Road Traffic Noise Impact Study
2476-2482 Confederation Parkway

Mississauga, Ontario
Project # TPB188171

Prepared for:

Preeminent Developments Inc.

58 Six Point Road, Etobicoke, ON, Canada, M8Z 2X2

March 2020

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Prepared for:

Preeminent Developments Inc.
58 Six Point Road, Etobicoke, ON, Canada, M8Z 2X2

Prepared by:

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March 6, 2020

Copyright and non-disclosure notice

Third-party disclaimer

Executive Summary

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood) was retained by Preeminent Developments Inc. through Sajecki Planning to complete a Road Traffic Noise Impact Study (NIS) for the proposed development at 2476-2482 Confederation Parkway in Mississauga, Ontario (the "Site").

This NIS has been prepared in support of the City of Mississauga's (the "City") specific request for an "Acoustical Feasibility Study", as part of the rezoning application submitted to the City by Sajecki Planning (City of Mississauga Project Number DARC 18-279 W7).

The Site is located on the west side of Confederation Parkway between Dunbar Road and Floradale Drive, as shown in Appendix A. The area surrounding the Site is mostly comprised of existing residential properties, with some retail area, educational institutions, a hospital and other medical buildings.

The proposed development is for two proposed three storey semi-detached dwellings, which will replace two existing single storey dwellings. As per the provided drawings dated February 27, 2020, each unit will be comprised of three above-ground levels. The lot area of each dwelling will range between approximately 303 – 420 m^2 of ground area within the development zone. Both dwellings will have a building height of approximately 10 metres above the finished ground level.

The Ontario Ministry of the Environment, Conservation and Parks (MECP) has a guideline published, "Environmental Noise Guideline - Stationary and Transportation Sources - Approval and Planning (NPC-300)". This guideline, along with the Region of Peel's General Guidelines for the Preparation of Acoustical Reports in the Region of Peel (the Peel Guideline) was utilized for guidance within this study [1].

The noise level calculations were completed using the design information provided, which is included in Appendix A, and the traffic information presented in Section 3 and Appendix C. The STAMSON software package developed by the Ministry of Environment (MOE, now MECP) was utilized to calculate sound levels using the Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT). The predicted noise levels due to the road traffic noise sources discussed in Section 3 are presented in Table 5.1. The receptor locations assessed are illustrated in Appendix B. The output results from STAMSON are provided in Appendix D.

The noise impact assessment results indicate that the development can meet the noise criteria requirements outlined in NPC-300 provided the noise abatement recommendations presented in Section 5 and Table 6.1 are implemented. This includes a noise barrier 2.2 m in height, which is required for Lot 29A. The noise level calculations with the noise barrier are presented in Table 5.2. It is further our understanding that all remaining requirements will inherently be met by the design of the buildings if built to Ontario Building Code standards.

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1. Introduction

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood) was retained by Preeminent Developments Inc. through Sajecki Planning to complete a Road Traffic Noise Impact Study (NIS) for the proposed development at 2476-2482 Confederation Parkway in Mississauga, Ontario (the "Site").

This NIS has been prepared in support of the City of Mississauga's (the "City") specific request for an "Acoustical Feasibility Study", as part of the rezoning application submitted to the City by Sajecki Planning (City of Mississauga Project Number DARC 18-279 W7).

Wood previously completed a NIS for the Site in April of 2019 (report dated April 2, 2019). However, an updated set of drawings were released with the main modification being the front entrance of the development now facing Dunbar Road as opposed to Confederation Parkway. The assessment and results described herein reflect the latest set of provided drawings.

2. Background

The Site is located on the west side of Confederation Parkway between Dunbar Road and Floradale Drive, as shown in Appendix A. The area surrounding the Site is mostly comprised of existing residential properties, with some retail area and educational institutions. A major hospital, Trillium Health Partners, along with other medical buildings, is located south of the Site.

The development includes two proposed three storey semi-detached dwellings which will replace two existing single storey dwellings. As per the provided drawings dated February 27, 2020 (see Appendix A), each unit will be comprised of three above-ground levels (the basement is only partially underground). The lot area of each dwelling will range between approximately 303 – 420 m^2 of ground area within the development zone. Both dwellings will have a building height of approximately 10 metres above the finished ground level.

The provided drawings are included in Appendix A and marked-up drawings showing the specific assessment locations are shown in Appendix B (further explained in Section 5).

3. Noise Sources

Dwellings are usually not expected to cause a significant amount of noise emissions. Air conditioning units may be installed; however, they are typically not a cause for concern. It is expected that any air conditioning units installed will follow applicable local by-laws and will be strategically placed such that its impact be minimized. Therefore, the development is not expected to contribute a significant amount of noise upon the surrounding environment.

This report considers road traffic noise impacts on the proposed Site in the context of the design information provided by Sajecki Planning, included in Appendix A. The three roadways in proximity to the Site are Confederation Parkway, Dunbar Road and Floradale Drive. Traffic data obtained from the City (provided in Appendix C) were utilized as inputs to the noise level calculations. Specifically, the Annual Average Daily Traffic (AADT) in the form of ultimate volumes were provided by the City and utilized for the traffic noise impact calculations. The ultimate volume is representative of forecasted traffic conditions until the year of 2041. A summary of the traffic data is presented in Table 3.1.

Ultimate traffic data was not available for Dunbar Road and Floradale Drive. However, the traffic volumes on these two streets are expected to be an order of magnitude lower than that on Confederation Parkway as they are residential streets in the study area. Therefore, the contribution of traffic on Dunbar Road and Floradale Drive to resultant noise levels were considered as insignificant.

For example, a Turning Movement Count (TMC) was available at the intersection of Confederation Parkway and Paisley Boulevard West (included in Appendix C), which is one street south of Floradale Drive. The TMC shows that during the peak hour of the PM period, only 7% of vehicles heading northbound on Confederation Parkway turn right on Paisley Boulevard West during the study hour. For vehicles heading southbound on Confederation Parkway, only 14% of vehicles turned left onto Paisley Boulevard West during the study hour.

Table 3.1: Traffic Data Summary

Roadway	Ultimate AADT[1]	Day / Night Percentage Split[2]	Posted Speed (kph)	Total Trucks Percentage	Medium Truck Ratio[3]	Heavy Truck Ratio[4]
Confederation Parkway between Dunbar Road and Floradale Drive	12,200	90 / 10	50	3%	55	45

Notes:

1. AADT – Annual Average Daily Traffic Volume in the form of an ultimate volume forecast until the year of 2041.
2. Represents the percentage of AADT in each time period:
    - Day – 07:00 to 23:00; and,
    - Night – 23:00 to 07:00.
3. Medium truck ratio as a percentage of total trucks. Medium trucks are defined as having 2 axles and includes buses.
4. Heavy truck ratio as a percentage of total trucks. Heavy trucks are defined as having more than 2 axles.

4. Noise Criteria

The Ontario Ministry of the Environment, Conservation and Parks (MECP) has a guideline published, "Environmental Noise Guideline - Stationary and Transportation Sources - Approval and Planning (NPC-300)" [2]. This guideline addresses the assessment of noise generated by road traffic. Ultimately, the Planning Act provides the Ministry of Housing with authority to delegate land-use planning authority to local municipalities. These municipalities may then adopt the MECP guidance or develop their own standards at their choosing. Part C of the NPC-300 guideline is intended to assist municipalities in assessing applications under the Planning Act. The City does not have a guideline for noise impact studies in a land-use planning context and therefore, NPC-300 and the Region of Peel's General Guidelines for the Preparation of Acoustical Reports in the Region of Peel (the Peel Guideline) will be utilized for guidance within this study. The Peel Guideline adopts the road traffic noise limits prescribed in NPC-300. In 1986, The MOE (Ministry of Environment, now MECP) delegated the review of acoustical reports of regional and local roads directly to the Region of Peel.

The applicable indoor noise criteria for road traffic sources are presented in Table 4.1. Indoor noise levels are typically assessed only if building component analysis is required, discussed further below. The applicable outdoor noise criteria for road traffic are presented in Table 4.2, Table 4.3 and Table 4.4.

To mitigate indoor noise levels due to elevated exterior noise levels, means may be provided so that exterior windows can be kept closed for noise control purposes. This typically requires the installation of central air conditioning. Table 4.2 outlines the noise criteria which determine the ventilation requirements for a noise sensitive receptor.

To mitigate indoor noise levels due to elevated exterior noise levels the building construction may need to be designed such that the façade elements (windows, exterior wall, etc.) provide adequate noise reduction. This typically requires the specification of sound transmission class (STC) ratings for the façade elements. Table 4.3 outlines the noise criteria which determine whether the building components must be designed to meet the indoor noise level criteria specified in Table 4.1.

Noise barriers may be used to mitigate outdoor noise levels in designated outdoor living areas to meet the applicable noise criteria. This typically requires the installation of a noise barrier fences and/or earthen berms. Table 4.4 outlines the noise criteria which determine the noise barrier and warning clause requirements for outdoor living areas.

Table 4.1: Noise Level Criteria – Indoors

Noise Source	Space	Day-time (07:00 – 23:00) $L_{Aeq-16hr}$ (dBA)	Night-time (23:00 – 07:00) $L_{Aeq-8hr}$ (dBA)
Road Traffic	Living/dining[1]	$L_{Aeq-16hr} \leq 45$	$L_{Aeq-8hr} \leq 45$
	Schools[2]	$L_{Aeq-16hr} \leq 45$	-
	Sleeping quarters	$L_{Aeq-16hr} \leq 45$	$L_{Aeq-8hr} \leq 40$

Notes:

1. Includes den areas of residences, hospitals, nursing homes, etc.
2. Includes schools, daycare centres, etc. Facilities typically utilized for day-time use only.

Table 4.2: Noise Level Criteria – Ventilation Requirements

Noise Source	Day-time (07:00 – 23:00) $L_{Aeq-16hr}$ (dBA)	Night-time (23:00 – 07:00) $L_{Aeq-8hr}$ (dBA)	Ventilation Requirement[1,2]	Required Warning Clause[3]
Combined Road and Rail Traffic	$L_{Aeq-16hr} \leq 55$	$L_{Aeq-8hr} \leq 50$	None	None
	$55 < L_{Aeq-16hr} \leq 65$	$50 < L_{Aeq-8hr} \leq 60$	PA	Type C
	$L_{Aeq-16hr} > 65$	$L_{Aeq-8hr} > 60$	CA	Type D

Notes:

1. PA – Forced air heating with provision for adding central air conditioning.
2. CA – Central air conditioning.
3. Example warning clauses from NPC-300 to be included on agreements of purchase and sale, lease agreements and subdivision/site plan agreements are included in Appendix F.

Table 4.3: Noise Level Criteria – Building Component Requirements

Noise Source	Day-time (07:00 – 23:00) $L_{Aeq-16hr}$ (dBA)	Night-time (23:00 – 07:00) $L_{Aeq-8hr}$ (dBA)	Building Component Requirement[1,2]	Required Warning Clause[3]
Road Traffic	$L_{Aeq-16hr} \leq 65$	$L_{Aeq-8hr} \leq 60$	OBC	None
	$L_{Aeq-16hr} > 65$	$L_{Aeq-8hr} > 60$	Design	Type B & Type D

Notes:

1. OBC – Building compliant with the Ontario Building Code.
2. Design – Building Components (walls, windows, etc.) must be designed to achieve indoor noise level criteria.
3. Example warning clauses from NPC-300 to be included on agreements of purchase and sale, lease agreements and subdivision/site plan agreements are included in Appendix F.

Table 4.4: Noise Level Criteria – Outdoor Living Areas

Noise Source	Day-time (07:00 – 23:00) $L_{Aeq-16hr}$ (dBA)	Night-time (23:00 – 07:00) $L_{Aeq-8hr}$ (dBA)	Outdoor Noise Control Measures Requirement	Required Warning Clause[5]
Combined Road and Rail Traffic	$L_{Aeq-16hr} \leq 55$	None	None	None
	$55 < L_{Aeq-16hr} \leq 60$	None	Consider[1]	Type A[3]
	$L_{Aeq-16hr} > 60$	None	Required[2]	Type B[4]

Notes:

1. Consider – Control measures (barriers) not required but should be considered.
2. Required – Control measures (barriers) required to reduce the $L_{Aeq-16hr}$ to below 60 dBA and as close to 55 dBA as technically, economically and administratively feasible.
3. Type A – required if resultant $L_{Aeq-16hr}$ exceeds 55 dBA.
4. Type B - required if resultant $L_{Aeq-16hr}$ exceeds 60 dBA.
5. Example warning clauses from NPC-300 to be included on agreements of purchase and sale, lease agreements and subdivision/site plan agreements are included in Appendix F.

5. Noise Impact Assessment

The noise level calculations were completed using the design information provided, which is included in Appendix A, and the traffic information presented in Section 3 and Appendix C. The STAMSON software package developed by the MOE was utilized to calculate sound levels using the Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT). The predicted noise levels due to the road traffic noise sources discussed in Section 3 are presented in Table 5.1. The receptor locations assessed covered all four lots identified in the site plan and are illustrated in Appendix B. The output results from STAMSON are provided in Appendix D.

Table 5.1: Predicted Road Traffic Noise Levels

Receptor Location (ID)	Receptor Description[1]	Daytime (07:00-23:00) $L_{Aeq-16h}$ (dBA)[2]	Nighttime (23:00-07:00) L_{Aeq-8h} (dBA)[2]
R1	Lot 29A – East Façade, POW	63	57
R2	Lot 29A – Backyard, OLA	63	N/A
R3	Lot 29B – South Façade, POW	59	52
R4	Lot 29B – Backyard, OLA	54	N/A
R5	Lot 30A – South Façade, POW	57	50
R6	Lot 30A – Backyard, OLA	51	N/A
R7	Lot 30B – South Façade, POW	56	50
R8	Lot 30B – Backyard, OLA	48	N/A

Notes:

1. Receptor types:
   - POW – Plane of window (top most floor, level 3); and,
   - OLA – Outdoor living area (ground level).
2. Predicted noise levels represent a worst-impacted location.

The plane of window receptor locations assessed represent the location of the bedroom window nearest to Confederation Parkway, as this would represent the worst-case noise impact. The predicted plane of window noise levels range from 56 to 63 dBA $L_{Aeq-16h}$ for daytime and from 50 to 57 dBA L_{Aeq-8h} for nighttime. Comparison with the criteria in Table 4.2 indicates that the building at each lot requires forced air heating with the provision for adding air conditioning in the future, and warning clause Type C.

Further comparison with the criteria in Table 4.3 indicates that building component analysis is not required and construction meeting the minimum requirements of the Ontario Building Code will suffice for noise control purposes.

The OLA locations assessed represent the backyard areas, chosen at a point approximately aligned within 3 m of the façade, as noted in the Peel Guideline. The predicted noise levels in the OLAs range from 48 to 63 dBA $L_{Aeq-16h}$ for daytime. Noise levels were not predicted in the OLA for nighttime as it is not considered a sensitive space during this time period. Comparison with the criteria in Table 4.4 indicates that noise control measures are required for Lot 29A with warning clause type B. Lots 29B, 30A and 30B do not require noise control measures.

