
TRAFFIC IMPACT STUDY

for

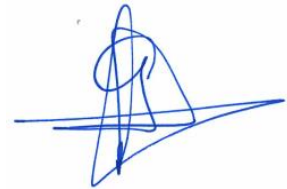
**Proposed Warehouse Development
25 Talbot Lane
South Windsor, Connecticut**

Prepared for:

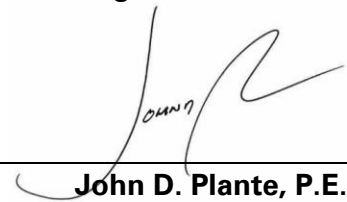
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**June 2021
Revised July 2021
140236601**

TABLE OF CONTENTS

	<u>Page No.</u>
EXECUTIVE SUMMARY	1
1.0 INTRODUCTION	1
2.0 SITE ACCESS AND STUDY LOCATIONS	1
Site Access.....	1
Study Locations	1
3.0 EXISTING CONDITIONS	2
Area Roadway Network	2
Study Intersections.....	2
4.0 INTERSECTION CAPACITY ANALYSIS MEASURES	3
Level of Service Criteria	3
5.0 METHODOLOGY AND ANALYSIS	4
5.1 Step One: Determine the existing peak-hour traffic volumes and evaluate traffic operating conditions for the study intersections.	5
Existing Peak-Hour Traffic Volumes	5
2021 Existing Traffic Operating Conditions	5
5.2 Step Two: Project the existing peak-hour traffic volumes (Step One) to create 2023 Background peak-hour traffic volumes (Including approved or pending developments in the area) and evaluate traffic operating conditions for the study intersections.	5
Background Peak-Hour Traffic Volumes	5
2023 Background Traffic Operating Conditions.....	5
5.3 Step Three: Determine the traffic volumes to be generated by the proposed development. Distribute and assign these site traffic volumes throughout the study area roadway network.	6
Peak-Hour Trip Generation	6
5.4 Step Four: Combine the Background traffic volumes (Step Two) with the assigned proposed traffic (Step Three) to establish 2023 Build traffic volumes. Determine traffic operating conditions and identify mitigation of potential impacts.	7
Build Traffic Volumes	7
Build Traffic Operating Conditions.....	7
Queuing Evaluation	7
Analysis Results	10
5.5 Step Five: Investigate the safety conditions within the area roadway network.	10
Intersection Sight Distance.....	10
Accidents	11
6.0 SUMMARY AND CONCLUSIONS	12

TABLE OF CONTENTS – CONTINUED

TABLES

Table 1	Anticipated Peak-Hour Trip Generation
Table 2	Capacity Analysis Summary – Weekday A.M. Peak-Hour
Table 3	Capacity Analysis Summary – Weekday P.M. Peak-Hour
Table 4	Intersection Sight Distance Summary
Table 5	Accident Data Summary (2018 – 2021)

FIGURES

Figure 1	Location Map
Figure 2	Study Area Intersections
Figure 3	2021 Existing Peak-Hour Traffic Volumes
Figure 4	2023 Background Peak-Hour Traffic Volumes
Figure 5	Trip Distribution
Figure 6	Trip Assignment
Figure 7	2023 Build Peak-Hour Traffic Volumes

APPENDICES

Appendix A	Overall Site Plan
Appendix B	Capacity Analysis – 2021 Existing Traffic Conditions
Appendix C	Capacity Analysis – 2023 Background Traffic Conditions
Appendix D	Capacity Analysis – 2023 Build Traffic Conditions
Appendix E	Capacity Analysis – 2023 Build with Improvements Traffic Conditions

EXECUTIVE SUMMARY

Langan has prepared this traffic impact study to identify the potential impacts of the proposed warehouse at 25 Talbot Lane in South Windsor, Connecticut (See Figure 1). The project site is approximately 30.37-acres of vacant land.

The project includes the construction of a ±360,000 square-foot warehouse with approximately 269 parking spaces, 118 trailer spaces and 54 loading docks and associated site improvements (See Site Plan in Appendix A). The proposed development will be served by a full movement driveway on Talbot Lane and a secondary gated driveway on Governor's Highway requiring all vehicular traffic to utilize the Talbot Lane driveway. If this secondary driveway is utilized it will be operate as a full-movement driveway, restricting tractor trailer truck to left turns out of the site. The proposed development is anticipated to be in operation in 2023. All tractor trailer truck traffic from the facility will be directed to only travel west on Governor's Highway to comply with the town's restriction of truck traffic on Governor's Highway east of the site.

Langan used the Institute of Transportation Engineers (ITE) land-use code 156 to develop the trip generation for the proposed warehouse and site use. These trip generation volumes were used to evaluate the peak-hour and average daily traffic (ADT) for the 2023 build-year traffic operations conditions.

Video turning-movement and vehicle-classification were conducted in June 2021 at three intersections and used as a basis for this evaluation. The existing roadway infrastructure is adequate to support the nominal increase in traffic volume generated by the proposed warehouse development. No improvements are required or recommended at this time; signal timing optimization at the intersection of Route 5 and Governors Highway can improve signal operations in the future as needed.

1.0 INTRODUCTION

Langan has prepared this traffic impact study to identify the potential impacts of the proposed warehouse at 25 Talbot Lane in South Windsor, Connecticut (See Figure 1 for the Location Map). The 30.37-acre vacant site is on the southwest corner of Governor's Highway and Talbot Lane. Residential lots lie west and south from the project site.

The proposed warehouse will comprise a $\pm 360,000$ square-foot building with approximately 269 parking spaces, 118 trailer spaces and 54 loading docks and associated landscaping, utility improvements and stormwater systems (See Site Plan in Appendix A). The proposed development is anticipated to be in operation by 2023

2.0 SITE ACCESS AND STUDY LOCATIONS

Site Access

The proposed development will construct a primary driveway connection each to Talbot Lane and Governor's Highway. The proposed driveway along Talbot Lane (Driveway 1) will be a full-movement stop-controlled driveway. Governor's Highway has a truck traffic restriction from Talbot Lane to Ellington Road issued by the Town of South Windsor under ordinance #172. The proposed driveway on Governor's Highway (Driveway 2) will be a secondary access and will be gated, requiring all vehicular traffic to utilize the Talbot Lane driveway. (See Site Plan in Appendix A).

Research into the use of Governor's Highway east of the site indicates that there the town of South Windsor police department has no records tractor trailer truck being cited for violating this ordinance restricting trucks on that segment of the town roadway. The development will install clear signage indicating no tractor trailer truck right turns onto Governor's Highway. The proposed site driveway on Governor's Highway will also be designed with curb radii to discourage this movement.

Study Locations

Three key intersections were evaluated in this study (See Figure 2).

- John Fitch Boulevard (US-5) and Governor's Highway
- Talbot Lane and Governor's Highway
- Ellington Road (SR-30) and Governor's Highway/ Podunk Circle

This study will evaluate traffic impacts of the facility's peak-hours on these intersections and the area roadway network.

3.0 EXISTING CONDITIONS

Area Roadway Network

John Fitch Boulevard (U.S. Route 5) is a four lane, north-south major highway under state jurisdiction. The north and south lanes are separated by a 25 foot wide grassy median with guardrails. *U.S. Route 5* provides two 12-foot wide travel lanes in each direction, with a 6-foot shoulder that varies along the length of the road on the outside of each travel lane, with a posted speed limit of 50 MPH.

Governor's Highway is a two lane, east-west, urban major collector road under local jurisdiction, with a posted speed limit of 30 MPH. Governor's Highway provides two 12-foot wide travel lanes and a 3-foot shoulder in each direction that varies along the length of the road.

Ellington Road (State Road 30) is a two lane, northeast-southwest, undivided, major highway under state jurisdiction, with a posted speed limit of 40 MPH. Ellington Road provides two 12-foot wide travel lanes in each direction, with 6-foot wide shoulders on the outside of each travel lane.

Podunk Circle is a two lane, north-south, local road under local jurisdiction, that operates as the main access for residential lots.

Study Intersections

John Fitch Boulevard and Governor's Highway is a signalized four way intersection with the following geometry:

- Governor's Highway – one shared right-turn/left-turn/thru lane on both sides of intersection.
- Southbound John Fitch Boulevard – one shared right-turn/thru lane, one left-turn lane with approximately 260 feet of storage and one thru lane.
- Northbound John Fitch Boulevard - one left turn lane with approximately 260 feet of storage, one right-turn lane with approximately 280 feet of storage and two thru lane.

Talbot Lane and Governor's Highway is a stop-sign controlled "T" intersection with the following geometry:

- Talbot Lane – one share right-turn/left-turn lane.
- Governor's Highway Eastbound – one shared right-turn/thru lane.
- Governor's Highway Westbound – one shared left-turn/thru lane.

Ellington Road and Governor's Highway/Podunk Circle is a signalized four-way intersection with the following geometry:

- Governor's Highway – one shared right-turn/left-turn/thru lane.
- Podunk Circle – one shared right-turn/left-turn/thru lane.
- Ellington Road Southbound – one shared left-turn/thru lane, one right-turn lane with approximately 250 feet of storage.
- Ellington Road Northbound – one shared right-turn/left-turn/thru lane.

Site Driveway and Governor's Highway is gated with a stop sign controlled "T" intersection with the following geometry:

- Site Driveway – One shared left and right-turn lane, allowing full movement for cars and restricting tractor trailer trucks to left-turn only.
- Governor's Highway Eastbound – one shared right-turn/thru lane lane.
- Governor's Highway Westbound – one shared left-turn/thru lane.

4.0 INTERSECTION CAPACITY ANALYSIS MEASURES

Langan conducted capacity analyses for the existing, background and build traffic conditions to assess quality of traffic flow. Capacity analyses provide an indication of the adequacy of the road and intersections to serve traffic demands.

Level of Service Criteria

Level of Service (LOS) is the term used to denote the different operating conditions that occur at an intersection under various traffic volume demands. LOS is a qualitative measure that considers a number of factors including road geometry, speed and travel delay. LOS provides an index to the operational qualities of an intersection. LOS designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. The LOS designation is reported differently for signalized intersections and unsignalized intersections.

For signalized intersections, the analysis considers the operation of all traffic entering the intersection. For unsignalized intersections, however, the analysis considers the operation of all movements that are in conflict with other movements such as mainline left turns and traffic exiting the side street. An overall LOS is given for signalized intersections. For unsignalized intersections, LOS is given for each specific approach.

The evaluation criteria used to analyze the study area intersections are based on the Highway Capacity Manual (HCM) 6th Edition, published by the Transportation Research Board (TRB). SYNCHRO Plus SimTraffic 10 was used to facilitate computer calculation for the capacity analyses at each intersection.

The HCM 6th Edition defines level of service for signalized intersections as follows:

<u>Level of Service</u>	<u>Control Delay per Vehicle (sec/veh)</u>
A	≤10
B	>10 – 20
C	>20 – 35
D	>35 – 55
E	>55 – 80
F	>80

The HCM defines level of service for unsignalized intersections as follows:

<u>Level of Service</u>	<u>Control Delay per Vehicle (sec/veh)</u>
A	≤10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F	> 50

5.0 METHODOLOGY AND ANALYSIS

To assess the potential traffic impact of the proposed development, Langan employed a five-step methodology outlined below and described in detail in subsequent sections 5.1 through 5.5:

- Step One: Determine the existing peak-hour traffic volumes and evaluate existing traffic operating conditions for the study intersections.
- Step Two: Project the existing peak-hour traffic volumes (Step One) to create 2023 Background peak-hour traffic volumes (Including approved or pending developments in the area) and evaluate traffic operating conditions for the study intersections.
- Step Three: Determine the traffic volumes to be generated by the proposed development. Distribute and assign these site traffic volumes throughout the study area roadway network.
- Step Four: Combine the Background traffic volumes (Step Two) with the assigned proposed traffic (Step Three) to establish 2023 Build traffic volumes. Determine traffic operating conditions and identify mitigation of potential impacts.
- Step Five: Investigate the safety conditions within the area roadway network.

5.1 Step One: Determine the existing peak-hour traffic volumes and evaluate traffic operating conditions for the study intersections.

Existing Peak-Hour Traffic Volumes

Video turning-movement counts (TMC's) and vehicle classification counts were conducted in June 2021 to determine the existing peak-hour traffic volumes. The TMC's and vehicle classification counts were conducted on a weekday during the morning (7:00 a.m. to 10:00 a.m.) and evening (3:30 p.m. to 6:30 p.m.) peak periods of the development. During these study periods, the peak-hours of the adjacent roadway network generally occurred from 7:45 to 8:45 a.m. and 4:30 to 5:30 p.m.

2021 Existing Traffic Operating Conditions

The traffic operating conditions for the study area intersections were analyzed during the roadway peak-hour periods using the 2021 existing traffic volumes. Figure 3 illustrate the 2021 existing peak-hour traffic volumes. A summary of the traffic operating conditions is provided in Tables 2 and 3. Detailed reports can be found in Appendix B.

5.2 Step Two: Project the existing peak-hour traffic volumes (Step One) to create 2023 Background peak-hour traffic volumes (Including approved or pending developments in the area) and evaluate traffic operating conditions for the study intersections.

Background Peak-Hour Traffic Volumes

Background traffic growth was estimated based on historical data available from ConnDOT in the vicinity of the project. A review of the ConnDOT data indicates that traffic volumes in Windsor have fluctuated over the last several years, with a growth of 0.46%. In order to be conservative, a reasonable growth rate of 0.5% annually was applied to the existing traffic volumes to develop the 2023 background ambient growth peak-hour traffic volumes shown on Figure 4A.

We contacted the Town of South Windsor Planning Department and confirmed that there are no planned or approved developments in our study area. In addition, we reviewed the 2021-2025 ConnDOT Transportation Capital Infrastructure Program and found that there are no planned improvements in the study area.

2023 Background Traffic Operating Conditions

The traffic operating conditions for the study area intersections were analyzed during the peak-hour periods using the 2023 background traffic volumes illustrated in Figure 4. A

summary of the traffic operating conditions is provided in Tables 2 and 3. Detailed reports can be found in Appendix C.

5.3 Step Three: Determine the traffic volumes to be generated by the proposed development. Distribute and assign these site traffic volumes throughout the study area roadway network.

The project includes the construction of a ±360,000 square-foot warehouse with approximately 269 parking spaces, 118 trailer spaces and 54 loading docks and associated site improvements (See Site Plan in Appendix A).

