

Memo



To: John Pennachetti, Project Manager
c/o Northbridge Capital Inc.

From: Dave Poole, M.Sc., P.Eng., CRM, SCR – Dillon Consulting Limited

cc: Mike Walters, B.Eng., P.Eng. – Dillon Consulting Limited

Date: March 17, 2026

Subject: Technical Memorandum – Rail Safety Considerations at 2172 Wycroft Road, Oakville, Ontario

Our File: 23-6586-4000

Background

Northbridge Capital Group (Northbridge) is proposing a mixed use residential and commercial/retail development at 2172 Wycroft Road in Oakville, Ontario, herein called the Development. To the southeast of the Development (see **Figure 1**), Metrolinx owns and operates the Oakville Subdivision. To the southwest of the Development is a CN Rail spur that services Mauser Packaging solutions – a manufacturer of metal, plastic, fire and hybrid packaging for the food, beverage, personal care and pharmaceutical industries. There is an additional CN Rail spur to the southeast of the Development.

Within **Figure 1**, we have designated “Railway North” to be perpendicular to the Oakville Subdivision, and henceforth in this memo, any reference to North, South, East or West will be in relation to Railway North, not True North.

The intent of this Technical Memorandum is to document the rail safety considerations of the Oakville Subdivision as it pertains to the Development to determine if rail safety mitigation measures are required to address the established risks.

Rail Operations

A review of the Canadian Rail Atlas¹ indicates that the Oakville Subdivision consists of three active tracks, all designated at Main Track. Rail operations along these three tracks are both passenger rail (Metrolinx) and freight rail (CN Rail). Within **Figure 1**, we have highlighted the property line for the Oakville Subdivision right-of-way (ROW) which identify those lands designated for current and future rail operations. The section of the Oakville Subdivision that was considered is between Mileposts 24 and 25.

¹ <https://rac.jmaponline.net/canadianrailatlas/>

According to the Transport Canada grade crossing database, for the grade level crossing at Burloak Drive (Milepost 26.98), there are 110 trains per day that travel along this section of the Oakville Subdivision with a maximum train speed of 95 miles per hour (mph). An Oakville Subdivision Timetable² references that the freight rail maximum train speed is 30 mph.

² <https://www.cwrailway.ca/cnrha.ca/Timetables%2007/Great%20Lakes%20South/Oakville.pdf>

