

PROPOSED RESIDENTIAL
DEVELOPMENT
55 EAGLE STREET
NEWMARKET, ONTARIO

SHADOW IMPACT STUDY
February 2011

Prepared for:
Millford Development Ltd.
P.O. Box 215
Newmarket, Ontario

Prepared by:
PDA Architects
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February 25, 2011

Mrs. Enza Orsi
MILLFORD DEVELOPMENT LIMITED
PO Box 215
Newmarket ON

Dear Mrs. Orsi:

Re: PROPOSED RESIDENTIAL DEVELOPMENT
55 Eagle Street, Newmarket ON

SHADOW IMPACT STUDY

As requested, we have prepared the attached Shadow Impact Study of the proposed Residential Development of this property.

The study is based on a digital analysis of the projected shadow impact of the proposed buildings on the surrounding area. A digital model of the topography of the site and surrounding area is combined with a digital model of the proposed development to project the impact of the shadows generated by the proposed development.

The analysis includes an evaluation of the shadows in Spring (March 21), Summer (June 21), Fall (September 21) and Winter (December 21). Four times of day were evaluated for each period, based on the criteria requested by the Town of Newmarket.

Our analysis has concluded that the proposed development will have minimal impact on the adjacent uses. In the Spring, Summer and Fall periods no shadows are projected from the proposed development on to adjacent residential uses. In the winter, a transitory shadow impact will affect the rear yards of some of the houses on Lewis Street. The impact is considered minimal as a result of the short length of time the shadow will affect each rear yard and the reduction in use of this area as a result of winter conditions.

The study also demonstrates that no shadows are projected on to the property of 45 Eagle Street from the proposed buildings.

The attached report contains the analysis and evaluation of the projected shadow impact.

Yours truly,
PDA Architects



John de Valence
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jdev/w/2524



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1.0 SUMMARY

1.1 Purpose of Report

PDA Architects has been retained by Millford Development Inc. to produce a Shadow Impact Study for the proposed development of 55 Eagle Street. The proposed development is the subject of a Development Application for an Official Plan Amendment and Zoning Bylaw Amendment.

The purpose of this report is to determine the shadow impact of the proposed development on the adjacent residential and commercial properties. Furthermore, this report will also review the impact of the proposed development on the adjacent valley lands, which are part of the subject property.

Analysis of the projected shadow impact has been carried out using a computer-generated 3-dimensional digital model of the proposed development and its surroundings.

1.2 Description of Proposed Development

The subject property is municipally known as 55 Eagle Street, Newmarket, Ontario. The total land area of the subject property, including the northern valley lands, is approximately 50 922 square metres (12.58 acres). The net development area is 19 742 square metres (4.87 acres). The subject site is located approximately 250 metres east of Yonge Street.

The proposed development includes a 12 storey residential building on the western portion of the site and 38 townhouses on the eastern portion of the site.

The proposed height of the 12 storey residential building including the mechanical penthouse is 40 metres. The proposed height of the townhouses is a wall height of 6 metres and an overall height including the sloping roof of 9.6 metres.

1.3 Description of Existing Adjacent Land Uses (See Figure No.1)

To the west of the subject property is the Yonge-Davis Provincial Urban Growth Centre, as designated by the Town of Newmarket Official Plan.



FIGURE No.1: EXISTING ADJACENT LAND USES



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Commercial uses west of the subject property include an Esso Gas Station and McDonald's Restaurant and drive-thru. Located directly adjacent to the subject property is the parking area for the McDonald's restaurant. Northwest of the subject property is a Puck'N Wings Restaurant and the western extent of the valley lands. Farther north of this restaurant is another commercial property on which a Pickle Barrel restaurant is located.

North of the proposed development area, on the subject property, are vegetated valley lands through which the Western Creek runs. Located on the north side of these valley lands, beyond the property boundary are detached residential homes fronting on Lewis Drive to the north. Additional detached residential homes are situated to the northeast of the subject property, where Avenue Road extends west towards the valley lands.

Directly east of the proposed development area is a Law Office (105 Eagle Street) extending north along the east boundary of the subject site.

In the southeast corner of the subject property is an existing Tire and Auto Centre (95 Eagle Street).

The southwest corner of the subject property neighbors an Orthodontist Office (29 Eagle Street). Farther east, partially surrounded by the proposed development area of the subject property, is a Chiropractic Office/ Detached Residence (45 Eagle Street).

