future Traffic	0	0	181	0	0	0	17	0	0	0	0	0	0	40	0	93	330

Existing Conditions

Synchro signal operations analysis software was used to construct a model of the existing roadway network in the study area. The model relied upon the adjusted peak-hour, turning-movement counts shown in Table 1 and the geometric characteristics of the studied roadways. The analysis was completed in accordance with the Transportation Research Board's Highway Capacity Methodology (HCM).

Note that the HCM analysis software does not model six-lane roadways well. As a result, SR 7 is shown as a four-lane roadway and the north and southbound through movements have been reduced by one third.

Copies of the Synchro reports for existing morning and afternoon peak-hour, peak-season conditions may be found in **Appendix C – Existing Conditions Analyses**. As reported in **Table 2 – Peak Hour Queue Length, Level of Service and Delay Summary**, the intersection of SR 7 (US 441) at NW 15th Street currently operates well with little overall delay (3.0 seconds in the a.m. peak hour, 2.5 seconds in the p.m. peak hour) and the entrance and exit to the Academy function well.

It should be noted that HCM software doesn't evaluate the queue of vehicles turning right from a freeflow through movement onto a more minor street or driveway. This means that the westbound queue of vehicles turning into the Academy from NW 15th Street is not addressed in the analysis. Field observations revealed that, in the afternoon peak hour for the Lubavitch Hebrew Academy, the queue of vehicles stretching to the east was, at one point, 20 vehicles in length. This was due to parents arriving before the class dismissal time and lining up in the westbound parking lane to wait for the opportunity to pick-up their children.

Table 2
Peak Hour Queue Length, Level of Service and Delay Summary
Lubavitch Hebrew Academy

A.M. Peak Hour													
Intersection	Auxiliary Lane Length	Existing Conditions			Queue Length (Feet)	Background Traffic Conditions			Queue Length (Feet)	Total Traffic Conditions			Queue Length (Feet)
		Movement	LOS	Delay		Movement	LOS	Delay		Movement	LOS	Delay	
SR 7 at NW 15th Street	N/A	Overall	N/A	3.0	N/A	Overall	N/A	3.1	N/A	Overall	N/A	3.7	N/A
	N/A	EBR	B	12.6	2.5	EBR	B	12.7	2.5	EBR	B	12.7	2.5
	N/A	WBR	D	25.5	90.0	WBR	D	26.2	95.0	WBR	D	30.1	117.5
	210'	NBL	B	10.8	5.0	NBL	B	0.3	5.0	NBL	B	10.9	5.0
	N/A	NBTR	A	0.0	0.0	NBTR	A	0.0	0.0	NBTR	A	0.0	0.0
	150'	SBL	B	13.7	20.0	SBL	B	1.4	20.0	SBL	B	14.1	22.5
NW 15th Street at Project Entrance	N/A	SBTR	A	0.0	0.0	SBTR	A	0.0	0.0	SBTR	A	0.0	0.0
	N/A	Overall	N/A	2.2	N/A	Overall	N/A	2.2	N/A	Overall	N/A	2.5	N/A
	N/A	EBLT	A	3.7	10.0	EBLT	A	3.7	10.0	EBLT	A	4.2	13.0
	N/A	WBTR	A	0.0	0.0	WBTR	A	0.0	0.0	WBTR	A	0.0	0.0
NW 15th Street at Project Exit	N/A	NB	A	0.0	0.0	NB	A	0.0	0.0	NB	A	0.0	0.0
	N/A	Overall	N/A	1.5	N/A	Overall	N/A	1.5	N/A	Overall	N/A	1.7	N/A
	N/A	EBLT	A	0.0	0.0	EBLT	A	0.0	0.0	EBLT	A	0.0	0.0
	N/A	WBTR	A	0.0	0.0	WBTR	A	0.0	0.0	WBTR	A	0.0	0.0
NW 15th Street at Project Exit	N/A	SBLR	B	10.0	10.0	SBLR	B	10.1	10.0	SBLR	B	10.3	12.5
	N/A	SBLR	B	10.0	10.0	SBLR	B	10.1	10.0	SBLR	B	10.3	12.5
	N/A	SBLR	B	10.0	10.0	SBLR	B	10.1	10.0	SBLR	B	10.3	12.5
	N/A	SBLR	B	10.0	10.0	SBLR	B	10.1	10.0	SBLR	B	10.3	12.5
P.M. Peak Hour													
Intersection	Auxiliary Lane Length	Existing Conditions			Queue Length (Feet)	Background Traffic Conditions			Queue Length (Feet)	Total Traffic Conditions			Queue Length (Feet)
		Movement	LOS	Delay		Movement	LOS	Delay		Movement	LOS	Delay	
SR 7 at NW 15th Street	N/A	Overall	N/A	2.5	N/A	Overall	N/A	2.5	N/A	Overall	N/A	2.7	N/A
	N/A	EBR	B	12.4	0.0	EBR	B	12.4	0.0	EBR	B	12.4	0.0
	N/A	WBR	C	18.6	52.5	WBR	C	18.9	52.5	WBR	C	20.2	62.5
	210'	NBL	B	11.2	10.0	NBL	B	11.3	10.0	NBL	B	11.3	10.0
	N/A	NBTR	A	0.0	0.0	NBTR	A	0.0	0.0	NBTR	A	0.0	0.0
	150'	SBL	B	13.3	25.0	SBL	B	13.4	52.5	SBL	B	13.5	27.5
NW 15th Street at Project Entrance	N/A	SBTR	A	0.0	0.0	SBTR	A	0.0	0.0	SBTR	A	0.0	0.0
	N/A	Overall	N/A	0.1	N/A	Overall	N/A	0.1	N/A	Overall	N/A	0.2	N/A
	N/A	EBLT	A	0.1	0.0	EBLT	A	0.1	0.0	EBLT	A	0.3	1.0
	N/A	WBTR	A	0.0	0.0	WBTR	A	0.0	0.0	WBTR	A	0.0	0.0
NW 15th Street at Project Exit	N/A	NB	A	0.0	0.0	NB	A	0.0	0.0	NB	A	0.0	0.0
	N/A	Overall	N/A	2.6	N/A	Overall	N/A	2.5	N/A	Overall	N/A	2.8	N/A
	N/A	EBLT	A	0.0	0.0	EBLT	A	0.0	0.0	EBLT	A	0.0	0.0
	N/A	WBTR	A	0.0	0.0	WBTR	A	0.0	0.0	WBTR	A	0.0	0.0
NW 15th Street at Project Exit	N/A	SBLR	A	9.8	12.5	SBLR	B	9.8	12.5	SBLR	B	10.0	15.0
	N/A	SBLR	A	9.8	12.5	SBLR	B	9.8	12.5	SBLR	B	10.0	15.0

Background Traffic Conditions

Future 2022 build-out year (background) traffic volumes without the project were derived by applying the 0.92 percent annual growth rate to the existing peak-season, turning-movement counts. Note that the annual growth rate was not applied to the volumes entering and exiting the Academy. Those volumes are not expected to grow due to a background annual growth rate, but are specifically associated with the number of students enrolled in the Academy. Table 1 shows the peak-season background traffic volumes expected during the future build-out year of 2022.

Appendix D – Background Traffic Conditions Analyses contains copies of the Synchro reports for the studied intersections. In addition to reporting existing intersection operating conditions, Table 2 also provides a summary of the critical elements of the background conditions analyses and demonstrates that intersection operations are expected to remain similar to those found for the existing conditions analysis.

Project Trip Generation

Table 3 – Daily Trip Generation, Table 4 - AM Peak Hour Trip Generation and Table 5 – PM Peak-hour Trip Generation depict the trip generation for the project site. Trip generation characteristics were obtained from the Institute of Transportation Engineers' (ITE) *Trip Generation* manual, 10th Edition. The closest ITE Land Use available is Land Use 534 – Private School Pre-k through 8th Grade. Students are expected to continue to arrive and depart via passenger vehicle. For the purposes of this study, it was assumed that the student population of the Lubavitch Hebrew Academy will increase from its current enrollment of 350 students to its planned cap of 400 students in 2022. The trip generation tables show the delta between the current enrollment trip generation and the future enrollment trip generation, an increase of 50 students.

The Lubavitch Hebrew Academy is expected to generate an additional 206 daily trips, 42 a.m. peak-hour trips, and 31 p.m. peak-hour trips. The additional trips are under the 500 additional trips that the City of Margate requires for a traffic impact study.

