August 27, 2024

Homestead Land Holdings Limited
80 Johnson Street
Kingston, ON K7L 1X7

E-mail: JMangan@homestead.ca

Attention: Jack Mangan
Manager, Acquisitions & Corporate Development

Re: Noise Impact Study of the Proposed Residential Development
210 Clearview Avenue, Ottawa, ON
Pinchin File: 313119

Pinchin Ltd. (Pinchin) was retained by Homestead Land Holdings Limited (Client) to prepare a noise impact study report for its proposed residential development (Development) at 210 Clearview Avenue, Ottawa, ON. This report has been prepared to evaluate the noise impacts from external stationary sources and road traffic on the Development and the Development on nearby noise sensitive receptors. The purpose of the study is to support re-zoning and/or site plan control applications for the proposed Development.

The proposed Development will include the construction of one residential building. The building will include two levels of underground parking, twenty-four levels of residential units, and one level of penthouse for amenity spaces and mechanical equipment.

Figure 1, Appendix B shows the locations of the proposed Development, external stationary sources and nearby roads. Additional drawings showing the site plan, floor and elevation plans are included in Appendix C.

1.0 NOISE CRITERIA

In this study, noise criteria outlined in the City of Ottawa's Environmental Noise Control Guidelines (ENCG) [1] and the Ontario Ministry of Environment, Conservation and Parks (MECP) Publication NPC-300 [2] were adopted. The applicable noise criteria for this proposed redevelopment are described as follows:

1.1 Outdoor Noise Criteria

The daytime noise criterion for outdoor living areas (OLAs) is 55 dBA for road and rail noise sources. Where it is not technically, economically, or administratively feasible to meet the 55 dBA limit, up to 60 dBA is permissible with warning clauses. Where the daytime sound level is greater than 60 dBA, control measures are required to reduce the sound level to 60 dBA or less.

The proposed development has made provisions for a variety of protected indoor amenities such as screening room, party and exercise rooms, etc. that are accessible to all future occupants/owners in the proposed Development. There are also outdoor rooftop terraces on the 4th and 25th floors. In addition, there are balconies and terraces for the respective suites, and it should be noted that typically, balconies in residential condominium buildings are not considered OLAs unless both of the following conditions exist: they are at least 4 m in depth and there is no provision for protected amenities within the development.

1.2 External Building Façade Criteria

Where the sound levels at the exterior of the building facades exceed 55 dBA at living/dining room windows during daytime hours and 50 dBA at bedroom windows during nighttime periods, the unit must be provided with forced air heating with provision for central air conditioning. Where the sound levels exceed by more than 10 dB (i.e. 65 dBA at living/dining room windows and 60 dBA at bedroom windows), central air conditioning must be incorporated into the building design prior to occupancy. Upgraded window glazing construction may be required and warning clauses are applicable as well.

It should be noted that in high and medium density residential developments, other forms of mechanical ventilation may be available. Ventilation methods other than central air conditioning are acceptable for high and medium density residential developments, subject to the following conditions:

- the noise produced by the proposed ventilation system in the space served does not exceed 40 dBA;
- the ventilation system complies with all national, provincial and municipal standards and codes;
- the ventilation system is designed by a heating and ventilation professional; and
- the ventilation system enables the windows and exterior doors to remain closed.

1.3 Noise Criteria for Stationary Sources

The applicable MECP noise criteria at a point of reception (POR) are dictated by MECP Publication NPC-300 [2] for Class 1 Areas. These guidelines state that the one-hour sound exposures (Leq, 1 hour) from stationary noise sources in Class 1 areas shall not exceed:

- the higher of 50 dBA or background noise between 0700h and 1900h;
- the higher of 50 dBA or background noise between 1900h and 2300h; and
- the higher of 45 dBA or background noise between 2300h and 0700h (excluding outdoor PORs).

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The sound level limits for the testing of emergency generator are 5 dBA higher the above limits.

2.0 POINT OF RECEPTION DESCRIPTION

To evaluate the noise impact from external stationary sources, eight onsite noise sensitive receptors (ON-North, ON-West, ON-SE, ON-OLA1 to ON-OLA5) were selected from the Development's most affected locations. Receptors ON-North, ON-West and ON-SE represent 3rd floor windows on the north, west and southeast facades, respectively. Receptors ON-OLA1 to ON-OLA3 represent the outdoor living areas on the 4th level roof decks. Receptors ON-OLA4 and ON-OLA5 represent the outdoor living areas on the penthouse (25th) floor level.

To evaluate the noise impact from road traffic on the Development, two onsite noise sensitive receptors (ON-South and ON-South-OLA) were selected from the south side of the building. Receptor ON-South represents the south façade windows on the 3rd floor level. Receptor ON-South-OLA represents the rooftop OLA on the 4th level roof deck.

The following table lists the selected receptor details:

Point of Reception ID	Point of Reception Location	Point of Reception Height, m
ON_OLA1	Rooftop OLA - 11.7 m	11.7
ON_OLA2	Rooftop OLA - 11.7 m	11.7
ON_OLA3	Rooftop OLA - 11.7 m	11.7
ON_OLA4	Rooftop OLA - 75.3 m	75.3
ON_OLA5	Rooftop OLA - 75.3 m	75.3
ON_North	North Facade Windows - 10 m	10.0
ON_SE	Southeast Corner Windows - 10 m	10.0
ON_West	West Facade Windows - 10 m	10.0
ON-South	South Façade, 3rd Floor Windows	8.7
ON-South-OLA	Outdoor Living Area, Roof Deck on 4th Floor	11.7

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Locations of the selected receptors are shown in Figure 2, Appendix B.

It was confirmed by the Client that outdoor at-grade amenity space is not required by the zoning bylaw. Therefore, no at-grade OLAs were selected from the Development.

To evaluate the noise impact from the Development on nearby noise sensitive land uses, four receptors (EXT-R1 to EXT-R4) were selected from nearby noise sensitive land uses. Receptor EXT-R1 represents a 3-storey townhouse located to the southeast of the Development. Receptor EXT-R2 represents a high-rise residential building located to the east of the Development. Receptor EXT-R3 represents a 3-storey apartment building located to the north of the Development. Receptor EXT-R4 represents a one storey institutional building located to the west of the Development.

Locations of the selected receptors are shown in Figures 7 and 8, Appendix B.

3.0 NOISE IMPACT ASSESSMENT

3.1 Noise Impact from External Stationary Sources on the Development

A review of aerial photos of the area shows that there are four facilities/buildings that are located within 100 m of the proposed Development.

To the west of the Development is an institutional operation (Centre Jules-Léger). To the east and north of the Development are three residential towers (185, 195, and 200 Clearview Avenue). It should be noted that all three residential towers are owned and operated by the Client.

To collect the equipment sound information, a site visit was conducted on Friday July 22, 2022. At the Client's buildings (185, 195, and 200 Clearview Avenue), significant sources were identified and acoustic measurements were conducted to quantify the radiated sound. An acoustic model was developed to predict the noise impact on the Development.

The Client tried to request the permission for access to the institutional building. However, permission was not granted by the property manager. As such, Pinchin estimated the rooftop equipment sound information based on the review of aerial photos and observations during the site visit.

Further to the south of the Development are more residential buildings, a government building (Graham Spry Building) and a transformer distribution station. However, since all these buildings are located beyond the 100 m setback, they were not included in this assessment.

Based on the information collected during the site visit, the significant noise sources associated with the external buildings are provided in Table 3, Appendix A, and include the following:

Centre Jules-Léger:

- One (1) air handling unit (source CJL_AHU1);

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- One (1) HVAC unit (source CJL_HVAC1); and
- Ten (10) make-up air units (sources CJL_MUA1 to CJL_MUA10).

185/195/200 Clearview Avenue:

- Two (2) cooling towers (CT195_IN, CT195_North, CT195_South, CT195_West, CT200_East, CT200_North, CT200_South, and CT200_West);
- Two (2) emergency generators (sources GEN195_EX, GEN195_IN, GEN200_EX, and GEN200_Vent);
- One (1) fan/motor casing (source F_195_12M); and
- Thirteen (13) exhaust fans (sources F_195_01 to F_195_13).

Equipment sound data were based on measurements collected during the site visit and Pinchin's past measurements on similar sized equipment. Table 3, Appendix A, lists the equipment sound information.

In modelling the noise impact from the external stationary sources, all equipment was assumed operating 60 minutes during daytime, evening and nighttime hours. The only exception includes the testing of the two emergency generators at 195 and 200 Clearview Avenue. The emergency generators are tested for 60 minutes during daytime hours.

The predicted noise impacts from stationary sources and emergence generator testing are summarized in Tables 4 and 5, Appendix A, respectively. Noise impact contour maps are presented in Figures 4 and 5, Appendix B.

3.2 Noise Impact from Transportation Sources on the Development

A review of aerial photos showed that there are four collector roads (Lanark Avenue to the south, Sir John A. Macdonald Parkway to the north, Island Park Drive to the east and Scott Road to the south) and a bus transitway to the south. However, all these roads and bus transitway, except Lanark Avenue, are located at distances beyond 100 m setback for arterial/collector roads and BRT, as specified by the ENCG. The review of aerial photo showed that there are no CN/CP railway lines and 400-series highways within 500 m of the Development.

The proposed Development is located approximately 9 km to the northwest of the Ottawa International Airport. Annex 10 of the City's Official Plan shows that the Airport Vicinity Development Zone (AVDZ) extends up to the intersection of Baseline Road and Woodroffe Avenue to the northwest of the Airport. The distance from the proposed Development to the nearest AVDZ is approximately 3.2 km. Therefore, the aircraft noise impact was deemed insignificant and the aircraft warning clause is not required. A copy of the aircraft noise impact contour map is included in Figure 3, Appendix B.

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The AADT volume for Lanark Avenue was taken from Table 1, Appendix B of the ENCG. Details of traffic data and vehicle breakdowns are provided in Table D1, Appendix D.

The sound levels at the proposed development due to road traffic were calculated using the MECP program STAMSON, Version 5.04 [3]. STAMSON uses the traffic volumes for the road and basic topographical information for the site in its calculations. Details of calculation results are provided in Appendices A and D.

3.3 Noise Control Measures

The traffic noise impacts and control measures are provided in Tables 1 and 2, Appendix A. Table 1, Appendix A provides the STAMSON calculation results at most affected building facade and outdoor living area. Table 2, Appendix A, summarizes the predicted sound levels at selected units and outdoor living areas, as well as the applicable noise control requirements. An approximately 1.2 m high rooftop barrier with a combination of parapet and glass panel would be constructed on all sides of the roof deck areas. The barrier was included in the STAMSON calculations.

The predicted traffic noise impacts range from 57 dBA to 65 dBA at the selected onsite receptor. The predicted levels indicate that the units should be designed with a provision for the installation of central air conditioning in the future, at the occupant's discretion. Warning clause Types A and C are required to be included in agreements of offers of purchase and sale, lease/rental agreements and condominium declarations. Details of the warning clause is included in Appendix E.

It was confirmed by the Client that all units will be equipped with central air conditioning and HRV systems. The construction will exceed the City's and MECP ventilation requirements.

Since the predicted traffic noise impacts do not exceed 65 dBA and 60 dBA during daytime and nighttime hours, respectively, no special construction requirements on building components (i.e. windows, doors and walls) are warranted. Constructions meeting the Ontario Building Code (OBC) would be sufficient to provide the required sound attenuation.

The architectural drawings show that all walls will be constructed using masonry walls (for floors 1 to 3) and EIFS (Exterior Insulation and Finish System) panels. The masonry walls and EIFP systems are anticipated to provide the STC rating exceeding the minimum OBC requirements for exterior walls.

The external stationary source noise impacts are provided in Tables 4 to 6, Appendix A. As shown in Table 4, Appendix A, the predicted stationary source noise impacts exceed the MECP exclusionary sound level limits at selected onsite receptors (ON-OLA1 and ON-SE). Calculations showed that noise abatement is required on the west façade opening of the cooling tower building (CT200_West).

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One (1) acoustic silencer or its acoustical equivalent (e.g. acoustic louvre) may be installed on the west façade opening of the cooling tower building (CT200_West). The acoustic silencer or its acoustical equivalent should be capable of providing the following minimum values of insertion-Loss in 1/1 octave frequency bands:

Centre Frequency (Hertz)	63	125	250	500	1000	2000	4000	8000
Insertion Loss (decibel)	5	8	10	12	15	15	10	8

The predicted sound levels following the implementation of the above noise control are presented in Table 5, Appendix A, and Figure 5, Appendix B.

The Client proposes to complete the installation of the silencer or its acoustical equivalent within six (6) months after the issuance of an above grade building permit under the Building Code Act, 1992, as amended, for the proposed Development.

3.4 Noise Impact from the Development on Nearby Sensitive Receptors

Based on the information provided by the Client, the significant noise sources associated with the proposed Development are included in Table 3, Appendix A, and may include the following:

- Two (2) garage exhaust fans (sources INT_EF1, 2);
- One (1) emergency generator (source INT_GEN);
- One (1) make-up air unit (source INT_MUA); and
- One (1) cooling tower (sources INT_CT_Air, INT_CT_Back, INT_CT_Motor, INT_CT_End, and INT_CT_Top).

Pinchin was advised by the Client that the proposed equipment would be materially similar to the equipment used at the Client's other development projects in Kingston, Ontario. Consequently, manufacturers' sound data for the generator, make-up unit, and the cooling tower at the other developments were provided by the Client and are included in Appendix F. The sound power level for the garage fans was calculated based on the published engineering method.

CadnaA was used to predict the noise impact from external sources on the Development. The modeling protocol was similar to the modelling of the external sources.

In modelling the noise impact from the proposed equipment, the following assumptions were made. The emergency generator was assumed testing for 30 minutes during daytime hours. The Client indicates that the cooling tower will be equipped with variable speed motor(s). Consequently, the cooling tower was modelled operating for 60 minutes during daytime hours, 45 minutes during evening hours, and 30 minutes during nighttime hours. The selected duty cycles are in line with operations of typical comfort

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heating equipment used at residential facilities. Both the make-up air unit and the garage fans were modelled operating continuously during daytime, evening, and nighttime hours.

The following table summarizes the modelled equipment operating schedule:

Equipment	Daytime Operation	Evening Operation	Nighttime Operation
Emergency Generator Testing (INT_GEN)	30 min/hr	No Operation	No Operation
Cooling Tower (INT_CT)	60 min/hr	45 min/hr	30 min/hr
Garage Exhaust Fans (INT_EF1, 2)	60 min/hr	60 min/hr	60 min/hr
Make-up Air Unit (INT_MUA)	60 min/hr	60 min/hr	60 min/hr

Tables 7 and 8 summarize the compliance status of the Development at each receptor location. Noise impact contour maps are presented in Figures 7 and 8, Appendix B.

4.0 CONCLUSIONS

A detailed noise impact assessment of the proposed Development was completed by modelling the noise impacts from road traffic and external stationary sources on the Development. The assessment shows that the traffic noise impact on the Development meets the NPC-300 noise criteria, with the included control measure (rooftop parapet/glass panels) and proposed installation of central air conditioning systems. In addition, the following warning clause Types A and C are required.

Warning Clause Type A – From MECP NPC-300

“Purchasers/tenants are advised that sound levels due to increasing road 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.”

Warning Clause Type C – From MECP NPC-300

“This dwelling unit has been designed with the provision for adding central air conditioning at the occupant’s discretion. Installation of central air conditioning by the occupant in low and medium density developments 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.”

The predicted noise impacts from external stationary sources exceed the NPC-300 noise criteria. However, calculations show that, with the implementation of the recommended noise mitigation measure in Section 3.4, predicted worst-case external stationary source noise levels are shown to be at or below the applicable MECP NPC-300 Class 1 guideline limits at all onsite receptor locations.

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The predicted noise impacts from the Development on external sensitive receptors meet the NPC-300 noise criteria. Noise control measures are not required.

5.0 TERMS AND LIMITATIONS

This work was performed subject to the Terms and Limitations presented or referenced in the proposal for this project.

Information provided by Pinchin is intended for Client use only. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law. Any use by a third party of reports or documents authored by Pinchin or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

6.0 CLOSURE

Should you have any questions or concerns regarding the contents of this study, please contact the undersigned.

Sincerely,

Pinchin Ltd.

