TRAFFIC IMPACT STUDY

120 MAPLEVIEW DR.
CITY OF BARRIE
SIMCOE COUNTY

PREPARED FOR:
A.R.G. GROUP OF COMPANIES

PREPARED BY:

C.F. CROZIER & ASSOCIATES INC.
1 FIRST STREET, SUITE 200
COLLINGWOOD, ONTARIO
L9Y 1A1

1ST SUBMISSION: MAY 2022

CFCA FILE NO. 2181-6334

CROZIER
CONSULTING ENGINEERS

REVISION NUMBER	DATE	COMMENTS
Issued For Draft	May 20, 2022	Draft Submission to Client
Issued for first submission	May 27, 2022	First Submission to the City of Barrie

1.0 Executive Summary

C.F. Crozier & Associates Inc. (Crozier) was retained by A.R.G. Group of Companies (The Client) to complete a Traffic Impact Study (TIS) for the proposed industrial development located at 120 Mapleview Drive, in the City of Barrie, Simcoe County. This TIS has been prepared to support the Site Plan Application for the subject lands.

The site is approximately 3.95 ha and is currently partially vacant, with an existing temporary building at the south end of the property. The majority of the property is open field with some areas of woodlot cover. The site is located north of Mapleview Drive West, adjacent to an existing industrial building on the property. The lot spans approximately 300 m east of Veterans Drive. The site is bound by Veterans Drive to the west and existing industrial/employment developments to the north, south, and east.

The site forms part of the northern portion of the existing lot that extends south to Mapleview Drive and contains the existing industrial building. For this application, the proposed development is being treated as a separate site, as confirmed with City staff. Per the conversations with the City, the site will not require a severance and will be considered as separately conveyable parcels, and the part lots/ blocks will be dealt with individually under Section 50(5) of the planning act.

The existing industrial development currently has two entrances, one to the south that is blocked off by a concrete barrier, and one to the north that is controlled by a gate. As the north access will be utilized for the proposed development, the south access will be reinstated to service the existing industrial building at 120 Mapleview Drive. The existing entrance to the north will have the traffic gate removed and will be converted to be one of two accesses for the proposed development.

The industrial development is proposed to consist of a 1-storey industrial warehouse building (18,357.83 m^2) with office space (269.19 m^2) and a proposed future office mezzanine (269.19 m^2), 51 paved asphalt loading spaces with 1 Drive-in Over Head Garage Door (OHGD), and 133 paved asphalt parking spaces, including 2 Barrier-Free Parking Spaces. Access to the site is proposed though two full move access on Veterans Drive. The site accesses (new and proposed) were designed per the geometric standards provided by City staff. These standards also conform to TAC Figure 8.9.2 and Table 8.9.1. The site accesses all have a width and curb radii of 9 m to 12 m.

The proposed Veterans Drive site accesses were assessed under future total traffic volume conditions based on a growth rate of 3% on Veterans Drive. The volumes on Veterans Drive were established from turning movement counts collected at the existing site access.

The proposed development is forecasted to generate 48 and 51 two-way trips in the weekday a.m. and p.m. peak hours, respectively. 80% of the trips were distributed to the south towards Mapleview Drive, with the remaining 20% distributed to the north.

Intersection analysis of the 2027 future total traffic volumes indicates that both accesses are anticipated to operate with a Level of Service (LOS) "C" or better during the weekday a.m. and p.m. peak hours.

It is concluded that the traffic generated by the proposed industrial development can be supported by the boundary road network.

The analysis contained within this report was completed based on the Site Plan dated April 5th, 2022. Any minor changes to the Site Plan will not affect the conclusions contained within this report.

Table of Contents

List of Tables

List of Appendices

List of Figures

2.0 Introduction

2.1 Background

C.F. Crozier & Associates Inc. (Crozier) was retained by A.R.G. Group of Companies (The Client) to complete a Traffic Impact Study (TIS) for the proposed industrial development located at 120 Mapleview Drive, in the City of Barrie, Simcoe County. This TIS has been prepared to support the Site Plan Application, based on the most recent Site Plan prepared by Nestico Architect Inc. (April 5, 2022).

2.2 Purpose and Scope

The purpose of the Traffic Impact Study was to review the impacts of the proposed development on the boundary road network and to recommend warranted mitigation measures.

The study reviews the following aspects of the proposed development from a transportation engineering perspective:

- Existing traffic volumes on the boundary road network
- Forecasted trip generation of the proposed development
- Traffic operations at the proposed site accesses
- Access safety and geometry

The TIS has been prepared in accordance with the Terms of Reference established with the City of Barrie. **Appendix A** contains the terms of reference correspondence.

2.3 Development Proposal

The industrial development is proposed to consist of a 1-storey industrial warehouse building (18,357.83 m^2) with office space (269.19 m^2) and a proposed future office mezzanine (269.19 m^2). The proposed development also consists of 51 paved asphalt loading spaces and 1 Drive-in Over Head Garage Door (OHGD), 133 paved asphalt parking spaces, including 2 barrier-free parking spaces. Access to the Site is proposed though two full move access on Veterans Drive.

Figure 1A contains the Site Plan prepared by Nestico Architect Inc. (April 5, 2022).

3.0 Existing Conditions

3.1 Development Lands

The subject lot is approximately 3.95 ha and is currently partially vacant, with an existing temporary building at the south end of the property. The majority of the property is open field with some areas of woodlot cover. The site is located north of Mapleview Drive West, adjacent to an existing industrial building. The lot spans approximately 300 m east of Veterans Drive. The subject lot is bound by Veterans Drive to the west and existing industrial/employment developments to the north, south, and east. The location of the site is reflected on the Site Location Plan included as **Figure 2**.

The site on which the proposed industrial building is proposed to be constructed is the northern portion of the lot that extends south to Mapleview Drive and contains the existing industrial building. For the purpose of this application, the proposed development is being treated as a separate site, as confirmed with City staff. Per the conversations with the City, the site will not require a severance

and will be considered as separately conveyable parcels, and the part lots/ blocks will be dealt with individually under section 50(5) of the planning act.

The existing industrial development currently has two entrances, one to the south that is blocked off by a concrete barrier, and one to the north that is controlled by a traffic gate. As the north access will be utilized for the proposed industrial building, the south access will be reinstated to service the existing industrial building at 120 Mapleview Drive. The existing entrance to the north will have the traffic gate removed and will be converted to be one of two accesses for the proposed development.

3.2 Key Intersections

Per the agreed upon Terms of Reference, the enclosed scoped analysis was prepared for the proposed site accesses to Veterans Drive. The volumes on Veterans Drive were established based on turning movement counts completed at the existing Veterans Drive site access.

3.3 Boundary Road Network

The external boundary road network is described in **Table 1.**

Table 1: Boundary Road Network

Roadway	Veterans Drive
Direction	North-South
Classification	Arterial
Jurisdiction	City of Barrie
Posted Speed Limit	60 km/h
Number of Lanes Per Direction	2 with a two-way centre left-turn lane
Sidewalk	1.5m Sidewalk (Both sides)
Transit	City of Barrie bus stop at northeast corner of Veterans Drive and Caplan Avenue

3.4 Traffic Data

Turning movement counts at the existing site access were undertaken by Spectrum Traffic Data Inc. staff from 7:00 a.m. to 10:00 a.m. and from 4:00 p.m. to 7:00 p.m. on April 12, 2022. The turning movement count data is included in **Appendix B**. **Figure 3** illustrates the 2022 existing traffic volumes.

Peak hour factors (PHF) associated with the weekday a.m. and p.m. peak hours were calculated for the existing site access. **Table 2** outlines the PHFs as calculated and applied to the model for their respective intersections.

Table 2: Peak Hour Factors

Intersection	Peak Hour	Peak Hour Factor
Veterans Drive and Existing Site Access	7:45 – 8:45 a.m.	0.98
	4:30 – 5:30 p.m.	0.97

4.0 Future Background Conditions

4.1 Horizon Years & Growth Rate

In accordance with the agreed upon Terms of Reference, the five-year horizon (2027) was reviewed. A growth rate of 3% was used to forecast future traffic volumes on Veterans Drive, as supplied by City staff.

5.0 Site Generated Traffic

5.1 Trip Generation

The development will result in additional vehicles on the boundary road network that previously did not exist. The trip generation of the development was forecasted using the fitted curve equations provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. Per the Site Plan (April 5, 2022), the industrial development is proposed to consist of a 1-storey industrial warehouse building (18,357.83 m^2) with office space (269.19 m^2) and a proposed future office mezzanine (269.19 m^2) Accordingly, LUC 150 "Warehousing", was used to forecast trips generated by the site.

Table 3 summarizes the trip generation of the site. **Appendix C** contains relevant excerpts from the ITE Trip Generation Manual.

Table 3: Trip Generation

Land Use	Peak Hour	Number of Trips		
		Inbound	Outbound	Total
LUC 150 'Warehousing' (203,397.11 sq ft)	Weekday A.M.	37	11	48
	Weekday P.M.	14	37	51

5.2 Trip Distribution and Assignment

The trips generated by the industrial development were distributed to the boundary road network based on existing traffic patterns and the anticipated catchment areas. The existing traffic on Veterans Drive is primarily heading to/from Mapleview Drive. This is likely because Mapleview has direct access to Highway 400 interchanges. Therefore, the future total volumes were distributed with 80% travelling to/from the south and 20% travelling to/from the north in both the a.m. and p.m. peak hours. The volumes were divided evenly between the two site accesses.

The truck loading bays are located along the south face of the proposed industrial building and in closest proximity to the south access (Site Access "B"). Accordingly, a heavy vehicle percentage of 20% was applied to the inbound and outbound traffic volumes at Site Access "B". It was assumed that the north access (Site Access "A") would primarily service staff, and accordingly only passenger vehicles were assumed to utilize that access. The 20% heavy vehicle percentage is consistent with Table I.1 in the ITE Trip Generation, 9th Edition. The majority of truck activity is anticipated outside of the roadway peak hours.

The trip distribution is illustrated in **Figure 4**, with the corresponding trip assignment illustrated in **Figure 5**.

6.0 Total Future Conditions

6.1 Basis of Assessment

The traffic impacts arising from the proposed development were assessed based on the site generated traffic illustrated in **Figure 5**, being superimposed on the background traffic volumes**.** The resulting 2027 future total traffic volumes for the weekday a.m. and p.m. peak hours are illustrated in **Figure 6.**

6.2 Intersection Operations

The operations of the study intersections were analyzed based on the 2027 total traffic volumes illustrated in **Figure 6**. **Table 4** outlines the 2027 future total traffic Levels of Service. Level of Service definitions are included in **Appendix D** and detailed capacity analysis worksheets are included in **Appendix E.**

Table 4: 2027 Future Total Levels of Service

Intersection	Control	Peak Hour	Level of Service	Control Delay (seconds)	Maximum Volume-to-Capacity Ratio
Veterans Drive and Proposed Site Access "A"	Stop	A.M.	B	11.5 s	0.01 (WB)
		P.M.	C	18.3 s	0.07 (WB)
Veterans Drive and Proposed Site Access "B"	Stop	A.M.	B	12.8 s	0.01 (WB)
		P.M.	C	22.2 s	0.07 (WB)

The study intersections are expected to operate with a LOS "C" or better in the weekday a.m. and p.m. peak hours under 2027 future total traffic volume conditions. After the north existing access is converted to the proposed Site Access "B", the gate that is currently in place will be removed. This will alleviate concerns of vehicles queuing on Veterans Drive to enter the site.

7.0 Sight Access Safety

7.1 Sight Distance Assessment

A sight distance assessment was completed to demonstrate that the proposed accesses provide sufficient stopping and intersection sight distances on Veterans Drive. The minimum stopping sight distance and the minimum intersection sight distance requirements were obtained from the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR) (June 2017).

Section 2.5 of the Geometric Design Guide for Canadian Roads provides stopping sight distances for various design speeds on level roadways. As noted previously, the posted speed limit on Veterans Drive is 60 km/h. Accordingly, a design speed of 70 km/h was selected, reflecting an industry standard increase of 10 km/h for lower speed roads. For a design speed of 70 km/h, a stopping sight distance of 105 m is required.

Section 9.9 of the TAC GDGCR provides intersection sight distances for different intersection control types. For these accesses, the applicable cases include:

- Case B1 – Left turns from the minor road (Site Access)
- Case B2 – Right turns from the minor road (Site access)

When we compare these cases and their sight distances, Case B1 has the greatest sight distance requirement of 150 m for 70 km/h design speed roads. The required intersection sight distance and stopping sight distance was taken from Table 9.9.4 (Geometric Design Guide for Canadian Roads, June 2017, pg. 68) as outlined in **Appendix F.**

Table 5 outlines the available stopping sight distance and intersection sight distance at the proposed access.

Table 5: Sight Distance

Access	Oncoming Traffic	Design Speed	Stopping Sight Distance		Intersection Sight Distance	
			Minimum Standard[1]	Available Distance	Minimum Standard[2]	Available Distance
North Site access 1	Northbound	70 km/h	105 m	+200 m	130 m	+200 m
	Southbound	70 km/h	105 m	100 m to intersection, can see +200 m through intersection	150 m	100 m to intersection, can see +200 m through intersection
South Site Access 2	Northbound	70 km/h	105 m	+200 m	130 m	+200 m
	Southbound	70 km/h	105 m	+170 m	150 m	+170 m

Note[1]: Section 2.5 (Geometric Design Guide for Canadian Roads, June 2017)
Note[2]: Table 9.9.4 (Geometric Design Guide for Canadian Roads, June 2017, pg. 68)

As summarized in **Table 5,** the available sight distance at the site accesses exceeds the minimum sight distance requirements.

8.0 Access Geometry

The proposed site accesses were designed to adhere to the minimum geometry requirements prescribed by the City of Barrie.

<u>New North Access (Proposed Access "A"):</u>

- Access width of 9 m
- Curb radii of 9 m
- A 28 m offset from property line is provided, exceeding the 0.3 m minimum

<u>New South Access (Proposed Access "B"):</u>

- Access width of 12 m
- Curb radii of 12 m
- A 1.2 m offset from property line is provided, exceeding the 0.3 m minimum
- A 12 m tangent was maintained between the existing access to the south

<u>Existing Access:</u>

- Access width of 12 m
- Curb radii of 12 m
- A 12 m is tangent maintained between the existing access to the north
- Swept path analysis for the loading bay demonstrates sufficient internal circulation to ensure

vehicles can enter and exist in a forward motion. The swept path analysis can be found on the Site Plan **(Figure 1)**

All accesses have been designed per the geometric standards provided by City staff. These standards also conform to TAC Figure 8.9.2 and Table 8.9.1. According to Table 8.9.1, the site accesses are classified as two-way industrial accesses with a minimum width and curb radii of 9 m. The relevant TAC excerpts are shown in **Appendix G.**

9.0 Conclusions

The analysis contained within this report has resulted in the following key findings:

- The proposed development is forecasted to generate 48 and 51 two-way trips in the weekday a.m. and p.m. peak hours, respectively.
- Under 2027 future total traffic conditions, the study intersections are anticipated to operate with a Level of Service "C" or better during the weekday a.m. and p.m. peak hours.
- The site accesses (new and proposed) were designed per the geometric standards provided by City staff. These standards also conform to TAC Figure 8.9.2 and Table 8.9.1. The site accesses all have a width and curb radii of 9 m to 12 m.
- The available sight distance at the site accesses exceeds the minimum sight distance requirements. Site Access "A" has clear sight lines greater than 200 m. While the intersection of Veterans Drive and Caplan Avenue is approximately 100 m from the site, sight distance is available beyond the intersection.

