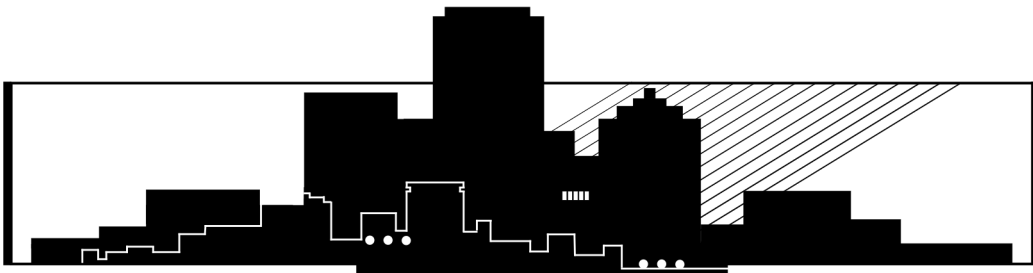


Hybrid Committee of
Adjustment Meeting
October 22, 2025 1:00 pm



AGENDA

COMMITTEE OF ADJUSTMENT AGENDA

Meeting 19

Meeting Date: October 22, 2025

TIME OF MEETING:	1:00 P.M.
PLACE OF MEETING:	Council Chambers and Zoom

1. DECLARATION OF INTEREST:

2. ADDENDUMS:

3. REQUEST FOR DEFERRALS:

4. CONSENT ITEMS:

HEARING NO.	TIME	FILE NO. 540-02-	APPLICATION ADDRESS
4.1)	1:00 P.M.	A-042/25	Re: 3022 South Dr., Burlington Ward 4 Pages 4-48
4.2)	1:00 P.M.	A-059/25	Re: 2197 Turnberry Rd., Burlington Ward 6 Pages 49-84

5. REGULAR ITEMS:

HEARING NO.	TIME	FILE NO. 540-02-	APPLICATION ADDRESS
5.11)	1:00 P.M.	A-015/25	Re: 4903 Thomas Alton Blvd., Burlington Ward 6 Pages 85-346

6. OTHER BUSINESS:

6.1 Correspondence

6.2 Items for Discussion

6.3 Date of Next Meeting

6.4 Motion to Approve Minutes of the previous Committee of Adjustment Meeting:

7. ADJOURNMENT:

COMMITTEE OF ADJUSTMENT

Meeting 19

AGENDA

OCTOBER 22, 2025

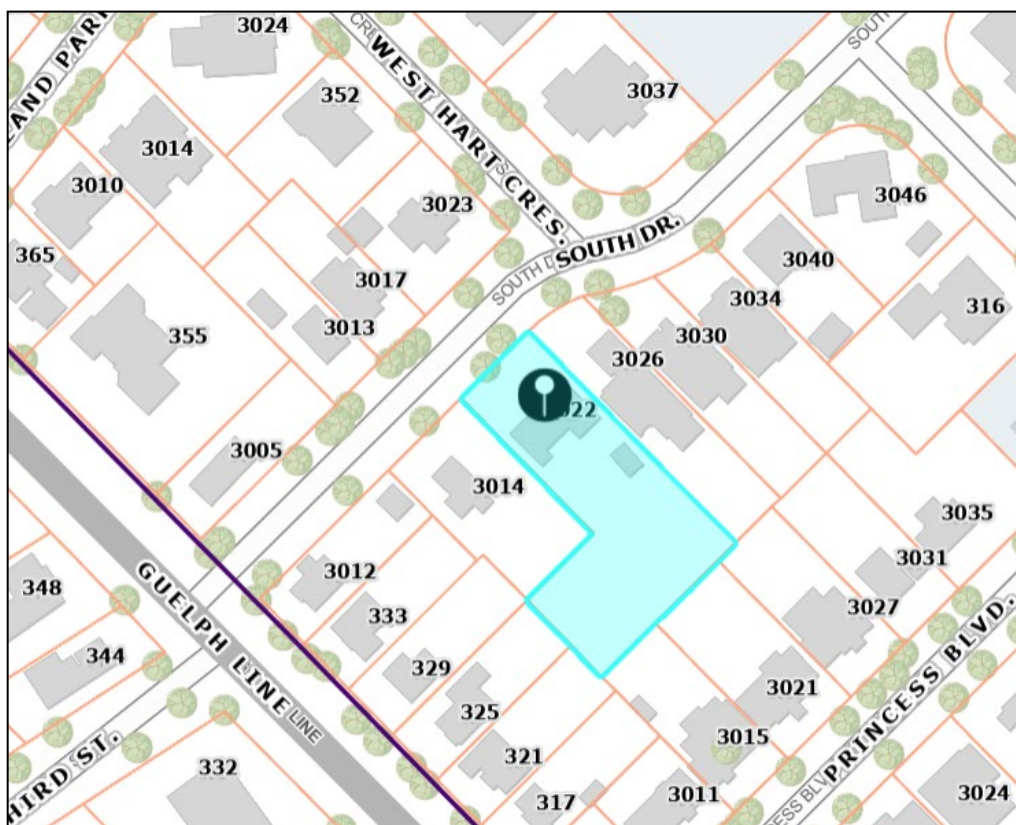
HEARING NO. 4.1 - 1:00 P.M.

File
540-02-A-042/25

- APPLICANT: Jillian Mary Edmunds and Michael Andrew Edmunds,
- PROPERTY: 3022 South Drive,
PLAN 218 LOT 86 PT LOTS 83,85
City of Burlington - Regional Municipality of Halton.
- PROPOSAL: The applicant is proposing the construction of a new two-storey dwelling with attached garage, rear yard uncovered and covered decks, pool and circular driveway.
- VARIANCES:
1. To permit a dwelling depth of 21.8 m instead of the maximum permitted 18 m measured from building wall closest to front lot line to the building wall closest to the rear lot line for a proposed two-storey addition.
 2. To permit a proposed attached garage to project 0.4 m beyond the longest portion of a wall facing a street whereas Zoning By-Law 2020 does not permit an attached garage to project beyond the longest portion of a wall facing a street containing residential floor area on the first storey of a dwelling.

COMMITTEE OF ADJUSTMENT MINOR VARIANCE STAFF REPORTS

Owner(s): Jillian Mary Edmund and Michael Andrew Edmunds
 Address: 3022 South Dr. Burlington
 File No. **A-042/25**
 Ward: 4



Staff Comments

Committee of Adjustment

There are no previous land division or minor variance applications on record for this property.

Date: September 3, 2025

Prepared By: E. Shacklette

Zoning

1) Background information:

The subject property is zoned R1.2, Low Density Residential, under Zoning By-Law 2020, as amended, and is located in the designated area for lot coverage and floor area

**COMMITTEE OF ADJUSTMENT
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ratio. The property is also located in the Roseland Character Area. The R1.2 zone requires, among other things, the following:

4.6 DWELLING DEPTH

- (a) Maximum depth of a dwelling shall be 18m measured from building wall closest to front lot line to building wall closest to rear lot line.

4.8 GARAGES

- b) An attached garage with a garage door facing a street is not permitted to project beyond the longest portion of a wall facing a street and containing residential floor area on the first storey of a dwelling.

2) Proposal:

The applicant is proposing the construction of a new two-storey dwelling with attached garage, rear yard uncovered and covered decks, pool and circular driveway. Variances are required to permit increased dwelling depth and a garage projection.

3) Variances required:

1. To permit a dwelling depth of 21.8 m instead of the maximum permitted 18 m measured from building wall closest to front lot line to the building wall closest to the rear lot line for a proposed two-storey addition.
2. To permit a proposed attached garage to project 0.4 m beyond the longest portion of a wall facing a street whereas Zoning By-Law 2020 does not permit an attached garage to project beyond the longest portion of a wall facing a street containing residential floor area on the first storey of a dwelling.

4) Notes and conditions:

Condition:

1. The applicant shall apply for a Pre-Building Approval Application.

Notes:

1. Variances have been identified based on the plans submitted for zoning review. The applicant has been advised that height is required to be confirmed from fixed grade by an Ontario Land Surveyor. If additional

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
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variances are identified when a Pre-Building Permit Application is made, they will be the responsibility of the applicant to obtain.

2. The variances identified are based on the plans provided. Any changes to the plans resulting in additional variances will be the responsibility of the applicant to obtain.
3. The application has been reviewed under Section 45(1) of the Planning Act.

Date: August 28, 2025

Prepared By: S. Boich

Site Planning

The owner of 3022 South Drive has applied for minor variances from the Zoning Bylaw to facilitate construction of a new two-storey home. Requested are a longer dwelling depth and a garage that projects slightly forward of the front wall.

The subject property, municipally known as 3022 South Drive, is comprised of a large L-shaped lot with an area of 2,217.54 m² and a lot width of 22.80 metres. Existing land uses on this site include a two-storey dwelling with attached garage and an accessory swimming pool.

The subject lands are located east of Guelph Line and south of New Street in the Roseland neighbourhood. South Drive is narrow and lined with large, mature trees which help contribute to the intimate feel of the neighbourhood. The streets in Roseland are curved and do not form a neat grid pattern and as such, there is a wide mix of lot configurations. Front yards are generally well manicured and include meticulously landscaped gardens. The housing stock consists of a mix of single, one-and-a-half and two-storey detached dwellings in a variety of architectural styles. Roseland has experienced considerable redevelopment in recent years and several of the custom dwellings on South Drive incorporate unique design elements and finishes.

A site visit was conducted on Friday, September 19th, 2025. Existing on-site conditions are summarized in the site photos included as Attachment No. 1 (Site Photos).

1) Official Plan Designation:

Does the proposed minor variance from the Zoning By-law maintain the general intent and purpose of the Official Plan?

Yes

Regional Official Plan

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The subject lands are identified within the Urban Area as per Map 1 of the Regional Official Plan (Office Consolidation May 16, 2024). Section 72 of the ROP states that the goal of the Urban Area and the Regional Urban Structure is “to manage growth in a manner that fosters complete communities, enhances mobility across Halton, addresses climate change, and improves housing affordability, sustainability and economic prosperity.” Since the Plan is intended to provide a long-term vision for Halton Region, construction of detached dwellings on existing lots in the Urban Area is not specifically addressed instead, the ROP defers to local Official Plans and Zoning By-laws.

City of Burlington staff have no concerns with the proposal from a Regional Official Plan perspective.

City of Burlington Official Plan 1997 & 2020

On April 2, 2024 the Ontario Land Tribunal issued a decision granting the City’s motion for partial approval of the *Burlington Official Plan, 2020* (BOP 2020). This decision brought the “Residential Neighbourhood Areas” policies under “Chapter 8 – Land Use – Urban Area” into force. These policies supersede the “Residential Areas” policies of the *Burlington Official Plan, 1997* (BOP 1997). However, since other chapters of BOP 2020 relevant to this application remain under appeal, such as “Chapter 7 – Design Excellence”, the proposal has been reviewed against a combination of in-force policies under both Official Plans.

Additionally, Official Plan Amendment No. 3 further revised certain elements of the Burlington Official Plan, 2020 to implement the findings of the *Official Plan Amendment to Increase Housing Options* project. The purpose of this amendment was to support ground-oriented intensification as well as to update the policies related to the Residential Neighbourhood Areas designations. OPA 3 introduced three modified land use categories based on built form; Low-Rise Neighbourhoods I, Low-Rise Neighbourhoods II and High-Rise Neighbourhoods. As it pertains to this application, Section 8.3.3 of BOP, 2020 was renamed from Residential – Low Density to Low-Rise Neighbourhoods I. This designation includes areas with low-rise, ground-oriented homes and supports gradual, compatible infill development while maintaining the existing low-rise character and allowing for more diverse housing options. The proposed single-detached dwelling on the subject lands is a permitted use under the new Low-Rise Neighbourhoods I designation. The general intent and purpose of the BOP, 2020 and OPA 3 is to encourage new development within existing areas while recognizing that the form must be balanced with other considerations like compatibility and integration into residential neighbourhoods, as they continue to evolve over time.

The Design Guidelines Policies under Part II Section 6.5 of Burlington’s OP 1997, which remain in effect, indicate that new development should be compatible and integrate well with the surrounding area including “the density, form, bulk, height, setbacks, spacing and materials...” Compatibility is further defined in OP 1997 as, “development or redevelopment that is capable of co-existing in harmony with, and that will not have an undue physical (including form) or functional adverse impact on, existing or proposed

**COMMITTEE OF ADJUSTMENT
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development in the area or pose an unacceptable risk to environmental and/or human health. Compatibility should be evaluated in accordance with measurable/objective standards where they exist, based on criteria such as aesthetics, noise, vibration, dust, odours, traffic, safety and sun-shadowing, and the potential for serious adverse health impact on humans or animals.”

The design of the proposed dwelling integrates the second storey into a sloping roofline which mitigates the scale and massing (see below image). The gables incorporated into the front façade are reminiscent of those found at 3013 and 3014 South Drive as well as the newly reconstructed dwelling at 352 West Hart Crescent. The two shed dormers facing the street also fit well with the surrounding area as there is a similar style in the dwelling at 3023 South Drive. The wide covered porch includes well-balanced columns and a pronounced entry.



Proposed Front Elevation

Source: Willmott & Strickland Inc

The attached garage of the proposed dwelling incorporates two different styles of garage doors one of which is on a recessed building wall. This variation adds to the visual interest and helps break up the overall massing. Although a technical variance is required for the garage projection, the garage is not actually a prominent design feature of the new dwelling and does not dominate the public facing streetscape. The overall form, bulk and setbacks of the building in conjunction with the landscaping and mature trees preserved in the front yard make the new house compatible with the surrounding neighbourhood.

In the rear yard, an unenclosed cabana is proposed, facing the pool and connected to the main dwelling with an elongated breezeway. This creates a courtyard feel and helps shield the proposed breakfast nook (which prompts the variance for dwelling depth as explained in next section). The cabana, breezeway and breakfast nook are one-storey tall and do not contribute to any overlook, sun-shadowing or imposing massing onto the neighbouring properties. An existing and well-established hedgerow along this side lot line further reduces any potential impacts and adds privacy.

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
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Overall, Staff are of the opinion that the proposed variances meet the general intent and purpose of the Official Plans.

2) Zoning By-law Designation:

Yes

Does the proposed minor variance from the Zoning By-law maintain the general intent and purpose of the Zoning By-law?

The subject property is currently zoned R1.2, or Low-Density Residential, under *Zoning Bylaw 2020*, as amended. It is in the Roseland Character Area, and continues to be subject to some special zoning provisions, despite the Official Plan no longer including special policies for Roseland. The property is in a designated area for lot coverage.

Burlington's Zoning By-law 2020 established maximum dwelling depth restrictions in 2016 with the intent to control the size and massing of buildings on a property. Other regulations related to architectural design were also introduced including limitations on how far garages could project to discourage "snout" style suburban homes.

Under Part 2 Section 4.8 (b) of the by-law, an attached garage with a garage door facing a street is not permitted to project beyond the longest portion of a wall facing a street and containing residential floor area on the first storey of a dwelling. In this instance, the longest wall facing a street is the wall of the front entry which is sheltered by a covered porch and flanked by the wall of the office on one side and the garage on the other. The office and the garage bay adjacent to the porch are equal in width and both project from the front wall by 0.4 metres. Staff consider the projection of one garage bay 0.4m beyond the front wall to be a minor request and acknowledge that the design of the garage does not visually dominate the existing streetscape.

With respect to the dwelling depth, staff recognize that given the size of the property and the sloped roof building design, the proposed increase will not result in excessive scale or massing. The proposed dwelling depth is 21.18 metres measured between the building wall closest to the front lot line and the building wall closest to the rear lot line whereas the maximum permitted under the by-law is 18 metres. 3.82 metres of this total dwelling depth is comprised of a single-storey breakfast nook at the rear. The nook is positioned along the central axis of the dwelling and is 4.52 metres wide. As mentioned in the section above, it is sheltered from the neighbouring dwelling by a row of tall evergreens. Given the overall lot depth of 71.41 metres, proportionately this increase will not be intrusive and will maintain sufficient rear yard amenity space and landscaping.

Based on the above, staff is of the opinion that the variances requested maintain the general intent and purpose of the Zoning By-law.

3) Desirability:

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MINOR VARIANCE
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Is the proposed minor variance from the Zoning By-law desirable for the appropriate development or use of the land, building or structure?

Yes

Staff are of the opinion that the proposal represents appropriate redevelopment on the subject property. The design of the detached dwelling is sensitive to the existing neighbourhood character, aims to preserve healthy and mature trees and offers an appropriate transition to the adjacent properties.

4) Minor in Nature:

Is the proposed minor variance from the Zoning By-law considered minor in nature?

Yes

The proposed variances are both minor in nature when considered against the depth of the rear yard and overall site context. Neither variance contributes to any negative impacts on massing, shadowing or drainage. The request for a garage projection is more technical in nature since the one garage bay that projects forward will not protrude further than the porch or the office on the other side of the porch.

Cumulative Effects of Multiple Variances and Other Planning Matters:

In this case, the requested variances for increased dwelling depth and garage projection do not have a cumulative effect since the garage is in line with the office portion of the front façade and is recessed from the porch. It does not add to the overall dwelling depth the way that the cabana and breezeway do.

Recommendation:

Staff have reviewed the proposed variances in accordance with the Planning Act, the policies of the Official Plans and the requirements of the Zoning By-law and support the variances as requested.

Date: October 1, 2025

Prepared By: Magda Rusin-Hynek

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MINOR VARIANCE
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Attachment No. 1 - Site Photos



View of front yard of subject property



View from rear yard looking westerly towards
3014 South Dr and nearby lots abutting
Guelph Line



View looking towards the rear yard



View from rear yard looking easterly
towards 3026 South Dr

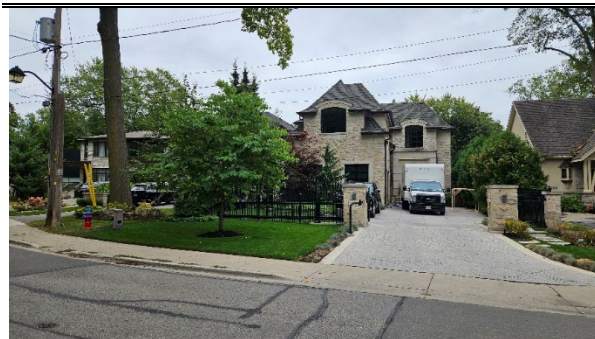


View from rear yard looking easterly
towards 3026 South Dr (over existing
pavilion)



View of existing side yard and evergreens
to remain

**COMMITTEE OF ADJUSTMENT
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Front view of adjacent dwelling at 3026 South Dr



View of dwelling at 3037 South Drive



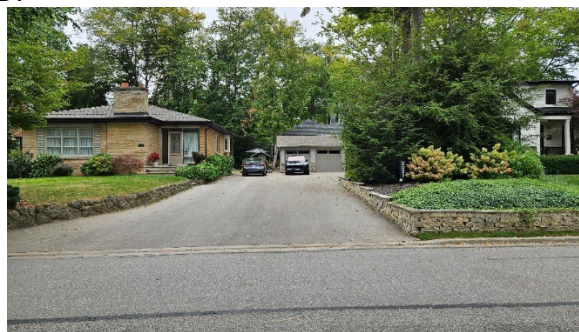
View of dwellings at 3034 and 3030 South Drive



View of adjacent dwelling at 3014 South Dr



View of dwelling at 3013 South Dr



View looking directly across the street at 3017 and 3023 South Dr

Development Engineering

Development Engineering has reviewed the proposed minor variances and has no objections. Changes to the plans may be required during the Grading and Drainage Clearance Certificate review process.

Date: September 5, 2025

Prepared By: D. Savelli

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
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Forestry

Forestry has no objection to the proposed minor variance(s) and provides the following advisory note(s) to the applicant:

1. A tree permit will be required for any and all work around regulated trees in accordance with the City's Tree By-laws.
2. Revisions to the report and/or plans may be required through the tree permit process.

Date: September 16, 2025Prepared By: R. Shaw-Lukavsky**Building**

1. A Building Permit is required for all building construction;
2. Permit application drawings are to be prepared by a qualified designer as per Div. C., Section 3.2 - Qualifications of Designers and OBC 2024.

Date: September 17, 2025Prepared By: T. Le**Transportation Planning**Deemed Road Width Analysis

South Drive is under the authority of the City of Burlington and the deemed right-of-way width is 20 metres. The right of-way adjacent to the subject site is approximately 20 metres therefore, no additional lands are required.

Date: June 4, 2025Prepared By: Stephanie Robinson

Transportation Planning have reviewed the proposed minor variance application and have no comments.

Date: September 18 2025Prepared By: Taylor Kirchknopf**Finance****Notice regarding Development Charges:**

The owner, its successors and assigns, are hereby notified that City Development Charges may be payable in accordance with the applicable By-law 72-2004, as may be amended, upon issuance of a building permit, at the rate in effect on the date issued.

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For further information, the owner is advised to contact the City Building Department (905) 335-7731.

Tax

All property taxes including penalty and interest must be paid. This includes all outstanding balances plus current year taxes that have been billed but are not yet due. Local improvements must be commuted.

Date: September 4, 2025

Prepared By: L. Bray

Halton Region

Regional Staff have reviewed the above-referenced Minor Variance application requesting relief from the maximum permitted dwelling depth and garage projection to facilitate the construction of a new two-storey dwelling with attached garage, rear yard uncovered and covered decks, pool and circular driveway.

- Due to Provincial legislation, as of July 1, 2024, the Halton Region's role in land use planning and development matters has changed. The Region is no longer responsible for the Regional Official Plan – as this has become the responsibility of Halton's four local municipalities. As a result of this change, a Memorandum of Understanding (MOU) between the Halton municipalities and Conservation Authorities has been signed that identifies the local municipality as the primary authority on matters of land use planning and development. The MOU also defines the continued scope of interests for the Region and the Conservation Authorities in these matters.
- Staff have reviewed the application from the Region's Source Water Protection requirements. In accordance with the MOU and to ensure protection of groundwater sources, Halton Region provides the following comments:
 - The property is located within the jurisdiction of the Halton-Hamilton Source Protection Plan (SPP). The Halton-Hamilton SPP can be accessed online at: <http://www.protectingwater.ca/>
 - The property is located in a Highly Vulnerable Aquifer (VS= 6).
 - Based on the information provided by the applicant, this application is not subject to Section 59 under the *Clean Water Act, 2006*. Therefore, this application can proceed from a Source Water Protection perspective and Section 59 notice will not be required.
 - The Region has attached some reference materials for the applicant related to the Source Water Protection program and the important role landowners play in protecting drinking water sources.
- Regional staff have no objections to this Minor Variance application.

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Date: September 17, 2025

Prepared By: Amanda Roger

Burlington Hydro

A response to a request for comment was not received by the time this report was published.

Date: October 5, 2025

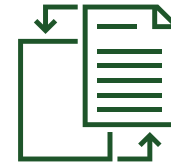
Prepared By: E. Shacklette

Source Water Protection Factsheet

halton.ca

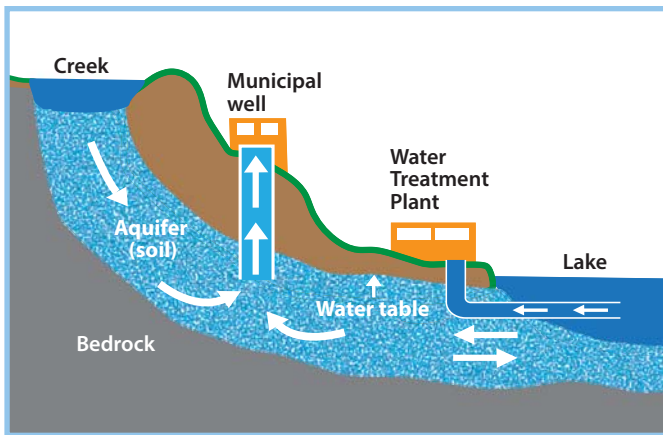


Planning and Building Applications



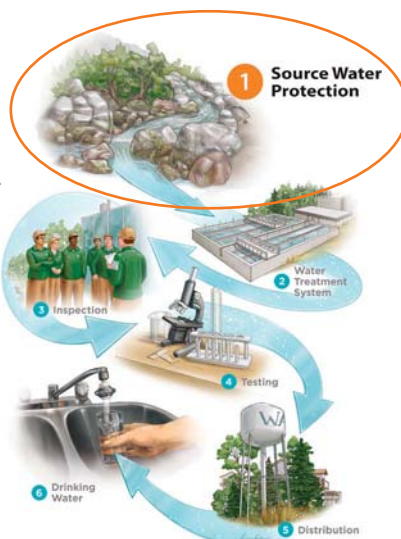
Sources of drinking water

Sources of drinking water include groundwater from underground aquifers and surface water from streams, rivers and lakes. These water sources are used to supply municipal drinking water systems and private wells in Halton Region, as illustrated below.



Protecting Halton's drinking water

To ensure the consistent delivery of safe and high quality drinking water to our residents and businesses, Halton Region uses a proactive multi-barrier approach to safeguard our municipal drinking water. Under the *Clean Water Act, 2006*, the very first barrier in this approach is **Source Protection**.



Source water protection and Planning/Building Applications

Under the *Clean Water Act, 2006*, additional protection of these drinking water sources from potential contamination or overuse is provided through the mandatory implementation of approved Source Protection Plans. These Plans contain policies to protect municipal sources of drinking water in certain **vulnerable areas**.

Planning/building applications on properties located within **vulnerable areas** may be subject to Source Protection Plan policies if they propose activities identified as significant drinking water threats that may potentially contaminate or overuse municipal drinking water sources such as:

- Applying, handling and storing road salt and snow storage.
- Handling and storing fuels, solvents, hazardous waste and other related chemicals.
- Activities that reduce return of water into the ground.
- Applying, handling, and storing pesticides, fertilizers, agricultural and non-agricultural materials.
- Activities that take water without returning it to the same water source.
- Installing or modifying septic and other sewage systems.
- Use of land for livestock yards and/or pasturing.

Is my property in a vulnerable area?

Applicants can contact their local municipal Planning and Building Departments or Halton Region's Source Protection Office to obtain this information prior to submitting an application. To find out if your property falls within a vulnerable area, such as a wellhead protection area or surface water treatment plant intake zone, visit **halton.ca** or call 311.

Did you know? Compliance with Source Protection Plans is applicable law in the Planning Act and the Ontario Building Code when the property is located in a vulnerable area.

How is my application reviewed?

Municipalities have developed tools to determine whether your application may be subject to Source Protection Plan policies, such as the **Source Protection Checklist** (available at local municipal building/ planning service desks). If the subject property is located in a vulnerable area, applicants will be requested to complete and submit this single page checklist along with other supporting documentation (drawings, details, etc.).

Staff will review the submission and communicate any Source Water Protection requirements to the applicant. In some cases, additional information regarding the proposed activity may be requested to complete the review process.

Step 1

Local municipal staff circulate applications (including Source Protection Checklist) within vulnerable areas to Halton Region's Source Protection Office



Step 2

Halton Region staff will communicate results of Source Protection assessment to applicant and local municipal staff



What do I need to do to comply with Source Water Protection?

Some activities will be managed through traditional methods such as Environmental Compliance Approvals, Permits-To-Take-Water, Nutrient Management Plans and Nutrient Management Strategies. However, depending on the level of risk associated with the proposed activities, some may be prohibited as proposed or require other supporting documents such as:

- Risk Management Plans (see Risk Management Plan fact sheet)
- Site-Specific Salt Management Plans
- Water Balance Assessments
- Hydrogeological Assessments

Where proposed activities are prohibited or regulated through Source Water Protection, municipal staff will provide applicants with detailed feedback regarding what is required.

Did you know? For planning/ building applications located in vulnerable areas, a notice to proceed is required from Halton Region's Risk Management Official before applications are processed.



For more information, visit halton.ca, email sourcewater@halton.ca or call 311.

RETHINK
WATER



Enjoy Conserve Protect



halton.ca 311



NOTICE OF PUBLIC HEARING

Jillian Mary Edmunds and Michael Andrew Edmunds, the owners of 3022 South Dr. Burlington, have applied to the Committee of Adjustment for a Minor Variance to the requirements of Zoning By-law 2020, as amended. The property in question is **3022 South Dr. Burlington** (see map).

The applicant is proposing the construction of a new two-storey dwelling with attached garage, rear yard uncovered and covered decks, pool and circular driveway. This proposal results in the following variances:

1. To permit a dwelling depth of 21.8 m instead of the maximum permitted 18 m measured from building wall closest to front lot line to the building wall closest to the rear lot line for a proposed two-storey addition.
2. To permit a proposed attached garage to project 0.4 m beyond the longest portion of a wall facing a street whereas Zoning By-Law 2020 does not permit an attached garage to project beyond the longest portion of a wall facing a street containing residential floor area on the first storey of a dwelling.

You have received this notice as stipulated by the *Planning Act* because your property is within 60 metres of the property noted above. The application materials are available on request by contacting Committee of Adjustment staff by one of the methods listed above. A copy of the Agenda, containing staff reports and drawings, can be viewed online under the Meeting Agenda tab at **Burlington.ca/coa** on or after **October 6 2025**.

Committee of Adjustment Hearings will be hybrid-conducted in person and virtually. All members of the public, applicants and their agents will now have the option to participate in the public meeting process in person at City Hall in Council Chambers, or remotely via Zoom Webinar Video Conferencing Technology. The Committee of Adjustment will meet to consider the above application under Section 45 of the *Planning Act*, 1990, as amended on:

WEDNESDAY OCTOBER 22, 2025,

This application is scheduled to be heard at or after 1:00 pm.

How to participate if I have comments or concerns?

Written Submissions

Members of the public who would like to participate in a Committee of Adjustment meeting are able to send written comments regarding the application by e-mail to committeeofadjustment@burlington.ca with the subject line to read "Comments_Your Name_File No._Address of the Property".

Alternatively, written comments can be sent by regular mail addressed to the Secretary-Treasurer. Include your name, address, application number and address of the property for which you are providing comments.

City of Burlington Committee of Adjustment - Community Planning
426 Brant Street P.O. Box 5013 Burlington, Ontario, L7R 3Z6
committeeofadjustment@burlington.ca

To allow all Committee of Adjustment members the opportunity to review and consider your comments, please provide your written submissions to be received no later than noon the day before the hearing date.

Oral Submissions

Members of the public are also able to provide oral comments regarding Committee of Adjustment Hearing items by participating virtually through Zoom via computer or phone, or by attending the Hearing in-person. Participation virtually requires pre-registration in advance. Please contact staff for instructions if you wish to make a presentation containing visual materials.

1. Virtual Oral Submissions

To register as a delegate, please contact the Secretary-Treasurer no later than 12:00 p.m. (noon) the day before the hearing date. The following information is required to register; Committee of Adjustment file number, hearing date, name, and mailing address of each person wishing to speak, if participation will be by phone or video. All requests to delegate must contain a copy of your intended remarks which will be circulated to all members of Committee in advance.

2. In person Oral Submissions

Interested members of the public, agents, and owners who wish to participate in person may attend Council Chambers on the date and time listed on the Notice of Public Hearing. Please note that you will be required to provide your name and address for the record. It is advised that you arrive no less than 10 minutes before the time of the Public Hearing as noted on the Notice of Public Hearing.

Attend or View the Committee of Adjustment Hearing:

If you do not wish to participate, but would like to follow along, the hearing will be held in person at City Hall in Council Chambers and live through a Zoom Webinar. Instructions, links and phone numbers for joining the meeting will be posted on the Committee of Adjustment webpage the day prior to the scheduled meeting. The link will be active at **12:00 p.m.**

If you wish to be notified of the decision of the Committee of Adjustment in respect to this application, you must submit a written request to the Secretary-Treasurer. This will also entitle you to be advised of a possible Ontario Land Tribunal Hearing. In accordance with the Planning Act, the Committee of Adjustment decision may be appealed to the Ontario Land Tribunal by the owner, the Minister of Municipal Affairs and Housing, a specified person or public body that has an interest in the matter.

The applicant is advised that it is **mandatory** that either the applicant or an authorized agent of the applicant must be present at the hearing either in person or virtual.

For more information about this matter, contact Catherine Susidko-Petriczko at committeeofadjustment@burlington.ca

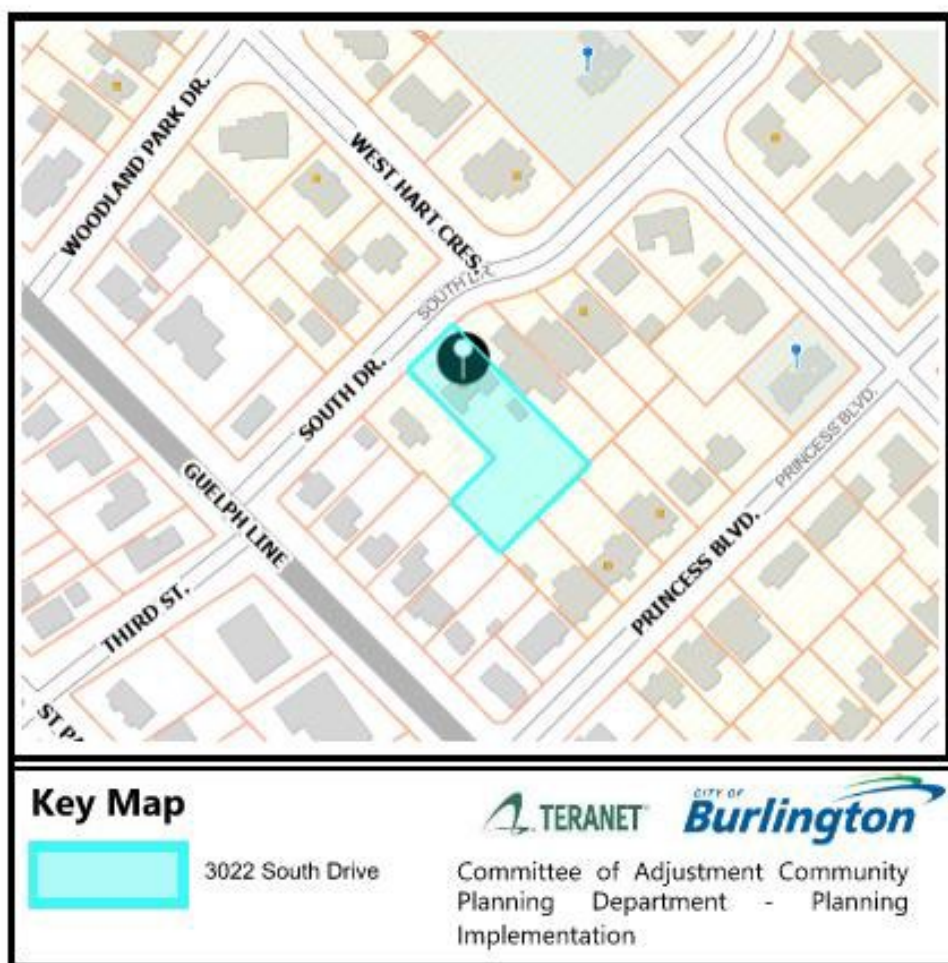
Yours truly,



Catherine Susidko-Petriczko
Secretary-Treasurer
Committee of Adjustment

Personal information including comments and public feedback, is collected under the legal authority of the Planning Act, R.S.O. 1990, Chapter c. P.13, as amended, and the Municipal Freedom of Information and Protection of Privacy Act, R.S.O. 1990, as amended, which will be used to process the application and in the decision making process and becomes the property of the City of Burlington, and is considered to be a public record and will be disclosed to any individual (including being posted on the internet) upon request. Questions about this collection should be directed to the Secretary-Treasurer, Burlington Committee of Adjustment, Community Planning Department, 426 Brant Street, P.O. Box 5013, Burlington, Ontario; L7R 3Z6 (905) 335-7629.

Key Map



PLANNING ACT, R.S.O. 1990, C.P. 13
APPLICATION FOR MINOR VARIANCE OR FOR PERMISSION

THE UNDERSIGNED HEREBY APPLIES TO THE COMMITTEE OF ADJUSTMENT FOR THE CITY OF BURLINGTON UNDER SECTION 45 OF THE PLANNING ACT, R.S.O. 1990, C.P.13, AS DESCRIBED IN THIS APPLICATION, FROM BY-LAW NO. 2020. (AS AMENDED)

Application made under:

☒ Section 45 (1) of the Planning Act

☐ Section 45 (2) of the Planning Act

Discussed the application with a City Zoning Examiner and Development Planner Y ☒ or N ☐

Name of Planner: Mariana Da Silva

Name of Zoning Examiner: Erin Ruby

PROPERTY INFORMATION

Municipal Address(es) of property:

3022 South Drive

Legal Description of property:

Lot 86 and part of Lots 83 and 85, Registered Plan 218

Official Plan Designation: Low-Rise Neighbourhoods Current Zoning Designation Residential Low Density R1.2

OWNER(S) INFORMATION:

Legal Name (as it appears on the title for the property):

Jillian Edmunds

Mailing Address: 3022 South Drive City: Burlington

Postal Code: Text Home Phone: _____ Mobile Phone: 905 808 6616

Work Phone: _____ E-Mail: jill.edmunds27@gmail.com

AGENT INFORMATION (if applicable): (This person will be the primary point of contact if provided)

Name: Emelie Vea - Willmott & Strickland, Inc.

Business Address: 594 Chartwell Road, Unit 3 City: Oakville

Postal Code: L6J 4A5 Home Phone: _____ Mobile Phone: _____

Work Phone: 905 842 2332 X28 E-Mail: emelie@willmottstrickland.ca

PROPOSED DEVELOPMENT Please outline in detail your proposed development and list each variance you are requesting, as well as the Zoning By-law Requirements. Attach a separate sheet if required.

New two-storey brick dwelling with a 2-car attached garage, rear covered porch and new in-ground pool

Variance(s) Requested	Zoning Bylaw Requirement
Increase dwelling depth to 21.80m	Maximum 18.0 m

In your own words, please explain why you are unable to comply with the provisions of the Zoning By-law and how the minor variance(s) meet the four (4) tests under the Planning Act:

1. Why is the variance(s) minor in nature? See attached.

2. Why are the variance(s) desirable for the appropriate use of the land? See attached.

3. Do the variance(s) meet the intent and purpose of the Official Plan? See attached.

4. Do the variance(s) meet the intent and purpose of the Zoning By-law? See attached.

Forming part of MV Application for 3022 South Drive, Burlington ON
May 2025

Zoning By-law 2020, R1.2

Nature and extent of relief applied for variances required:

To permit a construction of a new two-storey single family brick dwelling with an increased dwelling depth of 21.80m where the zoning by-law permits a maximum depth of 18.0m.

Why is it not possible to comply with the provision of the by-law?

An increase in dwelling depth is needed to be able to create a one storey breakfast room with perimeter windows at the rear of the two storey dwelling. The proposed two-storey portion has a dwelling depth of 17.97m.

The intent of the Zoning By-law and Official Plan provision is to prevent a dwelling from having a mass and scale that appears larger than the dwellings in the surrounding neighbourhood. We designed the new dwelling to be below the lot coverage maximum and within the minimum building setbacks. The structure is divided into distinct volumes and rooflines to further mitigate the massing and to create a facade that doesn't dominate the streetscape. The main two-storey structure has a dwelling depth of 17.97m. The variance is minor in nature. The increased dwelling depth is a result of a one-storey fenestrated structure that is far away from both sideyard property lines so as not to create significant impact on the immediate neighbours. Overall, the effect of the new dwelling does not negatively impact adjacent properties nor the surrounding area. The new development maintains and protects the existing neighbourhood character. Therefore, we believe that the proposal meets the four test of the Planning Act.

PROPERTY DETAILS (please complete all fields):

Date property purchased:	<u>09/29/2022</u>	Date property first built on:	<u>unknown</u>	Date of proposed construction:	<u>03/01/2026</u>
	mmm/dd/yyyy		mmm/dd/yyyy		mmm/dd/yyyy

Existing Use of the Subject Property (check one):

Detached Dwelling ☒ Semi-Detached Dwelling ☐
 Townhouse Dwelling ☐ Street Townhouse Dwelling ☐
 Apartment ☐ Mixed Use ☐ Hi Rise ☐
 Commercial ☐ Industrial ☐ Vacant ☐
 Other ☐ _____

Length of time the existing uses of the subject property have continued:

Unknown

Proposed Use of the Land:

Residential

Existing Uses of Abutting Properties (check all that apply)

Residential ☒ Commercial ☐ Industrial ☐ Multi-Residential ☐ Vacant ☐ Hydro right of-way ☐
 Railway right-of-way ☐ Provincial Highway ☐ Park ☐ Other ☐ _____
 Conservation Halton Lands: Lake Ontario ☐ Creek ☐ Storm Water Management Pond/Channel ☐
 Ravine ☐

Additional Information

Is liquor sold on site? Y ☐ or N ☒

Is the property on the Municipal Cultural Heritage Register for the City of Burlington? Y ☐ N ☒
Unknown ☐

Type of Access to the Subject Lands

Provincial Highway ☐	Municipal Road ☒	Private Road ☐	Water ☐	Other(specify) ☐

Municipal Services Provided

Water ☒	If not available, by what means is it provided: _____
Sanitary Sewers ☒	If not available, by what means is it provided: _____
Storm Sewers ☒	If not available, by what means is it provided: _____

IS THE SUBJECT LAND(S) THE SUBJECT OF ANY OF THE FOLLOWING DEVELOPMENT APPLICATIONS:

☐ Official Plan Amendment ☐ Zoning By-law Amendment ☐ Building Permit
☐ Site Development Plan ☐ Plan of Subdivision ☐ Previous Minor Variance ☐ Consent

FOR RESIDENTIAL DETACHED OR SEMI-DETACHED DWELLINGS

Dimensions of Property			Street Width (see first page of application for how to obtain)			Lot Coverage	Corner Lot? Y ☐ N ☒
Frontage 22.80 m	Depth 71.41	Area 2217.54	Actual 20 m	Deemed 20 m	Required N/A		

Particulars of all buildings and structures on or proposed for the subject lands

(attach additional page if required)

EXISTING (Dwelling/Building) **To be demolished**

PROPOSED (Dwelling/Building/Addition)

Ground Floor Area (incl. attached garage)	M ²	Ground Floor Area (incl. attached garage)	367.94	M ²
Gross Floor Area:	M ²	Gross Floor Area:	579.76	M ²
Number of Storeys:		Number of Storeys:	two	
Width:	M	Width:	17.35	M
Length:	M	Length including front and back porches	30.99	M
Height:	M	Height	10.00	M

Garage/Car Port

N/A

Garage/Car Port

Detached?	Y ☐ N ☐	Detached?	Y ☐ N ☒
Gross Floor Area:	M ²	Gross Floor Area:	58.81 M ²
Width:	M	Width:	7.52 M
Length:	M	Length:	8.25 M
Height:	M	Height:	N/A M

Accessory Structures (Shed, Gazebo, etc)

N/A

Accessory Structures

N/A

Gross Floor Area:	M ²	Gross Floor Area:	M ²
Width:	M	Width:	M
Length:	M	Length:	M
Height:	M	Height:	M

To be demolished Other (pool, additional sheds, decks, driveways, etc.)

Other

Deck

Pool

Gross Floor Area:	M ²	Gross Floor Area:	179.01	73.62	M ²
Width:	M	Width:	17.65	5.49	M
Length:	M	Length:	25.65	13.41	M
Height:	M	Height:	.75	.75	M

LOCATION of all existing and proposed buildings and structures

EXISTING

PROPOSED

Front:	M	Front:	12.92	M
Rear:	M	Rear:	27.45	M
Side/Street Side:	M	Side/Street Side:	West 2.74	M
Side/Other Side:	M	Side/Other Side:	East 2.74	M

EXEMPTION FROM NEW SURVEY REQUIREMENT

Minor additions to an existing dwelling or for a proposed accessory building or structure (i.e., deck, driveway, pergola, shed), may be exempt from having to provide a new survey. Please refer to Page 3 of this application package for more details. Minor Variances with concurrent Consent applications require a new survey.

Applicant/Owner:

Property Address:

1. I, _____ In my capacity as _____ do attest to the following:

 Print Name (Owner or agent)

Please complete Section A, B, or C

A.	The OLS survey/sketch of survey dated

mmm/dd/yyyy

has been revised by:

(Person or Company Name)

OR

B.	The site plan, architect's plan or engineer's plan dated

mmm/dd/yyyy

has been revised by:

(Person or Company Name)

OR

C.	The sketch or plot plan** dated

****Accepted for applications involving variances for Uses only.**

mmmm/dd/yyyy

was prepared by:

(Person or Company Name)

2. All structures, measurements, setbacks and boundaries of the property are shown accurately as of:

mmmm/dd/yyyy

3. The material submitted shows all measurements in metric, as calculated/converted by:

(Person or Company Name)

4. Should the need arise during application processing for an new OLS survey, the applicant/agent agree to provide the survey as required by Committee or city staff in order to receive a decision on the application.

Signature of Owner/Applicant

Date (mmm/dd/yyyy)

POSTING OF ADVISORY SIGN

This will confirm the requirement of the Committee of Adjustment for a sign to be posted by all applicants or agents on each property under application.

A sign will be made available to you after completion of the zoning review of your application(s) and you are directed to post each sign in a prominent location that will enable the public to observe the sign.

The location of each sign will depend on the lot and location of structures on it, however, the sign should be placed so as to be legible from the roadway in order that the public can see the sign and make note of the telephone number should they wish to make inquiries. In most cases, please post the sign on a stake as you would a real estate sign. For commercial or industrial buildings it may be appropriate to post the sign on the front wall of the building at its entrance. Please contact the undersigned if you have any queries on the sign location.

DO NOT POST THE SIGN INSIDE THE BUILDING BY A WINDOW. The sign must be outdoors by the roadway in order to be visible and readable.

Each sign must remain posted beginning 10 days prior to the hearing, until the day following the hearing. Please fill in the form below indicating your agreement to post the sign(s) as required. This form must be submitted with the application so that it may be placed on file as evidence that you have met the committee's requirements. Failure to post the sign as required will result in deferral of the application.

I UNDERSTAND THAT EACH SIGN MUST BE POSTED AT LEAST 10 DAYS BEFORE THE HEARING, AND WILL REMAIN POSTED AND BE REPLACED, IF NECESSARY, UNTIL THE DAY FOLLOWING THE HEARING.

Owner Name

Jillian Edmunds

Property Address

3022 South DriveSignature of Owner/ApplicantMay 13, 2025Date (mmm/dd/yyyy)

AFFIDAVIT

*Please fill out at time of submission of application

I have the authority to bind the Corporation (check if applicable) ☐ Signature of Applicant or Authorized

Agent: EMELIE VEA

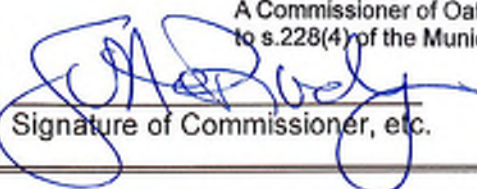
I, EMELIE VEA of the City of Burlington in the Region
(print name) (Region/City/County) (City/Town/Township)

of Halton solemnly declare that all the statements contained in this application are true and I make this solemn declaration conscientiously believing it to be true and knowing it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

Declared before me at the City of Burlington in the Region of Halton.
(Region/City/County) (City/Town/Township)

this 20th day of May 2025.

Jo-Anne Rudy, Committee Clerk
The Corporation of the City of
Burlington, Region of Halton
A Commissioner of Oaths pursuant
to s.228(4) of the Municipal Act


Signature of Commissioner, etc.


Signature of Applicant or Authorized Agent

PERMISSION TO ENTER

IMPORTANT This MUST be completed for all applications and signed by the OWNER.

Municipal Address of Subject Lands: 3022 SOUTH DRIVE, BURLINGTON

I hereby authorize the Committee of Adjustment members, City of Burlington and Region of Halton staff to enter onto the above-noted property for the limited purposes of evaluating the merits of this application.


Signature of Owner

JILL EDMUNDS
Print Name

OWNERS AUTHORIZATION

If using an agent, the owner must also complete the following form:

I, JILLIAN EDMUNDS being the registered owner of the subject lands, hereby
(print name)

Authorize EMELIE VEA - WILLMOTT & STRICKLAND, INC. to prepare, submit and act on my behalf with respect to this
(print agent name)

application for a Minor Variance.


Signature of Owner

MAY/09/2025
Date (mmm/dd/yyyy)

Notice of collection of personal information

Personal information contained on this form is collected under the authority of the Planning Act, RSO 1990, c. P.13, to process applications and make decisions. Applications made under the Planning Act, are considered part of the public record and shall be made available to the public. Questions about this collection can be directed to the Manager of Development Planning, City of Burlington, 426 Brant Street, Burlington, Ontario, L7R 3Z6, 905-335-7600.

The applicant acknowledges that an application, all supporting information and materials, including studies and drawings, submitted under the Planning Act, pursuant to s. 1.0.1 of the Planning Act, RSO 1990, c.P.13, as amended, shall be made available to the public.

Minor Variance Application Checklist Please add a check mark beside the items you have provided with your application. Illegible drawings or those missing required details will be returned to applicant.	Select (✓)
LEGAL SURVEY (must be prepared and signed and dated by an Ontario Land Surveyor) * For new development, a Proposed Building Plan stamped by an Ontario Land Surveyor or Professional Engineer may be required.	
OR	
DETAILED SITE PLAN (must be prepared and stamped by Professional Engineer, Ontario Land Surveyor or Professional Architect). A legal survey may still be required at the discretion of staff.	X
AND	
PLAN and ELEVATION DRAWINGS which include the following as applicable: (Missing details or illegible drawings will be sent back to the applicant for correction)	X
SITE PLAN ☒ Metric Scale ☒ North Arrow ☒ Frontage ☒ Depth ☒ Lot Area ☒ Lot Coverage ☒ Deemed Street Line ☒ Existing Front Yard Setbacks ☒ Existing Rear Yard Setbacks ☒ Existing Side Yard Setbacks ☒ Existing Street Side Yard Setbacks ☒ Existing Porch, Stairs and Overhang Setbacks ☒ Proposed Front Yard Setbacks ☒ Proposed Rear Yard Setbacks ☒ Proposed Side Yard Setbacks ☒ Proposed Street Side Yard Setbacks ☒ Proposed Porch, Stairs and Overhang Setbacks ☒ Streets (Public and Private) ☒ Street Names ☒ Parking (Dimensioned spaces, Driveway Width, Arrangement) ☐ Railways (Location of them and setbacks to structures) ☐ All Watercourses and/or Conservation Halton Areas(creeks, lakes, etc)	

Minor Variance Application Checklist

Please add a check mark beside the items you have provided with your application.

Illegible drawings or those missing required details will be returned to applicant.

LOCATION AND MEASUREMENTS OF SHED, DECK OR OTHER STRUCTURES

- ☒ Setbacks (Deck and Pool)
- ☒ Height
- ☒ Area
- ☒ Length
- ☒ Width

ELEVATIONS

- ☒ Metric
- ☒ Front
- ☒ Rear
- ☒ Side 1
- ☒ Side 2

FLOOR PLANS

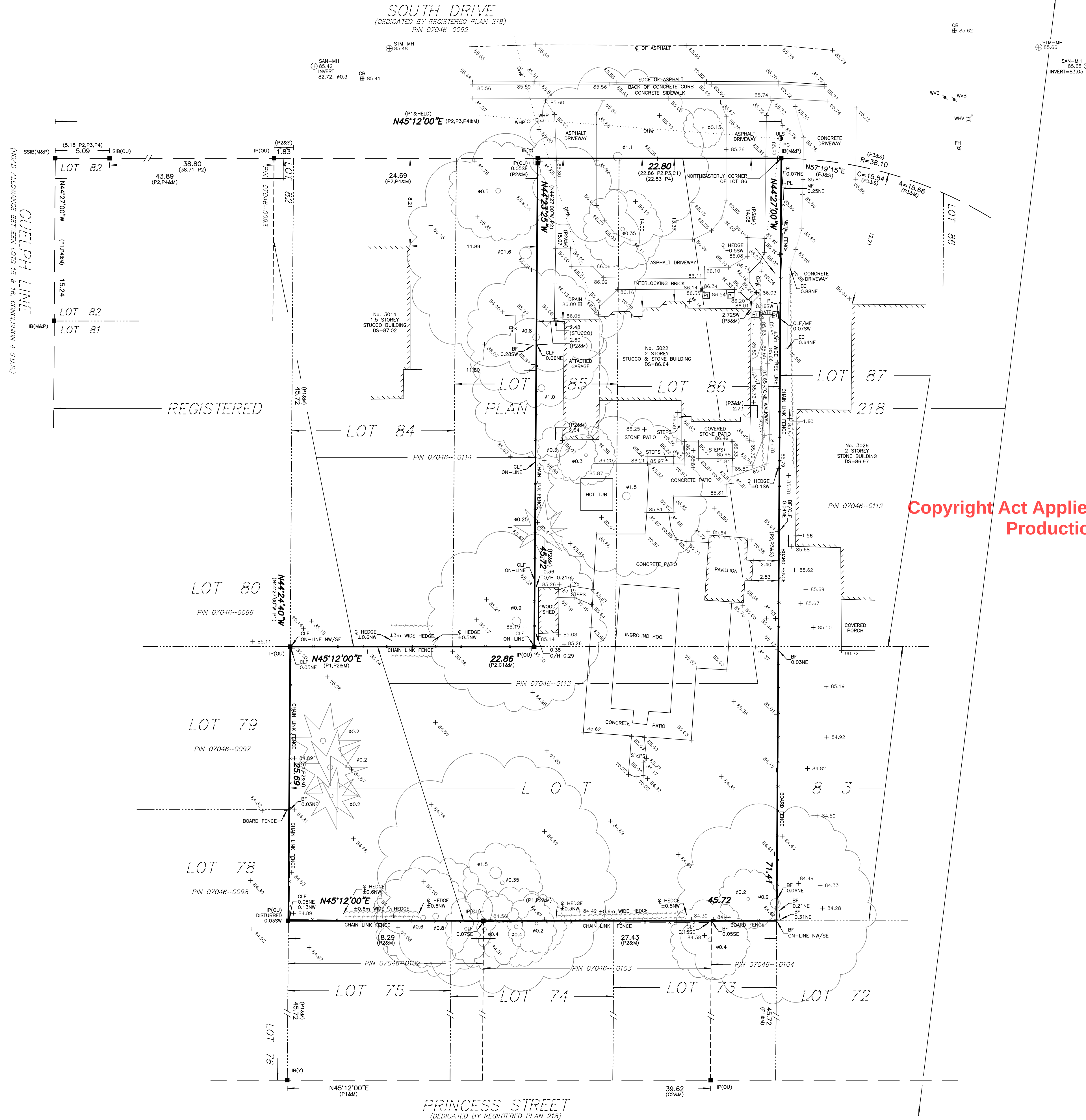
- ☒ Metric
- ☒ North Arrow
- ☒ Gross Floor Area Calculation
- ☒ Ground Floor Area Calculation
- ☒ Floor Area Ratio (where applicable)

I have reviewed the minor variance checklist and ensure all the applicable information is shown on the drawings submitted as part of this application.



Signature of Owner/Agent**May 14, 2025**

Date (mmm/dd/yyyy)



SURVEYOR'S REAL PROPERTY REPORT
PART 1 - PLAN OF SURVEY SHOWING TOPOGRAPHY OF
ALL OF
LOT 86
AND PART OF
LOTS 83 & 85
REGISTERED PLAN 218
IN THE
CITY OF BURLINGTON
REGIONAL MUNICIPALITY OF HALTON
SCALE 1 : 200

THE INTENDED PLOT SIZE OF THIS PLAN IS 700mm IN WIDTH BY 570mm IN HEIGHT
WHEN PLOTTED AT A SCALE OF 1:200 (INCLUDING 15mm BEYOND EACH BORDER)
MacKAY, MacKAY & PETERS LIMITED - ONTARIO LAND SURVEYORS
© 2024

KNOWN AS MUNICIPAL No. 3022 SOUTH DRIVE

PART 2 - REPORT SUMMARY (TO BE READ IN CONJUNCTION WITH PART 1)
LAND REGISTRY OFFICE TITLE INFORMATION ON SUBJECT PROPERTY INCLUDING
BOUNDARIES, EASEMENTS AND RIGHT OF WAYS - JANUARY 22, 2024
REGISTERED EASEMENTS AND/OR RIGHTS-OF-WAY:
- NONE
ADDITIONAL REMARKS:
- REFER TO PART 1 OF SURVEY FOR THE LOCATION OF BUILDINGS, STRUCTURES, FENCES & UTILITIES

MacKAY, MacKAY & PETERS LIMITED grants MICHAEL & JILLIAN EDMUNDS ("The Client"),
their solicitor and other related parties permission to use "Original Copies" of the
Surveyor's Real Property Report in transactions involving "The Client"

METRIC DISTANCES SHOWN HEREON ARE IN METRES AND
CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

ASSOCIATION OF ONTARIO
LAND SURVEYORS
PLAN SUBMISSION FORM
V-74037

THIS PLAN IS NOT VALID
UNLESS IT IS AN EMBOSSED
ORIGINAL COPY
ISSUED BY THE SURVEYOR
IN ACCORDANCE WITH
REGULATION 1028, SECTION 29(3)

Copyright Act Applies to Use and
Production

- LEGEND**
- DENOTES A SURVEY MONUMENT FOUND
 - SIB DENOTES STANDARD IRON BAR
 - SSIB DENOTES SHORT STANDARD IRON BAR
 - IB DENOTES IRON BAR
 - IP DENOTES IRON PIPE
 - P1 DENOTES REGISTERED PLAN 218
 - P2 DENOTES PLAN BY YATES & YATES LIMITED DATED FEBRUARY 19, 1990 (90Y-44)
 - P3 DENOTES PLAN BY MMP LIMITED DATED FEBRUARY 24, 2016 (16-018)
 - P4 DENOTES PLAN BY MMP LIMITED DATED SEPTEMBER 10, 1999 (99H-238)
 - D1 DENOTES INST. No. 851178
 - D2 DENOTES INST. No. 632318
 - C1 DENOTES CALCULATED FROM P1 & D1
 - C2 DENOTES CALCULATED FROM P1 & D2
 - PIN DENOTES PROPERTY IDENTIFICATION NUMBER
 - (OU) DENOTES ORIGIN UNKNOWN
 - S.D.S. DENOTES SOUTH OF DUNDAS STREET
 - PC DENOTES POINT OF CURVATURE
 - DS DENOTES DOOR SILL
 - CL DENOTES CENTRELINE
 - BF DENOTES BOARD FENCE
 - CLF DENOTES CHAIN LINK FENCE
 - MF DENOTES METAL FENCE
 - PL DENOTES PILLAR
 - O/H DENOTES OVERHANG
 - FH DENOTES FIRE HYDRANT
 - WVB DENOTES WATER VALVE BOX
 - WHV DENOTES WATER HYDRANT VALVE
 - CB DENOTES CATCH BASIN
 - SAN-MH DENOTES SANITARY MANHOLE
 - STM-MH DENOTES STORM MANHOLE
 - WHP DENOTES WOOD HYDRO POLE
 - ULS DENOTES UTILITY LIGHT STANDARD
 - OHW DENOTES OVERHEAD WIRE
 - EC DENOTES EDGE OF CONCRETE
 - DENOTES DECIDUOUS TREE SCALED TO CANOPY TRUNK SIZE SHOWN IN METRES
 - ✱ DENOTES CONIFEROUS TREE SCALED TO CANOPY TRUNK SIZE SHOWN IN METRES

ALL BUILDING TIES ARE TO FOUNDATION AND ARE PERPENDICULAR TO PROPERTY LINES
UNLESS OTHERWISE NOTED

BENCHMARK NOTE
CITY OF BURLINGTON BENCHMARK No. 249
ELEVATION = 87.399 METRES (CGVD28:78 ADJUSTMENT)
CITY BENCHMARK PLATE ON NORTHEAST CORNER OF CONCRETE CULVERT UNDER NEW
STREET OVER ROSELAND CREEK APPROXIMATELY 35 METRES WEST OF DYNES ROAD ON
SOUTH FACE OF NORTH WALL OF CULVERT 0.3 METRES ABOVE SIDEWALK, 0.1 METRES
WEST OF THE EAST CORNER

BEARING REFERENCE
BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE SOUTHEASTERLY LIMIT OF SOUTH
DRIVE AS SHOWN ON REGISTERED PLAN 218 HAVING A BEARING OF N45°12'00"E

SURVEYOR'S CERTIFICATE
I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT,
THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM,
2. THE SURVEY WAS COMPLETED ON THE 1st DAY OF AUGUST, 2024.

AUGUST 9, 2024
DATE

AIASAR-BHERI
FOR MACKAY, MACKAY & PETERS LIMITED

MMP
MacKay, MacKay & Peters Limited
LAND SURVEYORS & MAPPERS
SINCE 1906

3380 South Service Road
Unit 101
Burlington, ON
L7M 3J5
(905) 639-1375
halton@mmplimited.com
mmplimited.com

DRAWN BY: G.S.
PARTY CHIEF: N.C.
CHECKED BY: AB
PROJECT No.: 24-017



Willmott & Strickland Inc.
594 Chartwell Road, Suite 3, Oakville ON, L6J 4A5

T. 905 842.2332
willmottstrickland.ca

Notes
All work shall conform the Ontario Building Code, latest edition, and all other regulations of authorities having jurisdiction. All work shall be carried out in accordance with best trade practice by trades skilled in the type of work being performed. No work shall proceed prior to the issuance of a building permit.

These drawings shall be read in conjunction with specifications, schedules, details and other instructions prepared by the Architect, Structural Consultant, Mechanical Consultant and other consultants who have provided service for this project.

All dimensions and information shown on these drawings must be checked and verified on site by the Contractor and any discrepancies shall be reported to the Architect prior to construction and fabrication of its components.

Copyright: All drawings and related documents shall remain the property and copyright of **Willmott & Strickland, Inc.** Reproduction of these documents without consent of the Architect is prohibited. Use latest revised drawings. Do not scale drawings.

Revisions
Issued 2025.XX.XX

Project
**Edmunds
Residence**

Address
**3022 South Drive
Burlington, ON**

Project No.
24.13

Drawn By
TB

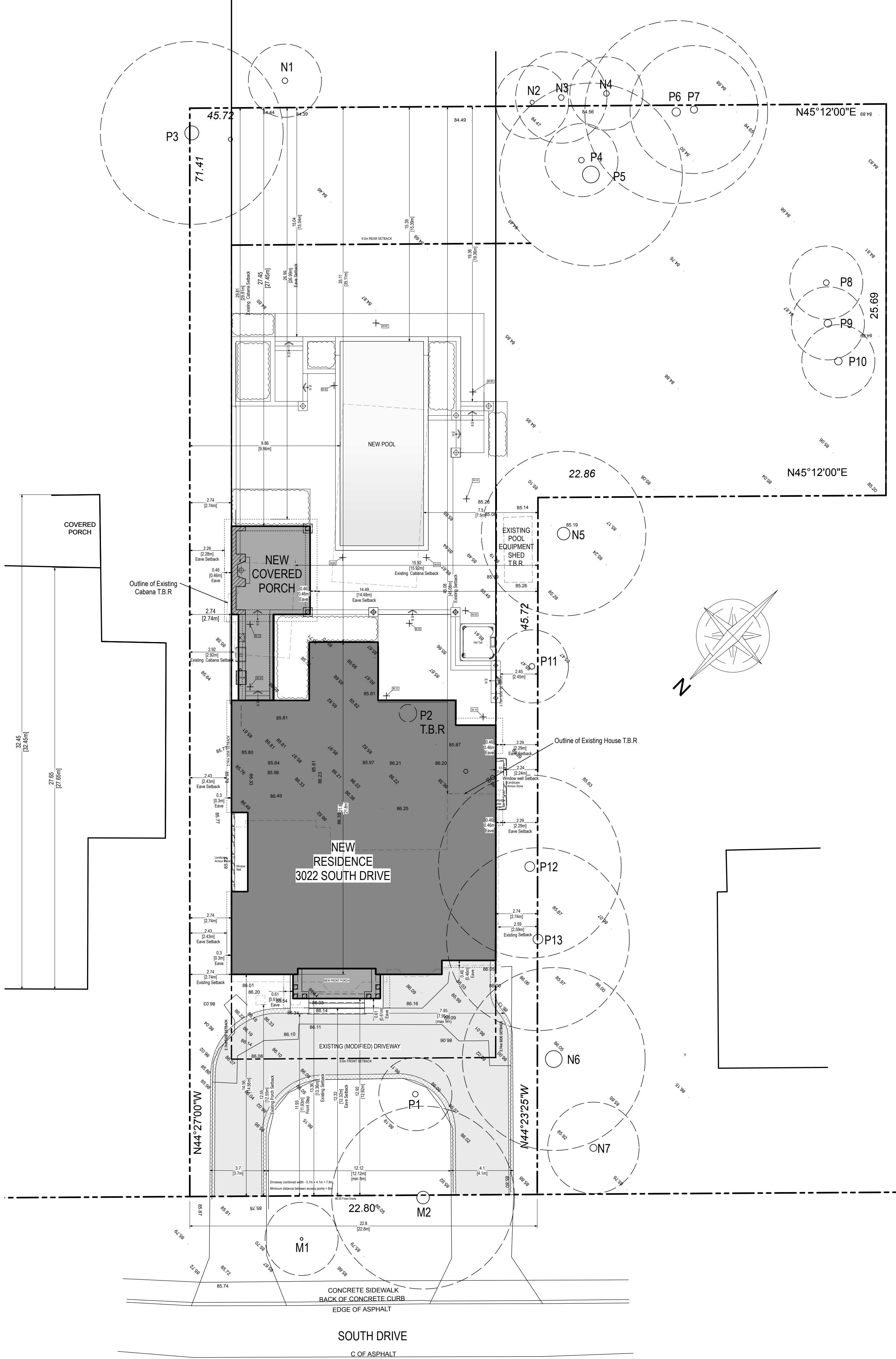
Checked By
CE

Date
22 April 2025

Scale
1:150

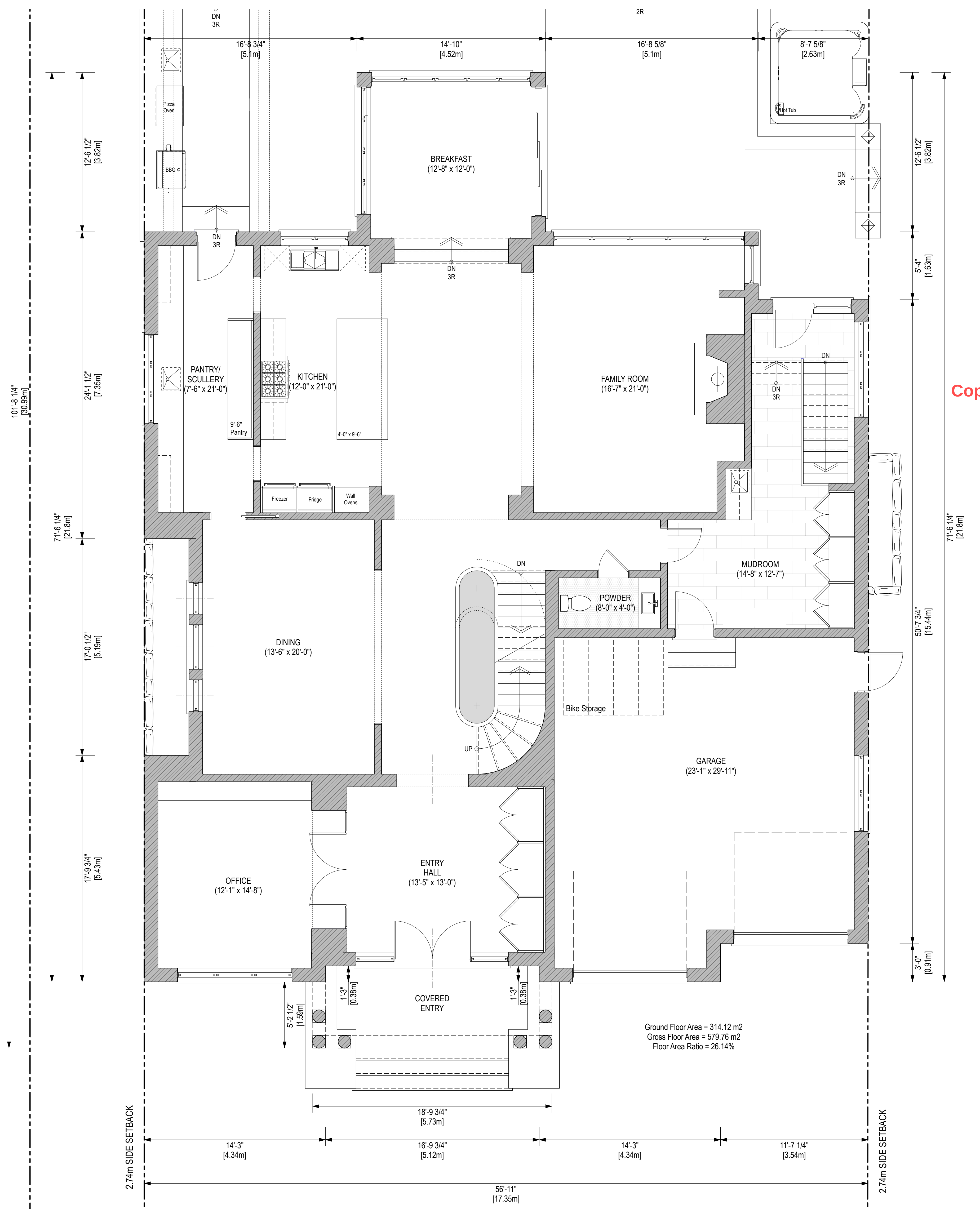


A-00.01
**Site Plan & Site
Statistics**



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Production

3022 South Drive Site Statistics					
** Roseland Character Area, Designated Area for Lot Coverage					
Zoning				By-Law 2014-014	Reference
				R1.2	
Lot Area	2,217.54 m ²	23,869.43 ft ²		0 m	6.3
Lot Frontage	22.80 m	74.81 ft		0 m	6.3
Lot Coverage					
New Dwelling	314.12 m ²	3381.11 ft ²	14.17%		
Front Porch	11.05 m ²	118.93 ft ²	0.50%		
Back Porch	42.78 m ²	460.44 ft ²	1.93%		
Total	367.94 m ²	3960.48 ft ²	16.6%	25% (max - 5967.36 ft ²)	6.3 / 6.4.1
Residential Floor Area Ratio - includes attached garage area					
Ground Floor	314.12 m ²	3381.11 ft ²	14.17%		
Second Floor	265.64 m ²	2859.37 ft ²	11.98%		
Total	579.76 m ²	6240.48 ft ²	26.14%	45% (max -10741 Ft ²)	6.3 / 6.4.1
Building Height					
New Dwelling Height	10.00 m	32.80 ft		10m (max) (2 story)	6.3 / 6.4.6
Max number of storeys					
		2.00		2	6.3 / 6.4.6
Max dwelling depth					
	21.80m	71.52ft		18 m	6
Setbacks (Dwelling)					
Front Yard	12.92 m	42.38 ft		9.0m (min)	6.3 / 6.4.3
Rear Yard	27.45 m	90.06 ft		9.0m (min)	6.3
Interior Side Yard (W)	2.74 m	8.98 ft		2.74 m (min)	6.3
Interior Side Yard (E)	2.74 m	8.98 ft		2.74 m (min)	6
Balcony and Deck - prohibited above the floor level of the first storey					
					6.4.5.
Main Wall/Garage Proportionality					
		45%		50% max	4.8
Shaded items require minor variance					



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Revisions	
Issued	2025.XX.XX

Project
Edmunds Residence

Address
**3022 South Drive
Burlington, ON**

Project No.
24.13

Drawn By
TB

Checked By
CE

Date
22 April 2025

Scale
1/4"=1'-0"



A-01.02
Ground Floor Plan

T. 905 842 2332
willmottstrickland.ca

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Project Edmunds Residence

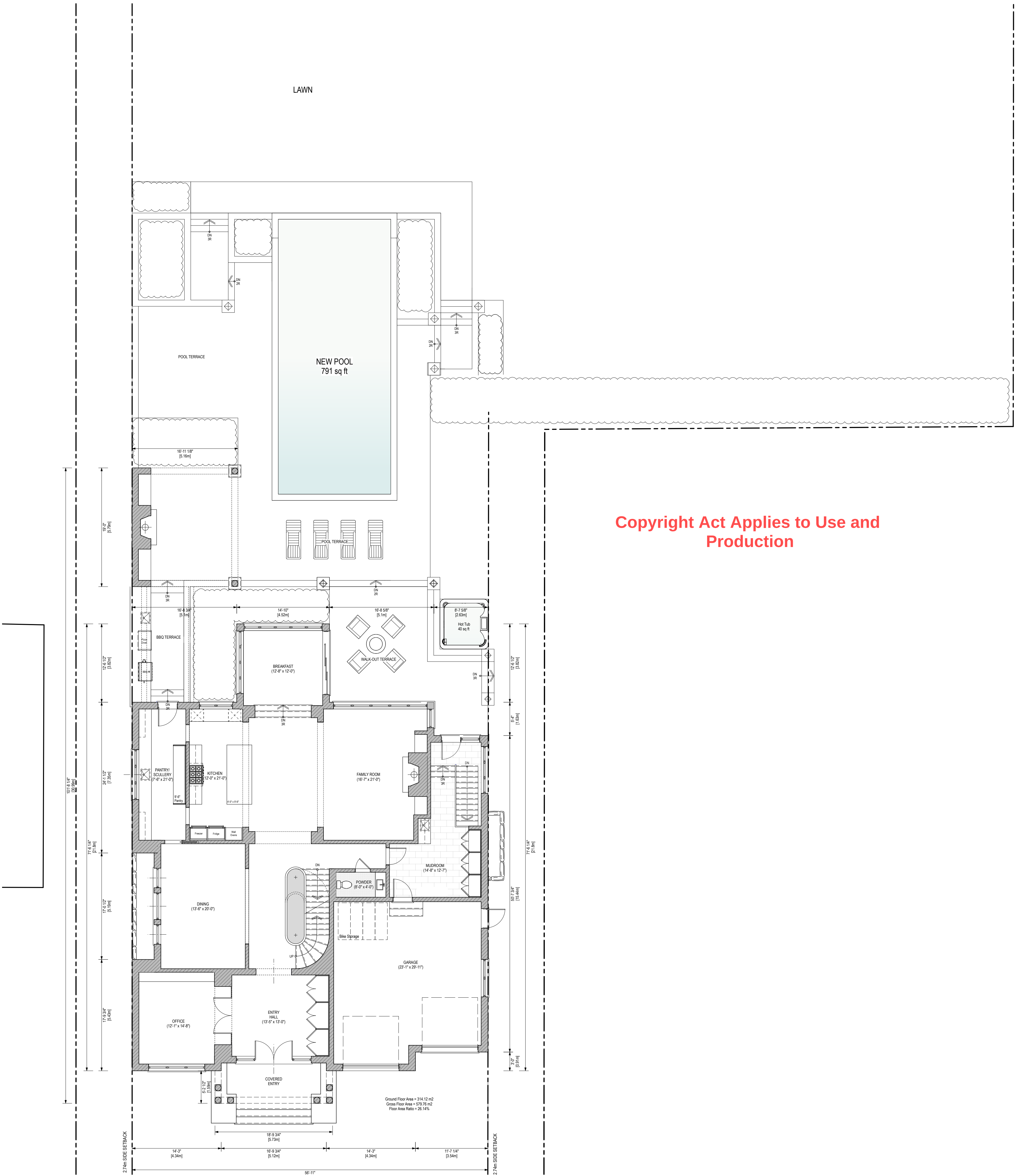
Project No.
24.13

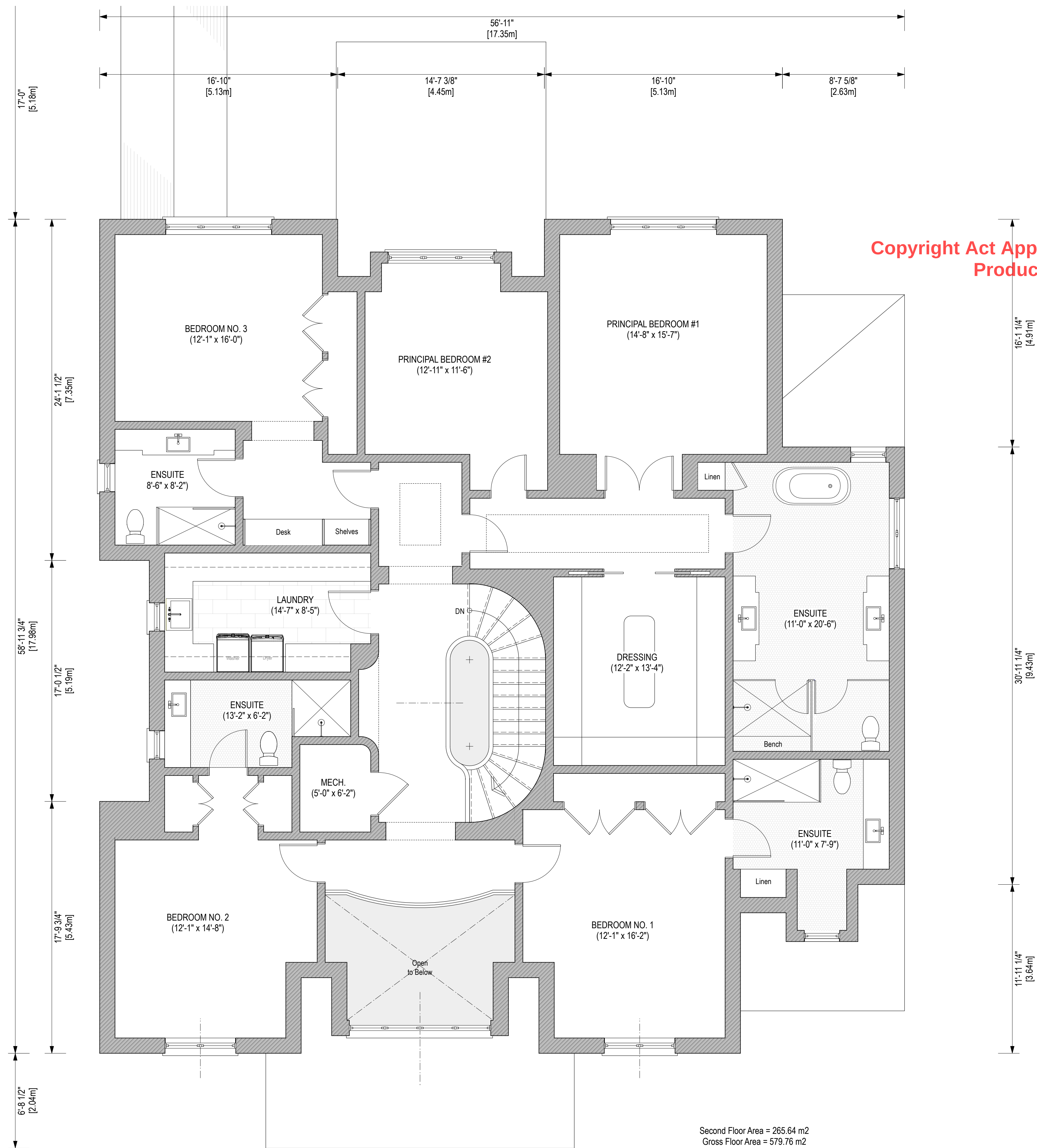
Date
22 April 2025

A-01.02a

Ground Floor

Context Plan





Willmott & Strickland Inc.
594 Chartwell Road, Suite 3, Oakville ON, L6J 4A5
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Project
Edmunds Residence