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7.0 REFERENCES

1. City of Ottawa, Environmental Noise Control Guidelines: Introduction and Glossary, January 2016.
2. Ministry of the Environment Publication NPC-300, "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning", August 2013.
3. Ministry of the Environment's STAMSON/STEAM Computer Programme, (Version 5.04),

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APPENDIX A

Tables

(9 Pages)

Table 1 - Road Traffic Noise Prediction Results

Point of Reception ID	Point of Reception Location	Point of Reception Height, m	Daytime Sound Level, dBA [1]	Nighttime Sound Level, dBA [2]
ON-South	South Façade, 3rd Floor Windows	8.7	65	57
ON-South-OLA	Outdoor Living Area, Roof Deck on 4th Floor	11.7	58	-

Notes

1. The daytime period is from 7 am to 11 pm.

2. The nighttime period is from 11 pm to 7 am.

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Table 2: Summary of Noise Control Measures

Point of Reception ID [1]	Façade/Location Description [2]	Predicted Unmitigated Sound Level at Most Affected Facades (Leq, dBA) [3]		Approximate Distance to Road, m [4]	Exterior Window STC Requirements [5]	Ventilation Requirements [6]	Wall Requirements [7]	Approximate Barrier Height [8]	Warning Clauses [9]
		Daytime (16 hr)	Nighttime (8 hr)						
ON-South	South Façade, 3rd Floor Windows	65	57	20.0	OBC	Provision	OBC	n/a	Type C
ON-South-OLA	Outdoor Living Area, Roof Deck on 4th Floor	58	-	21.5	-	-	-	m (Parapet + Glass Pane	Type A

Notes:

[1] Where applicable, the PORs are referred to the room dimensions. See the floor plans in Appendix C.
[2] The north facade faces Lanark Avenue.
[3] STAMSON predicted sound levels at the planes of windows or outdoor living areas in dBA.
[4] The distance is measured from the façade to the centerline of the road.
[5] The windows are specified in pane-gap-pane for double glazing or pane-gap-pane-gap-pane for triple glazing.
OBC - the window should be designed to meet the Ontario Building Code requirements.
[6] Provision - the dwelling should be designed with a provision for the installation of central air conditioning in the future, at the occupant's discretion.
Central AC - installation of central air conditioning should be implemented.
[7] OBC - the wall should be designed and constructed to meet the Ontario Building Code requirements.
[8] Acoustic barriers for outdoor living areas on the roof.
[9] For details on warning clauses, see Appendix E.

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Table 3: External and Internal Noise Source Summary Table

Source ID [1]	Source Description	Lw(A) [2]	Source Location [3]	Sound Characteristics [4]	Noise Control Measures [5]	Source of Data [6]
CJL_AHU1	Air Handling Unit	90	O	S	U	File
CJL_HVAC1	HVAC Unit	82	O	S	U	File
CJL_MUA1	Make-up Air Unit	81	O	S	U	File
CJL_MUA10	Make-up Air Unit	81	O	S	U	File
CJL_MUA2	Make-up Air Unit	81	O	S	U	File
CJL_MUA3	Make-up Air Unit	81	O	S	U	File
CJL_MUA4	Make-up Air Unit	81	O	S	U	File
CJL_MUA5	Make-up Air Unit	81	O	S	U	File
CJL_MUA6	Make-up Air Unit	81	O	S	U	File
CJL_MUA7	Make-up Air Unit	81	O	S	U	File
CJL_MUA8	Make-up Air Unit	81	O	S	U	File
CJL_MUA9	Make-up Air Unit	81	O	S	U	File
CT195_IN	Cooling Tower Intake - 195	78	O	S	U	Mea
CT195_North	Cooling Tower North Vent - 195	92	O	S	U	Mea
CT195_South	Cooling Tower South Vent - 195	92	O	S	U	Same as CT195_North
CT195_West	Cooling Tower West Vent - 195	92	O	S	U	Same as CT195_North
CT200_East	Cooling Tower Room Louvre - East, 200	86	O	S	U	Mea
CT200_North	Cooling Tower Room Louvre - North, 200	84	O	S	U	Mea
CT200_South	Cooling Tower Room Louvre - South, 200	90	O	S	U	Mea
CT200_West	Cooling Tower Room Louvre - West, 200	95	O	S	S	Mea
F_195_01	Exhaust Fan	76	O	S	U	Mea
F_195_02	Exhaust Fan	81	O	S	U	Mea
F_195_03	Exhaust Fan	78	O	S	U	Mea
F_195_04	Exhaust Fan	78	O	S	U	Mea
F_195_05	Exhaust Fan	78	O	S	U	Mea
F_195_06	Exhaust Fan	79	O	S	U	Mea
F_195_07	Exhaust Fan	83	O	S	U	Mea
F_195_08	Exhaust Fan	83	O	S	U	Mea
F_195_09	Exhaust Fan	78	O	S	U	Mea
F_195_10	Exhaust Fan	81	O	S	U	Mea
F_195_11	Exhaust Fan	76	O	S	U	Mea
F_195_12	Exhaust Fan	77	O	S	U	Mea
F_195_12M	Motor Casing	84	O	S	U	Mea
F_195_13	Exhaust Fan	78	O	S	U	Mea

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Table 3: External and Internal Noise Source Summary Table

Source ID [1]	Source Description	Lw(A) [2]	Source Location [3]	Sound Characteristics [4]	Noise Control Measures [5]	Source of Data [6]
GEN195_EX	Generator Exhaust - 195	87	O	S	S	Mea
GEN195_IN	Generator Intake - 195	94	O	S	U	Mea
GEN200_EX	Generator Exhaust - 200	92	O	S	S	Mea
GEN200_Vent	Generator Vent - 200	96	O	S	U	Mea
INT_CT_Air	Cooling Tower - Air Inlet	89	O	S	U	Cal
INT_CT_Back	Cooling Tower - Back	83	O	S	U	Cal
INT_CT_End	Cooling Tower - End	81	O	S	U	Cal
INT_CT_Motor	Cooling Tower - Connection	83	O	S	U	Cal
INT_CT_Top	Cooling Tower - Top	89	O	S	U	Cal
INT_GEN	Back-up Generator - Ground	96	O	S	U	Man
INT_MUA	Make-up Air Unit	88	O	S	U	Man
INT_EF1	Garage Exhaust	81	O	S	U	Cal
INT_EF2	Garage Exhaust	81	O	S	U	Cal

Notes:

[1] Wherever possible, the Source ID is identical with that used in the ESDM report.

[2] Sound Power Levels of continuous noise sources, in dBA, do not include sound characteristic adjustments per NPC-104.
Sound Power Levels of impulsive noise sources, in dBAI, are A-weighted incorporating an impulsive time weighting.

[3] Source Location:
O - located/installed outside the building, including on the roof
I - located/installed inside the building

[4] Sound Characteristic
S = Steady
Q = Quasi-Steady Impulsive

[5] Noise Control Measures
S = Silencer/Muffler/Louver
A = Acoustic lining, plenum
B = Barrier, berm, screening

[6] Mea - Measured
Cal - Engineering calculations File - Past measurements on similar equipment

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Table 4: Acoustic Assessment Summary Table - From External Stattionary Sources on the Development, Without Abatement

Point of Reception ID	Point of Reception Description	Time Period [1]	Total Level at POR (L_{eq}, 1-hr) [2]	Verified by Acoustic Audit (Yes/No)	Performance Limit (L_{eq} 1-hr) [3]	Compliance with Performance Limit (Yes/No)
ON_OLA1	Rooftop OLA - 11.7 m	Daytime	54	No	50	No
		Evening	54	No	50	No
ON_OLA2	Rooftop OLA - 11.7 m	Daytime	47	No	50	Yes
		Evening	47	No	50	Yes
ON_OLA3	Rooftop OLA - 11.7 m	Daytime	45	No	50	Yes
		Evening	45	No	50	Yes
ON_OLA4	Rooftop OLA - 75.3 m	Daytime	41	No	50	Yes
		Evening	41	No	50	Yes
ON_OLA5	Rooftop OLA - 75.3 m	Daytime	42	No	50	Yes
		Evening	42	No	50	Yes
ON_North	North Facade Windows - 10 m	Daytime	43	No	50	Yes
		Evening	43	No	50	Yes
		Nighttime	43	No	45	Yes
ON_SE	Southeast Corner Windows - 10 m	Daytime	55	No	50	No
		Evening	55	No	50	No
		Nighttime	55	No	45	No
ON_West	West Facade Windows - 10 m	Daytime	43	No	50	Yes
		Evening	43	No	50	Yes
		Nighttime	43	No	45	Yes

Notes:

[1] The predictable worst-case one (1) hour period was considered in the study.

[2] Worst-case one hour equivalent sound level from all applicable sources operating in dBA.

[3] NPC-300 exclusionary sound level limits of one hour L_{eq} for Class 1 Areas.

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Table 5: Acoustic Assessment Summary Table - From External Stattionary Sources on the Development, With Abatement

Point of Reception ID	Point of Reception Description	Time Period [1]	Total Level at POR (L_{eq}, 1-hr) [2]	Verified by Acoustic Audit (Yes/No)	Performance Limit (L_{eq} 1-hr) [3]	Compliance with Performance Limit (Yes/No)
ON_OLA1	Rooftop OLA - 11.7 m	Daytime	46	No	50	Yes
		Evening	46	No	50	Yes
ON_OLA2	Rooftop OLA - 11.7 m	Daytime	42	No	50	Yes
		Evening	42	No	50	Yes
ON_OLA3	Rooftop OLA - 11.7 m	Daytime	45	No	50	Yes
		Evening	45	No	50	Yes
ON_OLA4	Rooftop OLA - 75.3 m	Daytime	38	No	50	Yes
		Evening	38	No	50	Yes
ON_OLA5	Rooftop OLA - 75.3 m	Daytime	41	No	50	Yes
		Evening	41	No	50	Yes
ON_North	North Facade Windows - 10 m	Daytime	40	No	50	Yes
		Evening	40	No	50	Yes
		Nighttime	40	No	45	Yes
ON_SE	Southeast Corner Windows - 10 m	Daytime	45	No	50	Yes
		Evening	45	No	50	Yes
		Nighttime	45	No	45	Yes
ON_West	West Facade Windows - 10 m	Daytime	43	No	50	Yes
		Evening	43	No	50	Yes
		Nighttime	43	No	45	Yes

Notes:

[1] The predictable worst-case one (1) hour period was considered in the study.

[2] Worst-case one hour equivalent sound level from all applicable sources operating in dBA.

[3] NPC-300 exclusionary sound level limits of one hour L_{eq} for Class 1 Areas.

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Table 6: Acoustic Assessment Summary Table - From External Emergency Generators on the Development

Point of Reception ID	Point of Reception Description	Time Period [1]	Total Level at POR (L_{eq}, 1-hr) [2]	Verified by Acoustic Audit (Yes/No)	Performance Limit (L_{eq} 1-hr) [3]	Compliance with Performance Limit (Yes/No)
ON_OLA1	Rooftop OLA - 11.7 m	Daytime	52	No	55	Yes
ON_OLA2	Rooftop OLA - 11.7 m	Daytime	45	No	55	Yes
ON_OLA3	Rooftop OLA - 11.7 m	Daytime	29	No	55	Yes
ON_OLA4	Rooftop OLA - 75.3 m	Daytime	39	No	55	Yes
ON_OLA5	Rooftop OLA - 75.3 m	Daytime	41	No	55	Yes
ON_North	North Facade Windows - 10 m	Daytime	44	No	55	Yes
ON_SE	Southeast Corner Windows - 10 m	Daytime	53	No	55	Yes
ON_West	West Facade Windows - 10 m	Daytime	27	No	55	Yes

Notes:

[1] The predictable worst-case one (1) hour period was considered in the study.

[2] Worst-case one hour equivalent sound level from all applicable sources operating in dBA.

[3] NPC-300 exclusionary daytime sound level limit of one hour L_{eq} for Class 1 Areas, plus 5 dB for emergency generator testing.

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Table 7: Acoustic Assessment Summary Table - From the Development Stationary Sources on External Sensitive Receptors

Point of Reception ID	Point of Reception Description	Time Period [1]	Total Level at POR (L_{eq}, 1-hr) [2]	Verified by Acoustic Audit (Yes/No)	Performance Limit (L_{eq} 1-hr) [3]	Compliance with Performance Limit (Yes/No)
EXT_R1	Home to Southeast	Daytime	37	No	50	Yes
		Evening	37	No	50	Yes
		Nighttime	37	No	45	Yes
EXT_R2	Apartment Building to East	Daytime	46	No	50	Yes
		Evening	46	No	50	Yes
		Nighttime	45	No	45	Yes
EXT_R3	Home to North	Daytime	37	No	50	Yes
		Evening	37	No	50	Yes
		Nighttime	37	No	45	Yes
EXT_R4	Institutional Building to West	Daytime	41	No	50	Yes
		Evening	40	No	50	Yes
		Nighttime	38	No	45	Yes

Notes:

[1] The predictable worst-case one (1) hour period was considered in the study.

[2] Worst-case one hour equivalent sound level from all applicable sources operating in dBA.

[3] NPC-300 exclusionary sound level limits of one hour L_{eq} for Class 1 Areas.

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Table 8: Acoustic Assessment Summary Table - From the Development Generator Testing on External Sensitive Receptors

Point of Reception ID	Point of Reception Description	Time Period [1]	Total Level at POR (L_{eq}, 1-hr) [2]	Verified by Acoustic Audit (Yes/No)	Performance Limit (L_{eq} 1-hr) [3]	Compliance with Performance Limit (Yes/No)
EXT_R1	Home to Southeast	Daytime	36	No	55	Yes
EXT_R2	Apartment Building to East	Daytime	20	No	55	Yes
EXT_R3	Home to North	Daytime	38	No	55	Yes
EXT_R4	Institutional Building to West	Daytime	43	No	55	Yes

Notes:

[1] The predictable worst-case one (1) hour period was considered in the study.

[2] Worst-case one hour equivalent sound level from all applicable sources operating in dBA.

[3] NPC-300 exclusionary sound level limits of one hour L_{eq} for Class 1 Areas, plus 5 dB for emergency equipment testing.

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APPENDIX B

Figures

(8 Pages)

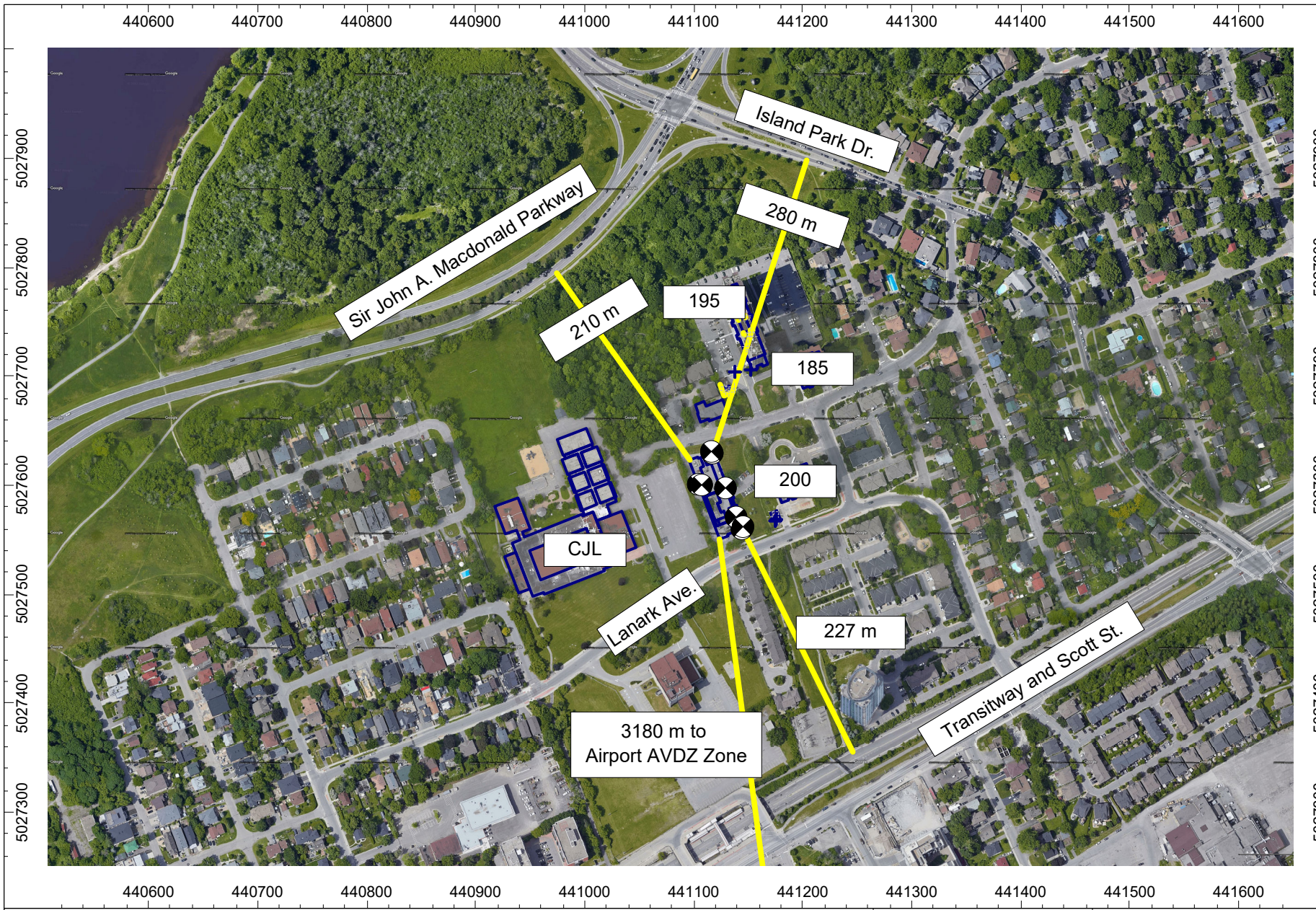


Figure 1- Scaled Area Plan, Showing Proposed Building, Stationary Sources and Roads