The ITE trip generation rates were used to generate future trips for the Academy, but it should be noted that by examining the actual trips associated with the current 350 student population it was learned that in actuality, the Academy generates fewer trips than are estimated using the ITE trip generation rate. It is suspected that this is due to the effects of carpooling. Many families have several children that attend the Academy and, thus, multiple children are in a single vehicle arriving and departing from the school.

Based on the actual counts, it would appear that, in the morning peak hour, the Lubavitch Hebrew Academy has a trip generation rate of 0.477 trips per student. In the afternoon peak hour, the Academy has a trip generation rate of 0.52 trips per student. This equates to 167 trips in the morning peak hour and 182 trips in the afternoon peak hour for the current school enrollment. If these rates are used to estimate the trips associated with an

additional 50 students, they would equate to 24 more trips in the morning peak hour and 26 more trips in the afternoon peak hour. These numbers are substantially different from those found using the ITE trip generation rates and imply that the Lubavitch Hebrew Academy will generate fewer trips than are considered in the Total Traffic Conditions analysis.

Table 3
Daily Trip Generation
Lubavitch Hebrew Academy

Land Use	ITE Code	Intensity		Trip Generation Rate ⁽¹⁾	Total Trips			Internal Trips				Adjusted Trips			Pedestrian		Trips		
					In	Out	Total	In	Out	Total	%	In	Out	Total	Trip Reduction		In	Out	Total
Existing Use																			
Private School (Pre-k - 8)	534	350	students	T=4.11(X) (50/50)	719	719	1,439	0	0	0	0.00%	719	719	1,439	0	0.00%	719	720	1,439
Sub-total					719	719	1,439	0	0	0		719	719	1,439	0		719	720	1,439
Proposed Uses																			
Private School (Pre-k - 8)	534	400	students	T=4.11(X) (50/50)	822	822	1,644	0	0	0	0.00%	822	822	1,644	0	0.00%	822	823	1,644
Net New Trips					103	103	206	0	0	0		103	103	206	0		103	103	206

⁽¹⁾ Source: Institute of Transportation Engineers' *Trip Generation* manual, 10th Edition.

Table 4
AM Peak-Hour Trip Generation
Lubavitch Hebrew Academy

Land Use	ITE Code	Intensity		Trip Generation Rate ⁽¹⁾	Total Trips			Internal Trips				Adjusted Trips			Pedestrian		Trips		
					In	Out	Total	In	Out	Total	%	In	Out	Total	Trip Reduction		In	Out	Total
Existing Use																			
Private School (Pre-k - 8)	534	350	students	T=0.85(X)+22.17 (55/45)	176	144	320	0	0	0	0.00%	176	144	320	0	0.00%	176	144	320
Sub-total					176	144	320	0	0	0		176	144	320	0		176	144	320
Proposed Uses																			
Private School (Pre-k - 8)	534	400	students	T=0.85(X)+22.17 (55/45)	199	163	362	0	0	0	0.00%	199	163	362	0	0.00%	199	163	362
Net New Trips					23	19	42	0	0	0		23	19	42	0		23	19	42

⁽¹⁾ Source: Institute of Transportation Engineers' *Trip Generation* manual, 10th Edition.

Table 5
PM Peak-Hour Trip Generation
Lubavitch Hebrew Academy

Land Use	ITE Code	Intensity		Trip Generation Rate ⁽¹⁾	Total Trips			Internal Trips				Adjusted Trips			Pedestrian		Trips		
					In	Out	Total	In	Out	Total	%	In	Out	Total	Trip Reduction		In	Out	Total
Proposed Uses																			
Private School (Pre-k - 8)	534	350	students	T=0.63(X)-1.93 (47/53)	103	116	219	0	0	0	0.00%	103	116	219	0	0.00%	103	116	219
Net New Trips					103	116	219	0	0	0		103	116	219	0		103	116	219
Proposed Uses																			
Private School (Pre-k - 8)	534	400	students	T=0.63(X)-1.93 (47/53)	118	132	250	0	0	0	0.00%	118	132	250	0	0.00%	118	132	250
Net New Trips					15	16	31	0	0	0		15	16	31	0		15	16	31

⁽¹⁾ Source: Institute of Transportation Engineers' *Trip Generation* manual, 10th Edition.

Project Distribution and Assignment

Project trips distribution information was obtained from an evaluation of the current traffic volumes entering and exiting the Lubavitch Hebrew Academy. **Figure 2 – A.M. Peak-Hour Trip Distribution** shows the morning traffic distribution on study area roadways. Figure 3 – P.M. Peak-Hour Trip Distribution shows the afternoon traffic distribution on the study area roadways.

Figure 4 – Net New Peak-Hour Project Trip Assignment shows the peak-hour project trips assigned to the study area roadway network in accordance with the trip distribution.

