January 26th, 2022

To: Ms. Isabelle Dépault
c/o Grepault Development Ltd.
5882 Leitrim Road
Ottawa, Ontario
K0A 1K0
[Phone 613-818-9810]

Re: Parking Turning Movement Analysis at 439 Churchill Avenue North

Castleglenn Consultants Inc. was retained by Grepault Developments Ltd. to investigate the parking provisions offered by the existing two-vehicle parking spaces located at 439 Churchill Avenue North, Ottawa Ontario.

The analysis involved:

- undertaking a vehicle turning movement analysis within the parking area;
- assessing the adherence of the geometrics taking into account the City of Ottawa parking space provisions within the relevant municipal by-laws;
- assessing the impacts of the turning movements assuming passenger car design vehicles; and
- a review of the sight lines for vehicles exiting the laneway onto Churchill Avenue.

The proposed plan is consistent with existing parking provisions and provides for two parking stalls at the rear of the property. The proposed design would have the stalls skewed at an 18° angle with the north-south property boundary. The stalls dimensions are 2.6m wide x 5.2m long in concurrence with City requirements[1].

As illustrated in Figure 1 the proposed plans envision a balcony. The lower balcony at its lowest point in conflict with the parking stall offers a vertical clearance of approximately 2.1m at the pinch point.

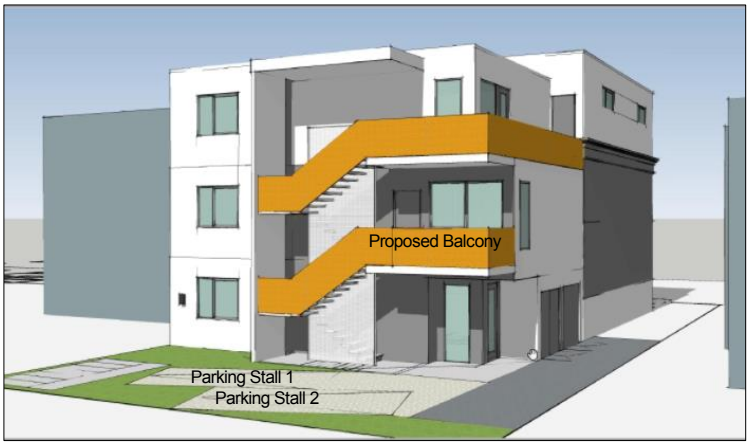

Figure 1: View of Back of Building, Balconies and Parking Areas

[1] The proposed dimensions of the parking spaces meet the City of Ottawa's Parking Space Provisions Requirements Section 106 (1) and Section 107 (2).

It is worthwhile to note that the existing driveway width belonging to the subject property is 2.5m in width between the already existing building and the property line. However, Figure 4 illustrates that both existing and future plans (See City Plans D02-02-19-0037) provide for a shared driveway lane with the adjacent property to the north that provides for a 3.98m wide laneway.

The attached Figure 2 and Figure 3 illustrate the turning movement analysis of a typical passenger vehicle as defined by Transportation Association of Canada (TAC) 2017 standards with dimensions of 5.6m length, 2m width and 1.3m height and conservatively assumes at 2.5m wide driveway which is not shared representing a case where the shared driveway agreement would no longer be in place. As illustrated in the figures a typical passenger vehicle….:

- could park in either of the two parking stalls without conflicting with the proposed building upgrades or the other vehicle parked in the adjacent stall;
- would be required to reverse out of the stalls and the driveway. Numerous properties along Churchill Avenue require motorists to back out of their driveways; and
- clear sight lines exist such that the vehicles within the parking area have clear sight of one another and can safely maneuver into a stall while another vehicle is parked in the adjacent stall.

Figure 5 illustrates the sight-line analysis that was undertaken to simulate vehicles reversing out of the laneway. The analyses considered the 50kph posted speed along Churchill Avenue and the proximity of adjacent buildings. The exhibit illustrates clear sight lines in both directions of travel on Churchill Avenue.