N

Drawn by: WNL	
Scale: 1:5,000	
Date: August 22, 2024	

Homestead Land Holdings Limited, 210 Clearview Avenue, Ottawa, ON

Pinchin Project: 313119

PINCHIN

Figure 2- Site Plan, Showing Proposed Building and Onsite Receptors

N

Drawn by: WNL

Scale: 1:800

Date: August 22, 2024

Homestead Land Holdings Limited, 210 Clearview Avenue, Ottawa, ON

Pinchin Project: 313119

PINCHIN

Development

OFFICIAL PLAN - ANNEX 10
Land Use Constraints Due to Aircraft Noise

Prepared by: City of Ottawa,
Department of Planning, Transit and the Environment,
September 2011

PLAN OFFICIEL - APPENDICE 10
Contraintes limitant l'utilization en raison du brut des avions

Preparé par : Ville d'Ottawa ,
Le Service de l'urbanisme , du transport en commun et de l'environnement ,
septembre 2011

Airport Vicinity Development Zone
Zone d'aménagement dans le voisinage de l'aéroport

25 Line (Composite of 25 NEF/NEP)
Ligne 25 (ensemble des courbes NEF et NEP 25)

35 Line Noise Exposure Protection (NEP 2023)
Ligne 35 : prévisions à long terme de l'ambiance sonore (NEP 2023)

Airport Zoning Regulations
Règlements de zonage applicables à de l'Aéroport

Airport Operating Influence Zone
Zone d'influence d'exploitation de l'aéroport

Note:
The boundaries of the Ottawa Airport Operating Influence Zone and the Airport Vicinity Development Zone, are not subject to interpretation and their precise locations should be read from a map at a scale of 1:50,000 available from the City of Ottawa and the Ottawa International Airport Authority.

Figure 3

Scale / Échelle
1km 0 1 2 3 km

Ottawa

N

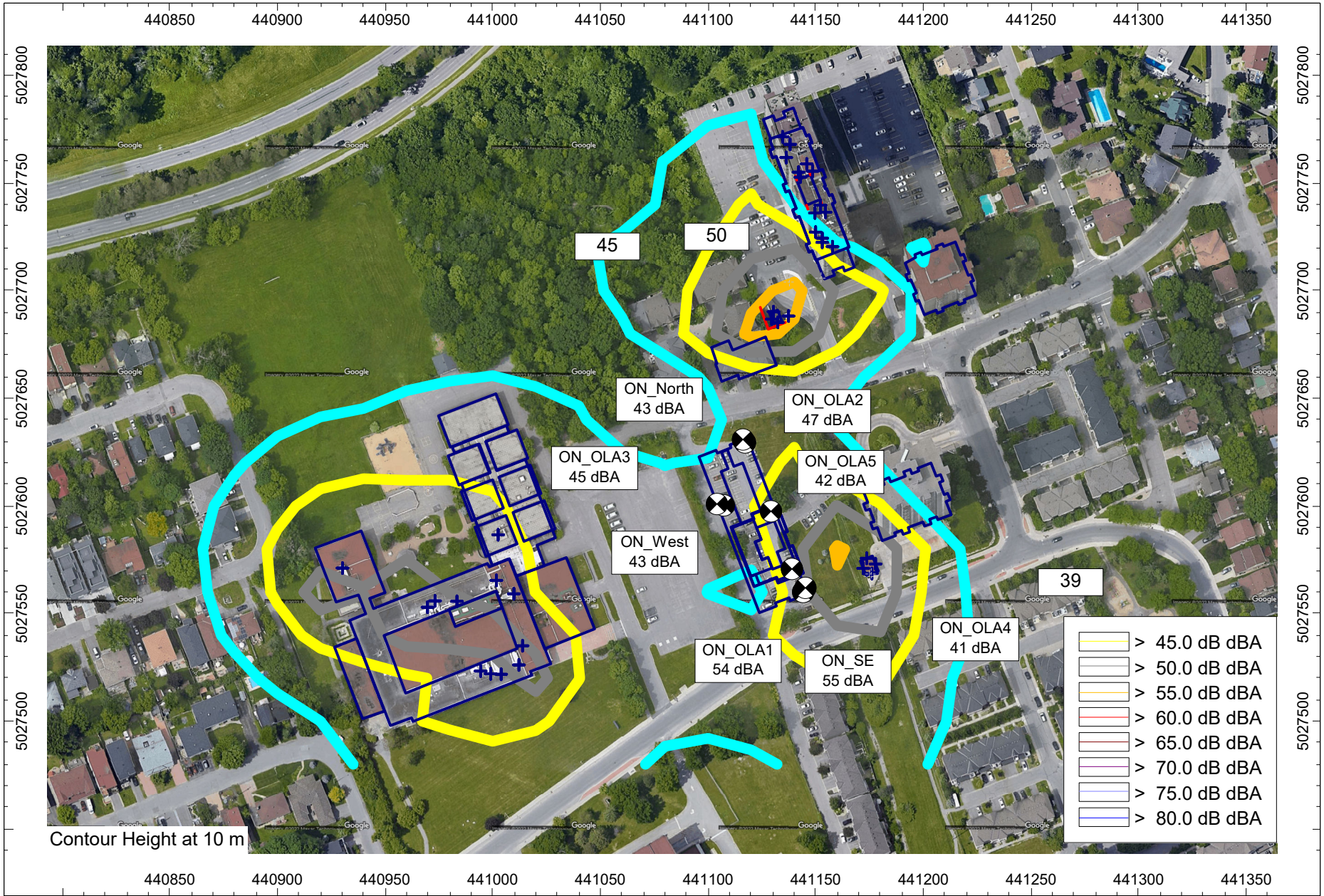


Figure 4 - Noise Impact Contour Map, Stationary Sources Without Abatement

N

Drawn by: WNL

Scale: 1:2,500

Date: August 22, 2024

Homestead Land Holdings Limited, 210 Clearview Avenue, Ottawa, ON

Pinchin Project: 313119

PINCHIN

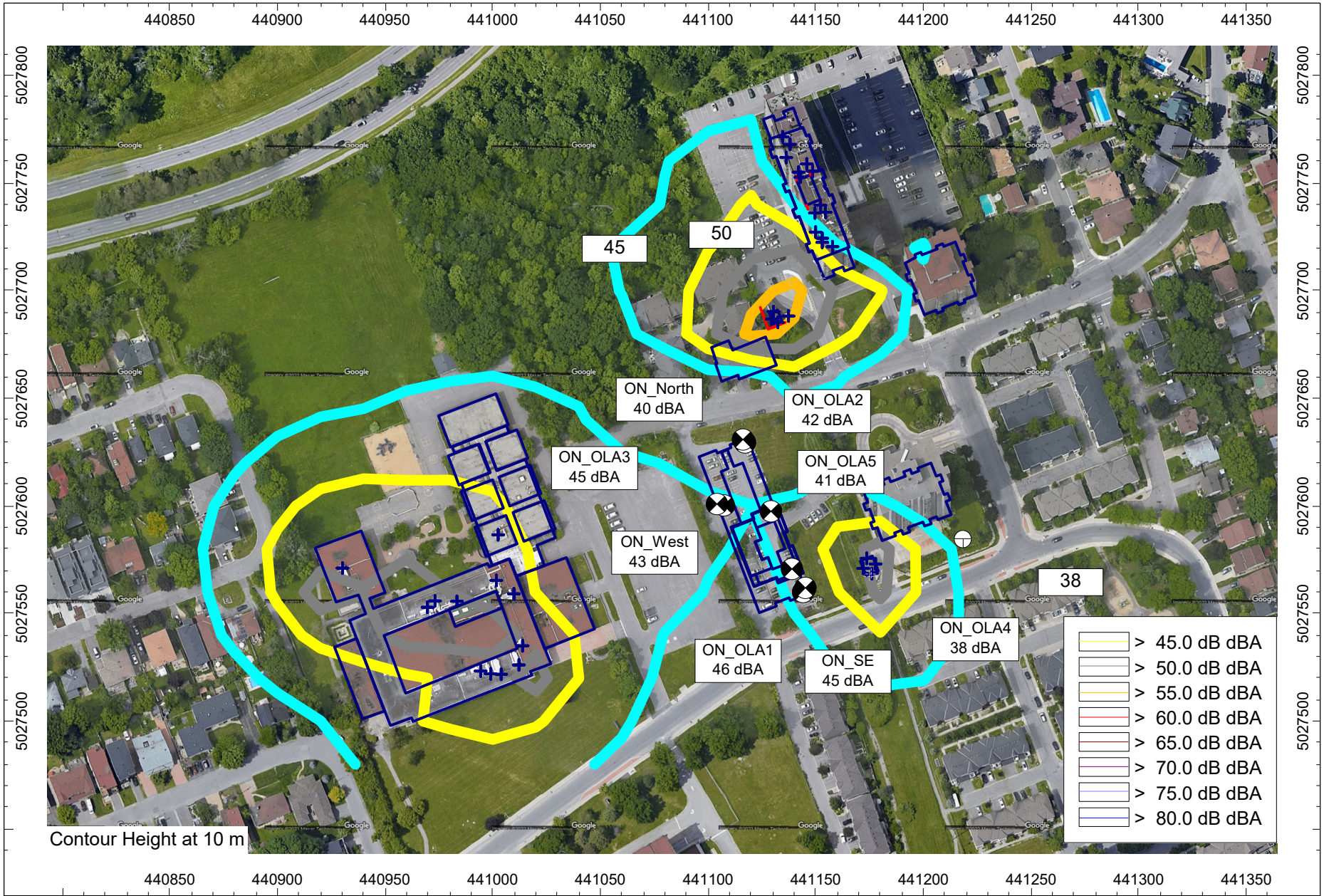


Figure 5 - Noise Impact Contour Map, Stationary Sources With Abatement

N

Drawn by: WNL

Scale: 1:2,500

Date: August 22, 2024

Homestead Land Holdings Limited, 210 Clearview Avenue, Ottawa, ON

Pinchin Project: 313119

PINCHIN

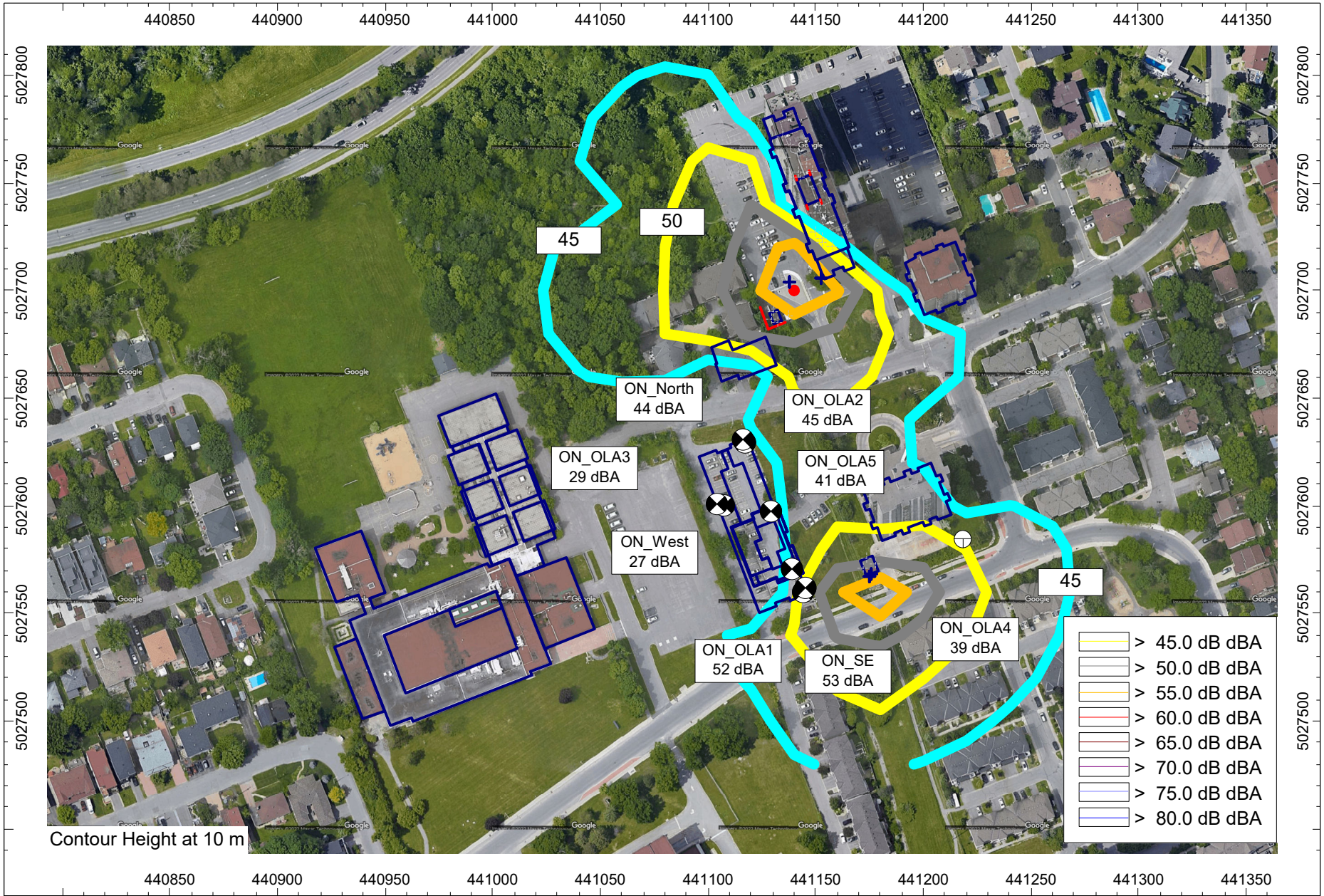


Figure 6 - Daytime Noise Impact Contour Map, Emergency Generator Testing

N

Homestead Land Holdings Limited, 210 Clearview Avenue, Ottawa, ON

Pinchin Project: 313119

Drawn by: WNL

Scale: 1:2,500

Date: August 22, 2024

PINCHIN

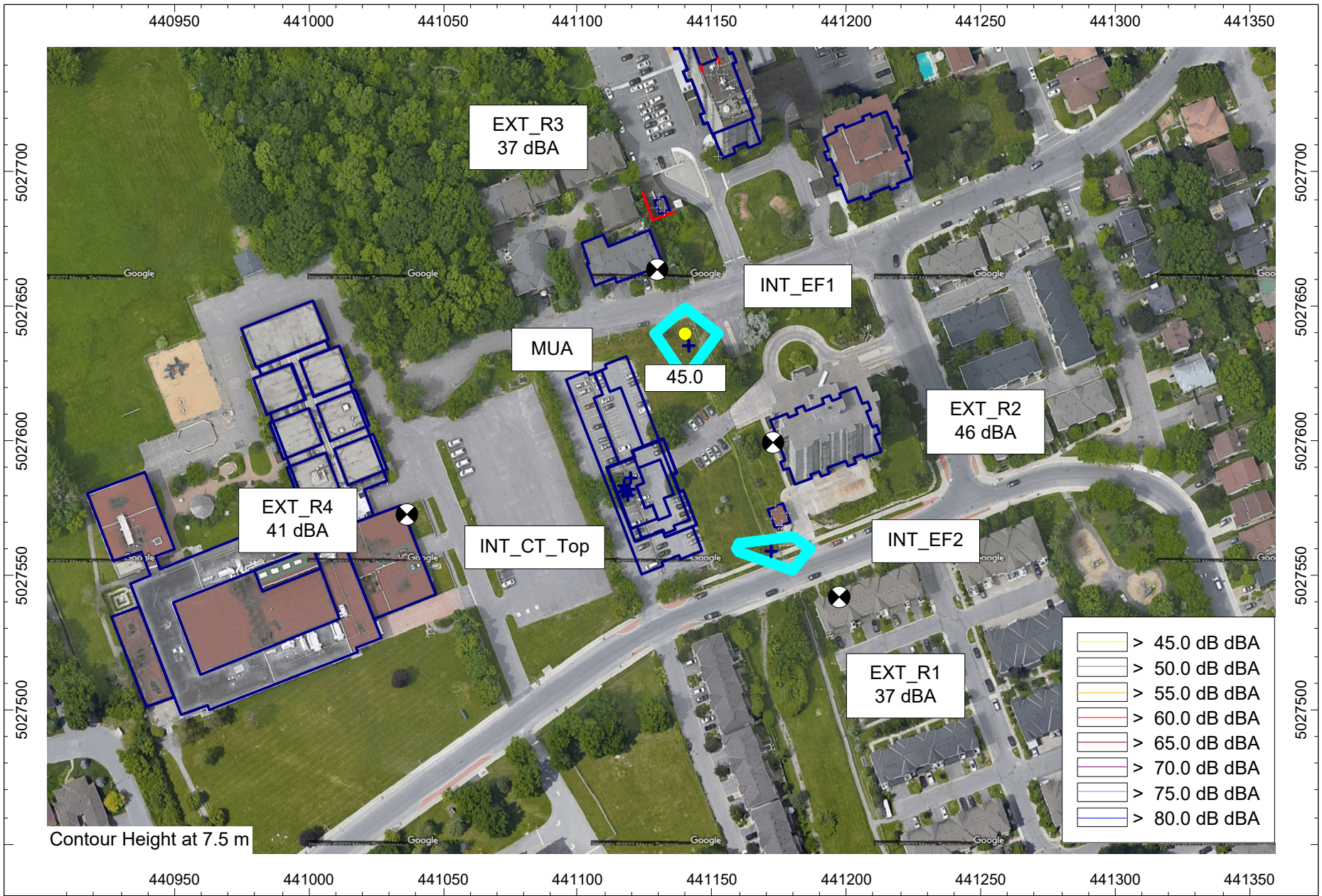


Figure 7 - Noise Impact Contour Map, From Development Stationary Sources on External Receptors

