September 14, 2021

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
100 Weeping Willow Lane, Ottawa, ON
Pinchin File: 293160

Pinchin Ltd. (Pinchin) was retained by Homestead Land Holdings Limited (Client) to prepare a noise impact study report of its proposed residential development (Development) at 100 Weeping Willow Lane, Ottawa, ON. This report has been prepared to evaluate the noise impacts from the road traffic on the Development and the Development on nearby noise sensitive receptors. The purpose of the study is to support the re-zoning application for the proposed Development.

The proposed development will include the construction of one residential building. The building will include one level of underground parking, nine 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 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, the noise criteria outlined in the City of Ottawa's Environmental Noise Control Guidelines (Guide) [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 that have been provided. 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).

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 road traffic on the Development, four onsite noise sensitive receptors (ON-R1, ON-OLA1, ON-OLA2, and ON-OLA3) were selected from the Development's most affected locations. Receptor ON-R1 represents the ninth floor windows on the east façade, facing Teron Road. Receptor ON-OLA1 represents the rooftop terrace at the northeast corner of the building. Receptor ON-OLA2 represents the amenity space windows on the penthouse level. Receptor ON-OLA3 represents an outdoor living area (pool) on the ground level. The following table lists the selected receptor details:

Point of Reception ID	Point of Reception Location	Point of Reception Height, m
ON-R1	East Façade, 9th Floor Windows	26.1
ON-OLA1	Rooftop Terrace	29.1
ON-OLA2	Amenity Space Windows, Penthouse Level	29.1
ON-OLA3	Ground Level OLA (Pool)	1.5

Locations of the selected receptors are shown in Figure 2, 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 no significant stationary sources (e.g. industrial and commercial operations) within 100 m of the proposed Development. In accordance with the City's Environmental Noise Control Guidelines, the potential noise impact (if any) from external stationary sources has been deemed insignificant.

March Road is located to the northeast of the Development approximately 390 m away. Since the distance is greater than the required setback of 250 m for an existing or proposed highway, the noise impact from March Road on the Development was deemed insignificant.

Highway 417 is located to the southeast of the Development, approximately 1,700 m away. Since the distance is greater than the required setback of 500 m for 400 series freeways, the noise impact from Highway 417 on the Development was deemed insignificant.

A CN railway line is located to the north of the Development approximately 840 m away. Since the distance is greater than the maximum setback of 500 m for principal main lines, the noise/vibration impact from the CN railway line on the Development was deemed insignificant.

The proposed Development is located approximately 16 km to the west 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 11 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.

3.2 Noise Impact from the Development on Nearby Sensitive Receptors

At the time this report was prepared, detailed mechanical equipment information associated with the Development was not available. As such, the noise impact from the Development on nearby sensitive receptors could not be evaluated. It is therefore suggested that, once the information is available, which is traditionally at the time of the site plan application, Pinchin will review the equipment acoustical information. If significant noise impact is anticipated, this noise impact study report will be updated accordingly.

3.3 Noise Impact from Transportation Sources on the Development

A review of aerial photos shows that there is one roadway in proximity to the Development: Teron Road to the east of the Development.

The AADT volume for Teron Road was calculated from Turning Movement Count (TMC) report at the intersection of Beaverbrook Road and Penfield Drive North. The TMC study was commissioned by the City of Ottawa in March 2020. The AADT volume was projected to year 2032, with an annual increase of 2.5%. This growth rate is in line with other studies in the nearby areas. Breakdowns of commercial vehicles were also determined based on the City's Guidelines.

Traffic noise impact was predicted using the MECP computer program STAMSON (Version 5.04) [3]. STAMSON uses the traffic volumes for the road and basic topographical information for the site in its calculations. The program accounts for adjustments in sound levels with vehicle volume, distance, finite segment, pavement surface, and acoustical shielding. Details of traffic data and STAMSON calculations are included in Appendix D.

The traffic noise impact prediction results are provided in Table 1, Appendix A.

In summary, the predicted traffic noise impacts range from 43 dBA to 54 dBA at the selected onsite receptors. The predicted traffic noise impact indicates that no special noise control measures are required on the building components. Construction of all building components meeting the Ontario Building Code (OBC) requirements will be sufficient to provide the required noise attenuation so that the indoor noise

levels will meet the applicable MECP guideline limits. Warning clauses are not required for the proposed Development.

Consequently, it is our opinion that the traffic noise impacts are in compliance with the MECP noise guidelines.

4.0 CONCLUSIONS

A detailed noise assessment of the proposed Development was completed by modelling the noise impact from road traffic on the Development. The assessment and review show that the traffic noise impacts meet the NPC-300 noise criteria.

Once information on the significant noise sources (if any) associated with the Development is available, which is traditionally at the time of the site plan application, the information should be reviewed by an acoustical consultant.

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.

Prepared by:

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Senior Project Engineer
(647) 287-1677
wli@pinchin.com

Reviewed by:

Aidan Maher, P.Eng.
Senior Project Manager
(416) 271-9333
amaher@pinchin.com

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),

APPENDIX A

Table

(1 Page)

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]	Noise Control Measures [3]
ON-R1	East Façade, 9th Floor Windows	26.1	54	46	None
ON-OLA1	Rooftop Terrace	29.1	54	-	None
ON-OLA2	Amenity Space Windows, Penthouse Level	29.1	54	-	None
ON-OLA3	Ground Level OLA (Pool)	1.5	43	-	None

Notes

-. Road traffic noise impacts from Teron Road on the most affected facades and outdoor living areas.