1.4 Summary of Shadow Impact of Proposed Development

We have evaluated the projected shadow impact of the proposed development during 3 different observation periods:

1.4.1 Summer: June 21st (See Figure No.2)

As a result of the proposed development, at this time of year:

- There is no significant shadow impact on adjacent residential uses to the north.
- There is no significant shadow impact on adjacent commercial uses to the east or west.
- There is no significant shadow impact on the adjacent valley lands on the subject property.
- There is no shadow impact on 45 Eagle Street.
- There is no shadow impact on the adjacent uses south of Eagle Street.

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1.4.2 Spring/Fall: March 21st & September 21st (See Figure No.3)

As a result of the proposed development, at this time of year:

- There is no significant shadow impact on adjacent residential uses to the north.
- There is no significant shadow impact on adjacent commercial uses to the east or west.
- There is no significant shadow impact on the adjacent valley lands on the subject property.
- There is no shadow impact on 45 Eagle Street.
- There is no shadow impact on the adjacent uses south of Eagle Street.

1.4.3 Winter: December 21st (See Figure No.4)

As a result of the proposed development, at this time of year:

- There is minimal shadow impact on adjacent residential uses to the north.
- There is minimal shadow impact on adjacent commercial uses to the east or west.
- There is minimal shadow impact on the adjacent valley lands on the subject property.
- There is no shadow impact on 45 Eagle Street.
- There is no shadow impact on the adjacent uses south of Eagle Street.



FIGURE No.2: SHADOW IMPACT PLAN- JUNE 21 (EDT)



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FIGURE No.3: SHADOW IMPACT PLAN- MARCH 21 & SEPTEMBER 21 (EDT)



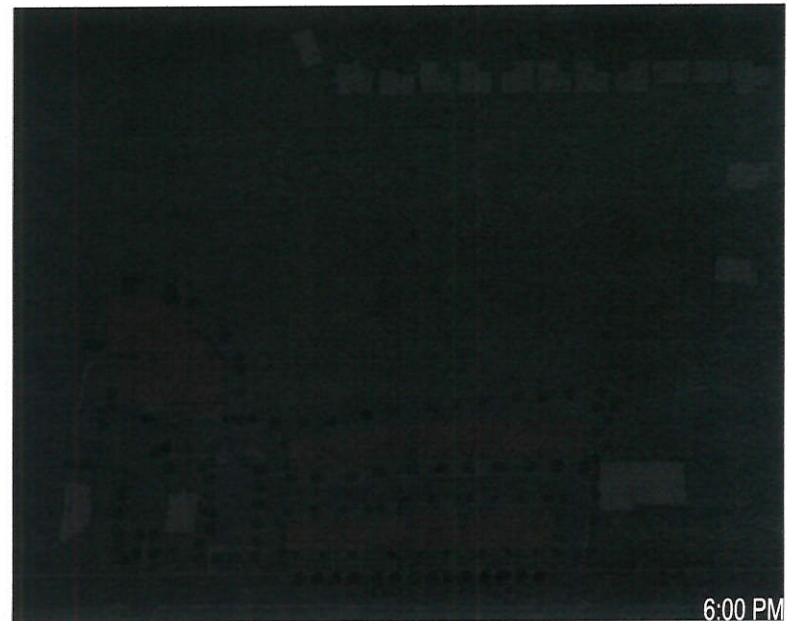
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FIGURE No.4: SHADOW IMPACT PLAN- DECEMBER 21 (EST)

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2.0 METHODOLOGY

PDA Architects generated a 3-dimensional digital model of the proposed development in order to determine the impact of the projected shadows on the surrounding uses. The model was comprised of digital topography information for the subject property and adjacent properties, including the proposed buildings and the existing neighbouring buildings. As the movement of the sun is modeled across the site from east to west, the resulting patterns of sunlight and shadow are illustrated and their impact on the surrounding properties was assessed.

Three observation periods of shadow simulation were recorded through time animation. The digital model was programmed to display the projected shadows of the proposed buildings at various times of day for March 21st and September 21st (spring equinox and fall equinox respectively), and each of June 21st (summer solstice- the longest day and shortest night of the year) and December 21st (winter solstice- the shortest day and longest night of the year). The shadows were projected for 10:00am, 2:00pm, 4:00pm, and 6:00pm for spring/fall, and winter and 10:00am, 4:00pm, 6:00pm, and 7:00pm for summer. The times of day used in the simulation were at the request of the Town of Newmarket Planning Department.

The results describe the effects that the proposed buildings located on the subject property will have on the existing adjacent commercial and residential properties. They also describe how these shadows will impact the valley lands which are part of the subject property.

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3.0 SHADOW IMPACT ANALYSIS

The following is an analysis of the impact of shadows on adjacent properties as cast by the proposed development for specific dates and times of the year.

