Mahogany Phase 2- Noise Assessment Report

Project #160410140

Prepared for:
Minto Communities Inc.

Prepared by:
Stantec Consulting Ltd.

July 22, 2019

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1.0 INTRODUCTION

1.1 PURPOSE OF REPORT

Minto Communities Inc. have retained Stantec Consulting Ltd. to prepare an environmental noise assessment for Phase 2 of the Mahogany Subdivision located within the Village of Manotick. A plan of subdivision has been submitted and a Noise Assessment Study is required to address City policies regarding residential development adjacent to arterial and collector roads.

The purpose of this report is to:

- outline the Ministry's guidelines and criteria for noise levels and residential land use;
- apply the noise level standards of the Ontario Ministry of the Environment, Conservation and Parks NPC-300 to the site in conjunction with the City of Ottawa document "Environmental Noise Control Guidelines" (2016);
- determine the extent to which noise level contours will be of concern to future residents of the proposed development, using the computerized version (STAMSON 5.03) of the MECP's noise model;
- outline potential locations for noise attenuation, as necessary, to achieve acceptable noise levels for future residents of the proposed development.

1.2 LOCATION & DRAFT PLAN CONCEPTS

The site is bordered by existing development to the east and north, and future residential development to the west. The property is illustrated in **Figure 1**. The proposed phase consists of approximately 23ha of land and will contain a mixture of single-family units, townhomes, a school block, a neighbourhood park and a stormwater management block. This report is to focus on noise sensitive uses with exposure to Century Road, the only collector road within the required proximity of the site, set out by the Transportation Master Plan – Map 8 (see **Appendix D**).

Surrounding land uses are as follows:

- north – existing development;
- east – future development;
- south – existing agricultural;
- west – future residential.

The main potential noise source that may impact the subject site is vehicular traffic from Century Road. The traffic volumes for this roadway is based on the City of Ottawa document "Environmental Noise Control Guidelines" (January 2016).

Figure 1: Mahogany Subdivision Phase 2 Development Area

2.0 NOISE LEVEL CRITERIA

2.1 GUIDELINES

The Ontario Ministry of Environment Conservation and Parks (MECP) has produced guidelines for noise levels for use in noise assessment and land use planning. Noise level criteria for residential land use are summarized in **Table 1**. below. Noise levels in excess of the guidelines presented are acceptable under certain conditions and with certain provisions.

Table 1: Noise Criteria for Residential Land Use

Location	7 a.m. - 11 p.m.	11 p.m. - 7 a.m.
Outdoor Living Areas	55 dBA	N/A
Indoor Living Areas	45 dBA	40 dBA

Table 2: Combination of Road and Rail Noise, Day-Time Outdoor, Ventilation and Warning Clause Requirements

Location	Leq (16 hr) (dBA)	Ventilation Requirements	Outdoor Control Measures	Warning Clause
Outdoor Living Area	Leq16hr less than or equal to 55 dBA	N/A	None required	Not required
	Leq16hr greater than 55 dBA to less than or equal to 60 dBA	N/A	Control measures (barriers) may not be required but should be considered	Required if resultant Leq exceeds 55 dBA Extensive mitigation of outdoor amenity area clause
	Leq16hr greater than 60 dBA	N/A	Control measures (barriers) required to reduce the Leq to below 60 dBA and as close to 55 dBA as technically, economically and administratively feasible	Required if resultant Leq exceeds 55 dBA Extensive mitigation of outdoor amenity area clause
Plane of Living Room Window	Leq16hr less than or equal to 55 dBA	None required	N/A	Not required
	Leq16hr greater than 55 dBA to less than or equal to 65 dBA	Provision for central air conditioning	N/A	Required Generic mitigation of indoor area clause
	Leq16hr greater than 65 dBA	Supplied central air conditioning	N/A	Required Extensive mitigation of indoor clause (Supplied Central Air Conditioning)

(Source: Ministry of the Environment, Noise Assessment Criteria in Land Use Planning: Requirements, Procedures and Implementation, October 1997 and City of Ottawa, Environmental Noise Control Guidelines, January 2016)

Table 3: Combination of Road and Rail Noise, Night-Time Ventilation and Warning Clause Requirements

Location	Leq (8 hr) (dBA)	Ventilation Requirements	Outdoor Control Measures	Warning Clause
Plane of Bedroom Window	Leq8hr greater than 50 dBA to less or equal to 60 dBA	Provision for central air conditioning	N/A	Required Generic mitigation of indoor area clause
	Leq8hr greater than 60 dBA	Supplied central air conditioning	N/A	Required Extensive mitigation of indoor area clause (Supplied Central Air Conditioning)

(Source: Ministry of the Environment, Noise Assessment Criteria in Land Use Planning: Requirements, Procedures and Implementation, October 1997 and City of Ottawa, Environmental Noise Control Guidelines, January 2016)

The MECP also specifies building component requirements when indoor noise levels exceed the criteria by certain levels. These requirements are summarized in **Table 4** below**.**

Table 4: Road and Rail Noise – Building Component Requirements

Location		Leq (16 hr) (dBA)	Building Component Requirements
Plane of Living Room Window – Daytime	Road	Less than or equal to 65 dBA	Building compliant with the Ontario Building Code
		Greater than 65 dBA	Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria
	Rail	Less than or equal to 60 dBA	Building compliant with the Ontario Building Code
		Greater than 60 dBA	Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria
Location		**Leq (8 hr) (dBA)**	**Building Component Requirements**
Plane of Bedroom Window - Nighttime	Road	Less than or equal to 60 dBA	Building compliant with the Ontario Building Code
		Greater than 60 dBA	Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria
	Rail	Less than or equal to 55 dBA	Building compliant with the Ontario Building Code
		Greater than 55 dBA	Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria

(Source: Ministry of the Environment, Noise Assessment Criteria in Land Use Planning: Requirements, Procedures and Implementation, October 1997 and City of Ottawa, Environmental Noise Control Guidelines, January 2016)

3.0 OBSERVATIONS AND CALCULATIONS

3.1 NOISE LEVEL PREDICTIONS

Noise predictions in this report were completed using the computerized version (STAMSON 5.03) of the MECP noise model, ORNAMENT to calculate noise levels from various sources. The program accepts variables related to noise sources and receivers, road traffic volumes and the nature and extent of noise attenuation barriers, if required.

3.2 ROAD TRAFFIC VOLUMES

Traffic volume data for Century Road was provided by the of Ottawa document "Environmental Noise Control Guidelines" (January 2016). The documents indicate that the average annual daily traffic volume (AADT) Century Road is predicted to produce is 12,000 vehicles per day for a 2-lane major collector. The posted speed limit for Century Road is 80km/hr. Additional information regarding applicable assumptions and ratios for day/night traffic and car/ truck traffic is summarized as follows:

- heavy truck traffic for this segment is estimated to be 5% of total traffic volume
- medium truck traffic for this segment is estimated to be 7% of total traffic volume; the rest is assumed to be car traffic
- daytime (7 am – 11 pm) traffic is assumed to be 92%, with the remaining 8% at night (11 pm – 7 am)
- speed limit for Century Road is 80 km/hour.

Table 5 summarizes the traffic volumes used for calculations in this report:

Table 5: Traffic Volumes - Century Road, 2-Lane Major Collector

	Day	Night	Total
Car	9,715	845	10,560
Medium Truck	773	67	840
Heavy Truck	552	48	600
TOTAL	**11,040**	**960**	**12,000**
Speed Limit	80 km/hr		
Gradient	1%		
Surface	Asphalt		

3.3 PROJECTED NOISE LEVELS

Using the MECP noise model, ORNAMENT, noise levels were calculated for daytime and nighttime conditions at the point representing the anticipated dwelling locations, based on the plan of subdivision. The resulting receiver site is illustrated in **Figure 2** and **Figure 3**.

For units with exposure to the road network, calculations were completed assuming the amenity area would be 3.0 m offset from the rear of the units and at a height of 1.5 m.