The Peel Guideline specifies that the sound level objective in the outdoor living areas after applying attenuation measures is 55 dBA. In order to reduce the noise level in the OLA of Lot 29A to at least 55 dBA, a noise barrier is recommended and should meet the following requirements:

1. Have a minimum height of 2.2 m above grade;
2. Cover the extent of backyard lot's line in Lot 29A until the toe wall, as shown in Appendix E; and,
3. Made of solid construction with a surface density of at least 4 lbs/sqft and be free of any cracks, gaps or other openings.

The OLA locations were re-assessed with the addition of a 2.2 m barrier in the location shown in Appendix E. The plane of window locations were not re-assessed as all the predicted noise levels at the plane of window locations did not trigger further analysis, as summarized in paragraph two of Section 5.0. The predicted noise levels with the 2.2 m barrier are presented in Table 5.2, along with the OLA levels without the barrier for comparison purposes.

Table 5.2: Predicted Road Traffic Noise Levels - Mitigated OLA

Receptor Location (ID)	Receptor Description[1]	Without Noise Barrier	With 2.2m Noise Barrier
		Daytime (07:00-23:00) $L_{Aeq-16h}$ (dBA)[1]	Daytime (07:00-23:00) $L_{Aeq-16h}$ (dBA)[1]
R2	Lot 29A – Backyard, OLA	63	55
R4	Lot 29B – Backyard, OLA	54	50
R6	Lot 30A – Backyard, OLA	51	48
R8	Lot 30B – Backyard, OLA	48	46

Note:

1. Predicted noise levels represent a worst-impacted location.

The predicted OLA levels with a 2.2 m barrier range from 46 to 55 dBA ($L_{Aeq-16h}$). Comparison with Table 4.4 indicates that the OLA at Lot 29A would not require further noise control measures once the noise level is under 55 dBA, as shown in Table 5.2. Although lots 29B, 30A and 30B do not require noise control measures, their OLAs nonetheless receive shielding from the installation of the noise barrier when installed in the location shown in Appendix E.

The calculations for the OLAs with the noise barrier implemented are provided in Appendix D. A table comparing the effectiveness of varying barrier heights, as required by the Peel Guideline, is included in the calculations for Lot 29A in Appendix D.

6. Conclusions

The noise impact assessment results indicate that the development can meet the noise criteria requirements outlined in NPC-300 and the Peel Guideline provided the noise abatement recommendations presented in Section 5 and Table 6.1 are implemented. It is further our assumption that these requirements will inherently met by the design of the buildings if built to Ontario Building Code standards.

Table 6.1: Noise Abatement Summary

Lot	Exterior Wall Construction[1]	Exterior Window Construction[1]	Ventilation Requirements[2]	Minimum Required Noise Barrier Height (m)	Warning Clauses[3]
29A	OBC	OBC	PA	2.2	B
29B	OBC	OBC	PA	None	C
30A	OBC	OBC	PA	None	C
30B	OBC	OBC	PA	None	C

Notes:

1. OBC – Ontario Building Code
2. Ventilation Requirements:
   - PA – Forced air heating with provision for adding central air conditioning.
   - CA – Central air conditioning.
3. Example warning clauses from NPC-300 to be included on agreements of purchase and sale, lease agreements and subdivision/site plan agreements are included in Appendix F.

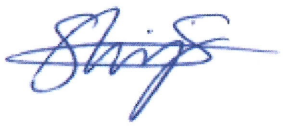
7. Closure

This Road Traffic Noise Impact Assessment was prepared by Wood for the sole benefit of Preeminent Developments Inc. for the specific application to the proposed development at 2476-2482 Confederation Parkway in Mississauga, Ontario. The quality of information, conclusions and estimates contained herein are consistent with the level of effort involved in Wood's services and based on: i) information available at the time of preparation, ii) data supplied by outside sources and iii) the assumptions, conditions and qualifications set forth in this document. This report is intended to be used by Preeminent Developments Inc. only, and its nominated representatives, subject to the terms and conditions of its contract with Wood. Any other use of, or reliance on, this report by any third party is at that party's sole risk. This report has been prepared in accordance with generally accepted industry-standard. No other warranty, expressed or implied, is made.

If you require further information regarding the above or the project in general, please contact the undersigned at (905) 568-2929. Thank you for the opportunity to be of service to Preeminent Developments Inc.

Sincerely,
Wood Environment & Infrastructure Solutions
a Division of Wood Canada Limited

Prepared by:



Shivraj Sagar, B.Eng.
Specialist
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Reviewed by:

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Department Head & Senior Engineer
Acoustics & Vibration

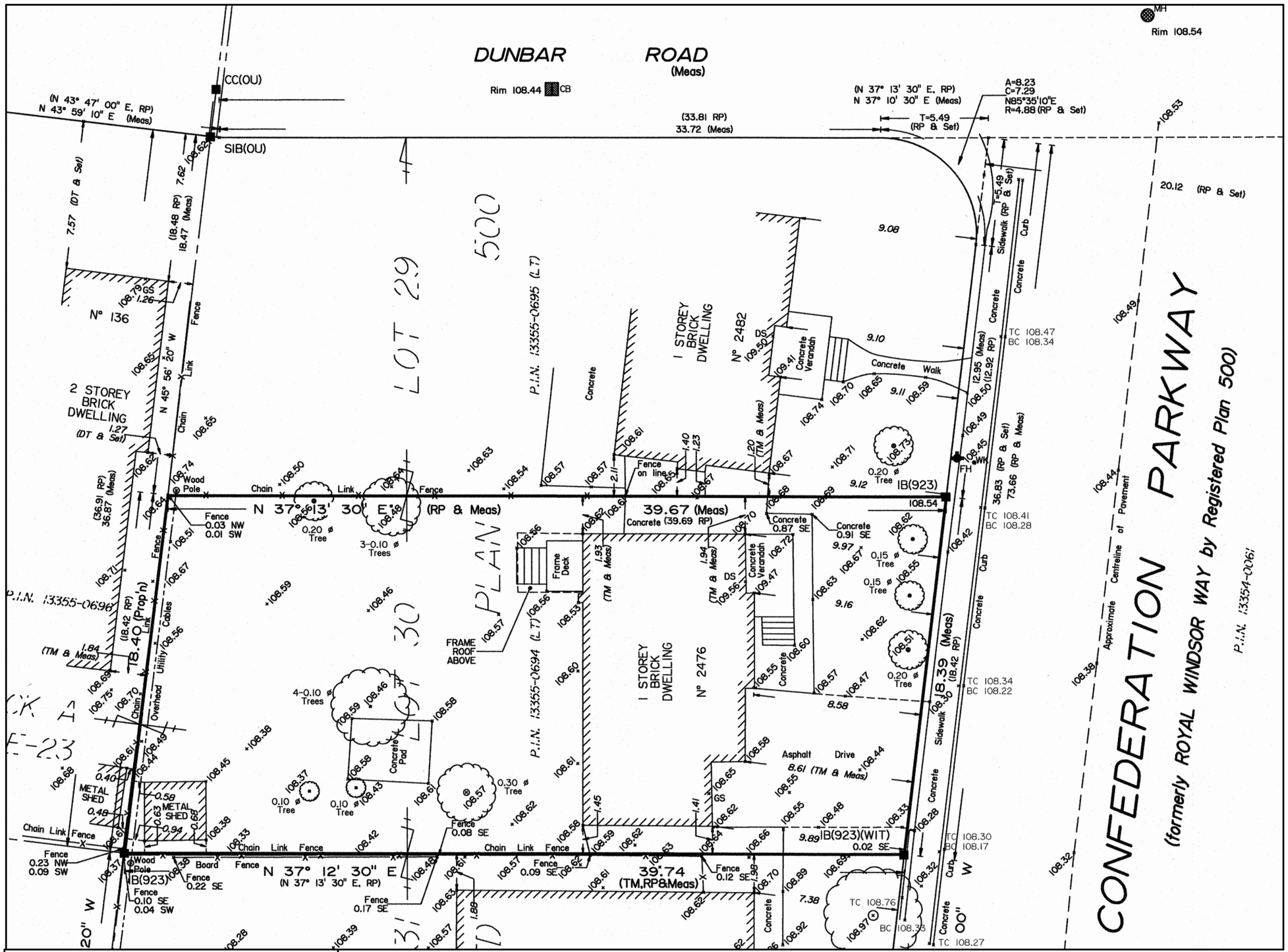
8. References

[1] The Region of Peel, "GENERAL GUIDELINES FOR THE PREPARATION OF ACOUSTICAL REPORTS IN THE REGION OF PEEL," November 2012. [Online]. Available: https://www.peelregion.ca/planning/noise-guidelines.pdf.

[2] Ontario Ministry of the Environment and Climate Change (MOECC), "Publication NPC-300, Noise Assessment Criteria for Stationary Sources and for Land Use Planning," August 2013.

Appendix A

Drawings



EXISTING LOT 30
REGISTERED PLAN 500
CITY OF MISSISSAUGA
REGIONAL MUNICIPALITY OF PEEL
SCALE 1:200

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**
Issued for Zoning By-Law Amendment	-	**2019-05-08**
Issued for Zoning By-Law Amendment		**2019-04-30**

TREVOR MCIVOR ARCHITECT INC

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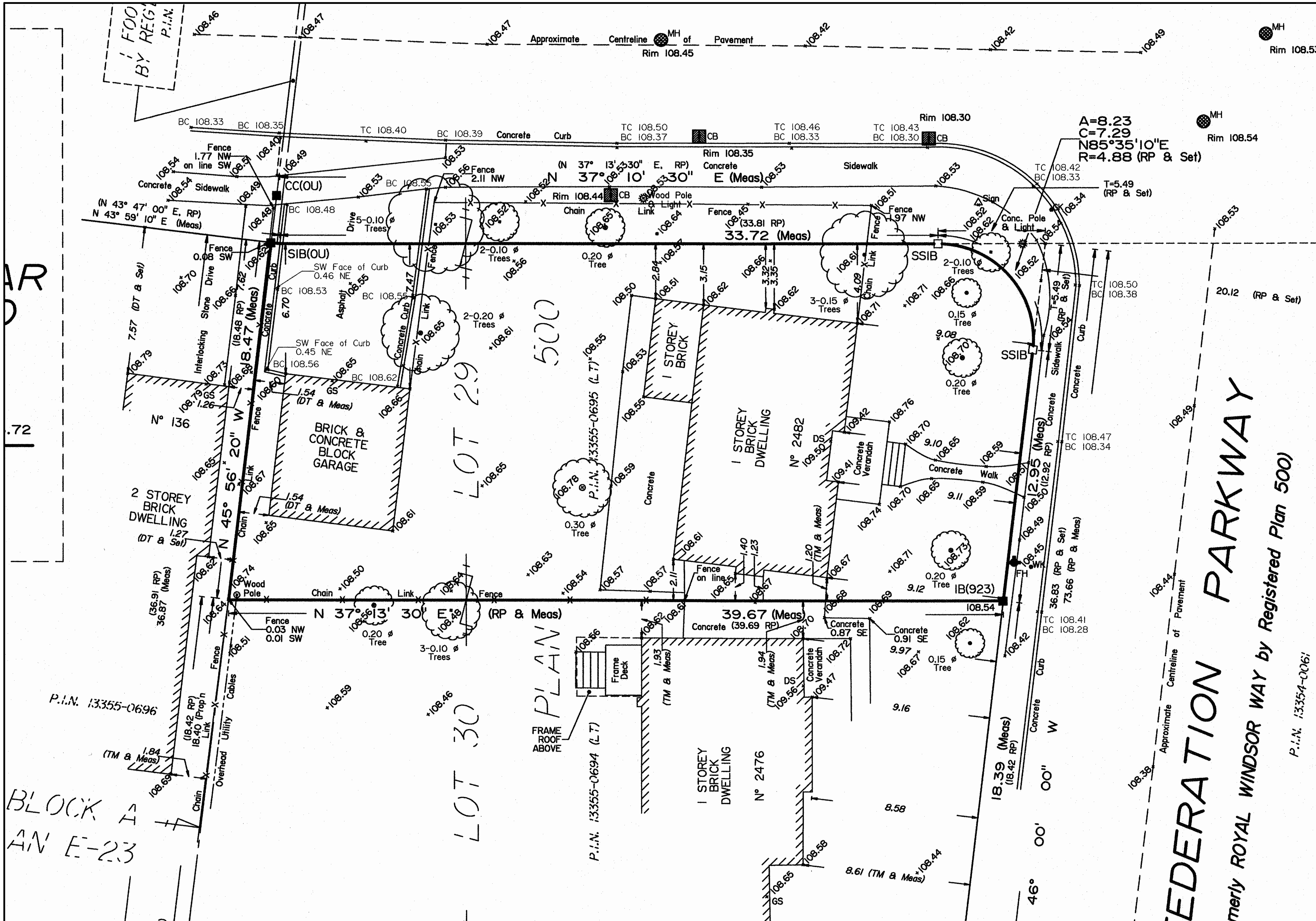
ONTARIO ASSOCIATION OF ARCHITECTS TREVOR MCIVOR LICENCE 6807

2476 Confederation Parkway
Mississauga, ON, Canada

Existing Survey Plan - LOT 30

A000a

Drawn: TB



EXISTING LOT 29
REGISTERED PLAN 500
CITY OF MISSISSAUGA
REGIONAL MUNICIPALITY OF PEEL
SCALE 1:200

2. These Contract Documents are the property of the Architect. The Architect bears no responsibility for the interpretation of these documents by the Contractor. Upon written application, the Architect will provide written/graphic clarification or supplementary information regarding the intent of the Contract Documents. The Architect will review Shop Drawings submitted by the Contractor for design conformance only.

3. Drawings are not to be scaled for construction. The Contractor is to verify all existing conditions and dimensions required to perform the work and report any discrepancies with the Contract Documents to the Architect before commencing any work.

4. Positions of exposed finished mechanical or electrical devices, fittings, and fixtures are indicated on architectural drawings. The locations shown on the architectural drawings govern over the Mechanical and Electrical drawings. Those items not clearly located will be located as directed by the Architect.

5. These drawings are not to be used for constuction unless noted below as "Issuance: For Construction"

6. All work is to be carried out in conformance with the Code and Bylaws of the authorities having jurisdiction.

7. The Architect of these plans and specifications gives no warranty or representation to any party about the constructability of the building(s) represented by them. All contractors or subcontractors must satisfy themselves when bidding and at all times ensure that they can properly construct the work represented by these plans.