N

Homestead Land Holdings Limited, 210 Clearview Avenue, Ottawa, ON

Pinchin Project: 313119

Drawn by: WNL

Scale: 1:2,000

Date: August 22, 2024

PINCHIN

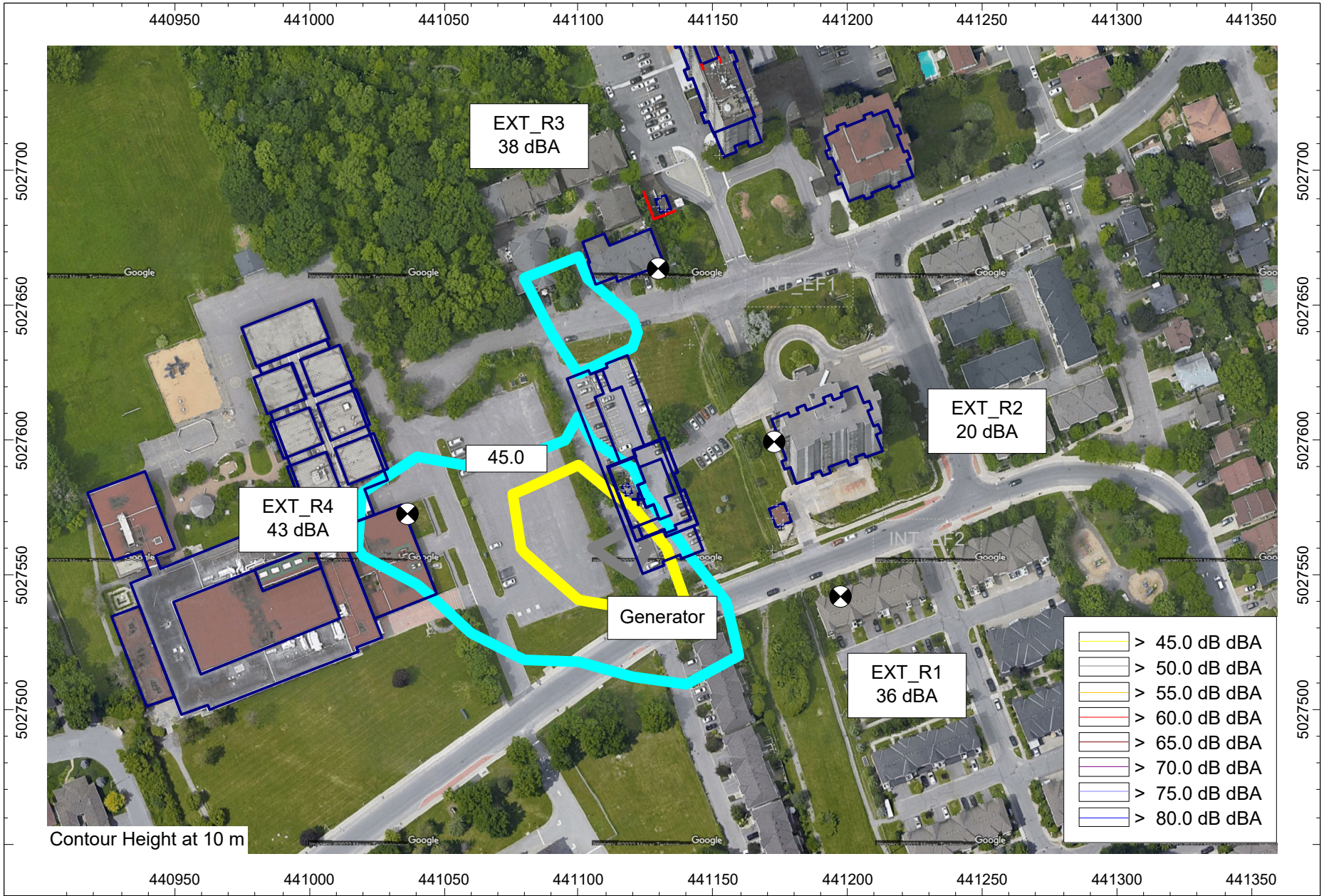


Figure 8 - Noise Impact Contour Map, From Development Generator Testing on External Receptors

N

Drawn by: WNL

Scale: 1:2,000

Date: August 22, 2024

Homestead Land Holdings Limited, 210 Clearview Avenue, Ottawa, ON

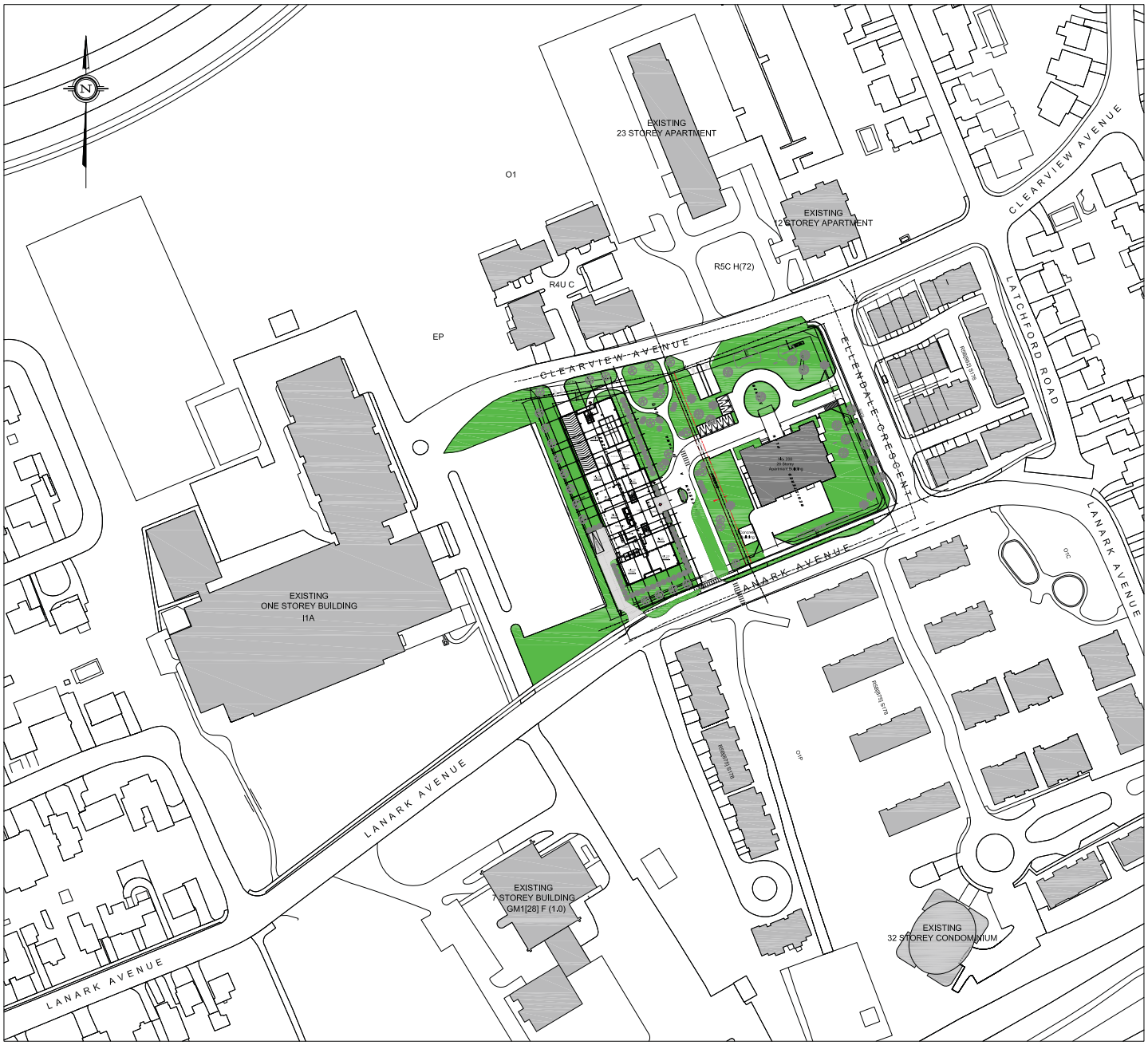
Pinchin Project: 313119

PINCHIN

APPENDIX C

Additional Drawings

(21 Pages)



SITE INFO.

SITE AREA	10967.2 sq. m.
EXISTING ZONING	
AREA A	R5C H(28)
AREA B	O1 [313] S216
AREA C	O1 [313]
AREA D	R5C H(78)
GROSS FLOOR AREA (ZONING DEFINITION)	
EXISTING APARTMENT	~19300 SQ.M.
	224 units
	110 Indoor parkings

PROJECT INFO.

BUILDING HEIGHT	25 STOREY
RESIDENTIAL UNITS	197
ONE BEDROOM	71
TWO BEDROOM	126
CAR PARKING REQUIRED	138
RESIDENTIAL (0.5)	99
VISITOR (0.2)	39
BIKE PARKING REQUIRED	
RESIDENTIAL (0.5)	99
CAR PARKING PROVIDED	278
P1	129
P2	149
BIKE PARKING PROVIDED	169
P1	71
P2	98
AMENITY REQUIRED (6 SQ.M. PER UNITS)	1182 SQ.M.
MIN. COMMUNAL	591 SQ.M.
AMENITY PROVIDED	
COMMUNAL (ROOF DECK AND INDOOR)	1934 SQ.M.
GROUND FLOOR	412 SQ.M.
4TH FLOOR	1030 SQ.M.
25TH FLOOR	492 SQ.M.
PRIVATE BALCONY	1430 SQ.M.
LANDSCAPED AREA	50%

rla/architecture

PLOT DATE: Thursday, June 30, 2022

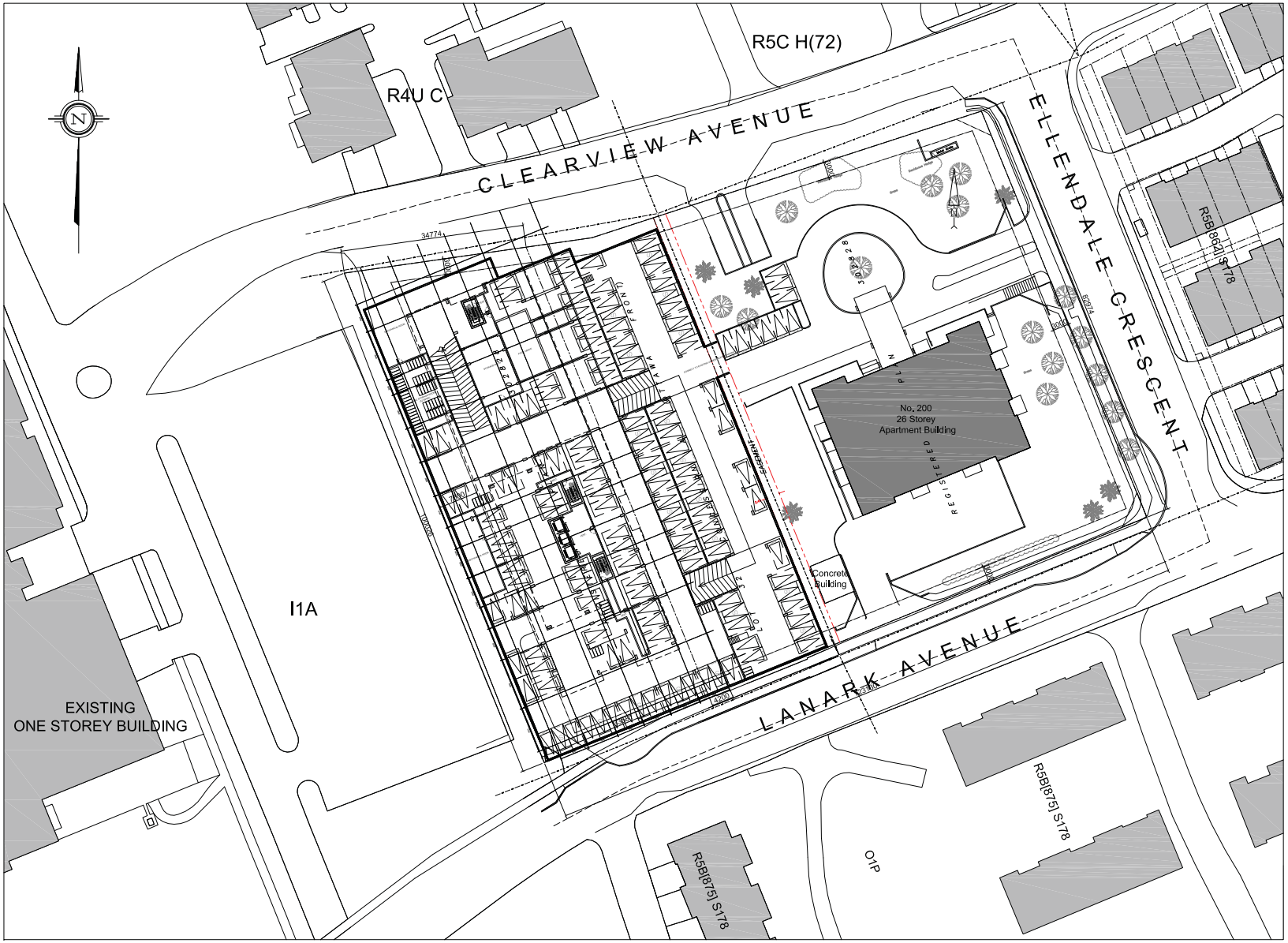
210 CLEARVIEW AVE.

OTTAWA ONTARIO

HOMESTEAD

SHEET # 00

PROJ. # 2117



FLOOR INFO.