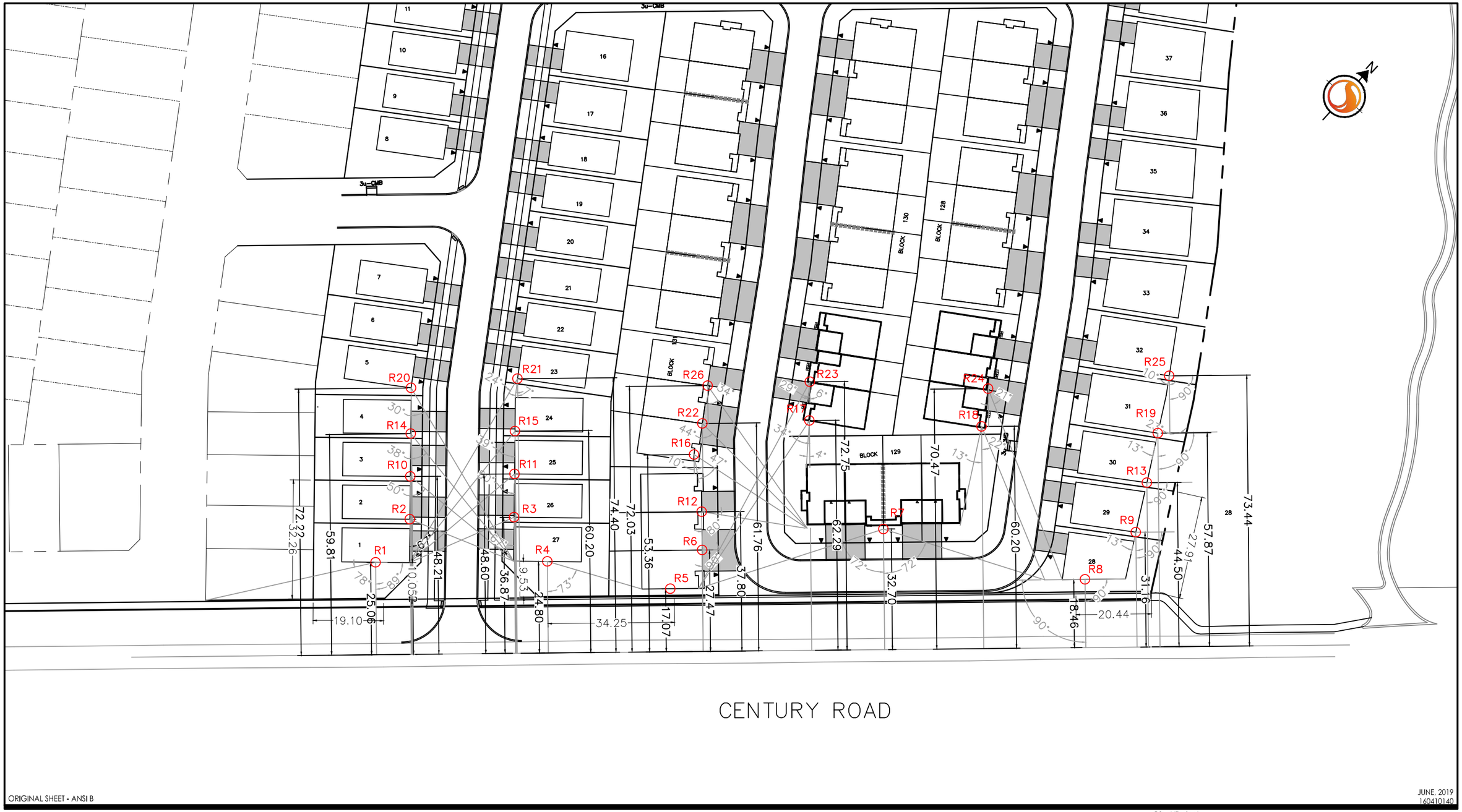
The receiver heights for indoor, daytime, and nighttime noise level calculations for the proposed buildings were completed at the ground level (1.5m above ground), and at the second level (4.5m above ground). The townhome units adjacent to Century Road are bungalows and therefore the nighttime receiver heights used for these units were set to the same as the daytime height of 1.5m. These receivers were placed at the most exposed area of the units.

Attenuated noise level calculations are provided in **Appendix B** for daytime and nighttime building face, as well as, unattenuated outdoor living area noise levels, and have been summarized in **Table 6** below.

Table 6: Summary of Projected Noise Levels

Receiver Site	Location (Unit)	Daytime-Building Face (dBA)	Nighttime-Building Face (dBA)	Unattenuated Outdoor Living Area (dBA)
R1	Unit 184	66.3	59	63.8 (RO1)
R2	Unit 185	60.8	52.9	60.3 (RO8)
R3	Unit 182	60	52.9	57.8 (RO9)
R4	Unit 183	66.3	59	63 (RO2)
R5	Block 768 – south block - south exterior unit	69.1	61.5	65.8 (RO3)
R6	Block 768 – south block - interior unit	62.7	55.5	61.3 (RO10)
R7	Block 770	64.1	56.5	-
R8	Unit 171	68.1	57.3	66.1 (RO4)
R9	Unit 170	62.6	55.4	62.1 (RO5)
R10	Unit 186	57.2	50.1	-
R11	Unit 181	57.1	50	-
R12	Block 768 – south block – north exterior unit	60.3	52.7	-
R13	Unit 169	59.2	52.2	59 (RO6)
R14	Unit 187	54.6	47.6	-

Receiver Site	Location (Unit)	Daytime-Building Face (dBA)	Nighttime-Building Face (dBA)	Unattenuated Outdoor Living Area (dBA)
R15	Unit 180	54.6	47.6	-
R16	Block 768 –mid block – south exterior unit	55.1	47.5	-
R17	Block 769 –south block – south exterior unit	53.3	45.7	48.4 (RO11)
R18	Block 770 –south block – south exterior unit	54.3	46.7	-
R19	Unit 168	58.1	51.2	56.8 (RO7)
R20	Unit 188	52.3	45.3	-
R21	Unit 179	49.6	42.7	-
R22	Block 768 –mid block – south interior unit	54.9	47.3	-
R23	Block 769 –south block – south interior unit	51	43.4	-
R24	Block 770 –south block – south interior unit	51	43.4	-
R25	Unit 167	54.9	48.1	-
R26	Block 768 –mid block – north exterior unit	52.8	45.2	-



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Client/Project
MINTO COMMUNITIES
MAHOGANY PHASE 2
NOISE ASSESSMENT REPORT

Figure No.
2.0

Title
INDOOR RECEIVERS

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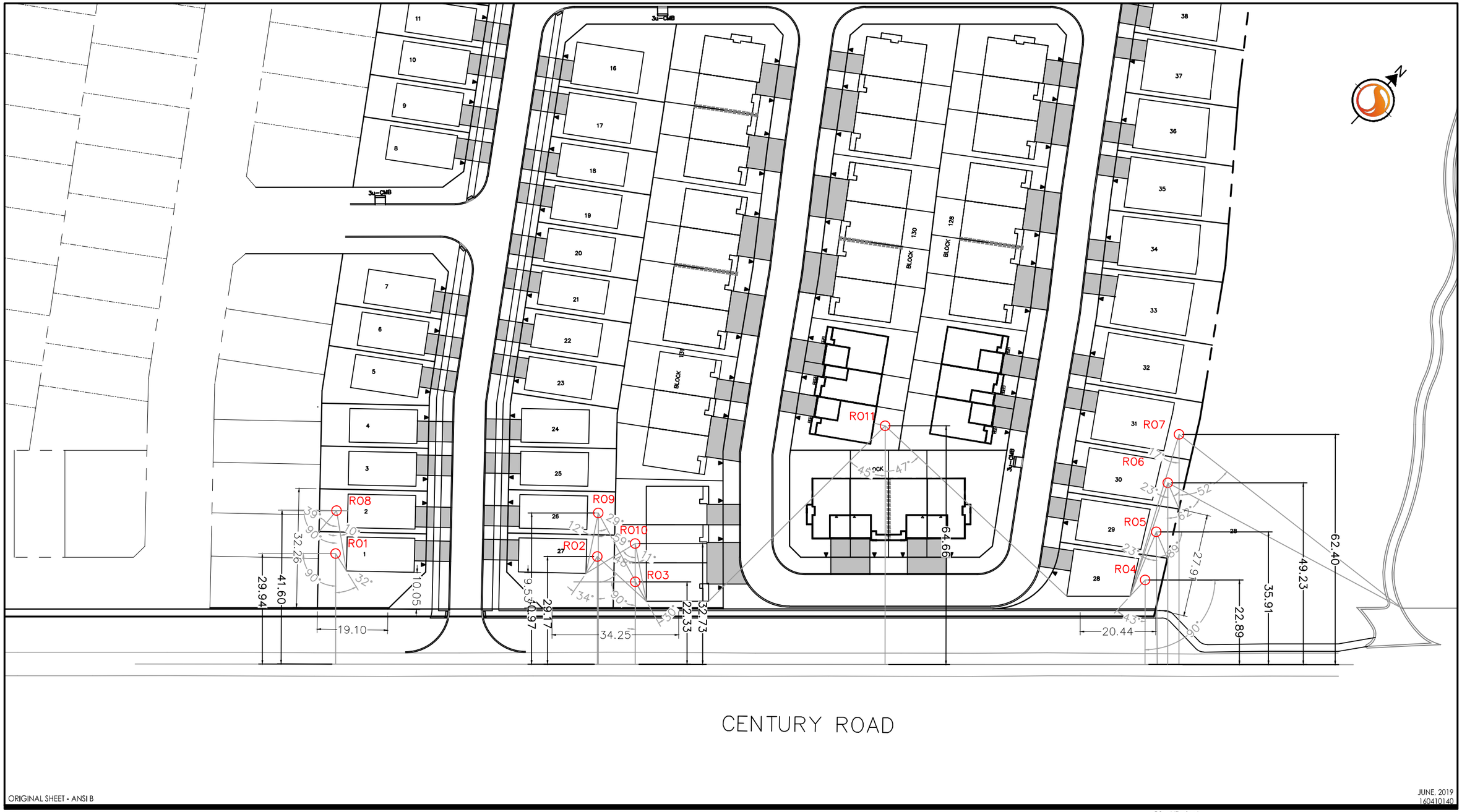

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3.0

Title
OUTDOOR RECEIVERS

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 OUTDOOR NOISE IMPACTS

Predicted noise levels are above City of Ottawa and MECP criteria at the outdoor living areas for potential units with exposure to Century Road.

