



PARTNERS IN
ENGINEERING, PLANNING &
ENVIRONMENTAL SERVICES

August 25, 2026

Steve Wuis
3588 Wallace Point Road
Otonabee, ON
K9J 6Y3

Attention: Steve Wuis

**Re: Engineering Services for Site Entrance Assessment
3588 Wallace Point Road
Township of Otonabee-South Monaghan
D.M. Wills Project No. 11240-01**

D.M. Wills Associates Limited (Wills) has been retained to complete this Site Entrance Assessment (SEA) to support the proposed industrial use (i.e. Wuis Concrete Forming) on County Road (CR) 21 at 3588 Wallace Point Road (Subject Property) in the County of Peterborough.

1.0 Roadway Existing Conditions

The Subject Property is located on the north side of CR 21 (Wallace Point Road). The area surrounding the proposed development is mostly undeveloped. The posted speed limit at the entrance of the Subject Property is 80 km/hr. The Subject Property is serviced by an unpaved entrance on CR 21, as shown in **Figure 1**.

Figure 1 – Location of the Existing Entrance of the Development



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ONTARIO

PGO

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P. 705.742.2297 F. 705.748.9944 E. wills@dmwills.com

Within the study area, CR 21 has a typical rural cross-section with unpaved shoulders and ditches on both sides.

2.0 Existing and Planned Site Conditions

Currently, the Subject Property has an existing agricultural building (with a gross floor area of about 279.46 m²). The owners are proposing to operate an industrial use, being a construction business (e.g. Wuis Concrete Forming) out of the existing building and expand the building to accommodate additional office space and washroom. The proposed building addition is to have a gross floor area of about 255.88 m², as shown in **Appendix A**.

According to the client, a maximum of 15 employees will work on-site daily. In addition, up to four trucks will enter/exit the site daily, depending on the workload, and up to two trucks will deliver materials weekly to the site.

3.0 Existing and Future Traffic on CR 21

The Spring 2025 traffic counts on CR 21 were acquired from the County, as shown in **Appendix B**. The traffic count location is 350 m to the north of the CR 21 intersection with Matchett Line. Based on these counts, the traffic on CR 21 at the existing entrance is summarized in **Table 1**.

Table 1 – CR 21 Traffic at the Development Entrance in 2025

Peak Hour	NB	SB	Total
a.m.	29	79	108
p.m.	110	85	195

It is assumed that the proposed expansion will be in full operation by 2027, and hence, the horizon year is set to be 2037. To obtain traffic volumes for the horizon year (2037), the future traffic counts were estimated using an annual growth rate of about 2%, which is a conservative assumption. The future traffic volumes at the entrance of the development are summarized in **Table 2**. Since the counts during the spring were higher than those conducted in the summer, the spring traffic counts are used without any modification factor.

Table 2 – CR 21 Estimated Traffic at the Development Entrance

Peak Hour	NB	SB	Total
2027			

a.m.	30	82	112
p.m.	114	88	203
2037			
a.m.	37	100	137
p.m.	140	108	247

4.0 Trip Generation and Distribution

Based on the information provided by the owner, it is anticipated that a maximum of 15 employees and four trucks will use the entrance daily, depending on the workload. In addition, up to two delivery trucks will use the entrance weekly. As a worst-case scenario, it is assumed that the employees and the trucks will enter the development during the a.m. peak hour and will exit the development during the p.m. peak hour. Accordingly, a total of 21 vehicles will enter the development during the a.m. peak hour, and a total of 21 vehicles will exit the development during the p.m. peak hour.

These trips are distributed at the entrance based on the traffic pattern, which is shown in **Table 1**. Accordingly, the worst-case scenario traffic at the entrance of the development is as shown in **Table 3**.

Table 3 – Trip Distribution at the Entrance of the Development

Peak Hour	EBL	EBR	NBL	NBT	SBT	SBR
a.m. Peak	0	0	6	0	0	15
p.m. Peak	12	9	0	0	0	0

The estimated total traffic volumes at the entrance of the proposed development, after considering the trips generated, are summarized in **Table 4**.