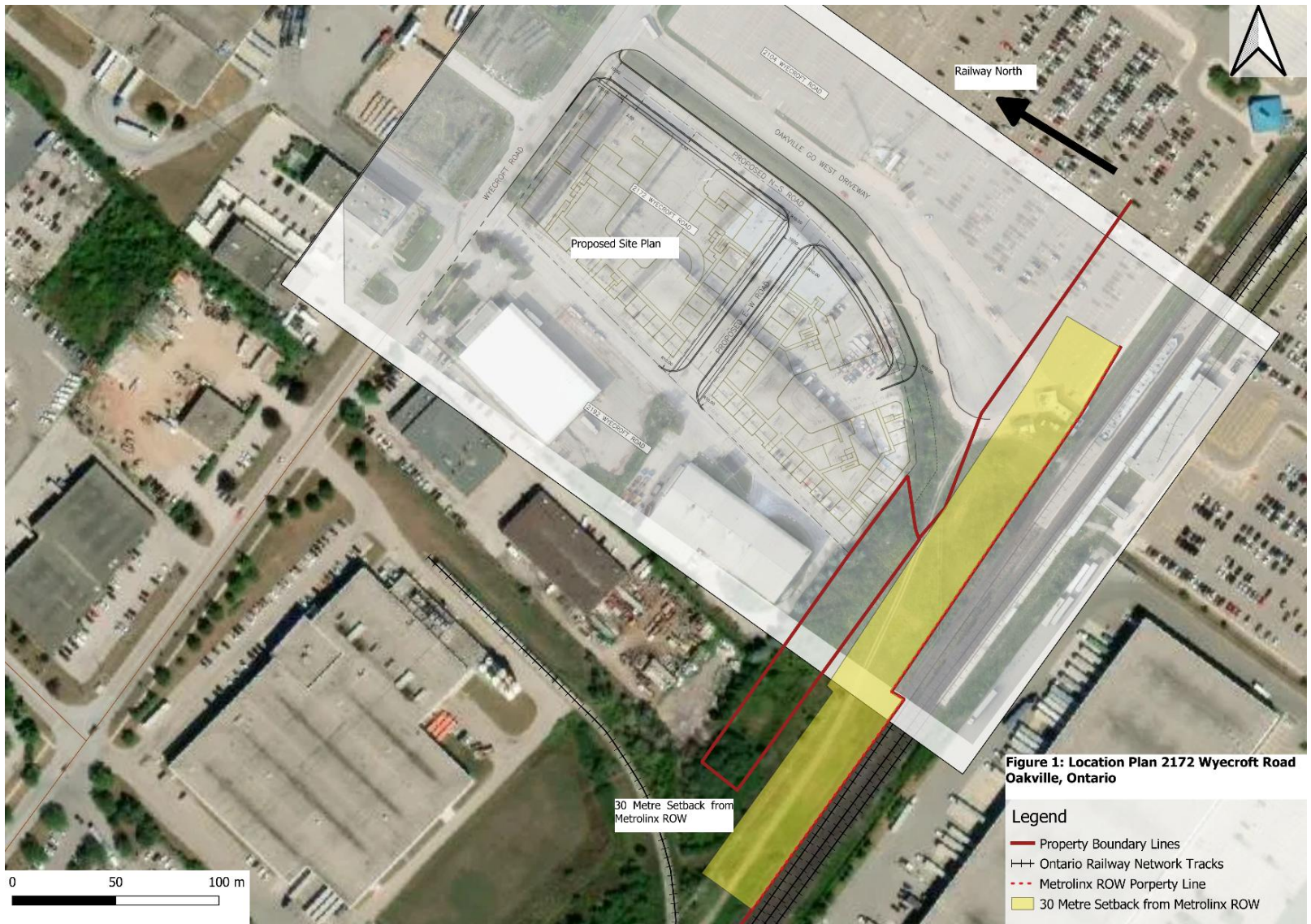


Figure 1: Location Plan – 2172 Wycroft Road, Oakville, Ontario

Site Details

The Development is located approximately 55 metres (m) north of the closest ROW property line for the Oakville Subdivision as highlighted in **Figure 1**. The land between the Development and the Oakville Subdivision ROW is currently a green space and as part of the Development, there will be a 16 m ROW lane dedication.

According to a Functional Grading Plan, Dwg. No. FSG-1, dated August 1, 2025 (see **Attachment A**), the elevation of the Oakville Subdivision is approximately 105.5 metres above sea level (masl) and then drops by 1.0 m by the property line and then slopes upward to between 105.5 and 106.0 masl at the closest point to the Development. As such, for the purpose of this Technical Memorandum, the Oakville Subdivision is approximately at grade in comparison to the closest point at the Development.

Construction Details

Given the preliminary stage for the Development, specific construction details are not available at this time; however, for the purpose of this analysis, the following assumptions are considered reasonable:

- Most construction activities will be contained within the property boundary of the development;
- It is anticipated that, at times, construction activities will encroach approximately 10 to 15 m upon the adjacent green space to the south of the Development; and
- Construction activities will not encroach upon area defined by the 30-m setback from the Oakville Subdivision ROW.

Rail Proximity Requirements for Proposed Development

FCM-RAC Guidelines

The Federation of Canadian Municipalities (FCM) along with the Railway Association of Canada (RAC) published a guidance document in May 2013 entitled “*Guidelines for New Development in Proximity to Railway Operations*” – herein called FCM-RAC Guidelines. The FCM-RAC Guidelines communicate relevant information to parties interested in undertaking a development project adjacent to railway operations.

The Oakville Subdivision is classified as a “Main Line” under the FCM-RAC Guidelines as defined by:

- Volumes generally exceed five trains per day;
- High speeds, frequently exceeding 80 km/hr; and
- Crossings, gradients, etc. may increase normal railway noise and vibration.