Address
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Burlington, ON**

Project No.
24.13

Drawn By TB	Checked By CE

Date
22 April 2025

Scale
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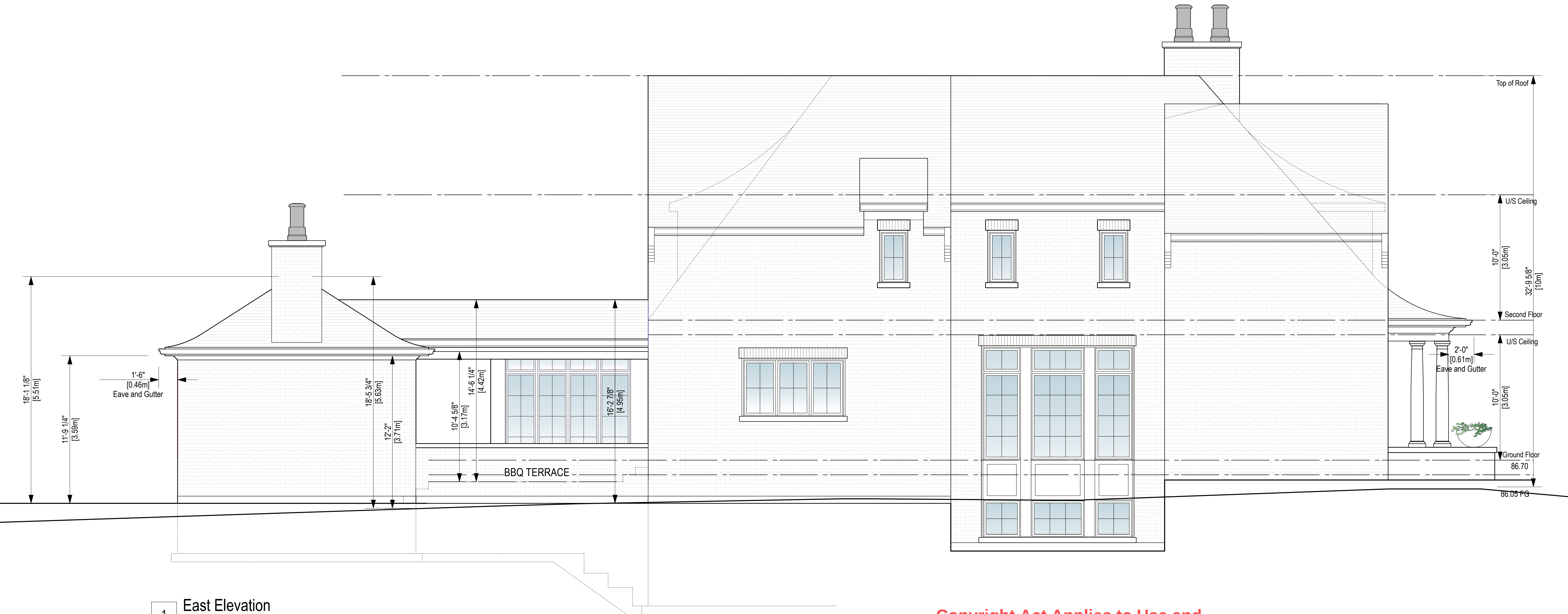
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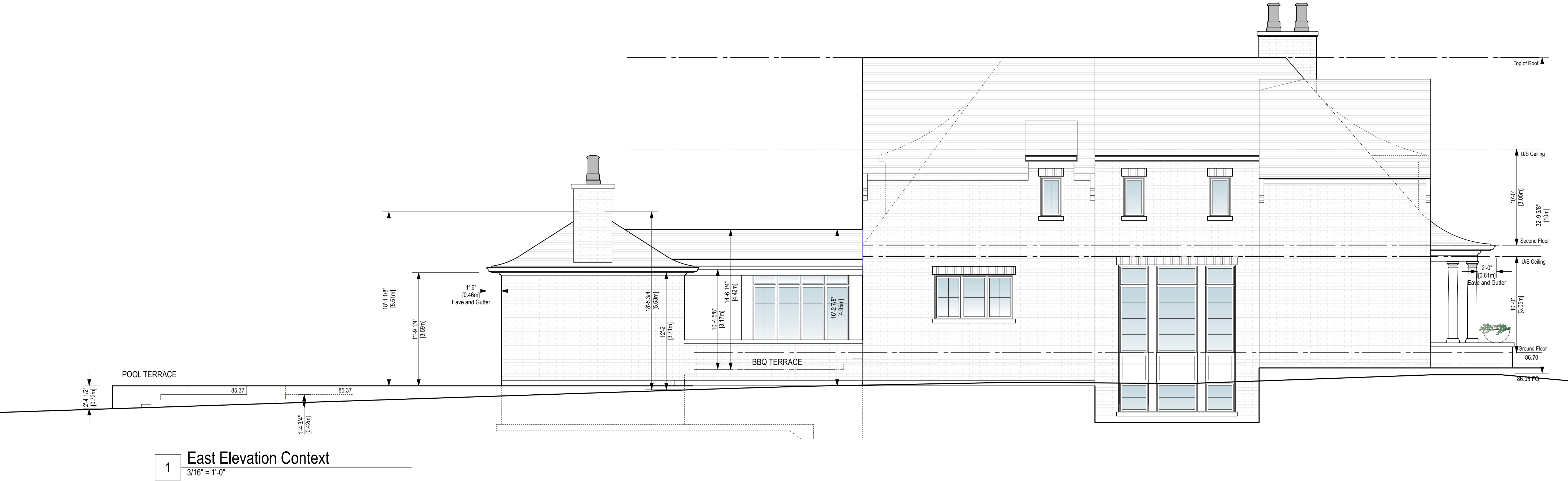
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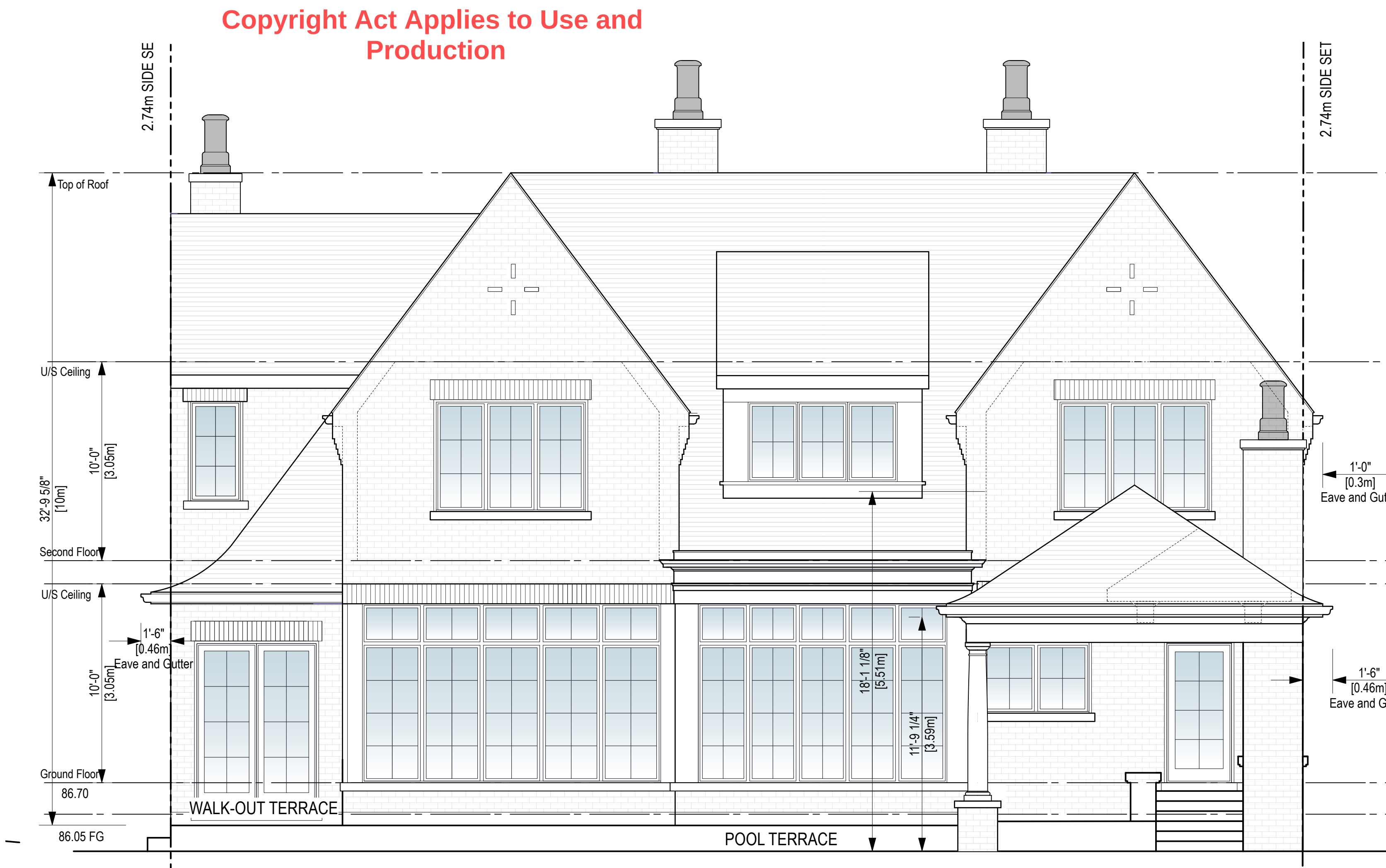
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1 South Elevation
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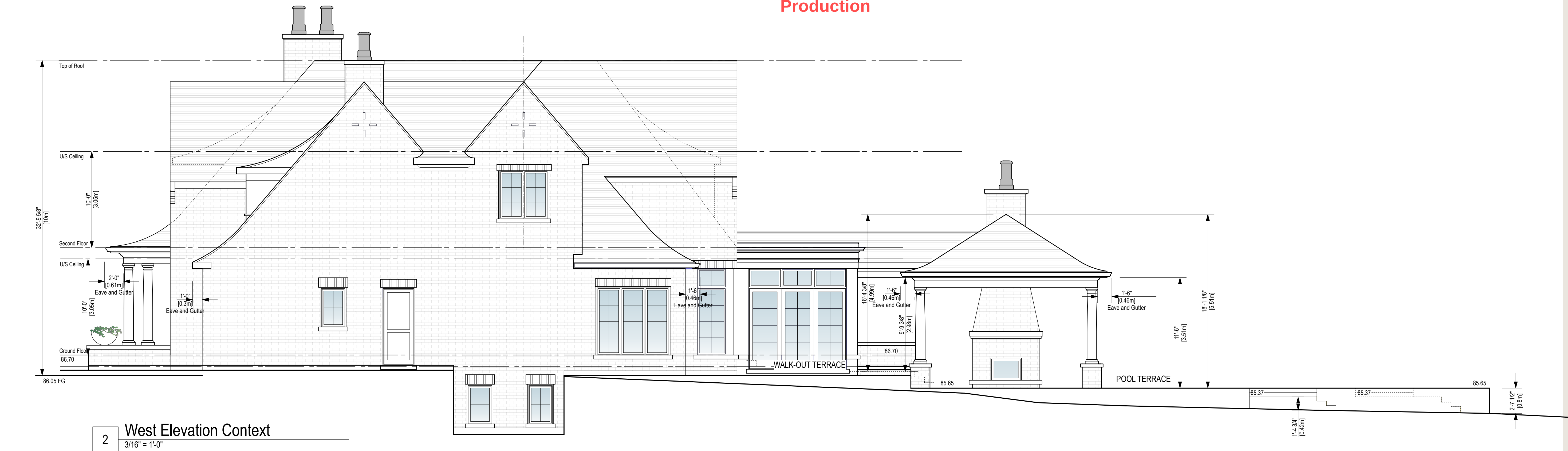
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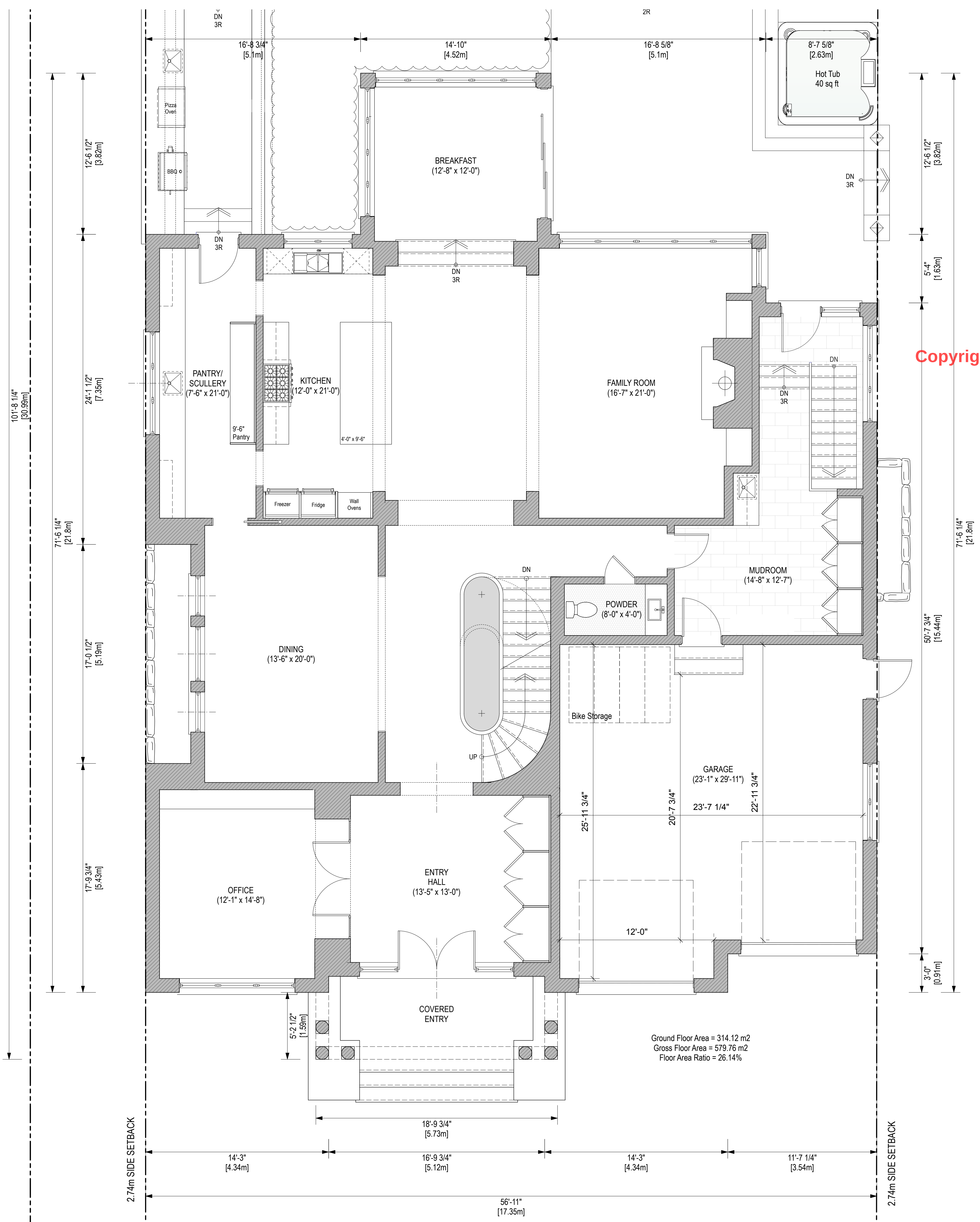
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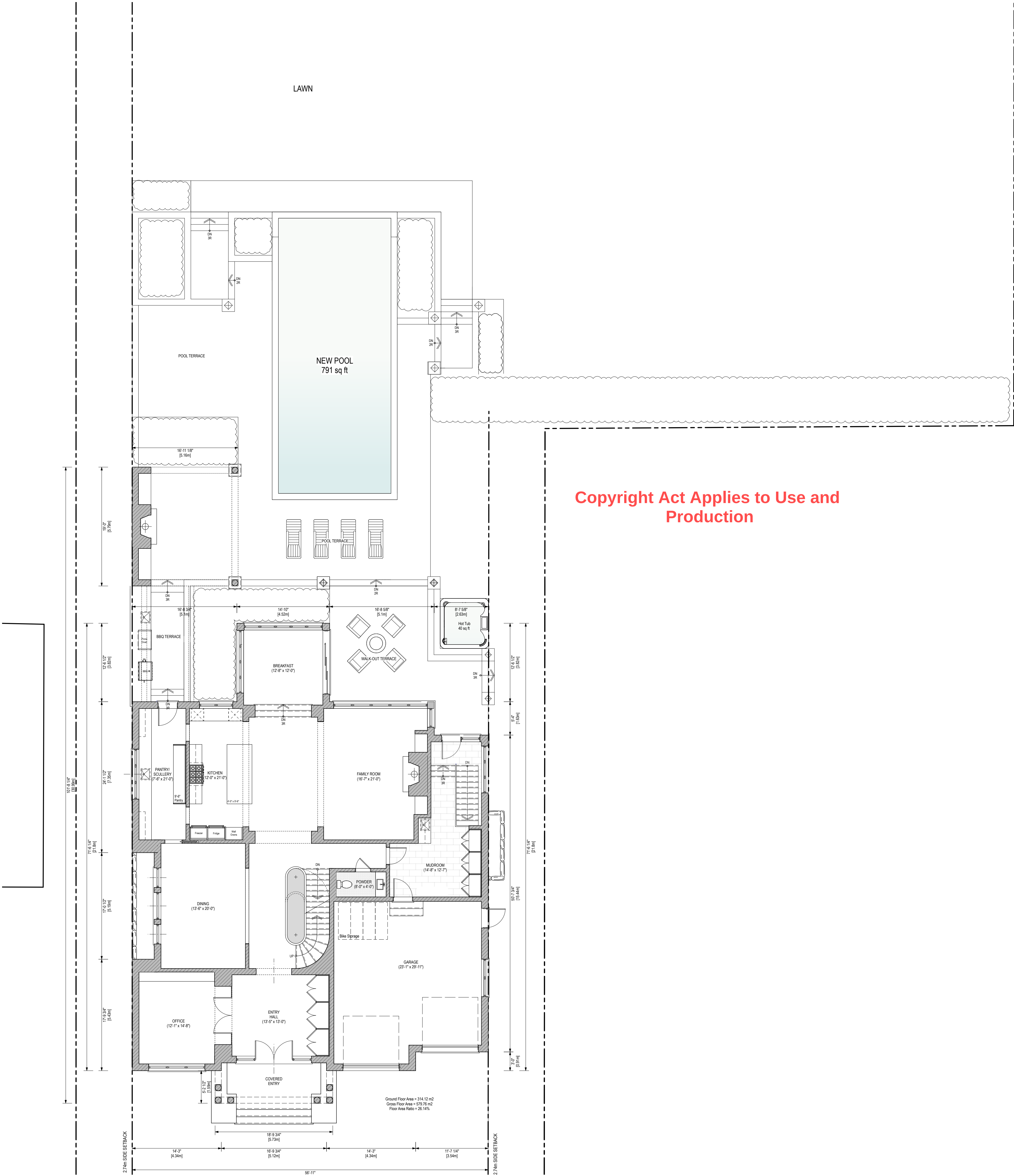
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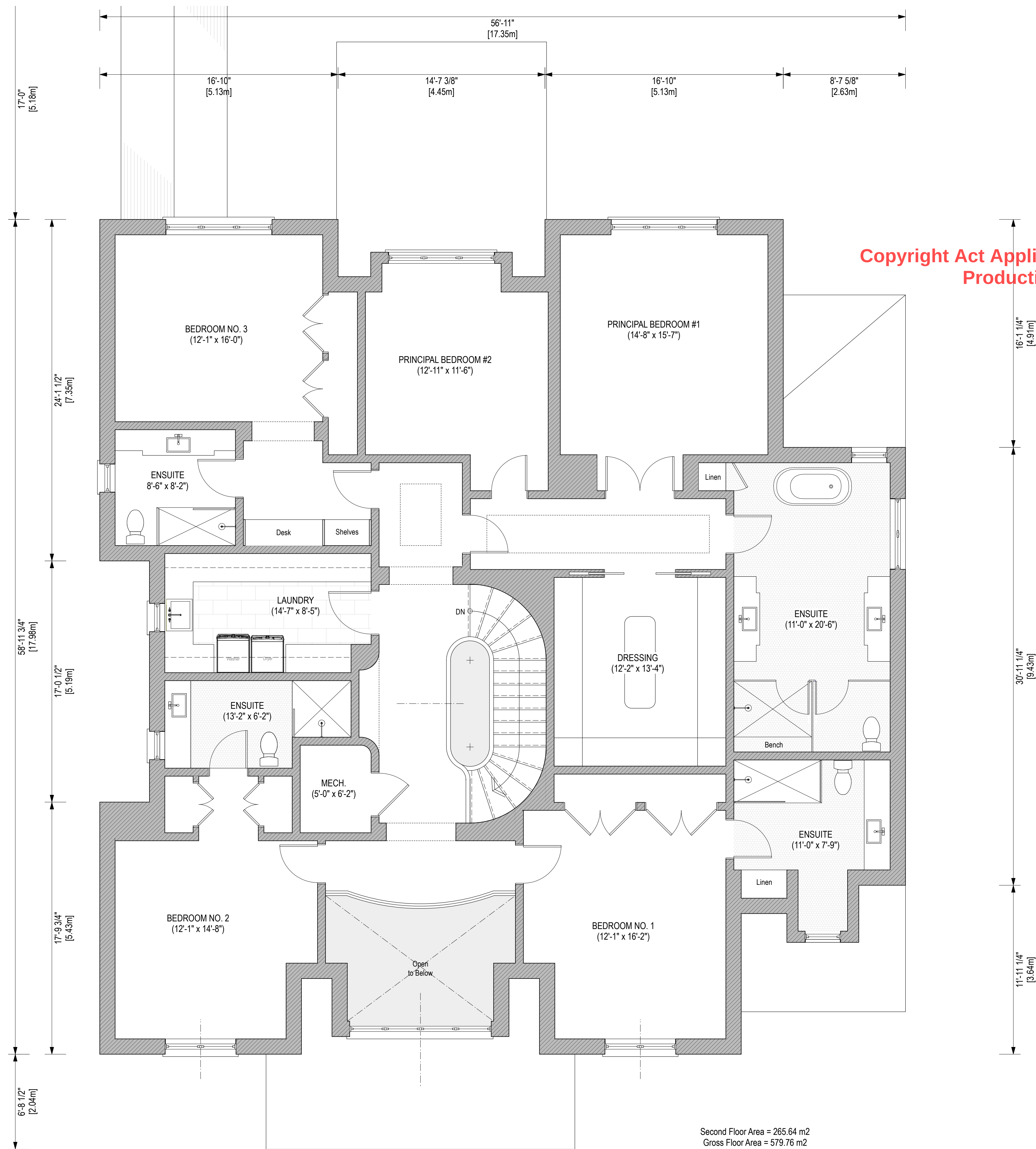
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A-01.02a
Ground Floor
Context Plan



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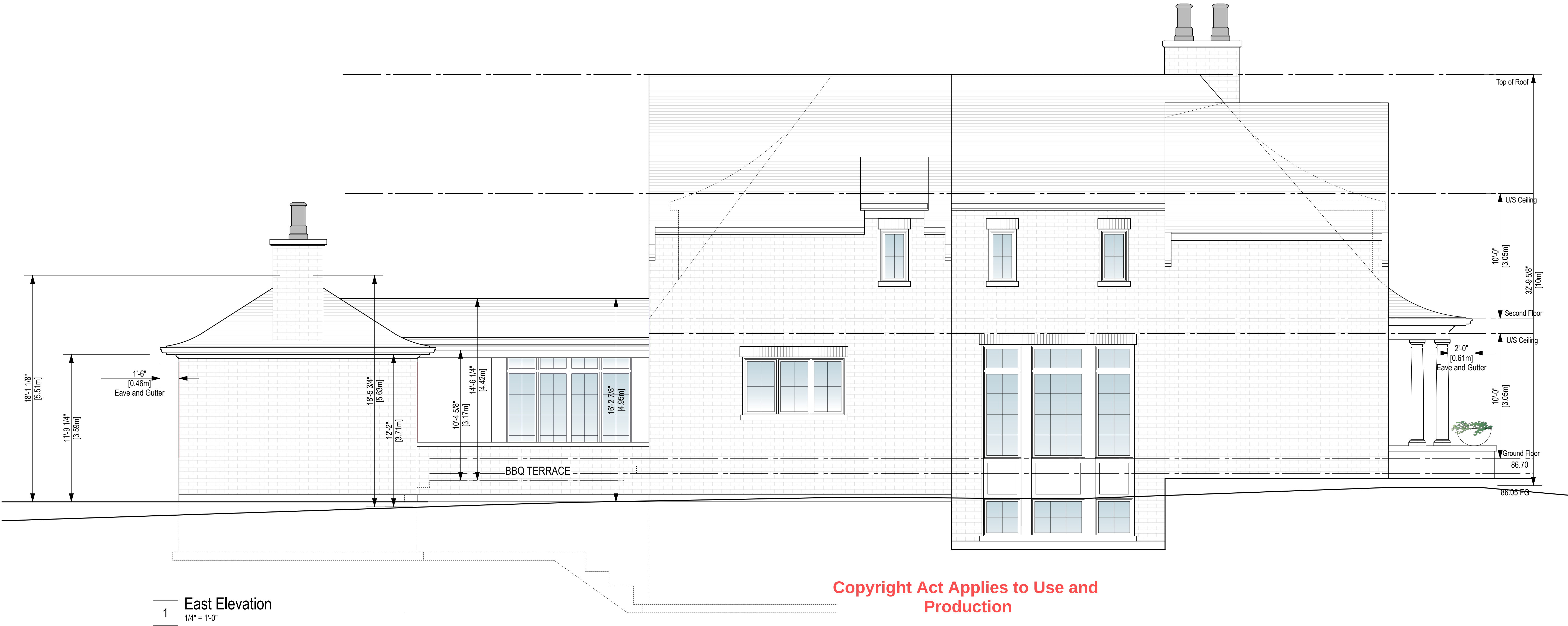
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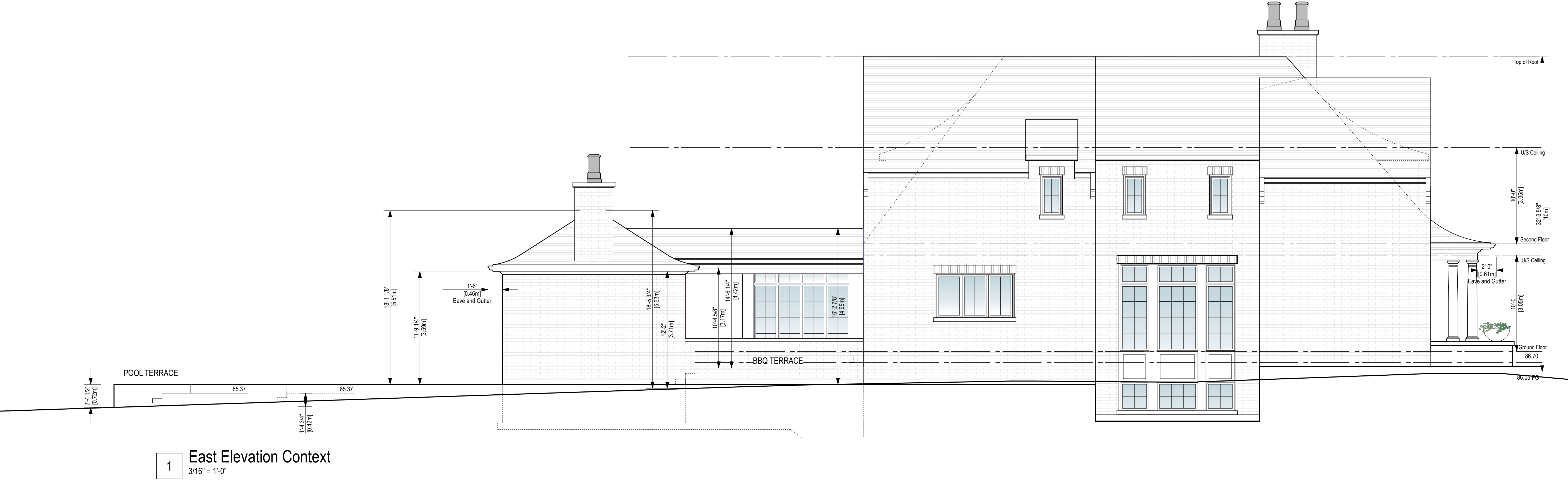
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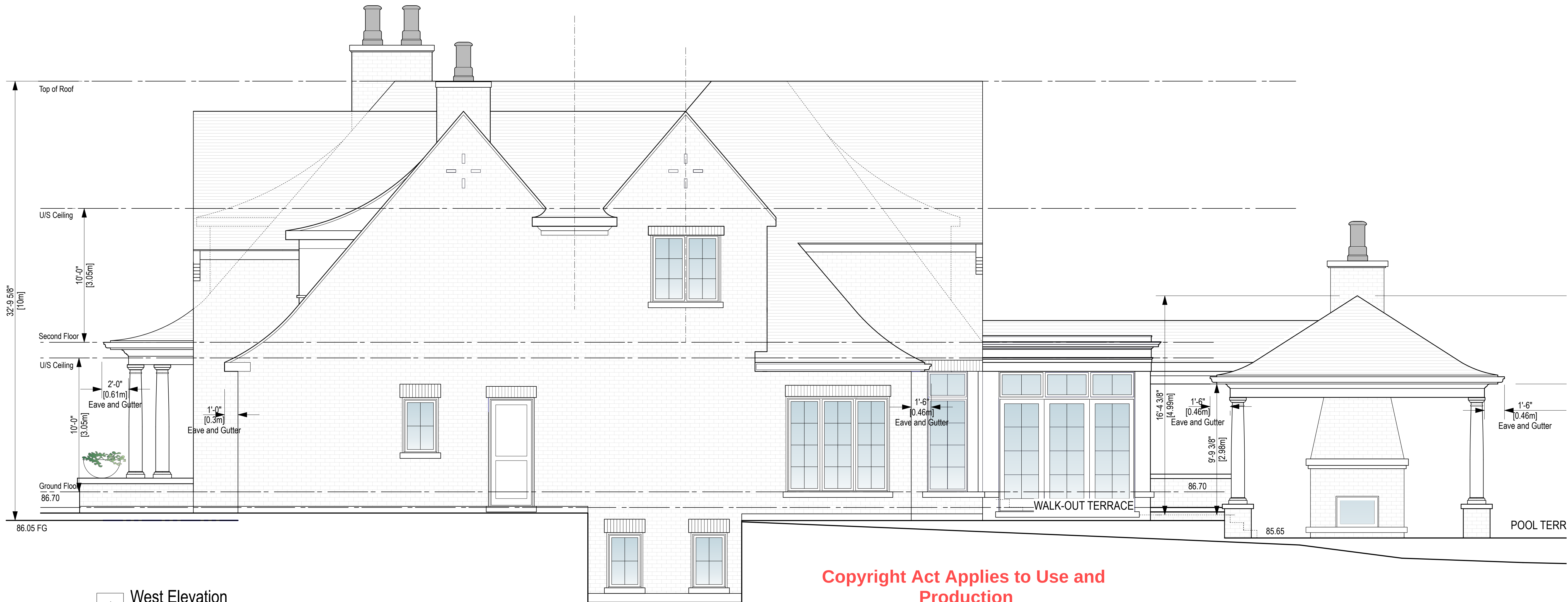


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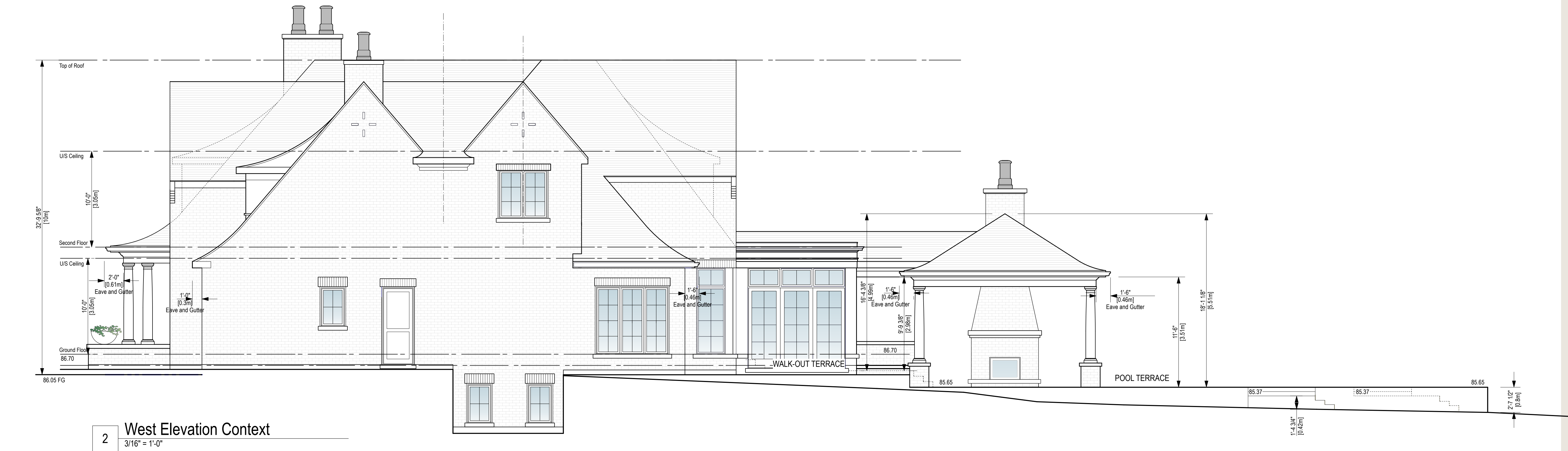
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1 South Elevation
1/4" = 1'-0"



1 West Elevation
1/4" = 1'-0"



2 West Elevation Context
3/16" = 1'-0"



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COMMITTEE OF ADJUSTMENT

Meeting 19

AGENDA

OCTOBER 22, 2025

HEARING NO. 4.2 - 1:00 P.M.

File
540-02-A-059/25

APPLICANT: Joseph Spotts and Pamela Spotts,

PROPERTY: 2197 Turnberry Road,
PLAN M702 LOT 6
City of Burlington - Regional Municipality of Halton.

PROPOSAL: The applicant is proposing the construction of a one storey
11.12m² rear yard addition onto the existing one storey
dwelling with attached garage.

VARIANCE:

1. To permit a dwelling depth of 21.5 m instead of the
maximum permitted 18 m measured from building wall
closest to front lot line to the building wall closest to the
rear lot line for a proposed one storey addition.

The map displays a residential area with property numbers ranging from 2181 to 2207. A red line, likely representing a proposed route or boundary, runs through the area, with distances marked along it: 300, 200, 200, 375, 150, 200, 200, 200, and 100. A red circle highlights a specific location near property 2199. The map also shows a large green area labeled 'Millcroft Park' and a blue area representing water. The street 'TURNBERRY RD.' is clearly visible, running vertically through the center of the map.

1) **Background information:**

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
STAFF REPORTS**

The subject property is zoned R3.2-200, Low Density Residential, under Zoning By-Law 2020, as amended. The R3.2-200 zone requires, among other things, the following:

4.6 DWELLING DEPTH

- (a) Maximum depth of a dwelling shall be 18m measured from building wall closest to front lot line to building wall closest to rear lot line.

2) Proposal:

The applicant is proposing the construction of a one storey 11.12m² rear yard addition onto the existing one storey dwelling with attached garage. A variance to permit increased dwelling depth is required.

3) Variances required:

1. To permit a dwelling depth of 21.5 m instead of the maximum permitted 18 m measured from building wall closest to front lot line to the building wall closest to the rear lot line for a proposed one storey addition.

4) Notes and conditions:

Conditions:

1. The applicant shall apply for a Pre-Building Approval Application.

Notes:

1. Conservation Halton (CH) approval is required. A CH permit dated May 23, 2025 was submitted with associated Pre-Building Approval application ZC 2025 009341. Any changes to the proposal will require a revised CH approval.
2. Variances have been identified based on the plans submitted for zoning review. If additional variances are identified when a Pre-Building Approval Application is made, they will be the responsibility of the applicant to obtain.
3. The zoning review is based on the portion of the site affected by the proposed development only.
4. The application has been reviewed under Section 45(1) of the Planning Act.

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
STAFF REPORTS**

Date: August 28, 2025Prepared By: S. Boich**Site Planning**

A minor variance application has been submitted to the City of Burlington seeking relief from the requirements of maximum dwelling depth in order to accommodate a one-storey, unheated sunroom addition at the rear of an existing detached dwelling.

The subject property, municipally known as 2197 Turnberry Road, is comprised of a large, pie-shaped lot with an area of 1,042 m² and an approximate lot frontage of 12.96 metres. Existing land uses on this site include a single-storey detached dwelling and accessory swimming pool.

The dwelling has a brick finish and double car garage projecting towards the street. The main entrance is recessed and the front yard is neatly manicured. The side yard setbacks are 1.50 and 1.83 metres. As the property widens towards the back where the side yard setbacks expand to 2.89 and 5.44 metres. On the wider side, where the sunroom addition is proposed, a mature row of evergreen trees provides privacy. The rear yard is large and includes a mix of hard and soft landscaping as well as an existing inground pool. Outward views are completely unobstructed as the rear of the property backs onto an existing storm water pond and Millcroft Park.

The neighbourhood consists predominantly of one and two storey detached dwellings and forms part of the Millcroft subdivision developed in the late 1980s. There are no significant elevation changes and the street is lined with various trees and well-maintained front yards. The lotting pattern and overall spacing between buildings is fairly consistent as well since the immediate area has the same zone designation.

Through this submission, the Owner is seeking relief from Zoning By-law 2020 to permit a dwelling depth of 21.5 metres instead of the maximum permitted 18 metres, measured from the building wall closest to the front lot line and the building wall closest to the rear lot line.

A site visit was conducted on Friday, September 19th, 2025. Existing on-site conditions are summarized in the site photos included as Attachment No. 1 (Site Photos).

1) Official Plan Designation:

Does the proposed minor variance from the Zoning By-law maintain the general intent and purpose of the Official Plan?

Yes

Regional Official Plan

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
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The subject lands are identified within the Urban Area as per Map 1 of the Regional Official Plan (Office Consolidation May 16, 2024). Section 72 of the ROP states that the goal of the Urban Area and the Regional Urban Structure is “to manage growth in a manner that fosters complete communities, enhances mobility across Halton, addresses climate change, and improves housing affordability, sustainability and economic prosperity.” Since the Plan is intended to provide a long-term vision for Halton Region, additions and modifications to established dwellings are not specifically addressed. Staff is of the opinion that the proposal is small enough in scale to meet the general intent and purpose of the ROP’s land use designation policies and objectives under Part III.

City of Burlington staff have no concerns with the proposal from a Regional Official Plan perspective.

City of Burlington Official Plan 1997 & 2020

On April 2, 2024 the Ontario Land Tribunal issued a decision granting the City’s motion for partial approval of the *Burlington Official Plan, 2020* (BOP 2020). This decision brought the “Residential Neighbourhood Areas” policies under “Chapter 8 – Land Use – Urban Area” into force. These policies supersede the “Residential Areas” policies of the *Burlington Official Plan, 1997* (BOP 1997). However, since other chapters of BOP 2020 relevant to this application remain under appeal, such as “Chapter 7 – Design Excellence”, the proposal has been reviewed against a combination of in-force policies under both Official Plans.

Additionally, Official Plan Amendment No. 3 further revised certain elements of the Burlington Official Plan, 2020 to implement the findings of the *Official Plan Amendment to Increase Housing Options* project. The purpose of this amendment was to support ground-oriented intensification as well as to update the policies related to the Residential Neighbourhood Areas designations. OPA 3 introduced three modified land use categories based on built form; Low-Rise Neighbourhoods I, Low-Rise Neighbourhoods II and High-Rise Neighbourhoods. As it pertains to this application, Section 8.3.3 of BOP, 2020 was renamed from Residential – Low Density to Low-Rise Neighbourhoods I. This designation includes areas with low-rise, ground-oriented homes and supports gradual, compatible infill development while maintaining the existing low-rise character and allowing for more diverse housing options. The single-detached dwelling on the subject lands is a permitted use under the new Low-Rise Neighbourhoods I designation. The general intent and purpose of the BOP, 2020 and OPA 3 is to encourage new development within existing areas while recognizing that the form must be balanced with other considerations like compatibility and integration into residential neighbourhoods, as they continue to evolve over time.

The Design Guidelines Policies under Part II Section 6.5 of Burlington’s OP 1997, which remain in effect, indicate that new development should be compatible and integrate well with the surrounding area including “the density, form, bulk, height, setbacks, spacing and materials...” Compatibility is further defined in OP 1997 as, “development or redevelopment that is capable of co-existing in harmony with, and that will not have an

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
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undue physical (including form) or functional adverse impact on, existing or proposed development in the area or pose an unacceptable risk to environmental and/or human health. Compatibility should be evaluated in accordance with measurable/objective standards where they exist, based on criteria such as aesthetics, noise, vibration, dust, odours, traffic, safety and sun-shadowing, and the potential for serious adverse health impact on humans or animals.”

The proposed sunroom addition, which measures only 11.12 square metres (120 square feet) is located at the rear of the property and does not in any way impact the public facing streetscape. Because the homes in this neighbourhood were constructed at the same time, they have a fairly consistent siting pattern. For example, the property immediately adjacent on the northerly side shares a similar forward protruding garage and setback. The rear facing walls of the two dwellings, closest to the shared lot line, are also nearly completely in line. Healthy, mature trees and attractive landscaping in the rear yard provide privacy and may help with noise. On the opposite side, where the sunroom is proposed, a well-established hedgerow abuts the lot line. It also acts as a natural sound barrier and completely shields the adjacent dwelling at 2195 Turnberry Road.

Owing to the size, massing and positioning of the proposed single-storey addition as well as the unique characteristics of the subject property, there will be no opportunity for overlook or sun-shadowing onto the neighbouring dwellings. The widening lot configuration and generous setbacks also mitigate any potential adverse impacts to existing grading and drainage patterns.

Overall, Staff are of the opinion that the proposed sunroom addition is compatible with the existing neighbourhood and meets the intent and purpose of the Official Plans.

2) Zoning By-law Designation:

Yes

Does the proposed minor variance from the Zoning By-law maintain the general intent and purpose of the Zoning By-law?

The subject property is currently zoned R3.2-200, or Low-Density Residential with special site Exception 200, under *Zoning Bylaw 2020*, as amended. Subject to all applicable regulations, detached dwellings are a permitted use in this zone. Exception 200 allows for a maximum lot coverage of 43% for one storey dwellings and specifies a minimum rear yard of 7.5 metres. The distance between the sunroom and rear lot line, measured perpendicular to the wall of the addition, is 23.89 metres which well exceeds the minimum.

Burlington's Zoning By-law 2020 established maximum dwelling depth restrictions in 2016 with the intent to control the size and massing of buildings on a property. At the same time, other regulations related to architectural design were also introduced -

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
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namely, limitations on garage projection commonly seen in “snout” style suburban homes. The current by-law does not allow an attached garage facing the street to project beyond the longest portion of a front wall.

The existing dwelling on the subject property, which was constructed prior to these regulations, has a very pronounced garage projection. Despite the fact that the proposed sunroom addition is at the rear and opposite side of the attached garage, the by-law instructs the measurement to be taken from the building wall closest to the front lot line (garage wall) and the building wall closest to the rear lot line (sunroom). In this case, this results in a proposed dwelling depth of 21.42 metres where the maximum permitted is 18 metres. If we consider the actual building wall facing directly onto the side lot line shared with 2195 Turnberry Road however, the proposed length is only 18.53 metres (or 14.87 m existing plus 3.66 m sunroom addition).

In light of the above considerations as well as the substantial side yard setbacks of 5.44 and 6.25 metres to the single-storey addition, staff do not consider the proposed sunroom to result in significant massing or shadow impacts on the neighbouring property. As such, staff is of the opinion that the variance requested maintains the general intent and purpose of the Zoning By-law.

3) Desirability:

Is the proposed minor variance from the Zoning By-law desirable for the appropriate development or use of the land, building or structure?

Yes

The proposed rear yard sunroom will provide the Owners with a comfortable connection to the outdoors and offer shelter from the elements. It is appropriate in scale and the proposed form is respectful of the physical character of the neighbourhood. The addition preserves on-site trees and vegetation and integrates well within existing landscape. Based on this, staff are of the opinion that the proposed minor variance is considered desirable.

4) Minor in Nature:

Is the proposed minor variance from the Zoning By-law considered minor in nature?

Yes

The proposed variance is very minor in nature when considered against the depth of the rear yard and overall site context. Both proportionately and functionally, the increase in dwelling depth does not result in any adverse impacts related to massing, shadowing or drainage. Mature landscaping on the subject property also ensures that the proposed

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
STAFF REPORTS**

sunroom has maximum privacy for the property owners and minimal impact on the immediate neighbours.

Cumulative Effects of Multiple Variances and Other Planning Matters:

n/a

Recommendation:

Staff have reviewed the proposed variance in accordance with the Planning Act, the policies of the Official Plans and the requirements of the Zoning By-law and support the variance as requested.

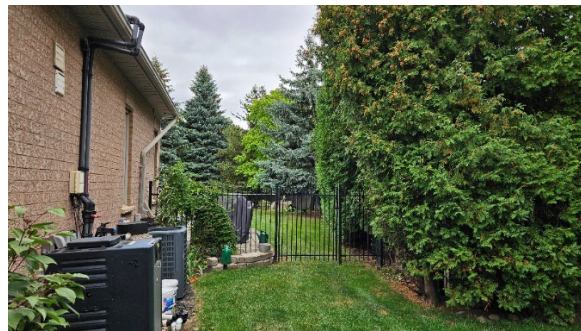
Date: October 1, 2025

Prepared By: Magda Rusin-Hynek

Attachment No. 1 - Site Photos



Front yard of subject property at 2197 Turnberry Rd



View of side yard of the proposed addition (looking towards the rear)

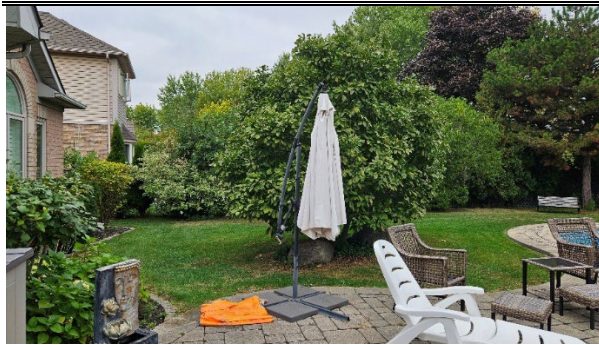


Rear of the dwelling at location of proposed addition (at sliding patio door)



View from the rear yard towards adjacent neighbour at 2199 Turnberry Rd

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
STAFF REPORTS**



View from approximate location of sunroom addition towards 2199 Turnberry Rd



View from the rear yard towards adjacent neighbour at 2195 Turnberry Rd



View from approximate location of sunroom addition towards 2195 Turnberry Rd



View from approximate location of sunroom addition towards rear yard



View of side yard looking toward the street



View of yards between subject property and 2195 Turnberry Rd



**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
STAFF REPORTS**

Development Engineering

Development Engineering has reviewed the proposed minor variances and has no objection to the variance(s) requested. Revisions to the plans may be required through the Grading and Drainage Clearance Certificate process.

Date: September 5, 2025

Prepared By: R. Maximo

Forestry

Forestry has no objection to the proposed minor variance(s) and provides the following advisory note(s) to the applicant:

1. A tree permit will be required for any and all work around regulated trees in accordance with the City's Tree By-laws.
2. Revisions to the report and/or plans may be required through the tree permit process.

Date: September 16, 2025

Prepared By: R. Shaw-Lukavsky

Building

1. A Building Permit is required for all building construction;
2. Permit application drawings are to be prepared by a qualified designer as per Div. C., Section 3.2 - Qualifications of Designers and OBC 2024.

Date: September 17, 2025

Prepared By: T. Le

Transportation PlanningDeemed Road Width Analysis

Turnberry Road is under the authority of the City of Burlington and the deemed right-of-way width is 20 metres. The right of-way adjacent to the subject site is approximately 20 metres therefore no additional lands are required.

Date: July 18th 2025

Prepared By: Taylor Kirchknopf

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
STAFF REPORTS**

Transportation Planning have reviewed the proposed minor variance application and have no comments.

Date: September 18th 2025

Prepared By: Taylor Kirchknopf

Finance

Notice regarding Development Charges:

The owner, its successors and assigns, are hereby notified that City Development Charges may be payable in accordance with the applicable By-law 72-2004, as may be amended, upon issuance of a building permit, at the rate in effect on the date issued. For further information, the owner is advised to contact the City Building Department (905) 335-7731.

Tax

All property taxes including penalty and interest must be paid. This includes all outstanding balances plus current year taxes that have been billed but are not yet due. Local improvements must be commuted.

Date: September 4, 2025

Prepared By: L. Bray

Halton Region

Regional Staff have reviewed the above-referenced Minor Variance application requesting relief from the maximum permitted dwelling depth to facilitate the construction of a one storey (11.12m²) rear yard addition onto the existing one storey dwelling with attached garage.

- Due to Provincial legislation, as of July 1, 2024, the Halton Region's role in land use planning and development matters has changed. The Region is no longer responsible for the Regional Official Plan – as this has become the responsibility of Halton's four local municipalities. As a result of this change, a Memorandum of Understanding (MOU) between the Halton municipalities and Conservation Authorities has been signed that identifies the local municipality as the primary authority on matters of land use planning and development. The MOU also defines the continued scope of interests for the Region and the Conservation Authorities in these matters.
- Regional Staff have no objections to this Minor Variance application.

Date: September 17, 2025

Prepared By: Amanda Roger

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
STAFF REPORTS**

Conservation Halton

Conservation Halton (CH) staff has reviewed the application materials for the above-noted application as per our regulatory responsibilities under the *Conservation Authorities Act* (CA Act) and Ontario Regulation 41/24 and our provincially delegated responsibilities under Ontario Regulation 686/21 (e.g., acting on behalf of the province to ensure decisions under the Planning Act are consistent with the natural hazards policies of the Provincial Policy Statement [PPS, Sections 3.1.1-3.1.7] and/or provincial plans).

CH regulates all watercourses, valleylands, wetlands, Lake Ontario Shoreline, hazardous lands (e.g. flooding and erosion hazards, dynamic beaches, unstable soil and bedrock), as well as lands adjacent to these features. Based on CH's Approximate Regulation Limit (ARL) mapping, the subject property is adjacent to lands which are traversed by a tributary of Sheldon Creek and contain the flooding and erosion hazards associated with that watercourse. CH regulates 15m from the greater of the flooding and erosion hazards associated with watercourses. Permits are required from CH prior to undertaking development activities within CH's regulated areas and applications for development are reviewed under the CA Act, Ontario Regulation 41/24, and CH's *Policies and Guidelines for the Administration of Part VI of the Conservation Authorities Act and Ontario Regulation 41/24 and Land Use Policy Document* (last amended April 17, 2025) (<https://conservationhalton.ca/policies-and-guidelines>).

A variance is requested to permit a dwelling depth of 21.5m instead of the maximum permitted 18m measured from building wall closest to front lot line to the building wall closest to the rear lot line. This variance is required for a proposed one-storey addition.

On May 23, 2025, CH issued a Development Clearance Letter for the proposed works (RNOL-3331). CH has no objections to the requested variances as the proposed development activities are consistent with plans approved through the issued CH Development Clearance Letter and remain outside of CH's regulated area.

Should any changes to the proposed development arise through the Minor Variance process, or for future development, please circulate CH for further review and comment to identify any regulatory and permitting requirements.

We trust the above is of assistance. Please contact the undersigned with any questions.

Date: September 5, 2025

Prepared By: Ashley Gallaughier

Burlington Hydro

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
STAFF REPORTS**

A response for request for comments was not received by the time this staff report was published.

Date: October 3, 2025

Prepared By: E. Shacklette



(905) 335-7629
committeeofadjustment@burlington.ca
FILE NO. 540-02-**A-059/25**
Committee of Adjustment
Date of Mailing: October 6, 2025

NOTICE OF PUBLIC HEARING

Joseph Spotts and Pamela Spotts, the owners of 2197 Turnberry Rd. Burlington, have applied to the Committee of Adjustment for a Minor Variance to the requirements of Zoning By-law 2020, as amended. The property in question is **2197 Turnberry Rd. Burlington** (see map).

The applicant is proposing the construction of a one storey 11.12m² rear yard addition onto the existing one storey dwelling with attached garage. This proposal results in the following variance:

1. To permit a dwelling depth of 21.5 m instead of the maximum permitted 18 m measured from building wall closest to front lot line to the building wall closest to the rear lot line for a proposed one storey addition.

You have received this notice as stipulated by the *Planning Act* because your property is within 60 metres of the property noted above. The application materials are available on request by contacting Committee of Adjustment staff by one of the methods listed above. A copy of the Agenda, containing staff reports and drawings, can be viewed online under the Meeting Agenda tab at **Burlington.ca/coa** on or after **October 6, 2025**.

Committee of Adjustment Hearings will be hybrid-conducted in person and virtually. All members of the public, applicants and their agents will now have the option to participate in the public meeting process in person at City Hall in Council Chambers, or remotely via Zoom Webinar Video Conferencing Technology. The Committee of Adjustment will meet to consider the above application under Section 45 of the *Planning Act*, 1990, as amended on:

WEDNESDAY OCTOBER 22, 2025,

This application is scheduled to be heard at or after 1:00 pm.

How to participate if I have comments or concerns?

Written Submissions

Members of the public who would like to participate in a Committee of Adjustment meeting are able to send written comments regarding the application by e-mail to committeeofadjustment@burlington.ca with the subject line to read "Comments_Your Name_File No._Address of the Property".

Alternatively, written comments can be sent by regular mail addressed to the Secretary-Treasurer. Include your name, address, application number and address of the property for which you are providing comments.

City of Burlington Committee of Adjustment - Community Planning
426 Brant Street P.O. Box 5013 Burlington, Ontario, L7R 3Z6
committeeofadjustment@burlington.ca

To allow all Committee of Adjustment members the opportunity to review and consider your comments, please provide your written submissions to be received no later than noon the day before the hearing date.

Oral Submissions

Members of the public are also able to provide oral comments regarding Committee of Adjustment Hearing items by participating virtually through Zoom via computer or phone, or by attending the Hearing in-person. Participation virtually requires pre-registration in advance. Please contact staff for instructions if you wish to make a presentation containing visual materials.

1. Virtual Oral Submissions

To register as a delegate, please contact the Secretary-Treasurer no later than 12:00 p.m. (noon) the day before the hearing date. The following information is required to register; Committee of Adjustment file number, hearing date, name, and mailing address of each person wishing to speak, if participation will be by phone or video. All requests to delegate must contain a copy of your intended remarks which will be circulated to all members of Committee in advance.

2. In person Oral Submissions

Interested members of the public, agents, and owners who wish to participate in person may attend Council Chambers on the date and time listed on the Notice of Public Hearing. Please note that you will be required to provide your name and address for the record. It is advised that you arrive no less than 10 minutes before the time of the Public Hearing as noted on the Notice of Public Hearing.

Attend or View the Committee of Adjustment Hearing:

If you do not wish to participate, but would like to follow along, the hearing will be held in person at City Hall in Council Chambers and live through a Zoom Webinar. Instructions, links and phone numbers for joining the meeting will be posted on the Committee of Adjustment webpage the day prior to the scheduled meeting. The link will be active at **12:00 p.m.**

If you wish to be notified of the decision of the Committee of Adjustment in respect to this application, you must submit a written request to the Secretary-Treasurer. This will also entitle you to be advised of a possible Ontario Land Tribunal Hearing. In accordance with the Planning Act, the Committee of Adjustment decision may be appealed to the Ontario Land Tribunal by the owner, the Minister of Municipal Affairs and Housing, a specified person or public body that has an interest in the matter.

The applicant is advised that it is **mandatory** that either the applicant or an authorized agent of the applicant must be present at the hearing either in person or virtual.

For more information about this matter, contact Catherine Susidko-Petriczko at
committeeofadjustment@burlington.ca

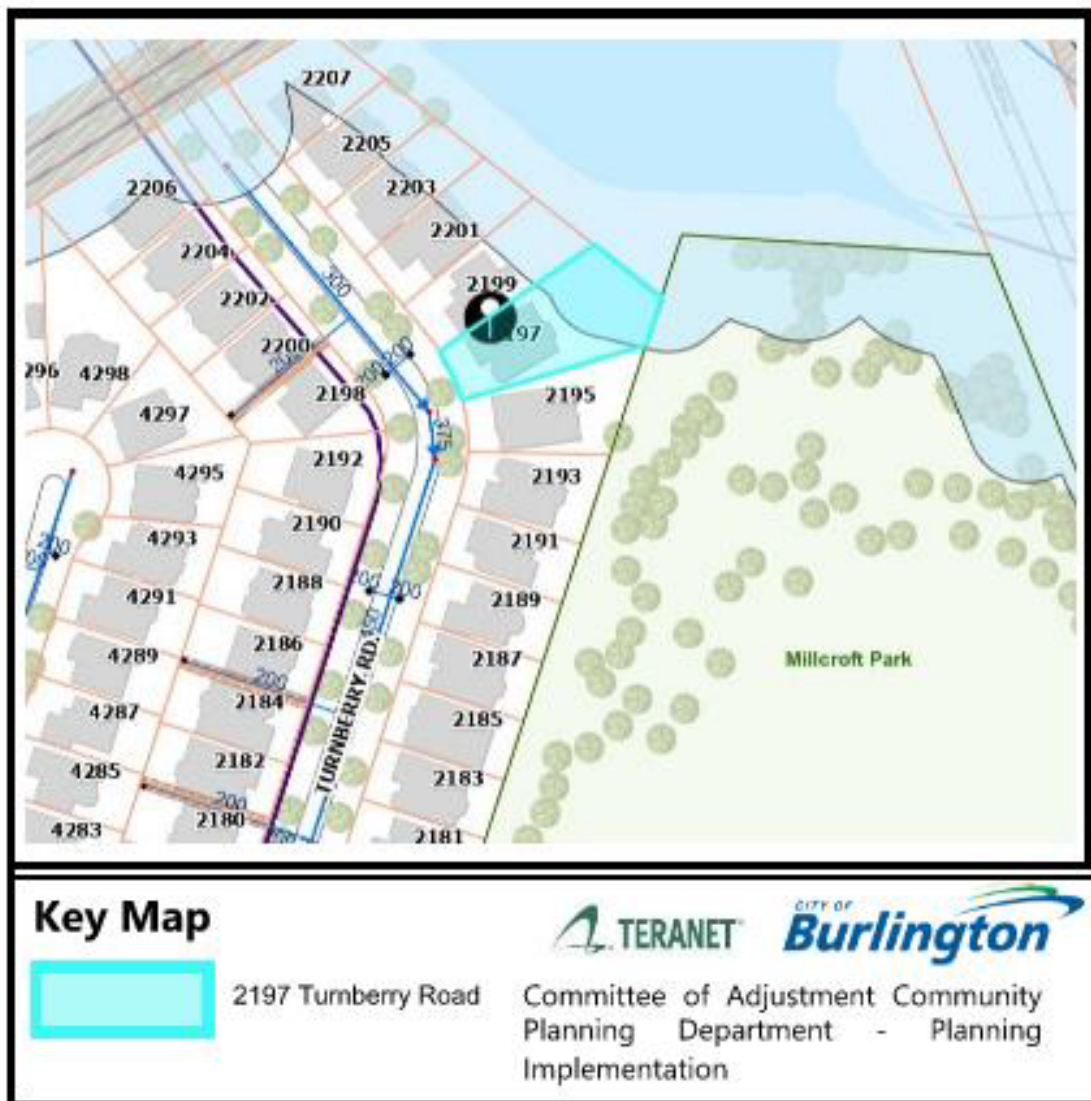
Yours truly,



Catherine Susidko-Petriczko
Secretary-Treasurer
Committee of Adjustment

Personal information including comments and public feedback, is collected under the legal authority of the Planning Act, R.S.O. 1990, Chapter c. P.13, as amended, and the Municipal Freedom of Information and Protection of Privacy Act, R.S.O. 1990, as amended, which will be used to process the application and in the decision making process and becomes the property of the City of Burlington, and is considered to be a public record and will be disclosed to any individual (including being posted on the internet) upon request. Questions about this collection should be directed to the Secretary-Treasurer, Burlington Committee of Adjustment, Community Planning Department, 426 Brant Street, P.O. Box 5013, Burlington, Ontario; L7R 3Z6 (905) 335-7629.

Key Map



PLANNING ACT, R.S.O. 1990, C.P. 13
APPLICATION FOR MINOR VARIANCE OR FOR PERMISSION

THE UNDERSIGNED HEREBY APPLIES TO THE COMMITTEE OF ADJUSTMENT FOR THE CITY OF BURLINGTON UNDER SECTION 45 OF THE PLANNING ACT, R.S.O. 1990, C.P.13, AS DESCRIBED IN THIS APPLICATION, FROM BY-LAW NO. 2020. (AS AMENDED)

Application made under:

☒ Section 45 (1) of the Planning Act

☐ Section 45 (2) of the Planning Act

Discussed the application with a City Zoning Examiner and Development Planner Y ☐ or N ☒

Name of Planner: _____ Name of Zoning Examiner: _____

PROPERTY INFORMATION

Municipal Address(es) of property:

2197 Turnberry road, Burlington ON L7M 4P9

Legal Description of property:

PLAN M702 LOT 6

Official Plan Designation: PLAN M702 Current Zoning Designation _____

OWNER(S) INFORMATION:

Legal Name (as it appears on the title for the property):

Joseph and Pamela Spotts

Mailing Address: 2197 Turnberry road City: Burlington

Postal Code: L7M 4P9 Home Phone: _____ Mobile Phone: (905) 971 8801

Work Phone: _____ E-Mail: _____

AGENT INFORMATION (if applicable): (This person will be the primary point of contact if provided)

Name:

Syed Ahmed

Business Address: 944 Crawford Drive City: Peterborough

1 (800) 465

Postal Code: K9J 3X2 Home Phone: _____ Mobile Phone: 0593

Work Phone: _____ E-Mail: Permits@lifestylehp.ca

PROPOSED DEVELOPMENT Please outline in detail your proposed development and list each variance you are requesting, as well as the Zoning By-law Requirements. Attach a separate sheet if required.

Construction of a 11.12 sq.m unheated sunroom

1. Adjustment of permitted maximum dwelling depth from 18.0 m to 21.5m

Variance(s) Requested	Zoning Bylaw Requirement
Proposed dwelling depth - 21.5m	Allowed : 18.0m

In your own words, please explain why you are unable to comply with the provisions of the Zoning By-law and how the minor variance(s) meet the four (4) tests under the Planning Act:

1. Why is the variance(s) minor in nature? _____

It does not result in any negative impacts on adjacent properties, access or the overall

Character of the neighborhood

2. Why are the variance(s) desirable for the appropriate use of the land? _____

Sunroom will not be of reasonable dimensions if kept to by law

3. Do the variance(s) meet the intent and purpose of the Official Plan? _____

Yes, the variance meets the intent and purpose of the Official Plan. The proposed building depth of 21.5m remains compatible with surrounding properties

4. Do the variance(s) meet the intent and purpose of the Zoning By-law? _____

Yes, the variance meets the intent and purpose of the Zoning By-law.

PROPERTY DETAILS (please complete all fields):

Date property purchased:	<u>05/29/2017</u> mmm/dd/yyyy	Date property first built on:	<u>1998</u> mmm/dd/yyyy	Date of proposed construction:	<u>8/29/2025</u> mmm/dd/yyyy

Existing Use of the Subject Property (check one):

- Detached Dwelling ☒ Semi-Detached Dwelling ☐
 Townhouse Dwelling ☐ Street Townhouse Dwelling ☐
 Apartment ☐ Mixed Use ☐ Hi Rise ☐
 Commercial ☐ Industrial ☐ Vacant ☐
 Other ☐ _____

Length of time the existing uses of the subject property have continued:

8 years

Proposed Use of the Land:

Residential

Existing Uses of Abutting Properties (check all that apply)

- Residential ☒ Commercial ☐ Industrial ☐ Multi-Residential ☐ Vacant ☐ Hydro right of-way ☐
 Railway right-of-way ☐ Provincial Highway ☐ Park ☐ Other ☐ _____
 Conservation Halton Lands: Lake Ontario ☐ Creek ☐ Storm Water Management Pond/Channel ☐
 Ravine ☐

Additional Information

Is liquor sold on site? Y ☐ or N ☒

Is the property on the Municipal Cultural Heritage Register for the City of Burlington? Y ☐ N ☒
Unknown ☐

Type of Access to the Subject Lands

- Provincial Highway ☐ Municipal Road ☒ Private Road ☐ Water ☐ Other(specify) ☐

Municipal Services Provided

- Water ☒ If not available, by what means is it provided: _____
 Sanitary Sewers ☒ If not available, by what means is it provided: _____
 Storm Sewers ☒ If not available, by what means is it provided: _____

IS THE SUBJECT LAND(S) THE SUBJECT OF ANY OF THE FOLLOWING DEVELOPMENT APPLICATIONS:

- ☐ Official Plan Amendment ☐ Zoning By-law Amendment ☒ Building Permit
☐ Site Development Plan ☐ Plan of Subdivision ☐ Previous Minor Variance ☐ Consent

FOR RESIDENTIAL DETACHED OR SEMI-DETACHED DWELLINGS

Dimensions of Property			Street Width (see first page of application for how to obtain)			Lot Coverage	Corner Lot? Y ☐ N ☒
Frontage	Depth	Area	Actual	Deemed	Required		
12.8M	21.437M	214.93M	20M	20M	None	21.68%	

Particulars of all buildings and structures on or proposed for the subject lands

(attach additional page if required)

EXISTING (Dwelling/Building)		PROPOSED (Dwelling/Building/Addition)	
Ground Floor Area (incl. attached garage)	214.93 M ²	Ground Floor Area (incl. attached garage)	11.12 M ²
Gross Floor Area:	214.93 M ²	Gross Floor Area:	11.12 M ²
Number of Storeys:		Number of Storeys:	
Width:	12.69 M	Width:	3.05 M
Length:	16.97 M	Length:	3.66 M
Height:	5.4 M	Height:	2.75 M
Garage/Car Port		Garage/Car Port	
Detached?	Y ☐ N ☒	Detached?	Y ☐ N ☐
Gross Floor Area:	29.32 M ²	Gross Floor Area:	M ²
Width:	5.82 M	Width:	M
Length:	5.05 M	Length:	M
Height:	2.7 M	Height:	M
Accessory Structures (Shed, Gazebo, etc)		Accessory Structures	
Gross Floor Area:	13.4 M ²	Gross Floor Area:	M ²
Width:	3.66 M	Width:	M
Length:	3.66 M	Length:	M
Height:	2.7 M	Height:	M
Other (pool, additional sheds, decks, driveways, etc.)		Other	
Gross Floor Area:	36.12 M ²	Gross Floor Area:	M ²
Width:	M	Width:	M
Length:	M	Length:	M
Height:	M	Height:	M
LOCATION of all existing and proposed buildings and structures			
EXISTING		PROPOSED	
Front:	7.27 M	Front:	25.03 M
Rear:	21.06 M	Rear:	22.23 M
Side/Street Side:	1.83 M	Side/Street Side:	12.57 M
Side/Other Side:	1.5 M	Side/Other Side:	6.25 M

FOR COMMERCIAL, MIXED USE, INDUSTRIAL AND OTHER

Dimensions of Property			Street Width (see first page of application for how to obtain)			Density	Have you applied for Site Plan Approval? Y ☐ N ☐ File #:
Frontage	Depth	Area	Actual	Deemed	Required		

Particulars of all buildings and structures on or proposed for the subject lands

(attach additional page if required)

EXISTING (Building)		PROPOSED (Building/Addition)	
Ground Floor Area:	M ²	Ground Floor Area:	M ²
Gross Floor Area:	M ²	Gross Floor Area:	M ²
Number of Storeys:		Number of Storeys:	1 STOREY
Width:	M	Width:	M
Length:	M	Length:	M
Height:	M	Height:	M
Floor Area: Office Space	M ²	Floor Area: Office Space	M ²
Floor Area:	M ²	Floor Area:	M ²
Warehouse/Retail/Other:		Warehouse/Retail/Other:	
# of Existing Units:		# of Proposed Units:	
Floor Area Ratio:		Floor Area Ratio:	
Required Parking Spaces:		Proposed Parking Spaces:	
Existing Parking Spaces:			
EXISTING (Other)		PROPOSED (Other)	
Ground Floor Area:	M ²	Ground Floor Area:	M ²
Gross Floor Area:	M ²	Gross Floor Area:	M ²
Number of Storeys:		Number of Storeys:	
Width:	M	Width:	M
Length:	M	Length:	M
Height:	M	Height:	M
LOCATION of all existing and proposed buildings and structures			
EXISTING (Building)		PROPOSED (Building)	
Front:	M	Front:	M
Rear:	M	Rear:	M
Side:	M	Side:	M
Side:	M	Side:	M
OTHER		OTHER	
Front:	M	Front:	M
Rear:	M	Rear:	M
Side:	M	Side:	M
Side:	M	Side:	M

MULTI-RESIDENTIAL

(STREET TOWNHOUSE, HI-RISE, STACKED TOWNHOUSES, DUPLEXES, etc)

Dimensions of Property			Street Width (see first page of application for how to obtain)			Density	Have you applied for Site Plan Approval? Y ☐ N ☐ File #:
Frontage	Depth	Area	Actual	Deemed	Required		

Particulars of all buildings and structures on or proposed for the subject lands

(attach additional page if required)

EXISTING (Building)

Ground Floor Area:	M ²
Gross Floor Area:	M ²
Number of Storeys:	
Width:	M
Length:	M
Height:	M
# of Existing Units:	M ²
Floor Area Ratio:	M ²
Required Parking Spaces:	
Existing Parking Spaces:	

PROPOSED (Building/Addition)

Ground Floor Area:	M ²
Gross Floor Area:	M ²
Number of Storeys:	
Width:	M
Length:	M
Height:	M
# of Proposed Units:	M ²
Floor Area Ratio:	M ²
Proposed Parking Spaces:	

EXISTING (Other)

Ground Floor Area:	M ²
Gross Floor Area:	M ²
Number of Storeys:	
Width:	M
Length:	M
Height:	

PROPOSED (Other)

Ground Floor Area:	M ²
Gross Floor Area:	M ²
Number of Storeys:	
Width:	M
Length:	M
Height:	M

LOCATION of all existing and proposed buildings and structures

EXISTING (Building)

Front:	M
Rear:	M
Side:	M
Side:	M

PROPOSED (Building)

Front:	M
Rear:	M
Side:	M
Side:	M

OTHER

Front:	M
Rear:	M
Side:	M
Side:	M

OTHER

Front:	M
Rear:	M
Side:	M
Side:	M

EXEMPTION FROM NEW SURVEY REQUIREMENT

Minor additions to an existing dwelling or for a proposed accessory building or structure (i.e., deck, driveway, pergola, shed), may be exempt from having to provide a new survey. Please refer to Page 3 of this application package for more details. Minor Variances with concurrent Consent applications require a new survey.

Applicant/Owner: Joseph Spotts

Property Address: 2197 Turnberry road,
Burlington L7M 4P9

1. I, Syed Ahmed In my capacity as Agent do attest to the following:
Print Name (Owner or agent)

Please complete Section A, B, or C

A. The OLS survey/sketch of survey dated 6/27/2025
mmm/dd/yyyy
has been revised by: Lifestyle sunroom Inc
(Person or Company Name)

OR

B. The site plan, architect's plan or engineer's plan dated 6/27/2025
mmm/dd/yyyy
has been revised by: Lifestyle Sunroom Inc
(Person or Company Name)

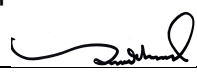
OR

C. The sketch or plot plan** dated 6/27/2025
mmm/dd/yyyy
**Accepted for applications involving variances for Uses only.
was prepared by: Lifestyle Sunroom Inc
(Person or Company Name)

2. All structures, measurements, setbacks and boundaries of the property are shown accurately as of: 6/27/2025
mmm/dd/yyyy

3. The material submitted shows all measurements in metric, as calculated/converted by: Lifestyle sunroom Inc
(Person or Company Name)

4. Should the need arise during application processing for an new OLS survey, the applicant/agent agree to provide the survey as required by Committee or city staff in order to receive a decision on the application.


Signature of Owner/Applicant

6/27/2025
Date (mmm/dd/yyyy)

POSTING OF ADVISORY SIGN

This will confirm the requirement of the Committee of Adjustment for a sign to be posted by all applicants or agents on each property under application.

A sign will be made available to you after completion of the zoning review of your application(s) and you are directed to post each sign in a prominent location that will enable the public to observe the sign.

The location of each sign will depend on the lot and location of structures on it, however, the sign should be placed so as to be legible from the roadway in order that the public can see the sign and make note of the telephone number should they wish to make inquiries. In most cases, please post the sign on a stake as you would a real estate sign. For commercial or industrial buildings it may be appropriate to post the sign on the front wall of the building at its entrance. Please contact the undersigned if you have any queries on the sign location.

DO NOT POST THE SIGN INSIDE THE BUILDING BY A WINDOW. The sign must be outdoors by the roadway in order to be visible and readable.

Each sign must remain posted beginning 10 days prior to the hearing, until the day following the hearing. Please fill in the form below indicating your agreement to post the sign(s) as required. This form must be submitted with the application so that it may be placed on file as evidence that you have met the committee's requirements. Failure to post the sign as required will result in deferral of the application.

I UNDERSTAND THAT EACH SIGN MUST BE POSTED AT LEAST 10 DAYS BEFORE THE HEARING, AND WILL REMAIN POSTED AND BE REPLACED, IF NECESSARY, UNTIL THE DAY FOLLOWING THE HEARING.

Owner Name

Joseph Spotts

Property Address

2197 Turnberry Road,
Burlington

Signature of Owner/Applicant

6/27/2025

Date (mmm/dd/yyyy)

AFFIDAVIT

*Please fill out at time of submission of application

I have the authority to bind the Corporation (check if applicable) ☒ Signature of Applicant or Authorized Agent

Agent: SYED AHMED

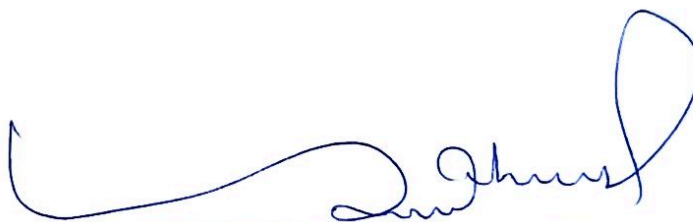
I, SYED AHMED of the REGION of HALTON in the CITY OF BURLINGTON
(print name) (Region/City/County) (City/Town/Township)

of _____ solemnly declare that all the statements contained in this application are true and I make this solemn declaration conscientiously believing it to be true and knowing it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

Declared before me at the Region of Halton in the City of Burlington
(Region/City/County) (City/Town/Township)

this 3rd day of July 2025:


Signature of Commissioner, etc.
In Anne Rudy, Committee Clerk


Signature of Applicant or Authorized Agent

The Corporation of the City of
Burlington, Region of Halton
A Commissioner of Oaths pursuant
to s.228(4) of the Municipal Act

PERMISSION TO ENTER

IMPORTANT This MUST be completed for all applications and signed by the OWNER.

Municipal Address of Subject Lands: 2197 Turnberry road, Burlington L7M 4P9

I hereby authorize the Committee of Adjustment members, City of Burlington and Region of Halton staff to enter onto the above-noted property for the limited purposes of evaluating the merits of this application.


Signature of Owner

Joseph Spotts
Print Name

OWNERS AUTHORIZATION

If using an agent, the owner must also complete the following form:

I, Joseph Spotts being the registered owner of the subject lands, hereby
(print name)

Authorize Syed Ahmed to prepare, submit and act on my behalf with respect to this
(print agent name)

application for a Minor Variance.



Signature of Owner

6/27/2025

Date (mmm/dd/yyyy)

Notice of collection of personal information

Personal information contained on this form is collected under the authority of the Planning Act, RSO 1990, c. P.13, to process applications and make decisions. Applications made under the Planning Act, are considered part of the public record and shall be made available to the public. Questions about this collection can be directed to the Manager of Development Planning, City of Burlington, 426 Brant Street, Burlington, Ontario, L7R 3Z6, 905-335-7600.

The applicant acknowledges that an application, all supporting information and materials, including studies and drawings, submitted under the Planning Act, pursuant to s. 1.0.1 of the Planning Act, RSO 1990, c.P.13, as amended, shall be made available to the public.

Minor Variance Application Checklist Please add a check mark beside the items you have provided with your application. Illegible drawings or those missing required details will be returned to applicant.	Select (✓)
LEGAL SURVEY (must be prepared and signed and dated by an Ontario Land Surveyor) * For new development, a Proposed Building Plan stamped by an Ontario Land Surveyor or Professional Engineer may be required.	✓
OR	
DETAILED SITE PLAN (must be prepared and stamped by Professional Engineer, Ontario Land Surveyor or Professional Architect). A legal survey may still be required at the discretion of staff.	✓
AND	
PLAN and ELEVATION DRAWINGS which include the following as applicable: (Missing details or illegible drawings will be sent back to the applicant for correction)	✓
SITE PLAN ☐ Metric Scale ☐ North Arrow ☐ Frontage ☐ Depth ☐ Lot Area ☐ Lot Coverage ☐ Deemed Street Line ☐ Existing Front Yard Setbacks ☐ Existing Rear Yard Setbacks ☐ Existing Side Yard Setbacks ☐ Existing Street Side Yard Setbacks ☐ Existing Porch, Stairs and Overhang Setbacks ☐ Proposed Front Yard Setbacks ☐ Proposed Rear Yard Setbacks ☐ Proposed Side Yard Setbacks ☐ Proposed Street Side Yard Setbacks ☐ Proposed Porch, Stairs and Overhang Setbacks ☐ Streets (Public and Private) ☐ Street Names ☐ Parking (Dimensioned spaces, Driveway Width, Arrangement) ☐ Railways (Location of them and setbacks to structures) ☐ All Watercourses and/or Conservation Halton Areas(creeks, lakes, etc)	

Minor Variance Application Checklist

Please add a check mark beside the items you have provided with your application.

Illegible drawings or those missing required details will be returned to applicant.

LOCATION AND MEASUREMENTS OF SHED, DECK OR OTHER STRUCTURES

- ☐ Setbacks
- ☐ Height
- ☐ Area
- ☐ Length
- ☐ Width

ELEVATIONS

- ☐ Metric
- ☐ Front
- ☐ Rear
- ☐ Side 1
- ☐ Side 2

FLOOR PLANS

- ☐ Metric
- ☐ North Arrow
- ☐ Gross Floor Area Calculation
- ☐ Ground Floor Area Calculation
- ☐ Floor Area Ratio (where applicable)

I have reviewed the minor variance checklist and ensure all the applicable information is shown on the drawings submitted as part of this application.



Signature of Owner/Agent

6/27/2025

Date (mmm/dd/yyyy)

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TURNBERRY ROAD

(BY REG'D PLAN 20M - 702)

PIN 07182-1167

R=40.00
A=12.96
C=12.90

N25°40'20"W

7.42

IB (H)

7.26

IB (H)

SIB (MMM)

R=40.00
A=3.86
C=3.86
N37°43'00"W

LOT 7

PIN 07182-1104

LOT 5

PIN 07182-1102

CONCRETE
FOUNDATION
TOP OF CONC.
148.32

(REFERENCE BEARING)
N 54° 38' 40" E

2.89

46.07

21.08

IB (H)

IB (H)

IB (H)

IB (H)

IB (H)

IB (H)

IB (H)

IB (H)

IB (H)

IB (H)

IB (H)

IB (H)

IB (H)

IB (H)

REG'D

PLAN

20M

20M

702

LOT 6

PIN 07182-1103

PART OF LOT 6
CONCESSION 1 S.D.S.