FLOOR AREA	5114.8 sq. m.
CAR PARKING	129
BIKE PARKING	71

P1 FLOOR PLAN

rla/architecture

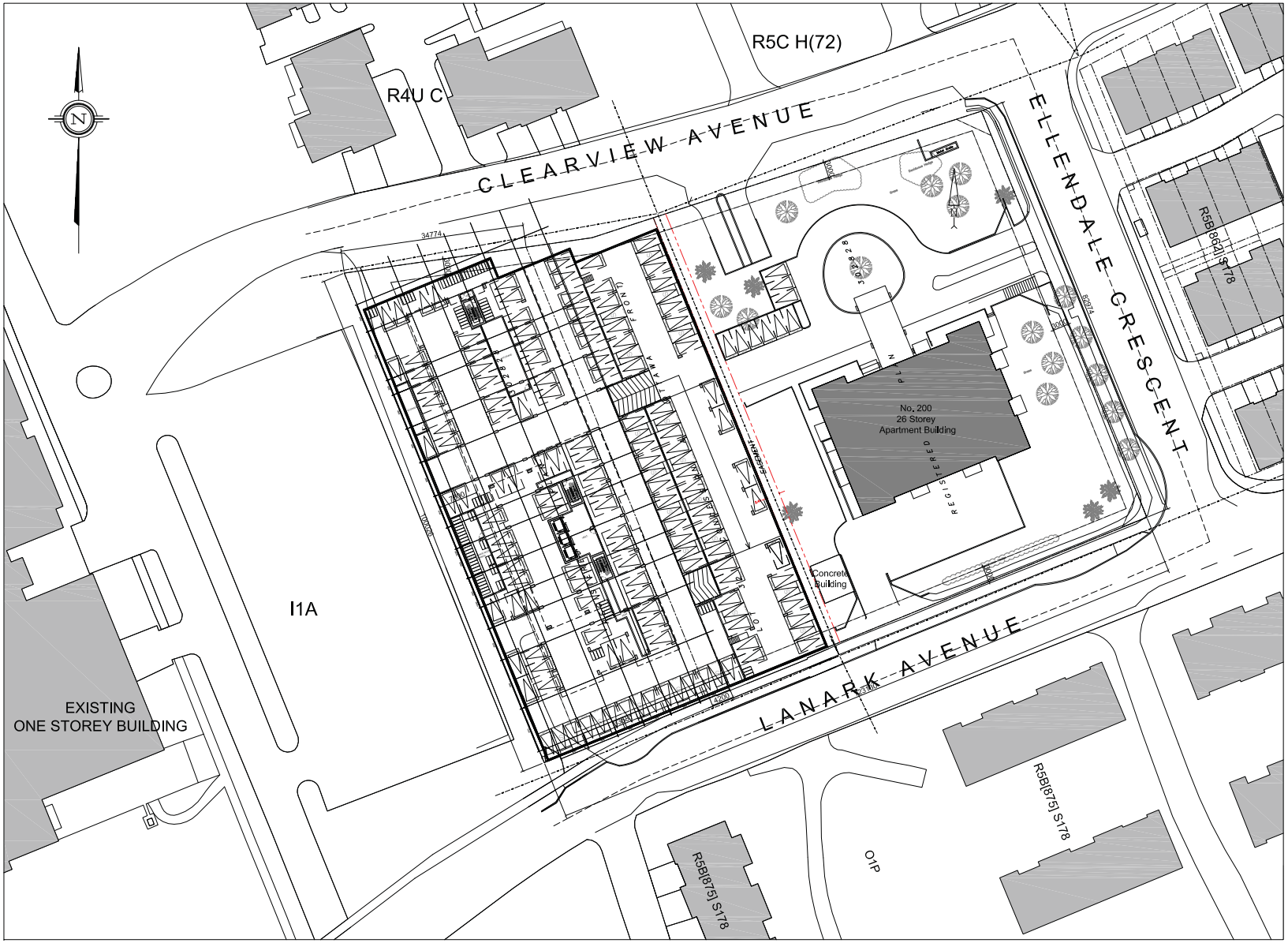
PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 01

PROJ. # 2117



FLOOR INFO.	
FLOOR AREA	5114.8 sq. m.
CAR PARKING	149
BIKE PARKING	98

P2 FLOOR PLAN

rla/architecture

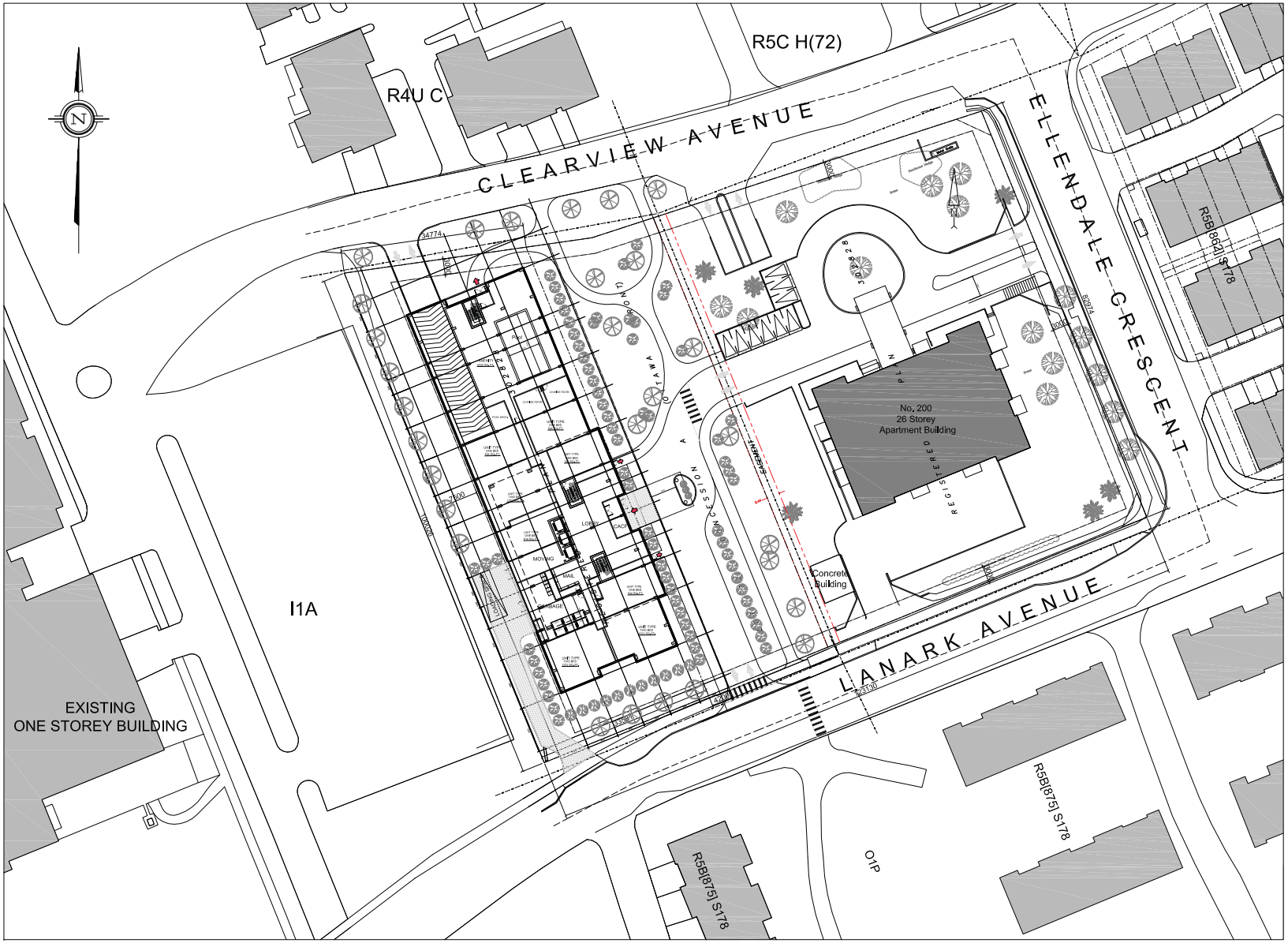
PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 02

PROJ. # 2117



FLOOR INFO.

FLOOR AREA	1884.0 sq. m.
RESIDENTIAL UNITS	8
ONE UNIT	5
TWO UNIT	3

GROUND FLOOR PLAN

rla/architecture

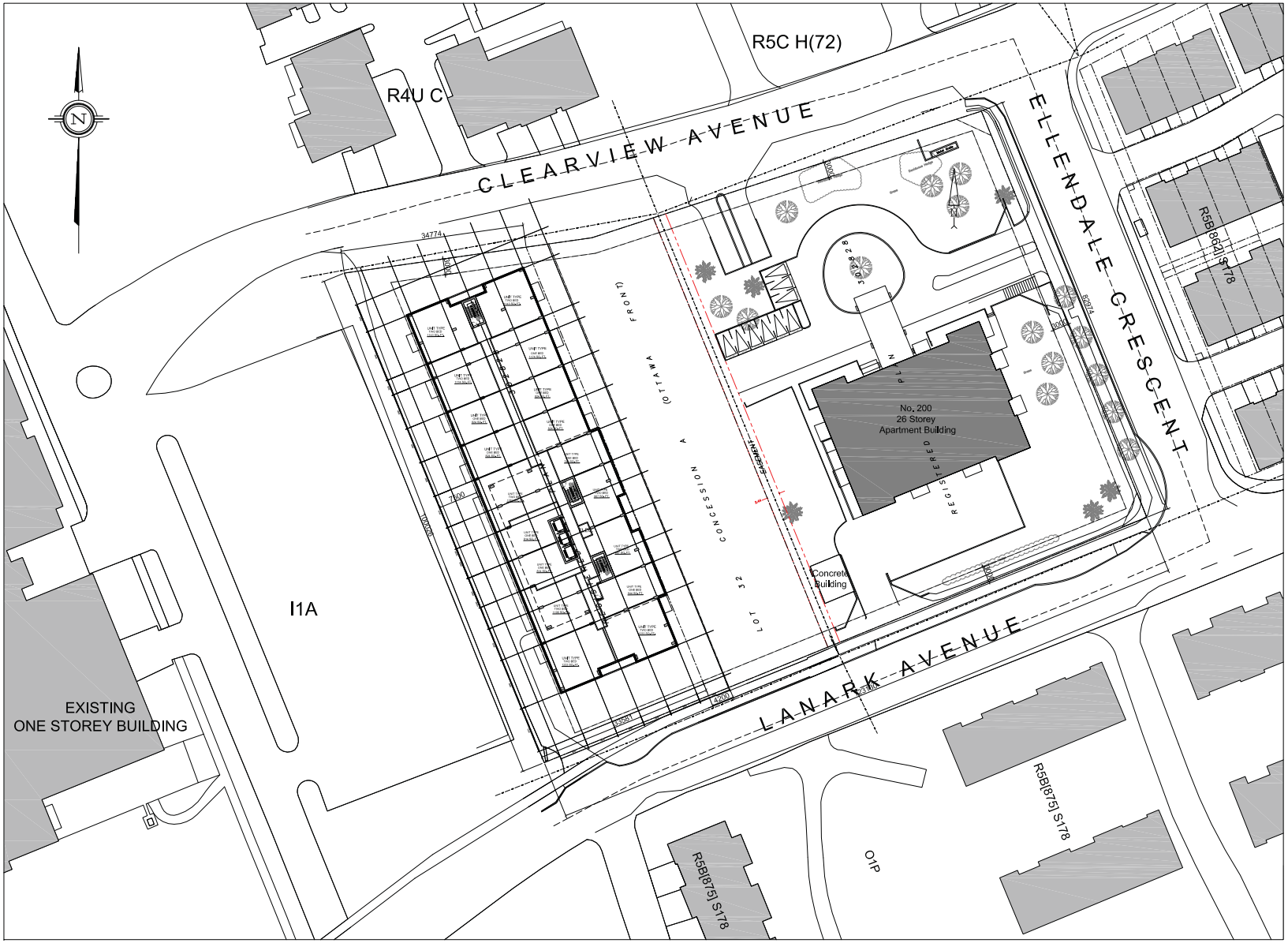
PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 03

PROJ. # 2117



FLOOR INFO.	
FLOOR AREA	1884.0 sq. m.
RESIDENTIAL UNITS	18
ONE UNIT	9
TWO UNIT	9

2ND-3RD FLOOR PLAN

rla/architecture

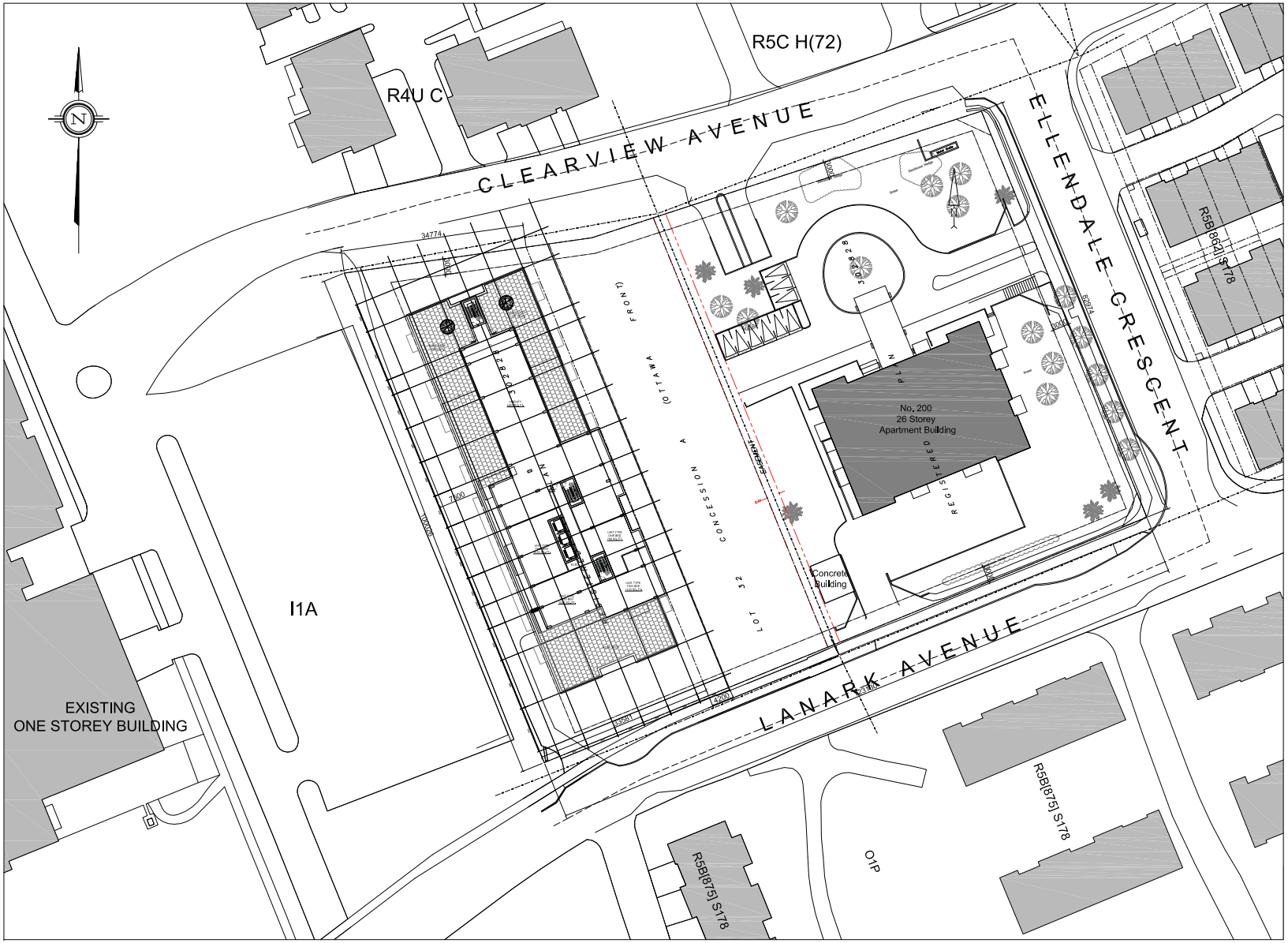
PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 04