The recommended setback distance is defined in the FCM- RAC Guidelines as “the recommended separation distance between rail corridor and a sensitive use, such as a residence”. The separation distance, measured horizontally from the property line of the rail corridor to the sensitive use in 30 m as illustrated in **Figure 2**.

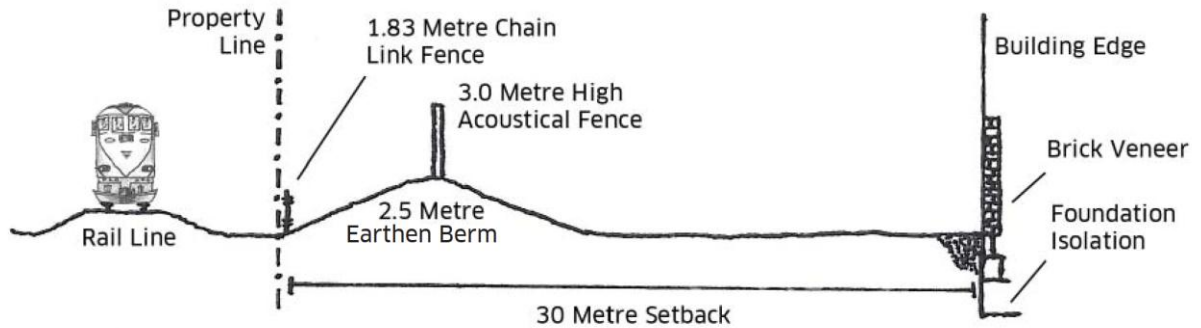


FIGURE 2 // STANDARD MITIGATION FOR NEW RESIDENTIAL DEVELOPMENT IN PROXIMITY TO A MAIN LINE RAILWAY

Figure 2: Setback Distance in FCM-RAC Guidelines

Metrolinx Adjacent Development Guidelines – GO Transit Heavy Rail Corridors

Metrolinx published a guidance document in June 2023 entitled “*Metrolinx Adjacent Development Guidelines – GO Transit Heavy Rail Corridors, Third Party Projects Review (TPPR), Version 6.0*” – herein called Metrolinx (2023). Metrolinx (2023), as with FCM-RAC Guidelines, communicates relevant information to parties interested in undertaking a development project adjacent to railway operations.

Building setback requirements based on land use relevant to the Development are:

- 30 m for residential occupancy.

Key considerations regarding setbacks include:

- The minimum building setback distance is measured from the mutual property line (i.e. between the Rail Corridor and the private property) to the building face where the Sensitive Use [residential] is located.
- The mutual property line may be redefined in cases where the Rail Corridor expansion is required or there is intervening Metrolinx-owned land outside of the active Rail Corridor (such as a station building or parking lot); in such cases, the minimum setback distance would be measured from the “adjusted” property line.
- In its most basic form, the setback is assumed to be measured as a straight-line horizontal distance – see **Figure 3**.

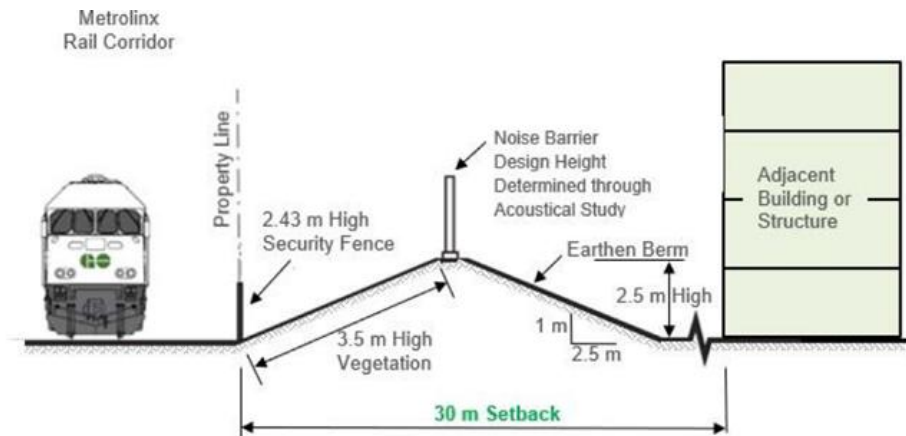


Figure 5.1: Typical Setback and Safety Barrier Requirements

Figure 3: Setback Distance in Metrolinx (2023)