Table 4 – Estimated Total Future Traffic Volumes with the Development Consideration at the Entrance on CR 21

Peak Hour	EBL	EBR	NBL	NBT	SBT	SBR
a.m. Peak						
2027	0	0	6	30	82	15
2037	0	0	6	37	100	15
p.m. Peak						

2027	12	9	0	114	88	0
2037	12	9	0	140	108	0

5.0 Visibility Requirements Assessment

A site visit was conducted on Thursday, May 14, 2026, to check the sight lines at the existing entrance of the Subject Property on CR 21. Based on the sight line review for the existing entrance, the available sight distances when looking east and west from the entrance are more than 180 m. According to the Peterborough County By-law 2012-26, in the Visibility Requirement Section, the required visibility distance for 80 km/hr speed limit roads is 180 metres. Therefore, the available visibility distance is fulfilled for the existing entrance location for both directions based on an 80 km/hr speed limit. The measurement of the sight lines assumed an observer's eye at 1.1 metres above the shoulder of CR 21 and an object height of 1.3 metres above the centreline of the on-coming lane as indicated in the County's by-law. **Figure 2** and **Figure 3** show pictures taken in both directions at the proposed entrance on CR 21. For the north side of the property, although no visibility issues were observed in the field, as evident in the figure, it is recommended to maintain a lower height of vegetation to maintain the visibility of the entrance.

Figure 2 – Picture taken in the field on the Northbound Lane at 180 m to the Southwest of the Existing Entrance on CR 21 – Looking Northeast.



Figure 3 – Picture taken in the field on the Southbound Lane at 180 m to the Northeast of the Existing Entrance on CR 21 – Looking Southwest.



6.0 Auxiliary Lane Warrant

In accordance with Appendix 9A of MTO's *Design Supplement for the 2017 Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads*¹, the warrants for auxiliary lanes were examined on CR 21 at the proposed entrance of the Subject Property.

The need for a left-turn lane at an unsignalized intersection (i.e. at the entrance of the Subject Property on CR 21) as established by the Design Supplement, Chapter 9A is based on the advancing traffic volume (V_A), the opposing traffic volume (V_O), the left-turning traffic volume (V_L), and the percentage of left-turning traffic in the advancing volume (LT%).

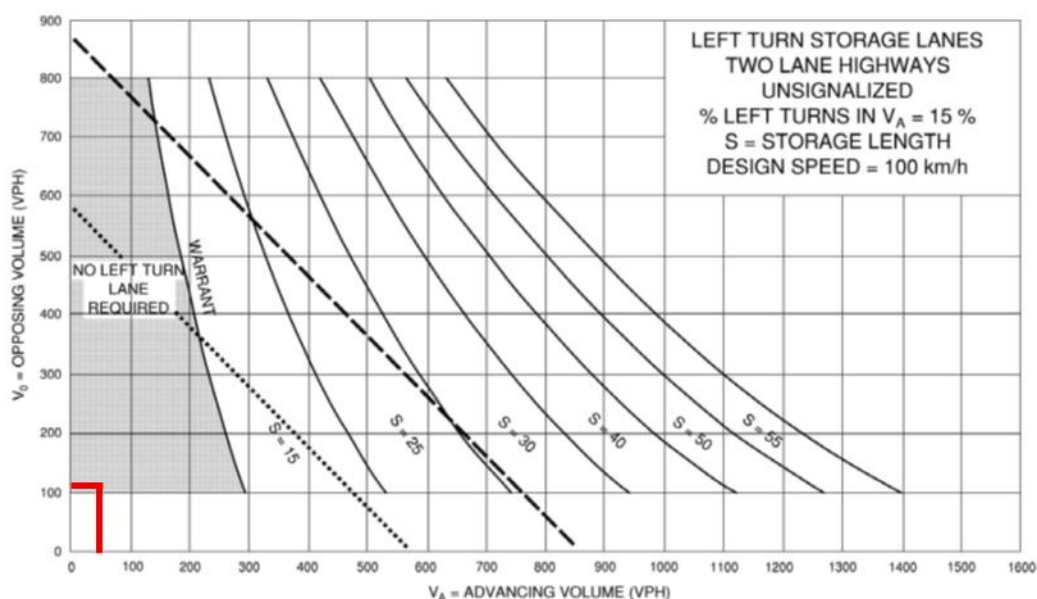
Due to the low traffic volume anticipated on CR 21, there is no need for a left turn lane in the 2037 future scenario, as shown in **Table 5, Figure 4**, and based on the traffic volumes summarized in **Table 4**.

¹ Transportation Association of Canada (TAC). *Geometric Design Guide for Canadian Roads: Design Controls, Classification and Consistency*. Transportation Association of Canada, 2017.