It is concluded that the traffic generated by the proposed industrial development can be supported by the boundary road network from an operations and safety perspective.

The analysis contained within this report was completed based on the Site Plan dated April 5th, 2022. Any minor changes to the Site Plan will not affect the conclusions contained within this report.

Prepared by,

C.F. CROZIER & ASSOCIATES INC.

Madeleine Ferguson, P.Eng.
Manager of Transportation
MF/ib

J:\2100\2181- A.R.G. Group of Companies\6334- 120 Mapleview Dr W\Reports\2022.05.20_6334_FINAL TIS (May 2022).docx

APPENDIX A

Terms of Reference

From: Madeleine Ferguson
Sent: April 5, 2022 2:06 PM
To: Justin MacDonald
Cc: Isaac Bennoit
Subject: RE: 120 Mapleview Drive - Transportation TOR

Thanks for confirming!
Maddie

Madeleine Ferguson, P.Eng. | Manager of Transportation
1 First Street, Suite 200 | Collingwood, ON L9Y 1A1
T: 705.446.3510

Crozier Connections:

Read our latest news and announcements here.

From: Justin MacDonald <Justin.MacDonald@barrie.ca>
Sent: April 5, 2022 1:58 PM
To: Madeleine Ferguson <mferguson@cfcrozier.ca>
Cc: Isaac Bennoit <ibennoit@cfcrozier.ca>
Subject: RE: 120 Mapleview Drive - Transportation TOR

Good afternoon Maddie

That all seems reasonable for the proposed development.

Thanks.

Justin MacDonald, C.E.T., PTP
Project Delivery – Transportation Planning, Development Services
The City of Barrie
Mobile 705-734-8020

From: Madeleine Ferguson <mferguson@cfcrozier.ca>
Sent: Tuesday, April 5, 2022 1:37 PM
To: Justin MacDonald <Justin.MacDonald@barrie.ca>

Cc: Isaac Bennoit <ibennoit@cfcrozier.ca>
Subject: 120 Mapleview Drive - Transportation TOR

Hi Justin,

Thanks again for meeting with us to discuss this project. We are glad to hear that there was a resolution regarding the accesses configuration for the site. Further to our discussion, we've formalized our Terms of Reference for your review and confirmation. Please let us know if there's anything we've missed from our discussion.

The current Site Plan proposes the construction of a one (1) storey industrial warehouse building (18,357.83 m^2) with office space (269.19 m^2) and a proposed future office mezzanine (269.19 m^2). Two accesses to Veterans Drive are proposed and have been designed to align with the geometric parameters previously provided.

The proposed Terms of Reference as are follows:

- We will assess the weekday a.m. and p.m. peak hours of the proposed site accesses. Turning movement counts will be commissioned at the existing site access to establish current volumes on Veterans Drive. These will be compared to the historical turning movement counts previously provided.

- We will assess the horizon year of 2027, which is assumed to capture the full build-out of the development.

- We will use the provided growth rate of 3% to forecast the 2027 future background traffic volumes on Veterans Drive.

- We will forecast the trip generation characteristics of the development using the ITE Trip Generation Manual, 11th Edition.
    - We will distribute trips to the boundary road network based on Transportation Tomorrow Survey Data and expected catchment areas. This may be adjusted based on observed travel patterns.

- We will review the proposed site accesses from a geometrics and safety perspective.

Please let us know if you have any questions.

Thanks,
Maddie

Madeleine Ferguson, P.Eng. | Manager of Transportation
1 First Street, Suite 200 | Collingwood, ON L9Y 1A1
T: 705.446.3510

Crozier Connections:

Read our latest news and announcements here.

APPENDIX B

Traffic Data

Crozier & Associates
SUITE 301 40 HURON STREET
COLLINGWOOD ONTARIO, L9Y 4R3
CANADA

Turning Movement Count (1 . VETERANS DR & 120 MAPLEVIEW DR)

Start Time	N Approach VETERANS DR					E Approach 120 MAPLEVIEW DR					S Approach VETERANS DR					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total		
07:00:00	83	0	1	0	84	0	0	0	0	0	0	35	0	0	35	119	
07:15:00	104	0	0	0	104	0	0	0	0	0	0	41	0	0	41	145	
07:30:00	128	0	0	0	128	0	0	0	0	0	0	58	0	0	58	186	
07:45:00	147	0	1	0	148	0	1	0	0	1	0	80	0	0	80	229	679
08:00:00	141	0	0	0	141	0	2	0	1	2	0	93	0	0	93	236	796
08:15:00	139	0	0	0	139	0	0	0	0	0	0	87	0	0	87	226	877
08:30:00	143	0	0	0	143	0	0	0	0	0	0	92	0	0	92	235	926
08:45:00	135	0	1	0	136	0	1	0	0	1	0	91	0	0	91	228	925
09:00:00	140	0	0	0	140	0	0	0	1	0	0	85	0	0	85	225	914
09:15:00	141	0	0	0	141	0	0	0	0	0	0	93	0	0	93	234	922
09:30:00	137	0	0	0	137	0	0	0	3	0	0	84	0	0	84	221	908
09:45:00	124	0	0	0	124	0	0	0	2	0	0	95	0	0	95	219	899
BREAK																	
16:00:00	133	0	0	0	133	0	0	0	0	0	0	193	0	0	193	326	
16:15:00	168	0	0	0	168	0	0	0	2	0	0	187	0	0	187	355	
16:30:00	153	0	0	0	153	0	0	0	3	0	0	217	0	0	217	370	
16:45:00	144	0	0	0	144	0	0	0	1	0	0	230	0	0	230	374	1425
17:00:00	157	0	0	0	157	0	0	0	2	0	0	212	0	0	212	369	1468
17:15:00	171	0	1	0	172	0	0	0	0	0	0	215	0	0	215	387	1500
17:30:00	104	0	0	0	104	0	0	0	2	0	0	191	0	0	191	295	1425
17:45:00	123	0	0	0	123	0	0	0	1	0	0	177	0	0	177	300	1351
18:00:00	107	0	0	0	107	0	0	0	0	0	0	118	0	0	118	225	1207
18:15:00	111	0	0	0	111	0	0	0	0	0	0	110	1	0	111	222	1042
18:30:00	95	0	2	0	97	0	0	0	0	0	0	148	0	0	148	245	992
18:45:00	106	0	1	0	107	0	0	0	0	0	0	101	0	0	101	208	900
Grand Total	3134	0	7	0	3141	0	8	0	18	4	0	3033	1	0	3034	**6179**	-
Approach%	99.8%	0%	0.2%		-	0%	200%	0%		-	0%	100%	0%		-	**-**	-
Totals %	50.7%	0%	0.1%		50.8%	0%	0.1%	0%		0.1%	0%	49.1%	0%		49.1%	**-**	-
Heavy	55	0	0		-	0	4	0		-	0	46	0		-	**-**	-
Heavy %	1.8%	0%	0%		-	0%	50%	0%		-	0%	1.5%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

Crozier & Associates
SUITE 301 40 HURON STREET
COLLINGWOOD ONTARIO, L9Y 4R3
CANADA

Peak Hour: 07:45 AM - 08:45 AM Weather: Scattered Clouds (1.97 °C)

Start Time	N Approach VETERANS DR					E Approach 120 MAPLEVIEW DR					S Approach VETERANS DR					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
07:45:00	147	0	1	0	148	0	1	0	0	1	0	80	0	0	80	229
08:00:00	141	0	0	0	141	0	2	0	1	2	0	93	0	0	93	236
08:15:00	139	0	0	0	139	0	0	0	0	0	0	87	0	0	87	226
08:30:00	143	0	0	0	143	0	0	0	0	0	0	92	0	0	92	235
Grand Total	570	0	1	0	571	0	4	0	1	3	0	352	0	0	352	**926**
Approach%	99.8%	0%	0.2%		-	0%	133.3%	0%		-	0%	100%	0%		-	**-**
Totals %	61.6%	0%	0.1%		61.7%	0%	0.4%	0%		0.3%	0%	38%	0%		38%	**-**
PHF	0.97	0	0.25		0.96	0	0.38	0		0.38	0	0.95	0		0.95	**-**
Heavy	13	0	0		13	0	3	0		3	0	8	0		8	**-**
Heavy %	2.3%	0%	0%		2.3%	0%	75%	0%		100%	0%	2.3%	0%		2.3%	**-**
Lights	557	0	1		558	0	0	0		0	0	344	0		344	**-**
Lights %	97.7%	0%	100%		97.7%	0%	0%	0%		0%	0%	97.7%	0%		97.7%	**-**
Single-Unit Trucks	11	0	0		11	0	2	0		2	0	6	0		6	**-**
Single-Unit Trucks %	1.9%	0%	0%		1.9%	0%	50%	0%		66.7%	0%	1.7%	0%		1.7%	**-**
Buses	1	0	0		1	0	0	0		0	0	1	0		1	**-**
Buses %	0.2%	0%	0%		0.2%	0%	0%	0%		0%	0%	0.3%	0%		0.3%	**-**
Articulated Trucks	1	0	0		1	0	1	0		1	0	1	0		1	**-**
Articulated Trucks %	0.2%	0%	0%		0.2%	0%	25%	0%		33.3%	0%	0.3%	0%		0.3%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	50%		-	-	-	0%		**-**

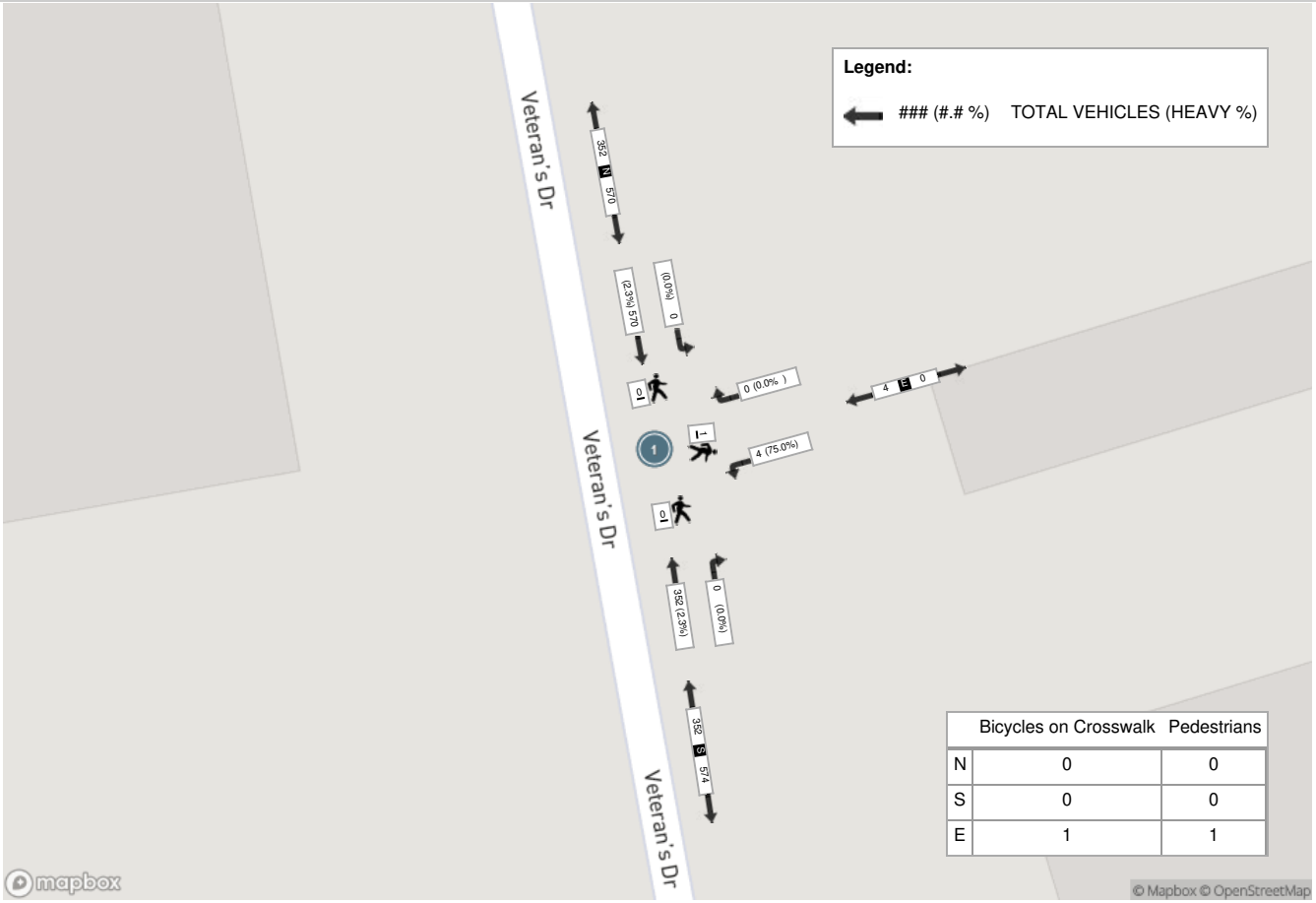
Crozier & Associates
SUITE 301 40 HURON STREET
COLLINGWOOD ONTARIO, L9Y 4R3
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (17.57 °C)

Start Time	N Approach VETERANS DR					E Approach 120 MAPLEVIEW DR					S Approach VETERANS DR					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:30:00	153	0	0	0	153	0	0	0	3	0	0	217	0	0	217	370
16:45:00	144	0	0	0	144	0	0	0	1	0	0	230	0	0	230	374
17:00:00	157	0	0	0	157	0	0	0	2	0	0	212	0	0	212	369
17:15:00	171	0	1	0	172	0	0	0	0	0	0	215	0	0	215	387
Grand Total	625	0	1	0	626	0	0	0	6	0	0	874	0	0	874	**1500**
Approach%	99.8%	0%	0.2%		-	0%	0%	0%		-	0%	100%	0%		-	**-**
Totals %	41.7%	0%	0.1%		41.7%	0%	0%	0%		0%	0%	58.3%	0%		58.3%	**-**
PHF	0.91	0	0.25		0.91	0	0	0		0	0	0.95	0		0.95	**-**
Heavy	6	0	0		6	0	0	0		0	0	7	0		7	**-**
Heavy %	1%	0%	0%		1%	0%	0%	0%		0%	0%	0.8%	0%		0.8%	**-**
Lights	619	0	1		620	0	0	0		0	0	867	0		867	**-**
Lights %	99%	0%	100%		99%	0%	0%	0%		0%	0%	99.2%	0%		99.2%	**-**
Single-Unit Trucks	5	0	0		5	0	0	0		0	0	5	0		5	**-**
Single-Unit Trucks %	0.8%	0%	0%		0.8%	0%	0%	0%		0%	0%	0.6%	0%		0.6%	**-**
Buses	1	0	0		1	0	0	0		0	0	1	0		1	**-**
Buses %	0.2%	0%	0%		0.2%	0%	0%	0%		0%	0%	0.1%	0%		0.1%	**-**
Articulated Trucks	0	0	0		0	0	0	0		0	0	1	0		1	**-**
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.1%	0%		0.1%	**-**
Pedestrians	-	-	-	0	-	-	-	-	6	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	100%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Crozier & Associates
SUITE 301 40 HURON STREET
COLLINGWOOD ONTARIO, L9Y 4R3
CANADA