PART 1

PLAN 20R-7934

PIN 07182 - 0381

BLOCK 65

PIN 07182-1162

IB (H)

IB (H)

IB (H)

IB (H)

IB (H)

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IB (H)

SURVEYOR'S REAL PROPERTY REPORT - PART 1

PLAN OF

LOT 6 REG'D PLAN 20M - 702

CITY OF BURLINGTON

REGIONAL MUNICIPALITY OF HALTON

SCALE 1 : 300

david horwood limited ontario land surveyors

1 9 9 8

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SURVEYOR'S REAL PROPERTY REPORT - PART 2

REGISTERED EASEMENTS AND/OR RIGHT-OF-WAY

None

ENCROACHMENTS

None

LEGEND

■ Survey Monument Found H David Horwood Limited, O.L.S.
□ Survey Monument Set GL Garage Lip
SIB Standard Iron Bar MMB Marshall, Macklin, Monaghan, O.L.S.
IB Iron Bar

METRIC

Distances shown on this plan are in metres and can be converted to feet by dividing by 0.3048 .

NOTE

This REPORT can be updated by this office, however NO ADDITIONAL PRINTS of this ORIGINAL REPORT will be issued, subsequent to the DATE of CERTIFICATION. All building ties are perpendicular to property lines unless otherwise noted. Property lines are unfenced unless otherwise noted.

This REPORT was prepared for Monarch Construction and the undersigned accepts no responsibility for use by other parties.

BEARING NOTE

Bearings are astronomic, and are referred to the North limit of LOT 6 as shown on Reg'd Plan 20M-702, being N 54° 38' 40" E.

SURVEYOR'S CERTIFICATE

I certify that:

The field survey represented by this plan was completed on the 30th day of Sept., 1998.

October 19, 1998

Date

David O. Horwood
Ontario Land Surveyor

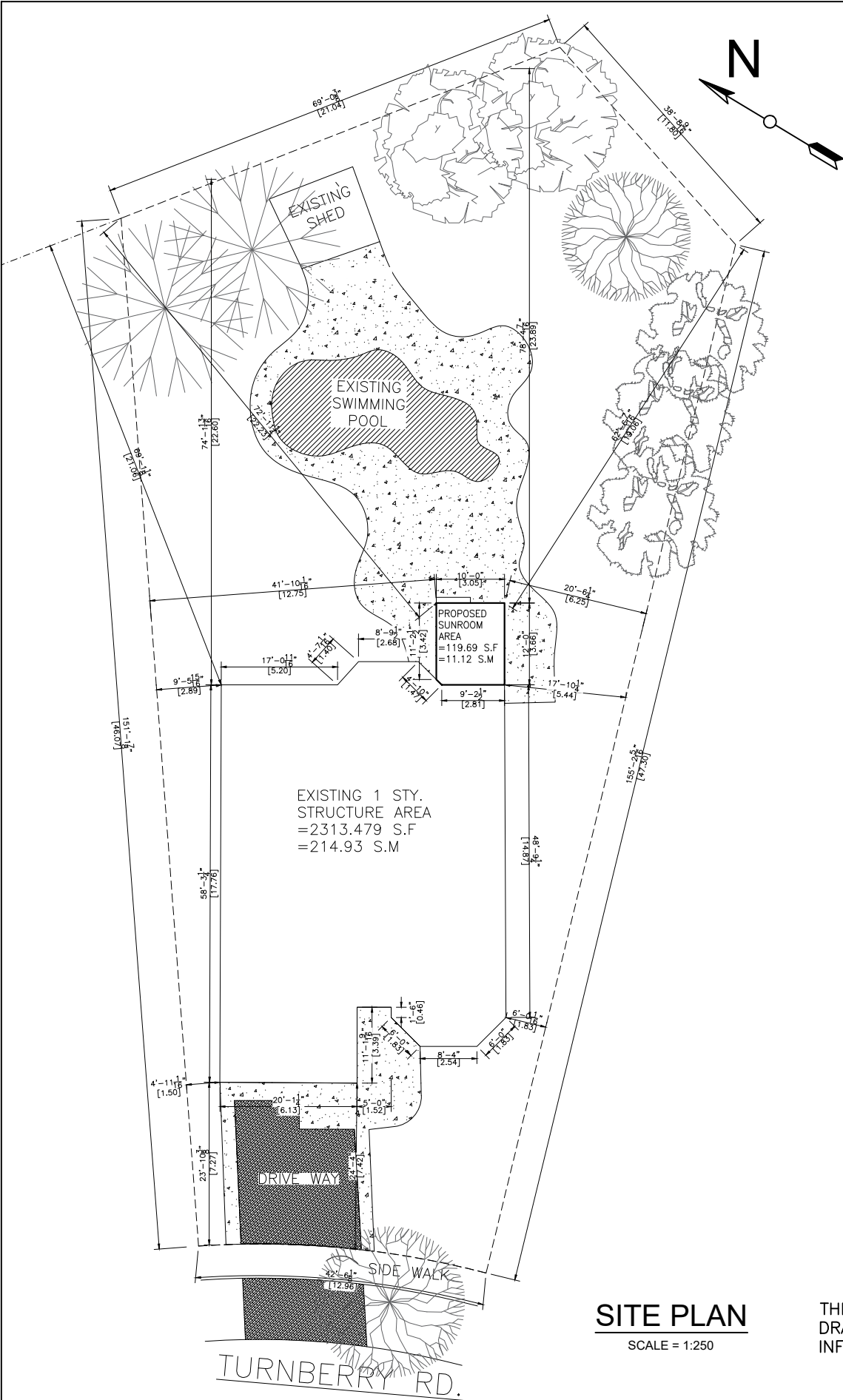
Project No. 3660

ASSOCIATION OF ONTARIO
LAND SURVEYORS
PLAN SUBMISSION FORM

1211493



THIS PLAN IS NOT VALID
UNLESS IT IS AN EMBOSSED
ORIGINAL COPY
ISSUED BY THE SURVEYOR
In accordance with
Regulation 1026, Section 29(3).



- NOTES:
1. THE WALLS AND ROOF STRUCTURAL PANELS OF THE SUNROOM WILL BE PREFABRICATED BY LIFESTYLE SUNROOMS INC. AND WILL BE INSTALLED BY ITS TRAINED SKILLED INSTALLERS.
 2. A PROFESSIONAL ENGINEER UNDERTAKES THE GENERAL REVIEW OF THE INSTALLATION.
 3. A FINAL PROJECT REVIEW LETTER WILL BE SUBMITTED TO THE BUILDING DEPARTMENT AFTER THE COMPLETION.
 4. (1). STAIRS RISER DIMENSIONS SHALL CONFIRM TO ARTICLES 9.8.4.2 AND 9.8.4.3 OF THE 2024 OBC WHICH STIPULATES THAT RISERS DESIGNED FOR PRIVATE USE MUST HAVE A MAXIMUM RISE OF NO MORE THAN 200 mm OR A MINIMUM RISE OF NO LESS THAN 125 mm AND A MAXIMUM RUN OF NO MORE THAN 355 mm OR A MINIMUM RUN OF NO MORE THAN 255 mm AND A MAXIMUM TREAD DEPTH OF 355 mm OR A MINIMUM TREAD DEPTH OF NO LESS THAN 235 mm.
 4. (2). REQUIRED EXIT STAIRS SHALL HAVE A WIDTH, MEASURED BETWEEN WALL FACES OR GUARDS, OF NOT LESS THAN 900 mm AS PER ARTICLE 9.8.2.1 OF THE 2024 OBC.
 5. THE WIDTH OF THE LANDING IF REQUIRED SHALL BE NOT LESS THAN THE GREATER REQUIRED STAIR WIDTH WHERE ONE OR MORE OF THE STAIR WIDTHS DO NOT EXCEED THEIR RESPECTIVE REQUIRED WIDTHS, OR NOT LESS THAN THE LESSER ACTUAL STAIR WIDTH WHERE ALL OF THE WIDTHS OF THE STAIRS EXCEED THEIR RESPECTIVE REQUIRED WIDTHS AS PER ARTICLES 9.8.6.2 AND 9.8.6.3 OF THE 2024 OBC.
 6. ALL HAND RAILS AND GUARDS SHALL BE BUILT AS PER OBC 2024 AND SUPPLEMENTARY STANDARD SB-7. EXTERIOR HANDRAIL AND GUARDS TO BE AT LEAST 900 mm OR 36" MEASURED VERTICALLY ABOVE THE NOSING OF ANY TREAD AND/OR PLATFORM NOT MORE THAN 1800 mm OR 5'-11" ABOVE THE FINISHED GROUND AS PER SUBSECTIONS 9.8.7 AND 9.8.8 OF 2024 OBC; ALL PICKET AND/OR GUARD SPACING MUST BE NO MORE THAN 100 mm OR 4" APART AS PER ARTICLE 9.8.8.5 OF THE 2024 OBC; ALL BALUSTERS TO BE SPACED NO MORE THAN 1200 mm OR 48" APART.
 7. TO CARRY RAINWATER AWAY FROM THE SUNROOM, DOWNSPOUTS WILL BE INSTALLED AT THE OUTSIDE CORNERS OF ROOM IN ACCORDANCE TO ARTICLES 9.26.18.2, 7.3.3.7, AND 5.6.2.2 OF THE 2024 OBC.
 8. ALL ADDITIONAL ASPECTS OF THE PROJECT WILL BE INSTALLED ACCORDING TO TACBOC DETAILS AND COMPLY WITH THE REQUIREMENTS STIPULATED BY THE 2024 OBC, INCLUDING DOORS (TO SECTION 9.6.); WINDOWS (TO SECTION 9.7.); SKYLIGHTS (TO SUBSECTION 9.7.7.); GLASSES (TO SUBSECTION 9.7.3.); WOOD FRAME CONNECTIONS, DECK FARMING, STICK BUILT WALLS AND SUBFLOORING (TO SUBSECTION 9.23.14); BUILT-UP BEAMS (TO ARTICLE 9.23.8.3); BUILT-UP COLUMNS (TO ARTICLE 9.17.4.2); ROOFING (TO SECTION 9.26.); ROOF DRAINS AND DOWNSPOUTS (TO SUBSECTION 9.26.18.); FLASHING (TO SUBSECTIONS 9.20.13 & 9.26.3 & 9.26.4); CLADDING (TO SECTION 9.27.); CAULKING (TO SUBSECTION 9.27.4.); INTERIOR FINISHING (TO SUBSECTION 9.29.); FLOORING (TO SECTION 9.30.); STAIRS, RAMPS, HANDRAILS AND GUARDS (TO SECTION 9.8.); LIGHTING OUTLETS (TO SECTION 9.34.).

LOT AREA	1042.44 m ²	11220.69 ft ²
TOTAL EXISTING FLOOR AREA	214.93 m ²	2313.48 ft ²
PROPOSED SUNROOM AREA	11.12 m ²	119.69 ft ²
PROPOSED DECK AREA	— m ²	— ft ²
TOTAL EXISTING AND PROPOSED FLOOR AREA	226.05 m ²	2433.17 ft ²
TOTAL LOT COVERAGE	~21.68 %	

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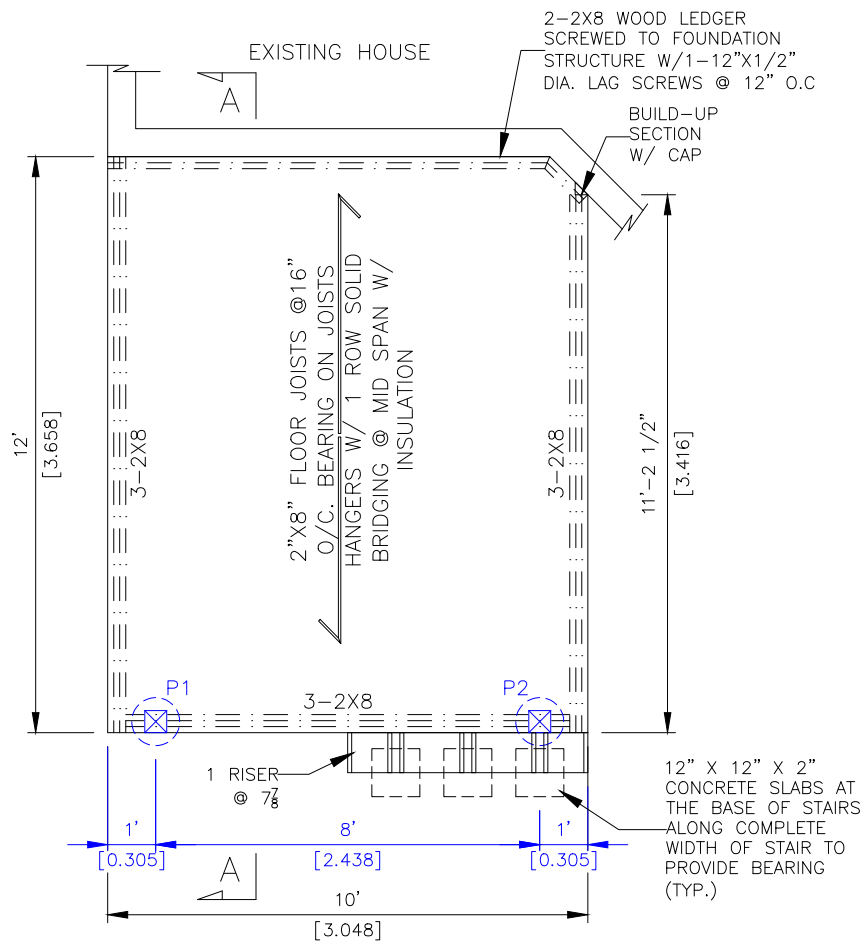


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Fax: 800-934-0822

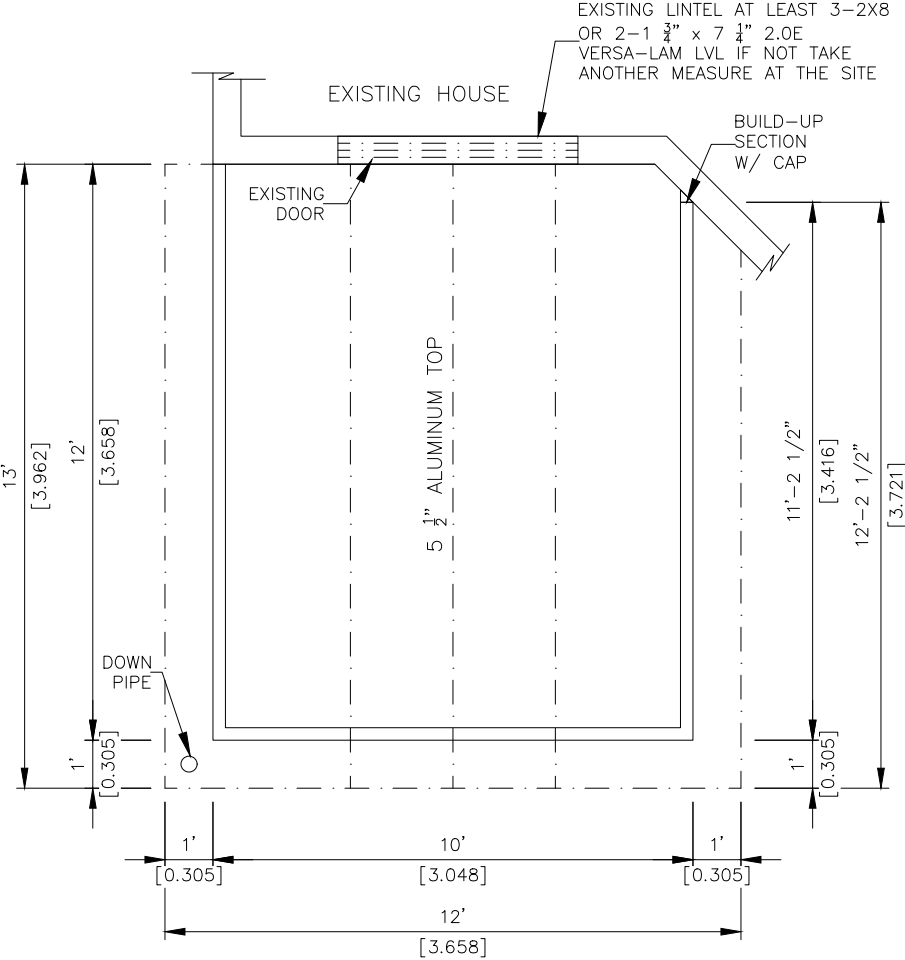
PROJECT		
LIFESTYLE SUNROOM UNHEATED ADDITION		
PROJECT ADDRESS		
2197 Turnberry Rd Burlington, ON L7M 4P9		
DRAWING TITLE		
SITE PLAN		
DRAWING NUMBER		
01		
REVISION	PROJECT#	DESIGN#
	103556	
MODEL TYPE		
3125 STUDIO (5-1/2" AL TOP ROOF)		
CLIENT		
SPOTTS		
DATE	SCALE	
Jun 16, 2025		
DRAWN BY:	CHECKED BY:	
S.P	O.Z	
LIFESTYLE ENGINEERING		

* NOTES:
-HELICAL PILES ARE PER CCMC 13059-R
AND THE ENCLOSED CALCULATIONS
-THE STRUCTURAL PANELS ARE ACCORDING TO
BMEC#03-08-287 AND THE ENCLOSED CALCULATIONS

P1	Compressive Load = 19.55 KN = 4395.00 Lbs
	Use helical post per structural calculation
P2	Compressive Load = 19.22 KN = 4320.00 Lbs
	Use helical post per structural calculation



PIERS & DECK PLAN
SCALE 1/4"=1'-0"



WALLS & ROOF PLAN
SCALE 1/4"=1'-0"

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PROJECT		
LIFESTYLE SUNROOM UNHEATED ADDITION		
PROJECT ADDRESS		
2197 Turnberry Rd Burlington, ON L7M 4P9		
DRAWING TITLE		
DECK & ROOF PLAN		
DRAWING NUMBER		
02		
REVISION	PROJECT#	DESIGN#
	103556	
MODEL TYPE		
3125 STUDIO (5-1/2" AL TOP ROOF)		
CLIENT		
SPOTTS		
DATE	SCALE	
Jun 16, 2025		
DRAWN BY:	CHECKED BY:	
S.P	O.Z	
LIFESTYLE ENGINEERING		



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PROJECT

LIFESTYLE SUNROOM
UNHEATED ADDITION

PROJECT ADDRESS

2197 Turnberry Rd
Burlington, ON L7M 4P9

DRAWING TITLE

ELEVATIONS

DRAWING NUMBER

03

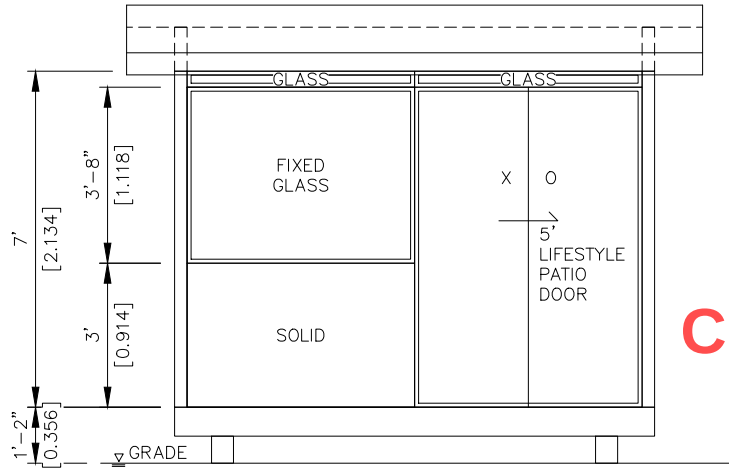
REVISION	PROJECT#	DESIGN#
	103556	

MODEL TYPE
3125 STUDIO (5-1/2" AL TOP ROOF)

CLIENT
SPOTTS

DATE	SCALE
Jun 16, 2025	
DRAWN BY:	CHECKED BY:
S.P	O.Z

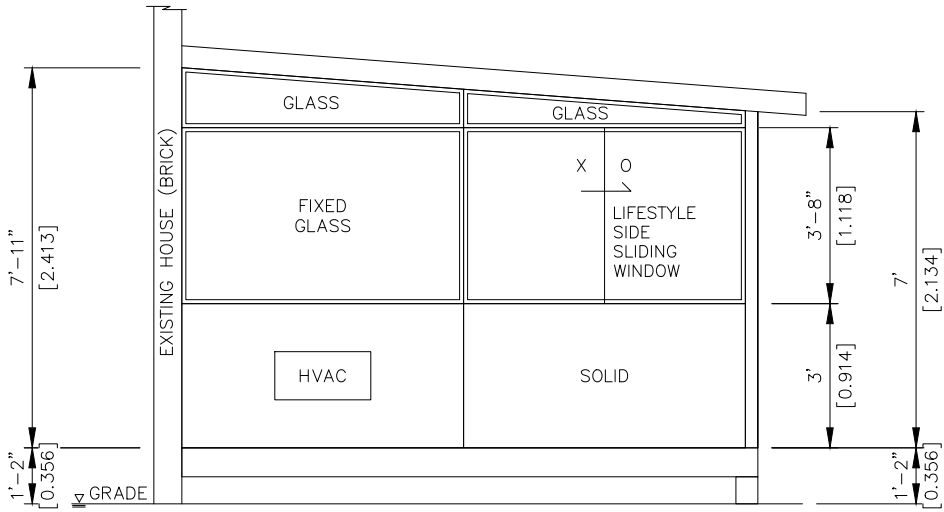
LIFESTYLE ENGINEERING



EAST ELEVATION (FRONT WALL)

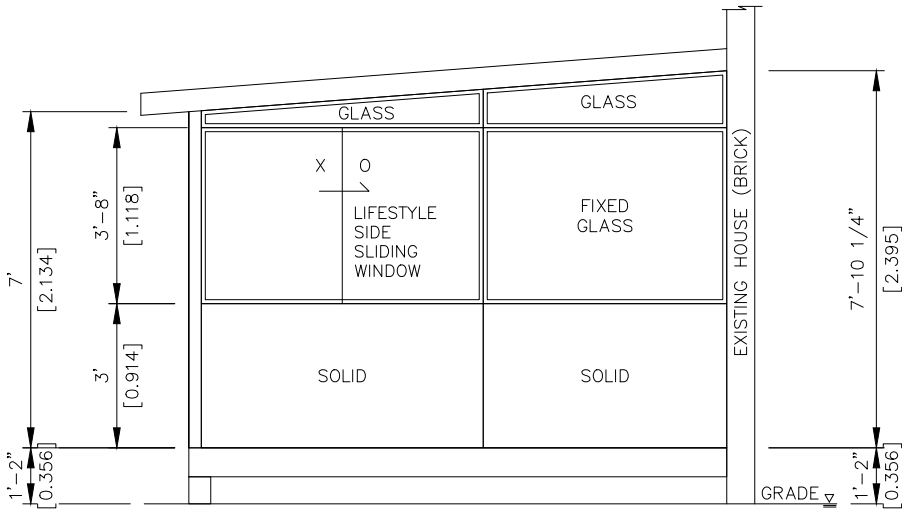
SCALE 1/4"=1'-0"

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SOUTH ELEVATION (LEFT WALL)

SCALE 1/4"=1'-0"



NORTH ELEVATION (RIGHT WALL)

SCALE 1/4"=1'-0"

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PROJECT

LIFESTYLE SUNROOM
UNHEATED ADDITION

PROJECT ADDRESS

2197 Turnberry Rd
Burlington, ON L7M 4P9

DRAWING TITLE

RIGHT AND FRONT
ELVATION

DRAWING NUMBER

05

REVISION PROJECT# DESIGN#

103556

MODEL TYPE

3125 STUDIO (5-1/2" AL TOP ROOF)

CLIENT

SPOTTS

DATE

Jun 16, 2025

SCALE

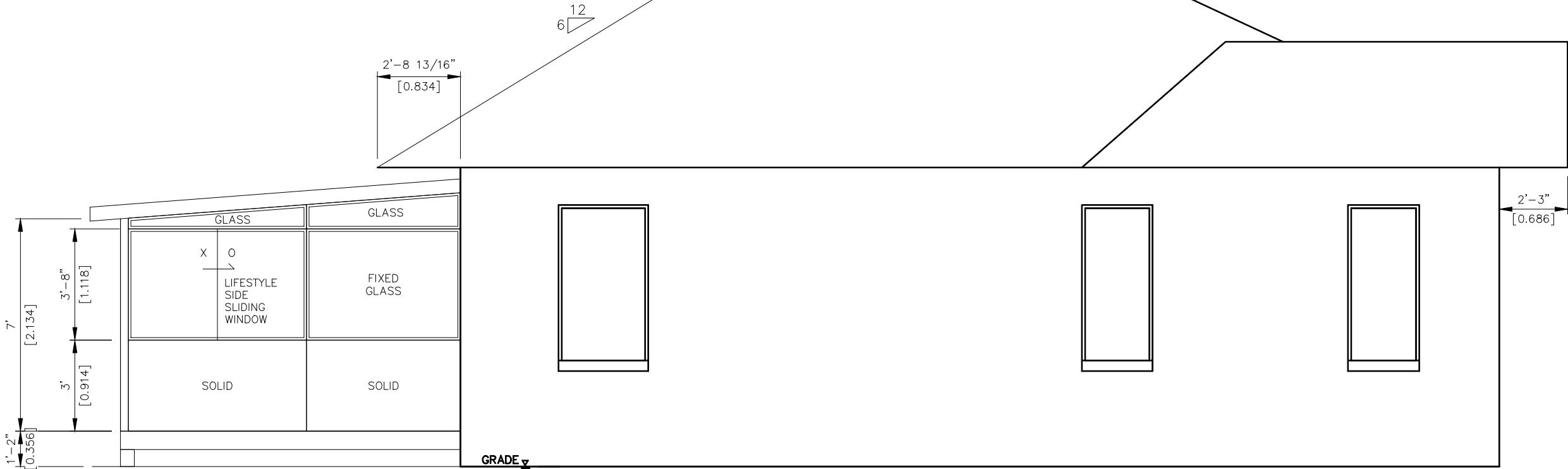
DRAWN BY:

S.P

CHECKED BY:

O.Z

LIFESTYLE ENGINEERING



NORTH ELEVATION (RIGHT WALL)

SCALE 1/4"=1'-0"

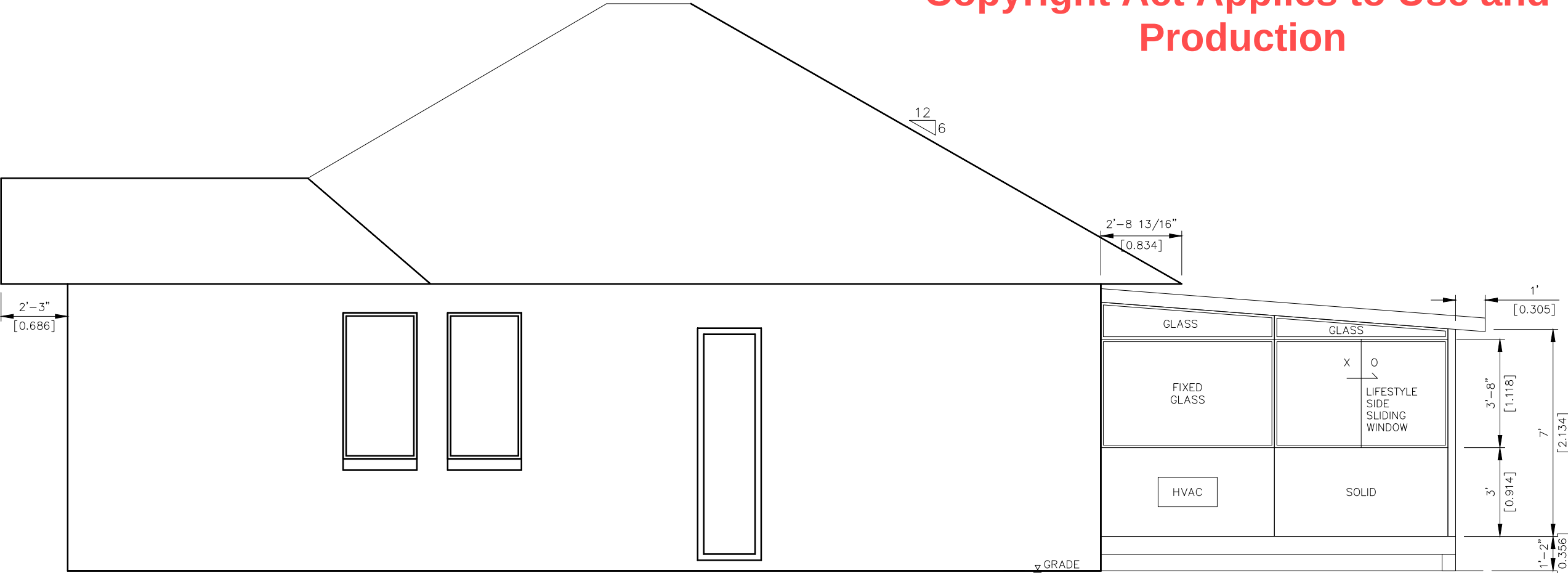


EAST ELEVATION (FRONT WALL)

SCALE 1/4"=1'-0"

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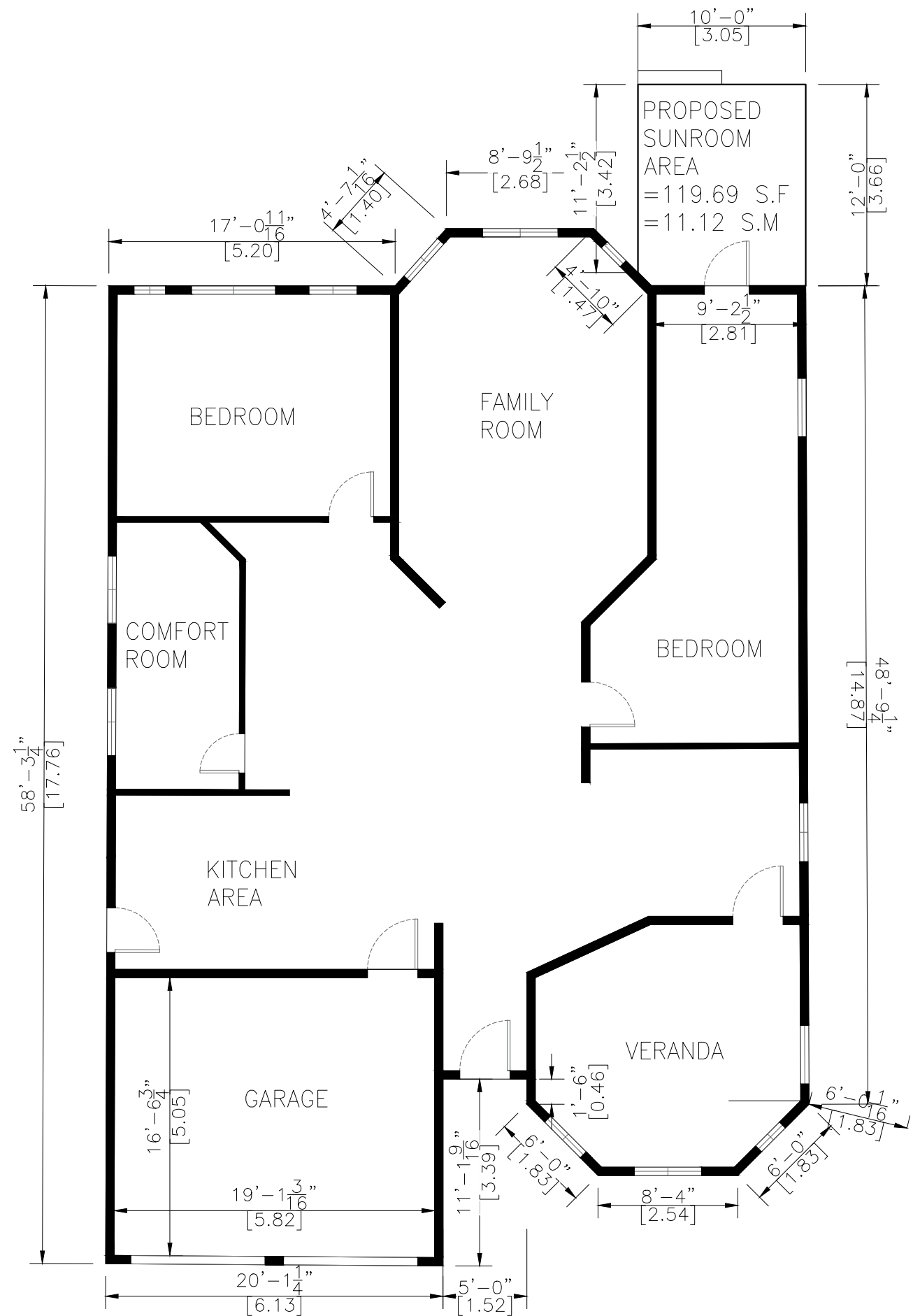


SOUTH ELEVATION (LEFT WALL)
SCALE 1/4"=1'-0"



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PROJECT		
LIFESTYLE SUNROOM UNHEATED ADDITION		
PROJECT ADDRESS		
2197 Turnberry Rd Burlington, ON L7M 4P9		
DRAWING TITLE		
LEFT ELEVATION		
DRAWING NUMBER		
06		
REVISION	PROJECT#	DESIGN#
	103556	
MODEL TYPE		
3125 STUDIO (5-1/2" AL TOP ROOF)		
CLIENT		
SPOTTS		
DATE	SCALE	
Jun 16, 2025		
DRAWN BY:	CHECKED BY:	
S.P	O.Z	
LIFESTYLE ENGINEERING		



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FLOOR PLAN
SCALE 1/8"=1'-0"



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PROJECT		
LIFESTYLE SUNROOM UNHEATED ADDITION		
PROJECT ADDRESS		
2197 Turnberry Rd Burlington, ON L7M 4P9		
DRAWING TITLE		
FLOOR PLAN		
DRAWING NUMBER		
06		
REVISION	PROJECT#	DESIGN#
	103556	
MODEL TYPE		
3125 STUDIO (5-1/2" AL TOP ROOF)		
CLIENT		
SPOTTS		
DATE		SCALE
Jun 16, 2025		
DRAWN BY:		CHECKED BY:
S.P		O.Z
LIFESTYLE ENGINEERING		

COMMITTEE OF ADJUSTMENT

Meeting 19

AGENDA

OCTOBER 22, 2025

HEARING NO. 5.1 - 1:00 P.M.

File
540-02-A-015/25

APPLICANT: CJJ Holdings Limited

PROPERTY: 4903 Thomas Alton Boulevard,
PLAN M1034 BLK 24
City of Burlington - Regional Municipality of Halton.

PROPOSAL: The applicant submitted a Site Plan Pre-Consultation Application, under file PRCN-SP-031/24, for the construction of a new one storey multi-tenant retail/service commercial building (Building C). The proposed development of Building C will remove 57 existing parking spaces, with 64 additional spaces provided for a total of 255 parking spaces. The new building is proposed to include a Day Care Centre use in units 1 and 2.

VARIANCES:

1. To permit a 61m maximum yard abutting Thomas Alton Blvd instead of the maximum permitted 6m for proposed Building C.
2. To permit a 77m maximum yard abutting Appleby Line instead of the maximum permitted 6m for proposed Building C.
3. To permit a 12m maximum yard abutting Palladium Way instead of the maximum permitted 6m for proposed Building C.
4. To permit garbage storage to be located within a yard abutting Palladium Way-whereas Zoning By-law 2020 does not permit garbage storage to be located in the front or street side lot line.
5. To permit 3.65 parking spaces per 100m² of gross floor area instead of the minimum required 5 parking spaces per 100m² of gross floor area for a retail centre.

COMMITTEE OF ADJUSTMENT

Meeting 19

AGENDA

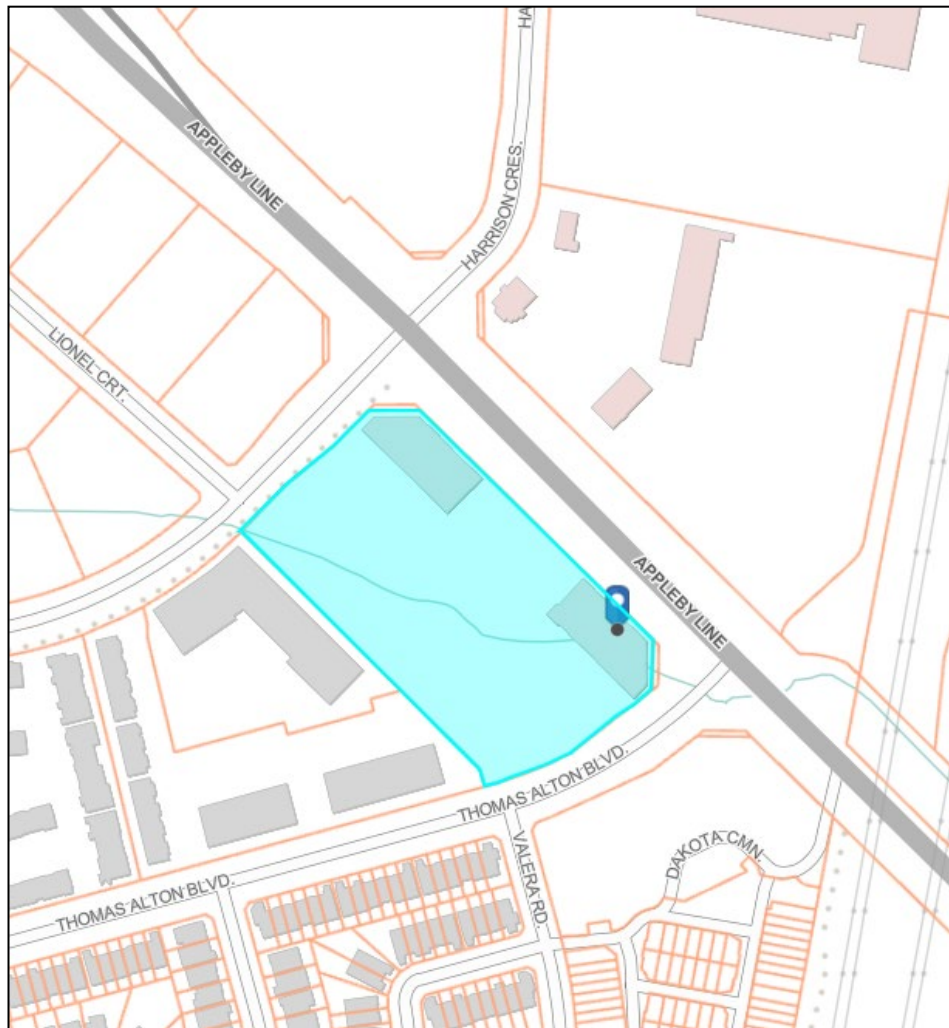
OCTOBER 22, 2025

VARIANCES:

6. Notwithstanding Part 5, Section 4.13, to permit a building elevation facing a street (Thomas Alton Blvd) without pedestrian accessible doors associated with Building C, whereas Zoning By-Law 2020 requires a pedestrian accessible door on a building elevation facing a street for every building located within 60 metres of a street with a deemed width of 26 m or greater.
7. Notwithstanding Part 5, Section 4.13, to permit a building elevation facing a street (Palladium Way) without pedestrian accessible doors associated with Building C, whereas Zoning By-Law 2020 requires a pedestrian accessible door on a building elevation facing a street for every building located within 60 metres of a street with a deemed width of 26 m or greater.

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
STAFF REPORTS**

Owner(s): CJJ Holdings Limited
Address: 4903 Thomas Alton Boulevard
File No. **A-015/25**
Ward: 6



Staff Comments

Committee of Adjustment

This application was deferred at the September 3 2025 Committee Meeting
Date: October 1, 2025 Prepared By: E. Shacklette

There is one previous minor variance application on record for this property.

File No. A064/2011 – Approved

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
STAFF REPORTS**

- To permit canopies and sidewalks associated with proposed buildings A and B to encroach into the required 3m landscape areas abutting a street along Appleby Line, Palladium Way and Thomas Alton Boulevard.

Date: February 20, 2025Prepared By: C. Kabel**Zoning**

The subject property is zoned MXE-322, Mixed Use Employment Corridor, under Zoning By-Law 2020, as amended. The MXE-322 zone requires, among other things, the following:

Exception 322	Zone MXE	Map 25	Amendment 2020.184 2020.176 2020.373	Enacted Apr 25/05 May 23/06 Nov 28/16
Yard abutting a street: 6 metres maximum - Additional Permitted Use: Day Care Centre - Notwithstanding PART 1, section 2.2.2, the maximum yard requirement for a principal building shall not apply to accessory buildings or structures associated with an outdoor play area of a day care centre. - A minimum setback of 30 m from Appleby Line is required for an outdoor play area associated with a day care centre. - A minimum setback of 30 m from a Business Corridor zone is required for an outdoor play area associated with a day care centre. Except as amended herein, all other provisions of this By-law, as amended, shall apply.				

2.2.3 Where a building or structure for the storage of garbage for all other uses not mentioned in 2.2.1, would be permitted only in a rear or side yard, **not in the front** or street side lot line and shall comply with the following regulations:

- Shall be located outside a required landscape area, landscape buffer and landscape open space
- Minimum setback from a rear lot line: 1 m
- Minimum setback from a side lot line: 1 m
- Minimum setback from a residential zone: 15 m

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
STAFF REPORTS**

(e) Maximum height: 3.7 m

(f) Shall not be located in any required parking area or obstruct any required parking or drive aisles

2.25 OFF-STREET PARKING AND LOADING REQUIREMENTS

2.25.4 The number of parking spaces required for permitted uses in all zones shall be in accordance with Table 1.2.6, unless otherwise specified in the respective zones. Where more than one use specified in Table 1.2.6 is provided on the same lot or in the same building, the parking spaces required shall be in respect of each use.

Table 1.2.6: Off-Street Parking Standards

USE	PARKING STANDARD
Retail Centre	5 spaces per 100 m ² gross floor area

Required:	Required Calculation for Building A, B, C:	Proposed Parking for entire development	Proposed Calculation for Building A, B, C:
Retail Centre: 5/100 m ² GFA	$6969\text{m}^2/100 \times 5 =$ 349 parking spaces	255 spaces	$6969\text{m}^2/100 \times 3.65 =$ 255 parking spaces

4.13 DOORS

Every building located within 60 metres of a street with a deemed width of 26 metres or greater shall provide a pedestrian accessible door on the building elevation facing the street.

Background:

The property is currently developed with two multi-tenant buildings (Buildings A and B) and associated surface parking, which were approved through Site Plan Approval file 535-04/11.

Proposal:

The applicant submitted a Site Plan Pre-Consultation Application, under file PRCN-SP-031/24, for the construction of a new one storey multi-tenant retail/service commercial building (Building C). The proposed development of Building C will remove 57 existing parking spaces, with 64 additional spaces provided for a total of

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
STAFF REPORTS**

255 parking spaces. The new building is proposed to include a Day Care Centre use in units 1 and 2.

Variances are required to permit an increase to the maximum yards abutting a street, to permit a garbage enclosure within a yard abutting a street and to permit a reduction in required parking for a retail centre for the entire development. Additional variances are required to permit building elevations facing a street and within 60m of a right-of-way to not provide pedestrian doors based on the proposed function of the street fronting end units.

Variances required:

1. To permit a 61m maximum yard abutting Thomas Alton Blvd instead of the maximum permitted 6m for proposed Building C.
2. To permit a 77m maximum yard abutting Appleby Line instead of the maximum permitted 6m for proposed Building C.
3. To permit a 12m maximum yard abutting Palladium Way instead of the maximum permitted 6m for proposed Building C.
4. To permit garbage storage to be located within a yard abutting Palladium Way whereas Zoning By-law 2020 does not permit garbage storage to be located in the front or street side lot line.
5. To permit 3.65 parking spaces per 100m² of gross floor area instead of the minimum required 5 parking spaces per 100m² of gross floor area for a retail centre.
6. Notwithstanding Part 5, Section 4.13, to permit a building elevation facing a street (Thomas Alton Blvd) without pedestrian accessible doors associated with Building C, whereas Zoning By-Law 2020 requires a pedestrian accessible door on a building elevation facing a street for every building located within 60 metres of a street with a deemed width of 26 m or greater.
7. Notwithstanding Part 5, Section 4.13, to permit a building elevation facing a street (Palladium Way) without pedestrian accessible doors associated with Building C, whereas Zoning By-Law 2020 requires a pedestrian accessible door on a building elevation facing a street for every building located within 60 metres of a street with a deemed width of 26 m or greater.

Condition:

1. The applicant shall apply for a zoning clearance certificate.

**COMMITTEE OF ADJUSTMENT
MINOR VARIANCE
STAFF REPORTS**

Note:

1. The application was reviewed under Section 45(1) of The Planning Act

Date: September 4, 2025Prepared By: Nathan Dart, CPT**Site Planning**

KLM Planning Partners Inc. has submitted a revised Committee of Adjustment application for seven variances to facilitate construction of a new 13-unit commercial building containing a daycare centre, two standard restaurants and eight retail units at the rear of a property municipally known as 4903 Thomas Alton Boulevard (the "Site"). The original application was scheduled for the September 3, 2025 Committee of Adjustment heading, but staff were not supportive of variances 1 & 3 to permit the proposed building to exceed the maximum yards abutting Thomas Alton Boulevard and Palladium Way or variance #5 to reduce the separation distance between the proposed daycare and the business corridor zone across Palladium Way. Staff also recommended conditional support for the parking reduction proposed through variance #6, which was a concern for the applicant.

The applicant met with staff in early September and mutually agreed on a series of revisions to address the concerns. The changes are summarized below:

Staff concern	Revision
The daycare and outdoor play area are located less than the minimum required distance from a Business Corridor Zone without supporting evidence to demonstrate there would be no adverse impacts on the daycare.	Variance eliminated. The daycare unit has been moved to the opposite end of the building, over 100 metres from the Business Corridor zone, eliminating the variance and resolving the concern.
The building is located too far from Palladium Way, which does not achieve the Official Plan goals of providing a sense of human comfort and pedestrian scale to the street.	The entire building has been moved 4 metres closer to Palladium Way and the standard restaurant and patio have been moved to Palladium Way instead of the drive aisle on the interior of the site, which should create a more active and animated street frontage.
The building is located too far from Thomas Alton Boulevard, which does not achieve the Official Plan goals of providing a sense of human comfort and pedestrian scale to the street.	A new entrance feature has been added along Thomas Alton Boulevard, consisting of a pergola with two benches. This feature is available for transit users or passersby and contributes to a more pedestrian-oriented streetscape.

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The site did not have enough transit supportive design features, which the Official Plan recommends in cases where a parking reduction is proposed. Specifically, staff highlighted that the Site is adjacent to two bus stops located on Thomas Alton Boulevard, but there are very few direct connections between the public sidewalk next to the bus stop and the Site's internal walkway system and no additional connections were proposed. The daycare was also located at the opposite side of the site from the bus stop.	A new sidewalk connection has been added to enable pedestrians or transit riders to more directly access the walkway system surrounding building "B". The daycare has also been relocated approximately 100 metres closer to the bus stop than in the previous proposal.

The Site is currently developed with a pair of two-storey commercial buildings at the northeast and southeast corners of the site:

1. 4900 Palladium Way (Building "A")
2. 4903 Thomas Alton Boulevard (Building "B")

The existing two buildings front directly onto Appleby Line and are separated from one another by a parking area containing 46-spaces. Behind buildings "A" and "B" are an additional 202 parking spaces, for a combined total of 248 spaces on the Site. West of the main parking lot are three vacant areas, two of which are proposed to be developed with the new Building "C". At the edge of the site is a private road identified on the survey plan as "Valera Road".

The Site is located at the east edge of a newer, master-planned, mixed-use neighbourhood known as "Alton Village", whose boundaries are Highway 407 to the north and west, Bronte Creek to the east and Dundas Street to the south. The properties immediately surrounding the Site to the south and west are developed or under development with medium and high density residential uses including townhouses, back-to-back townhouses, and apartment buildings. Further west are low-rise residential areas of the neighbourhood that were developed in the mid-2000s. Adjacent land uses include:

North: The lands on the north side of Palladium Way and surrounding Lionel Court Lands are designated and zoned for employment uses, including industrial uses. 3301 Lionel Court, directly across the street from the site, is approved for redevelopment with a 1-storey office building (the Argo Development Corporation headquarters) with a floor area of approx. 1,478 m.

East: Retail uses including a home building supply store and a pair of fast-food restaurants

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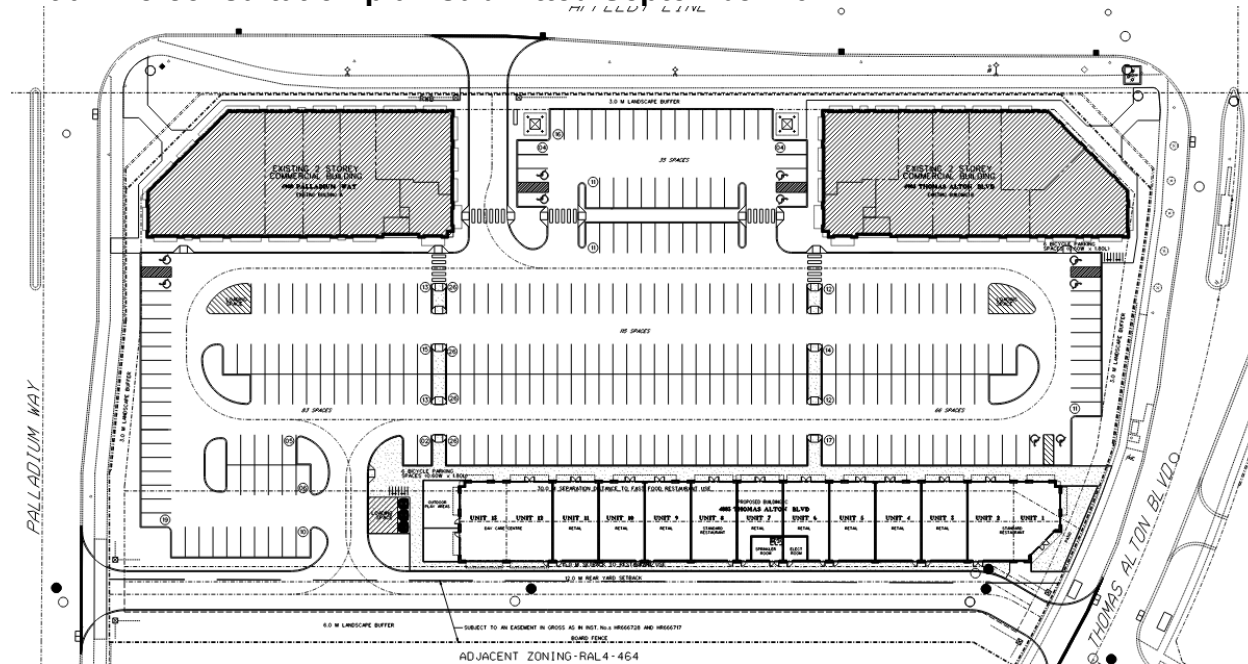
South: A 10-storey apartment building with 344 units is located across Thomas Alton Boulevard from the Site, municipally known as 3200 and 3210 Dakota Common

West: A high-rise residential development consisting of two 17-storey apartment buildings is under construction directly west of the site, municipally known as 4853 Thomas Alton Boulevard.

Timing of Minor Variance Application

The minor variance application for building “C” has been submitted in advance of a site plan application. Some applicants prefer this sequence to avoid a situation where the Committee of Adjustment declines the variances required to facilitate the preferred site layout, triggering costly changes to the site plan application submission. Staff are not opposed to reviewing the minor variance application at this stage and note that the site plan included in the application has been informed by some technical input from City departments and outside agencies. An early version of this proposal was reviewed through a pre-consultation application submitted in August 2024. In the 2024 concept plan, building “C” was positioned on the opposite side of the site next to Thomas Alton Drive (See below). The applicant received comments, requests for additional information, and a list of study requirements from planning, zoning, forestry and engineering staff. Engineering staff noted that the original proposed building was “*above existing storm and sanitary services. Revisions are required to either redirect the existing services or change the building footprint*”. This comment influenced the change in building location to the north side of the site.

Initial Pre-consultation plan submitted September 2024



1) Official Plan Designation:

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Does the proposed minor variance from the Zoning By-law maintain the general intent and purpose of the Official Plan?

Regional Official Plan 1995

Yes

- The Site is part of the Urban Area and the construction of an additional commercial building generally meets policies under section 72 of the Regional Official Plan (ROP, 1995), which include the goal “to manage growth in a manner that fosters complete communities, enhances mobility across Halton, addresses climate change, and improves housing affordability, sustainability and economic prosperity”. The inclusion of a daycare use somewhere on the site supports the goal of complete communities, because the Site is within walking distance from a cluster of medium and high-density residential developments.
- The ROP, 1995 indicates under section 76 that detailed land use planning such as the “range of permitted uses and the creation of new lots within the Urban Area will be in accordance with Local Official Plans and Zoning By-laws.” Detailed site design is also not addressed by the ROP, 1995 and is delegated to local plans and bylaws.
- In accordance with section 148 of the ROP, it is an objective of the Region to implement an integrated and sustainable waste management plan. Further, it is the Region’s interest to ensure the safe and efficient collection of solid waste as part of the design and development approval. The Region provided the following comments on waste collection as part of the pre-consultation:
 - The proposed development is not eligible for Waste collection provided by Halton Region.
 - Industrial developments and commercial developments must be designed to accommodate for containerized waste collection specific to the development’s operational waste collection needs and should include waste diversion.
 - Each Commercial Unit must have provision for adequate waste storage.

Burlington Official Plan 2020 & 1997

According to the Burlington Official Plan, 2020,(BOP, 2020) schedule “C” the Site is designated “Local Centre”, which is under the land use category “Mixed Use Nodes and Intensification Corridors”. The Local Centre designation policies are currently under appeal at the Ontario Land Tribunal, so the proposal has been reviewed under the Burlington Official Plan, 1997 (BOP, 1997).

According to BOP, 1997, Schedule B- Comprehensive Land Use Plan, the Site is designated “Mixed Use Corridor – Employment”, which is one of three sub-types of mixed-use corridors in the City. The mixed-use Corridor land use has three objectives,

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all of which indicate that mixed-use development is encouraged to concentrate “high density residential, retail, service commercial, office, entertainment, community facilities and institutions, and open space uses.” (objective a), to support transit and pedestrian activity through high density and compact urban form while retaining *compatibility* with nearby land uses (objective b) and to permit mixed use developments near other sides where retail and residential uses are already present (objective c).

The more specific objective of the Mixed Use Corridor – Employment designation is to permit higher intensity, transit and pedestrian oriented employment development such as a broad range of office uses, a limited range of retail, service commercial and personal service uses... “...and other community facilities such as libraries and day care centres and motor vehicle dealerships.” (policy 5.3.4(b))

Compatible is defined as – Development or re-development that is capable of co-existing in harmony with, and that will not have an undue physical (including form) or functional adverse impact on, existing or proposed development in the area or pose an unacceptable risk to environmental and/or human health. Compatibility should be evaluated in accordance with measurable/objective standards where they exist, based on criteria such as aesthetics, noise, vibration, dust, odours, traffic, safety and sun-shadowing, and the potential for serious adverse health impacts on humans or animals.

Strictly from a land use standpoint, the proposed variances would facilitate additional service commercial uses on a Site that is close to high-density residential uses and close to an arterial road well served by transit. Staff believe that the variances meet the general intent and purpose of objectives a-c of the mixed-use corridor designation.

The Site is also subject to the Alton Central East Community Urban Design Study and Guidelines, 2004.

Yes- Variances 1-3 Reductions to required maximum yards abutting Thomas Alton Blvd, Appleby Line and Palladium Way

Variance #'s 1 and 3 seek to vary the maximum required setback between the proposed building “C” and Thomas Alton Boulevard and Palladium Way. The general intent and purpose of the Official Plan in directing that the zoning bylaw establish a *maximum* setback is to “provide a sense of human comfort and pedestrian scale” and to “be in close proximity to transit services” (Part III, section 5.3.2 (g) Site Plan Considerations).

The general intent of being close to transit services is met, and the site plan has been revised to provide a sense of human comfort or pedestrian scale relative to both streets. The setback from Palladium Way has been reduced from 16 metres in the previous proposal to 12 metres. A restaurant patio is also now proposed within 6 metres of the property line. The patio is a pedestrian-scale use, highly visible from the sidewalk along Palladium Way, which will add animation and visual interest to the building frontage.

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On the opposite side of the building, the proposed setback of 61m from Thomas Alton Boulevard is significantly greater than the 6m required by the Zoning Bylaw, but a pergola feature with benches has been added to this frontage to meet the general intent and purpose of achieving human comfort and pedestrian scale.

Variance #3 meets the general intent of the Alton Central East Community Urban Design Study and Guidelines, 2004, specifically guidelines for Street A (Palladium Way), which is envisioned as a major employment collector road, characterized by employment uses and a parkway-like streetscape. Guidelines are found under section 3.1.1 and include:

1. Buildings should be sited close to the front property line to reinforce the street edge,
2. On the employment side, building setbacks along Street 'A' shall be combined with a 6.0m wide continuous and fully landscaped buffer.
5. The scale, massing and design of buildings along Street 'A' should be based on pedestrian scaled elements and details.
10. Loading, service, garbage and storage areas shall be located away from Street A. Similarly their visual impact should be mitigated through their configuration, the use of landscaping and grading. Sideyards should be considered as priority locations for these elements.

Street B (Thomas Alton Boulevard) is characterized as the major Residential Collector within the community. A 6m setback was envisioned for street B, but staff believe the pergola feature is an acceptable compromise given engineering commentary received during the pre-consultation phase of the application.

Variance # 2 seeks to vary the maximum required setback between the proposed building "C" and Appleby Line. Staff believe that variance #2 is technical in nature, since it would apply to any proposed building located at the rear of the site. Refusal of variance #2 would sterilize the rear of the site and mean that phase 2 of the original site plan approval could never be built. The general intent and purpose of the Official Plan respecting the maximum setback to Appleby Line is met by buildings "A" and "B", both of which are located close to Appleby Line and provide a sense of human comfort and pedestrian scale.

Yes- Variance #4 - Garbage Storage in a Yard Abutting Palladium Way

The BOP, 1997 site plan considerations include "outdoor storage areas shall be fenced and/or screened" (Part III, section 5.3.2 (g)(vii) Site Plan Considerations). The general intent and purpose of this provision is to ensure that unsightly storage areas have no negative visual impact on the streetscape or surrounding area. In the current plan, the applicant proposes to build a deep collection waste disposal system surrounded by a 1.8m tall screening fence, positioned near the daycare centre outdoor play area. The Site does not currently have a centralized garbage storage area. The site plan agreement registered on title as part of the application required that "All perishable

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garbage be stored within the main building, in a climate-controlled room or facility.” Staff agree with the applicant that there are limited locations where a garbage storage area could be located given the arrangement of buildings on the site. The rear of the site is not an option because of the required landscape buffer. Other locations beside or in front of building “C” would also trigger a variance. Staff believe the proposed garbage storage area is sufficiently screened from the street that it would have no negative visual impacts on the streetscape. The use of a deep collection waste disposal system will help minimize odors.

Yes- Variance #5 - Reduced Parking Rate

The Zoning Bylaw requires 349 parking spaces for the site, whereas 255 are required. This translates to a 94-space shortfall. The applicant has prepared a parking study to justify the parking reduction. Transportation staff have reviewed the study and have no objection to the proposed variance.

BOP, 1997, Part III, policy 5.3.2 (d)(v) states that “off-street parking needs may be reduced for sites with transit supportive designs or shared parking arrangements.” In this case, the Site is adjacent to two bus stops located on Thomas Alton Boulevard, which are serviced by the #11 bus route, which arrives every 15 minutes at peak periods and every 30 minutes during off-peak periods. Although the proposed development includes walkways surrounding building “C”, there are very few direct connections between the public sidewalk next to the bus stop and the Site’s internal walkway system. To address this, the applicant has added a sidewalk connection between the sidewalk next to the bus stop and the walkway system around building “B”, which staff believe helps meet the general intent and purpose of this OP policy.

The daycare has also been relocated approximately 100 metres closer to the bus stop than in the previous plan, which staff consider to be a transit supportive measure.

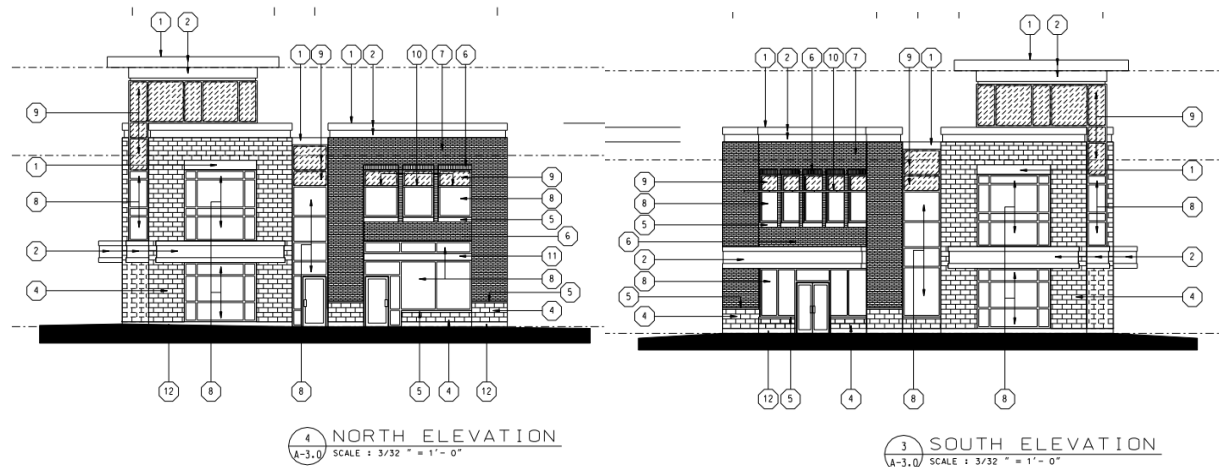
Staff also note that nine bicycle parking spaces are proposed on the site, which could offset some parking demand.

Yes - Variances 6 & 7- To permit no pedestrian accessible doors in Building Elevations facing Thomas Alton Boulevard and Palladium Way

The general intent and purpose of the BOP, 1997 with respect to Mixed Use Corridor developments is to include “features that integrate the development with surrounding uses” (Part III, section 5.3.2 (g) (ii) Site Plan Considerations) and to promote “Transit-supportive and pedestrian-oriented urban design...”. (Part III, section 5.3.2 (h)). Staff believe the design of the north and south side elevations meets this general intent and purpose. The north elevation features two doors, and the south elevation features a double door, which could be made accessible in future as tenancies change. The side elevations have not been designed as blank walls, but feature windows, brick cladding,

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cornices, recesses, projections and other building articulations. The elevations look inviting and like a continuation of the front elevation facing into the site.



2) Zoning By-law Designation:

Does the proposed minor variance from the Zoning By-law maintain the general intent and purpose of the Zoning By-law?

Yes- Variances 1-3 Reductions to required maximum yards abutting Thomas Alton Blvd, Appleby Line and Palladium Way

The general intent and purpose of establishing maximum yard requirements for Thomas Alton Boulevard and Palladium Way is to facilitate good urban design where buildings engage with the street and encourage and invite pedestrian activity and modes of travel other than vehicle trips. When buildings are close to the street, they contribute to a feeling of pedestrian safety and comfort and create visual interest for people on the sidewalk. The side elevation of Building “C” facing Palladium Way is 11 metres tall, almost the height of a four-storey building. The larger scale of the building will help frame the street and sidewalk, while the restaurant patio is an engaging feature that will add visual interest to the frontage. Staff believe variance #3 meets the general intent and purpose of the Zoning Bylaw

The pergola feature with benches has been introduced within 6 metres of the property line facing Thomas Alton Boulevard, to mitigate the 61m setback to building C. Staff believe this is a reasonable compromise that enhances pedestrian comfort, while also balancing engineering considerations.

The general intent and purpose of the maximum yard requirement abutting Appleby Line is met when the Site is looked at in its entirety. Both existing buildings “A” and “B” are located close to Appleby Line and create an engaging streetscape along this frontage. It is not possible for any building situated behind buildings A and B to meet the maximum yard requirement and staff view this variance as technical in nature.

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Yes- Variance #4 - Garbage Storage in a Yard Abutting Palladium Way

The general intent and purpose of the Zoning Bylaw with respect to discouraging garbage storage in the side yard is to facilitate good urban design and visually attractive street frontages. Staff believe this intent is met by the combination of existing landscaping along Palladium Way, the use of a deep collection waste system in which most of the waste storage containers are underground and the use of a 1.8m high solid fence to further screen the area.

Yes- Variance #5 - Reduced Parking Rate

The intent of the minimum parking rate is to ensure that adequate parking is provided on the property to avoid a scenario where there is insufficient parking for customers of the commercial plaza park, causing them to park in the surrounding area and become a nuisance to nearby businesses and residents. In this case, the applicant has justified the reduced parking rate through a parking study, and the City's Transportation planning staff are supportive of the variance.

The applicant has also modified their site plan to provide an additional pedestrian sidewalk connection and relocated the daycare over 100 metres closer to the bus stop. The site supports bicycle transportation through the inclusion of nine bicycle parking spaces.

Yes- Variances 6 & 7- To permit no pedestrian accessible doors in Building Elevations facing Thomas Alton Boulevard and Palladium Way

The intent of requiring pedestrian accessible doors on side elevations is to avoid the appearance of blank elevations and to improve the way buildings engage public streets. Staff believe the current design meets the general intent of this zoning provision by providing a high level of architectural design on the side elevations and doorways, which could one day be made pedestrian accessible.

3) Desirability:

Is the proposed minor variance from the Zoning By-law desirable for the appropriate development or use of the land, building or structure?

Yes

The variances are desirable because they facilitate development of the rear of the Site in general accordance with the 2011 site plan approval and related zoning provisions. No adverse impacts are anticipated and development of the rear of the site will enhance the Palladium Way and Thomas Alton Boulevard streetscapes. Approval of these variances would facilitate additional service commercial and community institutional uses in walking distance to two high-density residential developments.

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4) Minor in Nature:

Is the proposed minor variance from the Zoning By-law considered minor in nature?

Yes

The variances are minor in nature because there are no adverse impacts resulting from their approval. There are no aesthetic impacts resulting from building C not being located adjacent to Appleby Line, since Buildings “A” and “B” already engage with the Appleby streetscape. There are no anticipated aesthetic or odour impacts from the waste collection area being in the side yard thanks to the fencing and deep collection system being used. The building’s side elevations are attractive and feature usable doors into the building, which could be made publicly accessible in future. The building is close to Palladium Way and designed at a substantial scale that will appropriate frame this street. The restaurant patio will activate the frontage and is located within the required 6 metre setback from the street, mitigating the distance from the building wall to the sidewalk.

Cumulative Effects of Multiple Variances and Other Planning Matters:

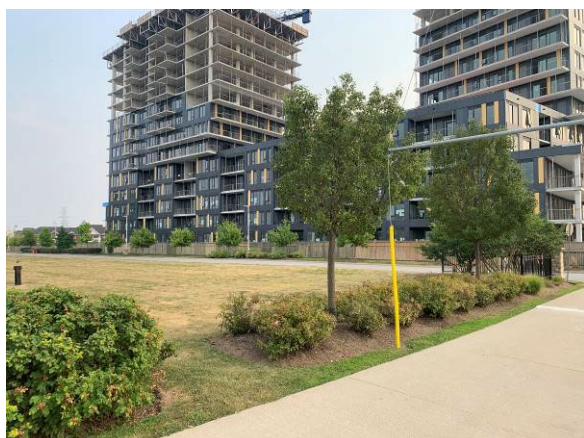
N/A

Recommendation:

Staff has reviewed the proposed variances in accordance with the Planning Act, the policies of the Official Plan and the requirements of the Zoning By-law and recommends support of the application.

Date: September 30, 2025

Prepared By: John O’Reilly



View of proposed daycare play area with high-



View of proposed daycare play area, future

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rise towers behind



View of future proposed location of northwest corner of Building C from Palladium Way

north elevation of Building "C"



View of development area looking south from Palladium Way



View of rear side of Building B



View of south end of Building A and main driveway entrance into the site from Appleby Line



View of development site looking north along Valera Road toward Building "A"



View of entrance from Thomas Alton Boulevard onto Valera Road

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View of sidewalk, bus stop along Thomas Alton Boulevard



View of Building B looking north along Appleby Line



Appleby Line Streetscape, Building A at right

Development Engineering

Development Engineering has reviewed the proposed minor variances and has no comments.

Date: September 16, 2025

Prepared By: Andre Papineau

Forestry

1. Forestry has no objections to the proposed development.
2. The applicant may require a tree application permit and attendant documentation such as an arborist report and tree protection plan should any regulated trees be impacted following our public tree by-law.
3. Any impacts to private trees will be dealt with through the site plan process and public trees will require a permit should there be any impacts.

Date: October 1, 2025

Prepared By: R. Shaw-Lukavsky

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Building

1. A Building Permit is required for all building construction;
2. Permit application drawings are to be prepared by a qualified designer as per Div. C., Section 3.2 - Qualifications of Designers and OBC 2024.

Date: September 17, 2025Prepared By: T. Le**Transportation Planning**

Thomas Alton Boulevard is under the authority of the City of Burlington and the deemed right-of-way width is 26 metres. The right of-way adjacent to the subject site is approximately 26 metres therefore no additional lands are required.

Date: February 26, 2025Prepared By: Derek NapoliVariance 6

Transportation Planning have reviewed the proposed minor variance application and offer the following comments on Variance 6: To permit 3.65 parking spaces per 100m² of gross floor area instead of the minimum required 5 parking spaces per 100m² of gross floor area for a retail centre.

Variance 6 Comments: Transportation Planning support the minor variance.

Transportation Planning have reviewed the submitted Parking Justification Report (PJR) which was required by staff to ensure the 94-space deficiency is justifiable and supportable for the intended use for this site.

Sufficient justification is provided based on a proxy site, 1960 Appleby Line, which is directly opposite the subject site and has similar land use and characteristics. The PJR included on-site parking surveys in May 2025 of the proxy site during known peak hours. The 2025 data confirmed similar results from survey of the same proxy site from summer 2015.

Transportation Planning support the minor variance.

Date: September 26th 2025Prepared By: Taylor Kirchknopf**Finance****Notice regarding Development Charges:**

The owner, its successors and assigns, are hereby notified that City Development Charges may be payable in accordance with the applicable By-law 72-2004, as may be

NOTICE OF PUBLIC HEARING

CJJ HOLDINGS LIMITED, 222 BAY ST. SUITE 2500 TORONTO have applied to the Committee of Adjustment for a Minor Variance to the requirements of Zoning By-law 2020, as amended. The property in question is **4903 Thomas Alton Blvd. Burlington** (see map).

This Application was Deferred at the Committee of Adjustment meeting September 3, 2025

The applicant submitted a Site Plan Pre-Consultation Application, under file PRCN-SP-031/24, for the construction of a new one storey multi-tenant retail/service commercial building (Building C). The proposed development of Building C will remove 57 existing parking spaces, with 64 additional spaces provided for a total of 255 parking spaces. The new building is proposed to include a Day Care Centre use in units 1 and 2. This proposal results in the following variances:

1. To permit a 61m maximum yard abutting Thomas Alton Blvd instead of the maximum permitted 6m for proposed Building C.
2. To permit a 77m maximum yard abutting Appleby Line instead of the maximum permitted 6m for proposed Building C.
3. To permit a 12m maximum yard abutting Palladium Way instead of the maximum permitted 6m for proposed Building C.
4. To permit garbage storage to be located within a yard abutting Palladium Way-whereas Zoning By-law 2020 does not permit garbage storage to be located in the front or street side lot line.
5. To permit 3.65 parking spaces per 100m² of gross floor area instead of the minimum required 5 parking spaces per 100m² of gross floor area for a retail centre.
6. Notwithstanding Part 5, Section 4.13, to permit a building elevation facing a street (Thomas Alton Blvd) without pedestrian accessible doors associated with Building C, whereas Zoning By-Law 2020 requires a pedestrian accessible door on a building elevation facing a street for every building located within 60 metres of a street with a deemed width of 26 m or greater.
7. Notwithstanding Part 5, Section 4.13, to permit a building elevation facing a street (Palladium Way) without pedestrian accessible doors associated with Building C, whereas Zoning By-Law 2020 requires a pedestrian accessible door on a building elevation facing a street for every building located within 60 metres of a street with a deemed width of 26 m or greater.

You have received this notice as stipulated by the *Planning Act* because your property is within 60 metres of the property noted above. The application materials are available on request by contacting Committee of Adjustment staff by one of the methods listed above. A copy of the Agenda, containing staff reports and drawings, can be viewed online under the Meeting Agenda tab at **Burlington.ca/coa** on or after **October 6, 2025**.

Committee of Adjustment Hearings will be hybrid-conducted in person and virtually. All members of the public, applicants and their agents will now have the option to participate in the public meeting process in person at City Hall in Council Chambers, or remotely via Zoom Webinar Video Conferencing Technology. The Committee of Adjustment will meet to consider the above application under Section 45 of the *Planning Act*, 1990, as amended on:

WEDNESDAY OCTOBER 22, 2025,

This application is scheduled to be heard at or after 1:00 pm.

How to participate if I have comments or concerns?

Written Submissions

Members of the public who would like to participate in a Committee of Adjustment meeting are able to send written comments regarding the application by e-mail to committeeofadjustment@burlington.ca with the subject line to read "Comments_Your Name_File No._Address of the Property".

Alternatively, written comments can be sent by regular mail addressed to the Secretary-Treasurer. Include your name, address, application number and address of the property for which you are providing comments.

City of Burlington Committee of Adjustment - Community Planning
426 Brant Street P.O. Box 5013 Burlington, Ontario, L7R 3Z6
committeeofadjustment@burlington.ca

To allow all Committee of Adjustment members the opportunity to review and consider your comments, please provide your written submissions to be received no later than noon the day before the hearing date.

Oral Submissions

Members of the public are also able to provide oral comments regarding Committee of Adjustment Hearing items by participating virtually through Zoom via computer or phone, or by attending the Hearing in-person. Participation virtually requires pre-registration in advance. Please contact staff for instructions if you wish to make a presentation containing visual materials.

1. Virtual Oral Submissions

To register as a delegate, please contact the Secretary-Treasurer no later than 12:00 p.m. (noon) the day before the hearing date. The following information is required to register; Committee of Adjustment file number, hearing date, name, and mailing address of each person wishing to speak, if participation will be by phone or video. All requests to delegate must contain a copy of your intended remarks which will be circulated to all members of Committee in advance.

2. In person Oral Submissions

Interested members of the public, agents, and owners who wish to participate in person may attend Council Chambers on the date and time listed on the Notice of Public Hearing. Please note that you will be required to provide your name and address for the record. It is advised that you arrive no less than 10 minutes before the time of the Public Hearing as noted on the Notice of Public Hearing.

Attend or View the Committee of Adjustment Hearing:

If you do not wish to participate, but would like to follow along, the hearing will be held in person at City Hall in Council Chambers and live through a Zoom Webinar. Instructions, links and phone numbers for joining the meeting will be posted on the Committee of Adjustment webpage the day prior to the scheduled meeting. The link will be active at **12:00 p.m.**

If you wish to be notified of the decision of the Committee of Adjustment in respect to this application, you must submit a written request to the Secretary-Treasurer. This will also entitle you to be advised of a possible Ontario Land Tribunal Hearing. In accordance with the Planning Act, the Committee of Adjustment decision may be appealed to the Ontario Land Tribunal by the owner, the Minister of Municipal Affairs and Housing, a specified person or public body that has an interest in the matter.

The applicant is advised that it is **mandatory** that either the applicant or an authorized agent of the applicant must be present at the hearing either in person or virtual.

For more information about this matter, contact Catherine Susidko-Petriczko at committeeofadjustment@burlington.ca

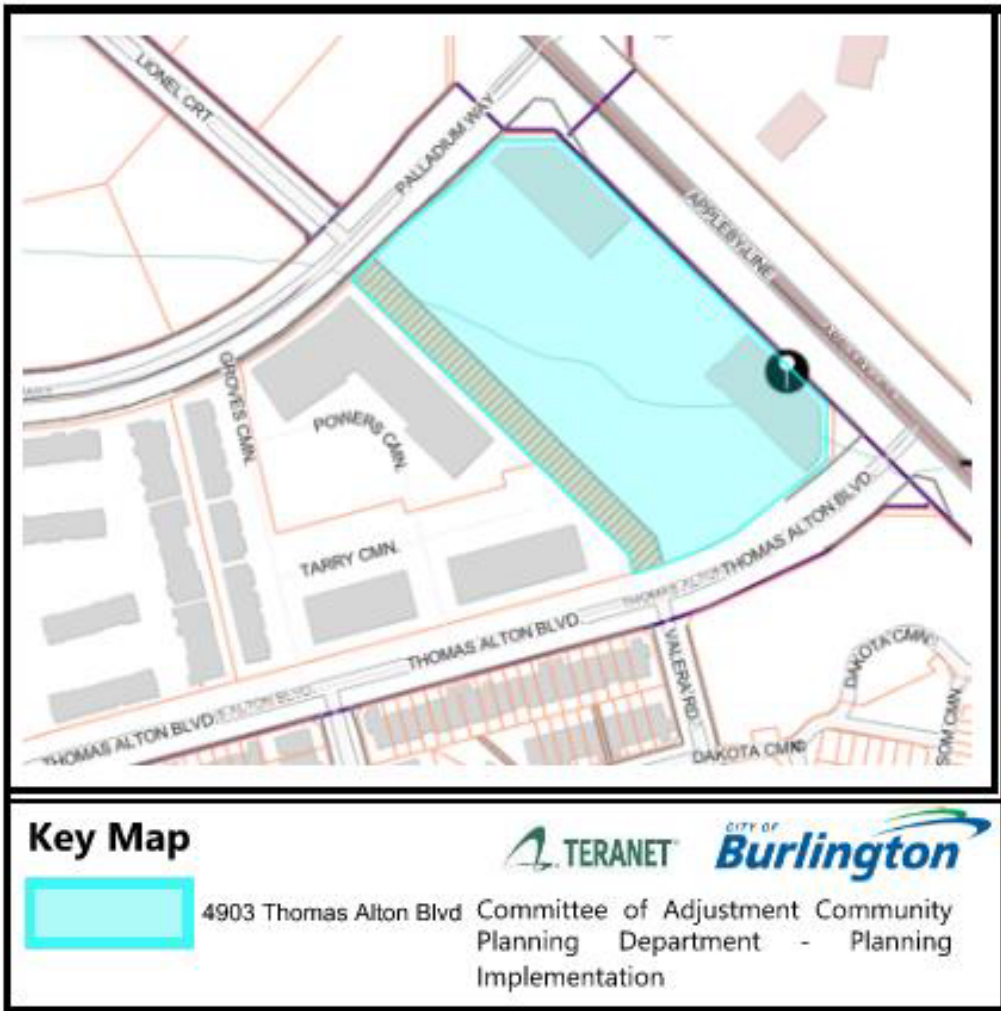
Yours truly,



Catherine Susidko-Petriczko
Secretary-Treasurer
Committee of Adjustment

Personal information including comments and public feedback, is collected under the legal authority of the Planning Act, R.S.O. 1990, Chapter c. P.13, as amended, and the Municipal Freedom of Information and Protection of Privacy Act, R.S.O. 1990, as amended, which will be used to process the application and in the decision making process and becomes the property of the City of Burlington, and is considered to be a public record and will be disclosed to any individual (including being posted on the internet) upon request. Questions about this collection should be directed to the Secretary-Treasurer, Burlington Committee of Adjustment, Community Planning Department, 426 Brant Street, P.O. Box 5013, Burlington, Ontario; L7R 3Z6 (905) 335-7629.

Key Map



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amended, upon issuance of a building permit, at the rate in effect on the date issued. For further information, the owner is advised to contact the City Building Department (905) 335-7731.

Tax

All property taxes including penalty and interest must be paid. This includes all outstanding balances plus current year taxes that have been billed but are not yet due. Local improvements must be commuted.