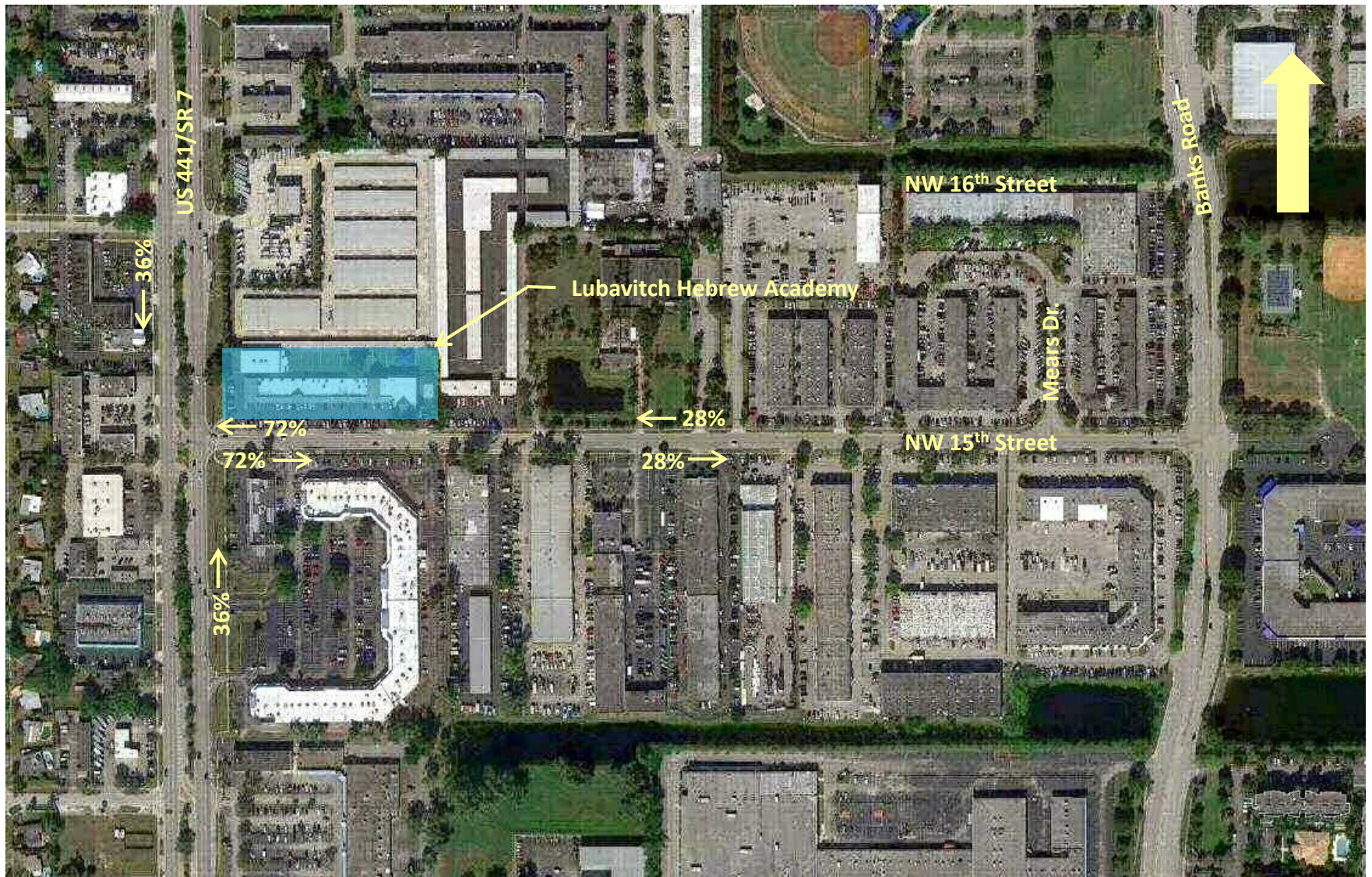


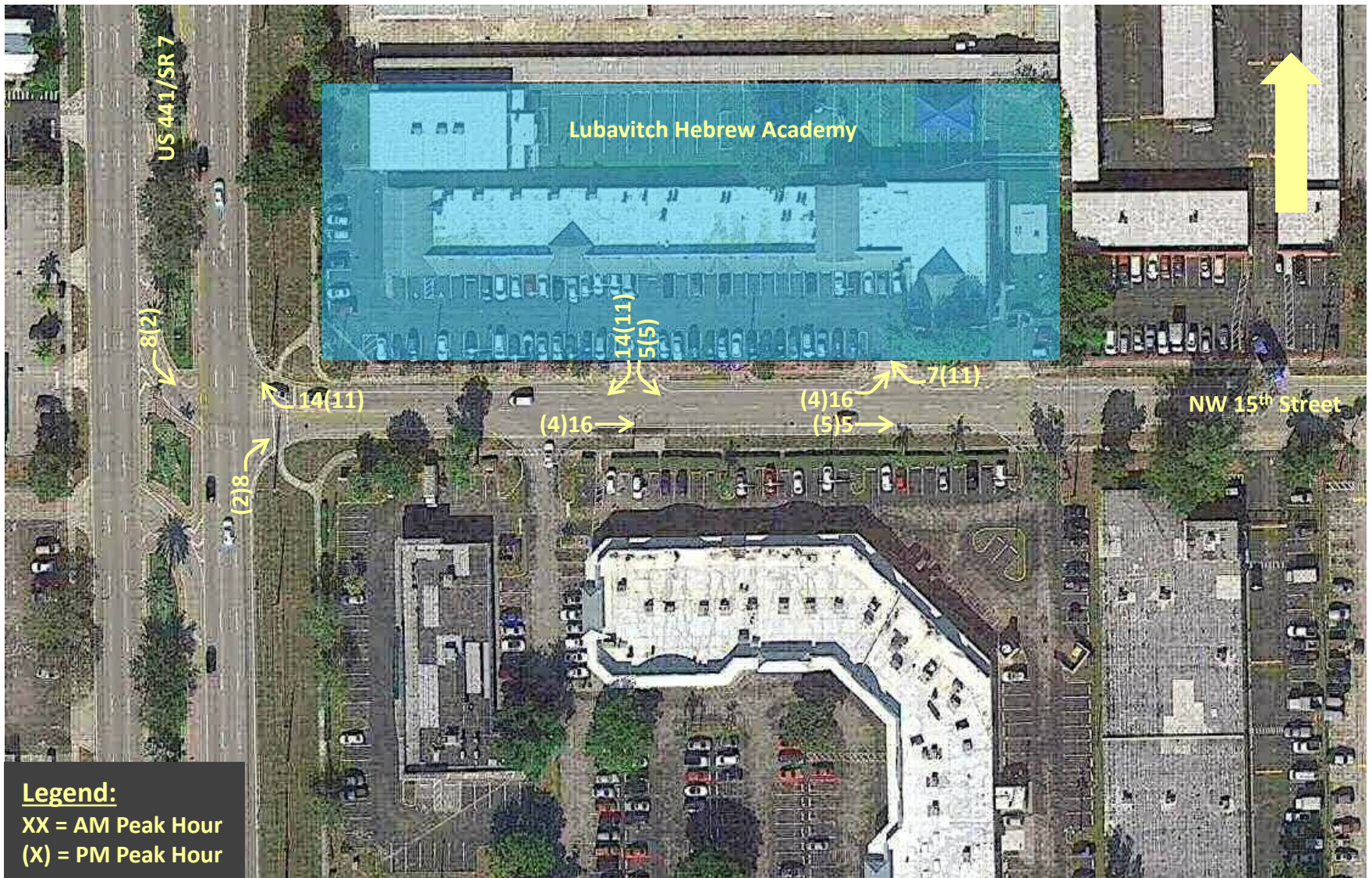
Figure 2 – A.M. Peak-Hour Trip Distribution
Lubavitch Hebrew Academy
City of Margate, Florida

Thomas A. Hall, Inc.



Figure 3 – P.M. Peak-Hour Trip Distribution
Lubavitch Hebrew Academy
City of Margate, Florida

Thomas A. Hall, Inc.



Thomas A. Hall, Inc.

Figure 4 – Net New Peak-Hour Project Trip Assignment
Lubavitch Hebrew Academy
City of Margate, Florida

Total Traffic Conditions

Future total traffic volumes (including project trips) were obtained by adding the 2022 background traffic volumes to the project traffic volumes shown in Figure 4. The resulting future total traffic volumes are also shown in **Table 1 – Peak-hour Turning-movement Counts**.

Appendix E – Total Traffic Conditions Analyses contains copies of the Synchro reports for this third analysis condition. Table 2 provides a summary of the critical elements of these analyses and demonstrates that the studied intersections all are expected to function in a similar manner to the Background condition. In fact, the single largest impact of the increased student population is that the westbound right-turning vehicle queue at the intersection of SR 7 (US 441) at NW 15th Street increases from four to five vehicle lengths. This is a vehicle queue easily accommodated in the length of roadway between the stop bar at SR 7 (US 441) and the exit from the Academy (approximately 210 feet).

As was noted previously, the HCM analysis method does not evaluate the right-turning vehicle queue of the westbound parent traffic entering the Lubavitch Hebrew Academy in the afternoon peak hour. Based on field observations, with 350 students at present, that queue extended a length of 20 vehicles at its peak prior to student dismissal at 3:45. There were 63 westbound right-turning vehicles in the afternoon peak hour that produced the 20 vehicle queue. This is a ratio of 3.15 entering vehicles for every queued vehicle.

Adding the 11 additional right-turning vehicles shown in Figure 4 to the 63 currently entering vehicles results in a total of 74 entering vehicles in the 2022 build-out year afternoon peak hour. Applying the 3.15 ratio to the 74 entering vehicles results in a future queue storage length in the westbound parking lane on NW 15th Street of 24 vehicles. This increase of four vehicle lengths (approximately 100 feet) is easily accommodated in the existing parking lane.

Circulation Analysis

The Lubavitch Hebrew Academy has an effective student drop-off and pick-up operation in place and has used this operation for many years. It is noted that, regardless of the building expansion, no change is being made to the building footprint. Therefore, the drop-off and pick-up operation that currently occurs in the Academy's parking lot drive aisle will continue to be used in the future.

Conclusions

Based on the results of this analysis, it is concluded that the proposed Lubavitch Hebrew Academy building expansion will have no significant impact on the adjacent roadway network even if an additional 50 students were to be added to the existing 350-student population.

Appendix A – Traffic Counts

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 9423 - BANKS ROAD, N OF COCONUT CREEK PARKWAY

YEAR	AADT		DIRECTION 1		DIRECTION 2		*K FACTOR	D FACTOR	T FACTOR
----	-----		-----		-----		-----	-----	-----
2019	14100	R	N	6900	S	7200	9.00	54.60	5.50
2018	14100	T	N	6900	S	7200	9.00	54.50	6.00
2017	14100	S	N	6900	S	7200	9.00	51.90	6.20
2016	14100	F	N	6900	S	7200	9.00	54.10	2.90
2015	13900	C	N	6800	S	7100	9.00	54.00	3.40
2014	13000	T	N	6100	S	6900	9.00	54.20	7.40
2013	12800	S	N	6000	S	6800	9.00	53.60	7.60
2012	12800	F	N	6000	S	6800	9.00	52.20	5.90
2011	12800	C	N	6000	S	6800	9.00	52.50	6.30
2010	14600	F	N	6500	S	8100	8.35	52.69	9.30
2009	14600	C	N	6500	S	8100	8.53	53.89	5.30
2008	10900	C	N	5800	S	5100	8.81	54.16	6.50
2007	16300	C	N	8100	S	8200	8.63	55.75	4.80
2006	15200	C	N	7100	S	8100	8.40	55.34	2.90
2005	16000	C	N	7600	S	8400	8.20	51.70	0.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = 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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 0169 - SR 7 - S OF ROYAL PALM BLVD/COPANS RD

YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
----	-----		-----		-----	-----	-----	-----
2019	53500	C	N 24500		S 29000	9.00	54.60	3.10
2018	55000	C	N 28500		S 26500	9.00	54.50	2.80
2017	51000	C	N 24000		S 27000	9.00	51.90	2.80
2016	53000	C	N 27000		S 26000	9.00	54.10	2.80
2015	53000	C	N 26500		S 26500	9.00	54.00	2.90
2014	53000	C	N 27500		S 25500	9.00	54.20	3.10
2013	51500	C	N 26000		S 25500	9.00	53.60	3.10
2012	52500	C	N 25500		S 27000	9.00	52.20	2.70
2011	45000	C	N 23000		S 22000	9.00	52.50	5.60
2010	48500	C	N 25000		S 23500	8.35	52.69	5.60
2009	47000	C	N 23500		S 23500	8.53	53.89	4.00
2008	55000	C	N 28000		S 27000	8.81	54.16	4.00
2007	50500	C	N 26000		S 24500	8.63	55.75	2.20
2006	51500	C	N 26500		S 25000	8.40	55.34	5.10
2005	52000	C	N 26500		S 25500	8.20	51.70	5.10
2004	52000	C	N 26000		S 26000	9.10	55.30	5.10

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = 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

NW 15TH STREET AT SR 7
BROWARD COUNTY, FLORIDA
COUNTED BY:
UNSIGNALIZED

THOMAS A. HALL, INC.
1355 ADAMS STREET
HOLLYWOOD, FL 33019
954-288-4447

Site Code: 10031
Start Date: 1/20/2021
File I.D.: MARGATE
Page: 1

ALL VEHICLES

NW 15th Street From West					NW 15th Street From East				SR 7 From South				SR 7 From North				
Uturn Left Thru Right					Uturn Left Thru Right				Uturn Left Thru Right				Uturn Left Thru Right				Total
Date 1/20/2021																	
7:00	0	0	0	0	0	0	0	7	1	1	304	12	0	24	285	0	634
7:15	0	0	0	0	0	0	0	11	0	1	396	29	0	19	303	2	761
7:30	0	0	0	1	0	0	0	27	4	1	371	20	0	18	373	3	818
7:45	0	1	0	5	0	0	0	21	4	5	430	29	0	34	369	8	906
Hr Total	0	1	0	6	0	0	0	66	9	8	1501	90	0	95	1330	13	3119
8:00	0	0	0	1	0	0	0	59	5	1	362	24	2	37	337	9	837
8:15	0	0	0	3	0	0	0	47	5	1	360	23	2	34	365	2	842
8:30	0	0	0	2	0	0	0	29	7	2	380	22	0	18	333	2	795
8:45	0	1	0	2	0	0	0	21	9	1	380	14	0	21	317	4	770
Hr Total	0	1	0	8	0	0	0	156	26	5	1482	83	4	110	1352	17	3244
* BREAK *																	
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	1	0	1	0	0	0	46	13	0	345	17	1	35	382	2	843
15:15	0	0	0	1	0	0	1	52	14	4	399	18	2	33	409	2	935
15:30	0	0	0	2	0	0	0	65	8	4	381	19	5	24	352	0	860
15:45	0	0	0	2	0	0	0	81	11	10	340	26	0	43	316	1	830
Hr Total	0	1	0	6	0	0	1	244	46	18	1465	80	8	135	1459	5	3468
* BREAK *																	
16:00	0	0	0	0	0	0	0	79	11	2	362	20	2	31	364	0	871
16:15	0	0	0	1	0	0	0	76	16	0	355	24	0	29	408	4	913
16:30	0	0	0	4	0	0	0	45	12	1	348	17	2	26	371	0	826
16:45	0	0	0	1	0	0	0	47	11	2	416	11	0	24	398	0	910
Hr Total	0	0	0	6	0	0	0	247	50	5	1481	72	4	110	1541	4	3520
17:00	0	1	0	4	0	0	0	54	16	2	475	11	3	26	403	3	998
17:15	0	0	0	5	0	0	0	35	13	0	456	12	4	20	438	5	988
17:30	0	0	0	2	0	0	0	62	8	17	446	7	5	13	485	5	1050
17:45	0	0	0	1	0	0	0	28	15	2	480	14	0	13	404	2	959
Hr Total	0	1	0	12	0	0	0	179	52	21	1857	44	12	72	1730	15	3995
TOTAL	0	4	0	38	0	0	1	892	183	57	7786	369	28	522	7412	54	17346

NW 15TH STREET AT SR 7
BROWARD COUNTY, FLORIDA
COUNTED BY:
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THOMAS A. HALL, INC.
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954-288-4447

Site Code: 10031
Start Date: 1/20/21
File I.D.: MARGATE
Page: 2

ALL VEHICLES

NW 15th Street From West					NW 15th Street From East				SR 7 From South				SR 7 From North				
Uturn Left Thru Right					Uturn Left Thru Right				Uturn Left Thru Right				Uturn Left Thru Right				Total
Date 1/20/2021																	
Peak Hour Analysis By Entire Intersection for the Period: 07:00 to 09:00 on 1/20/2021																	
Peak start 07:30					07:30				07:30				07:30				
Volume	0	1	0	11	0	0	0	124	20	9	1541	94	2	104	1440	15	3361
Percent	0%	8%	0%	92%	0%	0%	0%	100%	1%	1%	93%	6%	0%	7%	92%	1%	
Pk total	12				124				1664				1561				
Highest	7:45				8:00				7:45				7:45				
Volume	0	1	0	5	0	0	0	59	4	5	430	29	0	34	369	8	
Hi total	6				59				468				411				
PHF	0.50				0.53				0.89				0.95				

Peak Hour Analysis By Entire Intersection for the Period: 11:00 to 01:00 on 1/20/2021																	
Peak start 15:00					15:00				15:00				15:00				3272
Volume	0	1	0	2	0	0	1	98	46	18	1465	35	8	135	1459	4	
Percent	0%	33%	0%	67%	0%	0%	1%	99%	3%	1%	94%	2%	0%	8%	91%	0%	
Pk total	3				99				1564				1606				
Highest	15:45:00 PM				15:45:00 PM				15:15:00 PM				15:15:00 PM				
Volume	0	0	0	2	0	0	0	81	14	4	399	18	2	33	409	2	
Hi total	2				81				435				446				
PHF	0.38				0.31				0.90				0.90				

Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 18:00 on 1/20/2021																	
Peak start 17:00					17:00				17:00				17:00				3995
Volume	0	1	0	12	0	0	0	179	52	21	1857	44	12	72	1730	15	
Percent	0%	8%	0%	92%	0%	0%	0%	100%	3%	1%	94%	2%	1%	4%	95%	1%	
Pk total	13				179				1974				1829				
Highest	17:00				17:30				17:45				17:30				
Volume	0	1	0	4	0	0	0	62	15	2	480	14	5	13	485	5	
Hi total	5				62				511				508				
PHF	0.65				0.72				0.97				0.90				

Turning Movement Count Report

Report Generated Using Turning Movement Count for Android by PortableStudies.com

Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	Iubavitch driveway am			207	
	Location			% Bank 1	% Bank 2
	NW 15th Street			100.0%	0.0%
	Performed By			% Bank 3	% Bank 4
	Unknown			0.0%	0.0%
	Date			Pedestrians Volume	
	Thursday, January 21, 2021			0	

Peak Hour Data

Time Period	Eastbound							Westbound							Northbound							Southbound							Total Vehicles	Total Pedestrians
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh		
7:30 AM	0	5	0	0	0	0	5	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	2	0	0	2	10	0
7:45 AM	0	21	0	0	0	0	21	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	2	0	5	0	0	7	35	0
8:00 AM	0	33	0	0	0	0	33	0	0	0	26	0	0	26	0	0	0	0	0	0	0	12	0	34	0	0	46	105	0	
8:15 AM	0	22	0	0	0	0	22	0	0	0	9	0	0	9	0	0	0	0	0	0	0	3	0	23	0	0	26	57	0	

Vehicle Movement Summary

Movement / Details																													Entire Intersection	
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians
Movement Volume	0	81	0	0	0	0	81	0	0	0	45	0	0	45	0	0	0	0	0	0	0	0	17	0	64	0	0	81	207	0
PHF	-	0.61	-	-	-	-	0.61	-	-	-	0.43	-	-	0.43	-	-	-	-	-	-	-	-	0.35	-	0.47	-	-	0.44	0.49	-
% Bank 1	0.0%	100.0%	0.0%	0.0%				0.0%	0.0%	0.0%	100.0%				0.0%	0.0%	0.0%	0.0%				0.0%	100.0%	0.0%	100.0%				Need a custom report? Contact: support@portablestudies.com	
% Bank 2	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%													
% Bank 3	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%													
% Bank 4	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%													