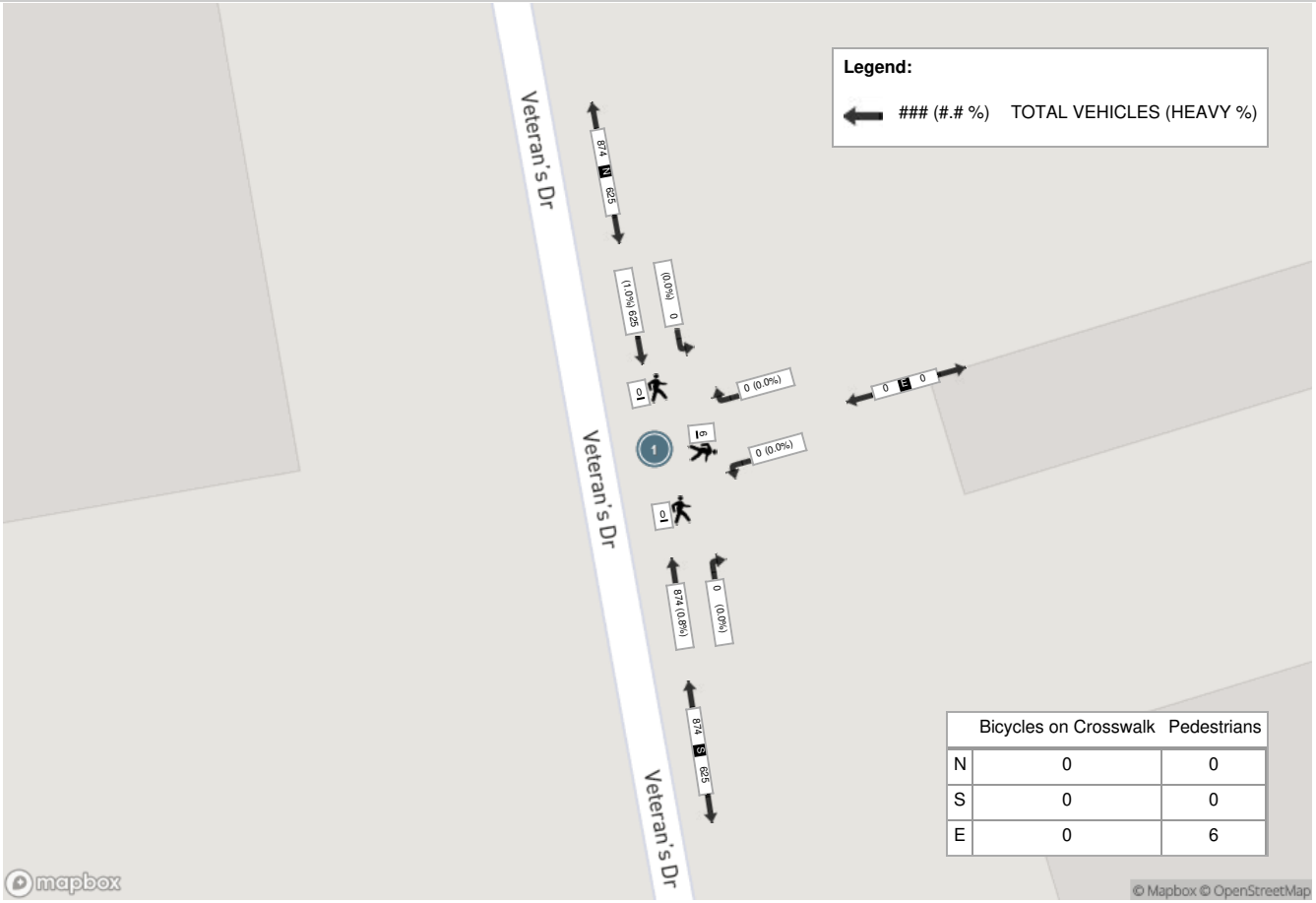
Peak Hour: 07:45 AM - 08:45 AM Weather: Scattered Clouds (1.97 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
E	1	1

Crozier & Associates
SUITE 301 40 HURON STREET
COLLINGWOOD ONTARIO, L9Y 4R3
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (17.57 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
E	0	6

APPENDIX C

ITE 11th Edition Excerpts

Land Use: 150
Warehousing

Description

A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas. High-cube transload and short-term storage warehouse (Land Use 154), high-cube fulfillment center warehouse (Land Use 155), high-cube parcel hub warehouse (Land Use 156), and high-cube cold storage warehouse (Land Use 157) are related uses.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Connecticut, Minnesota, New Jersey, New York, Ohio, Oregon, Pennsylvania, and Texas.

Source Numbers

184, 331, 406, 411, 443, 579, 583, 596, 598, 611, 619, 642, 752, 869, 875, 876, 914, 940, 1050

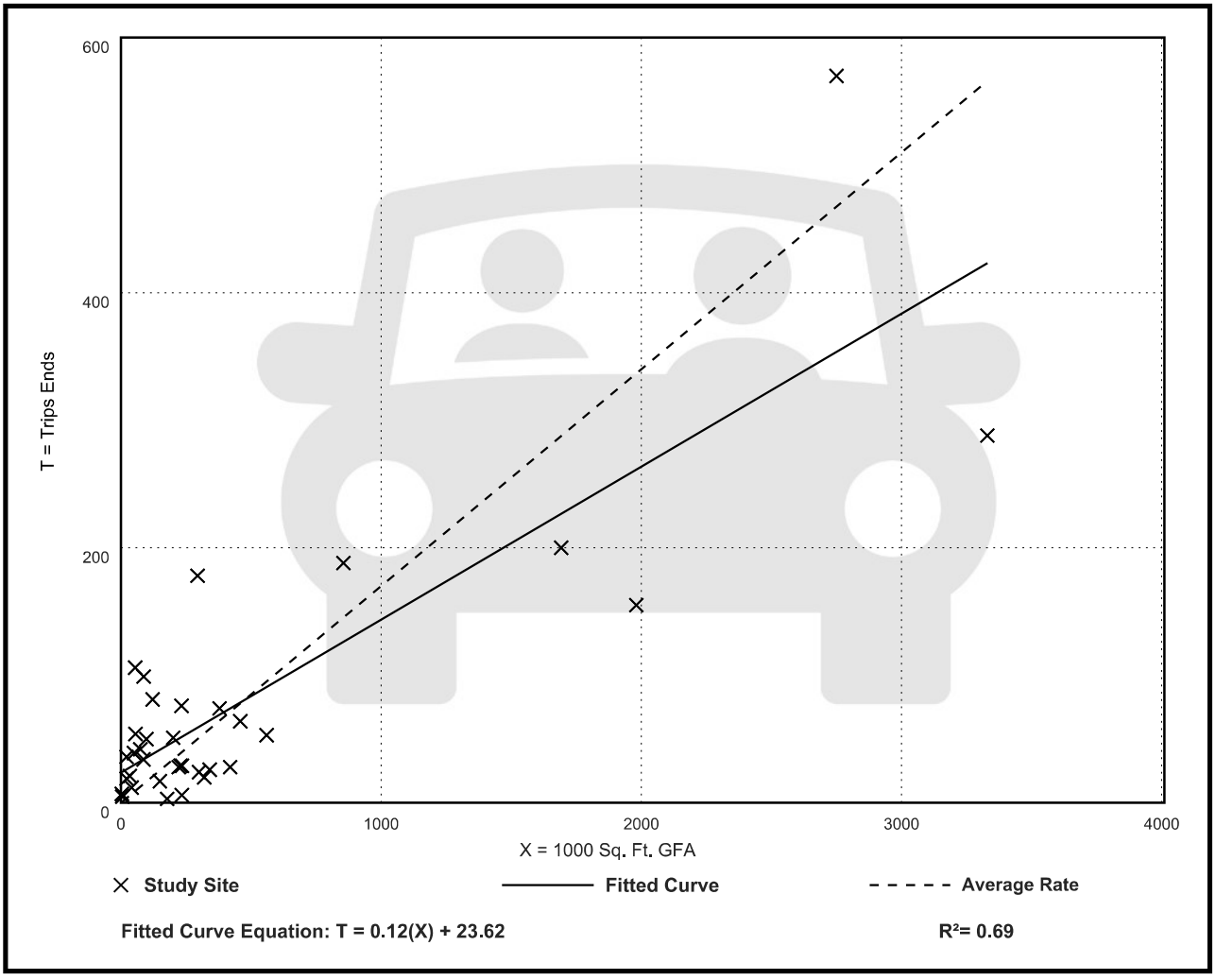
Warehousing
(150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 36
Avg. 1000 Sq. Ft. GFA: 448
Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.19

Data Plot and Equation



Fitted Curve Equation: T = 0.12(X) + 23.62

R^2= 0.69

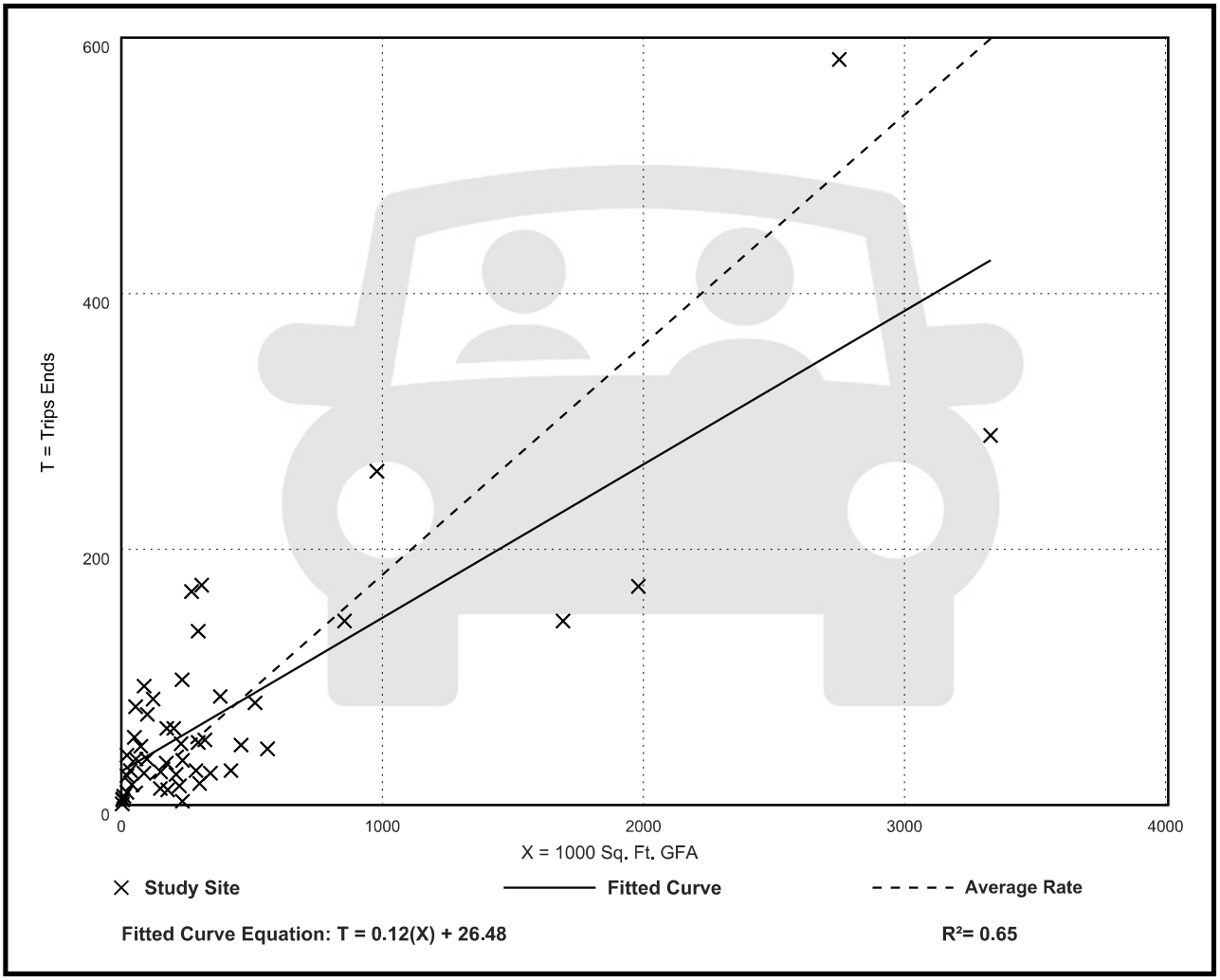
Warehousing
(150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 49
Avg. 1000 Sq. Ft. GFA: 400
Directional Distribution: 28% entering, 72% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.18	0.01 - 1.80	0.18

Data Plot and Equation



Fitted Curve Equation: T = 0.12(X) + 26.48

R^2= 0.65

APPENDIX D

Level of Service Definitions

Level of Service Definitions

Two-Way Stop Controlled Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Large and frequent gaps in traffic on the main roadway. Queuing on the minor street is rare.
B	> 10 and ≤ 15	VERY GOOD. Many gaps exist in traffic on the main roadway. Queuing on the minor street is minimal.
C	> 15 and ≤ 25	GOOD. Fewer gaps exist in traffic on the main roadway. Delay on minor approach becomes more noticeable.
D	> 25 and ≤ 35	FAIR. Infrequent and shorter gaps in traffic on the main roadway. Queue lengths develop on the minor street.
E	> 35 and ≤ 50	POOR. Very infrequent gaps in traffic on the main roadway. Queue lengths become noticeable.
F	> 50	UNSATISFACTORY. Very few gaps in traffic on the main roadway. Excessive delay with significant queue lengths on the minor street.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