Castleglenn Consultants recommends that the parking space is adequate for passenger car maneuvers with the following provisions:

- Tall vehicles such as cargo vans and heavy-duty pickups characterized by heights above 2m should not be allowed to access the western parking space. This is critical especially during the winter period when snow and ice buildup may reduce the available 2.1m vertical clearance. Signage should be provided to ensure that motorists driving tall vehicles are aware of the height limitation and to stay clear of the balcony/deck corners. A height restriction suspended sign/bar spanning the width of the shared driveway which could be used to provide advance warning for vehicles over 2m tall, (but this would require an agreement with the adjacent property owners).
- Additionally, vehicles with widths greater than 2.4m, (such as a fire truck or a single unit truck) would not be able to access to access the two parking stalls due to their wide turning radii approaching the stalls. These vehicles would be required to either park on-street or find other accommodation.

Sight lines for vehicles leaving the site were found to be clear.

We hope that the above analysis addresses the project requirements. Yours truly,

Mr. Arthur Gordon B.A. P.Eng
Principal Engineer
Castleglenn Consultants Inc.

Ms. Roza Malunga, P.Eng
Transportation Engineer
Castleglenn Consultants Inc.

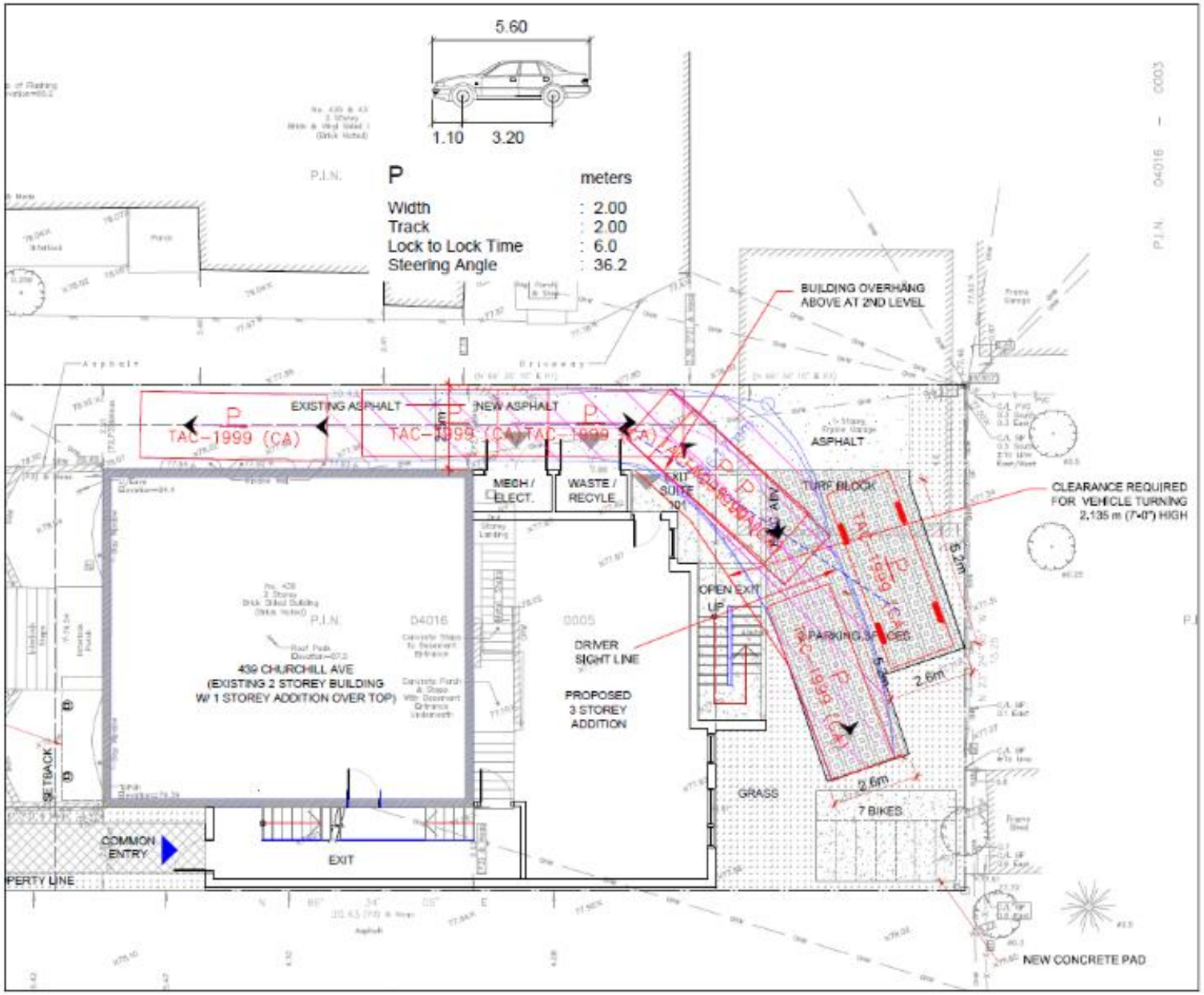

Figure 2: Vehicle 1 Entering with Vehicle 2 already Parked to the West

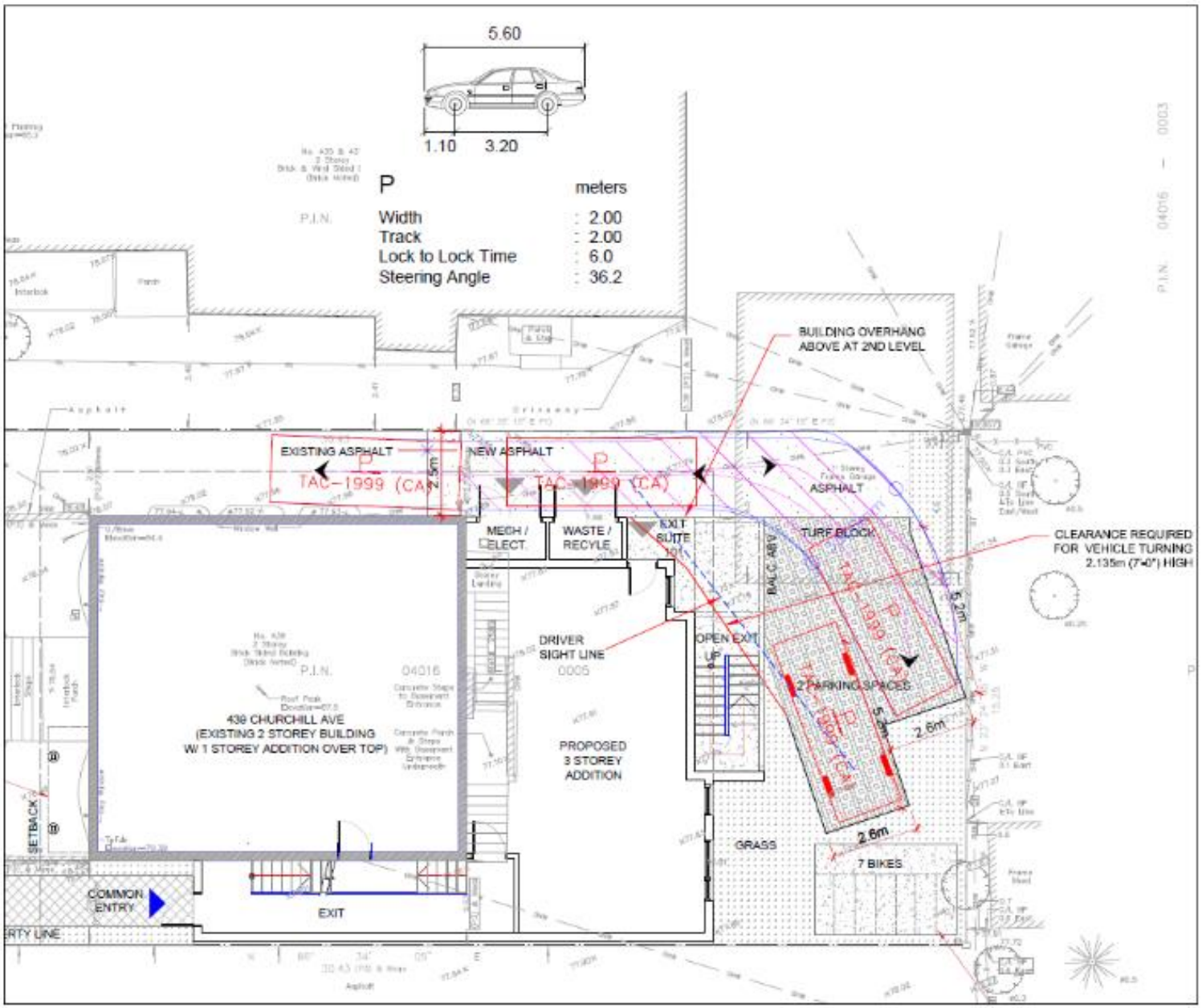

Figure 3: Vehicle 1 Entering with Vehicle 2 already Parked to the East

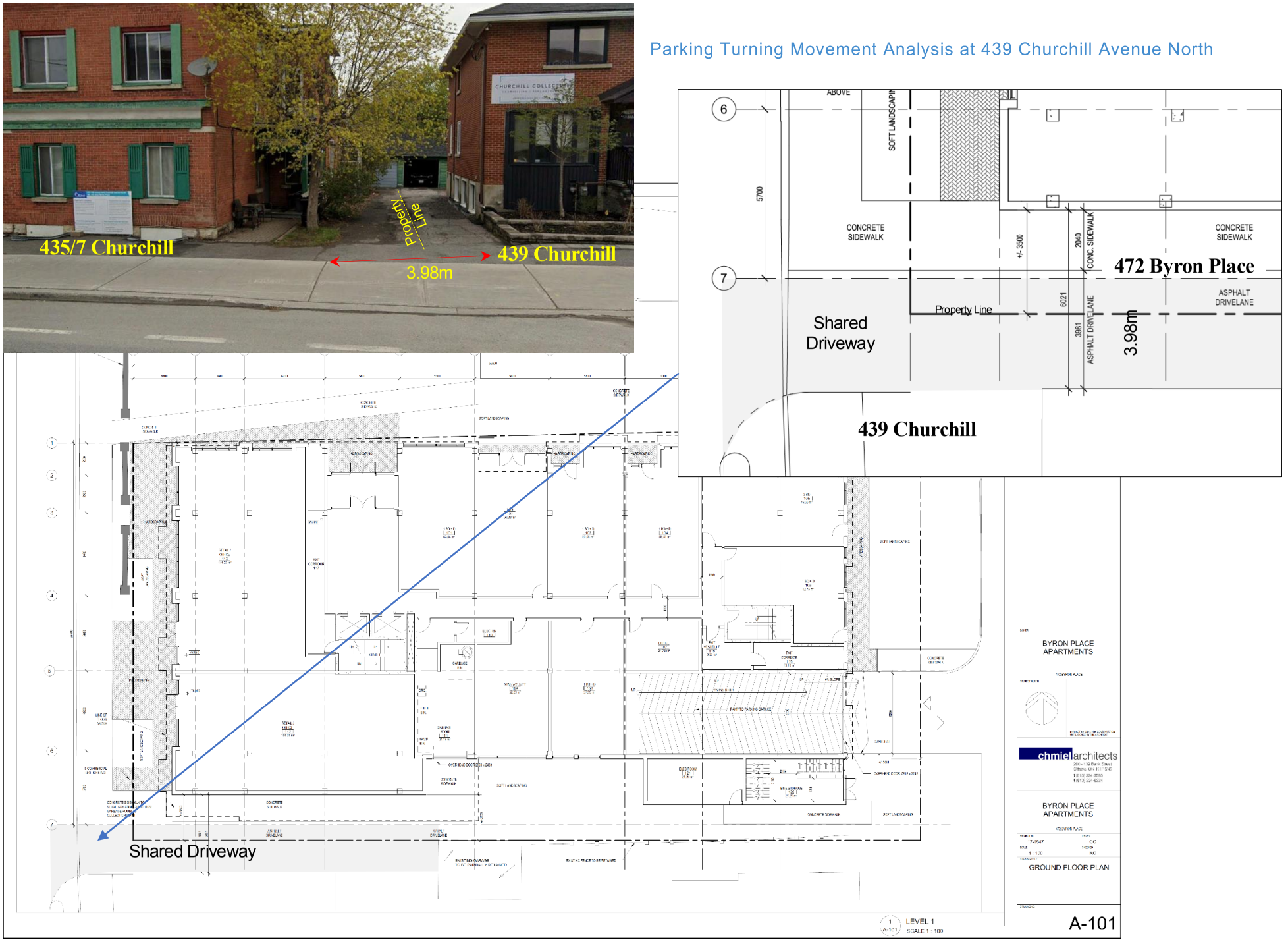

Figure 4: Site Plans for 472 Byron Place Development

Figure 5: Sight lines of Vehicle Exiting 472 Byron Place Development