Noise & Vibration Feasibility Study

Mona Road Phase II Development

Queenscorp (Mona II) Inc.

30 October 2024

→ The Power of Commitment

Prepared by:

Reviewed by:

Andrew DeFaria, B.A.Sc.
Acoustical Engineering Assistant

519-340-4242
andrew.defaria@ghd.com

Ben Wiseman, P.Eng.
Senior Acoustical Engineer

519-340-4121
ben.wiseman@ghd.com

GHD Limited 735
455 Phillip Street, Suite #100A
Waterloo, Ontario N2L 3X2, Canada
T 519-884-0510 | **ghd.com**

Document Status

Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S0	DRAFT	A. DeFaria	B. Wiseman		M. Masschaele		
S4	FINAL	A. DeFaria	B. Wiseman		M. Masschaele		Oct.30/24

Executive Summary

GHD Limited (GHD) was retained by *Queenscorp (Mona II) Inc.* to prepare a Noise and Vibration Feasibility Study for the proposed residential development (Development) located at 1148 and 1154 Mona Road, Mississauga, Ontario (Site). This Study has been prepared in support of the planning approvals for the Development.

The Development consists of one 3-storey residential townhouse building and two 3-storey semi-detached residential buildings. Each dwelling unit includes a backyard outdoor living area. The purpose of this Study is to assess the following potential impacts:

– Noise impacts at the Development due to future rail traffic
– Ground-borne vibration impacts due to rail traffic

Noise due to road traffic is not evaluated in detail in this Study as the site is more than 300 metres from the nearest major roadway (Hurontario Street); such that road traffic noise would be insignificant in comparison to rail traffic noise on the adjacent rail corridor.

The Oakville Subdivision is located within 300 metres of the Site, therefore future rail traffic noise impacts at the Development are assessed. Noise impacts at the Development from future rail traffic are significant. Noise mitigation is recommended in the form of building envelope construction performance requirements, barrier walls, and requirements for installation of ventilation for residential units. Noise warning clauses are also recommended.

A previous Noise and Vibration Feasibility Study by HGC Engineering dated March 17, 2016, assessed the ground-borne vibration from rail traffic for the first phase of the Mona Road residential development located south of the Site. The assessment determined that the applicable vibration limits are not exceeded at 1130, 1136, and 1138 Mona Road, Mississauga, Ontario. Based on GHD's review of the HGC Study, and site location in comparison to 1148 and 1154 Mona Road, an update to the rail vibration impact assessment is not warranted for Phase II of the development as vibration levels would be lower than those measured at Phase I.

This report is subject to, and must be read in conjunction with, the limitations set out in section 1.2 and the assumptions and qualifications contained throughout the Report.

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1. Introduction

1.1 Purpose of this Report

GHD Limited (GHD) was retained by Queenscorp (Mona II) Inc. to prepare a Noise and Vibration Feasibility Study (Study) for the proposed low-rise residential Development (Development) located at 1148 and 1154 Mona Road, Mississauga, Ontario (Site). This Study has been prepared in support of the planning applications for the Development.

Noise due to road traffic is not evaluated in detail in this Study as the site is more than 300 metres from the nearest major roadway (Hurontario Street); such that road traffic noise would be insignificant in comparison to rail traffic noise on the adjacent rail corridor.

A previous Noise and Vibration Feasibility Study by HGC Engineering dated March 17, 2016, assessed the ground-borne vibration from rail traffic for the residential development located south of the Site. The assessment determined that the applicable vibration limits are not exceeded at 1130, 1136, and 1138 Mona Road, Mississauga, Ontario. Based on GHD's review of the HGC Study, and site location in comparison to 1148 and 1154 Mona Road, an update to the rail vibration impact assessment is not warranted.

1.2 Site and Development Description

The Site is located at 1148 and 1154 Mona Road, Mississauga, Ontario, approximately 160 metres southeast of Inglewood Drive and 10 metres southwest of Mona Road. The Oakville Subdivision rail line is located approximately 70 metres southeast of the Site. A key plan is included as Figure 1.1, which shows the location of the Site in relation to these transportation corridors.

The Site is currently zoned as Residential (R3-1). The lands surrounding the Site are zoned as Residential as well (RM4-26, R2-5, R3-3, R3-2, RA2-6).

The area surrounding the Site is relatively flat but does include slope declines towards the west and south. There are some intervening structures that will obstruct the line of sight to the rail lines in the future, particularly at the lower floors.

The Development consists of one 3-storey residential townhouse building and two 3-storey semi-detached residential buildings. Each dwelling unit includes a backyard outdoor living area.

1.3 Scope and Limitations

This report: has been prepared by GHD for Queenscorp (Mona II) Inc. and may only be used and relied on by Queenscorp (Mona II) Inc. for the purpose agreed between GHD and Queenscorp (Mona II) Inc. as set out in section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than Queenscorp (Mona II) Inc. arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

2. Sound and Vibration Criteria

2.1 Rail Noise Criteria

Under NPC-300, rail traffic noise impacts are evaluated for exterior receptors and interior receptors based on the average day (07:00 to 23:00) and night (23:00 to 07:00) noise impacts. The sound levels are expressed in terms of A-weighted equivalent sound levels (Leq).

NPC-300 defines two categories of receivers for transportation noise:

– Plane of Window (POW): Point corresponding with the centre of a window of a sensitive space.
– Outdoor Living Area (OLA): Outdoor location intended and designed for quiet enjoyment of the outdoor environment that is readily accessible from the building (e.g., backyards, front yards, gardens, terraces, patios). Private balconies and terraces are only considered OLAs if they are greater than 4 metres in depth and if they are the only outdoor living area for the occupant(s).

NPC-300 specifies sound level limits for POW and OLA receivers as summarized in Table 2.1 below.

Table 2.1 Rail Traffic – Outdoor Sound Level Limits

Receiver Category	Sound Level Limit (dBA)	
	Day (16-hour Leq)	Night (8-hour Leq)
Plane-of-Window (POW)	55	50
Outdoor Living Area (OLA)	55	N/A

For POWs, combined rail traffic sound levels exceeding the corresponding criteria above would require additional controls for MECP compliance. Depending on the magnitude of the exceedances, additional controls may include ventilation requirements, requirements for building envelope elements, and/or noise warning clauses.

For OLAs, rail traffic sound levels exceeding the daytime limit indicated above would require design of noise barriers to achieve the target, and/or warning clauses. NPC-300 states that sound levels up to 5 dBA above the OLA sound level limit (i.e., up to 60 dBA) are acceptable with the use of an appropriate noise warning clause.

If POW sound levels from future rail traffic exceed 60 dBA during the day or 55 dBA at night, building envelope components must be designed to achieve the indoor sound level limits of NPC-300. The indoor sound level limits for rail traffic are summarized in Table 2.2 below.

Table 2.2 Rail Traffic – Indoor Sound Level Limits (Residential uses)

Receiver Category	Rail Sound Level Limits (dBA)	
	Day (16-hour Leq)	Night (8-hour Leq)
Indoor living areas (excluding sleeping quarters)	40	40
Sleeping quarters	40	35

3. Transportation Noise Impact Assessment

3.1 Methodology

Rail traffic noise levels are modelled as line sources of sound using the rail source element in CadnaA using the US Federal Transit Administration and Federal Railway Administration's prediction algorithm (FTA/FRA Model). The rail noise sources were set to use noise emission rates calculated using STAMSON.

The 3D CadnaA model accounts for the complex geometry at the Site and the surrounding area. The area surrounding the Site has been assumed to be relatively flat based on satellite imagery. Rail traffic noise levels were predicted at all POWs of the Development using the Building Noise Map feature of CadnaA, and at OLAs using point receivers.

To demonstrate that the model is generally consistent with the STAMSON model that is the standard in Ontario, a sample STAMSON calculation is included in Appendix B representing a southern façade window of the Townhouse Block. The prediction results are within ± 1 dBA of the CadnaA noise predictions, indicating that the CadnaA model is consistent with STAMSON.

3.2 Traffic Input Parameters

3.2.1 Rail Traffic Data

Future rail traffic model parameters used in this Study are summarized as follows:

Table 3.1 Future (2034) Rail Traffic Input Parameters

Rail Source	Future Daytime Trains	Future Nighttime Trains	Locomotive Type	Max. Locomotives per Train	Max. Cars per Train	Max. Speed (km/h)
CN Freight	1.4	0	Diesel	4	140	97
CN Way Freight	1.4	5.5	Diesel	4	25	97
VIA Rail	16.5	0	Diesel	2	10	153
GO Diesel	354	54	Diesel	1	5	137

Rail traffic data for CN freight, way freight, and VIA Rail passenger traffic operating on the Metrolinx Oakville Subdivision was obtained from Canadian National (CN) railway. Future rail volumes for these rail traffic sources were estimated using an assumed annual growth rate of 2.5%.

Future 2034 forecast rail traffic data for the Lakeshore West GO traffic operating on the Metrolinx Oakville Subdivision was obtained from Metrolinx. As per Metrolinx's recommendations, despite the future electrification of GO trains, all locomotives were modelled as diesel locomotives.

Figure 1.1 shows the location of the rail line noted above in relation to the Site. All rail traffic data referenced in this Study is included in Appendix C.

3.3 Results

3.3.1 Rail Traffic

3.3.1.1 Plane of Window Receivers

Predicted future rail traffic noise impacts at the worst-case POW receivers of the Development are summarized as follows:

Table 3.2 Future Rail Noise Levels – Plane of Window

Building	Façade	Future Noise Levels (dBA)		Limits Exceeded?
		Day	Night	
Townhouse Building – Block 1	North	55	50	No
	East	68	63	Yes
	South	71	66	Yes
	West	68	63	Yes
North Semi-Detached Building – Block 2	North	55	51	Yes
	East	66	62	Yes
	South	66	61	Yes
	West	63	59	Yes
South Semi-Detached Building – Block 3	North	61	57	Yes
	East	68	63	Yes
	South	69	64	Yes
	West	68	63	Yes

As seen above, future rail noise levels at the façades generally range from 55 dBA to 71 dBA during the day and 50 dBA to 66 dBA at night. These sound levels are sufficiently high that the Development must incorporate physical noise mitigation and noise warning clauses in accordance with NPC-300, which are described further in Section 3.4. Figure 3.1 shows the predicted rail noise levels at the façades throughout the Development.

3.3.1.2 Outdoor Living Areas

Predicted future rail traffic noise impacts at the worst-case OLA receivers of the Development are summarized as follows:

Table 3.3 Future Rail Noise Levels – Outdoor Living Area

Receiver ID	Receiver Description	Future Daytime Noise Level (dBA)	Limit Exceeded?
OLA-01	Townhouse Block 1, Unit 6 Backyard (1.5 metres above grade [m AG])	69	Yes
OLA-02	Townhouse Block 1, Unit 5 Backyard (1.5 m AG)	67	Yes
OLA-03	Townhouse Block 1, Unit 4 Backyard (1.5 m AG)	65	Yes
OLA-04	Townhouse Block 1, Unit 3 Backyard (1.5 m AG)	64	Yes
OLA-05	Townhouse Block 1, Unit 2 Backyard (1.5 m AG)	63	Yes
OLA-06	Townhouse Block 1, Unit 1 Backyard (1.5 m AG)	62	Yes
OLA-07	Semi-Detached Block 2, Unit 1 Backyard (1.5 m AG)	59	Yes

Receiver ID	Receiver Description	Future Daytime Noise Level (dBA)	Limit Exceeded?
OLA-08	Semi-Detached Block 2, Unit 2 Backyard (1.5 m AG)	60	Yes
OLA-09	Semi-Detached Block 3, Unit 3 Backyard (1.5 m AG)	63	Yes
OLA-10	Semi-Detached Block 3, Unit 4 Backyard (1.5 m AG)	63	Yes

As seen above, the daytime rail noise levels at the OLAs range from 59 dBA to 69 dBA. Noise levels at all OLAs are sufficiently high that physical noise mitigation and/or noise warning clauses are required, which are described further in Section 3.4. OLA receiver locations are shown in Figure 3.2.