Turning Movement Count Report

Report Generated Using Turning Movement Count for Android by PortableStudies.com

Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	Iubavitch driveway pm			199	
	Location			% Bank 1	% Bank 2
	NW 15th Street			100.0%	0.0%
	Performed By			% Bank 3	% Bank 4
	Unknown			0.0%	0.0%
	Date			Pedestrians Volume	
	Thursday, January 21, 2021			0	

Peak Hour Data

Time Period	Eastbound							Westbound							Northbound							Southbound							Total Vehicles	Total Pedestrians
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh		
3:30 PM	9	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	10	0
3:45 PM	4	0	0	0	0	0	4	0	0	0	43	0	0	43	0	0	0	0	0	0	0	0	21	0	30	0	0	51	98	0
4:00 PM	4	1	0	0	0	0	5	0	0	0	19	0	0	19	0	0	0	0	0	0	0	11	0	37	0	0	48	72	0	
4:15 PM	0	1	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3	0	14	0	0	17	19	0	

Vehicle Movement Summary

Movement / Details																													Entire Intersection	
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians
Movement Volume	17	2	0	0	0	0	19	0	0	0	63	0	0	63	0	0	0	0	0	0	0	0	35	0	82	0	0	117	199	0
PHF	0.47	0.50	-	-	-	-	0.53	-	-	-	0.37	-	-	0.37	-	-	-	-	-	-	-	-	0.42	-	0.55	-	-	0.57	0.51	-
% Bank 1	100.0%	100.0%	0.0%	0.0%				0.0%	0.0%	0.0%	100.0%				0.0%	0.0%	0.0%	0.0%				0.0%	100.0%	0.0%	100.0%				Need a custom report? Contact: support@portablestudies.com	
% Bank 2	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%												
% Bank 3	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%												
% Bank 4	0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%												

Appendix B - Adjustment Factors

2019 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 8601 CEN.-W OF US1 TO SR7

			MOCF: 0.97	
WEEK	DATES	SF	PSCF	
=====				
1	01/01/2019 - 01/05/2019	1.00	1.03	
2	01/06/2019 - 01/12/2019	1.00	1.03	
3	01/13/2019 - 01/19/2019	1.01	1.04	
4	01/20/2019 - 01/26/2019	1.00	1.03	
5	01/27/2019 - 02/02/2019	0.99	1.02	
* 6	02/03/2019 - 02/09/2019	0.98	1.01	
* 7	02/10/2019 - 02/16/2019	0.97	1.00	
* 8	02/17/2019 - 02/23/2019	0.97	1.00	
* 9	02/24/2019 - 03/02/2019	0.97	1.00	
*10	03/03/2019 - 03/09/2019	0.96	0.99	
*11	03/10/2019 - 03/16/2019	0.96	0.99	
*12	03/17/2019 - 03/23/2019	0.97	1.00	
*13	03/24/2019 - 03/30/2019	0.97	1.00	
*14	03/31/2019 - 04/06/2019	0.97	1.00	
*15	04/07/2019 - 04/13/2019	0.98	1.01	
*16	04/14/2019 - 04/20/2019	0.98	1.01	
*17	04/21/2019 - 04/27/2019	0.99	1.02	
*18	04/28/2019 - 05/04/2019	0.99	1.02	
19	05/05/2019 - 05/11/2019	1.00	1.03	
20	05/12/2019 - 05/18/2019	1.00	1.03	
21	05/19/2019 - 05/25/2019	1.01	1.04	
22	05/26/2019 - 06/01/2019	1.01	1.04	
23	06/02/2019 - 06/08/2019	1.01	1.04	
24	06/09/2019 - 06/15/2019	1.02	1.05	
25	06/16/2019 - 06/22/2019	1.02	1.05	
26	06/23/2019 - 06/29/2019	1.02	1.05	
27	06/30/2019 - 07/06/2019	1.03	1.06	
28	07/07/2019 - 07/13/2019	1.03	1.06	
29	07/14/2019 - 07/20/2019	1.04	1.07	
30	07/21/2019 - 07/27/2019	1.03	1.06	
31	07/28/2019 - 08/03/2019	1.02	1.05	
32	08/04/2019 - 08/10/2019	1.02	1.05	
33	08/11/2019 - 08/17/2019	1.01	1.04	
34	08/18/2019 - 08/24/2019	1.02	1.05	
35	08/25/2019 - 08/31/2019	1.03	1.06	
36	09/01/2019 - 09/07/2019	1.03	1.06	
37	09/08/2019 - 09/14/2019	1.04	1.07	
38	09/15/2019 - 09/21/2019	1.05	1.08	
39	09/22/2019 - 09/28/2019	1.04	1.07	
40	09/29/2019 - 10/05/2019	1.02	1.05	
41	10/06/2019 - 10/12/2019	1.01	1.04	
42	10/13/2019 - 10/19/2019	1.00	1.03	
43	10/20/2019 - 10/26/2019	1.00	1.03	
44	10/27/2019 - 11/02/2019	1.00	1.03	
45	11/03/2019 - 11/09/2019	1.00	1.03	
46	11/10/2019 - 11/16/2019	1.00	1.03	
47	11/17/2019 - 11/23/2019	1.00	1.03	
48	11/24/2019 - 11/30/2019	1.00	1.03	
49	12/01/2019 - 12/07/2019	1.00	1.03	
50	12/08/2019 - 12/14/2019	1.00	1.03	
51	12/15/2019 - 12/21/2019	1.00	1.03	
52	12/22/2019 - 12/28/2019	1.00	1.03	
53	12/29/2019 - 12/31/2019	1.01	1.04	

* PEAK SEASON

Annual Growth Factor Worksheet
Lubavitch Hebrew Academy

Count Station	2014 AADT	2019 AADT	Annual Compound Growth	Adjusted Annual Compound Growth
Site 86016 - SR 7 S. of Royal Palm Blvd.	53000	53500	0.19%	0.19%
Site 869423 - Banks Road N. of Coconut Creek	13000	14100	1.64%	1.64%
Assumed Annual Compound Growth Rate				0.92%

Appendix C – Existing Traffic Conditions Analyses

HCM 6th TWSC
3: SR 7 & Shopping Ctr. Driveway/NW 15th Street

01/28/2021

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↗		↗	↕↗	
Traffic Vol, veh/h	0	0	11	0	0	128	30	1063	97	109	994	15
Future Vol, veh/h	0	0	11	0	0	128	30	1063	97	109	994	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	210	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	50	92	92	53	89	89	89	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	3	3	2	3	3
Mvmt Flow	0	0	22	0	0	242	34	1194	109	115	1046	16
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	531	-	-	652	1062	0	0	1303	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	493	0	0	411	652	-	-	527	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	493	-	-	411	652	-	-	527	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.6		25.5		0.3		1.3					
HCM LOS	B		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	652	-	-	493	411	527	-	-				
HCM Lane V/C Ratio	0.052	-	-	0.045	0.588	0.218	-	-				
HCM Control Delay (s)	10.8	-	-	12.6	25.5	13.7	-	-				
HCM Lane LOS	B	-	-	B	D	B	-	-				
HCM 95th %tile Q(veh)	0.2	-	-	0.1	3.6	0.8	-	-				

HCM 6th TWSC
3: SR 7 & Shopping Ctr. Driveway/NW 15th Street

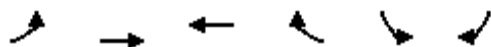
01/28/2021

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↘	↕		↘	↕	
Traffic Vol, veh/h	0	0	2	0	0	101	66	1011	36	147	1007	4
Future Vol, veh/h	0	0	2	0	0	101	66	1011	36	147	1007	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	210	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	50	92	92	53	89	89	89	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	3	3	2	3	3
Mvmt Flow	0	0	4	0	0	191	74	1136	40	155	1060	4
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	532	-	-	588	1064	0	0	1176	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	492	0	0	452	651	-	-	590	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	492	-	-	452	651	-	-	590	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.4		18.6		0.7		1.7					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	651	-	-	492	452	590	-	-				
HCM Lane V/C Ratio	0.114	-	-	0.008	0.422	0.262	-	-				
HCM Control Delay (s)	11.2	-	-	12.4	18.6	13.3	-	-				
HCM Lane LOS	B	-	-	B	C	B	-	-				
HCM 95th %tile Q(veh)	0.4	-	-	0	2.1	1	-	-				