APPENDIX E

Detailed Capacity Analysis

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	1	408	15	4	665
Future Volume (Veh/h)	4	1	408	15	4	665
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1	443	16	4	723
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	820	230			459	
vC1, stage 1 conf vol	451					
vC2, stage 2 conf vol	370					
vCu, unblocked vol	820	230			459	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	519	779			1113	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	5	295	164	4	362	362
Volume Left	4	0	0	4	0	0
Volume Right	1	0	16	0	0	0
cSH	556	1700	1700	1113	1700	1700
Volume to Capacity	0.01	0.17	0.10	0.00	0.21	0.21
Queue Length 95th (m)	0.2	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	11.5	0.0	0.0	8.2	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	11.5	0.0		0.0		
Approach LOS	B					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	1	423	15	4	665
Future Volume (Veh/h)	4	1	423	15	4	665
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1	460	16	4	723
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	838	238			476	
vC1, stage 1 conf vol	468					
vC2, stage 2 conf vol	370					
vCu, unblocked vol	838	238			476	
tC, single (s)	7.2	7.3			4.5	
tC, 2 stage (s)	6.2					
tF (s)	3.7	3.5			2.4	
p0 queue free %	99	100			100	
cM capacity (veh/h)	463	711			966	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	4	1	307	169	4	362	362
Volume Left	4	0	0	0	4	0	0
Volume Right	0	1	0	16	0	0	0
cSH	463	711	1700	1700	966	1700	1700
Volume to Capacity	0.01	0.00	0.18	0.10	0.00	0.21	0.21
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	12.8	10.1	0.0	0.0	8.7	0.0	0.0
Lane LOS	B	B			A		
Approach Delay (s)	12.3		0.0		0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	4	1013	6	1	726
Future Volume (Veh/h)	15	4	1013	6	1	726
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	4	1101	7	1	789
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1501	554			1108	
vC1, stage 1 conf vol	1104					
vC2, stage 2 conf vol	396					
vCu, unblocked vol	1501	554			1108	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	99			100	
cM capacity (veh/h)	265	481			638	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	20	734	374	1	394	394
Volume Left	16	0	0	1	0	0
Volume Right	4	0	7	0	0	0
cSH	291	1700	1700	638	1700	1700
Volume to Capacity	0.07	0.43	0.22	0.00	0.23	0.23
Queue Length 95th (m)	1.8	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	18.3	0.0	0.0	10.7	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	18.3	0.0		0.0		
Approach LOS	C					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	4	1019	6	1	740
Future Volume (Veh/h)	15	4	1019	6	1	740
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	4	1108	7	1	804
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1516	558			1115	
vC1, stage 1 conf vol	1112					
vC2, stage 2 conf vol	404					
vCu, unblocked vol	1516	558			1115	
tC, single (s)	7.2	7.3			4.5	
tC, 2 stage (s)	6.2					
tF (s)	3.7	3.5			2.4	
p0 queue free %	93	99			100	
cM capacity (veh/h)	226	430			528	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	4	739	376	1	402	402
Volume Left	16	0	0	0	1	0	0
Volume Right	0	4	0	7	0	0	0
cSH	226	430	1700	1700	528	1700	1700
Volume to Capacity	0.07	0.01	0.43	0.22	0.00	0.24	0.24
Queue Length 95th (m)	1.8	0.2	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	22.2	13.4	0.0	0.0	11.8	0.0	0.0
Lane LOS	C	B			B		
Approach Delay (s)	20.4		0.0		0.0		
Approach LOS	C						

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX F

Geometric Design Guide Excerpts

Stopping sight distance is the sum of the distance travelled during the perception and reaction time and the braking distance.

$$SSD = 0.278Vt + 0.039 \frac{V^2}{a} \quad (2.5.2)$$

Where:

SSD = Stopping sight distance (m)
t = Brake reaction time, 2.5 s
V = Design speed (km/h)
a = Deceleration rate (m/s^2)

Table 2.5.2 gives the minimum stopping sight distances on level grade, on wet pavement, for a range of design speeds. These values are used for vertical curve design, intersection geometry and the placement of traffic control devices. The stopping sight distances quoted in **Table 2.5.2** may need to be increased for a variety of reasons related to grade and vehicle type as noted below.

Table 2.5.2: Stopping Sight Distance on level roadways for Automobiles[54]

Design speed (km/h)	Brake reaction distance (m)	Braking distance on level (m)	Stopping sight distance	
			Calculated (m)	Design (m)
20	13.9	4.6	18.5	20
30	20.9	10.3	31.2	35
40	27.8	18.4	46.2	50
50	34.8	28.7	63.5	65
60	41.7	41.3	83.0	85
70	48.7	56.2	104.9	105
80	55.6	73.4	129.0	130
90	62.6	92.9	155.5	160
100	69.5	114.7	184.2	185
110	76.5	138.8	215.3	220
120	83.4	165.2	248.6	250
130	90.4	193.8	284.2	285

Note: Brake reaction distance predicated on a time of 2.5 s; deceleration rate of 3.4 m/s^2 used to determine calculated sight distance.

Table 9.9.3: Time Gap for Case B1, Left Turn from Stop

Design Vehicle	Time Gap (t_g)(s) at Design Speed of Major Road
Passenger car	7.5
Single-unit truck	9.5
Combination truck (WB 19 and WB 20)	11.5
Longer truck	To be established by road authority

Notes: Time gaps are for a stopped vehicle to turn left onto a two-lane highway with no median and with grades of 3% or less. The table values should be adjusted as follows:

- For multi-lane highways: For left turns onto two-lane highways with more than two lanes, add 0.5 s for passenger cars and 0.7 s for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.
- For minor approach grades: If the approach grade is an upgrade that exceeds 3%, add 0.2 s for each percent grade for left turns.
- Some road authorities use higher values for certain specialized vehicles (e.g., Alberta uses 22 s for very long log trucks).

The intersection sight distance along the major road (distance b in **Figure 9.9.2**) is determined by:

$$ISD = 0.278\ V_{major}\ t_g \qquad (9.9.1)$$

Where:

ISD = intersection sight distance (length of the leg of sight triangle along the major road) (m)
V_{major} = design speed of the major road (km/h)
t_g = time gap for minor road vehicle to enter the major road (s)

For example, a passenger car turning left onto a two-lane major road should be provided sight distance equivalent to a time gap of 7.5 s in major-road traffic. If the design speed of the major road is 100 km/h, this corresponds to a sight distance of 0.278(100)(7.5) = 208.5 or 210 m, rounded for design.

A passenger car turning left onto a four-lane undivided roadway will need to cross two near lanes, rather than one. This increases the recommended gap in major-road traffic from 7.5 to 8.0 s. The corresponding value of sight distance for this example would be 223 m. If the minor-road approach to such an intersection is located on a 4% upgrade, then the time gap selected for intersection sight distance design for left turns should be increased from 8.0 to 8.8 s, equivalent to an increase of 0.2 s for each percent grade.

The design values for intersection sight distance for passenger cars are shown in **Table 9.9.4**. **Figure 9.9.4** includes design values, based on the time gaps for the design vehicles included in **Table 9.9.3**.

No adjustment of the recommended sight distance values for the major-road grade is generally needed because both the major- and minor-road vehicle will be on the same grade when departing from the intersection. However, if the minor-road design vehicle is a heavy truck and the intersection is located near a sag vertical curve with grades over 3%, then an adjustment to extend the recommended sight distance based on the major-road grade should be considered.

Table 9.9.4: Design Intersection Sight Distance – Case B1, Left Turn From Stop

Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance for Passenger Cars	
		Calculated (m)	Design (m)
20	20	41.7	45
30	35	62.6	65
40	50	83.4	85
50	65	104.3	105
60	85	125.1	130
70	105	146.0	150
80	130	166.8	170
90	160	187.7	190
100	185	208.5	210
110	220	229.4	230
120	250	250.2	255
130	285	271.1	275

Note: Intersection sight distance shown is for a stopped passenger car to turn left onto a two-lane highway with no median and grades 3% or less. For other conditions, the time gap should be adjusted and the sight distance recalculated.

Sight distance design for left turns at divided-highway intersections should consider multiple design vehicles and median width. If the design vehicle used to determine sight distance for a divided-highway intersection is larger than a passenger car, then sight distance for left turns will need to be checked for that selected design vehicle and for smaller design vehicles as well. If the divided-highway median is wide enough to store the design vehicle with a clearance to the through lanes of approximately 1 m at both ends of the vehicle, no separate analysis for the departure sight triangle for left turns is needed on the minor-road approach for the near roadway to the left. In most cases, the departure sight triangle for right turns (case B2) will provide sufficient sight distance for a passenger car to cross the near roadway to reach the median. Possible exceptions are addressed in the discussion of case B3.

The time gaps in **Table 9.9.3** can be decreased by 1.0 s for right-turn maneuvers without undue interference with major-road traffic. These adjusted time gaps for the right turn from the minor road are shown in **Table 9.9.5**. Design values based on these adjusted time gaps are shown in **Table 9.9.6** for passenger cars. **Figure 9.9.5** includes the design values for the design vehicles for each of the time gaps in **Table 9.9.5**.

Table 9.9.5: Time Gap for Case B2—Right Turn from Stop and Case B3—Crossing Maneuver

Design Vehicle	Time Gap (t_g)(s) at Design Speed of Major Road
Passenger car	6.5
Single-unit truck	8.5
Combination truck (WB 19 and WB 20)	10.5

Note: Time gaps are for a stopped vehicle to turn left onto a two-lane highway with no median and with grades of 3% or less. The table values should be adjusted as follows:

- For multi-lane highways: For left turns onto two-lane highways with more than two lanes, add 0.5 s for passenger cars and 0.7 s for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.
- For minor approach grades: If the approach grade is an upgrade that exceeds 3%, add 0.1 s for each percent grade for left turns.

APPENDIX G

TAC Access Spacing Excerpts

collector roadways, while a 3.0 m minimum is the suggested dimension for both commercial and industrial land uses. If there is a need to provide parallel parking between driveways along the roadway, a spacing of 6.0 to 7.5 m is suitable. If the spacing provided is in the range of 3.0 to 5.0 m, the space may appear inviting to a driver wishing to park, but if used, severely hampers the operation of the driveways by reducing sight lines and interfering with the turning paths of the vehicles.

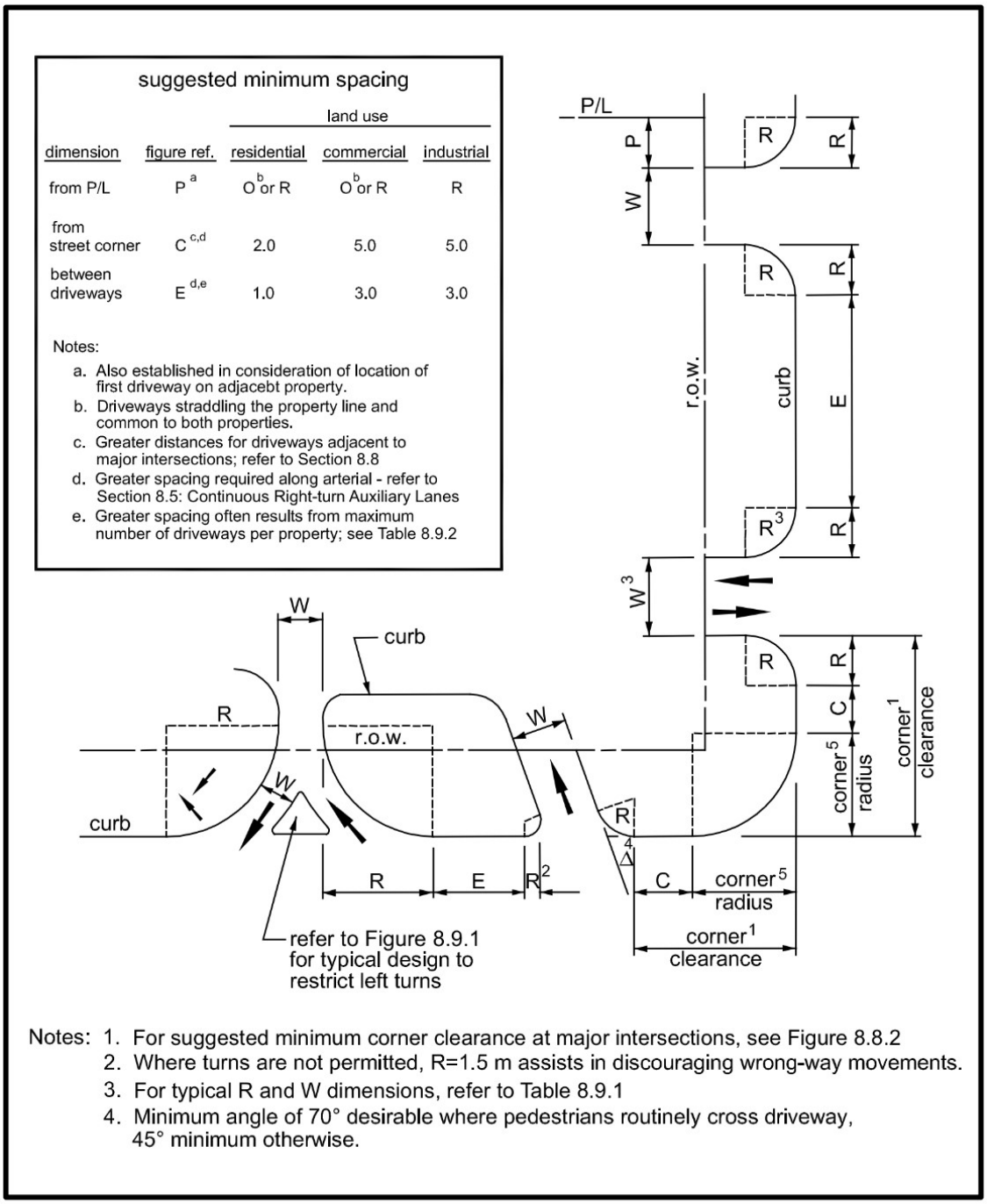


Figure 8.9.2: Driveway Spacing Guidelines – Locals and Collectors

contrasting construction materials across the driveway assists in defining a pedestrian crossing zone to the driver.

The radius of the curb return style or the flare required to accommodate an equivalent turning radius is meaningful only when considered in combination with the width of the driveway throat.

8.9.5 WIDTH

The width of a two-way driveway is measured parallel to the road since turns are generally oriented at right angles. The dimension is typically measured beyond any entrance flare. The width of one-way driveways, which are normally skewed, is measured perpendicular to the driveway.

It is desirable to state suitable driveway widths as a design domain. Dimensions at the lower end of the domain are intended to define the minimum spatial and operational requirements. The maximum dimensions assist in preventing driveways from becoming unwieldy with large paved areas and poorly defined travel paths. The most appropriate width of a driveway is determined in combination with the radius of the curb return (or the design vehicle turning radius and flare dimensions, if a straight flared design is adopted), the desired operating characteristics such as turning speed, and physical limitations which may exist at the site.

Table 8.9.1 provides a typical design domain for driveway throat widths and radii for both two-way and one-way operation. In locations where special vehicles such as long combination vehicles or similar vehicles are present, wider driveway throat dimensions or larger radii may be required.