3.4 Transportation Noise Mitigation

3.4.1 Building Envelope Construction

Predicted future traffic noise levels are sufficiently high that the building envelope must be designed with sufficient sound insulation performance to achieve the sound level criteria of NPC-300 for indoor living spaces. Sound insulation performance for windows and walls are commonly specified in terms of Sound Transmission Class (STC) ratings. Higher STC ratings generally correspond to higher sound insulation performance.

STC rating requirements are dependent on the exterior noise levels, source type/spectrum, angles of incidence, sizes of façade components relative to the room size, and sound absorption characteristics of the subject indoor living space. Using these variables, STC rating requirements can be calculated using the method described in the National Research Council Canada's "Controlling Sound Transmission into Buildings" (BPN 56) publication. In accordance with NPC-300, STC rating requirements are calculated separately for road, rail, and air traffic noise, and are then combined on a logarithmic energy sum basis.

Given the current concept of the Development, current floor plans and building elevations were used to calculate the STC requirements of the windows and walls. Minimum STC rating requirements have been calculated based on the provided window-to-floor area ratios (i.e., total window area for a room divided by its floor area) with "intermediate" sound absorption characteristics for bedrooms and "hard" sound absorption characteristics for indoor living areas. Note that if the window-to-floor area ratios are determined to exceed these values during detailed design, then window STC rating requirements would require an updated assessment to ensure acceptable indoor noise levels.

Based on the above parameters and assumptions, the minimum STC rating requirements at the worst-case façades are **STC-40** for windows and **STC-50** for exterior walls. The specific façade requirements are displayed in Figure 3.4.

Additionally, exterior wall assemblies must be **brick veneer or equivalent** high-mass construction (e.g., concrete) from the foundation to the rafters due to the Site's proximity to the Oakville Subdivision rail line and high associated noise levels.

Examples of window assemblies capable of achieving the necessary performance are included in Table 3.4 below:

Table 3.4 Example Window Assemblies and STC Ratings

STC Requirement	Window Assembly Short Form	Window Assembly Description
STC-30	6-13AS-6	Two 6 mm thick monolithic glass panes separated by an air gap of 13 mm
STC-36	8L-25AS-6	One 8 mm thick laminated glass pane and one 6 mm monolithic glass pane separated by an air gap of 25 mm
STC-40	10L-25AS-6	One 10 mm thick laminated glass pane and one 6 mm monolithic glass pane separated by an air gap of 25 mm

STC ratings for windows are dependent on a variety of factors (e.g., frame design, seals, etc.), and can vary significantly between manufacturers. Therefore, the final STC rating requirements for the windows should be included

in the specifications, and window suppliers should be required to submit laboratory test data with their shop drawings to demonstrate that the STC requirements will be achieved.

3.4.2 Ventilation

Predicted future traffic noise levels at the façades of the Development are sufficiently high that central air conditioning is required to be installed prior to occupancy for all residential dwellings. This will allow windows and doors to remain closed to help ensure that the indoor sound level limits of NPC-300 are met. Warning Clause **Type D** should also be used for all residential dwellings (wording included in Section 4.4).

3.4.3 Acoustic Barriers

Predicted future traffic noise levels at OLA-07 and -08 (Block 2) are 59 dBA to 60 dBA without mitigation. In accordance with NPC-300, sound levels exceeding the 55 dBA limit by up to 5 dBA are considered acceptable with warning clause **Type A** without physical mitigation.

Predicted future traffic noise levels at all other OLAs are sufficiently high that acoustic barriers and warning clauses must be used.

For greater clarity, new barrier locations are shown in Figure 3.3 and warning clauses are provided in Section 4.4. With the barriers recommended above, predicted noise levels in the OLAs are as follows:

Table 3.5 Future Rail Noise Levels – Mitigated Outdoor Living Area

Receiver ID	Receiver Description	Future Daytime Noise Level (dBA)
OLA-01	Townhouse Block 1, Unit 6 Backyard (1.5 metres above grade [m AG])	57
OLA-02	Townhouse Block 1, Unit 5 Backyard (1.5 m AG)	58
OLA-03	Townhouse Block 1, Unit 4 Backyard (1.5 m AG)	58
OLA-04	Townhouse Block 1, Unit 3 Backyard (1.5 m AG)	57
OLA-05	Townhouse Block 1, Unit 2 Backyard (1.5 m AG)	57
OLA-06	Townhouse Block 1, Unit 1 Backyard (1.5 m AG)	56
OLA-09	Semi-Detached Block 3, Unit 3 Backyard (1.5 m AG)	59
OLA-10	Semi-Detached Block 3, Unit 4 Backyard (1.5 m AG)	59

As seen above, with the recommended acoustic barriers it is feasible to achieve sound levels below the applicable limits with the inclusion of Warning Clause **Type B** as detailed in Section 4.4.

GHD notes that after construction of townhouse Block 1 of Mona II, the previously proposed barrier along the northeast property line of Mona I will no longer be required for compliance. Thus, this segment of the barrier can be removed at the Client's discretion following the completion of Townhouse Block 1. The only portion of the barrier that must remain is indicated in yellow in Figure 3.3.

An acoustic barrier may vary in construction, provided it meets the following requirements:

– A minimum surface density of 20 kg/m^2 or meet compliance with requirement and certification CAN/CSA-Z107.9-00 (R2004) – Standard for Certification of Noise Barriers (Reaffirmed 2004).
– Be structurally sound and appropriately designed to withstand wind and snow loading as applicable.
– Constructed without any cracks or surface gaps at grade. If gaps are necessary for drainage purposes they should be minimized to mitigate the impact on the acoustical performance of the barrier.

4. Recommendations

4.1 Building Envelope Construction

For the worst-case façades of the Development with direct line-of-sight exposure to noise from Oakville GO Subdivision rail line, windows must achieve ratings of at least **STC-40**, and exterior walls must be rated **STC-50** or higher. The specific façade requirements are displayed in Figure 3.4. STC ratings recommended in this Study are preliminary and subject to change depending on revised window-to-floor area ratios and should be updated at the detailed design stage.

Additionally, exterior wall assemblies must be **brick veneer or equivalent** high-mass construction (e.g., concrete) from the foundation to the rafters due to the Site's proximity to the Oakville Subdivision rail line and high associated noise levels.

4.2 Ventilation

Central air conditioning is required to be installed prior to occupancy for all residential dwellings. This will allow windows and doors to remain closed to help ensure that the indoor sound level limits of NPC-300 are met.

4.3 Acoustic Barriers

The future rail traffic levels are sufficiently high that acoustic barriers must be implemented to mitigate the noise as shown in Figure 3.3.

4.4 Warning Clauses

The following warning clauses are recommended to be included in agreements of Offers of Purchase and Sale, lease/rental agreements, and condominium declarations for all residential dwellings of the Development:

> **Warning Clause Type A (for all residential units in Block 2):** "Purchasers/tenants are advised that sound levels due to increasing rail traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment, Conservation, and Parks."
>
> **Warning Clause Type B (for all residential units in Blocks 1 and 3)**: "Purchasers/tenants are advised that despite the inclusion of noise control features in the development, sound levels due to increasing rail traffic may on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."
>
> **Warning Clause Type D (for all residential units)**: "This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."
>
> **Warning Clause Type E (for all residential units):** "Purchasers are advised that due to the proximity of this development to the Port Credit GO station, sounds from associated operations may at times be audible.
>
> **Warning Clause Type F (for all residential units)**: "Warning: Metrolinx and its assigns and successors in interest operate commuter transit service within 300 metres from the subject land. In addition to the current use of these lands, there may be alterations to or expansions of the rail and other facilities on such lands in the future including the possibility that Metrolinx or any railway entering into an agreement with Metrolinx or any railway assigns or successors as aforesaid may expand their operations, which expansion may affect the environment of the occupants in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual units. Metrolinx will not be responsible

for any complaints or claims arising from use of such facilities and/or operations on, over or under these lands."

Warning Clause Type G (for all residential units): "Warning: Canadian National Railway Company or its assigns or successors in interest has or have a right-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the railway facilities on such rights-of-way in the future including the possibility that the railway or its assigns or successors as aforesaid may expand its operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwelling(s). CNR will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid rights-of-way."

5. Conclusions

The Study concludes that the proposed development is feasible and will not be restricted by the surrounding rail noise and vibration impact exposures, provided that the proposed development adheres to the noise mitigation recommended in this Study. The recommended noise mitigation at the Development consists of building envelope construction requirements, installation of central air conditioning, noise warning clauses, and acoustic barriers.

6. References

Ontario Ministry of Environment, Conservation and Parks (MECP, 2013), Publication NPC-300: *Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning*

National Research Council Canada (NRC, 1985), Building Practice Note 56: Controlling Sound Transmission Into Buildings

Paper Size ANSI B

0 10 20 30 40 50 m

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

N

GHD

NOISE AND VIBRATION FEASIBILITY STUDY
QUEENSCORP (MONA II) INC.
1148 & 1154 MONA ROAD, MISSISSAUGA, ONTARIO

KEY PLAN

Project No. **12639635**
Revision No. **-**
Date **30.10.2024**

FIGURE 1.1

\\ghdnet\ghd\CA\Waterloo\Projects\662\12639635\Tech\Noise\CadnaA\12639635_Mona2_2024_rev01_2024cadnaaV2.cna
Data source: Google Satellite

DAY

NIGHT

Legend

- < 45 dBA
- 45 to 50 dBA
- 50 to 55 dBA
- 55 to 60 dBA
- 60 to 65 dBA
- 65 to 70 dBA
- 60 to 75 dBA
- 75 to 80 dBA
- > 80 dBA

Note: Sound levels are presented in terms of 16-hour Leq (Day) and 8-hour Leq (Night)

Paper Size ANSI B

0 2 4 6 8 10 m

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

N

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NOISE AND VIBRATION FEASIBILITY STUDY
QUEENSCORP (MONA II) INC.
1148 & 1154 MONA ROAD, MISSISSAUGA, ONTARIO

FUTURE SOUND LEVELS DUE TO RAIL TRAFFIC

Project No. **12639635**
Revision No. **-**
Date **30.10.2024**

FIGURE 3.1

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Data source: Google Satellite

Paper Size ANSI B

0 5 10 15 20 25 m

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

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NOISE AND VIBRATION FEASIBILITY STUDY
QUEENSCORP (MONA II) INC.
1148 & 1154 MONA ROAD, MISSISSAUGA, ONTARIO