Rail Safety Analysis

In consideration of FCM-RAC Guidelines and Metrolinx (2023), the following were noted:

- The Oakville Subdivision ROW property line is shown in **Figure 1**. Given the southern extent of the parking lot to the east (along with the position of the Bronte GO Station), which aligns with the Oakville Subdivision ROW property line, it is reasonable to expect that any future expansion of rail operations by either Metrolinx or CN would be confined within the existing defined Oakville Subdivision ROW.
- There is no mutual property line between the Oakville Subdivision ROW and the Development as shown in **Figure 1**.
- In consideration of the above, the setback distance was measured from the southern most extent of the Development to the property line that defines the Oakville Subdivision ROW.
- The total setback distance, as previously defined, is approximately 55 m.
- When the standard setback distance of 30 m is measured from the Oakville Subdivision, as shown in **Figure 1**, there is an additional 25 m of separation to the Development.

The intent of the earthen berm, as illustrated in **Figure 3**, is to prevent derailed rail car(s) from traveling beyond the 30-m setback and impacting adjacent building or structure. This scenario is called a jackknife derailment, in which the derailed rail cars pivot and essentially act like a swinging gate. The maximum possible distance the derailed rail cars could reach from the edge of the track is approximately equal to the length of the rail car.

For the analysis, we are assuming that the maximum length of a passenger rail car operated by Metrolinx is 25.9 m – a bi-level passenger coach. For CN, the maximum rail car length is 27.2 m – an autorack used to haul automobiles.

The following factors can increase the perpendicular distance that derailed rail cars can travel:

1. **Centrifugal Force:** If the derailment occurs on a curve, the momentum of the rail cars will naturally throw them toward the "outside" of the curve, potentially sliding the entire pile-up further away from the roadbed.
2. **Embankments/Slopes:** If the track is on a raised "fill" section, gravity will cause derailed rail cars to roll or slide down the slope, significantly increasing the perpendicular distance from the centerline.

At 2171 Wyecroft Road, a derailment would occur on a straight-line portion of the Oakville Subdivision, therefore, centrifugal force would not apply. As previously stated, it is reasonable to assume that the top of rail at the Oakville Subdivision is at a similar grade to the Development at 2171 Wyecroft Road. Therefore, embankments/slopes would not apply.

Conclusion

Based on the evidence presented in the rail safety analysis, we conclude the following:

- Taking into consideration that the Development is at a similar grade to the top of rail at the Oakville Subdivision, and that the Development is not located along the outer curve of the Oakville Subdivision, it is reasonable to conclude that the maximum distance perpendicular to the Oakville Subdivision that one or more derailed rail cars would travel is equal to the length of a derailed rail car.
- The maximum length of a derailed rail car that is reasonable to expect would be approximately 27.2 m.
- Given that the Development is approximately 55 m setback from the property line that defines the Oakville Subdivision ROW, there is approximately 27.8 m of separation between the derailment, if it were to occur on the Oakville Subdivision, and the Development.

Since one or more derailed rail cars will not travel an additional 27.8 m to impact the Development, an earthen berm is not required. As such, it is our professional opinion that the Development is considered safe, in the context of Metrolinx and CN Rail operations.

Closure

Should you have any questions or comments regarding this memo, please contact the undersigned at dpoole@dillon.ca.