Table 5 - Northbound Left Turning Volume Calculations at the Entrance of the Development

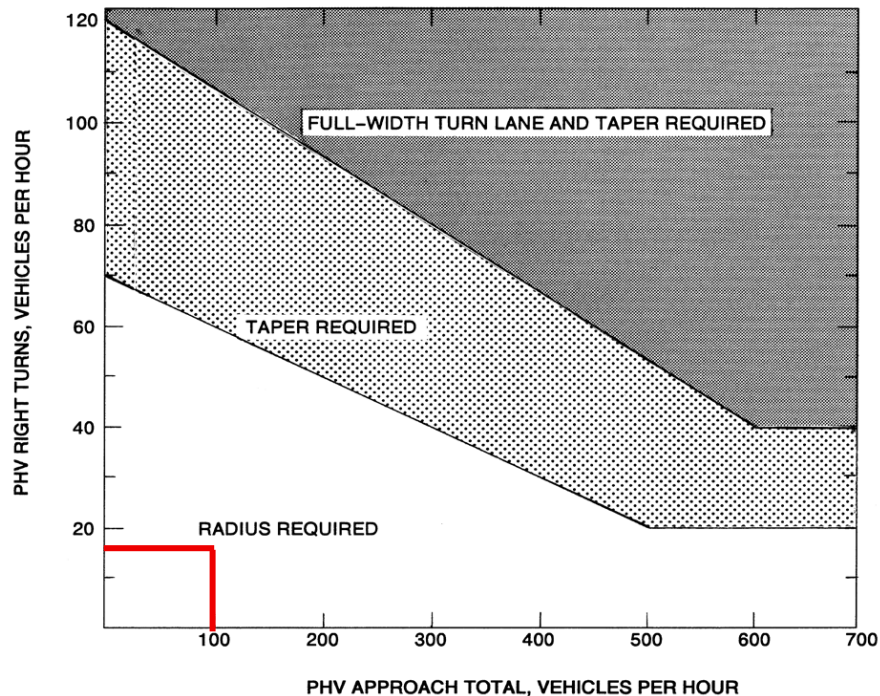
	V_L	V_A	LT%	V_o
a.m. Peak Hour				
2037	6	42	13%	116

Figure 4 – Northbound Left Turn Lane Warrant on CR 21 at the Entrance



The TAC Manual specifies that right turn lanes should be considered “when the volume of decelerating or accelerating vehicles compared with through traffic volumes causes undue hazard.” The anticipated traffic volume on CR 21 is relatively low and is unlikely to cause any potential safety hazard. Accordingly, there is no need for a right-turn lane based on the County's by-law, as shown in **Figure 5**.

Figure 5 – Southbound Right Turn Lane Warrant on CR 21 at the Entrance



The proposed entrance to the site should be designed and constructed according to the MTO Standard Drawing (MTOD 305.140) for a commercial entrance to a small business, as shown in **Appendix C**.

7.0 Conclusions and Recommendations

This Site Entrance Assessment reviewed the expected traffic that the proposed development could generate upon expansion and full operation. The discussion in this letter indicated that, in a worst-case scenario, there is no need for any auxiliary lanes at the entrance. The letter also reviewed and assessed the available sight distances at the entrance and concluded that the visibility requirements are satisfied, provided that low vegetation heights are maintained north of the entrance.

Sincerely,



Mostafa Tawfeek Mohammed, Ph.D., P.Eng., PTOE, RSP1
Senior Traffic Engineer

MTM/AT

Appendix A

Site Plan



SITE PLAN

3588 WALLACE POINT ROAD
TOWNSHIP OF OTONABEE-SOUTH
MONAGHAN

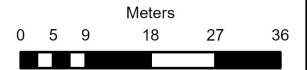
FIGURE 4

Legend

- Subject Property
- Proposed Industrial Use
- Pond
- Proposed Addition
- Existing Building
- Existing Gravel Driveway
- Proposed Gravel Driveway
- Proposed Sidewalk
- Parking Landscaping
- Outside Storage
- Existing Fields
- Non-evaluated Wetland
- Provincially Significant Wetland
- Septic bed
- Existing Propane Tanks
- Hydro Easement
- Septic
- Well
- Existing Trees