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**

TREVOR MCIVOR ARCHITECT INC

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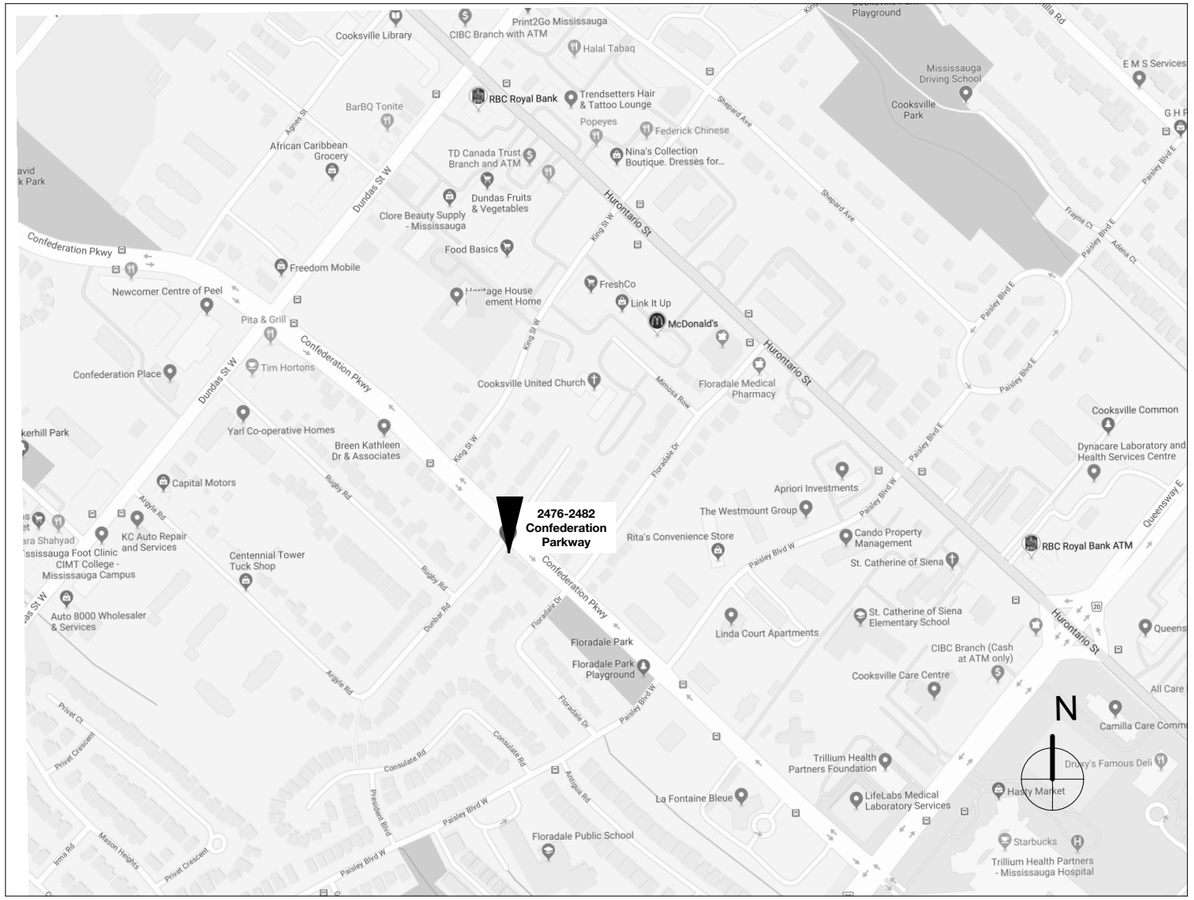
2482 Confederation Parkway
Mississauga, ON, Canada

Existing Survey Plan - LOT 29

A000b

Drawn: TB



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KEY PLAN

PROJECT STATISTICS

LOT:	29A	29B	30A	30B
ADDRESS:	2482 Confederation	2482 Confederation	2476 Confederation	2476 Confederation
ZONING:	RM2	RM2	RM2	RM2
LOT AREA:	419.78m^2	305.26m^2	305.26m^2	303.15m^2
LOT FRONTAGE:	10.44m	11.05m	9.83m	10.49m

BUILDING HEIGHT

AVERAGE GRADE:	108.57m	108.57m	108.57m	108.57m
HEIGHT TO HIGHEST RIDGE:	9.57m	9.57m	9.57m	9.57m

GROSS FLOOR AREA

	EXISTING	PROPOSED	PROPOSED	PROPOSED	PROPOSED
GROUND FLOOR:	0m^2	75.23m^2	75.23m^2	75.23m^2	75.23m^2
SECOND FLOOR:	0m^2	111.54m^2	109.60m^2	109.60m^2	109.60m^2
THIRD FLOOR:	0m^2	105.53m^2	105.53m^2	105.53m^2	105.53m^2
TOTAL GFA:		**292.3m^2**	**290.36m^2**	**290.36m^2**	**290.36m^2**

LOT COVERAGE

	EXISTING	PROPOSED	PROPOSED	PROPOSED	PROPOSED
DWELLING FOOTPRINT:	0m^2	113.86m^2	111.86m^2	111.86m^2	111.86m^2
PORCH:	0m^2	16.09m^2	8.44m^2	8.44m^2	8.44m^2
DECK: (>0.6m HEIGHT AND 10m^2)	0m^2	0m^2	0m^2	0m^2	0m^2
OTHER: (BALCONY PROJECTIONS BEYOND DWELLING FOOTPRINT)	0m^2	8.76m^2	8.76m^2	8.76m^2	8.76m^2
TOTAL LOT COVERAGE:		**138.71m**	**129.01m**	**129.01m**	**129.01m**
TOTAL LOT COVERAGE (%)		**33%**	**42%**	**42%**	**42%**

AVERAGE GRADE CALCULATIONS

PROPERTY SIDE LINES POINTS	A	108.42m		E	108.45m	
	B	108.62m		F	108.65m	
	C	108.70m		G	108.55m	
	D	108.62m		H	108.54m	
	E	108.45m		I	108.47m	
	F	108.65m		J	108.62m	
	G	108.55m		K	108.66m	
	H	108.54m		L	108.64m	
AVERAGE GRADE:		**108.57m**			**108.57m**	

LANDSCAPED OPEN SPACE

FRONT YARD AREA:	123.05m^2	95.16m^2	86.6m^2	89.68m^2
HARD SURFACES AREA - PORCH:	11.51m^2	9.33m^2	9.33m^2	9.33m^2
HARD SURFACES AREA - DRIVEWAY:	39.52m^2	39.29m^2	35.23m^2	39.28m^2
TOTAL LANDSCAPED OPEN SPACE (FRONT YARD):	72.02m^2 (59%)	46.54m^2 (49%)	42.04m^2 (49%)	41.07m^2 (46%)
SIDE YARD AREA:	68.40m^2	18.33m^2	18.16m^2	18.00m^2
HARD SURFACES AREA:	4.58m^2	0m^2	0m^2	0m^2
TOTAL LANDSCAPED OPEN SPACE (SIDE YARD):	63.82m^2 (93%)	18.33m^2 (100%)	18.16m^2 (100%)	18.00m^2 (100%)
REAR YARD AREA:	120.22m^2	83.66m^2	92.38m^2	87.58m^2
HARD SURFACES AREA:	0m^2	0m^2	0m^2	0m^2
TOTAL LANDSCAPED OPEN SPACE (REAR YARD):	120.22m (100%)	83.66m^2 (100%)	92.38m^2 (100%)	87.58m^2 (100%)

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**

TREVOR MCIVOR ARCHITECT INC

Architecture:

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Consultant | Architect

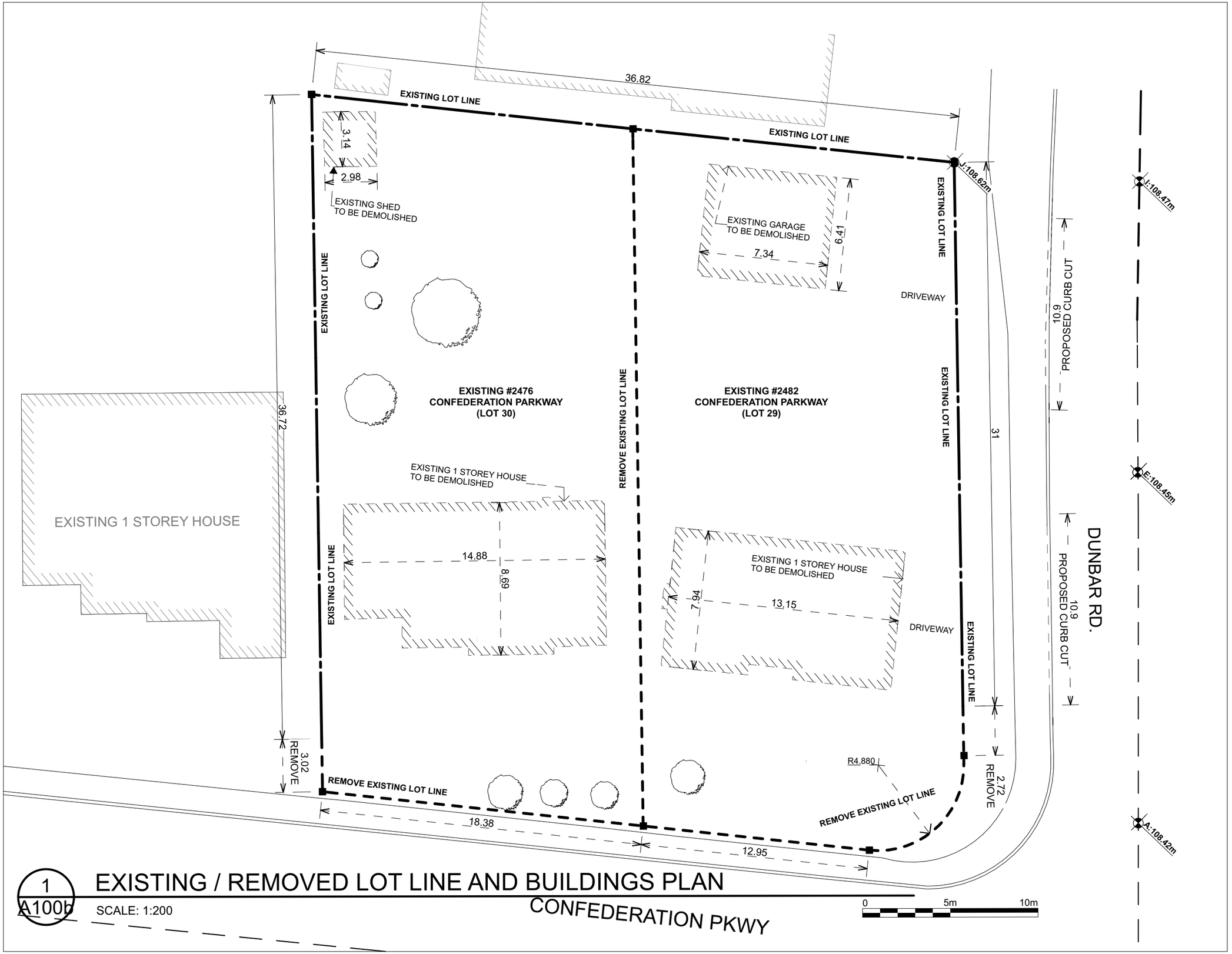
ONTARIO ASSOCIATION OF ARCHITECTS TREVOR McIVOR LICENCE 6807

2476-2482 Confederation Parkway
Mississauga, ON, Canada

PROJECT STATS

A100

Drawn: TB



1
A100b

EXISTING / REMOVED LOT LINE AND BUILDINGS PLAN

SCALE: 1:200

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**

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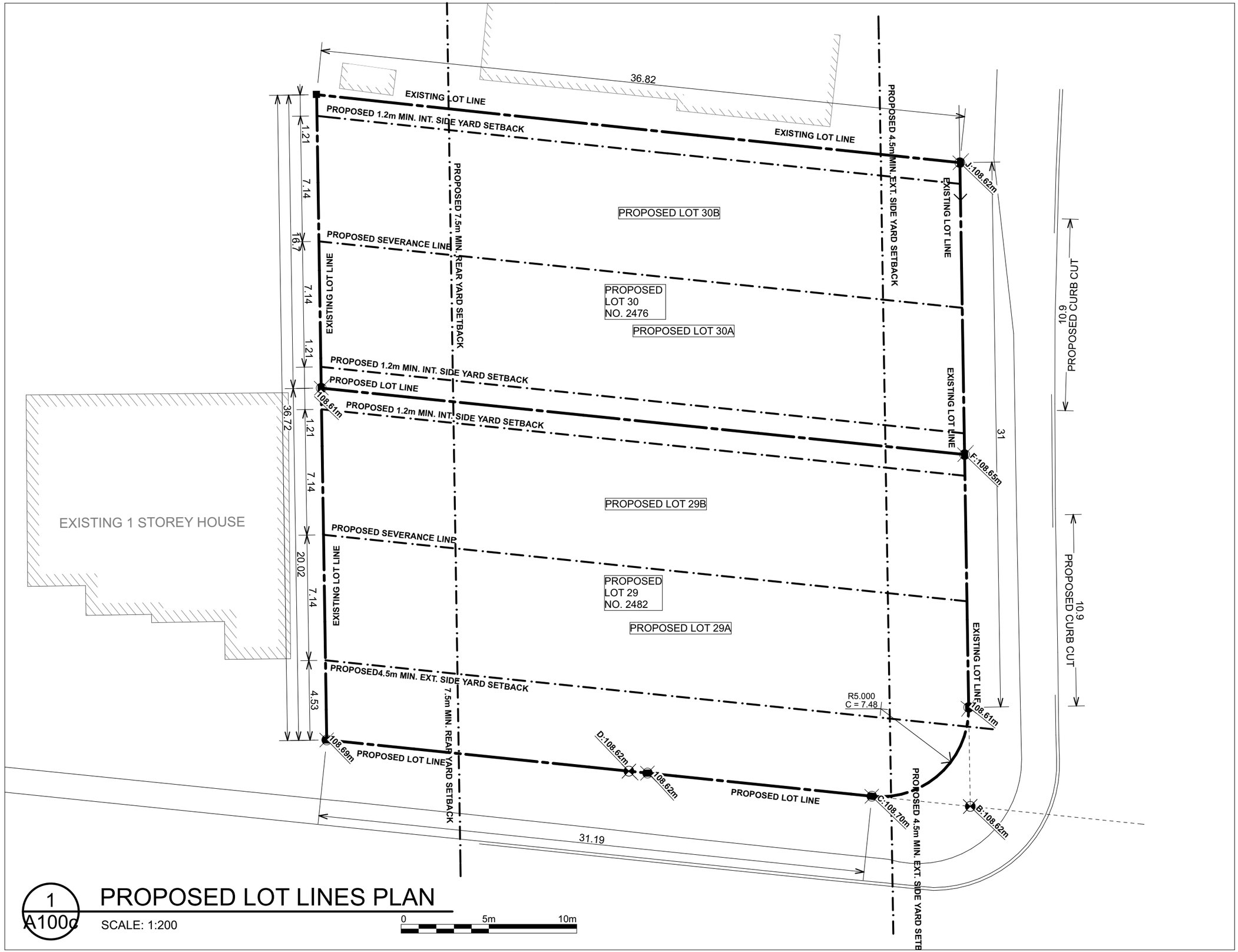
2476-2482 Confederation Parkway

Mississauga, ON, Canada

CONCEPT PLAN - DEMOLITION

A100b

Drawn: TB



1
A100c

PROPOSED LOT LINES PLAN

SCALE: 1:200

0 5m 10m

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**
Issued for Zoning By-Law Amendment		**2019-05-08**

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2476-2482 Confederation Parkway