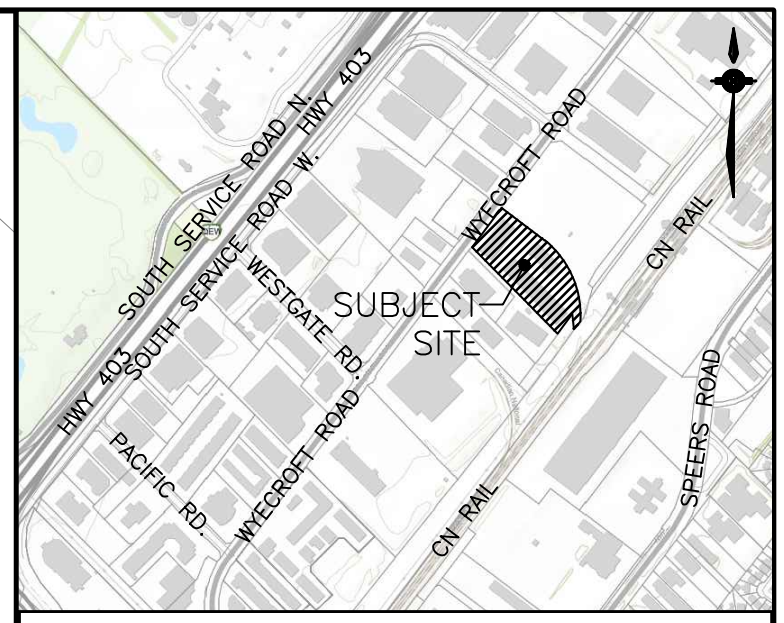
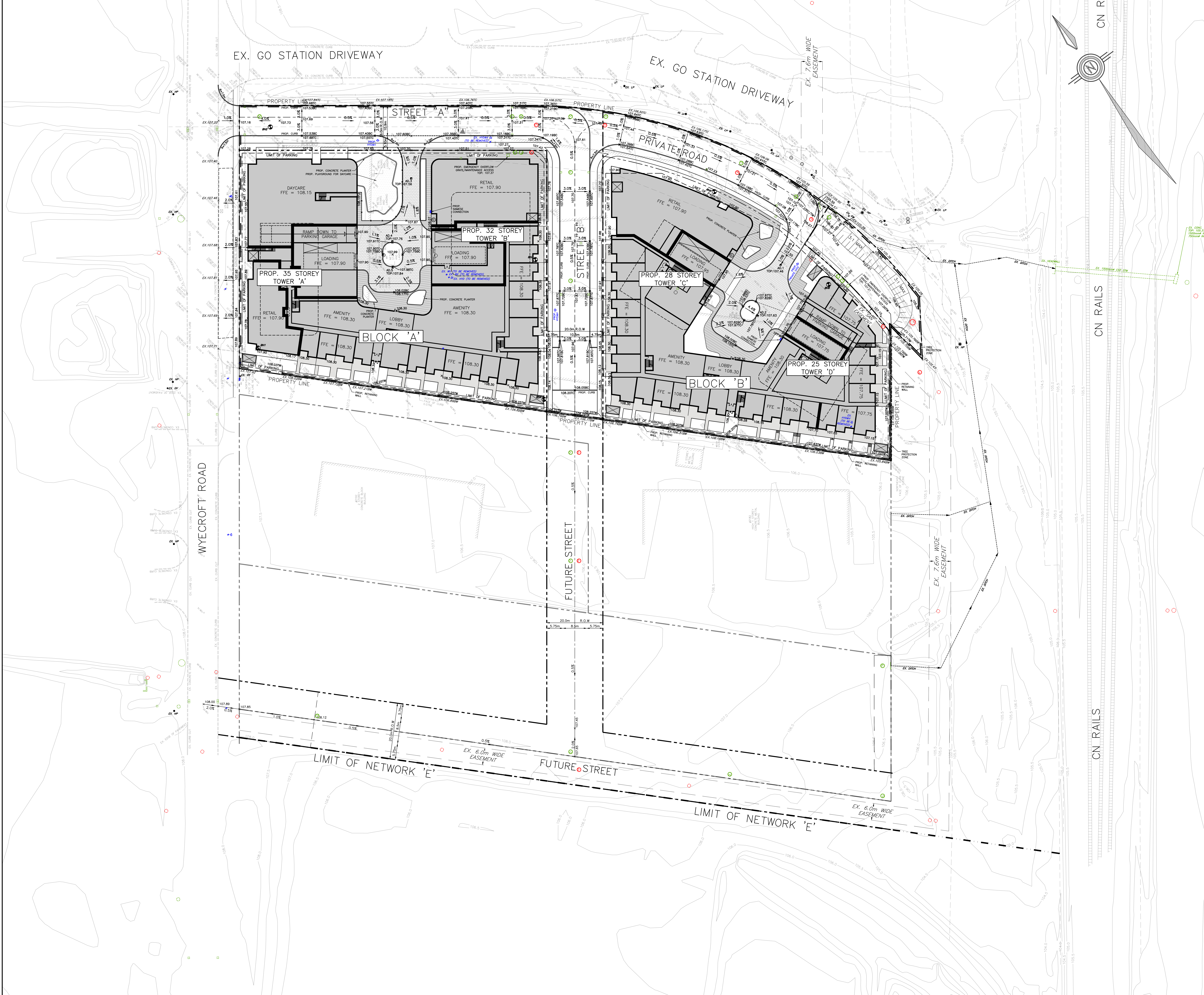
Sincerely,