The following summarizes the measures required by the City of Ottawa and MECP criteria for the development to occur within accepted standards:

- Warning clause "Extensive mitigation for outdoor amenity areas" are required for units 170, 171, 182, 183, 184, 185, Block 768 – south block – south exterior and interior units. Noise walls are required in the location shown in **Figure 4,** and shall have a minimum surface density of 20kg/m².

- Barrier heights were selected to reduce noise levels as close to 55 dBA or below where possible. The barrier heights are specified from the centerline elevation of the adjacent roadways. The results are summarized in **Table 7**.

- A sensitivity analysis was performed for receivers R1, R3 and R4 to determine the optimal noise barrier heights along proposed residential units. It was determined that walls in excess of 4m would be required in order to attenuate noise in outdoor living areas to 55dBA. A berm in tandem with noise barrier scenario would occupy approximately 9m of space perpendicular to Century Road. As such space is unavailable, it was determined that noise barrier heights should remain at 2.5m to ensure that predicted noise levels in outdoor living areas do not exceed 60 dBA, and to provide a minimum reduction of 5 dBA from unattenuated levels. Results of the sensitivity analysis are displayed in **Table 8** below.

Table 7: Summary of Projected Attenuated Outdoor Living Area Noise Levels

Receiver	Unit	Unattenuated Noise Level (dBA)	Noise Wall Height (m)	Attenuated Noise Level (dBA)	Δ Noise Level (dBA)
RO1	Unit 184	63.8	2.5	57.7	6.1
RO2	Unit 183	63	2.5	56.1	6.9
RO3	Block 768 – South block - South exterior unit	65.8	2.5	59.4	6.4
RO4	Unit 171	66.1	2.5	59.9	6.2
RO5	Unit 170	62.1	2.5	56.9	5.2
RO6	Unit 169	59	2.5	53.3	5.7
RO7	Unit 168	57.8	2.5	51.1	6.7
RO8	Unit 185	60.3	2.5	54.8	5.5
RO9	Unit 182	57.8	2.5	51.2	6.6
RO10	Block 768 – South block - South interior unit	61.3	2.5	55.1	6.2
RO11	Block 769 – South block - South exterior unit	48.4	-	48.4	-

Table 8: Attenuated Noise Levels at Varying Noise Barrier Heights

Receiver	Wall location	Wall Height (m)	Outdoor Daytime Attenuated Noise Level (dBA)
R1	West Wall	2.2	58.5
		2.3	58.3
		2.4	58.0
		2.5	57.7
		2.6	57.5
		2.7	57.2
		2.8	56.9
		2.9	56.6
		3	56.3
R3	Central Wall	2.2	60.4
		2.3	60.1
		2.4	59.7
		2.5	59.4
		2.6	59.0
		2.7	58.6
		2.8	58.2
		2.9	57.8
		3	57.5
R4	East Wall	2.2	60.8
		2.3	60.6
		2.4	60.2
		2.5	59.9
		2.6	59.5
		2.7	59.2
		2.8	58.8
		2.9	58.4
		3	58.0

4.2 INDOOR NOISE IMPACTS

Predicted noise levels are above City of Ottawa and MECP criteria at the daytime building face and the nighttime building face for potential units with exposure to Century Road.

The following summarizes the measures required by both the City of Ottawa and MECP criteria for the development to occur within accepted standards:

- Forced air conditioning is to be installed for unit 171, 183, 184, Block 768 – south block-south exterior unit.
- The provision for adding central air conditioning is to be included for units 168, 169, 170, 181, 182, 185, 186 and Block 768 – south block- interior, south block-north exterior, middle block-south exterior, middle block-south interior, and Block 770 south block-south exterior and Block 771.

Noise warning clauses are provided in **Appendix A**.

4.3 INDOOR NOISE MITIGATION – AIF METHOD

The following building components will apply based on the Acoustical Insulation Factor (AIF) method, as per the "Environmental Noise Assessment in Land Use Planning Manual", 1999. The AIF value and resultant required minimum building components were based off preliminary unit floor plans as provided by the developer. The calculated noise level requiring mitigation for single units was 68.6 dBA during the daytime and 59 dBA during the nighttime, and for the townhouse block end unit was 69.1 dBA during the daytime and 61.5 dBA during the nighttime. These noise levels were used to determine the typical building components required for the building façade.

Table 9 summarizes the AIF values and minimum building component requirements for the development, and **Appendix C** provides the floor plans for each unit, as well as sample AIF value calculations.

Table 9: AIF Summary

Minto Single home - East facing						
Units	**Space**	**Wall**	**AIF Value**	**Type of Window Glazing**	**Type of exterior glazing**	**Type of Door**
184, 185	Great Room/ Kitchen	1	30	2 (6) 2	EW1	-
		2	28	2 (6) 2	EW1	D2
	Dining Room	1	28	2 (6) 2	EW1	-

		4	26	-	EW1	-
	Den/ Foyer/ Powder Room	1	30	2 (6) 2	EW1	D2
		4	28	2 (6) 2	EW1	-
	Master Bedroom/ Ensuite	1	29	2 (6) 2	EW1	-
		2	27	2 (6) 2	EW1	-
	Bath	4	24	2 (6) 2	EW1	-
	Bedroom 2	4	24	2 (6) 2	EW1	-
	Bedroom 3	1	29	2 (6) 2	EW1	-
		4	27	2 (6) 2	EW1	-
	Bedroom 4	1	28	2 (6) 2	EW1	-
		2	26	-	EW1	-
Minto Single home - West facing						
Units	**Space**	**Wall**	**AIF Value**	**Type of Window Glazing**	**Type of exterior glazing**	**Type of Door**
170, 171, 182, 183	Great Room/ Kitchen	2	29	2 (6) 2	EW1	D2
		3	31	-	EW1	-
	Dining Room	2	23	-	EW1	-
	Mudroom/ Hallway	3	25	-	EW1	-
	Den/ Foyer/ Powder Room	4	26	2 (6) 2	EW1	-
	Master Bedroom/ Ensuite	2	28	2 (6) 2	EW1	-
		3	30	-	EW1	-
	Laundry Room/ Hallway	3	28	2 (6) 2	EW1	-
	Bedroom 2	3	30	-	EW1	-
		4	28	2 (6) 2	EW1	-
	Bedroom 3	3	30	2 (6) 2	EW1	-
		4	28	2 (6) 2	EW1	-
	Bedroom 4	2	23	-	EW1	-