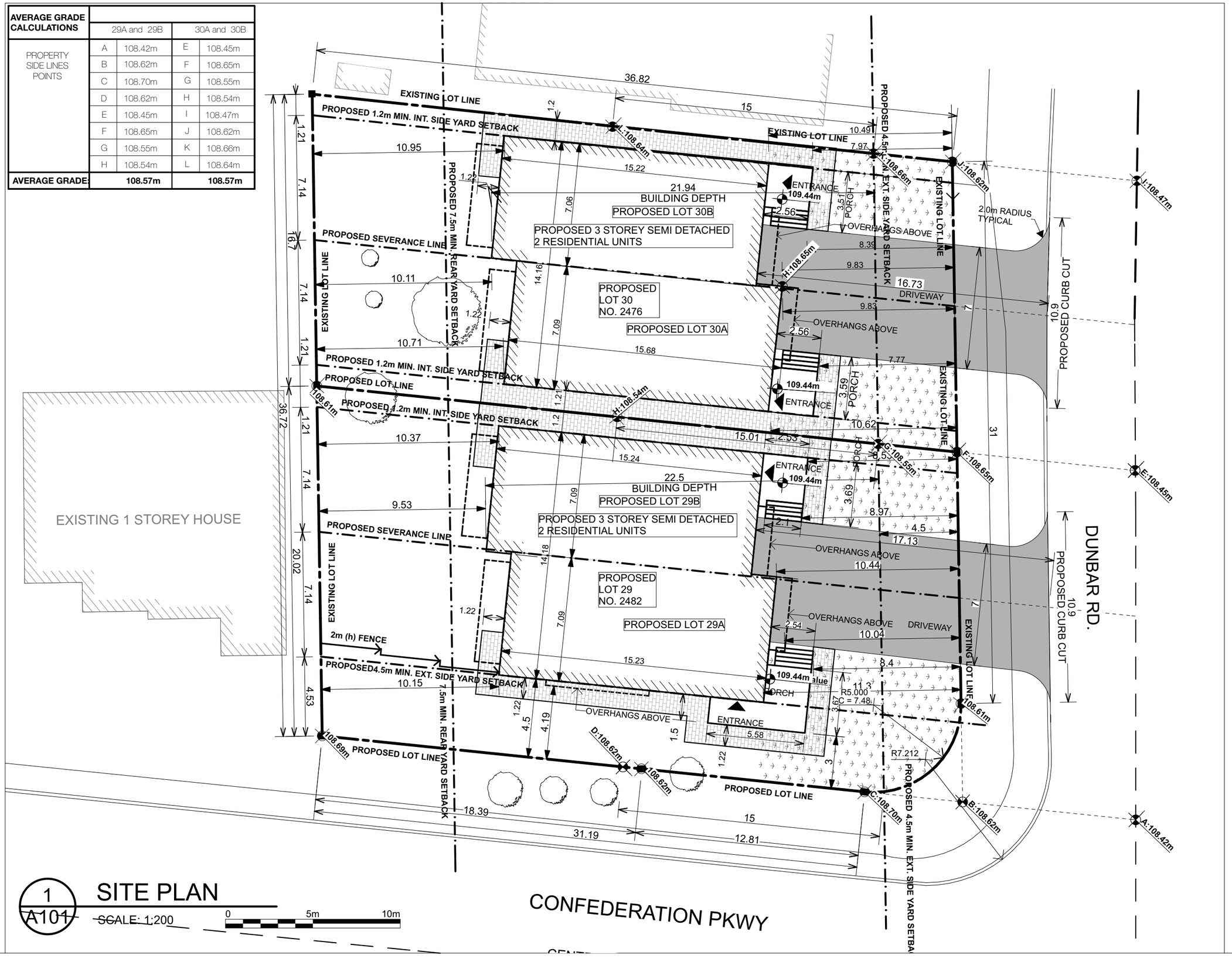
Mississauga, ON, Canada

CONCEPT PLAN - PROPOSED

A100c

Drawn: TB

AVERAGE GRADE CALCULATIONS				
	29A and 29B		30A and 30B	
PROPERTY SIDE LINES POINTS	A	108.42m	E	108.45m
	B	108.62m	F	108.65m
	C	108.70m	G	108.55m
	D	108.62m	H	108.54m
	E	108.45m	I	108.47m
	F	108.65m	J	108.62m
	G	108.55m	K	108.66m
	H	108.54m	L	108.64m
AVERAGE GRADE:		**108.57m**		**108.57m**



1 A101 SITE PLAN

SCALE: 1:200

0 5m 10m

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**
Issued for Zoning By-Law Amendment		**2019-04-16**

TREVOR MCIVOR ARCHITECT INC

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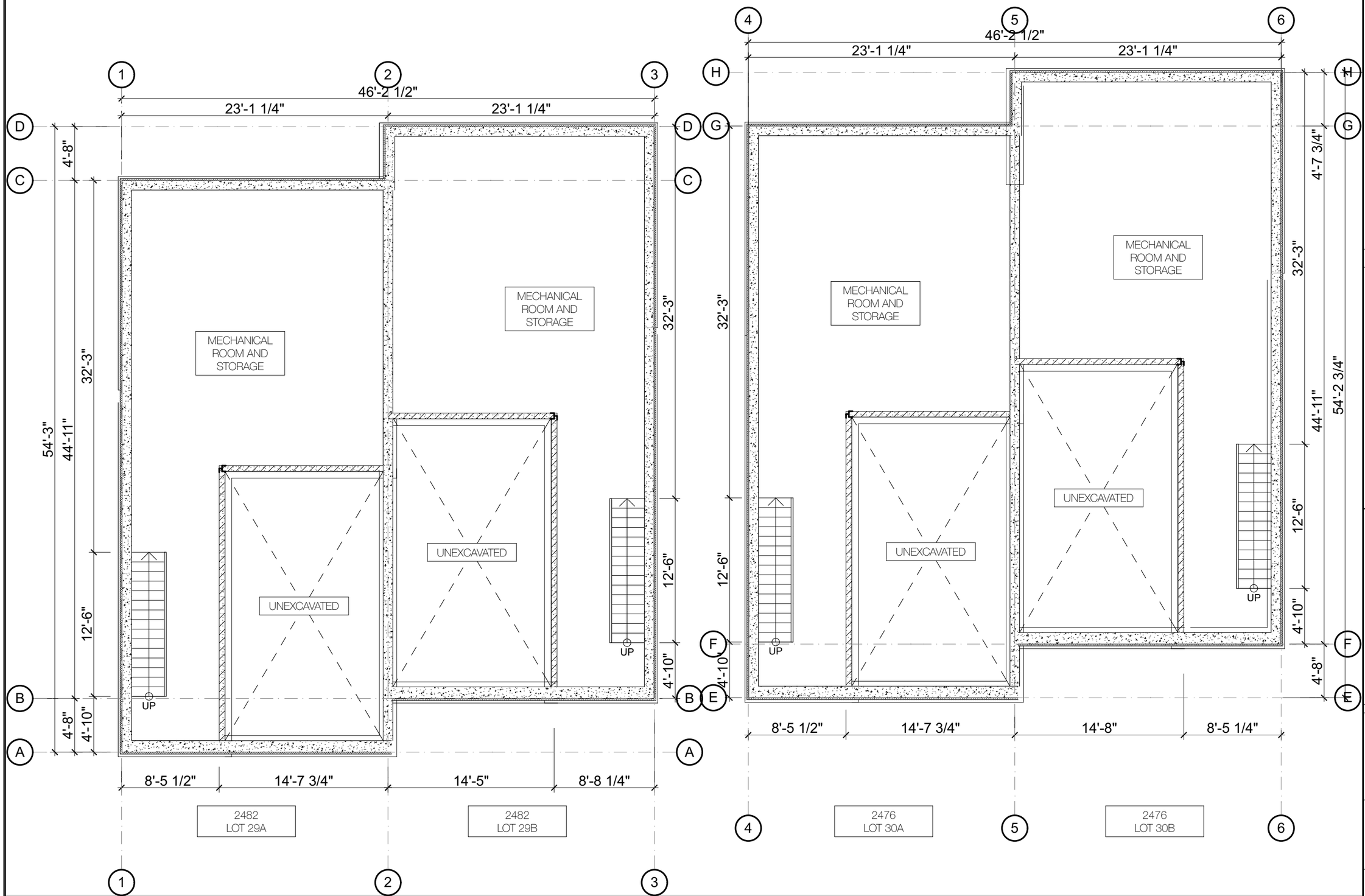
2476-2482 Confederation Parkway

Mississauga, ON, Canada

SITE PLAN

A101

Drawn: TB



1
A200

BASEMENT FLOOR PLAN

SCALE: 1/8" = 1'-0"

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**

TREVOR MCIVOR ARCHITECT INC

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2476-2482 Confederation Parkway
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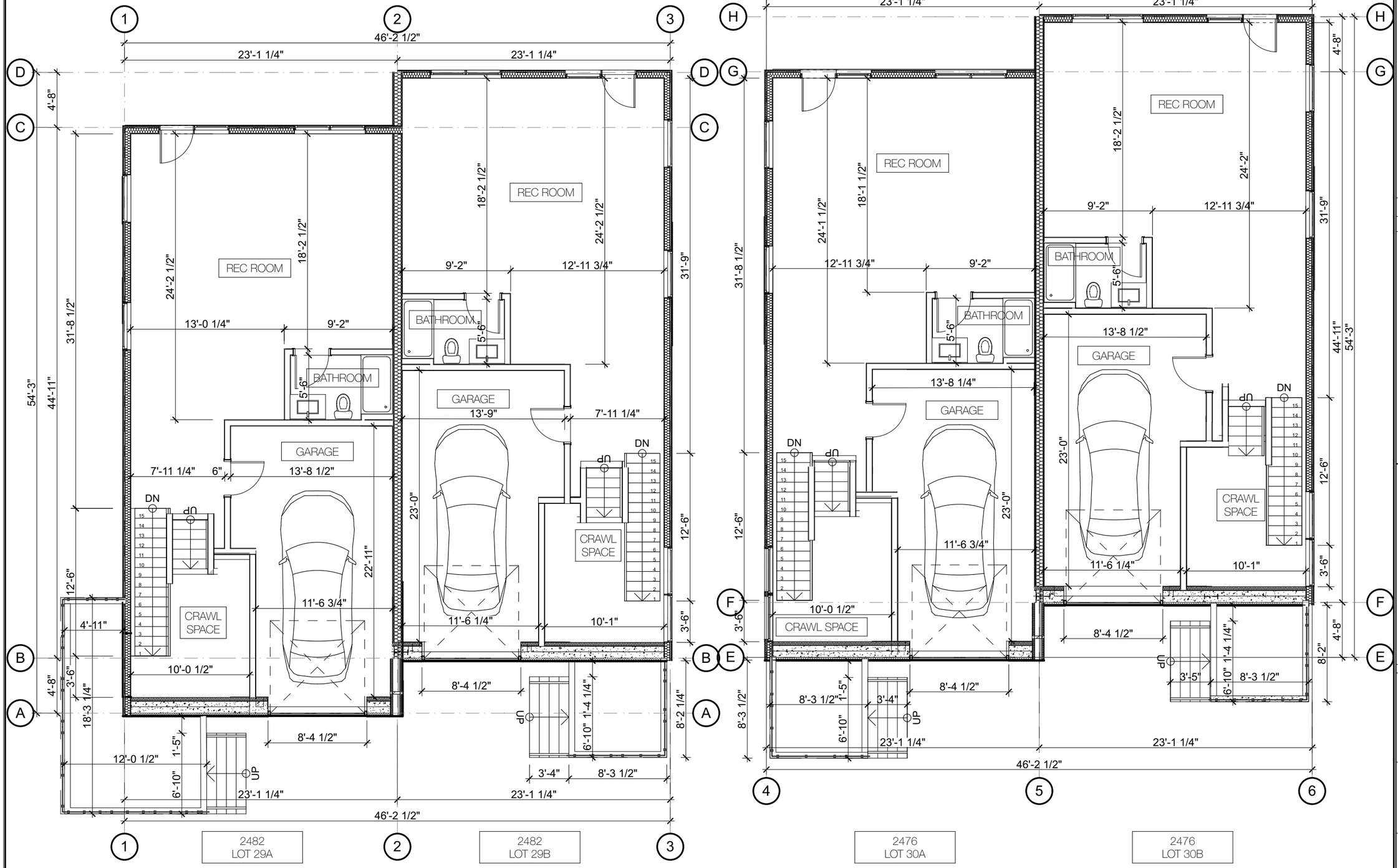
BASEMENT PLAN

A200

Drawn: TB



GROUND FLOOR PLAN

SCALE: 1/8" = 1'-0"

1
A201

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**
Issued for Zoning By-Law Amendment		**2019-04-16**

TREVOR MCIVOR ARCHITECT INC

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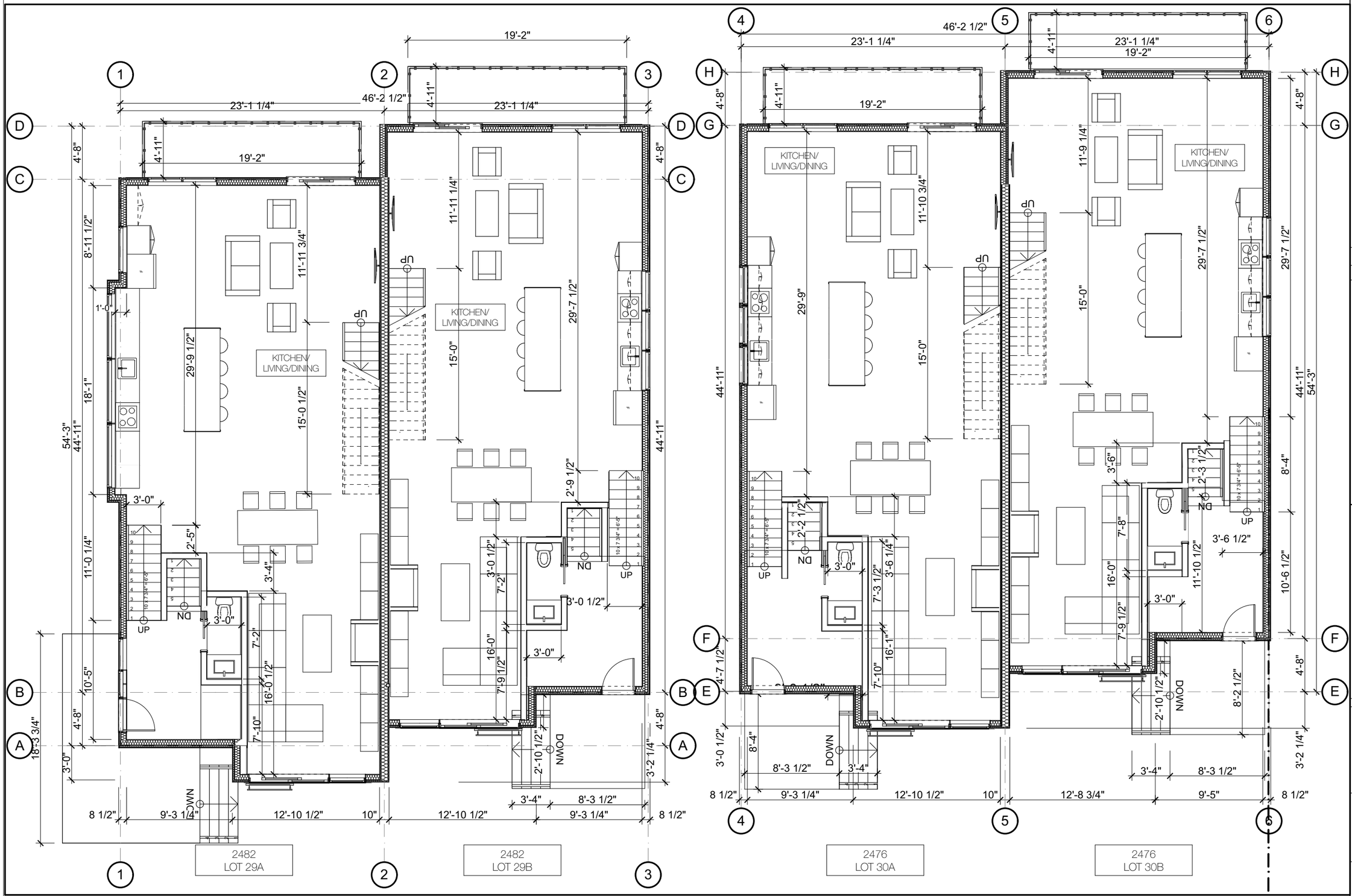
2476-2482 Confederation Parkway
Mississauga, ON, Canada

