1942 Regent St.
Unit L
Sudbury, ON
P3E 5V5

T. 705.671-2295
TF. 800.810.1937
F. 705.671.9477
sudbury@tulloch.ca

www.TULLOCH.ca

August 5th, 2022

Planning Services Division - City of Greater Sudbury
PO BOX 5000, Station 'A',
200 Brady St.
Sudbury, ON Canada
P3A 5P3

Attention: Mauro Manzon

**Re: Bancroft Estelle 45-Degree Angular Plane Analysis**

In response to the City of Greater Sudbury Staff Report dated June 27, 2022 regarding the subject application for rezoning (751-6/21-009) which recommends limiting the height of multiple-dwellings within 50.0-metres of all property boundaries/surrounding low-density uses to 3-storeys, an angular plane analysis was undertaken to demonstrate that the proposed 5-storey height is both appropriate and compatible with adjacent single-detached dwellings.

A "45-degree angular plane" is commonly applied when new developments abut low-rise residential neighborhoods. It is a planning tool used to transition and mitigate some of the impacts typically associated with infill development projects such as those that overlook sensitive receptors (typically a single detached dwelling) and, as a result, cause privacy and shadowing issues. The angular plane test is completed by extending a 45-degree line drawn from the property line of the sensitive receptor , limiting the maximum building height wherever the plane reaches the proposed taller building (*See Figure 1*). For buildings abutting the rear lot line of low-density residential neighbourhoods the 45-degree angular plane is typically drawn from the property line at-grade. The 45-degree angular plane test is a standard tool used in land use planning to assess the compatibility of infill projects and has been accepted as evidence to demonstrate compatibility of such at what is now referred to as the Ontario Lands Tribunal (OLT). Policies regarding the use of the 45-degree angular plane have been incorporated in *Urban Design Guidelines* and *Zoning By-Law's* across most mid-large municipalities in Ontario including the City of Toronto, City of Hamilton, Town of Milton, City of Ottawa, and City of Guelph.

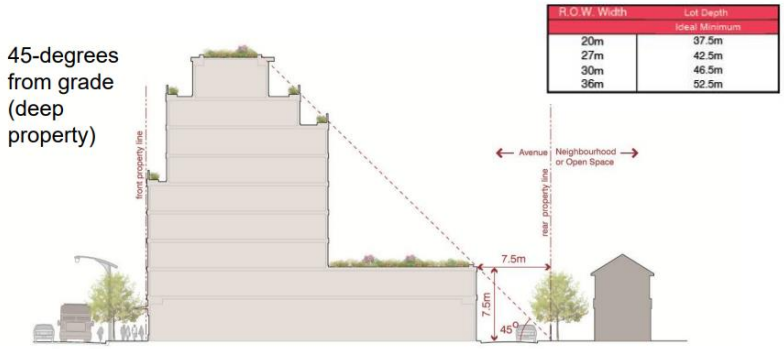



**Figure 1: Example Angular Plane from City of Toronto's Avenues and Mid-Rise Buildings Study**

Utilizing the subject property's proposed post-development topographic condition, the 45-degree angular plane test was conducted for the proposed south-westerly 5-storey 30-unit multiple dwelling with its corresponding 37.7-metre westerly and 44.6-metre southerly setback. A single detached dwelling (which would be similar to those found along Bancroft Drive and Levesque Street) was generated with a rear yard setback of 7.50-metres (the minimum rear yard setback requirements for R1-5 lots in the *City of Greater Sudbury's Zoning By-Law 2010-100z*). Vegetation (mature trees) with a height comparable to the subject lands existing conditions were included to demonstrate the buffer between built forms. The rendering's cross-sections reflect real-world conditions post development, which can be found in *Appendix A*.

Results of this analysis conclude that the proposed 5-storey 19.0-metre-tall multiple dwelling meets the 45-degree angular plane test as the proposed building sits well below the maximum allowable height at a 37.7-metre setback. Moreover, a building with a maximum height of 29.80-metres (approx. 8-9-storeys) could be established at the proposed setback of 37.7-metres and still comply with the 45-degree angular plane standard (see *Table 1).* The site's post-development grading condition was used to simulate real-world conditions, however, had the lands been flat the multiple dwelling could have had a maximum height of 38.60-metres (approx. 11-12-storeys) and still have met the 45-degree test.