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

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

3. None: noise control measures and/or warning clauses are not required.

APPENDIX B

Figures

(3 Pages)

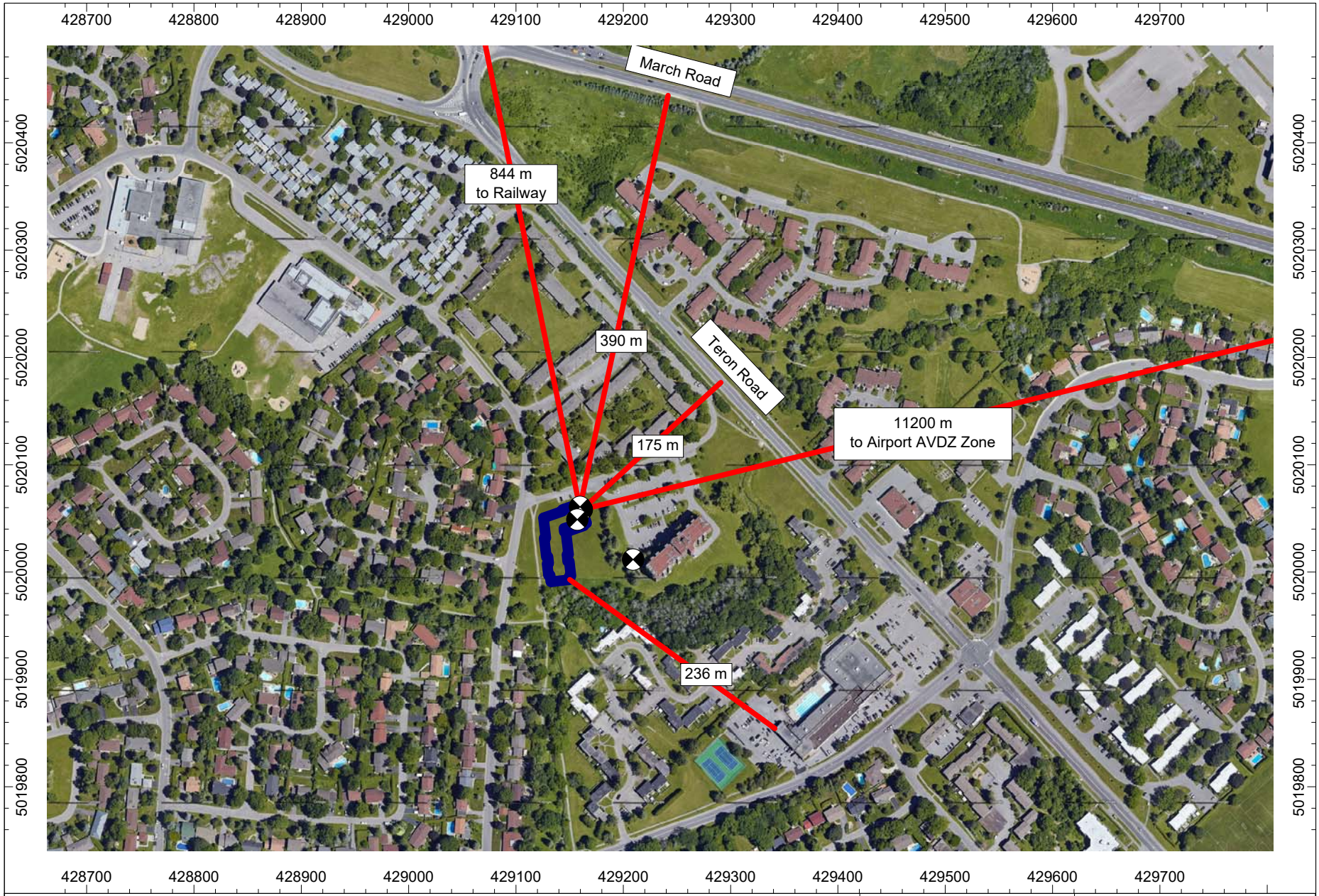


Figure 1 - Scaled Area Plan, Showing Proposed Development and Roads

N

Drawn by: WNL	
Scale: 1:5,000	
Date: September 14, 2021	

Homestead Land Holdings Limited, 100 Weeping Willow Lane, Ottawa, ON

Pinchin Project: 293160

PINCHIN

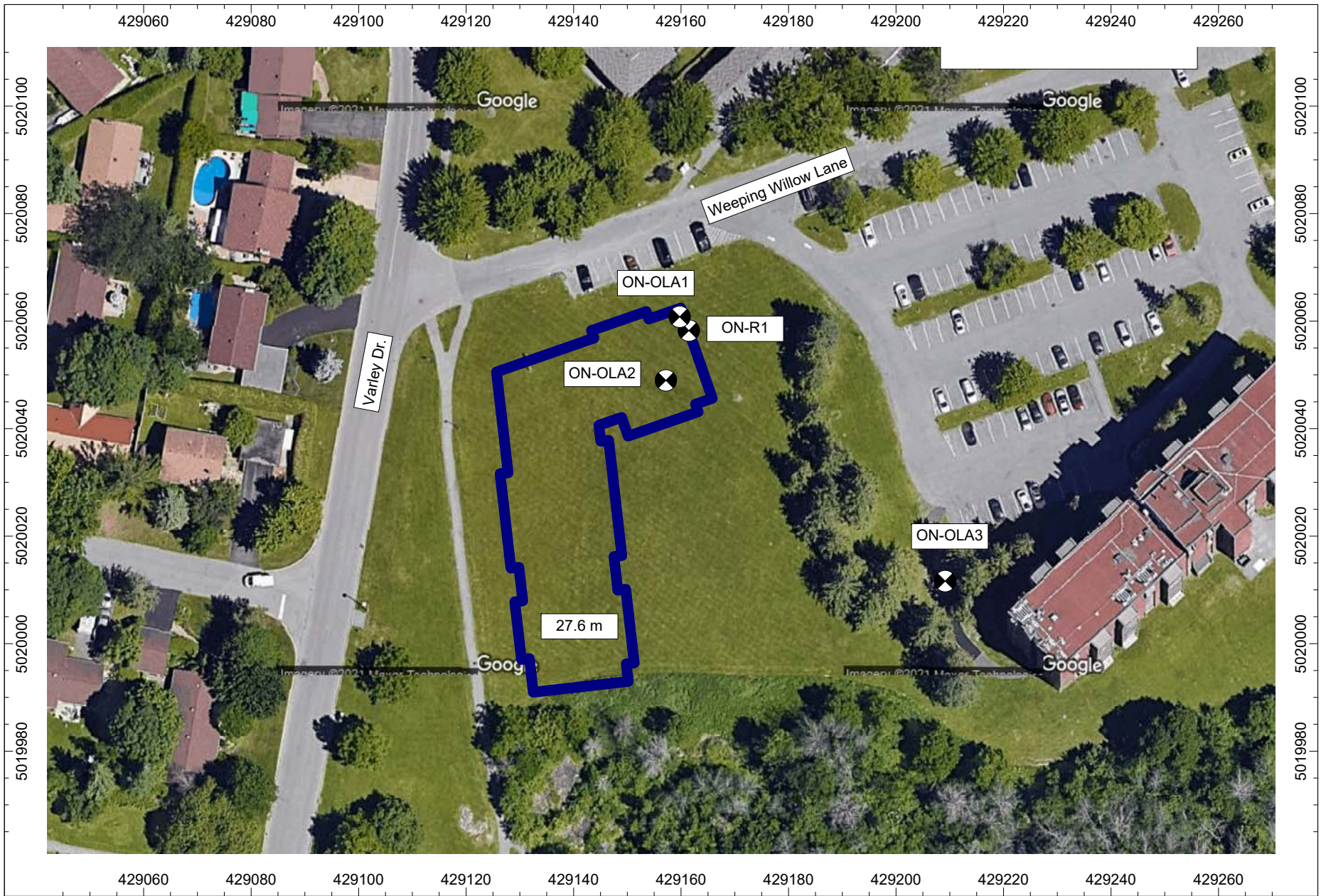


Figure 2 - Site Plan, Showing Onsite Receptors

N

Drawn by: WNL

Scale: 1:1,000

Date: September 14, 2021

Homestead Land Holdings Limited, 100 Weeping Willow Lane, Ottawa, ON

Pinchin Project: 293160

PINCHIN

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

Development

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

APPENDIX C

Additional Drawings

(10 Pages)

SITE INFO.

SITE AREA	32188.4 sq. m.
EXISTING ZONING	
AREA A	R5A(1533) H(20) S331
AREA B	R5A(1533) H(30) S331
GROSS FLOOR AREA (ZONING DEFINITION)	
EXISTING APARTMENT	7180 SQ.M.
EXISTING RESIDENTIAL UNITS	85
EXISTING OUTDOOR PARKING	102

PROJECT INFO.

BUILDING HEIGHT	9 STOREY
GROSS FLOOR AREA (ZONING DEFINITION)	11391.2 SQ.M.
RESIDENTIAL UNITS	142
ONE BEDROOM	46
TWO BEDROOM	96
CAR PARKING	
ZONING REQUIRED (1.2+0.2)	199
PROVIDED	199
BICYCLE PARKING	
ZONING REQUIRED (0.5)	71
PROVIDED	103
AMENITY SPACE	
ZONING REQUIRED (6 SQ.M. PER UNITS)	852 SQ.M.
MIN. COMMUNAL	426 SQ.M.
PROVIDED COMMUNAL	1271 SQ.M.
LANDSCAPE AREA	67.6%
FSI (EXISTING + PROPOSED)	0.58