GROUND FLOOR PLAN

A201

Drawn: TM



SECOND FLOOR PLAN

SCALE: 1/8" = 1'-0"

1
A202

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**
Issued for Zoning By-Law Amendment		**2019-04-16**

TREVOR MCIVOR ARCHITECT INC

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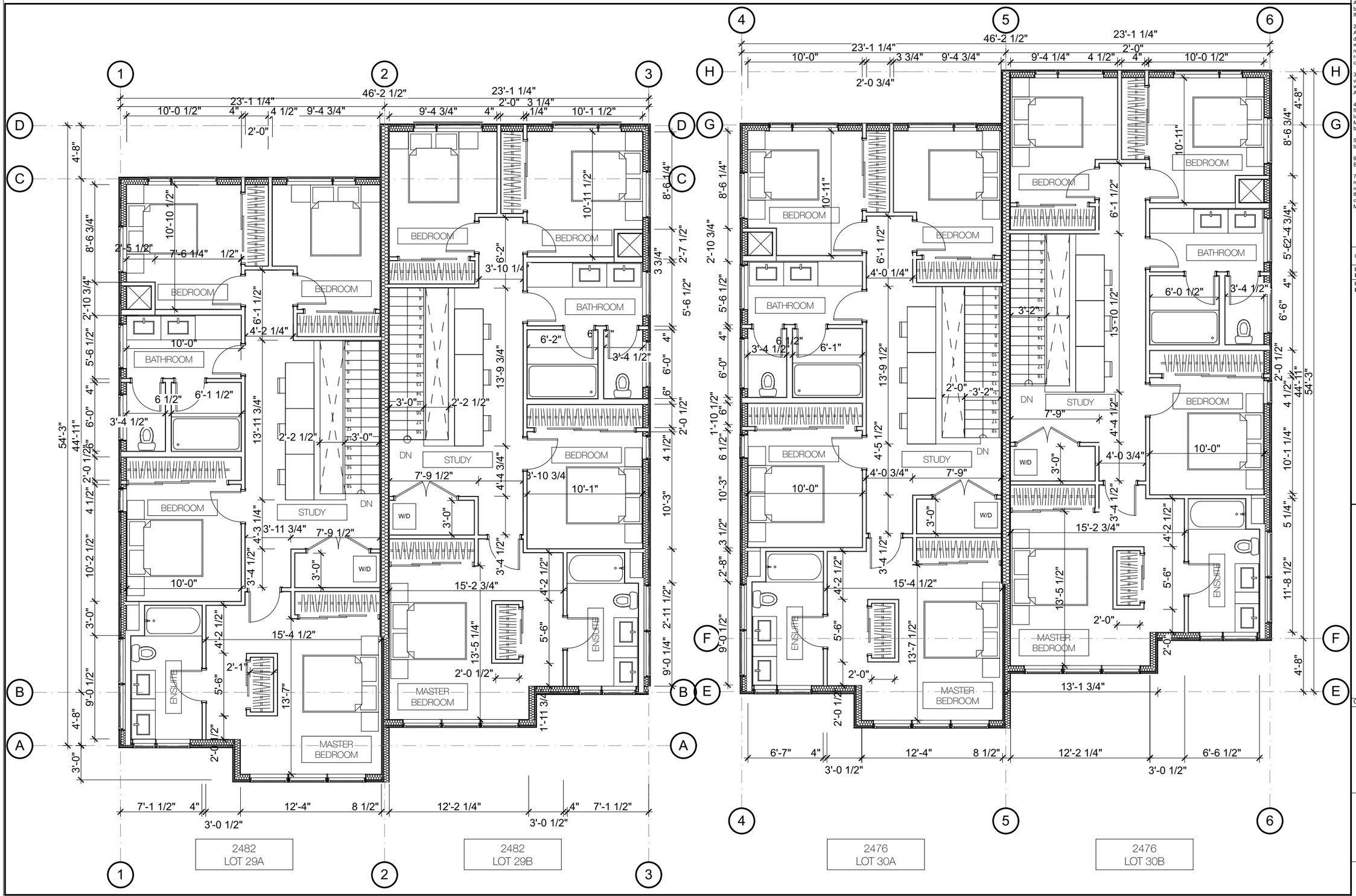
2476-2482 Confederation Parkway

Mississauga, ON, Canada

SECOND FLOOR PLAN

A202

Drawn: TR



THIRD FLOOR PLAN

SCALE: 1/8" = 1'-0"

1
A203

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		2020-02-27
Issued for Zoning By-Law Amendment		2019-04-16

TREVOR MCIVOR ARCHITECT INC

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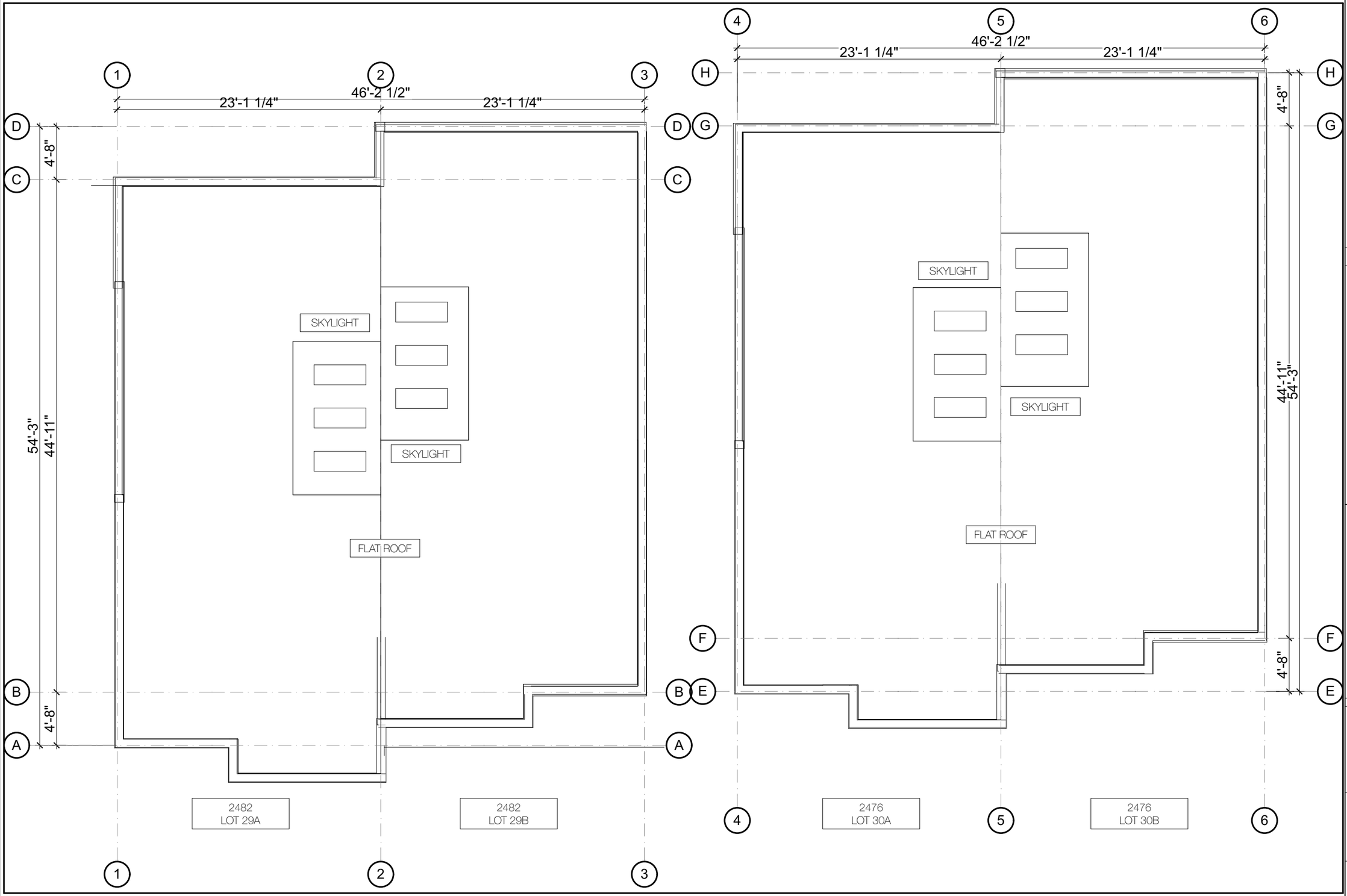
2476-2482 Confederation Parkway

Mississauga, ON, Canada

THIRD FLOOR PLAN

A203

Drawn: TB



Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**

TREVOR MCIVOR ARCHITECT INC

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2476-2482 Confederation Parkway

Mississauga, ON, Canada

ROOF PLAN

A204

Drawn: TB

1
A204

ROOF FLOOR PLAN

SCALE: 1/8" = 1'-0"

1
A401

NORTH / FRONT ELEVATION - FACING DUNBAR ROAD

SCALE: 1/8" = 1'-0"

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**
Issued for Zoning By-Law Amendment		**2019-04-16**

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2476-2482 Confederation Parkway

Mississauga, ON, Canada

ELEVATIONS

A401

Drawn: TB

1
A402

BACK / SOUTH ELEVATION

SCALE: 1/8" = 1'-0"

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**

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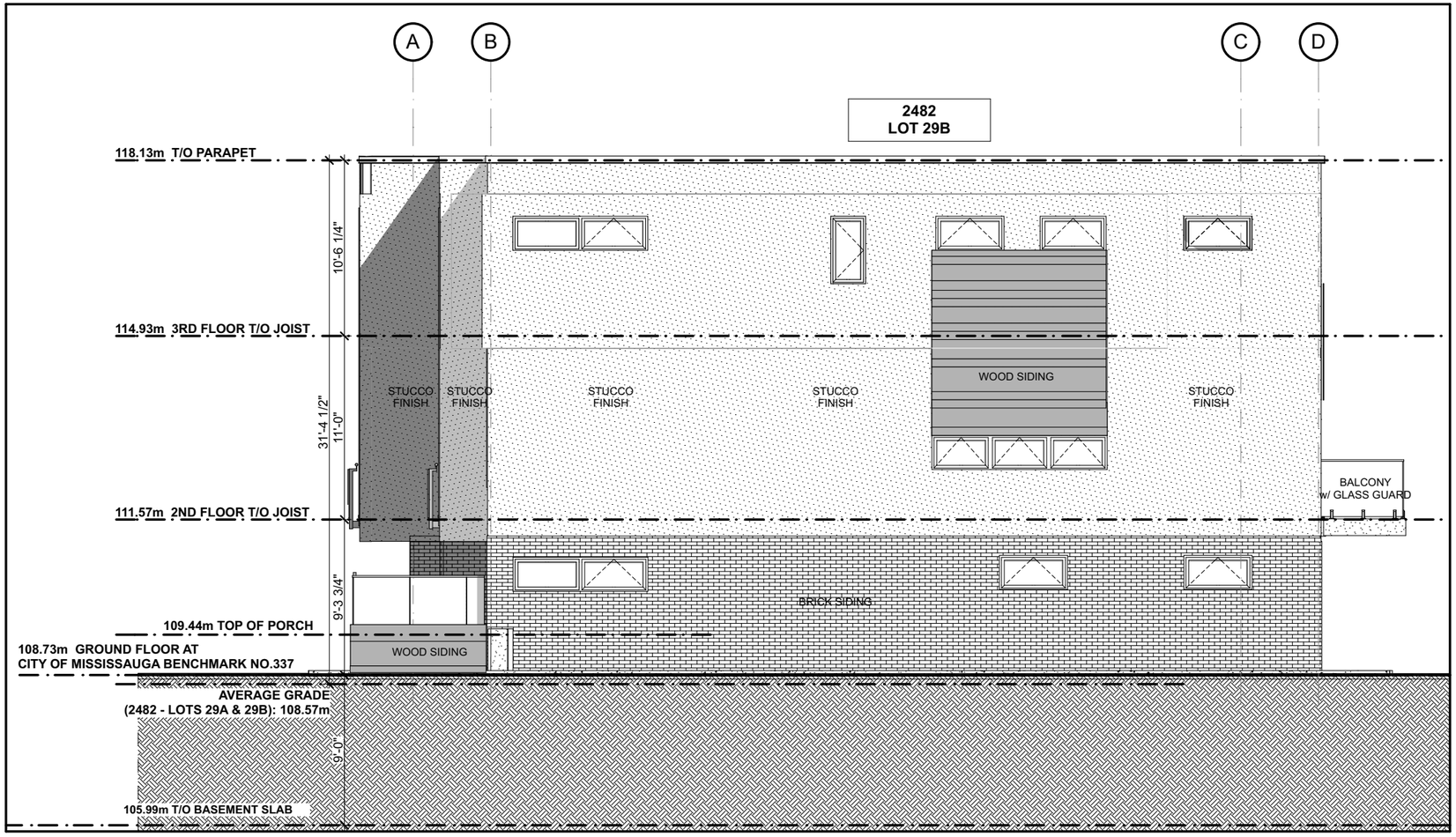
Mississauga, ON, Canada

ELEVATIONS

A402

Drawn: TB



1 / A403

WEST ELEVATION - LOT 29

SCALE: 1/8" = 1'-0"

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**
Issued for Zoning By-Law Amendment		**2019-04-16**

