Traffic+ Engineering Ltd.

Traffic Impact Study and Swept Path Assessments

Proposed Industrial Development

8995 Boston Church Road, Town of Milton

Prepared by: Traffic+ Engineering Ltd.
Prepared for: King Consultants Inc.

January 9, 2026

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Report

Date
January 09, 2026

Our Reference:
20250006

Client
King Consultants Inc.

Client Contact

Mr. Gursewak Singh, Provisional Member MCIP, RPP
Director, Planner

Re: Traffic Impact Study and Swept Path Assessments
Proposed Industrial Development
8995 Boston Church Road, Town of Milton

EXECUTIVE SUMMARY

Content

Traffic+ Engineering Ltd. was retained to undertake a traffic impact study and swept path assessments in support of a Plan of Subdivision application enclosed with an Official Plan Amendment and Zoning By-law Amendment to propose an industrial development to be built on an empty site located on the southeast quadrant of Boston Church Road and 5 Side Road in the Town of Milton.

The proposed industrial development will consist of warehousing use operating in three buildings representing a maximum lot coverage of 28.87%. The development will be built on a vacant land with a total surface area of approximately 117,192.46 m² (1,261,449.14 ft²). The total Gross Floor Are (GFA) of the three buildings is equal to 33,829.62 m² (364,139.00 ft²).

The purpose of this study is to determine the traffic impacts of the proposed industrial site on the surrounding road network and to identify any improvements to accommodate this added traffic, if necessary. Additionally, a thorough swept path assessments are undertaken to ensure that personal vehicles, trucks, and fire trucks can maneuver around the site without any obstructions.

Findings

The key conclusions and findings of the study are outlined herein:

- **Development:**
  - The proposed industrial development will consist of warehousing use operating in three buildings representing a maximum lot coverage of 28.87%. The development will be built on a vacant land with a total surface area of approximately 117,192.46 m² (1,261,449.14 ft²). The total Gross Floor Are (GFA) of the three buildings is equal to 33,829.62 m² (364,139.00 ft²).

- **Existing Traffic Operations:**

AM Peak:

- The signalised and unsignalized intersections are currently operating very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

PM Peak:

- Similar to AM Peak hour, the signalised and unsignalized intersections are currently operating very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

- **Future Background Traffic Operations:**

AM Peak:

- The signalised and unsignalized intersections are expected to operate very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

PM Peak:

- Similar to AM Peak hour, the signalised and unsignalized intersections will be operating very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

- **Modal Split:**

No modal splits were applied to the trip generation in order to assess the future traffic operations at key intersections under conservative conditions.

- **Future Total Traffic Operations:**

AM Peak:

- The signalised and unsignalized intersections are expected to operate very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

PM Peak:

- Similar to AM Peak hour, the signalised and unsignalized intersections will be operating very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with an approach expected to operate at LOS E but with a v/c equal to 0.48 which well below capacity. Volume/Capacity ratios are well below capacity at all approaches.

- **Parking Supply:**

Based on the summarized parking estimations, it can be deduced that the site is over supplying in parking by 227 parking spaces, which is more than double the minimum required parking spaces set by the Town of Milton Bylaw 016-2014.

- **Swept Path Assessments:**

Based on the swept path assessments, the site design and layout can accommodate both the articulated truck WB-20 and the Aerial fire truck.

In summary, the proposed development is anticipated to have a very minimal impact on traffic operations within the study area. Also, the site design and layout can accommodate both the articulated truck WB-20 and the Aerial fire truck.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.
Yours truly,

Mr. Nabil Ghariani, P.Eng., PTOE, M.S.C.E.
President and CEO

Traffic Engineering Ltd.

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1.0 Introduction

1.1 Study Overview

Traffic+ Engineering Ltd. was retained to undertake a traffic impact study and swept path assessments in support of a Plan of Subdivision application enclosed with an Official Plan Amendment and Zoning By-law Amendment to propose an industrial development to be built on an empty site located on the southeast quadrant of Boston Church Road and 5 Side Road in the Town of Milton.

The purpose of this study is to determine the impacts of the additional traffic generated from the proposed development on the surrounding road network to accommodate the expected future traffic generated from the proposed development. The scope of the study includes assessing the current traffic in the vicinity of the development, estimating background traffic growth in the area, estimating the additional traffic volumes that will be generated by the development, analysing the impacts of the added traffic. Additionally, a thorough swept path assessments are undertaken to ensure that personal vehicles, trucks, and fire trucks can maneuver around the site without any obstructions.

The proposed industrial development will consist of warehouse use operating in three buildings. It will be built on a vacant land with the total Gross Floor Are (GFA) of the three buildings equal to 33,829.62 m² (364,139.00 ft²).

1.2 Study Area and Proposed Site Plan

The approximate location of the subject site is illustrated in **Figure 1**. The community surrounding the subject site is mostly open green fields with few residential houses comprised of single detached homes found in the vicinity of the development.

Based on email communications with staff from the Town of Milton and Halton Region, the following intersections have been identified as intersections that should be assessed in this traffic impact study:

- Boston Church Road and 5 Side Road (Unsignalised),
- Boston Church Road and James Snow Parkway North (Signalised), and
- James Snow Parkway North and Regional Road 25 (Signalised)
-

Figure 2 illustrates the existing lane configurations and traffic controls at the study area intersections.

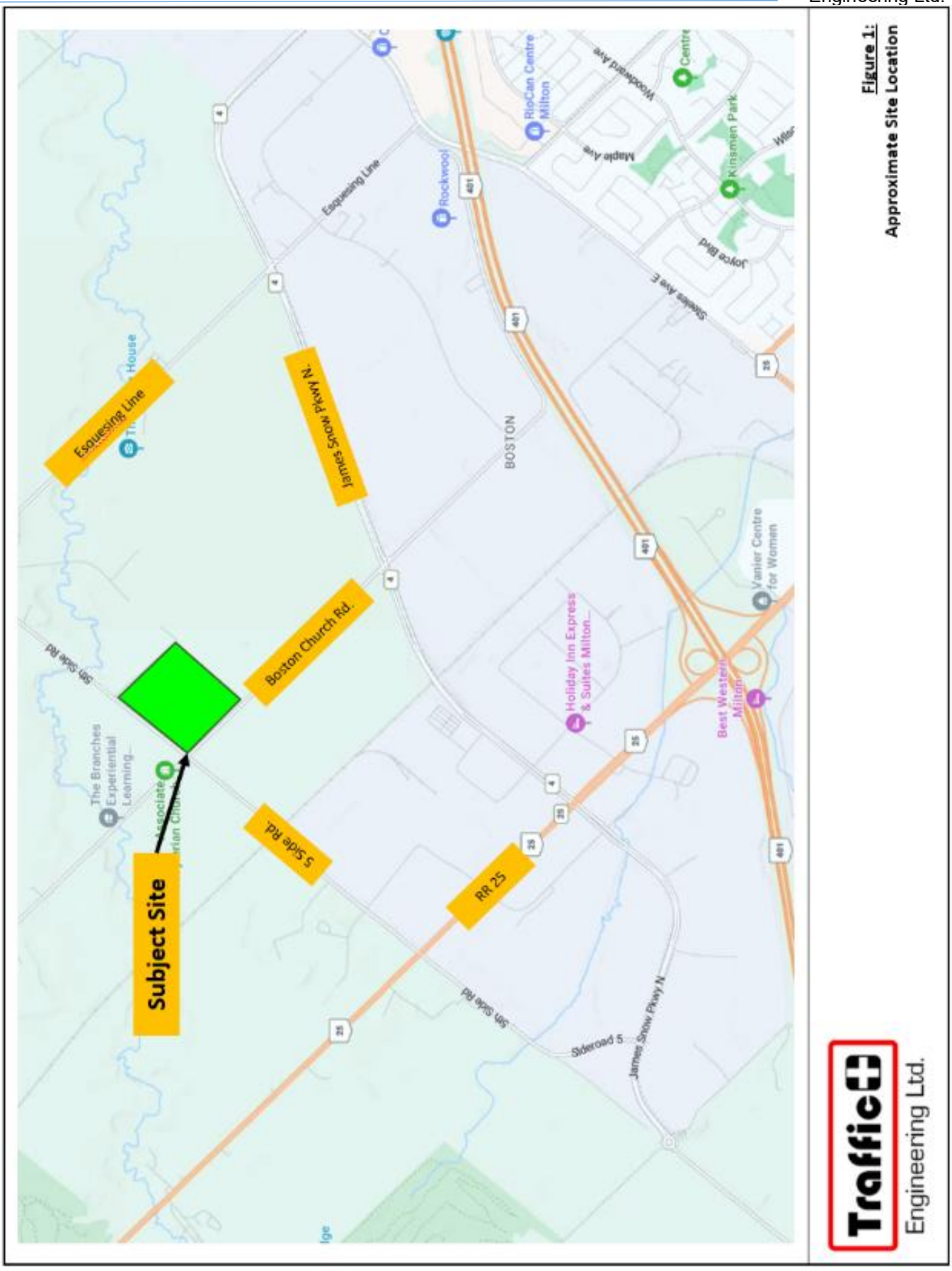


Figure 1:
Approximate Site Location

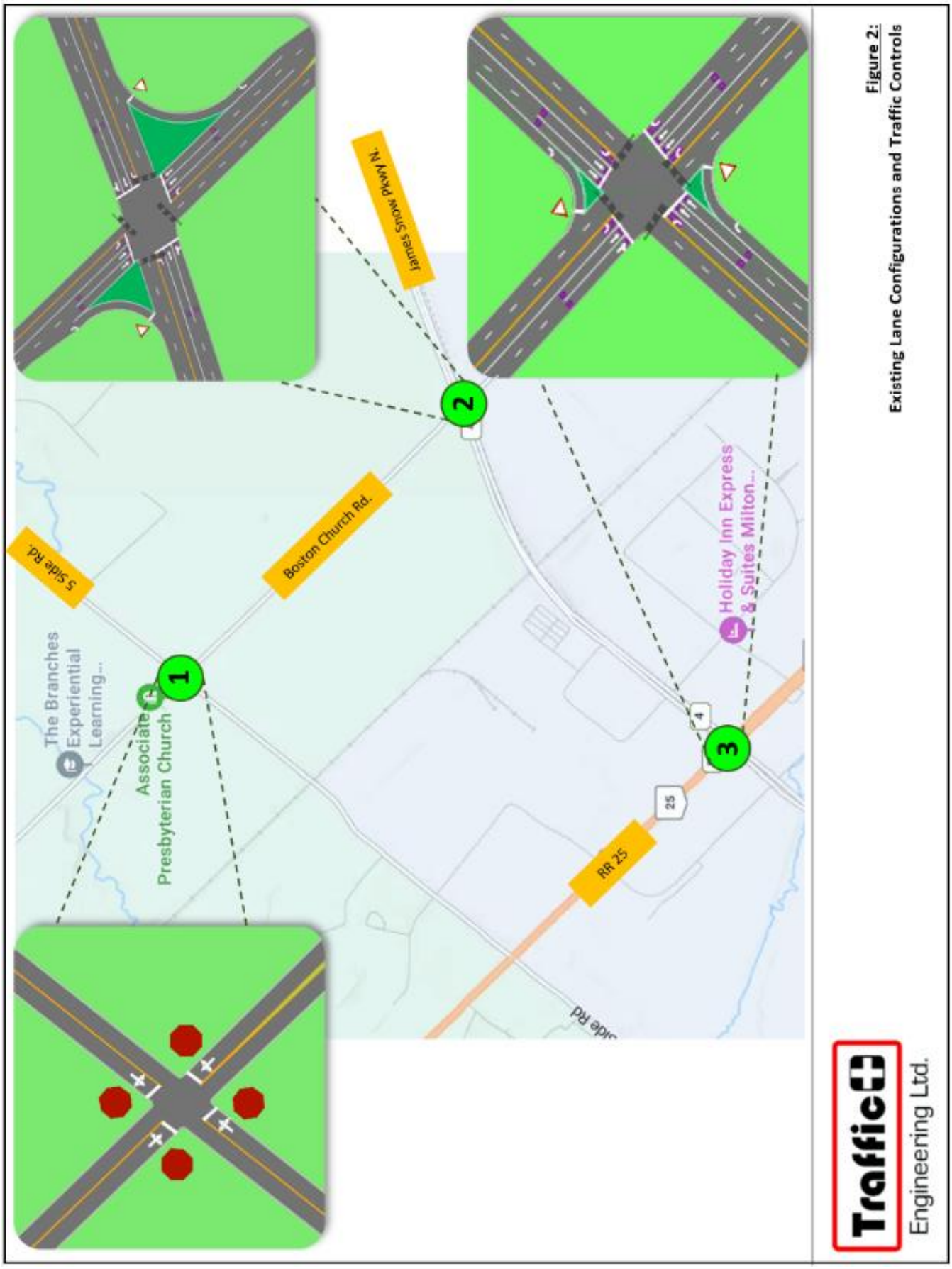


Figure 2:
Existing Lane Configurations and Traffic Controls

2.0 Existing Conditions

The subject property is currently a vacant land, it is a green field area. Based on the "Proposed Site Plan" prepared by Inspire Architectural Group dated June 27, 2025, as shown in **Figure 3**, the proposed development will consist of three buildings that will operate as warehouses.

Site access will be accommodated by two proposed full movement driveways, where the first access driveway will be located on Boston Church Road and the second on 5 Side Road.

Full site plan can be found in **Appendix A**.

2.1 Existing Road Network within the Study Area

The main roadways in the vicinity of the subject site that are considered to assessing the traffic impacts of the proposed development are described as follows:

- **Boston Church Road:** is a north-south Major Road. It has two (2) lanes with no sidewalks on both sides of Boston Church Road within the vicinity of the development and on-street parking is not permitted at any time. The posted speed limit is 70 km/h in the vicinity of the proposed development.

- **5 Side Road:** is an east-west Major Road. It has two (2) lanes with no sidewalks on both sides of 5 Side Road within the vicinity of the development and on-street parking is not permitted at any time. The posted speed limit is 60 km/h in the vicinity of the proposed development.

- **James Snow Parkway North:** is an east-west Regional Road. It has four (4) lanes with a sidewalk located on the south side of the road only within the vicinity of the development and on-street parking is not permitted at any time. The posted speed limit is 70 km/h in the vicinity of the proposed development.

- **Regional Road 25:** is a north-south Regional Road. It has four (4) lanes with no sidewalks on both sides of the corridor, and on-street parking is not permitted at any time. The posted speed limit is 70 km/h in the vicinity of the proposed development.

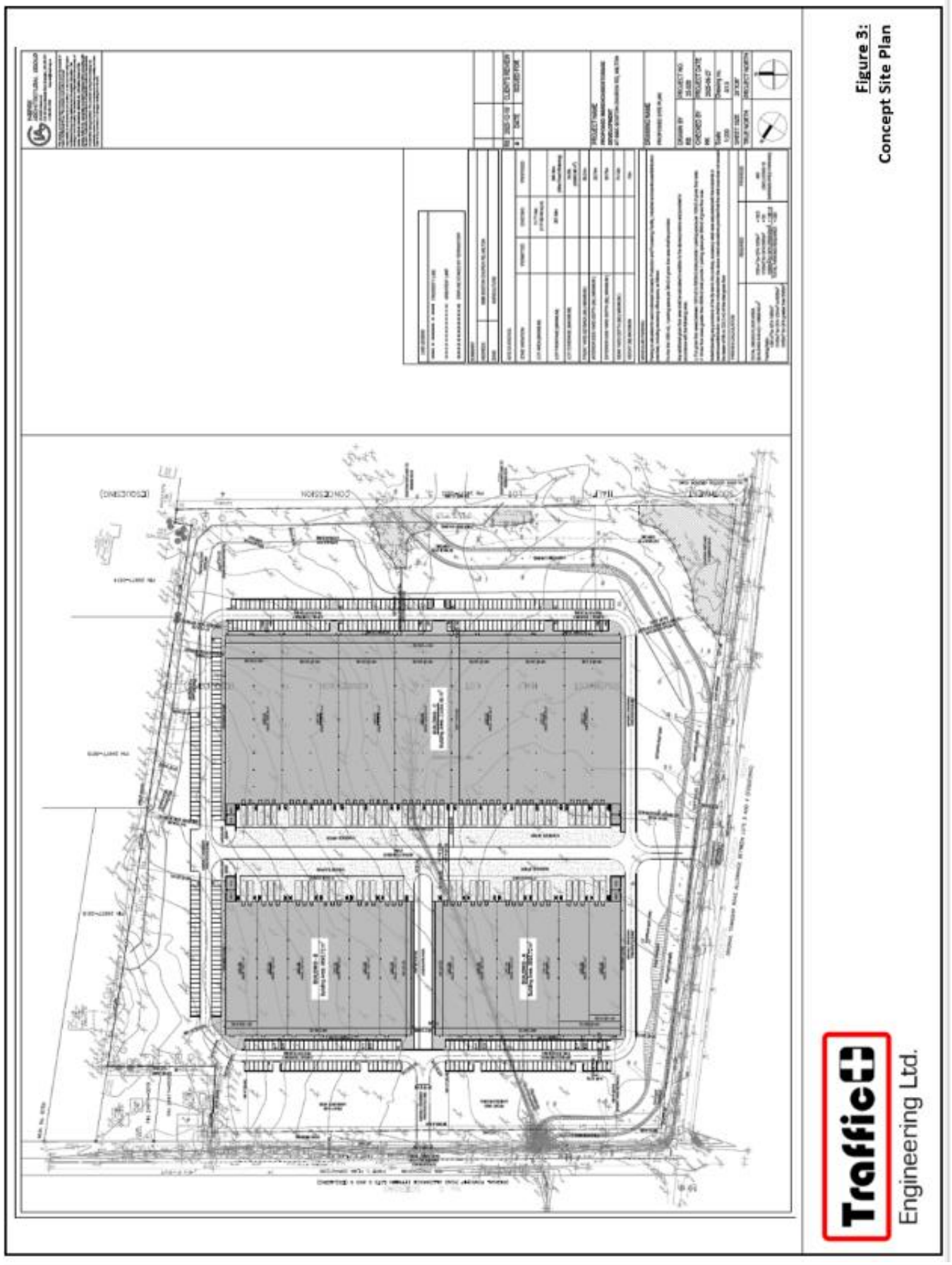


Figure 3:
Concept Site Plan

2.2 Existing Transit Operations

The proposed industrial development is not within any transit line, hence the only modes of transportation to get to the proposed residential site is either by car, carpooling, car-hailing service (e.g. Uber), or cycling.

However, Milton Transit has a "Milton Transit OnDemand" service that is a flexible shared-ride service that provides transit rides without following a fixed route or schedule. Booking the bus is done via a mobile application. "OnDemand" transit connects passengers to/from available fixed route service at key transfer locations. Additionally, smaller-size, fully accessible Milton Transit buses are used to deliver "OnDemand" services on "OnDemand" routes and to "Milton Access+" passengers.

Figure 4 shows "Milton Transit OnDemand" vehicle making a left turn at Boston Church Road and 5 Side Road intersection.

2.3 Active Transportation

There are currently no dedicated on-street bike lanes or continuous sidewalks on each side of Boston Church Road or 5 Side Road.

However, there may be plans to provide sidewalks on either side or both sides of Boston Church Road when the road will be widened from a two-lane road to four-lane road. The estimate or exact date of road widening of Boston Church Road has not been determined as of this date.

2.4 Existing Traffic Volumes

The existing traffic volumes on the adjacent road network were determined through peak hour turning movement counts undertaken by Traffic+ Engineering Ltd. The traffic counts for the intersections in the study area are summarized in **Table 1**. The obtained traffic counts were counted on October 2025. The existing traffic volumes are illustrated in **Figure 5-1** and **Figure 5-2**.

Table 1: Traffic Count Data & Sources

Intersection Number	Intersection Description	Count Date	Source
1	Boston Church Rd. and 5 Side Rd.	Oct. 2025	Traffic+ Engineering Ltd.
2	Boston Church Rd. and James Snow Prkwy. N.	Oct. 2025	Traffic+ Engineering Ltd.
3	James Snow Prkwy. N. and Regional Road 25	Oct. 2025	Traffic+ Engineering Ltd.