BUILDING SETBACK

FROM WEEPING WILLOW	6 M
FROM EXISTING TRAIL	6 M
FROM VARLEY	FROM MIN. 9.85 M TO MAX. 25.79 M

SITE PLAN

rla / architecture

Zoning Amendment

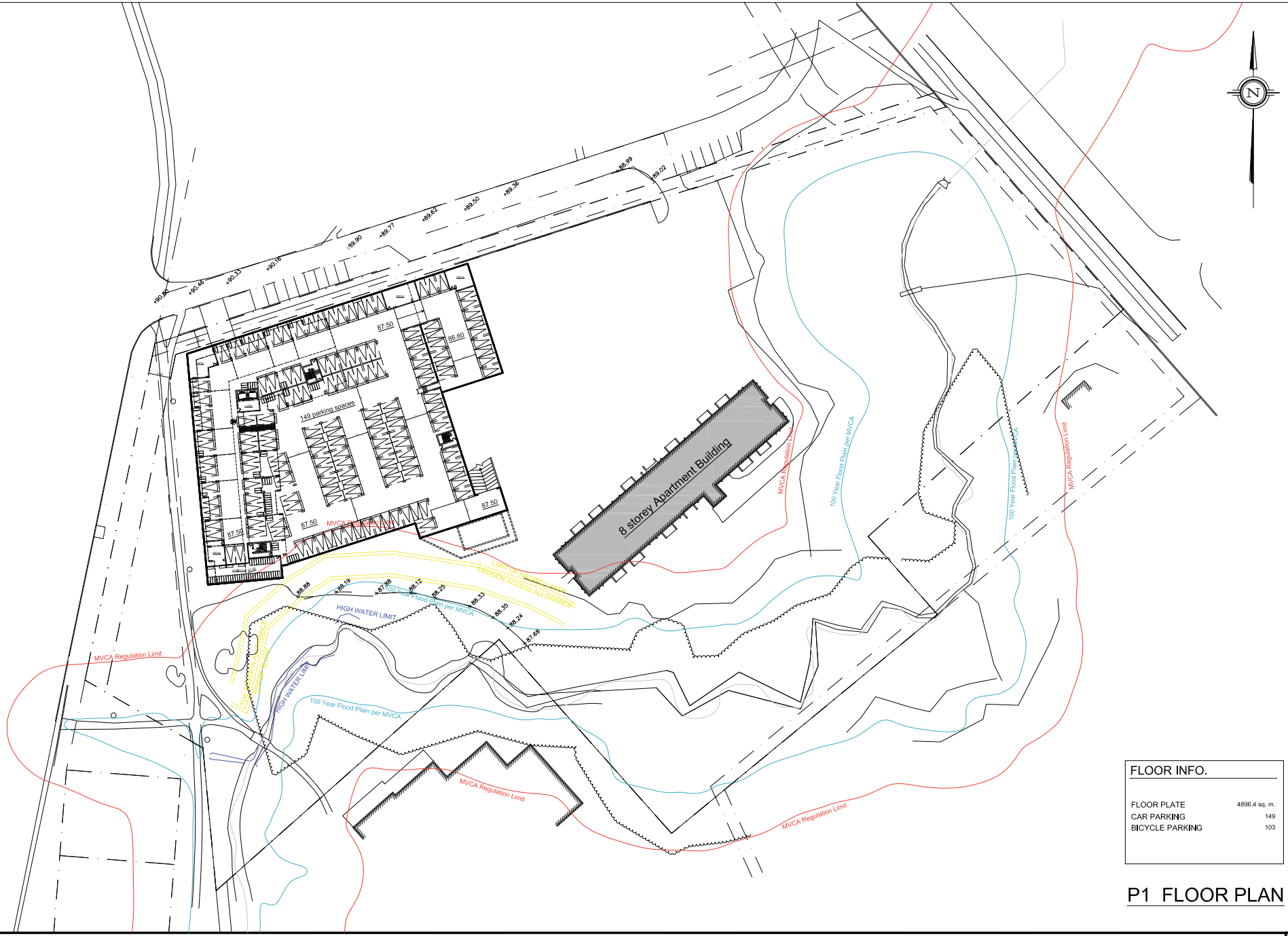
PLOT DATE: Friday, August 20, 2021

100 VARLEY DRIVE
OTTAWA ONTARIO

HOMESTEAD

SHEET # 01

PROJ. # 1813



FLOOR INFO.	
FLOOR PLATE	4896.4 sq. m.
CAR PARKING	149
BICYCLE PARKING	103

P1 FLOOR PLAN

rla / architecture

Zoning Amendment

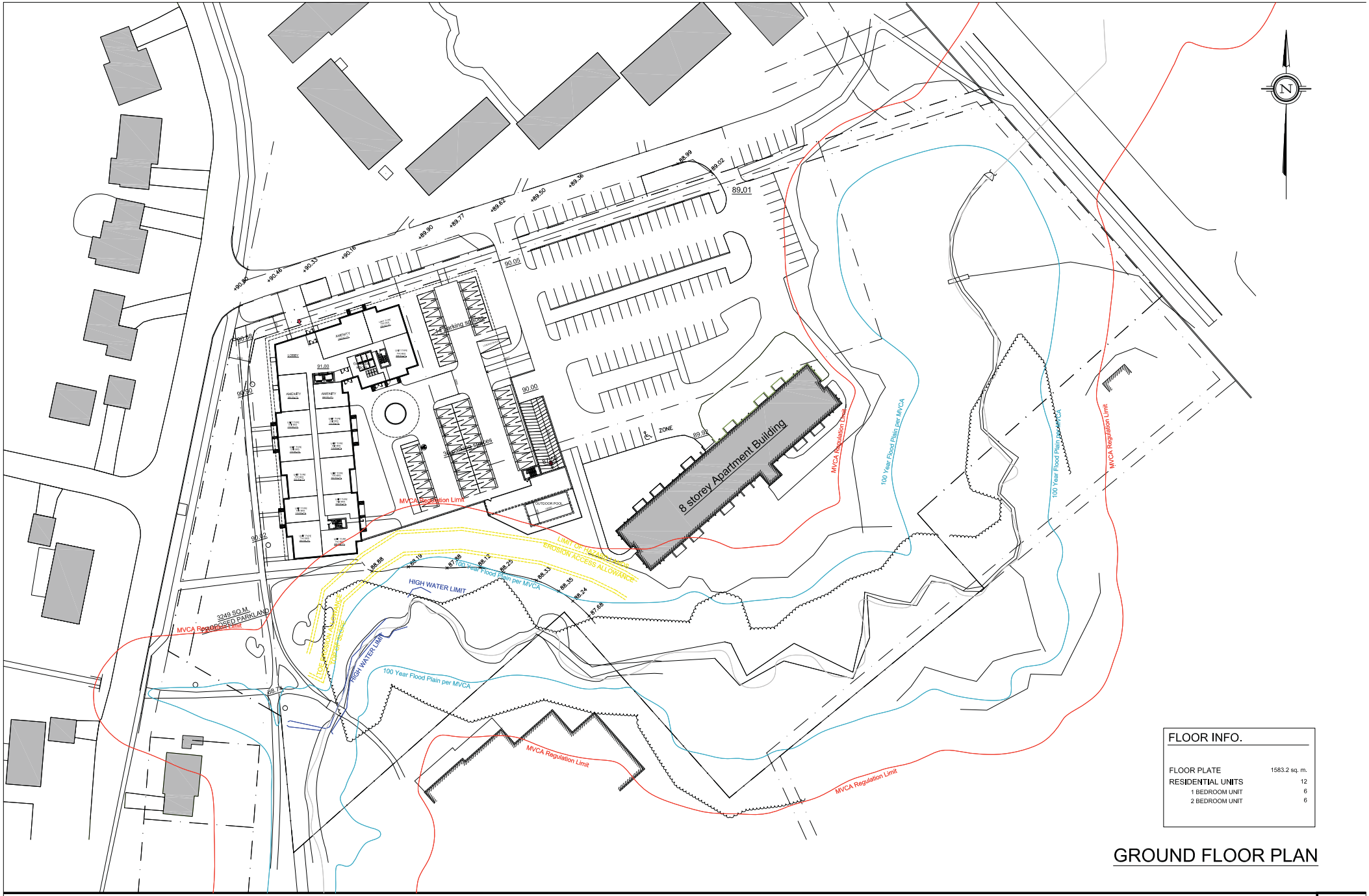
PLOT DATE: Friday, August 20, 2021

100 VARLEY DRIVE
OTTAWA ONTARIO

HOMESTEAD

SHEET # 02

PROJ. # 1813



FLOOR INFO.	
