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2023-12-12
Project: 210569

Niagara Property Corp.
500 Cochrane Drive, Unit 4
Markham, ON L3R 8E2

RE: SIGHT DISTANCE REVIEW – RESIDENTIAL DEVELOPMENT (CASCADES OF NIAGARA) – 7835 MCLEOD ROAD, CITY OF NIAGARA FALLS

Paradigm Transportation Solutions Limited (Paradigm) was retained to conduct a sight distance review for a proposed residential subdivision located at 7835 McLeod Road (Regional Road 49) in the City of Niagara Falls. The site is located approximately 290 metres north of McLeod Road with frontage to Montrose Road (Regional Road 98). **Figure 1** (attached) illustrates the site location.

The draft plan of subdivision includes 83 townhouse units with vehicle access provided by two private driveways to Montrose Road. The driveways are titled “Street A” and “Street B” on the site plan. Street A is located approximately 370 metres north of McLeod Road and Street B is located approximately 460 metres north of McLeod Road. Street A will be restricted to right-in/right-out through use of the existing raised median on Montrose Road. The Street B connection aligns directly opposite the driveway serving 7070 Montrose Road on the east side of the roadway. **Figure 2** (attached) illustrates the draft plan of subdivision.

Montrose Road is a regional roadway with a posted speed limit of 50 km/h. North of the proposed Street B intersection, there is a vertical curve that has the potential to reduce sightlines.

Sight Distance Assessment

The available sight distance at the proposed driveway location has been assessed based on the methodology outlined in the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads*¹ (“TAC Guide”). The following parameters have been referenced in the assessment:

- ▶ Object height (vehicle tail or brake light) – 0.60 m;
- ▶ Driver eye height – 1.08 m; and

¹ Transportation Association of Canada. *Geometric Design Guide for Canadian Roads*. June 2017.

- Top of car – 1.30 m

The sight distance requirements for the proposed driveway locations were determined based on a design speed of 60 km/h, which is 10 km/h above the posted speed limit on Montrose Road. **Table 1** summarizes the sight distance measurements set out in the TAC Guide for level (flat) roadways applicable to this analysis.

TABLE 1: TAC GUIDE SIGHT DISTANCES

Sight Distance	Distance (m) (60 km/h Design Speed)
Minimum Stopping Sight Distance ² <i>Driver approaching the site driveway.</i>	85 m
Intersection Sight Distance (Left Turn from Stop) ³ <i>Driver looks to the right before turning left to exit the site.</i>	130 m
Intersection Sight Distance (Right Turn from Stop) ⁴ <i>Driver looks to the left before turning right to exit the site.</i>	110 m

Paradigm staff completed a site visit in October 2021, to measure the sight distances at the proposed site driveways. **Table 2** and **Table 3** summarize the measurements taken at the proposed Street A and Street B driveways, respectively.

Figure 3 (attached) illustrate site photos looking north and south along Montrose Road at Street A. **Figure 4** (attached) illustrate site photos looking north and south along Montrose Road at Street B.

TABLE 2: MEASURED SIGHT DISTANCES – STREET A

Sight Distance 60 km/h Design Speed	Distance per TAC Guide	Direction	Measured Distance (m)	Satisfactory
Minimum Stopping Sight Distance	85 m	Northbound	> 200 m	Yes
	85 m	Southbound	> 200 m	Yes
Intersection Sight Distance (Left Turn from Stop)	130 m	Looking South	> 200 m	Yes
Intersection Sight Distance (Right Turn from Stop)	110 m	Looking North	> 200 m	Yes

² Ibid. Table 2.5.2: Stopping Sight Distance on Level Roadways for Automobiles.

³ Ibid. Table 9.9.4: Design Intersection Sight Distance – Case B1, Left Turn from Stop.

⁴ Ibid. Table 9.9.6: Design Intersection Sight Distance – Case B2, Right Turn from Stop.



TABLE 3: MEASURED SIGHT DISTANCES – STREET B

Sight Distance 60 km/h Design Speed	Distance per TAC Guide	Direction	Measured Distance (m)	Satisfactory
Minimum Stopping Sight Distance	85 m	Northbound	125 m	Yes
	85 m	Southbound	> 200 m	Yes
Intersection Sight Distance (Left Turn from Stop)	130 m	Looking South	155 m	Yes
Intersection Sight Distance (Right Turn from Stop)	110 m	Looking North	125 m	Yes

The measured sight distances at the proposed site driveways exceed the sight distances identified in the TAC Guide for a design speed of 60 km/h.

Conclusions

The proposed site driveways to Montrose Road are positioned to allow for the prescribed sight distances set out in the TAC Guide. No sight distance issues are identified.

