SHADOW IMPACT ANALYSIS

PROPOSED DEVELOPMENT

5-STOREY APARTMENT

HARMONY LIVING, BLOCK 151, PEEL ST, COLLINGWOOD, ON

Prepared by

RPD Studio

09 September, 2025

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1. Introduction

This report has been prepared in support of the Building D in the proposed development located at 151 Peel St, Collingwood, ON. The purpose of this shadow study is to evaluate the potential impact of Building D on neighboring properties, surrounding streets, and public spaces at the subject location. Specifically, the study assesses how the building's massing may affect adjacent areas through the use of a computer-generated model of the proposed five-storey, flat-roof structure.

To support our analysis, shadow diagrams have been prepared and overlaid on satellite imagery of the surrounding context. As the Town of Collingwood does not specify shadow study time requirements, the general requirements outlined by the City of Mississauga have been applied.

2. Site Context and Description

The subject site is zoned R3-8 in accordance with the Town of Collingwood's zoning regulations. The proposed development includes four residential apartment buildings. This report focuses specifically on Building D, for which a shadow study has been conducted. Building D is a five-storey residential apartment building that incorporates ground-floor parking as part of its design.

Surrounding Uses:

- North: The property abuts the Riverside apartments, which consists of three four- storey apartment buildings.
- South: A two-storey single detached home is located immediately to the south of the site.
- East: The site is bounded by the Pretty River and a landscape buffer regulated by the Nottawasaga Valley Conservation Authority (NVCA).
- West: The western boundary includes two-storey single detached homes, as well as a future public sidewalk planned along the property line adjacent to Building D.

3. Shadow Study Methodology

- Method of Analysis: A digital 3D model of the proposed Building D was developed using BIM Software- Autodesk Revit using satellite imagery and building height. Astronomical North was determined based on the topographic survey data provided for the site.
- Location: Collingwood, Ontario (Latitude 44.48° N, Longitude 80.19° W).
- Dates analyzed: March 21 / September 21, June 21, December 21.

- Times analyzed: Shadows were modeled at hourly intervals between 10:18 a.m. and 18:18 p.m. on each of the above dates.

4. Shadow Impact Analysis

March 21 (Spring Equinox)/ September 21 (Fall Equinox)

- Morning: Shadows extend slightly onto Peel Street, with no impact on adjacent residential properties.
- Noon: Shadows are compact and fall almost entirely within the site with no impact on adjacent residential properties.
- Evening: Shadows extend eastward toward the NVCA -regulated lands and the Pretty River corridor, with no impact on adjacent residential properties or public streets.

June 21 (Summer Solstice)

- Morning: Shadows cast by the proposed Building D are short and remain within the site boundaries, ensuring full access to morning sunlight to adjacent streets and neighbouring residential properties.
- Noon: Shadows are at their shortest and fall almost entirely within the site with no impact on surrounding residential properties.
- Afternoon/Evening: Shadows extend into the NVCA landscape buffer with limited extension beyond site boundaries; Adequate solar access is maintained for adjacent residential properties.

December 21 (Winter Solstice)

- Morning: Long westward shadows extend slightly onto one adjacent residential property. This condition is typical for the season and is primarily a result of the site's latitude rather than the massing of the building.
- Noon: Shadows extend northward but remain within the site. With no impact on adjacent residential properties.
- Afternoon/ Evening: Projecting long eastward shadows into NVCA regulated lands and the Pretty River Corridor. While shadows are longer due to low winter sun angles, there is no adverse impact on adjacent residential properties. This shadow pattern aligns with municipal expectations for the season. It is also important to note that due to the early sunset during this time of year, the modeled evening shadows at 17:18 and 18:18 may not represent actual conditions, as the sun would have already set or be below the horizon at those times.

5. Conclusion

- The proposed Building D maintains adequate solar access to the adjacent public streets, sidewalks, and residential properties during key times of the year.
- During both the Spring and Fall Equinoxes, shadowing effects are limited and manageable. Shadows primarily remain within the site or extend toward the landscape buffer regulated by the NVCA and the Pretty River Corridor, which are less sensitive to shadow impacts. Notably, there is no adverse impact on the adjacent residential properties during these times, ensuring compliance with municipal shadow study guidelines.
- During the Summer Solstice, shadowing from the development is minimal and contained, with the greatest solar access available to the surrounding residential properties and public spaces. The impacts are considered negligible and entirely consistent with planning and urban design expectations for this season. This is particularly important, as summer represents the peak period for outdoor use and community activity.
- Winter shadows are longer, which is typical for the season and the site's location. However, the shadow remains consistent with municipal expectations for winter conditions and do not result in any unacceptable impacts on surrounding residential areas.
- Overall, the shadow impacts are within acceptable planning and urban design guidelines for the Town of Collingwood.

APPENDIX -A

SHADOW DIAGRAMS FOR THE 3 STUDY PERIODS

Shadow Diagrams at Spring/Fall: March/September 21st

March/September 21st = Hourly intervals between 10:18 and 18:18 pm.

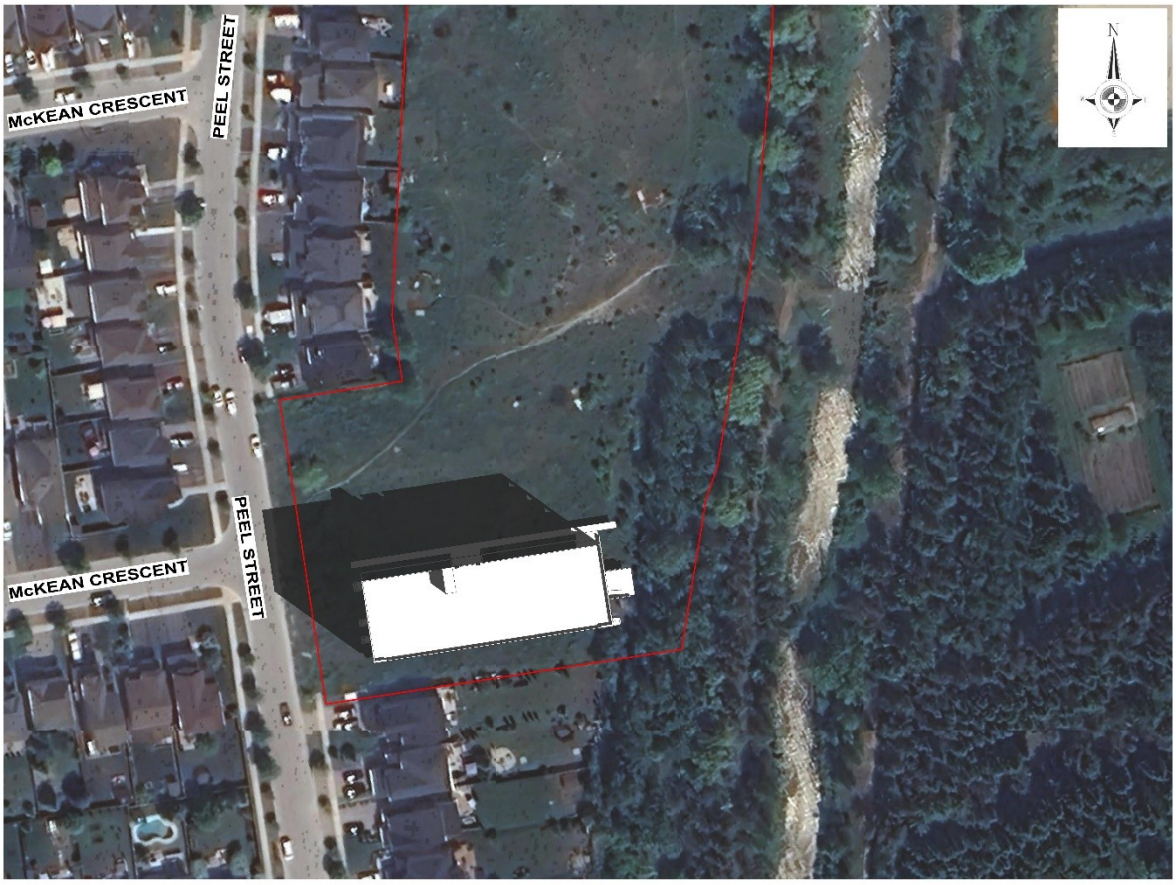
Shadow Diagrams at Summer: June 21st

June 21st = Hourly intervals between 10:18 and 18:18 pm.

Shadow Diagrams at Winter: December 21st

December 21st = Hourly intervals between 10:18 and 18:18 pm.

[March/September 21, 10:18 am]



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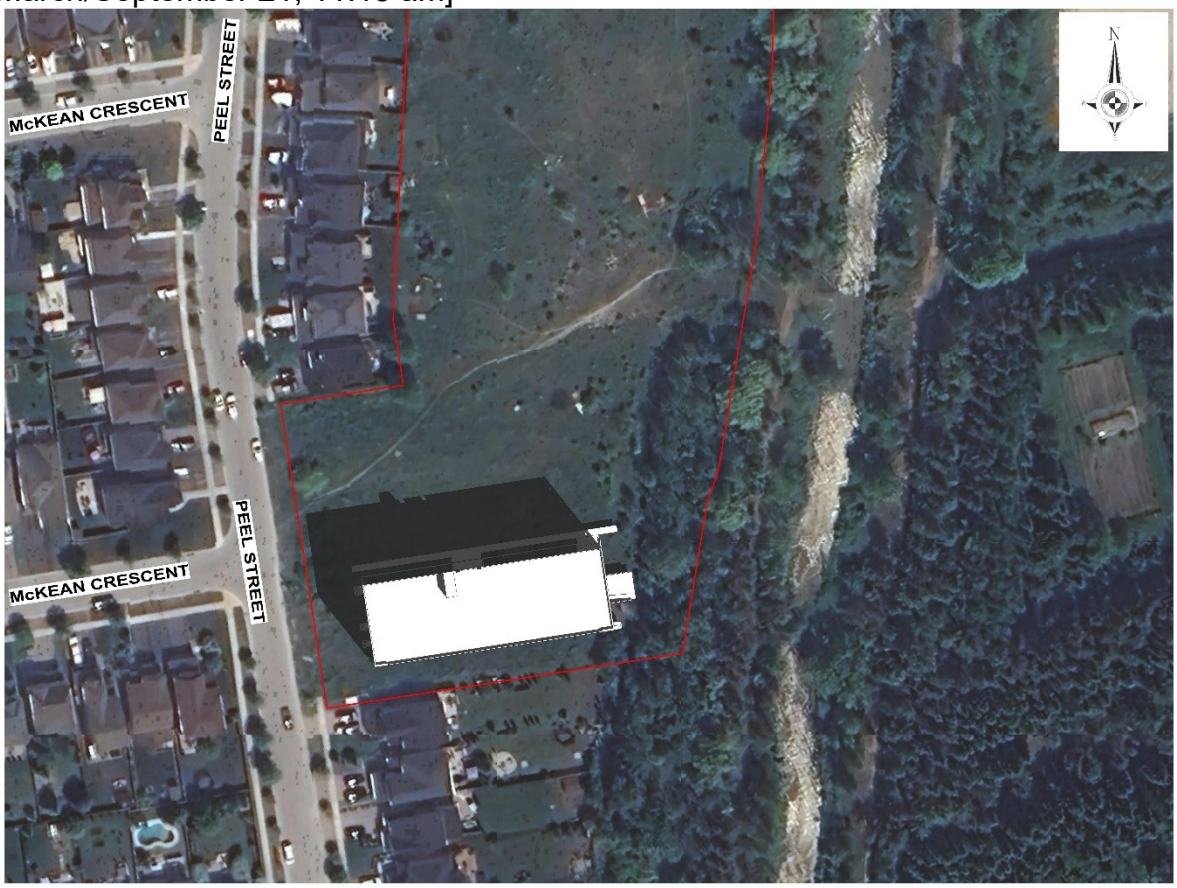