3.1 Summer: June 21st

3.1.1 10:00am (See Figure No.5)

At this observation period, the shadow projected from the proposed 12 storey building falls slightly past the west boundary of the site into the side yard of the adjacent commercial property. It does not extend to any adjacent buildings. Shadows from the proposed townhouses are contained within the subject site.

3.1.2 4:00pm (See Figure No.6)

The shadow projected from the proposed 12 storey building falls within the subject site and the southernmost part of the valley lands. It does not extend to any adjacent buildings on any adjacent properties. Shadows from the proposed townhouses are also contained within the subject site.

3.1.3 6:00pm (See Figure No.7)

At this observation period, no neighboring commercial or residential properties are affected by the projected shadows. The shadows projected from the townhouses extend south beyond the property boundary, but do not affect the homes situated on the south side of Eagle Street.

3.1.4 7:00pm (See Figure No.8)

During the early evening, an elongated shadow is projected from the proposed 12 storey building towards the proposed townhouses on the eastern part of the site, extending into Eagle Street. The shadow projected from the proposed townhouses also extends into Eagle Street. However, due to the nearness of the sunset at this time, the impact of these shadows on neighboring residential properties is considered minimal.





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FIGURE No.5: SHADOW IMPACT STUDY- JUNE 21, 10:00 AM EDT

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FIGURE No.6: SHADOW IMPACT STUDY- JUNE 21, 4:00 PM EDT

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0 2 5 10 20 50



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FIGURE No.7: SHADOW IMPACT STUDY- JUNE 21, 6:00 PM EDT

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0 2 5 10 20 50



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FIGURE No.8: SHADOW IMPACT STUDY- JUNE 21, 7:00 PM EDT

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55 Eagle Street, Newmarket ON

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3.2 Spring/Fall: March 21st & September 21st

3.2.1 10:00am (See Figure No.9)

At this observation period, the shadow projected from the proposed 12 storey building falls upon the side yard of the adjacent commercial property to the west, on Parcel A. This shadow projection does not extend to any adjacent buildings. There is a minimal impact on the western valley lands. Shadows projected from the proposed townhouses are contained within the subject property at this time of day.

3.2.2 2:00pm (See Figure No.10)

In the early afternoon, all shadows projected from the proposed development are contained within the subject property. There is a minimal impact on the valley lands.

3.2.3 4:00pm (See Figure No.11)

The shadows projected from the proposed development fall within the subject site and extend across the centre of the valley lands. These projections do not extend near to any adjacent buildings on any adjacent properties. There is a minimal impact on the valley lands.

3.2.4 6:00pm (See Figure No.12)

At this observation period, sunset is imminent. As a result, the model does not project shadows generated independently by the proposed buildings.

Therefore, the impact of the projected shadows from the proposed development is not considered significant.



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FIGURE No.9: SHADOW IMPACT STUDY- MARCH & SEPTEMBER 21, 10:00 AM EDT

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FIGURE No.10: SHADOW IMPACT STUDY- MARCH & SEPTEMBER 21, 2:00 PM EDT





FIGURE No.11: SHADOW IMPACT STUDY- MARCH & SEPTEMBER 21, 4:00 PM EDT



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FIGURE No.12: SHADOW IMPACT STUDY- MARCH & SEPTEMBER 21, 6:00 PM EDT

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55 Eagle Street, Newmarket ON

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3.3 Winter: December 21st

3.3.1 10:00am (See Figure No.13)

The morning winter shadows projected by the proposed 12 storey building stretch past the northwest boundary of the subject property towards the rear of the Pickle Barrel restaurant commercial property located on Yonge Street. This is the only property affected by the shadows during this observation period. The impact is considered minimal because of the short length of the shadow and the short elapsed time before the shadow passes on, as well as the winter season reducing outdoor activity. The balance of the projected shadows fall within the subject property.

3.3.2 2:00pm (See Figure No.14)

An elongated shadow projected by the proposed 12 storey building extends northeast partially across the valley lands, with transitory shading affecting a few rear yards of the southernmost homes on Lewis Drive for approximately one hour at a time sequentially. The impact is considered minimal because of the short elapsed time before the shadow passes on, as well as the winter season reducing outdoor activity. Shadows projected from the proposed townhouses are contained within the subject property at this time of day.

3.3.3 4:00pm (See Figure No.15)

At this observation period, sunset is imminent. As a result, the model does not project shadows generated independently by the proposed buildings.

Therefore, the impact of the projected shadows from the proposed development is not considered significant.

3.3.4 6:00pm (See Figure No.16)

At this observation period, the sun has fully set, and therefore no shadow is projected from the proposed development.