Date: September 10, 2025

Prepared By: L. Bray

Halton Region

Regional Staff have reviewed the Minor Variance application proposing the construction of a new one storey multi-tenant retail/service commercial building (Building C). Variances are requested to the maximum permitted yard depths, permitted location for garbage storage, minimum required setbacks, minimum required parking spaces, and the requirement to have pedestrian accessible doors on street facing facades.

- Due to Provincial legislation, as of July 1, 2024, the Halton Region's role in land use planning and development matters has changed. The Region is no longer responsible for the Regional Official Plan – as this has become the responsibility of Halton's four local municipalities. As a result of this change, a Memorandum of Understanding (MOU) between the Halton municipalities and Conservation Authorities has been signed that identifies the local municipality as the primary authority on matters of land use planning and development. The MOU also defines the continued scope of interests for the Region and the Conservation Authorities in these matters.
- Regional Transportation staff acknowledge the submission of the TIS and note that Regional comments on the TIS will be provided at the time of Site Plan application.
- Regional Staff have no objections to the Minor Variance application.

Date: September 15, 2025

Prepared By: Navjot Kaur

Burlington Hydro

Please see attached comments at the end of this staff report.

Date: August 12, 2025

Prepared By: Rossa Parra



64 JARDIN DRIVE, UNIT 1B
CONCORD, ONTARIO L4K 3P3

T 905.669.4055
KLMPLANNING.COM

KLM file: P-3536

September 10, 2025

City of Burlington
Committee of Adjustment - Community Planning
426 Brant Street P.O. Box 5013
Burlington, Ontario
L7R 3Z6
committeeofadjustment@burlington.ca

**Attention: Erin Shacklette, CPT, ACST-A
Secretary Treasurer**

**Re: Application for Minor Variance – Revisions to Site Plan
Owner: CJJ Holdings Limited
Address: 4903 Thomas Alton Blvd.
File Number: A-015-2025**

Dear Ms. Shacklette,

KLM Planning Partners Inc. is the land use planning firm retained on behalf of our client, CJJ Holdings Limited., owner of the lands located at the corners of Palladium Way and Appleby Line, and Thomas Alton Boulevard and Appleby line, municipally known as 4903 Thomas Alton Boulevard in the City of Burlington, Region of Halton (the "Subject Lands"). On behalf of our client, we made a first submission in support of a Minor Variance Application to the Committee of Adjustment on February 13, 2025, to vary the City of Burlington Zoning By-law 2020 ("the Zoning By-law"). We received comments on the application from the Zoning Examiner outlining the need for additional variances. Following this, subsequent resubmissions were made on June 16 and July 14th.

The application was scheduled for the September 3, 2025, Committee of Adjustment Hearing. Upon reviewing the staff report, a meeting was held with John O'Reilly of the Planning department on August 22, 2025 to discuss the comments received through staff report, proposed revisions to the site plan to satisfactorily address the comments, and next steps for the required variances. As a result, we requested a deferral of the application on August 25, 2025 which was granted.

The following letter provides a detailed description of the revised development and revised requested variances.

1.0 Proposed Revised Development and Revised Variances

The proposed development on the Subject Lands continues to involve the development of one commercial building (Building C) consisting of 13 units which together with the two existing commercial buildings on the site (Buildings A and B) will complete the overall development of the currently vacant portion of the site. As shown bubbled on the latest site plan prepared by Global Architect Inc. dated September 3, 2025, the following revisions outlined from 1.1 to 1.4 below have been made through consultation with staff to address the comments and concerns outlined in the staff report.

1.1 The daycare is proposed for Units 1 & 2 (previously 12 & 13)

The location of the daycare has been revised based on comments from staff received through the staff report where they have noted that there are better locations on site for the outdoor play area. Per the staff report, staff recommended the relocation of the daycare to further minimize the potential for compatibility issues with the Business Corridor zone to protect employment land base and to relocate the daycare closer to the existing residential areas and the transit stop on Thomas Alton Boulevard. In accordance with this feedback, the daycare and associated play area have been relocated to Units 1 & 2, which is closer to Thomas Alton Boulevard as recommended in the notes and conditions of the staff report and is closer to existing residential uses, supporting transit use and pedestrian trips, addressing staff's concerns in that regard as well. The size of the required day care play area is dictated by Ontario regulation. In order to maintain the size of the play area, this has resulted in the need for Building C to shift slightly closer to Palladium Way. The location and size of Building C was previously influenced by existing services and the parking supply which is at the minimum that can be supported. Accordingly, maintaining the size and general location of Building C is critical to maintaining the proposed parking layout which is the most efficient manner to develop the balance of the undeveloped site.

1.2 The restaurant is proposed for Units 12 & 13 (previously 1 & 2)

The location of the restaurant has been revised based on comments from staff received through the staff report. Staff believe that a highly visible and public location (at the corner of Palladium Way and Valera Road) would be better suited to the restaurant patio located at the opposite end of building "C". Therefore, we have implemented this revision and moved the restaurant use to Units 12 & 13 and the associated patio adjacent to Palladium way improves the building street edge relation and assists with further animating the street.

1.3 A pedestrian entry feature Trellis with bench seating is shown adjacent to Thomas Alton Boulevard

The revised Site Plan includes a trellis entry feature structure with bench seating adjacent to Thomas Alton Boulevard within the zoning requirement needing a maximum yard for buildings or structures abutting a street of 6 metres. Zoning staff maintain that this does not eliminate the variance required for the Maximum yard abutting Thomas Alton Boulevard for Building C; however, in addressing the concerns of staff, the introduction of this features has positive benefits that are in keeping with the intent of the Official Plan and Zoning as this assists with providing an additional element that provides both aesthetics to the streetscape, promotes human and pedestrian comfort and wayfinding, is pedestrian in scale and will also support transit. The entry feature over a proposed sidewalk providing a direct connection will be more inviting and provide a meeting place for pedestrians. Through our meetings, staff agreed that such an entry feature with seating would assist to address concerns related to the location of Building C, animate the street and support transit through providing an additional alternative seating area and shade cover for pedestrians waiting for the bus which together with other revisions satisfy the recommended notes and conditions in the staff report.

1.4 A new sidewalk access is shown connecting to the existing municipal sidewalk along Thomas Alton Boulevard adjacent to Existing Building 2

Through the staff report, staff commented on the lack of direct connections between the public sidewalk next to the bus stop and the site's internal walkway system. Staff recommend it be subject to a condition requiring the applicant to work with staff to include an additional pedestrian connection from the public sidewalk near the bus stop into the site. This would also support site plan considerations encouraging safe, convenient and barrier-free pedestrian travel within the site, between the site and adjacent uses

and to and from transit stops. Based on this feedback, we worked with staff on a location for a sidewalk connection from the existing building 2 to the sidewalk connecting to the bus stop. Staff were supportive of this change and agreed that it addressed the notes and condition in the staff report requiring additional pedestrian connection into the site from the bus stop.

2.0 Required Variances

The following eight (8) variances were identified within the Staff Report through review of the previously submitted Site Plan. Based on the above noted revisions to the Site Plan, our comments/revisions to the required variances are outlined below.

2.1 To permit a 58m maximum yard abutting Thomas Alton Blvd instead of the maximum permitted 6m for proposed Building C.

Through the revision to the Site Plan of relocating the daycare and restaurant uses within the building, the setback to Thomas Alton Boulevard was slightly increased in order to adjust the sizes of the daycare outdoor play area and the restaurant patio on the opposite side of the building.

In accordance with the new maximum yard abutting Thomas Alton Boulevard shown on the revised site plan, the variance will read as follows: *"To permit a 61 m maximum yard abutting Thomas Alton Blvd instead of the maximum permitted 6m for proposed Building C."*

As noted above, the revised Site Plan contemplates a trellis entry feature structure with bench seating adjacent to Thomas Alton Boulevard. The intent of this feature is to animate the street, provide for a comfortable pedestrian environment and experience, and reinforce the street edge. The general intent and purpose of establishing maximum yard requirements for Thomas Alton Boulevard is to facilitate good urban design where buildings and structures engage with the street and encourage and invite pedestrian activity and modes of travel other than vehicle trips. This entry feature will provide bench seating for pedestrians utilizing the nearby bus stop and create visual interest in which the details are to be further refined through landscape drawings under the future Site Plan approval application.

2.2 To permit a 77m maximum yard abutting Appleby Line instead of the maximum permitted 6m for proposed Building C.

This variance remains unchanged based on the revised plan and is still required for the proposed development. Justification for this variance was provided through KLM's Minor Variance Cover Letter dated July 14, 2025, and the variance was supported through the Staff Report by the Planning Department dated August 18, 2025.

2.3 To permit a 16m maximum yard abutting Palladium Way instead of the maximum permitted 6m for proposed Building C.

Through the revision to the Site Plan of relocating the daycare and restaurant uses within the building, the setback to Palladium Way was decreased in order to adjust the sizes of the patio and the daycare outdoor play area on the opposite side of the building.

This variance would now read as follows based on the revised plan: "To permit a **12m** maximum yard abutting Palladium Way instead of the maximum permitted 6m for proposed Building C."

The associated patio further reduces the proximity to the street which is setback __metres to Palladium Way. Since this setback is improved from the originally proposed 16 metres, and the restaurant patio

further contributes to satisfying the intent of both the Official Plan and Zoning By-law with respect to human comfort and pedestrian scale.

2.4 To permit garbage storage to be located within a yard abutting Palladium Way whereas Zoning By-law 2020 does not permit garbage storage to be located in the front or street side lot line

This variance remains unchanged based on the revised plan and is still required for the Subject Lands. Justification for this variance was provided through KLM's Minor Variance Cover Letter dated July 14, 2025, and the variance was supported through the Staff Report by the Planning Department dated August 18, 2025.

2.5 To permit a 19 m setback from a Business Corridor Zone instead of the minimum required 30 m for an outdoor play area associated with a Day Care Centre in Building C

This variance is no longer required, as the daycare is proposed as Units 1 & 2 which is well beyond 30 m from the Business Corridor Zone north of Palladium Way.

2.6 To permit 3.65 parking spaces per 100m² of gross floor area instead of the minimum required 5 parking spaces per 100m² of gross floor area for a retail centre

This variance remains unchanged based on the revised plan and is still required for the Subject Lands. Justification for this variance was provided through KLM's Minor Variance Cover Letter dated July 14, 2025, and the variance was supported through the Staff Report by the Planning Department dated August 18, 2025.

2.7 Notwithstanding Part 5, Section 4.13, to permit a building elevation facing a street (Thomas Alton Blvd) without pedestrian accessible doors associated with Building C, whereas Zoning By-Law 2020 requires a pedestrian accessible door on a building elevation facing a street for every building located within 60 metres of a street with a deemed width of 26 m or greater.

This variance remains unchanged based on the revised plan and is still required for the Subject Lands. Justification for this variance was provided through KLM's Minor Variance Cover Letter dated July 14, 2025, and the variance was supported through the Staff Report by the Planning Department dated August 18, 2025.

2.8 Notwithstanding Part 5, Section 4.13, to permit a building elevation facing a street (Palladium Way) without pedestrian accessible doors associated with Building C, whereas Zoning By-Law 2020 requires a pedestrian accessible door on a building elevation facing a street for every building located within 60 metres of a street with a deemed width of 26 m or greater.

This variance remains unchanged based on the revised plan and is still required for the Subject Lands. Justification for this variance was provided through KLM's Minor Variance Cover Letter dated July 14, 2025, and the variance was supported through the Staff Report by the Planning Department dated August 18, 2025.

2 Conclusion

The requested minor variances are desirable for the appropriate development and use of land as they do not change the land use or any other lot and building requirements on the Subject Lands other than those outlined above. The lands are located on a parcel that is already developed with two commercial buildings. Should the minor variances to the zoning be approved, the proposed development would provide 13 commercial units through one building on a portion of the lands which are currently

underutilized, supporting the City's goals by providing commercial uses facilitating employment within the area. Allowing for the minor alterations to the zoning would facilitate the build out of a quality commercial centre that functions properly and will not cause any undo impacts on adjacent lands or associated public realm.

It is for the above reasons that KLM Planning Partners Inc. is of the opinion that the requested variances are consistent with the general intent and purpose of the Official Plan and the Zoning By-law, are desirable for the appropriate development or use of the lands and are minor in nature. Furthermore, it is not anticipated that the proposed minor variances will have any adverse impacts to municipal servicing, parking, or any abutting lands. It is for these reasons that we believe the proposed minor variances represent good land use planning in the public interest. We have worked with staff on the revisions to the Site Plan, and believe that the above variances can be supported by Planning.

In support of this Minor Variance Application, please find enclosed:

1. Cover Letter prepared by KLM Planning Partners Inc. dated September 10, 2025;
2. Minor Variance Application Form;
3. Site Plan prepared by Global Architect Inc. dated September 3, 2025; and,
4. Floor Plan prepared by Global Architect Inc. dated August 29, 2025.

Should you have any questions with respect to the enclosed, please do not hesitate to contact the undersigned. We look forward to working with the City of Burlington and all other applicable external public agencies with regard to the processing and approval of the Minor Variance Application.

Yours truly,

KLM PLANNING PARTNERS INC.



Lauren Dynes, BURPI, MCIP, RPP
Senior Planner

Copy to: Mark Yarranton, President, KLM Planning Partners Inc.
Donna Bravo, Director, Land Development, Rothman Real Estate Investments Limited

PLANNING ACT, R.S.O. 1990, C.P. 13
APPLICATION FOR MINOR VARIANCE OR FOR PERMISSION

THE UNDERSIGNED HEREBY APPLIES TO THE COMMITTEE OF ADJUSTMENT FOR THE CITY OF BURLINGTON UNDER SECTION 45 OF THE PLANNING ACT, R.S.O. 1990, C.P.13, AS DESCRIBED IN THIS APPLICATION, FROM BY-LAW NO. 2020. (AS AMENDED)

Application made under:

☒ Section 45 (1) of the Planning Act☐ Section 45 (2) of the Planning ActDiscussed the application with a City Zoning Examiner and Development Planner Y ☒ or N ☐

Name of Planner: Melissa Morgan/ John O'Reilly Name of Zoning Examiner: Mark Dalrymple / Nathan Dart

PROPERTY INFORMATION

Municipal Address(es) of property:

4903 Thomas Alton Boulevard

Legal Description of property:

Block 24, Registered Plan 20M-1034 City of Burlington Regional Municipality of Halton

'Urban Area' (Map 1), 'Mixed Use Nodes and Intensification Corridors' (Schedule B)
'Secondary Growth Area' (Schedule 8-1), and Urban Corridor (Schedule C)

Official Plan Designation: within City of Burlington Official Plan Current Zoning Designation: MXE-322 – Mixed Use Employment

OWNER(S) INFORMATION:

Legal Name (as it appears on the title for the property):

CJJ Holdings Limited

Mailing Address: 620 Wilson Avenue, Suite 300 City: Toronto

Postal Code: M3K 1Z3 Home Phone: Mobile Phone: 416-630-6955

Work Phone: E-Mail: rgoldberg@rothmanrei.com**AGENT INFORMATION** (if applicable): (This person will be the primary point of contact if provided)

Name:

KLM Planning Partners Inc.

Mark Yarranton / Lauren Dynes

Business Address: 64 Jardin Drive Unit 1B City: Concord

Postal Code: L4K 3P3 Home Phone: Mobile Phone: 416-660-5655

Work Phone: 416-660-5655 E-Mail: ldynes@klmplanning.com

PROPOSED DEVELOPMENT Please outline in detail your proposed development and list each variance you are requesting, as well as the Zoning By-law Requirements. Attach a separate sheet if required.

The Subject Lands are currently developed with two two-storey commercial buildings and surface parking.

The proposed development on the Subject Lands proposes one additional commercial building consisting of 13 units and additional surface parking.

Variance(s) Requested	Zoning Bylaw Requirement
1. To permit a 61m maximum yard abutting Thomas Alton Blvd	6 metre maximum yard
2. To permit a 77m maximum yard abutting Appleby Line	6 metre maximum yard
3. To permit a 12m maximum yard abutting Palladium Way	6 metre maximum yard
4. To permit garbage storage to be located within a yard abutting Palladium Way	Section 2.2.3 of the by-law permits garbage storage in only a rear or side yard
5. To permit a building elevation facing a street (Palladium Way) without pedestrian accessible doors associated with Building C	section 4.13 of the by-law currently requires every building located within 60 metres of a street with a deemed width of 26 metres or greater to provide a pedestrian accessible door on the building elevation facing the street.
6. To permit a building elevation facing a street (Thomas Alton Blvd) without pedestrian accessible doors associated with Building C	section 4.13 of the by-law currently requires every building located within 60 metres of a street with a deemed width of 26 metres or greater to provide a pedestrian accessible door on the building elevation facing the street.
7. To permit a variance to the minimum Retail Centre parking requirement of 3.65 spaces per 100 m2 of GFA, or 254 spaces for the entire development.	the By-law requires 5.0 spaces per 100 m2 or 349 spaces

In your own words, please explain why you are unable to comply with the provisions of the Zoning By-law and how the minor variance(s) meet the four (4) tests under the Planning Act:

1. Why is the variance(s) minor in nature? Please refer to the Minor Variance submission cover letter.

2. Why are the variance(s) desirable for the appropriate use of the land? _____

Please refer to the Minor Variance submission cover letter.

3. Do the variance(s) meet the intent and purpose of the Official Plan? _____

Please refer to the Minor Variance submission cover letter.

4. Do the variance(s) meet the intent and purpose of the Zoning By-law? _____

Please refer to the Minor Variance submission cover letter.

PROPERTY DETAILS (please complete all fields):

Date property
purchased:

Unknown
mmm/dd/yyyy

Date property
first built on:

Between 2010-2013
mmm/dd/yyyy

Date of
proposed
construction:

Unknown
mmm/dd/yyyy

Existing Use of the Subject Property (check one):

- Detached Dwelling ☐ Semi-Detached Dwelling ☐
Townhouse Dwelling ☐ Street Townhouse
Dwelling ☐ Stacked Townhouse Dwelling ☐
Apartment ☐ Mixed Use ☐ Hi Rise ☐
Commercial ☒ Industrial ☐ Vacant ☐
Other ☐ _____

Length of time the existing uses of the subject
property have continued:

Commercial uses built between 2010-2013.

Proposed Use of the Land:

Additional commercial building with 13 units.

Existing Uses of Abutting Properties (check all that apply)

- Residential ☐ Commercial ☒ Industrial ☐ Multi-Residential ☐ Vacant ☐ Hydro right-of-way ☐
Railway right-of-way ☐ Provincial Highway ☐ Park ☐ Other ☐ _____
Conservation Halton Lands: Lake Ontario ☐ Creek ☐ Storm Water Management Pond/Channel ☐
Ravine ☐

Additional Information

Is liquor sold on site? Y ☐ or N ☒

Is the property on the Municipal Cultural Heritage Register for the City of Burlington? Y ☐ N ☒
Unknown ☐

Type of Access to the Subject Lands

- Provincial Highway ☐ Municipal Road ☒ Private Road ☐ Water ☐ Other(specify) ☐

Municipal Services Provided

- Water ☒ If not available, by what means is it
provided: _____
Sanitary Sewers ☒ If not available, by what means is it
provided: _____
Storm Sewers ☒ If not available, by what means is it
provided: _____

IS THE SUBJECT LAND(S) THE SUBJECT OF ANY OF THE FOLLOWING DEVELOPMENT

- APPLICATIONS: ☐ Official Plan Amendment ☐ Zoning By-law Amendment ☐ Building Permit
☒ Site Development Plan ☐ Plan of Subdivision ☐ Previous Minor Variance ☐ Consent

FOR RESIDENTIAL DETACHED OR SEMI-DETACHED DWELLINGS

Dimensions of Property			Street Width (see first page of application for how to obtain)			Lot Coverage	Corner Lot? Y ☐ N ☐
Frontage	Depth	Area	Actual	Deemed	Required		

Particulars of all buildings and structures on or proposed for the subject lands

(attach additional page if required)

EXISTING (Dwelling/Building)

Ground Floor Area (incl. attached garage)	M ²
Gross Floor Area:	M ²
Number of Storeys:	
Width:	M
Length:	M
Height:	M

Garage/Car Port

Detached?	Y ☐ N ☐
Gross Floor Area:	M ²
Width:	M
Length:	M
Height:	M

Accessory Structures (Shed, Gazebo, etc)

Gross Floor Area:	M ²
Width:	M
Length:	M
Height:	M

Other (pool, additional sheds, decks, driveways, etc.)

Gross Floor Area:	M ²
Width:	M
Length:	M
Height:	M

PROPOSED (Dwelling/Building/Addition)

Ground Floor Area (incl. attached garage)	M ²
Gross Floor Area:	M ²
Number of Storeys:	
Width:	M
Length:	M
Height:	M

Garage/Car Port

Detached?	Y ☐ N ☐
Gross Floor Area:	M ²
Width:	M
Length:	M
Height:	M

Accessory Structures

Gross Floor Area:	M ²
Width:	M
Length:	M
Height:	M

Other

Gross Floor Area:	M ²
Width:	M
Length:	M
Height:	M

LOCATION of all existing and proposed buildings and structures

EXISTING

Front:	M
Rear:	M
Side/Street Side:	M
Side/Other Side:	M

PROPOSED

Front:	M
Rear:	M
Side/Street Side:	M
Side/Other Side:	M

FOR COMMERCIAL, MIXED USE, INDUSTRIAL AND OTHER

Dimensions of Property			Street Width (see first page of application for how to obtain)			Density	Have you applied for Site Plan Approval? Y ☒ N ☐
Frontage	Depth	Area	Actual	Deemed	Required		
+/- 89.88 m	+/- 203.24	21,143.11 m ²		Appleby Line - 36 m Palladium Way - 26 m Thomas Alton Blvd - 26 m			File #: PRCN-SP-31-24

Particulars of all buildings and structures on or proposed for the subject lands

(attach additional page if required)

EXISTING (Building)		PROPOSED (Building/Addition)	
Ground Floor Area:	3,916.52 M ²	Ground Floor Area:	1,831.87 M ²
Gross Floor Area:	5,632.86 M ²	Gross Floor Area:	1,888.33 M ²
Number of Storeys:	2 storeys	Number of Storeys:	1 storey
Width:	25.5 (each building) M	Width:	16.41 M
Length:	61.09 (each building) M	Length:	119.74 M
Height:	12.8 maximum M	Height:	11.53 maximum M
Floor Area: Office Space	2,961.10 M ²	Floor Area: Office Space	N/A M ²
Floor Area:	Retail: 242.62 Medical Office: 1,479.67 Service Commercial: 254.20 M ²	Floor Area:	Retail: 1,115.94 Restaurant: 419.73 Day Care: 295.77 M ²
Warehouse/Retail/Other:		Warehouse/Retail/Other:	
# of Existing Units:	22	# of Proposed Units:	13
Floor Area Ratio:	0.319	Floor Area Ratio:	0.36
Required Parking Spaces:	197	Proposed Parking Spaces:	255
Existing Parking Spaces:	248		
EXISTING (Other)		PROPOSED (Other)	
Ground Floor Area:	M ²	Ground Floor Area:	M ²
Gross Floor Area:	M ²	Gross Floor Area:	M ²
Number of Storeys:		Number of Storeys:	
Width:	M	Width:	M
Length:	M	Length:	M
Height:	M	Height:	M

LOCATION of all existing and proposed buildings and structures

EXISTING (Building)		PROPOSED (Building)	
Front:	M	Front:	M
Rear:	M	Rear:	M
Side:	M	Side:	M
Side:	M	Side:	M
OTHER		OTHER	
Front:	M	Front:	M
Rear:	M	Rear:	M
Side:	M	Side:	M
Side:	M	Side:	M

MULTI-RESIDENTIAL

(STREET TOWNHOUSE, HI-RISE, STACKED TOWNHOUSES, DUPLEXES, etc)

Dimensions of Property			Street Width (see first page of application for how to obtain)			Density	Have you applied for Site Plan Approval? Y ☐ N ☐ File #:
Frontage	Depth	Area	Actual	Deemed	Required		

Particulars of all buildings and structures on or proposed for the subject lands
(attach additional page if required)

EXISTING (Building)

Ground Floor Area: M²
Gross Floor Area: M²
Number of Storeys:
Width: M
Length: M
Height: M
of Existing Units: M²
Floor Area Ratio: M²
Required Parking Spaces:
Existing Parking Spaces:

PROPOSED (Building/Addition)

Ground Floor Area: M²
Gross Floor Area: M²
Number of Storeys:
Width: M
Length: M
Height: M
of Proposed Units: M²
Floor Area Ratio: M²
Proposed Parking Spaces:

EXISTING (Other)

Ground Floor Area: M²
Gross Floor Area: M²
Number of Storeys:
Width: M
Length: M
Height: M

PROPOSED (Other)

Ground Floor Area: M²
Gross Floor Area: M²
Number of Storeys:
Width: M
Length: M
Height: M

LOCATION of all existing and proposed buildings and structures

EXISTING (Building)

Front: M
Rear: M
Side: M
Side: M

PROPOSED (Building)

Front: M
Rear: M
Side: M
Side: M

OTHER

Front: M
Rear: M
Side: M
Side: M

OTHER

Front: M
Rear: M
Side: M
Side: M

EXEMPTION FROM NEW SURVEY REQUIREMENT

Minor additions to an existing dwelling or for a proposed accessory building or structure (i.e., deck, driveway, pergola, shed), may be exempt from having to provide a new survey. Please refer to Page 3 of this application package for more details. Minor Variances with concurrent Consent applications require a new survey.

Applicant/Owner:

Property Address:

1. I, _____ In my capacity as _____ do attest to the following:

 Print Name (Owner or agent)

Please complete Section A, B, or C

A. The OLS survey/sketch of survey dated

mmmm/dd/yyyy

has been revised by:

(Person or Company Name)

OR

B. The site plan, architect's plan or engineer's plan dated

mmmm/dd/yyyy

has been revised by:

(Person or Company Name)

OR

C. The sketch or plot plan** dated

****Accepted for applications involving variances for Uses only.**

mmm/dd/yyyy

was prepared by:

(Person or Company Name)

2. All structures, measurements, setbacks and boundaries of the property are shown accurately as of:

mmmm/dd/yyyy

3. The material submitted shows all measurements in metric, as calculated/converted by:

(Person or Company Name)

4. Should the need arise during application processing for an new OLS survey, the applicant/agent agree to provide the survey as required by Committee or city staff in order to receive a decision on the application.

Signature of Owner/Applicant

Date (mmm/dd/yyyy)

POSTING OF ADVISORY SIGN

This will confirm the requirement of the Committee of Adjustment for a sign to be posted by all applicants or agents on each property under application.

A sign will be made available to you after completion of the zoning review of your application(s) and you are directed to post each sign in a prominent location that will enable the public to observe the sign.

The location of each sign will depend on the lot and location of structures on it, however, the sign should be placed so as to be legible from the roadway in order that the public can see the sign and make note of the telephone number should they wish to make inquiries. In most cases, please post the sign on a stake as you would a real estate sign. For commercial or industrial buildings it may be appropriate to post the sign on the front wall of the building at its entrance. Please contact the undersigned if you have any queries on the sign location.

DO NOT POST THE SIGN INSIDE THE BUILDING BY A WINDOW. The sign must be outdoors by the roadway in order to be visible and readable.

Each sign must remain posted beginning 10 days prior to the hearing, until the day following the hearing. Please fill in the form below indicating your agreement to post the sign(s) as required. This form must be submitted with the application so that it may be placed on file as evidence that you have met the committee's requirements. Failure to post the sign as required will result in deferral of the application.

I UNDERSTAND THAT EACH SIGN MUST BE POSTED AT LEAST 10 DAYS BEFORE THE HEARING, AND WILL REMAIN POSTED AND BE REPLACED, IF NECESSARY, UNTIL THE DAY FOLLOWING THE HEARING.

Owner Name	<u>Richard Goldberg</u>	Property Address	<u>4903 Thomas Alton Boulevard</u>
			<u>Sept. 10, 2025</u>
	Signature of Owner/Applicant		Date (mmm/dd/yyyy)

AFFIDAVIT

*Please fill out at time of submission of application

I have the authority to bind the Corporation (check if applicable) ☐ Signature of Applicant or Authorized Agent: KLM Planning Partners Inc.

I, Lauren Dynes of the Town of Aurora in the Region
(print name) (Region/City/County) (City/Town/Township)

of York solemnly declare that all the statements contained in this application are true and I make this solemn declaration conscientiously believing it to be true and knowing it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

Declared before me at the City of Vaughan in the Region of York
(Region/City/County) (City/Town/Township)

this 10th day of September 2025.

Victoria-Jessica Potkanski
a Commissioner, etc., Province of Ontario
for KLM Planning Partners Inc.
Expires August 12 2027

[Signature]
Signature of Commissioner, etc.

[Signature: L Dynes]
Signature of Applicant or Authorized Agent

PERMISSION TO ENTER

IMPORTANT This MUST be completed for all applications and signed by the OWNER.

Municipal Address of Subject Lands: 4903 Thomas Alton Boulevard

I hereby authorize the Committee of Adjustment members, City of Burlington and Region of Halton staff to enter onto the above-noted property for the limited purposes of evaluating the merits of this application.

[Signature]
Signature of Owner

Richard Goldberg
Print Name

OWNERS AUTHORIZATION

If using an agent, the owner must also complete the following form:

I, Richard Goldberg being the registered owner of the subject lands, hereby
(print name)

Authorize KLM Planning Partners Inc. to prepare, submit and act on my behalf with respect to this
(print agent name)

application for a Minor Variance.


Signature of Owner

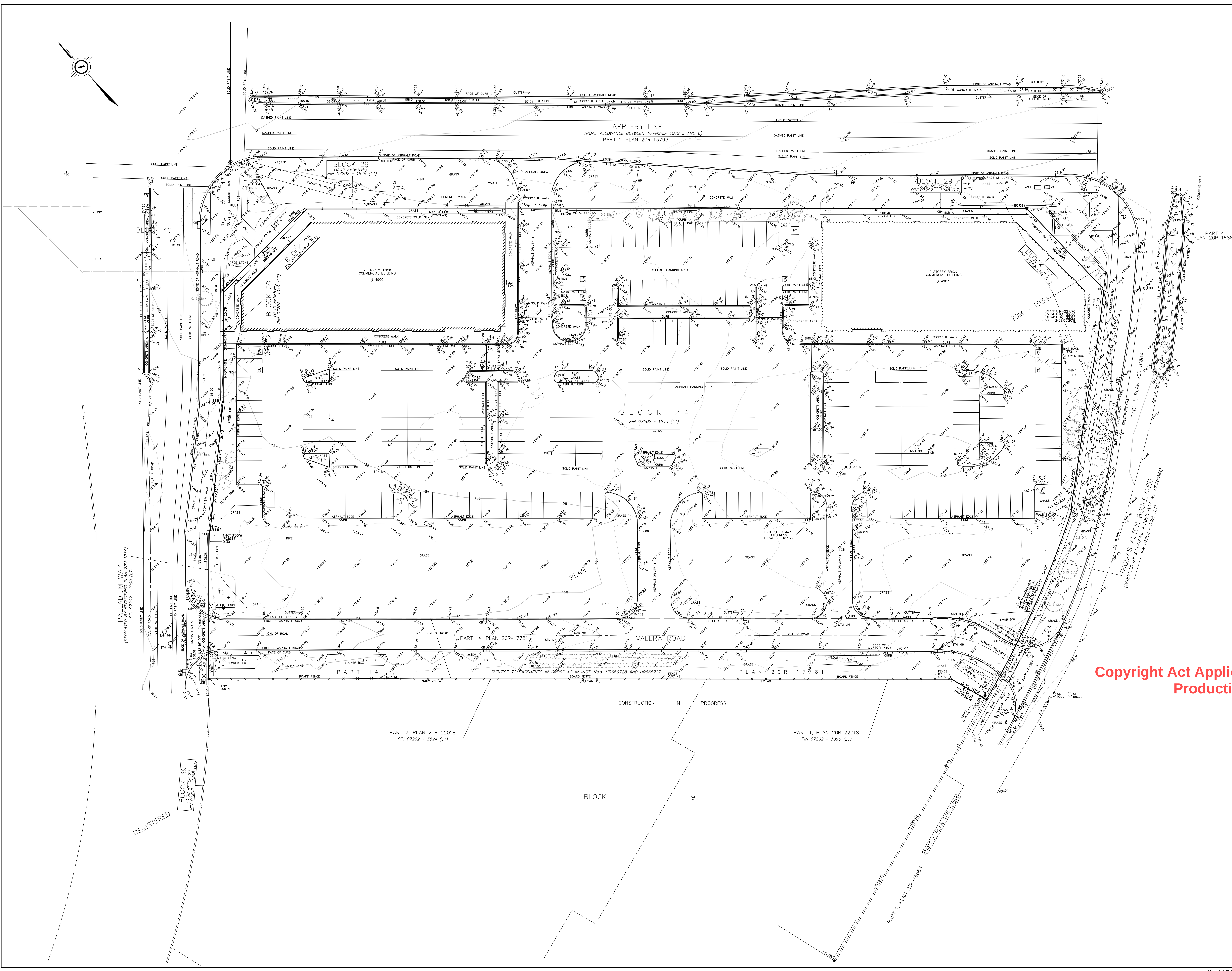
Sept. 10, 2025

Date (mmm/dd/yyyy)

Notice of collection of personal information

Personal information contained on this form is collected under the authority of the Planning Act, RSO 1990, c. P.13, to process applications and make decisions. Applications made under the Planning Act, are considered part of the public record and shall be made available to the public. Questions about this collection can be directed to the Manager of Development Planning, City of Burlington, 426 Brant Street, Burlington, Ontario, L7R 3Z6, 905-335-7600.

The applicant acknowledges that an application, all supporting information and materials, including studies and drawings, submitted under the Planning Act, pursuant to s. 1.0.1 of the Planning Act, RSO 1990, c.P.13, as amended, shall be made available to the public.



PLAN OF SURVEY ILLUSTRATING TOPOGRAPHY OF
BLOCK 24
REGISTERED PLAN 20M-1034
CITY OF BURLINGTON
REGIONAL MUNICIPALITY OF HALTON
SCALE 1 : 250
THE INTENDED PLOT SIZE OF THIS PLAN IS 1306mm IN WIDTH BY 914mm IN HEIGHT
WHEN PRINTED AT A SCALE OF 1:250.
J.D. BARNES LIMITED
© COPYRIGHT
METRIC MEASURES AND COORDINATES SHOWN ON THIS PLAN ARE IN
METRIC MEASURES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

NOTES
BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS 4 AND 8,
BY REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, NAD83 (CSRS)
(COORD.)
DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY
THE CORNER SCALE FACTOR OF 0.999692.
INTEGRATION DATA
OBSERVED REFERENCE POINTS (ORP'S) - UTM ZONE 17, NAD83 (CSRS) (2010.0)
COORDINATES TO URBAN ACCURACY PER SECTION 14 (2) OF OREG 216/10.
POINT ID EASTING NORTHING
ORP (4) 595 837.82 4 807 127.38
ORP (8) 595 964.13 4 808 999.78
COORDINATES CANNOT IN THEMSELVES BE USED TO RE-ESTABLISH
CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.
THE RESULTANT BETWEEN ORP (4) AND ORP (8) IS 179.60 N44°42'35"W.

ELEVATION NOTE
ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM
AND ARE DERIVED FROM THE CITY OF BURLINGTON BENCHMARKS.
BENCHMARK NO. 160.35m
NO. 160.35m
ELEVATION=160.35m

LOCAL BENCHMARK
A GUTTER LOCATED ON CURB BEING APPROXIMATELY 43.3 METERS SOUTHWEST
OF BUILDING #400, AS SHOWN ON THE FACE OF PLAN.
ELEVATION= 157.38m

LEGEND
■ DENOTES SURVEY MONUMENT FOUND
□ DENOTES SURVEY MONUMENT SET
SMB DENOTES STANDARD IRON BAR
SSB DENOTES SHORT STANDARD IRON BAR
BI DENOTES IRON BAR
PI DENOTES PLASTIC BAR
WT DENOTES WITNESS
MEAS DENOTES MEASURED
JDB DENOTES J.D. BARNES LIMITED
P1 DENOTES PLAN 20M-22018
P2 DENOTES PLAN 20M-1034
ALL SET SSB MONUMENTS WERE USED DUE TO LACK OF OVERBURDEN
AND/OR PROXIMITY OF UNDERGROUND UTILITIES IN ACCORDANCE WITH
SECTION 11 (4) OF OREG, 205/91.

TOPOGRAPHIC LEGEND
CB DENOTES CATCH-BASEIN
HFD DENOTES HYDRO FRESTIAL
MH DENOTES MANHOLE
SMH DENOTES SANITARY MANHOLE
STM MH DENOTES STORM MANHOLE
WMH DENOTES WATER MANHOLE
HF DENOTES HYDRO POLE
LS DENOTES LIGHT STANDARD
TP DENOTES TELEPHONE POLE
TSC DENOTES TRAFFIC SIGNAL CONTROL
H DENOTES FIRE HYDRANT
WV DENOTES WATER VALVE
CBV DENOTES LOCAL BENCH MARK
CA DENOTES CONCRETE AREA
CB DENOTES CONCRETE AREA
CBV DENOTES IRRIGATION CONTROL BOX
CBV DENOTES IRRIGATION CONTROL VALVE
CBV DENOTES SHRUB
CBV DENOTES CONIFEROUS TREE
DIA=DIAMETER OF TRUNK IN METRES
CBV DENOTES DECIDUOUS TREE
DIA=DIAMETER OF TRUNK IN METRES

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Production

BEFORE DIGGING, UNDERGROUND SERVICES SHOULD BE LOCATED ON
SITE BY THE RESPECTIVE AGENCIES.
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT
LOCAL BENCHMARKS HAVE NOT BEEN ALTERED OR DISTURBED AND
THAT THE RELATIVE ELEVATIONS AGREE WITH THE INFORMATION
SHOWN ON THIS PLAN.
PRIMARY CONTOURS ARE AT 1.00m INTERVALS.
SECONDARY CONTOURS ARE AT 0.25m INTERVALS.

SURVEYOR'S CERTIFICATE
I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS
ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON OCTOBER 28th, 2024.

NOVEMBER 01, 2024
DATE
SARAL PETERIA
ONTOARIO LAND SURVEYOR

THIS PLAN OF SURVEY RELATES TO A/L'S PLAN SUBMISSION FORM NUMBER 2219787
J. D. BARNES SURVEYING
LIMITED
LAND INFORMATION SPECIALISTS
401 WHEELABRATOR WAY SUITE A, MILTON, ONT L7T 1C1
T: 905.275.9385 F: 905.275.9386 www.jdbarnes.com
DRAWN BY: WA CHECKED BY: AB/SP REFERENCE NO.: 24-30-204-00
PLOTTED: 11/27/2024 DATED: 05/29/2024
FILE: C:\24-30-204\00\drawing\24-30-204-00.dgn

APPLEBY LINE

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ADJACENT ZONING-S

ADJACENT ZONING-BC1-448

ADJACENT ZONING-RAL4-493

PALLADIUM WAY

THOMAS ALTON BLVD

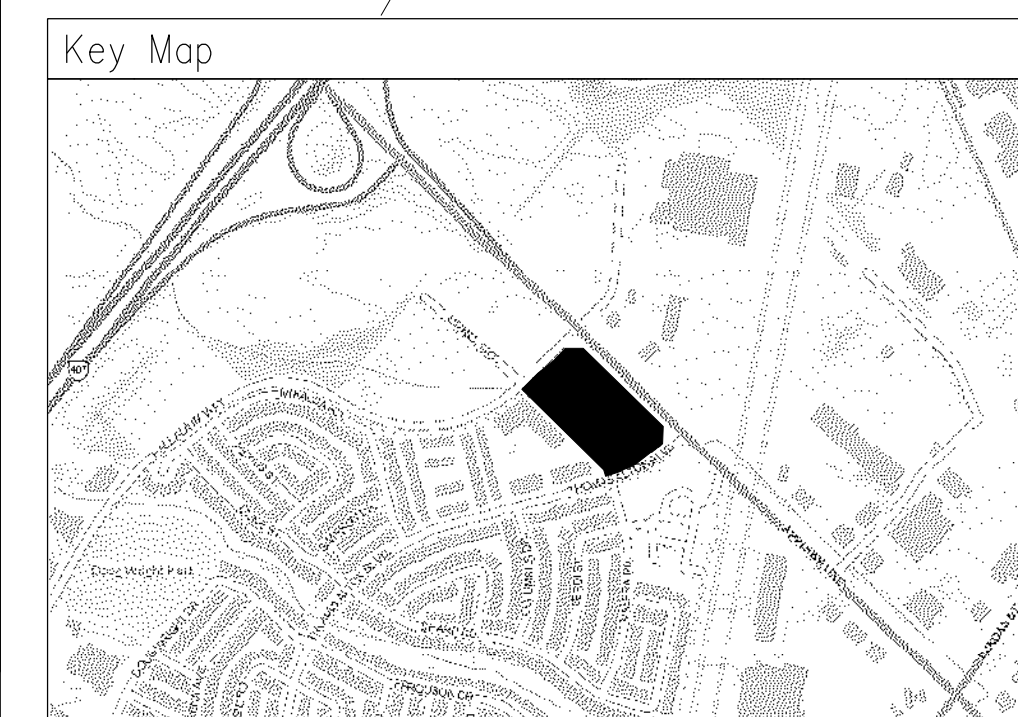
VALERA ROAD

SITE STATISTICS		
	BY-LAW 2020	PROPOSED
ZONING		BY-LAW REQUIREMENT
LOT WIDTH	108.8 M	25.0 M
LOT AREA	2143.11 M ² - 2.11 ha	1000.0 M ² - 0.1 ha
FRONT YARD (APPLEBY LINE)	3.0 M	MAXIMUM 6.0 M
REAR YARD (ADJUTS RESIDENTIAL ZONE)	15.74 M	MINIMUM 12.0 M
YARD ABUTTING STREET (PALLADIUM WAY)	15.76 M	MAXIMUM 6.0 M
YARD ABUTTING STREET (THOMAS ALTON BLVD)	51.37 M	MAXIMUM 6.0 M
YARD ABUTTING STREET (APPLEBY LINE)	76.51 M	MAXIMUM 6.0 M
BUILDING HEIGHTS - INDUSTRIAL/AUTOMOTIVE USES	1 STOREY	MAXIMUM 2 STOREYS
LANDSCAPE BUFFER - ABUTTING A STREET	3.00 M	MINIMUM 3.0 M
LANDSCAPE BUFFER - ABUTTING RESIDENTIAL ZONE	6.00 M	MINIMUM 6.0 M
SEPARATION DISTANCE - STANDARD RESTAURANT	15.74 M	25.0 M BETWEEN THE USE AND A RESIDENTIAL ZONE
SEPARATION DISTANCE - DAYCARE PLAY AREA TO RAL4-493 ZONE	43.01 M TO CENTRE LINE OF ROAD	

AREA CALCULATIONS FOR EXISTING BUILDINGS A & B AND PROPOSED BUILDING C		
GROSS FLOOR AREA BUILDING: EXISTING BUILDING A	1,399.10 SM (15,060 SF)	
SECOND FLOOR	1,413.39 SM (15,214 SF)	
TOTAL	2,812.49 SM (30,274 SF)	
EXISTING BUILDING B	1,403.10 SM (15,103 SF)	
SECOND FLOOR	1,417.21 SM (15,255 SF)	
TOTAL	2,820.31 SM (30,358 SF)	
TOTAL EXIST. G.F.A. BUILDING FOR A & B	5,635.86 SM (60,632 SF)	
PROPOSED BUILDING C	1,888.33 SM (20,327 SF)	
TOTAL G.F.A. BUILDING FOR A, B & C	7,524.19 SM (80,959 SF)	
GROSS FLOOR AREA W/PERMITTED DEDUCTIONS EXISTING BUILDING A		
GROUND FLOOR	1,399.10 SM (15,060 SF)	
AREA DEDUCTIONS GROUND FLOOR	MINUS 114.62 SM (1,234 SF)	
LOBBY	71.06 SM	
ELEVATOR	6.61 SM	
ELEV. MACH. RM.	5.21 SM	
STAIRS	31.14 SM	
TOTAL DEDUCTIONS	114.62 SM	
SECOND FLOOR	1,413.39 SM (15,214 SF)	
AREA DEDUCTIONS SECOND FLOOR	MINUS 169.04 SM (1,820 SF)	
HALLWAY	71.63 SM	
ELEVATOR	6.61 SM	
WASHROOMS	52.38 SM	
STAIRS	25.08 SM	
AIR HANDLING EQUIP.	15.37 SM	
TOTAL DEDUCTIONS	169.04 SM	
EXISTING BUILDING B		
GROUND FLOOR	1,403.10 SM (15,103 SF)	
AREA DEDUCTIONS GROUND FLOOR	MINUS 114.79 SM (1,236 SF)	
LOBBY	71.06 SM	
ELEVATOR	6.61 SM	
ELEV. MACH. RM.	5.21 SM	
STAIRS	31.14 SM	
TOTAL DEDUCTIONS	114.79 SM	
SECOND FLOOR	1,417.21 SM (15,255 SF)	
AREA DEDUCTIONS SECOND FLOOR	MINUS 169.04 SM (1,820 SF)	
HALLWAY	71.63 SM	
ELEVATOR	6.61 SM	
WASHROOMS	52.38 SM	
STAIRS	25.08 SM	
AIR HANDLING EQUIP.	15.37 SM	
TOTAL DEDUCTIONS	169.04 SM	
TOTAL G.F.A. FOR EXIST. A & B	5,200.67 SM (56,088 SF)	
G.F.A. PROPOSED C	1,888.33 SM (20,328 SF)	
TOTAL G.F.A. FOR A, B AND C	6,989.00 SM (75,014 SF)	

ADJACENT ZONING-RAL4-464

PARKING SPACES		
REQUIRED PARKING: EXISTING BUILDING A	1,284.48 SM	64.22
EXISTING BUILDING B	1,288.31 SM	64.42
EXISTING BUILDING C	1,283.53 SM	63.18
TOTAL REQUIRED PARKING SPACES FOR EXIST. A & B	2,572.79 SM	248
REQUIRED PARKING BUILDING C	1,888.33 SM	94.42
TOTAL PARKING SPACES PROVIDED	1,888.33 SM	349
TOTAL PARKING SPACES REQUIRED A, B, C	4,461.12 SM	255
ACCESSIBLE PARKING: TYPICAL STALL WIDTH: 1.46 M x 2.0 M WALKWAY ASLE: 2.75 M x 2.0 M WALKWAY ASLE	8 SPACES	7 SPACES
EXISTING PROVIDED	10 SPACES	10 SPACES
TOTAL PROVIDED	10 SPACES	10 SPACES
BIKE PARKING: TYPICAL STALL SIZE: 0.60 M x 1.8 M	3 SPACES	3 SPACES
EXISTING PROVIDED	12 SPACES	12 SPACES
TOTAL PROVIDED	12 SPACES	12 SPACES
LOADING SPACES REQUIRED	3 SPACES	1 SPACE PER BUILDING
LOADING SPACES PROVIDED	3 SPACES	3 SPACES



NOTES:

INFORMATION ON THIS PLAN

FROM:

PLAN OF SURVEY ILLUSTRATING TOPOGRAPHY OF

BLOCK 24

REGISTERED PLAN 20M-1034

CITY OF BURLINGTON

REGIONAL MUNICIPALITY OF HALTON

PREPARED BY:

J.D. BARNES LIMITED

ONTOARIO LAND SURVEYORS

FILE NO. 24-30-204-00

THE ARCHITECT IS NOT RESPONSIBLE

FOR ANY ERRORS OR OMISSIONS

IN THIS RESPECT

FOR SITE SERVING AND GRADING INFORMATION

REFER TO DWGS PREPARED BY:

URBANTECH CONSULTING

FOR LANDSCAPING INFORMATION

REFER TO DWGS PREPARED BY:

NAK DESIGN STRATEGIES

LEGEND	
	MAIN ENTRANCE FIREFIGHTERS ENTRANCE
	STEEL BOLLARD
	ELEVATION
	PROPOSED ELEVATION
	CATCH BASIN
	HYDRO POLE
	MANHOLE
	FIRE HYDRANT
	LIGHT STANDARD
	ACCESSIBLE PARKING
	EXISTING PARKING AREA
	CONCRETE WALKWAY
	PEDESTRIAN ROUTE (BARRIER-FREE ACCESSIBLE)

CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME, REPORTING ANY DISCREPANCIES TO THE ARCHITECT BEFORE COMMENCING WORK.

ALL DRAWINGS, PRINTS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED TO HIM ON COMPLETION OF WORK.

LATEST APPROVED DRAWINGS ONLY TO BE USED FOR CONSTRUCTION.

PRINTS ARE NOT TO BE SCALED.

Date Plotted	Revisions	Date Plotted	Issued for:
AUG 29 2025	REVISIONS PER PLANNING COMMENTS	FEB 12 2025	SITE PLAN APPROVAL SUBMISSION
JUL 10 2025	ADDITIONAL DIMENSION PER REQ.	FEB 11 2025	COMMITTEE OF ADJUSTMENT APP.
MAR 27 2025	PER PLANNING COMMENTS		

Commercial Development 4883 Thomas Alton Blvd

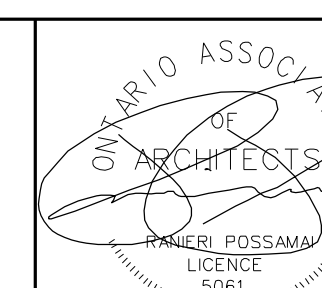
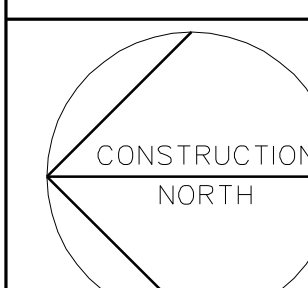
4900 Palladium Way, 4903 & 4883 Thomas Alton Blvd
Block 24, RP 20M-1034, City of Burlington, Regional Municipality of Halton

CJJ
Holdings Limited

620 Wilson Avenue, Suite 300
Toronto, Ontario, M6K 1Z3

tel (416) 630-6927

SITE PLAN - SCHEME 9



GLOBAL
ARCHITECT INC.

6 Laswyn Road
Toronto, Ontario, M6A 1K2

tel (416) 266-4440

SPA APPL.# PRCN-SP-31-24

DRAWN BY : J. DeCicco/P. Pivetta

DATE : November 22, 2024

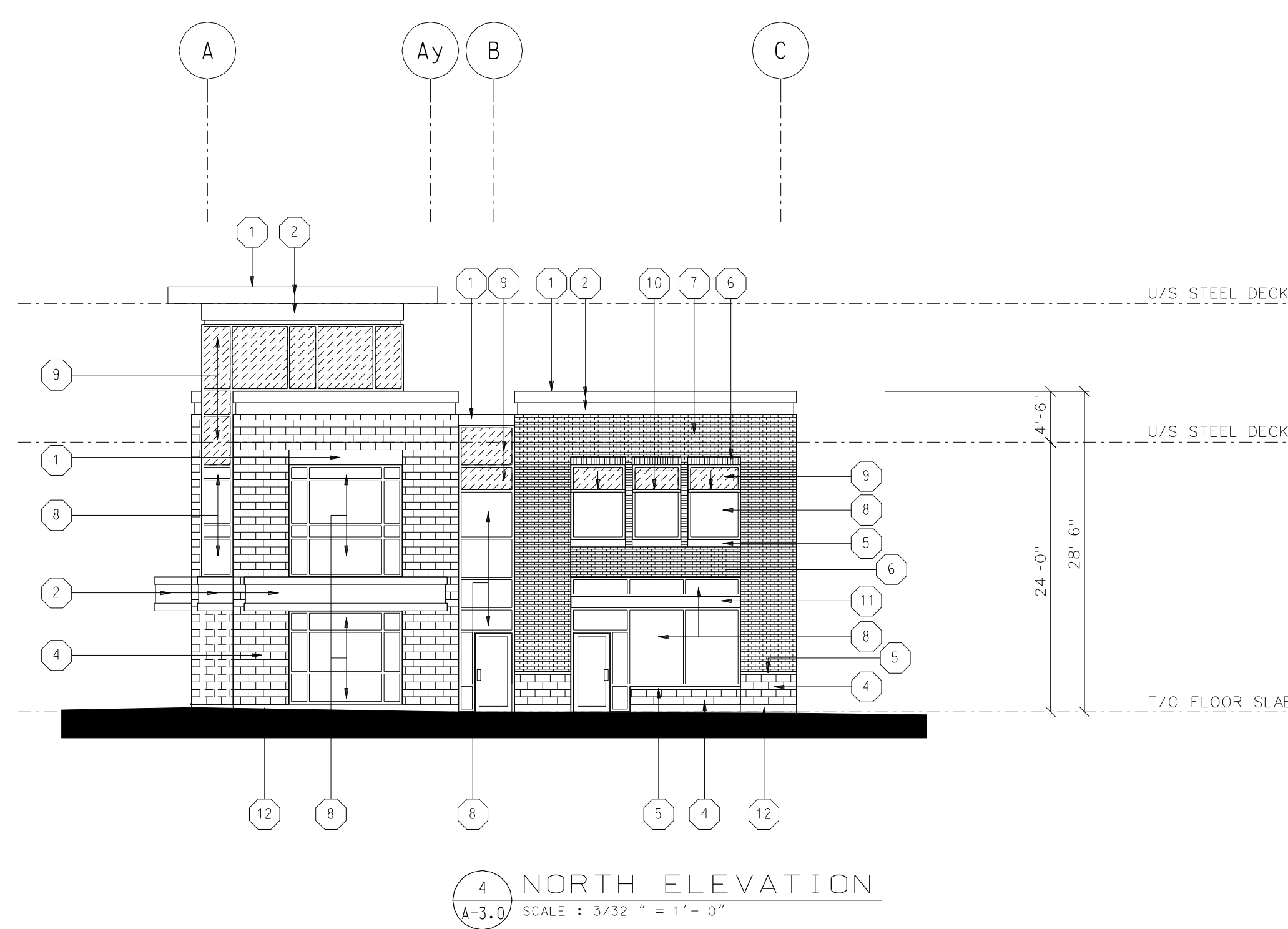
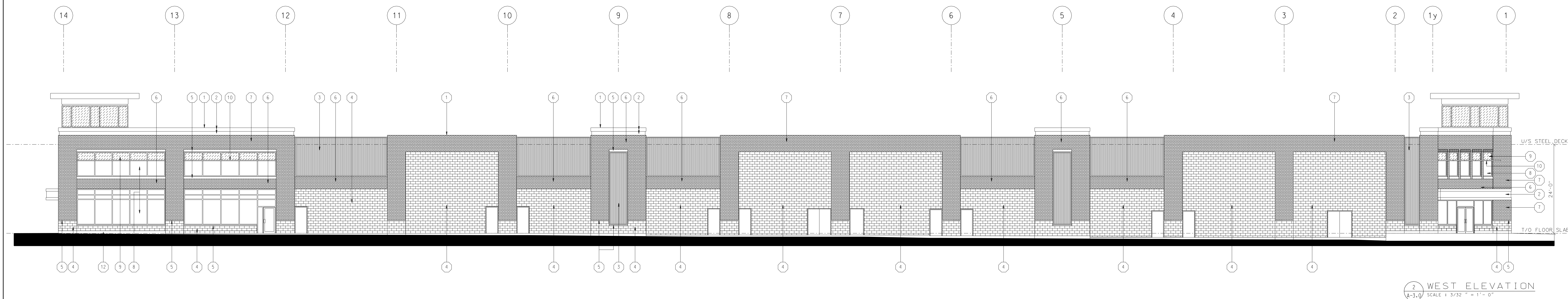
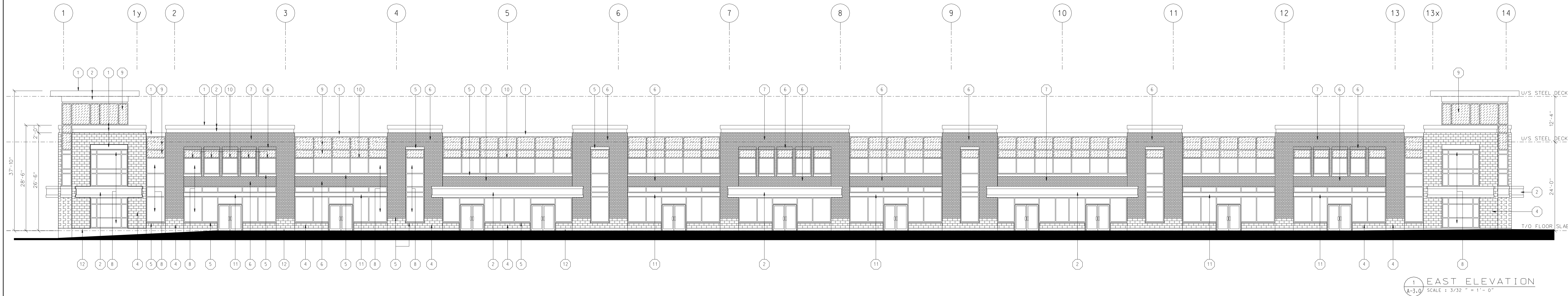
SCALE : 1:300

PROJECT NO.:

24-04

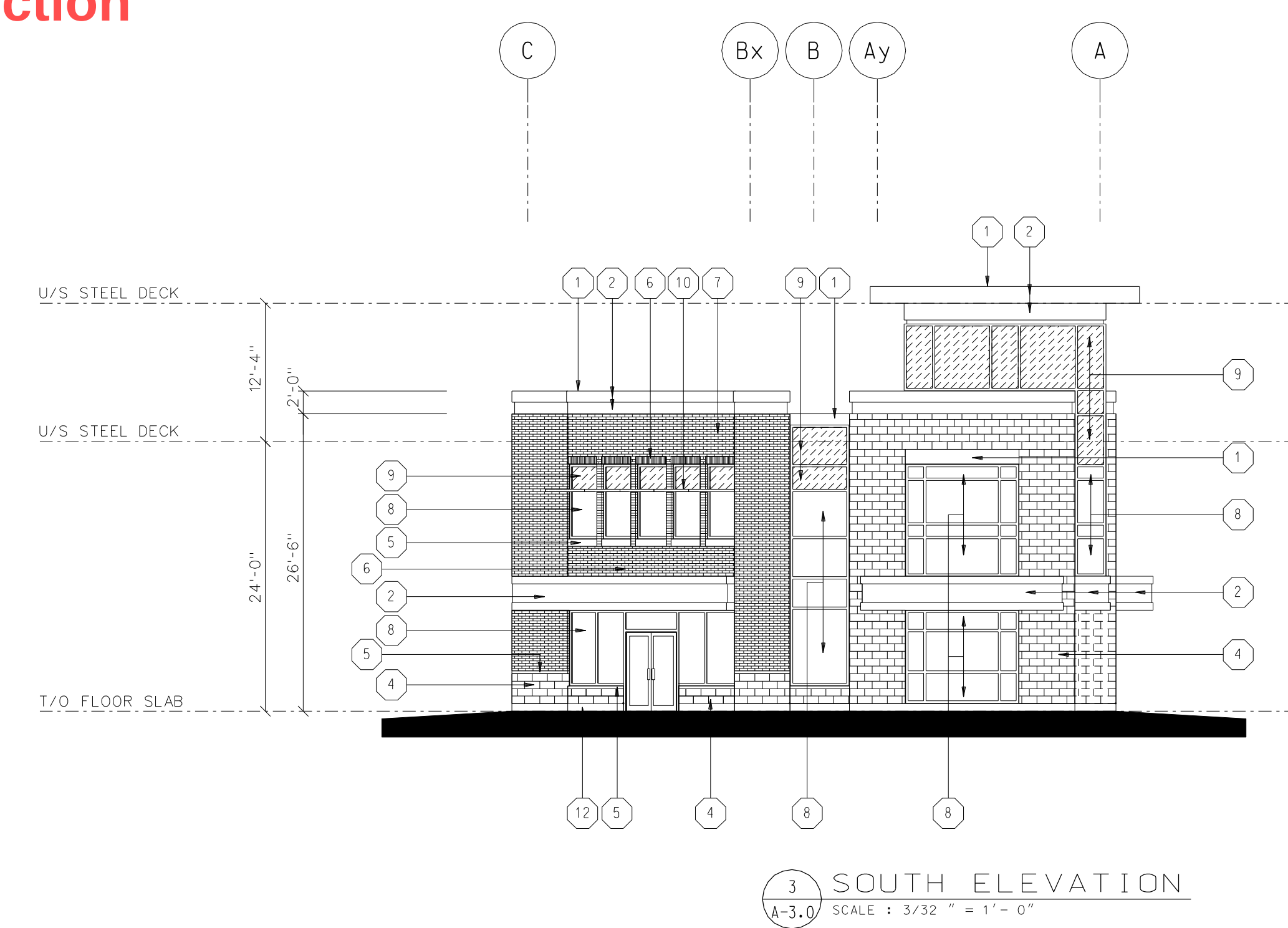
DRAWING NO.:

A-1.0



COLOUR/MATERIAL LEGEND	
1	PREFINISHED METAL FLASHINGS COLOUR: SILVER TO MATCH EXISTING
2	PREFINISHED METAL PANELS COLOUR: SILVER TO MATCH EXISTING
3	PREFINISHED VERTICAL METAL PANELS C/W TRIM AND FLASHINGS SECURED TO VERTICAL INSULATED METAL PANELS PROFILE: CL 7040 COLOUR: BRIGHT SILVER
4	PREFINISHED CONCRETE BLOCK PROFILE: MATCH EXISTING COLOUR: BEIGE TO MATCH EXISTING
5	PREFINISHED STONE COPING/SILL TO MATCH EXISTING COLOUR: GREY TO MATCH EXISTING
6	PREFINISHED FACE BRICK PROFILE/SIZE: MATCH EXISTING COLOUR: RED TO MATCH EXISTING
7	PREFINISHED FACE BRICK PROFILE/SIZE: MATCH EXISTING COLOUR: YELLOW TO MATCH EXISTING
8	TINTED (SOLARBAN 70 XL) DOUBLE GLAZED SEALED WINDOW UNITS (COLOUR TO MATCH EXISTING) IN THERMALLY BROKEN PREFINISHED ANODIZED ALUMINUM FRAMES (DURANAR XL FINISH) LOW E AND ARGON FILLED
9	TINTED (SOLARBAN 70 XL) SINGLE GLAZED INSULATED (R-20 MIN.) SPANDREL PANELS COLOUR TO MATCH EXISTING IN THERMALLY BROKEN PREFINISHED ANODIZED ALUMINUM FRAMES (DURANAR XL FINISH)
10	PREFINISHED WINDOW SHADES TO MATCH EXISTING
11	PREFINISHED METAL FLASHINGS ON STEEL BEAM CANOPY TO MATCH EXISTING
12	POURED CONCRETE WALL
	SPANDREL PANELS
PAINT ALL EXTERIOR H.M. DOORS AND FRAMES BEIGE TO MATCH CONCRETE BLOCK	

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LATEST APPROVED DRAWINGS ONLY TO BE USED FOR CONSTRUCTION.				
PRINTS ARE NOT TO BE SCALED.				
No	Date Plotted	Revisions	Date Plotted	Issued for:
			FEB 11 2025	COMMITTEE OF ADJUSTMENT APP.

Commercial Development 4883 Thomas Alton Blvd

4900 Palladium Way, 4903 & 4883 Thomas Alton Blvd Burlington, Ontario
Block 24, RP 20M-1034, City of Burlington, Regional Municipality of Halton

CJJ
Holdings Limited

620 Wilson Avenue, Suite 300
Toronto, Ontario, M3K 1Z3

tel (416) 630-6927

ELEVATIONS – BUILDING C

SPA APPL.# PRCN-SP-31-24

DRAWN BY : J. DeCicco/P. Pivetta

DATE : November 22, 2024

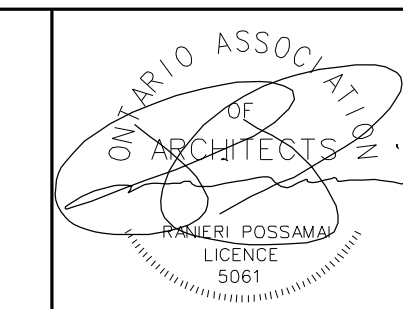
SCALE : $\frac{3}{32}$ " = 1'-0"

PROJECT NO.:

24-04

DRAWING NO.:

A-3.0



GLOBAL
ARCHITECT INC.

6 Laswyn Road
Toronto, Ontario, M6A 1K2

tel (416) 256-4440

2025-06-16
Project: 240651

Donna Bravo
Rothman Real Estate Investments Limited
620 Wilson Avenue, Suite 300
Toronto ON

**RE: 4900 PALLADIUM WAY AND 4883 & 4903 THOMAS ALTON BOULEVARD,
PARKING STUDY, PROPOSED MULTI-USE BUSINESS PARK**

Rothman Real Estate Investments Limited retained Paradigm Transportation Solutions Limited (Paradigm) to prepare a **Parking Study** to consider the appropriateness of a proposed parking variance for 4900 Palladium Way and 4883 & 4903 Thomas Alton Boulevard in the City of Burlington. **Figure 1** (attached) illustrates the site location.

Site Description

The site currently contains two two-storey commercial buildings with a total of approximately 5,081 m² (54,688 sq. ft.) of Gross Floor Area (GFA). The buildings are located near the Appleby Line frontage.

The development concept proposes a third, single-storey building containing 13 retail units on the site. A total of approximately 1,888 m² (20,326 sq. ft.) of GFA is proposed for retail uses. City of Burlington Zoning staff considers the land use for the site to be "Retail Centre."

Vehicle access will be maintained via the existing three driveways serving the site and will remain unchanged after construction. **Figure 2** (attached) illustrates the site plan.

Site Context

The subject lands are located in the Alton Village neighbourhood, which offers a variety of transportation options and easy access to employment, educational, and institutional land uses, as well as other local amenities. The site has a Walk Score¹ of 71 out of 100. This location is "Very Walkable," so most errands can be accomplished on foot.

Pedestrian travel within the study area is accommodated by sidewalks on both sides of Palladium Way, Thomas Alton Boulevard, Appleby Line, Valera Road and Lionel Court, and on

¹ Walk Score, last updated 2025-04-01, <https://www.walkscore.com/score/4883-thomas-alton-blvd-burlington-on-canada>

the south side of Harrison Court. East of Appleby Line, sidewalks are not provided on Thomas Alton Boulevard. Pedestrian signal heads, with push buttons and delineated crosswalks are provided at the signalized intersections in the study area.

The existing cycling infrastructure includes painted bike lanes along Appleby Line, Palladium Way, and Thomas Alton Boulevard. Multi-use paths are provided on the south side of Palladium Way and south of Thomas Alton Boulevard through the existing hydro corridor. A bike repair station is located on the southwest corner of the Appleby Line and Palladium Way/Harrison Court intersection next to the subject site.

Two Burlington Transit routes operate nearby along Thomas Alton Boulevard and Appleby Line. Weekday and weekend headways operate in the order of approximately 15 to 60 minutes

Site Statistics

The development lands will retain the existing retail centre uses on 4900 Palladium Way and 4903 Thomas Alton Boulevard, and proposes additional retail uses on 4883 Thomas Alton Boulevard.

Table 1 summarizes the land use summary for the subject site. It is noted that the areas follow the definition of Floor Area, Gross with the permitted deductions as per the City of Burlington By-law 2020.²

TABLE 1: DEVELOPMENT SUMMARY

Building	Address	GFA
Existing - Building A	4900 Palladium Way	2,529 m ²
Existing - Building B	4903 Thomas Alton Boulevard	2,552 m ²
Proposed - Building C	4883 Thomas Alton Boulevard	1,888 m ²
Total		6,969 m²

Parking Supply

Parking for all buildings is provided via the existing surface parking lot. Currently, the site has 248 parking spaces (4.88 spaces per 100 m²). The additional development will remove 57, retain 191, and add 64, for a total of 255 parking spaces (3.66 spaces per 100 m²).

The existing site has a total of three bicycle parking spaces, nine additional spaces are proposed for a total of twelve bicycle parking spaces. Short-term bicycle parking is located at grade near the building entrances at the northwest and southeast corners of the site.

² City of Burlington Zoning By-law 2020, § part 16.



Parking Analysis

Zoning By-law 2020

In Zoning By-law 2020, the site is identified as MXE-322, a Mixed-Use Employment Corridor Zone³. The following vehicular parking rates for retail centre uses apply for the site: 5 spaces per 100 m² of gross floor area.⁴

Based on these rates, the Zoning By-law mandates a parking supply of 349 spaces for the development. **Table 2** summarizes the required and proposed parking supply. The proposed vehicular parking supply is deficient by 94 parking spaces compared to the Zoning By-law requirements.

TABLE 2: ZONING BY-LAW 2020 VEHICULAR PARKING SUMMARY

Land Use	GFA	Rate	Total (Spaces)
Retail Centre	6,969 m ²	5 spaces / 100 m ² GFA	349 spaces
Supply			255 spaces
Surplus/Deficit			-94 spaces

Based on the foregoing, a variance to the Zoning By-law is proposed as follows: To permit a variance to the minimum Retail Centre parking requirement of 3.65 spaces per 100 m² of GFA, or 254 spaces for the entire development, whereas the by-law requires 5.00 spaces per 100 m² or 349 spaces.

Bicycle parking is required to be provided at a rate of 2 spaces plus 1 space per 1,000 m² ground floor area. Based on this requirement, nine bicycle parking spaces are required for the site. Twelve spaces are proposed, exceeding the Zoning By-law requirements.

Forecast Parking Demand – ITE Parking Data

The Institute of Transportation Engineers (ITE) *Parking Generation Manual*⁵ was referenced to estimate the peak hour vehicular parking demands generated by the development. Specifically, the parking demand rates for Land Use Code 821 – Shopping Plaza (40-150k) was used to estimate the parking demand.

Table 3 summarizes the estimated parking demand for the development. The higher of the average parking rate and the fitted parking rate was used to remain conservative.

³ City of Burlington Zoning By-law 2020, § part 15.

⁴ City of Burlington Zoning By-law 2020, § part 1.

⁵ Institute of Transportation Engineers, *Parking Generation Manual*, 6th ed., (Washington DC: ITE, 2023).



The proposed vehicular parking supply exceeds the forecast parking requirements based on the ITE rates. A surplus of 22 spaces and 75 spaces is noted in the weekday and Saturday periods, respectively

TABLE 3: ITE VEHICULAR PARKING SUMMARY

Land Use	GFA	Weekday	Saturday
LUC 821	75.01 k sq. ft.	233 spaces	180 spaces
Total	75.01 k sq. ft.	233 spaces	180 spaces
Supply		255 spaces	
Surplus/Deficit		+22 spaces	+75 spaces

LUC 821: Weekday – $P = 3.11(X)$ | Saturday – $P = 2.23(X) + 14.13$

Forecast Parking Demand – Proxy Survey

Paradigm originally completed a parking generation study at 1960 Appleby Line in the City of Burlington on Wednesday, June 24, 2015, and Saturday July 11, 2015. The site is a commercial plaza of similar size and use. A weekday parking rate of 3.62 spaces per 100 m² and a Saturday parking rate of 1.38 spaces per 100 m² were observed.⁶

Applying the peak parking demand rate to the proposed development, the forecast parking demand is 253 spaces during weekdays and 97 on Saturday. With 255 spaces provided, the supply exceeds the forecast demand by two spaces.

Paradigm completed an updated parking generation study at 1960 Appleby Line on Tuesday May 20, 2025, Wednesday May 21, 2025, and Thursday May 22, 2025. A weekday parking rate ranging between 3.56 to 3.65 spaces per 100 m² was observed.

Applying the peak parking demand rate to the proposed development, the forecast parking demand is 254 spaces. With 255 spaces provided, the supply exceeds the forecast demand by one space.

Similarly, 1960 Upper Appleby Line was reviewed in the *Burlington City-Wide Parking Standards Review*. This study found that the peak parking demand for the site was 3.32 spaces per 100 m².⁷

Applying the peak parking demand rate, measured by the City's consultant, to the proposed development, the forecast parking demand is 232 spaces. With 255 spaces provided, the supply exceeds the forecast demand by 23 spaces.

⁶ Paradigm Transportation Solutions Limited, *Upper Appleby Developments Parking Study*, Burlington, ON, (Cambridge: Paradigm Transportation Solutions Limited, 2015).

⁷ IBI Group. *Burlington City-Wide Parking Standards Review*, (Burlington: IBI Group, 2017).



Table 4 summarizes the parking demand calculations based on the proxy studies.

TABLE 4: PROXY STUDY VEHICULAR PARKING SUMMARY

Study	Rate	Forecast Demand	Surplus/Deficit
Paradigm Study – Weekday 2015	3.62 spaces per 100 m ² GFA	253 spaces	+2 spaces
Paradigm Study – Weekday 2025	3.56 to 3.65 spaces per 100 m ² GFA	254 spaces	+1 space
City-Wide Parking Standards Review	3.32 spaces per 100 m ² GFA	232 spaces	+23 spaces

Summary

The proposed development introduces a third, single-story building with 13 non-residential retail units, adding approximately 1,888 m² (20,322 sq. ft.) of gross floor area to the existing site. The total site GFA following development of the proposed building is 6,969 m² (75,014 sq. ft.). City of Burlington Zoning staff considers the land use for the site to be "Retail Centre."

The site parking supply will increase from 248 parking spaces to 255 spaces, resulting in approximately 3.66 spaces per 100 m². Twelve bicycle parking spaces are proposed.

The Zoning By-law mandates a total of 349 parking spaces. The proposed parking supply results in a deficit of 94 spaces compared to the Zoning By-law requirements. The bicycle parking supply exceeds the Zoning By-law requirements.

Actual parking demand for the development is anticipated to be lower than the Zoning By-law requirements based on ITE published data, local proxy site data collected by Paradigm and local proxy site data collected by the City's consultant for the *Burlington City-Wide Parking Standards Review*. Based on the parking demand forecasts, the planned parking supply should adequately serve the demand with a surplus ranging from 1 space to 23 spaces.

Based on the findings of the study, the proposed variance to the Zoning By-law is supportable. The City of Burlington should recognize the conclusions drawn above and permit the proposed development to proceed as planned with the proposed parking supply of 255 spaces and twelve bicycle parking spaces.



We trust that the foregoing meets your requirements. Please do not hesitate to contact us if we can be of further assistance.

Yours very truly,

<< Original Signed By >>

Scott Catton, C.E.T.
Senior Project Manager, Associate

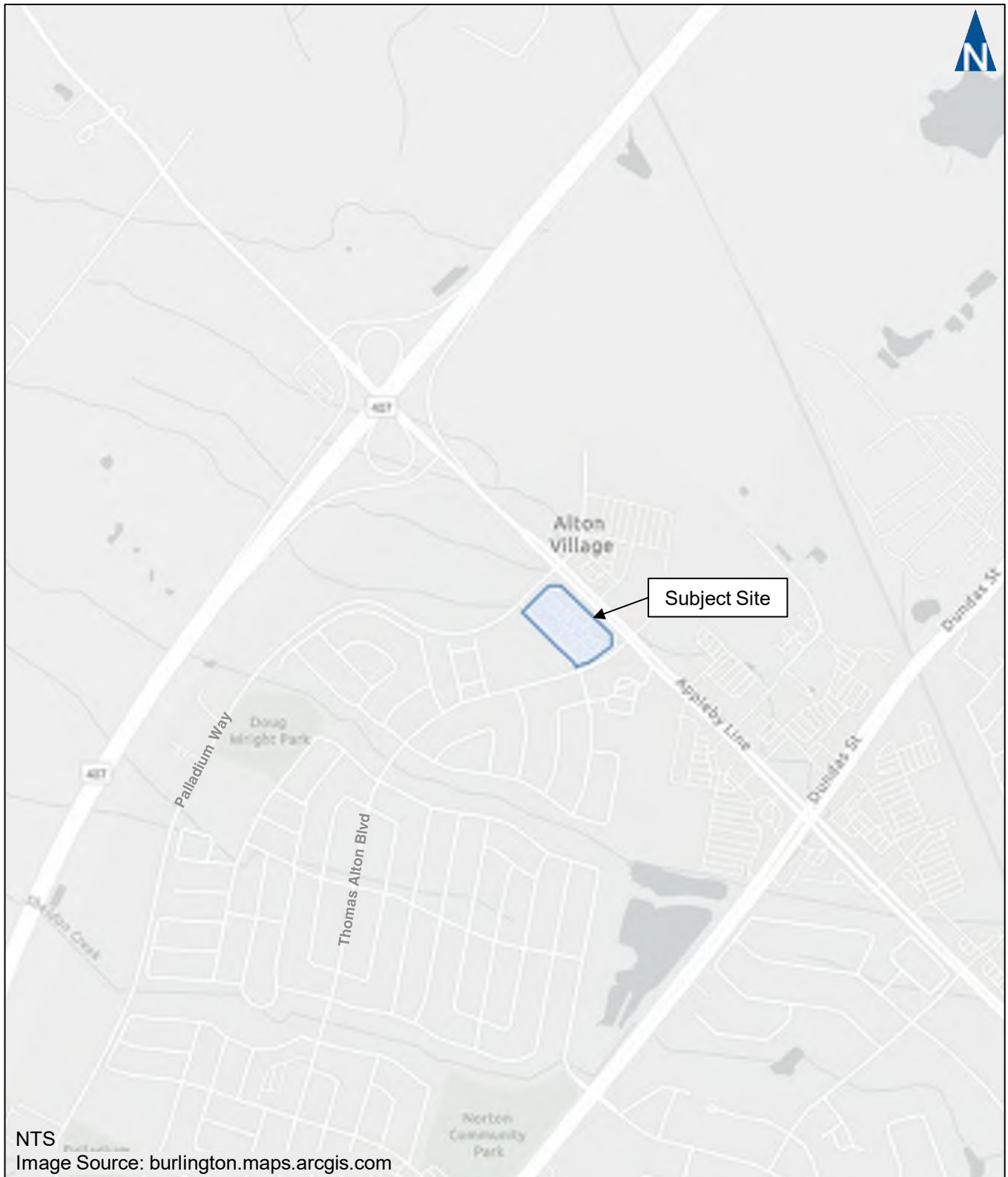
<< Original Signed By >>

Stew Elkins, B.E.S.
Vice President and CRO, Principal



Attachments

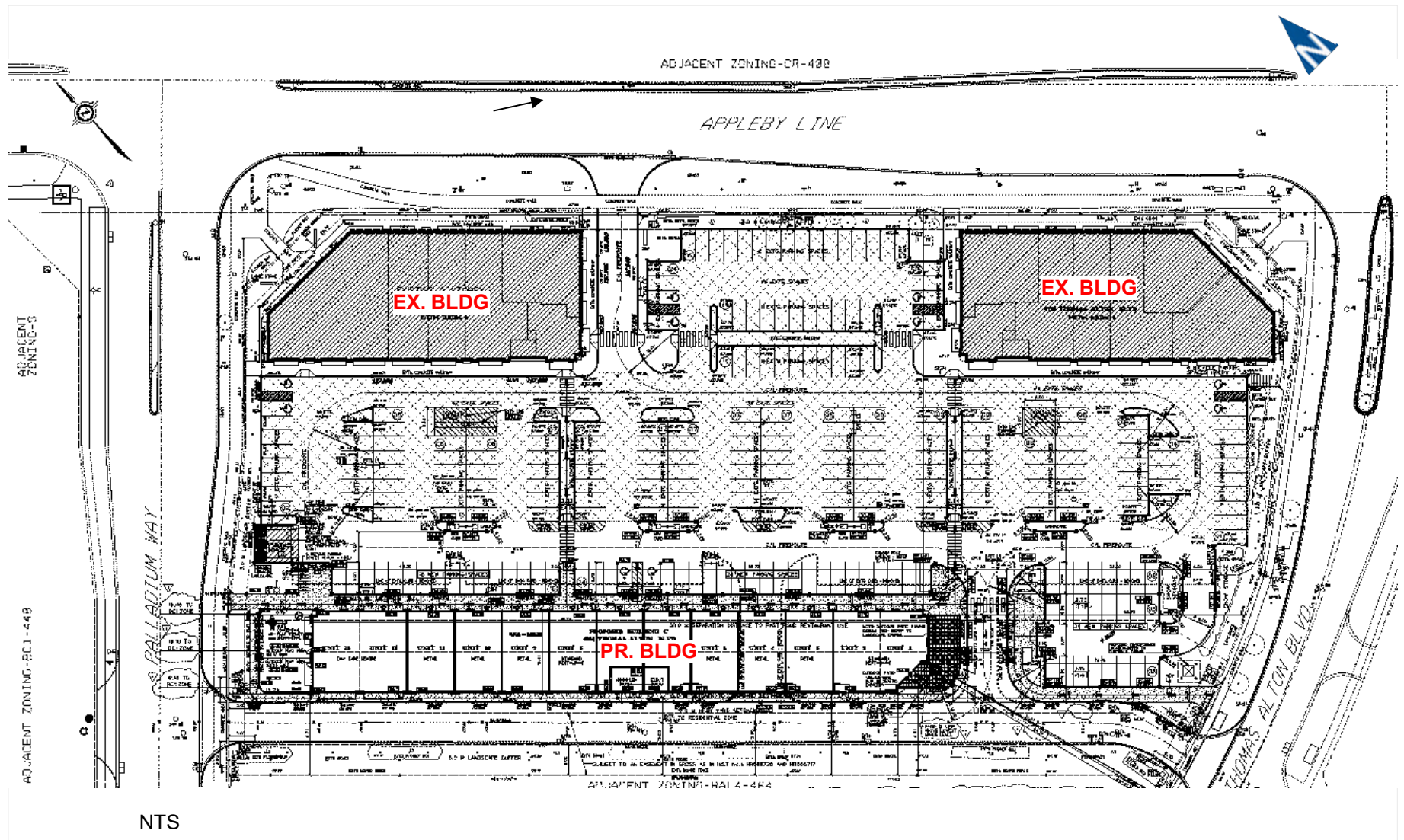




Site Location

4900 Palladium Way and 4883 & 4903 Thomas Alton Boulevard, City of Burlington, PS
240651

Figure 1



Site Concept Plan

4900 Palladium Way and 4883 & 4903 Thomas Alton Boulevard, City of Burlington, PS 240651

Figure 2



**4883 Thomas Alton
Boulevard
City of Burlington**

Transportation Impact Study

Paradigm Transportation Solutions Limited

2025-06
240651



Project Number:

240651

Date and Version:

2025-06

2.0.0

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4883 Thomas Alton Boulevard City of Burlington Transportation Impact Study

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Executive Summary

Content

Rothman Real Estate Investments Limited retained Paradigm Transportation Solutions Limited (Paradigm) to conduct this Transportation Impact Study (TIS) for a proposed multi-use business park building located at 4900 Palladium Way and 4883 & 4903 Thomas Alton Boulevard in the City of Burlington.