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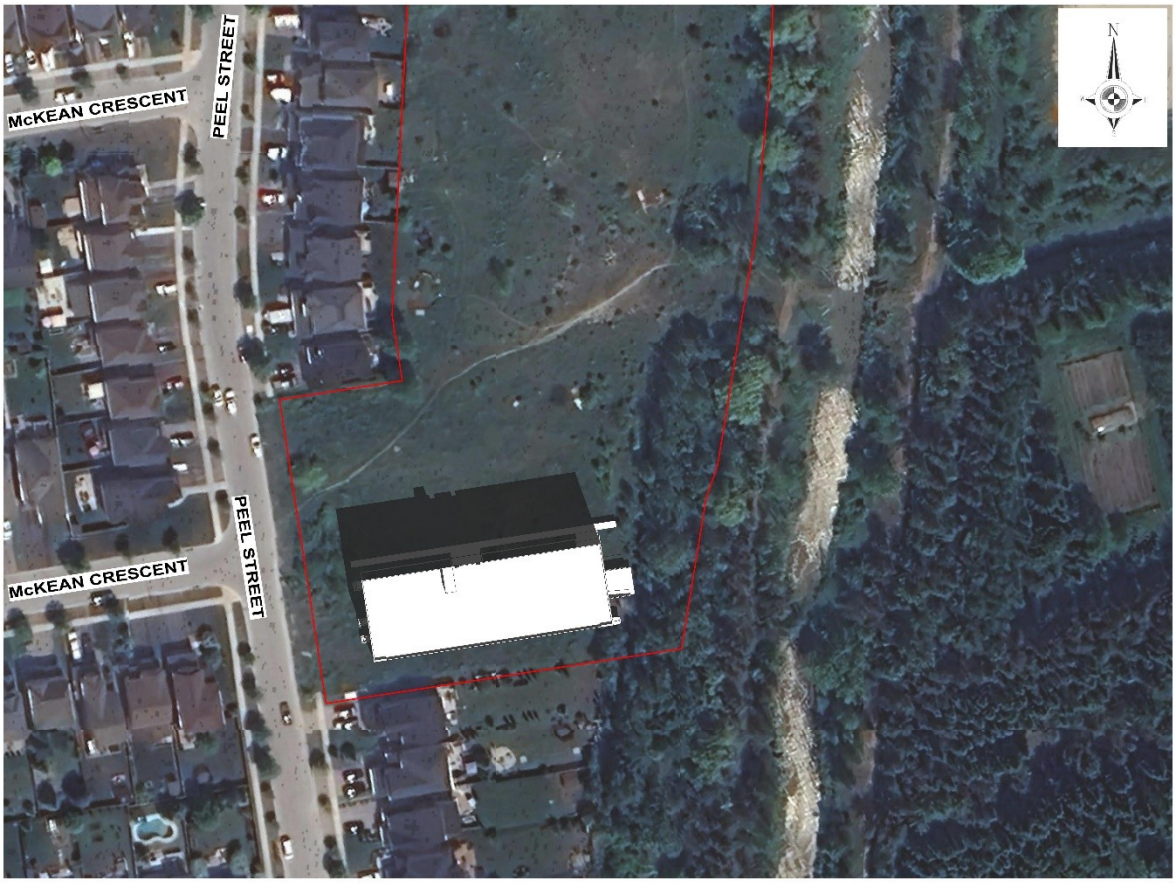

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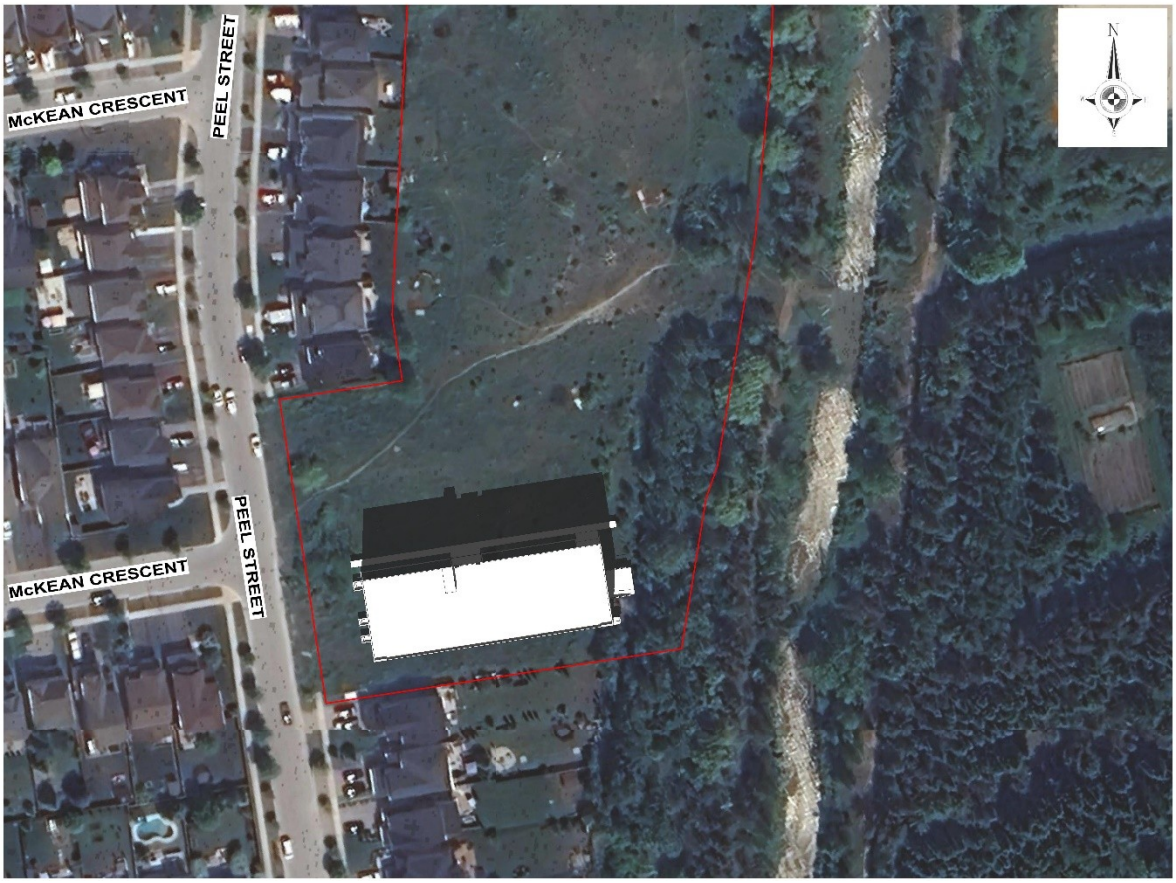

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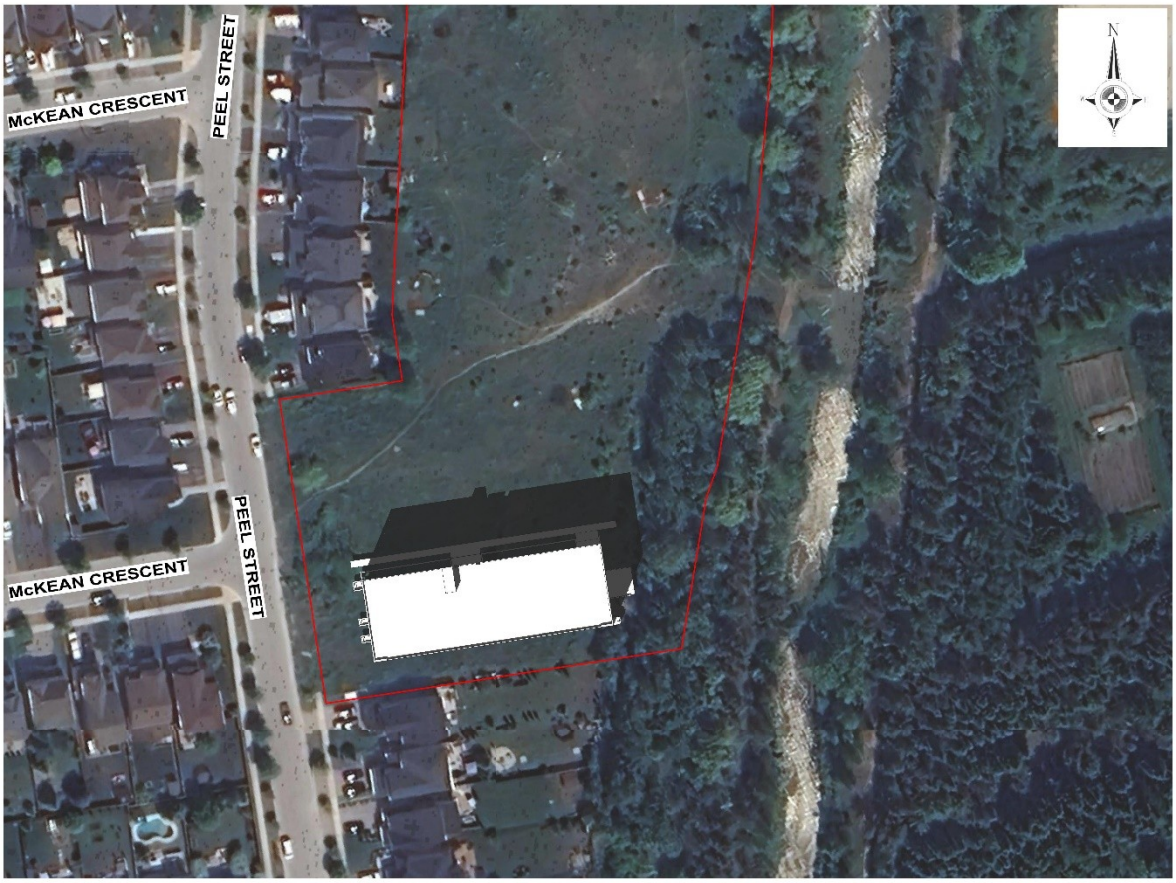

