

October 23, 2014

(Revised October 23, 2014)

OUR REF: TO3183TOA
BY EMAIL: roy@rndconstruction.ca

RND Construction
1155 Lola Street, Unit 5-B
Ottawa, ON K1K 4C1

Attention: Roy Nandram

Dear Roy:

**Re: 2970 McCarthy Road
Transportation Impact Assessment**

1.0 INTRODUCTION

From the information provided, it is our understanding that RND Construction is proposing to construct four new residential units on a currently vacant lot, municipally known as 2970 McCarthy Road, in the City of Ottawa. The four proposed dwelling units will each have driveway access to Fielding Drive immediately west of the McCarthy/Fielding controlled intersection. The former single house located on the lot had its driveway connection to McCarthy Road. The site's local context shown on the attached Figure 1 and the proposed driveway connections to Fielding Drive are shown on the attached Figure 2.

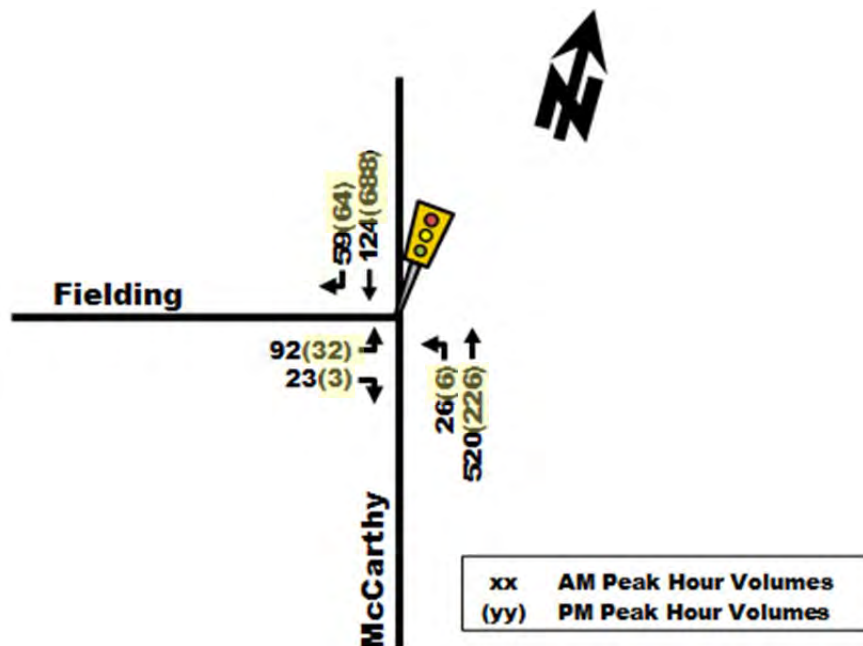
The scope of transportation analysis addressed in this report includes a review of operations at the adjacent McCarthy/Fielding intersection; peak period observations of traffic flow and queuing on Fielding Drive; impact assessment of the proposed driveways locations on traffic flow, a review of driveway locations on other area streets that intersect with McCarthy; and preparation of a brief letter report outlining our findings. As such, the following is our proposed Work Plan.

2.0 EXISTING CONDITIONS

The Fielding/McCarthy intersection is three-legged traffic signal controlled intersection. Both streets are two lanes wide and have sidewalks on both sides. On Fielding adjacent to the site, on-street parking is prohibited. In the City's Transportation Master Plan, McCarthy Road is classified as a major collector and Fielding Drive is classified as a local street. Due to a combination of traffic volume and vehicle speed, when a lot is being developed at the corner of a major collector/local intersection, it is most desirable to have the driveway connection(s) to the local street and not the major collector.

With regard to traffic volumes, the City has an August 2012 count for the McCarthy/Fielding intersection. However, as there is a public school adjacent to the west of the subject site, and as the City's count was during the summer, it was decided to conduct current October 2014 peak hour counts at the intersection. These were coordinated by Parsons staff on Thursday October 9, 2014, with the resultant morning (7:30a. to 8:30am) and afternoon (4:30pm to 5:30pm) peak hour volumes summarized in the following graphic.

Existing Peak Hour Traffic Volumes



With regard to intersection operation, using appropriate cycle lengths and phase timings the intersection operates at an excellent level of service (LoA) during both the morning and afternoon peak hours as summarized in Table 1.