HCM Unsignalized Intersection Capacity Analysis

8: NW 15th Street & Academy Entrance

01/28/2021

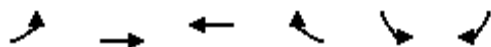


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Traffic Volume (veh/h)	81	144	108	45	0	0
Future Volume (Veh/h)	81	144	108	45	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.53	0.53	0.53	0.53	0.92	0.92
Hourly flow rate (vph)	153	272	204	85	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	289				824	246
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	289				824	246
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	88				100	100
cM capacity (veh/h)	1273				301	792
Direction, Lane #	EB 1	WB 1				
Volume Total	425	289				
Volume Left	153	0				
Volume Right	0	85				
cSH	1273	1700				
Volume to Capacity	0.12	0.17				
Queue Length 95th (ft)	10	0				
Control Delay (s)	3.7	0.0				
Lane LOS	A					
Approach Delay (s)	3.7	0.0				
Approach LOS						
Intersection Summary						
Average Delay		2.2				
Intersection Capacity Utilization		27.2%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

8: NW 15th Street & Academy Entrance

01/28/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Traffic Volume (veh/h)	2	211	81	63	0	0
Future Volume (Veh/h)	2	211	81	63	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.53	0.53	0.53	0.53	0.92	0.92
Hourly flow rate (vph)	4	398	153	119	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	272				618	212
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	272				618	212
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1291				451	828
Direction, Lane #	EB 1	WB 1				
Volume Total	402	272				
Volume Left	4	0				
Volume Right	0	119				
cSH	1291	1700				
Volume to Capacity	0.00	0.16				
Queue Length 95th (ft)	0	0				
Control Delay (s)	0.1	0.0				
Lane LOS	A					
Approach Delay (s)	0.1	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.1				
Intersection Capacity Utilization		16.0%		ICU Level of Service		A
Analysis Period (min)		15				

HCM 6th TWSC
6: NW 15th Street & Academy Exit

01/28/2021

Intersection

Int Delay, s/veh 1.5

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations

Traffic Vol, veh/h 0 210 62 0 17 64

Future Vol, veh/h 0 210 62 0 17 64

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 53 53 53 53 92 92

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 396 117 0 18 70

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 513 117

Stage 1 - - - - 117 -

Stage 2 - - - - 396 -

Critical Hdwy - - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - - - 3.518 3.318

Pot Cap-1 Maneuver 0 - - 0 521 935

Stage 1 0 - - 0 908 -

Stage 2 0 - - 0 680 -

Platoon blocked, % - -

Mov Cap-1 Maneuver - - - - 521 935

Mov Cap-2 Maneuver - - - - 521 -

Stage 1 - - - - 908 -

Stage 2 - - - - 680 -

Approach EB WB SB

HCM Control Delay, s 0 0 10

HCM LOS B

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h) - - 801

HCM Lane V/C Ratio - - 0.11

HCM Control Delay (s) - - 10

HCM Lane LOS - - B

HCM 95th %tile Q(veh) - - 0.4

HCM 6th TWSC
6: NW 15th Street & Academy Exit

01/28/2021

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	175	16	0	35	82
Future Vol, veh/h	0	175	16	0	35	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	53	53	53	53	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	330	30	0	38	89

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 360 30
Stage 1	-	-	- 30 -
Stage 2	-	-	- 330 -
Critical Hdwy	-	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	-	-	- 3.518 3.318
Pot Cap-1 Maneuver	0	-	0 639 1044
Stage 1	0	-	0 993 -
Stage 2	0	-	0 728 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 639 1044
Mov Cap-2 Maneuver	-	-	- 639 -
Stage 1	-	-	- 993 -
Stage 2	-	-	- 728 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	878
HCM Lane V/C Ratio	-	-	0.145
HCM Control Delay (s)	-	-	9.8
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.5

Appendix D – Background Traffic Conditions Analysis

HCM 6th TWSC
3: SR 7 & Shopping Ctr. Driveway/NW 15th Street

01/28/2021

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗	↕↗		↗	↕↗	
Traffic Vol, veh/h	0	0	11	0	0	129	30	1073	98	110	1003	16
Future Vol, veh/h	0	0	11	0	0	129	30	1073	98	110	1003	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	210	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	50	92	92	53	89	89	89	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	3	3	2	3	3
Mvmt Flow	0	0	22	0	0	243	34	1206	110	116	1056	17
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	537	-	-	658	1073	0	0	1316	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	488	0	0	407	645	-	-	521	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	488	-	-	407	645	-	-	521	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.7		26.2		0.3		1.4					
HCM LOS	B		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	645	-	-	488	407	521	-	-				
HCM Lane V/C Ratio	0.052	-	-	0.045	0.598	0.222	-	-				
HCM Control Delay (s)	10.9	-	-	12.7	26.2	13.9	-	-				
HCM Lane LOS	B	-	-	B	D	B	-	-				
HCM 95th %tile Q(veh)	0.2	-	-	0.1	3.8	0.8	-	-				

HCM 6th TWSC
3: SR 7 & Shopping Ctr. Driveway/NW 15th Street

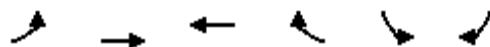
01/28/2021

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↘	↕		↘	↕	
Traffic Vol, veh/h	0	0	2	0	0	102	67	1020	36	148	1016	4
Future Vol, veh/h	0	0	2	0	0	102	67	1020	36	148	1016	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	210	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	50	92	92	53	89	89	89	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	3	3	2	3	3
Mvmt Flow	0	0	4	0	0	192	75	1146	40	156	1069	4
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	537	-	-	593	1073	0	0	1186	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	488	0	0	449	645	-	-	585	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	488	-	-	449	645	-	-	585	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.4		18.9		0.7		1.7					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	645	-	-	488	449	585	-	-				
HCM Lane V/C Ratio	0.117	-	-	0.008	0.429	0.266	-	-				
HCM Control Delay (s)	11.3	-	-	12.4	18.9	13.4	-	-				
HCM Lane LOS	B	-	-	B	C	B	-	-				
HCM 95th %tile Q(veh)	0.4	-	-	0	2.1	1.1	-	-				

HCM Unsignalized Intersection Capacity Analysis

8: NW 15th Street & Academy Entrance

01/28/2021

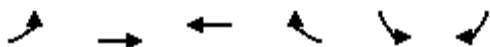


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Traffic Volume (veh/h)	81	146	109	45	0	0
Future Volume (Veh/h)	81	146	109	45	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.53	0.53	0.53	0.53	0.92	0.92
Hourly flow rate (vph)	153	275	206	85	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	291				830	248
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	291				830	248
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	88				100	100
cM capacity (veh/h)	1271				299	790
Direction, Lane #	EB 1	WB 1				
Volume Total	428	291				
Volume Left	153	0				
Volume Right	0	85				
cSH	1271	1700				
Volume to Capacity	0.12	0.17				
Queue Length 95th (ft)	10	0				
Control Delay (s)	3.7	0.0				
Lane LOS	A					
Approach Delay (s)	3.7	0.0				
Approach LOS						
Intersection Summary						
Average Delay		2.2				
Intersection Capacity Utilization		27.3%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

8: NW 15th Street & Academy Entrance

01/28/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰			
Traffic Volume (veh/h)	2	213	82	63	0	0
Future Volume (Veh/h)	2	213	82	63	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.53	0.53	0.53	0.53	0.92	0.92
Hourly flow rate (vph)	4	402	155	119	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	274				624	214
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	274				624	214
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1289				447	825
Direction, Lane #	EB 1	WB 1				
Volume Total	406	274				
Volume Left	4	0				
Volume Right	0	119				
cSH	1289	1700				
Volume to Capacity	0.00	0.16				
Queue Length 95th (ft)	0	0				
Control Delay (s)	0.1	0.0				
Lane LOS	A					
Approach Delay (s)	0.1	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.1				
Intersection Capacity Utilization		16.1%		ICU Level of Service		A
Analysis Period (min)		15				

HCM 6th TWSC
6: NW 15th Street & Academy Exit

01/28/2021

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	212	62	0	17	64
Future Vol, veh/h	0	212	62	0	17	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	53	53	53	53	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	400	117	0	18	70