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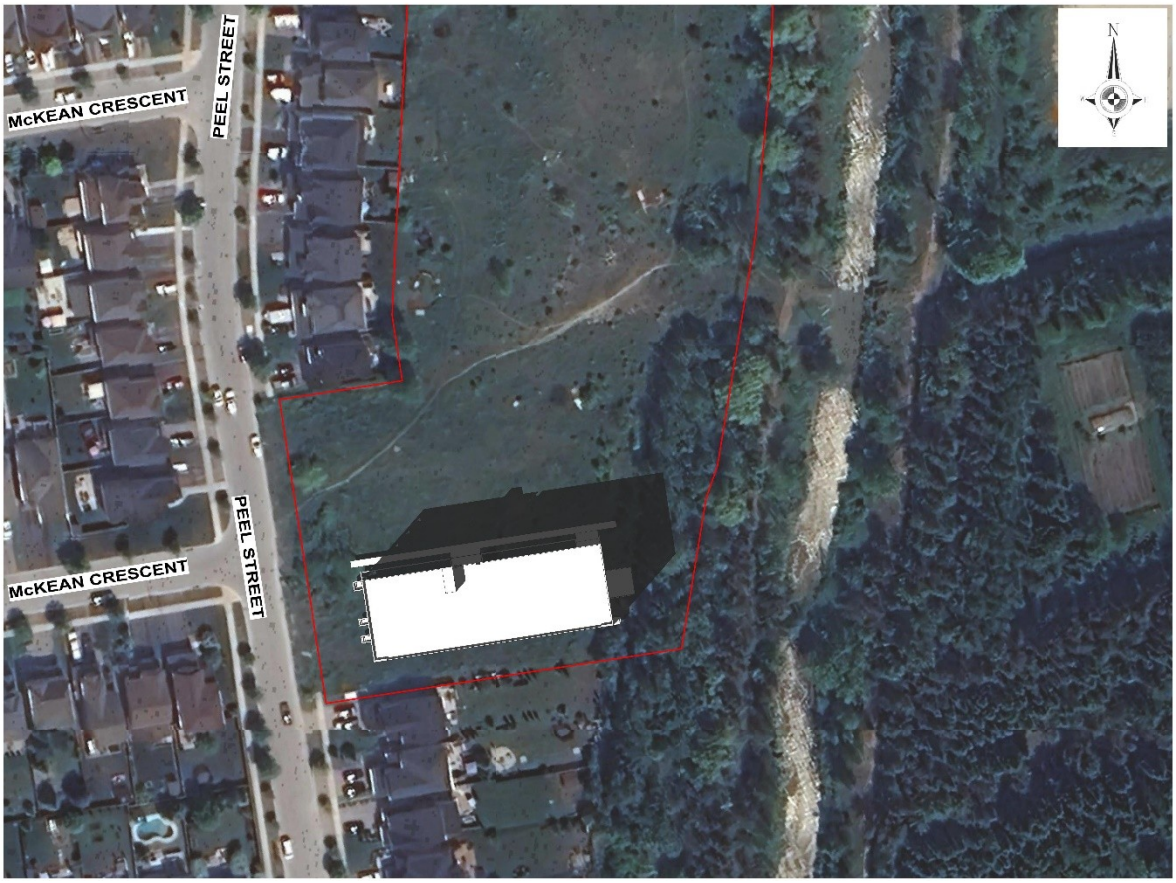

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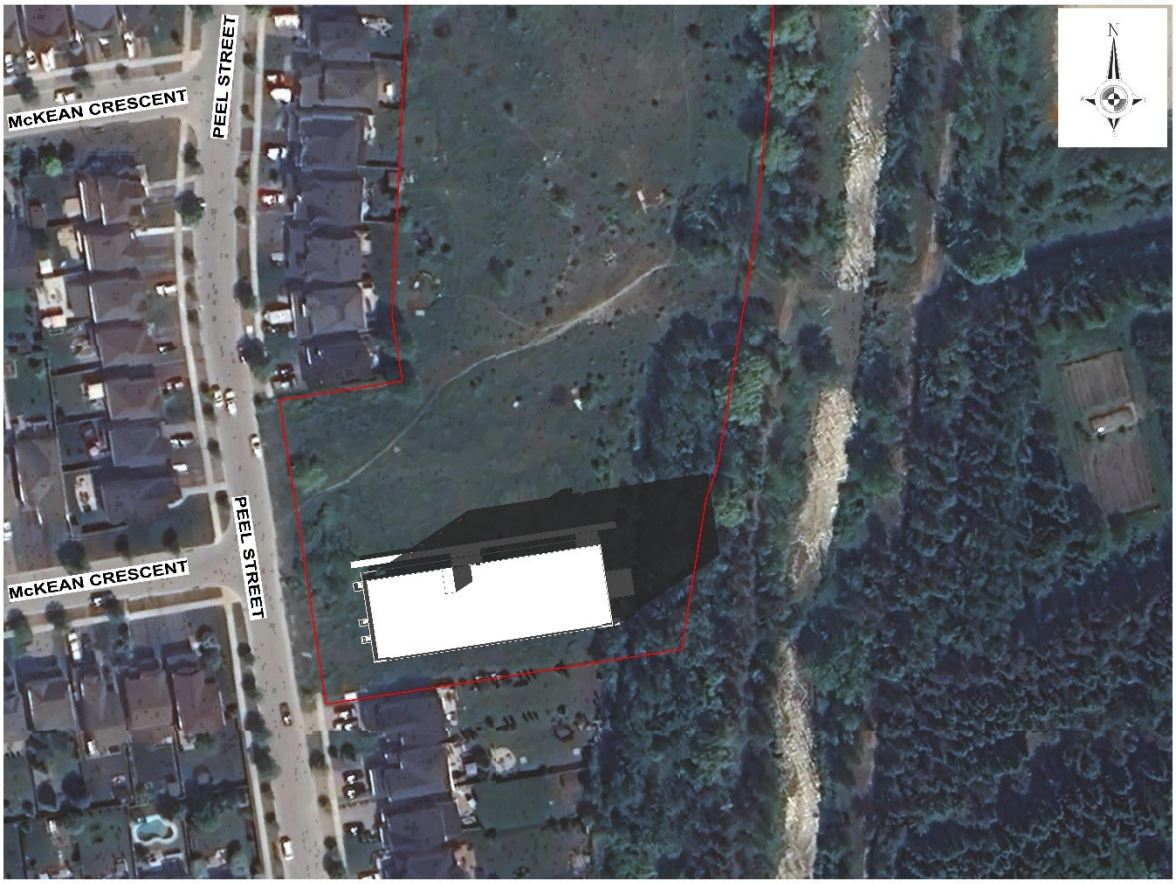

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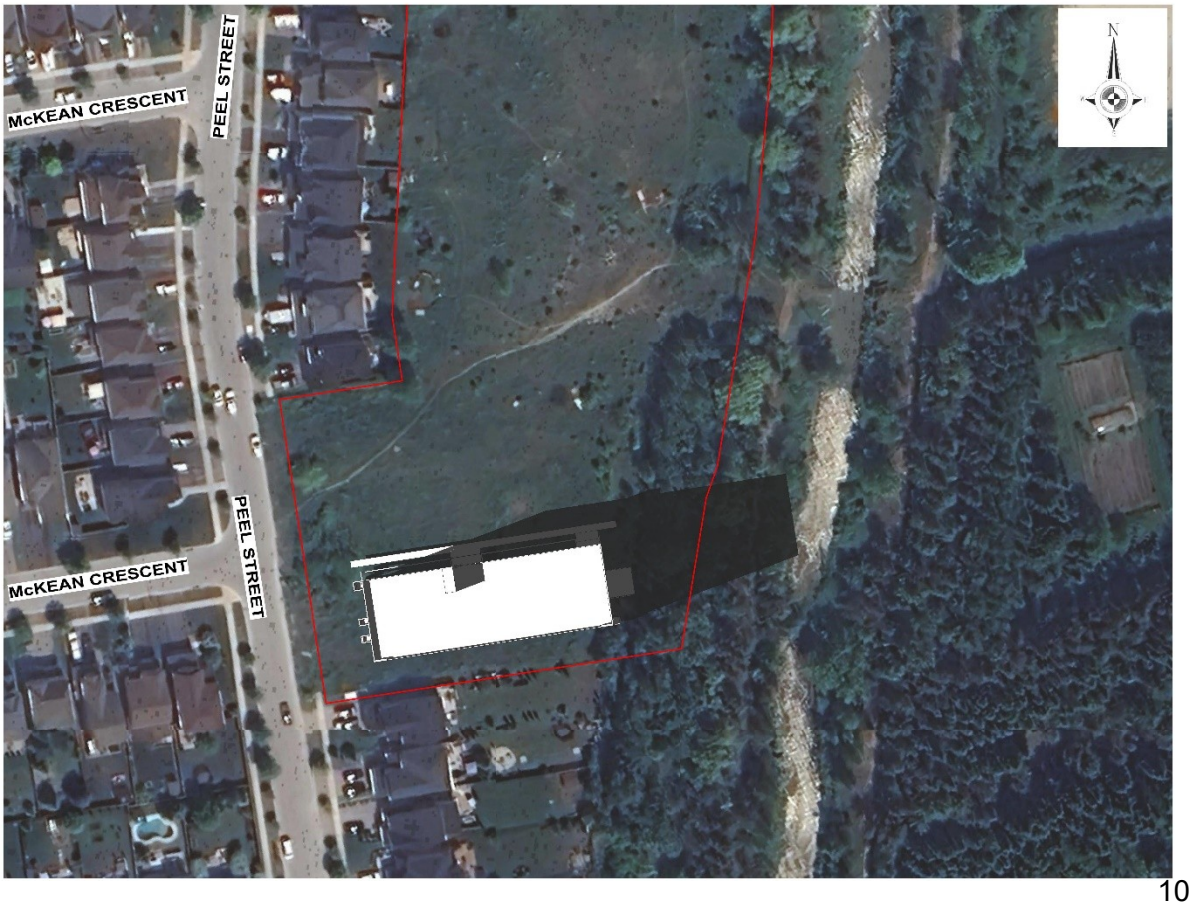

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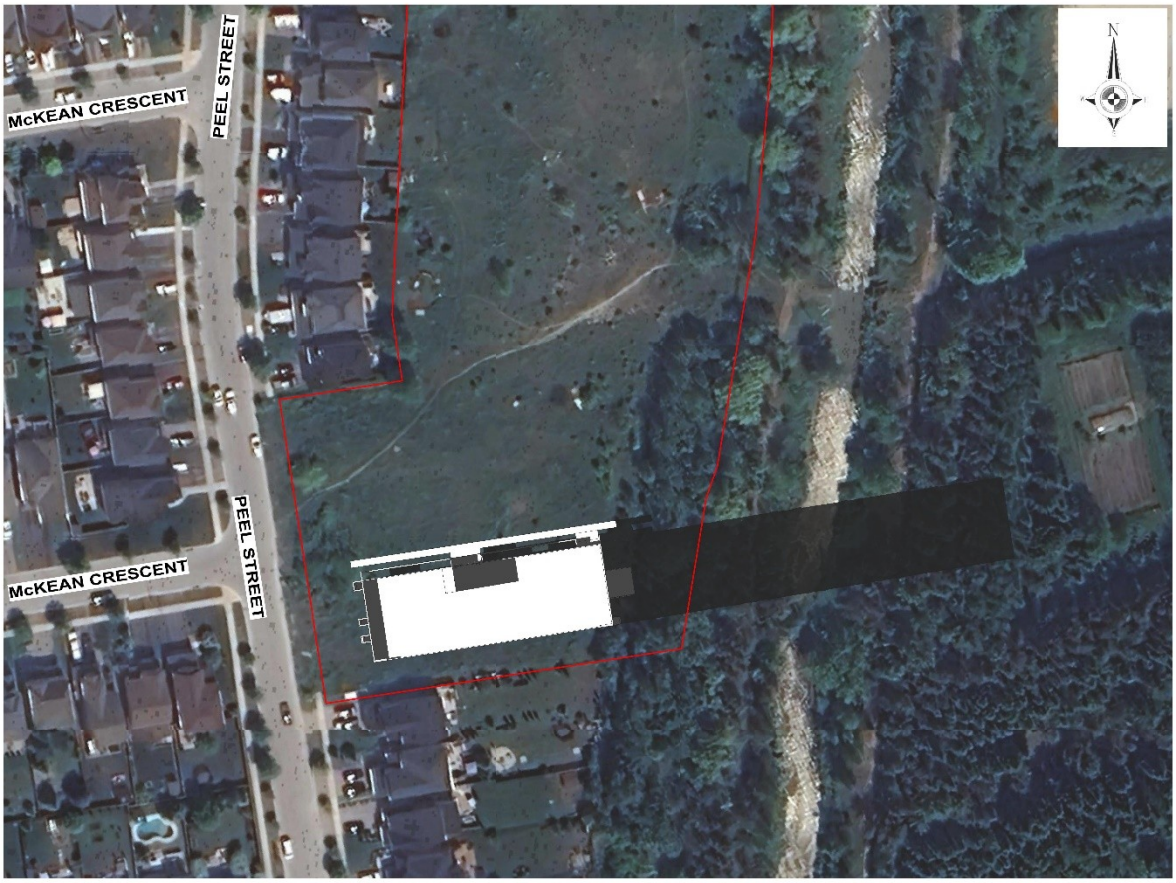