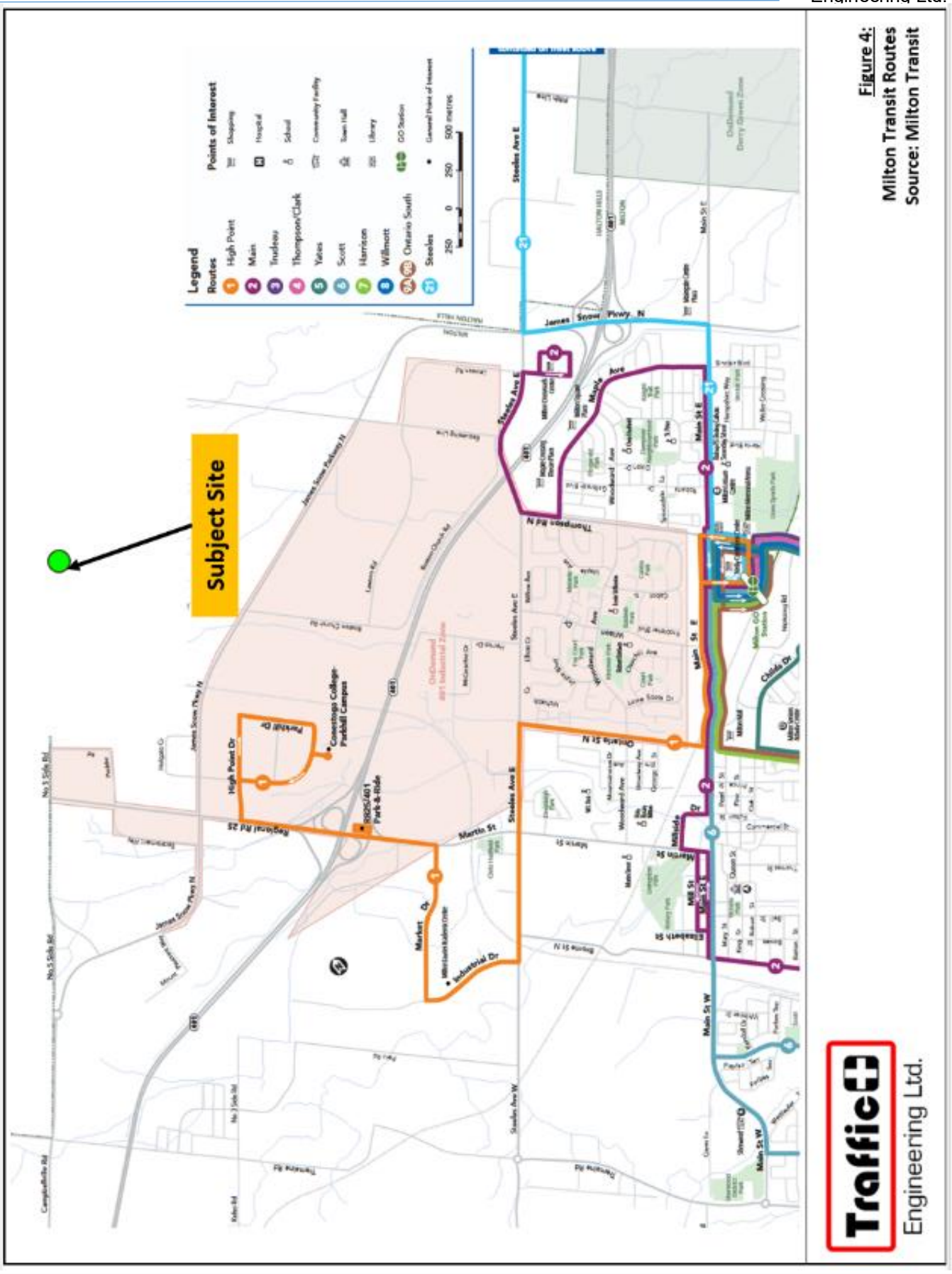


Figure 4:
Milton Transit Routes
Source: Milton Transit

Traffic Engineering Ltd.

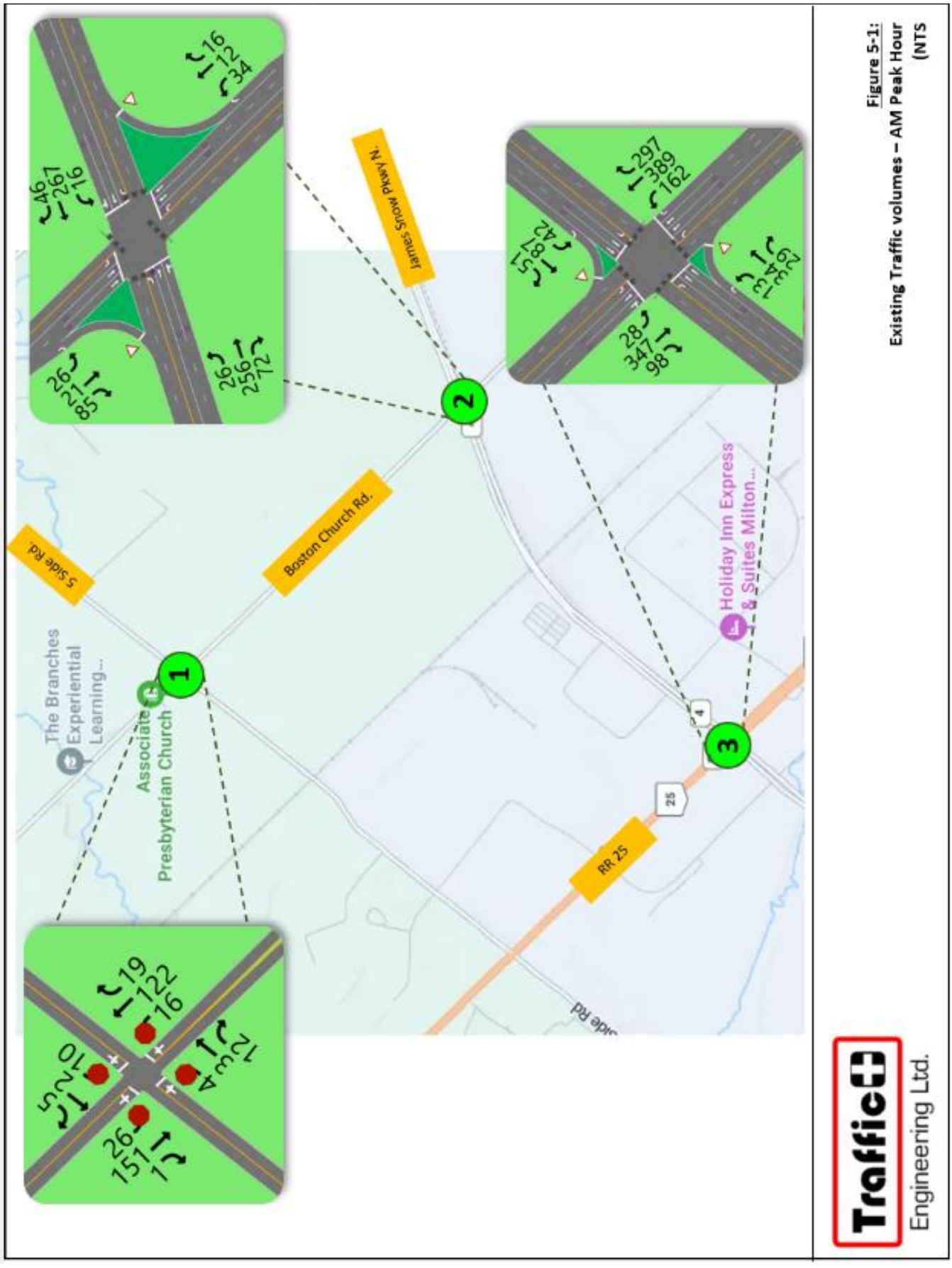


Figure 5-1: Existing Traffic volumes – AM Peak Hour (NTS

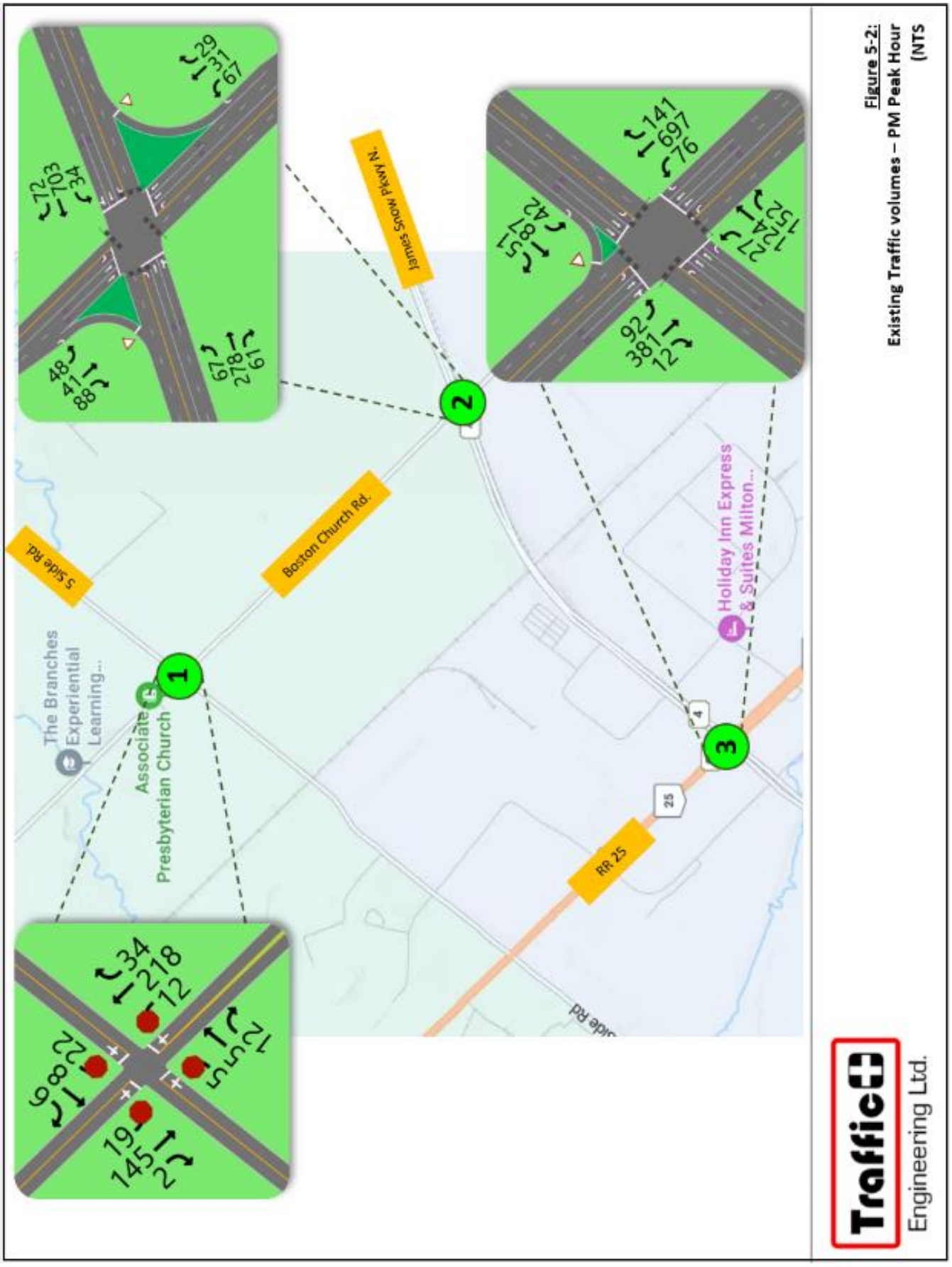


Figure 5-2: Existing Traffic volumes – PM Peak Hour (NTS

2.5 Existing Traffic Operations

The existing intersection operations were analyzed on the basis of the existing roadway A.M. and P.M. peak hour traffic volumes. The operations of the intersections in the study area were evaluated using the existing lane geometric configurations, traffic controls and the existing weekday A.M. and P.M. peak hour traffic volumes. The analysis was undertaken by using Synchro 12, which incorporates analysis of intersection capacity based on the approach outlined in the Highway Capacity Manual (HCM), Transportation Research Board.

Intersection level of service (LOS) is a recognized method of quantifying the efficiency of traffic flow at intersections. It is based on the delay experienced by individual vehicles executing the various movements. The highest possible rating is LOS A, under which the average total delay is equal or less than 10 seconds per vehicle. When the average delay exceeds 80 seconds at signalized intersections (50 seconds at unsignalized intersections), the movement is classified as LOS F and remedial measures are usually implemented, if they are feasible. The intersection analysis considered three separate measures of performance:

- The level of service (LOS) for each turning movement,
- The volume to capacity (v/c) ratio for each turning movement, and
- The 95th percentile queue length, obtained from Synchro output

The existing intersection operations are summarized in **Table 2** indicating the existing levels of service, volume to capacity ratios (v/c) and 95th percentile queues experienced within the study area, for the A.M. and P.M. peak hours.

Table 2: Existing Peak Hour Traffic Operations

Analysis Period	Intersection	Control Type	MOE	Directions / Movements / Approaches																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Boston Church Rd. / 5 Side Rd.	Unsignalized	LOS	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	**A**
			Delay	7.5	7.5	7.5	7.5	7.8	7.8	7.8	7.8	8.2	8.2	8.2	8.2	8.4	8.4	8.4	8.4	**8.3**
			V/C	0.02	0.02	0.02		0.02	0.02	0.02		0.2	0.2	0.2		0.23	0.23	0.23		**0.23**
			95th Queue	--	--	--		--	--	--		--	--	--		--	--	--		
	Boston Church Rd. / James Snow Pkwy N.	Signalised	LOS	A	B		B	A	B		B	C	D	A	C	C	D	A	B	**B**
			Delay	9.6	13.2		12.9	9.5	14.8		14.6	28.0	45.4	0.4	24.4	27.7	45.7	9.6	18.9	**15.3**
			V/C	0.04	0.19			0.03	0.18			0.08	0.03	0.06		0.06	0.05	0.31		**0.31**
			95th Queue	6.1	30.4			4.3	30.4			13.5	4.4	0.0		11.0	6.5	11.7		
	James Snow Pkwy N. / RR 25	Signalised	LOS	D	D	A	C	D	D	A	C	A	A	A	A	A	B		B	**B**
			Delay	36.1	48.9	1.4	28.4	37.7	44.6	6.8	32.4	6.0	8.9	1.7	5.8	5.4	11.2		10.9	**11.5**
			V/C	0.06	0.11	0.15		0.18	0.19	0.19		0.26	0.18	0.28		0.04	0.24			**0.28**
			95th Queue	7.8	9.5	0.0		18.2	18.8	7.2		18.6	29.4	10.8		4.5	36.4			
PM Peak Hour	Boston Church Rd. / 5 Side Rd.	Unsignalized	LOS	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	**A**
			Delay	7.9	7.9	7.9	7.9	8.3	8.3	8.3	8.3	9.3	9.3	9.3	9.3	8.7	8.7	8.7	8.7	**9.0**
			V/C	0.03	0.03	0.03		0.06	0.06	0.06		0.34	0.34	0.34		0.22	0.22	0.22		**0.34**
			95th Queue	--	--	--		--	--	--		--	--	--		--	--	--		
	Boston Church Rd. / James Snow Pkwy N.	Signalised	LOS	B	B		B	A	C		C	C	D	A	C	C	D	B	C	**B**
			Delay	11	14.9		14.2	9.8	20.6		20.1	29.1	46.0	0.7	26.7	28.4	46.2	10.4	23.6	**19.5**
			V/C	0.20	0.20			0.06	0.47			0.16	0.07	0.11		0.11	0.10	0.32		**0.47**
			95th Queue	12.6	32.6			7.5	85.8			22.8	8.5	0.0		17.5	10.5	13.0		
	James Snow Pkwy N. / RR 25	Signalised	LOS	D	D	B	C	D	D	A	C	A	B	A	B	A	B		A	**B**
			Delay	37.0	52.6	15.0	32.4	38.0	47.8	7.1	34.1	5.6	12.2	2.1	10.1	6.1	10.6		9.8	**15.9**
			V/C	0.12	0.40	0.55		0.19	0.22	0.21		0.12	0.35	0.15		0.20	0.20			**0.55**
			95th Queue	13.1	25.8	19.9		18.2	19.2	7.1		10.5	61.4	8.8		12.2	32.7			

Based on the above criteria and the results summarised in **Table 2**, it can be deduced the following:

AM Peak:

- The signalised and unsignalized intersections are currently operating very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

PM Peak:

- Similar to AM Peak hour, the signalised and unsignalized intersections are currently operating very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

Detailed Synchro 12 output is provided in **Appendix B**.

3.0 Future Background Traffic Conditions

3.1 Study Horizon Year

After discussion with Region of Halton and Town of Milton staff, it was indicated that the horizon year for this study is five years. Based on the project plans, the completion of this proposed residential development is expected to be in 2030.

3.2 Future Traffic Volumes Growth

Based on discussions with staff from Region of Halton and Town of Milton, it was requested to apply 2.0 percent per annum growth rate on all traffic volumes at the studied intersections.

3.3 Other Developments in the Vicinity

Based on the discussions with staff at the Town, it was indicated that there is a proposed large industrial subdivision, currently under construction, which will be located in the same quadrant as the proposed site as well as on the southwest quadrant of Boston Church Road and 5 side Road.

Figure 6 illustrates the proposed large industrial subdivision in the vicinity of the proposed development that is currently under construction.

The full site plan is in **Appendix E**

3.4 Future Background Traffic Volumes

The 2030 background traffic volumes for the weekday A.M. and P.M. peak hours were derived by first:

- Forecasting the A.M. and P.M. Peak hours to the horizon year 2030 from the existing traffic volumes (2025), by applying an annual compounded traffic growth rate of 2.0%; and

- Including the A.M. and P.M. trip generations of the proposed large industrial subdivision.

The resulting 2030 future background traffic volumes are illustrated in **Figure 7-1** and **Figure 7-2** for A.M. Peak and P.M. Peak hours respectively.

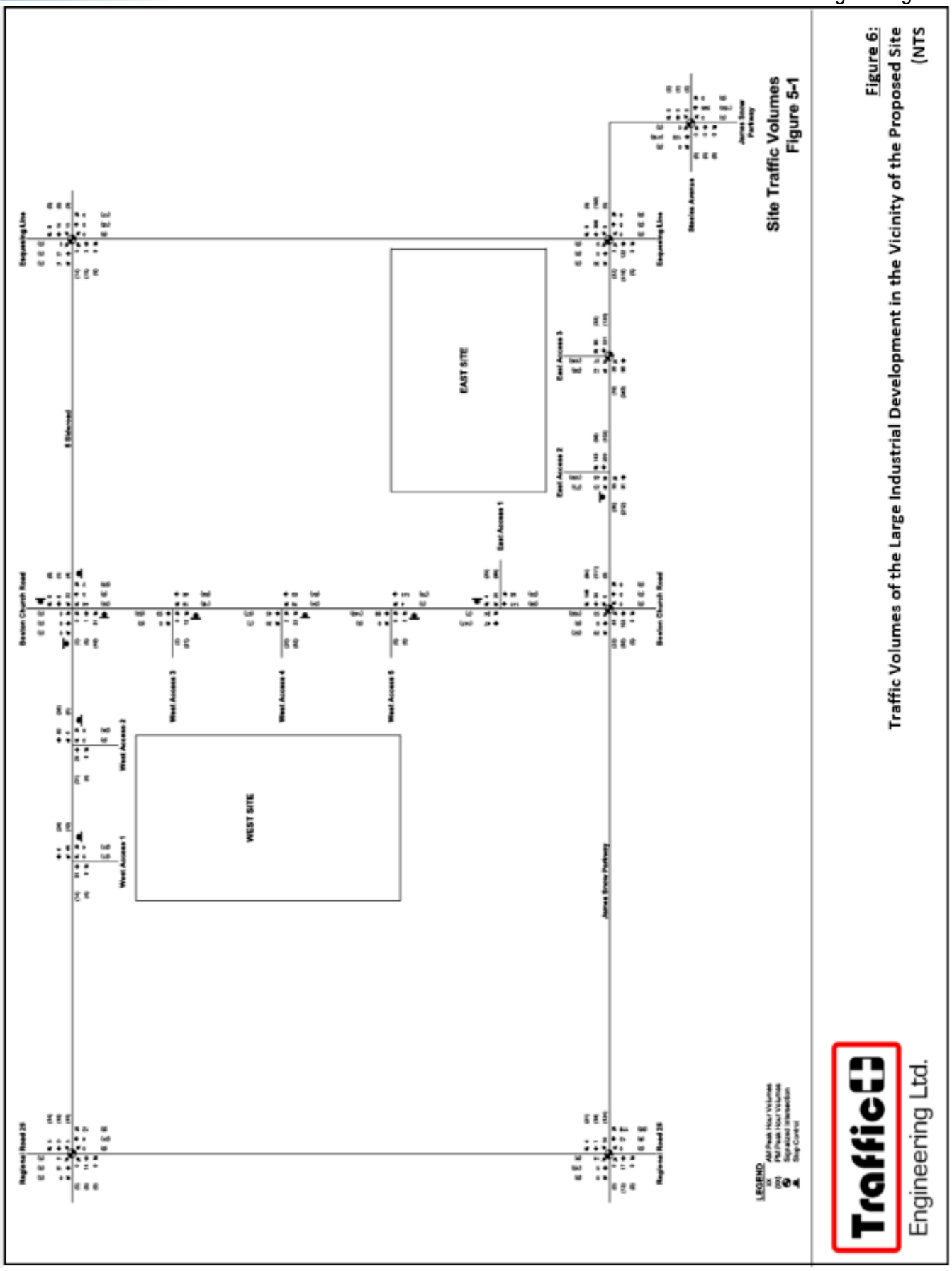


Figure 6:
Traffic Volumes of the Large Industrial Development in the Vicinity of the Proposed Site (NTS