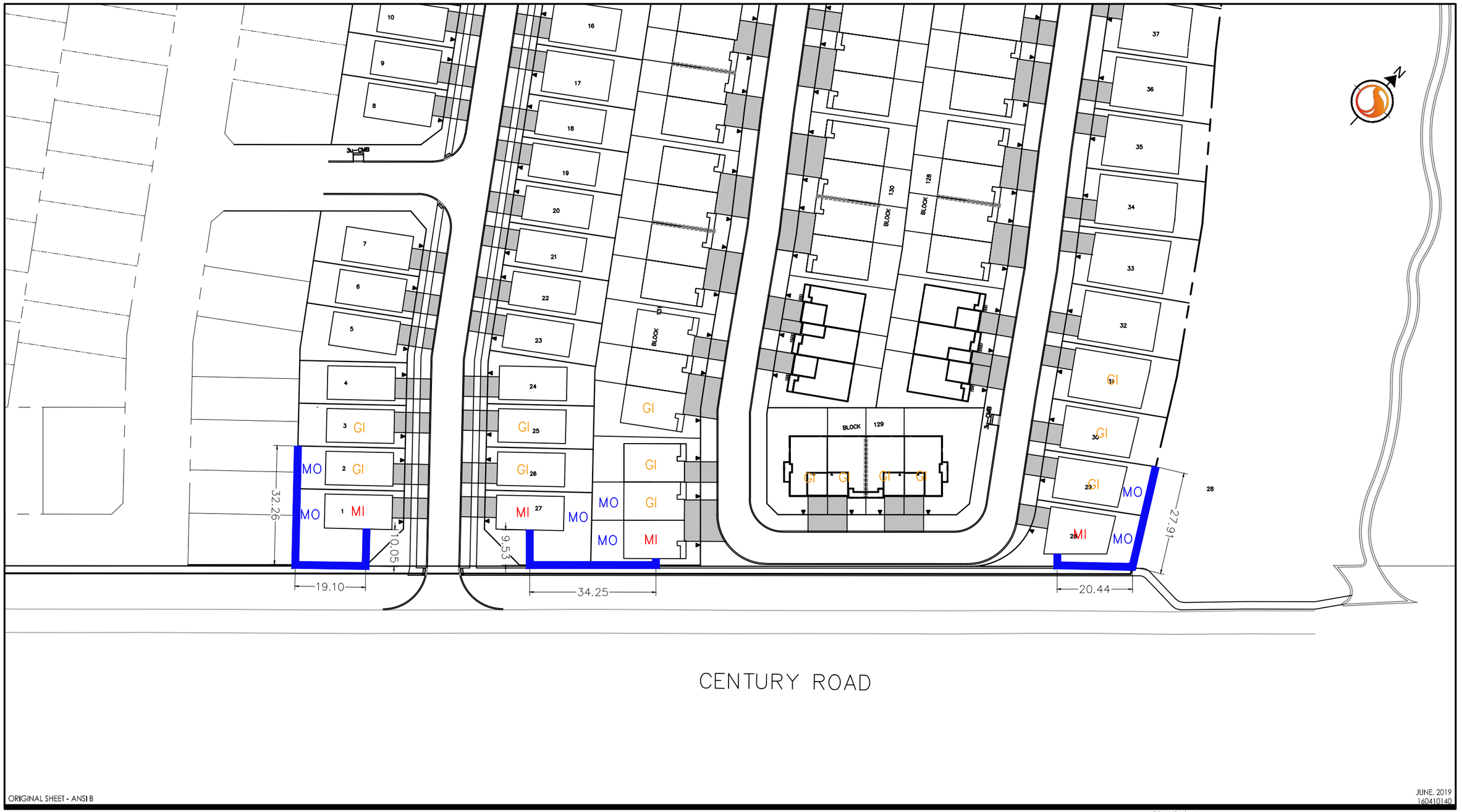
	Bath	4	26	2 (6) 2	EW1	-
Minto Townhome - Exterior						
Units	**Space**	**Wall**	**AIF Value**	**Type of Window Glazing**	**Type of exterior glazing**	**Type of Door**
Block 734 - south block - south exterior	Foyer	2	27	-	EW1	D2
	Bedroom 2	1	31	-	EW1	-
		2	29	2 (15) 2	EW1	-
	Main Bathroom	1	29	2 (6) 2	EW1	-
	Ensuite	1	29	2 (6) 2	EW1	-
	Master Bedroom	1	31	-	EW1	-
		4	29	2 (6) 2	EW1	-
	Living Room/ Dining Room/ Kitchen	4	29	2 (6) 2	EW1	D2

As the noise levels exceed the MECP Criteria, building components including walls and windows are to be designed so the indoor sound levels comply with MECP noise criteria by using EW1 type exterior wall construction as illustrated above. In this situation, double glazed windows with 2mm thickness and various spacing outlined above would be required. Windows with an equivalent AIF may be substituted for the recommended thickness, glazing and spacing. E.g. a double glazed 3mm pane with 6mm spacing may be substituted for double glazed 2mm panes with 15mm spacing.

EW1 construction consists of:

- 12.7 mm gypsum board, vapour barrier, and 38x89 studs with 50 mm mineral wool or glass fibre batts in inner stud cavities, as well as sheathing and wood siding or metal siding and fibre backer board.

Should the actual floor plans differ from the plans shown in **Appendix C**, updated calculations must be performed prior to the issuance of building permits.



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NOISE WARNING CLAUSE GENERIC INDOOR – GI

NOISE WARNING CLAUSE EXTENSIVE MITIGATION INDOOR – MI

NOISE WARNING CLAUSE EXTENSIVE MITIGATION OUTDOOR – MO

NOISE WALL– 2.5m

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Figure No.
4.0

Title
NOISE WALL LOCATIONS
AND WARNING CLAUSES

The consideration of these measures will allow the residential development to proceed in accordance with City of Ottawa's planning approval process and form the basis for meeting the MECP criteria with respect to environmental noise.

Respectfully Submitted By:

Karin Smadella, P.Eng.,
Project Manager

Dustin Thiffault, P.Eng.,
Project Engineer

Appendix A NOISE WARNING CLAUSES

WARNING CLAUSES

The following warning clauses may be used individually or in combination:

Generic Mitigation of Indoor Area (GI):

Indoor environment - L_{eq}(16) greater than 55 dBA and less than or equal to 65 dBA or (L_{eq}(8) greater than 50dBA and less than or equal to 60 dBA

To help address the need for sound attenuation this development has been designed so as to provide an indoor environment that is within provincial guidelines. Measures for sound attenuation include:

- the provision for adding central air conditioning at the occupant's discretion.

To be included in all offers of purchase:

"Installation of central air conditioning by the homeowner 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 of Ottawa and the Ministry of the Environment Conservation and Parks."

Extensive Mitigation of Indoor Area (MI):

Indoor environment - L_{eq}(16) greater than 65 dBA or (L_{eq}(8) greater than 60dBA

To help address the need for sound attenuation this development has been designed so as to provide an indoor environment that is within provincial guidelines. Measures for sound attenuation include:

- multi-pane glass;
- exterior wall insulation;
- a forced central air conditioning system.

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

To be included in all offers of purchase:

> "This dwelling unit has been supplied with a forced 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 of Ottawa and the Ministry of the Environment Conservation and Parks."

Extensive Mitigation of Outdoor Amenity Area (MO):

Outdoor amenity areas- $L_{eq}(16)$ in the OLA greater than 55 dBA.

To help address the need for outdoor sound attenuation this development is to include outdoor noise attenuation with the use of:

- an acoustic barrier.

To be included in all offers of purchase:

> "Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic may, on occasion, interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the City of Ottawa and the Ministry of the Environment Conservation and Parks."

Source: City of Ottawa - Environmental Noise Control Guidelines, January 2016 and Ontario Ministry of the Environment, Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning Publication NPC-300, Queen's Printer for Ontario, 2013

Appendix B NOISE LEVEL CALCULATIONS

B.1 INDOOR RECEIVER STAMSON REPORTS

```
STAMSON 5.0        NORMAL REPORT        Date: 28-03-2019 15:22:09
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1.te                Time Period: Day/Night 16/8 hours
Description: RECEIVER 1 - INDOOR


Road data, segment # 1: Century Rd (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  12000
    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: Century Rd (day/night)
--------------------------------------------
Angle1   Angle2           : -78.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.06 / 25.06  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Century Rd (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 66.27 + 0.00) = 66.27 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -78     90   0.66  71.52   0.00  -3.70  -1.54   0.00   0.00   0.00
66.27
-------------------------------------------------------------------------
---

Segment Leq : 66.27 dBA

Total Leq All Segments: 66.27 dBA


Results segment # 1: Century Rd (night)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 59.01 + 0.00) = 59.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -78     90   0.57  63.92   0.00  -3.50  -1.41   0.00   0.00   0.00
59.01
-------------------------------------------------------------------------
---

Segment Leq : 59.01 dBA

Total Leq All Segments: 59.01 dBA


TOTAL Leq FROM ALL SOURCES (DAY): 66.27
                           (NIGHT): 59.01
```

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:24:00
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R2.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 2 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : 0.00 deg 67.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 36.62 / 36.62 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 60.08 + 0.00) = 60.08 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	67	0.66	71.52	0.00	-6.43	-5.01	0.00	0.00	0.00	60.08

Segment Leq : 60.08 dBA

Total Leq All Segments: 60.08 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 52.91 + 0.00) = 52.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	67	0.57	63.92	0.00	-6.09	-4.92	0.00	0.00	0.00	52.91

Segment Leq : 52.91 dBA

Total Leq All Segments: 52.91 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.08
(NIGHT): 52.91

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:25:58
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R3.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 3 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -67.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 36.87 / 36.87 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 60.03 + 0.00) = 60.03 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-67 0 0.66 71.52 0.00 -6.48 -5.01 0.00 0.00 0.00
60.03

Segment Leq : 60.03 dBA

Total Leq All Segments: 60.03 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 52.87 + 0.00) = 52.87 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-67 0 0.57 63.92 0.00 -6.13 -4.92 0.00 0.00 0.00
52.87