TRANSPORTATION NOISE:
OLA LOCATION PLAN

Project No. **12639635**
Revision No. **-**
Date **30.10.2024**

FIGURE 3.2

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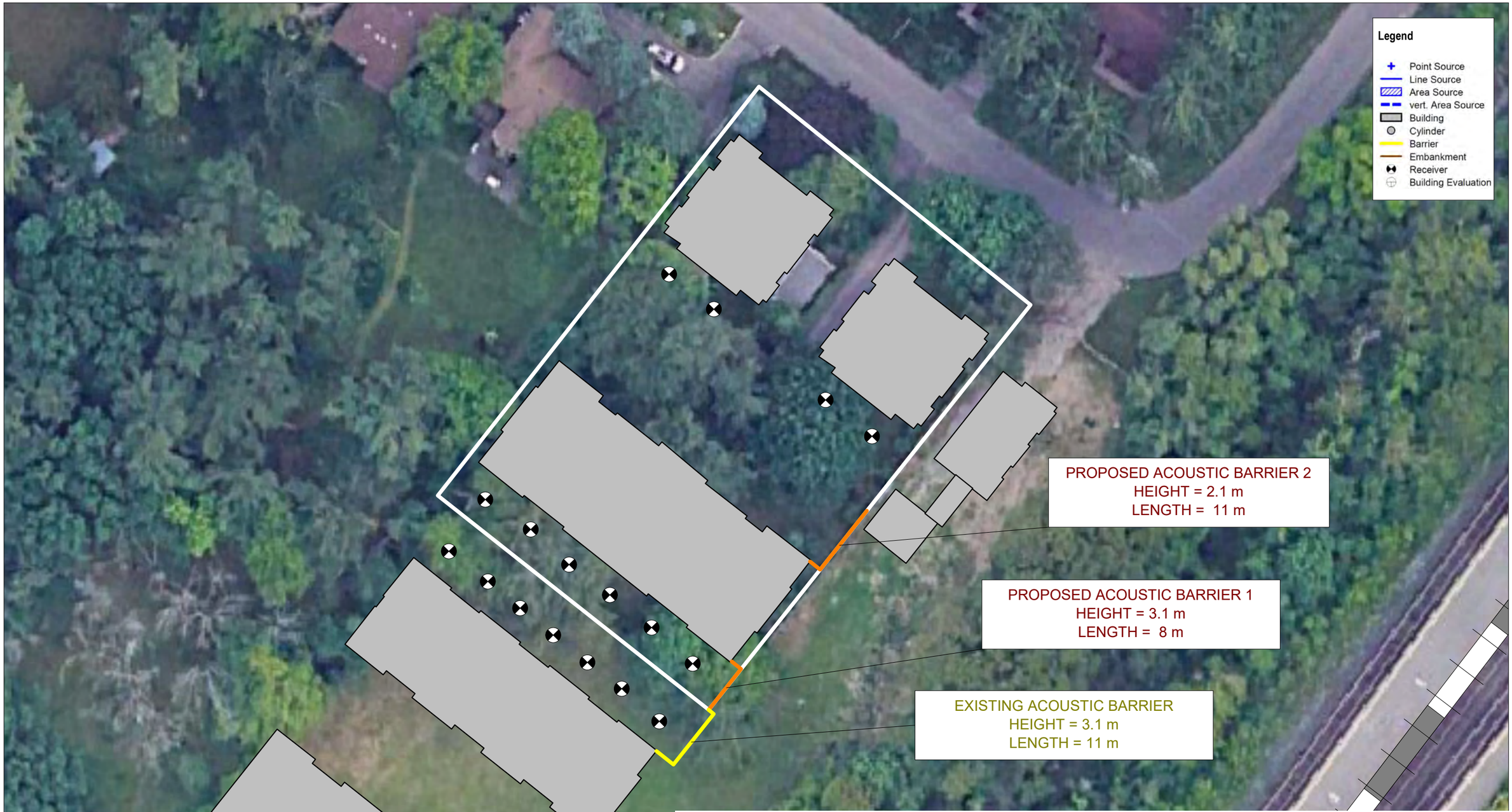
Data source: Google Satellite



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Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

N

GHD

NOISE AND VIBRATION FEASIBILITY STUDY
QUEENSCORP (MONA II) INC.
1148 & 1154 MONA ROAD, MISSISSAUGA, ONTARIO

TRANSPORTATION NOISE: ACOUSTIC BARRIER LOCATION PLAN

Project No. **12639635**
Revision No. **-**
Date **30.10.2024**

FIGURE 3.3

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Data source: Google Satellite

Paper Size ANSI B

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Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

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NOISE AND VIBRATION FEASIBILITY STUDY
QUEENSCORP (MONA II) INC.
1148 & 1154 MONA ROAD, MISSISSAUGA, ONTARIO

TRANSPORTATION NOISE: MINIMUM FACADE STC RATING REQUIREMENTS

Project No. **12639635**
Revision No. **-**
Date **30.10.2024**

FIGURE 3.4

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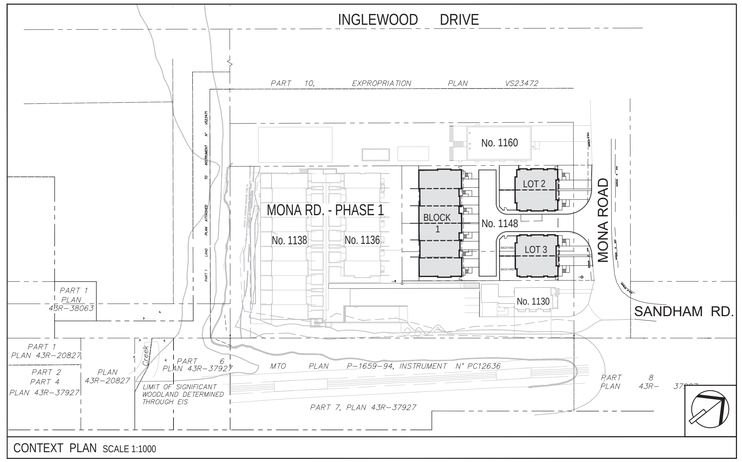
Data source: Google Satellite

Appendices

Appendix A

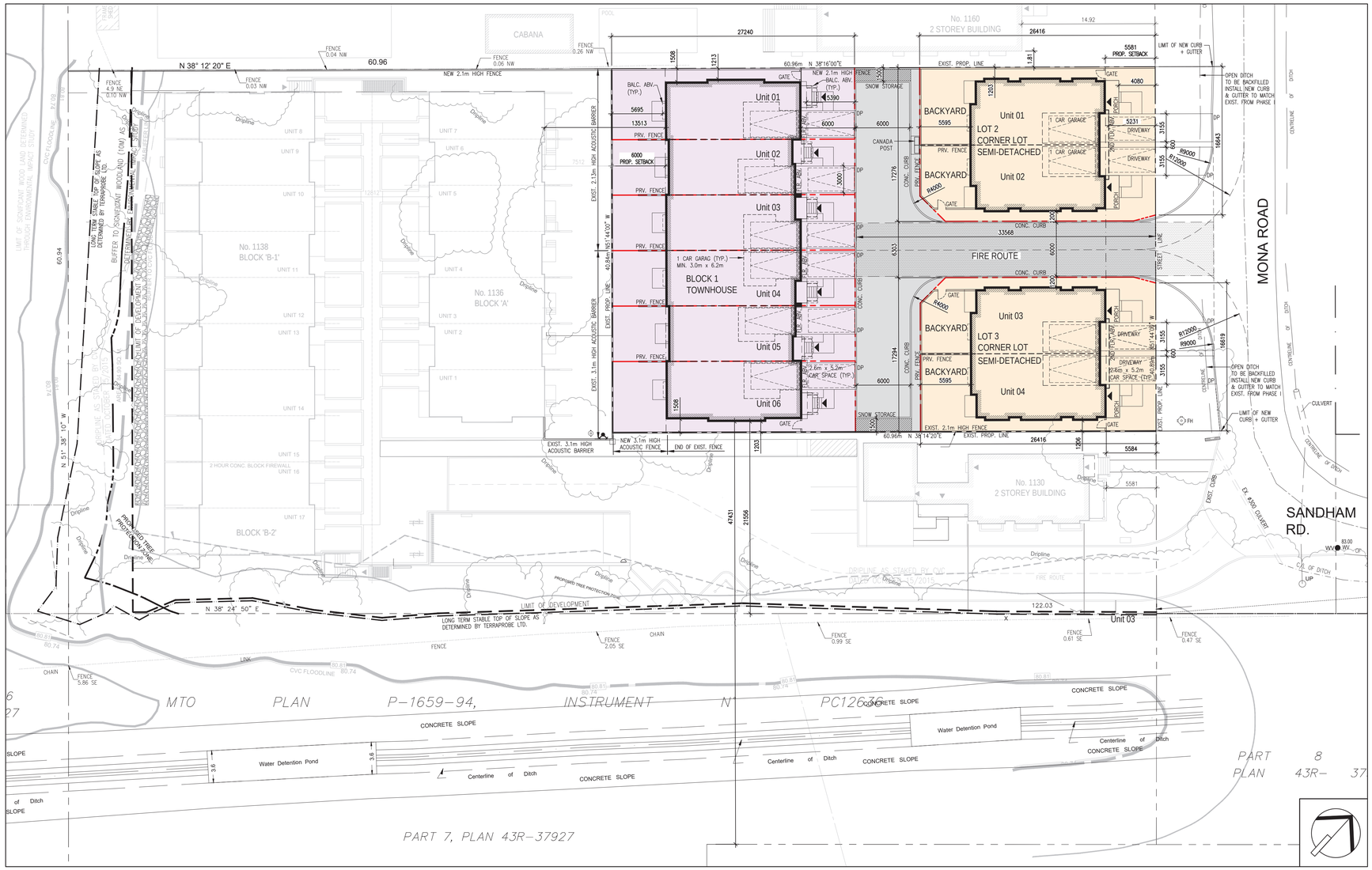
Development Drawings



KEY PLAN

LEGEND

- PROPERTY LINE
- ZONING ENVELOPE
- PROPOSED BUILDING
- FIRE DEPARTMENT ACCESS ROUTE
- CURB DEPRESSION
- RM2 ZONE LOT
- RM6 ZONE LOT
- CEC ACCESS ROAD



PROJECT
MONA ROAD PHASE II
TOWNHOUSE DEVELOPMENT
1148-1154 MONA ROAD
MISSISSAUGA, ON

CLIENT
QUEENSCORP

CONSULTANTS

ARCHITECT
JOSEPH N. CAMPITELLI ARCHITECT INC.
10 Bur Oak Avenue, Unit 3, Markham, ON L6C 0A2
tel: 905-887-8900 fax: 905-887-8400
e-mail: info@jnc-architect.com

LEGAL

COUNTERSIGNED
Joseph N. Campitelli, Architect
B.ARCH., O.A.A., M.R.A.I.C.