The site design also proposes construction of two site driveways, one connection to each Governor's Highway and Talbot Lane (See Site Plan in Appendix A). The primary driveway along Talbot Lane will be a full-access stop-controlled driveway. A secondary gated driveway on Governor's Highway requiring all vehicular traffic to utilize the Talbot Lane driveway. If this driveway is utilized it will be operate as a full-movement driveway, restricting tractor trailer truck to left turns out of the site.

Peak-Hour Trip Generation

The anticipated number of peak-hour trips generated by the proposed facility is based on rates established in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition. Land Use Code 156: High-Cube Parcel Hub Warehouse was selected based on a conservative trip generation estimate and the intended building use. Overall, the number of trips the proposed development is expected to generate is 275 for the AM peak hour, and 253 for the PM peak hour. **Table 1** below identifies the anticipated peak-hour trip generation of the proposed development using ITE data.

TABLE 1 ANTICIPATED TRIP GENERATION – 25 TALBOT LANE WAREHOUSE							
USE	LAND USE CODE ¹	AM PEAK HOUR			PM PEAK HOUR		
		ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
High-Cube Parcel Hub Warehouse (360,000 SF)	156	138	137	275	172	81	253

¹ Land Use Codes and Volumes based on ITE Trip Generation Manual 10th Edition. LUC 156: High-Cube Parcel Hub Warehouse

The site-generated traffic peak-hour volumes were distributed to and from the site onto the roadway network based on anticipated travel patterns of employees and journey to work data obtained for the Town of South Windsor. The anticipated percent distribution of the site generated trips is illustrated in Figure 5. Figure 6 illustrates the assignment of the peak-hour site-generated trips, indicated in Table 1, into the area roadway network.

5.4 Step Four: Combine the Background traffic volumes (Step Two) with the assigned proposed traffic (Step Three) to establish 2023 Build traffic volumes. Determine traffic operating conditions and identify mitigation of potential impacts.

Build Traffic Volumes

To evaluate the impacts of the proposed development, the proposed trip assignment volumes (Figure 6), as distributed on the roadway network, are combined with the background traffic volumes (Figure 4). Figure 7 illustrate the 2023 build traffic volumes in the roadway network during the peak-hour periods.

Build Traffic Operating Conditions

The resulting traffic volumes illustrated in Figure 7 were evaluated to determine the effective operating conditions of the study area intersections without any proposed improvements. Tables 2 and 3 compare the traffic operating conditions for the study area intersections during the peak-hour periods. Appendix D provides detailed reports for the 2023 build conditions.

Queuing Evaluation

In addition to the traffic operating conditions, we evaluated the resulting vehicular queuing for all conditions to assess the impacts at study intersections. In evaluating queuing length, the industry standard is to utilize the 50th and the 95th percentile queue lengths developed by the analysis. The 50th percentile queue represents the average or typical vehicular queue that can be expected during the peak-hour. The 95th percentile queue length represents the queuing experience during the highest peak periods, which accounts for 5% of the analysis period. Queues are calculated in feet, and approximately 25 feet of queue is equal to a single vehicle.

Tables 4 and 5 provide the expected 50th and 95th percentile queue lengths for the analyzed periods. For most analyzed intersections, queue lengths do not increase more than four car lengths. Any increase in queuing due to the proposed development is minimal and the existing roadway network can fully accommodate the anticipated queues.

TABLE 2 CAPACITY ANALYSIS SUMMARY – WEEKDAY A.M. PEAK-HOUR																		
INTERSECTION	CONTROL TYPE	LANE USE	STORAGE LENGTH (ft)	EXISTING CONDITIONS					BACKGROUND CONDITIONS					BUILD CONDITIONS				
				LOS	DELAY (sec)	V/C RATIO	QUEUES (ft)	QUEUES (ft)	LOS	DELAY (sec)	V/C RATIO	QUEUES (ft)	QUEUES (ft)	LOS	DELAY (sec)	V/C RATIO	QUEUES (ft)	QUEUES (ft)
							50th%	95th%				50th%	95th%				50th%	95th%
John Fitch Blvd (US-5) & Governor's Hwy	ACTUATED-COORDINATED	Overall		C	22.9	0.66			C	23	0.66			C	24.6	0.82		
		EB-LTR	>1000'	C	22.7	0.14	11'	35'	C	22.5	0.14	11'	35'	B	18.4	0.1	10'	33'
		WB-LTR	>1000'	D	41.9	0.66	72'	127'	D	41.8	0.66	73'	128'	D	48	0.82	135'	217'
		NB-L	260'	A	4.8	0.06	5'	17'	A	4.9	0.06	5'	18'	A	7.3	0.07	7'	21'
		NB-TT	>1000'	C	22.7	0.52	161'	214'	C	22.8	0.53	163'	217'	C	22.8	0.53	163'	217'
		NB-R	280'	A	4.5	0.14	0'	30'	A	4.6	0.14	0'	30'	A	3.9	0.24	0'	38'
		SB-L	260'	C	27.7	0.08	16'	43'	C	27.9	0.08	16'	44'	C	34.9	0.23	39'	83'
		SB-TTR	>1000'	C	21.9	0.48	143'	192'	C	22	0.48	144'	194'	C	22	0.48	144'	194'
Podunk Circle/ Governors Hwy. & Ellington Road	ACTUATED-UNCOORDINATED	EB-LTR	>1000'	A	7.2	0.23	36'	118'	A	7.2	0.23	37'	119'	A	9	0.31	41'	131'
		WB-LT	>1000'	A	7.3	0.25	40'	127'	A	7.3	0.25	40'	128'	A	8.8	0.3	41'	130'
		WB-R	240'	A	2.5	0.12	0'	25'	A	2.5	0.12	0'	25'	A	2.6	0.15	0'	27'
		SEB-LTR	>1000'	C	20.5	0.24	16'	46'	C	20.5	0.24	16'	46'	B	19.1	0.35	19'	59'
		NWB-LTR	>1000'	C	21	0.01	1'	6'	C	21	0.01	1'	6'	B	20	0.01	1'	6'
Talbot Ln. & Governors Hwy.	UNSIGNALIZED	EB	-	A	0	0		0'	A	0	0		0'	A	0	0		0'
		WB	-	A	7.3	0.001		0'	A	7.3	0.001		0'	A	7.6	0.026		3'
		NB	-	A	9.2	0.005		0'	A	9.2	0.005		0'	B	11.9	0.227		23'

TABLE 3 CAPACITY ANALYSIS SUMMARY – WEEKDAY P.M. PEAK-HOUR																							
INTERSECTION	CONTROL TYPE	LANE USE	STORAGE LENGTH (ft)	EXISTING CONDITIONS					BACKGROUND CONDITIONS					BUILD CONDITIONS					SIGNAL TIMING OPTIMIZATION CONDITIONS				
				LOS	DELAY (sec)	V/C RATIO	QUEUES (ft)	QUEUES (ft)	LOS	DELAY (sec)	V/C RATIO	QUEUES (ft)	QUEUES (ft)	LOS	DELAY (sec)	V/C RATIO	QUEUES (ft)	QUEUES (ft)	LOS	DELAY (sec)	V/C RATIO	QUEUES (ft)	QUEUES (ft)
							50th%	95th%				50th%	95th%				50th%	95th%				50th%	95th%
John Fitch Blvd (US-5) & Governor's Hwy	ACTUATED-COORDINATED	Overall		C	26.9	0.76			C	27.1	0.77			C	27.6	0.83			C	28	0.83		
		EB-LTR	>1000'	B	18.2	0.11	10'	32'	B	18.1	0.11	10'	32'	B	17	0.09	9'	32'	B	17	0.09	9'	32'
		WB-LTR	>1000'	D	45.1	0.74	105'	166'	D	45.1	0.74	106'	167'	D	50.1	0.83	139'	234'	D	50.1	0.83	139'	#234'
		NB-L	260'	A	6.6	0.01	1'	5'	A	6.6	0.01	1'	5'	A	7.4	0.01	1'	5'	A	7.4	0.01	1'	5'
		NB-TT	>1000'	C	22.2	0.49	147'	198'	C	22.3	0.49	149'	201'	C	22.3	0.49	149'	201'	C	24.1	0.52	155'	208'
		NB-R	280'	A	3.5	0.12	0'	22'	A	3.6	0.12	0'	23'	A	3.9	0.24	0'	39'	A	4.2	0.25	0'	41'
		SB-L	260'	C	32.4	0.15	28'	68'	C	32.6	0.16	29'	69'	D	37	0.34	57'	111'	C	34.5	0.3	55'	108'
		SB-TTR	>1000'	C	28.1	0.76	262'	340'	C	28.4	0.77	266'	346'	C	28.4	0.77	266'	346'	C	28.4	0.77	266'	346'
Podunk Circle/ Governors Hwy. & Ellington Road	ACTUATED-UNCOORDINATED	EB-LTR	>1000'	B	12.3	0.56	82'	207'	B	12.2	0.56	83'	209'	B	11.6	0.58	73'	225'					
		WB-LT	>1000'	B	10	0.39	52'	135'	B	10	0.39	53'	136'	A	8.8	0.37	42'	134'					
		WB-R	240'	A	2	0.11	0'	15'	A	2	0.11	0'	15'	A	2.3	0.13	0'	20'					
		SEB-LTR	>1000'	C	26.8	0.52	33'	134'	C	27.3	0.53	34'	136'	B	12.8	0.51	8'	68'					
		NWB-LTR	>1000'	A	0	0.01	0'	0'	A	0	0.01	0'	0'	A	0	0.01	0'	0'					
Talbot Ln. & Governors Hwy.	UNSIGNALIZED	EB	-	A	0	0		0'	A	0	0		0'	A	0	0		0'					
		WB	-	A	7.6	0.002		0'	A	7.6	0.002		0'	A	8.1	0.037		3'					
		NB	-	B	10	0.016		3'	B	10	0.016		3'	B	12.5	0.174		15'					

Analysis Results

The analysis of the study intersections reveals that most of the signalized intersections analyzed will maintain overall acceptable or background operating conditions for the 2023 build scenario; therefore no mitigation measures at the three study intersections are proposed for the 2023 build scenarios. Individual movements and lane groups may change slightly in level of service, delay, and queue length; however, overall levels of service at these signalized intersections analyzed remain unchanged or acceptable, with nominal impacts to intersection delays.

At the intersection of US Route 5 and Governors Highway in the evening peak-hour, the southbound left-turn lane changes from LOS C to LOS D from background to build conditions. Minor signal timing optimization at this intersection will return the movement LOS back to LOS C (background). At this time, no signal timing optimization is proposed as part of this application, however should conditions change in the future, the traffic signal timings can be adjusted.

5.5 Step Five: Investigate the safety conditions within the area roadway network.

Intersection Sight Distance

Langan evaluated the intersection sight distances (ISD) at the proposed site driveways on Governor's Highway and Talbot Road to confirm that they will meet the Town of South Windsor requirements for entering and exiting vehicles based on standards from ConnDOT Highway Design Manual Section 11-2. Sight distances requirements for the Town of South Windsor are based on minimum requirements established by the Connecticut Highway Design Manual and the American Association of State Highway and Transportation Officials (AASHTO) as outlined in *A Policy on Geometric Design of Highways and Streets*, 6th Edition (also known as the AASHTO Green Book). As shown in **Table 4**, the proposed intersection sight distances (ISDs) provided at the site driveways meet AASHTO's minimum requirements.

TABLE 4					
INTERSECTION SIGHT DISTANCE SUMMARY					
LOCATION	Design Speed	Intersection Sight Distance			
		Passenger Car		Combination Truck	
		Required	Provided	Required	Provided
Talbot Lane & Governors Highway					
Left (Governors Highway eastbound)	35 mph ¹	±390 ft	>390 ft	±595 ft	>595 ft
Right (Governors Highway westbound)	35 mph ¹	±390 ft	>390 ft	±595 ft	>595 ft
Site Driveway & Governors Highway					
Left (Governors Highway eastbound)	35 mph ¹	±390 ft	>390 ft	±595 ft	>595 ft
Right (Governors Highway westbound)	35 mph ¹	±390 ft	>390 ft	±595 ft	>595 ft

¹ Design speed of 35 MPH based on an assumed 85th percentile speed (the posted speed limit of 30 MPH plus 5 MPH)

Accidents

The most recent three years of accident data were requested via the online UConn Crash Data Repository website in order to conduct an accident analysis in the project vicinity. From January 2018 to December 2021, only one accident occurred in the vicinity of the site and the surrounding study intersection locations. The accident was an angle collision, with dry weather during night with a possible injury. Table 5 provides a summary of the accident history.