Segment Leq : 52.87 dBA

Total Leq All Segments: 52.87 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.03
(NIGHT): 52.87

```
STAMSON 5.0        NORMAL REPORT        Date: 28-03-2019 15:29:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R4.te                Time Period: Day/Night 16/8 hours
Description: RECEIVER 4 - INDOOR


Road data, segment # 1: Century Rd (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  12000
    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: Century Rd (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   73.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  24.80 / 24.80  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Results segment # 1: Century Rd (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 66.28 + 0.00) = 66.28 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     73   0.66  71.52   0.00  -3.62  -1.61   0.00   0.00   0.00
66.28
-------------------------------------------------------------------------
---

Segment Leq : 66.28 dBA

Total Leq All Segments: 66.28 dBA


Results segment # 1: Century Rd (night)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 59.01 + 0.00) = 59.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     73   0.57  63.92   0.00  -3.43  -1.48   0.00   0.00   0.00
59.01
-------------------------------------------------------------------------
---

Segment Leq : 59.01 dBA

Total Leq All Segments: 59.01 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 66.28
                           (NIGHT): 59.01
```

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:31:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R5.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 5 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (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 : 17.07 / 17.07 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 69.13 + 0.00) = 69.13 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-90 90 0.66 71.52 0.00 -0.93 -1.46 0.00 0.00 0.00
69.13

Segment Leq : 69.13 dBA

Total Leq All Segments: 69.13 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 61.53 + 0.00) = 61.53 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-90 90 0.66 63.92 0.00 -0.93 -1.46 0.00 0.00 0.00
61.53

Segment Leq : 61.53 dBA

Total Leq All Segments: 61.53 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 69.13
(NIGHT): 61.53

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:33:44
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R6.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 6 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 27.47 / 27.47 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 62.69 + 0.00) = 62.69 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
0 90 0.66 71.52 0.00 -4.36 -4.47 0.00 0.00 0.00
62.69

Segment Leq : 62.69 dBA

Total Leq All Segments: 62.69 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 55.48 + 0.00) = 55.48 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
0 90 0.57 63.92 0.00 -4.13 -4.31 0.00 0.00 0.00
55.48

Segment Leq : 55.48 dBA

Total Leq All Segments: 55.48 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.69
(NIGHT): 55.48

```
STAMSON 5.0        NORMAL REPORT        Date: 28-03-2019 15:34:39
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R7.te                Time Period: Day/Night 16/8 hours
Description: RECEIVER 7 - INDOOR


Road data, segment # 1: Century Rd (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  12000
    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: Century Rd (day/night)
--------------------------------------------
Angle1   Angle2           : -72.00 deg   72.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  32.70 / 32.70  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Results segment # 1: Century Rd (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 64.09 + 0.00) = 64.09 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -72     72   0.66  71.52   0.00  -5.62  -1.81   0.00   0.00   0.00
64.09
-------------------------------------------------------------------------
---

Segment Leq : 64.09 dBA

Total Leq All Segments: 64.09 dBA


Results segment # 1: Century Rd (night)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 56.49 + 0.00) = 56.49 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -72     72   0.66  63.92   0.00  -5.62  -1.81   0.00   0.00   0.00
56.49
-------------------------------------------------------------------------
---

Segment Leq : 56.49 dBA

Total Leq All Segments: 56.49 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 64.09
                           (NIGHT): 56.49
```

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:35:07
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R8.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 8 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (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 : 18.46 / 32.70 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 68.57 + 0.00) = 68.57 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-90 90 0.66 71.52 0.00 -1.50 -1.46 0.00 0.00 0.00
68.57

Segment Leq : 68.57 dBA

Total Leq All Segments: 68.57 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 57.30 + 0.00) = 57.30 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-90 90 0.57 63.92 0.00 -5.31 -1.30 0.00 0.00 0.00
57.30

Segment Leq : 57.30 dBA

Total Leq All Segments: 57.30 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.57
(NIGHT): 57.30

```
STAMSON 5.0        NORMAL REPORT        Date: 28-03-2019 15:37:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R9.te                Time Period: Day/Night 16/8 hours
Description: RECEIVER 9 - INDOOR


Road data, segment # 1: Century Rd (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  12000
    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: Century Rd (day/night)
--------------------------------------------
Angle1   Angle2           : -13.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  31.16 / 31.16  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Century Rd (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.58 + 0.00) = 62.58 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -13     90   0.66  71.52   0.00  -5.27  -3.67   0.00   0.00   0.00
62.58
-------------------------------------------------------------------------
---

Segment Leq : 62.58 dBA

Total Leq All Segments: 62.58 dBA


Results segment # 1: Century Rd (night)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 55.39 + 0.00) = 55.39 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -13     90   0.57  63.92   0.00  -4.99  -3.54   0.00   0.00   0.00
55.39
-------------------------------------------------------------------------
---

Segment Leq : 55.39 dBA

Total Leq All Segments: 55.39 dBA




TOTAL Leq FROM ALL SOURCES (DAY): 62.58
                           (NIGHT): 55.39
```

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:39:08
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R10.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 10 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : 0.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 48.21 / 48.21 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 57.16 + 0.00) = 57.16 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	50	0.66	71.52	0.00	-8.42	-5.94	0.00	0.00	0.00	57.16

Segment Leq : 57.16 dBA

Total Leq All Segments: 57.16 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 50.06 + 0.00) = 50.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	50	0.57	63.92	0.00	-7.96	-5.89	0.00	0.00	0.00	50.06

Segment Leq : 50.06 dBA

Total Leq All Segments: 50.06 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.16
(NIGHT): 50.06

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:39:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R11.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 11 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -50.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 48.60 / 48.60 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 57.10 + 0.00) = 57.10 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-50	0	0.66	71.52	0.00	-8.48	-5.94	0.00	0.00	0.00	57.10

Segment Leq : 57.10 dBA

Total Leq All Segments: 57.10 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 50.01 + 0.00) = 50.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-50	0	0.57	63.92	0.00	-8.02	-5.89	0.00	0.00	0.00	50.01

Segment Leq : 50.01 dBA

Total Leq All Segments: 50.01 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.10
(NIGHT): 50.01

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:40:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R12.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 12 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : 0.00 deg 80.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 37.80 / 37.80 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 60.26 + 0.00) = 60.26 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	80	0.66	71.52	0.00	-6.66	-4.60	0.00	0.00	0.00	60.26

Segment Leq : 60.26 dBA

Total Leq All Segments: 60.26 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 52.66 + 0.00) = 52.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	80	0.66	63.92	0.00	-6.66	-4.60	0.00	0.00	0.00	52.66

Segment Leq : 52.66 dBA

Total Leq All Segments: 52.66 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.26
(NIGHT): 52.66

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:42:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R13.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 13 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 44.50 / 44.50 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 59.21 + 0.00) = 59.21 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
0 90 0.66 71.52 0.00 -7.84 -4.47 0.00 0.00 0.00
59.21

Segment Leq : 59.21 dBA

Total Leq All Segments: 59.21 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 52.19 + 0.00) = 52.19 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
0 90 0.57 63.92 0.00 -7.42 -4.31 0.00 0.00 0.00
52.19

Segment Leq : 52.19 dBA

Total Leq All Segments: 52.19 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.21
(NIGHT): 52.19

```
STAMSON 5.0        NORMAL REPORT        Date: 28-03-2019 15:42:42
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R14.te               Time Period: Day/Night 16/8 hours
Description: RECEIVER 14 - INDOOR


Road data, segment # 1: Century Rd (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  12000
    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: Century Rd (day/night)
--------------------------------------------
Angle1   Angle2           :   0.00 deg   38.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  59.80 / 59.80  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Results segment # 1: Century Rd (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 54.58 + 0.00) = 54.58 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
     0     38   0.66  71.52   0.00  -9.97  -6.97   0.00   0.00   0.00
54.58
-------------------------------------------------------------------------
---

Segment Leq : 54.58 dBA

Total Leq All Segments: 54.58 dBA


Results segment # 1: Century Rd (night)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 47.55 + 0.00) = 47.55 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
     0     38   0.57  63.92   0.00  -9.43  -6.94   0.00   0.00   0.00
47.55
-------------------------------------------------------------------------
---

Segment Leq : 47.55 dBA

Total Leq All Segments: 47.55 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 54.58
                           (NIGHT): 47.55
```

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:44:39
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R15.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 15 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -39.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.20 / 60.20 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 54.63 + 0.00) = 54.63 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-39	0	0.66	71.52	0.00	-10.02	-6.87	0.00	0.00	0.00	54.63

Segment Leq : 54.63 dBA

Total Leq All Segments: 54.63 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 47.60 + 0.00) = 47.60 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-39	0	0.57	63.92	0.00	-9.48	-6.84	0.00	0.00	0.00	47.60

Segment Leq : 47.60 dBA

Total Leq All Segments: 47.60 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.63
(NIGHT): 47.60