DATE

DWG. ISSUES

1.	DEC.04.2023	ISSUED FOR REVIEW	RD
2.	DEC.18.2023	ISSUED FOR REVIEW	RD
3.	JAN.19.2024	ISSUED FOR REVIEW	RD
4.	FEB.02.2024	ISSUED FOR REVIEW + COORD.	RD
5.	JUN.14.2024	ISSUED FOR REVIEW + COORD.	RD
6.	SEP.12.2024	ISSUED FOR REVIEW + COORD.	RD

DESCRIPTION

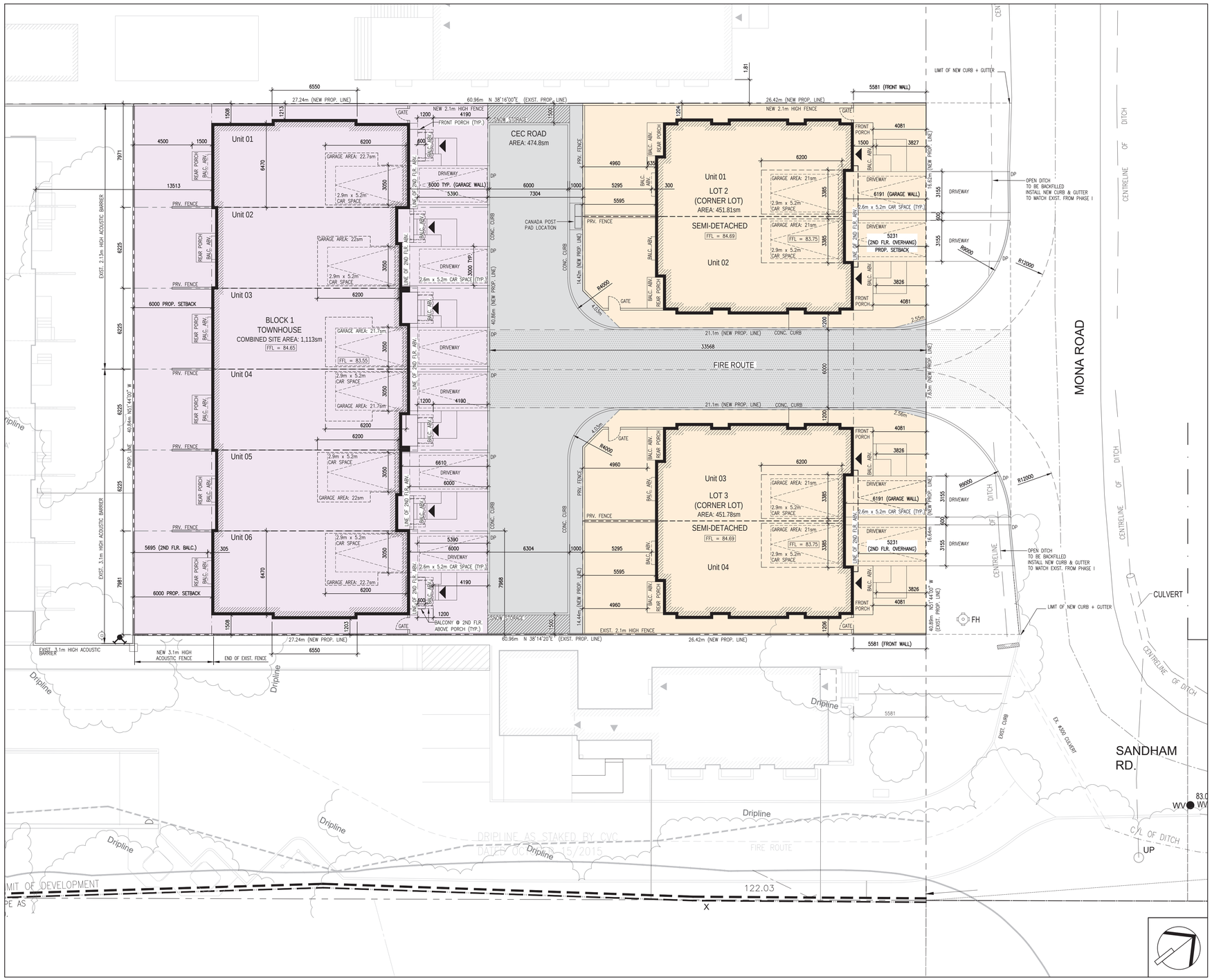
LEGAL

INFO
PROJECT ARCHITECT:
J. CAMPITELLI
ASSISTANT DESIGNER:
DRAWN BY:
RD
CHECKED BY:
J.C.

DWG. TITLE
CONTEXT PLAN
OVERALL SITE PLAN

SCALE	DATE PRINTED	PROJECT NO.
1:250	SEP.12.2024	311.23.D

SHEET NO.
A.100



SITE PLAN

LEGEND

- PROPERTY LINE
- ZONING ENVELOPE
- PROPOSED BUILDING
- FIRE DEPARTMENT ACCESS ROUTE
- CURB DEPRESSION (DP)
- RM2 ZONE LOT
- RM6 ZONE LOT
- CEC ACCESS ROAD

SITE STATISTICS - SEMI-DETACHED RESIDENCE

	ZONING BY-LAW	LOT 2 - CORNER LOT	LOT 3 - CORNER LOT
1. ZONING	RM2 SEMI-DETACHED HOUSE	SEMI-DETACHED RESIDENCE	SEMI-DETACHED RESIDENCE
2. LOT FRONTAGE	CORNER LOT – MIN. 9.8m	16.62m	16.64m
3. SITE AREA	CORNER LOT – MIN. 280m²	451.81m²	451.78m²
4. COVERAGE	MAX. 45%	49.97% BLDG. FOOTPRINT: 225.8sm NOTE: FOOTPRINT INCLUDES FRONT 2ND FLR. PROJECTION OVER GRND. FLR.	49.98% BLDG. FOOTPRINT: 225.8sm NOTE: FOOTPRINT INCLUDES FRONT 2ND FLR. PROJECTION OVER GRND. FLR.
5. SETBACKS	FRONT YARD = MIN. 4.5m GARAGE FACE = MIN. 6.0m INTERIOR SIDE YARD = MIN. 1.2m EXTERIOR SIDE YARD = MIN. 4.5m REAR YARD = MIN. 7.5m	FRONT YARD: TO GRND. FLR. WALL = 5.58m TO GARAGE WALL = 6.19m TO 2ND FLR. PROJECT. = 5.23m INTERIOR SIDE YARD = 1.20m EXTERIOR SIDE YARD = 1.20m REAR YARD = 5.59m	FRONT YARD: TO GRND. FLR. WALL = 5.58m TO GARAGE WALL = 6.19m TO 2ND FLR. PROJECT. = 5.23m INTERIOR SIDE YARD = 1.20m EXTERIOR SIDE YARD = 1.20m REAR YARD = 5.59m
6. PERMITTED PROJECTIONS	FRONT YARD PORCH + STAIRS = 1.6m FRONT YARD BALCONY = 1.0m REAR YARD PORCH + STAIRS = 5.0m REAR/FRONT YARD BALCONY = 1.0m	FRONT PORCH (EXCL. STAIR)=1.5m FRONT 2ND FLR. BALCONY = 1.5m REAR PORCH = 0.6m REAR 2ND FLR. BALCONY = 0.6m NOTE: NUMBER OF STEPS AT ALL LOCATIONS T.B.C. W/ GRADING PLAN	FRONT PORCH (EXCL. STAIR)=1.5m FRONT 2ND FLR. BALCONY = 1.5m REAR PORCH = 0.6m REAR 2ND FLR. BALCONY = 0.6m NOTE: NUMBER OF STEPS AT ALL LOCATIONS T.B.C. W/ GRADING PLAN
7. BUILDING HEIGHT	MAX. 10.7m FROM AVERAGE GRADE TO MID POINT OF ROOF	9.28m	9.48m
8. ATTACHED GARAGE & DRIVEWAY	GARAGE INTER. AREA = MAX. 75m² MIN. UNOBSTRUCT. SPACE: 2.6m x 5.2m x 2.0m MAX. DRIVEWAY WIDTH – 5.2m	GARAGE INTER. AREA = 21m² UNOBSTRUCTED SPACE: 2.9m x 5.2m DRIVEWAY WIDTH – 3.15m	GARAGE INTER. AREA = 21m² UNOBSTRUCTED SPACE: 2.9m x 5.2m DRIVEWAY WIDTH – 3.15m
9. PARKING	2 SPACES / UNIT	2 SPACES / UNIT	2 SPACES / UNIT

SITE STATISTICS - CEC TOWNHOUSES

	ZONING BY-LAW	BLOCK 1
1. ZONING	RM6 TOWNHOUSES ON A CEC–ROAD	TOWNHOUSES
2. LOT FRONTAGE	MIN. 5.0m	16.62m
3. SITE AREA	MIN. 115m²	END UNIT LOT (UNIT 6) – 217.2m² (UNIT 1– 217.5m²) INTERIOR UNIT LOT – 169.6m²
4. DWELLING UNIT WIDTH	MIN. 5.0m	INTERIOR UNIT WIDTH – 6.22m END UNIT WIDTH – 6.47m
5. SETBACKS	FRONT YARD = MIN. 4.5m GARAGE FACE = MIN. 6.0m (TO A STREET) INTERIOR SIDE YARD = MIN. 1.5m REAR YARD = MIN. 7.5m	FRONT YARD: TO GRND. FLR. WALL = MIN. 6.0m TO GARAGE WALL = MIN. 6.0m TO 2ND FLR. PROJECT. = MIN. 5.39m INTERIOR SIDE YARD = 1.2m REAR YARD = 6.0m
6. PERMITTED PROJECTIONS	FRONT YARD PORCH + STAIRS = 1.5m FRONT YARD AWNING = 0.6m REAR YARD PORCH + STAIRS = 5.0m REAR YARD BALCONY = 1.0m	FRONT PORCH (EXCL. STAIR) = 1.5m FRONT 2ND FLR. BALCONY = 1.2m REAR PORCH = 1.5m REAR 2ND FLR. BALCONY = 5.59m (ABOVE PORCH) NOTE: NUMBER OF STEPS AT ALL LOCATIONS T.B.C. W/ GRADING PLAN
7. BUILDING HEIGHT	MAX. 10.7m AND 3 STOREY FROM ESTABLISHED GRADE TO MID POINT OF ROOF	9.07m
8. ATTACHED GARAGE & DRIVEWAY	GARAGE INTER. AREA = MAX. 75m² MIN. UNOBSTRUCT. SPACE: 2.6m x 5.2m x 2.0m MAX. DRIVEWAY WIDTH – 3.0m	GARAGE INTER. AREA – 21.7m² / 22m² / 22.7m² UNOBSTRUCTED SPACE – 2.9m x 5.2m DRIVEWAY WIDTH – 3.0m
9. PARKING	PRIVATE – 2 SPACES / UNIT VISITOR – 0.25 SPACE/ UNIT	PRIVATE – 2 SPACES / UNIT VISITOR – NONE
10. CEC ROAD	MIN. WIDTH OF CEC ROAD – 7.0m	WIDTH OF CEC ROAD – 6.0m
11. LANDSCAPED AREA	MIN. 25% OF LOT AREA	END UNITS 1 & 6 – 42.5% (92.4m²) INTERIOR UNITS 2 & 5 – 32.2% (54.6m²) INTERIOR UNITS 3 & 4 30.6% (51.9m²) NOTE: LANDSCAPE CALC. EXCL. DRIVEWAYS + PORCHES

AREA STATISTICS

	TOWNHOUSES - BLOCK 1	SEMI-DETACHED - BLOCKS 2 & 3
GROSS FLOOR AREA	GROUND FLR. AREA: 419.4sm 2ND FLOOR AREA: 592.8sm 3RD FLOOR AREA: 498.4sm TOTAL GFA: 1,510.6sm GARAGE AREAS (NOT INCL.): 145.8sm	BLOCKS 2 & 3 (EACH) GROUND FLR. AREA: 172.6sm 2ND FLOOR AREA: 225.8sm 3RD FLOOR AREA: 171.2sm TOTAL GFA: 569.6sm GARAGE AREAS (NOT INCL.): 46.2sm
	GFA PER UNIT: UNITS 1 & 6: 268.0sm UNITS 2 & 5: 237.9sm UNITS 3 & 4: 249.4sm	GFA PER UNIT: 284.8sm

LANDSCAPE NOTE

FOR LANDSCAPE DETAILS AND INFORMATION ON TREES AND VEGETATION REFER TO ARBORIST REPORT.

PROJECT
MONA ROAD PHASE II
TOWNHOUSE DEVELOPMENT
1148-1154 MONA ROAD
MISSISSAUGA, ON

CLIENT
QUEENSCORP

CONSULTANTS

ARCHITECT
JOSEPH N. CAMPITELLI ARCHITECT INC.
10 Bur Oak Avenue, Unit 3, Markham, ON L6C 0A2
tel: 905-887-6800 fax: 905-887-6400
e-mail: info@jnc-architect.com

LEGAL

COUNTERSIGNED
Joseph N. Campitelli, Architect
B.ARCH., O.A.A., M.R.A.I.C.