TABLE 5									
ACCIDENT DATA SUMMARY (2018 - 2021)									
INTERSECTION	NUMBER OF ACCIDENTS		SEVERITY			CONDITIONS			
	Total	Average Per Year	Property Damage Only	Personal Injury	Fatality	Clear (Dry)	Rain/Snow	Day	Night
John Fitch Boulevard & Governor's Highway	1	0.0833	0 (0%)	1 (100%)	0 (0%)	1 (100%)	0 (00%)	0 (0%)	1 (100%)
Talbot Lane & Governor's Highway	0	0.00	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Ellington Road & Governor's Highway	0	0.00	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
TOTAL	1	0.0833	0 (0%)	1 (100%)	0 (0%)	1 (100%)	0 (0%)	0 (0%)	1 (100%)

Source: UConn Crash Data Repository (2018 – 2021)

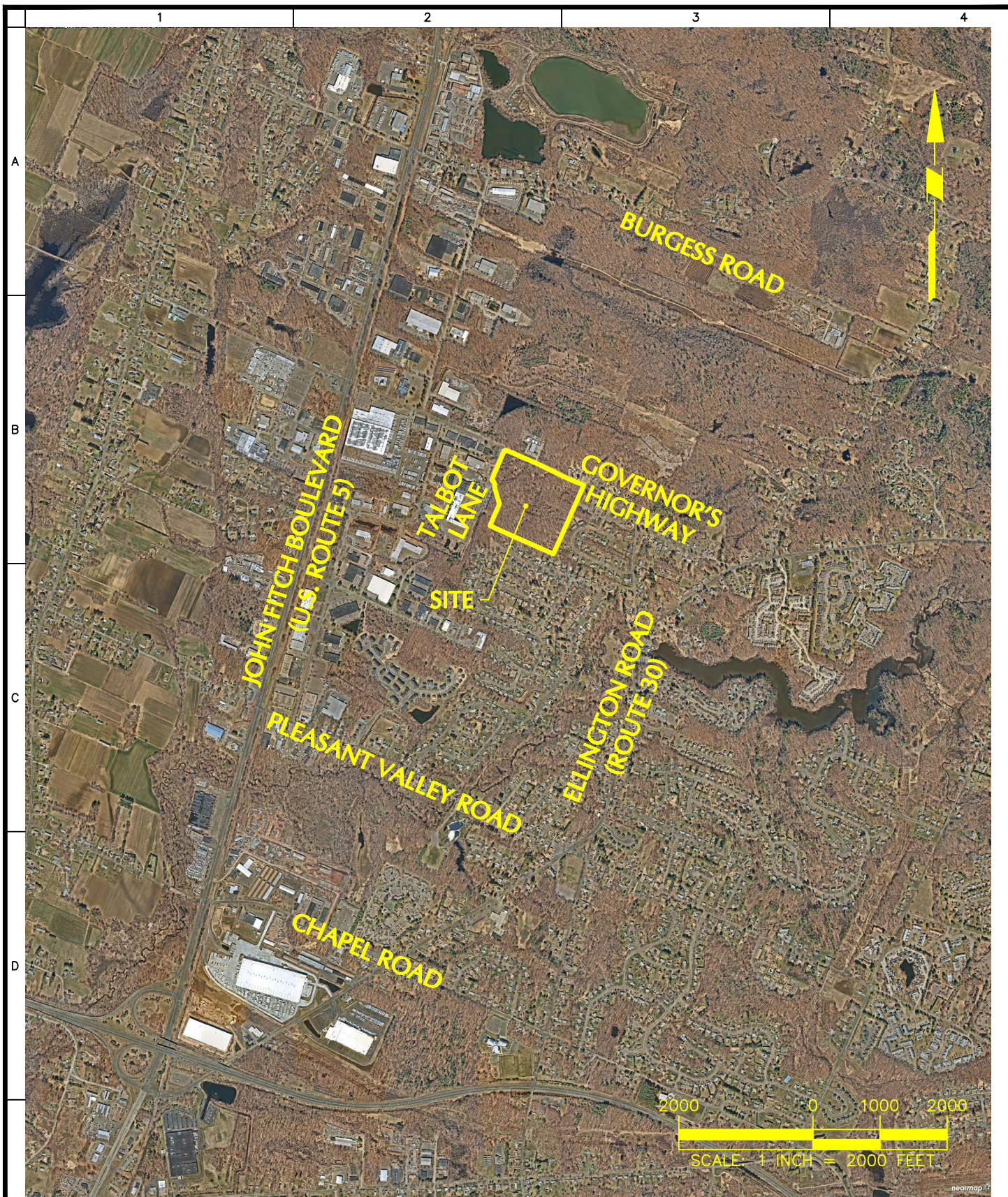
6.0 SUMMARY AND CONCLUSIONS

This evaluation identifies the potential traffic impacts generated by the proposed development on the surrounding area road network. We performed a capacity analysis for the existing, background, and build scenarios for three intersections. Our evaluation indicates that, the existing roadway infrastructure is adequate to support the nominal increase in traffic volume generated by the proposed warehouse development. No improvements are required or recommended at this time; signal timing optimization at the intersection of Route 5 and Governors Highway can improve signal operations in the future as needed.

\\langan.com\data\NH\data6\140236601\Project Data_Discipline\Traffic\Reports\Traffic Impact Study\140236601 - 25 Talbot Lane - Traffic Impact Study - July 2021.docx

Figures

Figure 1	Location Map
Figure 2	Study Intersections Map
Figure 3	2021 Existing Peak-Hour Traffic Volumes
Figure 4	2023 Background Peak-Hour Traffic Volumes
Figure 5	Trip Distribution
Figure 6	Trip Assignment
Figure 7	2023 Build Peak-Hour Traffic Volumes



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Project

**475 GOVERNOR'S
HIGHWAY**

SOUTH WINDSOR

CONNECTICUT

Drawing Title

LOCATION MAP

Project No.

140236601

Date

06/30/2021

Drawn By

MS

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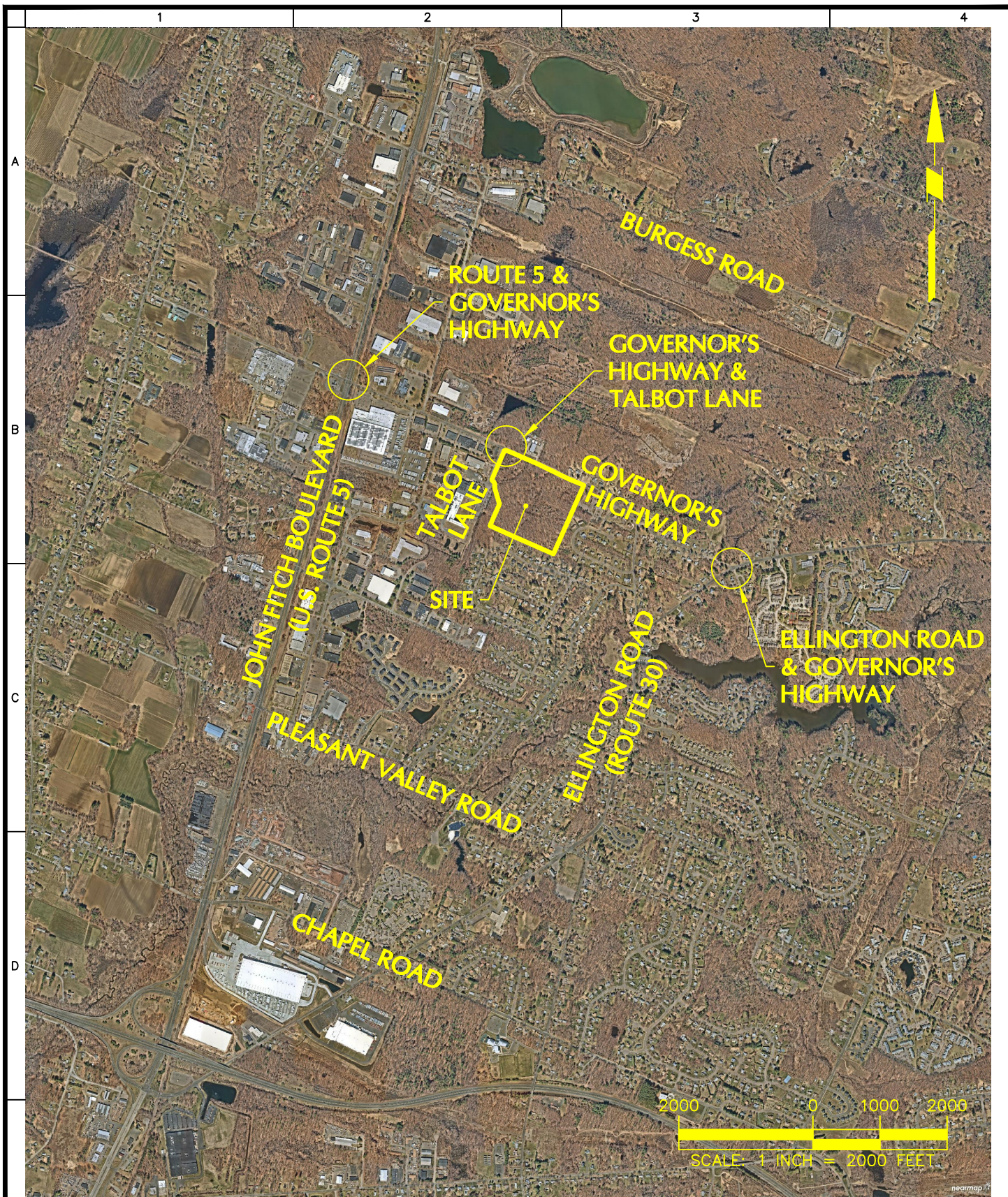
CJM

Drawing No.

FIG. 1

Sheet 1 of 7

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**475 GOVERNOR'S
HIGHWAY**

SOUTH WINDSOR

CONNECTICUT

Drawing Title

**STUDY
INTERSECTION
MAP**

Project No.

140236601

Date

06/30/2021

Drawn By

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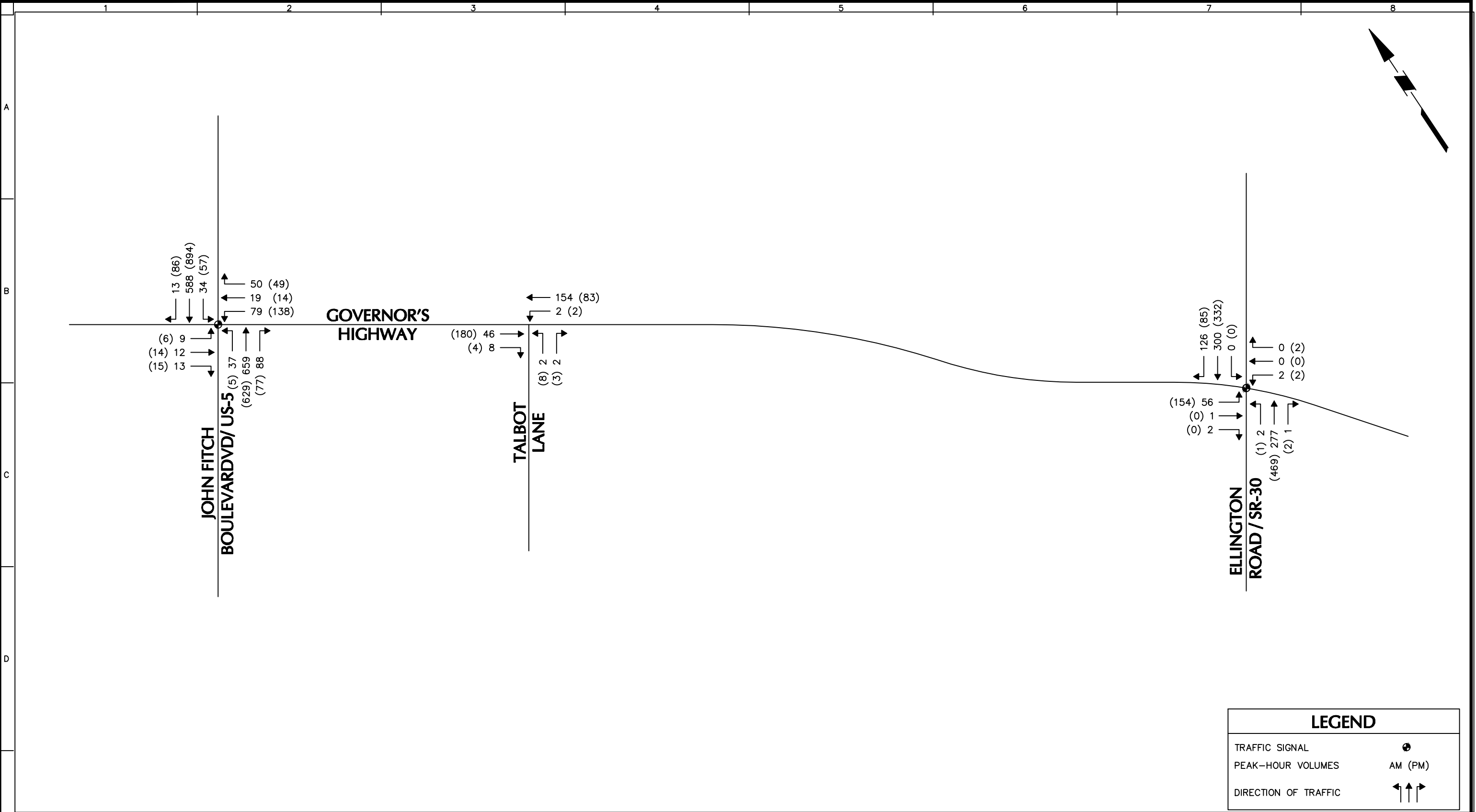
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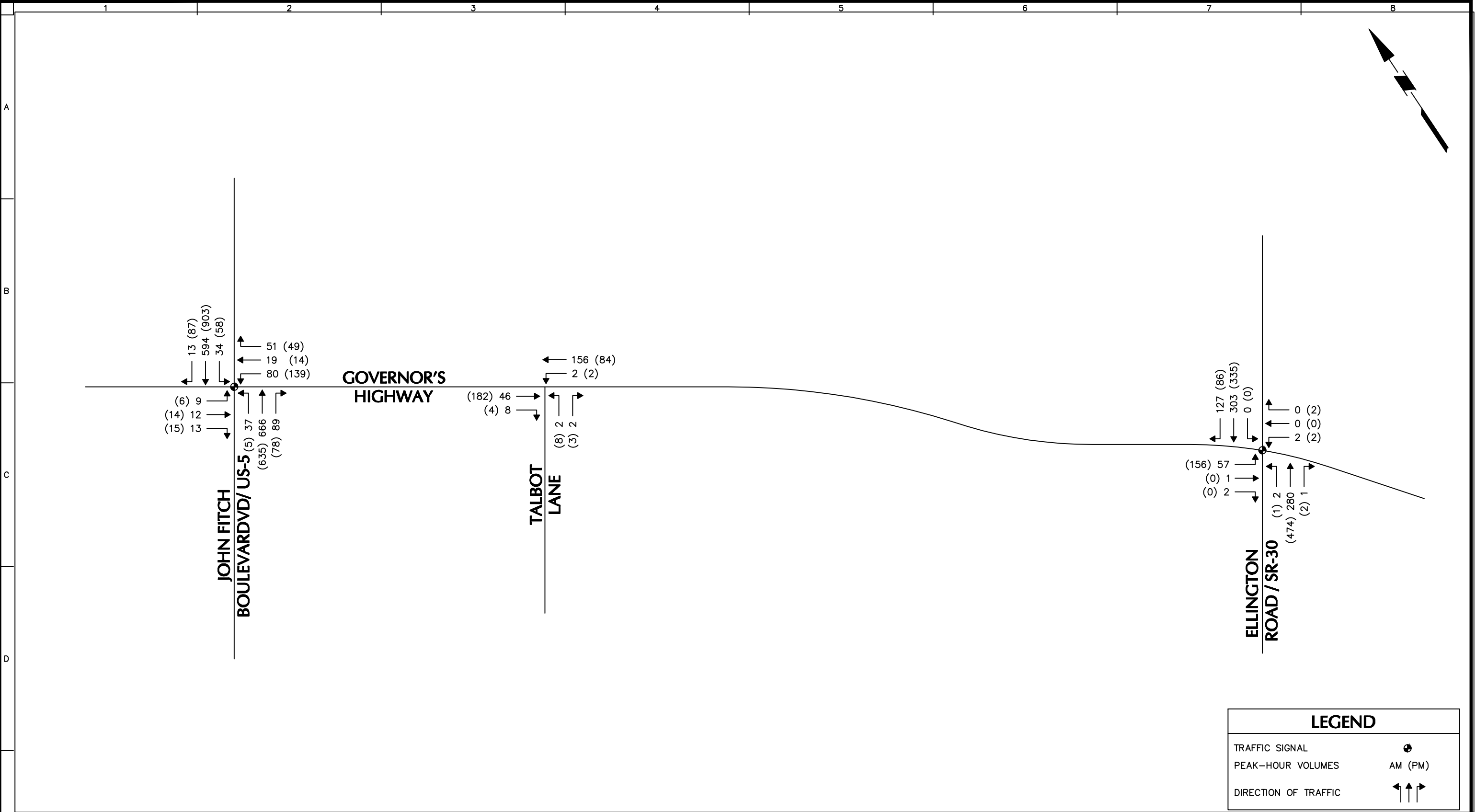
FIG. 2