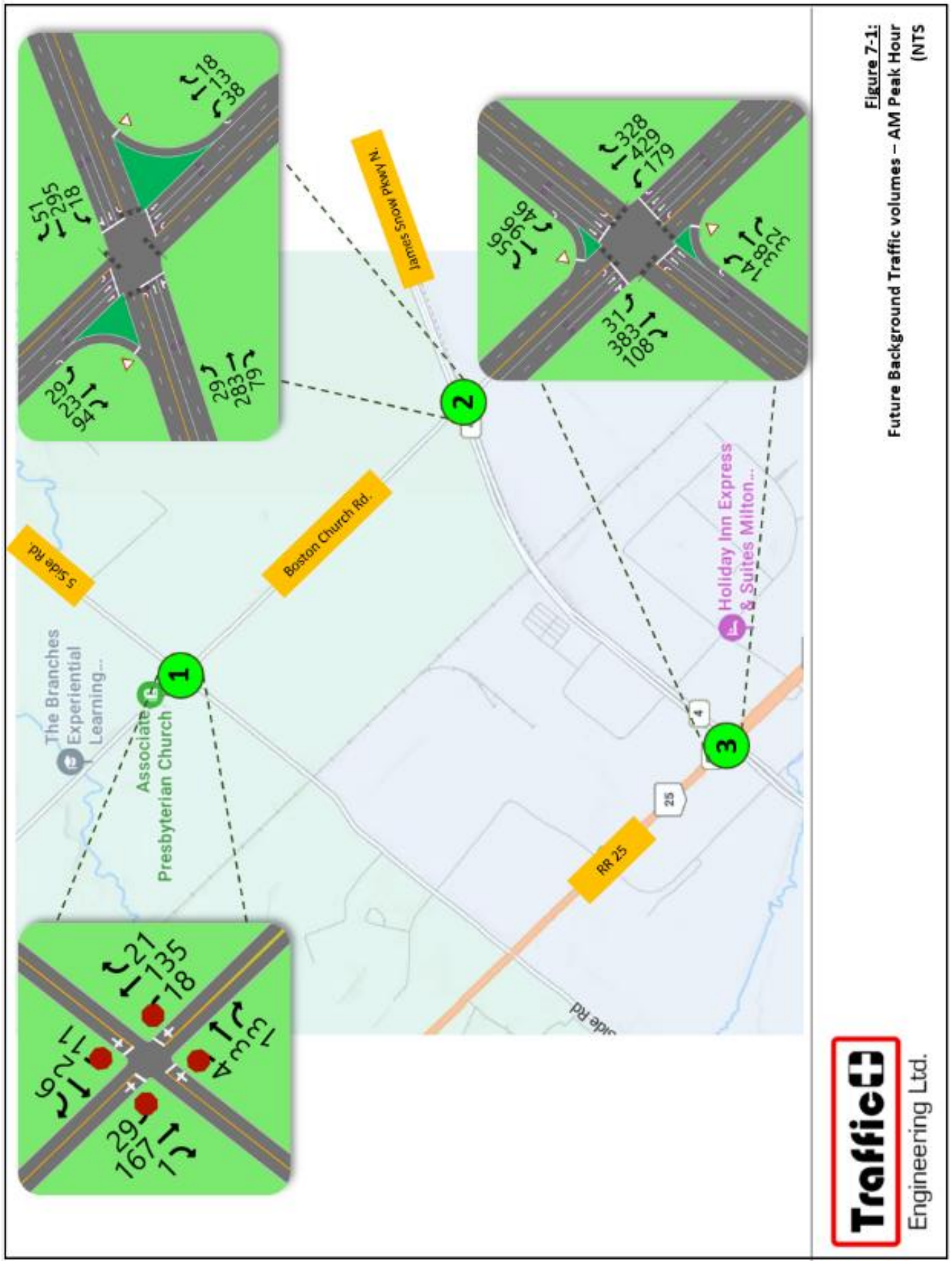


Figure 7-1: Future Background Traffic volumes – AM Peak Hour (NTS

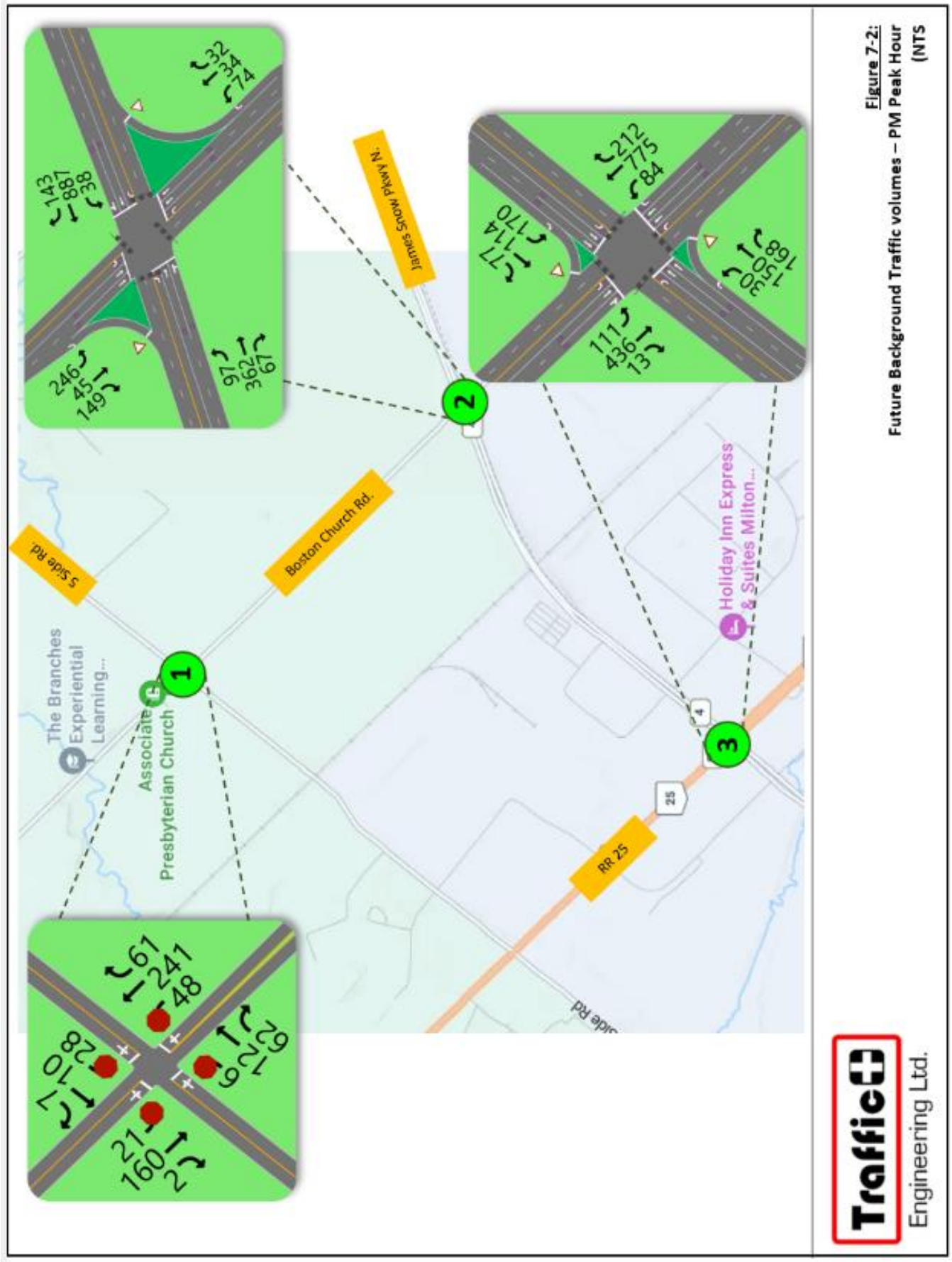


Figure 7-2: Future Background Traffic volumes – PM Peak Hour (NTS

3.5 Future Background Intersection Traffic Operations

The intersections in the vicinity of the proposed industrial / warehouse development traffic operations assessment under the future background traffic conditions were analyzed using similar analytical approach as the existing traffic conditions.

The LOS results are summarized in **Table 3**.

Table 3: Future Background Peak Hour Traffic Operations – 2030 Horizon Year

Analysis Period	Intersection	Control Type	MOE	Directions / Movements / Approaches																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Boston Church Rd. / 5 Side Rd.	Unsignalized	LOS	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	**A**
			Delay	7.9	7.9	7.9	7.9	8.5	8.5	8.5	8.5	9.3	9.3	9.3	9.3	9.1	9.1	9.1	9.1	**9.0**
			V/C	0.07	0.07	0.07		0.07	0.07	0.07		0.29	0.29	0.29		0.27	0.27	0.27		**0.29**
			95th Queue	--	--	--		--	--	--		--	--	--		--	--	--		
	Boston Church Rd. / James Snow Pkwy N.	Signalised	LOS	B	B		B	A	B		B	C	D	A	C	C	D	B	C	**B**
			Delay	10.6	14.6		14.1	9.7	13.9		13.8	28.1	45.5	0.4	24.0	29.5	45.7	12.2	22.2	**15.7**
			V/C	0.18	0.26			0.04	0.35			0.09	0.03	0.07		0.19	0.06	0.40		**0.40**
			95th Queue	14.1	45.1			4.9	47.3			14.5	4.6	0.0		26.8	6.8	17.0		
	James Snow Pkwy N. / RR 25	Signalised	LOS	D	D	A	C	D	D	A	C	A	B	A	A	A	B		B	**B**
			Delay	35.9	51.5	1.7	33.5	40.9	44.0	9.7	34.7	7.0	10.7	2.1	6.5	6.2	12.7		12.2	**13.1**
			V/C	0.07	0.19	0.16		0.37	0.19	0.21		0.31	0.21	0.41		0.08	0.27			**0.41**
			95th Queue	8.3	13.8	0.7		35.1	20.5	10.1		21.9	35.4	13.1		7.0	43.4			
PM Peak Hour	Boston Church Rd. / 5 Side Rd.	Unsignalized	LOS	A	A	A	A	A	A	A	A	B	B	B	B	A	A	A	A	**B**
			Delay	8.6	8.6	8.6	8.6	8.9	8.9	8.9	8.9	11.4	11.4	11.4	11.4	9.4	9.4	9.4	9.4	**10.3**
			V/C	0.12	0.12	0.12		0.07	0.07	0.07		0.47	0.47	0.47		0.26	0.26	0.26		**0.47**
			95th Queue	--	--	--		--	--	--		--	--	--		--	--	--		
	Boston Church Rd. / James Snow Pkwy N.	Signalised	LOS	B	B		B	A	C		C	C	D	A	C	D	D	B	C	**C**
			Delay	14.1	15.8		15.4	10.0	25.8		25.3	29.1	46.0	0.7	26.7	37.7	46.4	12.0	29.9	**23.9**
			V/C	0.39	0.25			0.07	0.66			0.16	0.07	0.11		0.58	0.11	0.47		**0.66**
			95th Queue	17	42.3			8	127.7			22.8	8.5	0.0		73.3	11.3	19.1		
	James Snow Pkwy N. / RR 25	Signalised	LOS	D	E	B	C	D	D	B	D	A	B	A	B	A	B		B	**B**
			Delay	36.5	56.6	14.9	35	47.3	46.1	12.0	39.4	7.0	15.5	2.2	12.2	8.2	13.1		12.2	**19.8**
			V/C	0.13	0.49	0.58		0.60	0.21	0.25		0.15	0.41	0.23		0.28	0.24			**0.60**
			95th Queue	14.4	31.5	21.1		59.1	24.0	14.5		12.4	76.1	11.1		15.8	40.5			

Based on the above criteria and the results summarised in **Table 3**, it can be deduced the following:

AM Peak:

- The signalised and unsignalized intersections are expected to operate very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

PM Peak:

- Similar to AM Peak hour, the signalised and unsignalized intersections will be operating very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A

and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

Detailed Synchro 12 output is provided in **Appendix C**.

4.0 Proposed Development

4.1 Site Characteristics

The proposed industrial development will consist of warehouse that will consist of three buildings.

Each building will be divided into units. Building A will have 6 units, Building B will also have 6 units, and Building C will have 7 units. Each unit in Buildings A and B will be equal in surface areas which is 1,437.8 m^2. In building C, however, the surface area of each unit is equal to 3,329.36.6 m^2.

4.2 Site Access

Access to the proposed industrial development will be via two full movement driveways which will be located off Boston Church Road and 5 Side Road. These proposed access driveways will operate under stop control at the egress approach.

4.3 Modal Split

Although Milton Transit has a "Milton Transit OnDemand" service that is a flexible shared-ride service that provides transit rides without following a fixed route or schedule, However, the traffic assessments are being assumed that all trips generated by the proposed development are vehicle-based trips in order to assess the traffic operations at key intersections under conservative conditions. Therefore, **no modal splits will be applied to reduce the number of trips generated from the proposed development**.

4.4 Trip Generation

As noted, the proposed industrial development will consist of warehousing use operating in three buildings. It will be built on a vacant land with the total Gross Floor Are (GFA) of the three buildings equal to 33,829.62 m² (364,139.00 ft²).

The trip generation related to the proposed development was estimated using the trip generation rates provided in the ITE Trip Generation Manual (11th Edition) for the following land uses:

- Warehousing LU 150

Table 4 provides the trip generation for the proposed residential components.

Table 4: Estimated Trip Generation Rate

	GFA (ft^2)	AM - Average Rate	Total Trip	IN	OUT	IN Trips	OUT Trips
Warehousing (LU 150)	364,139.00	0.17	62	0.77	0.23	48	14

	GFA (ft^2)	PM - Average Rate	Total Trip	IN	OUT	IN Trips	OUT Trips
Warehousing (LU 150)	364,139.00	0.18	66	0.28	0.72	18	48

4.5 Trip Distribution and Assignment

The distribution and assignment of the site-generated trips to the future site access and boundary road network, which are illustrated in **Figure 8-1** and **Figure 8-2**, were based on the existing local traffic patterns, as well as the type of development's location within the area in the Town of Milton.

Figure 8-1 and **Figure 8-2** shows the site traffic assignment at key intersections during A.M. and P.M. peak hours.

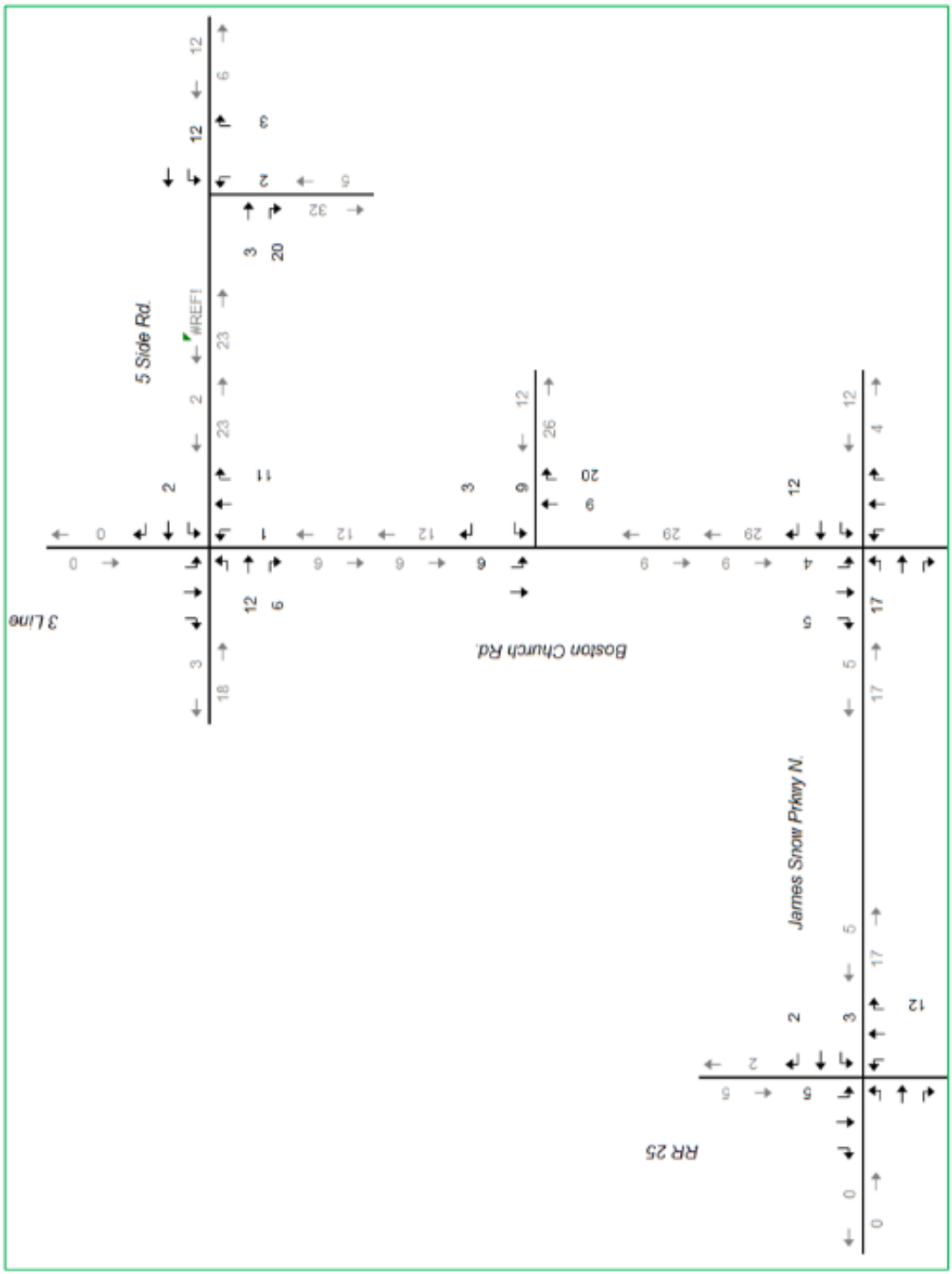


Figure 8-1:
Site Traffic Assignment – AM Peak Hour (NTS)

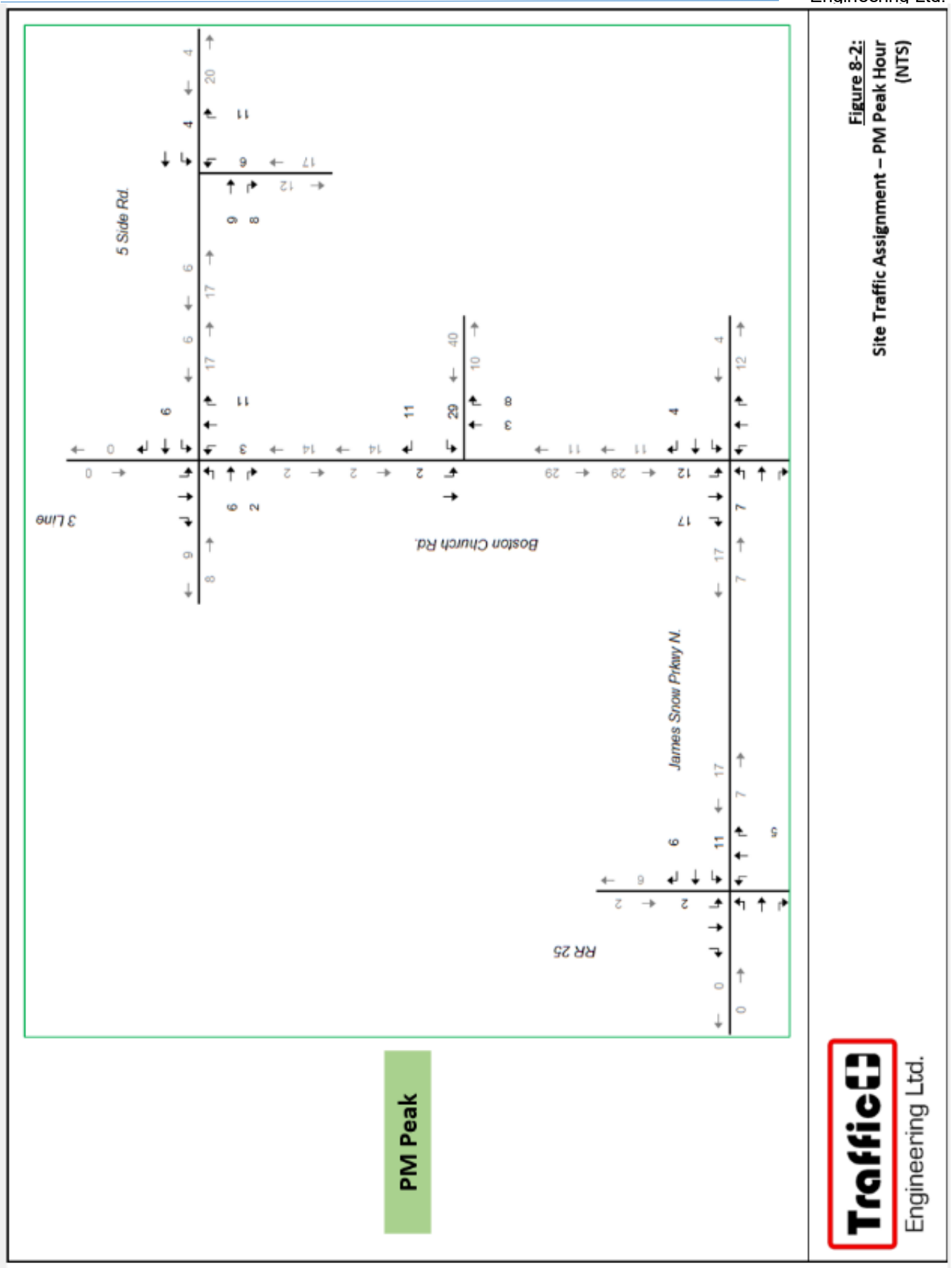
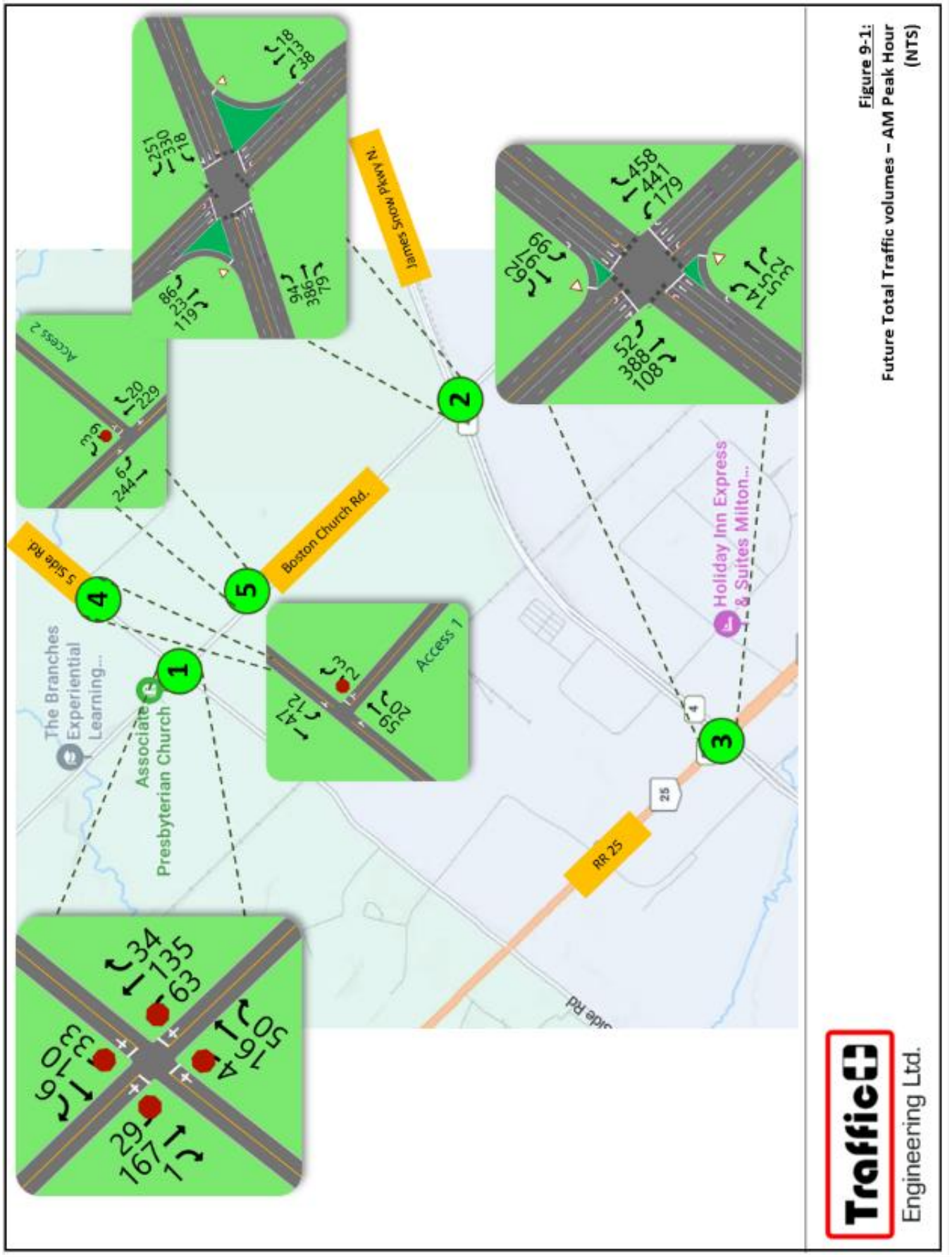