DATE

DWG. ISSUES

1.	DEC.04.2023 ISSUED FOR REVIEW	RD
2.	DEC.18.2023 ISSUED FOR REVIEW	RD
3.	JAN.19.2024 ISSUED FOR REVIEW	RD
4.	FEB.02.2024 ISSUED FOR REVIEW + COORD.	RD
5.	JUN.14.2024 ISSUED FOR REVIEW + COORD.	RD
6.	SEP.12.2024 ISSUED FOR REVIEW + COORD.	RD

DESCRIPTION

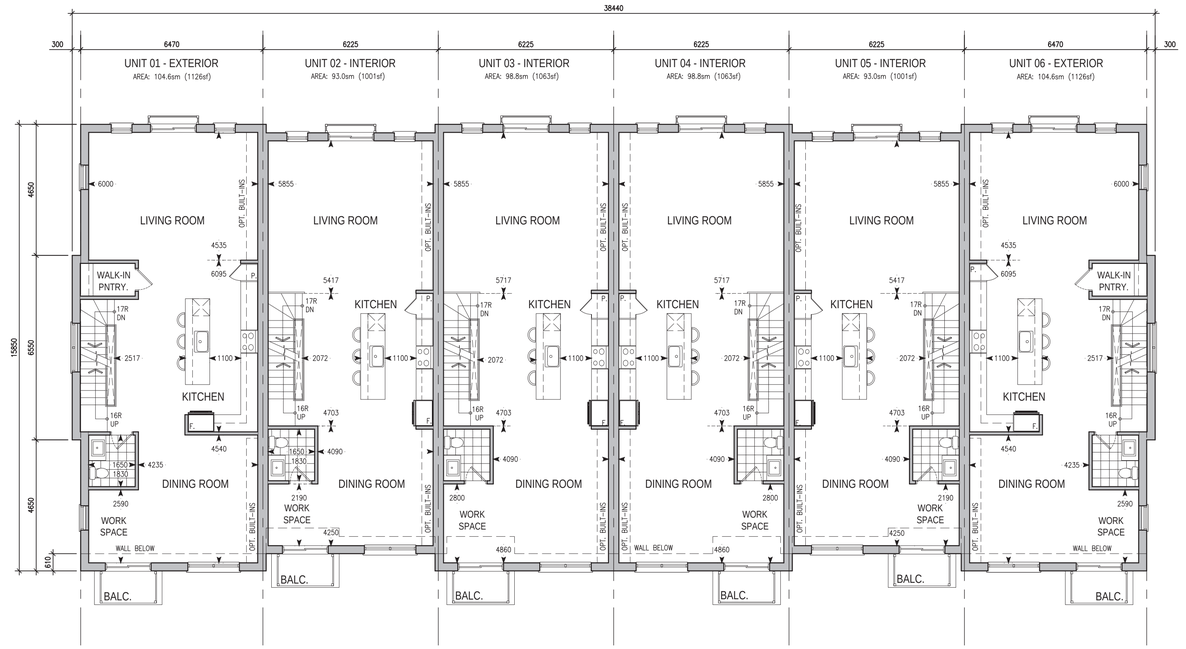
LEGAL

INFO
PROJECT ARCHITECT:
J. CAMPITELLI
ASSISTANT DESIGNER:
DRAWN BY:
RD
CHECKED BY:
J.C.

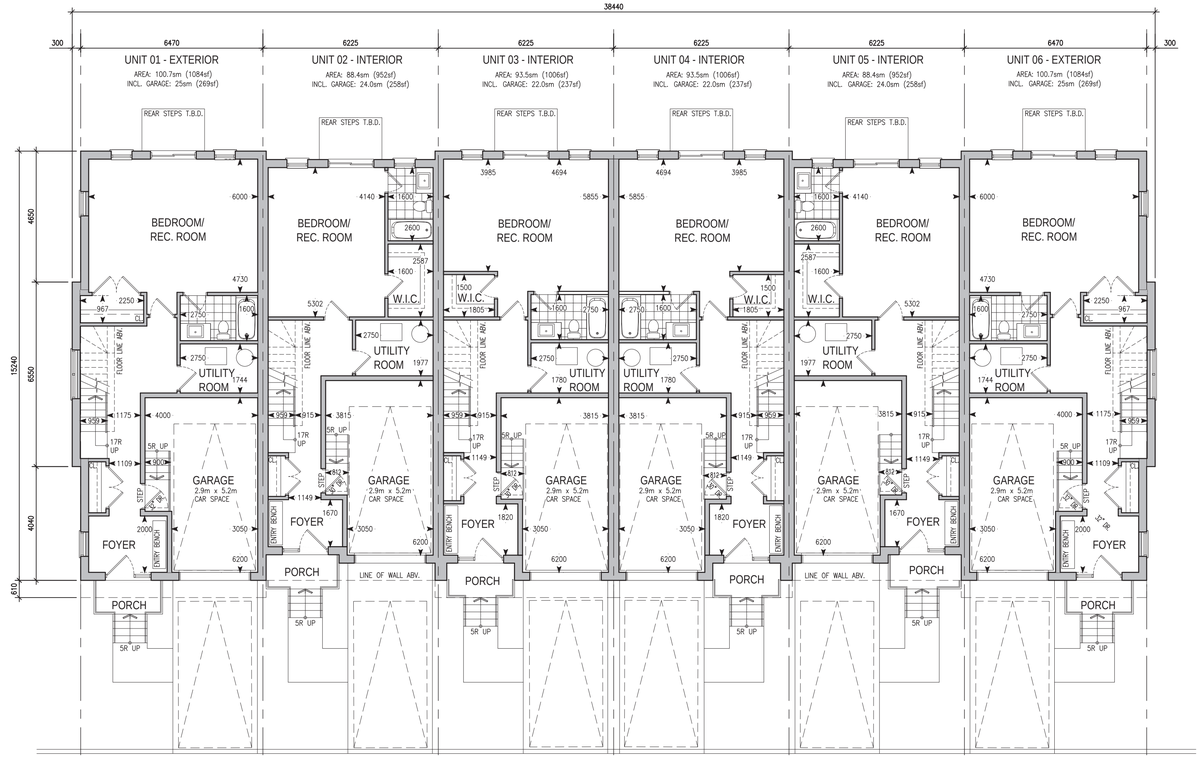
DWG. TITLE
SITE PLAN
STATISTICS

SCALE	DATE PRINTED	PROJECT NO.
1:150	SEP.12.2024	311.23.D

SHEET NO.
A.101



TOWNHOUSE BLOCK 1 - PROPOSED 2ND FLOOR PLAN



TOWNHOUSE BLOCK 1 - PROPOSED GROUND FLOOR PLAN

PROJECT

MONA ROAD PHASE II
TOWNHOUSE DEVELOPMENT

1148-1154 MONA ROAD
MISSISSAUGA, ON

CLIENT

QUEENSCORP

CONSULTANTS

ARCHITECT

JOSEPH N. CAMPITELLI ARCHITECT INC.
10 Bur Oak Avenue, Unit 3, Markham, ON L6C 0A2
tel: 905-887-8900, fax: 905-887-8400
e-mail: info@jnc-architect.com

LEGAL

COUNTERSIGNED
Joseph N. Campitelli, Architect
B.ARCH., O.A.A., M.R.A.I.C.

DATE

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6.	SEP.12.2024	ISSUED FOR REVIEW + COORD.	RD

DESCRIPTION

LEGAL

INFO

PROJECT ARCHITECT:
J. CAMPITELLI
ASSISTANT DESIGNER:

DRAWN BY:
RD
CHECKED BY:
J.C.

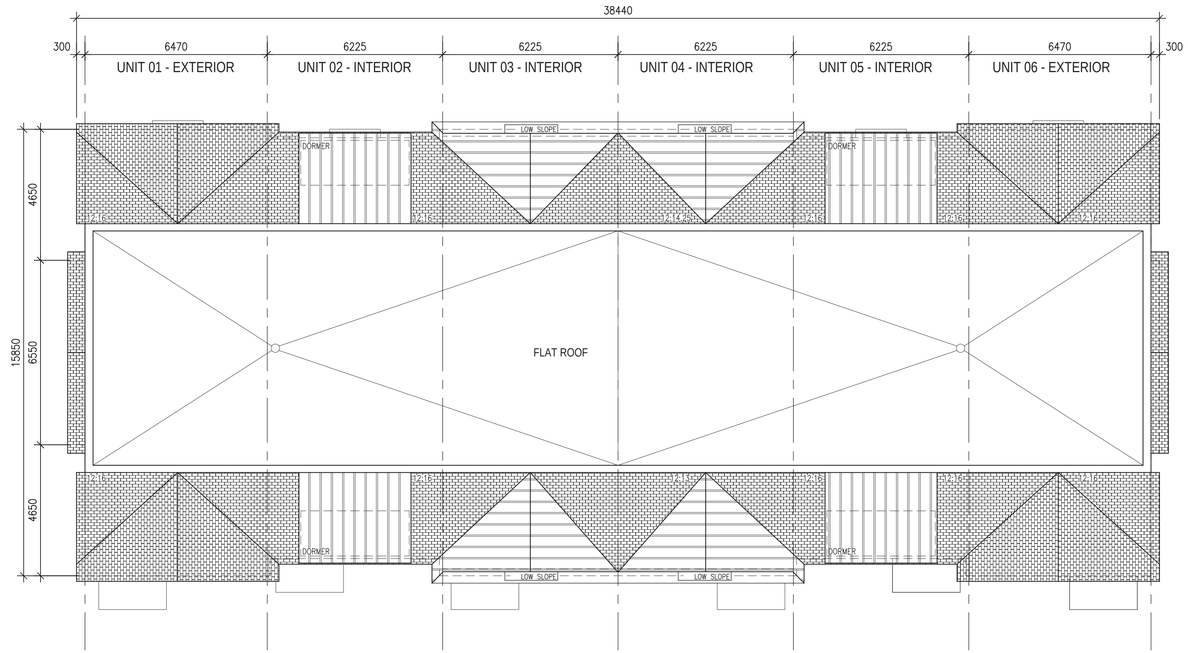
DWG. TITLE

TOWNHOUSE BLOCK 1
PROPOSED
GROUND & 2ND PLANS

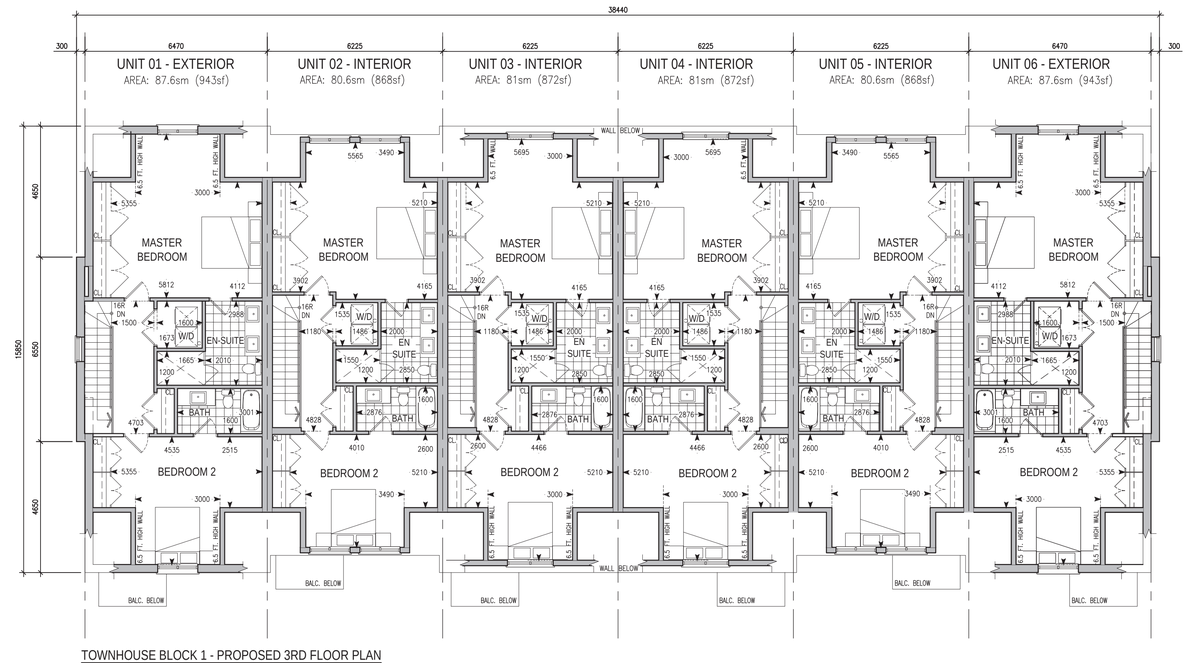
SCALE	DATE PRINTED	PROJECT NO.
1:100	SEP.12.2024	311.23.D

SHEET NO.