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 517 117
Stage 1	-	-	- 117 -
Stage 2	-	-	- 400 -
Critical Hdwy	-	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	-	-	- 3.518 3.318
Pot Cap-1 Maneuver	0	-	0 518 935
Stage 1	0	-	0 908 -
Stage 2	0	-	0 677 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 518 935
Mov Cap-2 Maneuver	-	-	- 518 -
Stage 1	-	-	- 908 -
Stage 2	-	-	- 677 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	800
HCM Lane V/C Ratio	-	-	0.11
HCM Control Delay (s)	-	-	10.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

HCM 6th TWSC
6: NW 15th Street & Academy Exit

01/28/2021

Intersection

Int Delay, s/veh 2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	177	17	0	35	82
Future Vol, veh/h	0	177	17	0	35	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	53	53	53	53	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	334	32	0	38	89

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 366 32
Stage 1	-	-	- 32 -
Stage 2	-	-	- 334 -
Critical Hdwy	-	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	-	-	- 3.518 3.318
Pot Cap-1 Maneuver	0	-	0 634 1042
Stage 1	0	-	0 991 -
Stage 2	0	-	0 725 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 634 1042
Mov Cap-2 Maneuver	-	-	- 634 -
Stage 1	-	-	- 991 -
Stage 2	-	-	- 725 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	874
HCM Lane V/C Ratio	-	-	0.146
HCM Control Delay (s)	-	-	9.8
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.5

Appendix E – Total Traffic Conditions Analysis

HCM 6th TWSC
3: SR 7 & Shopping Ctr. Driveway/NW 15th Street

01/28/2021

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↰			↰	↰	↰↱		↰	↰↱	
Traffic Vol, veh/h	0	0	11	0	0	143	30	1073	106	116	1003	16
Future Vol, veh/h	0	0	11	0	0	143	30	1073	106	116	1003	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	210	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	50	92	92	53	89	89	89	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	3	3	2	3	3
Mvmt Flow	0	0	22	0	0	270	34	1206	119	122	1056	17
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	537	-	-	663	1073	0	0	1325	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	488	0	0	404	645	-	-	517	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	488	-	-	404	645	-	-	517	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.7		30.1		0.3		1.4					
HCM LOS	B		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	645	-	-	488	404	517	-	-				
HCM Lane V/C Ratio	0.052	-	-	0.045	0.668	0.236	-	-				
HCM Control Delay (s)	10.9	-	-	12.7	30.1	14.1	-	-				
HCM Lane LOS	B	-	-	B	D	B	-	-				
HCM 95th %tile Q(veh)	0.2	-	-	0.1	4.7	0.9	-	-				

HCM 6th TWSC
3: SR 7 & Shopping Ctr. Driveway/NW 15th Street

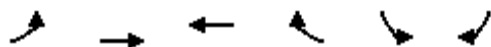
01/28/2021

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↘	↕		↘	↕	
Traffic Vol, veh/h	0	0	2	0	0	113	67	1020	38	150	1016	4
Future Vol, veh/h	0	0	2	0	0	113	67	1020	38	150	1016	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	210	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	50	92	92	53	89	89	89	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	3	3	2	3	3
Mvmt Flow	0	0	4	0	0	213	75	1146	43	158	1069	4
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	537	-	-	595	1073	0	0	1189	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	488	0	0	447	645	-	-	583	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	488	-	-	447	645	-	-	583	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.4		20.2		0.7		1.7					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	645	-	-	488	447	583	-	-				
HCM Lane V/C Ratio	0.117	-	-	0.008	0.477	0.271	-	-				
HCM Control Delay (s)	11.3	-	-	12.4	20.2	13.5	-	-				
HCM Lane LOS	B	-	-	B	C	B	-	-				
HCM 95th %tile Q(veh)	0.4	-	-	0	2.5	1.1	-	-				

HCM Unsignalized Intersection Capacity Analysis

8: NW 15th Street & Academy Entrance

01/28/2021

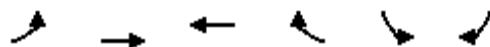


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Traffic Volume (veh/h)	97	151	109	52	0	0
Future Volume (Veh/h)	97	151	109	52	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.53	0.53	0.53	0.53	0.92	0.92
Hourly flow rate (vph)	183	285	206	98	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	304				906	255
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	304				906	255
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	85				100	100
cM capacity (veh/h)	1257				262	784
Direction, Lane #	EB 1	WB 1				
Volume Total	468	304				
Volume Left	183	0				
Volume Right	0	98				
cSH	1257	1700				
Volume to Capacity	0.15	0.18				
Queue Length 95th (ft)	13	0				
Control Delay (s)	4.2	0.0				
Lane LOS	A					
Approach Delay (s)	4.2	0.0				
Approach LOS						
Intersection Summary						
Average Delay		2.5				
Intersection Capacity Utilization		28.9%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

8: NW 15th Street & Academy Entrance

01/28/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰			
Traffic Volume (veh/h)	6	218	82	74	0	0
Future Volume (Veh/h)	6	218	82	74	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.53	0.53	0.53	0.53	0.92	0.92
Hourly flow rate (vph)	11	411	155	140	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	295				658	225
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	295				658	225
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1266				425	814
Direction, Lane #	EB 1	WB 1				
Volume Total	422	295				
Volume Left	11	0				
Volume Right	0	140				
cSH	1266	1700				
Volume to Capacity	0.01	0.17				
Queue Length 95th (ft)	1	0				
Control Delay (s)	0.3	0.0				
Lane LOS	A					
Approach Delay (s)	0.3	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.2				
Intersection Capacity Utilization		19.6%		ICU Level of Service		A
Analysis Period (min)		15				

HCM 6th TWSC
6: NW 15th Street & Academy Exit

01/28/2021

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	228	62	0	22	78
Future Vol, veh/h	0	228	62	0	22	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	53	53	53	53	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	430	117	0	24	85

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 547 117
Stage 1	-	-	- 117 -
Stage 2	-	-	- 430 -
Critical Hdwy	-	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	-	-	- 3.518 3.318
Pot Cap-1 Maneuver	0	-	0 498 935
Stage 1	0	-	0 908 -
Stage 2	0	-	0 656 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 498 935
Mov Cap-2 Maneuver	-	-	- 498 -
Stage 1	-	-	- 908 -
Stage 2	-	-	- 656 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	784
HCM Lane V/C Ratio	-	-	0.139
HCM Control Delay (s)	-	-	10.3
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.5

HCM 6th TWSC

6: NW 15th Street & Academy Exit

01/28/2021

Intersection									
Int Delay, s/veh		2.8							
Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations		↑	↑		↓	↓			
Traffic Vol, veh/h	0	181	17	0	40	93			
Future Vol, veh/h	0	181	17	0	40	93			
Conflicting Peds, #/hr	0	0	0	0	0	0			
Sign Control	Free	Free	Free	Free	Stop	Stop			
RT Channelized	-	None	-	None	-	None			
Storage Length	-	-	-	-	0	-			
Veh in Median Storage, #	-	0	0	-	0	-			
Grade, %	-	0	0	-	0	-			
Peak Hour Factor	53	53	53	53	92	92			
Heavy Vehicles, %	2	2	2	2	2	2			
Mvmt Flow	0	342	32	0	43	101			

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	374	32
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	342	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	627	1042
Stage 1	0	-	-	0	991	-
Stage 2	0	-	-	0	719	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	627	1042
Mov Cap-2 Maneuver	-	-	-	-	627	-
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	719	-