This study determines the impacts of the development traffic on the surrounding road network and identifies the recommended improvements to accommodate the site generated traffic, if any.

Development Concept

The subject site is located at 4900 Palladium Way, 4883 & 4903 Thomas Alton Boulevard in the City of Burlington. The site currently contains two commercial buildings with three driveways. The buildings are located near the Appleby Line Frontage.

The development concept proposes a third, single-storey building containing 13 non-residential units on the site. A total of 1,888 m² (20,322 sq. ft.) of gross floor area is proposed for restaurant, retail, and day care centre uses, served by a total parking supply of 255 vehicular spaces (3.66 spaces per 100 m² GFA) for the entire 6,969 m² (75,014 sq. ft.) site. The site will be served by a total bicycling parking supply of twelve spaces, an increase of nine spaces from the existing three spaces.

Vehicle access will be maintained via the three driveways serving the existing site:

- ▶ **Site Driveway 1** to Palladium Way is a full movement driveway 115 metres west of the Appleby Line and Palladium Way/Harrison Court intersection, opposite of Lionel Court. The driveway has a clear throat length of approximately 135 m.
- ▶ **Site Driveway 2** to Appleby Line is right-in/right-out driveway located approximately 85 metres south of the Appleby Line and Palladium Way/Harrison Court intersection. Left turns are restricted by the existing centre raised median on Appleby Line. The driveway has a clear throat length of approximately 25 m.
- ▶ **Site Driveway 3** to Thomas Alton Boulevard is a full movement driveway 135 metres west of the Appleby Line and Thomas Alton Boulevard intersection, opposite of Valera Road. The driveway has approximately 28 m of clear throat length.



The site driveways will remain unchanged after construction.

Build-out is anticipated to occur within five years (2029), timing is subject to market conditions.

Conclusion

The main findings and conclusions of this study are as follows:

- ▶ **Existing Traffic Operations:** The study area intersections are operating at acceptable levels of service with all movements within capacity during the AM and PM peak hours.
- ▶ **Site Generated Traffic:** The subject site is forecast to generate approximately 119 and 165 new vehicle trips during the AM and PM peak hours, respectively.
- ▶ **2029 Background Traffic Operations:** Accounting for background growth and other area site traffic contributions, the study area intersections are forecast to continue to operate at acceptable level of service with all movements within capacity during the AM and PM peak hours.
- ▶ **2029 Total Traffic Operations:** With the addition of site generated traffic, the study area intersections are forecast to operate similarly to background conditions. One new critical movement is identified during the AM peak hour. At the Appleby Line and Thomas Alton Boulevard intersection, the eastbound right-turn movement is forecast to exceed the current available storage (40 m) by approximately 2 m. The queue can be contained by the existing width of the driving lane.
- ▶ **Remedial Measures:** Signals are not warranted at the Palladium Way and Lionel Court/Site Driveway 1 or Thomas Alton Boulevard and Valera Road/Site Driveway 3 intersections.
- ▶ **Transportation Demand Management:** The proposed development includes TDM measures such as bicycle parking to encourage cycling and pedestrian facilities to provide accessibility to and from development.
- ▶ **MMLOS Assessment:** The existing study area segments and intersections meet most of the level of service targets. Improved transit facilities, wider sidewalks, enhanced pedestrian measures, and protected cycling facilities should be explored to address the deficient modes.



Recommendations

Based on the findings of this study, it is recommended that:

- ▶ The City should explore reallocating street space along Thomas Alton Boulevard to enhance pedestrian and cycling facilities, including wider sidewalks and protected cycling lanes, to meet MMLOS targets; and
- ▶ If transit service expanded to Palladium Way, the City should explore reallocating street space to provide transit passenger amenities such as shelters, seating, or shade trees, to meet MMLOS targets.



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1 Introduction

1.1 Overview

Rothman Real Estate Investments Limited retained Paradigm Transportation Solutions Limited (Paradigm) to conduct this Transportation Impact Study (TIS) for a proposed multi-use business park building located at 4900 Palladium Way and 4883 & 4903 Thomas Alton Boulevard in the City of Burlington. **Figure 1.1** illustrates the site location.

The scope of the study includes:

- ▶ An assessment of the current traffic and site conditions within the study area;
- ▶ Estimates of background traffic growth;
- ▶ Estimates of additional traffic generated by the subject site;
- ▶ Analyses of the impact of the future traffic on the surrounding road network;
- ▶ A transportation demand management (TDM) assessment;
- ▶ A multimodal level of service (MMLOS) assessment; and
- ▶ Recommendations to mitigate the site generated traffic in a satisfactory manner, if required.

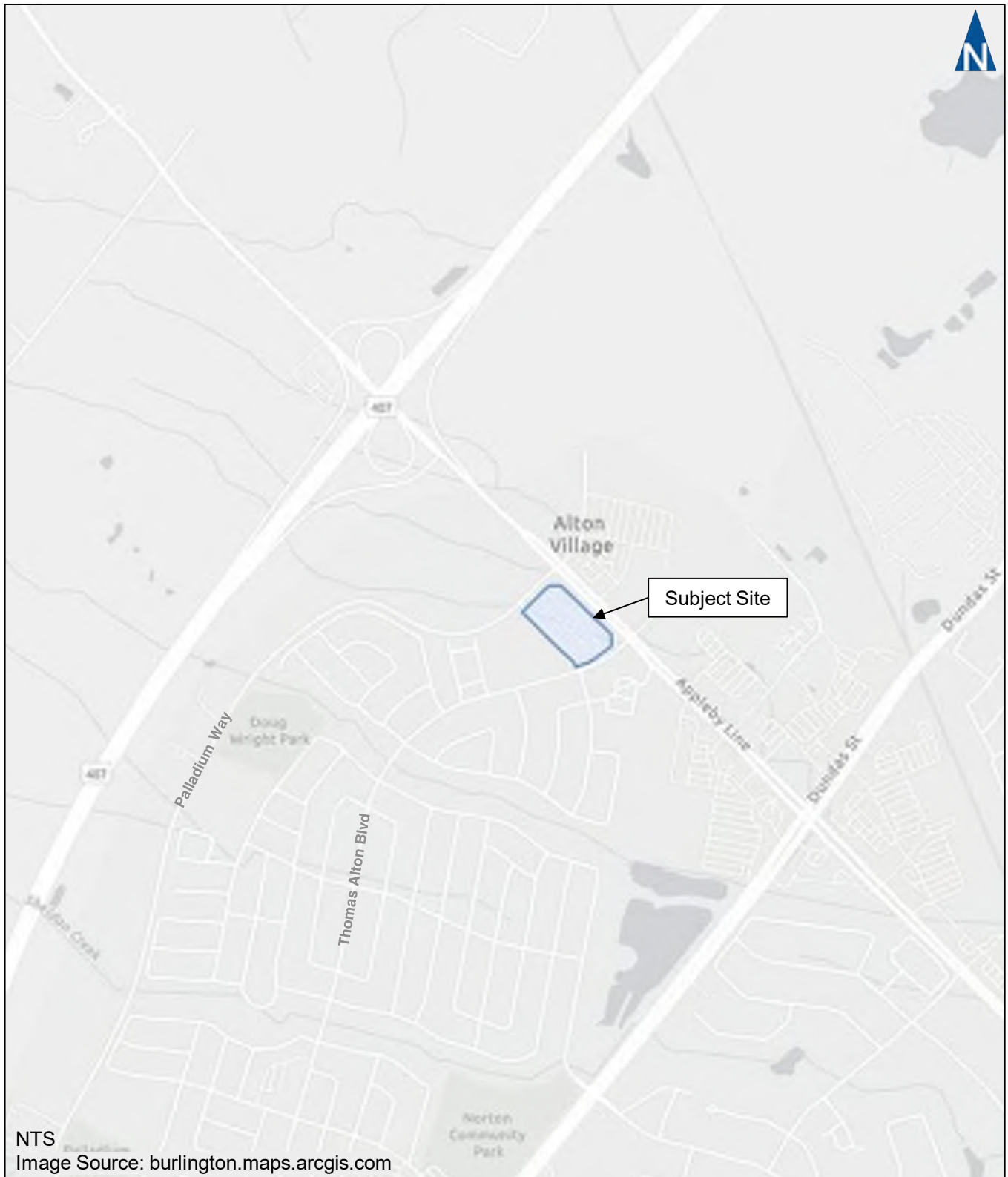
Appendix A contains the pre-study consultation material and responses from the City of Burlington and Halton Region. The Ministry of Transportation Ontario (MTO) noted the site is outside their permit control area with no further comments. The study generally follows Halton Region *Transportation Impact Study Guidelines*.¹

The study area intersections assessed in this study include:

- ▶ Appleby Line and Thomas Alton Boulevard (signalized);
- ▶ Appleby Line and Palladium Way/Harrison Court (signalized);
- ▶ Palladium Way and Lionel Court/Site Driveway 1 (unsignalized);
- ▶ Appleby Line and Site Driveway 2 (right-in/right-out, unsignalized); and
- ▶ Thomas Alton Boulevard and Valera Road/Site Driveway 3 (unsignalized).

¹ *Transportation Impact Study Guidelines*, Halton Region, January 2015.





Site Location

4883 Thomas Alton Boulevard, City of Burlington, TIS
240651

Figure 1.1

2 Existing Conditions

2.1 Road Network

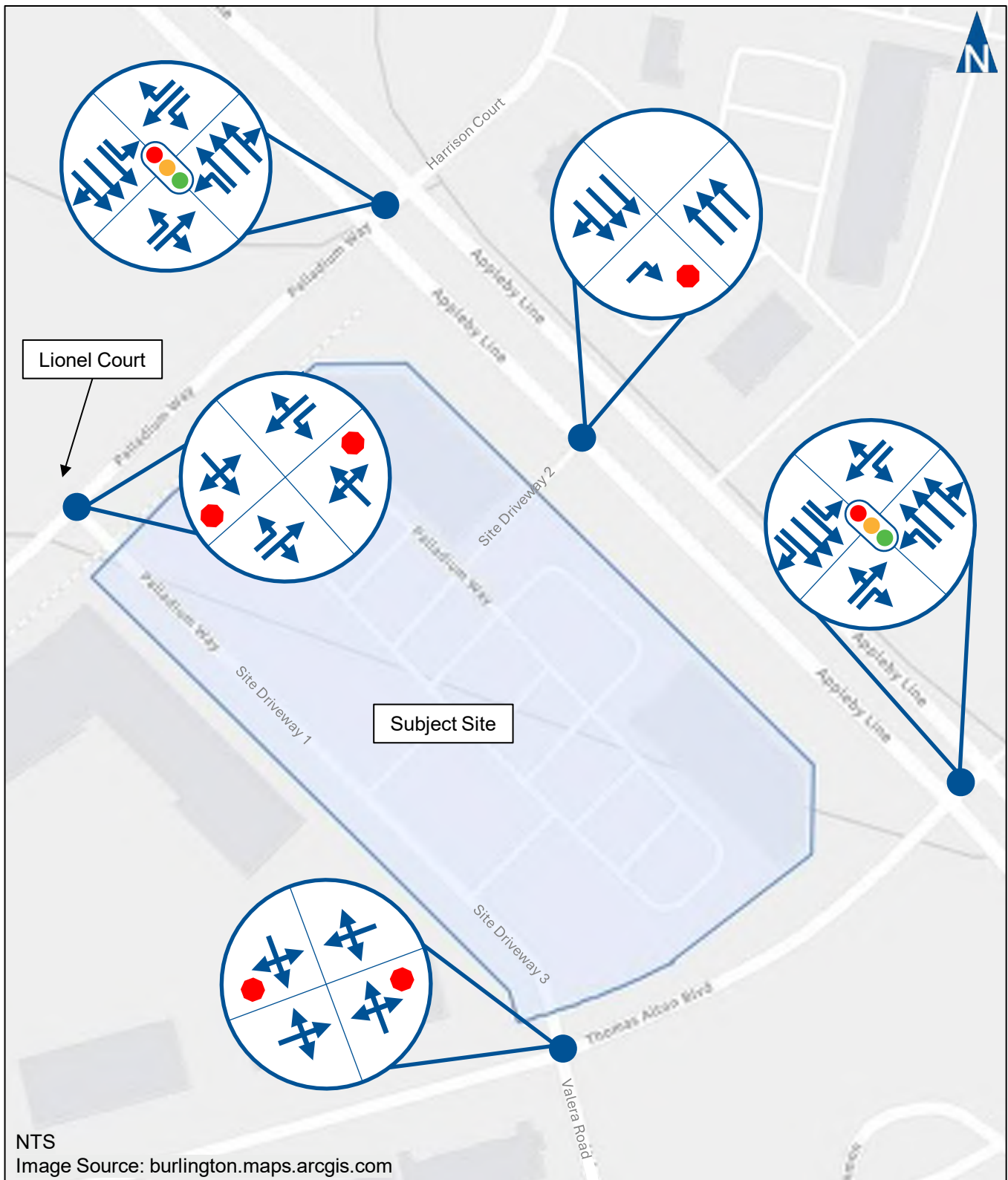
The characteristics of the roads and intersections in the study area are described below. Reference was made to the City of Burlington *Official Plan, Schedule O-1 Transportation Facilities – Urban Area*.²

- ▶ **Appleby Line** is a north-south major arterial road with a six-lane urban cross-section, providing three travel lanes in each direction and a centre median. The road has a posted speed limit of 70 km/h north, and 60 km/hr south, of the intersection with Palladium Way/Harrison Court. The intersections with Palladium Way/Harrison Court, and Thomas Alton Boulevard are signalized and operate with auxiliary left-turn lanes on all approaches.
- ▶ **Palladium Way** is an east-west industrial collector with a three-lane urban cross-section, providing one travel lane in each direction and a centre two-way left-turn lane. The road has a posted speed limit of 60 km/h.
- ▶ **Harrison Court** is an east-west local road with a two-lane urban cross-section, providing one travel lane in each direction. The road has a statutory speed limit of 50 km/h.
- ▶ **Lionel Court** is a north-south local road that terminates as a cul-de-sac approximately 200 metres north of Palladium Way. The road has a two-lane urban cross-section, providing one travel lane in each direction. The road has a statutory speed limit of 50 km/h.
- ▶ **Thomas Alton Boulevard** is an east-west neighbourhood collector with a two-lane urban cross-section, providing one travel lane in each direction. The road has a posted speed limit of 40 km/h designated by an area speed limit sign.
- ▶ **Valera Road** is a north-south local road with a two-lane urban cross-section, providing one travel lane in each direction. The road has a speed limit of 40 km/h designated by an area speed limit sign.

Figure 2.1 illustrates the existing lane configurations and traffic control at the study area intersections.

² City of Burlington, *Burlington's Official Plan: Schedule O-1 Classification of Transportation Facilities – Urban Area*, (Burlington: City of Burlington, 2020).





2.2 Pedestrian and Cycling Network

Pedestrian travel within the study area is facilitated by sidewalks on both sides of Palladium Way, Thomas Alton Boulevard, Appleby Line, Valera Road and Lionel Court, and on the south side of Harrison Court. East of Appleby Line, sidewalks are not provided on Thomas Alton Boulevard. Pedestrian signal heads, with push buttons and delineated crosswalks are provided at the signalized intersections in the study area.

The existing cycling infrastructure includes painted bike lanes along Appleby Line, Palladium Way, and Thomas Alton Boulevard. Multi-use paths are provided on the south side of Palladium Way and south of Thomas Alton Boulevard through the existing hydro corridor.³ A bike repair station is located on the southwest corner of the Appleby Line and Palladium Way/Harrison Court intersection next to the subject site.

Figure 2.2 illustrates the existing cycling network for the area.

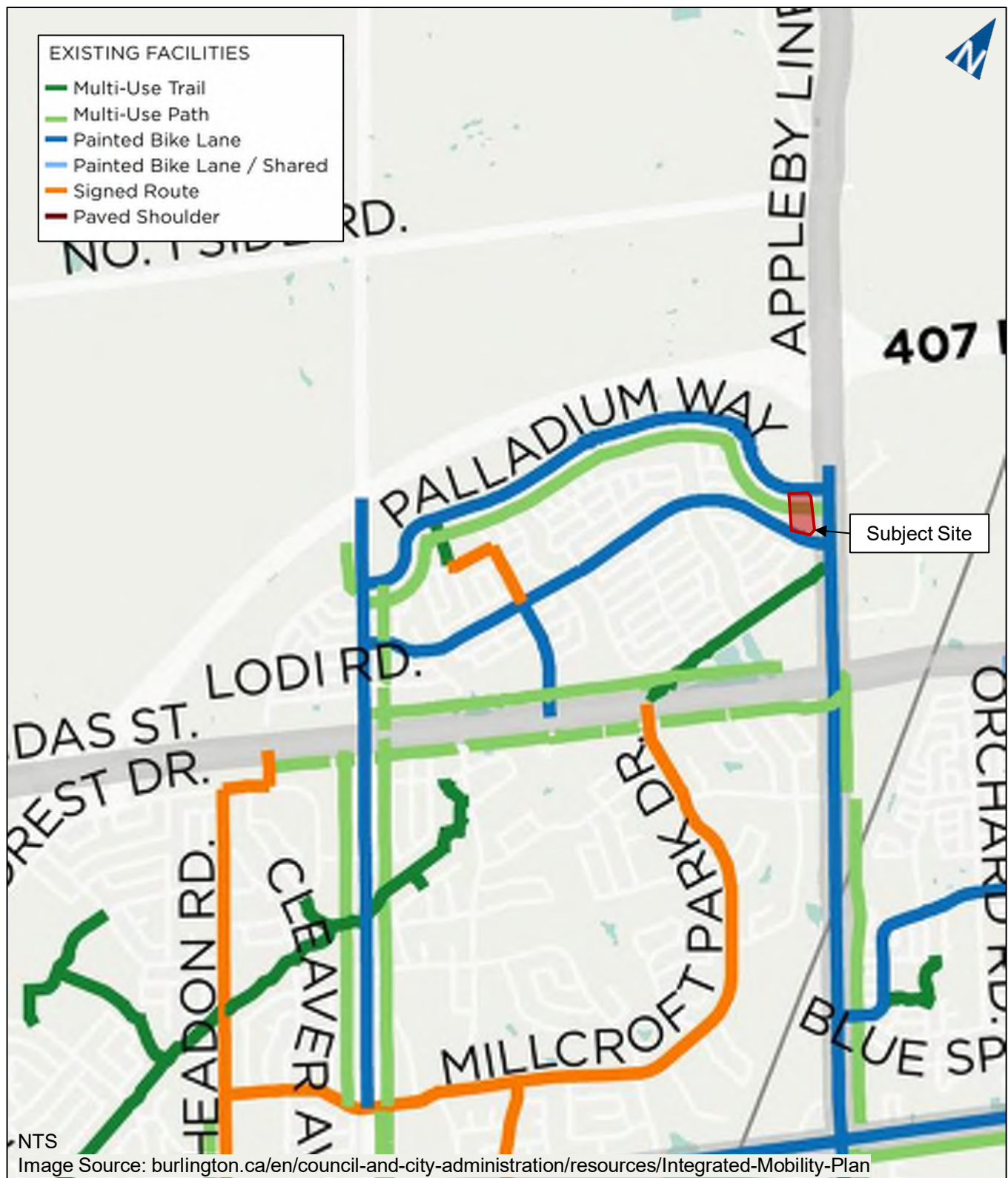
The City of Burlington *Cycling Master Plan's Proposed Network* identifies Palladium Way as part of the spine network with a protected bikeway, Thomas Alton Boulevard as a connector route with a painted bike lane, and intersection improvements are shown at the Appleby Line and Palladium Way/Harrison Court intersection.⁴

Figure 2.3 illustrates the proposed cycling network for the area.

³ City of Burlington, *Cycling Plan*, (Burlington: City of Burlington, 2018).

⁴ Ibid.





Existing Cycling Network



Proposed Cycling Network

4883 Thomas Alton Boulevard, City of Burlington, TIS
240651

Figure 2.3

2.3 Transit Service

Burlington Transit operates the public transit system in the City.

Figure 2.4 illustrates the existing transit network⁵ near the subject site.

Two transit routes serve the subject site:

- ▶ **Route 11 – Sutton-Alton** travels from the Appleby GO Station to the Highway 407 GO Carpool parking lot. This route operates on weekdays and Saturdays from the early morning until late evening. Weekday and weekend headways operate in the order of approximately 15 to 30 minutes. This route operates along Appleby Line and Thomas Alton Boulevard, south of the site.
- ▶ **Route 51 – Burlington Northeast** travels from the Burlington GO Station to northeast Burlington. This route operates on weekdays and Saturdays with three evening routes per day. Weekday and weekend headways operate in the order of approximately 60 minutes.

Figure 2.5 illustrates the four bus stops within a 500-metre radius of the subject site. The closest bus stops are located along Thomas Alton Boulevard, south of the site.⁶ The walking time to these stops is less than five minutes and can be accessed using the existing sidewalk infrastructure.

2.4 Traffic Volumes

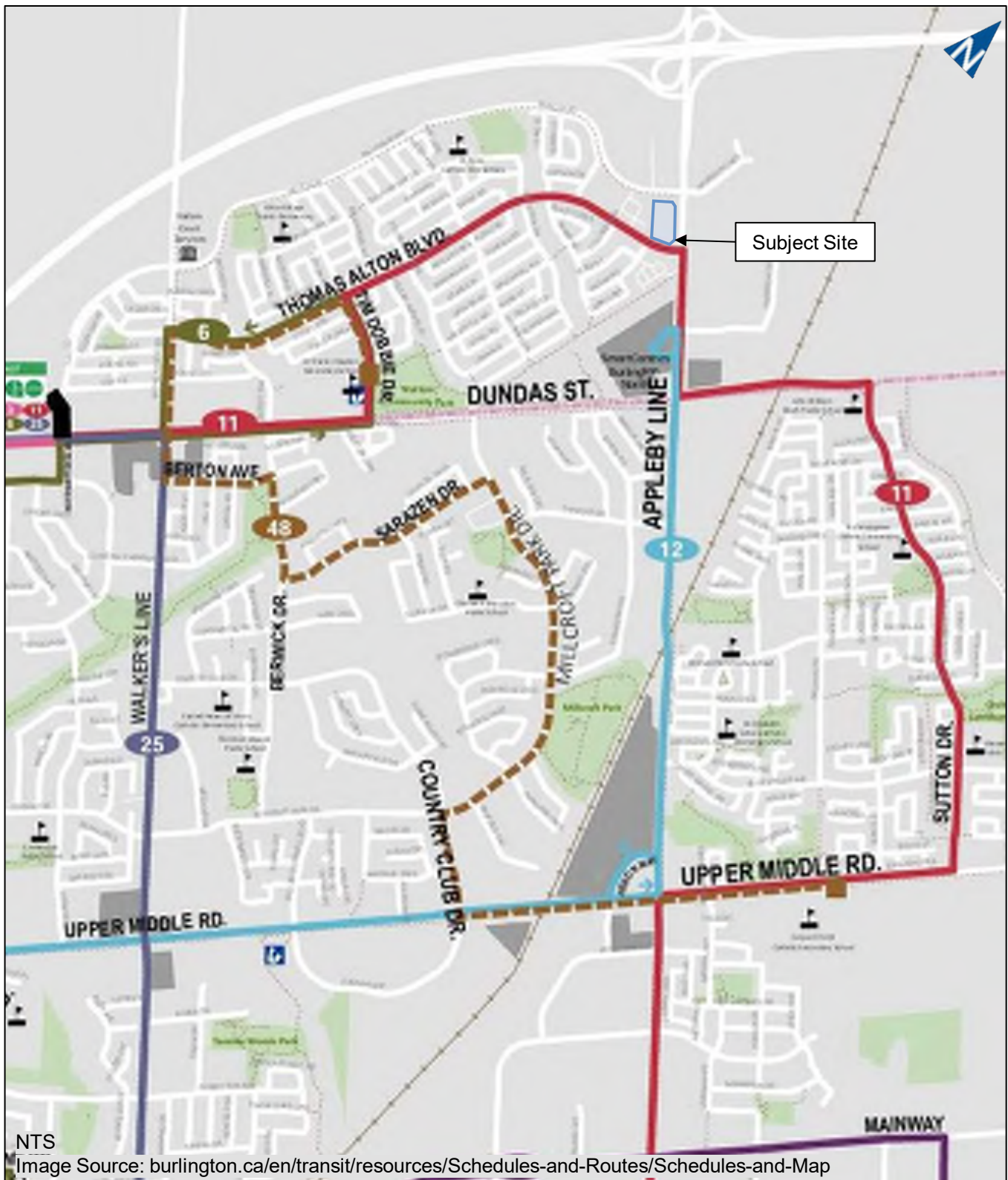
Pyramid Traffic Inc. collected turning movement counts (TMCs) at the study area intersections on Wednesday, November 13, 2024. **Figure 2.6** and **Figure 2.7** illustrate the existing weekday AM and PM peak hour volumes, respectively.

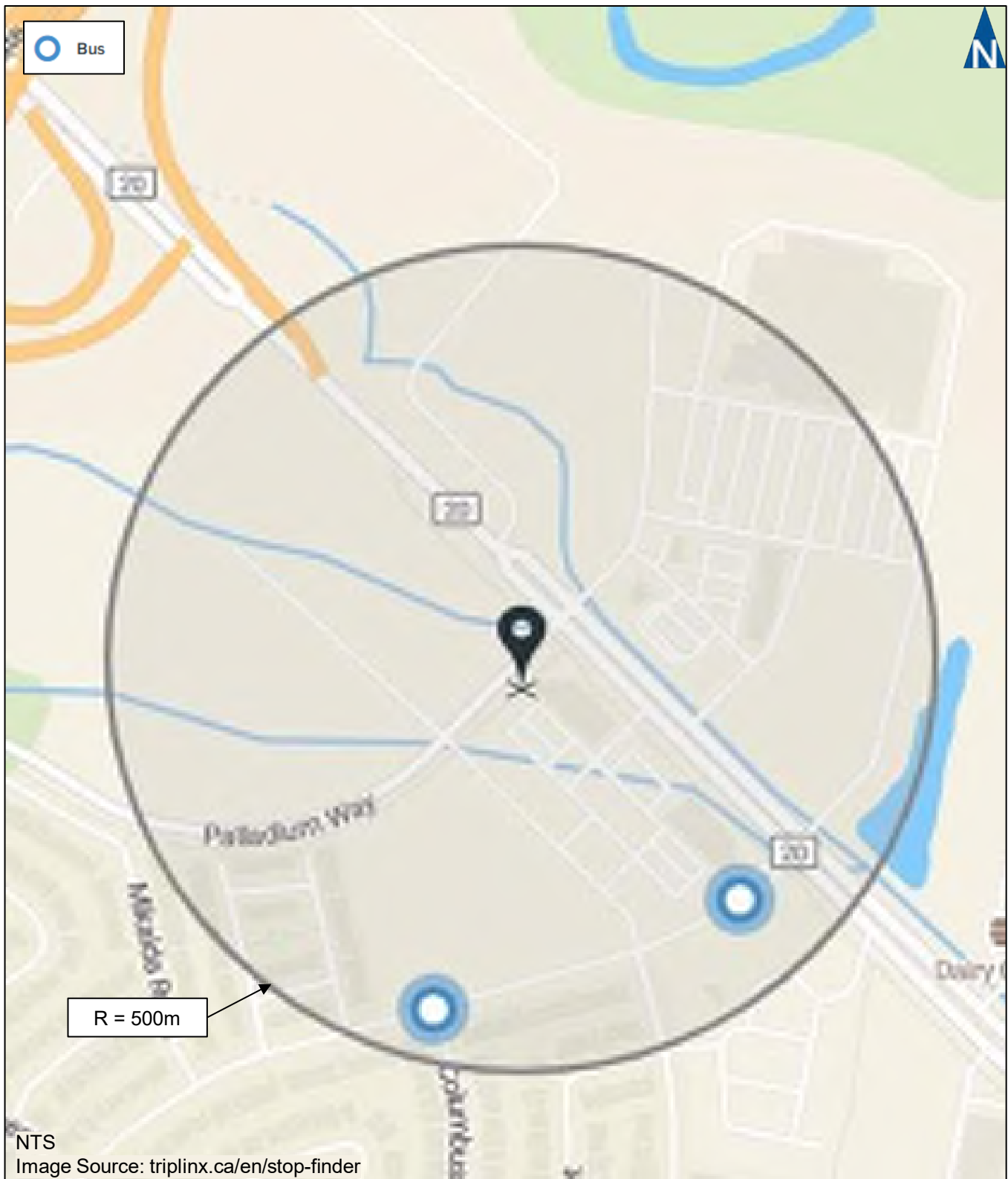
Appendix B contains the raw traffic data and signal timing plans for reference.

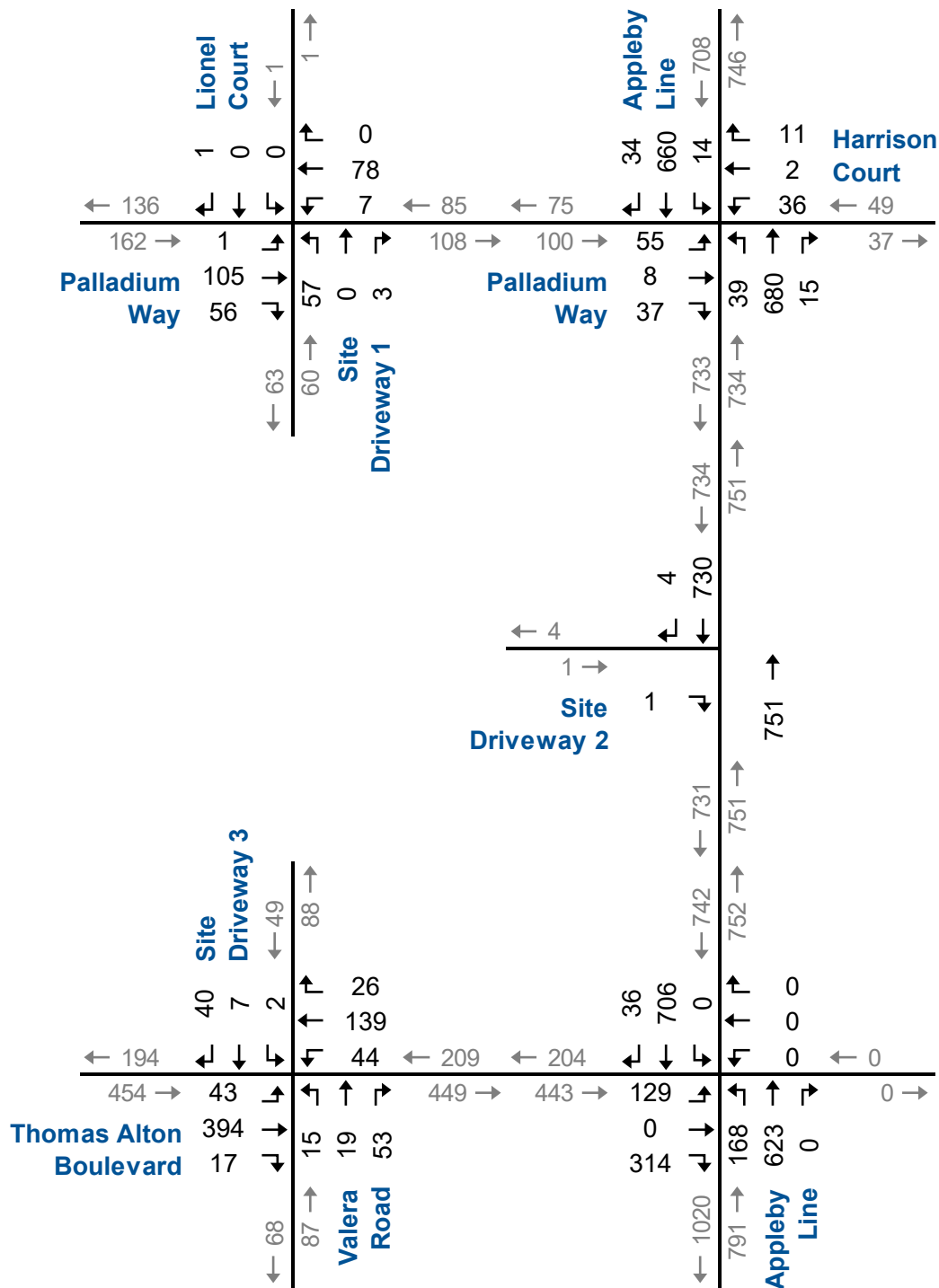
⁵ "Schedules and Maps", Burlington Transit, 2024, www.burlington.ca/en/transit/schedules-and-maps.aspx.

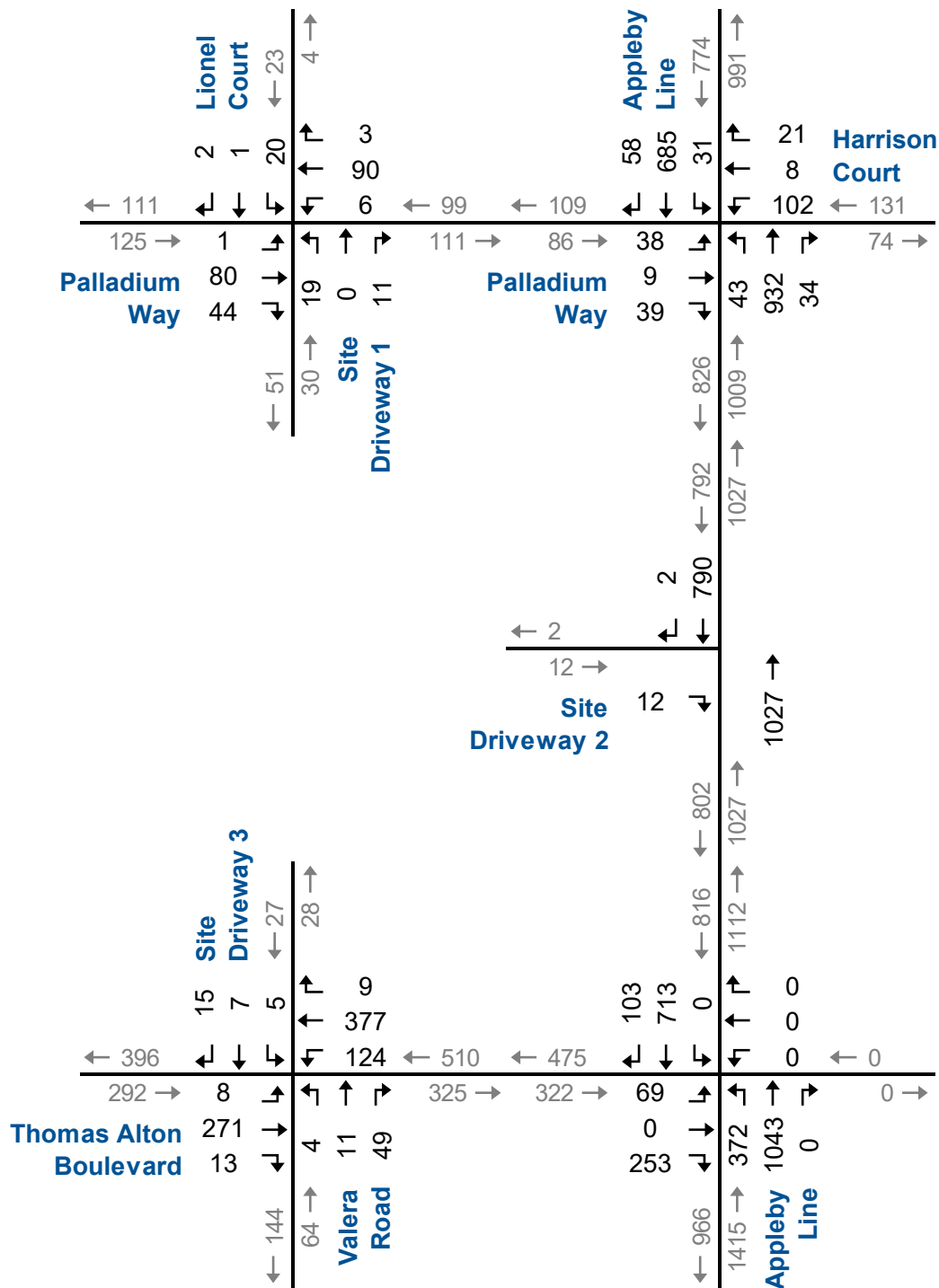
⁶ "Plan your route in the Greater Toronto and Hamilton Area," Triplinx, https://www.triplinx.ca/en/stop-finder/145/NearBy/search?Place=798488_7.











2.5 Traffic Operations

Intersection level of service (LOS) is a recognized method of quantifying the efficiency of traffic flow at intersections. It is based on the delay experienced by individual vehicles executing the various movements. The delay is related to the number of vehicles wanting to make a movement, compared to the estimated capacity for that movement. The capacity is based on several criteria related to the opposing traffic flows.

The highest possible rating is LOS A, under which the average total delay is equal or less than 10 seconds per vehicle. When the average delay exceeds 80 seconds at signalized intersections (50 seconds at unsignalized intersections), the movement is considered to have a LOS F, and remedial measures are usually implemented if they are feasible.

The intersection analysis considered three separate measures of performance:

- ▶ The LOS for each turning movement. LOS is based on the average control delay per vehicle;
- ▶ The volume to capacity (v/c) ratio for movements and overall intersection; and
- ▶ 95th percentile queue length (metres), which are estimated using five 60-minute simulations with 15-minute seeding from the SimTraffic module.

Under the Region's TIS Guidelines, the operational analysis must identify signalized and unsignalized intersections where:

- ▶ v/c ratios for through or shared through/turning movements that exceed 0.85 at a signalized intersection;
- ▶ v/c ratios for exclusive turning movements that exceed 0.95 at a signalized intersection;
- ▶ The 95th percentile queues for an individual movement that are projected to exceed the available turning lane storage; and
- ▶ LOS, based on average delay per vehicle on individual movements, which exceeds at LOS D for unsignalized intersections.



The evaluation criteria used to analyze signalized and unsignalized intersections are based on the Highway Capacity Manual (HCM)⁷ 2000 procedures output from Synchro 12 software.

The operations of the intersections in the study area were evaluated using the existing lane configuration, signal timings, and traffic control along with the existing traffic volumes, including the calculated intersection peak hour factors, crossing pedestrians, and heavy vehicle percentages.

Table 2.1 summarizes the operational analysis results including the LOS, average delay in seconds, v/c ratios, and 95th percentile queue lengths in metres for the weekday AM and PM peak hours. The results of the analysis indicate the study area intersections are operating at acceptable level of service with all movements within capacity during the AM and PM peak hours. No critical movements are noted.

Appendix C contains the detailed Synchro 12 and SimTraffic reports.

⁷ Transportation Research Board, *Highway Capacity Manual*, Washington, D.C. 2003.



TABLE 2.1: EXISTING TRAFFIC OPERATIONS SUMMARY

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Palladium Way & Lionel Court/Site Driveway 1	TWSC	LOS Delay V/C Q	A 7 0 0	A 0 0.13 >	> A 0	A 8 0.01 0	A 0 0.06 >	> A 1	< B 4 >	< A 10	< A 9 >	< A 9	A 2						
	Appleby Line & Palladium Way/Harrison Court	TCS	LOS Delay V/C Q Stor. Avail.	D 39 0.44 19 45 26	D 36 0.09 >	> D 37	D 37 0.30 14 60 46	C 35 0.02 >	> D 37	A 3 0.09 3 95 92	A 3 0.20 >	> A 3	A 5 0.03 4 70 66	A 6 0.22 >	> A 6	A 8 0.44				
	Appleby Line & Site Driveway 2	TWSC	LOS Delay V/C Q			A 9 0.00 0	A 9					A 0 0.12 0	A 0		A 0 0.18 0	A 0	A 0			
	Thomas Alton Boulevard & Valera Road/Site Driveway 3	TWSC	LOS Delay V/C Q	< < < 1	A 1 0.04 >	> A 1	< < < 2	A 2 0.05 >	> A 2	< C 19 >	< C 19	< B 12 >	< B 12	A 4						
	Appleby Line & Thomas Alton Boulevard	TCS	LOS Delay V/C Q Stor. Avail.	< < < 38 0.61 35 - -	D 33 0.37 >	> C 34	A 0 0 0 30 30	A 0 >	> A 0	A 5 0.37 19 130 111	A 5 0.21 >	> A 5	A 0 0 0 30 30	A 10 0.03 2 60 58	A 10	B 13 0.61				
PM Peak Hour	Palladium Way & Lionel Court/Site Driveway 1	TWSC	LOS Delay V/C Q	A 8 0.00 0	A 0 0.11 >	> A 0	A 8 0.01 0	A 0 0.08 >	> A 1	< A 16 >	< A 10	< A 10 >	A 2							
	Appleby Line & Palladium Way/Harrison Court	TCS	LOS Delay V/C Q Stor. Avail.	C 34 0.25 14 45 31	C 33 0.07 >	> C 33	D 44 0.65 31 60 29	C 33 >	> D 41	A 4 0.1 5 95 90	A 4 0.30 >	> A 4	A 8 0.12 8 70 62	A 8 >	> A 8	A 9 0.65				
	Appleby Line & Site Driveway 2	TWSC	LOS Delay V/C Q			A 9 0.01 0	A 9					A 0 0.17 0	A 0		A 0 0.21 0	A 0	A 0			
	Thomas Alton Boulevard & Valera Road/Site Driveway 3	TWSC	LOS Delay V/C Q	< < < 0	A 0 0.01 >	> A 0	< < < 3	A 3 0.1 >	> A 3	< B 14 >	< B 14	< C 17 >	< C 17	B 3						
	Appleby Line & Thomas Alton Boulevard	TCS	LOS Delay V/C Q Stor. Avail.	< < < 36 0.42 22 - -	D 34 0.17 >	> C 34	A 0 0 0 30 30	A 0 >	> A 0	A 5 0.64 32 130 98	A 5 0.3 >	> A 5	A 0 0 30 30	B 11 0.07 10 60 50	B 11	B 11 0.64				

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TWSC - Two-Way Stop Control

TCS - Traffic Control Signal

< / > - Shared with through movement



3 Development Concept

3.1 Description

The subject site is located at 4900 Palladium Way, 4883 & 4903 Thomas Alton Boulevard in the City of Burlington. The site currently contains two commercial buildings with three driveways. The buildings are located near the Appleby Line Frontage.

The development concept proposes a third, single-storey building containing 13 non-residential units on the site. A total of 1,888 m² (20,322 sq. ft.) of gross floor area is proposed for restaurant, retail, and day care centre uses, served by a total parking supply of 255 vehicular spaces (3.66 spaces per 100 m² GFA) for the entire 6,969 m² (75,014 sq. ft.) site. The site will be served by a total bicycling parking supply of twelve spaces, an increase of nine spaces from the existing three spaces.

Vehicle access will be maintained via the three driveways serving the existing site:

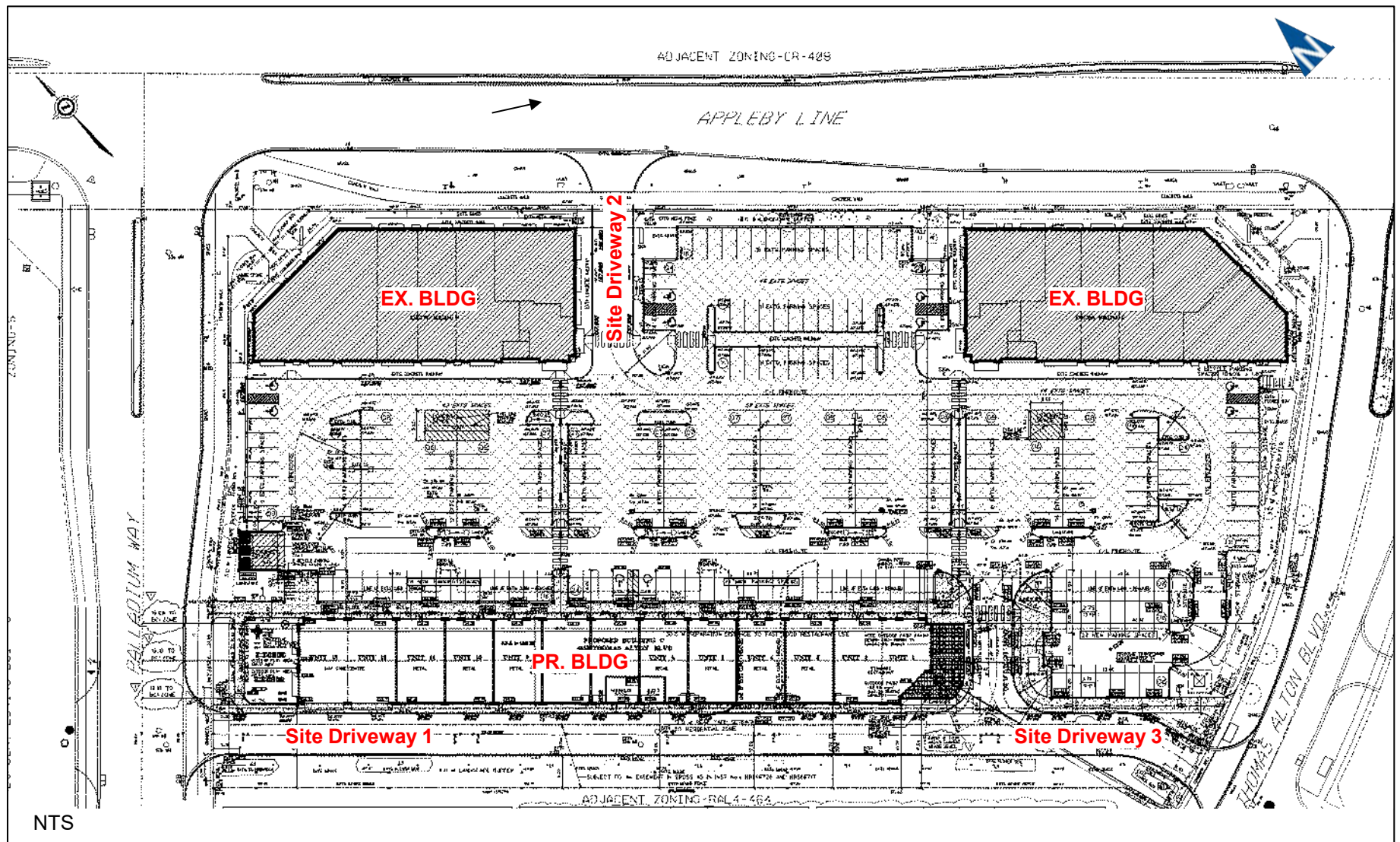
- ▶ **Site Driveway 1** to Palladium Way is a full movement driveway 115 metres west of the Appleby Line and Palladium Way/Harrison Court intersection, opposite of Lionel Court. The driveway has a clear throat length of approximately 135 m.
- ▶ **Site Driveway 2** to Appleby Line is right-in/right-out driveway located approximately 85 metres south of the Appleby Line and Palladium Way/Harrison Court intersection. Left turns are restricted by the existing centre raised median on Appleby Line. The driveway has a clear throat length of approximately 25 m.
- ▶ **Site Driveway 3** to Thomas Alton Boulevard is a full movement driveway 135 metres west of the Appleby Line and Thomas Alton Boulevard intersection, opposite of Valera Road. The driveway has approximately 28 m of clear throat length.

The site driveways will remain unchanged after construction.

Build-out is anticipated to occur within five years (2029), timing is subject to market conditions.

Figure 3.1 illustrates the site concept plan.





Site Concept Plan

4883 Thomas Alton Boulevard, City of Burlington, TIS
240651

Figure 3.1

3.2 Transportation Demand Management

Transportation Demand Management (TDM) refers to ways of making the capacity of our roads more efficient by reducing vehicle demands. TDM approaches consider how people's choices of travel mode are affected by land use patterns, development design, parking availability, parking cost, and the relative cost, convenience, and availability of alternative modes of travel.

The following TDM measures are included in the site plan (for example, bicycle parking) or will be provided by the site operator (for example, Smart Commute Halton) as part to the development program:

- ▶ Walking
 - Safe, attractive, and direct walkways are provided throughout the site for pedestrians. linking building entrances with public sidewalks, through the parking lot, and connecting to the existing pedestrian walkways; and
 - All on-site sidewalks conform to City of Burlington and Accessibility for Ontarians with Disabilities Act (AODA) design standards.
- ▶ Cycling
 - Twelve (12) bicycle parking spaces are provided exceeding the number of spaces recommended in the City of Burlington Zoning By-law for residential and retail uses;⁸
 - Short-term bicycle parking is located at grade near the building entrances at the northwest and southeast corners of the site; and
 - A bike repair station is located on the southwest corner of the Appleby Line and Palladium Way/Harrison Court intersection in the public right-of-way adjacent to the subject site.
- ▶ Transit Infrastructure
 - Sidewalks connect directly to the municipal sidewalk which will enable walking trips to/from the existing transit stops on Thomas Alton Boulevard.
- ▶ Wayfinding, Travel Planning, Education/Promotion
 - Employees should be provided with an information package that outlines the available transit routes and active

⁸ City of Burlington Zoning by-law 2020, § Section 1.



transportation options. A travel plan will engage and educate employees on the available sustainable modes of travel (for example, carpooling, cycling, or transit) and how to overcome obstacles that maybe perceived.

- The site operator(s) should consider joining Smart Commute Halton to promote sustainable transportation modes.
- Wayfinding signage will be provided on site.

The above TDM measures will assist in mitigating the site's transportation and parking impacts on the adjacent road network, promote a strong and vibrant economy, and create a livable community that has a balanced transportation network.

3.3 Site Trip Generation

The Institute of Transportation Engineers (ITE) *Trip Generation Manual*⁹ was referenced to estimate the peak hour vehicular traffic volumes generated by the proposed development. Specifically, the trip rates for Land Use Code (LUC) 565 – Day Care Centre, LUC 822 – Strip Retail Plaza, and LUC 932 – High Turnover (Sit-Down) Restaurant were used to estimate the vehicle trips generated.

No modal split adjustments have been applied to the trip generation estimate to account for active transportation or transit-oriented trips.

Table 3.1 summarizes the estimated trip generation for the development. The subject site is forecast to generate approximately 119 and 165 new vehicle trips during the AM and PM peak hours, respectively.

TABLE 3.1: ESTIMATED SITE GENERATED TRAFFIC

Land Use	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
LUC 565 – 3.2k sq. ft	19	16	35	16	19	35
LUC 822 – 12.0k sq. ft.	19	13	32	45	44	89
LUC 932 – 4.5k sq. ft.	29	23	52	25	16	41
Total Generation	67	52	119	86	79	165

LUC 565: AM – $T = 11.00(X)$ | PM – $T = 11.12(X)$

LUC 822: AM – $\ln(T) = 0.66 \ln(X) + 1.84$ | PM – $\ln(T) = 0.71 \ln(X) + 2.72$

LUC 932: AM – $T = 11.61(X)$ | PM – $T = 9.05(X)$

⁹ Institute of Transportation Engineers, *Trip Generation Manual*, 11th ed., (Washington DC: ITE, 2021).



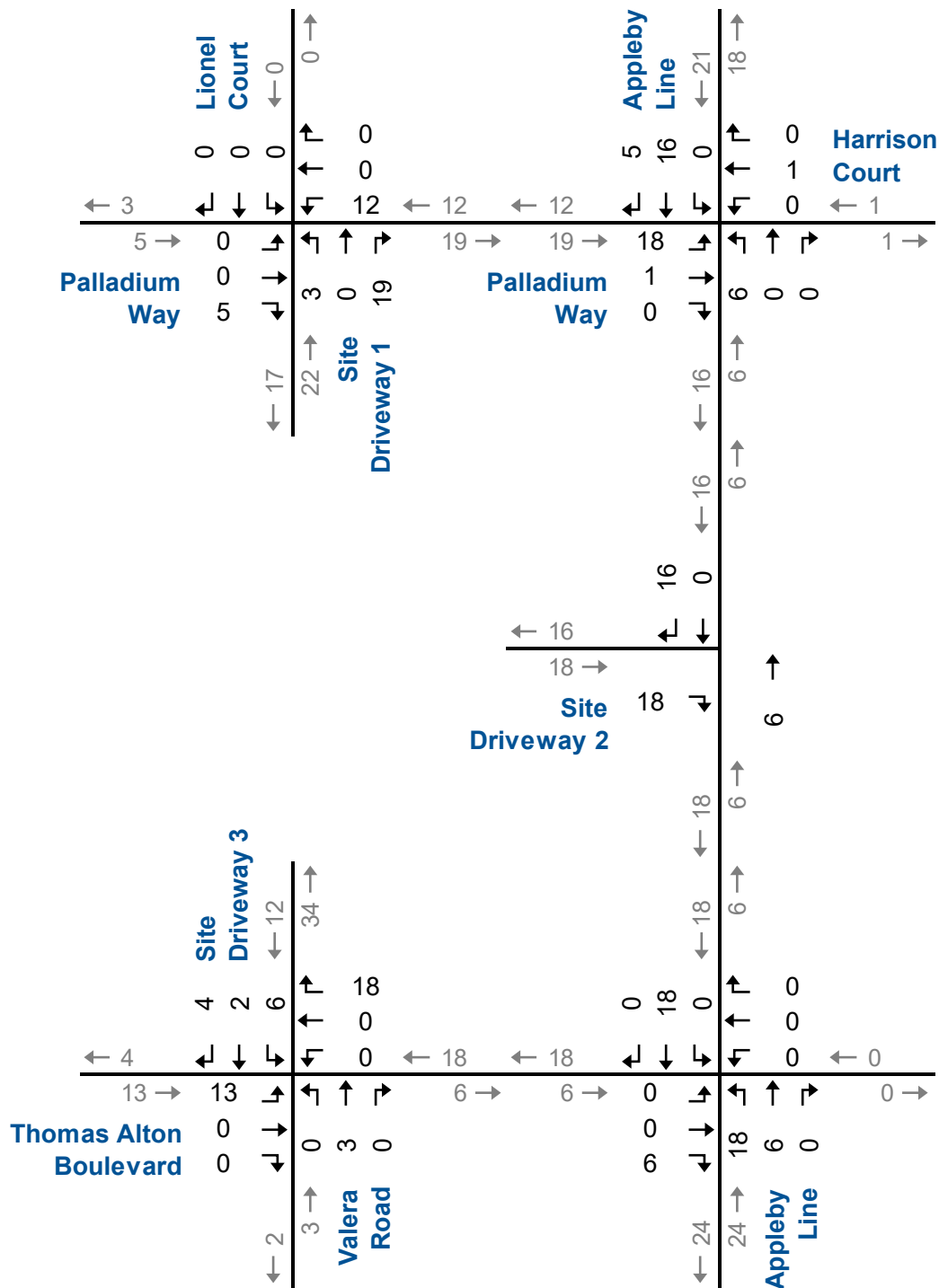
Table 3.2 summarizes the estimated trip distribution. The distribution is based on a review of existing travel patterns. The patterns capture the typical commuter patterns reflective of the surrounding residential and commercial area. The methodology was confirmed during pre-consultation with City staff. The distribution to each origin/destination has been rounded to the nearest five percent.

Figure 3.2 and **Figure 3.3** illustrate the site generated traffic for the AM and PM peak hours, respectively.

TABLE 3.2: ESTIMATED TRIP DISTRIBUTION

Origin/Destination	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
North via Appleby Line	30%	35%	30%	35%
East via Harrison Court	< 5%	< 5%	5%	5%
South via Appleby Line	35%	45%	50%	35%
South via Valera Road	5%	5%	< 5%	5%
West via Thomas Alton Boulevard	20%	10%	10%	15%
West via Palladium Way	10%	5%	5%	5%
Total	100%	100%	100%	100%





4 Future Traffic Conditions

The assessment of future conditions in this section includes the following components:

- ▶ Future background traffic estimates;
- ▶ Operational analysis of background traffic conditions (pre-development);
- ▶ Future total traffic estimates; and
- ▶ Operational analysis of total traffic conditions (post-development).

4.1 Forecast Traffic

A five-year horizon (2029) representing five years from study submission has been assessed. The likely future traffic volumes near the subject site are estimated to consist of:

- ▶ Increased non-site traffic (generalized background traffic growth);
- ▶ Traffic generated by adjacent instream developments; and
- ▶ Traffic generated by the subject site.

During pre-study consultation, Region staff confirmed a generalized background growth rate of 2% per annum applied to all movements that were not to, nor from the site driveways.

At the time of writing, the east leg of the Appleby Line and Thomas Alton Boulevard intersection is closed. To account for the reopening of this leg, turning movement data collected by Paradigm on Thursday, September 28, 2017, was utilized. This data was scaled up to the five-year horizon using the generalized growth rate of 2% per annum.

Appendix B contains the existing count data.

Additionally, five nearby developments were identified for inclusion in the traffic forecast. These developments include:

- ▶ **3399 Appleby Line**, a proposed industrial building with a total floor area of approximately 17,652 m². The site traffic volumes are based on the TIS¹⁰ for the site;

¹⁰ Paradigm Transportation Solutions Limited, 3399 Appleby Line, City of Burlington, *Transportation Impact Study*, (Cambridge, October 2022)



- ▶ **3402-3416 Appleby Line**, a proposed industrial building with a total floor area of approximately 30,234 m². The site traffic volumes are based on the TIS¹¹ for the site;
- ▶ **4103 Palladium Way**, a proposed retirement home with 115 units, a long-term care facility with 256 beds, a medical office with approximately 150 m² of GFA, a pharmacy with approximately 100 m² GFA, and a day care with approximately 705 m² GFA. The site traffic volumes are based on the TIS¹² for the site;
- ▶ **4721 Palladium Way**, a proposed Islamic Place of Worship with a small office component. The site traffic volumes are based on the TIS¹³ for the site; and
- ▶ **4853 Palladium Way**, a proposed set of 10 employment blocks with approximately 24,498 m² of GFA. The site traffic volumes are based on the TIS¹⁴ for the site

Appendix D contains the forecast traffic volumes.

Figure 4.1 and **Figure 4.2** illustrate the forecast 2029 background traffic volumes for the AM and PM peak hours, respectively.

The total traffic volumes consist of the background traffic volumes and the site-generated traffic. **Figure 4.3** and **Figure 4.4** illustrate the forecast 2029 total traffic volumes for the AM and PM peak hour, respectively.

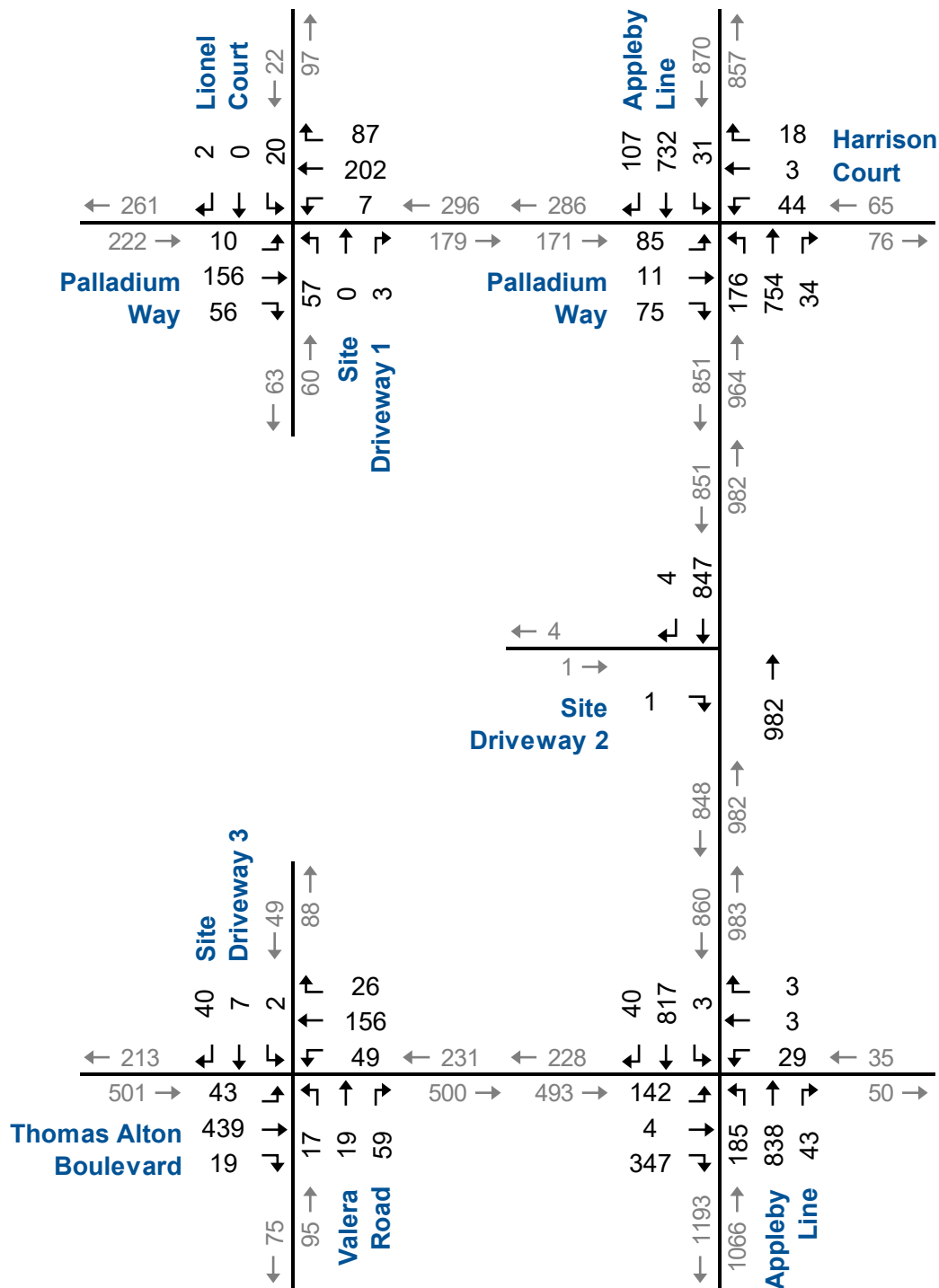
¹¹ JD Northcote Engineering Inc., *3402-3416 Appleby Line, City of Burlington, Traffic Impact and TDM Study*, (Barrie, February 2023)

¹² GHD Limited, *Proposed Long Term Care Facility, Traffic Impact Study, 4103 Palladium Way, City of Burlington*, (Mississauga, April 2022)

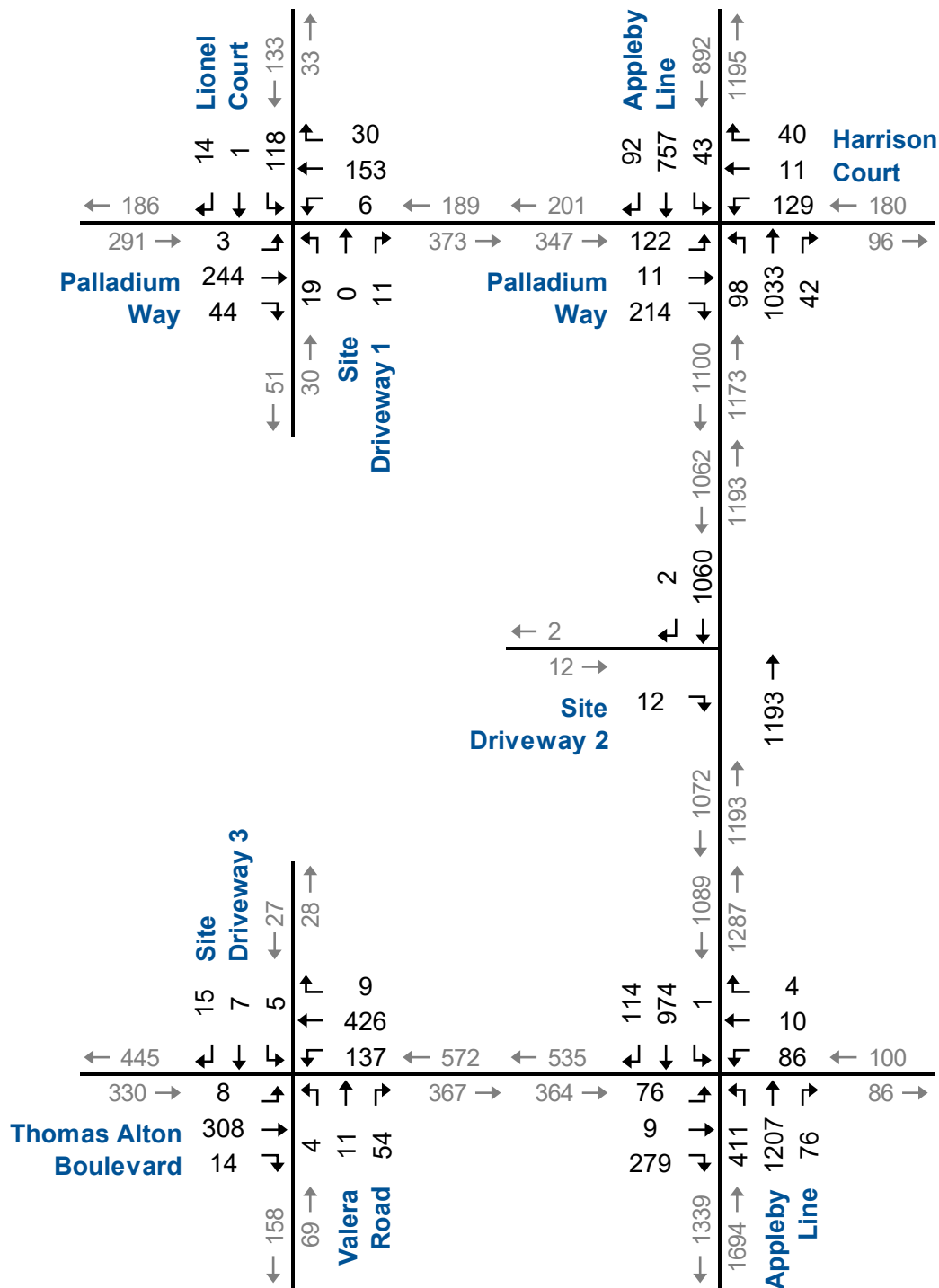
¹³ Paradigm Transportation Solutions Limited, *4721 Palladium Way, Transportation Impact Study & TDM Options Report*, (Cambridge, September 2017)

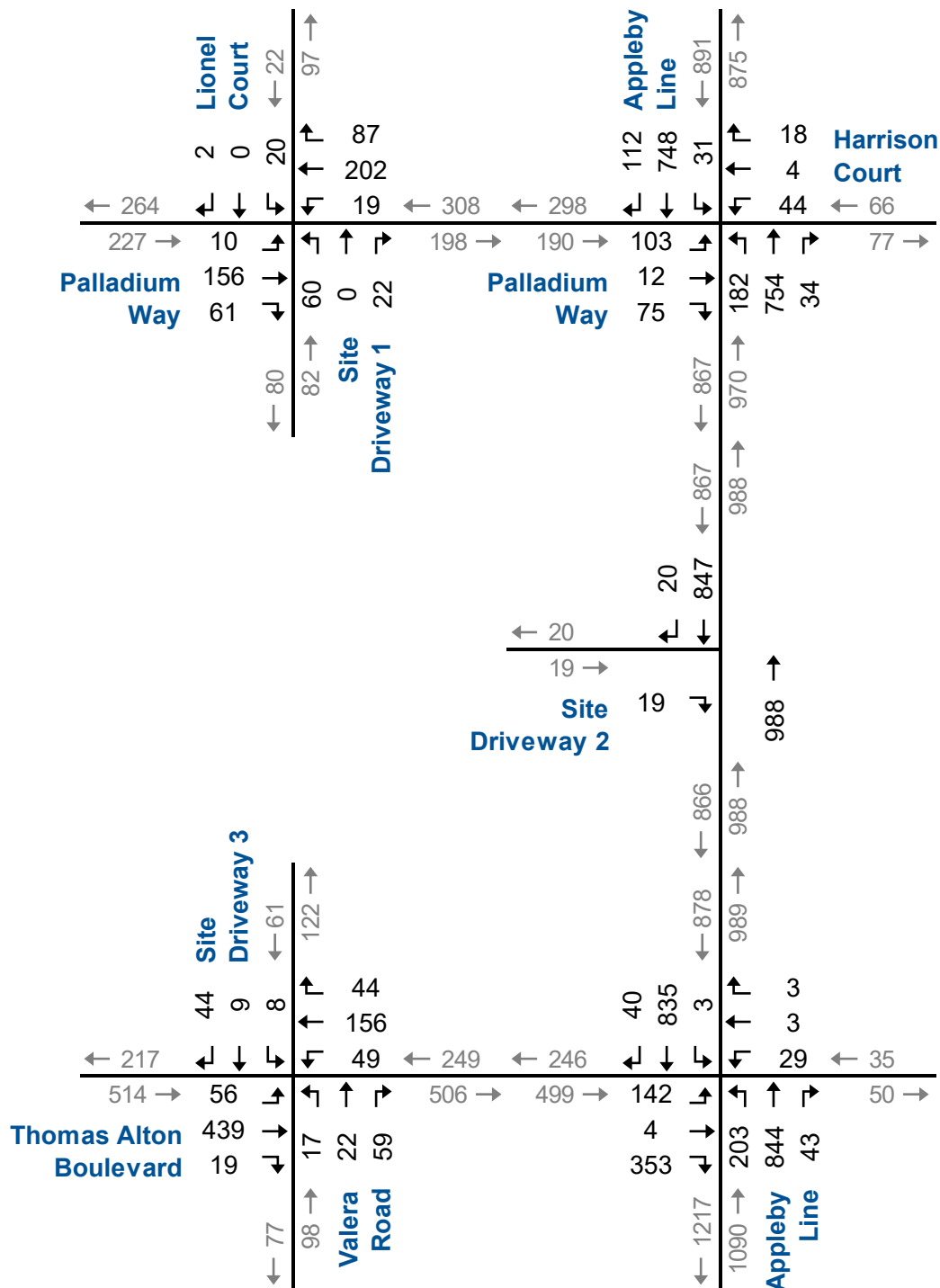
¹⁴ Paradigm Transportation Solutions Limited, *Block 23 20M-1034, 4853 Palladium Way, Transportation Impact Study*, (Cambridge, June 2016)



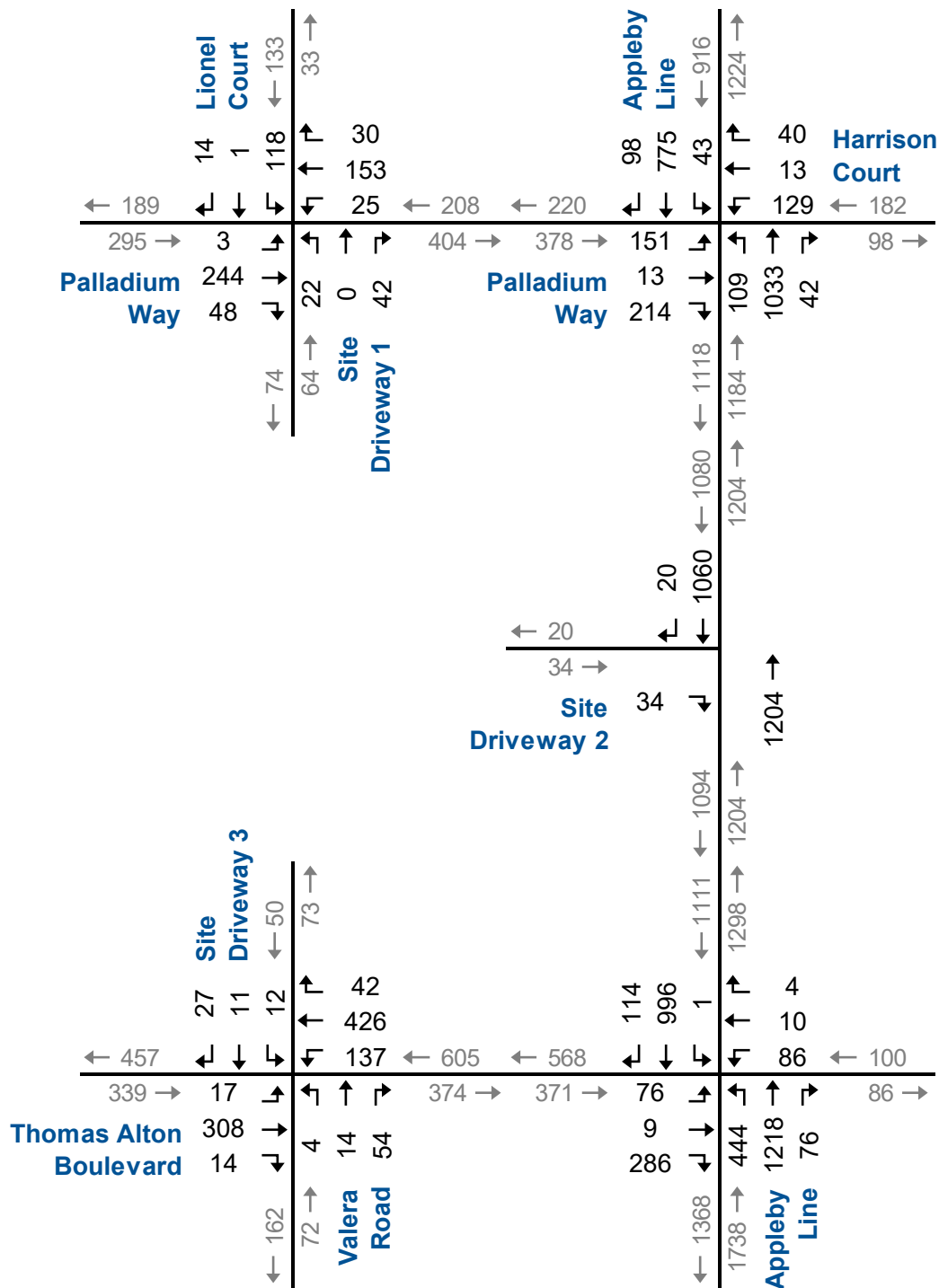


Five-Year (2029) Background Traffic AM Peak Hour





Five-Year (2029) Total Traffic AM Peak Hour



4.2 Background Traffic Operations

The study area intersection operational analyses for the background traffic forecasts followed the same methodology used for existing conditions. No changes to the existing lane configurations or signal timings were made.

Table 4.1 summarizes the results of the operational analysis for the 2029 background conditions. The study area intersections are forecast to operate at acceptable level of service with all movements within capacity during the AM and PM peak hours.

Appendix E contains the detailed Synchro 12 and SimTraffic reports.



TABLE 4.1: BACKGROUND TRAFFIC OPERATIONS SUMMARY

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Palladium Way & Lionel Court/Site Driveway 1	TWSC	LOS Delay V/C Q	A 8 0.01	A 0 0.18	> > >	A 0	A 8 0.01	A 0 0.24	> > >	A 0	< < <	B 4 0.14	> > >	B 12	< < <	B 12 0.05	> > >	B 12	A 2
	Appleby Line & Palladium Way/Harrison Court	TCS	LOS Delay V/C Q Stor. Avail.	D 40 0.57	C 35 0.14	> > >	D 37	D 36 0.32	C 34 0.03	> > >	D 35	A 9 0.43	A 3 0.23	> > >	A 4	A 9 0.09	A 10 0.31	> > >	A 10	B 10 0.57
	Appleby Line & Site Driveway 2	TWSC	LOS Delay V/C Q			A 9 0.00	A 9						A 0 0.15		A 0		A 0 0.21	> > >	A 0	A 0
	Thomas Alton Boulevard & Valera Road/Site Driveway 3	TWSC	LOS Delay V/C Q	< < <	A 1 0.04	> > >	A 1	< < <	A 2 0.06	> > >	A 2	< < <	C 23 0.36	> > >	C 23	< < <	B 13 0.11	> > >	B 13	A 4
	Appleby Line & Thomas Alton Boulevard	TCS	LOS Delay V/C Q Stor. Avail.	< < <	D 38 0.64	C 34 0.54	C 35	C 29 0.14	C 29 0.01	> > >	C 29	A 6 0.46	A 6 0.30	> > >	A 7	A 10 0.01	A 12 0.35	B 10 0.03	A 9	B 14 0.64
PM Peak Hour	Palladium Way & Lionel Court/Site Driveway 1	TWSC	LOS Delay V/C Q	A 8 0.00	A 0 0.25	> > >	A 0	A 8 0.01	A 0 0.16	> > >	A 0	< < <	B 16 0.08	> > >	B 12	< < <	B 14 0.33	> > >	B 14	A 4
	Appleby Line & Palladium Way/Harrison Court	TCS	LOS Delay V/C Q Stor. Avail.	C 32 0.52	C 28 0.19	> > >	C 30	E 58 0.82	C 28 0.06	> > >	D 50	A 7 0.28	A 7 0.38	> > >	A 7	B 14 0.22	B 13 0.37	> > >	B 13	B 15 0.82
	Appleby Line & Site Driveway 2	TWSC	LOS Delay V/C Q			A 9 0.01	A 9						A 0 0.2		A 0		A 0 0.28	> > >	A 0	A 0
	Thomas Alton Boulevard & Valera Road/Site Driveway 3	TWSC	LOS Delay V/C Q	< < <	A 0 0.01	> > >	A 0	< < <	A 3 0.12	> > >	A 3	< < <	C 16 0.18	> > >	C 16	< < <	C 20 0.1	> > >	C 20	B 3
	Appleby Line & Thomas Alton Boulevard	TCS	LOS Delay V/C Q Stor. Avail.	< < <	D 36 0.47	C 34 0.35	C 35	D 36 0.50	C 32 0.05	> > >	D 36	B 11 0.72	A 5 0.38	> > >	A 8	B 15 0.01	B 19 0.5	A 15 0.08	B 16	B 15 0.72

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TWSC - Two-Way Stop Control

TCS - Traffic Control Signal

< / > - Shared with through movement



4.3 Total Traffic Operations

The study area intersection operational analyses for the total traffic forecasts followed the same methodology used for existing conditions and background conditions. No changes to the existing lane configurations or signal timings were made.