A.301



TOWNHOUSE BLOCK 1 - PROPOSED ROOF PLAN



TOWNHOUSE BLOCK 1 - PROPOSED 3RD FLOOR PLAN

PROJECT
MONA ROAD PHASE II
TOWNHOUSE DEVELOPMENT

1148-1154 MONA ROAD
MISSISSAUGA, ON

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CONSULTANTS

ARCHITECT
JOSEPH N. CAMPITELLI ARCHITECT INC.
10 Bur Oak Avenue, Unit 3, Markham, ON L6C 0A2
tel: 905-887-8900 fax: 905-887-8400
e-mail: info@jnc-architect.com

LEGAL

COUNTERSIGNED
Joseph N. Campitelli, Architect
B.ARCH., O.A.A., M.R.A.I.C.

DATE

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5.	JUN.14.2024	ISSUED FOR REVIEW + COORD.	RD
6.	SEP.12.2024	ISSUED FOR REVIEW + COORD.	RD

DESCRIPTION

LEGAL

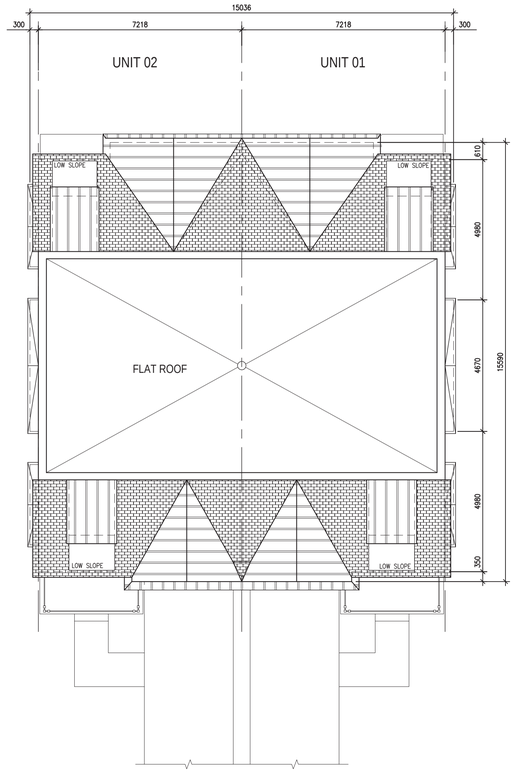
INFO
PROJECT ARCHITECT:
J. CAMPITELLI
ASSISTANT DESIGNER:

DRAWN BY:
RD
CHECKED BY:
J.C.

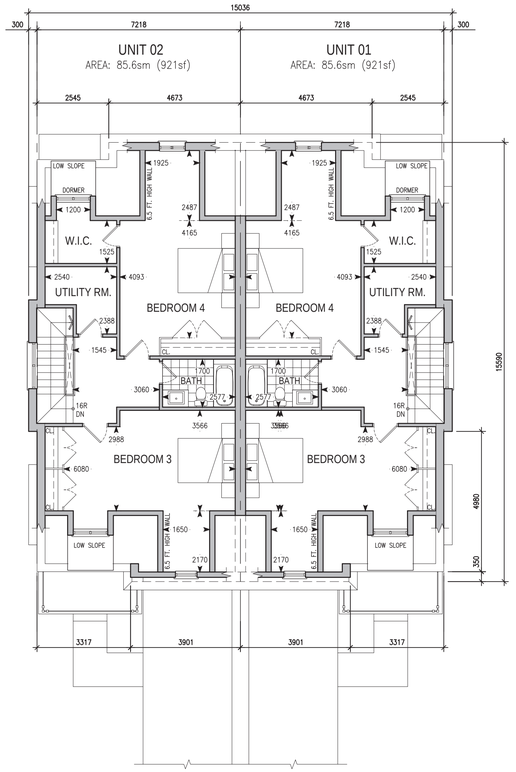
DWG. TITLE
TOWNHOUSE BLOCK 1
PROPOSED
3RD FLOOR & ROOF PLANS

SCALE	DATE PRINTED	PROJECT NO.
1:100	SEP.12.2024	311.23.0

SHEET NO.
A.302



SEMI'S - PROPOSED ROOF PLAN



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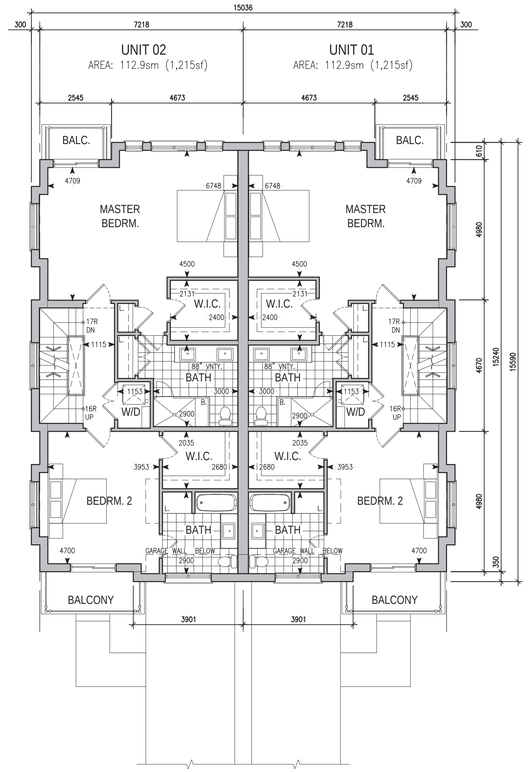
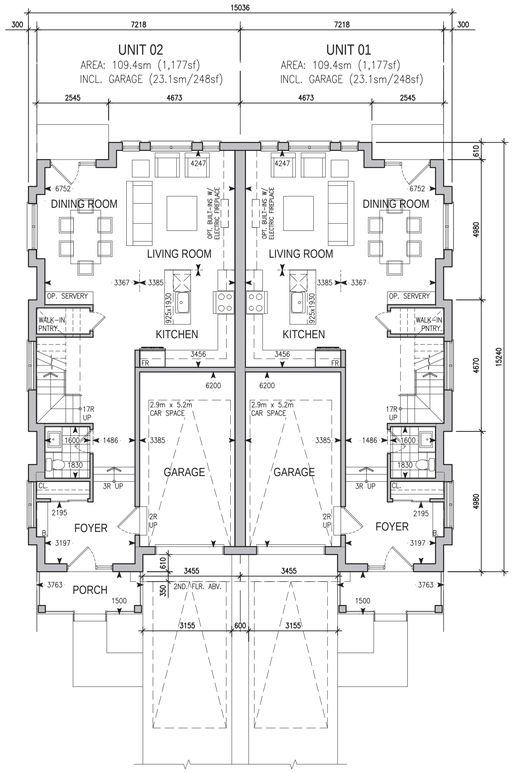


SEMI'S - PROPOSED 2ND FLOOR PLAN



SEMI'S - PROPOSED GROUND FLOOR PLAN

PROJECT
MONA ROAD PHASE II
TOWNHOUSE DEVELOPMENT

1148-1154 MONA ROAD
MISSISSAUGA, ON

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QUEENSCORP

CONSULTANTS

ARCHITECT
JOSEPH N CAMPITELLI ARCHITECT INC.

10 Bur Oak Avenue, Unit 3, Markham, ON L6C 0A2
tel: 905-887-8900 fax: 905-887-8490
e-mail: info@jnc-architect.com

LEGAL

COUNTERSIGNED
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B.ARCH., O.A.A., M.R.A.I.C.

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6.	SEP.12.2024	ISSUED FOR REVIEW + COORD.	RD

DESCRIPTION

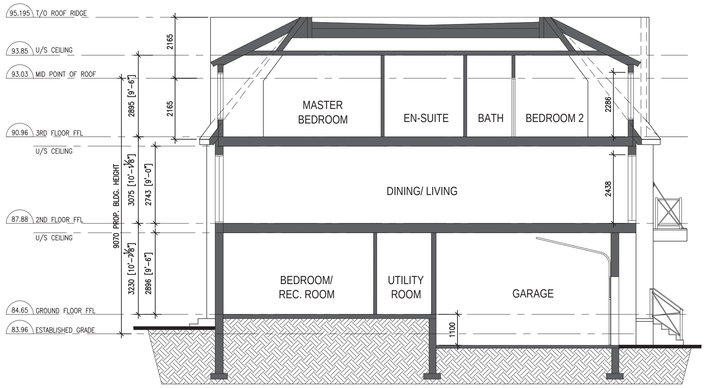
LEGAL

INFO
PROJECT ARCHITECT:
J. CAMPITELLI
ASSISTANT DESIGNER:
DRAWN BY:
RD
CHECKED BY:
J.C.

DWG. TITLE
SEMI-DETACHED
PROPOSED FLOOR PLANS

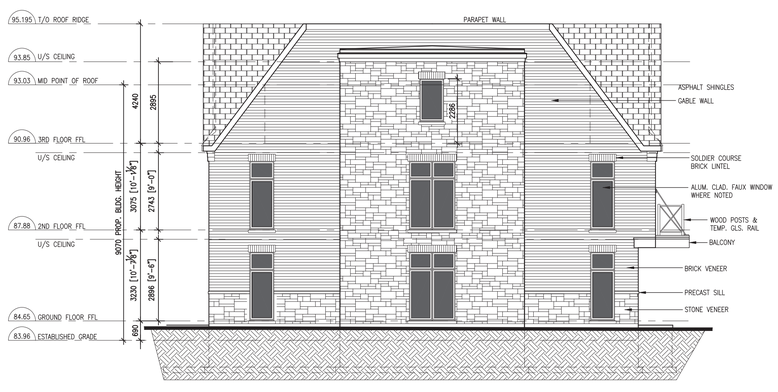
SCALE	DATE PRINTED	PROJECT NO.
1:100	SEP.12.2024	311.23.D