DILLON CONSULTING LIMITED

Dave Poole, M.Sc., P.Eng. (Ont), CRM, SCR
Partner

Attachment A

*Functional Grading Plan,
Dwg. No. FSG-1*



LEGEND:

- EX. 301.00' EXISTING ELEVATION
- - - - - PROPERTY LINE
- - - - - PROPOSED DRAINAGE BREAK
- - - - - DRAINAGE FLOW DIRECTION AND SLOPE
- - - - - PROPOSED ELEVATION
- EX. MANHOLE
- EX. CATCHBASIN
- PROP. SANITARY MANHOLE
- PROP. STORM MANHOLE
- PROP. CATCHBASIN
- EX. VALVE AND BOX
- EX. FIRE HYDRANT
- PROP. MAIN WATER VALVE
- PROP. FIRE HYDRANT
- EXTERIOR DOOR LOCATION
- ON-SITE BOREHOLE

NOTE:
 THIS PLAN HAS BEEN PREPARED TO DEMONSTRATE FEASIBILITY OF THE PROPOSED DEVELOPMENT WITH RESPECT TO GRADING IN CONJUNCTION WITH THE ZONING BY-LAW AMENDMENT APPLICATION. DETAILED GRADING DESIGN WILL BE PREPARED AT THE SITE PLAN APPLICATION STAGE.

CONVERSION NOTE:
 DISTANCES AND COORDINATES SHOWN HEREIN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

BEARINGS NOTE:
 BEARINGS SHOWN HEREIN ARE GRID DERIVED FROM GPS OBSERVATIONS OF OBSERVED REFERENCE POINTS 'A' AND 'B' USING THE LEICA SMARTNET RTK NETWORK AND ARE REFERRED TO THE UTM COORDINATE SYSTEM, ZONE 17, CENTRAL MERIDIAN 81 0' WEST LONGITUDE, (NAD 83 (CSRS)(2010)).

ELEVATIONS NOTE:
 ELEVATIONS SHOWN HEREIN ARE GEODETIC AND ARE REFERRED TO TOWN OF OAKVILLE BENCH MARK N0101 HAVING AN ELEVATION OF 115.836 METRES.

NO.	DATE	REVISIONS	BY
1.	AUG. 01/25	ISSUED FOR ZBA SUBMISSION	D.G.

PRELIMINARY

VALDOR ENGINEERING INC.
 CONSULTING ENGINEERS - PROJECT MANAGERS
 2175 WYECROFT ROAD
 CITY OF OAKVILLE

PROPOSED MIXED-USED DEVELOPMENT
 2175 WYECROFT ROAD
 CITY OF OAKVILLE

FUNCTIONAL GRADING PLAN

SCALE	DATE OF DWG.	PROJECT NO.
1:400	AUG. 01/25	24123
DRAWN BY	DRAWING NO.	
A.M.	FSG-1	
CHKD BY		
D.G.		