FLOOR PLATE	1583.2 sq. m.
RESIDENTIAL UNITS	12
1 BEDROOM UNIT	6
2 BEDROOM UNIT	6

GROUND FLOOR PLAN

rla / architecture

Zoning Amendment

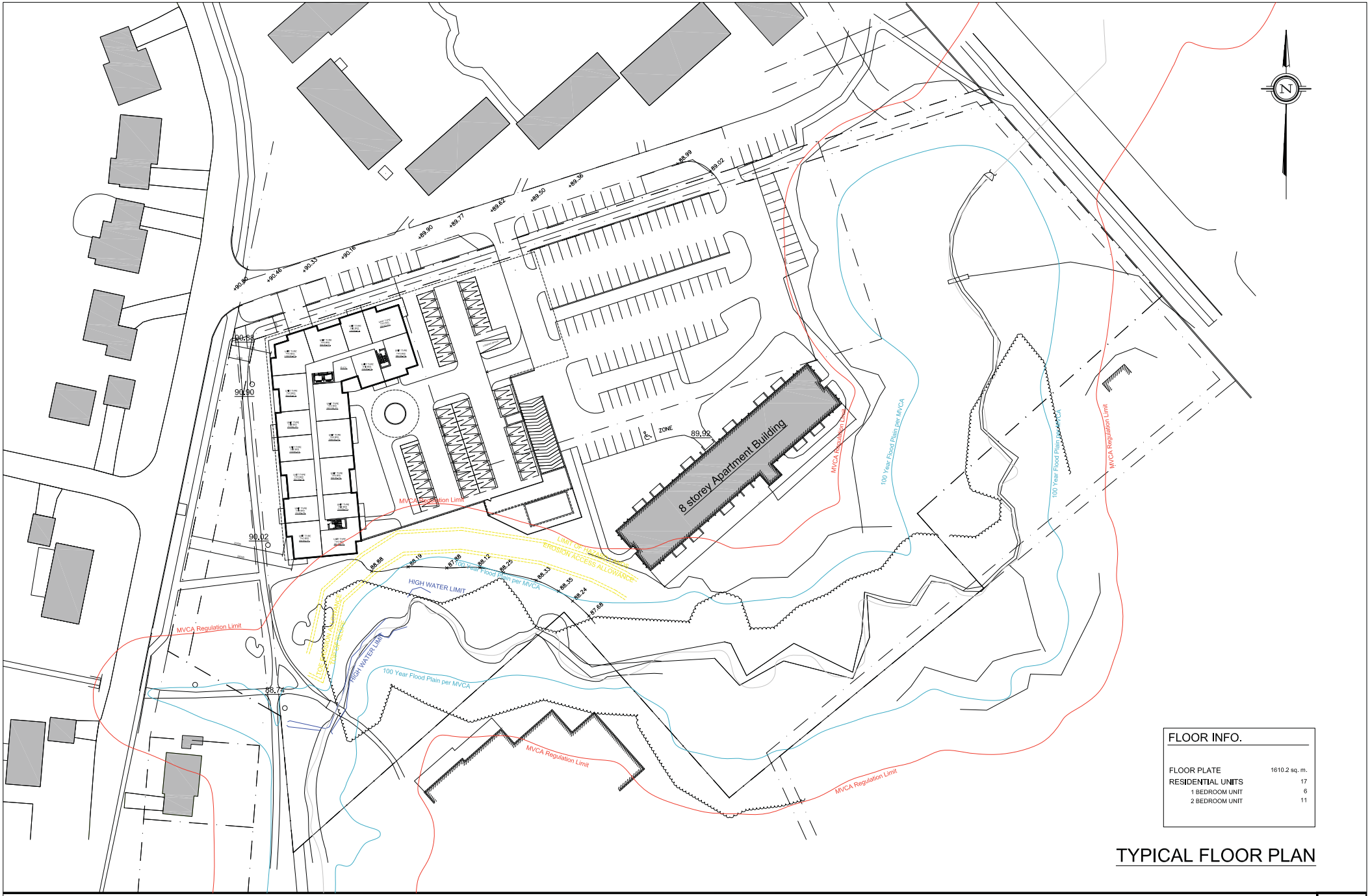
PLOT DATE: Monday, August 16, 2021

1 0 0 V A R L E Y D R I V E
OTTAWA ONTARIO

HOMESTEAD

SHEET # 03

PROJ. # 1813



FLOOR INFO.	
FLOOR PLATE	1610.2 sq. m.
RESIDENTIAL UNITS	17
1 BEDROOM UNIT	6
2 BEDROOM UNIT	11

TYPICAL FLOOR PLAN

rla / architecture

Zoning Amendment

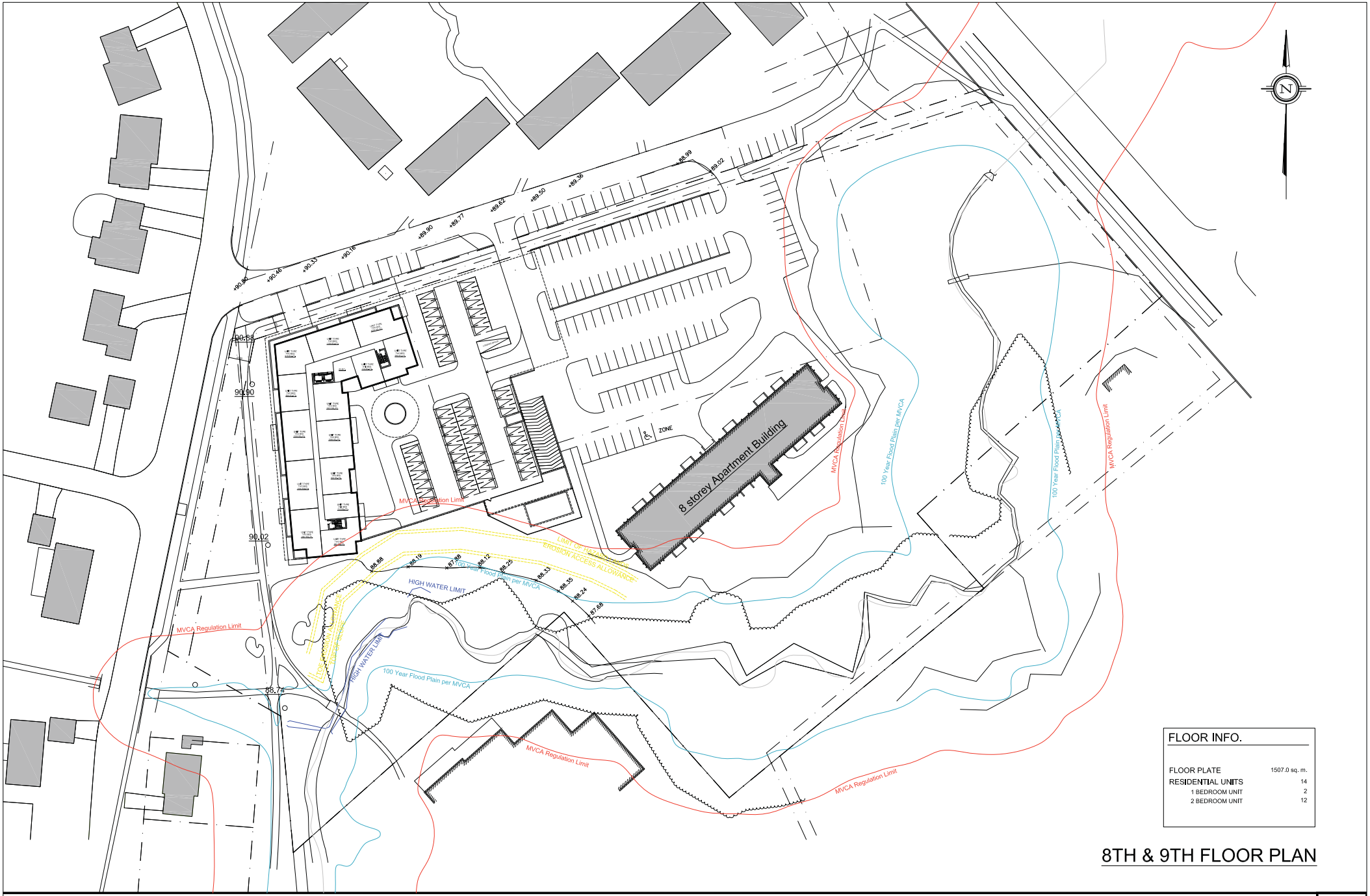
PLOT DATE: Friday, August 20, 2021

1 0 0 V A R L E Y D R I V E
OTTAWA ONTARIO

HOMESTEAD

SHEET # 04

PROJ. # 1813



FLOOR INFO.	