SHEET NO.
A.303

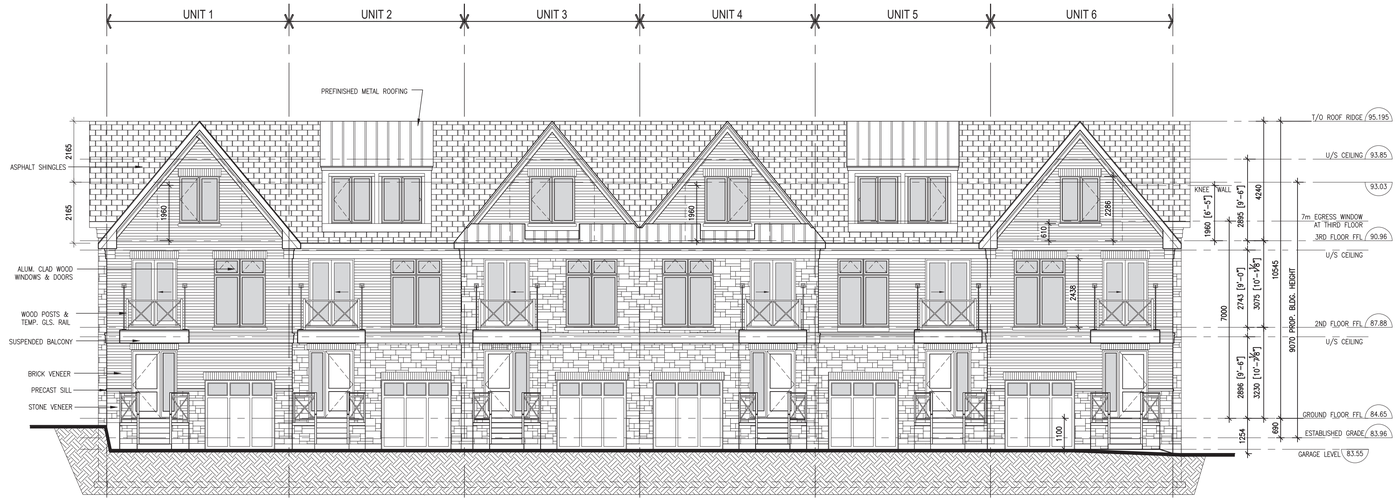


TOWNHOUSE BLOCK 1 - EAST-WEST SECTION THRU UNIT 2

TOWNHOUSE BLOCK 1 - PROPOSED SOUTH ELEVATION - OPTION A

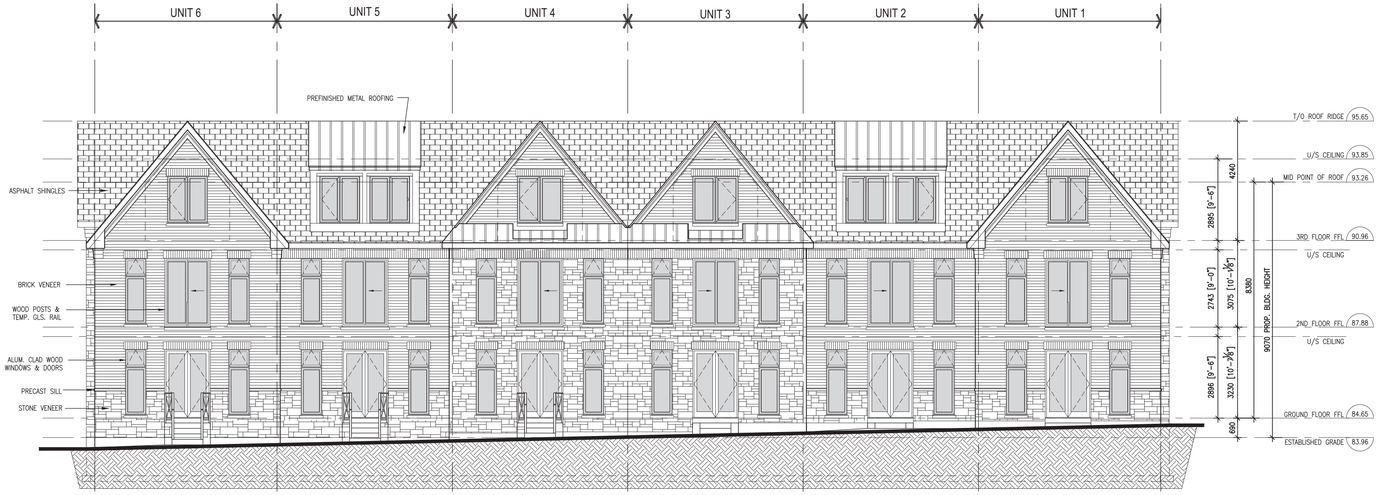


TOWNHOUSE BLOCK 1 - PROPOSED SOUTH ELEVATION - OPTION B



TOWNHOUSE BLOCK 1 - PROPOSED EAST ELEVATION

TOWNHOUSE BLOCK 1 - PROPOSED EAST ELEVATION



TOWNHOUSE BLOCK 1 - PROPOSED WEST ELEVATION

LEGEND

- FAUX WINDOW
- CLEAR GLASS FIXED WINDOW
- CLEAR GLASS OPERABLE WINDOW

PROJECT

MONA ROAD PHASE II
TOWNHOUSE DEVELOPMENT

1148-1154 MONA ROAD
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ARCHITECT

JOSEPH N CAMPITELLI
ARCHITECT INC.
10 Bur Oak Avenue, Unit 3, Markham, ON L6C 0A2
tel: 905-887-6900, fax: 905-887-6400
e-mail: info@jnc-architect.com

LEGAL

COUNTERSIGNED
Joseph N. Campitelli, Architect
B.ARCH., O.A.A., M.R.A.I.C.

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6.	SEP.12.2024	ISSUED FOR REVIEW + COORD.	RD

DESCRIPTION

LEGAL

INFO

PROJECT ARCHITECT:
J. CAMPITELLI
ASSISTANT DESIGNER:

DRAWN BY:
RD
CHECKED BY:
J.C.

DWG. TITLE

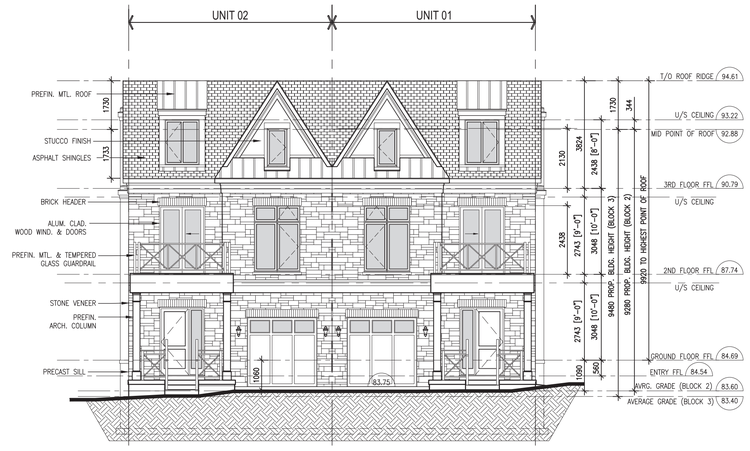
TOWNHOUSE BLOCK 1
PROPOSED ELEVATIONS

SCALE	DATE PRINTED	PROJECT NO.
1:100	SEP.12.2024	311.23.D

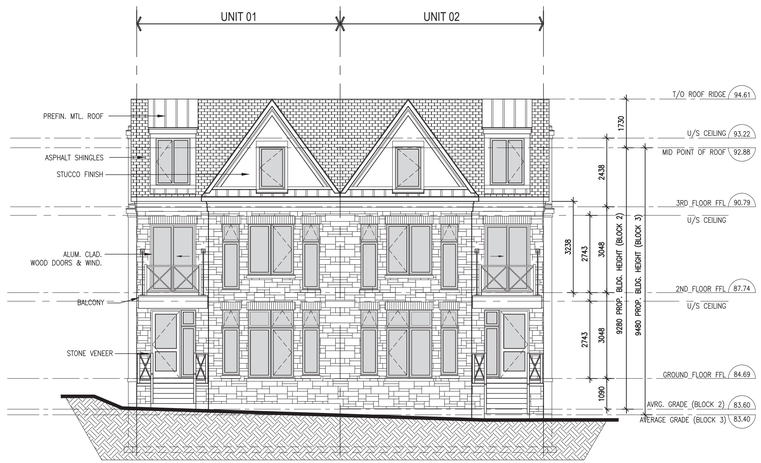
SHEET NO.

A.401

SEMI'S - PROPOSED SOUTH (SIDE) ELEVATION



SEMI'S - PROPOSED EAST (STREET) ELEVATION



SEMI'S - PROPOSED WEST (REAR) ELEVATION

LEGEND

- FAUX WINDOW
- CLEAR GLASS FIXED WINDOW
- CLEAR GLASS OPERABLE WINDOW

PROJECT

MONA ROAD PHASE II
TOWNHOUSE DEVELOPMENT

1148-1154 MONA ROAD
MISSISSAUGA, ON

CLIENT

QUEENSCORP

CONSULTANTS

ARCHITECT

JOSEPH N. CAMPITELLI ARCHITECT INC.
10 Bur Oak Avenue, Unit 3, Markham, ON L6C 0A2
tel: 905-887-6900, fax: 905-887-8400
e-mail: info@jnc-architect.com

LEGAL

COUNTERSIGNED
Joseph N. Campitelli, Architect
B.ARCH., O.A.A., M.R.A.I.C.

DATE

DWG. ISSUES

DESCRIPTION

LEGAL

INFO

PROJECT ARCHITECT:
J. CAMPITELLI
ASSISTANT DESIGNER:

DRAWN BY:
RD
CHECKED BY:
J.C.

DWG. TITLE

SEMI-DETACHED
PROPOSED ELEVATIONS

SCALE	DATE PRINTED	PROJECT NO.
1:100	SEP.12.2024	311.23-D

SHEET NO.

A.402

Appendix B

Sample STAMSON Calculation

STAMSON 5.0 COMPREHENSIVE REPORT Date: 19-09-2024 22:32:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a01olar2.te Time Period: Day/Night 16/8 hours
Description: SOUTHEASTERN FACADE OF TOWNHOUSE BLOCK

Rail data, segment # 1: Oakville SD (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1. Freight	1.4/0.0	97.0	4.0	140.0	Diesel	Yes
2. Way Freight	1.4/5.5	97.0	4.0	25.0	Diesel	Yes
3. VIA	16.5/0.0	150.0	2.0	10.0	Diesel	Yes
4. GO Diesel	132.0/20.0	137.0	1.0	5.0	Diesel	Yes
5. GO Electric	222.0/34.0	137.0	1.0	5.0	Diesel	Yes

Data for Segment # 1: Oakville SD (day/night)

Angle1 Angle2	-73.00 deg	65.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	1	(Absorptive ground surface)
Receiver source distance	69.97 / 69.97	m
Receiver height	7.50 / 7.50	m
Topography	1	(Flat/gentle slope; no barrier)

No Whistle
Reference angle : 0.00

Train # 1: Freight, Segment # 1: Oakville SD (day)

LOCOMOTIVE (0.00 + 54.47 + 0.00) = 54.47 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	65	0.41	65.51	-9.40	-1.65	0.00	0.00	0.00	54.47

WHEEL (0.00 + 47.23 + 0.00) = 47.23 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	65	0.51	59.10	-10.10	-1.76	0.00	0.00	0.00	47.23

Segment Leq : 55.22 dBA

Train # 2: Way Freight, Segment # 1: Oakville SD (day)

LOCOMOTIVE (0.00 + 50.16 + 0.00) = 50.16 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	65	0.41	61.20	-9.40	-1.65	0.00	0.00	0.00	50.16