Data Sources

Ontario Geohub



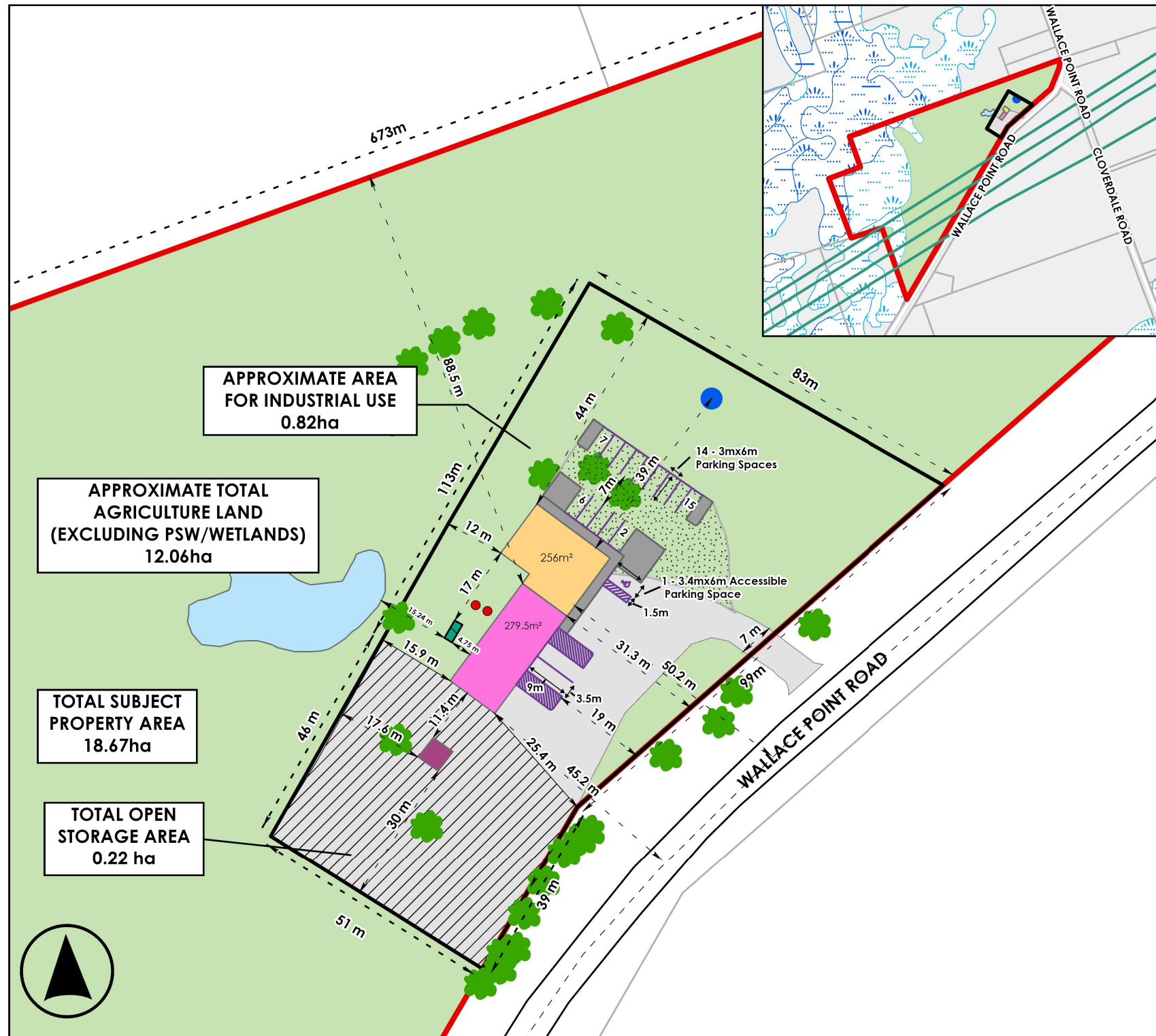
NAD1983 UTM ZONE 17N

Created In:	ArcGIS Pro
Drawn By:	NB
Checked By:	AT
Map Date:	6/30/2026
Project Number:	11240-01

WILLS

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Appendix B

Traffic Data



Basic Volume Report: 021-24160

Station ID : 021-24160

Info Line 1 : CR 21, 350 m N of Matchett Ln

Info Line 2 : on nb max. 80 begins sign

GPS Lat/Lon :

DB File : 021-24160.DB

Last Connected Device Type : Unicorn

Version Number : 2.39

Serial Number : 46192

Number of Lanes : 2

Posted Speed Limit : 60.0 kph

Lane #1 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.	N	NB	Normal	Veh.	No	

Lane #1 Basic Volume Data From: 00:00 - 05/15/2025 To: 23:59 - 05/15/2025

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
051525	T	3	1	1	1	3	13	32	79	81	60	51	68	57	49	60	56	85	67	43	37	23	8	9	4	891
Month Total :		3	1	1	1	3	13	32	79	81	60	51	68	57	49	60	56	85	67	43	37	23	8	9	4	891
Percent :		0%	0%	0%	0%	0%	1%	4%	9%	9%	7%	6%	8%	6%	5%	7%	6%	10%	8%	5%	4%	3%	1%	1%	0%	
ADT :		3	1	1	1	3	13	32	79	81	60	51	68	57	49	60	56	85	67	43	37	23	8	9	4	891