FLOOR PLATE	1507.0 sq. m.
RESIDENTIAL UNITS	14
1 BEDROOM UNIT	2
2 BEDROOM UNIT	12

8TH & 9TH FLOOR PLAN

rla / architecture

Zoning Amendment

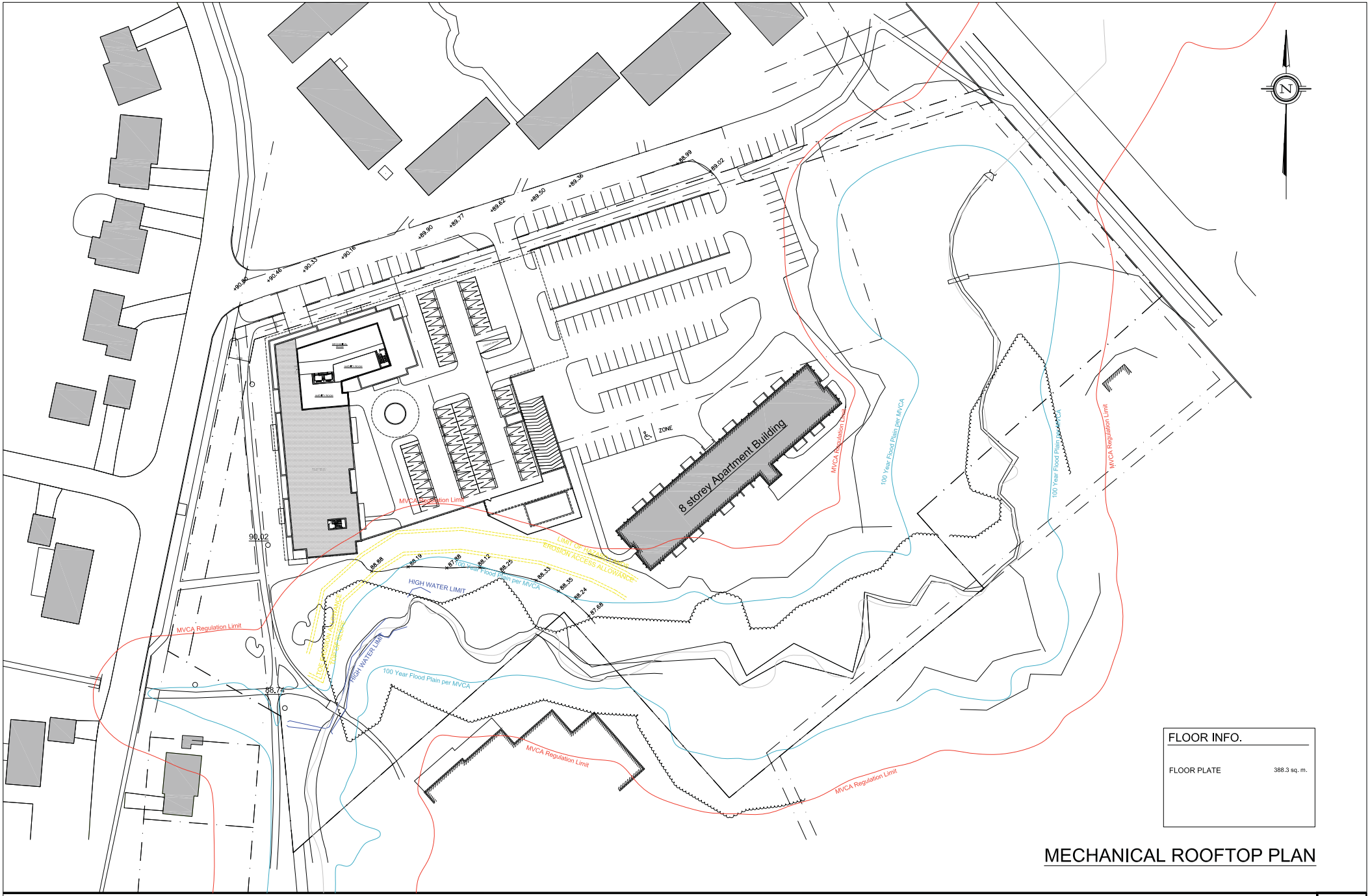
PLOT DATE: Friday, August 20, 2021

100 VARLEY DRIVE
OTTAWA ONTARIO

HOMESTEAD

SHEET # 05

PROJ. # 1813



FLOOR INFO.	
FLOOR PLATE	388.3 sq. m.

MECHANICAL ROOFTOP PLAN

rla / architecture

Zoning Amendment

PLOT DATE: Friday, August 20, 2021

100 VARLEY DRIVE
OTTAWA ONTARIO

HOMESTEAD

SHEET # 06

PROJ. # 1813

WEST ELEVATION (VARLEY)

rla / architecture

Zoning Amendment

PLOT DATE: Wednesday, May 26, 2021

100 VARLEY DRIVE

OTTAWA ONTARIO

HOMESTEAD

SHEET # 07

PROJ. # 1813

NORTH ELEVATION

rla/architecture

Zoning Amendment

PLOT DATE: Wednesday, May 26, 2021

100 VARLEY DRIVE
OTTAWA ONTARIO

HOMESTEAD

SHEET # 08

PROJ. # 1813

EAST ELEVATION

rla / architecture

Zoning Amendment

PLOT DATE: Wednesday, May 26, 2021

100 VARLEY DRIVE

OTTAWA ONTARIO

HOMESTEAD

SHEET # 09

PROJ. # 1813

SOUTH ELEVATION

rla / architecture

Zoning Amendment

PLOT DATE: Wednesday, May 26, 2021

100 VARLEY DRIVE

OTTAWA ONTARIO

HOMESTEAD

SHEET # 10

PROJ. # 1813

APPENDIX D

Traffic Data and STAMSON Calculations

(11 Pages)