Table 1: McCarthy/Fielding Intersection Operation

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection as a whole		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
McCarthy/Fielding	A(A)	0.45(0.52)	NBT(SBT)	8.9(6.8)	A(A)	0.43(0.43)
Note: Analysis of signalized intersections assumes a PHF of 0.95 and a saturation flow rate of 1800 veh/h/lane.						

Actual peak hour field observations at study area intersections confirm these findings. However, during the afternoon peak hour, heavy southbound queues were observed along McCarthy Road as a result of delays at the all-way STOP controlled intersection at the McCarthy/Southmore intersection adjacent to the south and not as a result of the McCarthy/Fielding intersection performance.

It is also noteworthy that any concern about visibility associated with a southbound right turn from McCarthy onto Fielding has been eliminated by removal of the existing vegetation on the corner and the planned conveyance, to the City, of a 5m x 5M sight triangle.

With regard to existing driveways on Fielding, it is also noteworthy and relevant that the two single family homes across Fielding from the subject site both have their driveways connecting to Fielding Drive, as do many other homes further west along the south side of Fielding Drive.

3.0 PUBLIC SCHOOL CURB SIDE OPERATION

Fielding Drive Public School is located adjacent to the west of the subject site as shown in the attached Figure 3. This adjacent school has a number of driveway connections to the north side of Fielding west of the site. The closest school driveway connection to the subject site is located approximately 85m west of McCarthy. The most westerly of the proposed homes has its proposed driveway at approximately 67m west of McCarthy, which means it is approximately 18m (60 ft) east of the adjacent school driveway. This is a significant and sufficient offset distance.

The area residents have advised that the current school operation causes some traffic problems for the 15 minute to 30 minute period in the morning and afternoon when children are arriving to and departing from school. Parsons staff have been on site a few times during these periods and have observed some issues, but certainly none to the extent suggested by the residents.

During the morning drop-off period (7:30 am to 8:15 am) the following was observed:

- The majority of passenger vehicles drop off students in the school parking lot;
- Some passenger vehicles drop off students in no stopping/no parking zones along the north side of Fielding Drive adjacent to the subject development site. Two or three passenger vehicles were noted to have stopped for a short period of time (approximately 5 minutes) in the "No Parking" zone adjacent to the subject development site;
- Buses stop directly in front of the school. A maximum of three buses stopped at one time to drop off students;
- Most of the passenger vehicles stopping along Fielding Drive to drop off students would make U-turns at the intersections of either Cowan Crescent or Rankin Street; and
- The volume of students walking to school along Fielding Drive (not arriving by school bus or passenger vehicle) was noted to be minimal. RND Construction staff counted 12 students during a 45 minute period walking on the sidewalk adjacent to the subject site.

During the afternoon pick-up period (2:15 p.m. to 2:45 p.m.) the following was observed:

- There was significantly less activity than during the morning drop-off period;
- Three buses were waiting at the curb to pick-up students. When students exited the school the bus loading was efficient and quick;
- Of those students not taking the bus, some walked on the near side sidewalk while some safely crossed the street to the other sidewalk;
- Some parents parked in the "No Parking" zone adjacent to the subject site; and
- There were some U-turns at intersection as parents left the neighborhood.

Overall, a relatively uneventful afternoon.

It is noteworthy that with regard to time periods outside of the school's total combined approximate 1 hour student drop-off/pick-up, we were not advised of any concerns from area residents about the traffic operations on Fielding Drive or the Fielding/McCarthy intersection. When we were out on site at these other times, we observed low volume, problem free conditions along Fielding Drive.

It is therefore clear that any traffic/safety issues on Fielding are related to school activity. Buses park on the street, parents park illegally in "No Stopping" and "No Parking" zones. And parents make U-turns in the middle of intersections. It is noteworthy that the majority of new schools have their bus lay-by loop and student drop-off loop on-site to avoid or minimize the foregoing

curb side problems. It is also noteworthy that the Fielding Drive Public School appears to have sufficient space/pavement at the west end of their site to accommodate both drop-off loops on-site.

If the school were to make better use of this available space, and if the school/City did a better job of enforcing illegal curb side stopping/parking, the existing real and perceived traffic problems on Fielding in front of the school would be significantly reduced or eliminated.

4.0 SITE TRAFFIC GENERATION

Using the vehicle trip generation rates from the ITE Trip Generation Manual, 6th Edition, four single family homes (Code 210) with modest transit service will generate approximately 3 vph and 4 vph two-way total during the morning and afternoon peak hours respectively. These volumes equate to a maximum of approximately 1 vph (either inbound or outbound) using each driveway during the peak hours. On average, this is 1 new vehicle movement per driveway every 15 minutes during peak hours, with the new traffic being even less than this during all other hours of the day.