Sheet 2 of 7

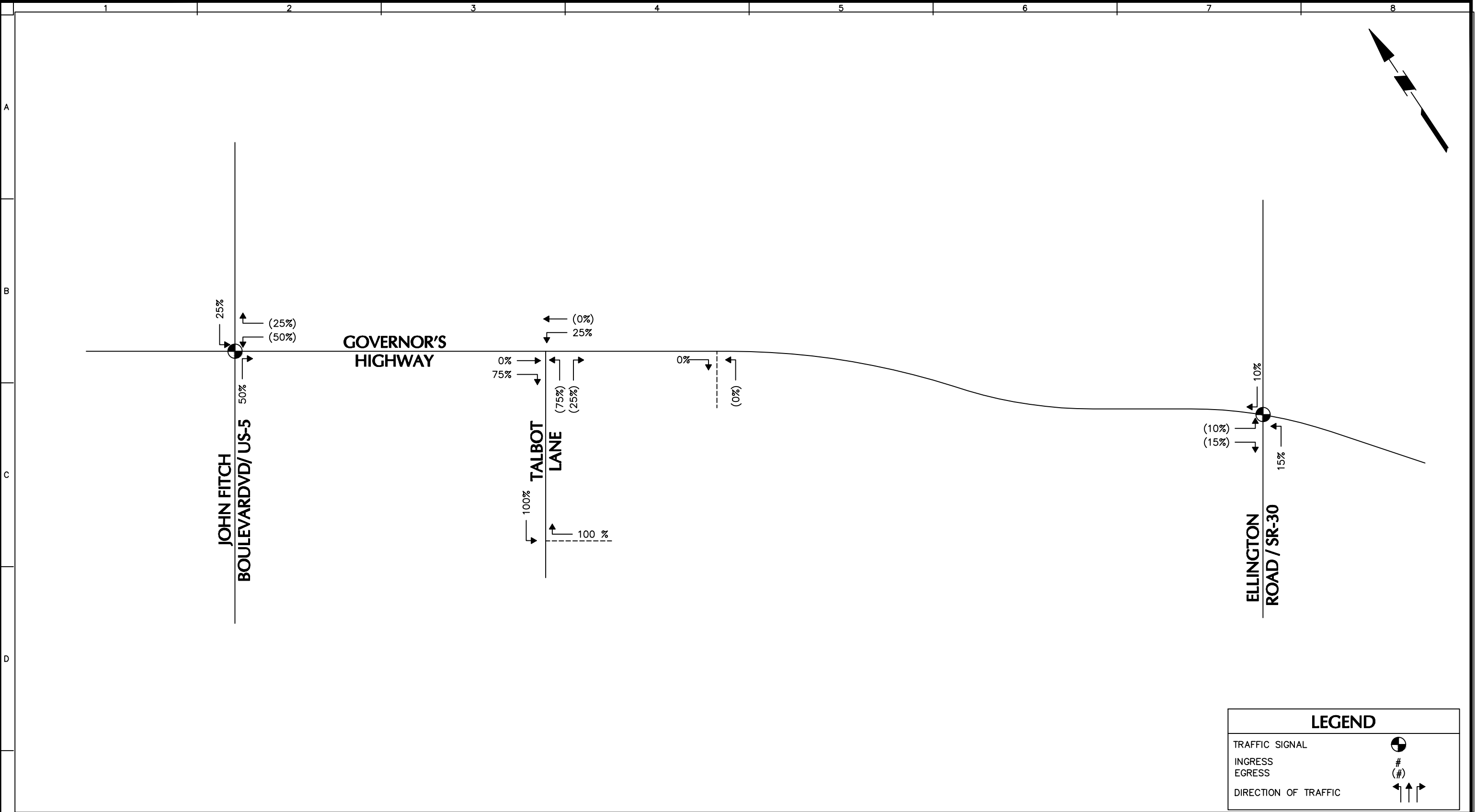
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			Date 07/01/2021	
			Drawn By MS	
			Checked By CJM	

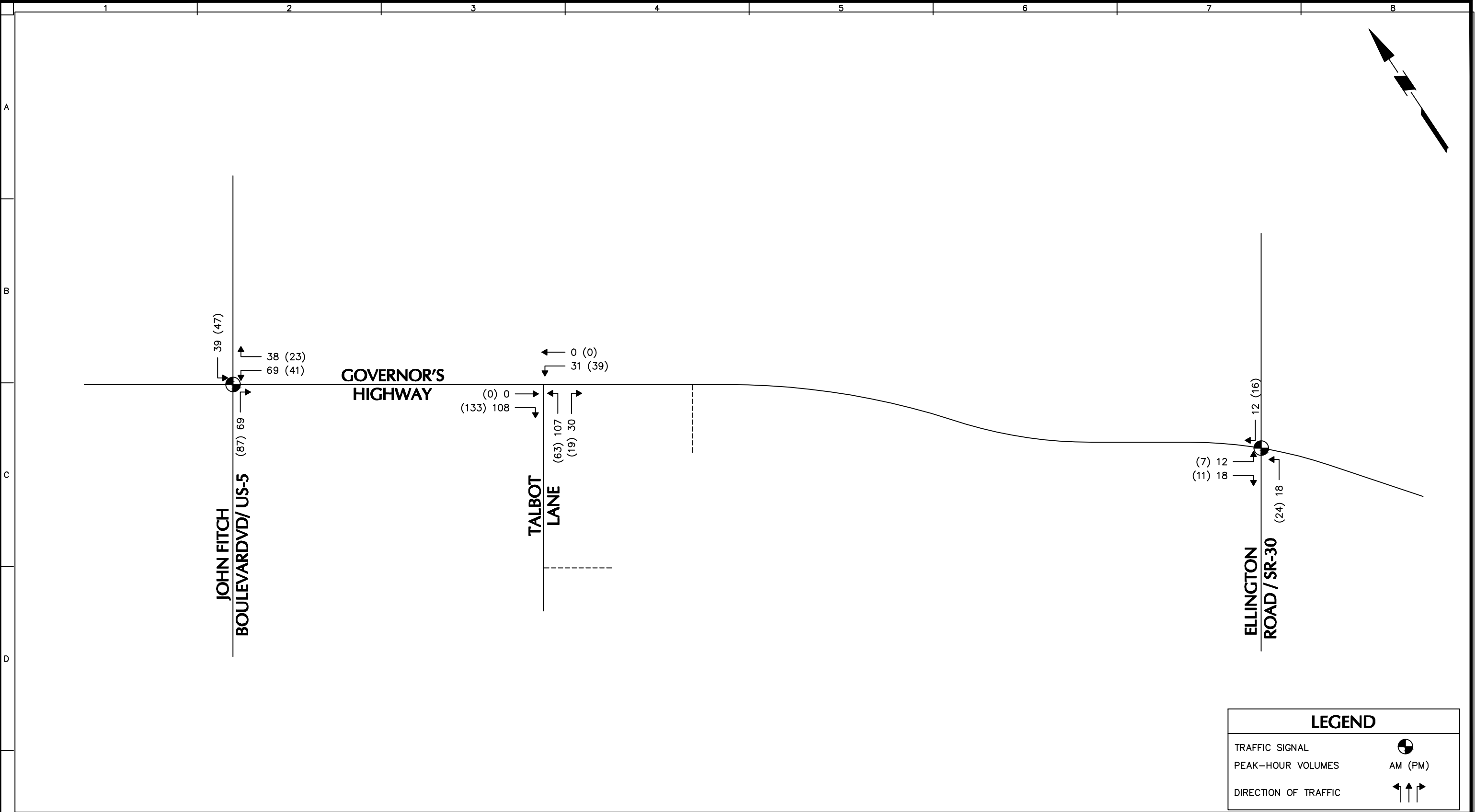


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			Date 07/01/2021	
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E

LANGAN Langan CT, Inc. 555 Long Wharf Drive New Haven, CT 06511 T: 203.562.5771 F: 203.789.6142 www.langan.com	Project 475 GOVERNOR'S HWY SOUTH WINDSOR CONNECTICUT	Drawing Title PROJECT TRAFFIC DISTRIBUTION	Project No. 140236601	Drawing No. FIG. 5 Sheet 5 of 7
			Date 07/01/2021	
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LEGEND

TRAFFIC SIGNAL

PEAK-HOUR VOLUMES

DIRECTION OF TRAFFIC

AM (PM)

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Project

475 GOVERNOR'S HWY

SOUTH WINDSOR CONNECTICUT

Drawing Title

PROJECT TRAFFIC

Project No.
140236601

Date
07/01/2021

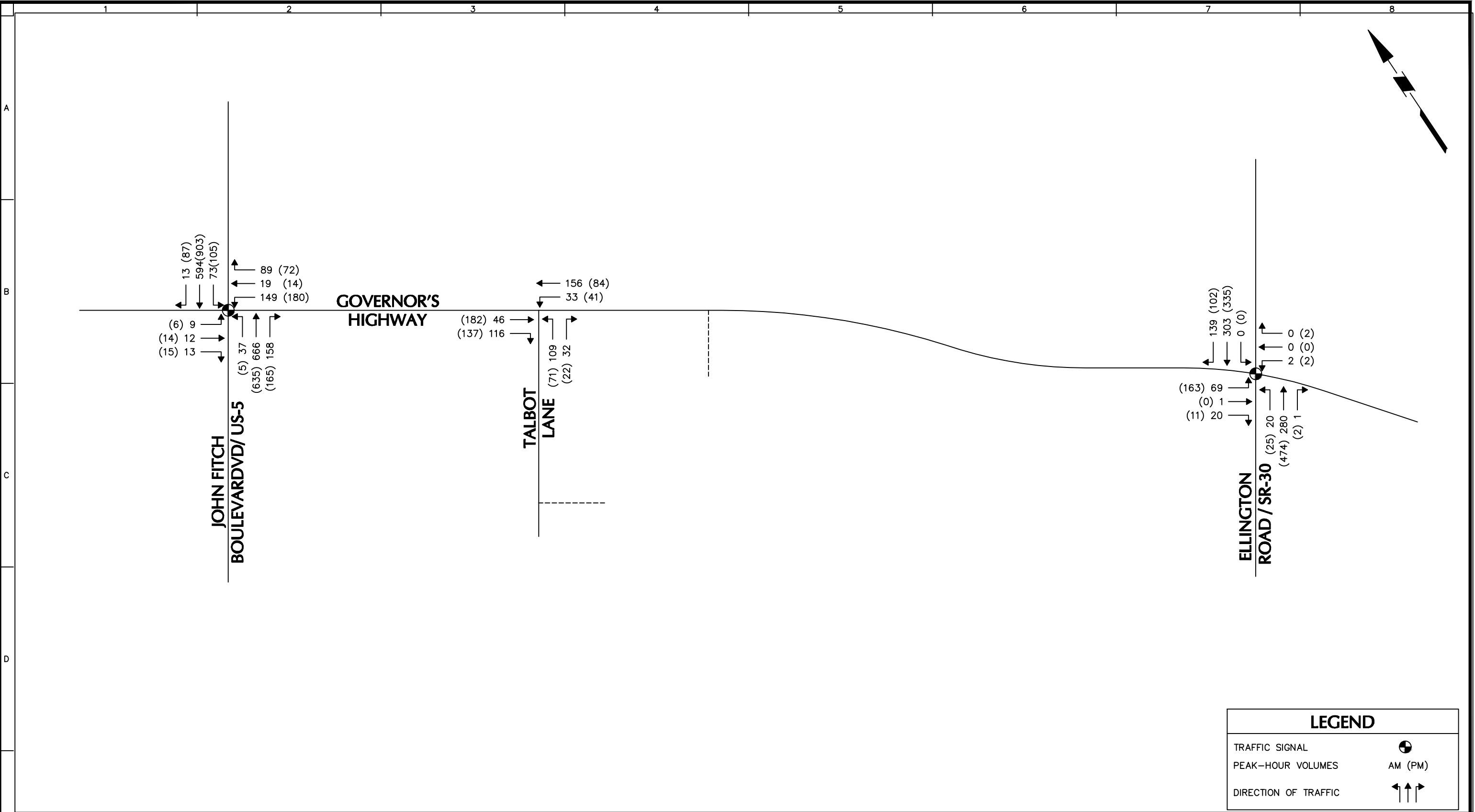
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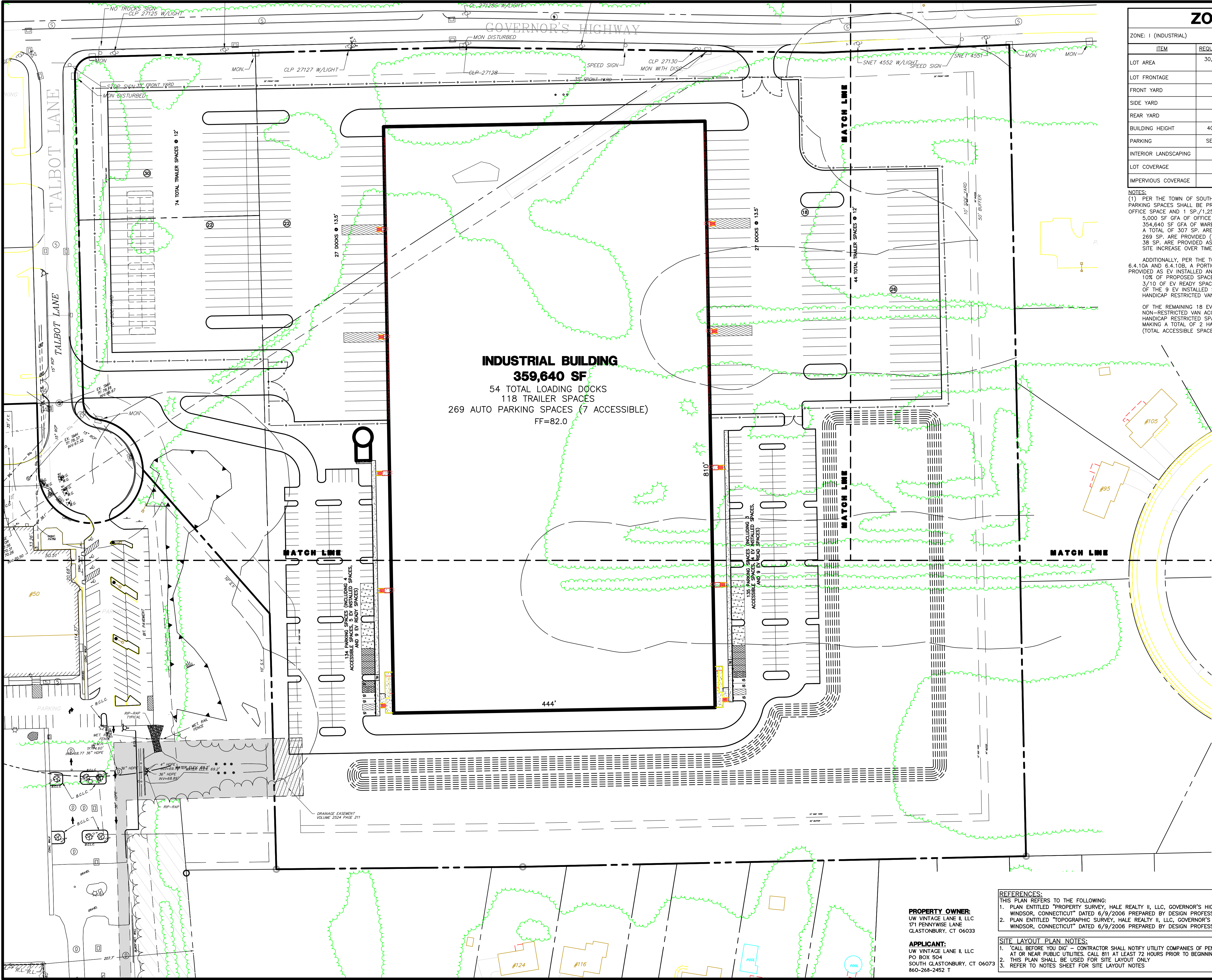
FIG. 6