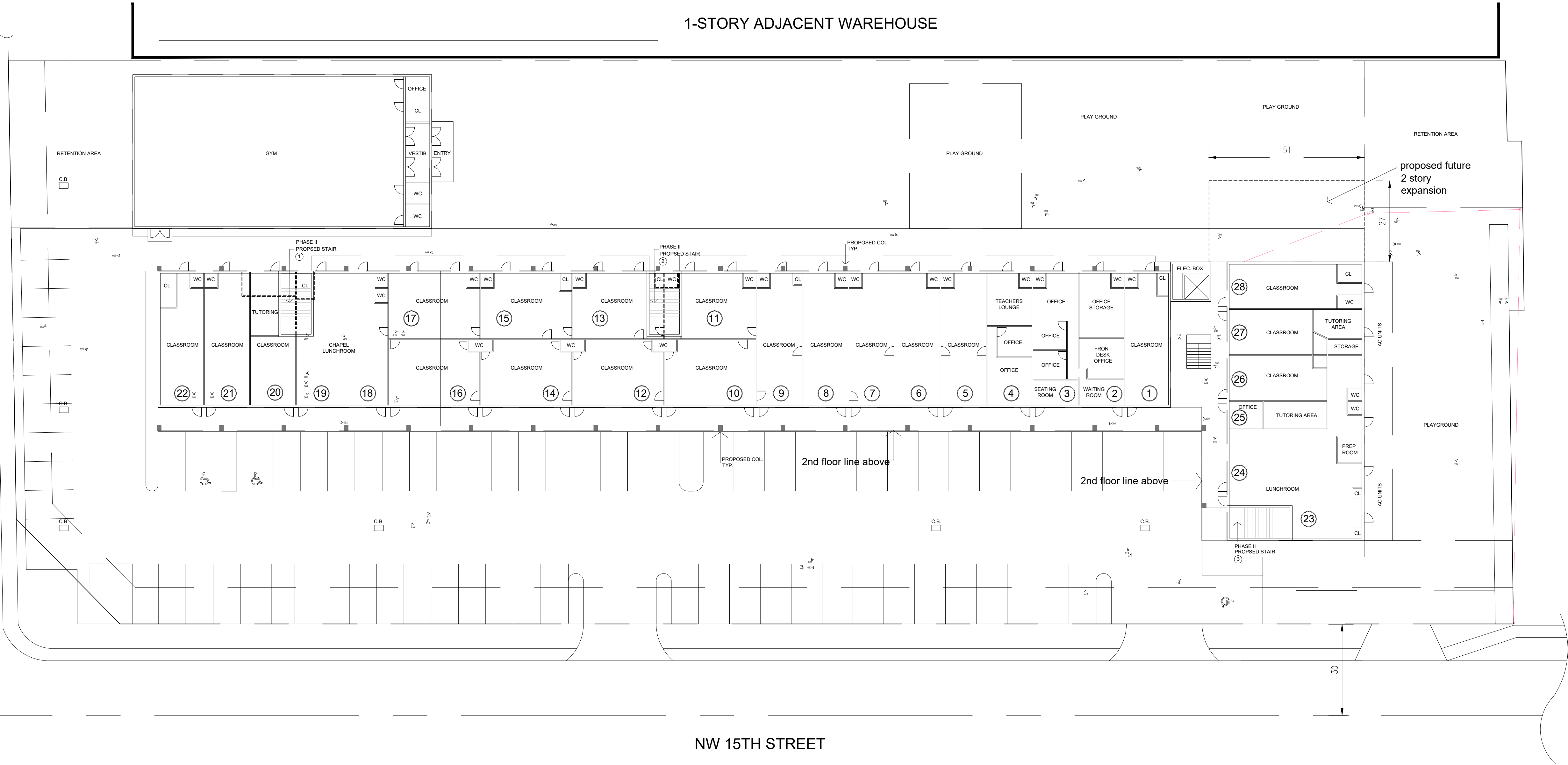
Approach	EB	WB	SB						
HCM Control Delay, s	0	0	10						
HCM LOS				B					

Minor Lane/Major Mvmt	EBT	WBT	SBLn1						
Capacity (veh/h)	-	-	869						
HCM Lane V/C Ratio	-	-	0.166						
HCM Control Delay (s)	-	-	10						
HCM Lane LOS	-	-	B						
HCM 95th %tile Q(veh)	-	-	0.6						

Appendix F – Site Plan

NORTH STATE ROAD 7

1-STORY ADJACENT WAREHOUSE

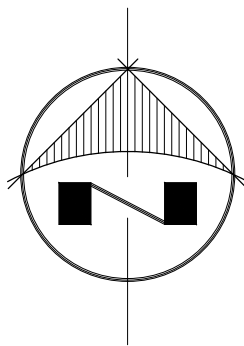


PHASE I

PROPOSED CONCEPTUAL FIRST FLOOR PLAN

SCALE = 1" = 20'

ALT. 12



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EXPANSION AND REMODEL
1500 N. SR 7
MARGATE, FLORIDA 33065

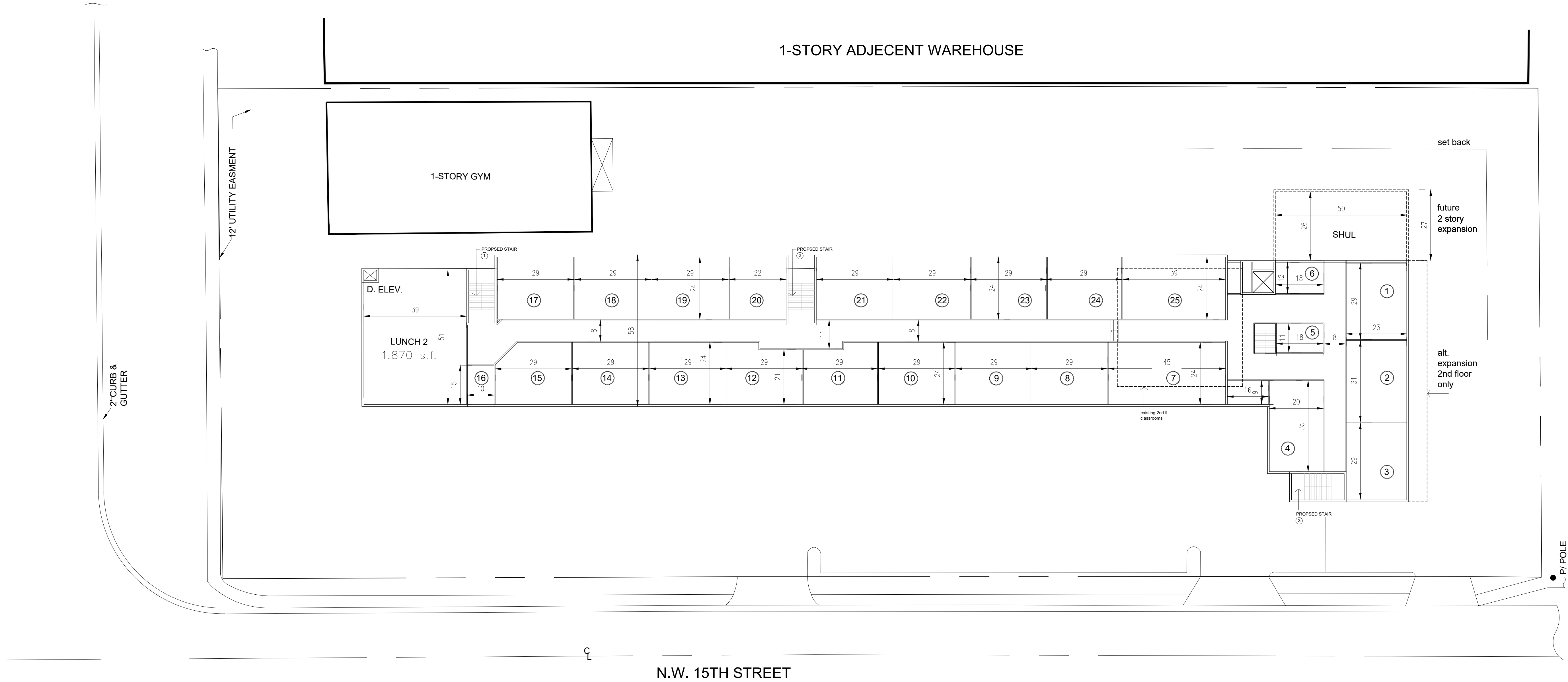
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A-1

p.n. 20005



1-STORY ADJECENT WAREHOUSE

1-STORY GYM

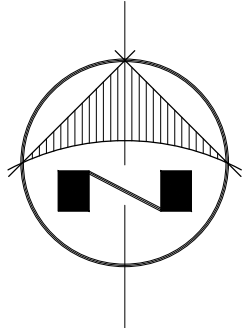
D. ELEV.
LUNCH 2
1,870 s.f.

SHUL

N.W. 15TH STREET

PHASE II
PROPOSED CONCEPTUAL SECOND FLOOR PLAN ALT. 13

SCALE = 1" = 20'



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HEBREW ACADEMY
EXPANSION AND REMODEL
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MARGATE, FLORIDA 33065

05-14-2020
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12-31-2020

ITAMAR GOLDENHOLZ
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