PROJ. # 2117



FLOOR INFO.	
FLOOR AREA	1062.8 sq. m.
RESIDENTIAL UNITS	4
ONE UNIT	1
TWO UNIT	3

4TH FLOOR PLAN

rla/architecture

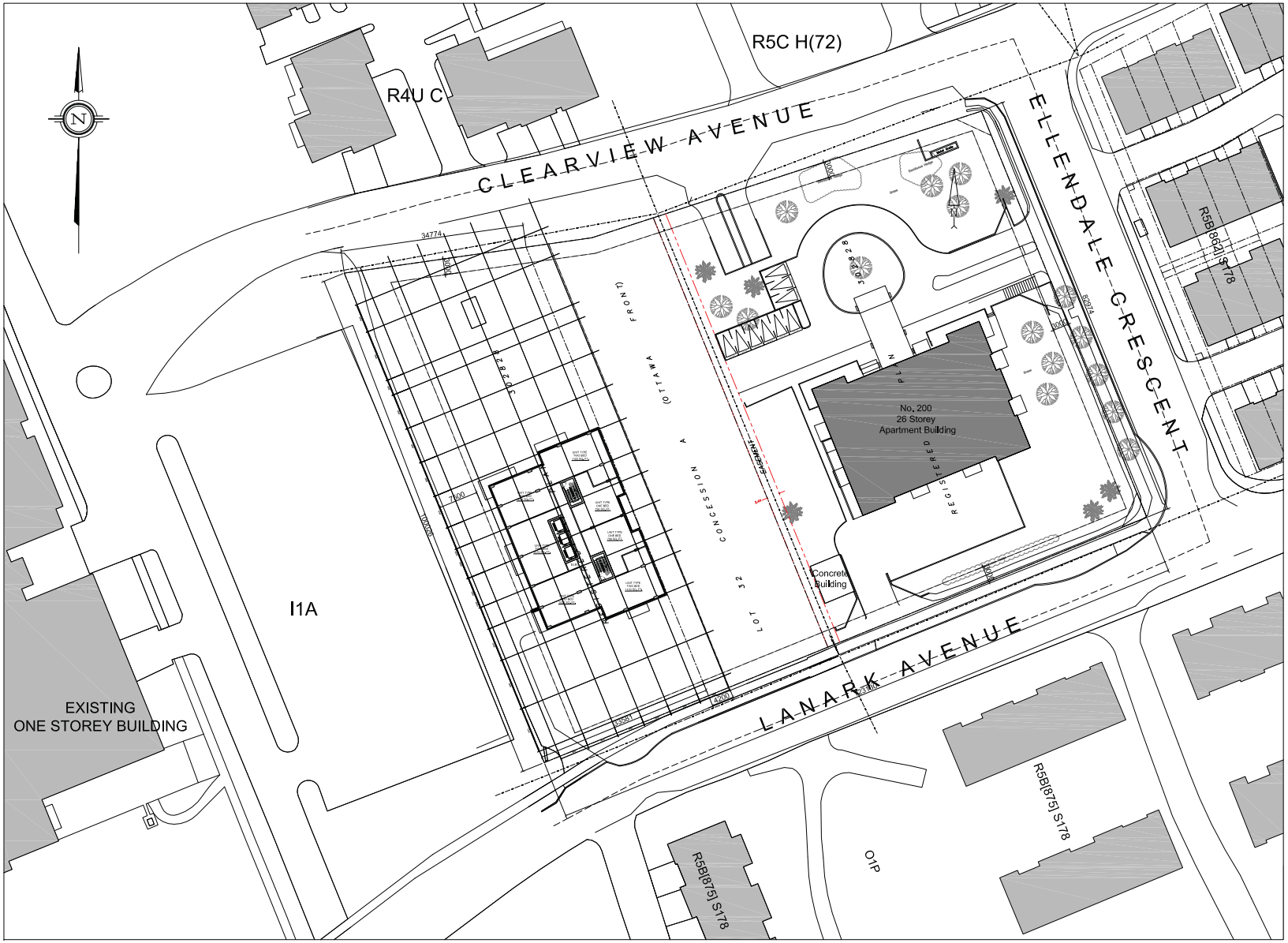
PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 05

PROJ. # 2117



FLOOR INFO.	
FLOOR AREA	743.1 sq. m.
RESIDENTIAL UNITS	7
ONE UNIT	2
TWO UNIT	5

5TH-20TH FLOOR PLAN

rla/architecture

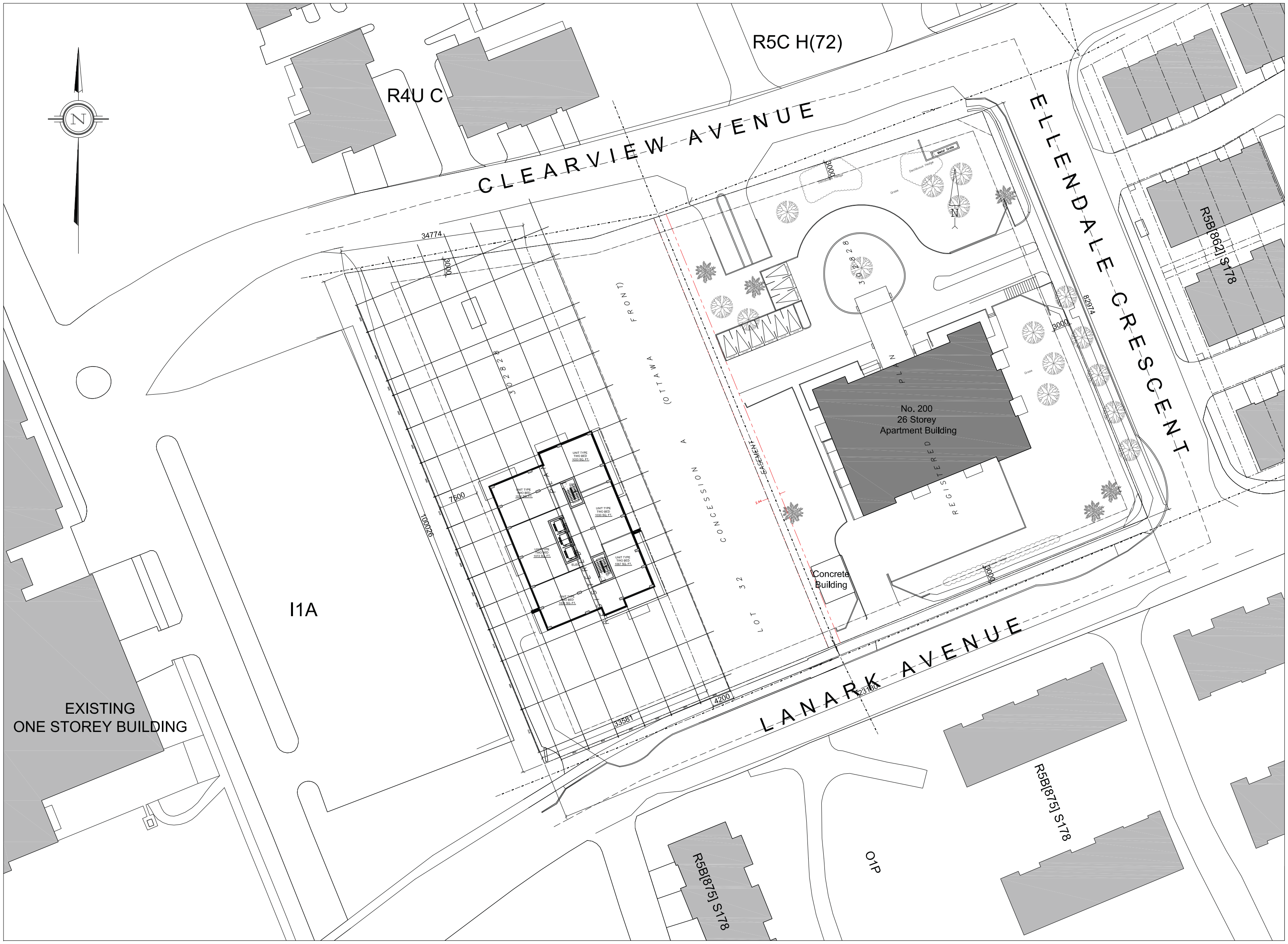
PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 06

PROJ. # 2117



FLOOR INFO.

FLOOR AREA	682.7 sq. m.
RESIDENTIAL UNITS	6
ONE UNIT	
TWO UNIT	6

21TH FLOOR PLAN

rla/architecture

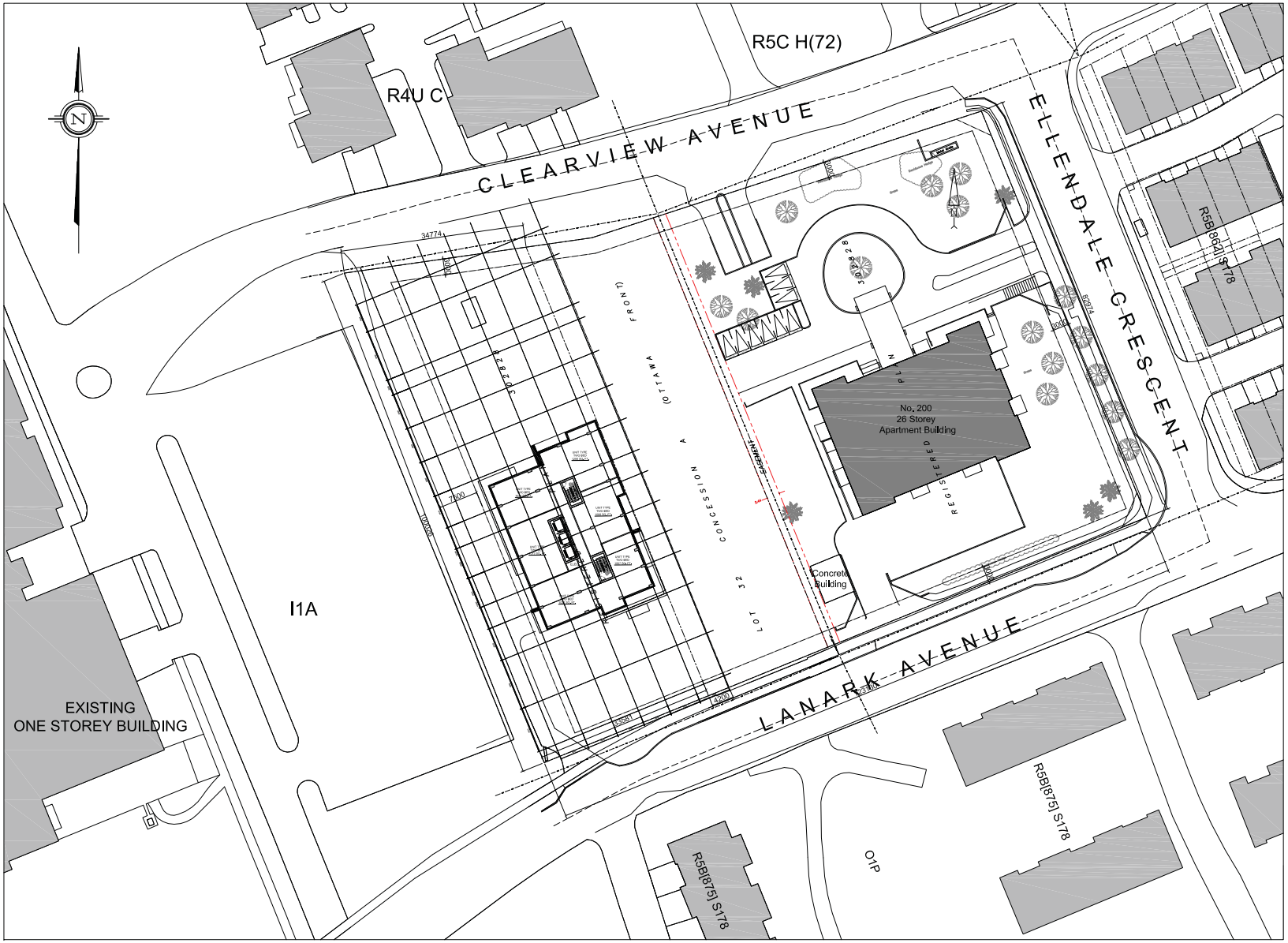
PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET #
07

PROJ. # 2117



FLOOR INFO.	
FLOOR AREA	712.7 sq. m.
RESIDENTIAL UNITS	6
ONE UNIT	
TWO UNIT	6

22TH FLOOR PLAN

rla/architecture

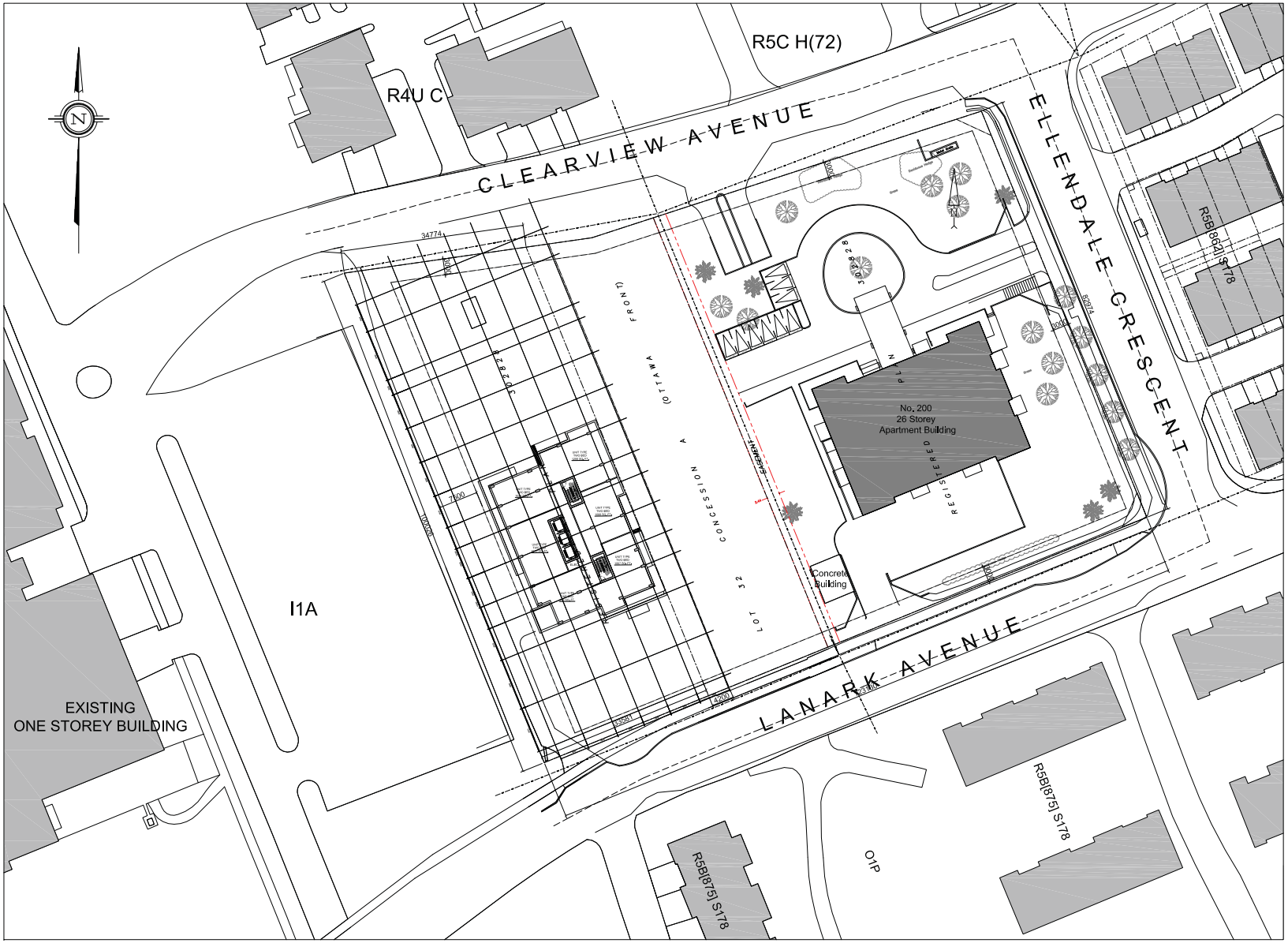
PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 08