FIGURE No.13: SHADOW IMPACT STUDY- DECEMBER 21, 10:00 AM EST



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 DATE: 02 16 2011

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FIGURE No.14: SHADOW IMPACT STUDY- DECEMBER 21, 2:00 PM EST



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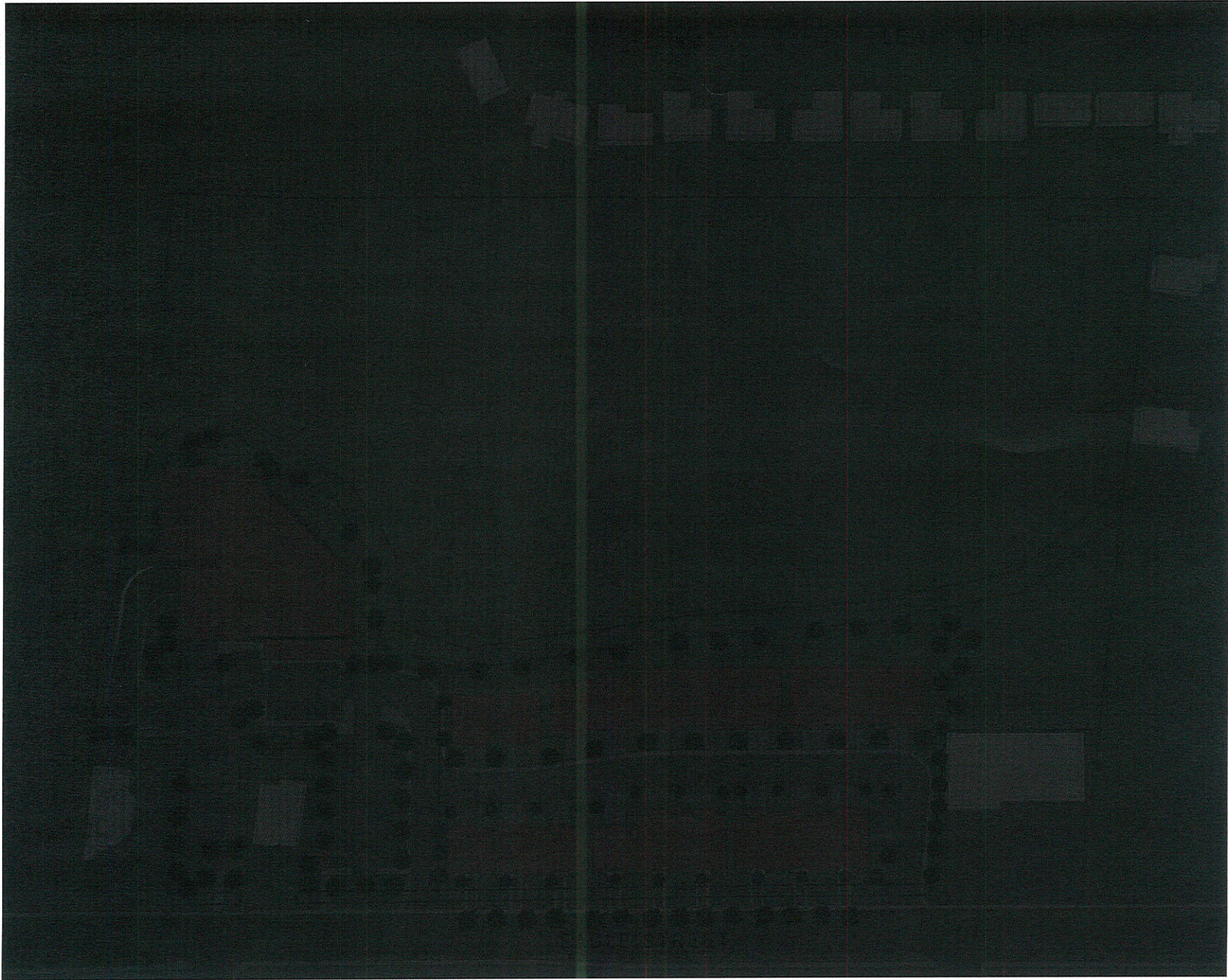
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FIGURE No.15: SHADOW IMPACT STUDY- DECEMBER 21, 4:00 PM EST

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FIGURE No.16: SHADOW IMPACT STUDY- DECEMBER 21, 6:00 PM EST

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PROPOSED RESIDENTIAL DEVELOPMENT