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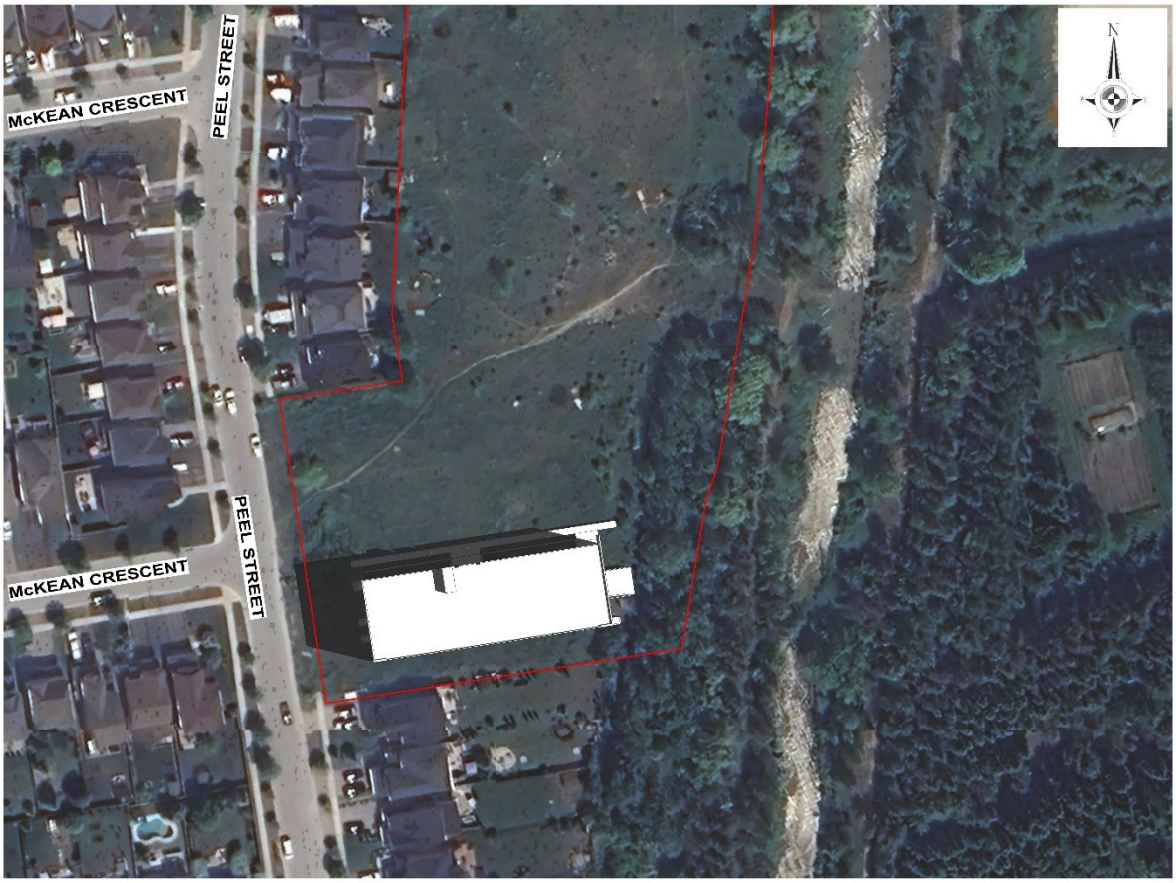

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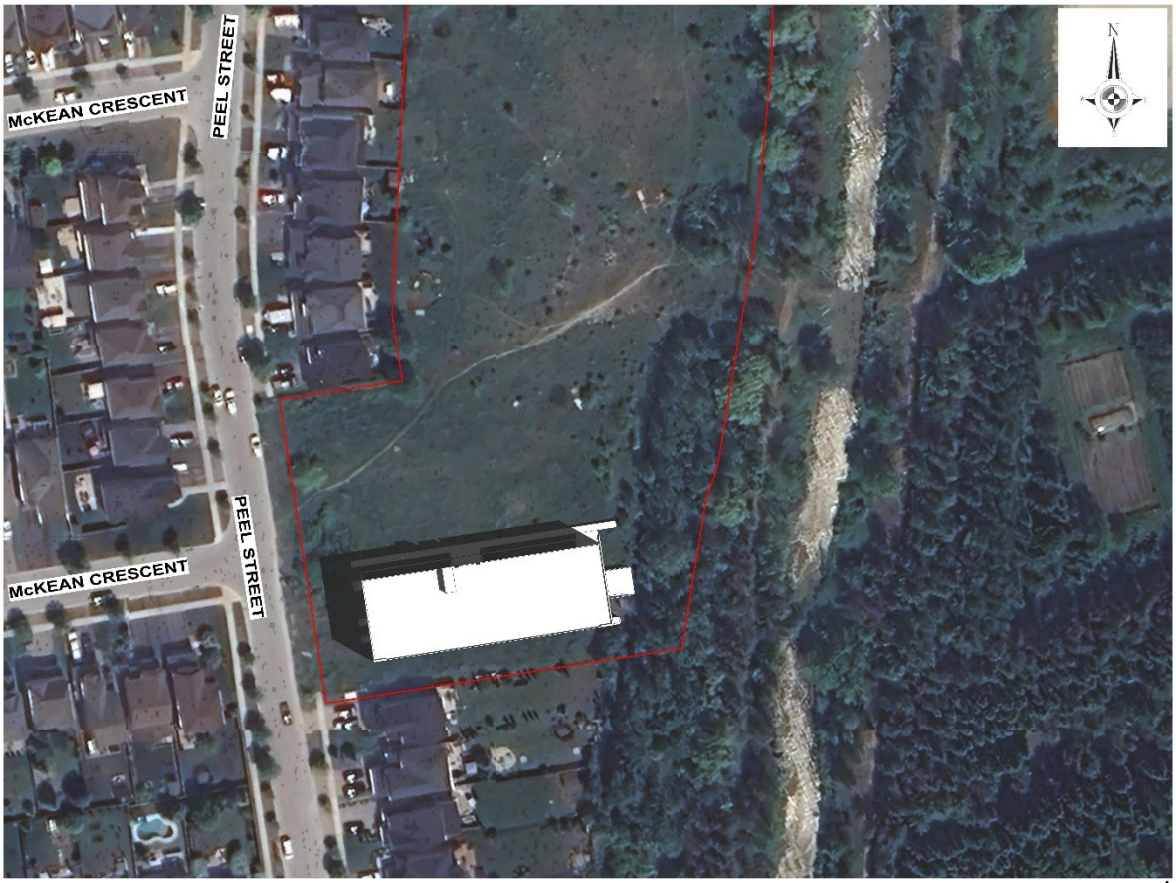

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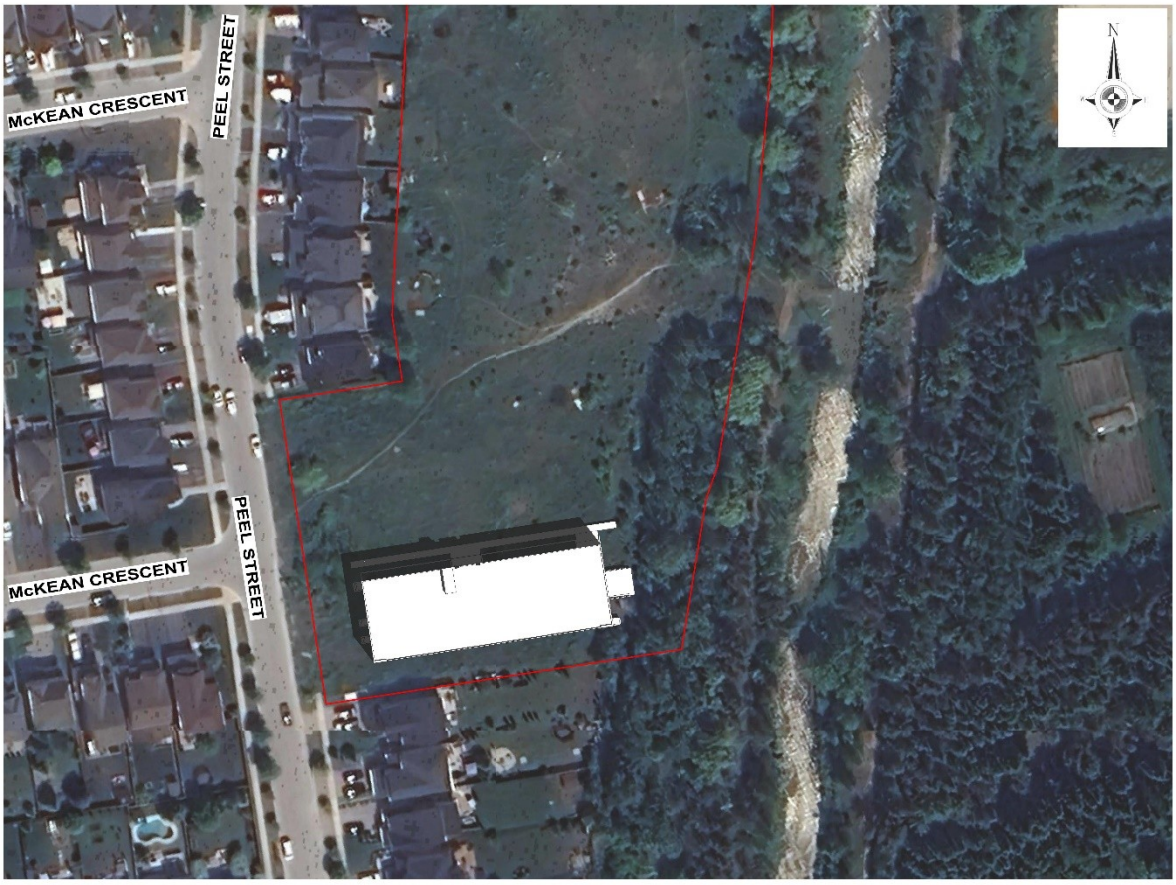