Figure 8-2:
Site Traffic Assignment – PM Peak Hour (NTS)

5.0 Future Total Traffic Conditions

5.1 Future Total Traffic Volumes

The future total traffic volumes were developed by superimposing the site generated traffic volumes onto the future background traffic volumes. The horizon 2030 weekday A.M. and P.M. peak hour future total traffic volumes for the study area intersections are illustrated in **Figure 9-1** and **Figure 9-2**.


James Snow PKWY N.
Boston Church Rd.
5 Side Rd.
RR 25
Access 1
Access 2
Holiday Inn Express & Suites Milton...
The Branches Experiential Learning...
Associate Presbyterian Church
1
2
3
4
5
Future Total Traffic volumes – AM Peak Hour (NTS)

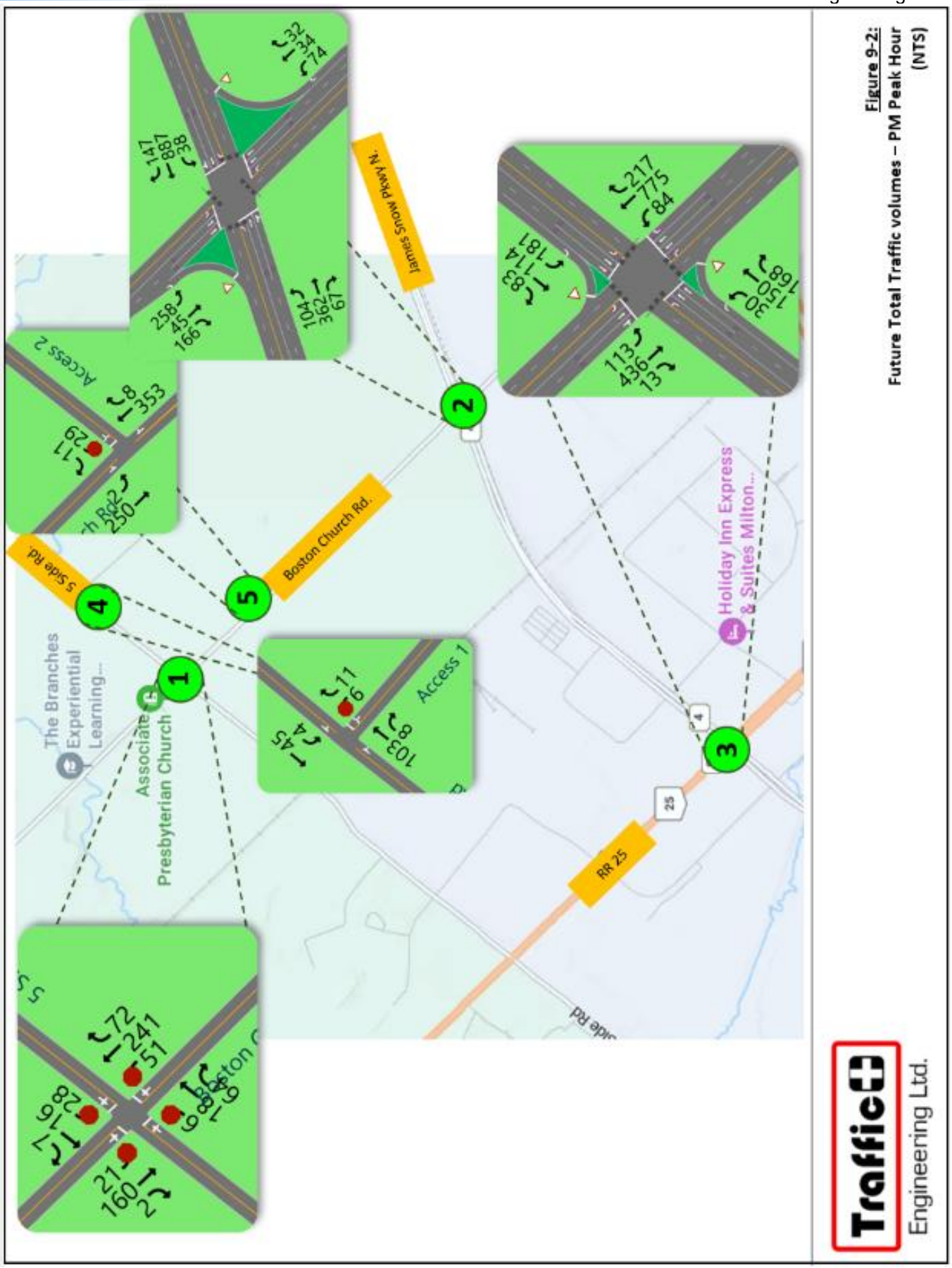


Figure 9-2: Future Total Traffic volumes – PM Peak Hour (NTS)

5.2 Future Total Traffic Intersection Operations

The future total traffic operations of the study area intersections were analyzed using the horizon 2030 future total traffic forecasts. For the purpose of this analysis, the signal timings were optimized, with the existing cycle lengths unchanged. **Table 5** summarizes the resulting traffic operations.

Detailed Synchro 12 output is provided in **Appendix D**.

Table 5: Future Total Peak Hour Traffic Operations – 2030 Horizon Year

Analysis Period	Intersection	Control Type	MOE	Directions / Movements / Approaches																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Boston Church Rd. / 5 Side Rd.	Unsignalized	LOS	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	**A**
			Delay	8.2	8.2	8.2	8.2	8.6	8.6	8.6	8.6	9.5	9.5	9.5	9.5	9.3	9.3	9.3	9.3	**9.2**
			V/C	0.1	0.1	0.1		0.08	0.08	0.08		0.31	0.31	0.31		0.27	0.27	0.27		**0.31**
			95th Queue	--	--	--		--	--	--		--	--	--		--	--	--		
	5 Side Rd. / Access 1	Unsignalized	LOS		A	A	A	A	A		A	A		A	A					**A**
			Delay		0.0	0.0	0.0	0.1	1.6		1.6	8.9		8.9	8.9					**0.9**
			V/C		0.05	0.05		0.01	0.01			0.01		0.01						**0.05**
			95th Queue		0.0	0.0		0.2	0.2			0.1		0.1						
	Boston Church Rd. / Access 2	Unsignalized	LOS					B		B	B		A	A	A	A	A		A	**A**
			Delay					11.8		11.8	11.8		0.0	0.0	0.0	0.1	0.2		0.2	**0.4**
			V/C					0.02		0.02			0.16	0.16		0.01	0.01			**0.16**
			95th Queue					0.6		0.6			0.0	0.0		0.1	0.1			
	Boston Church Rd. / James Snow Pkwy N.	Signalised	LOS	B	B		B	A	B		B	C	D	A	C	C	D	B	C	**B**
			Delay	11.0	14.6		14.0	9.7	14.6		14.5	28.1	45.5	0.4	24.0	29.6	45.7	12.1	22.1	**15.9**
			V/C	0.22	0.26			0.04	0.37			0.09	0.03	0.07		0.20	0.06	0.41		**0.41**
			95th Queue	16.7	45.1			4.9	48.6			14.5	4.6	0.0		27.8	6.8	17.3		
	James Snow Pkwy N. / RR 25	Signalised	LOS	D	D	A	C	D	D	B	C	A	B	A	A	A	B		B	**B**
			Delay	35.9	51.6	1.7	33.6	41.1	44.0	10.4	34.8	7.1	10.8	2.1	6.5	6.2	12.8		12.1	**13.1**
			V/C	0.07	0.19	0.17		0.38	0.19	0.21		0.31	0.21	0.42		0.09	0.27			**0.42**
			95th Queue	8.3	13.8	0.7		36.4	20.5	10.7		21.9	35.6	13.3		7.7	43.4			
AM Peak Hour	Boston Church Rd. / 5 Side Rd.	Unsignalized	LOS	A	A	A	A	A	A	A	A	B	B	B	B	A	A	A	A	**B**
			Delay	8.8	8.8	8.8	8.8	9.0	9.0	9.0	9.0	11.8	11.8	11.8	11.8	9.6	9.6	9.6	9.6	**10.6**
			V/C	0.13	0.13	0.13		0.08	0.08	0.08		0.49	0.49	0.49		0.27	0.27	0.27		**0.49**
			95th Queue	--	--	--		--	--	--		--	--	--		--	--	--		
	5 Side Rd. / Access 1	Unsignalized	LOS		A	A	A	A	A		A	A		A	A					**A**
			Delay		0.0	0.0	0.0	0.0	0.6		0.6	9.1		9.1	9.1					**1.1**
			V/C		0.07	0.07		0.0	0.0			0.02		0.02						**0.07**
			95th Queue		0.0	0.0		0.1	0.1			0.5		0.5						
	Boston Church Rd. / Access 2	Unsignalized	LOS					B		B	B		A	A	A	A	A		A	**A**
			Delay					13.4		13.4	13.4		0.0	0.0	0.0	0.0	0.1		0.1	**0.9**
			V/C					0.09		0.09			0.23	0.23		0.0	0.0			**0.23**
			95th Queue					2.3		2.3			0.0	0.0		0.0	0.0			
	Boston Church Rd. / James Snow Pkwy N.	Signalised	LOS	B	B		B	A	C		C	C	D	A	C	D	D	B	C	**C**
			Delay	14.6	15.8		15.5	10.0	26.0		25.5	29.3	46.0	0.8	26.8	38.8	46.4	12.0	30.0	**24.1**
			V/C	0.42	0.25			0.07	0.67			0.18	0.08	0.12		0.61	0.11	0.50		**0.67**
			95th Queue	18.1	42.3			8.0	129.1			24.5	9.1	0.0		77.1	11.3	20.0		
	James Snow Pkwy N. / RR 25	Signalised	LOS	D	E	B	C	D	D	B	D	A	B	A	B	A	B		B	**B**
			Delay	36.6	56.6	15.0	34.8	49.0	46.2	11.8	40.0	7.0	15.5	2.2	12.2	8.2	13.1		12.1	**13.1**
			V/C	0.13	0.48	0.58		0.64	0.21	0.26		0.15	0.41	0.23		0.28	0.24			**0.42**
			95th Queue	14.4	30.8	21.1		62.8	24.0	15.0		12.4	75.8	11.1		16.0	40.5			

Based on the above criteria and the results summarised in **Table 5**, it can be deduced the following:

AM Peak:

- The signalised and unsignalized intersections are expected to operate very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with

approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

PM Peak:

- Similar to AM Peak hour, the signalised and unsignalized intersections will be operating very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with an approach expected to operate at LOS E but with a v/c equal to 0.48 which well below capacity. Volume/Capacity ratios are well below capacity at all approaches.

In summary, the proposed development is anticipated to have a very minimal impact on traffic operations within the study area. It should also be noted that no modal split was applied to the traffic volumes and no future roadway widenings were considered in the analysis to demonstrate that under conservative conditions, the proposed development will have imperceptible traffic impacts.

6.0 Parking Supply

Based on the Town of Milton Zoning Bylaw 016-2014, the following **Table 6** shows the minimum parking requirements and the proposed parking supply.

Table 6: Parking Calculations

	REQUIRED	PROVIDED
TOTAL GROSS FLOOR AREA (BUILDING A+B+C) = 33829.62 m^2 Parking Ratio: 1/30 m^2 for GFA 1000m^2 1/100m^2 for GFA 1001m^2 to 5000m^2 1/200m^2 for GFA greater than 5000m^2	1/30 m^2 for GFA 1000m^2 = 33.3 1/100m^2 for GFA 5000m^2 = 50 1/200m^2 for GFA 27829.62m^2 = 139.14 TOTAL PARKING REQUIRED = 223	450 (INCLUDING 16 BARRIER-FREE PARKING)

Based on the summarized parking estimations, it can be deduced that the site is over supplying in parking by 227 parking spaces, which is more than double the minimum required parking spaces set by the Town of Milton Bylaw 016-2014.

7.0 Swept Path Assessments

The trucks circulation assessments at the driveways and at the loading areas were completed using AutoTurn 11 software package using the articulated truck WB-20, as well as aerial fire truck along the fire route.

Based on the comprehensive AutoTurn assessments, it can be determined that the proposed site layout around the development and at the loading areas, can accommodate a WB-20 truck, as well as an Aerial Fire truck.

Detailed AutoTurn assessments in different locations around the proposed development are illustrated in **Figures 10 -1 to 10 - 10**.

Based on the swept path assessments, the site design and layout can accommodate both the articulated truck WB-20 and the Aerial fire truck.