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:45:10
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R16.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 16 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : 10.00 deg 47.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 53.40 / 53.40 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 55.07 + 0.00) = 55.07 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
10 47 0.66 71.52 0.00 -9.15 -7.30 0.00 0.00 0.00
55.07

Segment Leq : 55.07 dBA

Total Leq All Segments: 55.07 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 47.47 + 0.00) = 47.47 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
10 47 0.66 63.92 0.00 -9.15 -7.30 0.00 0.00 0.00
47.47

Segment Leq : 47.47 dBA

Total Leq All Segments: 47.47 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.07
(NIGHT): 47.47

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:47:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R17.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 17 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -34.00 deg -4.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 62.30 / 62.30 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 53.28 + 0.00) = 53.28 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-34 -4 0.66 71.52 0.00 -10.27 -7.98 0.00 0.00 0.00 53.28

Segment Leq : 53.28 dBA

Total Leq All Segments: 53.28 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 45.68 + 0.00) = 45.68 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-34 -4 0.66 63.92 0.00 -10.27 -7.98 0.00 0.00 0.00 45.68

Segment Leq : 45.68 dBA

Total Leq All Segments: 45.68 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.28
(NIGHT): 45.68

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:47:52
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R18.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 18 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -13.00 deg 22.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.20 / 60.20 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 54.33 + 0.00) = 54.33 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-13	22	0.66	71.52	0.00	-10.02	-7.17	0.00	0.00	0.00	54.33

Segment Leq : 54.33 dBA

Total Leq All Segments: 54.33 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 46.73 + 0.00) = 46.73 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-13	22	0.66	63.92	0.00	-10.02	-7.17	0.00	0.00	0.00	46.73

Segment Leq : 46.73 dBA

Total Leq All Segments: 46.73 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.33
(NIGHT): 46.73

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:49:55
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R19.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 19 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -13.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 57.90 / 57.90 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 58.11 + 0.00) = 58.11 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-13 90 0.66 71.52 0.00 -9.74 -3.67 0.00 0.00 0.00
58.11

Segment Leq : 58.11 dBA

Total Leq All Segments: 58.11 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 51.16 + 0.00) = 51.16 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-13 90 0.57 63.92 0.00 -9.21 -3.54 0.00 0.00 0.00
51.16

Segment Leq : 51.16 dBA

Total Leq All Segments: 51.16 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.11
(NIGHT): 51.16

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:50:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R20.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 20 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : 0.00 deg 30.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 72.20 / 72.20 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 52.27 + 0.00) = 52.27 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
0 30 0.66 71.52 0.00 -11.33 -7.91 0.00 0.00 0.00
52.27

Segment Leq : 52.27 dBA

Total Leq All Segments: 52.27 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 45.31 + 0.00) = 45.31 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
0 30 0.57 63.92 0.00 -10.72 -7.90 0.00 0.00 0.00
45.31

Segment Leq : 45.31 dBA

Total Leq All Segments: 45.31 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.27
(NIGHT): 45.31

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:52:15
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R21.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 21 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -24.00 deg -7.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 74.40 / 74.40 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 49.61 + 0.00) = 49.61 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-24 -7 0.66 71.52 0.00 -11.54 -10.37 0.00 0.00 0.00
49.61

Segment Leq : 49.61 dBA

Total Leq All Segments: 49.61 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 42.65 + 0.00) = 42.65 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-24 -7 0.57 63.92 0.00 -10.92 -10.35 0.00 0.00 0.00
42.65

Segment Leq : 42.65 dBA

Total Leq All Segments: 42.65 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 49.61
(NIGHT): 42.65

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:52:46
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R22.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 22 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : 0.00 deg 44.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 61.80 / 61.80 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 54.90 + 0.00) = 54.90 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
0 44 0.66 71.52 0.00 -10.21 -6.41 0.00 0.00 0.00
54.90

Segment Leq : 54.90 dBA

Total Leq All Segments: 54.90 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 47.30 + 0.00) = 47.30 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
0 44 0.66 63.92 0.00 -10.21 -6.41 0.00 0.00 0.00
47.30

Segment Leq : 47.30 dBA

Total Leq All Segments: 47.30 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.90
(NIGHT): 47.30

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:54:18
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R23.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 23 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -29.00 deg -6.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 72.80 / 72.80 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 51.04 + 0.00) = 51.04 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-29 -6 0.66 71.52 0.00 -11.39 -9.09 0.00 0.00 0.00
51.04

Segment Leq : 51.04 dBA

Total Leq All Segments: 51.04 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 43.44 + 0.00) = 43.44 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-29 -6 0.66 63.92 0.00 -11.39 -9.09 0.00 0.00 0.00
43.44

Segment Leq : 43.44 dBA

Total Leq All Segments: 43.44 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 51.04
(NIGHT): 43.44

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:54:52
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R24.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 24 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : 0.00 deg 21.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.50 / 70.50 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 50.97 + 0.00) = 50.97 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
0 21 0.66 71.52 0.00 -11.16 -9.40 0.00 0.00 0.00
50.97

Segment Leq : 50.97 dBA

Total Leq All Segments: 50.97 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 43.37 + 0.00) = 43.37 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
0 21 0.66 63.92 0.00 -11.16 -9.40 0.00 0.00 0.00
43.37

Segment Leq : 43.37 dBA

Total Leq All Segments: 43.37 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 50.97
(NIGHT): 43.37

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:55:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R25.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 25 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : 10.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 73.44 / 73.44 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 54.87 + 0.00) = 54.87 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
10 90 0.66 71.52 0.00 -11.45 -5.20 0.00 0.00 0.00
54.87

Segment Leq : 54.87 dBA

Total Leq All Segments: 54.87 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 48.07 + 0.00) = 48.07 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
10 90 0.57 63.92 0.00 -10.83 -5.02 0.00 0.00 0.00
48.07

Segment Leq : 48.07 dBA

Total Leq All Segments: 48.07 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.87
(NIGHT): 48.07

STAMSON 5.0 NORMAL REPORT Date: 28-03-2019 15:57:04
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R26.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 26 - INDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : 0.00 deg 34.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 72.03 / 72.03 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 52.80 + 0.00) = 52.80 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
0 34 0.66 71.52 0.00 -11.31 -7.41 0.00 0.00 0.00
52.80

Segment Leq : 52.80 dBA

Total Leq All Segments: 52.80 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 45.20 + 0.00) = 45.20 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq
---
0 34 0.66 63.92 0.00 -11.31 -7.41 0.00 0.00 0.00
45.20

Segment Leq : 45.20 dBA

Total Leq All Segments: 45.20 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.80
(NIGHT): 45.20

B.2 OUTDOOR RECEIVER STAMSON REPORTS

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:22:00
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: RO1.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 1 - OUTDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -90.00 deg 32.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 29.94 / 29.94 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 63.77 + 0.00) = 63.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	32	0.66	71.52	0.00	-4.98	-2.76	0.00	0.00	0.00	63.77

Segment Leq : 63.77 dBA

Total Leq All Segments: 63.77 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 56.55 + 0.00) = 56.55 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	32	0.57	63.92	0.00	-4.71	-2.65	0.00	0.00	0.00	56.55

Segment Leq : 56.55 dBA

Total Leq All Segments: 56.55 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.77
(NIGHT): 56.55

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:22:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: RO2.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 2 - OUTDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -34.00 deg 48.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 29.17 / 29.17 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 63.03 + 0.00) = 63.03 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-34 48 0.66 71.52 0.00 -4.79 -3.69 0.00 0.00 0.00
63.03

Segment Leq : 63.03 dBA

Total Leq All Segments: 63.03 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 55.73 + 0.00) = 55.73 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-34 48 0.57 63.92 0.00 -4.54 -3.65 0.00 0.00 0.00
55.73

Segment Leq : 55.73 dBA

Total Leq All Segments: 55.73 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.03
(NIGHT): 55.73

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:24:19
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: RO3.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 3 - OUTDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -90.00 deg 30.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 22.33 / 22.33 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 65.80 + 0.00) = 65.80 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-90 30 0.66 71.52 0.00 -2.87 -2.85 0.00 0.00 0.00
65.80

Segment Leq : 65.80 dBA

Total Leq All Segments: 65.80 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 58.47 + 0.00) = 58.47 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-90 30 0.57 63.92 0.00 -2.71 -2.74 0.00 0.00 0.00
58.47

Segment Leq : 58.47 dBA

Total Leq All Segments: 58.47 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.80
(NIGHT): 58.47

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:24:55
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: RO4.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 4 - OUTDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -43.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 22.93 / 22.93 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 66.10 + 0.00) = 66.10 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-43	90	0.66	71.52	0.00	-3.06	-2.35	0.00	0.00	0.00	66.10

Segment Leq : 66.10 dBA

Total Leq All Segments: 66.10 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 58.78 + 0.00) = 58.78 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-43	90	0.57	63.92	0.00	-2.89	-2.24	0.00	0.00	0.00	58.78