Table 4.2 summarizes the results of the operational analysis for the 2029 total traffic conditions. The intersections are forecast to operate similarly to the background traffic operations with the addition of site traffic. Minor increases in delays, v/c ratios and queues are noted.

One new critical movement is triggered by the addition of site generated traffic during the AM peak hour. At the Appleby Line and Thomas Alton Boulevard intersection, the eastbound right-turn movement is forecast to exceed the current available storage (40 m) by approximately 2 m. The queue can be accommodated by the existing width of the driving lane and therefore poses no operation concern.

The site driveways to Palladium Way, Appleby Line, and Thomas Alton Boulevard are forecast to operate at acceptable levels of service. Delays on the driveway approach are forecast to be in the LOS A to C range with v/c ratios of less than 0.20. Queues on the driveway approaches are minimal (less than 1 car length) and are not expected to spill back into any of the internal drive aisle intersections.

Main line delays at the site driveway are forecast to operate at acceptable levels of service. Delays on the Palladium Way, Appleby Line, and Thomas Alton Boulevard approaches are forecast to be in the LOS A range with v/c ratios of less than 0.25.

Appendix F contains the detailed Synchro 12 and SimTraffic reports.



TABLE 4.2: TOTAL TRAFFIC OPERATIONS SUMMARY

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Palladium Way & Lionel Court/Site Driveway 1	TWSC	LOS Delay V/C Q	A 8 0.01	A 0 0.18	> > >	A 0	A 8 0.02	A 0 0.24	> > >	A 1	< < <	B 31 0.19	> > >	B 12	< < <	B 12 0.06	> > >	B 12	A 2
	Appleby Line & Palladium Way/Harrison Court	TCS	LOS Delay V/C Q Stor. Avail.	D 37 0.54	C 32 0.13	> > >	C 35	C 33 0.25	C 31 0.03	> > >	C 33	B 11 0.47	A 4 0.24	> > >	A 5	A 10 0.1	B 11 0.33	> > >	B 11	B 11 0.54
	Appleby Line & Site Driveway 2	TWSC	LOS Delay V/C Q			A 9 0.02	A 9						A 0 0.15		A 0		A 0 0.21	> > >	A 0	A 0
	Thomas Alton Boulevard & Valera Road/Site Driveway 3	TWSC	LOS Delay V/C Q	< < <	A 1 0.05	> > >	A 1	< < <	A 2 0.06	> > >	A 2	< < <	D 25 0.39	> > >	D 25	< < <	C 17 0.19	> > >	C 17	A 5
	Appleby Line & Thomas Alton Boulevard	TCS	LOS Delay V/C Q Stor. Avail.	< < <	D 37 0.63	C 35 0.57	D 35	C 29 0.14	C 29 0.01	> > >	C 29	A 6 0.52	A 6 0.3	> > >	A 7	A 10 0.01	B 13 0.36	A 11 0.03	A 9	B 13 0.63
PM Peak Hour	Palladium Way & Lionel Court/Site Driveway 1	TWSC	LOS Delay V/C Q	A 8 0.00	A 0 0.25	> > >	A 0	A 8 0.03	A 0 0.16	> > >	A 1	< < <	B 61 0.16	> > >	B 12	< < <	C 17 0.39	> > >	C 17	A 5
	Appleby Line & Palladium Way/Harrison Court	TCS	LOS Delay V/C Q Stor. Avail.	D 37 0.65	C 29 0.2	> > >	C 32	E 61 0.84	C 28 0.07	> > >	D 51	A 7 0.32	A 7 0.38	> > >	A 7	B 14 0.22	B 13 0.38	> > >	B 13	B 15 0.84
	Appleby Line & Site Driveway 2	TWSC	LOS Delay V/C Q			A 9 0.04	A 9						A 0 0.2		A 0		A 0 0.28	> > >	A 0	A 0
	Thomas Alton Boulevard & Valera Road/Site Driveway 3	TWSC	LOS Delay V/C Q	< < <	A 1 0.02	> > >	A 1	< < <	A 3 0.12	> > >	A 3	< < <	C 17 0.21	> > >	C 17	< < <	D 25 0.23	> > >	D 25	C 4
	Appleby Line & Thomas Alton Boulevard	TCS	LOS Delay V/C Q Stor. Avail.	< < <	D 35 0.46	C 34 0.38	C 35	D 36 0.49	C 32 0.05	> > >	D 35	C 14 0.79	A 5 0.39	> > >	A 9	B 15 0.01	B 19 0.51	A 15 0.08	B 16	B 15 0.79

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TWSC - Two-Way Stop Control

TCS - Traffic Control Signal

< / > - Shared with through movement



5 Remedial Measures

5.1 Traffic Signal Control

The need for traffic control improvements is assessed using the Ontario Traffic Manual (OTM Book 12) signal warrant¹⁵ procedures. To warrant the consideration for installation of traffic signal control with forecast traffic volumes (average hourly volumes), at least one warrant must be fulfilled by 120% for an existing intersection or 150% for a proposed new intersection.

Table 5.1 summarizes the OTM signal warrants for the intersections of Palladium Way and Lionel Court/Site Driveway 1, and Thomas Alton Boulevard and Valera Road/Site Driveway 3. Based on the volume warrant analysis, signals are not warranted at these locations.

Appendix G contains the warrant analysis.

TABLE 5.1: OTM WARRANT SUMMARY

Intersection	OTM Warrant				Warranted
	1A	1B	2A	2B	
Palladium Way & Lionel Court/ Site Driveway 1	46%	44%	36%	74%	No
Thomas Alton Boulevard & Valera Road/ Site Driveway 3	69%	41%	59%	26%	No

¹⁵ Ontario Ministry of Transportation, *Ontario Traffic Manual Book 12: Traffic Signals*, (Toronto: Queen's Printer for Ontario, 2012).



6 MMLOS Assessment

Intersection LOS is a recognized metric for categorizing the delay experienced by drivers at intersections. The term “Level of Service” denotes how well a traffic movement operates under given traffic demands, lane arrangements, and traffic controls. It converts average delay at intersections into a scale from A to F, where A indicates the least delay and F indicates the greatest delay. The metric is extensively used in transportation planning, but it is limited to the experience of car drivers.

Multi-modal Level of Service (MMLOS) extends this concept to incorporate the experience of modes beyond car drivers. It converts a variety of factors into a scale from A to F for each mode; A indicates the best experience for users of that mode, and F shows the worst experience. As the output is a *set* of indicators, it reveals where changes have different (or opposite) effects on each mode.

The Ontario Traffic Council (OTC) *MMLOS Guidelines*¹⁶ were published in February 2022 to provide a methodology to assess the performance of all travel modes. The guidelines identify nine general street types for analysis. **Table 6.1** outlines the street type classification assumed for the study area roadways.

TABLE 6.1: MMLOS STREET TYPE CLASSIFICATION

Roadway	Classification	MMLOS Applicable Classification
Palladium Way	Industrial Connector	Industrial Connector
Thomas Alton Boulevard	Neighbourhood Connector	Neighbourhood Connector

6.1 Level of Service Targets

Based on the street type, the MMLOS guidelines provide base LOS targets, ultimately identifying which modes should be prioritized. **Table 6.2** summarizes the base and adjusted LOS target (used in the analysis), as directed by the City of Burlington. The LOS for each user is based on the following criteria:

- ▶ Pedestrian LOS criteria includes facility width, buffer width and maximum distance between controlled crossings.

¹⁶ Dillion Consulting. *Multi-Modal Level of Service Guidelines*. (Toronto: Ontario Traffic Council, 2022)



- ▶ Cycling LOS criteria includes facility width, buffer width and conflicts with other modes (in-lane conflicts and crossing point conflicts).
- ▶ Transit LOS criteria includes the facility type, passenger amenities, and pedestrian level of service. Level of service for trucks is based on the width of the curb lane and the car level of service.
- ▶ Car LOS criteria relates to the mid-block v/c ratio and curb lane conflicts.

TABLE 6.2: MMLOS TARGETS

Street Classification	Walking	Cycling	Transit	Trucks	Cars
Industrial Connector	E	D	D	B	E
Adjusted Industrial Connector	D	C	D	D	E
Neighbourhood Connector	D	D	D	N/A	E
Adjusted Neighbourhood Connector	C	B	D	D	D

6.2 MMLOS Segment Analysis

Table 6.3 summarizes the MMLOS analysis for the corridor roadway. The existing and future conditions for the segments lengths are assumed to be the same and are considered in a single row.

Pedestrian MMLOS along Palladium Way is assessed to be in the D range, meeting the target grade. Along Thomas Alton Boulevard, it was assessed to be in the D range, below the target of LOS C. Pedestrian MMLOS can be improved by widening the pedestrian facility width or by adding additional controlled crossings to reduce the maximum distance between crossings. There are currently zero controlled crossing points between Appleby Line and Walkers Line as the lands are slowly being built out. There are several active transportation connections to the Alton Community that may be locations for pedestrian crossover should demand increase.

Cycling MMLOS along Palladium Way is assessed to be in the B range, meeting and exceeding the target grade. Along Thomas Alton Boulevard, it was assessed to be in the F range, below the target of



LOS B. Cycling MMLOS can be improved by increasing the bicycle facility and buffer widths. The City of Burlington *Cycling Master Plan's Proposed Network* does not identify any improvements along Thomas Alton Boulevard.¹⁷

Transit MMLOS along Palladium Way is assessed to be in the E range, below the target grade of LOS D. Along Thomas Alton Boulevard, it was assessed to be in the D range, meeting the target grade. Transit MMLOS can be increased by improving transit passenger amenities (for example, adding seating, shelters, or shade trees) and by improving pedestrian level of service. It is noted that transit does not currently use Palladium Way, thus the lack of transit amenities is expected.

Truck MMLOS along Palladium Way and Thomas Alton Boulevard is in the C range, meeting and exceeding the target grade.

Car MMLOS along Palladium Way is in the B range, meeting and exceeding the target grade. Along Thomas Alton Boulevard, it was assessed to be in the C range, also meeting and exceeding the target grade.

Appendix H contains the detailed MMLOS assessment.

TABLE 6.3: MMLOS SEGMENT ANALYSIS

Segment	Walking	Cycling	Transit	Trucks	Cars
Palladium Way	D	B	E	C	B
Thomas Alton Boulevard	D	F	D	C	C

¹⁷ City of Burlington, *Cycling Plan*, (Burlington: City of Burlington, 2018).



7 Conclusions and Recommendations

7.1 Conclusions

The main findings and conclusions of this study are as follows:

- ▶ **Existing Traffic Operations:** The study area intersections are operating at acceptable levels of service with all movements within capacity during the AM and PM peak hours.
- ▶ **Site Generated Traffic:** The subject site is forecast to generate approximately 119 and 165 new vehicle trips during the AM and PM peak hours, respectively.
- ▶ **2029 Background Traffic Operations:** Accounting for background growth and other area site traffic contributions, the study area intersections are forecast to continue to operate at acceptable level of service with all movements within capacity during the AM and PM peak hours.
- ▶ **2029 Total Traffic Operations:** With the addition of site generated traffic, the study area intersections are forecast to operate similarly to background conditions. One new critical movement is identified during the AM peak hour. At the Appleby Line and Thomas Alton Boulevard intersection, the eastbound right-turn movement is forecast to exceed the current available storage (40 m) by approximately 2 m. The queue can be contained by the existing width of the driving lane.
- ▶ **Remedial Measures:** Signals are not warranted at the Palladium Way and Lionel Court/Site Driveway 1 or Thomas Alton Boulevard and Valera Road/Site Driveway 3 intersections.
- ▶ **Transportation Demand Management:** The proposed development includes TDM measures such as bicycle parking to encourage cycling and pedestrian facilities to provide accessibility to and from development.
- ▶ **MMLOS Assessment:** The existing study area segments and intersections meet most of the level of service targets. Improved transit facilities, wider sidewalks, enhanced pedestrian measures, and protected cycling facilities should be explored to address the deficient modes.

7.2 Recommendations

Based on the findings of this study, it is recommended that:

- ▶ The City should explore reallocating street space along Thomas Alton Boulevard to enhance pedestrian and cycling facilities,



including wider sidewalks and protected cycling lanes, to meet MMLOS targets; and

- ▶ If transit service expanded to Palladium Way, the City should explore reallocating street space to provide transit passenger amenities such as shelters, seating, or shade trees, to meet MMLOS targets.



Appendix A

Pre-Study Consultation



From: [Scattolon, Walter](#)
To: [Drew Cobean](#)
Cc: [Scott Catton](#); smeeta.adiga@burlington.ca; [Krusto, Matt](#)
Subject: FW: (240651) 4883 Thomas Alton Boulevard, City of Burlington (TIS Scope of Work for 4883 & 4903 Thomas Alton Boulevard)
Date: November 7, 2024 11:59:12 AM
Attachments: [image001.png](#)
[image002.png](#)
[Conceptual Site Plan.pdf](#)

Hello Drew,

Halton Region responses to the TIS Scope of Work for **4883 & 4903 Thomas Alton Boulevard**, City of Burlington, have been [inserted](#) in the provided scope, in [light blue font](#).

Overall, the scope of work is [Acceptable](#).

Thank you for providing the Scope of Work for comment,

Walter Scattolon
Project Manager - Transportation Development Review
Development Services
Halton Region

PROPOSED TERMS OF REFERENCE

Study Area Intersections:

- Appleby Line & Palladium Way (signalized);
- Appleby Line & Existing Site Driveway (right-in/right-out – unsignalized);
- Appleby Line & Thomas Alton Boulevard (signalized);
- Palladium Way & Lionel Court / Existing Site Driveway (unsignalized); and
- Thomas Alton Boulevard & Valera Road / Existing Site Driveway (unsignalized).

Analysis Periods:

- Weekday AM peak hour; and
- Weekday PM peak hour.

Existing Data:

- TMCs to be collected by Paradigm; and
- Existing signal timings.

Traffic Data:

- [For all general inquiries regarding traffic data availability \(Signal Timing Plans, TMC's\) from Halton Region roads and intersections, please contact \[accesshalton@halton.ca\]\(mailto:accesshalton@halton.ca\) to receive the traffic data from **Traffic Operations & Safety**.](#)

Horizon Year:

- Existing Conditions; and
- Five years from the date of the study – Year 2029.

Capacity Analysis:

- Synchro 11, HCM 2000 analysis.

Background Traffic:

- Background traffic annual growth rate. 2% **Please confirm** - Acceptable @ 2%
- Background Developments
 - 4721 Palladium Way (Halton Islamic Association);
 - 3416 Appleby Line (Appleby 407 Limited Partnership);
 - 4853 Palladium Way (Emery Investments -1621158 Ontario Ltd);
 - 4853 Thomas Alton Boulevard (Adi Developments);
 - 3399 Appleby Line (Summit Industrial Income Operating LP); and
 - 4103 Palladium Way (Better Life Retirement Residence).
- Any additional developments identified by the City.

Trip Generation:

- ITE Trip Generation Data 11th Edition estimates for the AM and PM peak hours with appropriate land use codes based on assumed land uses and no modal split reductions.

Site Traffic Distribution:

- Existing Traffic Patterns

Remedial Measures:

- Left-turn lane warrants,
- Signal warrants,
- Optimized signal timings (remedial measure only).

Report:

- Report documenting the study methodologies, findings, conclusions, and recommendations.

General Comments:

TIS Report Requirements:

Please note, for the most up to date TIS Guidelines for Halton Region, these can now be found at the following updated web link:

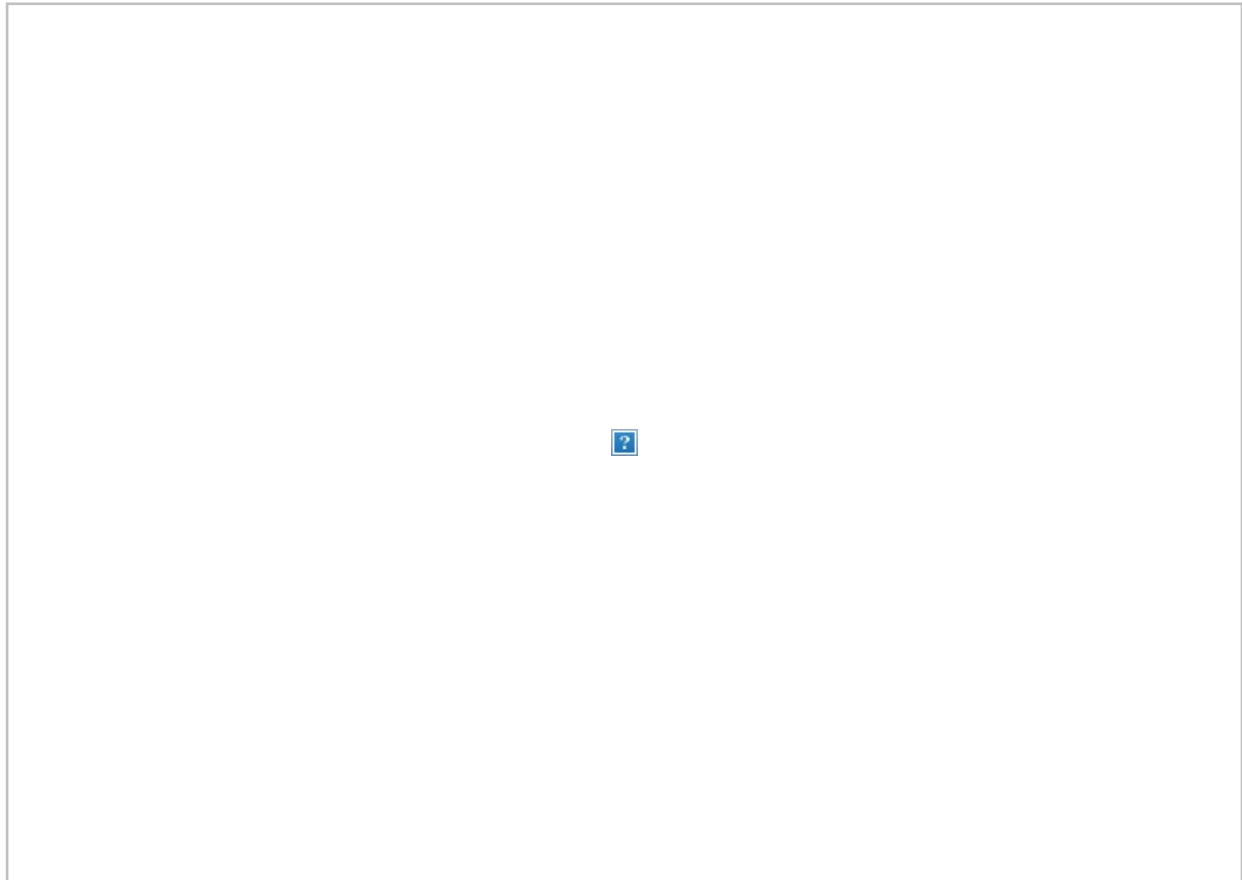
<https://www.halton.ca/Repository/Transportation-Impact-Study-Guidelines>

The TIS report shall include:

- Site Plan and Map,
- Size & Number of Development Phases,
- Existing Conditions (Study Area Intersections, Road Network, Pedestrian Routes, Cycling Routes, Transit Services),
- Existing Traffic Conditions (Site Operating Characteristics, Data Collection/Traffic Counts, Analysis Periods (5 years Ahead),
- Future Background Conditions (Horizon Years, Horizon Year Volumes)
- Background Traffic Demand (with TMC's < 2 years old),
- Background Traffic Demand Forecast (with acceptable growth rates)
- Site Generated Traffic (Transit Modal Split, Trip Generation/Distribution/Assignment)
- Future Total Traffic Demand,
- Capacity Analysis (by Intersection, with LOS, Avg. Delay, V/C ratios),
- Traffic Impacts (Tables – Total Traffic with/without Mitigation)

- Access Considerations – Existing, Proposed, Geometrics (turn lanes, sight lines),
- Recommendations - Identify required/recommended road improvements either as a result of the development impacts, or general non-development improvements.
- TDM recommendations (Transit, Pedestrian & Cycling Facilities Analysis)
- Conclusions

-END-



Walter Scattolon, BASc (Eng.), PMP
Project Manager I – Transportation Development Review
 Development Services
 Public Works
Halton Region
 905-825-6000, ext. 2687 | 1-866-442-5866

From: Drew Cobean <dcobean@ptsl.com>

Sent: Monday, November 4, 2024 1:17 PM

To: devapptransportationplanning@burlington.ca; Krusto, Matt <Matt.Krusto@halton.ca>

Cc: Scott Catton <scatton@ptsl.com>; smeeta.adiga@burlington.ca

Subject: (240651) 4883 Thomas Alton Boulevard, City of Burlington

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe. If you are unsure or need assistance please contact the IT Service Desk.

Greetings,

Paradigm has been retained to conduct a Transportation Impact Study for a proposed commercial development located at 4900 Palladium Way, 4883 & 4903 Thomas Alton Boulevard in the City of Burlington.

The site currently contains two existing commercial buildings and proposes a third, single storey building containing 13 non-residential units. 1,888 m² of gross floor area is proposed for restaurant, retail, and day care centre uses. Vehicle access is proposed by the site's existing driveways to Appleby Line (right-in/right-out), Palladium Way, and Thomas Alton Boulevard. Build-out and occupancy is TBD.

We'd like to prepare our report based on the following scope, subject to your comments:

PROPOSED TERMS OF REFERENCE

Study Area Intersections:

- Appleby Line & Palladium Way (signalized);
- Appleby Line & Existing Site Driveway (right-in/right-out – unsignalized);
- Appleby Line & Thomas Alton Boulevard (signalized);
- Palladium Way & Lionel Court / Existing Site Driveway (unsignalized); and
- Thomas Alton Boulevard & Valera Road / Existing Site Driveway (unsignalized).

Analysis Periods:

- Weekday AM peak hour; and
- Weekday PM peak hour.

Existing Data:

- TMCs to be collected by Paradigm; and
- Existing signal timings.

Horizon Year:

- Existing Conditions; and
- Five years from the date of the study – Year 2029.

Capacity Analysis:

- Synchro 11, HCM 2000 analysis.

Background Traffic:

- Background traffic annual growth rate. 2% **Please confirm**
- Background Developments
 - 4721 Palladium Way (Halton Islamic Association);
 - 3416 Appleby Line (Appleby 407 Limited Partnership);
 - 4853 Palladium Way (Emery Investments -1621158 Ontario Ltd);

- 4853 Thomas Alton Boulevard (Adi Developments);
- 3399 Appleby Line (Summit Industrial Income Operating LP); and
- 4103 Palladium Way (Better Life Retirement Residence).
- Any additional developments identified by the City.

Trip Generation:

- ITE Trip Generation Data 11th Edition estimates for the AM and PM peak hours with appropriate land use codes based on assumed land uses and no modal split reductions.

Site Traffic Distribution:

- Existing Traffic Patterns

Remedial Measures:

- Left-turn lane warrants,
- Signal warrants,
- Optimized signal timings (remedial measure only).

Report:

- Report documenting the study methodologies, findings, conclusions, and recommendations.

Drew Cobean

Transportation Consultant



Paradigm Transportation Solutions Limited

5A-150 Pinebush Road, Cambridge ON N1R 8J8

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From: [Adiga, Smeeta](#)
To: [Drew Cobean](#)
Cc: [Lucas, Sandra](#)
Subject: RE: 4900 Palladium Way and 4883 Thomas Alton Boulevard - TOR
Date: November 21, 2024 10:32:06 AM
Attachments: [image001.jpg](#)
[image002.png](#)

Hello Drew,

Transportation Planning have reviewed the Terms of Reference (TOR) for 4900 Palladium Way and 4883 Thomas Alton Boulevard. Please find the comments regarding the submission below, highlighted in blue.

As part of the TIS, an MMLOS analysis will also be required, as outlined below.

Please ensure that comments from the MTO and the Region are considered, if applicable.

Thanks,

Smeeta Adiga (she/her)

Transportation Planning Technologist
Transportation Services Department

P. 905 335 7600, ext 7691
smeeta.adiga@burlington.ca

426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6

City of Burlington | www.burlington.ca



Our working hours may be different. You are not obligated to reply outside of your typical working hours.

From: Drew Cobean <dcobean@ptsl.com>
Sent: Monday, November 4, 2024 1:17 PM
To: Mailbox, Transportation Planning <devapptransportationplanning@burlington.ca>; Krusto, Matt <Matt.Krusto@halton.ca>
Cc: Scott Catton <scatton@ptsl.com>; Adiga, Smeeta <Smeeta.Adiga@burlington.ca>
Subject: (240651) 4883 Thomas Alton Boulevard, City of Burlington

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Greetings,

Paradigm has been retained to conduct a Transportation Impact Study for a proposed

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The site currently contains two existing commercial buildings and proposes a third, single storey building containing 13 non-residential units. 1,888 m² of gross floor area is proposed for restaurant, retail, and day care centre uses. Vehicle access is proposed by the site's existing driveways to Appleby Line (right-in/right-out), Palladium Way, and Thomas Alton Boulevard. Build-out and occupancy is TBD.

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PROPOSED TERMS OF REFERENCE

Study Area Intersections:

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- Appleby Line & Existing Site Driveway (right-in/right-out – unsignalized);
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- Palladium Way & Lionel Court / Existing Site Driveway (unsignalized); and
- Thomas Alton Boulevard & Valera Road / Existing Site Driveway (unsignalized).

Analysis Periods:

- Weekday AM peak hour; and
- Weekday PM peak hour.

Existing Data:

- TMCs to be collected by Paradigm; and
- Existing signal timings.

Please contact the Traffic Operations Supervisor, Josip Kafadar, at Josip.kafadar@burlington.ca for any recent traffic data on City roads. If data is not available from the City, it is recommended that a traffic consultant conduct an eight-hours weekday count at the relevant intersections.

Horizon Year:

- Existing Conditions; and
- Five years from the date of the study – Year 2029.

Capacity Analysis:

- Synchro 11, HCM 2000 analysis.

Background Traffic:

- Background traffic annual growth rate. 2% **Please confirm** – [Region of Halton to confirm](#)
- Background Developments

- 4721 Palladium Way (Halton Islamic Association);
- 3416 Appleby Line (Appleby 407 Limited Partnership);
- 4853 Palladium Way (Emery Investments -1621158 Ontario Ltd);
- 4853 Thomas Alton Boulevard (Adi Developments);
- 3399 Appleby Line (Summit Industrial Income Operating LP); and
- 4103 Palladium Way (Better Life Retirement Residence).
- Any additional developments identified by the City.

Please check website: <https://www.burlington.ca/en/inc/current-development-projects.aspx>

Trip Generation:

- ITE Trip Generation Data 11th Edition estimates for the AM and PM peak hours with appropriate land use codes based on assumed land uses and no modal split reductions.

Site Traffic Distribution:

- Existing Traffic Patterns

Intersection Analysis:

- A detailed evaluation of intersections in the study area, focusing on parameters such as queue lengths, v/c ratios, level of service, and delay times to predict how the development will impact intersection performance. The queuing assessment, including levels of service and queuing distances, is to be based on micro-simulations using Sim-Traffic, or similar software analysis.

Remedial Measures:

- Left-turn lane warrants,
- Signal warrants,
- Optimized signal timings (remedial measure only).

MMOLS Analysis:

- Since the location is within an Enhanced Pedestrian Realm, a Multimodal Level of service (MMLOS) analysis is required. The analysis must evaluate the benefits of the “Complete Streets” design option on Palladium Way and Thomas Alton Boulevard. Additionally, the MMLOS analysis shall identify areas where the transportation system needs improvement, prioritize investments in transportation infrastructure and inform transportation planning and policy decisions.

LOS Target

Street Name	Street Type	LOS Per Mode Type				
		Pedestrian	Bikes	Transit	Trucks	Cars

Palladium Way	Industrial Connector	E	D	D	B	E
	Adjusted Targets	D	C	D	D	E
Thomas Alton Blvd	Neighbourhood Connector	D	B	D	N/A	E
	Adjusted Targets	C	B	D	D	D

TDM recommendations:

- Transit, Pedestrian and Cycling Facilities Analysis

Report:

- Report documenting the study methodologies, findings, conclusions, and recommendations.

Drew Cobean

Transportation Consultant



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Appendix B

Traffic Data



Palladium Way @ Lionel Crt

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 8:00:00

To: 9:00:00

Municipality: Burlington

Site #: 000000001

Intersection: Palladium Way & Lionel Crt

TFR File #: 1

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Non-Signalized Intersection **

Major Road: Palladium Way runs W/E

North Leg Total: 2

North Entering: 1

North Peds: 0

Peds Cross: $\nlessgtr$

Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	1	0	0	1
Totals	1	0	0	



Heavys 0

Trucks 0

Cars 1

Totals 1

East Leg Total: 193

East Entering: 85

East Peds: 0

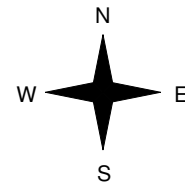
Peds Cross: $\nlessgtr$

Heavys	Trucks	Cars	Totals
14	0	122	136



Palladium Way

Heavys	Trucks	Cars	Totals
0	0	1	1
10	0	95	105
0	0	56	56
10	0	152	



Lionel Crt

Cars	Trucks	Heavys	Totals
0	0	0	0
64	0	14	78
7	0	0	7
71	0	14	

Palladium Way



Cars	Trucks	Heavys	Totals
98	0	10	108

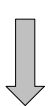
Peds Cross: $\nlessgtr$

West Peds: 1

West Entering: 162

West Leg Total: 298

Cars	63	Cars	57	0	3	60
Trucks	0	Trucks	0	0	0	0
Heavys	0	Heavys	0	0	0	0
Totals	63	Totals	57	0	3	



Driveway



Peds Cross: $\nlessgtr$

South Peds: 3

South Entering: 60

South Leg Total: 123

Comments

Palladium Way @ Lionel Crt

Mid-day Peak Diagram

Specified Period

From: 11:00:00

To: 14:00:00

One Hour Peak

From: 12:00:00

To: 13:00:00

Municipality: Burlington

Site #: 000000001

Intersection: Palladium Way & Lionel Crt

TFR File #: 1

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Palladium Way runs W/E

North Leg Total: 29

North Entering: 15

North Peds: 0

Peds Cross: $\nlessgtr$

Heavys	0	0	0	0
Trucks	0	1	2	3
Cars	0	0	12	12
Totals	0	1	14	

Heavys	0
Trucks	1
Cars	13
Totals	14

East Leg Total: 220

East Entering: 115

East Peds: 0

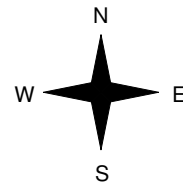
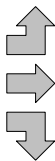
Peds Cross: $\nlessgtr$

Heavys	Trucks	Cars	Totals
18	2	75	95



Palladium Way

Heavys	Trucks	Cars	Totals
0	0	0	0
18	3	61	82
1	1	6	8
19	4	67	



Driveway



Cars	Trucks	Heavys	Totals
12	1	0	13
69	1	17	87
11	1	3	15
92	3	20	

Palladium Way



Cars	Trucks	Heavys	Totals
82	5	18	105

Peds Cross: $\nlessgtr$

West Peds: 14

West Entering: 90

West Leg Total: 185

Cars	17
Trucks	3
Heavys	4
Totals	24



Cars	6	1	9	16
Trucks	1	0	0	1
Heavys	1	0	0	1
Totals	8	1	9	

Peds Cross: $\nlessgtr$

South Peds: 11

South Entering: 18

South Leg Total: 42

Comments

Palladium Way @ Lionel Crt

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 18:00:00

One Hour Peak

From: 15:00:00

To: 16:00:00

Municipality: Burlington

Site #: 000000001

Intersection: Palladium Way & Lionel Crt

TFR File #: 1

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Non-Signalized Intersection **

Major Road: Palladium Way runs W/E

North Leg Total: 27

North Entering: 23

North Peds: 1

Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
0	0	0	0
0	0	0	0
2	1	20	23
2	1	20	23



Heavys 0

Trucks 0

Cars 4

Totals 4

East Leg Total: 210

East Entering: 99

East Peds: 0

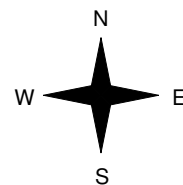
Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
9	1	101	111



Palladium Way

Heavys	Trucks	Cars	Totals
0	0	1	1
11	2	67	80
1	0	43	44
12	2	111	111



Driveway

Cars	Trucks	Heavys	Totals
3	0	0	3
80	1	9	90
6	0	0	6
89	1	9	99



Palladium Way



Cars	Trucks	Heavys	Totals
97	2	12	111

Peds Cross: $\times$

West Peds: 2

West Entering: 125

West Leg Total: 236

Cars	Trucks	Heavys	Totals
50	0	1	51
19	0	0	19
0	0	0	0
0	0	1	1
19	0	11	30



Peds Cross: $\times$

South Peds: 2

South Entering: 30

South Leg Total: 81

Comments

Palladium Way @ Lionel Crt

Total Count Diagram

Municipality: Burlington
Site #: 000000001
Intersection: Palladium Way & Lionel Crt
TFR File #: 1
Count date: 13-Nov-2024

Weather conditions:
Clear/Dry
Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Palladium Way runs W/E

North Leg Total: 91
North Entering: 55
North Peds: 3
Peds Cross: $\nless$

Heavys	0	0	2	2
Trucks	0	1	3	4
Cars	6	1	42	49
Totals	6	2	47	

Heavys	4
Trucks	2
Cars	30
Totals	36

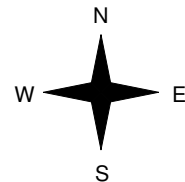
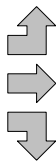
East Leg Total: 1426
East Entering: 734
East Peds: 0
Peds Cross: $\nless$

Heavys	Trucks	Cars	Totals
85	8	713	806



Palladium Way

Heavys	0	Trucks	0	Cars	3	Totals	3
82	8	503	593				
2	4	163	169				
84	12	669					



Driveway

Cars	Trucks	Heavys	Totals
26	2	4	32
559	7	83	649
49	1	3	53
634	10	90	

Palladium Way



Cars	Trucks	Heavys	Totals
595	12	85	692

Peds Cross: $\nless$
West Peds: 21
West Entering: 765
West Leg Total: 1571

Cars	213	Cars	148	1	50	199
Trucks	6	Trucks	1	0	1	2
Heavys	5	Heavys	2	0	1	3
Totals	224	Totals	151	1	52	



Peds Cross: $\nless$
South Peds: 26
South Entering: 204
South Leg Total: 428

Comments

Appleby Line @ Palladium Way

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 7:45:00

To: 8:45:00

Municipality: Burlington

Site #: 0000000003

Intersection: Appleby Line & Palladium Way

TFR File #: 3

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Signalized Intersection **

Major Road: Appleby Line runs N/S

North Leg Total: 1454

North Entering: 708

North Peds: 0

Peds Cross: $\times$

	Heavys	Trucks	Cars	Totals
North	2	13	0	15
East	0	6	0	6
South	32	641	14	687
Totals	34	660	14	



Heavys 23

Trucks 8

Cars 715

Totals 746

East Leg Total: 86

East Entering: 49

East Peds: 0

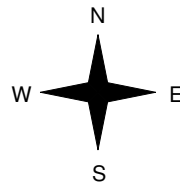
Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
10	0	65	75



Palladium Way

Heavys	Trucks	Cars	Totals
0	0	55	55
1	0	7	8
8	1	28	37
9	1	90	



Appleby Line

Cars	Trucks	Heavys	Totals
11	0	0	11
2	0	0	2
35	0	1	36
48	0	1	

Harrison Crt



Cars	Trucks	Heavys	Totals
35	0	2	37

Peds Cross: $\times$

West Peds: 0

West Entering: 100

West Leg Total: 175

	Cars	Trucks	Heavys	Totals
West	704	7	22	733
North	31	0	8	39
East	649	8	23	680
South	14	0	1	15
Totals	694	8	32	



Peds Cross: $\times$

South Peds: 1

South Entering: 734

South Leg Total: 1467

Comments

Appleby Line @ Palladium Way

Mid-day Peak Diagram

Specified Period

From: 11:00:00

To: 14:00:00

One Hour Peak

From: 12:00:00

To: 13:00:00

Municipality: Burlington

Site #: 0000000003

Intersection: Appleby Line & Palladium Way

TFR File #: 3

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Signalized Intersection **

Major Road: Appleby Line runs N/S

North Leg Total: 744

North Entering: 393

North Peds: 0

Peds Cross: $\times$

Heavys	3	13	2	18
Trucks	1	6	0	7
Cars	22	323	23	368
Totals	26	342	25	



Heavys	35
Trucks	5
Cars	311
Totals	351

East Leg Total: 268

East Entering: 176

East Peds: 0

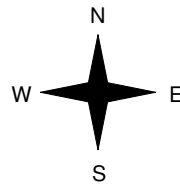
Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
21	1	92	114



Palladium Way

Heavys	Trucks	Cars	Totals
3	0	15	18
0	0	24	24
16	4	50	70
19	4	89	



Appleby Line

Appleby Line

Cars	Trucks	Heavys	Totals
10	0	2	12
25	0	0	25
138	0	1	139
173	0	3	

Harrison Crt



Cars	Trucks	Heavys	Totals
87	1	4	92

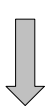
Peds Cross: $\times$

West Peds: 1

West Entering: 112

West Leg Total: 226

Cars	511	Cars	45	286	40	371
Trucks	10	Trucks	0	5	1	6
Heavys	30	Heavys	18	30	2	50
Totals	551	Totals	63	321	43	



Peds Cross: $\times$

South Peds: 10

South Entering: 427

South Leg Total: 978

Comments

Appleby Line @ Palladium Way

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 18:00:00

One Hour Peak

From: 16:30:00

To: 17:30:00

Municipality: Burlington

Site #: 0000000003

Intersection: Appleby Line & Palladium Way

TFR File #: 3

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Signalized Intersection **

Major Road: Appleby Line runs N/S

North Leg Total: 1765

North Entering: 774

North Peds: 0

Peds Cross: $\nlessgtr$

Heavys	1	12	0	13
Trucks	1	7	0	8
Cars	56	666	31	753
Totals	58	685	31	

Heavys 21

Trucks 6

Cars 964

Totals 991

East Leg Total: 205

East Entering: 131

East Peds: 0

Peds Cross: $\nlessgtr$

Heavys	Trucks	Cars	Totals
1	1	107	109

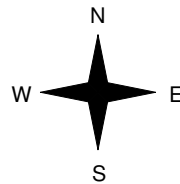


Palladium Way

Heavys	Trucks	Cars	Totals
1	1	36	38
0	0	9	9
0	0	39	39
1	1	84	



Appleby Line



Cars	Trucks	Heavys	Totals
21	0	0	21
8	0	0	8
101	0	1	102
130	0	1	

Harrison Crt



Cars	Trucks	Heavys	Totals
72	0	2	74

Peds Cross: $\nlessgtr$

West Peds: 0

West Entering: 86

West Leg Total: 195

Cars	806	Cars	43	907	32	982
Trucks	7	Trucks	0	5	0	5
Heavys	13	Heavys	0	20	2	22
Totals	826	Totals	43	932	34	



Peds Cross: $\nlessgtr$

South Peds: 4

South Entering: 1009

South Leg Total: 1835

Comments

Appleby Line @ Palladium Way

Total Count Diagram

Municipality: Burlington
Site #: 0000000003
Intersection: Appleby Line & Palladium Way
TFR File #: 3
Count date: 13-Nov-2024

Weather conditions:
Clear/Dry
Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total: 9432
North Entering: 4429
North Peds: 1
Peds Cross: ∇

Heavys	15	102	7	124
Trucks	4	67	1	72
Cars	283	3808	142	4233
Totals	302	3977	150	

Heavys	233
Trucks	50
Cars	4720
Totals	5003

East Leg Total: 1345
East Entering: 877
East Peds: 1
Peds Cross: ∇

Heavys	Trucks	Cars	Totals
92	6	637	735

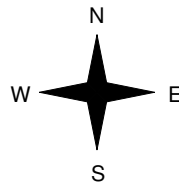


Palladium Way

Heavys	Trucks	Cars	Totals
27	2	270	299
1	1	80	82
57	10	264	331
85	13	614	



Appleby Line



Cars	Trucks	Heavys	Totals
99	0	6	105
85	0	0	85
673	8	6	687
857	8	12	

Harrison Crt



Cars	Trucks	Heavys	Totals
449	4	15	468

Peds Cross: ∇
West Peds: 2
West Entering: 712
West Leg Total: 1447

Cars	4745
Trucks	85
Heavys	165
Totals	4995



Cars	269	4351	227	4847
Trucks	2	48	2	52
Heavys	77	200	7	284
Totals	348	4599	236	

Peds Cross: ∇
South Peds: 28
South Entering: 5183
South Leg Total: 10178

Comments

4900 Appleby Line

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 7:45:00

To: 8:45:00

Municipality: Burlington

Site #: 0000000004

Intersection: Appleby Line & Driveway

TFR File #: 4

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Non-Signalized Intersection **

Major Road: Appleby Line runs N/S

North Leg Total: 1485

North Entering: 734

North Peds: 0

Peds Cross: 

Heavys 0 26

Trucks 0 3

Cars 4 701

Totals 4 730

26

3

705

Heavys 30

Trucks 9

Cars 712

Totals 751

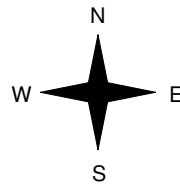
Heavys Trucks Cars Totals
0 0 4 4



Driveway

Heavys Trucks Cars Totals
0 0 0 0

0 0 1 1
0 0 1



Appleby Line

Peds Cross: 

West Peds: 1

West Entering: 1

West Leg Total: 5

Cars 702

Trucks 3

Heavys 26

Totals 731



Cars 0 712

Trucks 0 9

Heavys 0 30

Totals 0 751

712

9

30

Peds Cross: 

South Peds: 0

South Entering: 751

South Leg Total: 1482

Comments

4900 Appleby Line

Mid-day Peak Diagram

Specified Period

From: 11:00:00

To: 14:00:00

One Hour Peak

From: 12:45:00

To: 13:45:00

Municipality: Burlington

Site #: 0000000004

Intersection: Appleby Line & Driveway

TFR File #: 4

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Non-Signalized Intersection **

Major Road: Appleby Line runs N/S

North Leg Total: 992

North Entering: 496

North Peds: 0

Peds Cross: 

Heavys 0 25

Trucks 0 4

Cars 3 464

Totals 3 493

25

4

467

Heavys 45

Trucks 11

Cars 440

Totals 496

Heavys Trucks Cars Totals
0 0 3 3



Driveway

Heavys Trucks Cars Totals
0 0 0 0

0 0 5 5

0 0 5

Peds Cross: 

West Peds: 0

West Entering: 5

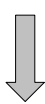
West Leg Total: 8

Cars 469

Trucks 4

Heavys 25

Totals 498



Appleby Line

Cars 0 440

Trucks 0 11

Heavys 0 45

Totals 0 496

440

11

45

Peds Cross: 

South Peds: 1

South Entering: 496

South Leg Total: 994

Comments

4900 Appleby Line

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 18:00:00

One Hour Peak

From: 16:30:00

To: 17:30:00

Municipality: Burlington

Site #: 0000000004

Intersection: Appleby Line & Driveway

TFR File #: 4

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Non-Signalized Intersection **

Major Road: Appleby Line runs N/S

North Leg Total: 1819

North Entering: 792

North Peds: 0

Peds Cross: 

Heavys 0 13

Trucks 0 6

Cars 2 771

Totals 2 790

13

6

773



Heavys 23

Trucks 6

Cars 998

Totals 1027

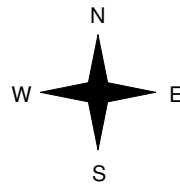
Heavys Trucks Cars Totals
0 0 2 2



Driveway

Heavys Trucks Cars Totals
0 0 0 0

0 0 12 12
0 0 12



Appleby Line



Peds Cross: 

West Peds: 1

West Entering: 12

West Leg Total: 14

Cars 783

Trucks 6

Heavys 13

Totals 802



Cars 0 998

Trucks 0 6

Heavys 0 23

Totals 0 1027

998

6

23

Peds Cross: 

South Peds: 0

South Entering: 1027

South Leg Total: 1829

Comments

4900 Appleby Line

Total Count Diagram

Municipality: Burlington
Site #: 0000000004
Intersection: Appleby Line & Driveway
TFR File #: 4
Count date: 13-Nov-2024

Weather conditions:
Clear/Dry
Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total: 10177
North Entering: 4914
North Peds: 0
Peds Cross: 

Heavys	0	169
Trucks	0	57
Cars	19	4669
Totals	19	4895

169
57
4688



Heavys	272
Trucks	62
Cars	4929
Totals	5263

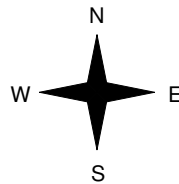
Heavys	Trucks	Cars	Totals
0	0	19	19



Appleby Line



Driveway



Heavys	Trucks	Cars	Totals
0	0	0	0
0	0	50	50
0	0	50	



Appleby Line



Peds Cross: 
West Peds: 19
West Entering: 50
West Leg Total: 69

Cars	4719
Trucks	57
Heavys	169
Totals	4945



Cars	0	4929	4929
Trucks	0	62	62
Heavys	0	272	272
Totals	0	5263	

Peds Cross: 
South Peds: 2
South Entering: 5263
South Leg Total: 10208

Comments

Thomas Alton Blvd @ Valera Rd

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 8:00:00

To: 9:00:00

Municipality: Burlington

Site #: 0000000002

Intersection: Thomas Alton Blvd & Valera Rd

TFR File #: 2

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Thomas Alton Blvd runs W/E

North Leg Total: 137

North Entering: 49

North Peds: 9

Peds Cross: $\times$

Heavys	1	0	0	1
Trucks	0	0	0	0
Cars	39	7	2	48
Totals	40	7	2	

Heavys 0

Trucks 0

Cars 88

Totals 88

East Leg Total: 658

East Entering: 209

East Peds: 1

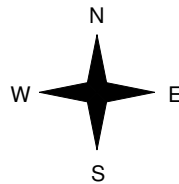
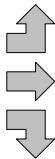
Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
14	2	178	194



Thomas Alton Blvd

Heavys	Trucks	Cars	Totals
0	0	43	43
7	0	387	394
1	0	16	17
8	0	446	



Valera Rd



Cars	Trucks	Heavys	Totals
26	0	0	26
125	2	12	139
44	0	0	44
195	2	12	

Thomas Alton Blvd



Cars	Trucks	Heavys	Totals
441	0	8	449

Peds Cross: $\times$

West Peds: 0

West Entering: 454

West Leg Total: 648

Cars	67	Cars	14	19	52	85
Trucks	0	Trucks	0	0	0	0
Heavys	1	Heavys	1	0	1	2
Totals	68	Totals	15	19	53	



Peds Cross: $\times$

South Peds: 18

South Entering: 87

South Leg Total: 155

Comments

Thomas Alton Blvd @ Valera Rd

Mid-day Peak Diagram

Specified Period

From: 11:00:00

To: 14:00:00

One Hour Peak

From: 12:00:00

To: 13:00:00

Municipality: Burlington

Site #: 0000000002

Intersection: Thomas Alton Blvd & Valera Rd

TFR File #: 2

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Thomas Alton Blvd runs W/E

North Leg Total: 66

North Entering: 37

North Peds: 7

Peds Cross: ∇

Heavys	3	0	2	5
Trucks	4	0	0	4
Cars	12	3	13	28
Totals	19	3	15	

Heavys 2

Trucks 2

Cars 25

Totals 29

East Leg Total: 474

East Entering: 245

East Peds: 1

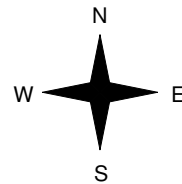
Peds Cross: ∇

Heavys	Trucks	Cars	Totals
7	5	199	211



Thomas Alton Blvd

Heavys	Trucks	Cars	Totals
0	1	8	9
3	2	177	182
0	1	5	6
3	4	190	



Valera Rd



Cars	Trucks	Heavys	Totals
16	1	2	19
185	1	4	190
36	0	0	36
237	2	6	

Thomas Alton Blvd



Cars	Trucks	Heavys	Totals
222	2	5	229

Peds Cross: ∇

West Peds: 0

West Entering: 197

West Leg Total: 408

Cars	44
Trucks	1
Heavys	0
Totals	45



Cars	2	1	32	35
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	2	1	32	

Peds Cross: ∇

South Peds: 5

South Entering: 35

South Leg Total: 80

Comments

Thomas Alton Blvd @ Valera Rd

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 18:00:00

One Hour Peak

From: 17:00:00

To: 18:00:00

Municipality: Burlington

Site #: 0000000002

Intersection: Thomas Alton Blvd & Valera Rd

TFR File #: 2

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Thomas Alton Blvd runs W/E

North Leg Total: 55

North Entering: 27

North Peds: 4

Peds Cross: $\times$

Heavys	0	0	0	0
Trucks	1	0	0	1
Cars	14	7	5	26
Totals	15	7	5	

Heavys	0
Trucks	0
Cars	28
Totals	28

East Leg Total: 835

East Entering: 510

East Peds: 0

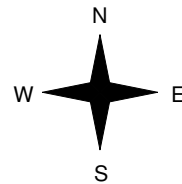
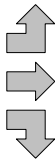
Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
3	1	392	396



Thomas Alton Blvd

Heavys	Trucks	Cars	Totals
0	0	8	8
3	0	268	271
0	0	13	13
3	0	289	



Valera Rd

Cars	Trucks	Heavys	Totals
9	0	0	9
374	0	3	377
124	0	0	124
507	0	3	

Thomas Alton Blvd



Cars	Trucks	Heavys	Totals
322	0	3	325

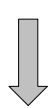
Peds Cross: $\times$

West Peds: 0

West Entering: 292

West Leg Total: 688

Cars	144
Trucks	0
Heavys	0
Totals	144



Cars	4	11	49	64
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	4	11	49	

Peds Cross: $\times$

South Peds: 9

South Entering: 64

South Leg Total: 208

Comments

Thomas Alton Blvd @ Valera Rd

Total Count Diagram

Municipality: Burlington

Site #: 0000000002

Intersection: Thomas Alton Blvd & Valera Rd

TFR File #: 2

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Thomas Alton Blvd runs W/E

North Leg Total: 537

North Entering: 268

North Peds: 34

Peds Cross: $\nlessgtr$

Heavys	4	0	3	7
Trucks	7	1	1	9
Cars	144	47	61	252
Totals	155	48	65	

Heavys	4
Trucks	3
Cars	262
Totals	269

East Leg Total: 4616

East Entering: 2230

East Peds: 4

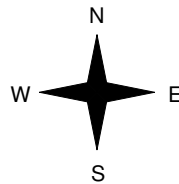
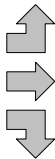
Peds Cross: $\nlessgtr$

Heavys	Trucks	Cars	Totals
48	12	1755	1815



Thomas Alton Blvd

Heavys	Trucks	Cars	Totals
1	1	98	100
42	5	1912	1959
1	2	84	87
44	8	2094	



Valera Rd



Cars	Trucks	Heavys	Totals
103	2	3	108
1568	4	42	1614
502	4	2	508
2173	10	47	

Thomas Alton Blvd



Cars	Trucks	Heavys	Totals
2330	8	48	2386

Peds Cross: $\nlessgtr$

West Peds: 3

West Entering: 2146

West Leg Total: 3961

Cars	633	Cars	43	61	357	461
Trucks	7	Trucks	1	0	2	3
Heavys	3	Heavys	2	0	3	5
Totals	643	Totals	46	61	362	



Peds Cross: $\nlessgtr$

South Peds: 75

South Entering: 469

South Leg Total: 1112

Comments

Appleby Line @ Thomas Alton Blvd

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 8:00:00

To: 9:00:00

Municipality: Burlington

Site #: 0000000005

Intersection: Appleby Line & Thomas Alton Blvd

TFR File #: 5

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Signalized Intersection **

Major Road: Appleby Line runs N/S

North Leg Total: 1494

North Entering: 742

North Peds: 0

Peds Cross: $\nlessgtr$

	Heavys	Trucks	Cars	Totals
North	3	23	0	26
South	0	5	0	5
East	33	678	0	711
Totals	36	706	0	



Heavys 42

Trucks 8

Cars 702

Totals 752

East Leg Total: 0

East Entering: 0

East Peds: 0

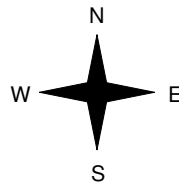
Peds Cross: $\nlessgtr$

Heavys	Trucks	Cars	Totals
13	1	190	204



Thomas Alton Blvd

Heavys	Trucks	Cars	Totals
0	1	128	129
0	0	0	0
3	0	311	314
3	1	439	



Appleby Line



Cars	Trucks	Heavys	Totals
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	

(Road Closed)



Cars	Trucks	Heavys	Totals
0	0	0	0

Peds Cross: $\nlessgtr$

West Peds: 2

West Entering: 443

West Leg Total: 647

	Cars	Trucks	Heavys	Totals
West	989	5	26	1020
East	157	1	10	168
South	574	7	42	623
Totals	1646	13	78	



Peds Cross: $\nlessgtr$

South Peds: 1

South Entering: 791

South Leg Total: 1811

Comments

Appleby Line @ Thomas Alton Blvd

Mid-day Peak Diagram

Specified Period

From: 11:00:00

To: 14:00:00

One Hour Peak

From: 12:00:00

To: 13:00:00

Municipality: Burlington

Site #: 0000000005

Intersection: Appleby Line & Thomas Alton Blvd

TFR File #: 5

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Signalized Intersection **

Major Road: Appleby Line runs N/S

North Leg Total: 1094

North Entering: 574

North Peds: 0

Peds Cross: $\times$

Heavys	0	28	0	28
Trucks	0	8	0	8
Cars	41	497	0	538
Totals	41	533	0	



Heavys 45

Trucks 11

Cars 464

Totals 520

East Leg Total: 0

East Entering: 0

East Peds: 0

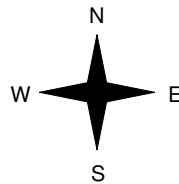
Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
3	4	233	240



Thomas Alton Blvd

Heavys	Trucks	Cars	Totals
2	1	47	50
0	0	0	0
2	2	178	182
4	3	225	



Appleby Line

Appleby Line

Cars	Trucks	Heavys	Totals
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	

(Road Closed)



Cars	Trucks	Heavys	Totals
0	0	0	0

Peds Cross: $\times$

West Peds: 5

West Entering: 232

West Leg Total: 472

Cars	675	Cars	192	417	0	609
Trucks	10	Trucks	4	10	0	14
Heavys	30	Heavys	3	43	0	46
Totals	715	Totals	199	470	0	



Peds Cross: $\times$

South Peds: 9

South Entering: 669

South Leg Total: 1384

Comments

Appleby Line @ Thomas Alton Blvd

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 18:00:00

One Hour Peak

From: 16:30:00

To: 17:30:00

Municipality: Burlington

Site #: 0000000005

Intersection: Appleby Line & Thomas Alton Blvd

TFR File #: 5

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Signalized Intersection **

Major Road: Appleby Line runs N/S

North Leg Total: 1928

North Entering: 816

North Peds: 1

Peds Cross: $\times$

Heavys	1	14	0	15
Trucks	0	3	0	3
Cars	102	696	0	798
Totals	103	713	0	

Heavys	21
Trucks	8
Cars	1083
Totals	1112

East Leg Total: 0

East Entering: 0

East Peds: 0

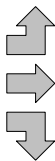
Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
6	1	468	475

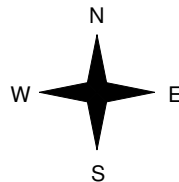


Thomas Alton Blvd

Heavys	Trucks	Cars	Totals
0	1	68	69
0	0	0	0
3	0	250	253
3	1	318	



Appleby Line



Cars	Trucks	Heavys	Totals
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	

(Road Closed)



Cars	Trucks	Heavys	Totals
0	0	0	0

Peds Cross: $\times$

West Peds: 2

West Entering: 322

West Leg Total: 797

Cars	946	Cars	366	1015	0	1381
Trucks	3	Trucks	1	7	0	8
Heavys	17	Heavys	5	21	0	26
Totals	966	Totals	372	1043	0	



Peds Cross: $\times$

South Peds: 5

South Entering: 1415

South Leg Total: 2381

Comments

Appleby Line @ Thomas Alton Blvd

Total Count Diagram

Municipality: Burlington

Site #: 0000000005

Intersection: Appleby Line & Thomas Alton Blvd

TFR File #: 5

Count date: 13-Nov-2024

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total: 10992

North Entering: 5167

North Peds: 8

Peds Cross: $\nlessgtr$

Heavys	6	174	0	180
Trucks	4	52	0	56
Cars	404	4527	0	4931
Totals	414	4753	0	

Heavys 271

Trucks 70

Cars 5484

Totals 5825

East Leg Total: 0

East Entering: 0

East Peds: 0

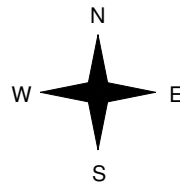
Peds Cross: $\nlessgtr$

Heavys	Trucks	Cars	Totals
38	22	2103	2163



Thomas Alton Blvd

Heavys	Trucks	Cars	Totals
5	5	532	542
0	0	0	0
25	7	1809	1841
30	12	2341	



Appleby Line

Appleby Line

Cars	Trucks	Heavys	Totals
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	

(Road Closed)



Cars	Trucks	Heavys	Totals
0	0	0	0

Peds Cross: $\nlessgtr$

West Peds: 33

West Entering: 2383

West Leg Total: 4546

Cars	6336
Trucks	59
Heavys	199
Totals	6594



Cars	1699	4952	0	6651
Trucks	18	65	0	83
Heavys	32	266	0	298
Totals	1749	5283	0	

Peds Cross: $\nlessgtr$

South Peds: 30

South Entering: 7032

South Leg Total: 13626

Comments

Intersection Name: Appleby Ln @ UMR		TS ID: 795	Line No: 9	Model: ACS/3	IP address: 172.22.143.2	Controller Make: Econolite																																																																																																																			
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3	2017	2	3	Amber and All red Changed as per OTM12																																																																																																																					
PHASE DESCRIPTION																																																																																																																									
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Ph3				Ph7																																																																																																																					
Ph4	EB - Palladium Way			Ph8	WB - Harrison Cres																																																																																																																				
CONFIGURATION (PHASE SEQ): PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2																																																																																																																									
Phase:	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>																																																																																																																	
Phase in Use		X		X	X	X		X																																																																																																																	
Exclusive PED																																																																																																																									
CONTROLLER TIMING DATA - VEHICLE TIMING *- 2 - 1																																																																																																																									
Timing Plan: 1 Minimum Green Walk Ped. Clearance Pedestrian Carry Over Vehicle Extension MAX 1 MAX 2 Yellow Change Red Clearance Phase Minimum: <table border="1"> <thead> <tr> <th colspan="8">Phase:</th> </tr> <tr> <th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th></tr> </thead> <tbody> <tr> <td></td><td>8</td><td></td><td>8</td><td>7</td><td>8</td><td></td><td>8</td></tr> <tr> <td></td><td>7</td><td></td><td>7</td><td></td><td>7</td><td></td><td>7</td></tr> <tr> <td></td><td>19</td><td></td><td>27</td><td></td><td>19</td><td></td><td>27</td></tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td></td><td>3</td><td></td><td>3</td><td>3</td><td>3</td><td></td><td>3</td></tr> <tr> <td></td><td>45</td><td></td><td>30</td><td>15</td><td>45</td><td></td><td>30</td></tr> <tr> <td></td><td>45</td><td></td><td>30</td><td>15</td><td>45</td><td></td><td>30</td></tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td></td><td>3.7</td><td></td><td>3.3</td><td>3</td><td>3.7</td><td></td><td>3.3</td></tr> <tr> <td></td><td>2.7</td><td></td><td>3.8</td><td>1</td><td>2.7</td><td></td><td>3.8</td></tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td></td><td>1</td><td>33.4</td><td>1</td><td>42.1</td><td>5</td><td>33.4</td><td>1</td><td>42.1</td></tr> </tbody> </table>									Phase:								1	2	3	4	5	6	7	8		8		8	7	8		8		7		7		7		7		19		27		19		27										3		3	3	3		3		45		30	15	45		30		45		30	15	45		30										3.7		3.3	3	3.7		3.3		2.7		3.8	1	2.7		3.8										1	33.4	1	42.1	5	33.4	1	42.1
Phase:																																																																																																																									
1	2	3	4	5	6	7	8																																																																																																																		
	8		8	7	8		8																																																																																																																		
	7		7		7		7																																																																																																																		
	19		27		19		27																																																																																																																		
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	2.7		3.8	1	2.7		3.8																																																																																																																		
	1	33.4	1	42.1	5	33.4	1	42.1																																																																																																																	
PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS *- 2 - 8																																																																																																																									
Phase:	1	2	3	4	5	6	7	8																																																																																																																	
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COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN										* - 3 - 2, - 3 - 3			
Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec)								
					1	2	3	4	5	6	7	8	
1	85	34	1	1		54		31	13	41		31	
2	85	34	1	2		54		31	13	41		31	
3	100	40	1	3		63		37	12	51		37	
10	0	0	1	10		0		0	0	0		0	
TIME BASE: ACTION PLAN, DAY PLAN										* - 5 - 2, - 5 - 3, -5 - 4			
Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan								
1	1	1	06:00	1	1								
1	1	2	09:00	2	1	Schedule 1 = Day Plan 1							
1	1	3	16:00	3	1	Schedule 2 = Day Plan 2							
1	1	2	19:00	2	1	Schedule 3 = Day Plan 3							
1	1	10	22:00	254	1								
2	2	10	00:15	254	1	Day Plan 1 (Weekday)							
3	3	10	00:15	254	1	Day Plan 2 (Saturday)							
						Day Plan 3 (Sunday, Holidays)							
						Action Plan 10 = free (254)							
					</								

TIME BASE DATA - TIME OF YEAR EVENTS

*** - 5 - 5**

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Intersection Name: Appleby Ln @ Thomas Alton E		TS ID: 793	Line No: 9	Model: ACS/3	IP address: 172.22.142.2	Controller Make: Econolite		
Type of Operation: 8 Phase Semi-Actuated								
*-Start from Main Menu								
No	Date			Description			Prepared by	
	Y	M	D				MA	
1								
3	2017	2	3	Amber and All red Changed as per OTM12				
PHASE DESCRIPTION								
Ph1				Ph5	NBLT - Appleby Ln			
Ph2	NB - Appleby Ln			Ph6	SB - Appleby Ln			
Ph3				Ph7				
Ph4	EB - Thomas Alton Blvd			Ph8	WB - Harrison Cres			
CONFIGURATION (PHASE SEQ): PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2								
Phase:	1	2	3	4	5	6	7	8
Phase in Use		X		X	X	X		X
Exclusive PED								
CONTROLLER TIMING DATA - VEHICLE TIMING *- 2 - 1								
Timing Plan: 1	Phase:							
Minimum Green	1	2	3	4	5	6	7	8
		8		8	7	8		8
Walk		7		7		7		7
Ped. Clearance		19		27		19		27
Pedestrian Carry Over								
Vehicle Extension		3		3	3	3		3
MAX 1		45		30	15	45		30
MAX 2		45		30	15	45		30
Yellow Change		3.7		3.3	3	3.7		3.3
Red Clearance		2.7		3.8	1	2.7		3.8
Phase Minimum:	1	33.4	1	42.1	5	33.4	1	42.1
PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS *- 2 - 8								
Phase:	1	2	3	4	5	6	7	8
Lock Detector								
Vehicle Recall								
Pedestrian Recall		X				X		
MAX Recall		X				X		
Min Recall								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN										* - 3 - 2, - 3 - 3			
Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec)								
					1	2	3	4	5	6	7	8	
1	85	52	1	1		54		31	13	41		31	
2	85	52	1	2		54		31	13	41		31	
3	100	40	1	3		63		37	12	51		37	
10	0	0	0	10		0		0	0	0		0	
TIME BASE: ACTION PLAN, DAY PLAN										* - 5 - 2, - 5 - 3, -5 - 4			
Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan								
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1	1	10	22:00	254	1								
2	2	10	00:15	254	1	Day Plan 1 (Weekday)							
3	3	10	00:15	254	1	Day Plan 2 (Saturday)							
						Day Plan 3 (Sunday, Holidays)							
						Action Plan 10 = free (254)							
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TIME BASE DATA - TIME OF YEAR EVENTS
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Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
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5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 dcobean@ptsl.com

Count Name: Appleby Line & Thomas Alton
Boulevard - Thursday
Site Code:
Start Date: 09-28-2017
Page No: 1

Turning Movement Data

Start Time	Thomas Alton Boulevard Eastbound						Harrison Cres. Westbound						Appleby Line Northbound						Appleby Line Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	29	0	53	0	1	82	3	0	2	0	0	5	18	149	5	0	0	172	0	90	1	0	0	91	350
7:15 AM	45	1	92	0	0	138	4	0	0	0	0	4	19	178	3	0	0	200	1	98	3	0	0	102	444
7:30 AM	51	0	98	0	1	149	6	1	1	0	0	8	20	270	10	0	0	300	1	160	3	0	0	164	621
7:45 AM	57	2	102	0	0	161	8	1	0	0	0	9	29	214	13	0	0	256	0	155	5	0	0	160	586
Hourly Total	182	3	345	0	2	530	21	2	3	0	0	26	86	811	31	0	0	928	2	503	12	0	0	517	2001
8:00 AM	39	1	102	0	1	142	6	0	1	0	0	7	24	243	5	0	0	272	1	167	3	1	0	172	593
8:15 AM	30	0	79	0	1	109	3	0	0	0	0	3	37	192	6	0	0	235	0	176	5	0	0	181	528
8:30 AM	29	1	106	0	0	136	4	0	1	0	0	5	36	179	7	0	0	222	0	153	2	0	0	155	518
8:45 AM	22	0	83	0	2	105	9	0	0	0	0	9	38	155	12	0	0	205	1	142	5	0	0	148	467
Hourly Total	120	2	370	0	4	492	22	0	2	0	0	24	135	769	30	0	0	934	2	638	15	1	0	656	2106
9:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:00 AM	10	0	35	0	0	45	25	0	3	0	0	28	29	63	19	0	0	111	0	66	8	0	0	74	258
11:15 AM	7	2	45	0	0	54	13	3	3	0	0	19	32	86	24	1	1	143	0	89	3	0	0	92	308
11:30 AM	9	2	45	0	1	56	20	2	1	0	1	23	33	88	13	1	0	135	0	92	4	0	0	96	310
11:45 AM	5	0	38	0	0	43	18	1	0	0	0	19	38	90	29	0	0	157	0	89	4	0	0	93	312
Hourly Total	31	4	163	0	1	198	76	6	7	0	1	89	132	327	85	2	1	546	0	336	19	0	0	355	1188
12:00 PM	0	2	44	0	0	46	23	0	0	0	0	23	48	85	24	0	0	157	0	98	3	0	0	101	327
12:15 PM	9	2	34	0	0	45	25	1	0	0	0	26	46	88	20	1	0	155	0	108	3	0	0	111	337
12:30 PM	9	0	34	0	0	43	24	2	1	0	0	27	46	98	24	1	0	169	1	90	6	0	0	97	336
12:45 PM	2	0	47	0	1	49	17	3	1	0	0	21	50	92	31	0	0	173	0	77	4	0	0	81	324
Hourly Total	20	4	159	0	1	183	89	6	2	0	0	97	190	363	99	2	0	654	1	373	16	0	0	390	1324
1:00 PM	9	1	36	0	0	46	23	2	2	0	0	27	44	84	28	0	1	156	1	75	4	1	0	81	310
1:15 PM	4	3	30	0	0	37	25	1	1	0	0	27	42	93	17	1	0	153	0	85	2	0	0	87	304
1:30 PM	4	2	41	0	0	47	17	1	0	0	0	18	37	109	23	1	0	170	1	81	11	0	0	93	328
1:45 PM	4	3	33	0	0	40	10	3	3	0	0	16	45	91	21	1	0	158	0	91	7	0	0	98	312
Hourly Total	21	9	140	0	0	170	75	7	6	0	0	88	168	377	89	3	1	637	2	332	24	1	0	359	1254
2:00 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	2	0	1	0	0	0	1	4
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	2	0	1	0	0	0	1	4
3:00 PM	9	6	47	0	2	62	26	2	3	0	0	31	58	106	14	0	1	178	0	153	7	0	0	160	431
3:15 PM	11	0	69	0	0	80	19	2	1	0	1	22	51	129	22	0	0	202	1	147	15	0	1	163	467
3:30 PM	10	0	55	0	1	65	20	1	2	0	0	23	53	157	20	0	0	230	0	157	11	0	0	168	486
3:45 PM	7	0	45	0	3	52	21	3	2	0	1	26	61	165	22	0	1	248	0	151	20	0	0	171	497

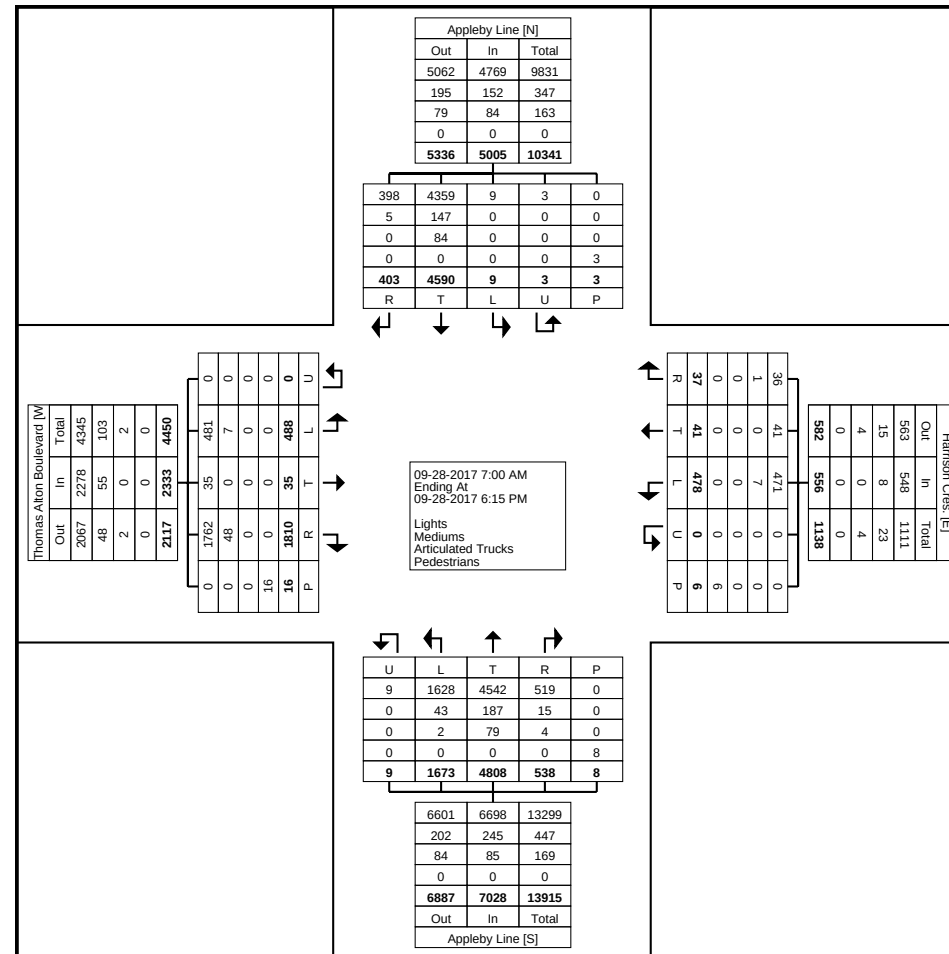
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4:00 PM	9	0	32	0	0	41	16	3	1	0	0	20	68	168	14	0	0	250	0	194	28	0	0	222	533
4:15 PM	7	0	49	0	0	56	5	0	3	0	0	8	73	223	19	1	0	316	0	216	22	0	0	238	618
4:30 PM	12	0	44	0	0	56	9	1	1	0	0	11	81	182	12	0	3	275	0	244	33	0	0	277	619
4:45 PM	6	3	60	0	1	69	16	0	1	0	0	17	96	232	14	0	0	342	0	252	37	0	0	289	717
Hourly Total	34	3	185	0	1	222	46	4	6	0	0	56	318	805	59	1	3	1183	0	906	120	0	0	1026	2487
5:00 PM	13	1	54	0	0	68	19	2	0	0	1	21	108	207	14	0	0	329	1	231	37	0	0	269	687
5:15 PM	14	0	64	0	0	78	19	2	1	0	1	22	108	198	17	0	0	323	0	219	37	0	1	256	679
5:30 PM	5	3	52	0	1	60	14	4	1	0	0	19	105	200	15	1	0	321	0	226	31	1	0	258	658
5:45 PM	11	0	60	0	0	71	11	0	1	0	1	12	100	193	20	0	1	313	0	216	39	0	1	255	651
Hourly Total	43	4	230	0	1	277	63	8	3	0	3	74	421	798	66	1	1	1286	1	892	144	1	2	1038	2675
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Grand Total	488	35	1810	0	16	2333	478	41	37	0	6	556	1673	4808	538	9	8	7028	9	4590	403	3	3	5005	14922
Approach %	20.9	1.5	77.6	0.0	-	-	86.0	7.4	6.7	0.0	-	-	23.8	68.4	7.7	0.1	-	-	0.2	91.7	8.1	0.1	-	-	-
Total %	3.3	0.2	12.1	0.0	-	15.6	3.2	0.3	0.2	0.0	-	3.7	11.2	32.2	3.6	0.1	-	47.1	0.1	30.8	2.7	0.0	-	33.5	-
Lights	481	35	1762	0	-	2278	471	41	36	0	-	548	1628	4542	519	9	-	6698	9	4359	398	3	-	4769	14293
% Lights	98.6	100.0	97.3	-	-	97.6	98.5	100.0	97.3	-	-	98.6	97.3	94.5	96.5	100.0	-	95.3	100.0	95.0	98.8	100.0	-	95.3	95.8
Mediums	7	0	48	0	-	55	7	0	1	0	-	8	43	187	15	0	-	245	0	147	5	0	-	152	460
% Mediums	1.4	0.0	2.7	-	-	2.4	1.5	0.0	2.7	-	-	1.4	2.6	3.9	2.8	0.0	-	3.5	0.0	3.2	1.2	0.0	-	3.0	3.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	2	79	4	0	-	85	0	84	0	0	-	84	169
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1	1.6	0.7	0.0	-	1.2	0.0	1.8	0.0	0.0	-	1.7	1.1
Pedestrians	-	-	-	-	16	-	-	-	-	-	6	-	-	-	-	-	8	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Site Code:
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Turning Movement Data Plot

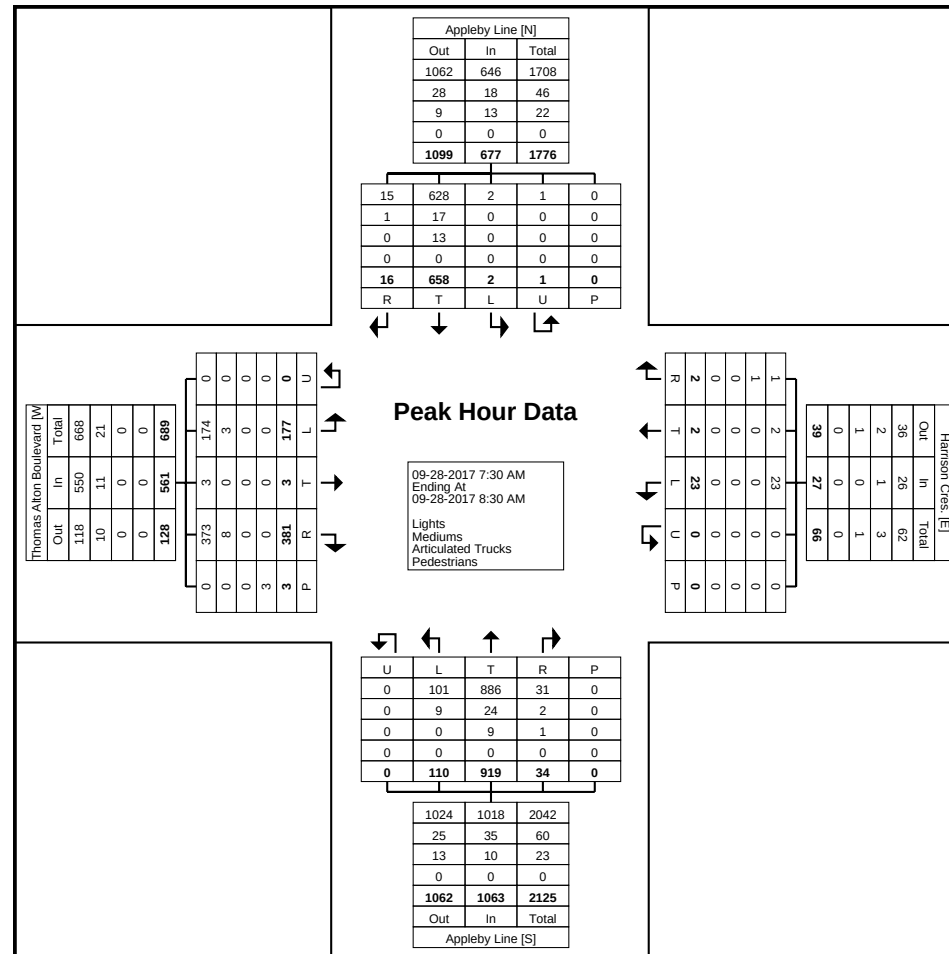
[illegible]



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519-896-3163 dcobean@pts1.com