55 Eagle Street, Newmarket ON

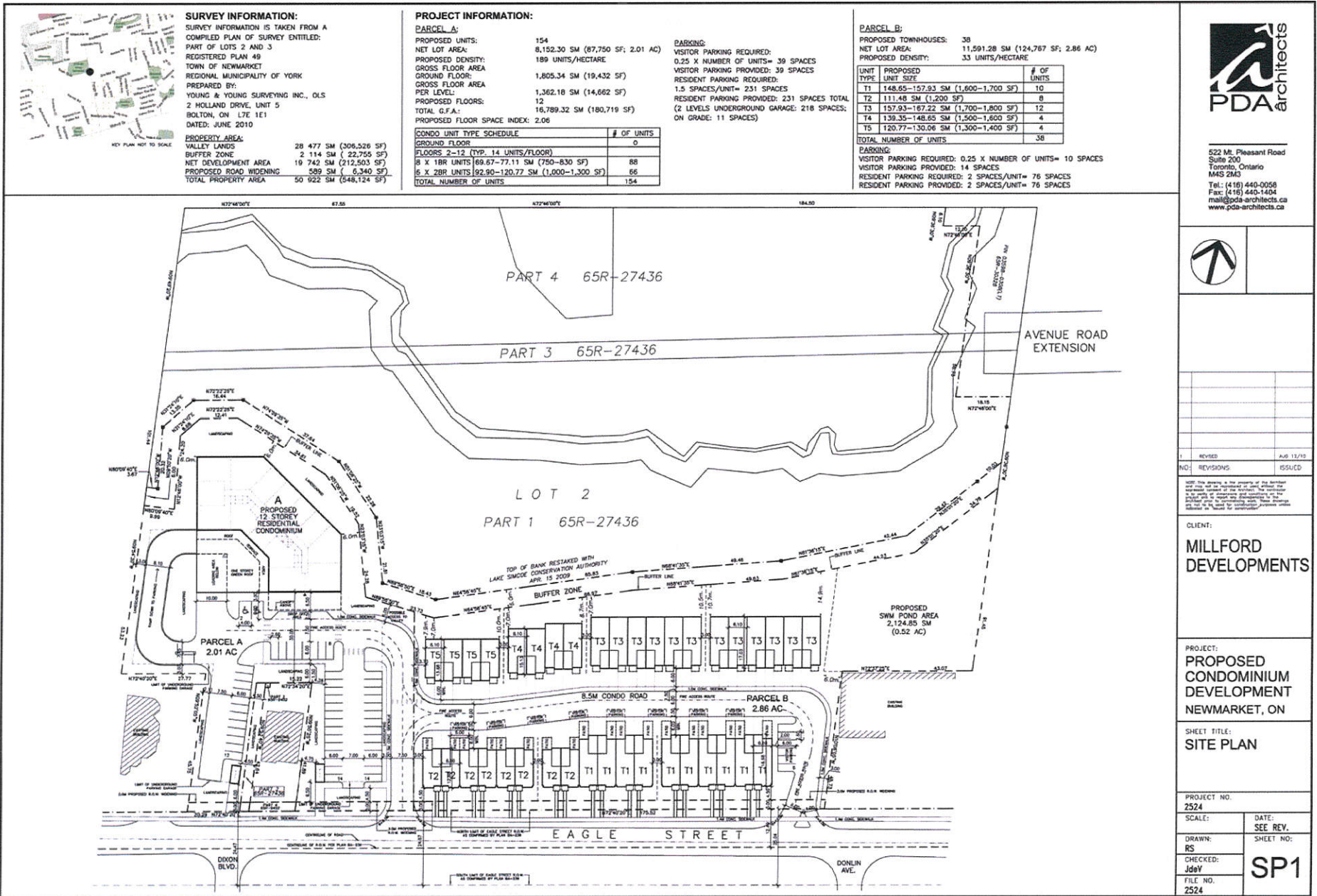
SHADOW IMPACT STUDY

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4.0 APPENDIX "A" - PROPOSED SITE PLAN (Figure No.17)

The attached Site Plan illustrates the proposed residential development of 55 Eagle Street, Newmarket, Ontario.





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| NO. | REVISED | DATE |
|-----|-----------|-----------|
| 1 | REVISED | AUG 12/10 |
| NO. | REVISIONS | ISSUED |

CLIENT:
MILLFORD DEVELOPMENTS

PROJECT:
**PROPOSED CONDOMINIUM DEVELOPMENT
 NEWMARKET, ON**

SHEET TITLE:
SITE PLAN

| | |
|---------------------|-------------------|
| PROJECT NO: 2524 | DATE: SEE REV. |
| SCALE: | SHEET NO: |
| DRAWN: RS | SP1 |
| CHECKED: Jdey | |
| FILE NO: 2524 | |

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FIGURE No.17: PROPOSED SITE PLAN

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