Segment Leq : 58.78 dBA

Total Leq All Segments: 58.78 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.10
(NIGHT): 58.78

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:27:01
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: RO5.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 5 - OUTDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -23.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 35.95 / 35.95 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 62.06 + 0.00) = 62.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-23	90	0.66	71.52	0.00	-6.30	-3.16	0.00	0.00	0.00	62.06

Segment Leq : 62.06 dBA

Total Leq All Segments: 62.06 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 54.91 + 0.00) = 54.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-23	90	0.57	63.92	0.00	-5.96	-3.04	0.00	0.00	0.00	54.91

Segment Leq : 54.91 dBA

Total Leq All Segments: 54.91 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.06
(NIGHT): 54.91

```
STAMSON 5.0        NORMAL REPORT        Date: 01-04-2019 13:49:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: RO6.te               Time Period: Day/Night 16/8 hours
Description: RECEIVER 6 - OUTDOOR


Road data, segment # 1: Century Rd (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  12000
    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: Century Rd (day/night)
--------------------------------------------
Angle1   Angle2           : -18.00 deg   62.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  49.27 / 49.27  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Results segment # 1: Century Rd (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 58.95 + 0.00) = 58.95 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------------
---
   -18     62   0.66  71.52   0.00  -8.57  -3.99   0.00   0.00   0.00
58.95
-------------------------------------------------------------------------------
---

Segment Leq : 58.95 dBA

Total Leq All Segments: 58.95 dBA


Results segment # 1: Century Rd (night)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 51.87 + 0.00) = 51.87 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------------
---
   -18     62   0.57  63.92   0.00  -8.11  -3.93   0.00   0.00   0.00
51.87
-------------------------------------------------------------------------------
---

Segment Leq : 51.87 dBA

Total Leq All Segments: 51.87 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 58.95
                           (NIGHT): 51.87
```

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:51:36
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: RO7.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 7 - OUTDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -17.00 deg 52.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 62.40 / 62.40 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 56.76 + 0.00) = 56.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	52	0.66	71.52	0.00	-10.28	-4.48	0.00	0.00	0.00	56.76

Segment Leq : 56.76 dBA

Total Leq All Segments: 56.76 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 49.76 + 0.00) = 49.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	52	0.57	63.92	0.00	-9.72	-4.44	0.00	0.00	0.00	49.76

Segment Leq : 49.76 dBA

Total Leq All Segments: 49.76 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.76
(NIGHT): 49.76

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:28:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: RO8.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 8 - OUTDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -90.00 deg 10.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 41.60 / 41.60 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 60.32 + 0.00) = 60.32 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 10 0.66 71.52 0.00 -7.35 -3.84 0.00 0.00 0.00 60.32

Segment Leq : 60.32 dBA

Total Leq All Segments: 60.32 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 53.25 + 0.00) = 53.25 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 10 0.57 63.92 0.00 -6.96 -3.71 0.00 0.00 0.00 53.25

Segment Leq : 53.25 dBA

Total Leq All Segments: 53.25 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.32
(NIGHT): 53.25

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:29:55
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: RO9.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 9 - OUTDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -12.00 deg 29.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 41.00 / 41.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 57.75 + 0.00) = 57.75 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	29	0.66	71.52	0.00	-7.25	-6.52	0.00	0.00	0.00	57.75

Segment Leq : 57.75 dBA

Total Leq All Segments: 57.75 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 50.56 + 0.00) = 50.56 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	29	0.57	63.92	0.00	-6.86	-6.51	0.00	0.00	0.00	50.56

Segment Leq : 50.56 dBA

Total Leq All Segments: 50.56 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.75
(NIGHT): 50.56

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:30:24
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: RO10.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 10 - OUTDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -59.00 deg 11.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 32.70 / 32.70 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 61.34 + 0.00) = 61.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	11	0.66	71.52	0.00	-5.62	-4.56	0.00	0.00	0.00	61.34

Segment Leq : 61.34 dBA

Total Leq All Segments: 61.34 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 54.11 + 0.00) = 54.11 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	11	0.57	63.92	0.00	-5.31	-4.50	0.00	0.00	0.00	54.11

Segment Leq : 54.11 dBA

Total Leq All Segments: 54.11 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 61.34
(NIGHT): 54.11

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:19:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: RO11.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 11 - OUTDOOR

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -45.00 deg 47.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 64.70 / 64.70 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Century Rd (day)

Source height = 1.50 m

ROAD (0.00 + 48.41 + 0.00) = 48.41 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-45 47 0.66 71.52 0.00 -10.54 -3.24 0.00 -9.34 0.00
48.41

Segment Leq : 48.41 dBA

Total Leq All Segments: 48.41 dBA

Results segment # 1: Century Rd (night)

Source height = 1.50 m

ROAD (0.00 + 50.76 + 0.00) = 50.76 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

-45 47 0.57 63.92 0.00 -9.97 -3.19 0.00 0.00 0.00
50.76

Segment Leq : 50.76 dBA

Total Leq All Segments: 50.76 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 48.41
(NIGHT): 50.76