Table 8.9.1: Typical Driveway[c] Dimensions

Dimension (m)	Land Use		
	Residential	Commercial	Industrial
Width (W)			
- One way	3.0[a] – 4.3	4.5[a] – 7.5	5.0 – 9.0
- Two way	2.0[a] – 7.3	7.2[a] – 12.0[b]	9.0[a] – 15.0[b]
Right turn radius (R)	3.0 – 4.5	4.5 – 12.0	9.0 – 15.0

Notes:

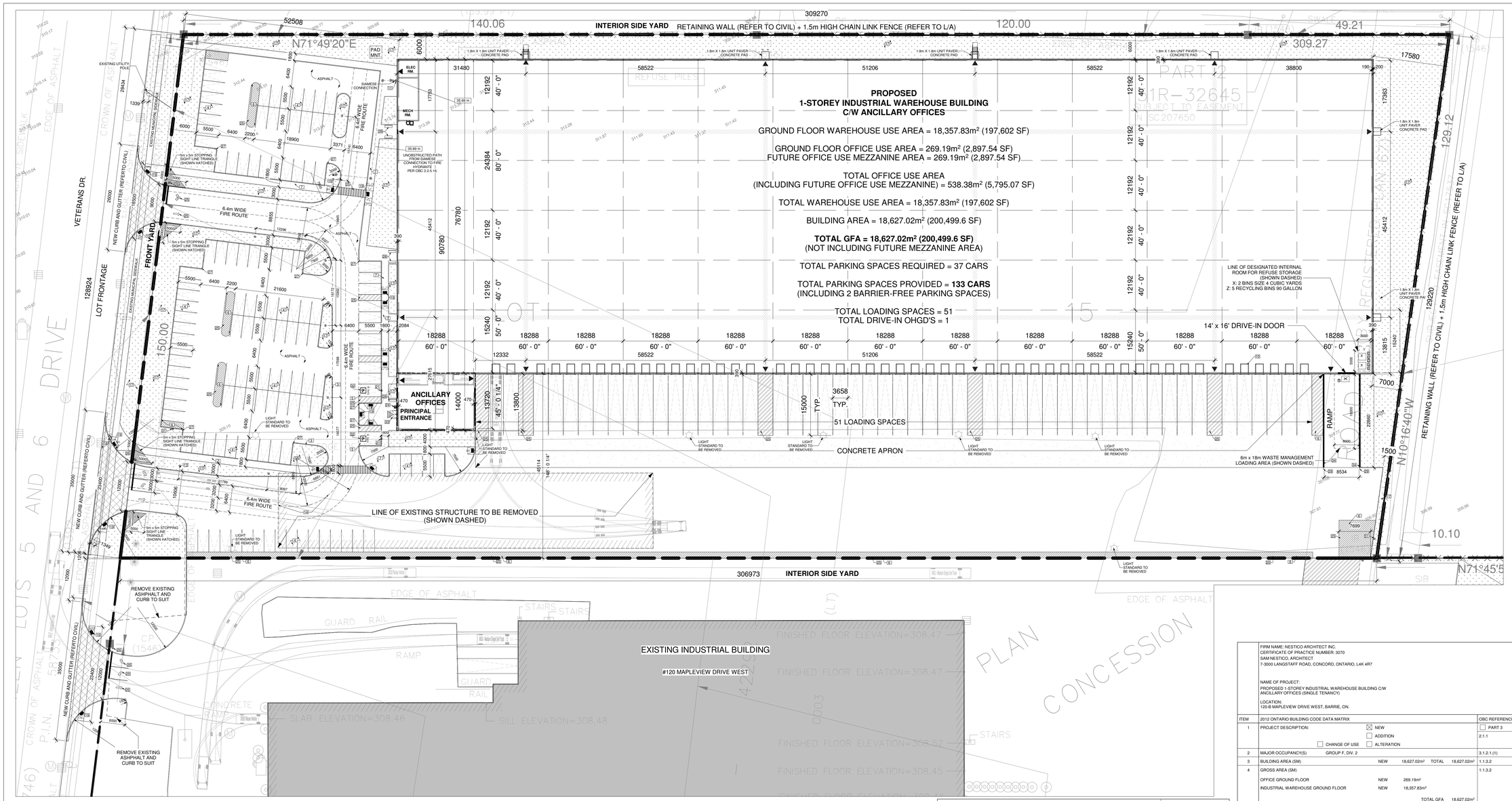
a. Minimum widths are normally used with radii at or near the upper end of the specified range
b. Increased widths may be considered for capacity purposes; where up to 3 exit lanes and 2 entry lanes are employed, 17.0 m is the maximum width exclusive of any median
c. Applicable to driveways only, not road intersections

8.9.6 ANGLE OF DRIVEWAY

Two-way driveways normally intersect the roadway curb at or near 90°. However, a minimum acute angle of 70°, as measured from the roadway curb line, normally operates in an acceptable manner.

For one-way driveways, where a skewed intersection assists in efficient traffic operation, skews in the range of 45° to 60° are appropriate in industrial areas where pedestrians are infrequent. For commercial and residential land uses, where pedestrian volumes are normally moderate to high, minimum skew angles in the range of 60° to 70° are preferred to improve the driver's visibility of the pedestrian, and vice versa, and to encourage lower turning speeds.

List of Figures



1 PARTIAL SITE PLAN
1 : 400

2 SITE PLAN
1 : 2500

3 KEY PLAN
1 : 30000

GENERAL NOTES

1. PROPERTY LINE
2. SETBACK LINE
3. 150mm WIDE CONCRETE CURB
4. 2700x5500mm PARKING STALL, WHITE COLOUR PAINTED PARKING STRIPING AS PER OPSS 1712 AND CITY STANDARDS
5. ACCESSIBLE PARKING SPACES AND AISLE PER O.REG. 413/12 AND CITY STANDARDS
6. TEMPORARY SNOW STORAGE AREA
7. CONCRETE SIDEWALK
8. LOADING SPACE
9. CONCRETE APRON
10. TRUCK LOADING DOCK (TYPICAL)
11. FIRE DEPARTMENT CONNECTION / SIAMESE PER OBC 3.2.5.16.
12. ELECTRIC VEHICLE CHARGING STATION SIGN
13. FIRE ROUTE SIGN (AS PER CITY STANDARDS)
14. FIRE ACCESS ROUTE W/ 12m TURNING RADIUS
15. FIRE HYDRANT
16. HEAVY DUTY ASPHALT (REFER TO CIVIL DWGS.)
17. LANDSCAPE AREA (REFER TO LANDSCAPE DWGS.)
18. LIGHT FIXTURE (REFER TO ELECTRICAL)
19. TACTILE INDICATORS PER OBC 3.8.3.18.
20. NEW PEDESTRIAN WALKWAY PAVEMENT MARKINGS WHITE COLOUR PAINTED PER OPSS 1712 N/A
21. HANDICAPPED PARKING SIGN PER O.REG. 413/12 AND CITY STANDARDS DISABLED PARKING PERMIT SIGN Rb-93. REFER TO S-SP2
22. SHORT-TERM BICYCLE PARKING RACKS (2 BIKE PARKING) (REFER TO LANDSCAPE DWGS.)
23. LONG-TERM BICYCLE PARKING RACKS
24. LITTER RECEPTACLE (REFER TO LANDSCAPE DWGS.)
25. PAVEMENT MARKINGS, WHITE COLOUR PAINTED PER OPSS 1712 AND CITY STANDARDS
26. GROUND MOUNTED STOP SIGN ON METAL POLE
27. 500mm RADII AT CONCRETE CURB
28. BENCH (REFER TO LANDSCAPE DWGS.)
29. 150mm O.D. x 1200mm HIGH CONCRETE FILLED STEEL BOLLARD (REFER TO S/SP2)
30. ELECTRIC VEHICLE CHARGING STATION
31. SNOW STORAGE AREA SIGN
32. BARRIER-FREE PARKING PAVEMENT MARKING PER O.REG. 413/12 (TYP.) (REFER TO S/SP2)
33. PER OBC 3.8.3.2 (1)(g) HAVE A LEVEL AREA OF 1670 mm BY 1670 mm ADJACENT TO THE ENTRANCE DOORWAY CONFORMING TO CLAUSE 3.8.3.4.(1)(b)
34. 2286mm LONG REINFORCED CONCRETE RETAINING WALL C/W 1070mm HIGH GALVANIZED METAL GUARDRAIL

LEGEND

D/C = DROPPED CURB (REFER TO 4-SP2, 5-SP2) PER OBC 3.8.3.2.
- CHAIN LINK FENCE
- PRINCIPAL ENTRANCE (BARRIER-FREE PEDESTRIAN ENTRANCE)
- EXIT ONLY DOOR
- FIRE ROUTE SIGN
- DENOTES FOUND SURVEY MONUMENT
- DENOTES PLANTED SURVEY MONUMENT
- DENOTES STANDARD IRON BAR
- DENOTES IRON BAR
- DENOTES FENCING OR GUARD RAIL
- DENOTES BOLLARD
- DENOTES MANHOLE
- DENOTES TELECOMMUNICATIONS BOX
- DENOTES LIGHT STANDARD
- DENOTES UTILITY POLE
- DENOTES GUY WIRE
- DENOTES OVERHEAD WIRES
- DENOTES CATCH BASIN
- DENOTES FIRE HYDRANT
- DENOTES DECIDUOUS TREE
- DENOTES CONIFEROUS TREE
- DENOTES MONITORING WELL
- DENOTES EDGE OF TREES
- DENOTES CHAIN LINK FENCE
- DENOTES BOTTOM OF CURB

ZONING BY-LAW MATRIX

GENERAL INDUSTRIAL (GI)	REQUIREMENTS	PROPOSED	CITY OF BARRIE ZONING BY-LAW 2009-141 ZONING CATEGORY: LIGHT INDUSTRIAL (LI)	COMPLIANCE
MIN. LOT AREA	700m²	39,454.03m²	TABLE 7.3	YES
MIN. LOT FRONTAGE	15m	129.132m	TABLE 7.3	YES
LOT COVERAGE (MAX.)	60%	18,627.02m² / 39,454.03m² = 47.21%	TABLE 7.3	YES
DEVELOPMENT AREA				
TOTAL BUILDING AREA	--	18,627.02m²	--	--
MIN. FRONT YARD SETBACK				
WEST	7m	52.508m	TABLE 7.3	YES
MIN. SIDE YARD SETBACK				
NORTH	3m	6m	TABLE 7.3	YES
SOUTH	3m	31.333m	TABLE 7.3	YES
MIN. REAR YARD SETBACK				
EAST	7m	7m	TABLE 7.3	YES
BUILDING HEIGHT (MAX)	N/A	14.00m (MEDIAN GRADE TO U/S ROOF DECK	TABLE 7.3	YES
PARKING SPACE (STANDARD)	2.7m x 5.5m	2.7m x 5.5	4.6.2.5	YES
ACCESSIBLE PARKING SPACE	TYPE 'A' = 3.4m WIDE TYPE 'B' = 2.4m WIDE	TYPE 'A' = 3.4m WIDE TYPE 'B' = 2.4m WIDE	4.6.4(b) O.REG. 413/12-s80.34	YES
LANDSCAPE REQUIREMENTS				
LANDSCAPED BUFFER AREAS WIDTH	1.5m ABUTTING INDUSTRIAL ZONES 6m ABUTTING A STREET LINE	1.5m ABUTTING INDUSTRIAL ZONES 6m ABUTTING A STREET LINE	4.8.2	YES
MIN. PARKING SPACES	OFFICE USE: 1 SPACE PER 30m² OF GROSS FLOOR AREA	WAREHOUSE USE: 1 SPACE PER 100m² OF GROSS FLOOR AREA		
PROPOSED OFFICE USE GROUND FLOOR AREA = 269.19m²	1/30 X 269.19m² = 8.97 (9 PARKING SPACES REQUIRED)	9 PARKING SPACES PROVIDED		
FUTURE OFFICE USE MEZZANINE AREA = 269.19m²	1/30 X 269.19m² = 8.97 (9 PARKING SPACES REQUIRED)	9 PARKING SPACES PROVIDED		
PROPOSED WAREHOUSE USE GROUND FLOOR AREA = 18,357.83m²	1/1000 X 18,357.83m² = 18.36 (19 PARKING SPACES REQUIRED)	115 PARKING SPACES PROVIDED		
TOTAL	9 + 9 + 19 = 37 PARKING SPACES REQUIRED	133 PARKING SPACES PROVIDED	TABLE 4.6	YES
BARRIER FREE PARKING SPACES	ONE TYPE 'A' ONE TYPE 'B' 2 BARRIER FREE PARKING SPACES REQUIRED	ONE TYPE 'A' ONE TYPE 'B' 2 BARRIER FREE PARKING SPACES PROVIDED	TABLE 4.6.4(a) O.REG. 413/12-s80.36.(1).4	YES
BICYCLE PARKING SPACES				
TOTAL OFFICE AREA - 538.38m² (INCLUDING FUTURE MEZZANINE) — REQUIRED LONG TERM SPACES = 0.08 / 100m²	538.38m² X 0.08 / 100m² = 1 BICYCLE PARKING SPACE	1 BICYCLE PARKING SPACES		
REQUIRED SHORT TERM SPACES = 0.08 / 100m²	538.38m² X 0.05 / 100m² = 1 BICYCLE PARKING SPACE	1 BICYCLE PARKING SPACES	---	--
TOTAL	2 BICYCLE PARKING SPACES REQUIRED	2 BICYCLE PARKING SPACES PROVIDED		
AISLE WIDTH FOR 90° PARKING	6.4m (2 WAYS)	6.4m (2 WAYS)	4.6.2.5	YES
LOADING SPACES BUILDING GROSS FLOOR AREA = 19,892.9m²	4 LOADING SPACES	51 LOADING SPACES	TABLE 4.7.1	YES
SIZE OF LOADING SPACES	3.0m x 9m	3.658m x 15m	4.7.1.2	YES
DRIVE-IN DOORS	---	ONE 14' (W) x 16' (H) DRIVE-IN DOORS	---	---

4 ZONING DATA MATRIX
N.T.S.

FIRM NAME: NESTICO ARCHITECT INC.
CERTIFICATE OF PRACTICE NUMBER: 3070
SAM NESTICO, ARCHITECT
7-3000 LANGSTAFF ROAD, CONCORD, ONTARIO, L4K 4R7

NAME OF PROJECT:
PROPOSED 1-STOREY INDUSTRIAL WAREHOUSE BUILDING C/W ANCILLARY OFFICES (SINGLE TENANCY)

LOCATION:
120-B MAPLEVIEW DRIVE WEST, BARRIE, ON.