**Table 1: Comparison of maximum height between proposed and flat grade**

| MAXIMUM COMPATIBLE HEIGHT USING 45-DEGREE ANGULAR PLANE TEST | MAX SW BUILDING HEIGHT AT PROPOSED GRADE | MAX HEIGHT AT GRADE (IF NO TOPOGRAPHIC CHANGE FROM LOW-TO-MEDIUM DENSITY USES) |
|---|---|---|
| North-South Alignment (proposed 44.6-metre setback) | 38.34m | 45.94m |
| West-East Alignment (proposed 37.7-metre setback) | 29.80m | 38.60m |

As a result of these findings, locating a 5-storey building with a setback of 37.7-metres to the abutting low density uses facilitates appropriate and compatible development to adjacent low-density areas given that it meets the angular plane test. The location of the multiple dwelling provides a high level of context-sensitively while integrating a mix of built forms into the existing lower density neighborhood.

Respectfully submitted,

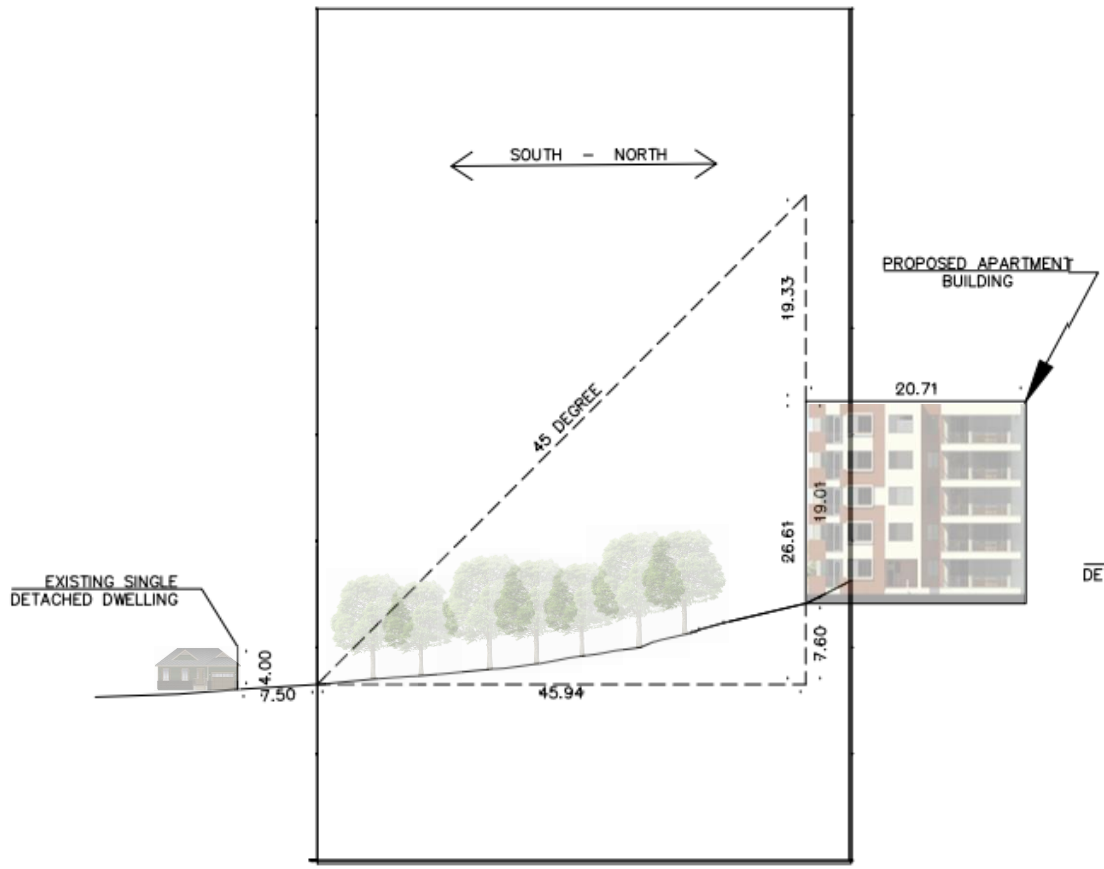
Kevin Jarus, M.Pl., RPP.
Senior Planner | Project Manager