Sheet 6 of 7



LANGAN Langan CT, Inc. 555 Long Wharf Drive New Haven, CT 06511 T: 203.562.5771 F: 203.789.6142 www.Langan.com	Project 475 GOVERNOR'S HWY SOUTH WINDSORCONNECTICUT	Drawing Title 2023 BUILD TRAFFIC VOLUME	Project No. 140236601	Drawing No. FIG. 7 Sheet 7 of 7
			Date 07/01/2021	
			Drawn By MS	
			Checked By CJM	

Appendix A
Overall Site Plan



INDUSTRIAL BUILDING
359,640 SF
54 TOTAL LOADING DOCKS
118 TRAILER SPACES
269 AUTO PARKING SPACES (7 ACCESSIBLE)
FF=82.0

PROPERTY OWNER:
UW VINTAGE LANE II, LLC
171 PENNYWISE LANE
GLASTONBURY, CT 06033

APPLICANT:
UW VINTAGE LANE II, LLC
PO BOX 504
SOUTH GLASTONBURY, CT 06073
860-268-2452 T

- REFERENCES:**
THIS PLAN REFERS TO THE FOLLOWING:
1. PLAN ENTITLED "PROPERTY SURVEY, HALE REALTY II, LLC, GOVERNOR'S HIGHWAY, SOUTH WINDSOR, CONNECTICUT" DATED 6/9/2006 PREPARED BY DESIGN PROFESSIONALS, INC.
2. PLAN ENTITLED "TOPOGRAPHIC SURVEY, HALE REALTY II, LLC, GOVERNOR'S HIGHWAY, SOUTH WINDSOR, CONNECTICUT" DATED 6/9/2006 PREPARED BY DESIGN PROFESSIONALS, INC.
- SITE LAYOUT PLAN NOTES:**
1. "CALL BEFORE YOU DIG" - CONTRACTOR SHALL NOTIFY UTILITY COMPANIES OF PENDING EXCAVATION AT OR NEAR PUBLIC UTILITIES. CALL 811 AT LEAST 72 HOURS PRIOR TO BEGINNING EXCAVATION.
2. THIS PLAN SHALL BE USED FOR SITE LAYOUT ONLY.
3. REFER TO NOTES SHEET FOR SITE LAYOUT NOTES

ZONING TABLE			
ZONE: I (INDUSTRIAL)			
ITEM	REQUIRED/ ALLOWED	EXISTING	PROPOSED
LOT AREA	30,000 SF (0.69 AC)	30.37 AC	30.37 AC
LOT FRONTAGE	100'	1,041.7'	1,041.7'
FRONT YARD	35'	N/A	96.9'
SIDE YARD	10'	N/A	167.6'
REAR YARD	25'	N/A	N/A
BUILDING HEIGHT	40'/2 STORIES	N/A	1 STORY/ <40'
PARKING	SEE BELOW (1)	N/A	269 (1)
INTERIOR LANDSCAPING	10%	N/A	10.0%
LOT COVERAGE	50%	N/A	27.2%
IMPERVIOUS COVERAGE	65%	0.4%	57.5%

NOTES:
(1) PER THE TOWN OF SOUTH WINDSOR ZONING REGULATIONS TABLE 6.4.3B, PARKING SPACES SHALL BE PROVIDED AT A RATIO OF 4.5 SP/1,000 SF GFA FOR OFFICE SPACE AND 1 SP/1,250 SF GFA FOR WAREHOUSE SPACE.
5,000 SF GFA OF OFFICE / 1,000 SF = 5*4.5 SP. = 22.5 SP. REQUIRED
354,640 SF GFA OF WAREHOUSE / 1,250 SF = 283.7 SP. REQUIRED
A TOTAL OF 307 SP. ARE REQUIRED FOR THIS DEVELOPMENT.
269 SP. ARE PROVIDED (77 HANDICAP SPACES PLUS 262 CONVENTIONAL SPACES)
38 SP. ARE PROVIDED AS RESERVE PARKING SHOULD THE PARKING DEMAND ON SITE INCREASE OVER TIME.
ADDITIONALLY, PER THE TOWN OF SOUTH WINDSOR ZONING REGULATIONS TABLES 6.4.10A AND 6.4.10B, A PORTION OF THE PASSENGER VEHICLE PARKING SPACES ARE PROVIDED AS EV INSTALLED AND EV READY.
10% OF PROPOSED SPACES = 27 EV READY SPACES.
3/10 OF EV READY SPACES = 9 EV INSTALLED SPACES.
OF THE 9 EV INSTALLED SPACES, 1 IS VAN ACCESSIBLE AND 1 IS HANDICAP RESTRICTED VAN ACCESSIBLE.
OF THE REMAINING 18 EV READY SPACES, THE 1 INSTALLED NON-RESTRICTED VAN ACCESSIBLE SPACE WOULD BE CONVERTED INTO A HANDICAP RESTRICTED SPACE IF DEEMED REQUIRED BY LOCAL REGULATIONS, MAKING A TOTAL OF 2 HANDICAP RESTRICTED EV VAN ACCESSIBLE SPACES (TOTAL ACCESSIBLE SPACES WOULD THEN INCREASE TO 8 SPACES).

OVERALL SITE PLAN

SCALE: 0 30' 60' 120'

T = 60'

SHEET 2 OF 2

25 TALBOT LANE

SITE PLAN APPLICATION

5 & 25 TALBOT LANE & 425 & 551 GOVERNOR'S HIGHWAY

SOUTH WINDSOR, CONNECTICUT

GIS Nos. 88900005, 88900025, 36900475, 36900551

PREPARED FOR:

UW Vintage Lane II, LLC

PO Box 504

Glastonbury, CT 06073

860-268-2452 T

DESIGN PROFESSIONALS

CIVIL & TRAFFIC ENGINEERS / LAND SURVEYORS PLANNERS / LANDSCAPE ARCHITECTS

21 EPHREY DRIVE

P.O. BOX 167

SOUTH WINDSOR, CT 06074

860-268-8727 F

www.designprofessionals.com

Appendix B

Capacity Analysis – 2021 Existing Traffic Conditions

2021 Existing Weekday A.M.

1: John Fitch Blvd./US-5 & Governor's Hwy.
Lanes, Volumes, Timings

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	12	13	79	19	50	37	659	88	34	588	13
Future Volume (vph)	9	12	13	79	19	50	37	659	88	34	588	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	260		280	260		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.949			0.955				0.850		0.997	
Flt Protected		0.987			0.974		0.950			0.950		
Satd. Flow (prot)	0	1745	0	0	1733	0	1770	3539	1583	1770	3529	0
Flt Permitted		0.913			0.813		0.323			0.950		
Satd. Flow (perm)	0	1614	0	0	1446	0	602	3539	1583	1770	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			28				96			3
Link Speed (mph)		30			30			50				30
Link Distance (ft)		1034			2473			2927				1619
Travel Time (s)		23.5			56.2			39.9				36.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	13	14	86	21	54	40	716	96	37	639	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	161	0	40	716	96	37	653	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Prot	Prot	NA	
Protected Phases		4			8		5	2	2	1	6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		6.0	15.0	15.0	6.0	15.0	
Minimum Split (s)	23.9	23.9		23.9	23.9		18.0	24.0	24.0	18.0	41.0	
Total Split (s)	31.0	31.0		31.0	31.0		18.0	41.0	41.0	18.0	41.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		20.0%	45.6%	45.6%	20.0%	45.6%	
Maximum Green (s)	25.1	25.1		25.1	25.1		13.0	35.0	35.0	13.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	5.0	5.0	3.0	5.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.0	1.0	1.0	2.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.9			5.9		5.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None		C-Max	Max	Max	C-Max	Max	
Walk Time (s)												7.0

1: John Fitch Blvd./US-5 & Governor's Hwy.

Lanes, Volumes, Timings

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												14.0
Pedestrian Calls (#/hr)												0
Act Effct Green (s)		13.7			13.7		60.4	35.0	35.0	24.4	35.0	
Actuated g/C Ratio		0.15			0.15		0.67	0.39	0.39	0.27	0.39	
v/c Ratio		0.14			0.66		0.06	0.52	0.14	0.08	0.48	
Control Delay		22.7			41.9		4.8	22.7	4.5	27.7	21.9	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		22.7			41.9		4.8	22.7	4.5	27.7	21.9	
LOS		C			D		A	C	A	C	C	
Approach Delay		22.7			41.9			19.9			22.3	
Approach LOS		C			D			B			C	
Queue Length 50th (ft)		11			72		5	161	0	16	143	
Queue Length 95th (ft)		35			127		17	214	30	43	192	
Internal Link Dist (ft)		954			2393			2847			1539	
Turn Bay Length (ft)							260		280	260		
Base Capacity (vph)		460			423		720	1376	674	479	1374	
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		0.08			0.38		0.06	0.52	0.14	0.08	0.48	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 16 (18%), Referenced to phase 1:SBL and 5:NBL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 22.9

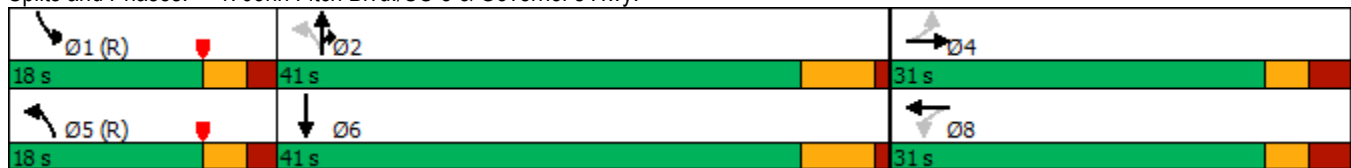
Intersection LOS: C

Intersection Capacity Utilization 52.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: John Fitch Blvd./US-5 & Governor's Hwy.