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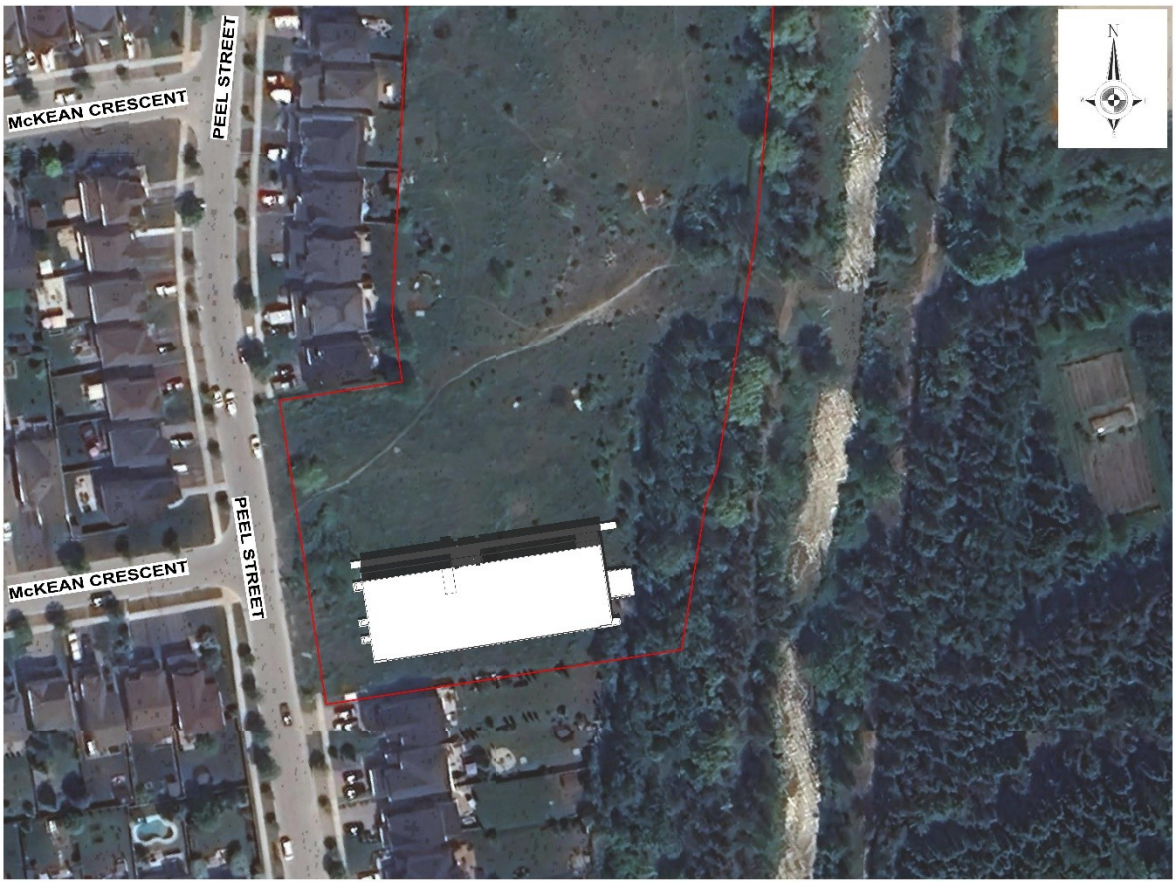

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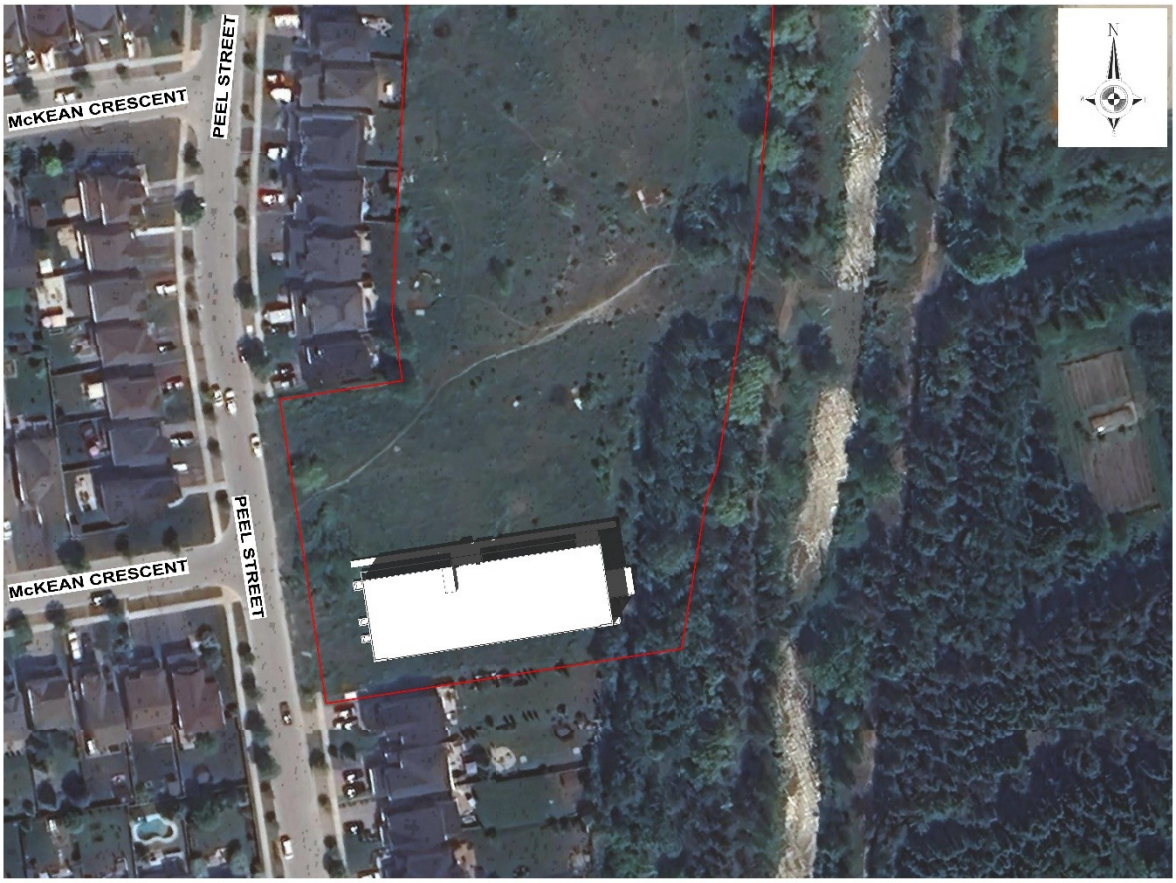

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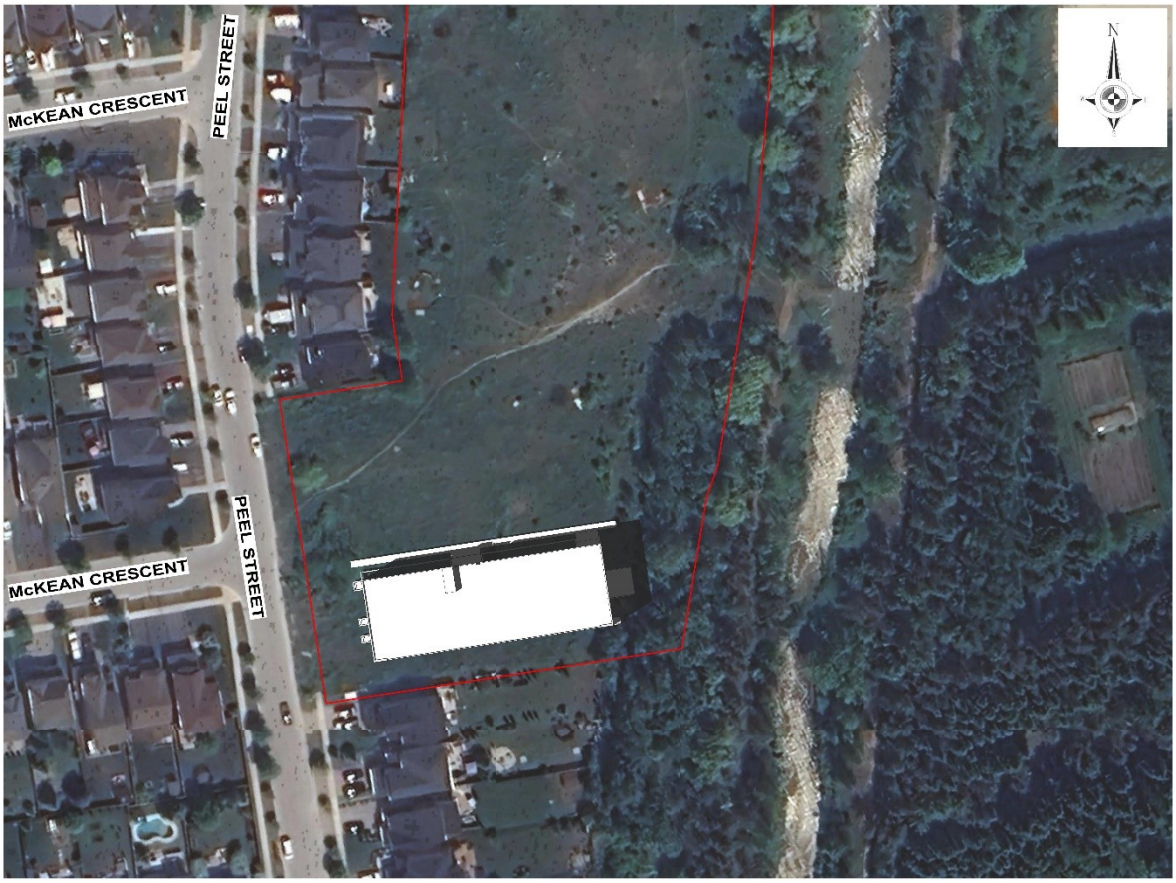

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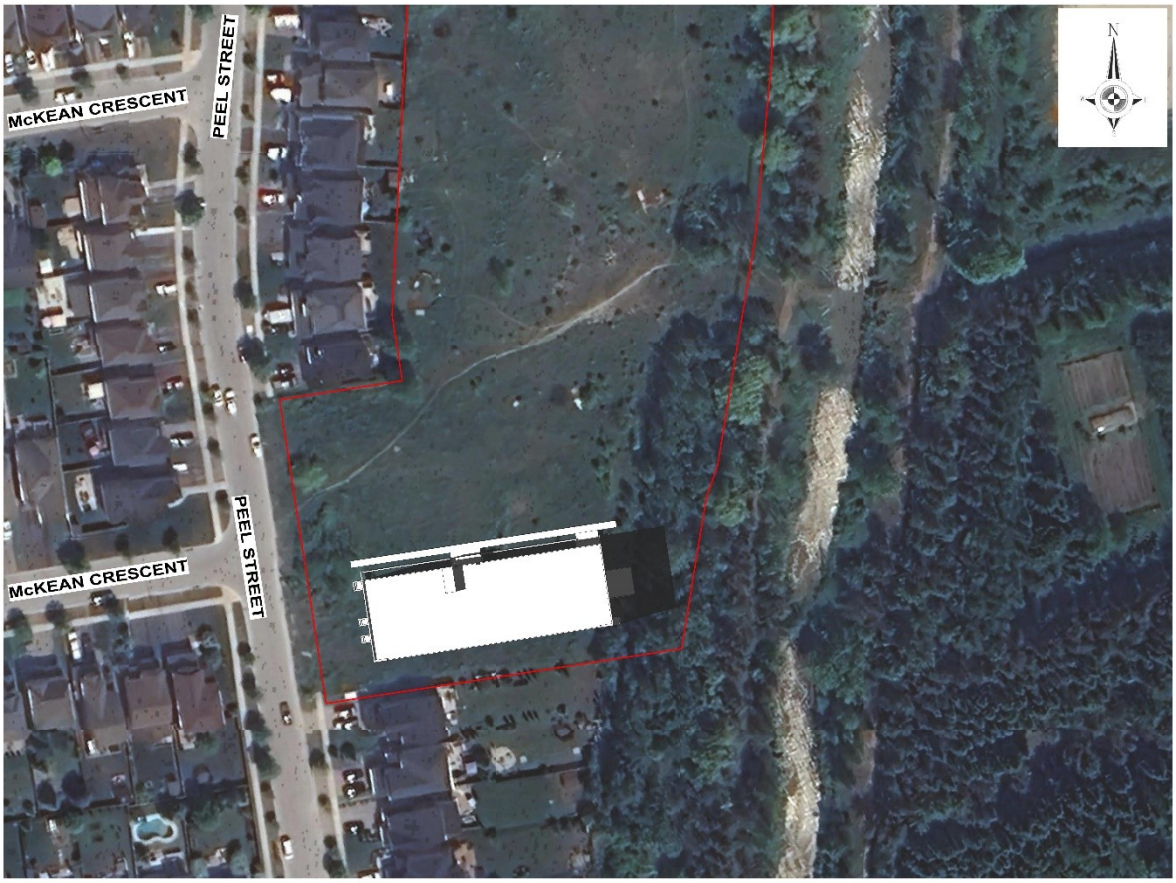