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent
DW Totals :	0	0	0	0	891	0	0	891	100%
# Days :	0.0	0.0	0.0	0.0	1.0	0.0	0.0	891	
ADT :	0	0	0	0	891	0	0	891	
Percent :	0%	0%	0%	0%	100%	0%	0%	0	0%
Weekday (Mon-Fri) :								891	100%
Weekend (Sat-Sun) :								0	0%
ADT :								0	

Lane #2 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
2.	S	SB	Normal	Veh.	No	

Lane #2 Basic Volume Data From: 00:00 - 05/15/2025 To: 23:59 - 05/15/2025

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
051525	T	7	4	1	2	2	3	13	29	42	52	51	40	48	62	59	81	110	69	61	52	39	26	20	6	879
Month Total :		7	4	1	2	2	3	13	29	42	52	51	40	48	62	59	81	110	69	61	52	39	26	20	6	879
Percent :		1%	0%	0%	0%	0%	0%	1%	3%	5%	6%	6%	5%	5%	7%	7%	9%	13%	8%	7%	6%	4%	3%	2%	1%	
ADT :		7	4	1	2	2	3	13	29	42	52	51	40	48	62	59	81	110	69	61	52	39	26	20	6	879

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent
DW Totals :	0	0	0	0	879	0	0	879	100%
# Days :	0.0	0.0	0.0	0.0	1.0	0.0	0.0	879	
ADT :	0	0	0	0	879	0	0	879	
Percent :	0%	0%	0%	0%	100%	0%	0%	879	
Weekday (Mon-Fri) :								879	100%
ADT :								879	
Weekend (Sat-Sun) :								0	0%
ADT :								0	

Basic Volume Summary: 021-24160

Grand Total For Data From: 00:00 - 05/15/2025 To: 23:59 - 05/15/2025

Total Count	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	3	1	1	1	3	13	32	79	81	60	51	68	57	49	60	56	85	67	43	37	23	8	9	4	891
Lane #2	7	4	1	2	2	3	13	29	42	52	51	40	48	62	59	81	110	69	61	52	39	26	20	6	879
TOTAL	10	5	2	3	5	16	45	108	123	112	102	108	105	111	119	137	195	136	104	89	62	34	29	10	1770

Percents:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Lane #1	0%	0%	0%	0%	0%	1%	4%	9%	9%	7%	6%	8%	6%	5%	7%	6%	10%	8%	5%	4%	3%	1%	1%	0%	
Lane #2	1%	0%	0%	0%	0%	0%	1%	3%	5%	6%	6%	5%	5%	7%	7%	9%	13%	8%	7%	6%	4%	3%	2%	1%	
TOTAL	1%	0%	0%	0%	0%	1%	3%	6%	7%	6%	6%	6%	6%	6%	7%	8%	11%	8%	6%	5%	4%	2%	2%	1%	

ADT:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	3	1	1	1	3	13	32	79	81	60	51	68	57	49	60	56	85	67	43	37	23	8	9	4	891
Lane #2	7	4	1	2	2	3	13	29	42	52	51	40	48	62	59	81	110	69	61	52	39	26	20	6	879
TOTAL	10	5	2	3	5	16	45	108	123	112	102	108	105	111	119	137	195	136	104	89	62	34	29	10	1770

LANE #1

	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	0	0	891	0	0	Weekday (Mon-Fri) :	891	100%
# Days :	0.0	0.0	0.0	0.0	1.0	0.0	0.0	ADT :	891	
ADT :	0	0	0	0	891	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	0%	0%	100%	0%	0%	ADT :	0	