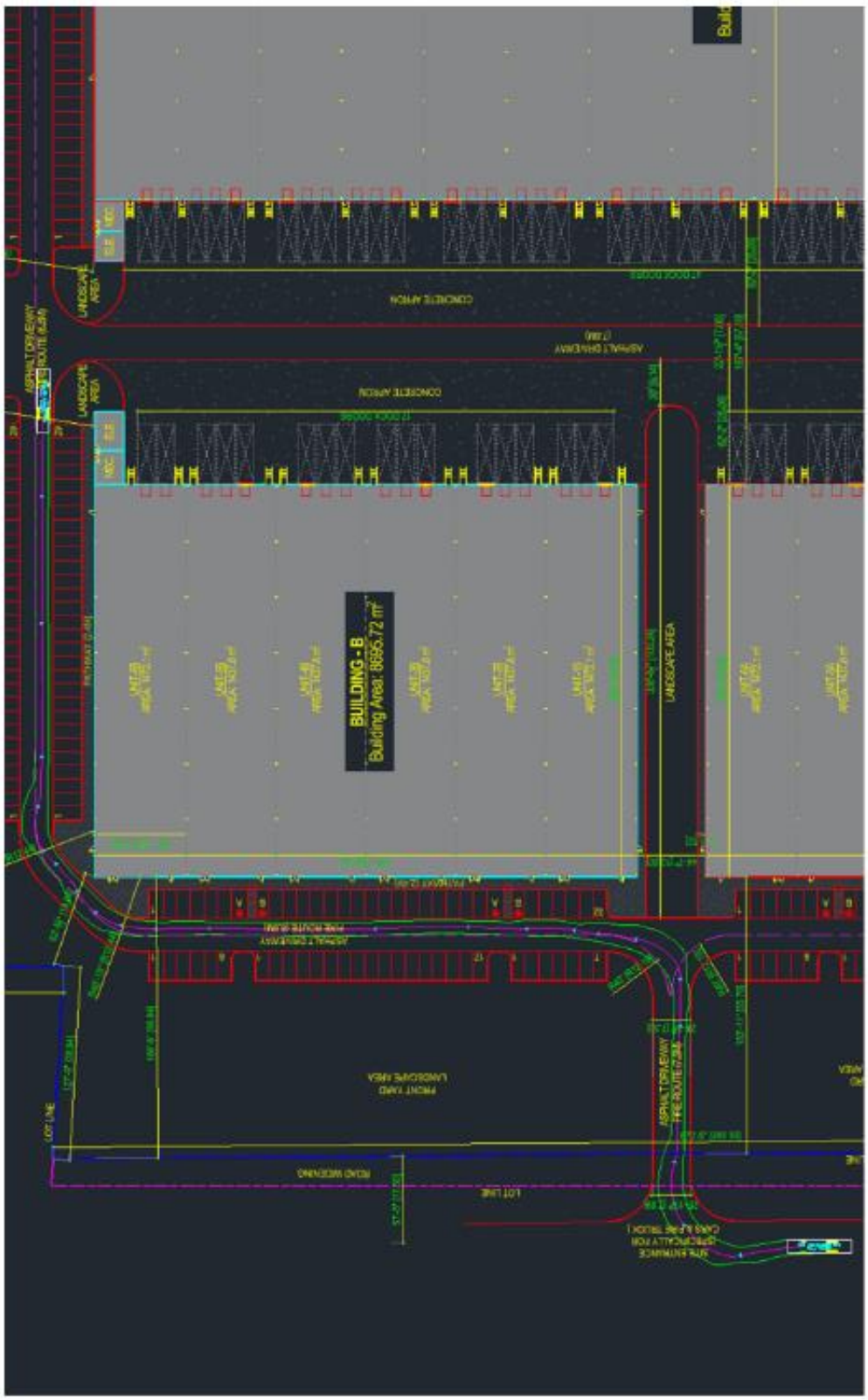


Figure 10-1:
Swept Path Assessments – Aerial Fire truck

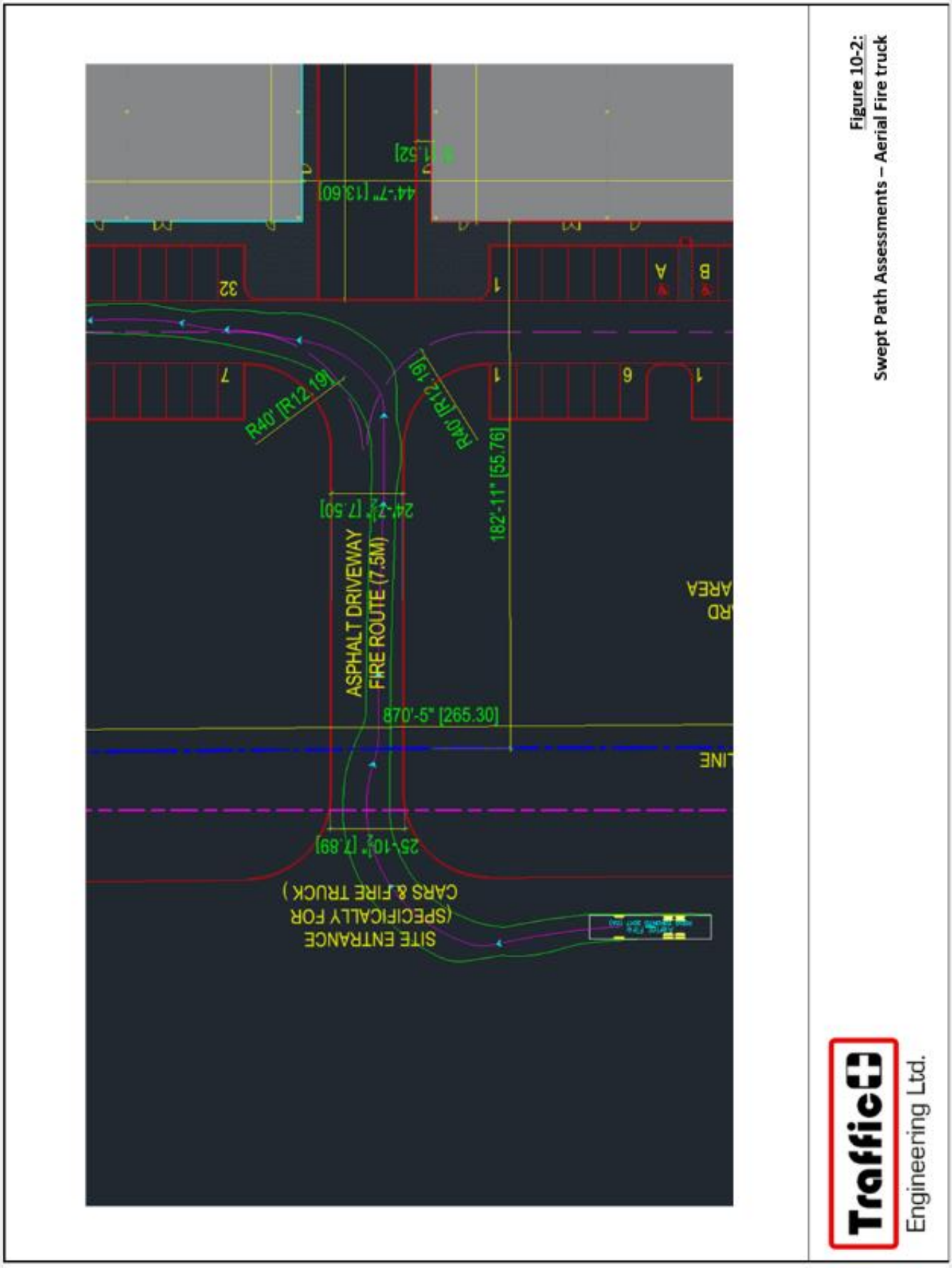


Figure 10-2:
Swept Path Assessments – Aerial Fire truck

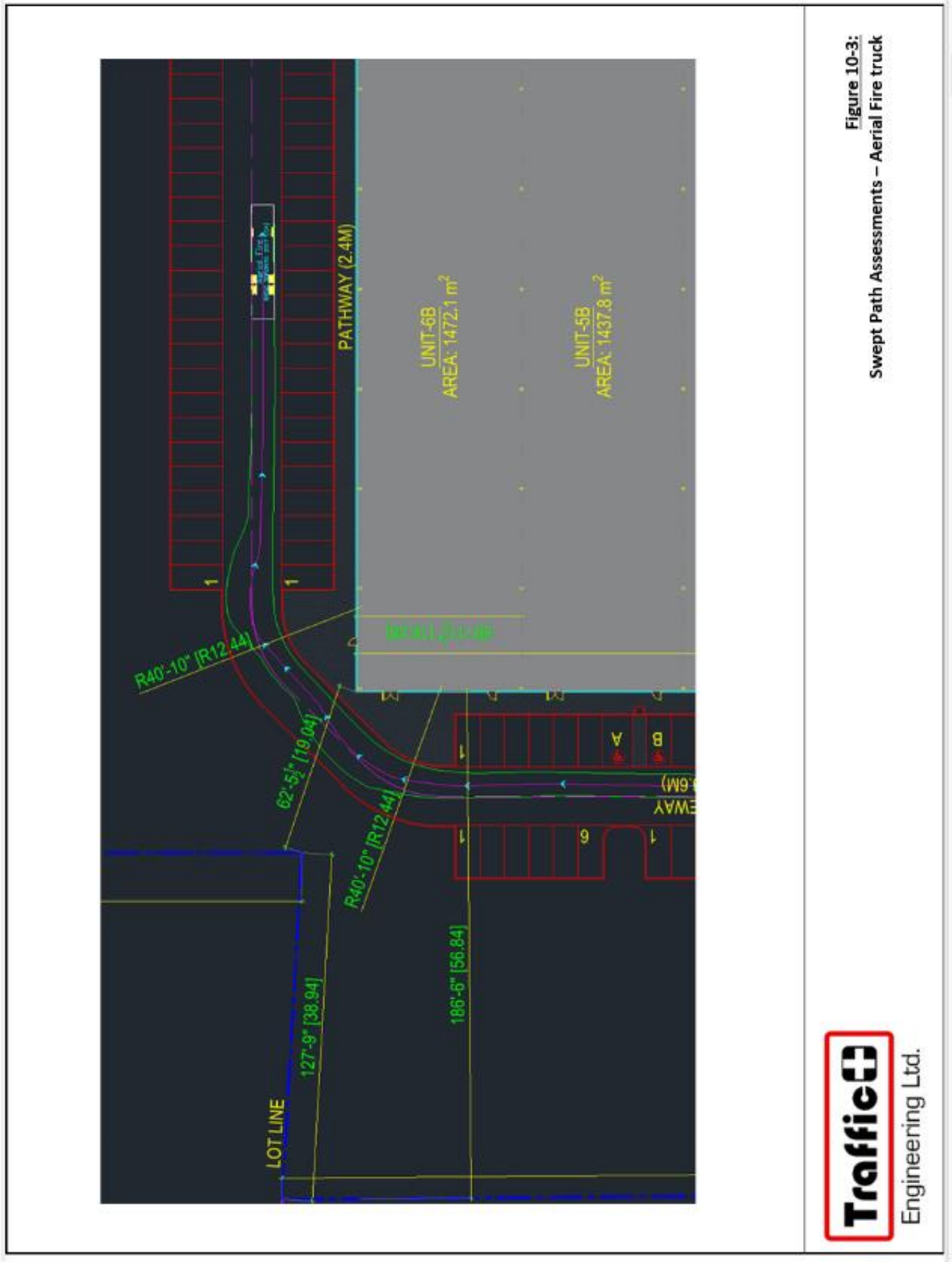


Figure 10-3:
Swept Path Assessments – Aerial Fire truck

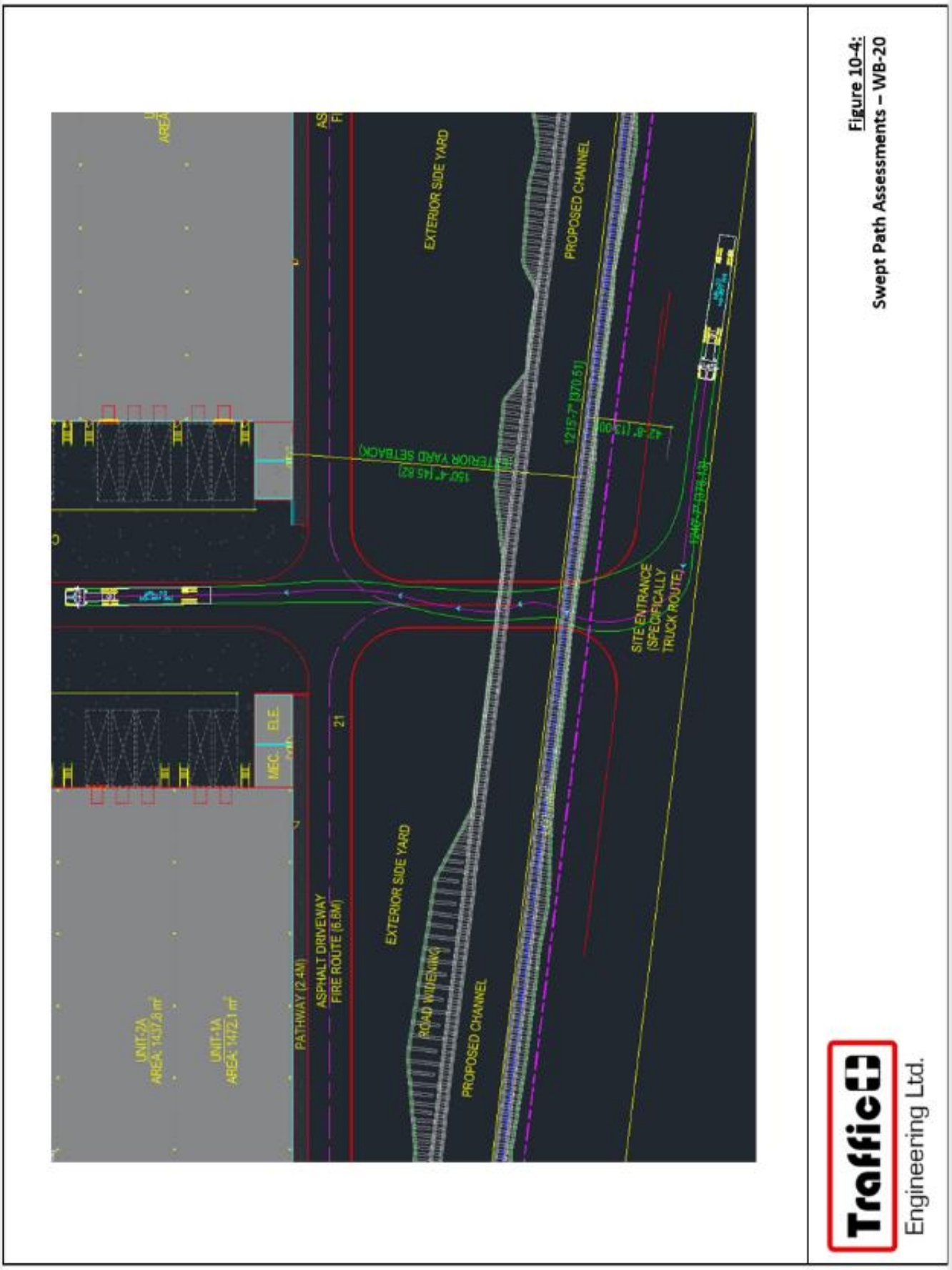


Figure 10-4:
Swept Path Assessments – WB-20

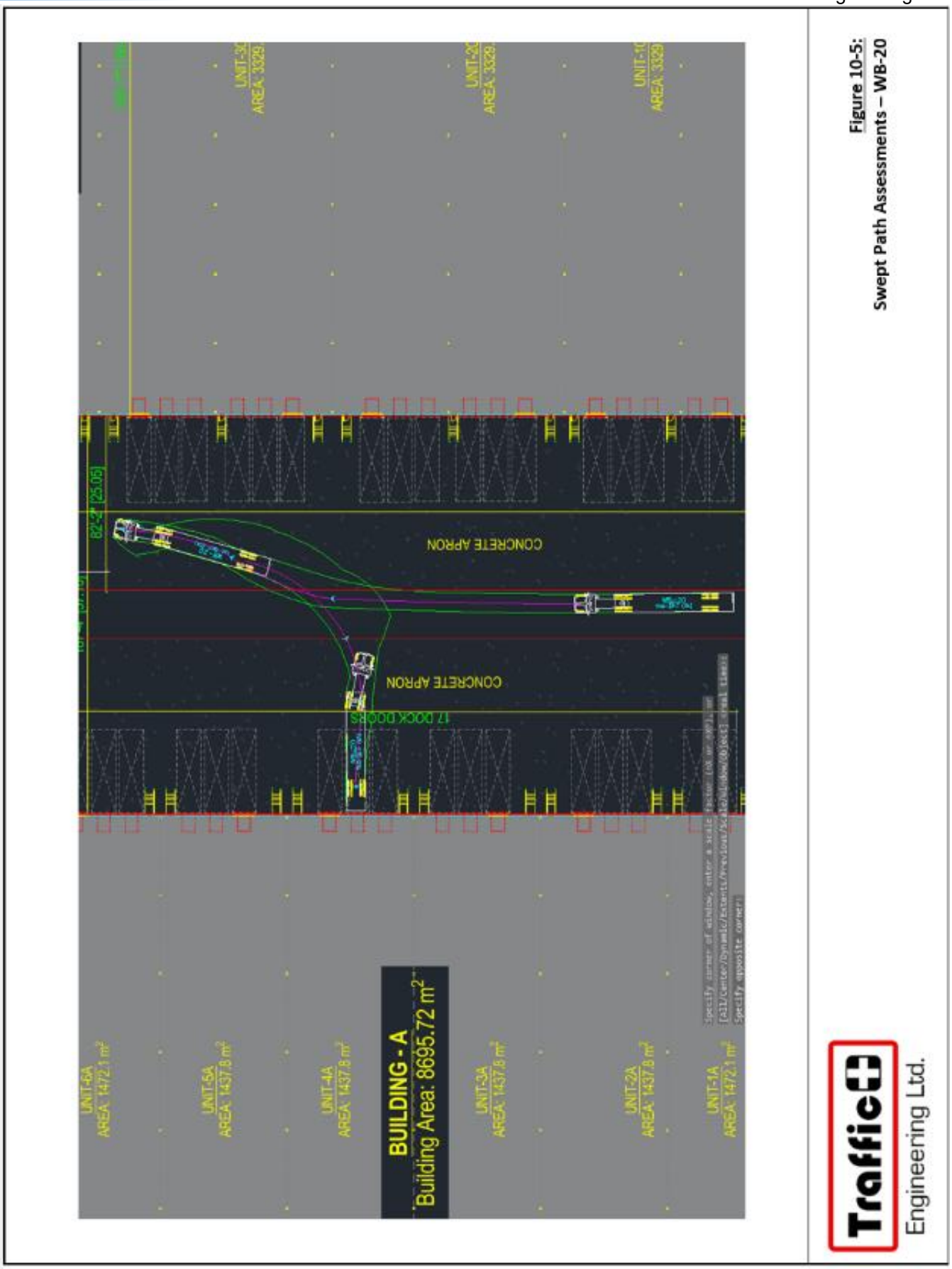


Figure 10-5:
Swept Path Assessments – WB-20

Figure 10-6:
Swept Path Assessments – WB-20

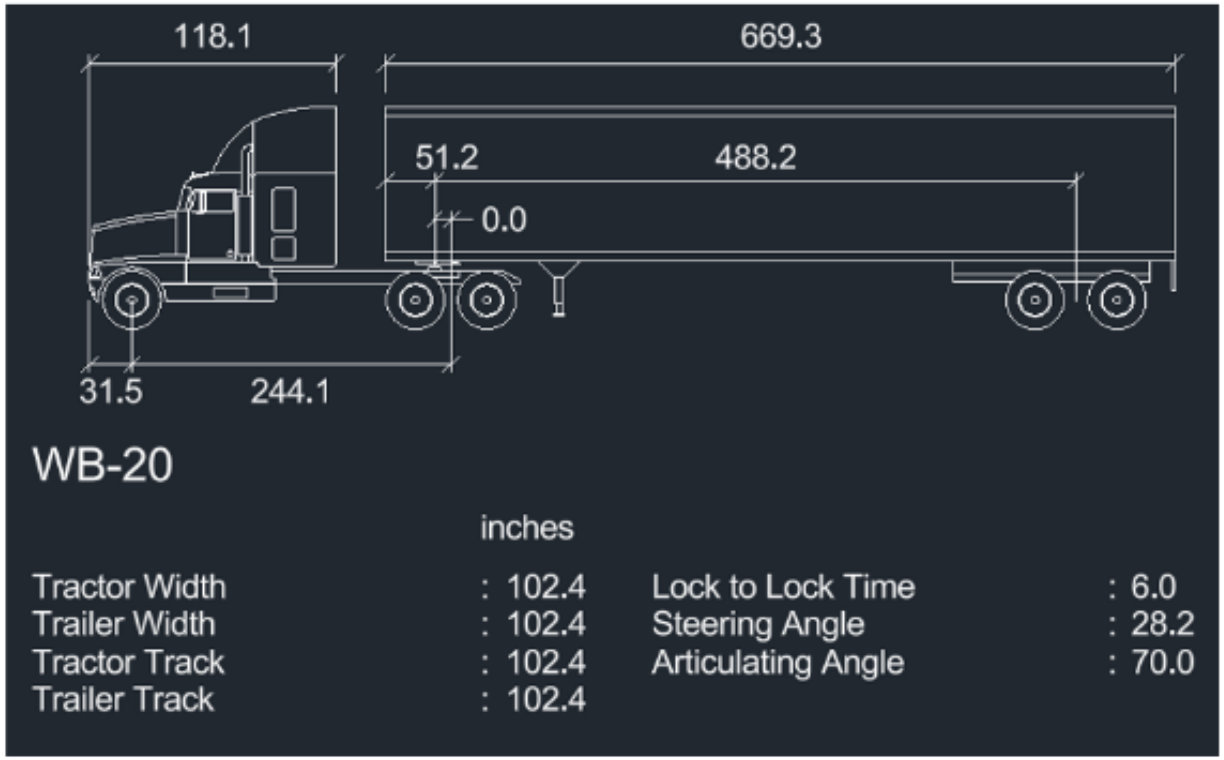


Figure 10-7:
Swept Path Assessments – WB-20

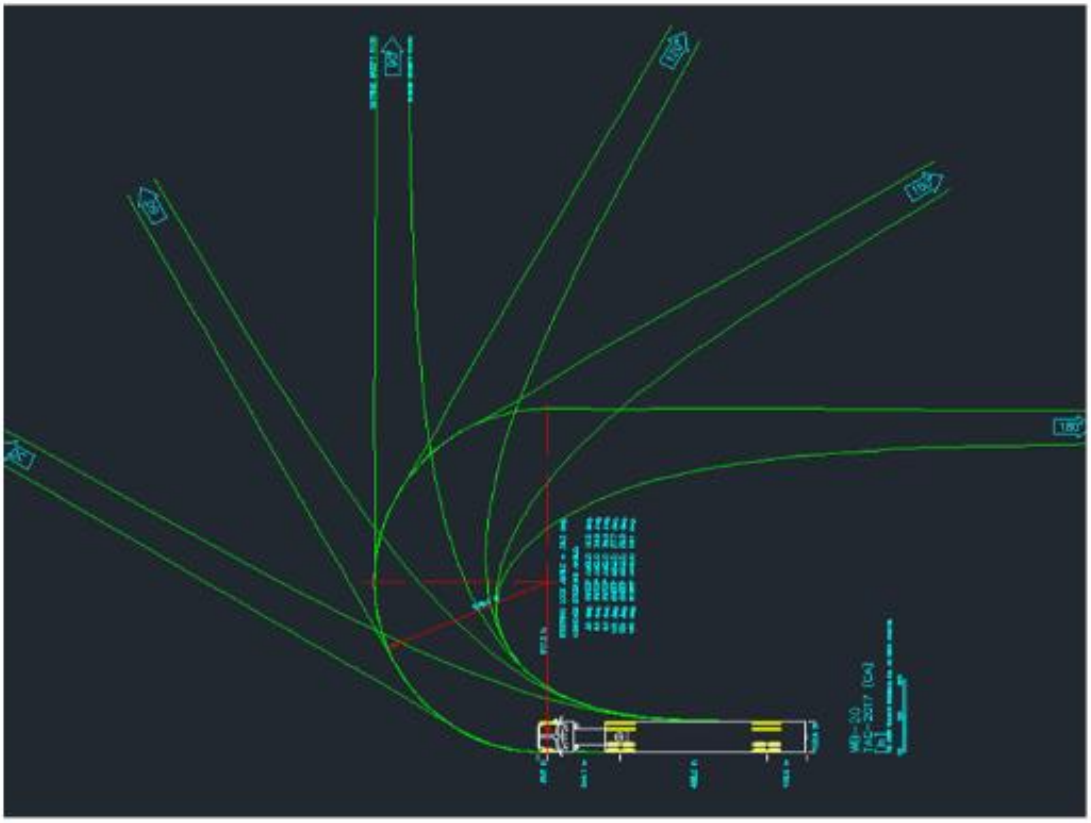


Figure 10-8:
Swept Path Assessments – WB-20

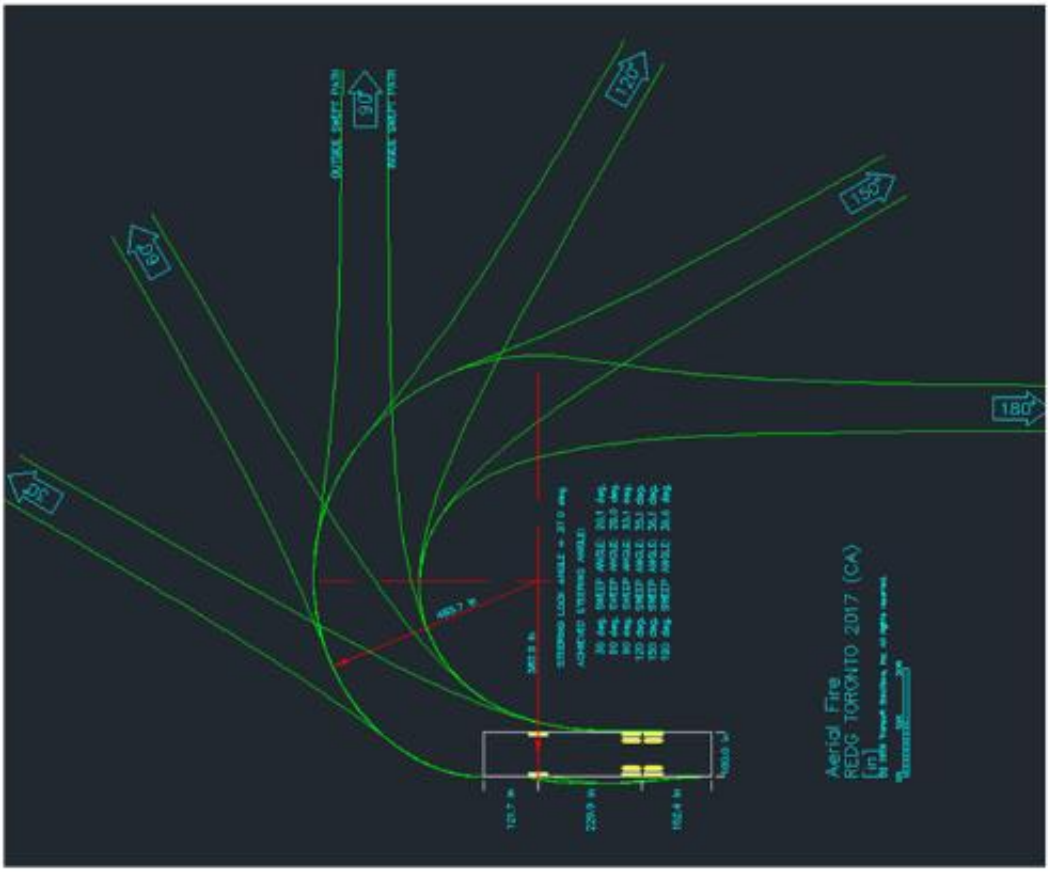


Figure 10-9:
Swept Path Assessments – Aerial Fire truck

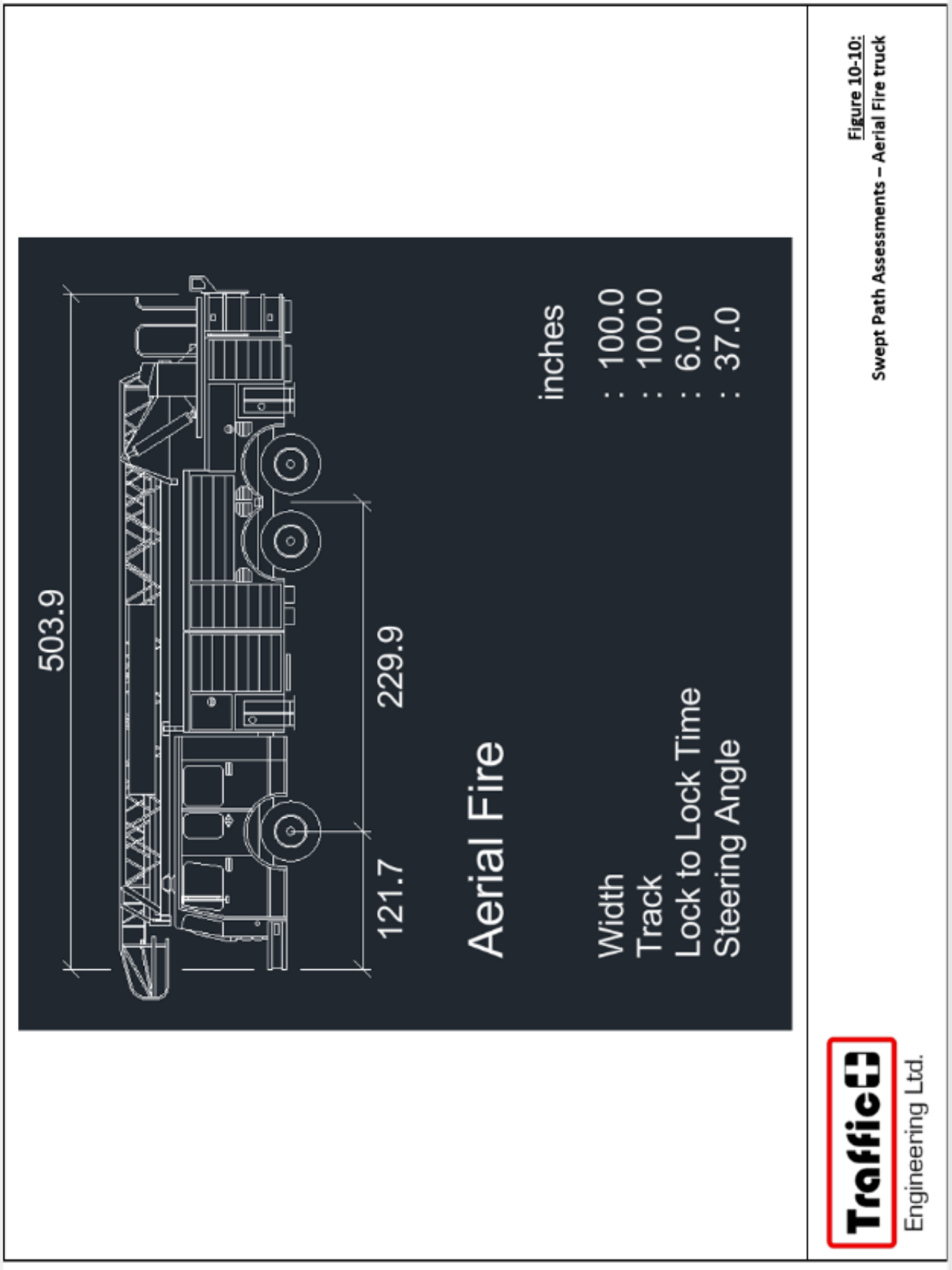


Figure 10-10:
Swept Path Assessments – Aerial Fire truck

8.0 Findings and Conclusions

The findings and conclusions of our study are as follows:

- **Development:**
  - The proposed industrial development will consist of warehousing use operating in three buildings representing a maximum lot coverage of 28.87%. The development will be built on a vacant land with a total surface area of approximately 117,192.46 m² (1,261,449.14 ft²). The total Gross Floor Are (GFA) of the three buildings is equal to 33,829.62 m² (364,139.00 ft²).

- **Existing Traffic Operations:**

AM Peak:

- The signalised and unsignalized intersections are currently operating very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

PM Peak:

- Similar to AM Peak hour, the signalised and unsignalized intersections are currently operating very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

- **Future Background Traffic Operations:**

AM Peak:

- The signalised and unsignalized intersections are expected to operate very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

PM Peak:

- Similar to AM Peak hour, the signalised and unsignalized intersections will be operating very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

- **Modal Split:**

No modal splits were applied to the trip generation in order to assess the future traffic operations at key intersections under conservative conditions.

- **Future Total Traffic Operations:**

AM Peak:

- The signalised and unsignalized intersections are expected to operate very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with approaches operating in LOS D. Volume/Capacity ratios are well below capacity at all approaches.

PM Peak:

- Similar to AM Peak hour, the signalised and unsignalized intersections will be operating very satisfactorily on an overall basis. Overall levels of service are equivalent to LOS A and LOS B, with an approach expected to operate at LOS E but with a v/c equal to 0.48 which well below capacity. Volume/Capacity ratios are well below capacity at all approaches.

- **Parking Supply:**

Based on the summarized parking estimations, it can be deduced that the site is over supplying in parking by 227 parking spaces, which is more than double the minimum required parking spaces set by the Town of Milton Bylaw 016-2014.

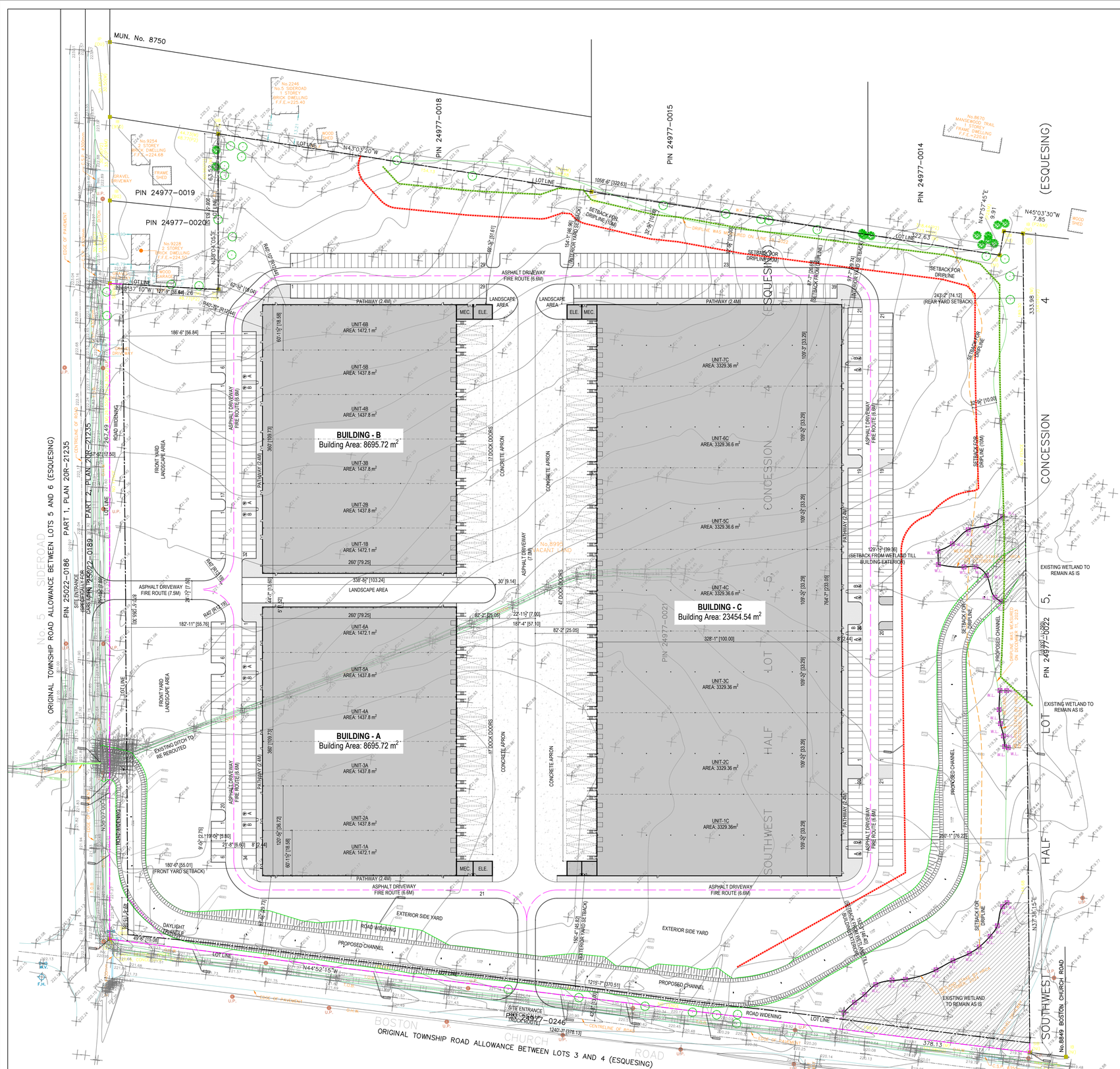
- **Swept Path Assessments:**

Based on the swept path assessments, the site design and layout can accommodate both the articulated truck WB-20 and the Aerial fire truck.

In summary, the proposed development is anticipated to have a very minimal impact on traffic operations within the study area. Also, the site design and layout can accommodate both the articulated truck WB-20 and the Aerial fire truck.

APPENDIX A

Site Plan



LINE LEGEND

- PROPERTY LINE
- GREATEST LIMIT
- DRIPLINE STAKED BY TERRASTORY

SUMMARY	
ADDRESS	8995 BOSTON CHURCH RD, MILTON
ZONE	AGRICULTURE

SITE STATISTICS			
ZONE VARIATION	PERMITTED	EXISTING	PROPOSED
LOT AREA (MINIMUM)		11.71 Hec. (117192.46 sq.m)	
LOT FRONTAGE (MINIMUM)		267.49m	265.30m (After Road Widening)
LOT COVERAGE (MAXIMUM)			34.8% (40845.98 m²)
FRONT YARD SETBACK (M) (MINIMUM)			55.01m
INTERIOR SIDE YARD DEPTH (M) (MINIMUM)			29.74m
EXTERIOR SIDE YARD DEPTH (M) (MINIMUM)			29.73m
REAR YARD DEPTH (M) (MINIMUM)			74.12m
HEIGHT (M) MAXIMUM			10m

VEHICULAR PARKING

Parking is calculated for each individual Cannabis Production and Processing Facility, industrial and warehouse/distribution premises, including accessory office space, as follows:

For the first 1000 m2, 1 parking space per 30m2 of gross floor area shall be provided.

Any additional gross floor area shall be calculated in addition to the above provision and provided in accordance with the following rates:

- ☐ For gross floor areas between 1001m2 to 5000m2 shall provide 1 parking space per 100m2 of gross floor area.
- ☐ Gross floor areas greater than 5000m2 shall provide 1 parking space per 200m2 of gross floor area.

Notwithstanding any provisions of the By-law to the contrary, accessory retail uses associated with the industrial or warehouse/distribution use shall be included within the above noted calculations provided that the retail area does not exceed the lesser of 5% or 232.2 m2 of the total gross floor

PARKING CALCULATION

	REQUIRED	PROVIDED
TOTAL GROSS FLOOR AREA (BUILDING A+B+C) = 33829.62 m²		450 (INCLUDING 16 BARRIER-FREE PARKING)
Parking Ratio: 1/30 m² for GFA 1000m²	= 33.3	
1/100m² for GFA 1001m² to 5000m²	= 50	
1/200m² for GFA greater than 5000m²	= 139.14	
	TOTAL PARKING REQUIRED = 223	