We trust that the foregoing information addresses your requirements. Please do not hesitate to contact us if we can be of further assistance.

Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED



Scott Catton, C.E.T.
Senior Project Manager, Associate



Stew Elkins, B.E.S.
Vice President and CRO, Principal

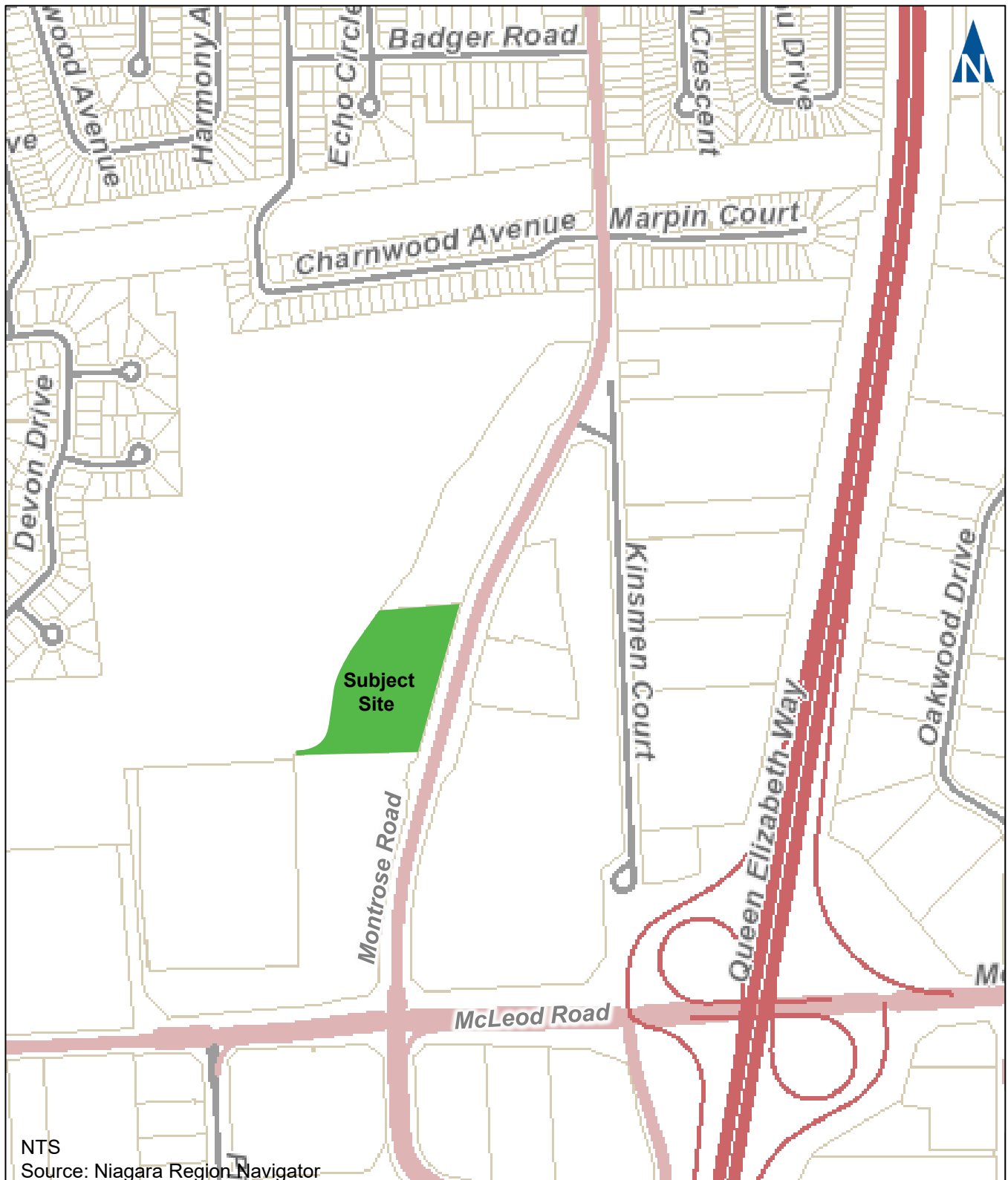


Erica Bayley, P.Eng.
Senior Project Manager, Associate



Attachments







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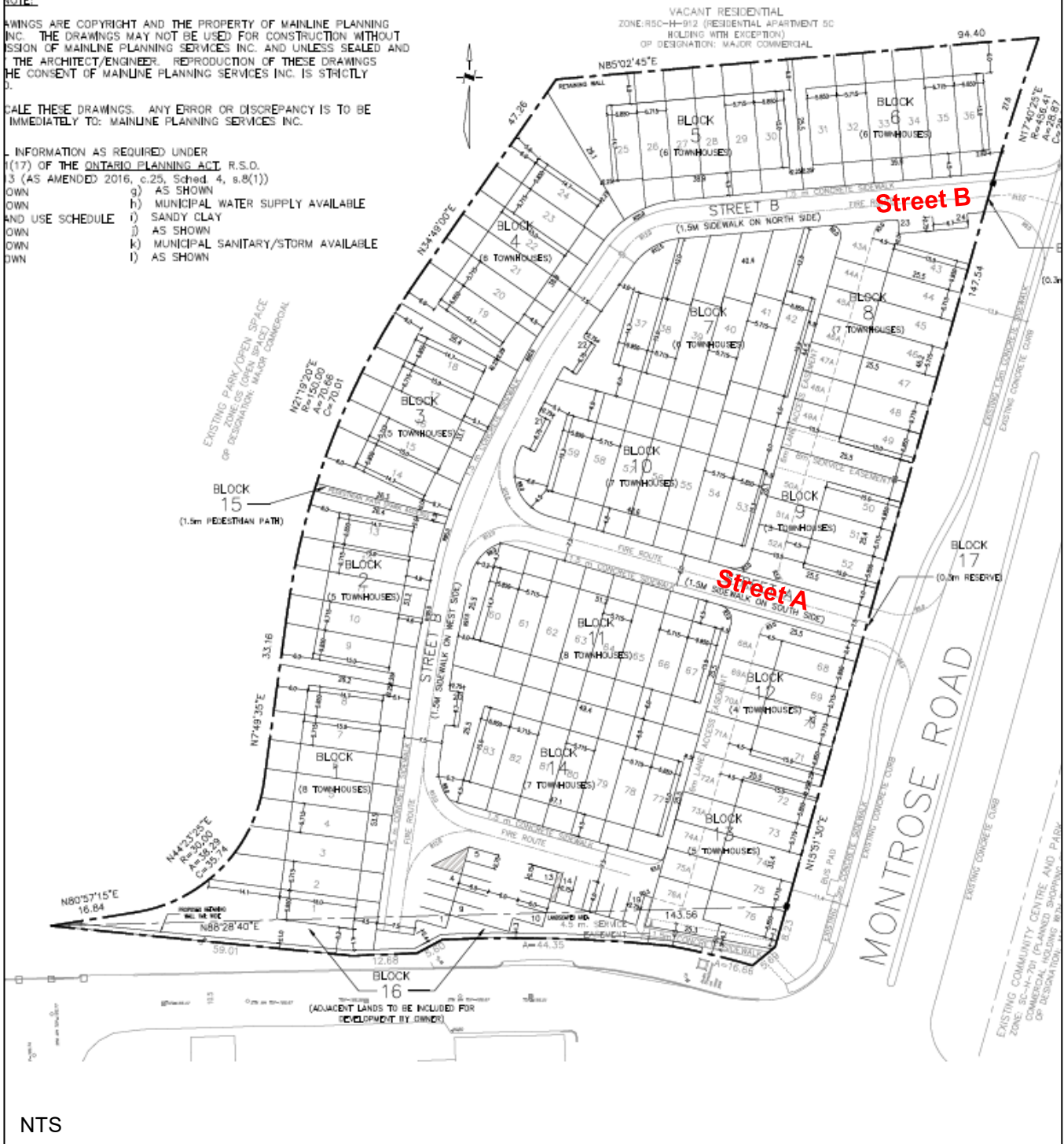
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INFORMATION AS REQUIRED UNDER

SECTION 11(17) OF THE ONTARIO PLANNING ACT, R.S.O.

1990, CAP. O.18, s.11(17) (AS AMENDED 2016, c.25, Sched. 4, s.8(1))

- | | |
|-----|---------------------------------------|
| OWN | g) AS SHOWN |
| OWN | h) MUNICIPAL WATER SUPPLY AVAILABLE |
| OWN | i) SANDY CLAY |
| OWN | j) AS SHOWN |
| OWN | k) MUNICIPAL SANITARY/STORM AVAILABLE |
| OWN | l) AS SHOWN |



NTS



Site Concept Plan

7835 McLeod Road
210569

Figure 2



22 October 2021
Looking North



22 October 2021
Looking South



Site Photos From Street A

7835 McLeod Road
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Figure 3



22 October 2021
Looking North



22 October 2021
Looking South



Site Photos From Street B

7835 McLeod Road
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Figure 4