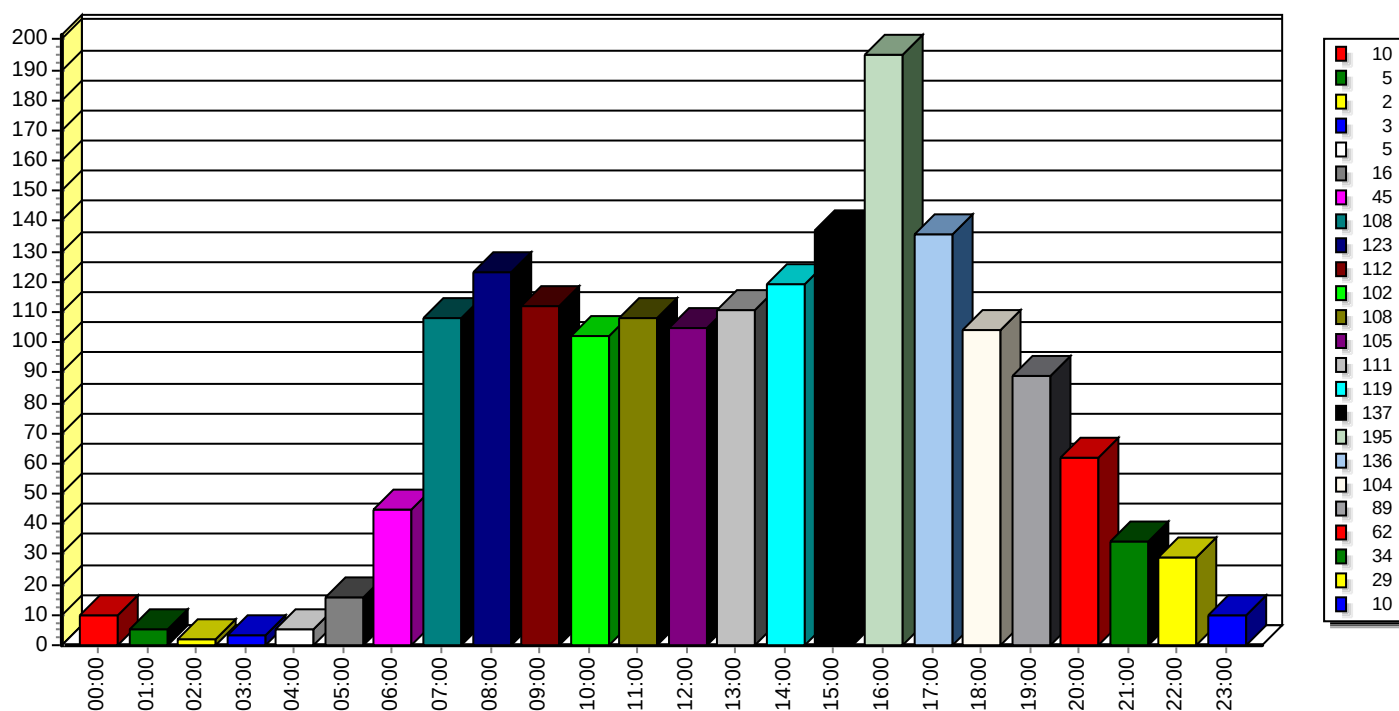
LANE #2

	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	0	0	879	0	0	Weekday (Mon-Fri) :	879	100%
# Days :	0.0	0.0	0.0	0.0	1.0	0.0	0.0	ADT :	879	
ADT :	0	0	0	0	879	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	0%	0%	100%	0%	0%	ADT :	0	