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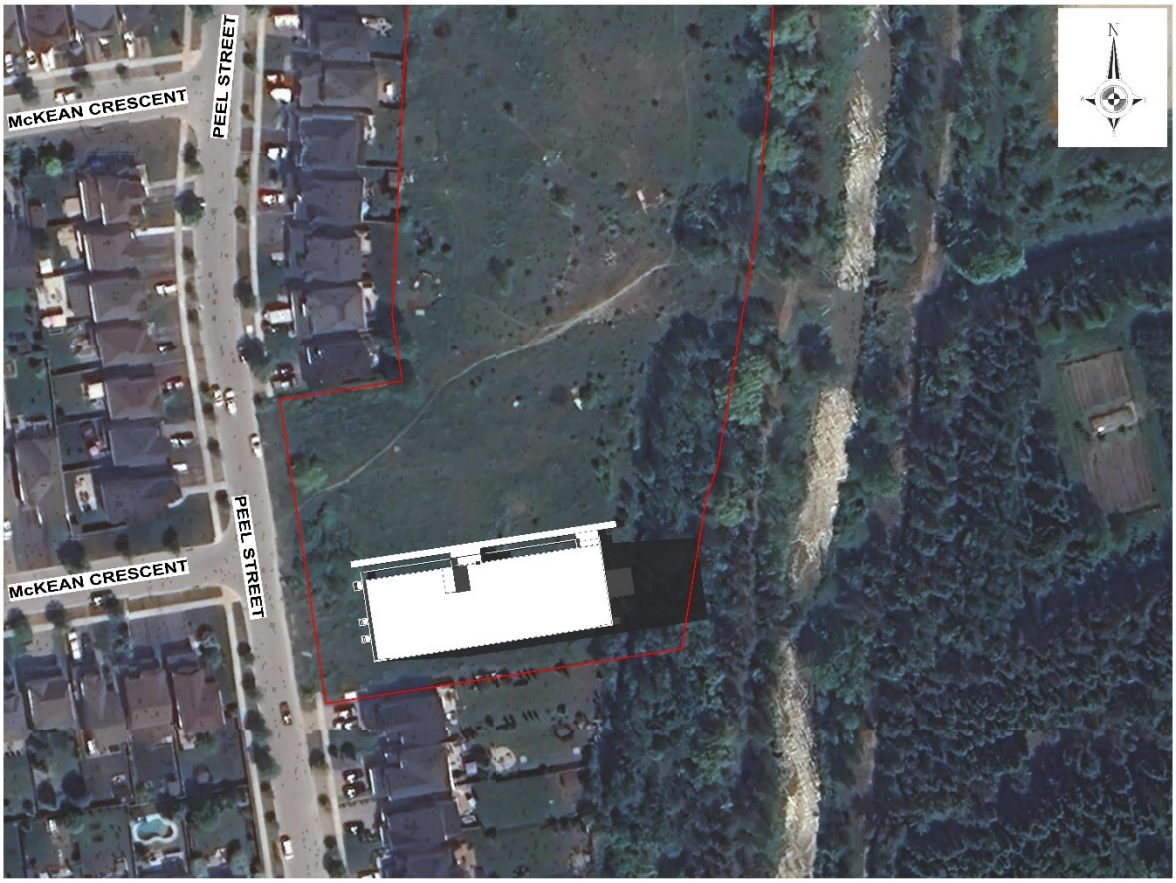

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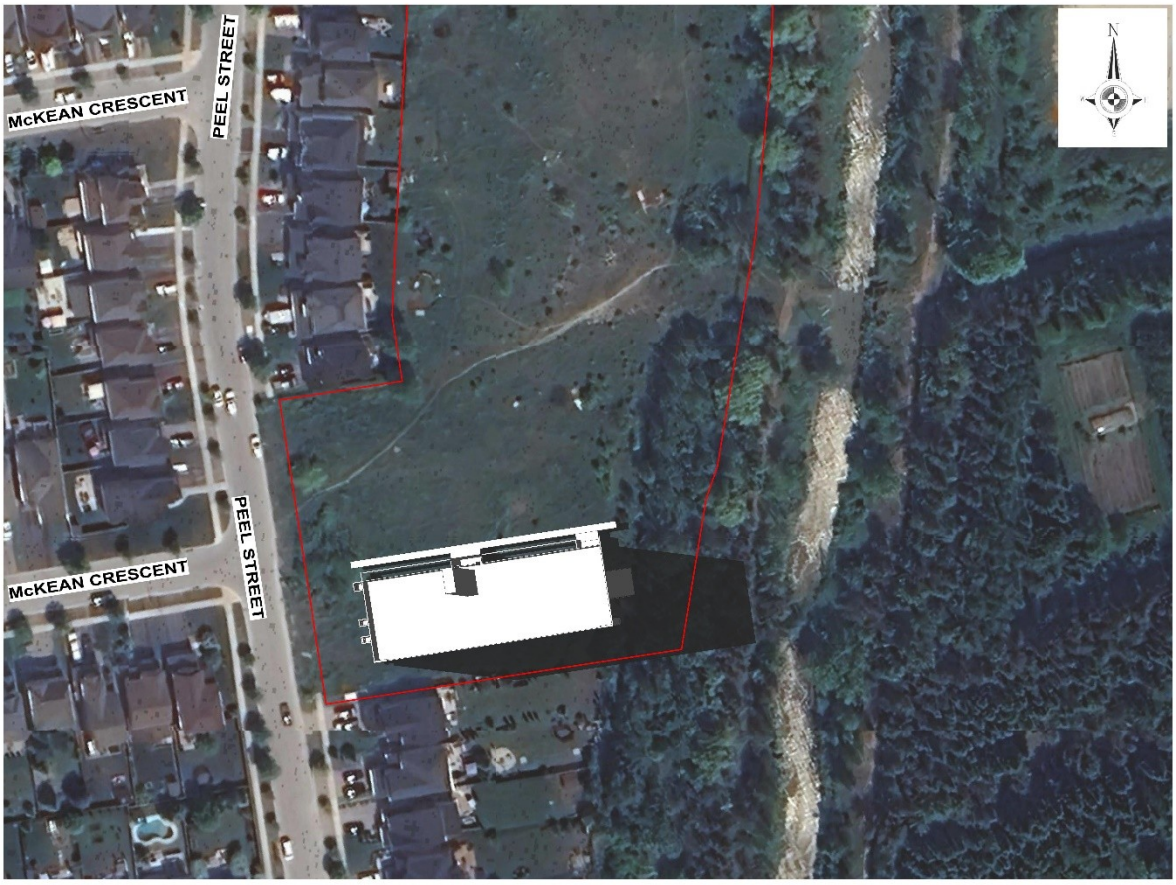

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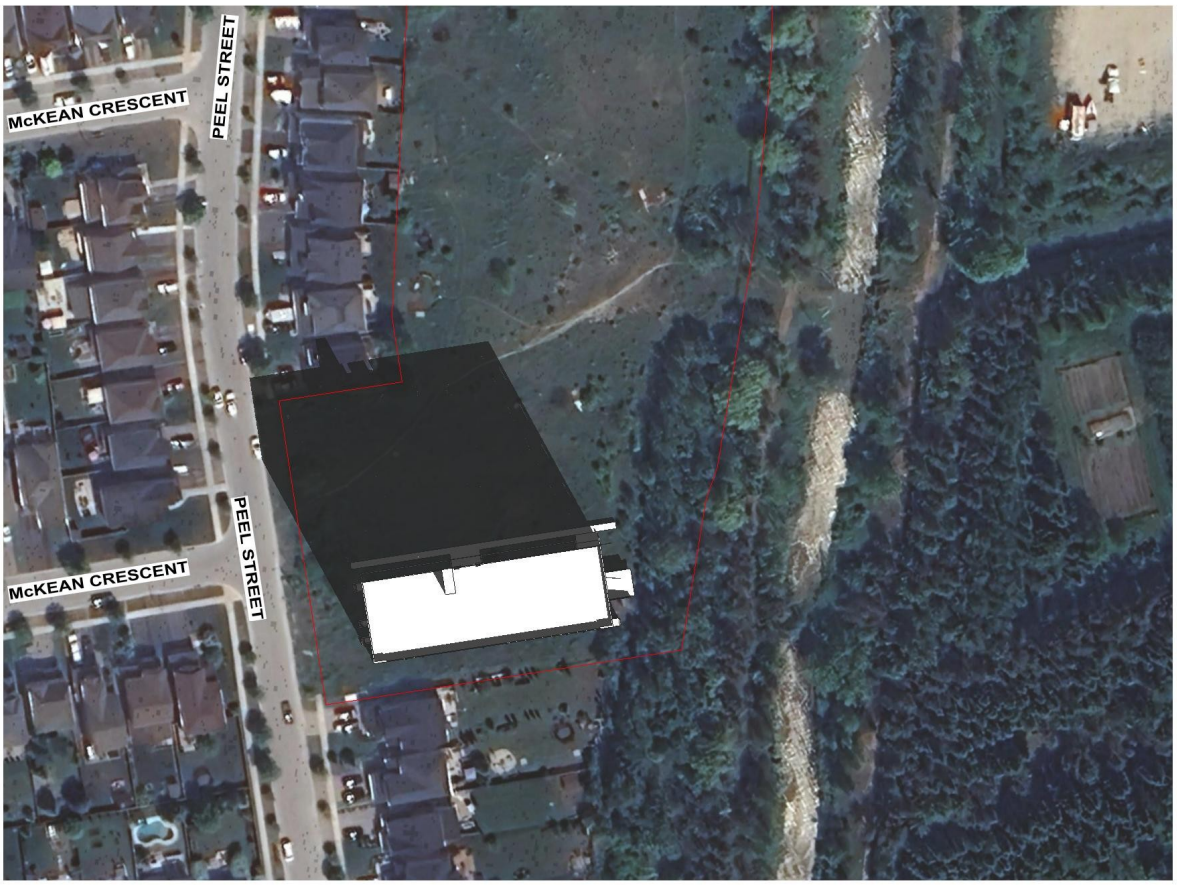