PROJ. # 2117



FLOOR INFO.	
FLOOR AREA	701.7 sq. m.
RESIDENTIAL UNITS	6
ONE UNIT	1
TWO UNIT	5

23TH-24TH FLOOR PLAN

rla/architecture

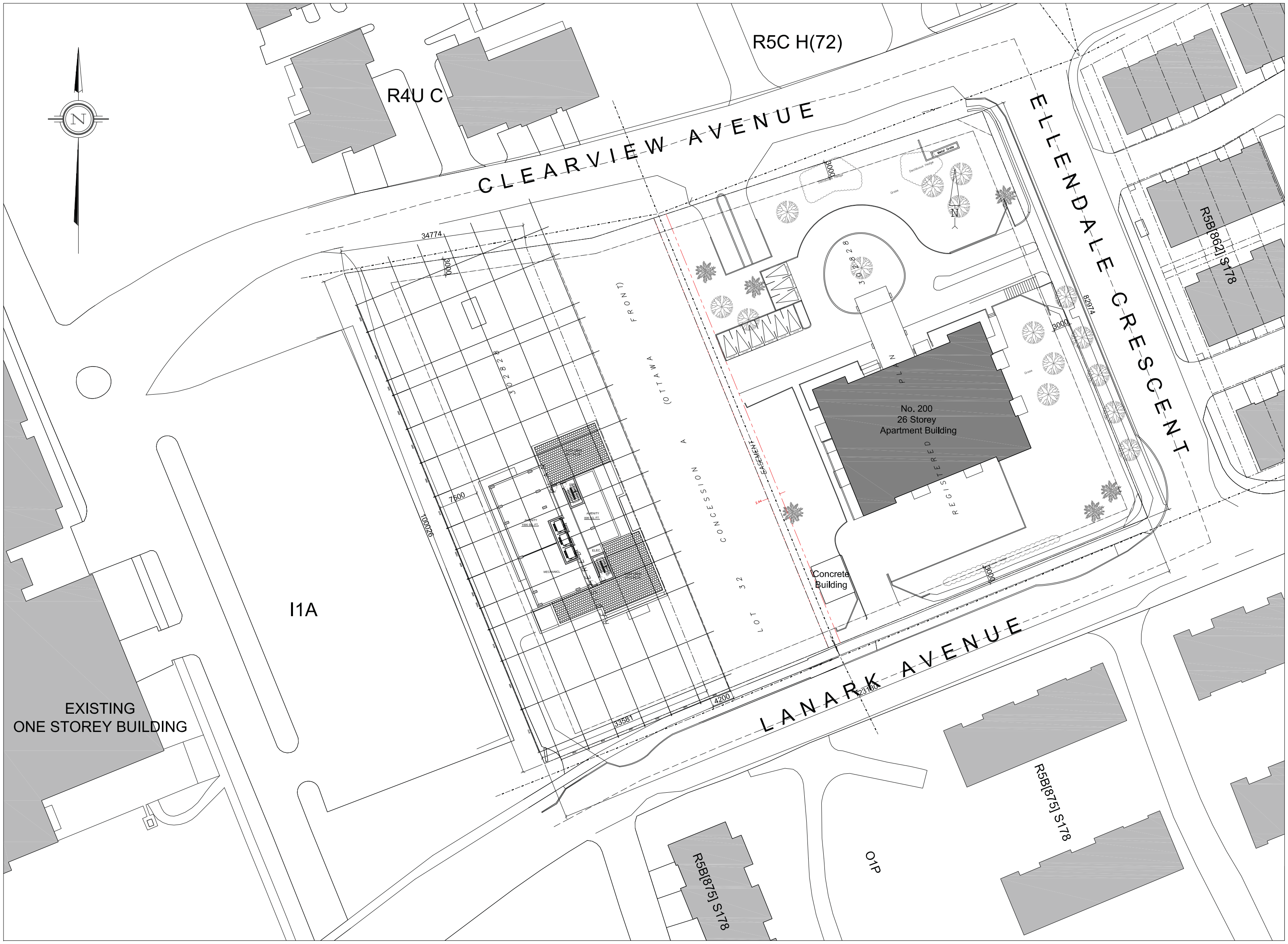
PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 09

PROJ. # 2117



FLOOR INFO.	
FLOOR AREA	424.0 sq. m.
RESIDENTIAL UNITS	

25TH FLOOR PLAN

rla/architecture

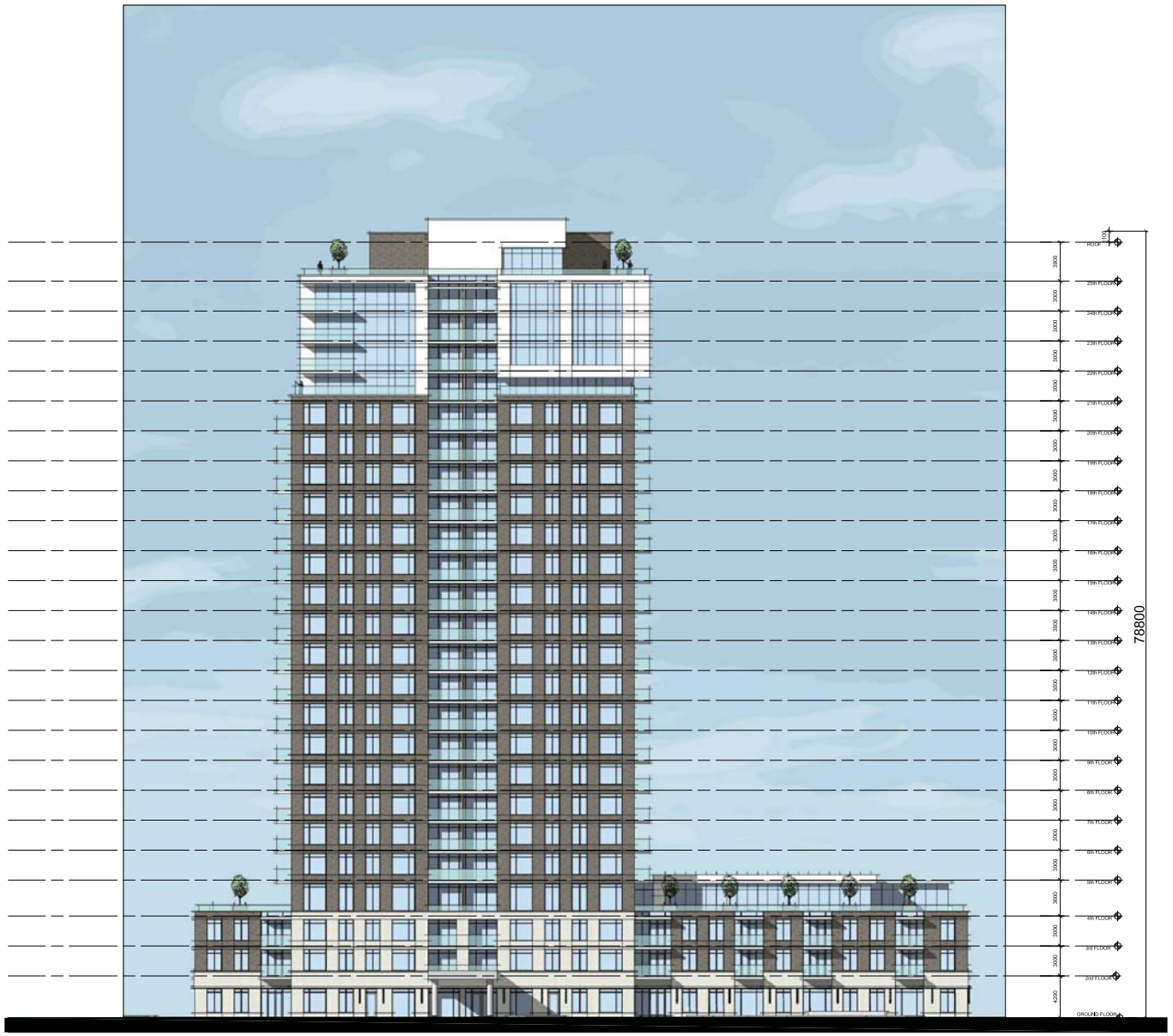
PLOT DATE: Monday, July 04, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 10

PROJ. # 2117



EAST ELEVATION

rla/architecture

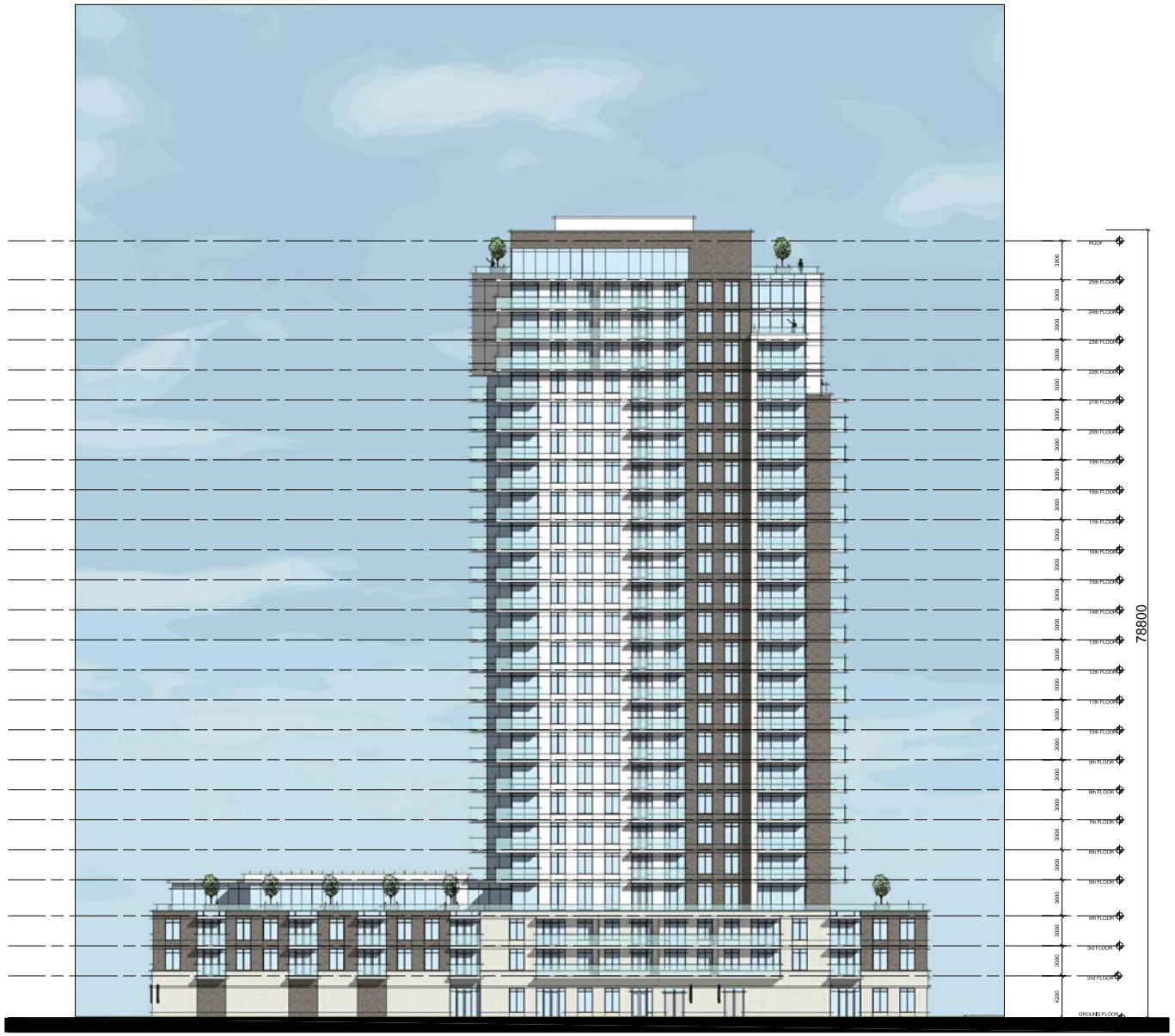
PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 11

PROJ. # 2117



WEST ELEVATION

rla/architecture

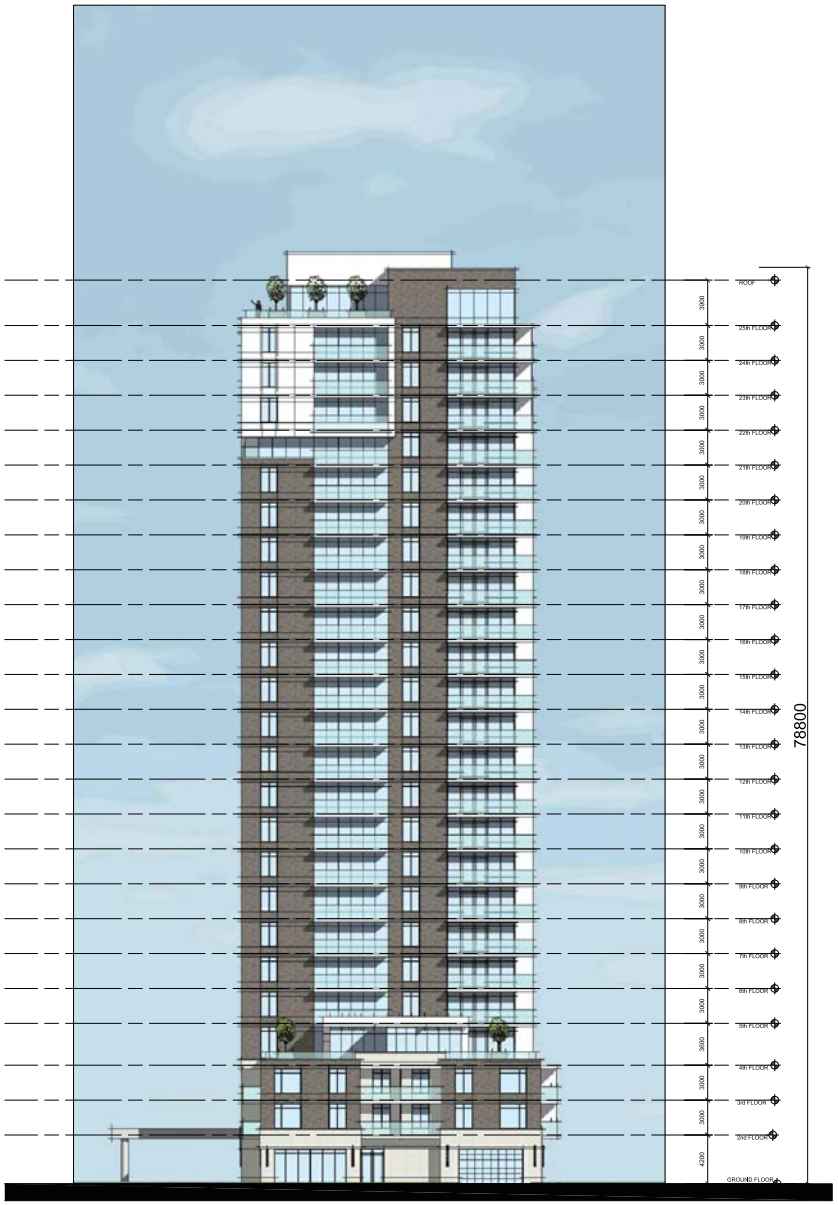
PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 12

PROJ. # 2117



NORTH ELEVATION

SOUTH ELEVATION

rla/architecture

PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 13

PROJ. # 2117

rla/architecture

PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 14

PROJ. # 2117

rla/architecture

PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 15

PROJ. # 2117

rla/architecture

PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 16

PROJ. # 2117

rla/architecture

PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 17

PROJ. # 2117

rla/architecture

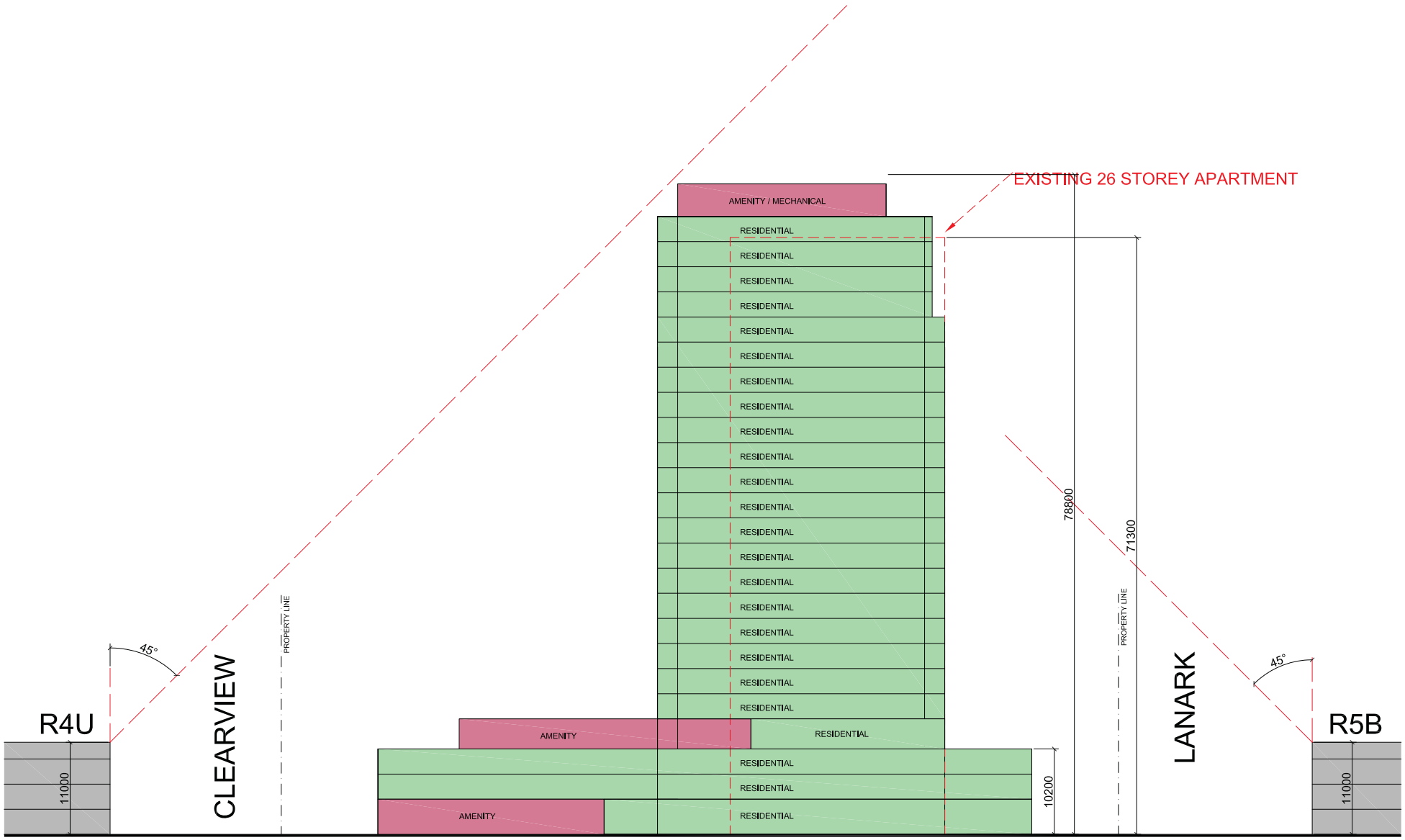
PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 18

PROJ. # 2117



STREET SECTION

rla/architecture

PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 19

PROJ. # 2117

OPTION ONE (PROPOSED OPTION)

OPTION TWO

rla/architecture

MASSING STUDY

PLOT DATE: Thursday, June 30, 2022

210 CLEARVIEW AVE.
OTTAWA ONTARIO

HOMESTEAD

SHEET # 20

PROJ. # 2117

APPENDIX D

Traffic Data and STAMSON Calculations

(5 Pages)

Table D1 - Summary of Traffic Data and Projections

	Lanark Avenue	Notes
AADT - Ultimate	8000	Table B1, City of Ottawa Environmental Noise Control Guidelines (ENCG)
Day Split	92%	92 / 8 %, City of Ottawa (ENCG)
Cars, 24 Hours	7040	88%, City of Ottawa (ENCG)
Medium Trucks, 24 Hours	560	7%, City of Ottawa (ENCG)
Heavy Trucks, 24 Hours	400	5%, City of Ottawa (ENCG)

Note: Other roads (e.g. Sir John A. MacDonald Parkway, Transitway, Scott Street and Island Park Drive) were not included in this assessment.