Count Name: Appleby Line & Thomas Alton
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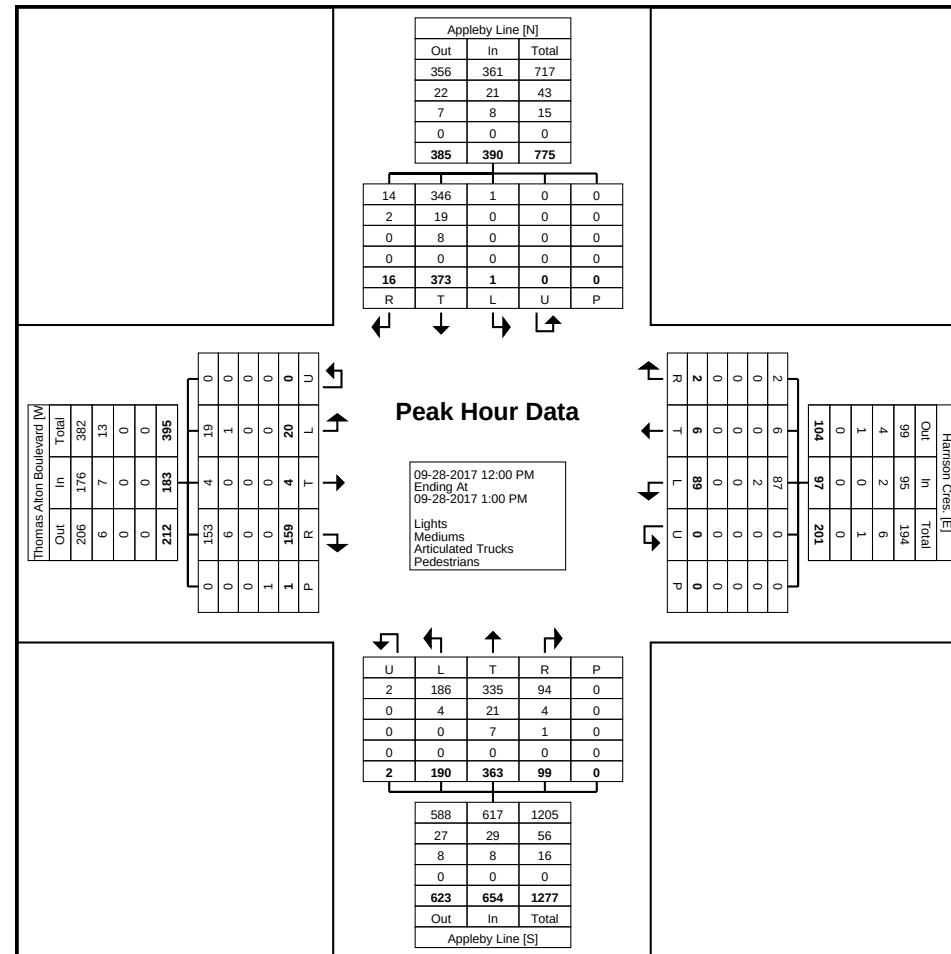
Start Time	Thomas Alton Boulevard Eastbound						Harrison Cres. Westbound						Appleby Line Northbound						Appleby Line Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	0	2	44	0	0	46	23	0	0	0	0	23	48	85	24	0	0	157	0	98	3	0	0	101	327
12:15 PM	9	2	34	0	0	45	25	1	0	0	0	26	46	88	20	1	0	155	0	108	3	0	0	111	337
12:30 PM	9	0	34	0	0	43	24	2	1	0	0	27	46	98	24	1	0	169	1	90	6	0	0	97	336
12:45 PM	2	0	47	0	1	49	17	3	1	0	0	21	50	92	31	0	0	173	0	77	4	0	0	81	324
Total	20	4	159	0	1	183	89	6	2	0	0	97	190	363	99	2	0	654	1	373	16	0	0	390	1324
Approach %	10.9	2.2	86.9	0.0	-	-	91.8	6.2	2.1	0.0	-	-	29.1	55.5	15.1	0.3	-	-	0.3	95.6	4.1	0.0	-	-	-
Total %	1.5	0.3	12.0	0.0	-	13.8	6.7	0.5	0.2	0.0	-	7.3	14.4	27.4	7.5	0.2	-	49.4	0.1	28.2	1.2	0.0	-	29.5	-
PHF	0.556	0.500	0.846	0.000	-	0.934	0.890	0.500	0.500	0.000	-	0.898	0.950	0.926	0.798	0.500	-	0.945	0.250	0.863	0.667	0.000	-	0.878	0.982
Lights	19	4	153	0	-	176	87	6	2	0	-	95	186	335	94	2	-	617	1	346	14	0	-	361	1249
% Lights	95.0	100.0	96.2	-	-	96.2	97.8	100.0	100.0	-	-	97.9	97.9	92.3	94.9	100.0	-	94.3	100.0	92.8	87.5	-	-	92.6	94.3
Mediums	1	0	6	0	-	7	2	0	0	0	-	2	4	21	4	0	-	29	0	19	2	0	-	21	59
% Mediums	5.0	0.0	3.8	-	-	3.8	2.2	0.0	0.0	-	-	2.1	2.1	5.8	4.0	0.0	-	4.4	0.0	5.1	12.5	-	-	5.4	4.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	7	1	0	-	8	0	8	0	0	-	8	16
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.9	1.0	0.0	-	1.2	0.0	2.1	0.0	-	-	2.1	1.2
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 dcobean@pts1.com

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Turning Movement Peak Hour Data Plot (12:00 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 dcobean@ptsl.com

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Turning Movement Peak Hour Data (4:45 PM)

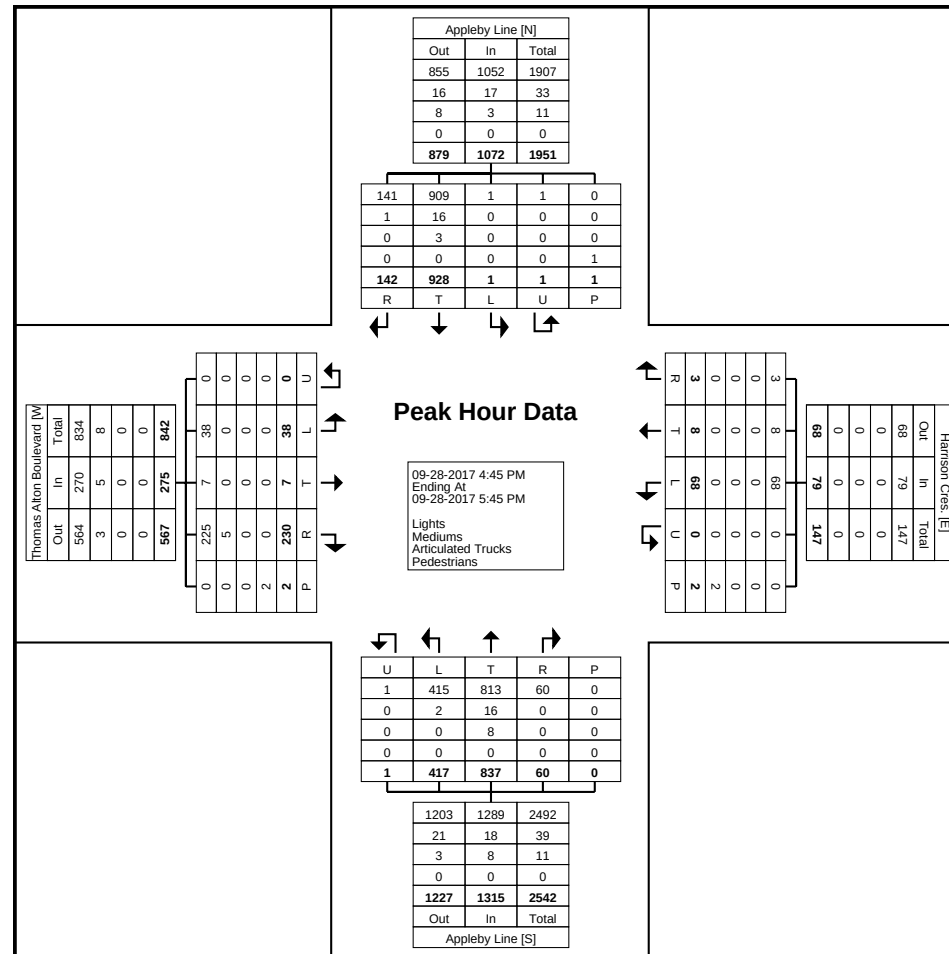
Start Time	Thomas Alton Boulevard Eastbound						Harrison Cres. Westbound						Appleby Line Northbound						Appleby Line Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:45 PM	6	3	60	0	1	69	16	0	1	0	0	17	96	232	14	0	0	342	0	252	37	0	0	289	717
5:00 PM	13	1	54	0	0	68	19	2	0	0	1	21	108	207	14	0	0	329	1	231	37	0	0	269	687
5:15 PM	14	0	64	0	0	78	19	2	1	0	1	22	108	198	17	0	0	323	0	219	37	0	1	256	679
5:30 PM	5	3	52	0	1	60	14	4	1	0	0	19	105	200	15	1	0	321	0	226	31	1	0	258	658
Total	38	7	230	0	2	275	68	8	3	0	2	79	417	837	60	1	0	1315	1	928	142	1	1	1072	2741
Approach %	13.8	2.5	83.6	0.0	-	-	86.1	10.1	3.8	0.0	-	-	31.7	63.7	4.6	0.1	-	-	0.1	86.6	13.2	0.1	-	-	-
Total %	1.4	0.3	8.4	0.0	-	10.0	2.5	0.3	0.1	0.0	-	2.9	15.2	30.5	2.2	0.0	-	48.0	0.0	33.9	5.2	0.0	-	39.1	-
PHF	0.679	0.583	0.898	0.000	-	0.881	0.895	0.500	0.750	0.000	-	0.898	0.965	0.902	0.882	0.250	-	0.961	0.250	0.921	0.959	0.250	-	0.927	0.956
Lights	38	7	225	0	-	270	68	8	3	0	-	79	415	813	60	1	-	1289	1	909	141	1	-	1052	2690
% Lights	100.0	100.0	97.8	-	-	98.2	100.0	100.0	100.0	-	-	100.0	99.5	97.1	100.0	100.0	-	98.0	100.0	98.0	99.3	100.0	-	98.1	98.1
Mediums	0	0	5	0	-	5	0	0	0	0	-	0	2	16	0	0	-	18	0	16	1	0	-	17	40
% Mediums	0.0	0.0	2.2	-	-	1.8	0.0	0.0	0.0	-	-	0.0	0.5	1.9	0.0	0.0	-	1.4	0.0	1.7	0.7	0.0	-	1.6	1.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	8	0	0	-	8	0	3	0	0	-	3	11
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.0	0.0	0.0	-	0.6	0.0	0.3	0.0	0.0	-	0.3	0.4
Pedestrians	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Appendix C

Existing Traffic Operations



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	105	56	7	78	0	57	0	3	0	0	1
Future Volume (vph)	1	105	56	7	78	0	57	0	3	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.948						0.994			0.865	
Flt Protected	0.950			0.950				0.955				
Satd. Flow (prot)	1805	1691	0	1805	1610	0	0	1804	0	0	1644	0
Flt Permitted	0.950			0.950				0.955				
Satd. Flow (perm)	1805	1691	0	1805	1610	0	0	1804	0	0	1644	0
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.0			132.7			113.2			175.1	
Travel Time (s)		7.4			8.0			8.2			12.6	
Confl. Peds. (#/hr)			3	3			1					1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	0%	10%	0%	0%	18%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	148	79	10	110	0	80	0	4	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	227	0	10	110	0	0	84	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 26.1% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 1: Site Driveway/Lionel Court & Palladium Way

(240651) 4883 Thomas Alton Blvd.
AM Existing Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	105	56	7	78	0	57	0	3	0	0	1
Future Volume (Veh/h)	1	105	56	7	78	0	57	0	3	0	0	1
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	1	148	79	10	110	0	80	0	4	0	0	1
Pedestrians	1						3					
Lane Width (m)	3.6						3.6					
Walking Speed (m/s)	1.2						1.2					
Percent Blockage	0						0					
Right turn flare (veh)												
Median type	TWLTL			None								
Median storage veh	2											
Upstream signal (m)				133								
pX, platoon unblocked												
vC, conflicting volume	110			230			325	323	191	284	362	111
vC1, stage 1 conf vol							193	193		130	130	
vC2, stage 2 conf vol							132	130		154	232	
vCu, unblocked vol	110			230			325	323	191	284	362	111
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			89	100	100	100	100	100
cM capacity (veh/h)	1493			1346			746	688	854	771	660	947
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	1	227	10	110	84	1						
Volume Left	1	0	10	0	80	0						
Volume Right	0	79	0	0	4	1						
cSH	1493	1700	1346	1700	751	947						
Volume to Capacity	0.00	0.13	0.01	0.06	0.11	0.00						
Queue Length 95th (m)	0.0	0.0	0.2	0.0	2.8	0.0						
Control Delay (s/veh)	7.4	0.0	7.7	0.0	10.4	8.8						
Lane LOS	A		A		B	A						
Approach Delay (s/veh)	0.0		0.6		10.4	8.8						
Approach LOS					B	A						
Intersection Summary												
Average Delay	2.2											
Intersection Capacity Utilization	26.1%			ICU Level of Service			A					
Analysis Period (min)	15											

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	8	37	36	2	11	39	680	15	14	660	34
Future Volume (vph)	55	8	37	36	2	11	39	680	15	14	660	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	60.0		0.0	0.0		0.0	70.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99		1.00								
Frt		0.876			0.871			0.997			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1348	0	1752	1655	0	1492	4923	0	1805	4994	0
Flt Permitted	0.748			0.726			0.338			0.362		
Satd. Flow (perm)	1421	1348	0	1337	1655	0	531	4923	0	688	4994	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			12			6			11	
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		132.7			140.4			91.2			346.3	
Travel Time (s)		8.0			10.1			5.5			20.8	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	13%	24%	3%	0%	0%	21%	5%	7%	0%	3%	6%
Adj. Flow (vph)	58	8	39	38	2	12	41	716	16	15	695	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	47	0	38	14	0	41	732	0	15	731	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			3.6			3.6			6.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.0	8.0		8.0	8.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		11.0	33.4		41.0	41.0	
Total Split (s)	31.0	31.0		31.0	31.0		13.0	54.0		41.0	41.0	
Total Split (%)	36.5%	36.5%		36.5%	36.5%		15.3%	63.5%		48.2%	48.2%	
Maximum Green (s)	23.9	23.9		23.9	23.9		9.0	47.6		34.6	34.6	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.7	3.7	
All-Red Time (s)	3.8	3.8		3.8	3.8		1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	10.0	10.0		10.0	10.0			19.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effect Green (s)	9.6	9.6		9.6	9.6		67.4	66.2		59.6	59.6	
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.79	0.78		0.70	0.70	
v/c Ratio	0.36	0.25		0.25	0.07		0.08	0.19		0.03	0.21	
Control Delay (s/veh)	40.9	17.2		38.0	19.1		2.8	2.8		8.0	6.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	40.9	17.2		38.0	19.1		2.8	2.8		8.0	6.6	
LOS	D	B		D	B		A	A		A	A	
Approach Delay (s/veh)		30.3			32.9			2.8			6.7	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 34 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.36

Intersection Signal Delay (s/veh): 7.2

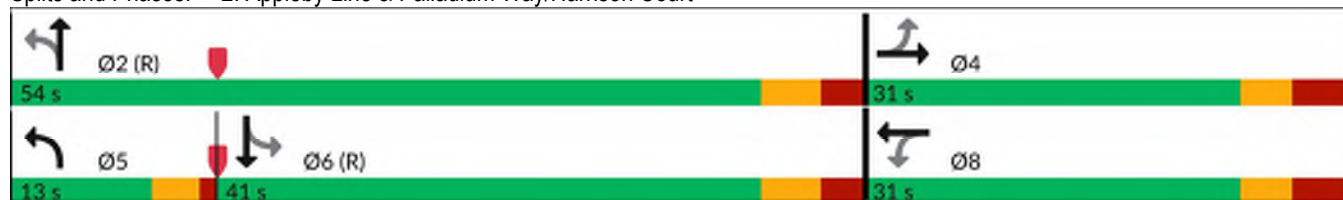
Intersection LOS: A

Intersection Capacity Utilization 46.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Appleby Line & Palladium Way/Harrison Court



Queues
2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.
AM Existing Traffic

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	58	47	38	14	41	732	15	731
v/c Ratio	0.36	0.25	0.25	0.07	0.08	0.19	0.03	0.21
Control Delay (s/veh)	40.9	17.2	38.0	19.1	2.8	2.8	8.0	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	40.9	17.2	38.0	19.1	2.8	2.8	8.0	6.6
Queue Length 50th (m)	8.8	1.2	5.7	0.3	1.0	8.5	0.9	17.5
Queue Length 95th (m)	19.1	10.1	14.0	5.2	3.2	13.7	3.5	26.3
Internal Link Dist (m)		108.7		116.4		67.2		322.3
Turn Bay Length (m)	45.0		60.0				70.0	
Base Capacity (vph)	399	407	375	473	522	3838	482	3507
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.12	0.10	0.03	0.08	0.19	0.03	0.21
Intersection Summary								

HCM Signalized Intersection Capacity Analysis 2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.
AM Existing Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	8	37	36	2	11	39	680	15	14	660	34
Future Volume (vph)	55	8	37	36	2	11	39	680	15	14	660	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.87		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1347		1750	1656		1492	4922		1805	4992	
Flt Permitted	0.75	1.00		0.73	1.00		0.34	1.00		0.36	1.00	
Satd. Flow (perm)	1422	1347		1338	1656		530	4922		688	4992	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	8	39	38	2	12	41	716	16	15	695	36
RTOR Reduction (vph)	0	35	0	0	11	0	0	2	0	0	4	0
Lane Group Flow (vph)	58	12	0	38	3	0	41	730	0	15	727	0
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	0%	13%	24%	3%	0%	0%	21%	5%	7%	0%	3%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.0	8.0		8.0	8.0		63.5	63.5		55.3	55.3	
Effective Green, g (s)	8.0	8.0		8.0	8.0		63.5	63.5		55.3	55.3	
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.75	0.75		0.65	0.65	
Clearance Time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	133	126		125	155		443	3677		447	3247	
v/s Ratio Prot		0.01			0.00		0.00	c0.15			c0.15	
v/s Ratio Perm	c0.04			0.03			0.06			0.02		
v/c Ratio	0.44	0.09		0.30	0.02		0.09	0.20		0.03	0.22	
Uniform Delay, d1	36.4	35.2		35.9	34.9		2.9	3.2		5.3	6.1	
Progression Factor	1.00	1.00		1.00	1.00		0.83	0.80		1.00	1.00	
Incremental Delay, d2	2.3	0.3		1.4	0.1		0.1	0.1		0.1	0.2	
Delay (s)	38.7	35.5		37.3	35.0		2.5	2.7		5.4	6.2	
Level of Service	D	D		D	C		A	A		A	A	
Approach Delay (s/veh)		37.2			36.7			2.7			6.2	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			7.5				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.25									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			46.6%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
3: Appleby Line & Site Driveway

(240651) 4883 Thomas Alton Blvd.
AM Existing Traffic

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				   	   	
Traffic Volume (vph)	0	1	0	751	730	4
Future Volume (vph)	0	1	0	751	730	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.86	0.91	0.91
Ped Bike Factor						
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1644	0	6225	4984	0
Flt Permitted						
Satd. Flow (perm)	0	1644	0	6225	4984	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	53.7			143.7	91.2	
Travel Time (s)	3.9			8.6	5.5	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	5%	4%	0%
Adj. Flow (vph)	0	1	0	782	760	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	0	782	764	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			6.6	6.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	24.2%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 3: Appleby Line & Site Driveway

(240651) 4883 Thomas Alton Blvd.
AM Existing Traffic

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations				  	  			
Traffic Volume (veh/h)	0	1	0	751	730	4		
Future Volume (Veh/h)	0	1	0	751	730	4		
Sign Control	Stop			Free	Free			
Grade	0%			0%	0%			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Hourly flow rate (vph)	0	1	0	782	760	4		
Pedestrians	1							
Lane Width (m)	3.6							
Walking Speed (m/s)	1.2							
Percent Blockage	0							
Right turn flare (veh)								
Median type				None	None			
Median storage (veh)								
Upstream signal (m)				144	91			
pX, platoon unblocked	0.95	0.95	0.95					
vC, conflicting volume	959	256	765					
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	781	43	578					
tC, single (s)	6.8	6.9	4.1					
tC, 2 stage (s)								
tF (s)	3.5	3.3	2.2					
p0 queue free %	100	100	100					
cM capacity (veh/h)	320	974	957					
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	1	196	196	196	196	304	304	156
Volume Left	0	0	0	0	0	0	0	0
Volume Right	1	0	0	0	0	0	0	4
cSH	974	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.12	0.12	0.12	0.12	0.18	0.18	0.09
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s/veh)	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s/veh)	8.7	0.0				0.0		
Approach LOS	A							
Intersection Summary								
Average Delay		0.0						
Intersection Capacity Utilization		24.2%		ICU Level of Service				A
Analysis Period (min)		15						

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	394	17	44	139	26	15	19	53	2	7	40
Future Volume (vph)	43	394	17	44	139	26	15	19	53	2	7	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.983			0.918			0.888	
Flt Protected		0.995			0.990			0.991			0.998	
Satd. Flow (prot)	0	1845	0	0	1734	0	0	1688	0	0	1643	0
Flt Permitted		0.995			0.990			0.991			0.998	
Satd. Flow (perm)	0	1845	0	0	1734	0	0	1688	0	0	1643	0
Link Speed (k/h)		40			40			40			50	
Link Distance (m)		200.7			141.3			98.5			71.1	
Travel Time (s)		18.1			12.7			8.9			5.1	
Confl. Peds. (#/hr)	9		18	18		9			1	1		
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	2%	6%	0%	10%	0%	7%	0%	2%	0%	0%	3%
Adj. Flow (vph)	51	469	20	52	165	31	18	23	63	2	8	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	540	0	0	248	0	0	104	0	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	45.1%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis
4: Valera Road/Site Driveway & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Existing Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	394	17	44	139	26	15	19	53	2	7	40
Future Volume (Veh/h)	43	394	17	44	139	26	15	19	53	2	7	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	51	469	20	52	165	31	18	23	63	2	8	48
Pedestrians					1			18			9	
Lane Width (m)					3.6			3.6			3.6	
Walking Speed (m/s)					1.2			1.2			1.2	
Percent Blockage					0			2			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)					141							
pX, platoon unblocked												
vC, conflicting volume	205			507			936	908	498	950	903	190
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	205			507			936	908	498	950	903	190
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			95			91	91	89	99	97	94
cM capacity (veh/h)	1368			1052			200	248	563	182	250	843
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	540	248	104	58								
Volume Left	51	52	18	2								
Volume Right	20	31	63	48								
cSH	1368	1052	353	581								
Volume to Capacity	0.04	0.05	0.29	0.10								
Queue Length 95th (m)	0.9	1.2	9.0	2.5								
Control Delay (s/veh)	1.1	2.2	19.4	11.9								
Lane LOS	A	A	C	B								
Approach Delay (s/veh)	1.1	2.2	19.4	11.9								
Approach LOS			C	B								
Intersection Summary												
Average Delay			4.0									
Intersection Capacity Utilization			45.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Existing Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	0	314	0	0	0	168	623	0	0	706	36
Future Volume (vph)	129	0	314	0	0	0	168	623	0	0	706	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		40.0	30.0		0.0	130.0		0.0	30.0		60.0
Storage Lanes	0		1	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor			0.99				1.00					0.98
Frt			0.850									0.850
Flt Protected		0.950					0.950					
Satd. Flow (prot)	0	1787	1599	1900	1900	0	1687	4803	0	1900	4988	1495
Flt Permitted		0.757					0.313					
Satd. Flow (perm)	0	1424	1577	1900	1900	0	555	4803	0	1900	4988	1458
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			295									104
Link Speed (k/h)		40			50			60			60	
Link Distance (m)		141.3			116.2			309.3			143.7	
Travel Time (s)		12.7			8.4			18.6			8.6	
Confl. Peds. (#/hr)			1	1			2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	7%	8%	0%	0%	4%	8%
Adj. Flow (vph)	140	0	341	0	0	0	183	677	0	0	767	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	341	0	0	0	183	677	0	0	767	39
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Existing Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm			pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		7.0	8.0		8.0	8.0	8.0
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0		11.0	33.4		41.0	41.0	41.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0		13.0	54.0		41.0	41.0	41.0
Total Split (%)	36.5%	36.5%	36.5%	36.5%	36.5%		15.3%	63.5%		48.2%	48.2%	48.2%
Maximum Green (s)	23.9	23.9	23.9	23.9	23.9		9.0	47.6		34.6	34.6	34.6
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.0	3.7		3.7	3.7	3.7
All-Red Time (s)	3.8	3.8	3.8	3.8	3.8		1.0	2.7		2.7	2.7	2.7
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	10.0	10.0	10.0	10.0	10.0			19.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	0
Act Effect Green (s)		13.8	13.8				60.1	57.7			44.7	44.7
Actuated g/C Ratio		0.16	0.16				0.71	0.68			0.53	0.53
v/c Ratio		0.61	0.68				0.36	0.21			0.29	0.05
Control Delay (s/veh)		43.2	13.4				6.9	5.8			10.7	3.1
Queue Delay		0.0	0.0				0.0	0.0			0.0	0.0
Total Delay (s/veh)		43.2	13.4				6.9	5.8			10.7	3.1
LOS		D	B				A	A			B	A
Approach Delay (s/veh)		22.1						6.0			10.3	
Approach LOS		C						A			B	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 52 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay (s/veh): 11.3

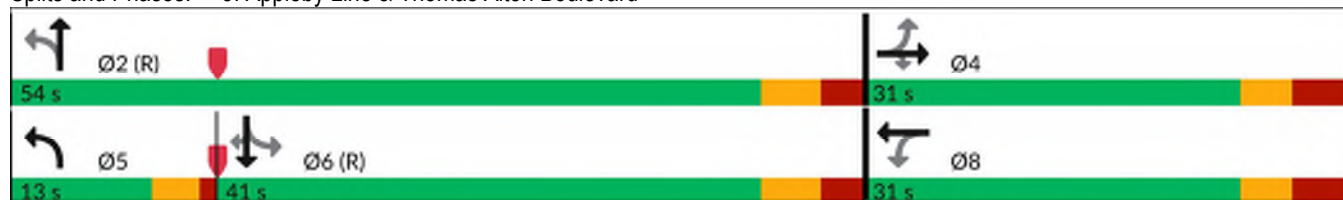
Intersection LOS: B

Intersection Capacity Utilization 45.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Appleby Line & Thomas Alton Boulevard



Queues
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Existing Traffic

	→	↘	↙	↑	↓	↗
Lane Group	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	140	341	183	677	767	39
v/c Ratio	0.61	0.68	0.36	0.21	0.29	0.05
Control Delay (s/veh)	43.2	13.4	6.9	5.8	10.7	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	43.2	13.4	6.9	5.8	10.7	3.1
Queue Length 50th (m)	21.2	6.5	8.0	12.6	27.2	0.0
Queue Length 95th (m)	35.4	28.3	18.9	22.1	44.5	2.4
Internal Link Dist (m)	117.3			285.3	119.7	
Turn Bay Length (m)		40.0	130.0			60.0
Base Capacity (vph)	400	655	522	3259	2625	816
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.52	0.35	0.21	0.29	0.05
Intersection Summary						

HCM Signalized Intersection Capacity Analysis 5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Existing Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (vph)	129	0	314	0	0	0	168	623	0	0	706	36
Future Volume (vph)	129	0	314	0	0	0	168	623	0	0	706	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1	7.1				4.0	6.4			6.4	6.4
Lane Util. Factor		1.00	1.00				1.00	0.91			0.91	1.00
Frpb, ped/bikes		1.00	0.99				1.00	1.00			1.00	0.98
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	1.00
Frt		1.00	0.85				1.00	1.00			1.00	0.85
Flt Protected		0.95	1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)		1787	1577				1686	4803			4988	1458
Flt Permitted		0.76	1.00				0.31	1.00			1.00	1.00
Satd. Flow (perm)		1424	1577				556	4803			4988	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	0	341	0	0	0	183	677	0	0	767	39
RTOR Reduction (vph)	0	0	247	0	0	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	140	94	0	0	0	183	677	0	0	767	21
Confl. Peds. (#/hr)			1	1			2					2
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	7%	8%	0%	0%	4%	8%
Turn Type	Perm	NA	Perm	Perm			pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)		13.8	13.8				57.7	57.7			44.8	44.8
Effective Green, g (s)		13.8	13.8				57.7	57.7			44.8	44.8
Actuated g/C Ratio		0.16	0.16				0.68	0.68			0.53	0.53
Clearance Time (s)		7.1	7.1				4.0	6.4			6.4	6.4
Vehicle Extension (s)		3.0	3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		231	256				495	3260			2628	768
v/s Ratio Prot							c0.04	0.14			0.15	
v/s Ratio Perm		c0.10	0.06				c0.21					0.01
v/c Ratio		0.61	0.37				0.37	0.21			0.29	0.03
Uniform Delay, d1		33.1	31.7				5.1	5.1			11.2	9.6
Progression Factor		1.00	1.00				1.00	1.00			0.84	1.00
Incremental Delay, d2		4.4	0.9				0.5	0.1			0.3	0.1
Delay (s)		37.5	32.6				5.6	5.2			9.7	9.7
Level of Service		D	C				A	A			A	A
Approach Delay (s/veh)		34.0			0.0			5.3			9.7	
Approach LOS		C			A			A			A	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			13.4				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.43									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)				17.5	
Intersection Capacity Utilization			45.4%				ICU Level of Service				A	
Analysis Period (min)			15									

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	80	44	6	90	3	19	0	11	20	1	2
Future Volume (vph)	1	80	44	6	90	3	19	0	11	20	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.947			0.996			0.951			0.988	
Flt Protected	0.950			0.950				0.969			0.958	
Satd. Flow (prot)	1805	1621	0	1805	1710	0	0	1695	0	0	1798	0
Flt Permitted	0.950			0.950				0.969			0.958	
Satd. Flow (perm)	1805	1621	0	1805	1710	0	0	1695	0	0	1798	0
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.0			132.7			113.2			175.1	
Travel Time (s)		7.4			8.0			8.2			12.6	
Confl. Peds. (#/hr)	1		2	2		1	2					2
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles (%)	0%	16%	2%	0%	11%	0%	0%	0%	9%	0%	0%	0%
Adj. Flow (vph)	1	116	64	9	130	4	28	0	16	29	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	180	0	9	134	0	0	44	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	18.0%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis 1: Site Driveway/Lionel Court & Palladium Way

(240651) 4883 Thomas Alton Blvd.
PM Existing Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	80	44	6	90	3	19	0	11	20	1	2
Future Volume (Veh/h)	1	80	44	6	90	3	19	0	11	20	1	2
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	1	116	64	9	130	4	28	0	16	29	1	3
Pedestrians	2						2			1		
Lane Width (m)	3.6						3.6			3.6		
Walking Speed (m/s)	1.2						1.2			1.2		
Percent Blockage	0						0			0		
Right turn flare (veh)												
Median type	TWLTL			None								
Median storage veh	2											
Upstream signal (m)				133								
pX, platoon unblocked												
vC, conflicting volume	135			182			306	305	150	285	335	135
vC1, stage 1 conf vol							152	152		151	151	
vC2, stage 2 conf vol							154	153		134	184	
vCu, unblocked vol	135			182			306	305	150	285	335	135
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			99			96	100	98	96	100	100
cM capacity (veh/h)	1461			1403			760	699	877	765	680	917
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	1	180	9	134	44	33						
Volume Left	1	0	9	0	28	29						
Volume Right	0	64	0	4	16	3						
cSH	1461	1700	1403	1700	799	774						
Volume to Capacity	0.00	0.11	0.01	0.08	0.06	0.04						
Queue Length 95th (m)	0.0	0.0	0.1	0.0	1.3	1.0						
Control Delay (s/veh)	7.5	0.0	7.6	0.0	9.8	9.9						
Lane LOS	A		A		A	A						
Approach Delay (s/veh)	0.0		0.5		9.8	9.9						
Approach LOS					A	A						
Intersection Summary												
Average Delay				2.1								
Intersection Capacity Utilization				18.0%	ICU Level of Service				A			
Analysis Period (min)				15								

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	9	39	102	8	21	43	932	34	31	685	58
Future Volume (vph)	38	9	39	102	8	21	43	932	34	31	685	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	60.0		0.0	0.0		0.0	70.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99		0.99								
Frt		0.878			0.891			0.995			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	1644	0	1787	1693	0	1805	5006	0	1805	4975	0
Flt Permitted	0.736			0.722			0.300			0.251		
Satd. Flow (perm)	1332	1644	0	1351	1693	0	570	5006	0	477	4975	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			24			10			19	
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		132.7			140.4			91.2			346.3	
Travel Time (s)		8.0			10.1			5.5			20.8	
Confl. Peds. (#/hr)			4	4								
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	5%	0%	0%	1%	0%	0%	0%	3%	6%	0%	3%	3%
Adj. Flow (vph)	43	10	44	115	9	24	48	1047	38	35	770	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	54	0	115	33	0	48	1085	0	35	835	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			3.6			3.6			6.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

	↖	→	↘	↙	←	↖	↙	↑	↘	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.0	8.0		8.0	8.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		11.0	33.4		41.0	41.0	
Total Split (s)	31.0	31.0		31.0	31.0		13.0	54.0		41.0	41.0	
Total Split (%)	36.5%	36.5%		36.5%	36.5%		15.3%	63.5%		48.2%	48.2%	
Maximum Green (s)	23.9	23.9		23.9	23.9		9.0	47.6		34.6	34.6	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.7	3.7	
All-Red Time (s)	3.8	3.8		3.8	3.8		1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	10.0	10.0		10.0	10.0			19.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effect Green (s)	12.7	12.7		12.7	12.7		64.2	63.1		56.4	56.4	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.76	0.74		0.66	0.66	
v/c Ratio	0.22	0.19		0.57	0.12		0.09	0.29		0.11	0.25	
Control Delay (s/veh)	32.7	13.4		44.0	15.9		4.4	4.7		11.4	8.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	32.7	13.4		44.0	15.9		4.4	4.7		11.4	8.6	
LOS	C	B		D	B		A	A		B	A	
Approach Delay (s/veh)		22.0			37.7			4.7			8.7	
Approach LOS		C			D			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 34 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay (s/veh): 9.2

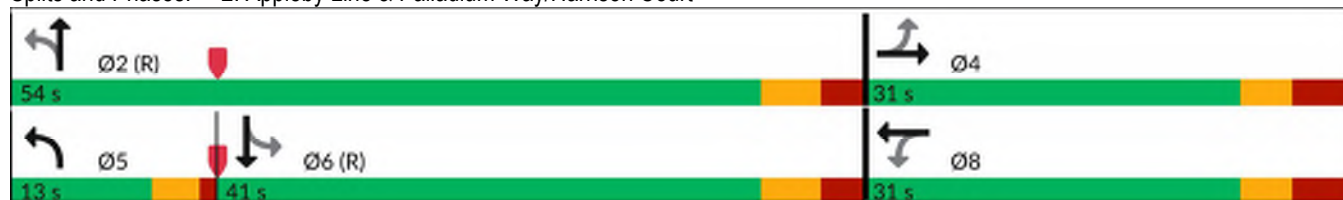
Intersection LOS: A

Intersection Capacity Utilization 54.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Appleby Line & Palladium Way/Harrison Court



Queues

2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.

PM Existing Traffic

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	54	115	33	48	1085	35	835
v/c Ratio	0.22	0.19	0.57	0.12	0.09	0.29	0.11	0.25
Control Delay (s/veh)	32.7	13.4	44.0	15.9	4.4	4.7	11.4	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.7	13.4	44.0	15.9	4.4	4.7	11.4	8.6
Queue Length 50th (m)	6.2	1.4	17.4	1.3	1.7	19.3	2.4	23.0
Queue Length 95th (m)	13.9	9.8	30.7	7.9	5.2	29.2	8.2	35.2
Internal Link Dist (m)		108.7		116.4		67.2		322.3
Turn Bay Length (m)	45.0		60.0				70.0	
Base Capacity (vph)	374	493	379	493	561	3718	316	3309
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.11	0.30	0.07	0.09	0.29	0.11	0.25
Intersection Summary								

HCM Signalized Intersection Capacity Analysis 2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.
PM Existing Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	9	39	102	8	21	43	932	34	31	685	58
Future Volume (vph)	38	9	39	102	8	21	43	932	34	31	685	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.89		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1643		1777	1693		1805	5004		1805	4977	
Flt Permitted	0.74	1.00		0.72	1.00		0.30	1.00		0.25	1.00	
Satd. Flow (perm)	1331	1643		1350	1693		571	5004		477	4977	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	43	10	44	115	9	24	48	1047	38	35	770	65
RTOR Reduction (vph)	0	38	0	0	21	0	0	3	0	0	7	0
Lane Group Flow (vph)	43	16	0	115	12	0	48	1082	0	35	828	0
Confl. Peds. (#/hr)			4	4								
Heavy Vehicles (%)	5%	0%	0%	1%	0%	0%	0%	3%	6%	0%	3%	3%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.1	11.1		11.1	11.1		60.4	60.4		52.1	52.1	
Effective Green, g (s)	11.1	11.1		11.1	11.1		60.4	60.4		52.1	52.1	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.71	0.71		0.61	0.61	
Clearance Time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	173	214		176	221		468	3555		292	3050	
v/s Ratio Prot		0.01			0.01		0.01	0.22			0.17	
v/s Ratio Perm	0.03			0.09			0.07			0.07		
v/c Ratio	0.25	0.07		0.65	0.05		0.10	0.30		0.12	0.27	
Uniform Delay, d1	33.2	32.4		35.1	32.4		3.8	4.5		6.9	7.6	
Progression Factor	1.00	1.00		1.00	1.00		0.94	0.89		1.00	1.00	
Incremental Delay, d2	0.8	0.1		8.4	0.1		0.1	0.2		0.8	0.2	
Delay (s)	34.0	32.6		43.5	32.5		3.7	4.3		7.7	7.9	
Level of Service	C	C		D	C		A	A		A	A	
Approach Delay (s/veh)		33.2			41.1			4.2			7.9	
Approach LOS		C			D			A			A	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			9.3				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.38									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			54.3%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
3: Appleby Line & Site Driveway

(240651) 4883 Thomas Alton Blvd.
PM Existing Traffic

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				   	   	
Traffic Volume (vph)	0	12	0	1027	790	2
Future Volume (vph)	0	12	0	1027	790	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.86	0.91	0.91
Ped Bike Factor						
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1644	0	6346	5086	0
Flt Permitted						
Satd. Flow (perm)	0	1644	0	6346	5086	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	53.7			143.7	91.2	
Travel Time (s)	3.9			8.6	5.5	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	3%	2%	0%
Adj. Flow (vph)	0	13	0	1141	878	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	13	0	1141	880	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			6.6	6.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 3: Appleby Line & Site Driveway

(240651) 4883 Thomas Alton Blvd.
PM Existing Traffic

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations				  	  			
Traffic Volume (veh/h)	0	12	0	1027	790	2		
Future Volume (Veh/h)	0	12	0	1027	790	2		
Sign Control	Stop			Free	Free			
Grade	0%			0%	0%			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly flow rate (vph)	0	13	0	1141	878	2		
Pedestrians	1							
Lane Width (m)	3.6							
Walking Speed (m/s)	1.2							
Percent Blockage	0							
Right turn flare (veh)								
Median type				None	None			
Median storage (veh)								
Upstream signal (m)				144	91			
pX, platoon unblocked	0.95	0.94	0.94					
vC, conflicting volume	1165	295	881					
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	747	19	643					
tC, single (s)	6.8	6.9	4.1					
tC, 2 stage (s)								
tF (s)	3.5	3.3	2.2					
p0 queue free %	100	99	100					
cM capacity (veh/h)	336	996	892					
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	13	285	285	285	285	351	351	178
Volume Left	0	0	0	0	0	0	0	0
Volume Right	13	0	0	0	0	0	0	2
cSH	996	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.17	0.17	0.17	0.17	0.21	0.21	0.10
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s/veh)	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s/veh)	8.7	0.0				0.0		
Approach LOS	A							
Intersection Summary								
Average Delay		0.1						
Intersection Capacity Utilization		25.3%		ICU Level of Service				A
Analysis Period (min)		15						

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	271	13	124	377	9	4	11	49	5	7	15
Future Volume (vph)	8	271	13	124	377	9	4	11	49	5	7	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.998			0.897			0.923	
Flt Protected		0.999			0.988			0.997			0.991	
Satd. Flow (prot)	0	1869	0	0	1873	0	0	1699	0	0	1671	0
Flt Permitted		0.999			0.988			0.997			0.991	
Satd. Flow (perm)	0	1869	0	0	1873	0	0	1699	0	0	1671	0
Link Speed (k/h)		40			40			40			50	
Link Distance (m)		200.7			141.3			98.5			71.1	
Travel Time (s)		18.1			12.7			8.9			5.1	
Confl. Peds. (#/hr)	4		9	9		4						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%
Adj. Flow (vph)	8	285	14	131	397	9	4	12	52	5	7	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	307	0	0	537	0	0	68	0	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	57.0%											
Analysis Period (min)	15											
ICU Level of Service B												

HCM Unsignalized Intersection Capacity Analysis
4: Valera Road/Site Driveway & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
PM Existing Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	271	13	124	377	9	4	11	49	5	7	15
Future Volume (Veh/h)	8	271	13	124	377	9	4	11	49	5	7	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	8	285	14	131	397	9	4	12	52	5	7	16
Pedestrians								9			4	
Lane Width (m)								3.6			3.6	
Walking Speed (m/s)								1.2			1.2	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)					141							
pX, platoon unblocked	0.93						0.93	0.93		0.93	0.93	0.93
vC, conflicting volume	410			308			1000	989	301	1034	992	406
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	334			308			965	953	301	1001	956	329
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	99			90			98	94	93	97	97	98
cM capacity (veh/h)	1152			1255			189	215	738	168	214	653
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	307	537	68	28								
Volume Left	8	131	4	5								
Volume Right	14	9	52	16								
cSH	1152	1255	461	322								
Volume to Capacity	0.01	0.10	0.15	0.09								
Queue Length 95th (m)	0.2	2.6	3.9	2.1								
Control Delay (s/veh)	0.3	2.9	14.2	17.2								
Lane LOS	A	A	B	C								
Approach Delay (s/veh)	0.3	2.9	14.2	17.2								
Approach LOS			B	C								
Intersection Summary												
Average Delay			3.3									
Intersection Capacity Utilization			57.0%		ICU Level of Service				B			
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
PM Existing Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	0	253	0	0	0	372	1043	0	0	713	103
Future Volume (vph)	69	0	253	0	0	0	372	1043	0	0	713	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		40.0	30.0		0.0	130.0		0.0	30.0		60.0
Storage Lanes	0		1	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98				1.00					0.98
Frt			0.850									0.850
Flt Protected		0.950					0.950					
Satd. Flow (prot)	0	1787	1599	1900	1900	0	1770	5036	0	1900	5085	1599
Flt Permitted		0.757					0.317					
Satd. Flow (perm)	0	1422	1568	1900	1900	0	590	5036	0	1900	5085	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			266									108
Link Speed (k/h)		40			50			60			60	
Link Distance (m)		141.3			116.2			309.3			143.7	
Travel Time (s)		12.7			8.4			18.6			8.6	
Confl. Peds. (#/hr)	1		5	5		1	2					2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	2%	3%	0%	0%	2%	1%
Adj. Flow (vph)	73	0	266	0	0	0	392	1098	0	0	751	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	266	0	0	0	392	1098	0	0	751	108
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
PM Existing Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm			pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		7.0	8.0		8.0	8.0	8.0
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0		11.0	33.4		41.0	41.0	41.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0		13.0	54.0		41.0	41.0	41.0
Total Split (%)	36.5%	36.5%	36.5%	36.5%	36.5%		15.3%	63.5%		48.2%	48.2%	48.2%
Maximum Green (s)	23.9	23.9	23.9	23.9	23.9		9.0	47.6		34.6	34.6	34.6
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.0	3.7		3.7	3.7	3.7
All-Red Time (s)	3.8	3.8	3.8	3.8	3.8		1.0	2.7		2.7	2.7	2.7
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	10.0	10.0	10.0	10.0	10.0			19.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	0
Act Effect Green (s)		10.3	10.3				63.6	61.2			43.5	43.5
Actuated g/C Ratio		0.12	0.12				0.75	0.72			0.51	0.51
v/c Ratio		0.43	0.63				0.62	0.30			0.29	0.13
Control Delay (s/veh)		41.7	11.7				8.4	4.7			11.9	3.3
Queue Delay		0.0	0.0				0.0	0.0			0.0	0.0
Total Delay (s/veh)		41.7	11.7				8.4	4.7			11.9	3.3
LOS		D	B				A	A			B	A
Approach Delay (s/veh)		18.2						5.7			10.8	
Approach LOS		B						A			B	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 52 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay (s/veh): 8.9

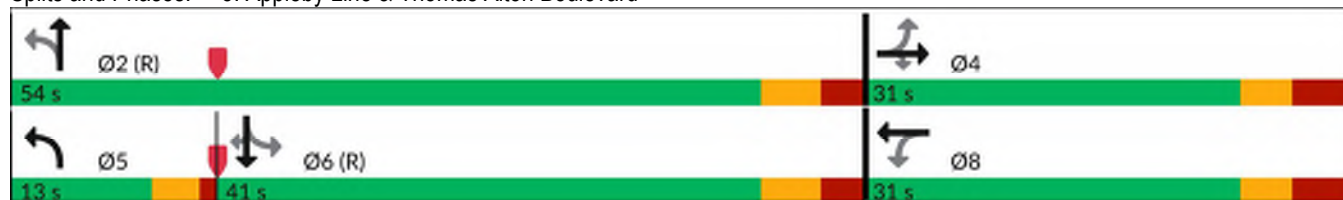
Intersection LOS: A

Intersection Capacity Utilization 60.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Appleby Line & Thomas Alton Boulevard



Queues
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
PM Existing Traffic

	→	↘	↙	↑	↓	↗
Lane Group	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	73	266	392	1098	751	108
v/c Ratio	0.43	0.63	0.62	0.30	0.29	0.13
Control Delay (s/veh)	41.7	11.7	8.4	4.7	11.9	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.7	11.7	8.4	4.7	11.9	3.3
Queue Length 50th (m)	11.1	0.0	15.6	18.4	29.3	1.6
Queue Length 95th (m)	22.3	19.3	31.6	29.3	44.9	10.0
Internal Link Dist (m)	117.3			285.3	119.7	
Turn Bay Length (m)		40.0	130.0			60.0
Base Capacity (vph)	399	632	632	3628	2601	850
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.42	0.62	0.30	0.29	0.13
Intersection Summary						

HCM Signalized Intersection Capacity Analysis 5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
PM Existing Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (vph)	69	0	253	0	0	0	372	1043	0	0	713	103
Future Volume (vph)	69	0	253	0	0	0	372	1043	0	0	713	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1	7.1				4.0	6.4			6.4	6.4
Lane Util. Factor		1.00	1.00				1.00	0.91			0.91	1.00
Frpb, ped/bikes		1.00	0.98				1.00	1.00			1.00	0.98
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	1.00
Frt		1.00	0.85				1.00	1.00			1.00	0.85
Flt Protected		0.95	1.00				0.95	1.00			1.00	1.00
Satd. Flow (prot)		1784	1568				1769	5036			5085	1559
Flt Permitted		0.76	1.00				0.32	1.00			1.00	1.00
Satd. Flow (perm)		1422	1568				590	5036			5085	1559
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	73	0	266	0	0	0	392	1098	0	0	751	108
RTOR Reduction (vph)	0	0	234	0	0	0	0	0	0	0	0	53
Lane Group Flow (vph)	0	73	32	0	0	0	392	1098	0	0	751	55
Confl. Peds. (#/hr)	1		5	5		1	2					2
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	2%	3%	0%	0%	2%	1%
Turn Type	Perm	NA	Perm	Perm			pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)		10.3	10.3				61.2	61.2			43.4	43.4
Effective Green, g (s)		10.3	10.3				61.2	61.2			43.4	43.4
Actuated g/C Ratio		0.12	0.12				0.72	0.72			0.51	0.51
Clearance Time (s)		7.1	7.1				4.0	6.4			6.4	6.4
Vehicle Extension (s)		3.0	3.0				3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		172	190				616	3625			2596	796
v/s Ratio Prot							c0.10	0.22			0.15	
v/s Ratio Perm		c0.05	0.02				c0.35					0.04
v/c Ratio		0.42	0.17				0.64	0.30			0.29	0.07
Uniform Delay, d1		34.6	33.5				4.7	4.3			11.9	10.6
Progression Factor		1.00	1.00				1.00	1.00			0.90	0.94
Incremental Delay, d2		1.7	0.4				2.2	0.2			0.3	0.2
Delay (s)		36.3	33.9				6.8	4.5			11.1	10.1
Level of Service		D	C				A	A			B	B
Approach Delay (s/veh)		34.4			0.0			5.1			11.0	
Approach LOS		C			A			A			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			10.7				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)				17.5	
Intersection Capacity Utilization			60.4%				ICU Level of Service				B	
Analysis Period (min)			15									
c Critical Lane Group												

Intersection: 1: Site Driveway/Lionel Court & Palladium Way

Movement	EB	WB	NB	SB
Directions Served	TR	L	LTR	LTR
Maximum Queue (m)	1.8	7.0	15.7	10.6
Average Queue (m)	0.1	0.3	6.2	4.8
95th Queue (m)	1.3	2.8	14.6	12.5
Link Distance (m)	115.4		102.7	164.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)		20.0		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Appleby Line & Palladium Way/Harrison Court

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	23.7	18.8	43.4	17.7	13.4	36.8	34.4	30.9	14.6	37.3	32.8	31.7
Average Queue (m)	8.0	6.6	18.7	4.2	4.9	15.1	16.1	10.8	4.6	17.9	9.3	9.5
95th Queue (m)	18.9	14.2	34.3	12.3	11.8	30.5	30.7	24.2	11.9	34.6	22.8	21.9
Link Distance (m)		104.6		119.7	66.5	66.5	66.5	66.5		334.4	334.4	334.4
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	45.0		60.0						70.0			
Storage Blk Time (%)			0									
Queuing Penalty (veh)			0									

Intersection: 3: Appleby Line & Site Driveway

Movement	EB
Directions Served	R
Maximum Queue (m)	10.0
Average Queue (m)	3.0
95th Queue (m)	9.8
Link Distance (m)	34.4
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Valera Road/Site Driveway & Thomas Alton Boulevard

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	13.3	33.2	13.4	14.6
Average Queue (m)	1.0	9.1	7.8	5.3
95th Queue (m)	6.8	23.7	13.5	12.4
Link Distance (m)	191.9	110.5	89.8	61.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Appleby Line & Thomas Alton Boulevard

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	L	T	T	TR	T	T	T	R
Maximum Queue (m)	43.1	36.7	71.9	46.7	33.4	25.8	47.3	45.3	38.5	24.2
Average Queue (m)	12.6	16.2	30.9	17.6	13.7	6.8	24.1	22.6	14.9	8.8
95th Queue (m)	29.0	28.3	56.1	37.1	29.4	18.7	43.1	40.5	32.2	19.7
Link Distance (m)	110.5			295.2	295.2	295.2	126.2	126.2	126.2	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)		40.0	130.0							60.0
Storage Blk Time (%)	0	0					4			
Queuing Penalty (veh)	1	0					0			

Network Summary

Network wide Queuing Penalty: 1

Intersection: 1: Site Driveway/Lionel Court & Palladium Way

Movement	EB	WB	NB	SB
Directions Served	TR	L	LTR	LTR
Maximum Queue (m)	1.8	7.0	14.8	3.5
Average Queue (m)	0.1	0.3	8.0	0.2
95th Queue (m)	1.3	3.1	14.5	2.5
Link Distance (m)	115.4		102.7	164.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)		20.0		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Appleby Line & Palladium Way/Harrison Court

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	25.2	23.1	20.3	10.8	23.2	28.6	28.4	19.2	10.7	37.5	24.4	19.1
Average Queue (m)	11.4	7.0	7.4	2.7	6.0	10.2	8.8	3.8	2.1	15.6	7.3	4.5
95th Queue (m)	22.4	18.6	16.8	8.4	16.3	22.6	21.3	13.1	7.6	31.7	18.6	13.5
Link Distance (m)		104.6		119.7	66.5	66.5	66.5	66.5		334.4	334.4	334.4
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	45.0		60.0						70.0			
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: Appleby Line & Site Driveway

Movement	EB
Directions Served	R
Maximum Queue (m)	8.5
Average Queue (m)	0.4
95th Queue (m)	3.6
Link Distance (m)	34.4
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Valera Road/Site Driveway & Thomas Alton Boulevard

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	18.2	17.8	18.6	15.7
Average Queue (m)	2.8	4.3	9.5	6.9
95th Queue (m)	11.6	13.3	16.0	13.4
Link Distance (m)	191.9	110.5	89.8	61.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Appleby Line & Thomas Alton Boulevard

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	L	T	T	TR	T	T	T	R
Maximum Queue (m)	65.6	47.0	41.3	44.7	33.0	17.5	45.0	40.3	33.7	15.4
Average Queue (m)	22.1	20.0	16.4	17.0	10.6	2.7	21.2	19.4	11.2	3.3
95th Queue (m)	45.1	36.1	30.8	32.8	24.6	10.0	40.6	38.4	28.4	11.5
Link Distance (m)	110.5			295.2	295.2	295.2	126.2	126.2	126.2	
Upstream Blk Time (%)	0									
Queuing Penalty (veh)	0									
Storage Bay Dist (m)		40.0	130.0							60.0
Storage Blk Time (%)	2	0					2			
Queuing Penalty (veh)	5	0					0			

Network Summary

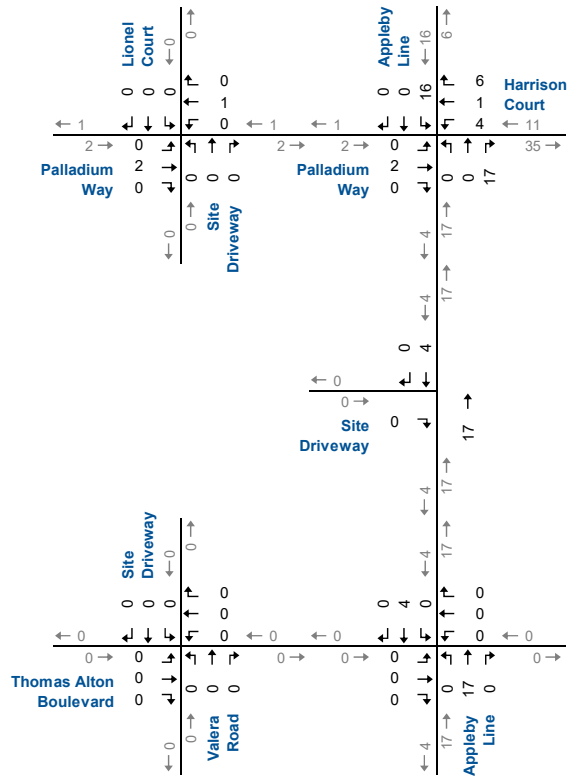
Network wide Queuing Penalty: 6

Appendix D

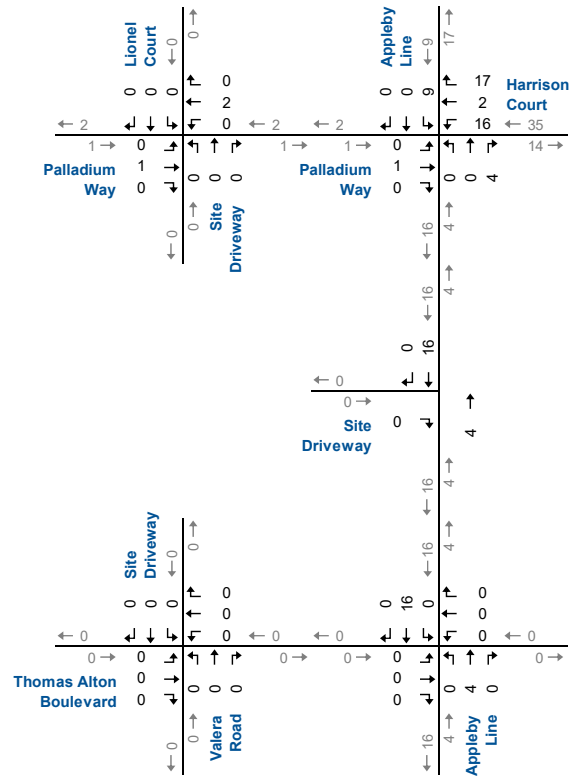
Background Development Traffic



AM Peak Hour

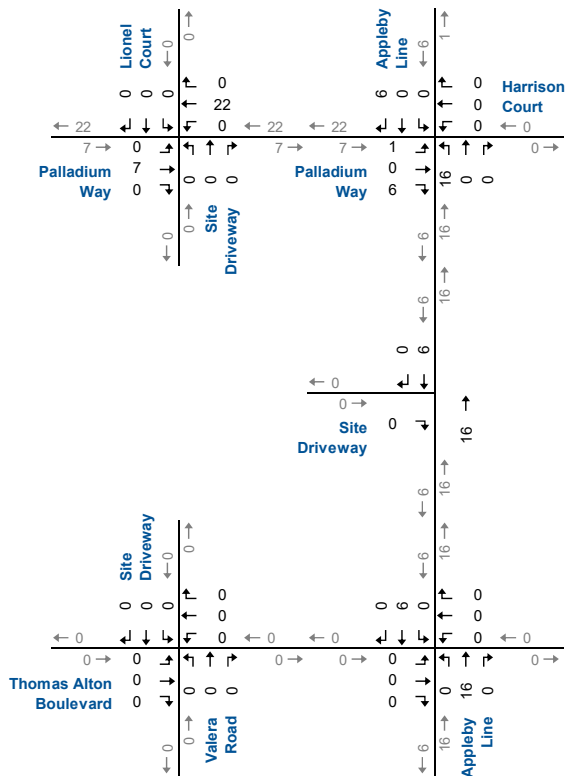


PM Peak Hour

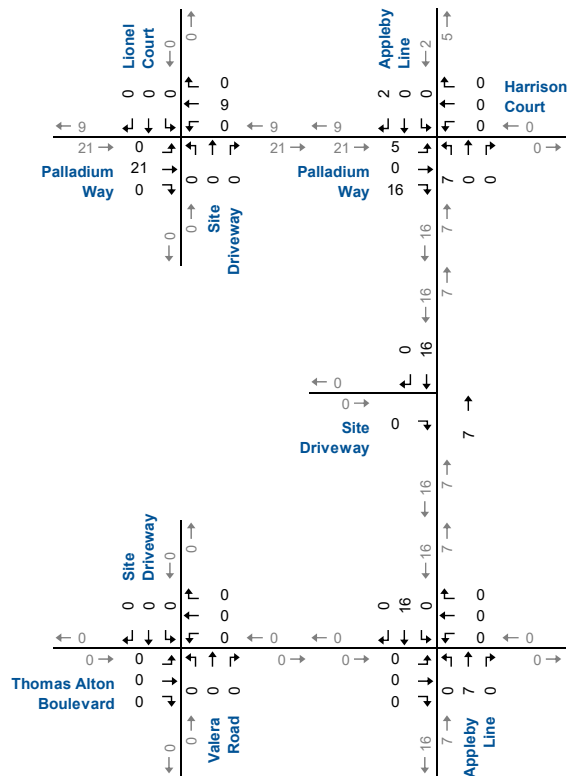


3399 Appleby Line

AM Peak Hour

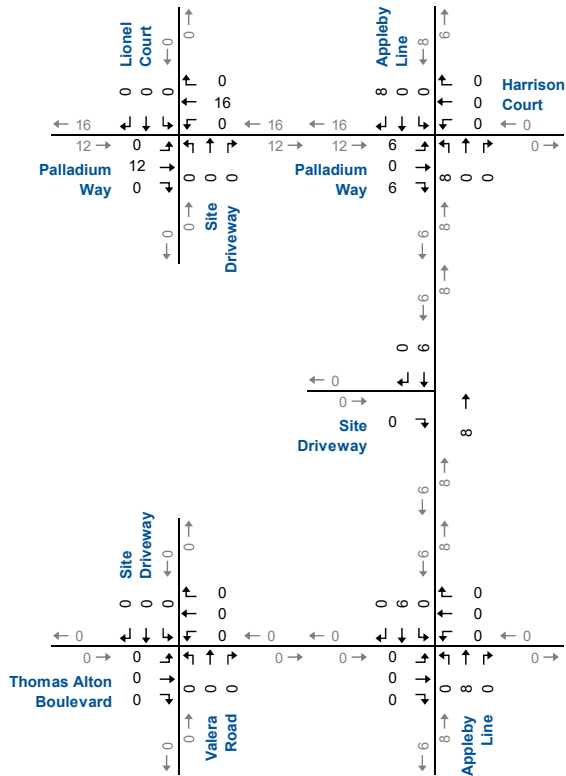


PM Peak Hour

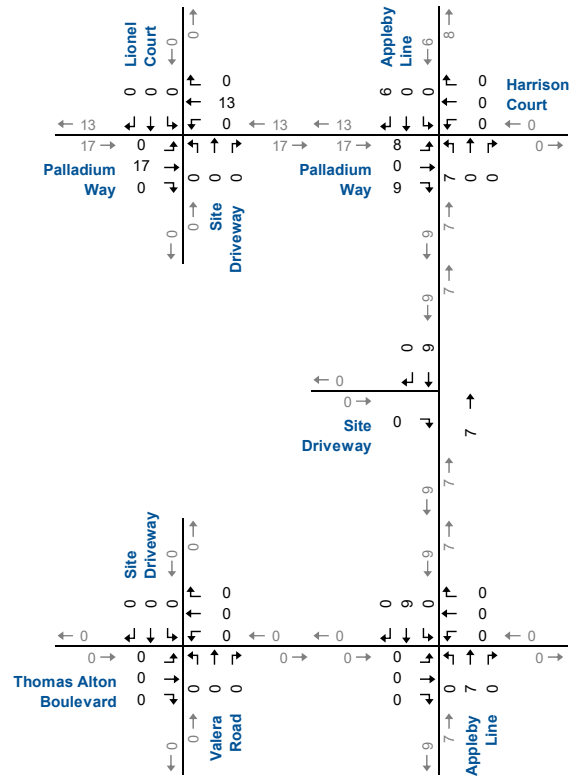


3402-3416 Appleby Line

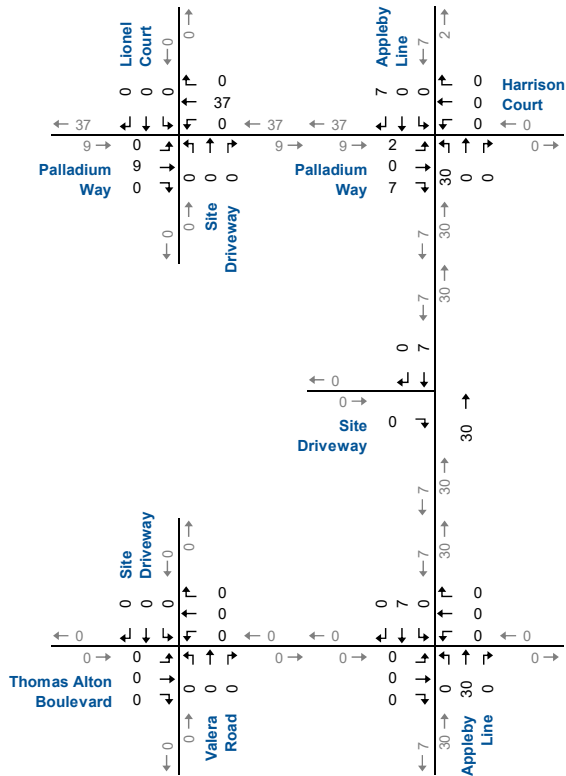
AM Peak Hour



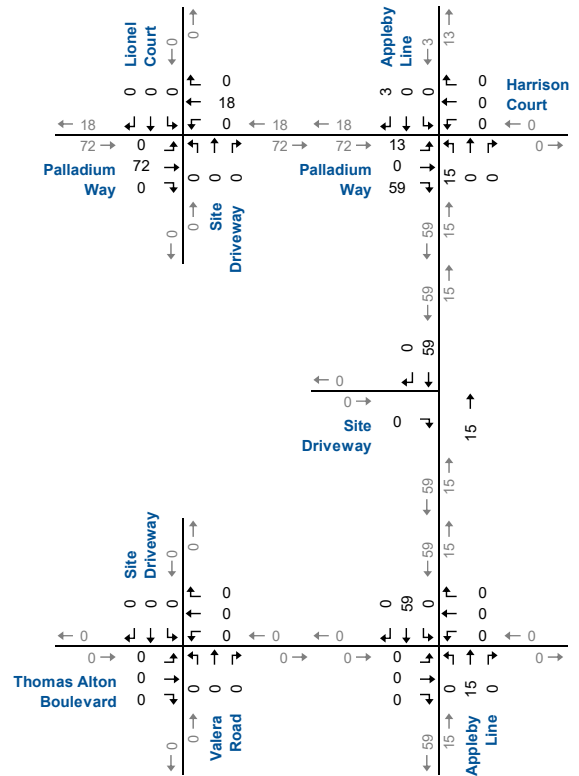
PM Peak Hour



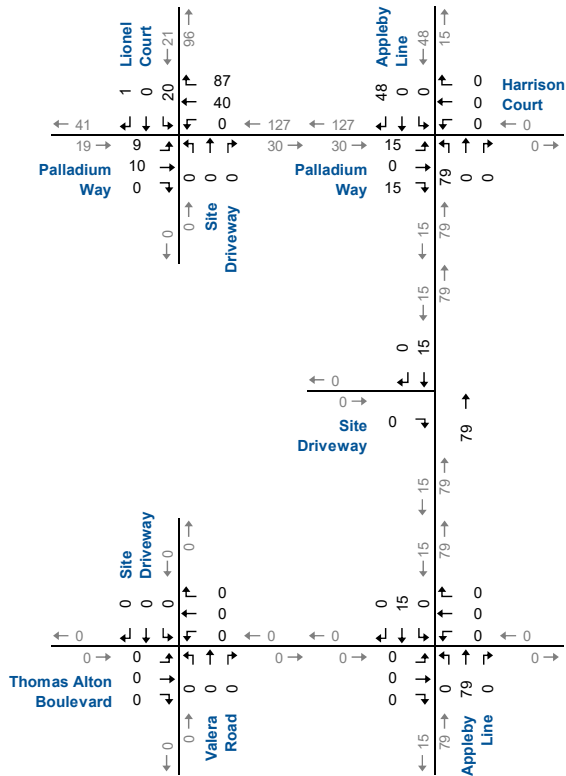
AM Peak Hour



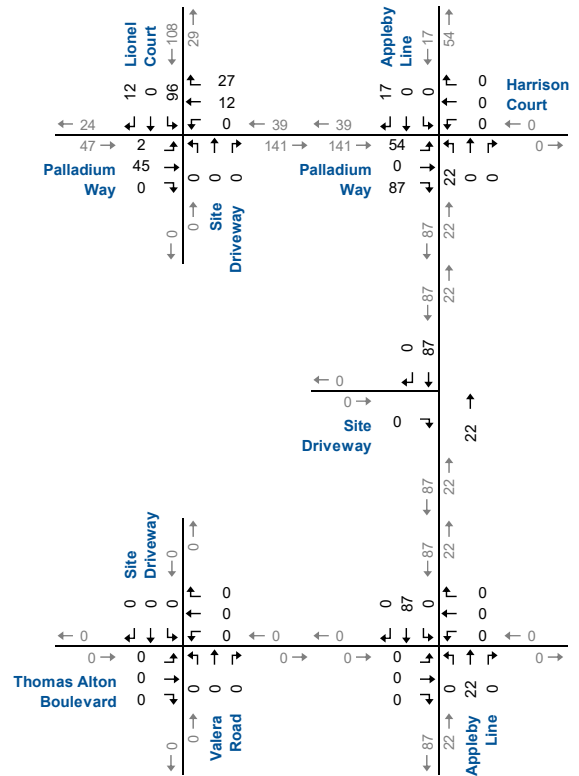
PM Peak Hour



AM Peak Hour



PM Peak Hour



Appendix E

Background Traffic Operations



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	156	56	7	202	87	57	0	3	20	0	2
Future Volume (vph)	10	156	56	7	202	87	57	0	3	20	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.960			0.955			0.994			0.987	
Flt Protected	0.950			0.950				0.955			0.957	
Satd. Flow (prot)	1805	1699	0	1805	1612	0	0	1804	0	0	1795	0
Flt Permitted	0.950			0.950				0.955			0.957	
Satd. Flow (perm)	1805	1699	0	1805	1612	0	0	1804	0	0	1795	0
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.0			132.7			113.2			175.1	
Travel Time (s)		7.4			8.0			8.2			12.6	
Confl. Peds. (#/hr)			3	3			1					1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	0%	10%	0%	0%	18%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	14	220	79	10	285	123	80	0	4	28	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	299	0	10	408	0	0	84	0	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 26.3% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 1: Site Driveway/Lionel Court & Palladium Way

(240651) 4883 Thomas Alton Blvd.
AM Background Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	156	56	7	202	87	57	0	3	20	0	2
Future Volume (Veh/h)	10	156	56	7	202	87	57	0	3	20	0	2
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	14	220	79	10	285	123	80	0	4	28	0	3
Pedestrians	1						3					
Lane Width (m)	3.6						3.6					
Walking Speed (m/s)	1.2						1.2					
Percent Blockage	0						0					
Right turn flare (veh)												
Median type	TWLTL			None								
Median storage veh	2											
Upstream signal (m)				133								
pX, platoon unblocked	1.00							1.00	1.00	1.00	1.00	1.00
vC, conflicting volume	408				302				600	719	263	619
vC1, stage 1 conf vol							291	291				367
vC2, stage 2 conf vol							309	428				252
vCu, unblocked vol	407				302				599	718	263	618
tC, single (s)	4.1				4.1				7.1	6.5	6.2	7.1
tC, 2 stage (s)							6.1	5.5				6.1
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5
p0 queue free %	99				99				86	100	99	95
cM capacity (veh/h)	1162				1267				585	508	779	575
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	14	299	10	408	84	31						
Volume Left	14	0	10	0	80	28						
Volume Right	0	79	0	123	4	3						
cSH	1162	1700	1267	1700	592	585						
Volume to Capacity	0.01	0.18	0.01	0.24	0.14	0.05						
Queue Length 95th (m)	0.3	0.0	0.2	0.0	3.7	1.3						
Control Delay (s/veh)	8.1	0.0	7.9	0.0	12.1	11.5						
Lane LOS	A		A		B	B						
Approach Delay (s/veh)	0.4		0.2		12.1	11.5						
Approach LOS					B	B						
Intersection Summary												
Average Delay				1.8								
Intersection Capacity Utilization				26.3%	ICU Level of Service			A				
Analysis Period (min)				15								

Lanes, Volumes, Timings
2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.
AM Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	11	75	44	3	18	176	754	34	31	732	107
Future Volume (vph)	85	11	75	44	3	18	176	754	34	31	732	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	60.0		0.0	0.0		0.0	70.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99		1.00								
Frt		0.870			0.870			0.993			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1333	0	1752	1653	0	1492	4901	0	1805	4922	0
Flt Permitted	0.743			0.698			0.277			0.327		
Satd. Flow (perm)	1412	1333	0	1286	1653	0	435	4901	0	621	4922	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		79			19			13			38	
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		132.7			140.4			91.2			346.3	
Travel Time (s)		8.0			10.1			5.5			20.8	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	13%	24%	3%	0%	0%	21%	5%	7%	0%	3%	6%
Adj. Flow (vph)	89	12	79	46	3	19	185	794	36	33	771	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	91	0	46	22	0	185	830	0	33	884	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			3.6			3.6			6.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.
AM Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.0	8.0		8.0	8.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		11.0	33.4		41.0	41.0	
Total Split (s)	31.0	31.0		31.0	31.0		13.0	54.0		41.0	41.0	
Total Split (%)	36.5%	36.5%		36.5%	36.5%		15.3%	63.5%		48.2%	48.2%	
Maximum Green (s)	23.9	23.9		23.9	23.9		9.0	47.6		34.6	34.6	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.7	3.7	
All-Red Time (s)	3.8	3.8		3.8	3.8		1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	10.0	10.0		10.0	10.0			19.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effect Green (s)	11.1	11.1		11.1	11.1		65.8	64.7		50.4	50.4	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.77	0.76		0.59	0.59	
v/c Ratio	0.48	0.38		0.28	0.09		0.41	0.22		0.09	0.30	
Control Delay (s/veh)	42.5	14.6		36.3	15.9		10.6	3.5		11.7	10.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	42.5	14.6		36.3	15.9		10.6	3.5		11.7	10.0	
LOS	D	B		D	B		B	A		B	A	
Approach Delay (s/veh)		28.4			29.7			4.8			10.0	
Approach LOS		C			C			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 34 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay (s/veh): 9.7

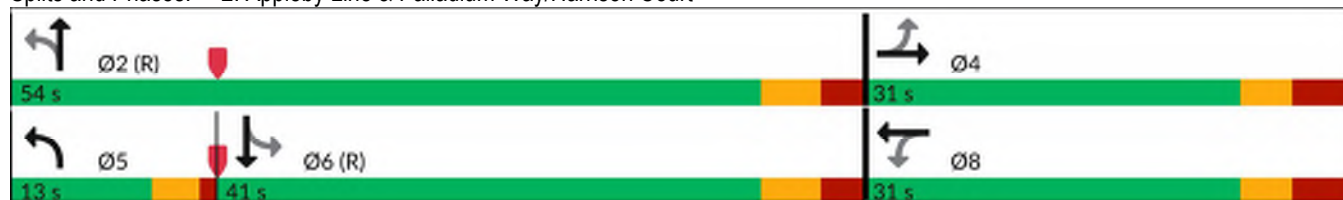
Intersection LOS: A

Intersection Capacity Utilization 52.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Appleby Line & Palladium Way/Harrison Court



Synchro 12 Report

Queues
2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.
AM Background Traffic

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	89	91	46	22	185	830	33	884
v/c Ratio	0.48	0.38	0.28	0.09	0.41	0.22	0.09	0.30
Control Delay (s/veh)	42.5	14.6	36.3	15.9	10.6	3.5	11.7	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.5	14.6	36.3	15.9	10.6	3.5	11.7	10.0
Queue Length 50th (m)	13.5	1.7	6.8	0.4	5.9	11.3	2.2	23.9
Queue Length 95th (m)	25.8	13.6	15.5	6.3	27.7	18.3	8.0	39.5
Internal Link Dist (m)		108.7		116.4		67.2		322.3
Turn Bay Length (m)	45.0		60.0				70.0	
Base Capacity (vph)	397	431	361	478	458	3733	368	2936
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.21	0.13	0.05	0.40	0.22	0.09	0.30
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.