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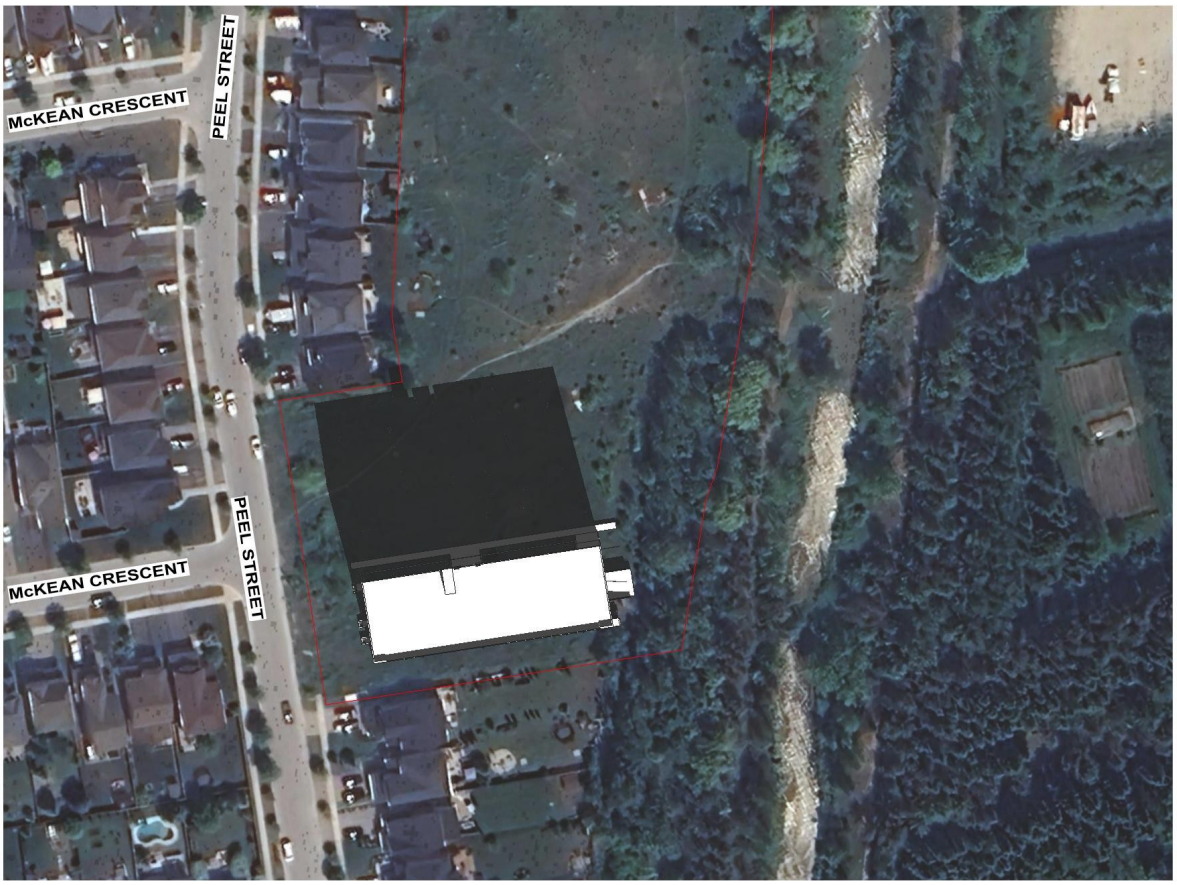

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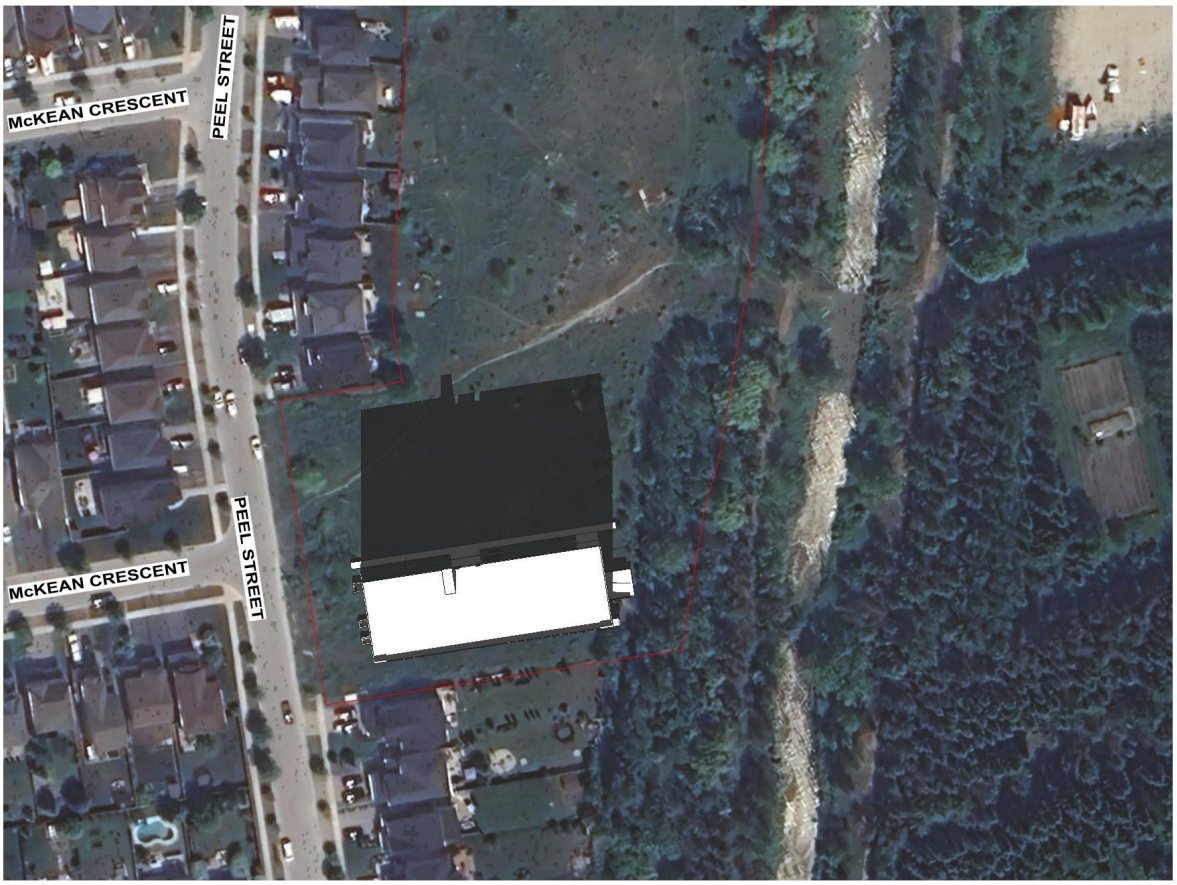

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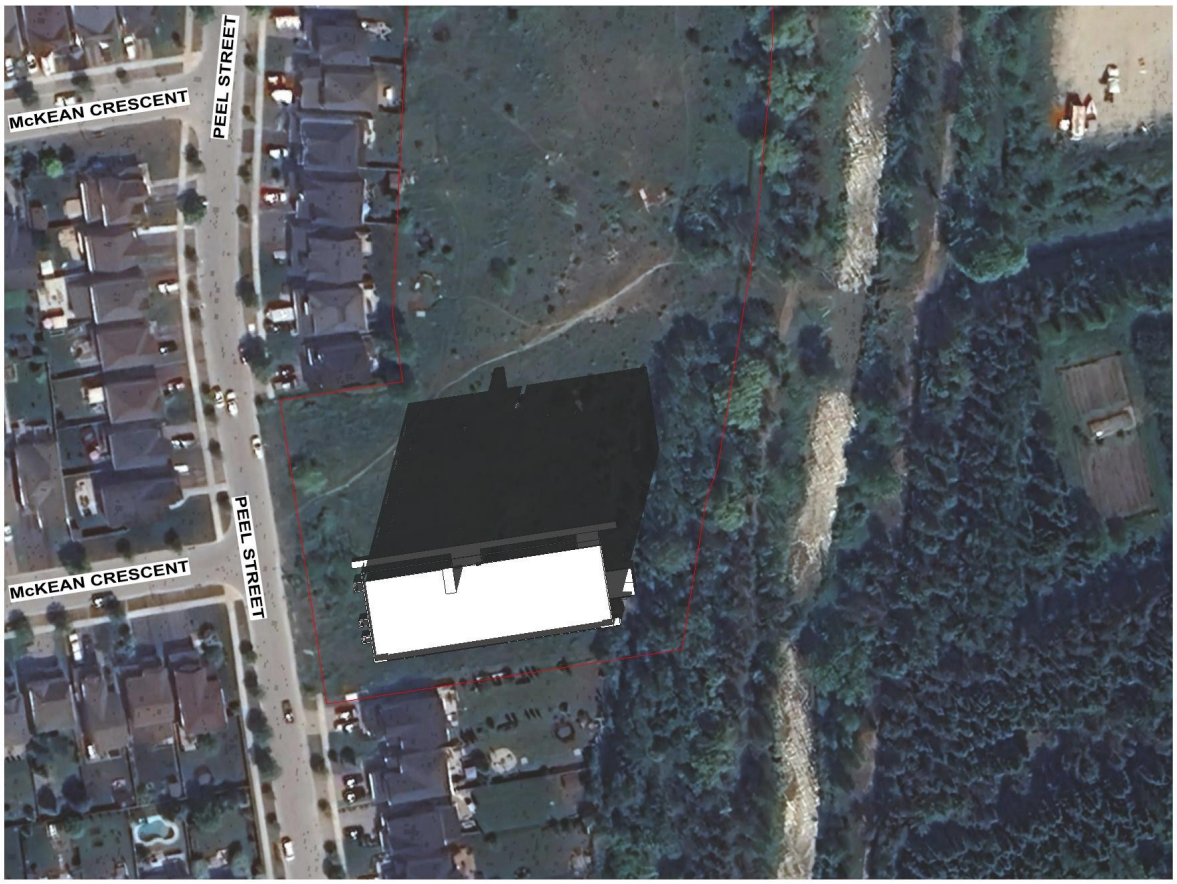

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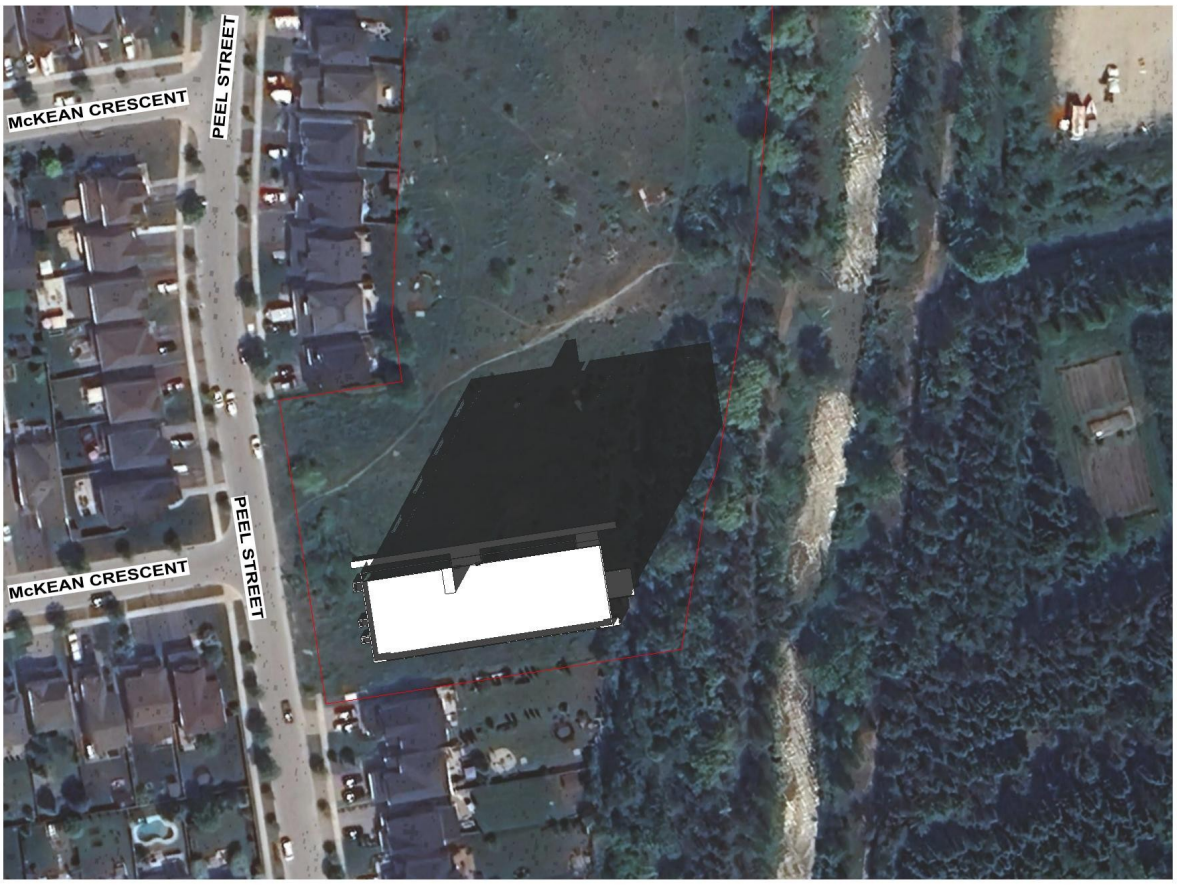