The rationale is that those roads are located at distances beyond 100 m setback for arterial/collector roads, LRT and BRT, as specified by the ENCG.

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STAMSON 5.0 NORMAL REPORT Date: 26-07-2022 14:41:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: lan_s.te Time Period: Day/Night 16/8 hours
Description: Road Traffic Noise Impact from Lanark Ave on the South Façade Windows

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: LanarkAve (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 : 20.00 / 20.00 m
Receiver height : 8.70 / 8.70 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: LanarkAve (day)

Source height = 1.50 m

ROAD (0.00 + 64.50 + 0.00) = 64.50 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	65.75	0.00	-1.25	0.00	0.00	0.00	0.00	64.50

Segment Leq : 64.50 dBA

Total Leq All Segments: 64.50 dBA

Results segment # 1: LanarkAve (night)

Source height = 1.50 m

ROAD (0.00 + 56.91 + 0.00) = 56.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	58.16	0.00	-1.25	0.00	0.00	0.00	0.00	56.91

Segment Leq : 56.91 dBA

Total Leq All Segments: 56.91 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.50
(NIGHT): 56.91

STAMSON 5.0 NORMAL REPORT Date: 31-07-2022 11:54:41
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: lan_sola.te Time Period: Day/Night 16/8 hours
Description: Road Traffic Noise Impact from Lanark Ave on the South Side OLA (4th Floor Roof Deck)

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: LanarkAve (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 : 21.50 / 21.50 m
Receiver height : 1.50 / 11.70 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 1.20 m
Barrier receiver distance : 1.50 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 10.20 m
Barrier elevation : 10.20 m
Reference angle : 0.00

Results segment # 1: LanarkAve (day)

Source height = 1.50 m

Barrier height for grazing incidence

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

```
       1.50 !        1.50 !        0.79 !        10.99

ROAD (0.00 + 57.81 + 0.00) = 57.81 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     90   0.00  65.75   0.00  -1.56   0.00   0.00   0.00  -6.38
57.81
-------------------------------------------------------------------------
---

Segment Leq : 57.81 dBA

Total Leq All Segments: 57.81 dBA

Results segment # 1: LanarkAve (night)
--------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       11.70 !        2.21 !        12.41

ROAD (0.00 + 56.59 + 0.00) = 56.59 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     90   0.00  58.16   0.00  -1.56   0.00   0.00   0.00  -3.54
53.05*
   -90     90   0.00  58.16   0.00  -1.56   0.00   0.00   0.00   0.00
56.59
-------------------------------------------------------------------------
---

 * Bright Zone !

Segment Leq : 56.59 dBA

Total Leq All Segments: 56.59 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 57.81
                           (NIGHT): 56.59
```

APPENDIX E

Warning Clauses

(1 Page)

Warning Clause Type A – From MECP NPC-300

“Purchasers/tenants are advised that sound levels due to increasing road 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.”

Warning Clause Type C – From MECP NPC-300

“This dwelling unit has been designed with the provision for adding central air conditioning at the occupant’s discretion. Installation of central air conditioning by the occupant in low and medium density developments 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.”

Warning Clause from ENCG:

Purchasers/tenants are advised that sound levels due to increasing road/rail/Light Rail/transitway traffic will interfere with outdoor activities as the sound levels exceed the sound level limits of the City and the Ministry of the Environment.

To help address the need for sound attenuation this development includes:

- multi-pane glass;
- double brick veneer;
- high sound transmission class walls.

To ensure that provincial sound level limits are not exceeded it is important to maintain these sound attenuation features.

This dwelling unit has been supplied with a central air conditioning system and other measures 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 City and the Ministry of the Environment.

APPENDIX F

Manufacturer Sound Data and Calculations

(Development Stationary Sources)

(5 Pages)

Baltimore Aircoil Company, Inc.

Closed Circuit Cooling Tower Selection Program

Version: 7.5.3 NA
Product data correct as of: March 03, 2017

Project Name:
Selection Name:
Project State/Province: Maryland
Project Country: United States
Date: May 05, 2017

Model Information

Product Line: VF1
Model: VF1-096-31Q
Number of Units: 1
Coil Type: Standard Coil
Coil Finning: None
Intake Option: None
Internal Option: None
Discharge Option: PCD w/ Tapered Discharge Hood
External Static Pressure: 0.00 in. of H2O

Fan Type: Standard Fan
Fan Motor: (1) 50.00 = 50.00 HP/Unit
Total Standard Fan Power: Full Speed, 50.00 BHP/Unit
Total Pump Motor Power: (1) 3.00 = 3.00 HP/Unit

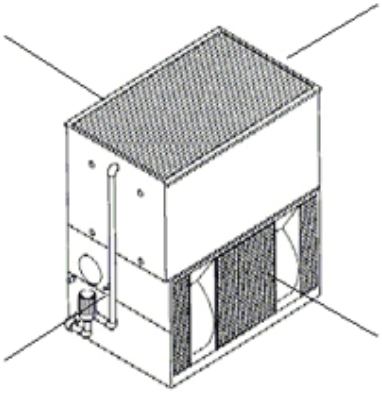
Octave band and A-weighted sound pressure levels (Lp) are expressed in decibels (dB) reference 0.0002 microbar. Sound power levels (Lw) are expressed in decibels (dB) reference one picowatt. Octave band 1 has a center frequency of 63 Hertz.

Top Lp
Sound Pressure (dB)

Octave Band	Distance 5 ft.	Distance 50 ft.
1	78	62
2	78	63
3	77	61
4	78	62
5	77	61
6	74	58
7	70	54
8	68	51
A-wgtd	**81**	**65**

Back Lp
Sound Pressure (dB)

Octave Band	Distance 5 ft.	Distance 50 ft.
1	73	60
2	71	60
3	69	55
4	66	55
5	67	53
6	65	49
7	59	44
8	59	39
A-wgtd	**72**	**58**



End Lp
Sound Pressure (dB)

Octave Band	Distance 5 ft.	Distance 50 ft.
1	77	65
2	71	61
3	68	56
4	68	56
5	68	54
6	63	50
7	59	46
8	55	41
A-wgtd	**72**	**59**

Connection End Lp
Sound Pressure (dB)

Octave Band	Distance 5 ft.	Distance 50 ft.
1	77	65
2	72	61
3	71	56
4	69	56
5	69	54
6	66	50
7	62	46
8	58	41
A-wgtd	**73**	**59**

Air Inlet Lp
Sound Pressure (dB)

Octave Band	Distance 5 ft.	Distance 50 ft.
1	79	66
2	75	65
3	76	63
4	76	62
5	76	60
6	74	57
7	72	54
8	67	49
A-wgtd	**81**	**65**

Sound Power (dB)

Octave Band	Center Frequency (Hertz)	Lw
1	63	96
2	125	94
3	250	91
4	500	91
5	1000	90
6	2000	87
7	4000	83
8	8000	79

INT_CT (with calculations)

Note: The use of frequency inverters (variable frequency drives) can increase sound levels.

Cooling Tower PWL Calculations - INT_CT

	31.5	63	125	250	500	1000	2000	4000	8000	dBA	Note
Air Inlet Measured SPL, dB		79	75	76	76	76	74	72	67		Provided by Manufacturer
Surface Area, m2		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		Based on AutoCAD Drawing
CT_Air - Sound Power Level, dB		**87**	**83**	**84**	**84**	**84**	**82**	**80**	**75**	**89**	
Back Side Measured SPL, dB		73	71	69	66	67	65	59	59		Provided by Manufacturer
Surface Area, m2		14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7		Based on AutoCAD Drawing
CT_Back - Sound Power Level, dB		**85**	**83**	**81**	**78**	**79**	**77**	**71**	**71**	**83**	
End Side Measured SPL, dB		77	71	68	68	68	63	59	55		Provided by Manufacturer
Surface Area, m2		9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5		Based on AutoCAD Drawing
CT_End - Sound Power Level, dB		**87**	**81**	**78**	**78**	**78**	**73**	**69**	**65**	**81**	
Motor Side Measured SPL, dB		77	72	71	69	69	66	62	58		Provided by Manufacturer
Surface Area, m2		9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5		Based on AutoCAD Drawing
CT_Motor - Sound Power Level, dB		**87**	**82**	**81**	**79**	**79**	**76**	**72**	**68**	**83**	
Top Side Measured SPL, dB		78	78	77	78	77	74	70	68		Provided by Manufacturer
Surface Area, m2		6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3		Based on AutoCAD Drawing
CT_Top - Sound Power Level, dB		**86**	**86**	**85**	**86**	**85**	**82**	**78**	**76**	**89**	

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Exhaust Sound Power Level Calculations

1. Garage Exhaust Fans - INT_EF1 and EF2

Fan Type	Centrifugal
Flow Rate, m3/s	8.9
Static Pressure, in.wc.	0.75

	63	125	250	500	1000	2000	4000	8000	LwA	Notes
Specific Sound Power Level	35	35	34	32	31	26	18	10		Noise Control for Buildings, Table 7-13
Flow and Pressure Corrections	40	40	40	40	40	40	40	40		
Blade Passage Correction	0	0	3	0	0	0	0	0		BP Inc = 3 at 250Hz
Efficiency Correction	5	5	5	5	5	5	5	5		80% efficiency assumed
Fan Outlet PWL	**80**	**80**	**82**	**77**	**76**	**71**	**63**	**55**	**80.6**	

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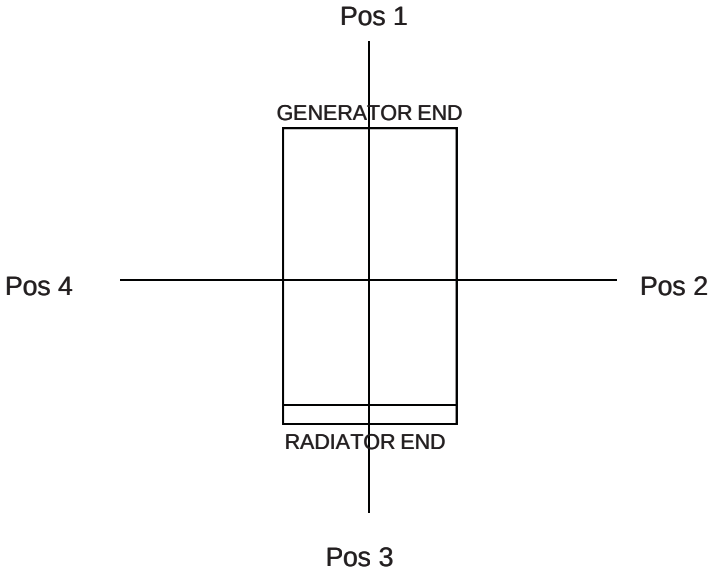
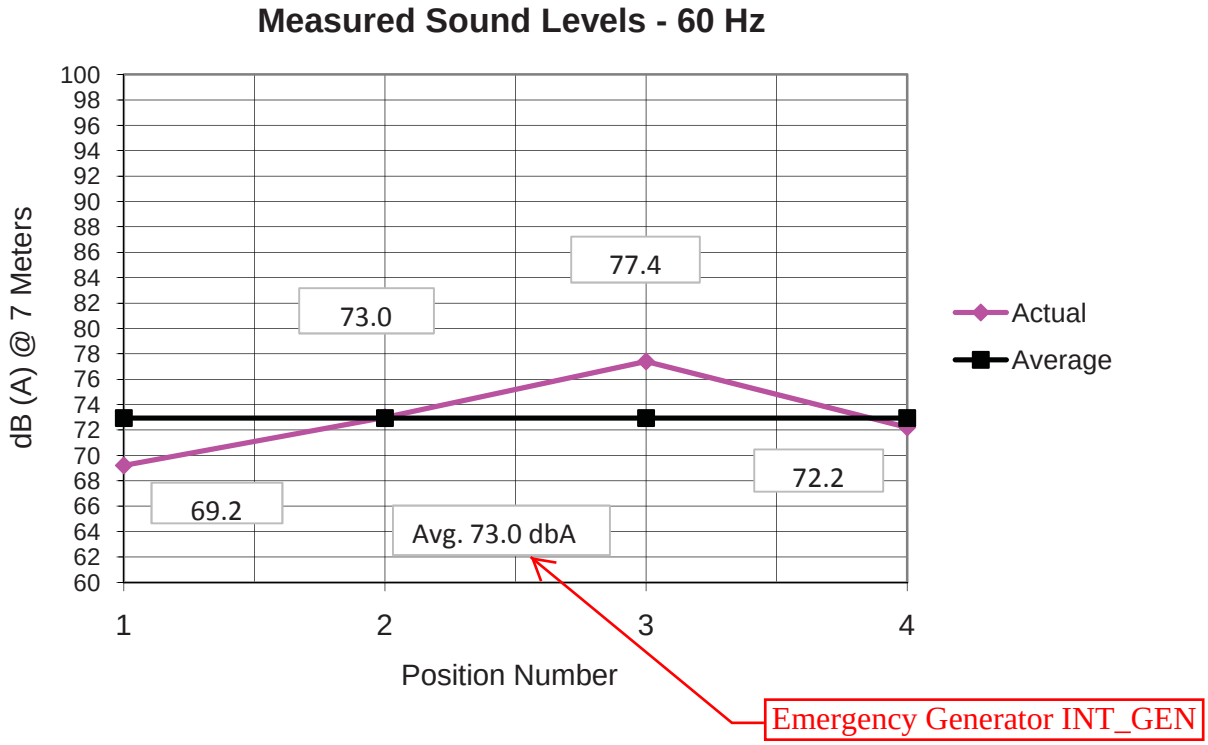
GENERAC POWER SYSTEMS INC.
Estimated Sound Performance

SG175 - 13.3L Hino
Level 2A Sound Attenuated Enclosure





Notes:
1. All positions 23 ft (7M) from center of generator.
2. Generator operating at full load.
3. Tests are conducted on a 100 foot diameter asphalt surface.

DATA SUBJECT TO CHANGE WITHOUT NOTICE

EngA ENGINEERED AIR

SUPPLY AIR FAN PERFORMANCE

JOB NAME: Barrett Court Condo # 2 JOB NO: (N-3796)

CUSTOMER: Veeda Inc

ENGINEER: Jain & Associates

EngA MODEL: LM15/C/O QTY: 1 TAG: MUA-1

AIRFLOW 15220 CFM E.S.P. 1.5 in.w.c. FAN MANUFACTURER LAU INDUSTRIES

FANSIZE 25/25 FC DIDW QTY. 1

TSP 2.8 in.w.c. RPM 653 REQ'D POWER 10.88 BHP

MOTOR SIZE 15 HP ODP (1750) INLET VANES NO

SOUND POWER DATA

Hz	63	125	250	500	1000	2000	4000	8000
db:	92	89	86	86	81	80	75	69

Make-up Air Unit
INT_MAU