2: Talbot Ln. & Governor's Hwy. /Governors Hwy. Lanes, Volumes, Timings

AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↘↙	
Traffic Volume (vph)	46	8	2	154	2	2
Future Volume (vph)	46	8	2	154	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.979				0.932	
Flt Protected				0.999	0.976	
Satd. Flow (prot)	1824	0	0	1861	1694	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	1824	0	0	1861	1694	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2473			3853	751	
Travel Time (s)	56.2			87.6	17.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	9	2	167	2	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	0	169	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.7%			ICU Level of Service A		
Analysis Period (min)	15					

2: Talbot Ln. & Governor's Hwy. /Governors Hwy.
HCM 6th TWSC

AM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	8	2	154	2	2
Future Vol, veh/h	46	8	2	154	2	2
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	9	2	167	2	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	59	0	226	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	171	-
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	-	-	1545	-	762	1012
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	859	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1545	-	761	1012
Mov Cap-2 Maneuver	-	-	-	-	761	-
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	859	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		9.2	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	869	-	-	1545	-	
HCM Lane V/C Ratio	0.005	-	-	0.001	-	
HCM Control Delay (s)	9.2	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

3: Podunk Cir. /Governors Hwy. & Elington Road Lanes, Volumes, Timings

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	2	277	1	0	300	126	56	1	2	2	0	0
Future Volume (vph)	2	277	1	0	300	126	56	1	2	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		240	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.996				
Flt Protected								0.955			0.950	
Satd. Flow (prot)	0	1863	0	0	1863	1583	0	1772	0	0	1770	0
Flt Permitted		0.998						0.955				
Satd. Flow (perm)	0	1859	0	0	1863	1583	0	1772	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						137		2				
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		1820			1725			3853			188	
Travel Time (s)		31.0			29.4			105.1			5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	301	1	0	326	137	61	1	2	2	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	304	0	0	326	137	0	64	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Split	NA		Perm	NA	
Protected Phases		2			6		4	4			8	
Permitted Phases	2			6		6				8		
Detector Phase	2	2		6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	29.0	29.0		26.2	26.2	26.2	15.0	15.0		10.0	10.0	
Total Split (s)	45.0	45.0		45.0	45.0	45.0	15.0	15.0		10.0	10.0	
Total Split (%)	64.3%	64.3%		64.3%	64.3%	64.3%	21.4%	21.4%		14.3%	14.3%	
Maximum Green (s)	36.8	36.8		36.8	36.8	36.8	8.9	8.9		6.0	6.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	3.7	3.7		3.0	3.0	
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	2.4	2.4		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		8.2			8.2	8.2		6.1			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)							1.0	1.0				

3: Podunk Cir. /Governors Hwy. & Elington Road Lanes, Volumes, Timings

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Flash Dont Walk (s)							10.0	10.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)		29.7			29.7	29.7		6.4			5.3	
Actuated g/C Ratio		0.71			0.71	0.71		0.15			0.13	
v/c Ratio		0.23			0.25	0.12		0.24			0.01	
Control Delay		7.2			7.3	2.5		20.5			21.0	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		7.2			7.3	2.5		20.5			21.0	
LOS		A			A	A		C			C	
Approach Delay		7.2			5.9			20.5			21.0	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		36			40	0		16			1	
Queue Length 95th (ft)		118			127	25		46			6	
Internal Link Dist (ft)		1740			1645			3773			108	
Turn Bay Length (ft)						240						
Base Capacity (vph)		1578			1581	1364		396			280	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.19			0.21	0.10		0.16			0.01	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 42.1

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.25

Intersection Signal Delay: 7.5

Intersection LOS: A

Intersection Capacity Utilization 43.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Podunk Cir. /Governors Hwy. & Elington Road

 Ø2	 Ø4	 Ø8
45 s	15 s	10 s
 Ø6		
45 s		

2021 Existing Weekday P.M.

1: John Fitch Blvd./US-5 & Governor's Hwy.
Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	14	15	138	14	49	5	629	77	57	894	86
Future Volume (vph)	6	14	15	138	14	49	5	629	77	57	894	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	260		280	260		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.942			0.967				0.850		0.987	
Flt Protected		0.992			0.967		0.950			0.950		
Satd. Flow (prot)	0	1741	0	0	1742	0	1770	3539	1583	1770	3493	0
Flt Permitted		0.945			0.772		0.133			0.950		
Satd. Flow (perm)	0	1658	0	0	1391	0	248	3539	1583	1770	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			18				96		13	
Link Speed (mph)		30			30			50			30	
Link Distance (ft)		1034			2473			2927			1619	
Travel Time (s)		23.5			56.2			39.9			36.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	6	15	16	147	15	52	5	669	82	61	951	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	214	0	5	669	82	61	1042	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Prot	Prot	NA	
Protected Phases		4			8		5	2	2	1	6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		6.0	15.0	15.0	6.0	15.0	
Minimum Split (s)	23.9	23.9		23.9	23.9		18.0	24.0	24.0	18.0	41.0	
Total Split (s)	31.0	31.0		31.0	31.0		18.0	41.0	41.0	18.0	41.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		20.0%	45.6%	45.6%	20.0%	45.6%	
Maximum Green (s)	25.1	25.1		25.1	25.1		13.0	35.0	35.0	13.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	5.0	5.0	3.0	5.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.0	1.0	1.0	2.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.9			5.9		5.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None		C-Max	Max	Max	C-Max	Max	
Walk Time (s)												7.0

1: John Fitch Blvd./US-5 & Governor's Hwy.

Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												14.0
Pedestrian Calls (#/hr)												0
Act Effct Green (s)		17.9			17.9		56.2	35.0	35.0	20.2	35.0	
Actuated g/C Ratio		0.20			0.20		0.62	0.39	0.39	0.22	0.39	
v/c Ratio		0.11			0.74		0.01	0.49	0.12	0.15	0.76	
Control Delay		18.2			45.1		6.6	22.2	3.5	32.4	28.1	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		18.2			45.1		6.6	22.2	3.5	32.4	28.1	
LOS		B			D		A	C	A	C	C	
Approach Delay		18.2			45.1			20.1			28.3	
Approach LOS		B			D			C			C	
Queue Length 50th (ft)		10			105		1	147	0	28	262	
Queue Length 95th (ft)		32			166		5	198	22	68	340	
Internal Link Dist (ft)		954			2393			2847			1539	
Turn Bay Length (ft)							260		280	260		
Base Capacity (vph)		473			400		495	1376	674	396	1366	
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		0.08			0.54		0.01	0.49	0.12	0.15	0.76	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 16 (18%), Referenced to phase 1:SBL and 5:NBL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 26.9

Intersection LOS: C

Intersection Capacity Utilization 64.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: John Fitch Blvd./US-5 & Governor's Hwy.

 Ø1 (R)	 Ø2	 Ø4
18 s	41 s	31 s
 Ø5 (R)	 Ø6	 Ø8
18 s	41 s	31 s

2: Talbot Ln. & Governor's Hwy. /Governors Hwy. Lanes, Volumes, Timings

PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↘↙	
Traffic Volume (vph)	180	4	2	83	8	3
Future Volume (vph)	180	4	2	83	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.966	
Flt Protected				0.999	0.964	
Satd. Flow (prot)	1857	0	0	1861	1735	0
Flt Permitted				0.999	0.964	
Satd. Flow (perm)	1857	0	0	1861	1735	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2473			3853	751	
Travel Time (s)	56.2			87.6	17.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	4	2	90	9	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	200	0	0	92	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 19.7%				ICU Level of Service A		
Analysis Period (min) 15						

2: Talbot Ln. & Governor's Hwy. /Governors Hwy.
HCM 6th TWSC

PM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	180	4	2	83	8	3
Future Vol, veh/h	180	4	2	83	8	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	196	4	2	90	9	3
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	200	0	292	198
Stage 1	-	-	-	-	198	-
Stage 2	-	-	-	-	94	-
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	-	-	1372	-	699	843
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	930	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1372	-	698	843
Mov Cap-2 Maneuver	-	-	-	-	698	-
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	930	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		10	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	732	-	-	1372	-	
HCM Lane V/C Ratio	0.016	-	-	0.002	-	
HCM Control Delay (s)	10	-	-	7.6	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

3: Podunk Cir. /Governors Hwy. & Elington Road Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	1	469	2	0	332	85	154	0	0	2	0	2
Future Volume (vph)	1	469	2	0	332	85	154	0	0	2	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		240	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999				0.850					0.932	
Flt Protected								0.950			0.976	
Satd. Flow (prot)	0	1861	0	0	1863	1583	0	1770	0	0	1694	0
Flt Permitted		0.999						0.950				
Satd. Flow (perm)	0	1859	0	0	1863	1583	0	1770	0	0	1736	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						111						176
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		1820			1725			3853			188	
Travel Time (s)		31.0			29.4			105.1			5.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1	499	2	0	353	90	164	0	0	2	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	502	0	0	353	90	0	164	0	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Split	NA		Perm	NA	
Protected Phases		2			6		4	4			8	
Permitted Phases	2			6		6				8		
Detector Phase	2	2		6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	29.0	29.0		26.2	26.2	26.2	15.0	15.0		10.0	10.0	
Total Split (s)	45.0	45.0		45.0	45.0	45.0	15.0	15.0		10.0	10.0	
Total Split (%)	64.3%	64.3%		64.3%	64.3%	64.3%	21.4%	21.4%		14.3%	14.3%	
Maximum Green (s)	36.8	36.8		36.8	36.8	36.8	8.9	8.9		6.0	6.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	3.7	3.7		3.0	3.0	
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	2.4	2.4		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		8.2			8.2	8.2		6.1			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)							1.0	1.0				

3: Podunk Cir. /Governors Hwy. & Elington Road Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Flash Dont Walk (s)							10.0	10.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)		22.9			22.9	22.9		8.4			5.1	
Actuated g/C Ratio		0.49			0.49	0.49		0.18			0.11	
v/c Ratio		0.56			0.39	0.11		0.52			0.01	
Control Delay		12.3			10.0	2.0		26.8			0.0	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		12.3			10.0	2.0		26.8			0.0	
LOS		B			B	A		C			A	
Approach Delay		12.3			8.4			26.8				
Approach LOS		B			A			C				
Queue Length 50th (ft)		82			52	0		33			0	
Queue Length 95th (ft)		207			135	15		#134			0	
Internal Link Dist (ft)		1740			1645			3773			108	
Turn Bay Length (ft)						240						
Base Capacity (vph)		1481			1484	1283		341			378	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.34			0.24	0.07		0.48			0.01	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 47.2

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 12.8

Intersection LOS: B

Intersection Capacity Utilization 52.6%

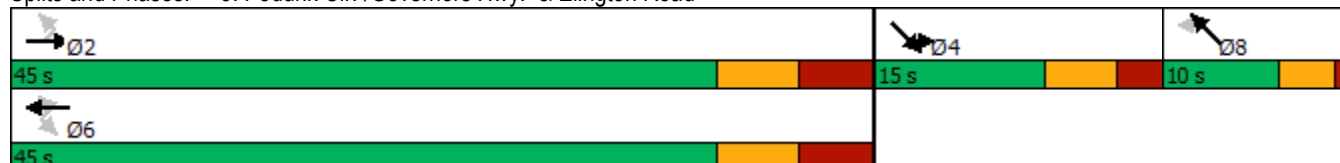
ICU Level of Service A

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Podunk Cir. /Governors Hwy. & Elington Road



Appendix C

Capacity Analysis – 2023 Background Traffic Conditions

2023 Background Weekday A.M.

1: John Fitch Blvd./US-5 & Governor's Hwy.

Lanes, Volumes, Timings

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	12	13	80	19	51	37	666	89	34	594	13
Future Volume (vph)	9	12	13	80	19	51	37	666	89	34	594	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	260		280	260		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.949			0.954				0.850		0.997	
Flt Protected		0.987			0.974		0.950			0.950		
Satd. Flow (prot)	0	1745	0	0	1731	0	1770	3539	1583	1770	3529	0
Flt Permitted		0.914			0.813		0.319			0.950		
Satd. Flow (perm)	0	1616	0	0	1445	0	594	3539	1583	1770	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			28				97			3
Link Speed (mph)		30			30			50				30
Link Distance (ft)		1034			2473			2927			1619	
Travel Time (s)		23.5			56.2			39.9			36.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	13	14	87	21	55	40	724	97	37	646	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	163	0	40	724	97	37	660	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Prot	Prot	NA	
Protected Phases		4			8		5	2	2	1	6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		6.0	15.0	15.0	6.0	15.0	
Minimum Split (s)	23.9	23.9		23.9	23.9		18.0	24.0	24.0	18.0	41.0	
Total Split (s)	31.0	31.0		31.0	31.0		18.0	41.0	41.0	18.0	41.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		20.0%	45.6%	45.6%	20.0%	45.6%	
Maximum Green (s)	25.1	25.1		25.1	25.1		13.0	35.0	35.0	13.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	5.0	5.0	3.0	5.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.0	1.0	1.0	2.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.9			5.9		5.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None		C-Max	Max	Max	C-Max	Max	
Walk Time (s)												7.0

1: John Fitch Blvd./US-5 & Governor's Hwy.

Lanes, Volumes, Timings

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												14.0
Pedestrian Calls (#/hr)												0
Act Effct Green (s)		13.9			13.9		60.2	35.0	35.0	24.2	35.0	
Actuated g/C Ratio		0.15			0.15		0.67	0.39	0.39	0.27	0.39	
v/c Ratio		0.14			0.66		0.06	0.53	0.14	0.08	0.48	
Control Delay		22.5			41.8		4.9	22.8	4.6	27.9	22.0	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		22.5			41.8		4.9	22.8	4.6	27.9	22.0	
LOS		C			D		A	C	A	C	C	
Approach Delay		22.5			41.8			20.0			22.3	
Approach LOS		C			D			B			C	
Queue Length 50th (ft)		11			73		5	163	0	16	144	
Queue Length 95th (ft)		35			128		18	217	30	44	194	
Internal Link Dist (ft)		954			2393			2847			1539	
Turn Bay Length (ft)							260		280	260		
Base Capacity (vph)		460			423		714	1376	674	476	1374	
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		0.08			0.39		0.06	0.53	0.14	0.08	0.48	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 16 (18%), Referenced to phase 1:SBL and 5:NBL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 23.0

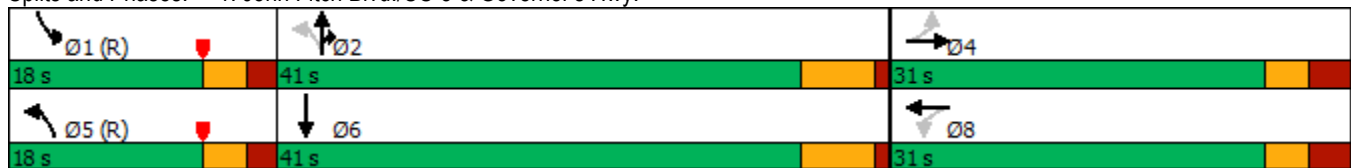
Intersection LOS: C

Intersection Capacity Utilization 52.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: John Fitch Blvd./US-5 & Governor's Hwy.