WHEEL (0.00 + 40.27 + 0.00) = 40.27 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq

```
-------------------------------------------------------------------------
   -73     65   0.51  52.14 -10.10  -1.76   0.00   0.00   0.00  40.27
-------------------------------------------------------------------------

Segment Leq : 50.58 dBA

Train # 3: VIA, Segment # 1: Oakville SD (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 60.23 + 0.00) = 60.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -73     65   0.41  71.27  -9.40  -1.65   0.00   0.00   0.00  60.23
-------------------------------------------------------------------------

WHEEL (0.00 + 50.13 + 0.00) = 50.13 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -73     65   0.51  61.99 -10.10  -1.76   0.00   0.00   0.00  50.13
-------------------------------------------------------------------------

Segment Leq : 60.63 dBA

Train # 4: GO Diesel, Segment # 1: Oakville SD (day)
----------------------------------------------------

LOCOMOTIVE (0.00 + 65.72 + 0.00) = 65.72 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -73     65   0.41  76.76  -9.40  -1.65   0.00   0.00   0.00  65.72
-------------------------------------------------------------------------

WHEEL (0.00 + 55.53 + 0.00) = 55.53 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -73     65   0.51  67.39 -10.10  -1.76   0.00   0.00   0.00  55.53
-------------------------------------------------------------------------

Segment Leq : 66.12 dBA

Train # 5: GO Electric, Segment # 1: Oakville SD (day)
------------------------------------------------------

LOCOMOTIVE (0.00 + 67.98 + 0.00) = 67.98 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -73     65   0.41  79.02  -9.40  -1.65   0.00   0.00   0.00  67.98
-------------------------------------------------------------------------

WHEEL (0.00 + 57.79 + 0.00) = 57.79 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -73     65   0.51  69.65 -10.10  -1.76   0.00   0.00   0.00  57.79
-------------------------------------------------------------------------

Segment Leq : 68.38 dBA
```

Total Leq All Segments: 71.00 dBA

Train # 1: Freight, Segment # 1: Oakville SD (night)

LOCOMOTIVE (0.00 + -11.04 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	65	0.41	0.00	-9.40	-1.65	0.00	0.00	0.00	-11.04

WHEEL (0.00 + -11.86 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	65	0.51	0.00	-10.10	-1.76	0.00	0.00	0.00	-11.86

Segment Leq : 0.00 dBA

Train # 2: Way Freight, Segment # 1: Oakville SD (night)

LOCOMOTIVE (0.00 + 59.11 + 0.00) = 59.11 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	65	0.41	70.15	-9.40	-1.65	0.00	0.00	0.00	59.11

WHEEL (0.00 + 49.23 + 0.00) = 49.23 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	65	0.51	61.09	-10.10	-1.76	0.00	0.00	0.00	49.23

Segment Leq : 59.53 dBA

Train # 3: VIA, Segment # 1: Oakville SD (night)

LOCOMOTIVE (0.00 + -11.04 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	65	0.41	0.00	-9.40	-1.65	0.00	0.00	0.00	-11.04

WHEEL (0.00 + -11.86 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	65	0.51	0.00	-10.10	-1.76	0.00	0.00	0.00	-11.86

Segment Leq : 0.00 dBA

Train # 4: GO Diesel, Segment # 1: Oakville SD (night)

LOCOMOTIVE (0.00 + 60.53 + 0.00) = 60.53 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	65	0.41	71.58	-9.40	-1.65	0.00	0.00	0.00	60.53

WHEEL (0.00 + 50.35 + 0.00) = 50.35 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	65	0.51	62.21	-10.10	-1.76	0.00	0.00	0.00	50.35

Segment Leq : 60.93 dBA

Train # 5: GO Electric, Segment # 1: Oakville SD (night)

LOCOMOTIVE (0.00 + 62.84 + 0.00) = 62.84 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	65	0.41	73.88	-9.40	-1.65	0.00	0.00	0.00	62.84

WHEEL (0.00 + 52.65 + 0.00) = 52.65 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	65	0.51	64.51	-10.10	-1.76	0.00	0.00	0.00	52.65

Segment Leq : 63.24 dBA

Total Leq All Segments: 66.28 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 71.00
(NIGHT): 66.28

Appendix C

Rail Traffic Data

Andrew DeFaria

From: Irina Olivares
Sent: Monday, May 6, 2024 7:10 AM
To: Andrew DeFaria
Cc: Ben Wiseman
Subject: FW: GO Transit Rail Traffic Data Request (1142 Mona Rd., Mississauga)

Please see below.

Irina Olivares
GHD
455 Phillip Street Unit #100A Waterloo, Ontario, N2L 3X2, Canada
D 519 340 4131 **E** Irina.olivares@ghd.com
Please consider the environment before printing this email

From: Rail Data Requests <RailDataRequests@metrolinx.com>
Sent: Friday, May 3, 2024 5:08 PM
To: Irina Olivares <Irina.Olivares@ghd.com>
Cc: Ben Wiseman <Ben.Wiseman@ghd.com>
Subject: RE: GO Transit Rail Traffic Data Request (1142 Mona Rd., Mississauga)

Good afternoon Irina,

Thanks for your patience, further to your request dated April 8th, 2024, the subject lands (1142 Mona Rd., Mississauga) are located within 300 metres of the Metrolinx Oakville Subdivision (which carries Lakeshore West GO rail service).

It's anticipated that GO rail service on this Subdivision will be comprised of diesel and electric trains. The GO rail fleet combination on this Subdivision will consist of up to 1 locomotive and 5 passenger cars. The typical GO rail weekday train volume forecast near the subject lands, including both revenue and equipment trips is in the order of 408 trains. *The planned detailed trip breakdown is listed below:

	1 Diesel Locomotive	1 Electric Locomotive		1 Diesel Locomotive	1 Electric Locomotive
Day (0700-2300)	132	222	Night (2300-0700)	20	34

The current track design speed near the subject lands is 85 mph (137 km/h).

There are *anti-whistling by-laws* in affect at Stavebank Rd and Revus Ave at-grade crossing.

With respect to future electrified rail service, Metrolinx is committed to finding the most sustainable solution for electrifying the GO rail network and we are currently working towards the next phase.

Options have been studied as part of the Transit Project Assessment Process (TPAP) for the GO Expansion program, currently in the Development Phase. ONxpress will be responsible for selecting and delivering the right trains and infrastructure to unlock the benefits of GO Expansion. Construction to support GO Expansion is currently underway.

However, we can advise that train noise is dominated by the powertrain at lower speeds and by the wheel- track interaction at higher speeds. Hence, the noise level and spectrum of electric trains is expected to be very similar at higher speeds, if not identical, to those of equivalent diesel trains.

Given the above considerations, it would be prudent at this time, for the purposes of acoustical analyses for development in proximity to Metrolinx corridors, to assume that the acoustical characteristics of electrified and diesel trains are equivalent. In light of the aforementioned information, acoustical models should employ diesel train parameters as the basis for analyses. We anticipate that additional information regarding specific operational parameters for electrified trains will become available in the future once the proponent team is selected.

Operational information is subject to change and may be influenced by, among other factors, service planning priorities, operational considerations, funding availability and passenger demand.

It should be noted that this information only pertains to Metrolinx rail service. It would be prudent to contact other rail operators in the area directly for rail traffic information pertaining to non-Metrolinx rail service.

I trust this information is useful. Should you have any questions or concerns, please do not hesitate to contact me.

*At this time we do not expect the frequency of trains to increase beyond 2032. It is expected that the number of passenger cars may increase during peak periods to increase capacity as required. Exact numbers are unknown at this time.

Best Regards,

Farah Faroque (she/her)
Project Analyst, Third Party Projects Review
Real Estate & Development
Metrolinx
10 Bay Street | Toronto | Ontario | M5J 2N8
T: 437.900.2291

METROLINX

From: Irina Olivares <Irina.Olivares@ghd.com>
Sent: Monday, April 8, 2024 8:29 AM
To: Rail Data Requests <RailDataRequests@metrolinx.com>
Cc: Ben Wiseman <Ben.Wiseman@ghd.com>
Subject: GO Transit Rail Traffic Data Request (1142 Mona Rd., Mississauga)

Good morning,

GHD is preparing an update noise study for the proposed development located at 1142 Mona Road in Mississauga, Ontario. We previously received a volume forecast in 2020 (see attached), and we would like to confirm if this acceptable or if you could please provide an updated forecast. Please do not hesitate to contact me if you require any additional information.

Kind Regards,

Irina Olivares
GHD
455 Phillip Street Unit #100A Waterloo, Ontario, N2L 3X2, Canada
D 519 340 4131 **E** Irina.olivares@ghd.com
Please consider the environment before printing this email

System Engineering
Engineering Services

1 Administration Road
Concord, ON, L4K 1B9
T: 905.669.3264
F: 905.760.3406

Train Count Data

TRANSMITTAL

To: *Destinataire :*	GHD 455 Phillip Street Unit #100 , Waterloo ON, N2L 3X2	*Project :*	OAK – 13.11- Stavebank Road, Mississauga ON
Att'n:	Ben Wiseman	*Routing:*	Ben.Wiseman@ghd.com
From: *Expéditeur :*	Michael Vallins	*Date:*	2021/03/12
Cc:	Adjacent Development CN via e-mail		

☐ Urgent ☐ For Your Use ☐ For Review ☐ For Your Information ☐ Confidential

Re: Train Traffic Data – CN Oakville Subdivision near Mona Rd, Mississauga ON

Please find attached the requested Train Traffic Data; this data does not reflect GO Metrolinx Traffic. The application fee in the amount of **$500.00** +HST will be invoiced.

Should you have any questions, please do not hesitate to contact the undersigned at permits.gld@cn.ca.

Sincerely,
CN Design & Construction

Michael Vallins P.Eng
Manager, Public Works- Eastern Canada
Permits.gld@cn.ca

Dear Ben:

Re: Train Traffic Data – CN Oakville Subdivision near Stavebank Road, Mississauga ON

The following is provided in response to Ben's 2021/01/18 request for information regarding rail traffic in the vicinity of Mona Road, in Mississauga ON at approximately Mile 13.11 on CN's Oakville Subdivision.

Typical daily traffic volumes are recorded below. However, traffic volumes may fluctuate due to overall economic conditions, varying traffic demands, weather conditions, track maintenance programs, statutory holidays and traffic detours that when required may be heavy although temporary. For the purpose of noise and vibration reports, train volumes must be escalated by 2.5% per annum for a 10-year period.

Typical daily traffic volumes at this site location are as follows:

***Maximum train speed is given in Miles per Hour**

	0700-2300			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	1	140	60	4
Way Freight	1	25	60	4
Passenger	12	10	95	2

	2300-0700			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	0	140	60	4
Way Freight	4	25	60	4
Passenger	0	10	95	2

The volumes recorded reflect westbound and eastbound freight and passenger operations on CN's Oakville Subdivision.

Except where anti-whistling bylaws are in effect, engine-warning whistles and bells are normally sounded at all at-grade crossings. There are two (2) at-grade crossing in the immediate vicinity of the study area at Mile 12.02 Revus Ave, and Mile 13.11 Stavebank Rd Xing. Anti-whistling bylaws are in effect at both Mile 12.02 Revus Ave and Mile 13.11 Stavebank Rd. Please note that engine warning whistles may be sounded in cases of emergency, as a safety and or warning precaution at station locations and pedestrian crossings and occasionally for operating requirements.

With respect to equipment restrictions, the gross weight of the heaviest permissible car is 286,000 lbs.

The double mainline track is considered to be continuously welded rail throughout the study area.

The Canadian National Railway continues to be strongly opposed to locating developments near railway facilities and rights-of-way due to potential safety and environmental conflicts. Development adjacent to the Railway Right-of-Way is not appropriate without sound impact mitigation measures to reduce the incompatibility. For confirmation of the applicable rail noise, vibration and safety standards, Adjacent Development, Canadian National Railway Properties at Proximity@cn.ca should be contacted directly.

I trust the above information will satisfy your current request.

Sincerely,

Michael Vallins P.Eng
Manager, Public Works- Eastern Canada
Permits.gld@cn.ca