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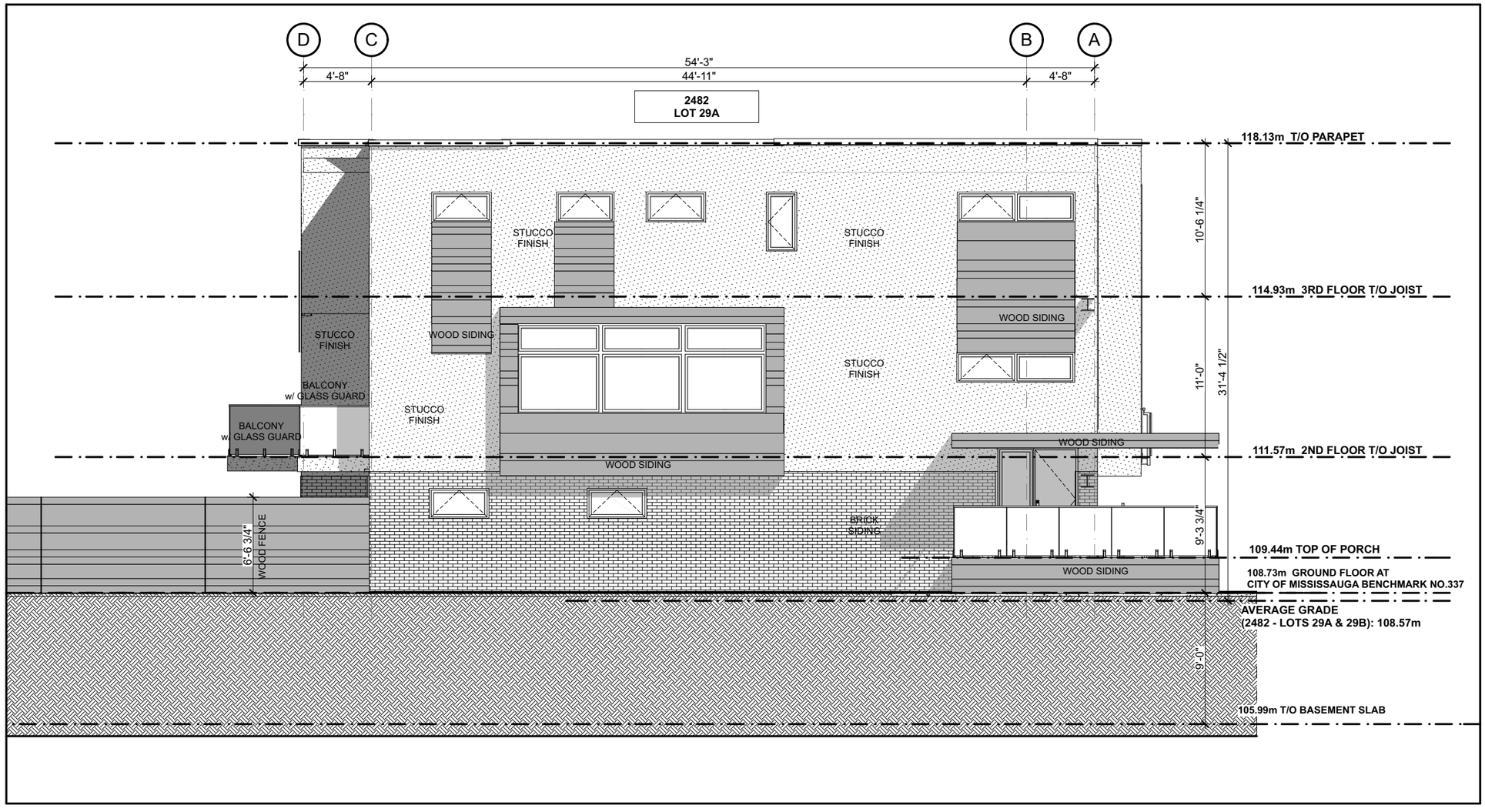
2476-2482 Confederation Parkway

Mississauga, ON, Canada

ELEVATIONS

A403

Drawn: TB



2 / A404 EAST ELEVATION - LOT 29 - PARKWAY SIDE

SCALE: 1/8" = 1'-0"

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**

TREVOR MCIVOR ARCHITECT INC

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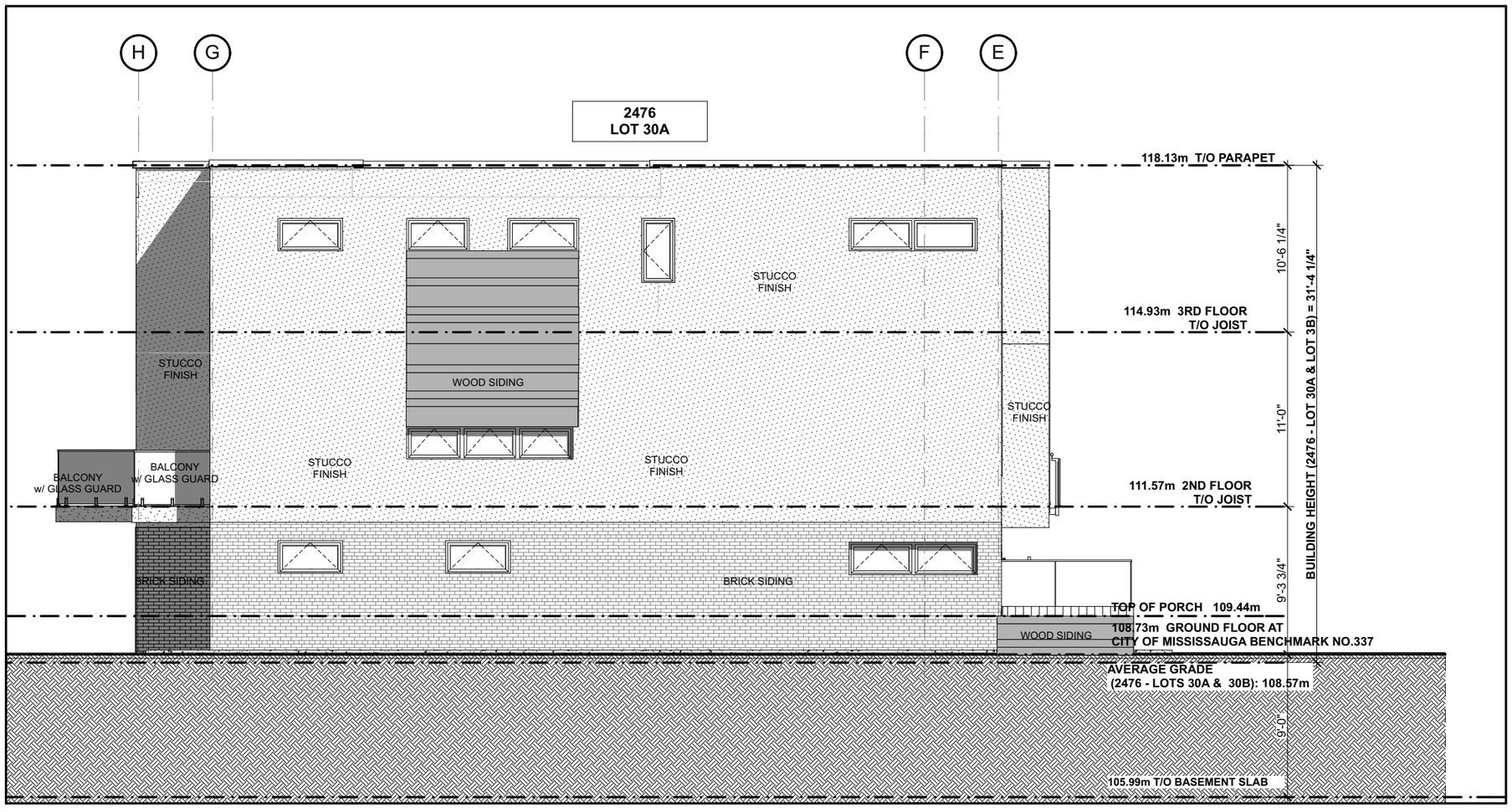
2476-2482 Confederation Parkway
Mississauga, ON, Canada

ELEVATIONS

A404



1
A405

EAST ELEVATION - LOT 30

SCALE: 1/8" = 1'-0"

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**

TREVOR MCIVOR ARCHITECT INC

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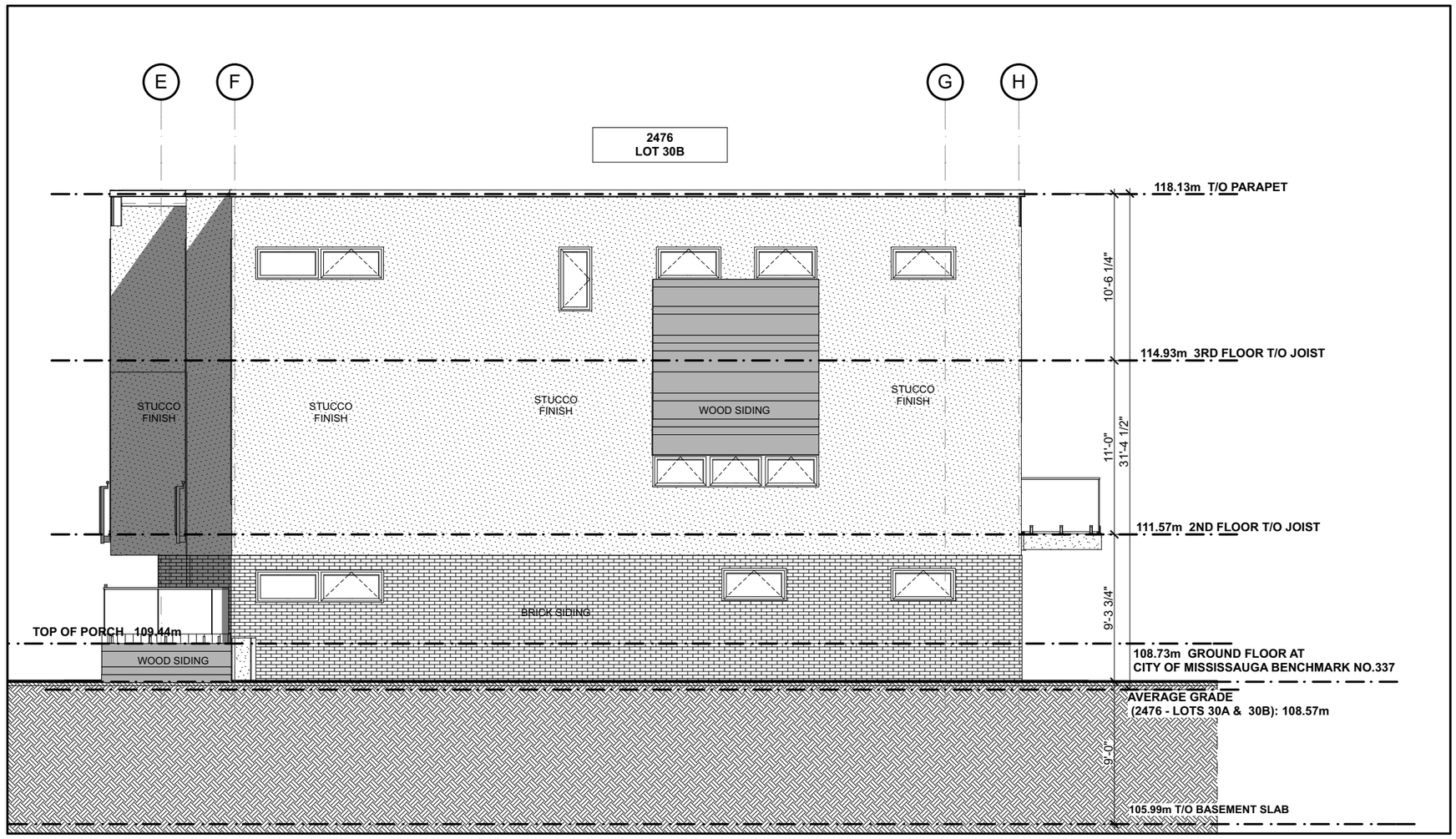
2476-2482 Confederation Parkway

Mississauga, ON, Canada

ELEVATIONS

A405

Drawn: TR



1
A406

WEST ELEVATION - LOT 30

SCALE: 1/8" = 1'-0"

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2020-02-27**

TREVOR MCIVOR ARCHITECT INC

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2476-2482 Confederation Parkway

Mississauga, ON, Canada

ELEVATIONS

A406

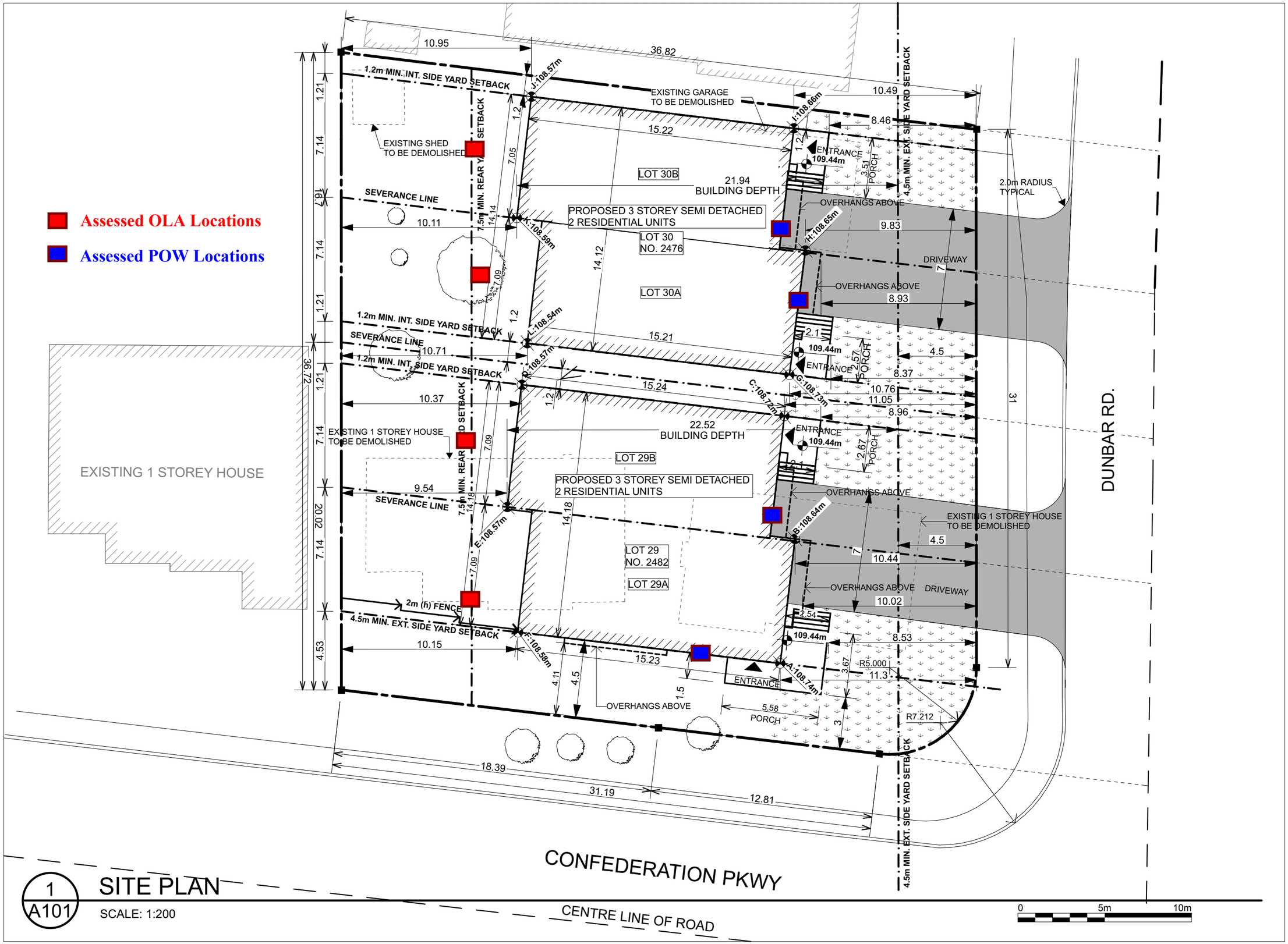
Drawn: TB

Appendix B

Receptor Locations

Assessed OLA Locations

Assessed POW Locations



1
A101

SITE PLAN

SCALE: 1:200

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		2019-04-16

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Consultant	Architect

N

2476-2482 Confederation Parkway

Mississauga, ON, Canada

SITE PLAN

A101

Drawn: TB

Appendix C

Traffic Data

Date:	08-Mar-19

NOISE REPORT FOR PROPOSED DEVELOPMENT

REQUESTED BY:	
Name:	Shivraj Sagar
Company	Wood PLC

PREPARED BY:	
Name:	Bertuen Mickle
Tel#:	(905) 615-3200

Location:	Confederation Parkway between Dunbar and Floradale
ID#:	408

ON SITE TRAFFIC DATA

Specific	***Street Names***				
	Confederation Pkwy				
AADT:	12,200				
# of Lanes:	2				
% Trucks:	3%				
Medium/Heavy Trucks Ratio:	55/45				
Day/Night Traffic Split:	90/10				
Posted Speed Limit:	50 km/h				
Gradient of Road:	<2%				
Ultimate R O W:	20 m				