2: Talbot Ln. & Governor's Hwy. /Governors Hwy. Lanes, Volumes, Timings

AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘↗	
Traffic Volume (vph)	46	8	2	156	2	2
Future Volume (vph)	46	8	2	156	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.979				0.932	
Flt Protected				0.999	0.976	
Satd. Flow (prot)	1824	0	0	1861	1694	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	1824	0	0	1861	1694	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2473			3853	751	
Travel Time (s)	56.2			87.6	17.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	9	2	170	2	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	0	172	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.8%			ICU Level of Service A		
Analysis Period (min)	15					

2: Talbot Ln. & Governor's Hwy. /Governors Hwy.
HCM 6th TWSC

AM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	8	2	156	2	2
Future Vol, veh/h	46	8	2	156	2	2
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	9	2	170	2	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	59	0	229	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	174	-
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	-	-	1545	-	759	1012
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	856	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1545	-	758	1012
Mov Cap-2 Maneuver	-	-	-	-	758	-
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	856	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		9.2	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	867	-	-	1545	-	
HCM Lane V/C Ratio	0.005	-	-	0.001	-	
HCM Control Delay (s)	9.2	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

3: Podunk Cir. /Governors Hwy. & Elington Road Lanes, Volumes, Timings

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	2	280	1	0	303	127	57	1	2	2	0	0
Future Volume (vph)	2	280	1	0	303	127	57	1	2	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		240	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.996				
Flt Protected								0.954			0.950	
Satd. Flow (prot)	0	1863	0	0	1863	1583	0	1770	0	0	1770	0
Flt Permitted		0.998						0.954				
Satd. Flow (perm)	0	1859	0	0	1863	1583	0	1770	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						138		2				
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		1820			1725			3853			188	
Travel Time (s)		31.0			29.4			105.1			5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	304	1	0	329	138	62	1	2	2	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	307	0	0	329	138	0	65	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Split	NA		Perm	NA	
Protected Phases		2			6		4	4			8	
Permitted Phases	2			6		6				8		
Detector Phase	2	2		6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	29.0	29.0		26.2	26.2	26.2	15.0	15.0		10.0	10.0	
Total Split (s)	45.0	45.0		45.0	45.0	45.0	15.0	15.0		10.0	10.0	
Total Split (%)	64.3%	64.3%		64.3%	64.3%	64.3%	21.4%	21.4%		14.3%	14.3%	
Maximum Green (s)	36.8	36.8		36.8	36.8	36.8	8.9	8.9		6.0	6.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	3.7	3.7		3.0	3.0	
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	2.4	2.4		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		8.2			8.2	8.2		6.1			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)							1.0	1.0				

3: Podunk Cir. /Governors Hwy. & Elington Road Lanes, Volumes, Timings

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Flash Dont Walk (s)							10.0	10.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)		29.7			29.7	29.7		6.4			5.3	
Actuated g/C Ratio		0.71			0.71	0.71		0.15			0.13	
v/c Ratio		0.23			0.25	0.12		0.24			0.01	
Control Delay		7.2			7.3	2.5		20.5			21.0	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		7.2			7.3	2.5		20.5			21.0	
LOS		A			A	A		C			C	
Approach Delay		7.2			5.9			20.5			21.0	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		37			40	0		16			1	
Queue Length 95th (ft)		119			128	25		46			6	
Internal Link Dist (ft)		1740			1645			3773			108	
Turn Bay Length (ft)						240						
Base Capacity (vph)		1578			1581	1364		395			279	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.19			0.21	0.10		0.16			0.01	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 42.1

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.25

Intersection Signal Delay: 7.6

Intersection LOS: A

Intersection Capacity Utilization 43.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Podunk Cir. /Governors Hwy. & Elington Road

 Ø2	 Ø4	 Ø8
45 s	15 s	10 s
 Ø6		
45 s		

2023 Background Weekday P.M.

1: John Fitch Blvd./US-5 & Governor's Hwy.

Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	14	15	139	14	49	5	635	78	58	903	87
Future Volume (vph)	6	14	15	139	14	49	5	635	78	58	903	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	260		280	260		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.942			0.967				0.850		0.987	
Flt Protected		0.992			0.967		0.950			0.950		
Satd. Flow (prot)	0	1741	0	0	1742	0	1770	3539	1583	1770	3493	0
Flt Permitted		0.944			0.771		0.128			0.950		
Satd. Flow (perm)	0	1656	0	0	1389	0	238	3539	1583	1770	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			18				96		13	
Link Speed (mph)		30			30			50			30	
Link Distance (ft)		1034			2473			2927			1619	
Travel Time (s)		23.5			56.2			39.9			36.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	6	15	16	148	15	52	5	676	83	62	961	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	215	0	5	676	83	62	1054	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Prot	Prot	NA	
Protected Phases		4			8		5	2	2	1	6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		6.0	15.0	15.0	6.0	15.0	
Minimum Split (s)	23.9	23.9		23.9	23.9		18.0	24.0	24.0	18.0	41.0	
Total Split (s)	31.0	31.0		31.0	31.0		18.0	41.0	41.0	18.0	41.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		20.0%	45.6%	45.6%	20.0%	45.6%	
Maximum Green (s)	25.1	25.1		25.1	25.1		13.0	35.0	35.0	13.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	5.0	5.0	3.0	5.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.0	1.0	1.0	2.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.9			5.9		5.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None		C-Max	Max	Max	C-Max	Max	
Walk Time (s)												7.0

1: John Fitch Blvd./US-5 & Governor's Hwy.

Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												14.0
Pedestrian Calls (#/hr)												0
Act Effct Green (s)		18.0			18.0		56.1	35.0	35.0	20.1	35.0	
Actuated g/C Ratio		0.20			0.20		0.62	0.39	0.39	0.22	0.39	
v/c Ratio		0.11			0.74		0.01	0.49	0.12	0.16	0.77	
Control Delay		18.1			45.1		6.6	22.3	3.6	32.6	28.4	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		18.1			45.1		6.6	22.3	3.6	32.6	28.4	
LOS		B			D		A	C	A	C	C	
Approach Delay		18.1			45.1			20.2			28.6	
Approach LOS		B			D			C			C	
Queue Length 50th (ft)		10			106		1	149	0	29	266	
Queue Length 95th (ft)		32			167		5	201	23	69	346	
Internal Link Dist (ft)		954			2393			2847			1539	
Turn Bay Length (ft)							260		280	260		
Base Capacity (vph)		473			400		490	1376	674	394	1366	
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		0.08			0.54		0.01	0.49	0.12	0.16	0.77	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 16 (18%), Referenced to phase 1:SBL and 5:NBL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 27.1

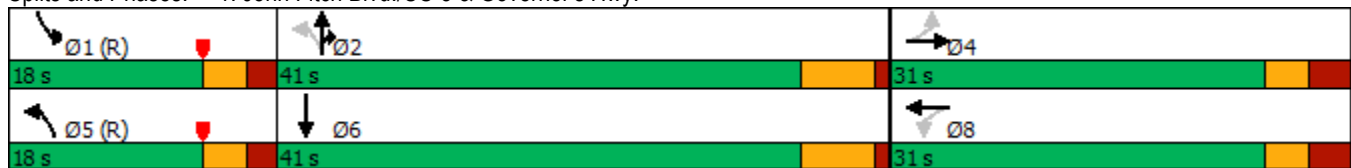
Intersection LOS: C

Intersection Capacity Utilization 64.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: John Fitch Blvd./US-5 & Governor's Hwy.



2: Talbot Ln. & Governor's Hwy. /Governors Hwy. Lanes, Volumes, Timings

PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↘↙	
Traffic Volume (vph)	182	4	2	84	8	3
Future Volume (vph)	182	4	2	84	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.966	
Flt Protected				0.999	0.964	
Satd. Flow (prot)	1857	0	0	1861	1735	0
Flt Permitted				0.999	0.964	
Satd. Flow (perm)	1857	0	0	1861	1735	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2473			3853	751	
Travel Time (s)	56.2			87.6	17.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	198	4	2	91	9	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	202	0	0	93	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.8%			ICU Level of Service A		
Analysis Period (min)	15					

2: Talbot Ln. & Governor's Hwy. /Governors Hwy.
HCM 6th TWSC

PM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	182	4	2	84	8	3
Future Vol, veh/h	182	4	2	84	8	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	198	4	2	91	9	3
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	202	0	295	200
Stage 1	-	-	-	-	200	-
Stage 2	-	-	-	-	95	-
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	-	-	1370	-	696	841
Stage 1	-	-	-	-	834	-
Stage 2	-	-	-	-	929	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1370	-	695	841
Mov Cap-2 Maneuver	-	-	-	-	695	-
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	929	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		10	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	730	-	-	1370	-	
HCM Lane V/C Ratio	0.016	-	-	0.002	-	
HCM Control Delay (s)	10	-	-	7.6	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

3: Podunk Cir. /Governors Hwy. & Elington Road Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	1	474	2	0	335	86	156	0	0	2	0	2
Future Volume (vph)	1	474	2	0	335	86	156	0	0	2	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		240	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999				0.850					0.932	
Flt Protected								0.950			0.976	
Satd. Flow (prot)	0	1861	0	0	1863	1583	0	1770	0	0	1694	0
Flt Permitted		0.999						0.950				
Satd. Flow (perm)	0	1859	0	0	1863	1583	0	1770	0	0	1736	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						111						176
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		1820			1725			3853			188	
Travel Time (s)		31.0			29.4			105.1			5.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1	504	2	0	356	91	166	0	0	2	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	507	0	0	356	91	0	166	0	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Split	NA		Perm	NA	
Protected Phases		2			6		4	4			8	
Permitted Phases	2			6		6				8		
Detector Phase	2	2		6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	29.0	29.0		26.2	26.2	26.2	15.0	15.0		10.0	10.0	
Total Split (s)	45.0	45.0		45.0	45.0	45.0	15.0	15.0		10.0	10.0	
Total Split (%)	64.3%	64.3%		64.3%	64.3%	64.3%	21.4%	21.4%		14.3%	14.3%	
Maximum Green (s)	36.8	36.8		36.8	36.8	36.8	8.9	8.9		6.0	6.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	3.7	3.7		3.0	3.0	
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	2.4	2.4		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		8.2			8.2	8.2		6.1			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)							1.0	1.0				

3: Podunk Cir. /Governors Hwy. & Elington Road Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Flash Dont Walk (s)							10.0	10.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)		23.1			23.1	23.1		8.4			5.1	
Actuated g/C Ratio		0.49			0.49	0.49		0.18			0.11	
v/c Ratio		0.56			0.39	0.11		0.53			0.01	
Control Delay		12.2			10.0	2.0		27.3			0.0	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		12.2			10.0	2.0		27.3			0.0	
LOS		B			B	A		C			A	
Approach Delay		12.2			8.4			27.3				
Approach LOS		B			A			C				
Queue Length 50th (ft)		83			53	0		34			0	
Queue Length 95th (ft)		209			136	15		#136			0	
Internal Link Dist (ft)		1740			1645			3773			108	
Turn Bay Length (ft)						240						
Base Capacity (vph)		1470			1473	1274		338			377	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.34			0.24	0.07		0.49			0.01	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 47.5

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 12.9

Intersection LOS: B

Intersection Capacity Utilization 53.0%

ICU Level of Service A

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Podunk Cir. /Governors Hwy. & Elington Road

 Ø2	 Ø4	 Ø8
45 s	15 s	10 s
 Ø6		
45 s		

Appendix D

Capacity Analysis – 2023 Build Traffic Conditions

2023 Build Weekday A.M.

1: John Fitch Blvd./US-5 & Governor's Hwy.

Lanes, Volumes, Timings

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	12	13	149	19	89	37	666	158	73	594	13
Future Volume (vph)	9	12	13	149	19	89	37	666	158	73	594	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	260		280	260		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.949			0.953				0.850		0.997	
Flt Protected		0.987			0.972		0.950			0.950		
Satd. Flow (prot)	0	1745	0	0	1725	0	1770	3539	1583	1770	3529	0
Flt Permitted		0.909			0.800		0.319			0.950		
Satd. Flow (perm)	0	1607	0	0	1420	0	594	3539	1583	1770	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			29				172			3
Link Speed (mph)		30			30			50			30	
Link Distance (ft)		1034			2473			2927			1619	
Travel Time (s)		23.5			56.2			39.9			36.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	13	14	162	21	97	40	724	172	79	646	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	280	0	40	724	172	79	660	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Prot	Prot	NA	
Protected Phases		4			8		5	2	2	1	6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		6.0	15.0	15.0	6.0	15.0	
Minimum Split (s)	23.9	23.9		23.9	23.9		18.0	24.0	24.0	18.0	41.0	
Total Split (s)	31.0	31.0		31.0	31.0		18.0	41.0	41.0	18.0	41.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		20.0%	45.6%	45.6%	20.0%	45.6%	
Maximum Green (s)	25.1	25.1		25.1	25.1		13.0	35.0	35.0	13.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	5.0	5.0	3.0	5.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.0	1.0	1.0	2.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.9			5.9		5.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None		C-Max	Max	Max	C-Max	Max	
Walk Time (s)												7.0

1: John Fitch Blvd./US-5 & Governor's Hwy.

Lanes, Volumes, Timings

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												14.0
Pedestrian Calls (#/hr)												0
Act Effct Green (s)		20.4			20.4		53.7	35.0	35.0	17.7	35.0	
Actuated g/C Ratio		0.23			0.23		0.60	0.39	0.39	0.20	0.39	
v/c Ratio		0.10			0.82		0.07	0.53	0.24	0.23	0.48	
Control Delay		18.4			48.0		7.3	22.8	3.9	34.9	22.0	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		18.4			48.0		7.3	22.8	3.9	34.9	22.0	
LOS		B			D		A	C	A	C	C	
Approach Delay		18.4			48.0			18.7			23.4	
Approach LOS		B			D			B			C	
Queue Length 50th (ft)		10			135		7	163	0	39	144	
Queue Length 95th (ft)		33			217		21	217	38	83	194	
Internal Link Dist (ft)		954			2393			2847			1539	
Turn Bay Length (ft)							260		280	260		
Base Capacity (vph)		458			416		586	1376	720	348	1374	
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		0.08			0.67		0.07	0.53	0.24	0.23	0.48	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 16 (18%), Referenced to phase 1:SBL and 5:NBL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 24.6

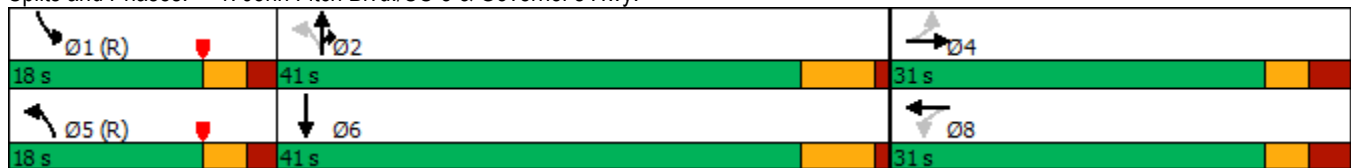
Intersection LOS: C

Intersection Capacity Utilization 58.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: John Fitch Blvd./US-5 & Governor's Hwy.