# APPENDIX A

ANGULAR PLANE ANALYSIS

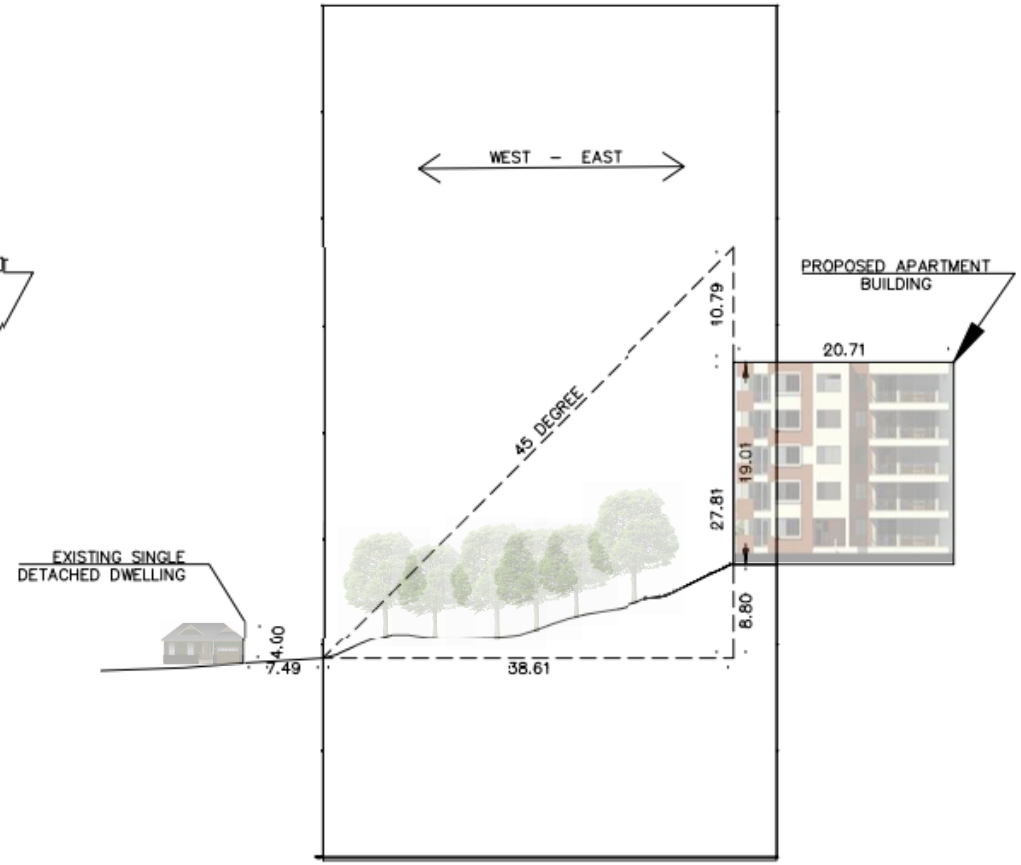
PROPOSED SOUTH-WEST 5-STOREY
30-UNIT APARTMENT BUILDING

SOUTH-NORTH ALIGNMENT
EXISTING DWELLINGS TO THE SOUTH




PROPOSED SOUTH-WEST 5-STOREY
30-UNIT APARTMENT BUILDING

WEST-EAST ALIGNMENT
EXISTING DWELLINGS TO THE WEST




| REVISIONS | | | CAUTION | | | DATE: August, 2022 | BANCROFT DRIVE & ESTELLE STREET ZONING CONCEPT | TULLOCH | SCALE: 1:500 |
|---|---|---|---|---|---|---|---|---|---|
| DATE | DETAILS | BY | | | | DRAWN: VS & AA | | | CONTRACT NO.: |
| | | | | | | DESIGNED: | | | CAD/FILE NUMBER: 191564 |
| | | | | | | CHECKED: | | | |
| | | | | | | ENGINEER: | | | PAGE NO.: |
| | | | | | | APPROVED: | CROSS SECTIONS | | |