Comments:	Untimate Traffic Data Only

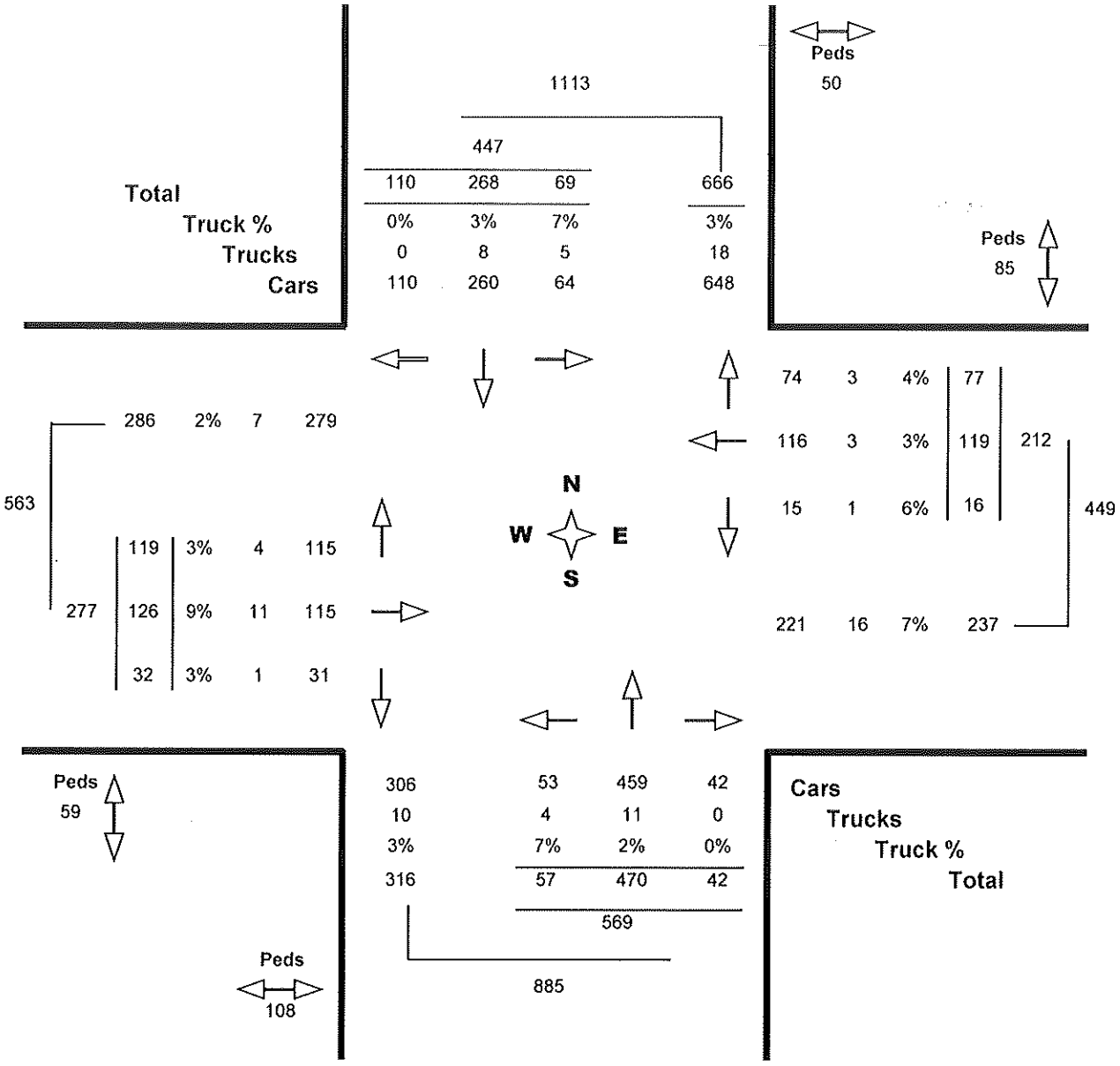
Turning Movements Report - PM Period

Location..... CONFEDERATION PKY @ PAISLEY BLVD W

Municipality..... Mississauga **GeoID.....** 349864

Count Date..... Thursday, 09 April, 2015 **Peak Hour.....** 03:30 PM — 04:30 PM

Road 1 CONFEDERATION PKY **Road 2** PAISLEY BLVD W



Appendix D

Calculations

STAMSON 5.0 NORMAL REPORT Date: 17-01-2020 14:37:40
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 29a_br1.te Time Period: Day/Night 16/8 hours
Description: Lot 29A Top Floor Bedroom Facing Confederation

Road data, segment # 1: Confed Pkwy (day/night)

Car traffic volume : 10651/1183 veh/TimePeriod *
Medium truck volume : 181/20 veh/TimePeriod *
Heavy truck volume : 148/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 12200
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.65
Heavy Truck % of Total Volume : 1.35
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Confed Pkwy (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 16.00 / 16.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Confed Pkwy (day)

Source height = 1.08 m

ROAD (0.00 + 63.32 + 0.00) = 63.32 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	63.60	0.00	-0.28	0.00	0.00	0.00	0.00	63.32

Segment Leq : 63.32 dBA

Total Leq All Segments: 63.32 dBA

Results segment # 1: Confed Pkwy (night)

Source height = 1.07 m

ROAD (0.00 + 56.73 + 0.00) = 56.73 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	57.01	0.00	-0.28	0.00	0.00	0.00	0.00	56.73

Segment Leq : 56.73 dBA

Total Leq All Segments: 56.73 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.32
(NIGHT): 56.73

STAMSON 5.0 NORMAL REPORT Date: 18-02-2020 16:32:37
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 29a_ola.te Time Period: 16 hours
Description: Lot 29A OLA

Road data, segment # 1: Confed Pkwy

Car traffic volume : 10651 veh/TimePeriod *
Medium truck volume : 181 veh/TimePeriod *
Heavy truck volume : 148 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Confed Pkwy

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 17.00 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Confed Pkwy

Source height = 1.08 m

ROAD (0.00 + 63.05 + 0.00) = 63.05 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	63.60	0.00	-0.54	0.00	0.00	0.00	0.00	63.05

Segment Leq : 63.05 dBA

Total Leq All Segments: 63.05 dBA

TOTAL Leq FROM ALL SOURCES: 63.05

STAMSON 5.0 NORMAL REPORT Date: 17-01-2020 14:42:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 29b_br1.te Time Period: Day/Night 16/8 hours
Description: Lot 29B Top Floor Bedroom Facing Dunbar

Road data, segment # 1: Confed Pkwy (day/night)

Car traffic volume : 10651/1183 veh/TimePeriod *
Medium truck volume : 181/20 veh/TimePeriod *
Heavy truck volume : 148/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 12200
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.65
Heavy Truck % of Total Volume : 1.35
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Confed Pkwy (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 24.00 / 24.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Confed Pkwy (day)

Source height = 1.08 m

ROAD (0.00 + 58.54 + 0.00) = 58.54 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	63.60	0.00	-2.04	-3.01	0.00	0.00	0.00	58.54

Segment Leq : 58.54 dBA

Total Leq All Segments: 58.54 dBA

Results segment # 1: Confed Pkwy (night)

Source height = 1.07 m

ROAD (0.00 + 51.96 + 0.00) = 51.96 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	57.01	0.00	-2.04	-3.01	0.00	0.00	0.00	51.96

Segment Leq : 51.96 dBA

Total Leq All Segments: 51.96 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.54
(NIGHT): 51.96

STAMSON 5.0 NORMAL REPORT Date: 19-02-2020 09:28:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 29b_ola.te Time Period: 16 hours
Description: Lot 29B OLA

Road data, segment # 1: Confed Pkwy

Car traffic volume : 5325 veh/TimePeriod *
Medium truck volume : 91 veh/TimePeriod *
Heavy truck volume : 74 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Confed Pkwy

Angle1 Angle2 : -90.00 deg -25.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 27.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -25.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 10.50 m
Source elevation : 108.54 m
Receiver elevation : 108.77 m
Barrier elevation : 108.81 m
Reference angle : 0.00

Road data, segment # 2: Confed Pkwy

Car traffic volume : 5325 veh/TimePeriod *
Medium truck volume : 91 veh/TimePeriod *
Heavy truck volume : 74 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Confed Pkwy

Angle1 Angle2 : -25.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 27.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 35.00 deg Angle2 : 90.00 deg

Barrier height : 3.00 m
Barrier receiver distance : 9.50 m
Source elevation : 108.27 m
Receiver elevation : 108.77 m
Barrier elevation : 108.70 m
Reference angle : 0.00

Results segment # 1: Confed Pkwy

Source height = 1.08 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.08 ! 1.50 ! 1.21 ! 110.02

ROAD (0.00 + 36.19 + 0.00) = 36.19 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 -25 0.00 60.59 0.00 -2.55 -4.42 0.00 0.00 -17.43 36.19

Segment Leq : 36.19 dBA

Results segment # 2: Confed Pkwy

Source height = 1.08 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.08 ! 1.50 ! 1.25 ! 109.95

ROAD (53.26 + 44.42 + 0.00) = 53.80 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-25 35 0.00 60.59 0.00 -2.55 -4.77 0.00 0.00 0.00 53.26
---
35 90 0.00 60.59 0.00 -2.55 -5.15 0.00 0.00 -8.46 44.42

Segment Leq : 53.80 dBA

Total Leq All Segments: 53.87 dBA

TOTAL Leq FROM ALL SOURCES: 53.87

STAMSON 5.0 NORMAL REPORT Date: 28-01-2020 11:40:55
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 30a_br1.te Time Period: Day/Night 16/8 hours
Description: Lot 30A Top Floor Bedroom Facing Dunbar

Road data, segment # 1: Confed Pkwy (day/night)

Car traffic volume : 10651/1183 veh/TimePeriod *
Medium truck volume : 181/20 veh/TimePeriod *
Heavy truck volume : 148/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 12200
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.65
Heavy Truck % of Total Volume : 1.35
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Confed Pkwy (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 37.00 / 37.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Confed Pkwy (day)

Source height = 1.08 m

ROAD (0.00 + 56.66 + 0.00) = 56.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	63.60	0.00	-3.92	-3.01	0.00	0.00	0.00	56.66

Segment Leq : 56.66 dBA

Total Leq All Segments: 56.66 dBA

Results segment # 1: Confed Pkwy (night)

Source height = 1.07 m

ROAD (0.00 + 50.08 + 0.00) = 50.08 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	57.01	0.00	-3.92	-3.01	0.00	0.00	0.00	50.08

Segment Leq : 50.08 dBA

Total Leq All Segments: 50.08 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.66
(NIGHT): 50.08

STAMSON 5.0 NORMAL REPORT Date: 19-02-2020 09:33:50
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 30a_ola.te Time Period: 16 hours
Description: Lot 30A OLA

Road data, segment # 1: Confed Pkwy

Car traffic volume : 5325 veh/TimePeriod *
Medium truck volume : 91 veh/TimePeriod *
Heavy truck volume : 74 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Confed Pkwy

Angle1 Angle2 : -90.00 deg -15.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -15.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 20.50 m
Source elevation : 108.54 m
Receiver elevation : 108.96 m
Barrier elevation : 108.81 m
Reference angle : 0.00

Road data, segment # 2: Confed Pkwy

Car traffic volume : 5325 veh/TimePeriod *
Medium truck volume : 91 veh/TimePeriod *
Heavy truck volume : 74 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Confed Pkwy

Angle1 Angle2 : -15.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 20.00 deg Angle2 : 90.00 deg

Barrier height : 3.00 m
Barrier receiver distance : 19.50 m
Source elevation : 108.27 m
Receiver elevation : 108.96 m
Barrier elevation : 108.70 m
Reference angle : 0.00

Results segment # 1: Confed Pkwy

Source height = 1.08 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.08 ! 1.50 ! 1.17 ! 109.98

ROAD (0.00 + 35.81 + 0.00) = 35.81 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 -15 0.00 60.59 0.00 -3.80 -3.80 0.00 0.00 -17.17 35.81

Segment Leq : 35.81 dBA

Results segment # 2: Confed Pkwy

Source height = 1.08 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.08 ! 1.50 ! 1.16 ! 109.86

ROAD (49.67 + 44.37 + 0.00) = 50.80 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-15 20 0.00 60.59 0.00 -3.80 -7.11 0.00 0.00 0.00 49.67
---
20 90 0.00 60.59 0.00 -3.80 -4.10 0.00 0.00 -8.32 44.37

Segment Leq : 50.80 dBA

Total Leq All Segments: 50.94 dBA

TOTAL Leq FROM ALL SOURCES: 50.94

STAMSON 5.0 NORMAL REPORT Date: 17-01-2020 15:08:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 30B_BR1.te Time Period: Day/Night 16/8 hours
Description: Lot 30B Top Floor Bedroom Window Facing Dunabr

Road data, segment # 1: Confed Pkwy (day/night)

Car traffic volume : 10651/1183 veh/TimePeriod *
Medium truck volume : 181/20 veh/TimePeriod *
Heavy truck volume : 148/16 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 12200
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.65
Heavy Truck % of Total Volume : 1.35
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Confed Pkwy (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 41.00 / 41.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Confed Pkwy (day)

Source height = 1.08 m

ROAD (0.00 + 56.22 + 0.00) = 56.22 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	63.60	0.00	-4.37	-3.01	0.00	0.00	0.00	56.22

Segment Leq : 56.22 dBA

Total Leq All Segments: 56.22 dBA

Results segment # 1: Confed Pkwy (night)

Source height = 1.07 m

ROAD (0.00 + 49.63 + 0.00) = 49.63 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	57.01	0.00	-4.37	-3.01	0.00	0.00	0.00	49.63

Segment Leq : 49.63 dBA

Total Leq All Segments: 49.63 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.22
(NIGHT): 49.63

STAMSON 5.0 NORMAL REPORT Date: 19-02-2020 09:43:17
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 30b_ola.te Time Period: 16 hours
Description: Lot 30B OLA

Road data, segment # 1: Confed Pkwy

Car traffic volume : 3945 veh/TimePeriod
Medium truck volume : 67 veh/TimePeriod
Heavy truck volume : 55 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Confed Pkwy

Angle1 Angle2 : -90.00 deg -15.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 43.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -15.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 27.50 m
Source elevation : 108.54 m
Receiver elevation : 109.11 m
Barrier elevation : 108.81 m
Reference angle : 0.00

Road data, segment # 2: Confed Pkwy

Car traffic volume : 3945 veh/TimePeriod
Medium truck volume : 67 veh/TimePeriod
Heavy truck volume : 55 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Confed Pkwy