ITEM	2012 ONTARIO BUILDING CODE DATA MATRIX								OBC REFERENCE	
1	PROJECT DESCRIPTION:	☒ NEW							☐ PART 3	☒ PART 9
		☐ ADDITION							2.1.1	2.1.1
	☐ CHANGE OF USE	☐ ALTERATION								9.10.1.3
2	MAJOR OCCUPANCY(S)	GROUP F, DIV. 2							3.1.2.1.(1)	9.10.2
3	BUILDING AREA (SM)			NEW	18,627.02m²	TOTAL	18,627.02m²		1.1.3.2	1.1.3.2
4	GROSS AREA (SM)								1.1.3.2	1.1.3.2
	OFFICE GROUND FLOOR			NEW	269.19m²					
	INDUSTRIAL WAREHOUSE GROUND FLOOR			NEW	18,357.83m²					
						TOTAL GFA	18,627.02m²			
5	NUMBER OF STORIES	ABOVE	1		BELOW	0			3.2.1.1 + 1.1.3.2	1.1.3.2
	HEIGHT OF BUILDING	13.32m	FINISHED FLOOR TO U/S ROOF DECK							
6	NUMBER OF STREETS / FIREFIGHTER ACCESS				1 STREET				3.2.2.10 + 3.2.5.	9.10.19
7	BUILDING CLASSIFICATION	3.2.2.66.B.							3.2.2.20 - .83	9.10.4
8	SPRINKLER SYSTEM PROPOSED							☒ ENTIRE BUILDING	3.2.2.20 - .83	9.10.8
								☐ BASEMENT ONLY	3.2.1.5	
								☐ IN LIEU OF ROOF RATING	3.2.2.17	
								☐ NOT REQUIRED		
9	STANDPIPE REQUIRED							☐ YES ☒ NO	3.2.9	N/A
10	FIRE ALARM REQUIRED							☐ YES ☒ NO	3.2.4	9.10.17.2
11	WATER SERVICE / SUPPLY IS ADEQUATE							☒ YES ☐ NO	3.2.5.7	N/A
12	HIGH BUILDING							☐ YES ☒ NO	3.2.6	N/A
13	PERMITTED CONSTRUCTION	☐ COMBUSTIBLE						☒ NON-COMBUSTIBLE ☐ BOTH	3.2.2.20 - .83	9.10.6
	ACTUAL CONSTRUCTION	☐ COMBUSTIBLE						☒ NON-COMBUSTIBLE ☐ BOTH		
14	OCCUPANT LOAD BASED ON							☐ m2 / PERSON ☒ DESIGN OF BUILDING	3.1.16	9.9.1.3
	GROUND FLOOR WAREHOUSE							OCCUPANCY TBD GROUP 'F', DIV 2		
	GROUND FLOOR OFFICE							OCCUPANCY TBD GROUP 'D'		
	MEZZANINE OFFICE							OCCUPANCY TBD GROUP 'D'		
15	BARRIER-FREE DESIGN							☒ YES ☐ NO	3.8	9.5.2
16	HAZARDOUS SUBSTANCES							☐ YES ☒ NO	3.3.1.2 + .3.3.1.19	9.10.1.3.(4)
17	REQUIRED FIRE	HORIZONTAL ASSEMBLIES FRR (HOURS)						LISTED DESIGN NO./DESCRIPTION (SB-2)	3.2.2.20 - .83	9.10.8
	RESISTANCE	FLOORS	2	HOURS	N/A				3.2.1.4	
	RATING (FRR)	MEZZANINE	1	HOURS	ULC DESIGN #F816					
		ROOF	0	HOURS	N/A					
		FRR OF SUPPORTING MEMBERS			LISTED DESIGN NO./DESCRIPTION (SB-2)					
		FLOORS	2	HOURS	N/A					
		MEZZANINE	1	HOURS	ULC DESIGN #Z800					
		ROOF	0	HOURS	N/A					
18	SPATIAL SEPARATION - CONSTRUCTION OF EXTERIOR WALLS								3.2.3	9.10.14

	WALL	AREA OF EBF (SM)	L.D. (m)	L/H H/L	PERMITTED MAX % OF OPENINGS	PROPOSED % OF OPENINGS	FRR (hr)	LISTED DESIGN OR DESCRIPTION	TYPE OF CONST.	TYPE OF CLADDING
	EAST	>200m²	7m		28%	8.30%	1	NF,PC, GL	NC	NC
	WEST	>200m²	>15m		100% (1)	10.32%	0	NF,PC, GL	NC	NC
	NORTH	>200m²	6m		22%	0.78%	2	NF,PC, GL	NC	NC
	SOUTH	>200m²	>15m		100%	19.39%	0	NF,PC, GL	NC	NC

LEGEND
- PC — PRECAST CONCRETE PANEL
- NC — NON COMBUSTIBLE CONSTRUCTION
- C — COMBUSTIBLE CONSTRUCTION
- NF — NUFORM WALL SYSTEM (ESR-1223)
- GL — GLAZING CURTAIN WALL SYSTEM

(1) AS PER OBC 3.2.3.10.(2)

5 O.B.C MATRIX
N.T.S

DRAWING NOTES:
a. ALL DRAWINGS TO REMAIN THE PROPERTY OF NESTICO ARCHITECT INCORPORATED.
b. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION BY THE CONTRACTOR AND SHALL REPORT ANY DISCREPANCIES.
c. ALL DISTANCES AND ELEVATIONS SHOWN ON THIS PLAN ARE IN METERS AND MAY BE CONVERTED TO IMPERIAL BY DIVIDING BY 0.3048.
d. SITE PLAN SUBJECT TO THE APPROVAL OF THE FIRE DEPARTMENT.

Nestico *Architect Inc.*
7-3000 Langstaff Road
Vaughan, ON, L4K 4R7
905.669.7600
mail@NesticoArchitect.on.ca
VaughanArchitect.ca

ONTARIO ASSOCIATION of ARCHITECTS
SAVERIO NESTICO
LICENCE
4638

PROJECT NORTH | TRUE NORTH

SUBMITTALS

THIS DOCUMENT SHOULD NOT BE RELIED ON OR USED IN CIRCUMSTANCES OTHER THAN THOSE FOR WHICH IT WAS ORIGINALLY PREPARED AND FOR WHICH NESTICO ARCHITECT INC. WAS COMMISSIONED.

NESTICO ARCHITECT INC. ACCEPTS NO RESPONSIBILITY FOR THIS DOCUMENT TO ANY PARTY OTHER THAN THE PERSON BY WHOM IT WAS COMMISSIONED.

THE CONTRACTOR WILL CHECK AND VERIFY DIMENSIONS AND SITE CONDITIONS ON THE PROJECT AND REPORT ANY DISCREPENCY TO THE ARCHITECT PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE ARCHITECT. ALL DRAWINGS ARE THE PROPERTY OF THE ARCHITECT AND MAY NOT BE COPIED, REPRODUCED OR ALTERED WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT.

DO NOT SCALE THE DRAWING.

REVISION

No	DATE	DESCRIPTION
3	2021.11.16	ISSUED FOR CONSULTANT COORDINATION
4	2021.11.19	ISSUED FOR CLIENT REVIEW
5	2022.01.07	ISSUED FOR CONSULTANT COORDINATION
6	2022.01.07	ISSUED FOR CONSULTANT COORDINATION - OLS UPDATE
7	2022.01.14	ISSUED FOR INTERNAL REVIEW
8	2022.01.17	ISSUED FOR CONSULTANT COORDINATION
9	2022.01.24	ISSUED FOR CONSULTANT COORDINATION
10	2022.01.25	ISSUED FOR SPA
11	2022.03.10	ISSUED FOR CONSULTANT COORDINATION
12	2022.04.05	ISSUED FOR CONSULTANT COORDINATION

JOB NO.	21752
DRAWING No.	SP1
SCALE:	As indicated
PRINT DATE:	2022.04.05

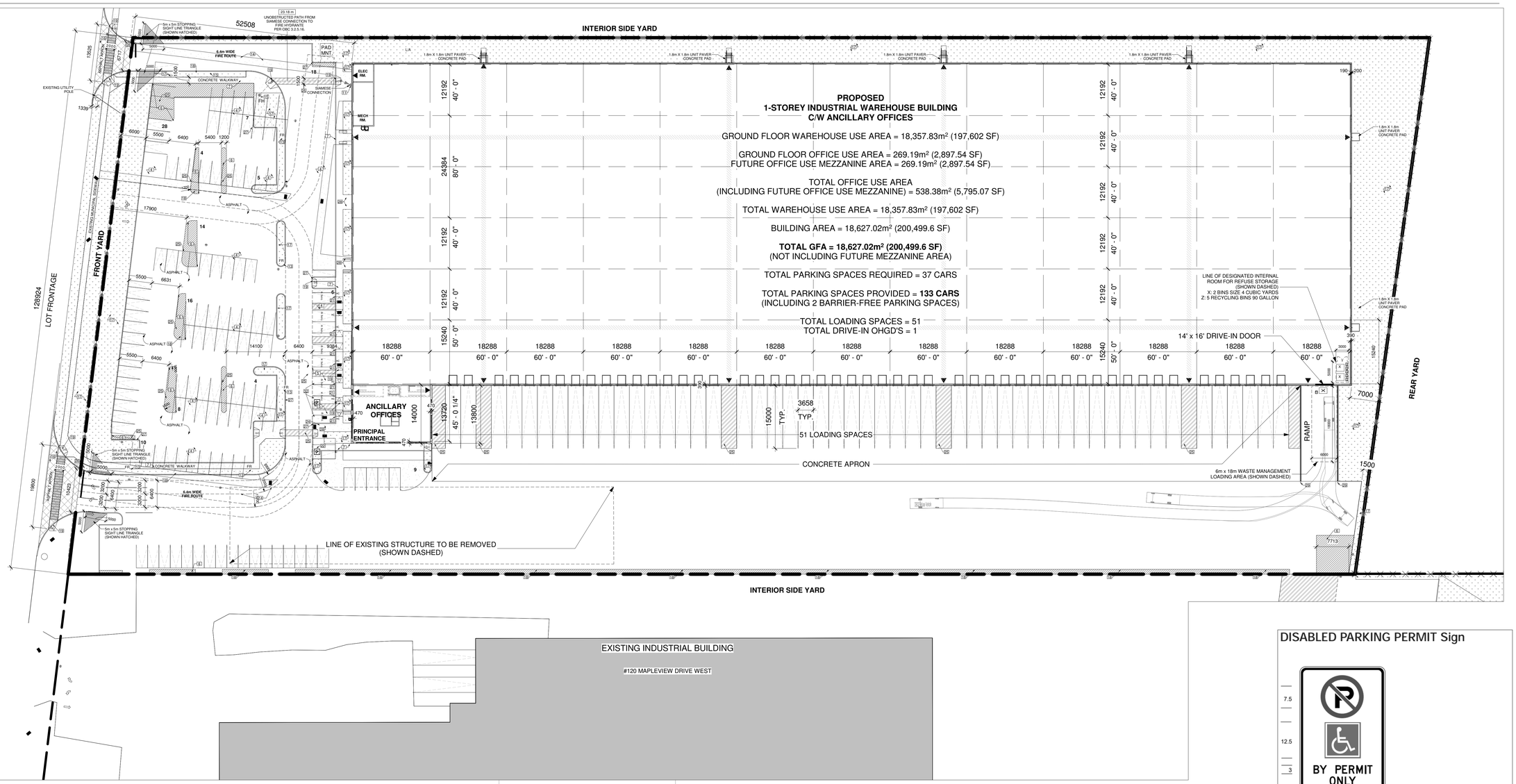
PROPOSED 1-STOREY INDUSTRIAL WAREHOUSE BUILDING C/W ANCILLARY OFFICES (SINGLE TENANCY)

120-B MAPLEVIEW DRIVE WEST, BARRIE, ON.

CITY FILE #D28-108-2021

SITE PLAN

SP1



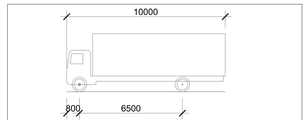
1 WASTE COLLECTION TRACKING PATH
1 : 400

GENERAL NOTES

1	PROPERTY LINE
2	SETBACK LINE
3	150mm WIDE CONCRETE CURB
4	2700x6500mm PARKING STALL, WHITE COLOUR PAINTED PARKING STRIPPING AS PER OPSS 1712 AND CITY STANDARDS
5	ACCESSIBLE PARKING SPACES AND AISLE PER O.REG. 413/12 AND CITY STANDARDS
6	TEMPORARY SNOW STORAGE AREA
7	CONCRETE SIDEWALK
8	LOADING SPACE
9	CONCRETE APRON
10	TRUCK LOADING DOCK (TYPICAL)
11	FIRE DEPARTMENT CONNECTION / SIAMESE PER OBC 3.2.5.16.
12	ELECTRIC VEHICLE CHARGING STATION SIGN
13	FIRE ROUTE SIGN (AS PER CITY STANDARDS)
14	FIRE ACCESS ROUTE W/ 12m TURNING RADIUS
15	FIRE HYDRANT
16	HEAVY DUTY ASPHALT (REFER TO CIVIL DWGS.)
17	LANDSCAPE AREA (REFER TO LANDSCAPE DWGS.)
18	LIGHT FIXTURE (REFER TO ELECTRICAL)
19	TACTILE INDICATORS PER OBC 3.8.3.18.
20	NEW PEDESTRIAN WALKWAY PAVEMENT MARKINGS WHITE COLOUR PAINTED PER OPSS 1712 AND CITY STANDARDS
21	HANDICAPPED PARKING SIGN PER O.REG. 413/12 AND CITY STANDARDS DISABLED PARKING PERMIT SIGN Rb-93. REFER TO 8-SP2
22	SHORT TERM BICYCLE PARKING RACKS (2 BIKE PARKING) (REFER TO LANDSCAPE DWGS.)
23	LONG-TERM BICYCLE PARKING RACKS
24	LITTER RECEPTACLE (REFER TO LANDSCAPE DWGS.)
25	PAVEMENT MARKINGS, WHITE COLOUR PAINTED PER OPSS 1712 AND CITY STANDARDS
26	GROUND MOUNTED STOP SIGN ON METAL POLE
27	500mm RADII AT CONCRETE CURB
28	BENCH (REFER TO LANDSCAPE DWGS.)
29	150mm O.D. x 1220mm HIGH CONCRETE FILLED STEEL BOLLARD (REFER TO 3/SP2)
30	ELECTRIC VEHICLE CHARGING STATION
31	SNOW STORAGE AREA SIGN
32	BARRIER-FREE PARKING PAVEMENT MARKING PER O.REG. 413/12 (TYP.) (REFER TO 6/SP2)
33	PER OBC 3.8.3.(1)(g) HAVE A LEVEL AREA OF 1670 mm BY 1670 mm ADJACENT TO THE ENTRANCE DOORWAY CONFORMING TO CLAUSE 3.8.3.4.(1)(c)
34	2286Omm LONG REINFORCED CONCRETE RETAINING WALL C/W 1070mm HIGH GALVANIZED METAL GUARDRAIL

LEGEND

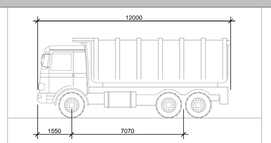
DC – DROPPED CURB (REFER TO 4/SP2, 5/SP2) PER OBC 3.8.3.2.
- CHAIN LINK FENCE
- PRINCIPAL ENTRANCE (BARRIER-FREE PEDESTRIAN ENTRANCE)
- EXIT ONLY DOOR
- FIRE ROUTE SIGN
- DENOTES FOUND SURVEY MONUMENT
- DENOTES PLANTED SURVEY MONUMENT
- DENOTES STANDARD IRON BAR
- DENOTES IRON BAR
- DENOTES FENCING OR GUARD RAIL
- DENOTES BOLLARD
- DENOTES MANHOLE
- DENOTES TELECOMMUNICATIONS BOX
- DENOTES LIGHT STANDARD
- DENOTES UTILITY POLE
- DENOTES GUY WIRE
- DENOTES OVERHEAD WIRES
- DENOTES CATCH BASIN
- DENOTES FIRE HYDRANT
- DENOTES DECIDUOUS TREE
- DENOTES CONIFEROUS TREE
- DENOTES MONITORING WELL
- DENOTES EDGE OF TREES
- DENOTES CHAIN LINK FENCE
- DENOTES BOTTOM OF CURB



MEDIUM SINGLE UNIT TRUCK

OVERALL LENGTH (L):	10.0 m
OVERALL WIDTH (W):	2.6 m
OVERALL HEIGHT (H):	3.65 m
CURB TO CURB TURNING RADIUS (R):	11.1 m

9 MEDIUM SINGLE UNIT TRUCK
N.T.S.



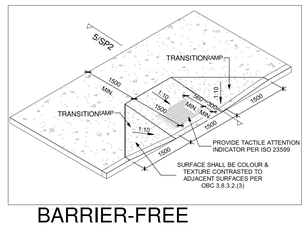
REFUSE TRUCK

WIDTH:	2.5 m
TRACK:	2.5 m
LOCK TO LOCK TIME:	6.0 m
STEERING ANGLE:	38.5 m

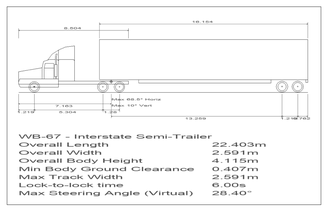
2 REFUSE TRUCK PROFILE
N.T.S.