INSPIRE ARCHITECTURAL GROUP
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+1 905-861-2032 harpreet@inspireag.ca

#	DATE	ISSUED FOR
R0	2025-12-10	CLIENT'S REVIEW

PROJECT NAME

PROPOSED WAREHOUSE/STORAGE DEVELOPMENT

AT 8995 BOSTON CHURCH RD, MILTON

DRAWING NAME

PROPOSED SITE PLAN

DRAWN BY RB	PROJECT NO. 25.020
CHECKED BY HK	PROJECT DATE 2025-06-27
Scale 1:200	Drawing no. A1.0
SHEET SIZE	24"X36"
TRUE NORTH	PROJECT NORTH

APPENDIX B

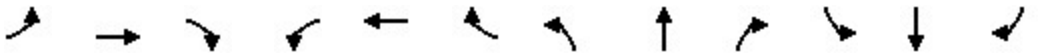
Existing Traffic Operations – Synchro Output

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

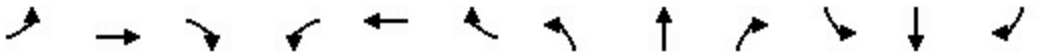
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	3	12	10	2	5	16	122	19	26	151	1
Future Vol, veh/h	4	3	12	10	2	5	16	122	19	26	151	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	3	13	11	2	5	17	133	21	28	164	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.5	7.8	8.2	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	21%	59%	15%
Vol Thru, %	78%	16%	12%	85%
Vol Right, %	12%	63%	29%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	157	19	17	178
LT Vol	16	4	10	26
Through Vol	122	3	2	151
RT Vol	19	12	5	1
Lane Flow Rate	171	21	18	193
Geometry Grp	1	1	1	1
Degree of Util (X)	0.194	0.025	0.024	0.223
Departure Headway (Hd)	4.094	4.407	4.688	4.155
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	867	817	768	855
Service Time	2.168	2.408	2.689	2.221
HCM Lane V/C Ratio	0.197	0.026	0.023	0.226
HCM Control Delay, s/veh	8.2	7.5	7.8	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.1	0.1	0.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	256	72	16	267	46	34	12	16	26	21	85
Future Volume (vph)	26	256	72	16	267	46	34	12	16	26	21	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	125.0		0.0	150.0		0.0	70.0		70.0	100.0		35.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.967			0.978				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3460	0	1789	3500	0	1789	3579	1601	1789	3579	1601
Flt Permitted	0.535			0.539			0.742			0.749		
Satd. Flow (perm)	1008	3460	0	1015	3500	0	1398	3579	1601	1411	3579	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			17				106			106
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		898.7			588.3			252.0			1063.3	
Travel Time (s)		46.2			30.3			15.1			63.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	28	278	78	17	290	50	37	13	17	28	23	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	356	0	17	340	0	37	13	17	28	23	92
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(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												

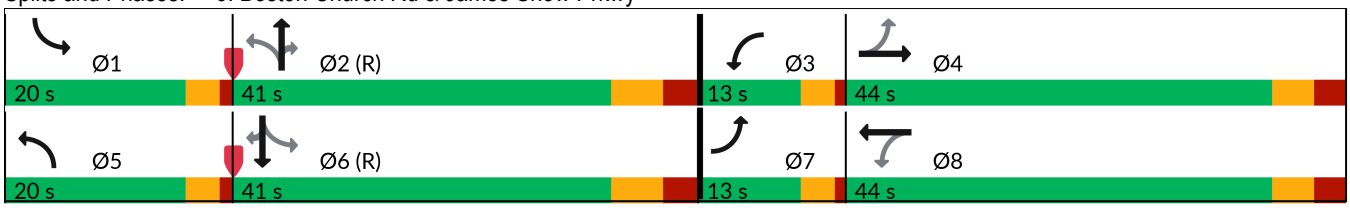


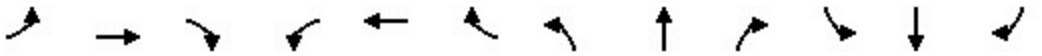
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	6.5	20.0		6.5	20.0		6.5	15.0	15.0	6.5	15.0	15.0
Minimum Split (s)	11.0	33.5		11.0	33.5		11.0	31.6	31.6	11.0	31.6	31.6
Total Split (s)	13.0	44.0		13.0	44.0		20.0	41.0	41.0	20.0	41.0	41.0
Total Split (%)	11.0%	37.3%		11.0%	37.3%		16.9%	34.7%	34.7%	16.9%	34.7%	34.7%
Maximum Green (s)	9.0	37.5		9.0	37.5		16.0	33.4	33.4	16.0	33.4	33.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.6	4.6	3.0	4.6	4.6
All-Red Time (s)	1.0	2.8		1.0	2.8		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5		4.0	7.6	7.6	4.0	7.6	7.6
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Max		None	Max		Max	C-Min	C-Min	Max	C-Min	C-Min
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		11.0			11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	69.9	64.7		68.9	62.4		34.6	15.0	15.0	34.6	15.0	15.0
Actuated g/C Ratio	0.59	0.55		0.58	0.53		0.29	0.13	0.13	0.29	0.13	0.13
v/c Ratio	0.04	0.19		0.03	0.18		0.08	0.03	0.06	0.06	0.05	0.31
Control Delay (s/veh)	9.6	13.2		9.5	14.8		28.0	45.4	0.4	27.7	45.7	9.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.6	13.2		9.5	14.8		28.0	45.4	0.4	27.7	45.7	9.6
LOS	A	B		A	B		C	D	A	C	D	A
Approach Delay (s/veh)		12.9			14.6			24.4			18.9	
Approach LOS		B			B			C			B	
90th %ile Green (s)	7.2	58.2		6.7	57.7		16.0	15.0	15.0	16.0	15.0	15.0
90th %ile Term Code	Gap	MaxR		Gap	MaxR		MaxR	Coord	Coord	MaxR	Coord	Coord
70th %ile Green (s)	6.6	58.4		6.5	58.3		16.0	15.0	15.0	16.0	15.0	15.0
70th %ile Term Code	Gap	MaxR		Min	MaxR		MaxR	Coord	Coord	MaxR	Coord	Coord
50th %ile Green (s)	6.5	68.9		0.0	58.4		16.0	15.0	15.0	16.0	15.0	15.0
50th %ile Term Code	Min	MaxR		Skip	MaxR		MaxR	Coord	Coord	MaxR	Coord	Coord
30th %ile Green (s)	0.0	68.9		0.0	68.9		16.0	15.0	15.0	16.0	15.0	15.0
30th %ile Term Code	Skip	MaxR		Skip	MaxR		MaxR	Coord	Coord	MaxR	Coord	Coord
10th %ile Green (s)	0.0	68.9		0.0	68.9		16.0	15.0	15.0	16.0	15.0	15.0
10th %ile Term Code	Skip	MaxR		Skip	MaxR		MaxR	Coord	Coord	MaxR	Coord	Coord
Queue Length 50th (m)	2.5	17.1		1.5	21.2		5.9	1.4	0.0	4.4	2.5	0.0
Queue Length 95th (m)	6.1	30.4		4.3	30.4		13.5	4.4	0.0	11.0	6.5	11.7
Internal Link Dist (m)		874.7			564.3			228.0			1039.3	
Turn Bay Length (m)	125.0			150.0			70.0		70.0	100.0		35.0
Base Capacity (vph)	663	1910		664	1859		462	1013	529	464	1013	529
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.19		0.03	0.18		0.08	0.01	0.03	0.06	0.02	0.17

Intersection Summary

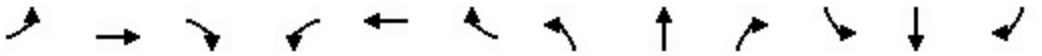
Area Type:	Other
Cycle Length: 118	
Actuated Cycle Length: 118	
Offset: 54.5 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.31	
Intersection Signal Delay (s/veh): 15.3	Intersection LOS: B
Intersection Capacity Utilization 49.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Boston Church Rd & James Snow Prkwy