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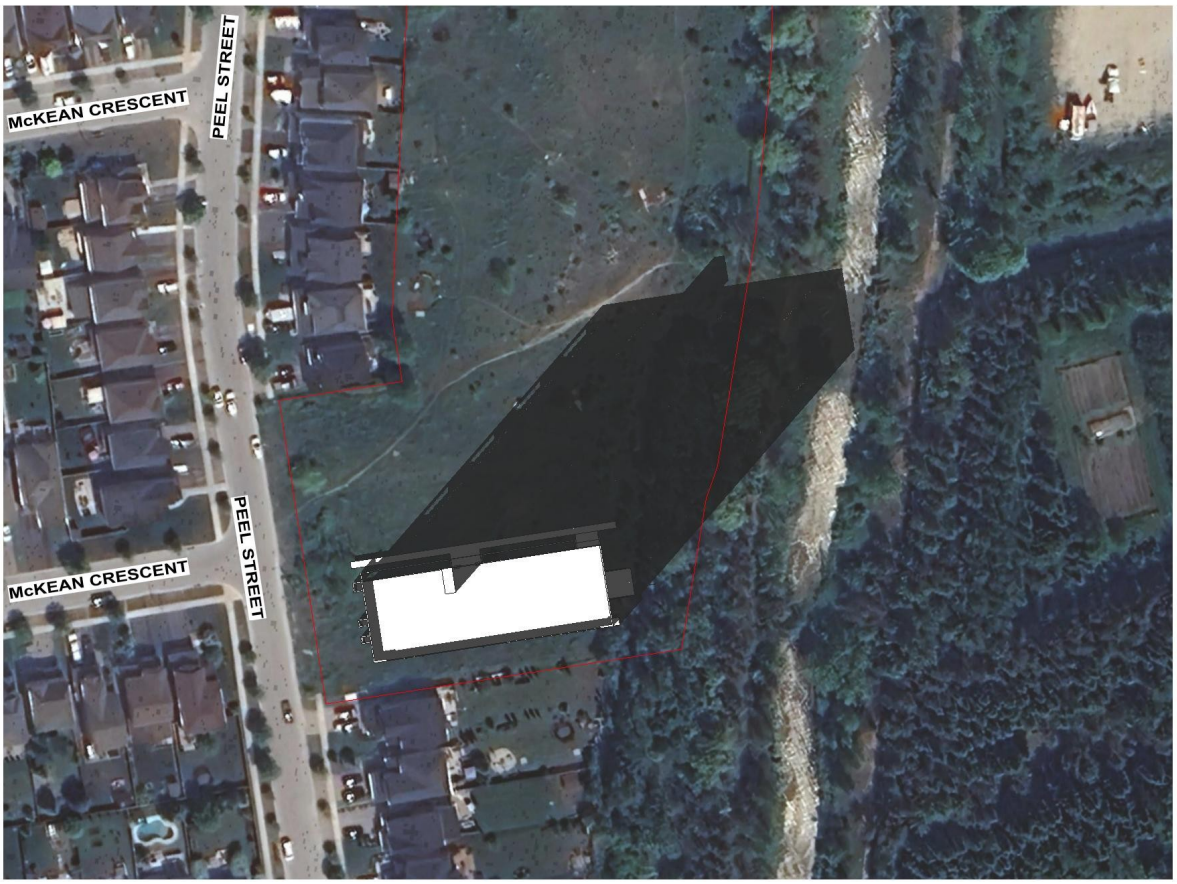

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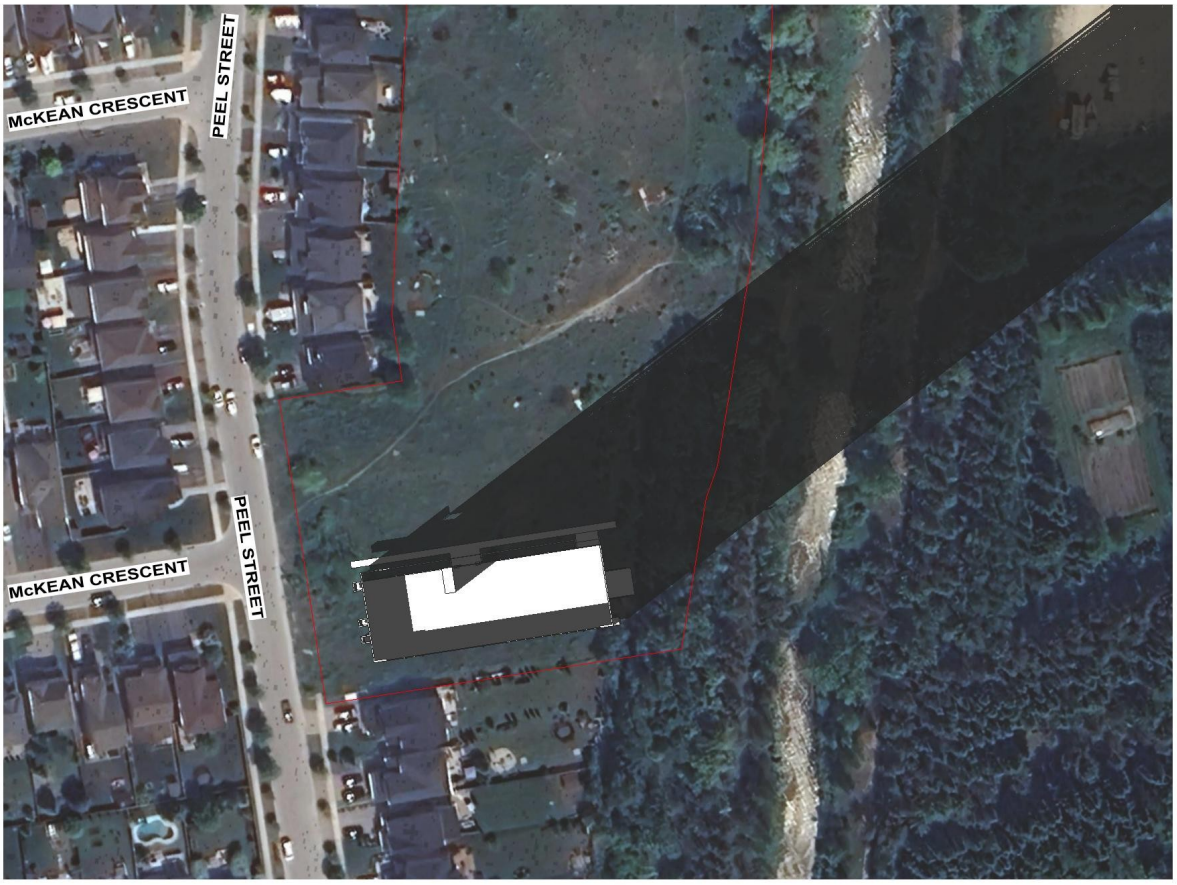

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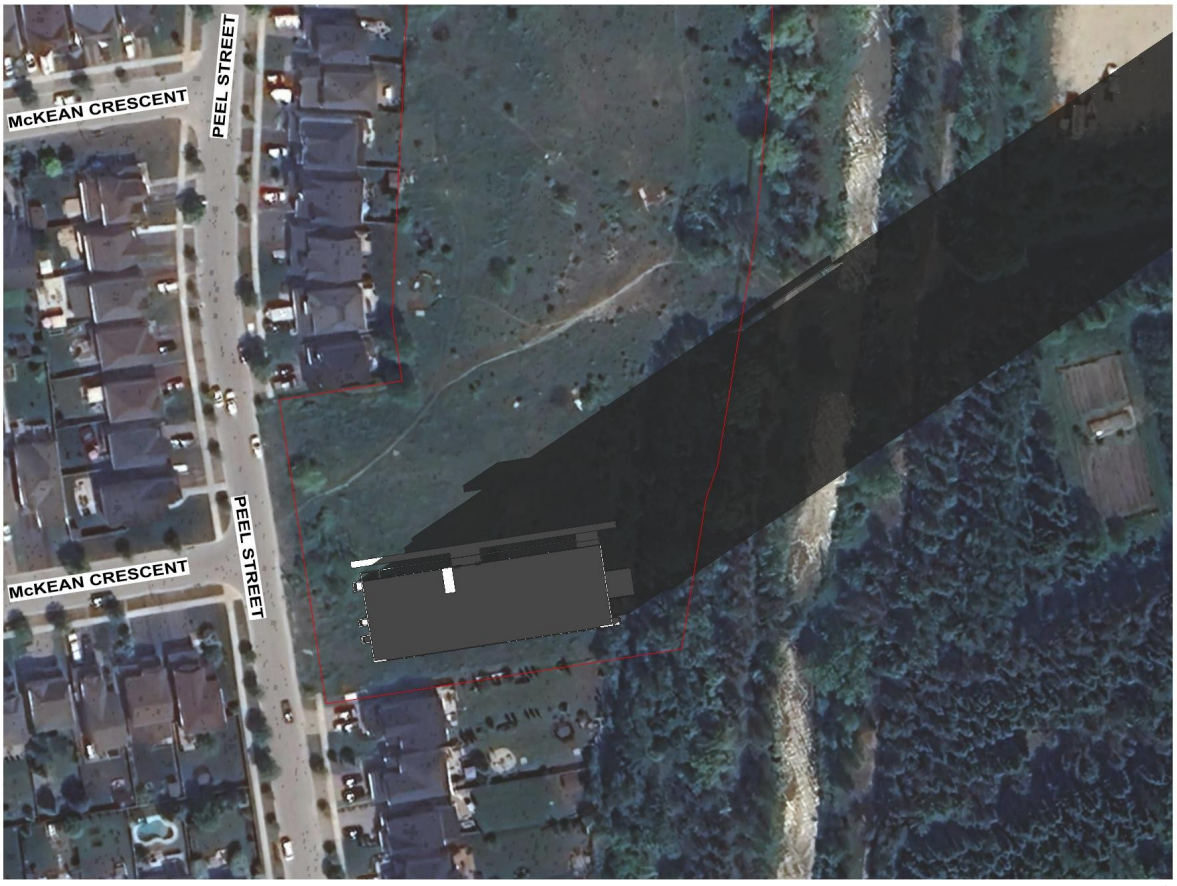

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