CONSTRUCTION NOTES:

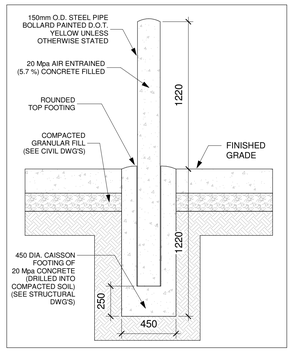
A. ALL CONSTRUCTION WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
B. REFER TO BUILDING ELEVATIONS FOR SCUPPER LOCATIONS.
C. THE CONTRACTOR SHALL RECTIFY ALL DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER AND TO THE SATISFACTION OF THE TOWN + CLIENT.
D. CONTRACTOR TO COORDINATE ALL SITE WORK DESIGN WITH CIVIL ENGINEER DRAWINGS, INCLUDING HARD SURFACE PAVING, CURBING, AISLEWAYS, DRIVEWAYS, RETAINING WALLS, ETC.
E. CONTRACTOR TO COORDINATE ALL GRADING + SITE SERVICES DESIGN WITH CIVIL ENGINEER DRAWINGS, INCLUDING ALL UNDER/ABOVE GROUND UTILITIES WATERMAINS, SEWERS, STORM PIPES, FIRE HYDRANTS, ETC.
F. BARRIER FREE PATH OF TRAVEL SHALL COMPLY WITH OBC 3.8.1.3.
G. WASHROOM FACILITIES SHALL COMPLY WITH OBC 3.7.4.9.
H. MINOR COMBUSTIBLE COMPONENTS SHALL COMPLY WITH OBC 3.1.5.2.
I. COMBUSTIBLE ROOFING MATERIAL SHALL COMPLY WITH OBC 3.1.5.3.
J. COMBUSTIBLE COMPONENTS FOR EXTERIOR WALL SHALL COMPLY WITH OBC. 3.1.5.5.
K. COMBUSTIBLE INTERIOR FINISH SHALL COMPLY WITH OBC. 3.1.5.10.
L. COMBUSTIBLE INSULATION AND ITS PROTECTION COMPLY WITH OBC. 3.1.5.11.
M. COMBUSTIBLE ELEMENTS IN PARTITIONS SHALL COMPLY WITH OBC. 3.1.5.12.
N. EXIT CAN SHALL COMPLY WITH OBC. 3.4.3.4.
O. EMERGENCY LIGHTING SHALL COMPLY WITH OBC. 3.2.7.3.
P. EMERGENCY LIGHTING SHALL COMPLY WITH OBC. 3.2.7.3.
Q. ALL UTILITY METERS + PIPES ARE TO BE LOCATED AWAY FROM PROMINENT LOCATIONS + THAT ALL UTILITY PIPES ARE TO BE INTERNAL AND WALL ROOFTOP EQUIPMENT SHALL BE SCREENED BY PARAPETS OR SCREEN DETAILS.
R. STRUCTURAL REVIEW OF THE RETAINING WALLS WILL BE UNDERTAKEN BY THE BUILDING STANDARDS DEPARTMENT. ACCORDINGLY, THE OWNER/APPLICANT SHALL FILE A BUILDING PERMIT APPLICATION WITH THE BUILDING STANDARDS DEPARTMENT IN ORDER TO OBTAIN THE REQUIRED PERMIT FOR THE PROPOSED RETAINING WALLS.



4 BARRIER-FREE CURB RAMP DETAIL
N.T.S.

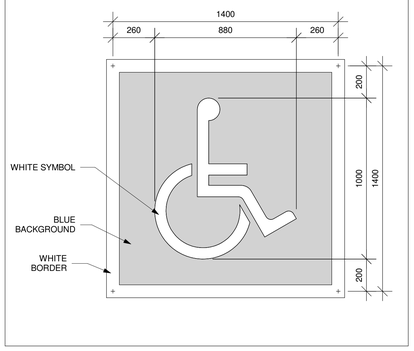


7 TRUCK PROFILE
N.T.S.



3 BOLLARD DETAIL
1 : 20

BARRIER-FREE PARKING PAVEMENT MARKING

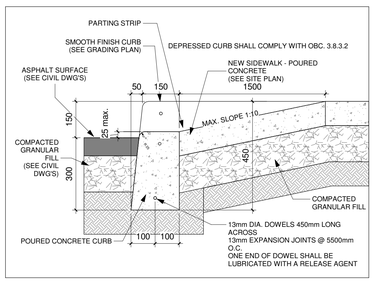


6 HC PAVEMENT MARKING
1 : 15

DISABLED PARKING PERMIT Sign

Rb-93	30 cm x 45 cm
Font	Helvetica Bold Condensed
Colour	Interdictory Symbol – Red Reflective Symbol of Access and Symbol Border – Blue Reflective Legend & Border – Black Background – White Reflective

8 DISABLED PARKING PERMIT SIGN
1 : 15



5 SECTION DETAIL BARRIER-FREE CURB RAMP
1 : 10

Nestico Architect Inc.
7-3000 Langstaff Road
Vaughan, ON, L4K 4R7
905.669.7000
mail@NesticoArchitect.on.ca
VaughanArchitect.ca

ONTARIO ASSOCIATION OF ARCHITECTS
SAVERIO NESTICO
LICENCE
4638

N

PROJECT NORTH

TRUE NORTH

SUBMITTALS

THIS DOCUMENT SHOULD NOT BE RELIED ON OR USED IN CIRCUMSTANCES OTHER THAN THOSE FOR WHICH IT WAS ORIGINALLY PREPARED AND FOR WHICH NESTICO ARCHITECT INC. WAS COMMISSIONED.

NESTICO ARCHITECT INC. ACCEPTS NO RESPONSIBILITY FOR THIS DOCUMENT TO ANY PARTY OTHER THAN THE PERSON BY WHOM IT WAS COMMISSIONED.

THE CONTRACTOR WILL CHECK AND VERIFY DIMENSIONS AND SITE CONDITIONS ON THE PROJECT AND REPORT ANY DISCREPENCY TO THE ARCHITECT PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE ARCHITECT. ALL DRAWINGS ARE THE PROPERTY OF THE ARCHITECT AND MAY NOT BE COPIED, REPRODUCED OR ALTERED WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT.

DO NOT SCALE THE DRAWING.

REVISION

No	DATE	DESCRIPTION
1	2022.01.17	ISSUED FOR CONSULTANT COORDINATION
2	2022.01.25	ISSUED FOR SPA
3	2022.03.10	ISSUED FOR CONSULTANT COORDINATION
4	2022.04.05	ISSUED FOR CONSULTANT COORDINATION

JOB NO.	21752
DRAWING No.	SP2
SCALE:	As indicated
PRINT DATE:	2022.04.05

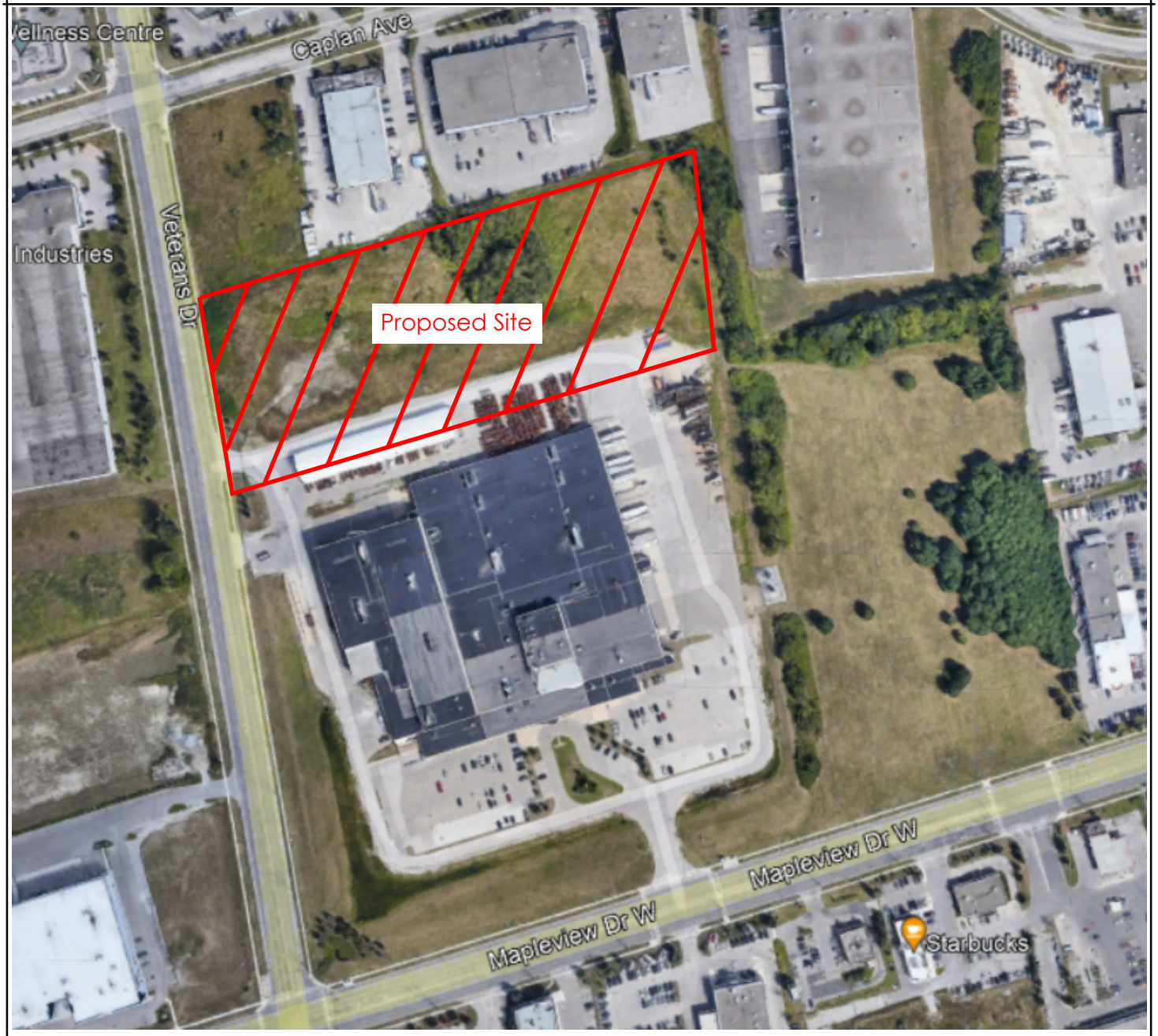
PROPOSED 1-STOREY INDUSTRIAL WAREHOUSE BUILDING C/W ANCILLARY OFFICES (SINGLE TENANCY)

120-B MAPLEVIEW DRIVE WEST, BARRIE, ON.

CITY FILE #D28-108-2021

WASTE COLLECTION TRACKING PATH AND TRUCK PROFILE + DETAILS

SP2



Legend

SIGNAL CONTROL

STOP CONTROL

XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

N

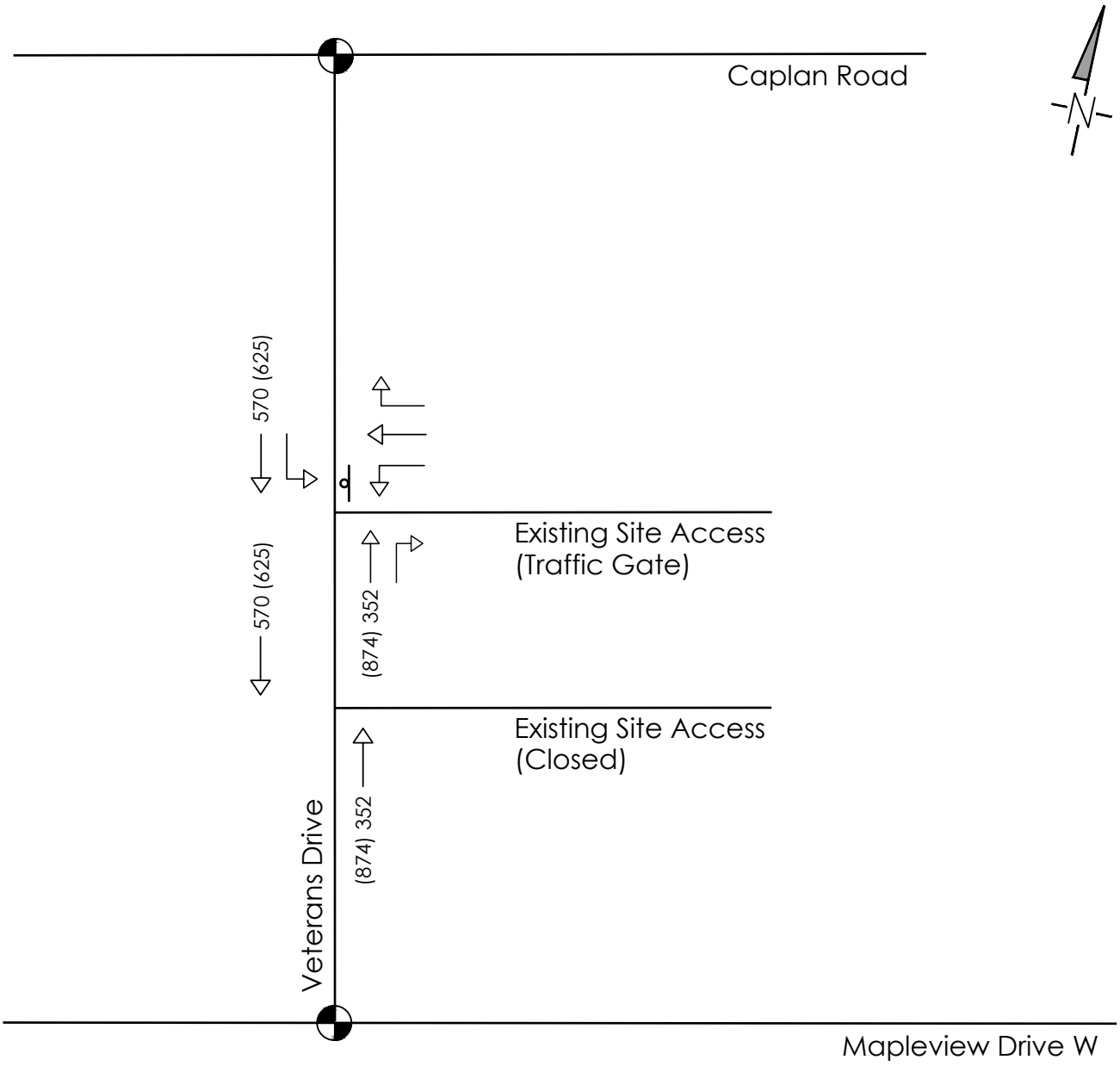
NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.