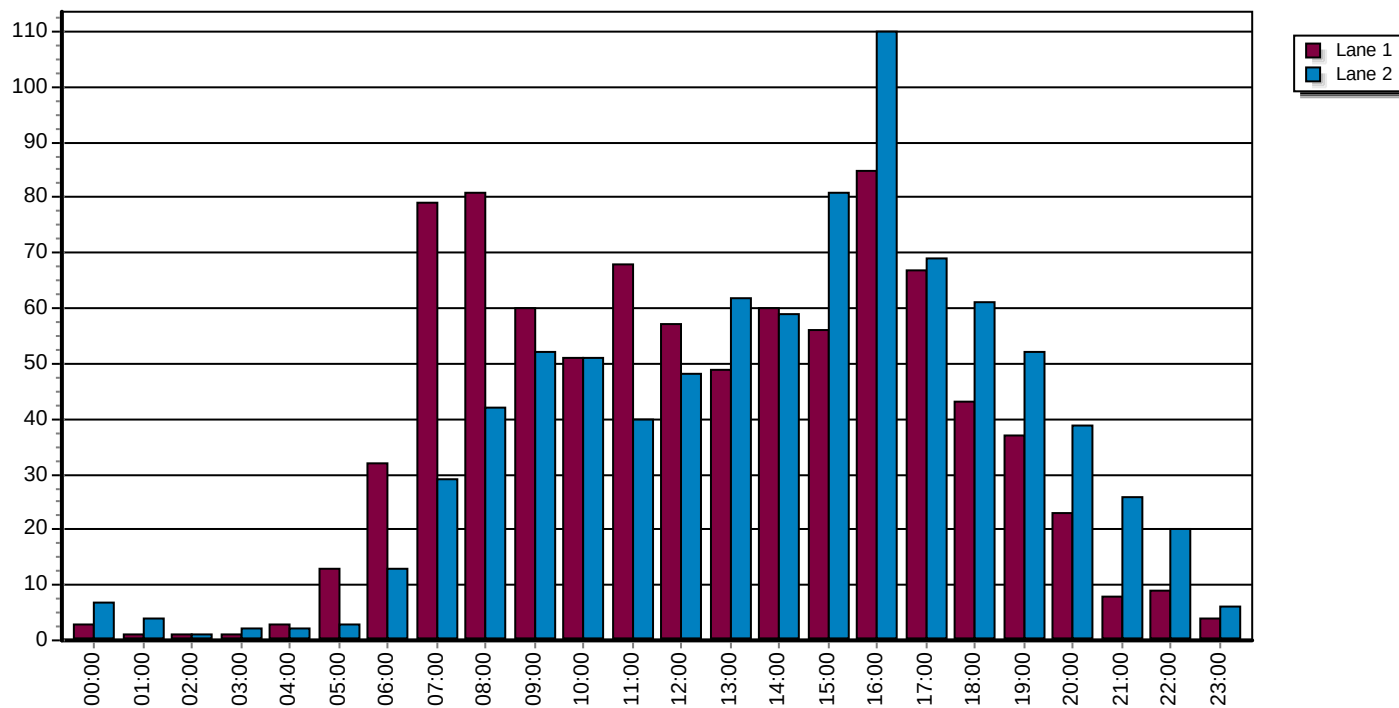
ALL LANES

	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	0	0	1770	0	0	Weekday (Mon-Fri) :	1770	100%
# Days :	0.0	0.0	0.0	0.0	1.0	0.0	0.0	ADT :	1770	
ADT :	0	0	0	0	1770	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	0%	0%	100%	0%	0%	ADT :	0	

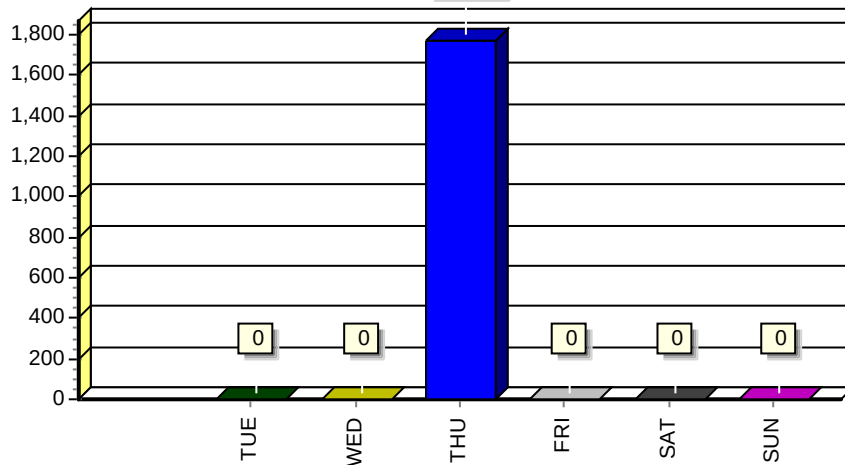
ADT Volume vs. Time (all lanes combined)



ADT Volume vs. Time (lane comparison)