Table D1 - Summary of Traffic Data and Projections

	Teron Road	Notes
AADT - Year 2020	8524	From Turning Movement Count (TMC) report
Annual Growth	2.5%	Typical growth rate
Years of Growth	12	Projected to year 2032
AADT - 2032	11464	Projected to year 2032
Day Split	92%	As per the City of Ottawa Environmental Noise Control Guidelines
Cars	10891	95% for cars, based on TMC report
Medium Trucks	335	A 7:5 medium/heavy truck ratio, as per the City of Ottawa Environmental Noise Control Guidelines
Heavy Trucks	238	A 7:5 medium/heavy truck ratio, as per the City of Ottawa Environmental Noise Control Guidelines

Transportation Services - Traffic Services

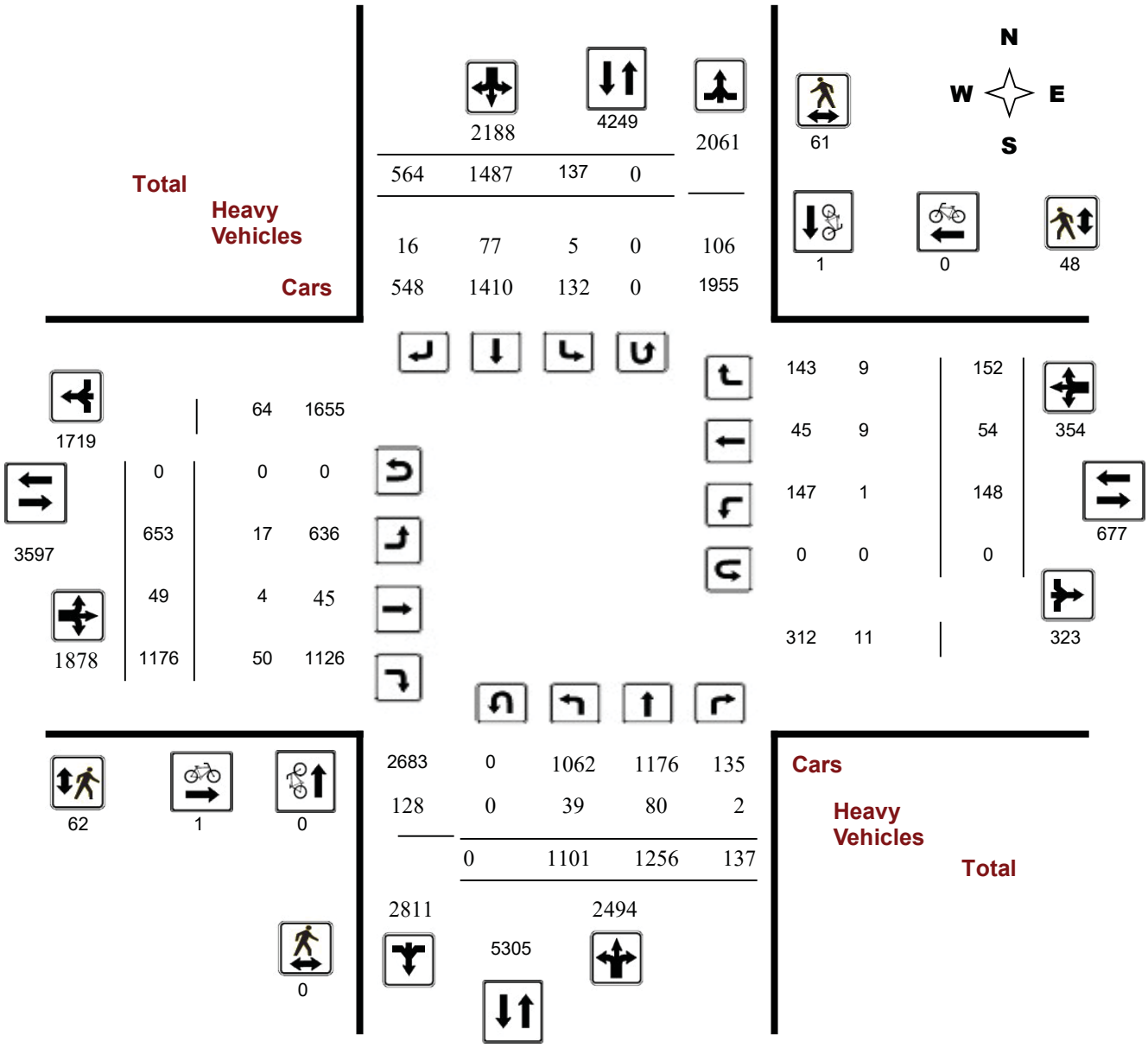
Turning Movement Count - Study Results

TERON RD @ BEAVERBROOK RD/PENFIELD DR N

Survey Date: Tuesday, March 10, 2020
Start Time: 07:00

WO No: 39593
Device: Miovision

Full Study Diagram



5479343 - MAR 10 2020 - 8HRS - LORETTA

Transportation Services - Traffic Services

Turning Movement Count - Study Results

TERON RD @ BEAVERBROOK RD/PENFIELD DR N

Survey Date: Tuesday, March 10, 2020 **WO No:** 39593

Start Time: 07:00 **Device:** Miovision

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, March 10, 2020

Total Observed U-Turns

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor

1.00

	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	71	148	7	**226**	8	75	36	**119**	**345**	113	4	152	**269**	21	9	28	**58**	**327**	**672**
08:00 09:00	197	320	9	**526**	16	144	39	**199**	**725**	142	11	189	**342**	23	13	30	**66**	**408**	**1133**
09:00 10:00	98	168	7	**273**	10	84	41	**135**	**408**	79	4	167	**250**	12	4	25	**41**	**291**	**699**
11:30 12:30	85	99	18	**202**	24	185	49	**258**	**460**	56	2	103	**161**	18	6	18	**42**	**203**	**663**
12:30 13:30	90	122	18	**230**	11	129	56	**196**	**426**	50	3	99	**152**	15	0	9	**24**	**176**	**602**
15:00 16:00	164	147	22	**333**	24	177	83	**284**	**617**	66	8	147	**221**	22	9	20	**51**	**272**	**889**
16:00 17:00	205	121	26	**352**	22	333	133	**488**	**840**	75	5	186	**266**	18	6	14	**38**	**304**	**1144**
17:00 18:00	191	131	30	**352**	22	360	127	**509**	**861**	72	12	133	**217**	19	7	8	**34**	**251**	**1112**
Sub Total	1101	1256	137	**2494**	137	1487	564	**2188**	**4682**	653	49	1176	**1878**	148	54	152	**354**	**2232**	**6914**
U Turns	0			**0**	0			**0**	**0**	**0**			**0**	0			**0**	**0**	**0**
Total	1101	1256	137	**2494**	137	1487	564	**2188**	**4682**	653	49	1176	**1878**	148	54	152	**354**	**2232**	**6914**
EQ 12Hr	1530	1746	190	**3466**	190	2067	784	**3041**	**6507**	908	68	1635	**2611**	206	75	211	**492**	**3103**	**9610**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	1530	1746	190	**3466**	190	2067	784	**3041**	**6507**	908	68	1635	**2611**	206	75	211	**492**	**3103**	**9610**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**1.00**					
AVG 24Hr	2004	2287	249	**4540**	249	2708	1027	**3984**	**8524**	1189	89	2142	**3420**	270	98	276	**644**	**4064**	**12588**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

AADT (2020)

STAMSON 5.0 NORMAL REPORT Date: 30-08-2021 11:02:36
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: wp_e.te Time Period: Day/Night 16/8 hours
Description: Road Traffic Noise Impact at Receptor ON-R1

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

Car traffic volume : 10019/871 veh/TimePeriod *
Medium truck volume : 308/27 veh/TimePeriod *
Heavy truck volume : 219/19 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): 8524
Percentage of Annual Growth : 2.50
Number of Years of Growth : 12.00
Medium Truck % of Total Volume : 2.92
Heavy Truck % of Total Volume : 2.08
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Teron (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 175.00 / 175.00 m
Receiver height : 26.10 / 26.10 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Teron (day)

Source height = 1.20 m

ROAD (0.00 + 53.90 + 0.00) = 53.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	64.57	0.00	-10.67	0.00	0.00	0.00	0.00	53.90

Segment Leq : 53.90 dBA

Total Leq All Segments: 53.90 dBA

Results segment # 1: Teron (night)

Source height = 1.20 m

ROAD (0.00 + 46.30 + 0.00) = 46.30 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	56.97	0.00	-10.67	0.00	0.00	0.00	0.00	46.30