To put these site-generated volumes into perspective it should be noted that the existing Fielding community currently generates a two-way total of 200 vph during the morning peak hour and 105 vph during the afternoon peak hour on Fielding Drive adjacent to the subject development site. The proposed homes will add only 3 vph to 4 vph to these total.

It is also noteworthy that the pedestrian counts during school beginning and end times for the sidewalk along the site's Fielding frontage revealed 10 to 15 students during the morning arrival and up to 5 students during afternoon departure. Given this low volume of pedestrian activity, the potential conflicts with the four proposed driveways is likely significantly less than further west along Fielding within the community as the majority of walking students are from the south or west of the school, and not from the east, as the counts demonstrate.

5.0 REVIEW OF DRIVEWAY LOCATIONS AND OTHER CONNECTING STREETS IN THE AREA

For comparison, other study area local streets intersecting McCarthy were reviewed to determine if/where driveways connect to the local street in close proximity to the McCarthy intersection. The results are summarized as follows.

Southmore Drive east of McCarthy: all single family homes immediately east of McCarthy have their driveways connecting to Southmore Drive (not McCarthy). The first two driveways are approximately 17m and 21 m from the McCarthy intersection and all subsequent driveways are at this approximate spacing.

Southmore Drive west of McCarthy: all single family homes immediately west of McCarthy have their driveways connecting to Southmore Drive (not McCarthy). The first two driveways are approximately 19m from the McCarthy intersection, with this approximate spacing being repeated down the street.

Provost Drive east of McCarthy: due to the existence of a townhouse complex on the north side of Provost Drive, there are no individual driveways on the north side immediate east of McCarthy. On the south side, the first single home driveway is approximately 21m from the intersection.

Southmore Drive south of Walkley: immediately south of the signalized Walkley intersection, the single family homes on either side of Southmore Drive have their driveways approximately 20m

south of the Walkley intersection. The next two driveways are approximately 5m and 10m farther south.

Wherever possible, this pattern of having driveway connections to local streets instead of to the adjacent collector or arterial roads is prevalent throughout both the neighbourhood and the City for the obvious safety reasons. Any suggestion that eliminating a proposed home driveway from Fielding and placing it on McCarthy to improve safety of either children or vehicle occupants is seriously misguided as the traffic volume (5 to 20 times greater) and speed on McCarthy significantly increases the collision potential and the seriousness of such a collision.

6.0 FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Based on the foregoing analysis, the findings, conclusions and recommendation of this study are as follows.

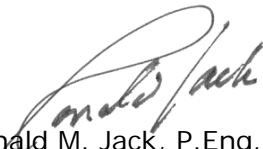
- The only time period during which we have been advised or observed any real or perceived traffic operations issues on Fielding Drive is the approximate combined 1 hour per weekday when students arrive or depart school. At all other times of the day or week we have not observed, nor have we been advised of any traffic-related issues on Fielding Drive adjacent to the school or the subject site;
- The McCarthy/Fielding signalized intersection currently operates at an excellent level of service (LoS A) during both commuter peak periods;
- During the morning and afternoon peak hours queues extending back along Fielding Drive from the traffic signal at McCarthy were minimal and always cleared easily during their green phase. As the eastbound volumes on Fielding range from 35 vph to 115 vph during the peak hours, these equate to less than 1 vehicle per minute during the afternoon peak hour and less than 2 vehicles per minute during the morning peak hour, which explains why there is no delay or queuing issue on Fielding;
- Using industry-accepted vehicle trip rates, the proposed four homes will generate a maximum of 4 vph during peak hours, or 1 vehicle movement per driveway. This volume of traffic will have no impact on the operation or level of service of the McCarthy/Fielding intersection;
- Due to the low volume of traffic on Fielding Drive and the low projected driveway volumes, there will be no issue with home-generated traffic entering/exiting the peak hour traffic flow of Fielding Drive. Any suggestion that eliminating a proposed home driveway from Fielding and placing it on McCarthy to improve safety of either children or vehicle occupants is seriously misguided as the traffic volume (5 to 20 times greater) and traffic speed on McCarthy significantly increases the collision potential and the seriousness of such a collision;
- The proposed site driveway locations on Fielding Drive are typical of many streets in the neighbourhood approaching collector or arterial roads, and are similar to those that exist on the south side of Fielding Drive;
- The most westerly proposed home driveway is located approximately 18m from the nearest public school driveway, which is more than sufficient offset and also satisfies the City's Private Approach Bylaw;
- Each proposed home can accommodate four on-site parking spaces, which is considered sufficient to accommodate the day to day resident and visitor parking requirements, particularly as parking is prohibited on the adjacent section of Fielding Drive; and

- If the school were to make better use of their available on-site space at the west end of the site to accommodate both an on-site bus loop and on-site child drop-off/pick-up loop (as is now done with most new schools) and if the "No Stopping" and "No Parking" regulations adjacent to the subject development site were enforced, there would be no, or significantly reduced, traffic concerns on Fielding Drive.