Angle1 Angle2 : -15.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 43.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 10.00 deg Angle2 : 90.00 deg

Barrier height : 3.00 m
Barrier receiver distance : 26.50 m
Source elevation : 108.27 m
Receiver elevation : 109.11 m
Barrier elevation : 108.70 m
Reference angle : 0.00

Results segment # 1: Confed Pkwy

Source height = 1.08 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
---+---+---+---
1.08 ! 1.50 ! 1.17 ! 109.98

ROAD (0.00 + 33.98 + 0.00) = 33.98 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 -15 0.00 59.29 0.00 -4.57 -3.80 0.00 0.00 -16.93 33.98

Segment Leq : 33.98 dBA

Results segment # 2: Confed Pkwy

Source height = 1.08 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
---+---+---+---
1.08 ! 1.50 ! 1.13 ! 109.83

ROAD (46.14 + 42.87 + 0.00) = 47.82 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-15 10 0.00 59.29 0.00 -4.57 -8.57 0.00 0.00 0.00 46.14
---
10 90 0.00 59.29 0.00 -4.57 -3.52 0.00 0.00 -8.32 42.87

Segment Leq : 47.82 dBA

Total Leq All Segments: 48.00 dBA

TOTAL Leq FROM ALL SOURCES: 48.00

STAMSON 5.0 NORMAL REPORT Date: 21-02-2020 15:27:50
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 29a_olam.te Time Period: 16 hours
Description: Lot 29A with Noise Barrier

Road data, segment # 1: Confed Pkwy

Car traffic volume : 10651 veh/TimePeriod *
Medium truck volume : 181 veh/TimePeriod *
Heavy truck volume : 148 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Confed Pkwy

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 17.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.20 m
Barrier receiver distance : 1.50 m
Source elevation : 108.32 m
Receiver elevation : 108.64 m
Barrier elevation : 108.55 m
Reference angle : 0.00

Results segment # 1: Confed Pkwy

Source height = 1.08 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.08 ! 1.50 ! 1.52 ! 110.07

ROAD (0.00 + 54.66 + 0.00) = 54.66 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.00 63.60 0.00 -0.54 0.00 0.00 0.00 -8.40 54.66

Segment Leq : 54.66 dBA

Total Leq All Segments: 54.66 dBA

Barrier table for segment # 1: Confed Pkwy

Barrier Height	Elev of Barr Top	Road dBA	Tot Leq dBA
1.70	110.25	57.69	57.69
1.80	110.35	57.21	57.21
1.90	110.45	56.62	56.62
2.00	110.55	55.97	55.97
2.10	110.65	55.31	55.31
2.20	110.75	54.66	54.66
2.30	110.85	54.03	54.03
2.40	110.95	53.45	53.45
2.50	111.05	52.90	52.90
2.60	111.15	52.39	52.39

TOTAL Leq FROM ALL SOURCES: 54.66

STAMSON 5.0 NORMAL REPORT Date: 21-02-2020 15:36:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 29b_olam.te Time Period: 16 hours
Description: Lot 29B OLA with Noise Barrier

Road data, segment # 1: Confed Pkwy

Car traffic volume : 5325 veh/TimePeriod *
Medium truck volume : 91 veh/TimePeriod *
Heavy truck volume : 74 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Confed Pkwy

Angle1 Angle2 : -90.00 deg -25.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 27.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -25.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 10.50 m
Source elevation : 108.54 m
Receiver elevation : 108.77 m
Barrier elevation : 108.81 m
Reference angle : 0.00

Road data, segment # 2: Confed Pkwy

Car traffic volume : 5325 veh/TimePeriod *
Medium truck volume : 91 veh/TimePeriod *
Heavy truck volume : 74 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Confed Pkwy

Angle1 Angle2 : -25.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 27.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -25.00 deg Angle2 : 90.00 deg

Barrier height : 2.20 m
Barrier receiver distance : 10.70 m
Source elevation : 108.27 m
Receiver elevation : 108.77 m
Barrier elevation : 108.55 m
Reference angle : 0.00

Results segment # 1: Confed Pkwy

Source height = 1.08 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.08 ! 1.50 ! 1.21 ! 110.02

ROAD (0.00 + 36.19 + 0.00) = 36.19 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 -25 0.00 60.59 0.00 -2.55 -4.42 0.00 0.00 -17.43 36.19

Segment Leq : 36.19 dBA

Results segment # 2: Confed Pkwy

Source height = 1.08 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.08 ! 1.50 ! 1.35 ! 109.90

ROAD (0.00 + 49.40 + 0.00) = 49.40 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-25 90 0.00 60.59 0.00 -2.55 -1.95 0.00 0.00 -6.69 49.40

Segment Leq : 49.40 dBA

Total Leq All Segments: 49.60 dBA

TOTAL Leq FROM ALL SOURCES: 49.60

STAMSON 5.0 NORMAL REPORT Date: 21-02-2020 15:38:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 30a_olam.te Time Period: 16 hours
Description: Lot 30A OLA with Noise Barrier

Road data, segment # 1: Confed Pkwy

Car traffic volume : 5325 veh/TimePeriod *
Medium truck volume : 91 veh/TimePeriod *
Heavy truck volume : 74 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Confed Pkwy

Angle1 Angle2 : -90.00 deg -15.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -15.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 20.50 m
Source elevation : 108.54 m
Receiver elevation : 108.96 m
Barrier elevation : 108.81 m
Reference angle : 0.00

Road data, segment # 2: Confed Pkwy

Car traffic volume : 5325 veh/TimePeriod *
Medium truck volume : 91 veh/TimePeriod *
Heavy truck volume : 74 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Confed Pkwy

Angle1 Angle2 : -15.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -15.00 deg Angle2 : 90.00 deg

Barrier height : 2.20 m
Barrier receiver distance : 20.20 m
Source elevation : 108.27 m
Receiver elevation : 108.96 m
Barrier elevation : 108.55 m
Reference angle : 0.00

Results segment # 1: Confed Pkwy

Source height = 1.08 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
---+---+---+---
1.08 ! 1.50 ! 1.17 ! 109.98

ROAD (0.00 + 35.81 + 0.00) = 35.81 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 -15 0.00 60.59 0.00 -3.80 -3.80 0.00 0.00 -17.17 35.81

Segment Leq : 35.81 dBA

Results segment # 2: Confed Pkwy

Source height = 1.08 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
---+---+---+---
1.08 ! 1.50 ! 1.29 ! 109.84

ROAD (0.00 + 48.02 + 0.00) = 48.02 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-15 90 0.00 60.59 0.00 -3.80 -2.34 0.00 0.00 -6.43 48.02

Segment Leq : 48.02 dBA

Total Leq All Segments: 48.27 dBA

TOTAL Leq FROM ALL SOURCES: 48.27

STAMSON 5.0 NORMAL REPORT Date: 21-02-2020 15:40:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 30b_olam.te Time Period: 16 hours
Description: Lot 30B OLA with Noise Barrier

Road data, segment # 1: Confed Pkwy

Car traffic volume : 3945 veh/TimePeriod
Medium truck volume : 67 veh/TimePeriod
Heavy truck volume : 55 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Confed Pkwy

Angle1 Angle2 : -90.00 deg -15.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 43.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -15.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 27.50 m
Source elevation : 108.54 m
Receiver elevation : 109.11 m
Barrier elevation : 108.81 m
Reference angle : 0.00

Road data, segment # 2: Confed Pkwy

Car traffic volume : 3945 veh/TimePeriod
Medium truck volume : 67 veh/TimePeriod
Heavy truck volume : 55 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Confed Pkwy

Angle1 Angle2 : -15.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 43.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -15.00 deg Angle2 : 90.00 deg

Barrier height : 2.20 m
Barrier receiver distance : 27.40 m
Source elevation : 108.27 m
Receiver elevation : 109.11 m
Barrier elevation : 108.55 m
Reference angle : 0.00

Results segment # 1: Confed Pkwy

Source height = 1.08 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
---+---+---+---
1.08 ! 1.50 ! 1.17 ! 109.98

ROAD (0.00 + 33.98 + 0.00) = 33.98 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 -15 0.00 59.29 0.00 -4.57 -3.80 0.00 0.00 -16.93 33.98

Segment Leq : 33.98 dBA

Results segment # 2: Confed Pkwy

Source height = 1.08 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
---+---+---+---
1.08 ! 1.50 ! 1.26 ! 109.81

ROAD (0.00 + 46.00 + 0.00) = 46.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-15 90 0.00 59.29 0.00 -4.57 -2.34 0.00 0.00 -6.37 46.00

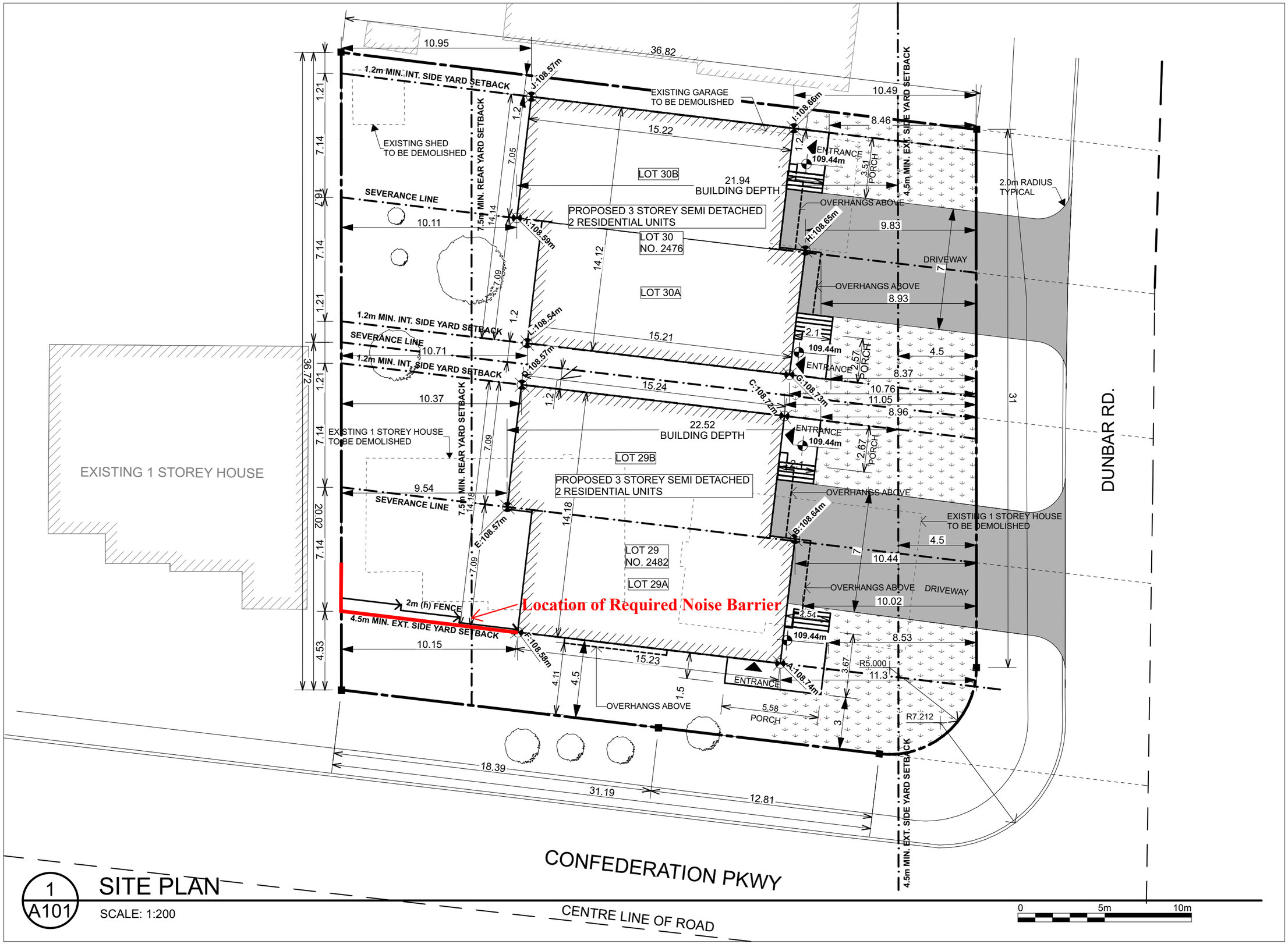
Segment Leq : 46.00 dBA

Total Leq All Segments: 46.26 dBA

TOTAL Leq FROM ALL SOURCES: 46.26

Appendix E

Location of Required Noise Barrier



1
A101

SITE PLAN

SCALE: 1:200

Issue Name	Change ID	Issue Date
Issued for Zoning By-Law Amendment		**2019-04-16**

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SITE PLAN

A101

Drawn: TB

Appendix F

Example Warning Clauses

EXAMPLE WARNING CLAUSES FROM NPC-300

Type A: "Purchasers/tenants are advised that noise levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the noise levels exceed the Municipality's and the Ministry of the Environment's noise criteria."

Type B: "Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, noise levels due to increasing road traffic may on occasions interfere with some activities of the dwelling occupants as the noise levels exceed the Municipality's and the Ministry of the Environment's noise criteria."

Type C: "This dwelling unit has been fitted with a forced air heating system and the ducting, etc. was sized to accommodate central air conditioning. Installation of central air conditioning by the occupant will allow windows and exterior doors to remain closed, thereby ensuring that the indoor noise levels are within the Municipality's and the Ministry of the Environment's noise criteria. (Note: The location and installation of the outdoor air conditioning device should be done so as to comply with noise criteria of MOE Publication NPC-216, Residential Air Conditioning Devices and thus minimize the noise impacts both on and in the immediate vicinity of the subject property.)"

Type D: "This dwelling unit has been supplied with a central air conditioning which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor noise levels are within the Municipality's and the Ministry of the Environment's noise criteria."

Limitations

Limitations

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:
    a. The Standard Terms and Conditions which form a part of our Professional Services Contract;
    b. The Scope of Services;
    c. Time and Budgetary limitations as described in our Contract; and
    d. The Limitations stated herein.
2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.
3. The conclusions presented in this report were based, in part, on visual observations of the Site and attendant structures. Our conclusions cannot and are not extended to include those portions of the Site or structures, which are not reasonably available, in Wood's opinion, for direct observation.
4. The environmental conditions at the Site were assessed, within the limitations set out above, having due regard for applicable environmental regulations as of the date of the inspection. A review of compliance by past owners or occupants of the Site with any applicable local, provincial or federal bylaws, orders-in-council, legislative enactments and regulations was not performed.
5. The Site history research included obtaining information from third parties and employees or agents of the owner. No attempt has been made to verify the accuracy of any information provided, unless specifically noted in our report.
6. Where testing was performed, it was carried out in accordance with the terms of our contract providing for testing. Other substances, or different quantities of substances testing for, may be present on-site and may be revealed by different or other testing not provided for in our contract.
7. Because of the limitations referred to above, different environmental conditions from those stated in our report may exist. Should such different conditions be encountered, Wood must be notified in order that it may determine if modifications to the conclusions in the report are necessary.
8. The utilization of Wood's services during the implementation of any remedial measures will allow Wood to observe compliance with the conclusions and recommendations contained in the report. Wood's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.
9. This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or the part, or any reliance thereon or decisions made based on any information or conclusions in the report is the sole responsibility of such third party. Wood accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.
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