Segment Leq : 46.30 dBA

Total Leq All Segments: 46.30 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.90
(NIGHT): 46.30

STAMSON 5.0 NORMAL REPORT Date: 30-08-2021 11:04:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: wp_ola1.te Time Period: Day/Night 16/8 hours
Description: Road Traffic Noise Impact at Receptor ON-OLA1

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

Car traffic volume : 10019/871 veh/TimePeriod *
Medium truck volume : 308/27 veh/TimePeriod *
Heavy truck volume : 219/19 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): 8524
Percentage of Annual Growth : 2.50
Number of Years of Growth : 12.00
Medium Truck % of Total Volume : 2.92
Heavy Truck % of Total Volume : 2.08
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Teron (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 175.00 / 175.00 m
Receiver height : 29.10 / 29.10 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Teron (day)

Source height = 1.20 m

ROAD (0.00 + 53.90 + 0.00) = 53.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	64.57	0.00	-10.67	0.00	0.00	0.00	0.00	53.90

Segment Leq : 53.90 dBA

Total Leq All Segments: 53.90 dBA

Results segment # 1: Teron (night)

Source height = 1.20 m

ROAD (0.00 + 46.30 + 0.00) = 46.30 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	56.97	0.00	-10.67	0.00	0.00	0.00	0.00	46.30

Segment Leq : 46.30 dBA

Total Leq All Segments: 46.30 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.90
(NIGHT): 46.30

STAMSON 5.0 NORMAL REPORT Date: 14-09-2021 12:00:52
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: wp_ameni.te Time Period: Day/Night 16/8 hours
Description: Road Traffic Noise Impact at Receptor ON-OLA2

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

Car traffic volume : 10019/871 veh/TimePeriod *
Medium truck volume : 308/27 veh/TimePeriod *
Heavy truck volume : 219/19 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): 8524
Percentage of Annual Growth : 2.50
Number of Years of Growth : 12.00
Medium Truck % of Total Volume : 2.92
Heavy Truck % of Total Volume : 2.08
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Teron (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 185.00 / 185.00 m
Receiver height : 29.10 / 29.10 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Teron (day)

Source height = 1.20 m

ROAD (0.00 + 53.66 + 0.00) = 53.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	64.57	0.00	-10.91	0.00	0.00	0.00	0.00	53.66

Segment Leq : 53.66 dBA

Total Leq All Segments: 53.66 dBA

Results segment # 1: Teron (night)

Source height = 1.20 m

ROAD (0.00 + 46.06 + 0.00) = 46.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	56.97	0.00	-10.91	0.00	0.00	0.00	0.00	46.06

Segment Leq : 46.06 dBA

Total Leq All Segments: 46.06 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.66
(NIGHT): 46.06

STAMSON 5.0 NORMAL REPORT Date: 30-08-2021 11:07:31
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: wp_pool.te Time Period: Day/Night 16/8 hours
Description: Road Traffic Noise Impact at Receptor ON-OLA3

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

Car traffic volume : 10019/871 veh/TimePeriod *
Medium truck volume : 308/27 veh/TimePeriod *
Heavy truck volume : 219/19 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): 8524
Percentage of Annual Growth : 2.50
Number of Years of Growth : 12.00
Medium Truck % of Total Volume : 2.92
Heavy Truck % of Total Volume : 2.08
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Teron (day/night)

Angle1 Angle2 : -90.00 deg 15.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 172.00 / 172.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Teron (day)

Source height = 1.20 m

ROAD (0.00 + 43.42 + 0.00) = 43.42 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	15	0.66	64.57	0.00	-17.59	-3.56	0.00	0.00	0.00	43.42

Segment Leq : 43.42 dBA

Total Leq All Segments: 43.42 dBA

Results segment # 1: Teron (night)

Source height = 1.20 m

ROAD (0.00 + 35.82 + 0.00) = 35.82 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	15	0.66	56.97	0.00	-17.59	-3.56	0.00	0.00	0.00	35.82

Segment Leq : 35.82 dBA

Total Leq All Segments: 35.82 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 43.42
(NIGHT): 35.82