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	34	29	42	87	51	162	389	297	28	347	98
Future Volume (vph)	13	34	29	42	87	51	162	389	297	28	347	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	90.0		120.0	125.0		55.0	70.0		0.0	145.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	25.0			25.0			25.0			20.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.967	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	3579	1601	1789	3460	0
Flt Permitted	0.692			0.551			0.437			0.505		
Satd. Flow (perm)	1303	3579	1601	1038	3579	1601	823	3579	1601	951	3460	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			77			77			323		29	
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		378.9			517.8			412.4			440.8	
Travel Time (s)		22.7			31.1			21.2			22.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	14	37	32	46	95	55	176	423	323	30	377	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	37	32	46	95	55	176	423	323	30	484	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(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												

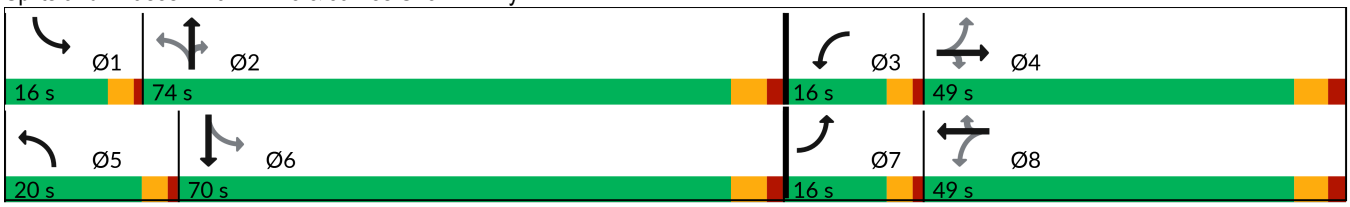


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	6.5	10.0	10.0	7.0	10.0	10.0	6.5	20.0	20.0	6.5	20.0	
Minimum Split (s)	11.0	43.9	43.9	11.5	43.9	43.9	11.0	42.9	42.9	11.0	35.9	
Total Split (s)	16.0	49.0	49.0	16.0	49.0	49.0	20.0	74.0	74.0	16.0	70.0	
Total Split (%)	10.3%	31.6%	31.6%	10.3%	31.6%	31.6%	12.9%	47.7%	47.7%	10.3%	45.2%	
Maximum Green (s)	12.0	43.0	43.0	12.0	43.0	43.0	16.0	68.0	68.0	12.0	64.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	17.3	10.0	10.0	21.1	15.4	15.4	80.0	72.2	72.2	73.3	64.7	
Actuated g/C Ratio	0.16	0.09	0.09	0.19	0.14	0.14	0.73	0.66	0.66	0.67	0.59	
v/c Ratio	0.06	0.11	0.15	0.18	0.19	0.19	0.26	0.18	0.28	0.04	0.24	
Control Delay (s/veh)	36.1	48.9	1.4	37.7	44.6	6.8	6.0	8.9	1.7	5.4	11.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	36.1	48.9	1.4	37.7	44.6	6.8	6.0	8.9	1.7	5.4	11.2	
LOS	D	D	A	D	D	A	A	A	A	A	B	
Approach Delay (s/veh)		28.4			32.4			5.8			10.9	
Approach LOS		C			C			A			B	
90th %ile Green (s)	7.4	10.0	10.0	10.1	12.7	12.7	12.1	69.4	69.4	6.7	64.0	
90th %ile Term Code	Gap	Min	Min	Gap	Hold	Hold	Gap	Hold	Hold	Gap	MaxR	
70th %ile Green (s)	6.7	10.0	10.0	8.7	12.0	12.0	10.4	68.0	68.0	6.5	64.1	
70th %ile Term Code	Gap	Min	Min	Gap	Hold	Hold	Gap	MaxR	MaxR	Min	Hold	
50th %ile Green (s)	0.0	10.0	10.0	7.8	21.8	21.8	9.2	68.0	68.0	6.5	65.3	
50th %ile Term Code	Skip	Min	Min	Gap	Hold	Hold	Gap	MaxR	MaxR	Min	Hold	
30th %ile Green (s)	0.0	10.0	10.0	7.0	21.0	21.0	9.1	77.1	77.1	0.0	64.0	
30th %ile Term Code	Skip	Min	Min	Min	Hold	Hold	Gap	Hold	Hold	Skip	MaxR	
10th %ile Green (s)	0.0	10.0	10.0	0.0	10.0	10.0	7.1	76.2	76.2	0.0	65.1	
10th %ile Term Code	Skip	Hold	Hold	Skip	Min	Min	Gap	Dwell	Dwell	Skip	Dwell	
Queue Length 50th (m)	2.5	4.0	0.0	8.2	9.1	0.0	10.6	20.4	0.0	1.7	23.8	
Queue Length 95th (m)	7.8	9.5	0.0	18.2	18.8	7.2	18.6	29.4	10.8	4.5	36.4	
Internal Link Dist (m)		354.9			493.8			388.4			416.8	
Turn Bay Length (m)	90.0		120.0	125.0		55.0	70.0			145.0		
Base Capacity (vph)	303	1403	674	286	1403	674	741	2347	1161	771	2048	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.05	0.03	0.05	0.16	0.07	0.08	0.24	0.18	0.28	0.04	0.24	

Intersection Summary

Area Type:	Other	
Cycle Length: 155		
Actuated Cycle Length: 110		
Natural Cycle: 110		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.28		
Intersection Signal Delay (s/veh): 11.5		Intersection LOS: B
Intersection Capacity Utilization 48.0%		ICU Level of Service A
Analysis Period (min) 15		
90th %ile Actuated Cycle: 116.2		
70th %ile Actuated Cycle: 113.2		
50th %ile Actuated Cycle: 112.3		
30th %ile Actuated Cycle: 110.1		
10th %ile Actuated Cycle: 98.2		

Splits and Phases: 9: RR 25 & James Snow Prkwy



Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	5	12	22	8	6	12	218	34	19	145	2
Future Vol, veh/h	5	5	12	22	8	6	12	218	34	19	145	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	5	13	24	9	7	13	237	37	21	158	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.9	8.3	9.4	8.6
HCM LOS	A	A	A	A

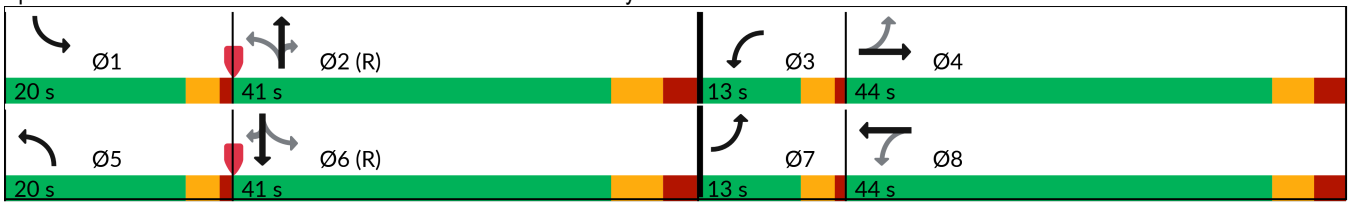
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	23%	61%	11%
Vol Thru, %	83%	23%	22%	87%
Vol Right, %	13%	55%	17%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	264	22	36	166
LT Vol	12	5	22	19
Through Vol	218	5	8	145
RT Vol	34	12	6	2
Lane Flow Rate	287	24	39	180
Geometry Grp	1	1	1	1
Degree of Util (X)	0.337	0.031	0.054	0.22
Departure Headway (Hd)	4.223	4.723	5.005	4.395
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	858	758	716	819
Service Time	2.223	2.752	3.033	2.409
HCM Lane V/C Ratio	0.334	0.032	0.054	0.22
HCM Control Delay, s/veh	9.4	7.9	8.3	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.5	0.1	0.2	0.8

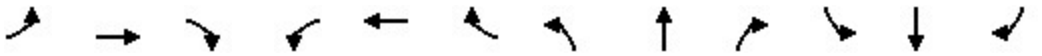
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	278	61	34	703	72	67	31	29	48	41	88
Future Volume (vph)	67	278	61	34	703	72	67	31	29	48	41	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		0.0	150.0		0.0	70.0		70.0	100.0		35.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.973			0.986				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3482	0	1789	3528	0	1789	3579	1601	1789	3579	1601
Flt Permitted	0.257			0.533			0.726			0.734		
Satd. Flow (perm)	484	3482	0	1004	3528	0	1367	3579	1601	1382	3579	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			10				106			106
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		898.7			588.3			252.0			1069.6	
Travel Time (s)		46.2			30.3			15.1			64.2	
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)	73	302	66	37	764	78	73	34	32	52	45	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	368	0	37	842	0	73	34	32	52	45	96
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(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	6.5	20.0		6.5	20.0		6.5	15.0	15.0	6.5	15.0	15.0
Minimum Split (s)	11.0	33.5		11.0	33.5		11.0	31.6	31.6	11.0	31.6	31.6
Total Split (s)	13.0	44.0		13.0	44.0		20.0	41.0	41.0	20.0	41.0	41.0
Total Split (%)	11.0%	37.3%		11.0%	37.3%		16.9%	34.7%	34.7%	16.9%	34.7%	34.7%
Maximum Green (s)	9.0	37.5		9.0	37.5		16.0	33.4	33.4	16.0	33.4	33.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.6	4.6	3.0	4.6	4.6
All-Red Time (s)	1.0	2.8		1.0	2.8		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5		4.0	7.6	7.6	4.0	7.6	7.6
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		Max	C-Min	C-Min	Max	C-Min	C-Min
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		11.0			11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	69.8	62.3		67.4	59.4		34.6	15.0	15.0	34.6	15.0	15.0
Actuated g/C Ratio	0.59	0.53		0.57	0.50		0.29	0.13	0.13	0.29	0.13	0.13
v/c Ratio	0.20	0.20		0.06	0.47		0.16	0.07	0.11	0.11	0.10	0.32
Control Delay (s/veh)	11.0	14.9		9.8	20.6		29.1	46.0	0.7	28.4	46.2	10.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.0	14.9		9.8	20.6		29.1	46.0	0.7	28.4	46.2	10.4
LOS	B	B		A	C		C	D	A	C	D	B
Approach Delay (s/veh)		14.2			20.1			26.7			23.6	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 118			
Offset: 54.5 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay (s/veh): 19.5		Intersection LOS: B	
Intersection Capacity Utilization 54.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Boston Church Rd & James Snow Prkwy



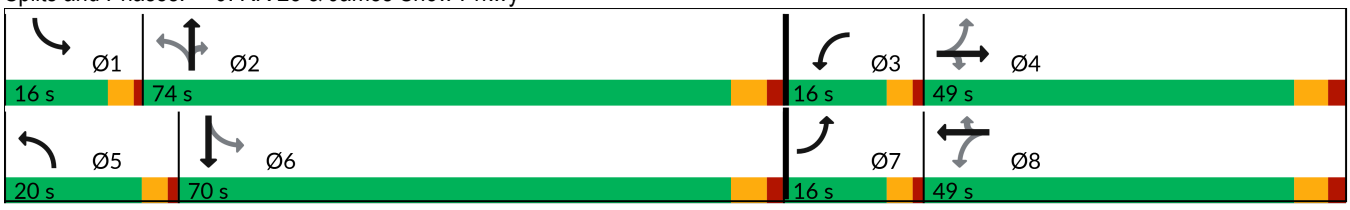


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	124	152	42	87	51	76	697	141	92	381	12
Future Volume (vph)	27	124	152	42	87	51	76	697	141	92	381	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		120.0	125.0		55.0	70.0		0.0	145.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	3579	1601	1789	3561	0
Flt Permitted	0.692			0.562			0.501			0.326		
Satd. Flow (perm)	1303	3579	1601	1058	3579	1601	944	3579	1601	614	3561	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			165			77			153		2	
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		378.9			517.8			412.4			440.8	
Travel Time (s)		22.7			31.1			21.2			22.7	
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)	29	135	165	46	95	55	83	758	153	100	414	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	135	165	46	95	55	83	758	153	100	427	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(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.5	10.0	10.0	7.0	10.0	10.0	6.5	20.0	20.0	6.5	20.0	
Minimum Split (s)	11.0	43.9	43.9	11.5	43.9	43.9	11.0	42.9	42.9	11.0	35.9	
Total Split (s)	16.0	49.0	49.0	16.0	49.0	49.0	20.0	74.0	74.0	16.0	70.0	
Total Split (%)	10.3%	31.6%	31.6%	10.3%	31.6%	31.6%	12.9%	47.7%	47.7%	10.3%	45.2%	
Maximum Green (s)	12.0	43.0	43.0	12.0	43.0	43.0	16.0	68.0	68.0	12.0	64.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	18.5	10.6	10.6	20.6	13.4	13.4	77.6	68.2	68.2	78.0	68.4	
Actuated g/C Ratio	0.17	0.09	0.09	0.18	0.12	0.12	0.69	0.61	0.61	0.70	0.61	
v/c Ratio	0.12	0.40	0.55	0.19	0.22	0.21	0.12	0.35	0.15	0.20	0.20	
Control Delay (s/veh)	37.0	52.6	15.0	38.0	47.8	7.1	5.6	12.2	2.1	6.1	10.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.0	52.6	15.0	38.0	47.8	7.1	5.6	12.2	2.1	6.1	10.6	
LOS	D	D	B	D	D	A	A	B	A	A	B	
Approach Delay (s/veh)		32.4			34.1			10.1			9.8	
Approach LOS		C			C			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 155			
Actuated Cycle Length: 112.1			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay (s/veh): 15.9		Intersection LOS: B	
Intersection Capacity Utilization 55.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 9: RR 25 & James Snow Prkwy



APPENDIX C

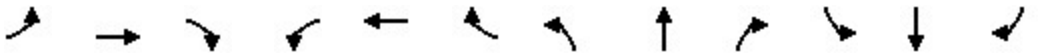
Future Background Traffic Operations – Synchro Output

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	3	13	11	2	6	18	135	21	29	167	1
Future Vol, veh/h	4	3	13	11	2	6	18	135	21	29	167	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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	3	14	12	2	7	20	147	23	32	182	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.6	7.9	8.4	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	20%	58%	15%
Vol Thru, %	78%	15%	11%	85%
Vol Right, %	12%	65%	32%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	174	20	19	197
LT Vol	18	4	11	29
Through Vol	135	3	2	167
RT Vol	21	13	6	1
Lane Flow Rate	189	22	21	214
Geometry Grp	1	1	1	1
Degree of Util (X)	0.216	0.027	0.027	0.248
Departure Headway (Hd)	4.116	4.482	4.761	4.175
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	861	803	756	850
Service Time	2.2	2.483	2.762	2.251
HCM Lane V/C Ratio	0.22	0.027	0.028	0.252
HCM Control Delay, s/veh	8.4	7.6	7.9	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.1	0.1	1

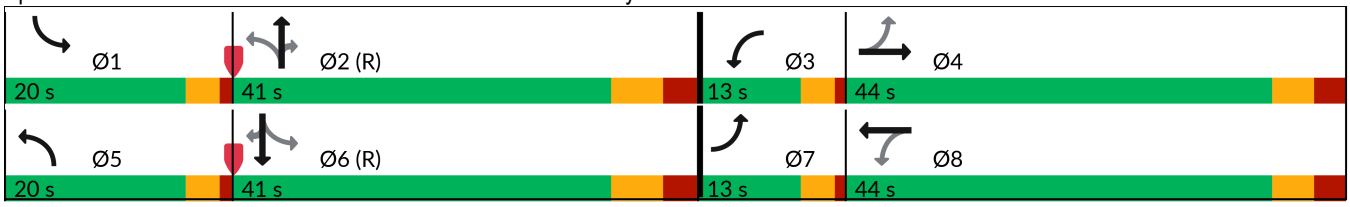


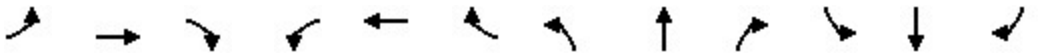
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	283	79	18	295	51	38	13	18	29	23	94
Future Volume (vph)	29	283	79	18	295	51	38	13	18	29	23	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		0.0	150.0		0.0	70.0		70.0	100.0		70.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	2.5			2.5			25.0			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.967			0.978				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3460	0	1789	3500	0	1789	3579	1601	1789	3579	1601
Flt Permitted	0.515			0.519			0.740			0.748		
Satd. Flow (perm)	970	3460	0	978	3500	0	1394	3579	1601	1409	3579	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			17				106			106
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		898.7			588.3			252.0			993.5	
Travel Time (s)		46.2			30.3			15.1			59.6	
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)	32	308	86	20	321	55	41	14	20	32	25	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	394	0	20	376	0	41	14	20	32	25	102
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(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	6.5	20.0		6.5	20.0		6.5	15.0	15.0	6.5	15.0	15.0
Minimum Split (s)	11.0	33.5		11.0	33.5		11.0	31.6	31.6	11.0	31.6	31.6
Total Split (s)	13.0	44.0		13.0	44.0		20.0	41.0	41.0	20.0	41.0	41.0
Total Split (%)	11.0%	37.3%		11.0%	37.3%		16.9%	34.7%	34.7%	16.9%	34.7%	34.7%
Maximum Green (s)	9.0	37.5		9.0	37.5		16.0	33.4	33.4	16.0	33.4	33.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.6	4.6	3.0	4.6	4.6
All-Red Time (s)	1.0	2.8		1.0	2.8		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5		4.0	7.6	7.6	4.0	7.6	7.6
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		Max	C-Min	C-Min	Max	C-Min	C-Min
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		11.0			11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	70.0	64.6		68.8	62.4		34.6	15.0	15.0	34.6	15.0	15.0
Actuated g/C Ratio	0.59	0.55		0.58	0.53		0.29	0.13	0.13	0.29	0.13	0.13
v/c Ratio	0.05	0.21		0.03	0.20		0.09	0.03	0.07	0.07	0.06	0.34
Control Delay (s/veh)	9.7	13.5		9.6	15.1		28.1	45.5	0.4	27.9	45.7	11.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.7	13.5		9.6	15.1		28.1	45.5	0.4	27.9	45.7	11.7
LOS	A	B		A	B		C	D	A	C	D	B
Approach Delay (s/veh)		13.2			14.8			24.0			20.3	
Approach LOS		B			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 118			
Offset: 54.5 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay (s/veh): 15.6		Intersection LOS: B	
Intersection Capacity Utilization 49.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Boston Church Rd & James Snow Prkwy



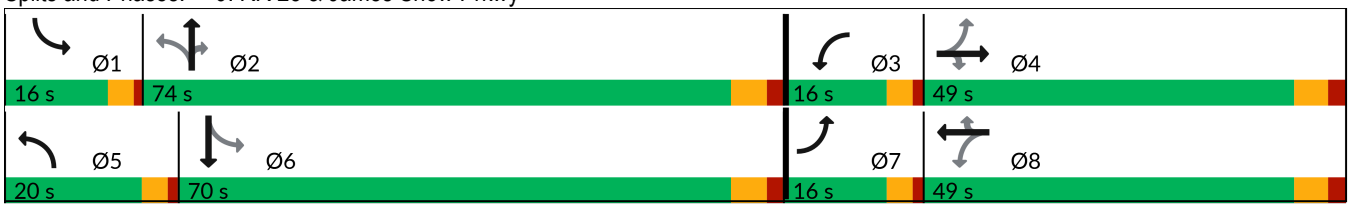


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	38	32	46	96	56	179	429	328	31	383	108
Future Volume (vph)	14	38	32	46	96	56	179	429	328	31	383	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		120.0	125.0		55.0	70.0		0.0	145.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	40.0			40.0			40.0			40.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.967	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	3579	1601	1789	3460	0
Flt Permitted	0.686			0.542			0.409			0.484		
Satd. Flow (perm)	1292	3579	1601	1021	3579	1601	770	3579	1601	912	3460	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			77			77			357		28	
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		378.9			517.8			412.4			440.8	
Travel Time (s)		22.7			31.1			21.2			22.7	
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)	15	41	35	50	104	61	195	466	357	34	416	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	41	35	50	104	61	195	466	357	34	533	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(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.5	10.0	10.0	7.0	10.0	10.0	6.5	20.0	20.0	6.5	20.0	
Minimum Split (s)	11.0	43.9	43.9	11.5	43.9	43.9	11.0	42.9	42.9	11.0	35.9	
Total Split (s)	16.0	49.0	49.0	16.0	49.0	49.0	20.0	74.0	74.0	16.0	70.0	
Total Split (%)	10.3%	31.6%	31.6%	10.3%	31.6%	31.6%	12.9%	47.7%	47.7%	10.3%	45.2%	
Maximum Green (s)	12.0	43.0	43.0	12.0	43.0	43.0	16.0	68.0	68.0	12.0	64.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	17.3	10.0	10.0	21.3	15.6	15.6	80.4	72.4	72.4	73.0	64.4	
Actuated g/C Ratio	0.16	0.09	0.09	0.19	0.14	0.14	0.73	0.66	0.66	0.66	0.58	
v/c Ratio	0.06	0.13	0.16	0.20	0.21	0.21	0.30	0.20	0.30	0.05	0.26	
Control Delay (s/veh)	36.3	49.5	1.6	38.2	44.9	8.9	6.3	9.1	1.8	5.5	11.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	36.3	49.5	1.6	38.2	44.9	8.9	6.3	9.1	1.8	5.5	11.9	
LOS	D	D	A	D	D	A	A	A	A	A	B	
Approach Delay (s/veh)		28.9			33.1			6.0			11.5	
Approach LOS		C			C			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 155			
Actuated Cycle Length: 110.4			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.30			
Intersection Signal Delay (s/veh): 11.8		Intersection LOS: B	
Intersection Capacity Utilization 49.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: RR 25 & James Snow Prkwy



Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	12	62	28	10	7	48	241	61	21	160	2
Future Vol, veh/h	6	12	62	28	10	7	48	241	61	21	160	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	13	67	30	11	8	52	262	66	23	174	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.6	8.9	11.3	9.4
HCM LOS	A	A	B	A

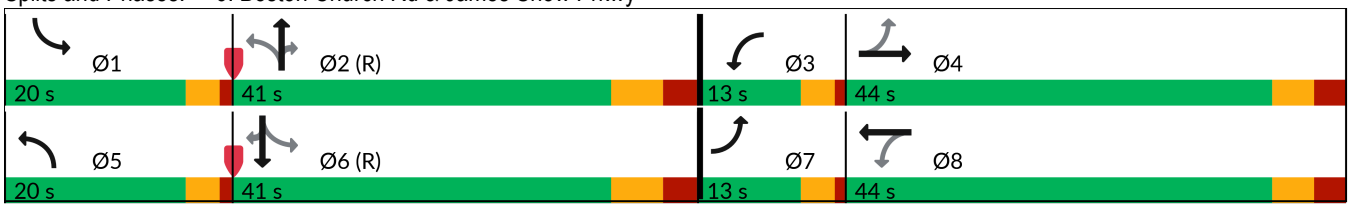
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	8%	62%	11%
Vol Thru, %	69%	15%	22%	87%
Vol Right, %	17%	78%	16%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	350	80	45	183
LT Vol	48	6	28	21
Through Vol	241	12	10	160
RT Vol	61	62	7	2
Lane Flow Rate	380	87	49	199
Geometry Grp	1	1	1	1
Degree of Util (X)	0.468	0.117	0.073	0.26
Departure Headway (Hd)	4.426	4.853	5.391	4.704
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	814	734	660	762
Service Time	2.463	2.914	3.457	2.75
HCM Lane V/C Ratio	0.467	0.119	0.074	0.261
HCM Control Delay, s/veh	11.3	8.6	8.9	9.4
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2.5	0.4	0.2	1

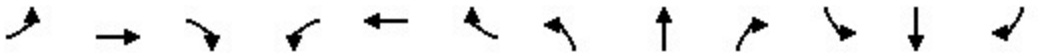
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	362	67	38	887	143	74	34	32	246	45	149
Future Volume (vph)	97	362	67	38	887	143	74	34	32	246	45	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		0.0	150.0		0.0	70.0		70.0	100.0		35.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.977			0.979				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3496	0	1789	3503	0	1789	3579	1601	1789	3579	1601
Flt Permitted	0.145			0.484			0.723			0.732		
Satd. Flow (perm)	273	3496	0	912	3503	0	1362	3579	1601	1379	3579	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			16				106			162
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		898.7			588.3			252.0			1069.6	
Travel Time (s)		46.2			30.3			15.1			64.2	
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)	105	393	73	41	964	155	80	37	35	267	49	162
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	466	0	41	1119	0	80	37	35	267	49	162
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(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	6.5	20.0		6.5	20.0		6.5	15.0	15.0	6.5	15.0	15.0
Minimum Split (s)	11.0	33.5		11.0	33.5		11.0	31.6	31.6	11.0	31.6	31.6
Total Split (s)	13.0	44.0		13.0	44.0		20.0	41.0	41.0	20.0	41.0	41.0
Total Split (%)	11.0%	37.3%		11.0%	37.3%		16.9%	34.7%	34.7%	16.9%	34.7%	34.7%
Maximum Green (s)	9.0	37.5		9.0	37.5		16.0	33.4	33.4	16.0	33.4	33.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.6	4.6	3.0	4.6	4.6
All-Red Time (s)	1.0	2.8		1.0	2.8		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5		4.0	7.6	7.6	4.0	7.6	7.6
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		Max	C-Min	C-Min	Max	C-Min	C-Min
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		11.0			11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	70.4	62.2		65.8	56.4		34.6	15.0	15.0	34.6	15.0	15.0
Actuated g/C Ratio	0.60	0.53		0.56	0.48		0.29	0.13	0.13	0.29	0.13	0.13
v/c Ratio	0.39	0.25		0.07	0.66		0.18	0.08	0.12	0.58	0.11	0.47
Control Delay (s/veh)	14.1	15.8		10.0	25.8		29.3	46.0	0.8	37.7	46.4	12.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.1	15.8		10.0	25.8		29.3	46.0	0.8	37.7	46.4	12.0
LOS	B	B		A	C		C	D	A	D	D	B
Approach Delay (s/veh)		15.4			25.3			26.8			29.9	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 118			
Offset: 54.5 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay (s/veh): 23.9		Intersection LOS: C	
Intersection Capacity Utilization 69.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Boston Church Rd & James Snow Prkwy



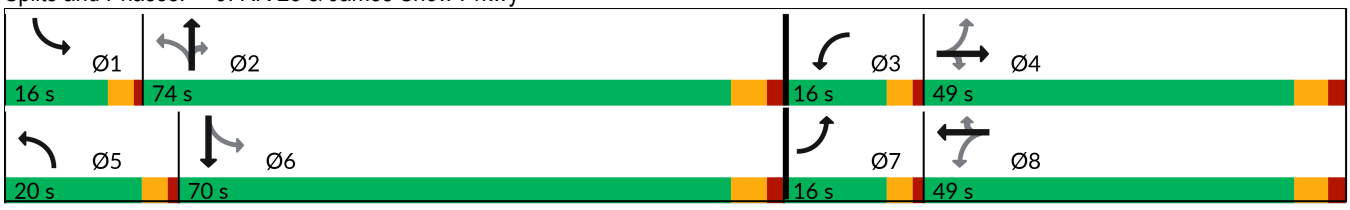


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	150	168	170	114	77	84	775	212	111	436	13
Future Volume (vph)	30	150	168	170	114	77	84	775	212	111	436	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		120.0	125.0		55.0	70.0		0.0	145.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	3579	1601	1789	3564	0
Flt Permitted	0.673			0.496			0.459			0.278		
Satd. Flow (perm)	1268	3579	1601	934	3579	1601	864	3579	1601	524	3564	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			183			84			230		2	
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		378.9			517.8			412.4			440.8	
Travel Time (s)		22.7			31.1			21.2			22.7	
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)	33	163	183	185	124	84	91	842	230	121	474	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	163	183	185	124	84	91	842	230	121	488	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(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.5	10.0	10.0	7.0	10.0	10.0	6.5	20.0	20.0	6.5	20.0	
Minimum Split (s)	11.0	43.9	43.9	11.5	43.9	43.9	11.0	42.9	42.9	11.0	35.9	
Total Split (s)	16.0	49.0	49.0	16.0	49.0	49.0	20.0	74.0	74.0	16.0	70.0	
Total Split (%)	10.3%	31.6%	31.6%	10.3%	31.6%	31.6%	12.9%	47.7%	47.7%	10.3%	45.2%	
Maximum Green (s)	12.0	43.0	43.0	12.0	43.0	43.0	16.0	68.0	68.0	12.0	64.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	20.8	11.3	11.3	28.8	19.9	19.9	77.8	68.1	68.1	78.7	68.5	
Actuated g/C Ratio	0.17	0.09	0.09	0.24	0.17	0.17	0.65	0.57	0.57	0.66	0.57	
v/c Ratio	0.13	0.48	0.58	0.60	0.21	0.25	0.15	0.41	0.23	0.28	0.24	
Control Delay (s/veh)	36.6	56.5	15.0	47.3	46.2	12.0	7.0	15.5	2.2	8.1	13.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	36.6	56.5	15.0	47.3	46.2	12.0	7.0	15.5	2.2	8.1	13.1	
LOS	D	E	B	D	D	B	A	B	A	A	B	
Approach Delay (s/veh)		34.7			39.4			12.2			12.1	
Approach LOS		C			D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 155			
Actuated Cycle Length: 119.3			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay (s/veh): 19.7		Intersection LOS: B	
Intersection Capacity Utilization 62.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 9: RR 25 & James Snow Prkwy



APPENDIX D

Future Total Traffic Operations – Synchro Output

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	103	8	4	45	6	11
Future Vol, veh/h	103	8	4	45	6	11
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	112	9	4	49	7	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	121	0	174	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	58	-
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	-	-	1467	-	816	936
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1467	-	814	936
Mov Cap-2 Maneuver	-	-	-	-	814	-
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	962	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.61	9.14
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	889	-	-	147	-
HCM Lane V/C Ratio	0.021	-	-	0.003	-
HCM Ctrl Dly (s/v)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	18	64	28	16	7	51	241	72	21	160	2
Future Vol, veh/h	6	18	64	28	16	7	51	241	72	21	160	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	20	70	30	17	8	55	262	78	23	174	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.8	9	11.8	9.5
HCM LOS	A	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	7%	55%	11%
Vol Thru, %	66%	20%	31%	87%
Vol Right, %	20%	73%	14%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	364	88	51	183
LT Vol	51	6	28	21
Through Vol	241	18	16	160
RT Vol	72	64	7	2
Lane Flow Rate	396	96	55	199
Geometry Grp	1	1	1	1
Degree of Util (X)	0.49	0.131	0.084	0.264
Departure Headway (Hd)	4.459	4.931	5.441	4.769
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	807	721	653	750
Service Time	2.504	3.002	3.519	2.824
HCM Lane V/C Ratio	0.491	0.133	0.084	0.265
HCM Control Delay, s/veh	11.8	8.8	9	9.5
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2.7	0.4	0.3	1.1

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	11	353	8	2	250
Future Vol, veh/h	29	11	353	8	2	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	12	384	9	2	272

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	664	388	0	0	392	0
Stage 1	388	-	-	-	-	-
Stage 2	276	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	426	660	-	-	1166	-
Stage 1	686	-	-	-	-	-
Stage 2	770	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	425	660	-	-	1166	-
Mov Cap-2 Maneuver	425	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	769	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	13.42	0	0.06
HCM LOS	B		

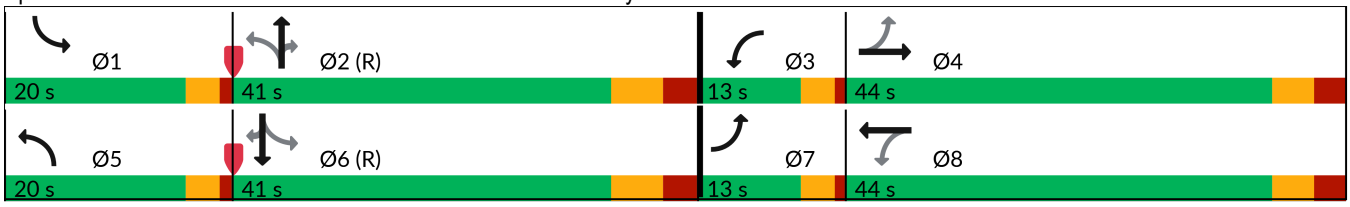
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	471	14	-
HCM Lane V/C Ratio	-	-	0.092	0.002	-
HCM Ctrl Dly (s/v)	-	-	13.4	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

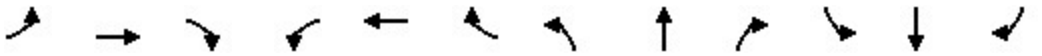
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	362	67	38	887	147	74	34	32	258	45	166
Future Volume (vph)	104	362	67	38	887	147	74	34	32	258	45	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	125.0		0.0	150.0		0.0	70.0		70.0	100.0		35.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.977			0.979				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3496	0	1789	3503	0	1789	3579	1601	1789	3579	1601
Flt Permitted	0.143			0.484			0.723			0.732		
Satd. Flow (perm)	269	3496	0	912	3503	0	1362	3579	1601	1379	3579	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			17				106			180
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		898.7			588.3			252.0			875.6	
Travel Time (s)		46.2			30.3			15.1			52.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	393	73	41	964	160	80	37	35	280	49	180
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	466	0	41	1124	0	80	37	35	280	49	180
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(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	6.5	20.0		6.5	20.0		6.5	15.0	15.0	6.5	15.0	15.0
Minimum Split (s)	11.0	33.5		11.0	33.5		11.0	31.6	31.6	11.0	31.6	31.6
Total Split (s)	13.0	44.0		13.0	44.0		20.0	41.0	41.0	20.0	41.0	41.0
Total Split (%)	11.0%	37.3%		11.0%	37.3%		16.9%	34.7%	34.7%	16.9%	34.7%	34.7%
Maximum Green (s)	9.0	37.5		9.0	37.5		16.0	33.4	33.4	16.0	33.4	33.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	4.6	4.6	3.0	4.6	4.6
All-Red Time (s)	1.0	2.8		1.0	2.8		1.0	3.0	3.0	1.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5		4.0	7.6	7.6	4.0	7.6	7.6
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	Max		Max	C-Min	C-Min	Max	C-Min	C-Min
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		11.0			11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	70.5	62.2		65.6	56.3		34.6	15.0	15.0	34.6	15.0	15.0
Actuated g/C Ratio	0.60	0.53		0.56	0.48		0.29	0.13	0.13	0.29	0.13	0.13
v/c Ratio	0.42	0.25		0.07	0.67		0.18	0.08	0.12	0.61	0.11	0.50
Control Delay (s/veh)	14.6	15.8		10.0	26.0		29.3	46.0	0.8	38.8	46.4	12.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.6	15.8		10.0	26.0		29.3	46.0	0.8	38.8	46.4	12.0
LOS	B	B		A	C		C	D	A	D	D	B
Approach Delay (s/veh)		15.5			25.5			26.8			30.0	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 118			
Actuated Cycle Length: 118			
Offset: 54.5 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay (s/veh): 24.1		Intersection LOS: C	
Intersection Capacity Utilization 71.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Boston Church Rd & James Snow Prkwy



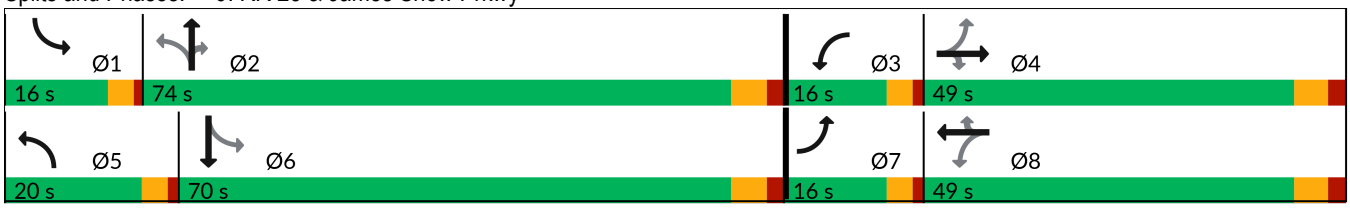


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	150	168	181	114	83	84	775	217	113	436	13
Future Volume (vph)	30	150	168	181	114	83	84	775	217	113	436	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		120.0	125.0		55.0	70.0		0.0	145.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	3579	1601	1789	3564	0
Flt Permitted	0.673			0.496			0.459			0.277		
Satd. Flow (perm)	1268	3579	1601	934	3579	1601	864	3579	1601	522	3564	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			183			90			236		2	
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		378.9			517.8			412.4			440.8	
Travel Time (s)		22.7			31.1			21.2			22.7	
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)	33	163	183	197	124	90	91	842	236	123	474	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	163	183	197	124	90	91	842	236	123	488	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(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.5	10.0	10.0	7.0	10.0	10.0	6.5	20.0	20.0	6.5	20.0	
Minimum Split (s)	11.0	43.9	43.9	11.5	43.9	43.9	11.0	42.9	42.9	11.0	35.9	
Total Split (s)	16.0	49.0	49.0	16.0	49.0	49.0	20.0	74.0	74.0	16.0	70.0	
Total Split (%)	10.3%	31.6%	31.6%	10.3%	31.6%	31.6%	12.9%	47.7%	47.7%	10.3%	45.2%	
Maximum Green (s)	12.0	43.0	43.0	12.0	43.0	43.0	16.0	68.0	68.0	12.0	64.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Don't Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	20.7	11.3	11.3	28.9	20.0	20.0	77.7	68.0	68.0	78.8	68.6	
Actuated g/C Ratio	0.17	0.09	0.09	0.24	0.17	0.17	0.65	0.57	0.57	0.66	0.57	
v/c Ratio	0.13	0.48	0.58	0.64	0.21	0.26	0.15	0.41	0.23	0.28	0.24	
Control Delay (s/veh)	36.6	56.6	15.0	49.0	46.2	11.8	7.0	15.5	2.2	8.2	13.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	36.6	56.6	15.0	49.0	46.2	11.8	7.0	15.5	2.2	8.2	13.1	
LOS	D	E	B	D	D	B	A	B	A	A	B	
Approach Delay (s/veh)		34.8			40.0			12.2			12.1	
Approach LOS		C			D			B			B	

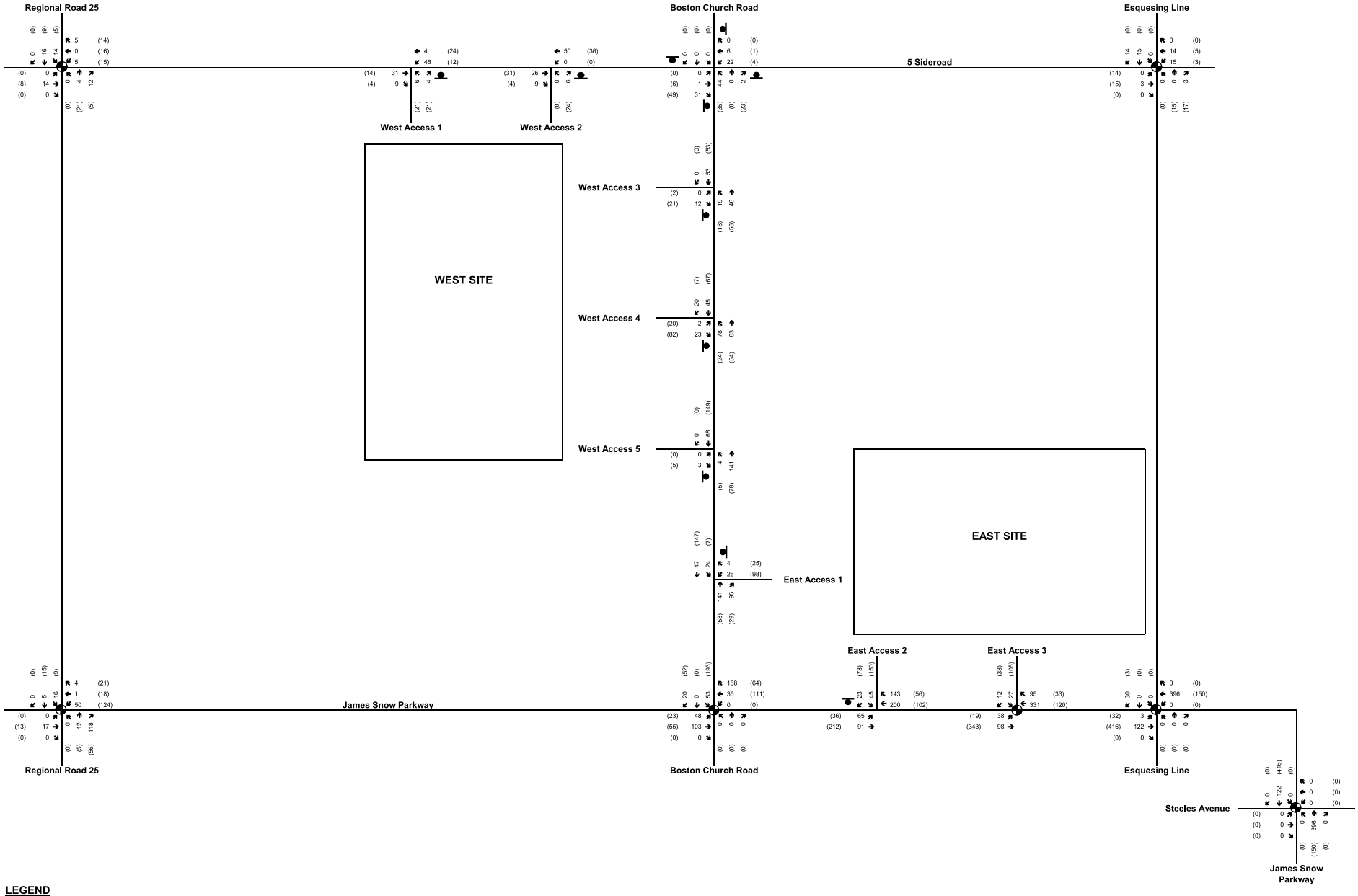
Intersection Summary			
Area Type:	Other		
Cycle Length: 155			
Actuated Cycle Length: 119.4			
Natural Cycle: 110			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay (s/veh): 20.0		Intersection LOS: B	
Intersection Capacity Utilization 62.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 9: RR 25 & James Snow Prkwy



APPENDIX E

Trip Generation of the Proposed Development in the Vicinity



LEGEND

XX AM Peak Hour Volumes
(XX) PM Peak Hour Volumes
Signalized Intersection
Stop Control

Site Traffic Volumes
Figure 5-1