120 Mapleview Street

Site Location Plan

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
COLLINGWOOD, ON L9Y 1A1
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
I.B.	I.B.	281-6334	
Date	Check	Scale	Dwg.
2022-04-20	I.B.	N.T.S	FIG. 02



Legend

SIGNAL CONTROL

STOP CONTROL

XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

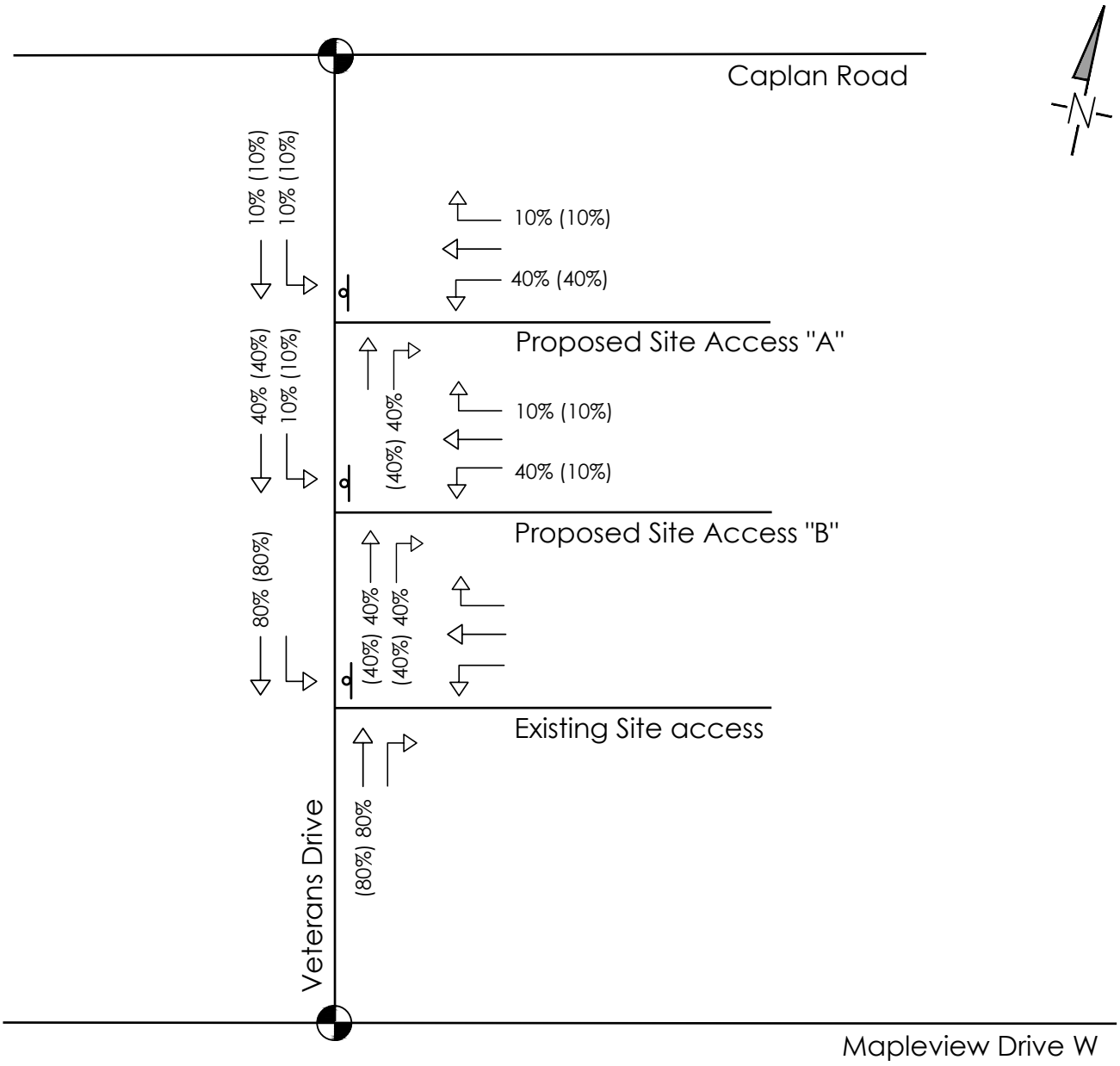
NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.

120 Mapleview Street

Existing Traffic Volumes (2027)

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
COLLINGWOOD, ON L9Y 1A1
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
I.B.	I.B.	281-6334	
Date	Check	Scale	Dwg.
2022-04-20	I.B.	N.T.S	FIG. 03



Legend

SIGNAL CONTROL

STOP CONTROL

XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

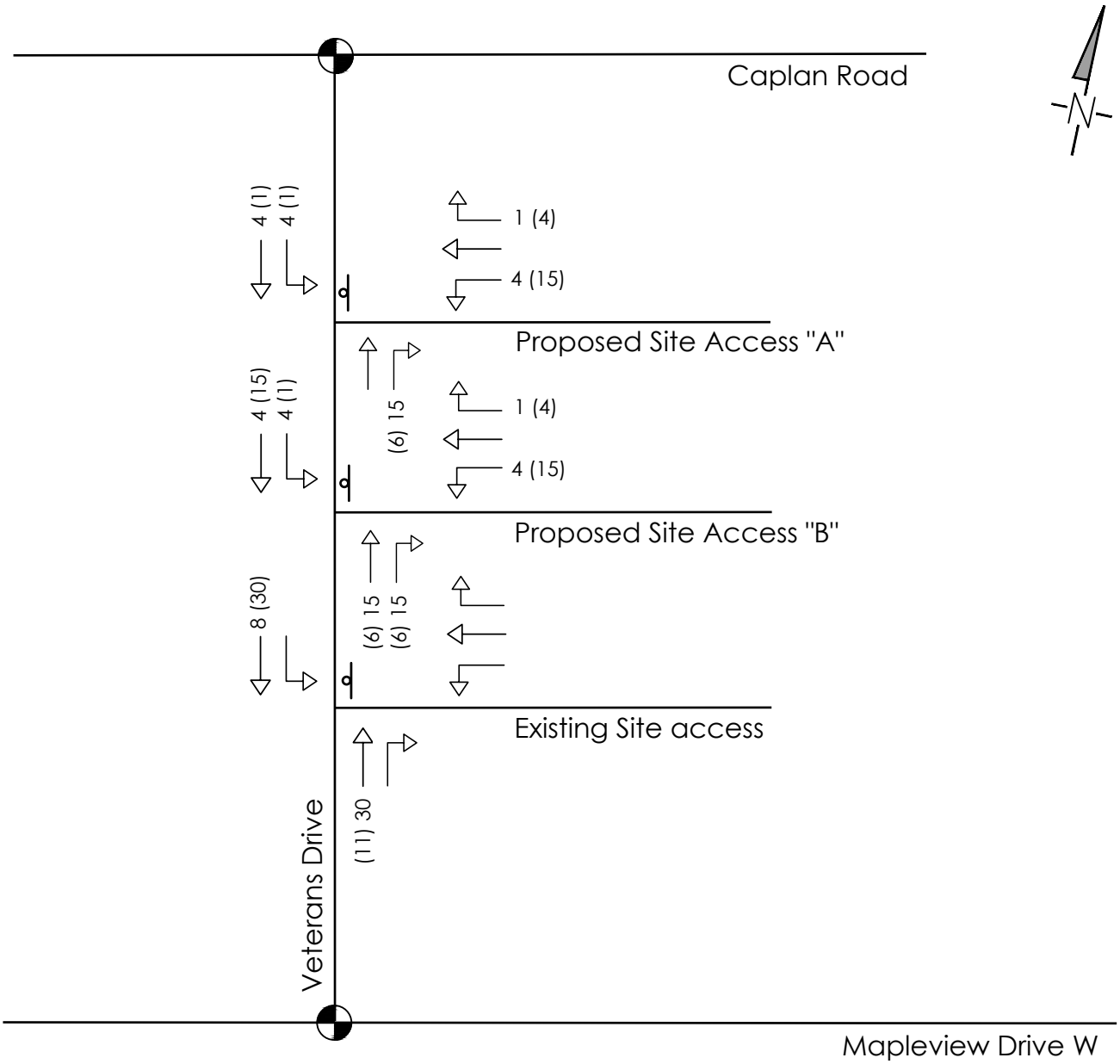
NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.

120 Mapleview Street

Trip Distribution

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
COLLINGWOOD, ON L9Y 1A1
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
I.B.	I.B.	281-6334	
Date	Check	Scale	Dwg.
2022-04-20	I.B.	N.T.S	FIG. 04



Legend

SIGNAL CONTROL

STOP CONTROL

XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

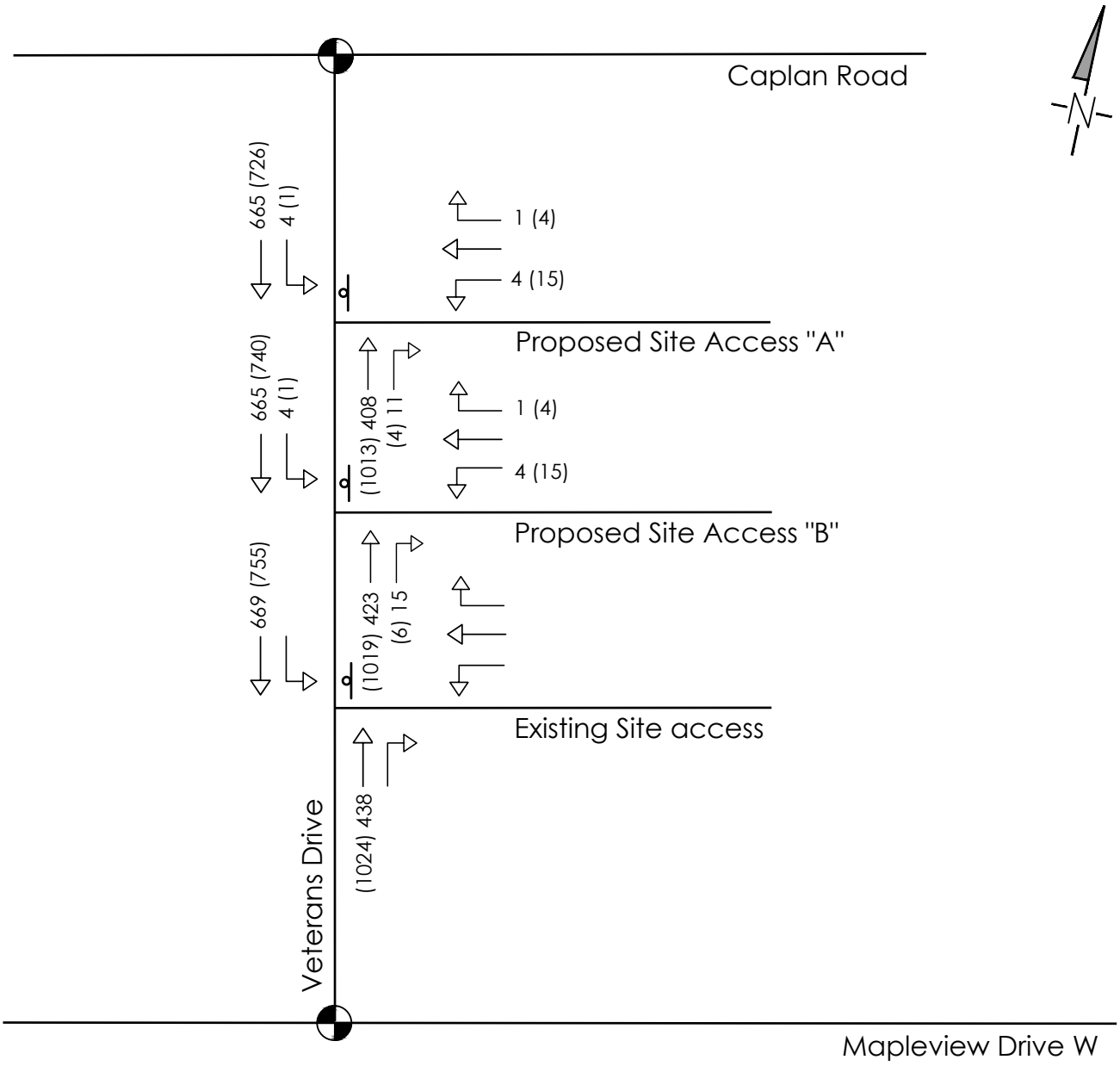
NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.

120 Mapleview Street

Trip Assignment

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
COLLINGWOOD, ON L9Y 1A1
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
I.B.	I.B.	281-6334	
Date	Check	Scale	Dwg.
2022-04-20	I.B.	N.T.S	FIG. 05



Legend

SIGNAL CONTROL

STOP CONTROL

XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.

120 Mapleview Street

Future Totals (2027)

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
COLLINGWOOD, ON L9Y 1A1
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
I.B.	I.B.	281-6334	
Date	Check	Scale	Dwg.
2022-04-20	I.B.	N.T.S	FIG. 06