2: Talbot Ln. & Governor's Hwy. /Governors Hwy. Lanes, Volumes, Timings

AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	↘
Traffic Volume (vph)	46	116	33	156	109	32
Future Volume (vph)	46	116	33	156	109	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.903				0.969	
Flt Protected				0.991	0.963	
Satd. Flow (prot)	1682	0	0	1846	1738	0
Flt Permitted				0.991	0.963	
Satd. Flow (perm)	1682	0	0	1846	1738	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2473			3853	751	
Travel Time (s)	56.2			87.6	17.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	126	36	170	118	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	176	0	0	206	153	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	37.6%			ICU Level of Service A		
Analysis Period (min)	15					

2: Talbot Ln. & Governor's Hwy. /Governors Hwy.
HCM 6th TWSC

AM Peak Hour

Intersection						
Int Delay, s/veh	3.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	116	33	156	109	32
Future Vol, veh/h	46	116	33	156	109	32
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	126	36	170	118	35
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	176	0	355	113
Stage 1	-	-	-	-	113	-
Stage 2	-	-	-	-	242	-
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	-	-	1400	-	643	940
Stage 1	-	-	-	-	912	-
Stage 2	-	-	-	-	798	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1400	-	625	940
Mov Cap-2 Maneuver	-	-	-	-	625	-
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	798	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	1.3		11.9		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	676	-	-	1400	-	
HCM Lane V/C Ratio	0.227	-	-	0.026	-	
HCM Control Delay (s)	11.9	-	-	7.6	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-	

3: Podunk Cir. /Governors Hwy. & Elington Road Lanes, Volumes, Timings

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	20	280	1	0	303	139	69	1	20	2	0	0
Future Volume (vph)	20	280	1	0	303	139	69	1	20	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		240	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.970				
Flt Protected		0.997						0.963			0.950	
Satd. Flow (prot)	0	1857	0	0	1863	1583	0	1740	0	0	1770	0
Flt Permitted		0.960						0.963				
Satd. Flow (perm)	0	1788	0	0	1863	1583	0	1740	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						151		17				
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		1820			1725			3853			188	
Travel Time (s)		31.0			29.4			105.1			5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	304	1	0	329	151	75	1	22	2	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	327	0	0	329	151	0	98	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Split	NA		Perm	NA	
Protected Phases		2			6		4	4			8	
Permitted Phases	2			6		6				8		
Detector Phase	2	2		6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	29.0	29.0		26.2	26.2	26.2	15.0	15.0		10.0	10.0	
Total Split (s)	45.0	45.0		45.0	45.0	45.0	15.0	15.0		10.0	10.0	
Total Split (%)	64.3%	64.3%		64.3%	64.3%	64.3%	21.4%	21.4%		14.3%	14.3%	
Maximum Green (s)	36.8	36.8		36.8	36.8	36.8	8.9	8.9		6.0	6.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	3.7	3.7		3.0	3.0	
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	2.4	2.4		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		8.2			8.2	8.2		6.1			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)							1.0	1.0				

3: Podunk Cir. /Governors Hwy. & Elington Road Lanes, Volumes, Timings

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Flash Dont Walk (s)							10.0	10.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)		25.7			25.7	25.7		6.7			5.2	
Actuated g/C Ratio		0.59			0.59	0.59		0.16			0.12	
v/c Ratio		0.31			0.30	0.15		0.35			0.01	
Control Delay		9.0			8.8	2.6		19.1			20.0	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		9.0			8.8	2.6		19.1			20.0	
LOS		A			A	A		B			B	
Approach Delay		9.0			6.9			19.1			20.0	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		41			41	0		19			1	
Queue Length 95th (ft)		131			130	27		59			6	
Internal Link Dist (ft)		1740			1645			3773			108	
Turn Bay Length (ft)						240						
Base Capacity (vph)		1506			1570	1357		384			267	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.22			0.21	0.11		0.26			0.01	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 43.2

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.35

Intersection Signal Delay: 9.0

Intersection LOS: A

Intersection Capacity Utilization 47.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Podunk Cir. /Governors Hwy. & Elington Road

 Ø2	 Ø4	 Ø8
45 s	15 s	10 s
 Ø6		
45 s		

2023 Build Weekday P.M.

1: John Fitch Blvd./US-5 & Governor's Hwy.
Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	14	15	180	14	72	5	635	165	105	903	87
Future Volume (vph)	6	14	15	180	14	72	5	635	165	105	903	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	260		280	260		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.942			0.963				0.850		0.987	
Flt Protected		0.992			0.967		0.950			0.950		
Satd. Flow (prot)	0	1741	0	0	1735	0	1770	3539	1583	1770	3493	0
Flt Permitted		0.942			0.775		0.128			0.950		
Satd. Flow (perm)	0	1653	0	0	1390	0	238	3539	1583	1770	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			21				176		13	
Link Speed (mph)		30			30			50			30	
Link Distance (ft)		1034			2473			2927			1619	
Travel Time (s)		23.5			56.2			39.9			36.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	6	15	16	191	15	77	5	676	176	112	961	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	283	0	5	676	176	112	1054	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Prot	Prot	NA	
Protected Phases		4			8		5	2	2	1	6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		6.0	15.0	15.0	6.0	15.0	
Minimum Split (s)	23.9	23.9		23.9	23.9		18.0	24.0	24.0	18.0	41.0	
Total Split (s)	31.0	31.0		31.0	31.0		18.0	41.0	41.0	18.0	41.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		20.0%	45.6%	45.6%	20.0%	45.6%	
Maximum Green (s)	25.1	25.1		25.1	25.1		13.0	35.0	35.0	13.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	5.0	5.0	3.0	5.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.0	1.0	1.0	2.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.9			5.9		5.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None		C-Max	Max	Max	C-Max	Max	
Walk Time (s)												7.0

1: John Fitch Blvd./US-5 & Governor's Hwy.

Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												14.0
Pedestrian Calls (#/hr)												0
Act Effct Green (s)		21.1			21.1		53.0	35.0	35.0	17.0	35.0	
Actuated g/C Ratio		0.23			0.23		0.59	0.39	0.39	0.19	0.39	
v/c Ratio		0.09			0.83		0.01	0.49	0.24	0.34	0.77	
Control Delay		17.0			50.1		7.4	22.3	3.9	37.0	28.4	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		17.0			50.1		7.4	22.3	3.9	37.0	28.4	
LOS		B			D		A	C	A	D	C	
Approach Delay		17.0			50.1			18.4			29.2	
Approach LOS		B			D			B			C	
Queue Length 50th (ft)		9			139		1	149	0	57	266	
Queue Length 95th (ft)		32			#234		5	201	39	111	346	
Internal Link Dist (ft)		954			2393			2847			1539	
Turn Bay Length (ft)							260		280	260		
Base Capacity (vph)		472			402		428	1376	723	333	1366	
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		0.08			0.70		0.01	0.49	0.24	0.34	0.77	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 16 (18%), Referenced to phase 1:SBL and 5:NBL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 27.6

Intersection LOS: C

Intersection Capacity Utilization 68.6%

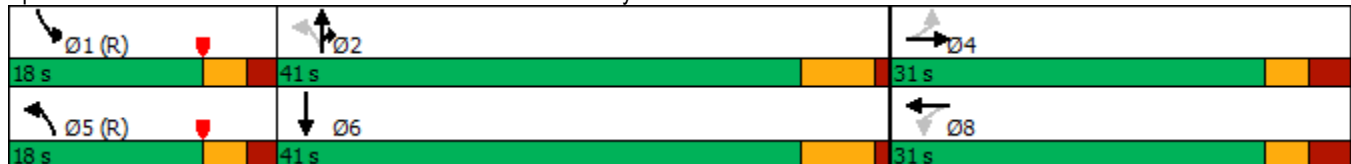
ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: John Fitch Blvd./US-5 & Governor's Hwy.



2: Talbot Ln. & Governor's Hwy. /Governors Hwy. Lanes, Volumes, Timings

PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↘↙	
Traffic Volume (vph)	182	137	41	84	71	22
Future Volume (vph)	182	137	41	84	71	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.942				0.968	
Flt Protected				0.984	0.963	
Satd. Flow (prot)	1755	0	0	1833	1736	0
Flt Permitted				0.984	0.963	
Satd. Flow (perm)	1755	0	0	1833	1736	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2473			3853	751	
Travel Time (s)	56.2			87.6	17.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	198	149	45	91	77	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	347	0	0	136	101	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	39.9%			ICU Level of Service A		
Analysis Period (min)	15					

2: Talbot Ln. & Governor's Hwy. /Governors Hwy.
HCM 6th TWSC

PM Peak Hour

Intersection						
Int Delay, s/veh	2.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	182	137	41	84	71	22
Future Vol, veh/h	182	137	41	84	71	22
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	198	149	45	91	77	24
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	347	0	454	273
Stage 1	-	-	-	-	273	-
Stage 2	-	-	-	-	181	-
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	-	-	1212	-	564	766
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	850	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1212	-	542	766
Mov Cap-2 Maneuver	-	-	-	-	542	-
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	850	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.7		12.5	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	582	-	-	1212	-	
HCM Lane V/C Ratio	0.174	-	-	0.037	-	
HCM Control Delay (s)	12.5	-	-	8.1	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-	

3: Podunk Cir. /Governors Hwy. & Elington Road Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	25	474	2	0	335	102	163	0	11	2	0	2
Future Volume (vph)	25	474	2	0	335	102	163	0	11	2	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		240	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999				0.850		0.991			0.932	
Flt Protected		0.997						0.955			0.976	
Satd. Flow (prot)	0	1855	0	0	1863	1583	0	1763	0	0	1694	0
Flt Permitted		0.966						0.955				
Satd. Flow (perm)	0	1798	0	0	1863	1583	0	1763	0	0	1736	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						111		143			176	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		1820			1725			3853			188	
Travel Time (s)		31.0			29.4			105.1			5.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	27	504	2	0	356	109	173	0	12	2	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	533	0	0	356	109	0	185	0	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Split	NA		Perm	NA	
Protected Phases		2			6		4	4			8	
Permitted Phases	2			6		6				8		
Detector Phase	2	2		6	6	6	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	29.0	29.0		26.2	26.2	26.2	15.0	15.0		10.0	10.0	
Total Split (s)	45.0	45.0		45.0	45.0	45.0	15.0	15.0		10.0	10.0	
Total Split (%)	64.3%	64.3%		64.3%	64.3%	64.3%	21.4%	21.4%		14.3%	14.3%	
Maximum Green (s)	36.8	36.8		36.8	36.8	36.8	8.9	8.9		6.0	6.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	3.7	3.7		3.0	3.0	
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	2.4	2.4		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		8.2			8.2	8.2		6.1			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)							1.0	1.0				

3: Podunk Cir. /Governors Hwy. & Elington Road Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Flash Dont Walk (s)							10.0	10.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)		23.5			23.5	23.5		6.3			5.2	
Actuated g/C Ratio		0.51			0.51	0.51		0.14			0.11	
v/c Ratio		0.58			0.37	0.13		0.51			0.01	
Control Delay		11.6			8.8	2.3		12.8			0.0	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		11.6			8.8	2.3		12.8			0.0	
LOS		B			A	A		B			A	
Approach Delay		11.6			7.3			12.8				
Approach LOS		B			A			B				
Queue Length 50th (ft)		73			42	0		8			0	
Queue Length 95th (ft)		225			134	20		68			0	
Internal Link Dist (ft)		1740			1645			3773			108	
Turn Bay Length (ft)						240						
Base Capacity (vph)		1500			1554	1339		469			388	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.36			0.23	0.08		0.39			0.01	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 46

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 10.1

Intersection LOS: B

Intersection Capacity Utilization 73.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Podunk Cir. /Governors Hwy. & Elington Road

 Ø2	 Ø4	 Ø8
45 s	15 s	10 s
 Ø6		
45 s		

Appendix E

Capacity Analysis – 2023 Build with Improvements Traffic Conditions

2023 Build with Improvements Weekday P.M.

1: John Fitch Blvd./US-5 & Governor's Hwy.
Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	14	15	180	14	72	5	635	165	105	903	87
Future Volume (vph)	6	14	15	180	14	72	5	635	165	105	903	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	260		280	260		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.942			0.963				0.850		0.987	
Flt Protected		0.992			0.967		0.950			0.950		
Satd. Flow (prot)	0	1741	0	0	1735	0	1770	3539	1583	1770	3493	0
Flt Permitted		0.942			0.775		0.136			0.950		
Satd. Flow (perm)	0	1653	0	0	1390	0	253	3539	1583	1770	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			21				176			13
Link Speed (mph)		30			30			50				30
Link Distance (ft)		1034			2473			2927				1619
Travel Time (s)		23.5			56.2			39.9				36.8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	6	15	16	191	15	77	5	676	176	112	961	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	283	0	5	676	176	112	1054	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Prot	Prot	NA	
Protected Phases		4			8		5	2	2	1	6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		6.0	15.0	15.0	6.0	15.0	
Minimum Split (s)	23.9	23.9		23.9	23.9		18.0	24.0	24.0	18.0	41.0	
Total Split (s)	31.0	31.0		31.0	31.0		18.0	39.0	39.0	20.0	41.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		20.0%	43.3%	43.3%	22.2%	45.6%	
Maximum Green (s)	25.1	25.1		25.1	25.1		13.0	33.0	33.0	15.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	5.0	5.0	3.0	5.0	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.0	1.0	1.0	2.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.9			5.9		5.0	6.0	6.0	5.0	6.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None		C-Max	Max	Max	C-Max	Max	
Walk Time (s)												7.0

1: John Fitch Blvd./US-5 & Governor's Hwy.

Lanes, Volumes, Timings

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												14.0
Pedestrian Calls (#/hr)												0
Act Effect Green (s)		21.1			21.1		51.0	33.0	33.0	19.0	35.0	
Actuated g/C Ratio		0.23			0.23		0.57	0.37	0.37	0.21	0.39	
v/c Ratio		0.09			0.83		0.01	0.52	0.25	0.30	0.77	
Control Delay		17.0			50.1		7.4	24.1	4.2	34.5	28.4	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		17.0			50.1		7.4	24.1	4.2	34.5	28.4	
LOS		B			D		A	C	A	C	C	
Approach Delay		17.0			50.1			19.9			29.0	
Approach LOS		B			D			B			C	
Queue Length 50th (ft)		9			139		1	155	0	55	266	
Queue Length 95th (ft)		32			#234		5	208	41	108	346	
Internal Link Dist (ft)		954			2393			2847			1539	
Turn Bay Length (ft)							260		280	260		
Base Capacity (vph)		472			402		429	1297	691	373	1366	
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		0.08			0.70		0.01	0.52	0.25	0.30	0.77	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 16 (18%), Referenced to phase 1:SBL and 5:NBL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 28.0

Intersection LOS: C

Intersection Capacity Utilization 68.6%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: John Fitch Blvd./US-5 & Governor's Hwy.