Based on the foregoing it is strongly recommended that the Site Plan for the four proposed single family homes be approved from a transportation perspective. The proposed driveways are located at safe and acceptable locations on a local street and site traffic generation can be accommodated with negligible, if any impact.

Please call if you have any questions of the foregoing.

Sincerely,



Ronald M. Jack, P.Eng.
Vice President

Attachments

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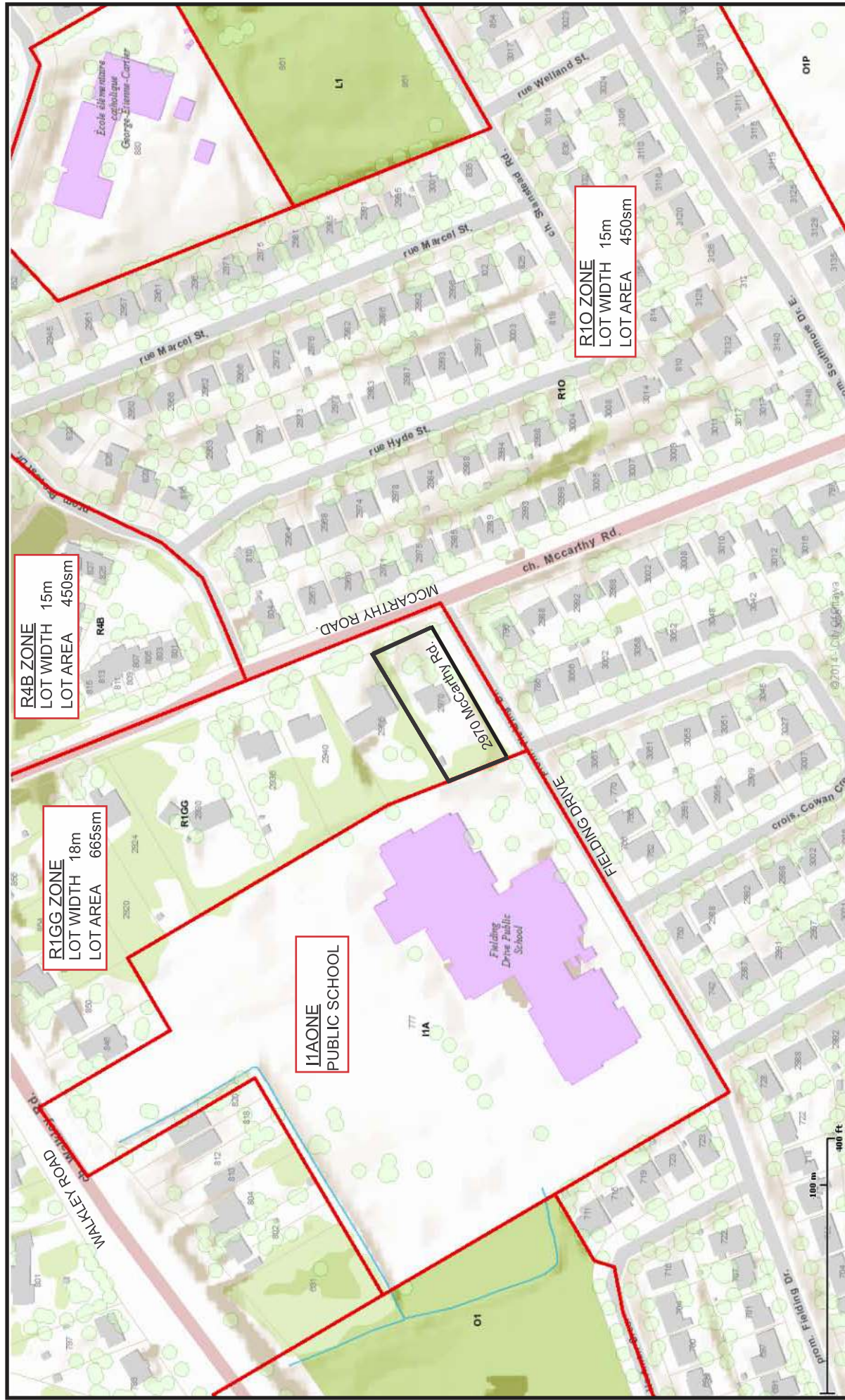