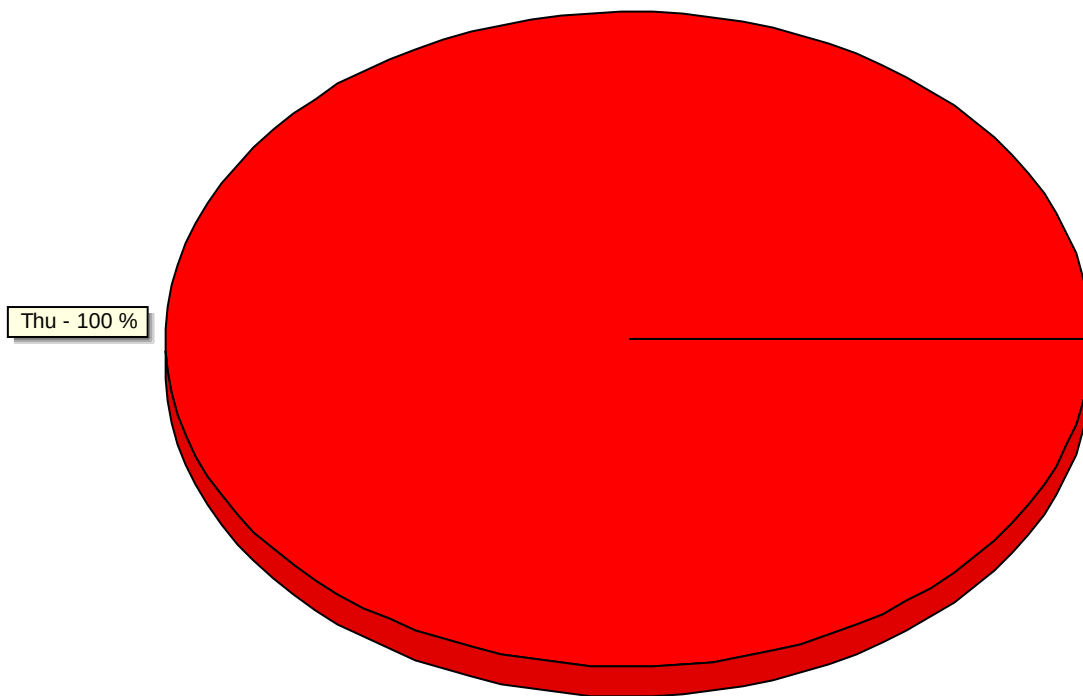


ADT By Day of 1,770 (all lanes)



DAY	ADT	TOTAL	# DAYS
Mon	-	-	-
Tue	-	-	-
Wed	-	-	-
Thu	1770	1770	1.0
Fri	-	-	-
Sat	-	-	-
Sun	-	-	-

Percent of Totals by Day of Week



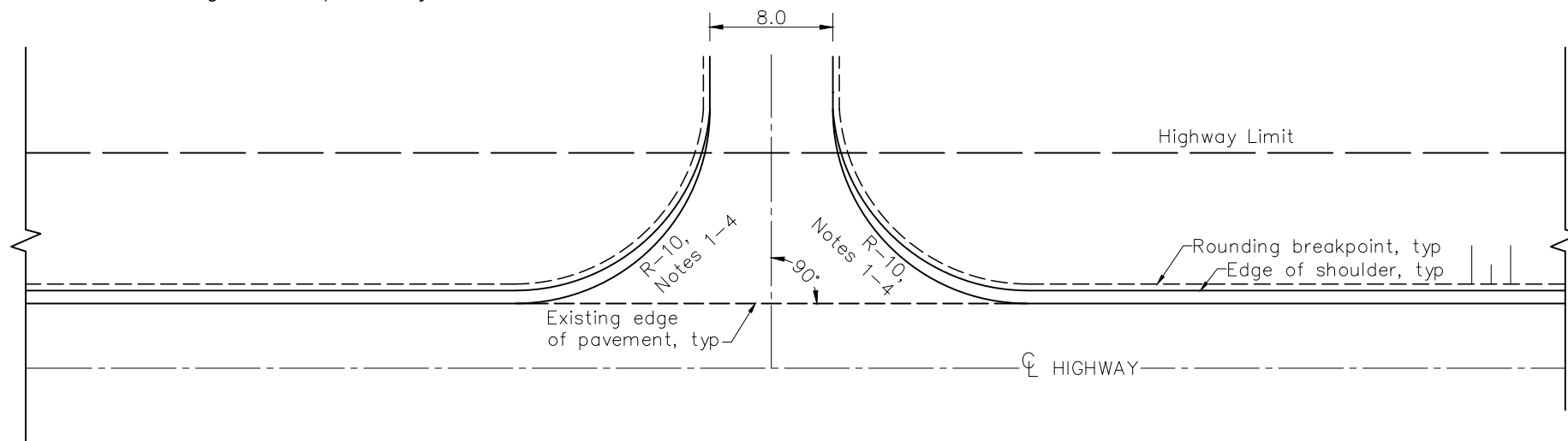
Appendix C

Entrance Standard



NOTES:

- 1 The design vehicle is a TAC-GDG Heavy Single Unit (HSU).
 - 2 R-15 for highways with posted speed $\geq 70\text{km/h}$.
 - 3 The paved portion of the highway shoulder should taper from existing to fully paved at a 5:1 rate, then be fully paved for 10m, and then it should continue to be fully paved as it transitions from the existing highway shoulder width to zero over the length of the entrance curve.
 - 4 For concrete curb and gutter design, use semi-mountable type for highways with posted speed $\geq 70\text{km/h}$ and barrier type for highways with posted speed $< 70\text{km/h}$.
- A All dimensions are in metres unless otherwise shown.
 B Minimum sight triangles as required by MTO.
 C Drainage as required by MTO.



MINISTRY OF TRANSPORTATION ONTARIO DRAWING

August 2018

Rev 0

COMMERCIAL ENTRANCE
ENTRANCE TO SMALL BUSINESS

MTOD 305.140