AM Background Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (vph)	85	11	75	44	3	18	176	754	34	31	732	107
Future Volume (vph)	85	11	75	44	3	18	176	754	34	31	732	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.87		1.00	0.87		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1333		1750	1654		1492	4904		1805	4921	
Flt Permitted	0.74	1.00		0.70	1.00		0.28	1.00		0.33	1.00	
Satd. Flow (perm)	1412	1333		1286	1654		435	4904		622	4921	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	12	79	46	3	19	185	794	36	33	771	113
RTOR Reduction (vph)	0	70	0	0	17	0	0	4	0	0	16	0
Lane Group Flow (vph)	89	21	0	46	5	0	185	826	0	33	868	0
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	0%	13%	24%	3%	0%	0%	21%	5%	7%	0%	3%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.5	9.5		9.5	9.5		62.0	62.0		49.0	49.0	
Effective Green, g (s)	9.5	9.5		9.5	9.5		62.0	62.0		49.0	49.0	
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.73	0.73		0.58	0.58	
Clearance Time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	157	148		143	184		429	3577		358	2836	
v/s Ratio Prot		0.02			0.00		c0.05	0.17			0.18	
v/s Ratio Perm	c0.06			0.04			c0.27			0.05		
v/c Ratio	0.57	0.14		0.32	0.03		0.43	0.23		0.09	0.31	
Uniform Delay, d1	35.8	34.1		34.8	33.6		3.8	3.7		8.1	9.3	
Progression Factor	1.00	1.00		1.00	1.00		2.14	0.82		1.00	1.00	
Incremental Delay, d2	4.6	0.4		1.3	0.1		0.7	0.1		0.5	0.3	
Delay (s)	40.4	34.5		36.1	33.7		8.9	3.2		8.6	9.5	
Level of Service	D	C		D	C		A	A		A	A	
Approach Delay (s/veh)		37.4			35.3			4.3			9.5	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			10.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.47									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			52.3%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
3: Appleby Line & Site Driveway

(240651) 4883 Thomas Alton Blvd.
AM Background Traffic

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1	0	982	847	4
Future Volume (vph)	0	1	0	982	847	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.86	0.91	0.91
Ped Bike Factor						
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1644	0	6225	4983	0
Flt Permitted						
Satd. Flow (perm)	0	1644	0	6225	4983	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	53.7			143.7	91.2	
Travel Time (s)	3.9			8.6	5.5	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	5%	4%	0%
Adj. Flow (vph)	0	1	0	1023	882	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	0	1023	886	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			6.6	6.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 3: Appleby Line & Site Driveway

(240651) 4883 Thomas Alton Blvd.
AM Background Traffic

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations				   	   			
Traffic Volume (veh/h)	0	1	0	982	847	4		
Future Volume (Veh/h)	0	1	0	982	847	4		
Sign Control	Stop			Free	Free			
Grade	0%			0%	0%			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Hourly flow rate (vph)	0	1	0	1023	882	4		
Pedestrians	1							
Lane Width (m)	3.6							
Walking Speed (m/s)	1.2							
Percent Blockage	0							
Right turn flare (veh)								
Median type				None	None			
Median storage (veh)								
Upstream signal (m)				144	91			
pX, platoon unblocked	0.93	0.93	0.93					
vC, conflicting volume	1141	297	887					
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	821	0	594					
tC, single (s)	6.8	6.9	4.1					
tC, 2 stage (s)								
tF (s)	3.5	3.3	2.2					
p0 queue free %	100	100	100					
cM capacity (veh/h)	294	1008	917					
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	1	256	256	256	256	353	353	180
Volume Left	0	0	0	0	0	0	0	0
Volume Right	1	0	0	0	0	0	0	4
cSH	1008	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.15	0.15	0.15	0.15	0.21	0.21	0.11
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s/veh)	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s/veh)	8.6	0.0				0.0		
Approach LOS	A							
Intersection Summary								
Average Delay		0.0						
Intersection Capacity Utilization		26.5%		ICU Level of Service		A		
Analysis Period (min)		15						

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	439	19	49	156	26	17	19	59	2	7	40
Future Volume (vph)	43	439	19	49	156	26	17	19	59	2	7	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.985			0.916			0.888	
Flt Protected		0.996			0.990			0.991			0.998	
Satd. Flow (prot)	0	1846	0	0	1735	0	0	1683	0	0	1643	0
Flt Permitted		0.996			0.990			0.991			0.998	
Satd. Flow (perm)	0	1846	0	0	1735	0	0	1683	0	0	1643	0
Link Speed (k/h)		40			40			40			50	
Link Distance (m)		200.7			141.3			98.5			71.1	
Travel Time (s)		18.1			12.7			8.9			5.1	
Confl. Peds. (#/hr)	9		18	18		9			1	1		
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	2%	6%	0%	10%	0%	7%	0%	2%	0%	0%	3%
Adj. Flow (vph)	51	523	23	58	186	31	20	23	70	2	8	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	597	0	0	275	0	0	113	0	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	48.6%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis
4: Valera Road/Site Driveway & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Background Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	439	19	49	156	26	17	19	59	2	7	40
Future Volume (Veh/h)	43	439	19	49	156	26	17	19	59	2	7	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	51	523	23	58	186	31	20	23	70	2	8	48
Pedestrians					1			18			9	
Lane Width (m)					3.6			3.6			3.6	
Walking Speed (m/s)					1.2			1.2			1.2	
Percent Blockage					0			2			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)					141							
pX, platoon unblocked	1.00						1.00	1.00		1.00	1.00	1.00
vC, conflicting volume	226			564			1024	997	554	1046	993	211
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	220			564			1022	994	554	1043	990	204
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			94			88	89	87	99	96	94
cM capacity (veh/h)	1345			1002			172	218	524	150	219	824
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	597	275	113	58								
Volume Left	51	58	20	2								
Volume Right	23	31	70	48								
cSH	1345	1002	318	536								
Volume to Capacity	0.04	0.06	0.36	0.11								
Queue Length 95th (m)	0.9	1.4	11.7	2.7								
Control Delay (s/veh)	1.1	2.3	22.4	12.5								
Lane LOS	A	A	C	B								
Approach Delay (s/veh)	1.1	2.3	22.4	12.5								
Approach LOS			C	B								
Intersection Summary												
Average Delay			4.3									
Intersection Capacity Utilization			48.6%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	4	347	29	3	3	185	838	43	3	817	40
Future Volume (vph)	142	4	347	29	3	3	185	838	43	3	817	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		40.0	30.0		0.0	130.0		0.0	30.0		60.0
Storage Lanes	0		1	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor			0.99	1.00			1.00					0.98
Frt			0.850		0.925			0.993				0.850
Flt Protected		0.954		0.950			0.950			0.950		
Satd. Flow (prot)	0	1795	1599	1805	1758	0	1687	4787	0	1805	4988	1495
Flt Permitted		0.728		0.657			0.264			0.287		
Satd. Flow (perm)	0	1370	1577	1247	1758	0	468	4787	0	545	4988	1458
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			271		3			15				104
Link Speed (k/h)		40			50			60			60	
Link Distance (m)		141.3			116.2			309.3			143.7	
Travel Time (s)		12.7			8.4			18.6			8.6	
Confl. Peds. (#/hr)			1	1			2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	7%	8%	0%	0%	4%	8%
Adj. Flow (vph)	154	4	377	32	3	3	201	911	47	3	888	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	158	377	32	6	0	201	958	0	3	888	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		7.0	8.0		8.0	8.0	8.0
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0		11.0	33.4		41.0	41.0	41.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0		13.0	54.0		41.0	41.0	41.0
Total Split (%)	36.5%	36.5%	36.5%	36.5%	36.5%		15.3%	63.5%		48.2%	48.2%	48.2%
Maximum Green (s)	23.9	23.9	23.9	23.9	23.9		9.0	47.6		34.6	34.6	34.6
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.0	3.7		3.7	3.7	3.7
All-Red Time (s)	3.8	3.8	3.8	3.8	3.8		1.0	2.7		2.7	2.7	2.7
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	10.0	10.0	10.0	10.0	10.0			19.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	0
Act Effect Green (s)		15.5	15.5	15.5	15.5		58.4	56.0		43.1	43.1	43.1
Actuated g/C Ratio		0.18	0.18	0.18	0.18		0.69	0.66		0.51	0.51	0.51
v/c Ratio		0.63	0.74	0.14	0.02		0.45	0.30		0.01	0.35	0.05
Control Delay (s/veh)		42.4	18.5	27.8	19.7		9.1	7.1		8.0	10.3	1.6
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		42.4	18.5	27.8	19.7		9.1	7.1		8.0	10.3	1.6
LOS		D	B	C	B		A	A		A	B	A
Approach Delay (s/veh)		25.6			26.5			7.4			9.9	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 52 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay (s/veh): 12.2

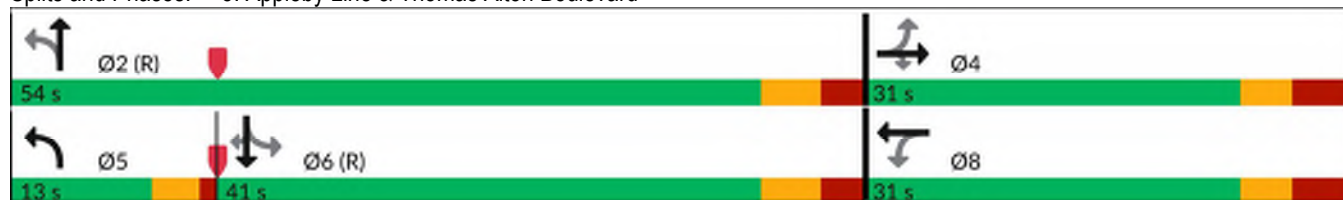
Intersection LOS: B

Intersection Capacity Utilization 61.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Appleby Line & Thomas Alton Boulevard



Synchro 12 Report

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Queues
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Background Traffic

									
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	158	377	32	6	201	958	3	888	43
v/c Ratio	0.63	0.74	0.14	0.02	0.45	0.30	0.01	0.35	0.05
Control Delay (s/veh)	42.4	18.5	27.8	19.7	9.1	7.1	8.0	10.3	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.4	18.5	27.8	19.7	9.1	7.1	8.0	10.3	1.6
Queue Length 50th (m)	23.8	15.1	4.4	0.4	9.6	20.2	0.1	33.7	0.4
Queue Length 95th (m)	38.1	39.7	10.5	3.1	23.0	35.2	m0.6	52.8	2.3
Internal Link Dist (m)	117.3			92.2		285.3		119.7	
Turn Bay Length (m)		40.0	30.0		130.0		30.0		60.0
Base Capacity (vph)	385	638	350	496	457	3156	276	2530	790
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.59	0.09	0.01	0.44	0.30	0.01	0.35	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis 5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Background Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (vph)	142	4	347	29	3	3	185	838	43	3	817	40
Future Volume (vph)	142	4	347	29	3	3	185	838	43	3	817	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1794	1577	1803	1758		1686	4785		1805	4988	1458
Flt Permitted		0.73	1.00	0.66	1.00		0.26	1.00		0.29	1.00	1.00
Satd. Flow (perm)		1369	1577	1246	1758		468	4785		544	4988	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	4	377	32	3	3	201	911	47	3	888	43
RTOR Reduction (vph)	0	0	222	0	2	0	0	5	0	0	0	21
Lane Group Flow (vph)	0	158	155	32	4	0	201	953	0	3	888	22
Confl. Peds. (#/hr)			1	1			2			3	888	2
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	7%	8%	0%	0%	4%	8%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)		15.5	15.5	15.5	15.5		56.0	56.0		43.2	43.2	43.2
Effective Green, g (s)		15.5	15.5	15.5	15.5		56.0	56.0		43.2	43.2	43.2
Actuated g/C Ratio		0.18	0.18	0.18	0.18		0.66	0.66		0.51	0.51	0.51
Clearance Time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		249	287	227	320		434	3152		276	2535	741
v/s Ratio Prot					0.00		0.05	0.20			0.18	
v/s Ratio Perm		0.12	0.10	0.03			0.26			0.01		0.01
v/c Ratio		0.63	0.54	0.14	0.01		0.46	0.30		0.01	0.35	0.03
Uniform Delay, d1		32.1	31.5	29.2	28.5		6.0	6.2		10.3	12.5	10.4
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		0.56	0.72	1.00
Incremental Delay, d2		5.2	2.1	0.3	0.0		0.8	0.2		0.1	0.4	0.1
Delay (s)		37.3	33.6	29.4	28.5		6.8	6.4		5.9	9.4	10.5
Level of Service		D	C	C	C		A	A		A	A	B
Approach Delay (s/veh)		34.7			29.3			6.5			9.4	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			13.5				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			61.2%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	244	44	6	153	30	19	0	11	118	1	14
Future Volume (vph)	3	244	44	6	153	30	19	0	11	118	1	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.977			0.976			0.951			0.986	
Flt Protected	0.950			0.950				0.969			0.957	
Satd. Flow (prot)	1805	1630	0	1805	1698	0	0	1695	0	0	1793	0
Flt Permitted	0.950			0.950				0.969			0.957	
Satd. Flow (perm)	1805	1630	0	1805	1698	0	0	1695	0	0	1793	0
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.0			132.7			113.2			175.1	
Travel Time (s)		7.4			8.0			8.2			12.6	
Confl. Peds. (#/hr)	1		2	2		1	2					2
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles (%)	0%	16%	2%	0%	11%	0%	0%	0%	9%	0%	0%	0%
Adj. Flow (vph)	4	354	64	9	222	43	28	0	16	171	1	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	418	0	9	265	0	0	44	0	0	192	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	32.5%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis 1: Site Driveway/Lionel Court & Palladium Way

(240651) 4883 Thomas Alton Blvd.
PM Background Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	244	44	6	153	30	19	0	11	118	1	14
Future Volume (Veh/h)	3	244	44	6	153	30	19	0	11	118	1	14
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	4	354	64	9	222	43	28	0	16	171	1	20
Pedestrians	2						2			1		
Lane Width (m)	3.6						3.6			3.6		
Walking Speed (m/s)	1.2						1.2			1.2		
Percent Blockage	0						0			0		
Right turn flare (veh)												
Median type	TWLTL			None								
Median storage veh	2											
Upstream signal (m)	133											
pX, platoon unblocked												
vC, conflicting volume	266			420			659	680	388	641	691	247
vC1, stage 1 conf vol							396	396		263	263	
vC2, stage 2 conf vol							263	284		378	428	
vCu, unblocked vol	266			420			659	680	388	641	691	247
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			99			95	100	98	69	100	97
cM capacity (veh/h)	1308			1148			552	532	644	555	521	795
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	4	418	9	265	44	192						
Volume Left	4	0	9	0	28	171						
Volume Right	0	64	0	43	16	20						
cSH	1308	1700	1148	1700	582	573						
Volume to Capacity	0.00	0.25	0.01	0.16	0.08	0.33						
Queue Length 95th (m)	0.1	0.0	0.2	0.0	1.8	11.0						
Control Delay (s/veh)	7.8	0.0	8.2	0.0	11.7	14.4						
Lane LOS	A		A		B	B						
Approach Delay (s/veh)	0.1		0.3		11.7	14.4						
Approach LOS					B	B						
Intersection Summary												
Average Delay	3.6											
Intersection Capacity Utilization	32.5%			ICU Level of Service			A					
Analysis Period (min)	15											

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	11	214	129	11	40	98	1033	42	43	757	92
Future Volume (vph)	122	11	214	129	11	40	98	1033	42	43	757	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	60.0		0.0	0.0		0.0	70.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.98		1.00								
Frt		0.857			0.882			0.994			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	1601	0	1787	1676	0	1805	5000	0	1805	4955	0
Flt Permitted	0.720			0.465			0.243			0.221		
Satd. Flow (perm)	1303	1601	0	871	1676	0	462	5000	0	420	4955	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		240			45			11			30	
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		132.7			140.4			91.2			346.3	
Travel Time (s)		8.0			10.1			5.5			20.8	
Confl. Peds. (#/hr)			4	4								
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	5%	0%	0%	1%	0%	0%	0%	3%	6%	0%	3%	3%
Adj. Flow (vph)	137	12	240	145	12	45	110	1161	47	48	851	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	252	0	145	57	0	110	1208	0	48	954	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			3.6			3.6			6.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

	↖	→	↘	↙	←	↖	↙	↑	↘	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.0	8.0		8.0	8.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		11.0	33.4		41.0	41.0	
Total Split (s)	31.0	31.0		31.0	31.0		13.0	54.0		41.0	41.0	
Total Split (%)	36.5%	36.5%		36.5%	36.5%		15.3%	63.5%		48.2%	48.2%	
Maximum Green (s)	23.9	23.9		23.9	23.9		9.0	47.6		34.6	34.6	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.7	3.7	
All-Red Time (s)	3.8	3.8		3.8	3.8		1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	10.0	10.0		10.0	10.0			19.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effect Green (s)	17.2	17.2		17.2	17.2		56.7	54.3		44.8	44.8	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.67	0.64		0.53	0.53	
v/c Ratio	0.52	0.49		0.83	0.15		0.26	0.38		0.22	0.36	
Control Delay (s/veh)	36.1	7.7		65.7	11.1		7.4	7.2		18.4	13.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	36.1	7.7		65.7	11.1		7.4	7.2		18.4	13.6	
LOS	D	A		E	B		A	A		B	B	
Approach Delay (s/veh)		17.7			50.3			7.2			13.8	
Approach LOS		B			D			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 34 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay (s/veh): 13.9

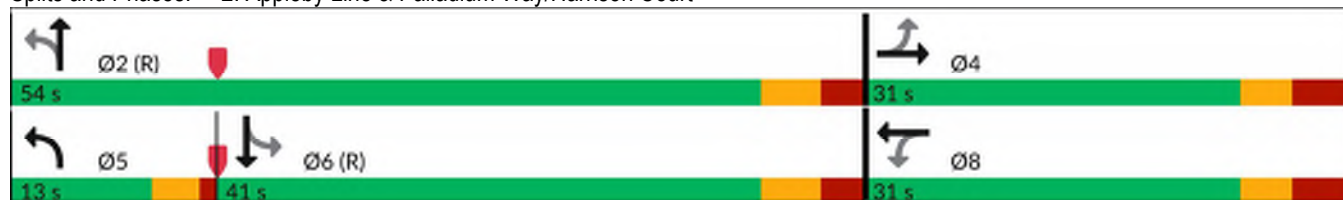
Intersection LOS: B

Intersection Capacity Utilization 71.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Appleby Line & Palladium Way/Harrison Court



Queues
2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.
PM Background Traffic

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	137	252	145	57	110	1208	48	954
v/c Ratio	0.52	0.49	0.83	0.15	0.26	0.38	0.22	0.36
Control Delay (s/veh)	36.1	7.7	65.7	11.1	7.4	7.2	18.4	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.1	7.7	65.7	11.1	7.4	7.2	18.4	13.6
Queue Length 50th (m)	19.6	1.6	22.3	1.6	5.2	27.6	4.1	31.6
Queue Length 95th (m)	32.6	17.1	38.9	9.4	11.6	33.0	13.6	48.9
Internal Link Dist (m)		108.7		116.4		67.2		322.3
Turn Bay Length (m)	45.0		60.0				70.0	
Base Capacity (vph)	366	622	244	503	450	3200	221	2626
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.41	0.59	0.11	0.24	0.38	0.22	0.36
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.
PM Background Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	11	214	129	11	40	98	1033	42	43	757	92
Future Volume (vph)	122	11	214	129	11	40	98	1033	42	43	757	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.86		1.00	0.88		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1601		1780	1675		1805	5001		1805	4954	
Flt Permitted	0.72	1.00		0.46	1.00		0.24	1.00		0.22	1.00	
Satd. Flow (perm)	1303	1601		871	1675		462	5001		419	4954	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	137	12	240	145	12	45	110	1161	47	48	851	103
RTOR Reduction (vph)	0	191	0	0	36	0	0	4	0	0	14	0
Lane Group Flow (vph)	137	61	0	145	21	0	110	1204	0	48	940	0
Confl. Peds. (#/hr)			4	4								
Heavy Vehicles (%)	5%	0%	0%	1%	0%	0%	0%	3%	6%	0%	3%	3%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.2	17.2		17.2	17.2		54.3	54.3		44.0	44.0	
Effective Green, g (s)	17.2	17.2		17.2	17.2		54.3	54.3		44.0	44.0	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.64	0.64		0.52	0.52	
Clearance Time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	263	323		176	338		394	3194		216	2564	
v/s Ratio Prot		0.04			0.01		0.02	0.24			0.19	
v/s Ratio Perm	0.11			0.17			0.16			0.11		
v/c Ratio	0.52	0.19		0.82	0.06		0.28	0.38		0.22	0.37	
Uniform Delay, d1	30.2	28.1		32.5	27.4		6.3	7.3		11.2	12.2	
Progression Factor	1.00	1.00		1.00	1.00		0.96	0.85		1.00	1.00	
Incremental Delay, d2	1.9	0.3		25.7	0.1		0.4	0.3		2.4	0.4	
Delay (s)	32.1	28.4		58.2	27.5		6.5	6.6		13.5	12.6	
Level of Service	C	C		E	C		A	A		B	B	
Approach Delay (s/veh)		29.7			49.5			6.6			12.7	
Approach LOS		C			D			A			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			14.7									
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			85.0									
Intersection Capacity Utilization			71.4%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
3: Appleby Line & Site Driveway

(240651) 4883 Thomas Alton Blvd.
PM Background Traffic

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				   	   	
Traffic Volume (vph)	0	12	0	1193	1060	2
Future Volume (vph)	0	12	0	1193	1060	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.86	0.91	0.91
Ped Bike Factor						
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1644	0	6346	5085	0
Flt Permitted						
Satd. Flow (perm)	0	1644	0	6346	5085	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	53.7			143.7	91.2	
Travel Time (s)	3.9			8.6	5.5	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	3%	2%	0%
Adj. Flow (vph)	0	13	0	1326	1178	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	13	0	1326	1180	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			6.6	6.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	30.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 3: Appleby Line & Site Driveway

(240651) 4883 Thomas Alton Blvd.
PM Background Traffic

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations				  	  			
Traffic Volume (veh/h)	0	12	0	1193	1060	2		
Future Volume (Veh/h)	0	12	0	1193	1060	2		
Sign Control	Stop			Free	Free			
Grade	0%			0%	0%			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly flow rate (vph)	0	13	0	1326	1178	2		
Pedestrians	1							
Lane Width (m)	3.6							
Walking Speed (m/s)	1.2							
Percent Blockage	0							
Right turn flare (veh)								
Median type				None	None			
Median storage (veh)								
Upstream signal (m)				144	91			
pX, platoon unblocked	0.93	0.90	0.90					
vC, conflicting volume	1512	395	1181					
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	834	0	824					
tC, single (s)	6.8	6.9	4.1					
tC, 2 stage (s)								
tF (s)	3.5	3.3	2.2					
p0 queue free %	100	99	100					
cM capacity (veh/h)	288	984	735					
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	13	332	332	332	332	471	471	238
Volume Left	0	0	0	0	0	0	0	0
Volume Right	13	0	0	0	0	0	0	2
cSH	984	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.20	0.20	0.20	0.20	0.28	0.28	0.14
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s/veh)	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s/veh)	8.7	0.0				0.0		
Approach LOS	A							
Intersection Summary								
Average Delay		0.0						
Intersection Capacity Utilization		30.5%		ICU Level of Service		A		
Analysis Period (min)		15						

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	308	14	137	426	9	4	11	54	5	7	15
Future Volume (vph)	8	308	14	137	426	9	4	11	54	5	7	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.998			0.895			0.923	
Flt Protected		0.999			0.988			0.997			0.991	
Satd. Flow (prot)	0	1869	0	0	1873	0	0	1695	0	0	1671	0
Flt Permitted		0.999			0.988			0.997			0.991	
Satd. Flow (perm)	0	1869	0	0	1873	0	0	1695	0	0	1671	0
Link Speed (k/h)		40			50			40			50	
Link Distance (m)		200.7			141.3			98.5			71.1	
Travel Time (s)		18.1			10.2			8.9			5.1	
Confl. Peds. (#/hr)	4		9	9		4						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%
Adj. Flow (vph)	8	324	15	144	448	9	4	12	57	5	7	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	347	0	0	601	0	0	73	0	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	62.6%						ICU Level of Service B					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis
4: Valera Road/Site Driveway & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
PM Background Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	308	14	137	426	9	4	11	54	5	7	15
Future Volume (Veh/h)	8	308	14	137	426	9	4	11	54	5	7	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	8	324	15	144	448	9	4	12	57	5	7	16
Pedestrians								9			4	
Lane Width (m)								3.6			3.6	
Walking Speed (m/s)								1.2			1.2	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)					141							
pX, platoon unblocked	0.91						0.91	0.91		0.91	0.91	0.91
vC, conflicting volume	461			348			1117	1106	341	1155	1109	457
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	356			348			1078	1066	341	1120	1069	351
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	99			88			97	93	92	96	96	97
cM capacity (veh/h)	1099			1213			151	176	701	131	175	617
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	347	601	73	28								
Volume Left	8	144	4	5								
Volume Right	15	9	57	16								
cSH	1099	1213	415	269								
Volume to Capacity	0.01	0.12	0.18	0.10								
Queue Length 95th (m)	0.2	3.0	4.7	2.6								
Control Delay (s/veh)	0.3	3.0	15.5	19.9								
Lane LOS	A	A	C	C								
Approach Delay (s/veh)	0.3	3.0	15.5	19.9								
Approach LOS			C	C								
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			62.6%		ICU Level of Service				B			
Analysis Period (min)			15									

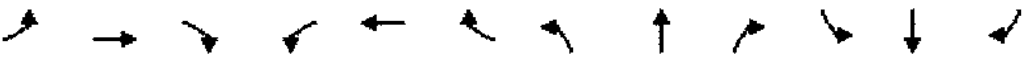
Lanes, Volumes, Timings
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
PM Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	9	279	86	10	4	411	1207	76	1	974	114
Future Volume (vph)	76	9	279	86	10	4	411	1207	76	1	974	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		40.0	30.0		0.0	130.0		0.0	30.0		60.0
Storage Lanes	0		1	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	0.99	1.00		1.00					0.98
Frt			0.850		0.960			0.991				0.850
Flt Protected		0.957		0.950			0.950			0.950		
Satd. Flow (prot)	0	1802	1599	1805	1817	0	1770	4999	0	1805	5085	1599
Flt Permitted		0.737		0.699			0.192			0.190		
Satd. Flow (perm)	0	1386	1568	1319	1817	0	357	4999	0	361	5085	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			254		4			19				120
Link Speed (k/h)		40			50			60			60	
Link Distance (m)		141.3			116.2			309.3			143.7	
Travel Time (s)		12.7			8.4			18.6			8.6	
Confl. Peds. (#/hr)	1		5	5		1	2					2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	2%	3%	0%	0%	2%	1%
Adj. Flow (vph)	80	9	294	91	11	4	433	1271	80	1	1025	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	89	294	91	15	0	433	1351	0	1	1025	120
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
PM Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		7.0	8.0		8.0	8.0	8.0
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0		11.0	33.4		41.0	41.0	41.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0		13.0	54.0		41.0	41.0	41.0
Total Split (%)	36.5%	36.5%	36.5%	36.5%	36.5%		15.3%	63.5%		48.2%	48.2%	48.2%
Maximum Green (s)	23.9	23.9	23.9	23.9	23.9		9.0	47.6		34.6	34.6	34.6
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.0	3.7		3.7	3.7	3.7
All-Red Time (s)	3.8	3.8	3.8	3.8	3.8		1.0	2.7		2.7	2.7	2.7
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	10.0	10.0	10.0	10.0	10.0			19.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	0
Act Effect Green (s)		11.7	11.7	11.7	11.7		62.2	59.8		34.6	34.6	34.6
Actuated g/C Ratio		0.14	0.14	0.14	0.14		0.73	0.70		0.41	0.41	0.41
v/c Ratio		0.47	0.68	0.50	0.06		0.71	0.38		0.01	0.50	0.17
Control Delay (s/veh)		40.8	15.2	42.6	25.3		18.7	5.8		11.0	17.2	2.6
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		40.8	15.2	42.6	25.3		18.7	5.8		11.0	17.2	2.6
LOS		D	B	D	C		B	A		B	B	A
Approach Delay (s/veh)		21.1			40.1			8.9			15.6	
Approach LOS		C			D			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 52 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay (s/veh): 13.5

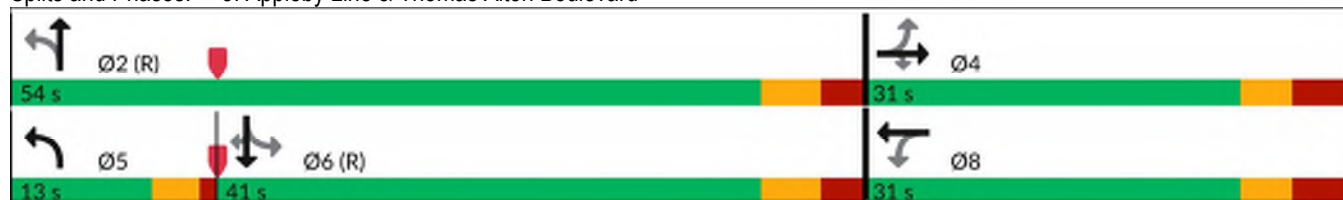
Intersection LOS: B

Intersection Capacity Utilization 68.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Appleby Line & Thomas Alton Boulevard



Synchro 12 Report

Queues
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
PM Background Traffic

									
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	89	294	91	15	433	1351	1	1025	120
v/c Ratio	0.47	0.68	0.50	0.06	0.71	0.38	0.01	0.50	0.17
Control Delay (s/veh)	40.8	15.2	42.6	25.3	18.7	5.8	11.0	17.2	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	40.8	15.2	42.6	25.3	18.7	5.8	11.0	17.2	2.6
Queue Length 50th (m)	13.4	5.8	13.8	1.6	28.1	25.9	0.1	49.4	3.3
Queue Length 95th (m)	25.2	27.0	25.9	6.1	#84.9	42.3	m0.1	53.9	m2.5
Internal Link Dist (m)	117.3			92.2		285.3		119.7	
Turn Bay Length (m)		40.0	30.0		130.0		30.0		60.0
Base Capacity (vph)	389	623	370	513	612	3520	146	2069	705
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.47	0.25	0.03	0.71	0.38	0.01	0.50	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
PM Background Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (vph)	76	9	279	86	10	4	411	1207	76	1	974	114
Future Volume (vph)	76	9	279	86	10	4	411	1207	76	1	974	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes		1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1800	1568	1793	1817		1769	5000		1805	5085	1559
Flt Permitted		0.74	1.00	0.70	1.00		0.19	1.00		0.19	1.00	1.00
Satd. Flow (perm)		1386	1568	1320	1817		357	5000		361	5085	1559
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	9	294	91	11	4	433	1271	80	1	1025	120
RTOR Reduction (vph)	0	0	219	0	3	0	0	6	0	0	0	71
Lane Group Flow (vph)	0	89	75	91	12	0	433	1345	0	1	1025	49
Confl. Peds. (#/hr)	1		5	5		1	2					2
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	2%	3%	0%	0%	2%	1%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)		11.7	11.7	11.7	11.7		59.8	59.8		34.6	34.6	34.6
Effective Green, g (s)		11.7	11.7	11.7	11.7		59.8	59.8		34.6	34.6	34.6
Actuated g/C Ratio		0.14	0.14	0.14	0.14		0.70	0.70		0.41	0.41	0.41
Clearance Time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		190	215	181	250		603	3517		146	2069	634
v/s Ratio Prot					0.01		c0.18	0.27			0.20	
v/s Ratio Perm		0.06	0.05	c0.07			c0.33			0.00		0.03
v/c Ratio		0.47	0.35	0.50	0.05		0.72	0.38		0.01	0.50	0.08
Uniform Delay, d1		33.8	33.2	34.0	31.8		11.2	5.1		15.0	18.7	15.4
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		0.70	0.87	0.63
Incremental Delay, d2		1.8	1.0	2.2	0.1		4.1	0.3		0.1	0.8	0.2
Delay (s)		35.6	34.2	36.1	31.9		15.3	5.4		10.6	17.0	9.9
Level of Service		D	C	D	C		B	A		B	B	A
Approach Delay (s/veh)		34.5			35.5			7.8			16.3	
Approach LOS		C			D			A			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)		14.5					HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio		0.71										
Actuated Cycle Length (s)		85.0					Sum of lost time (s)			17.5		
Intersection Capacity Utilization		68.0%					ICU Level of Service			C		
Analysis Period (min)		15										
c Critical Lane Group												

Intersection: 1: Site Driveway/Lionel Court & Palladium Way

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (m)	8.9	1.8	14.6	10.5
Average Queue (m)	0.7	0.1	8.6	5.1
95th Queue (m)	4.6	1.2	14.4	12.5
Link Distance (m)			102.7	164.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	15.0	20.0		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Appleby Line & Palladium Way/Harrison Court

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	39.6	39.2	22.7	10.0	56.1	30.5	32.0	28.5	13.5	51.1	46.8	35.3
Average Queue (m)	17.6	12.1	8.8	3.4	22.2	14.3	13.0	8.9	4.6	27.8	18.4	11.3
95th Queue (m)	31.7	26.0	19.2	9.2	43.5	27.3	27.6	21.7	11.1	46.0	37.9	25.0
Link Distance (m)		104.6		119.7	66.5	66.5	66.5	66.5		334.4	334.4	334.4
Upstream Blk Time (%)					0							
Queuing Penalty (veh)					0							
Storage Bay Dist (m)	45.0		60.0						70.0			
Storage Blk Time (%)	0	0										
Queuing Penalty (veh)	0	0										

Intersection: 3: Appleby Line & Site Driveway

Movement	EB
Directions Served	R
Maximum Queue (m)	5.1
Average Queue (m)	0.2
95th Queue (m)	2.5
Link Distance (m)	34.4
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Valera Road/Site Driveway & Thomas Alton Boulevard

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	16.8	31.6	21.2	14.6
Average Queue (m)	2.7	7.3	10.7	6.9
95th Queue (m)	11.2	21.6	18.0	13.6
Link Distance (m)	191.9	110.5	89.8	61.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Appleby Line & Thomas Alton Boulevard

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	L	TR	L	T	T	TR	L	T	T	T
Maximum Queue (m)	56.0	47.4	21.2	10.9	44.8	59.5	42.9	21.8	9.7	48.4	42.6	37.7
Average Queue (m)	24.0	24.6	6.0	1.3	20.6	25.6	13.4	6.1	0.6	17.0	17.7	14.5
95th Queue (m)	44.6	44.2	15.5	6.5	36.4	47.2	29.5	15.7	4.4	38.5	37.7	32.7
Link Distance (m)	110.5			98.0		295.2	295.2	295.2		126.2	126.2	126.2
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)		40.0	30.0		130.0				30.0			
Storage Blk Time (%)	1	2	0							2		
Queuing Penalty (veh)	4	2	0							0		

Intersection: 5: Appleby Line & Thomas Alton Boulevard

Movement	SB
Directions Served	R
Maximum Queue (m)	15.0
Average Queue (m)	3.0
95th Queue (m)	10.7
Link Distance (m)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	60.0
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 7

Intersection: 1: Site Driveway/Lionel Court & Palladium Way

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (m)	4.9	6.8	17.8	22.4
Average Queue (m)	0.2	0.5	6.9	12.4
95th Queue (m)	2.1	3.7	14.8	19.1
Link Distance (m)			102.7	164.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	15.0	20.0		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Appleby Line & Palladium Way/Harrison Court

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	45.6	50.2	44.8	18.4	23.7	45.2	43.2	37.5	18.4	51.1	43.6	36.5
Average Queue (m)	21.4	16.6	20.1	7.0	10.5	20.6	21.9	17.0	6.6	26.2	16.9	13.6
95th Queue (m)	37.5	32.7	35.9	14.9	20.0	36.3	37.3	32.3	14.8	45.1	35.6	29.2
Link Distance (m)		104.6		119.7	66.5	66.5	66.5	66.5		334.4	334.4	334.4
Upstream Blk Time (%)						0						
Queuing Penalty (veh)						0						
Storage Bay Dist (m)	45.0		60.0						70.0			
Storage Blk Time (%)	0	0								0		
Queuing Penalty (veh)	1	0								0		

Intersection: 3: Appleby Line & Site Driveway

Movement	EB
Directions Served	R
Maximum Queue (m)	9.8
Average Queue (m)	3.1
95th Queue (m)	9.9
Link Distance (m)	34.4
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Valera Road/Site Driveway & Thomas Alton Boulevard

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	13.7	41.6	17.0	16.8
Average Queue (m)	0.9	13.3	8.1	5.4
95th Queue (m)	6.4	31.1	14.0	12.8
Link Distance (m)	191.9	110.5	89.8	61.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Appleby Line & Thomas Alton Boulevard

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	L	TR	L	T	T	TR	L	T	T	T
Maximum Queue (m)	45.4	46.7	33.9	16.2	95.9	51.7	45.3	42.1	10.1	57.9	54.0	49.8
Average Queue (m)	14.6	21.5	15.8	3.7	42.4	24.8	20.9	14.4	0.4	29.3	32.9	27.8
95th Queue (m)	31.6	39.7	29.7	11.9	76.2	45.1	37.7	32.2	5.3	50.6	52.0	45.4
Link Distance (m)	110.5			98.0		295.2	295.2	295.2		126.2	126.2	126.2
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)		40.0	30.0		130.0				30.0			
Storage Blk Time (%)	0	1	2		0					6		
Queuing Penalty (veh)	1	1	0		0					0		

Intersection: 5: Appleby Line & Thomas Alton Boulevard

Movement	SB
Directions Served	R
Maximum Queue (m)	24.5
Average Queue (m)	10.1
95th Queue (m)	20.3
Link Distance (m)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	60.0
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 3

Appendix F

Total Traffic Operations



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	156	61	19	202	87	60	0	22	20	0	2
Future Volume (vph)	10	156	61	19	202	87	60	0	22	20	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.958			0.955			0.964			0.987	
Flt Protected	0.950			0.950				0.965			0.957	
Satd. Flow (prot)	1805	1698	0	1805	1612	0	0	1767	0	0	1795	0
Flt Permitted	0.950			0.950				0.965			0.957	
Satd. Flow (perm)	1805	1698	0	1805	1612	0	0	1767	0	0	1795	0
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.0			132.7			113.2			175.1	
Travel Time (s)		7.4			8.0			8.2			12.6	
Confl. Peds. (#/hr)			3	3			1					1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	0%	10%	0%	0%	18%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	14	220	86	27	285	123	85	0	31	28	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	306	0	27	408	0	0	116	0	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 27.1% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

1: Site Driveway/Lionel Court & Palladium Way

(240651) 4883 Thomas Alton Blvd.

AM Total Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	156	61	19	202	87	60	0	22	20	0	2
Future Volume (Veh/h)	10	156	61	19	202	87	60	0	22	20	0	2
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	14	220	86	27	285	123	85	0	31	28	0	3
Pedestrians	1						3					
Lane Width (m)	3.6						3.6					
Walking Speed (m/s)	1.2						1.2					
Percent Blockage	0						0					
Right turn flare (veh)												
Median type	TWLTL			None								
Median storage veh	2											
Upstream signal (m)				133								
pX, platoon unblocked	0.99							0.99	0.99			
vC, conflicting volume	408				309				637	756	266	680
vC1, stage 1 conf vol							294	294				401
vC2, stage 2 conf vol							343	462				279
vCu, unblocked vol	402				309				632	752	266	675
tC, single (s)	4.1				4.1				7.1	6.5	6.2	7.1
tC, 2 stage (s)							6.1	5.5				6.1
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5
p0 queue free %	99				98				85	100	96	95
cM capacity (veh/h)	1161				1260				562	487	776	528
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	14	306	27	408	116	31						
Volume Left	14	0	27	0	85	28						
Volume Right	0	86	0	123	31	3						
cSH	1161	1700	1260	1700	606	541						
Volume to Capacity	0.01	0.18	0.02	0.24	0.19	0.06						
Queue Length 95th (m)	0.3	0.0	0.5	0.0	5.3	1.4						
Control Delay (s/veh)	8.1	0.0	7.9	0.0	12.3	12.1						
Lane LOS	A			A			B			B		
Approach Delay (s/veh)	0.4			0.5			12.3			12.1		
Approach LOS							B			B		
Intersection Summary												
Average Delay				2.4								
Intersection Capacity Utilization				27.1%		ICU Level of Service				A		
Analysis Period (min)				15								

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	12	75	44	4	18	182	754	34	31	748	112
Future Volume (vph)	103	12	75	44	4	18	182	754	34	31	748	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	60.0		0.0	0.0		0.0	70.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99		1.00								
Frt		0.871			0.876			0.993			0.980	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1336	0	1752	1664	0	1492	4901	0	1805	4917	0
Flt Permitted	0.742			0.697			0.264			0.327		
Satd. Flow (perm)	1410	1336	0	1284	1664	0	415	4901	0	621	4917	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		79			19			13			39	
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		132.7			140.4			91.2			346.3	
Travel Time (s)		8.0			10.1			5.5			20.8	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	13%	24%	3%	0%	0%	21%	5%	7%	0%	3%	6%
Adj. Flow (vph)	108	13	79	46	4	19	192	794	36	33	787	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	92	0	46	23	0	192	830	0	33	905	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			3.6			3.6			6.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.0	8.0		8.0	8.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		11.0	33.4		41.0	41.0	
Total Split (s)	31.0	31.0		31.0	31.0		13.0	54.0		41.0	41.0	
Total Split (%)	36.5%	36.5%		36.5%	36.5%		15.3%	63.5%		48.2%	48.2%	
Maximum Green (s)	23.9	23.9		23.9	23.9		9.0	47.6		34.6	34.6	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.7	3.7	
All-Red Time (s)	3.8	3.8		3.8	3.8		1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	10.0	10.0		10.0	10.0			19.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effect Green (s)	12.1	12.1		12.1	12.1		61.8	59.4		46.1	46.1	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.73	0.70		0.54	0.54	
v/c Ratio	0.54	0.36		0.25	0.09		0.46	0.24		0.10	0.34	
Control Delay (s/veh)	43.1	13.7		34.4	15.5		12.9	4.2		12.8	11.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	43.1	13.7		34.4	15.5		12.9	4.2		12.8	11.7	
LOS	D	B		C	B		B	A		B	B	
Approach Delay (s/veh)		29.6			28.1			5.9			11.7	
Approach LOS		C			C			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 34 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay (s/veh): 11.1

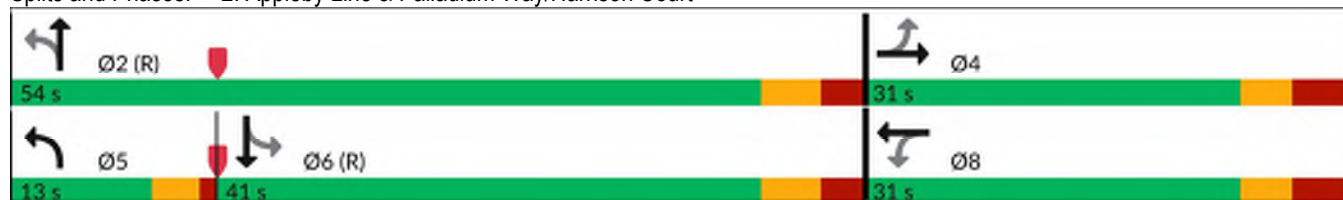
Intersection LOS: B

Intersection Capacity Utilization 54.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Appleby Line & Palladium Way/Harrison Court



Queues

2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.

AM Total Traffic

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	108	92	46	23	192	830	33	905
v/c Ratio	0.54	0.36	0.25	0.09	0.46	0.24	0.10	0.34
Control Delay (s/veh)	43.1	13.7	34.4	15.5	12.9	4.2	12.8	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	43.1	13.7	34.4	15.5	12.9	4.2	12.8	11.7
Queue Length 50th (m)	16.4	1.8	6.7	0.6	6.6	12.0	2.3	25.8
Queue Length 95th (m)	29.6	13.5	15.1	6.4	30.5	19.6	8.5	43.1
Internal Link Dist (m)		108.7		116.4		67.2		322.3
Turn Bay Length (m)	45.0		60.0				70.0	
Base Capacity (vph)	396	432	361	481	428	3428	336	2684
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.21	0.13	0.05	0.45	0.24	0.10	0.34
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.

AM Total Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	12	75	44	4	18	182	754	34	31	748	112
Future Volume (vph)	103	12	75	44	4	18	182	754	34	31	748	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.87		1.00	0.88		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1336		1750	1665		1492	4904		1805	4919	
Flt Permitted	0.74	1.00		0.70	1.00		0.26	1.00		0.33	1.00	
Satd. Flow (perm)	1410	1336		1285	1665		415	4904		622	4919	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	108	13	79	46	4	19	192	794	36	33	787	118
RTOR Reduction (vph)	0	68	0	0	16	0	0	4	0	0	18	0
Lane Group Flow (vph)	108	24	0	46	7	0	192	826	0	33	887	0
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	0%	13%	24%	3%	0%	0%	21%	5%	7%	0%	3%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	12.1	12.1		12.1	12.1		59.4	59.4		46.1	46.1	
Effective Green, g (s)	12.1	12.1		12.1	12.1		59.4	59.4		46.1	46.1	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.70	0.70		0.54	0.54	
Clearance Time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	200	190		182	237		407	3427		337	2667	
v/s Ratio Prot		0.02			0.00		c0.05	0.17			0.18	
v/s Ratio Perm	c0.08			0.04			c0.28			0.05		
v/c Ratio	0.54	0.13		0.25	0.03		0.47	0.24		0.10	0.33	
Uniform Delay, d1	33.9	31.8		32.4	31.4		4.8	4.6		9.4	10.9	
Progression Factor	1.00	1.00		1.00	1.00		2.21	0.82		1.00	1.00	
Incremental Delay, d2	3.0	0.3		0.7	0.0		0.8	0.2		0.6	0.3	
Delay (s)	36.8	32.1		33.2	31.4		11.5	4.0		10.0	11.2	
Level of Service	D	C		C	C		B	A		A	B	
Approach Delay (s/veh)		34.7			32.6			5.4			11.2	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			11.3				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			54.0%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
3: Appleby Line & Site Driveway

(240651) 4883 Thomas Alton Blvd.
AM Total Traffic

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				   	   	
Traffic Volume (vph)	0	19	0	988	847	20
Future Volume (vph)	0	19	0	988	847	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.86	0.91	0.91
Ped Bike Factor						
Frt		0.865			0.997	
Flt Protected						
Satd. Flow (prot)	0	1644	0	6225	4977	0
Flt Permitted						
Satd. Flow (perm)	0	1644	0	6225	4977	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	53.7			143.7	91.2	
Travel Time (s)	3.9			8.6	5.5	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	5%	4%	0%
Adj. Flow (vph)	0	20	0	1029	882	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	20	0	1029	903	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			6.6	6.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 3: Appleby Line & Site Driveway

(240651) 4883 Thomas Alton Blvd.
AM Total Traffic

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	19	0	988	847	20		
Future Volume (Veh/h)	0	19	0	988	847	20		
Sign Control	Stop			Free	Free			
Grade	0%			0%	0%			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Hourly flow rate (vph)	0	20	0	1029	882	21		
Pedestrians	1							
Lane Width (m)	3.6							
Walking Speed (m/s)	1.2							
Percent Blockage	0							
Right turn flare (veh)								
Median type				None	None			
Median storage (veh)								
Upstream signal (m)				144	91			
pX, platoon unblocked	0.92	0.91	0.91					
vC, conflicting volume	1151	306	904					
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	779	0	568					
tC, single (s)	6.8	6.9	4.1					
tC, 2 stage (s)								
tF (s)	3.5	3.3	2.2					
p0 queue free %	100	98	100					
cM capacity (veh/h)	309	997	927					
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	20	257	257	257	257	353	353	197
Volume Left	0	0	0	0	0	0	0	0
Volume Right	20	0	0	0	0	0	0	21
cSH	997	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.02	0.15	0.15	0.15	0.15	0.21	0.21	0.12
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s/veh)	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s/veh)	8.7	0.0				0.0		
Approach LOS	A							
Intersection Summary								
Average Delay			0.1					
Intersection Capacity Utilization			26.8%		ICU Level of Service			A
Analysis Period (min)			15					

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	439	19	49	156	44	17	22	59	8	9	44
Future Volume (vph)	56	439	19	49	156	44	17	22	59	8	9	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.976			0.919			0.904	
Flt Protected		0.995			0.990			0.991			0.993	
Satd. Flow (prot)	0	1845	0	0	1727	0	0	1690	0	0	1670	0
Flt Permitted		0.995			0.990			0.991			0.993	
Satd. Flow (perm)	0	1845	0	0	1727	0	0	1690	0	0	1670	0
Link Speed (k/h)		40			40			40			50	
Link Distance (m)		200.7			141.3			98.5			71.1	
Travel Time (s)		18.1			12.7			8.9			5.1	
Confl. Peds. (#/hr)	9		18	18		9			1	1		
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	2%	6%	0%	10%	0%	7%	0%	2%	0%	0%	3%
Adj. Flow (vph)	67	523	23	58	186	52	20	26	70	10	11	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	613	0	0	296	0	0	116	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	47.2%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis
4: Valera Road/Site Driveway & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Total Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	439	19	49	156	44	17	22	59	8	9	44
Future Volume (Veh/h)	56	439	19	49	156	44	17	22	59	8	9	44
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	67	523	23	58	186	52	20	26	70	10	11	52
Pedestrians					1			18			9	
Lane Width (m)					3.6			3.6			3.6	
Walking Speed (m/s)					1.2			1.2			1.2	
Percent Blockage					0			2			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)					141							
pX, platoon unblocked	0.99						0.99	0.99		0.99	0.99	0.99
vC, conflicting volume	247			564			1072	1050	554	1090	1035	221
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	228			564			1066	1043	554	1083	1028	202
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			94			87	87	87	93	95	94
cM capacity (veh/h)	1322			1002			154	199	524	136	203	818
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	613	296	116	73								
Volume Left	67	58	20	10								
Volume Right	23	52	70	52								
cSH	1322	1002	295	381								
Volume to Capacity	0.05	0.06	0.39	0.19								
Queue Length 95th (m)	1.2	1.4	13.5	5.2								
Control Delay (s/veh)	1.4	2.2	24.9	16.7								
Lane LOS	A	A	C	C								
Approach Delay (s/veh)	1.4	2.2	24.9	16.7								
Approach LOS			C	C								
Intersection Summary												
Average Delay			5.1									
Intersection Capacity Utilization			47.2%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	4	353	29	3	3	203	844	43	3	835	40
Future Volume (vph)	142	4	353	29	3	3	203	844	43	3	835	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		40.0	30.0		0.0	130.0		0.0	30.0		60.0
Storage Lanes	0		1	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor			0.99	1.00			1.00					0.98
Frt			0.850		0.925			0.993				0.850
Flt Protected		0.954		0.950			0.950			0.950		
Satd. Flow (prot)	0	1795	1599	1805	1758	0	1687	4786	0	1805	4988	1495
Flt Permitted		0.728		0.657			0.256			0.285		
Satd. Flow (perm)	0	1370	1577	1247	1758	0	454	4786	0	542	4988	1458
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			268		3			15				104
Link Speed (k/h)		40			50			60			60	
Link Distance (m)		141.3			116.2			309.3			143.7	
Travel Time (s)		12.7			8.4			18.6			8.6	
Confl. Peds. (#/hr)			1	1			2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	7%	8%	0%	0%	4%	8%
Adj. Flow (vph)	154	4	384	32	3	3	221	917	47	3	908	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	158	384	32	6	0	221	964	0	3	908	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		7.0	8.0		8.0	8.0	8.0
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0		11.0	33.4		41.0	41.0	41.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0		13.0	54.0		41.0	41.0	41.0
Total Split (%)	36.5%	36.5%	36.5%	36.5%	36.5%		15.3%	63.5%		48.2%	48.2%	48.2%
Maximum Green (s)	23.9	23.9	23.9	23.9	23.9		9.0	47.6		34.6	34.6	34.6
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.0	3.7		3.7	3.7	3.7
All-Red Time (s)	3.8	3.8	3.8	3.8	3.8		1.0	2.7		2.7	2.7	2.7
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	10.0	10.0	10.0	10.0	10.0			19.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	0
Act Effect Green (s)		15.7	15.7	15.7	15.7		58.2	55.8		42.9	42.9	42.9
Actuated g/C Ratio		0.18	0.18	0.18	0.18		0.68	0.66		0.50	0.50	0.50
v/c Ratio		0.63	0.76	0.14	0.02		0.50	0.31		0.01	0.36	0.05
Control Delay (s/veh)		41.9	19.7	27.5	19.5		10.0	7.2		7.3	9.3	1.1
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		41.9	19.7	27.5	19.5		10.0	7.2		7.3	9.3	1.1
LOS		D	B	C	B		B	A		A	A	A
Approach Delay (s/veh)		26.2			26.3			7.7			8.9	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 52 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay (s/veh): 12.1

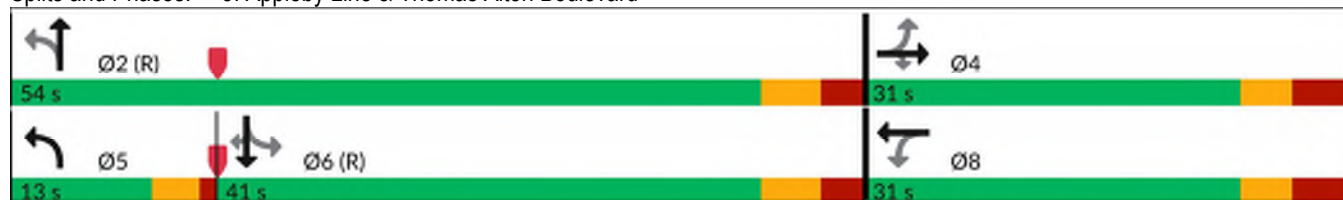
Intersection LOS: B

Intersection Capacity Utilization 61.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Appleby Line & Thomas Alton Boulevard



Synchro 12 Report

Queues
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Total Traffic

									
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	158	384	32	6	221	964	3	908	43
v/c Ratio	0.63	0.76	0.14	0.02	0.50	0.31	0.01	0.36	0.05
Control Delay (s/veh)	41.9	19.7	27.5	19.5	10.0	7.2	7.3	9.3	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.9	19.7	27.5	19.5	10.0	7.2	7.3	9.3	1.1
Queue Length 50th (m)	23.8	16.7	4.4	0.4	10.7	20.4	0.1	35.0	0.4
Queue Length 95th (m)	37.7	41.6	10.4	3.1	25.8	36.1	m0.4	54.2	0.7
Internal Link Dist (m)	117.3			92.2		285.3		119.7	
Turn Bay Length (m)		40.0	30.0		130.0		30.0		60.0
Base Capacity (vph)	385	636	350	496	449	3149	273	2516	786
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.60	0.09	0.01	0.49	0.31	0.01	0.36	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis 5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
AM Total Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (vph)	142	4	353	29	3	3	203	844	43	3	835	40
Future Volume (vph)	142	4	353	29	3	3	203	844	43	3	835	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes		1.00	0.99	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1794	1577	1803	1758		1687	4785		1805	4988	1458
Flt Permitted		0.73	1.00	0.66	1.00		0.26	1.00		0.28	1.00	1.00
Satd. Flow (perm)		1369	1577	1246	1758		454	4785		541	4988	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	4	384	32	3	3	221	917	47	3	908	43
RTOR Reduction (vph)	0	0	218	0	2	0	0	5	0	0	0	21
Lane Group Flow (vph)	0	158	166	32	4	0	221	959	0	3	908	22
Confl. Peds. (#/hr)			1	1			2			3		2
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	7%	8%	0%	0%	4%	8%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)		15.7	15.7	15.7	15.7		55.8	55.8		42.8	42.8	42.8
Effective Green, g (s)		15.7	15.7	15.7	15.7		55.8	55.8		42.8	42.8	42.8
Actuated g/C Ratio		0.18	0.18	0.18	0.18		0.66	0.66		0.50	0.50	0.50
Clearance Time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		252	291	230	324		428	3141		272	2511	734
v/s Ratio Prot					0.00		c0.05	0.20			0.18	
v/s Ratio Perm		c0.12	0.10	0.03			c0.28			0.01		0.01
v/c Ratio		0.63	0.57	0.14	0.01		0.52	0.31		0.01	0.36	0.03
Uniform Delay, d1		31.9	31.6	29.0	28.3		6.3	6.3		10.5	12.8	10.6
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		0.52	0.64	1.00
Incremental Delay, d2		4.8	2.5	0.3	0.0		1.1	0.3		0.1	0.4	0.1
Delay (s)		36.8	34.1	29.3	28.3		7.3	6.5		5.5	8.6	10.7
Level of Service		D	C	C	C		A	A		A	A	B
Approach Delay (s/veh)		34.9			29.1			6.7			8.6	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			13.3				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			61.9%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	244	48	25	153	30	22	0	42	118	1	14
Future Volume (vph)	3	244	48	25	153	30	22	0	42	118	1	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0		0.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.975			0.976			0.911			0.986	
Flt Protected	0.950			0.950				0.983			0.957	
Satd. Flow (prot)	1805	1629	0	1805	1698	0	0	1607	0	0	1793	0
Flt Permitted	0.950			0.950				0.983			0.957	
Satd. Flow (perm)	1805	1629	0	1805	1698	0	0	1607	0	0	1793	0
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		124.0			132.7			113.2			175.1	
Travel Time (s)		7.4			8.0			8.2			12.6	
Confl. Peds. (#/hr)	1		2	2		1	2					2
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles (%)	0%	16%	2%	0%	11%	0%	0%	0%	9%	0%	0%	0%
Adj. Flow (vph)	4	354	70	36	222	43	32	0	61	171	1	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	424	0	36	265	0	0	93	0	0	192	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.6%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis

1: Site Driveway/Lionel Court & Palladium Way

(240651) 4883 Thomas Alton Blvd.

PM Total Traffic

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	3	244	48	25	153	30	22	0	42	118	1	14						
Future Volume (Veh/h)	3	244	48	25	153	30	22	0	42	118	1	14						
Sign Control	Free			Free			Stop			Stop								
Grade	0%			0%			0%			0%								
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69						
Hourly flow rate (vph)	4	354	70	36	222	43	32	0	61	171	1	20						
Pedestrians	2						2			1								
Lane Width (m)	3.6						3.6			3.6								
Walking Speed (m/s)	1.2						1.2			1.2								
Percent Blockage	0						0			0								
Right turn flare (veh)																		
Median type	TWLTL			None														
Median storage veh	2																	
Upstream signal (m)				133														
pX, platoon unblocked																		
vC, conflicting volume	266			426			716	737	391	740	751	247						
vC1, stage 1 conf vol							399	399		317	317							
vC2, stage 2 conf vol							317	338		423	434							
vCu, unblocked vol	266			426			716	737	391	740	751	247						
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.1	6.5	6.2						
tC, 2 stage (s)							6.1	5.5		6.1	5.5							
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.3						
p0 queue free %	100			97			94	100	90	63	100	97						
cM capacity (veh/h)	1308			1142			523	507	641	466	485	795						
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1												
Volume Total	4	424	36	265	93	192												
Volume Left	4	0	36	0	32	171												
Volume Right	0	70	0	43	61	20												
cSH	1308	1700	1142	1700	595	487												
Volume to Capacity	0.00	0.25	0.03	0.16	0.16	0.39												
Queue Length 95th (m)	0.1	0.0	0.7	0.0	4.1	13.9												
Control Delay (s/veh)	7.8	0.0	8.3	0.0	12.2	17.1												
Lane LOS	A		A		B	C												
Approach Delay (s/veh)	0.1		1.0		12.2	17.1												
Approach LOS					B	C												
Intersection Summary																		
Average Delay				4.7														
Intersection Capacity Utilization				41.6%	ICU Level of Service				A									
Analysis Period (min)				15														

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	13	214	129	13	40	109	1033	42	43	775	98
Future Volume (vph)	151	13	214	129	13	40	109	1033	42	43	775	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	60.0		0.0	0.0		0.0	70.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.98		1.00								
Frt		0.859			0.887			0.994			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	1605	0	1787	1685	0	1805	5000	0	1805	4950	0
Flt Permitted	0.718			0.458			0.234			0.221		
Satd. Flow (perm)	1299	1605	0	858	1685	0	445	5000	0	420	4950	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		240			45			11			32	
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		132.7			140.4			91.2			346.3	
Travel Time (s)		8.0			10.1			5.5			20.8	
Confl. Peds. (#/hr)			4	4								
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	5%	0%	0%	1%	0%	0%	0%	3%	6%	0%	3%	3%
Adj. Flow (vph)	170	15	240	145	15	45	122	1161	47	48	871	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	255	0	145	60	0	122	1208	0	48	981	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		5.6			3.6			3.6			6.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

	↖	→	↘	↙	←	↖	↘	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		7.0	8.0		8.0	8.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		11.0	33.4		41.0	41.0	
Total Split (s)	31.0	31.0		31.0	31.0		13.0	54.0		41.0	41.0	
Total Split (%)	36.5%	36.5%		36.5%	36.5%		15.3%	63.5%		48.2%	48.2%	
Maximum Green (s)	23.9	23.9		23.9	23.9		9.0	47.6		34.6	34.6	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.7		3.7	3.7	
All-Red Time (s)	3.8	3.8		3.8	3.8		1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	10.0	10.0		10.0	10.0			19.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effect Green (s)	17.2	17.2		17.2	17.2		56.7	54.3		44.6	44.6	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.67	0.64		0.52	0.52	
v/c Ratio	0.65	0.49		0.84	0.16		0.29	0.38		0.22	0.38	
Control Delay (s/veh)	41.5	7.9		67.5	11.6		8.3	7.2		18.5	13.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	41.5	7.9		67.5	11.6		8.3	7.2		18.5	13.8	
LOS	D	A		E	B		A	A		B	B	
Approach Delay (s/veh)		21.4			51.1			7.3			14.0	
Approach LOS		C			D			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 34 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay (s/veh): 14.6

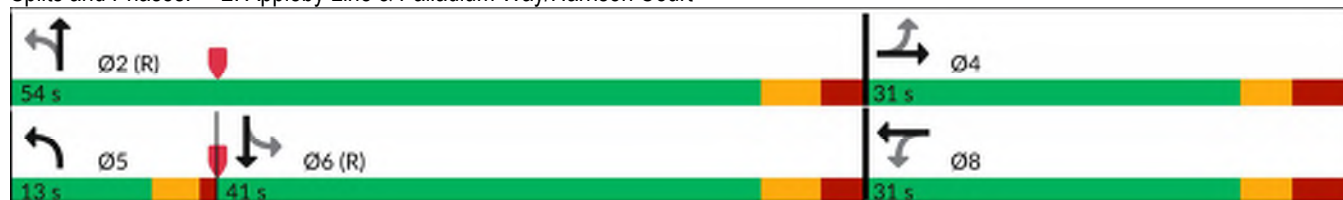
Intersection LOS: B

Intersection Capacity Utilization 71.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Appleby Line & Palladium Way/Harrison Court



Queues
2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.
PM Total Traffic

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	170	255	145	60	122	1208	48	981
v/c Ratio	0.65	0.49	0.84	0.16	0.29	0.38	0.22	0.38
Control Delay (s/veh)	41.5	7.9	67.5	11.6	8.3	7.2	18.5	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.5	7.9	67.5	11.6	8.3	7.2	18.5	13.8
Queue Length 50th (m)	25.0	2.0	22.3	1.9	5.8	27.6	4.2	33.0
Queue Length 95th (m)	40.2	17.5	#39.8	9.9	13.4	33.1	13.6	50.3
Internal Link Dist (m)		108.7		116.4		67.2		322.3
Turn Bay Length (m)	45.0		60.0				70.0	
Base Capacity (vph)	365	623	241	506	440	3195	220	2614
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.41	0.60	0.12	0.28	0.38	0.22	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis 2: Appleby Line & Palladium Way/Harrison Court

(240651) 4883 Thomas Alton Blvd.
PM Total Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	13	214	129	13	40	109	1033	42	43	775	98
Future Volume (vph)	151	13	214	129	13	40	109	1033	42	43	775	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.86		1.00	0.89		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1604		1781	1686		1805	5001		1805	4951	
Flt Permitted	0.72	1.00		0.46	1.00		0.23	1.00		0.22	1.00	
Satd. Flow (perm)	1299	1604		859	1686		444	5001		419	4951	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	170	15	240	145	15	45	122	1161	47	48	871	110
RTOR Reduction (vph)	0	191	0	0	36	0	0	4	0	0	15	0
Lane Group Flow (vph)	170	64	0	145	24	0	122	1204	0	48	966	0
Confl. Peds. (#/hr)			4	4								
Heavy Vehicles (%)	5%	0%	0%	1%	0%	0%	0%	3%	6%	0%	3%	3%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.2	17.2		17.2	17.2		54.3	54.3		43.9	43.9	
Effective Green, g (s)	17.2	17.2		17.2	17.2		54.3	54.3		43.9	43.9	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.64	0.64		0.52	0.52	
Clearance Time (s)	7.1	7.1		7.1	7.1		4.0	6.4		6.4	6.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	262	324		173	341		386	3194		216	2557	
v/s Ratio Prot		0.04			0.01		0.02	0.24			0.20	
v/s Ratio Perm	0.13			0.17			0.18			0.11		
v/c Ratio	0.65	0.20		0.84	0.07		0.32	0.38		0.22	0.38	
Uniform Delay, d1	31.1	28.2		32.6	27.4		6.4	7.3		11.2	12.3	
Progression Factor	1.00	1.00		1.00	1.00		1.06	0.86		1.00	1.00	
Incremental Delay, d2	5.4	0.3		28.3	0.1		0.4	0.3		2.4	0.4	
Delay (s)	36.6	28.5		60.8	27.5		7.2	6.6		13.6	12.8	
Level of Service	D	C		E	C		A	A		B	B	
Approach Delay (s/veh)		31.7			51.1			6.6			12.8	
Approach LOS		C			D			A			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			15.4				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			71.5%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
3: Appleby Line & Site Driveway

(240651) 4883 Thomas Alton Blvd.
PM Total Traffic

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					  	
Traffic Volume (vph)	0	34	0	1204	1060	20
Future Volume (vph)	0	34	0	1204	1060	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.86	0.91	0.91
Ped Bike Factor						
Frt		0.865			0.997	
Flt Protected						
Satd. Flow (prot)	0	1644	0	6346	5072	0
Flt Permitted						
Satd. Flow (perm)	0	1644	0	6346	5072	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	53.7			143.7	91.2	
Travel Time (s)	3.9			8.6	5.5	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	3%	2%	0%
Adj. Flow (vph)	0	38	0	1338	1178	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	38	0	1338	1200	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			6.6	6.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	30.9%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 3: Appleby Line & Site Driveway

(240651) 4883 Thomas Alton Blvd.
PM Total Traffic

									
Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations									
Traffic Volume (veh/h)	0	34	0	1204	1060	20			
Future Volume (Veh/h)	0	34	0	1204	1060	20			
Sign Control	Stop			Free	Free				
Grade	0%			0%	0%				
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90			
Hourly flow rate (vph)	0	38	0	1338	1178	22			
Pedestrians	1								
Lane Width (m)	3.6								
Walking Speed (m/s)	1.2								
Percent Blockage	0								
Right turn flare (veh)									
Median type				None	None				
Median storage (veh)									
Upstream signal (m)				144	91				
pX, platoon unblocked	0.92	0.90	0.90						
vC, conflicting volume	1525	405	1201						
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	813	0	829						
tC, single (s)	6.8	6.9	4.1						
tC, 2 stage (s)									
tF (s)	3.5	3.3	2.2						
p0 queue free %	100	96	100						
cM capacity (veh/h)	296	979	729						
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	
Volume Total	38	335	335	335	335	471	471	258	
Volume Left	0	0	0	0	0	0	0	0	
Volume Right	38	0	0	0	0	0	0	22	
cSH	979	1700	1700	1700	1700	1700	1700	1700	
Volume to Capacity	0.04	0.20	0.20	0.20	0.20	0.28	0.28	0.15	
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (s/veh)	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A								
Approach Delay (s/veh)	8.8	0.0				0.0			
Approach LOS	A								
Intersection Summary									
Average Delay			0.1						
Intersection Capacity Utilization			30.9%		ICU Level of Service			A	
Analysis Period (min)			15						

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	308	14	137	426	42	4	14	54	12	11	27
Future Volume (vph)	17	308	14	137	426	42	4	14	54	12	11	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.991			0.899			0.929	
Flt Protected		0.997			0.989			0.997			0.988	
Satd. Flow (prot)	0	1866	0	0	1862	0	0	1703	0	0	1682	0
Flt Permitted		0.997			0.989			0.997			0.988	
Satd. Flow (perm)	0	1866	0	0	1862	0	0	1703	0	0	1682	0
Link Speed (k/h)		40			40			40			50	
Link Distance (m)		200.7			141.3			98.5			71.1	
Travel Time (s)		18.1			12.7			8.9			5.1	
Confl. Peds. (#/hr)	4		9	9		4						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%
Adj. Flow (vph)	18	324	15	144	448	44	4	15	57	13	12	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	357	0	0	636	0	0	76	0	0	53	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type: Unsignalized												
Intersection Capacity Utilization 67.7%												
ICU Level of Service C												
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
4: Valera Road/Site Driveway & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.

PM Total Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	308	14	137	426	42	4	14	54	12	11	27
Future Volume (Veh/h)	17	308	14	137	426	42	4	14	54	12	11	27
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	18	324	15	144	448	44	4	15	57	13	12	28
Pedestrians								9			4	
Lane Width (m)								3.6			3.6	
Walking Speed (m/s)								1.2			1.2	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)					141							
pX, platoon unblocked	0.90						0.90	0.90		0.90	0.90	0.90
vC, conflicting volume	496			348			1169	1161	341	1194	1146	474
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	382			348			1131	1122	341	1159	1106	357
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	98			88			97	91	92	89	93	95
cM capacity (veh/h)	1063			1213			130	160	701	119	163	605
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	357	636	76	53								
Volume Left	18	144	4	13								
Volume Right	15	44	57	28								
cSH	1063	1213	369	231								
Volume to Capacity	0.02	0.12	0.21	0.23								
Queue Length 95th (m)	0.4	3.0	5.7	6.4								
Control Delay (s/veh)	0.6	3.0	17.3	25.2								
Lane LOS	A	A	C	D								
Approach Delay (s/veh)	0.6	3.0	17.3	25.2								
Approach LOS			C	D								
Intersection Summary												
Average Delay			4.2									
Intersection Capacity Utilization			67.7%		ICU Level of Service				C			
Analysis Period (min)			15									

Lanes, Volumes, Timings
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
PM Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	9	286	86	10	4	444	1218	76	1	996	114
Future Volume (vph)	76	9	286	86	10	4	444	1218	76	1	996	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		40.0	30.0		0.0	130.0		0.0	30.0		60.0
Storage Lanes	0		1	1		0	1		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	0.99	1.00		1.00					0.98
Frt			0.850		0.960			0.991				0.850
Flt Protected		0.957		0.950			0.950			0.950		
Satd. Flow (prot)	0	1802	1599	1805	1817	0	1770	4999	0	1805	5085	1599
Flt Permitted		0.737		0.699			0.185			0.188		
Satd. Flow (perm)	0	1386	1568	1319	1817	0	344	4999	0	357	5085	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			252		4			18				120
Link Speed (k/h)		40			50			60			60	
Link Distance (m)		141.3			116.2			309.3			143.7	
Travel Time (s)		12.7			8.4			18.6			8.6	
Confl. Peds. (#/hr)	1		5	5		1	2					2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	2%	3%	0%	0%	2%	1%
Adj. Flow (vph)	80	9	301	91	11	4	467	1282	80	1	1048	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	89	301	91	15	0	467	1362	0	1	1048	120
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
PM Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Detector Phase	4	4	4	8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		7.0	8.0		8.0	8.0	8.0
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0		11.0	33.4		41.0	41.0	41.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0		13.0	54.0		41.0	41.0	41.0
Total Split (%)	36.5%	36.5%	36.5%	36.5%	36.5%		15.3%	63.5%		48.2%	48.2%	48.2%
Maximum Green (s)	23.9	23.9	23.9	23.9	23.9		9.0	47.6		34.6	34.6	34.6
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		3.0	3.7		3.7	3.7	3.7
All-Red Time (s)	3.8	3.8	3.8	3.8	3.8		1.0	2.7		2.7	2.7	2.7
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Don't Walk (s)	10.0	10.0	10.0	10.0	10.0			19.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	0
Act Effect Green (s)		11.9	11.9	11.9	11.9		62.0	59.6		34.6	34.6	34.6
Actuated g/C Ratio		0.14	0.14	0.14	0.14		0.73	0.70		0.41	0.41	0.41
v/c Ratio		0.46	0.69	0.49	0.06		0.77	0.39		0.01	0.51	0.17
Control Delay (s/veh)		40.4	16.2	42.1	25.0		23.7	5.9		12.0	17.2	2.5
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		40.4	16.2	42.1	25.0		23.7	5.9		12.0	17.2	2.5
LOS		D	B	D	C		C	A		B	B	A
Approach Delay (s/veh)		21.7			39.7			10.5			15.7	
Approach LOS		C			D			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 52 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay (s/veh): 14.3

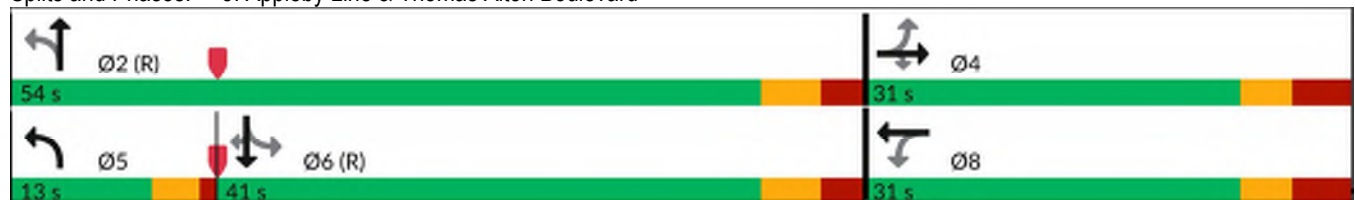
Intersection LOS: B

Intersection Capacity Utilization 70.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Appleby Line & Thomas Alton Boulevard



Synchro 12 Report

Queues
5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.
PM Total Traffic

									
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	89	301	91	15	467	1362	1	1048	120
v/c Ratio	0.46	0.69	0.49	0.06	0.77	0.39	0.01	0.51	0.17
Control Delay (s/veh)	40.4	16.2	42.1	25.0	23.7	5.9	12.0	17.2	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	40.4	16.2	42.1	25.0	23.7	5.9	12.0	17.2	2.5
Queue Length 50th (m)	13.4	7.2	13.8	1.6	35.9	26.3	0.1	50.6	3.5
Queue Length 95th (m)	24.9	28.6	25.6	6.0	#102.4	43.8	m0.1	54.7	m2.4
Internal Link Dist (m)	117.3			92.2		285.3		119.7	
Turn Bay Length (m)		40.0	30.0		130.0		30.0		60.0
Base Capacity (vph)	389	622	370	513	604	3512	145	2069	705
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.48	0.25	0.03	0.77	0.39	0.01	0.51	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

5: Appleby Line & Thomas Alton Boulevard

(240651) 4883 Thomas Alton Blvd.

PM Total Traffic

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	9	286	86	10	4	444	1218	76	1	996	114
Future Volume (vph)	76	9	286	86	10	4	444	1218	76	1	996	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes		1.00	0.98	1.00	1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	0.99	1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.96	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1800	1568	1793	1817		1769	5000		1805	5085	1559
Flt Permitted		0.74	1.00	0.70	1.00		0.18	1.00		0.19	1.00	1.00
Satd. Flow (perm)		1386	1568	1320	1817		344	5000		357	5085	1559
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	9	301	91	11	4	467	1282	80	1	1048	120
RTOR Reduction (vph)	0	0	217	0	3	0	0	5	0	0	0	71
Lane Group Flow (vph)	0	89	84	91	12	0	467	1357	0	1	1048	49
Confl. Peds. (#/hr)	1		5	5		1	2					2
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	2%	3%	0%	0%	2%	1%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)		11.9	11.9	11.9	11.9		59.6	59.6		34.6	34.6	34.6
Effective Green, g (s)		11.9	11.9	11.9	11.9		59.6	59.6		34.6	34.6	34.6
Actuated g/C Ratio		0.14	0.14	0.14	0.14		0.70	0.70		0.41	0.41	0.41
Clearance Time (s)		7.1	7.1	7.1	7.1		4.0	6.4		6.4	6.4	6.4
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		194	219	184	254		593	3505		145	2069	634
v/s Ratio Prot					0.01		c0.19	0.27			0.21	
v/s Ratio Perm		0.06	0.05	c0.07			c0.36			0.00		0.03
v/c Ratio		0.46	0.38	0.49	0.05		0.79	0.39		0.01	0.51	0.08
Uniform Delay, d1		33.6	33.2	33.8	31.6		13.7	5.2		15.0	18.8	15.4
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		0.76	0.86	0.59
Incremental Delay, d2		1.7	1.1	2.1	0.1		6.8	0.3		0.1	0.8	0.2
Delay (s)		35.3	34.3	35.9	31.7		20.5	5.5		11.4	17.0	9.3
Level of Service		D	C	D	C		C	A		B	B	A
Approach Delay (s/veh)		34.6			35.3			9.4			16.2	
Approach LOS		C			D			A			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			15.3				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)			17.5		
Intersection Capacity Utilization			70.2%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

Intersection: 1: Site Driveway/Lionel Court & Palladium Way

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (m)	8.9	3.2	8.8	1.2	17.3	10.5
Average Queue (m)	1.1	0.1	1.2	0.0	9.5	4.5
95th Queue (m)	5.8	2.3	6.0	0.9	15.0	12.2
Link Distance (m)		115.4		104.6	102.7	164.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)	15.0		20.0			
Storage Blk Time (%)		0				
Queuing Penalty (veh)		0				

Intersection: 2: Appleby Line & Palladium Way/Harrison Court

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	40.5	31.7	22.8	9.7	52.8	38.0	32.7	26.9	13.3	58.3	50.4	44.2
Average Queue (m)	17.6	12.3	9.7	2.8	23.3	14.3	13.2	7.9	4.3	30.6	18.8	14.5
95th Queue (m)	32.3	24.9	20.6	8.6	41.4	29.8	27.2	20.6	11.3	51.1	39.3	30.6
Link Distance (m)		104.6		119.7	66.5	66.5	66.5	66.5		334.4	334.4	334.4
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	45.0		60.0						70.0			
Storage Blk Time (%)	0											
Queuing Penalty (veh)	0											

Intersection: 3: Appleby Line & Site Driveway

Movement	EB
Directions Served	R
Maximum Queue (m)	11.8
Average Queue (m)	4.2
95th Queue (m)	11.5
Link Distance (m)	34.4
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Valera Road/Site Driveway & Thomas Alton Boulevard

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	20.9	36.0	20.7	17.4
Average Queue (m)	5.7	7.6	10.9	7.6
95th Queue (m)	18.1	23.4	18.3	14.2
Link Distance (m)	191.9	110.5	89.8	61.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Appleby Line & Thomas Alton Boulevard

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	L	TR	L	T	T	TR	L	T	T	T
Maximum Queue (m)	58.3	46.8	14.4	10.9	50.5	51.7	42.7	25.3	8.2	45.0	46.8	43.4
Average Queue (m)	22.3	23.9	4.8	1.6	21.0	26.1	15.9	6.9	0.5	16.6	17.2	14.3
95th Queue (m)	43.3	41.3	12.9	7.2	38.1	46.8	34.0	17.9	3.8	37.3	38.5	33.0
Link Distance (m)	110.5			98.0		295.2	295.2	295.2		126.2	126.2	126.2
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)		40.0	30.0		130.0				30.0			
Storage Blk Time (%)	1	1								2		0
Queuing Penalty (veh)	5	1								0		0

Intersection: 5: Appleby Line & Thomas Alton Boulevard

Movement	SB
Directions Served	R
Maximum Queue (m)	17.0
Average Queue (m)	2.9
95th Queue (m)	10.8
Link Distance (m)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	60.0
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 6

Intersection: 1: Site Driveway/Lionel Court & Palladium Way

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	L	LTR	LTR
Maximum Queue (m)	1.7	7.3	8.9	17.9	30.2
Average Queue (m)	0.1	0.4	2.4	9.5	13.2
95th Queue (m)	1.6	5.3	8.8	17.0	21.9
Link Distance (m)		115.4		102.7	164.8
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	15.0		20.0		
Storage Blk Time (%)		0			
Queuing Penalty (veh)		0			

Intersection: 2: Appleby Line & Palladium Way/Harrison Court

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	48.7	57.0	51.8	28.7	34.8	42.8	44.5	41.8	19.4	56.5	45.7	43.9
Average Queue (m)	24.7	18.8	22.7	7.2	12.5	21.1	22.5	17.9	6.1	30.2	19.7	17.4
95th Queue (m)	41.6	41.5	43.1	22.7	25.2	37.8	38.5	34.4	15.0	49.7	40.9	35.9
Link Distance (m)		104.6		119.7	66.5	66.5	66.5	66.5		334.4	334.4	334.4
Upstream Blk Time (%)		0										
Queuing Penalty (veh)		1										
Storage Bay Dist (m)	45.0		60.0						70.0			
Storage Blk Time (%)	1	0	0									
Queuing Penalty (veh)	3	0	0									

Intersection: 3: Appleby Line & Site Driveway

Movement	EB
Directions Served	R
Maximum Queue (m)	13.1
Average Queue (m)	6.3
95th Queue (m)	13.5
Link Distance (m)	34.4
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Valera Road/Site Driveway & Thomas Alton Boulevard

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	16.6	43.3	17.8	18.4
Average Queue (m)	2.0	12.1	9.3	7.9
95th Queue (m)	9.7	30.4	15.8	15.3
Link Distance (m)	191.9	110.5	89.8	61.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Appleby Line & Thomas Alton Boulevard

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	L	TR	L	T	T	TR	L	T	T	T
Maximum Queue (m)	42.0	43.6	30.7	11.0	109.2	67.1	61.9	41.3	10.9	56.8	60.3	53.2
Average Queue (m)	13.7	22.4	15.1	2.7	53.2	25.1	23.4	15.6	0.4	32.2	34.2	30.6
95th Queue (m)	29.5	39.1	27.1	9.1	92.9	49.5	46.0	32.9	5.8	54.3	55.1	48.6
Link Distance (m)	110.5			98.0		295.2	295.2	295.2		126.2	126.2	126.2
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)		40.0	30.0		130.0				30.0			
Storage Blk Time (%)		1	1			0				7		0
Queuing Penalty (veh)		1	0			0				0		0

Intersection: 5: Appleby Line & Thomas Alton Boulevard

Movement	SB
Directions Served	R
Maximum Queue (m)	26.0
Average Queue (m)	10.3
95th Queue (m)	21.7
Link Distance (m)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	60.0
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 5

Appendix G

Traffic Control Justification



Signal Justification Calculation for Forecasted Volumes (OTM Book 12 - Justification 7)



Horizon Year: Five-Year Total Traffic
Region/City/Township: City of Burlington

Major Street: Palladium Way North/South: N
Minor Street: Lionel Court / Site Driveway 1

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results			
150% Satisfied	No	Justification for new intersections with forecast traffic	
120% Satisfied	No	Justification for existing intersections with forecast traffic	

Time Period	Major Street						Minor Street						Peds Crossing Main Road
	Palladium Way						Lionel Court / Site Driveway 1						
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	10	156	61	19	202	87	60	0	22	20	0	2	0
PM Peak Hour	3	244	48	25	153	30	22	0	42	118	1	14	0
Average Hourly Volume	3	100	27	11	89	29	21	0	16	35	0	4	0

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	335
% Fulfilled						46%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	75
% Fulfilled						44%

Warrant	AHV
1A - All	335
1B - Minor	75
2A - Major	260
2B - Cross	55

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	260
% Fulfilled						36%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	55
% Fulfilled						74%

Signal Justification Calculation for Forecasted Volumes (OTM Book 12 - Justification 7)



Horizon Year: Five-Year Total Traffic
Region/City/Township: City of Burlington

Major Street: Thomas Alton Boulevard North/South: N
Minor Street: Valera Road / Site Driveway 3

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results			
150% Satisfied	No	Justification for new intersections with forecast traffic	
120% Satisfied	No	Justification for existing intersections with forecast traffic	

Time Period	Major Street						Minor Street						Peds Crossing Main Road
	Thomas Alton Boulevard						Valera Road / Site Driveway 3						
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	56	439	19	49	156	44	17	22	59	8	9	44	
PM Peak Hour	17	308	14	137	426	42	4	14	54	12	11	27	
Average Hourly Volume	18	187	8	47	146	22	5	9	28	5	5	18	0

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	
					% Fulfilled	69%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	
					% Fulfilled	41%

Warrant	AHV
1A - All	497
1B - Minor	70
2A - Major	427
2B - Cross	19

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	
					% Fulfilled	59%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	
					% Fulfilled	26%

Appendix H

MMLOS Analysis



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation

Actual	D	B	E	C	B
SCENARIO:	Palladium Way				
Area Type:	Industrial Connector				
MODE					
Type	SEGMENTS				
Target (Custom if necessary)	D	C	D	D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	D	B	E	C	B
Active Transportation Design Check					
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)					Yes
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?					Yes
MMLOS Evaluation					
Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	2.1 - 2.5	1.2 - 1.5	Mixed traffic with 1 lane per direction	3.4 - 3.6	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	2.1 - 2.5	Has physical measures AND buffer width > 1	No presence of passenger amenities such as shelters, seating, shade trees, etc.	B	3-4
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "low" conflict indicators	D		
Measure 4		-	-	-	-

LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation

Actual	D	F	D	C	C
SCENARIO:	Thomas Alton Boulevard				
Area Type:	Neighbourhood Connector				
MODE					
Type	SEGMENTS				
Target (Custom if necessary)	C	B	D	D	E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	D	F	D	C	C
Active Transportation Design Check					
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)					Yes
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?					Yes
MMLOS Evaluation					
Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	1.5 - 1.7	1.2 - 1.5	Mixed traffic with 1 lane per direction	3.4 - 3.6	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Greater than 2.5	Has no physical measures and buffer width is < 0.5	Moderate presence of passenger amenities such as shelters, seating, shade trees, etc.	C	9+
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	D		
Measure 4		-	-	-	-