Figure 1: Local Context

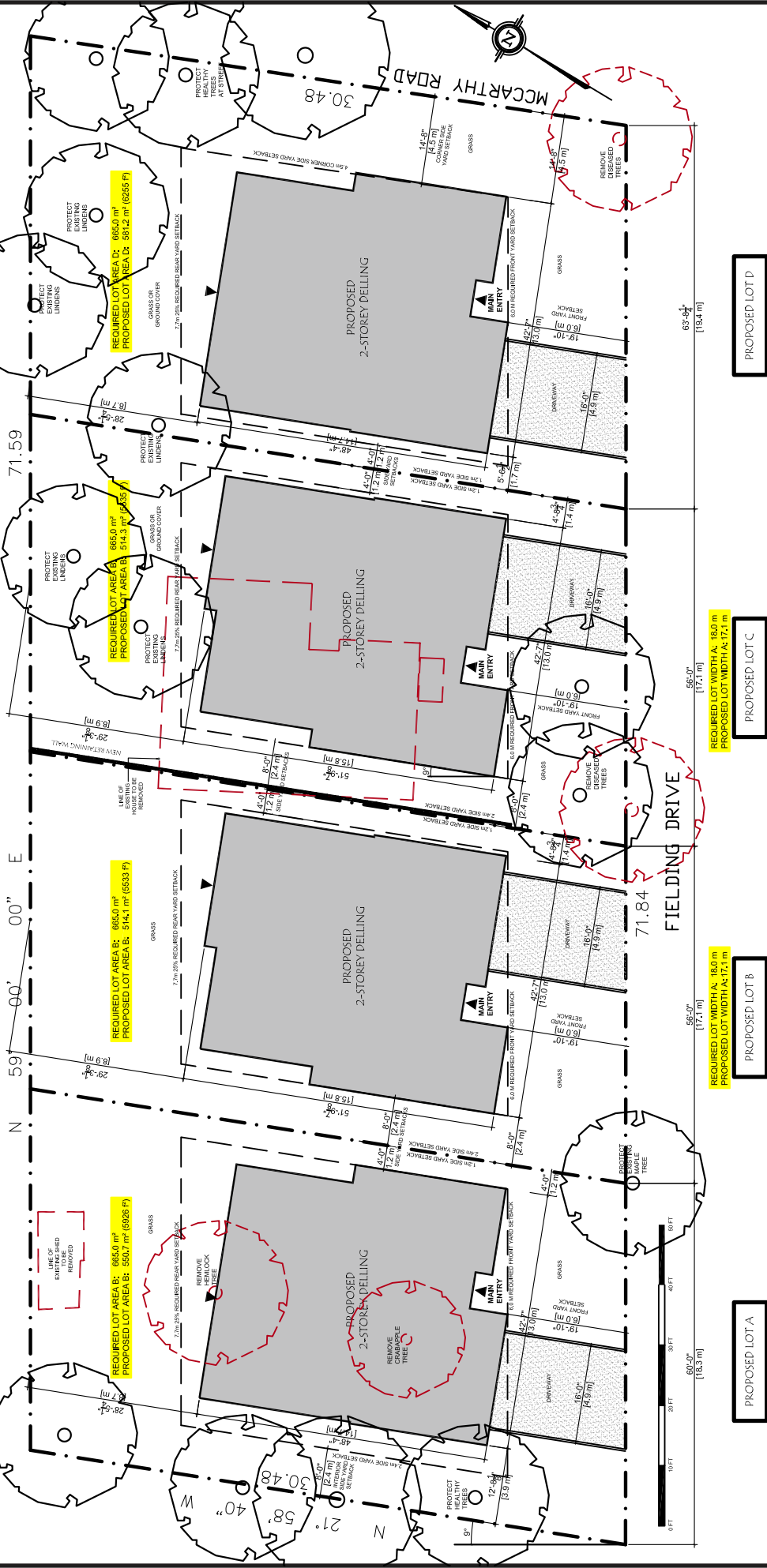




Figure 3: Fielding Drive
Public School