B.3 MITIGATED OUTDOOR RECEIVER STAMSON REPORTS

```
STAMSON 5.0        NORMAL REPORT        Date: 01-04-2019 13:01:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: roa1.te              Time Period: Day/Night 16/8 hours
Description: RECEIVER 1 - OUTDOOR ATTENUATED


Road data, segment # 1: Century Rd (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  12000
    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: Century Rd (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   32.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  29.94 / 29.94  m
Receiver height           :   1.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with
barrier)
Barrier angle1            : -90.00 deg   Angle2 : 32.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :  14.70 / 14.70  m
Source elevation          :  90.35 m
Receiver elevation        :  90.42 m
Barrier elevation         :  90.28 m
Reference angle           :   0.00


Results segment # 1: Century Rd (day)
-------------------------------------

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 !        1.50 !        1.60 !        91.88

ROAD (0.00 + 57.74 + 0.00) = 57.74 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     32   0.51  71.52   0.00  -4.53  -2.57   0.00   0.00  -6.67
57.74
-------------------------------------------------------------------------
---

Segment Leq : 57.74 dBA

Total Leq All Segments: 57.74 dBA


Results segment # 1: Century Rd (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 !        4.50 !        3.13 !        93.41

ROAD (0.00 + 56.55 + 0.00) = 56.55 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     32   0.42  63.92   0.00  -4.26  -2.45   0.00   0.00  -3.87
53.33*
   -90     32   0.57  63.92   0.00  -4.71  -2.65   0.00   0.00   0.00
56.55
-------------------------------------------------------------------------
---

 * Bright Zone !

Segment Leq : 56.55 dBA

Total Leq All Segments: 56.55 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 57.74
                           (NIGHT): 56.55
```

```
STAMSON 5.0        NORMAL REPORT        Date: 01-04-2019 13:03:15
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ROA2.te              Time Period: Day/Night 16/8 hours
Description: RECEIVER 2 - OUTDOOR ATTENUATED


Road data, segment # 1: Century Rd (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  12000
    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: Century Rd (day/night)
-----------------------------------------------
Angle1   Angle2           : -34.00 deg   48.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  29.17 / 29.17  m
Receiver height           :   1.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with
barrier)
Barrier angle1            : -34.00 deg   Angle2 : 48.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :  13.90 / 13.90  m
Source elevation          :  90.22 m
Receiver elevation        :  90.42 m
Barrier elevation         :  90.27 m
Reference angle           :   0.00


Results segment # 1: Century Rd (day)
-------------------------------------

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 !        1.50 !        1.55 !        91.82

ROAD (0.00 + 56.12 + 0.00) = 56.12 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -34     48   0.51  71.52   0.00  -4.36  -3.63   0.00   0.00  -7.41
56.12
-------------------------------------------------------------------------
---

Segment Leq : 56.12 dBA

Total Leq All Segments: 56.12 dBA


Results segment # 1: Century Rd (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 !        4.50 !        3.12 !        93.39

ROAD (0.00 + 55.73 + 0.00) = 55.73 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -34     48   0.42  63.92   0.00  -4.10  -3.59   0.00   0.00  -3.59
52.64*
   -34     48   0.57  63.92   0.00  -4.54  -3.65   0.00   0.00   0.00
55.73
-------------------------------------------------------------------------
---

 * Bright Zone !

Segment Leq : 55.73 dBA

Total Leq All Segments: 55.73 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 56.12
                           (NIGHT): 55.73
```

```
STAMSON 5.0        NORMAL REPORT        Date: 01-04-2019 13:03:41
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ROA3.te              Time Period: Day/Night 16/8 hours
Description: RECEIVER 3 - OUTDOOR ATTENUATED


Road data, segment # 1: Century Rd (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  12000
    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: Century Rd (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   30.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  22.33 / 22.33  m
Receiver height           :   1.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with
barrier)
Barrier angle1            : -90.00 deg   Angle2 : 30.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :   7.00 / 7.00   m
Source elevation          :  90.15 m
Receiver elevation        :  90.65 m
Barrier elevation         :  90.27 m
Reference angle           :   0.00


Results segment # 1: Century Rd (day)
-------------------------------------

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 !        1.50 !        1.72 !        91.99

ROAD (0.00 + 59.36 + 0.00) = 59.36 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     30   0.51  71.52   0.00  -2.61  -2.66   0.00   0.00  -6.89
59.36
-------------------------------------------------------------------------
---

Segment Leq : 59.36 dBA

Total Leq All Segments: 59.36 dBA


Results segment # 1: Century Rd (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 !        4.50 !        3.78 !        94.05

ROAD (0.00 + 58.47 + 0.00) = 58.47 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     30   0.42  63.92   0.00  -2.45  -2.53   0.00   0.00  -0.40
58.53*
   -90     30   0.57  63.92   0.00  -2.71  -2.74   0.00   0.00   0.00
58.47
-------------------------------------------------------------------------
---

 * Bright Zone !

Segment Leq : 58.47 dBA

Total Leq All Segments: 58.47 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 59.36
                           (NIGHT): 58.47
```

```
STAMSON 5.0        NORMAL REPORT        Date: 01-04-2019 13:04:40
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ROA4.te              Time Period: Day/Night 16/8 hours
Description: RECEIVER 4 - OUTDOOR ATTENUATED


Road data, segment # 1: Century Rd (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  12000
    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: Century Rd (day/night)
---------------------------------------------
Angle1   Angle2           : -43.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  22.93 / 22.93  m
Receiver height           :   1.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with
barrier)
Barrier angle1            : -43.00 deg   Angle2 : 90.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :   7.80 / 7.80   m
Source elevation          :  89.90 m
Receiver elevation        :  89.22 m
Barrier elevation         :  89.19 m
Reference angle           :   0.00


Results segment # 1: Century Rd (day)
--------------------------------------

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 !        1.50 !        1.76 !        90.95

ROAD (0.00 + 59.89 + 0.00) = 59.89 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -43     90   0.51  71.52   0.00  -2.78  -2.17   0.00   0.00  -6.67
59.89
-------------------------------------------------------------------------
---

Segment Leq : 59.89 dBA

Total Leq All Segments: 59.89 dBA


Results segment # 1: Century Rd (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 !        4.50 !        3.74 !        92.93

ROAD (0.00 + 58.78 + 0.00) = 58.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -43     90   0.42  63.92   0.00  -2.62  -2.04   0.00   0.00  -0.41
58.85*
   -43     90   0.57  63.92   0.00  -2.89  -2.24   0.00   0.00   0.00
58.78
-------------------------------------------------------------------------
---

 * Bright Zone !

Segment Leq : 58.78 dBA

Total Leq All Segments: 58.78 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 59.89
                           (NIGHT): 58.78
```

```
STAMSON 5.0        NORMAL REPORT        Date: 01-04-2019 13:06:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ROA5.te              Time Period: Day/Night 16/8 hours
Description: RECEIVER 5 - OUTDOOR ATTENUATED


Road data, segment # 1: Century Rd (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  12000
    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: Century Rd (day/night)
--------------------------------------------
Angle1   Angle2           : -23.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  35.95 / 35.95  m
Receiver height           :   1.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with
barrier)
Barrier angle1            : -23.00 deg   Angle2 : 90.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :  20.05 / 20.05  m
Source elevation          :  89.90 m
Receiver elevation        :  89.01 m
Barrier elevation         :  89.19 m
Reference angle           :   0.00


Results segment # 1: Century Rd (day)
-------------------------------------

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 !        1.50 !        1.81 !        91.00

ROAD (0.00 + 56.93 + 0.00) = 56.93 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -23     90   0.51  71.52   0.00  -5.73  -2.96   0.00   0.00  -5.89
56.93
-------------------------------------------------------------------------
---

Segment Leq : 56.93 dBA

Total Leq All Segments: 56.93 dBA


Results segment # 1: Century Rd (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 !        4.50 !        3.14 !        92.33

ROAD (0.00 + 54.91 + 0.00) = 54.91 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -23     90   0.42  63.92   0.00  -5.39  -2.83   0.00   0.00  -4.04
51.66*
   -23     90   0.57  63.92   0.00  -5.96  -3.04   0.00   0.00   0.00
54.91
-------------------------------------------------------------------------
---

 * Bright Zone !

Segment Leq : 54.91 dBA

Total Leq All Segments: 54.91 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 56.93
                           (NIGHT): 54.91
```

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:57:07
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ROA6.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 6 - OUTDOOR ATTENUATED

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -18.00 deg 62.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 49.27 / 49.27 m
Receiver height : 1.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -18.00 deg Angle2 : 62.00 deg
Barrier height : 2.50 m
Barrier receiver distance : 19.50 / 19.50 m
Source elevation : 89.90 m
Receiver elevation : 88.82 m
Barrier elevation : 89.19 m
Reference angle : 0.00

Results segment # 1: Century Rd (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	1.56	90.75

ROAD (0.00 + 53.33 + 0.00) = 53.33 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	62	0.51	71.52	0.00	-7.80	-3.89	0.00	0.00	-6.50	53.33

Segment Leq : 53.33 dBA

Total Leq All Segments: 53.33 dBA

Results segment # 1: Century Rd (night)

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	4.50	3.37	92.56

ROAD (0.00 + 51.87 + 0.00) = 51.87 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	62	0.42	63.92	0.00	-7.33	-3.83	0.00	0.00	-3.34	49.41*
-18	62	0.57	63.92	0.00	-8.11	-3.93	0.00	0.00	0.00	51.87

* Bright Zone !

Segment Leq : 51.87 dBA

Total Leq All Segments: 51.87 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.33
(NIGHT): 51.87

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:54:19
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ROA7.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 7 - OUTDOOR ATTENUATED

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -17.00 deg 52.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 62.40 / 62.40 m
Receiver height : 1.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -17.00 deg Angle2 : 52.00 deg
Barrier height : 2.50 m
Barrier receiver distance : 19.50 / 19.50 m
Source elevation : 89.90 m
Receiver elevation : 88.79 m
Barrier elevation : 89.19 m
Reference angle : 0.00

Results segment # 1: Century Rd (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	1.45	90.64

ROAD (0.00 + 51.06 + 0.00) = 51.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	52	0.51	71.52	0.00	-9.35	-4.41	0.00	0.00	-6.70	51.06

Segment Leq : 51.06 dBA

Total Leq All Segments: 51.06 dBA

Results segment # 1: Century Rd (night)

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	4.50	3.51	92.70

ROAD (0.00 + 49.76 + 0.00) = 49.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	52	0.42	63.92	0.00	-8.79	-4.37	0.00	0.00	-2.87	47.89*
-17	52	0.57	63.92	0.00	-9.72	-4.44	0.00	0.00	0.00	49.76

* Bright Zone !

Segment Leq : 49.76 dBA

Total Leq All Segments: 49.76 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 51.06
(NIGHT): 49.76

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:14:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ROA8.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 8 - OUTDOOR ATTENUATED

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -90.00 deg 10.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 41.60 / 41.60 m
Receiver height : 1.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 10.00 deg
Barrier height : 2.50 m
Barrier receiver distance : 26.35 / 26.35 m
Source elevation : 90.35 m
Receiver elevation : 90.27 m
Barrier elevation : 90.28 m
Reference angle : 0.00

Results segment # 1: Century Rd (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	1.54	91.82

ROAD (0.00 + 54.79 + 0.00) = 54.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	10	0.51	71.52	0.00	-6.69	-3.61	0.00	0.00	-6.42	54.79

Segment Leq : 54.79 dBA

Total Leq All Segments: 54.79 dBA

Results segment # 1: Century Rd (night)

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	4.50	2.64	92.92

ROAD (0.00 + 53.25 + 0.00) = 53.25 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	10	0.42	63.92	0.00	-6.29	-3.46	0.00	0.00	-4.97	49.20*
-90	10	0.57	63.92	0.00	-6.96	-3.71	0.00	0.00	0.00	53.25

---

* Bright Zone !

Segment Leq : 53.25 dBA

Total Leq All Segments: 53.25 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.79
(NIGHT): 53.25

```
STAMSON 5.0        NORMAL REPORT        Date: 01-04-2019 13:14:46
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ROA9.te              Time Period: Day/Night 16/8 hours
Description: RECEIVER 9 - OUTDOOR ATTENUATED


Road data, segment # 1: Century Rd (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  12000
    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: Century Rd (day/night)
--------------------------------------------
Angle1   Angle2           : -12.00 deg   29.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  41.00 / 41.00  m
Receiver height           :   1.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with
barrier)
Barrier angle1            : -12.00 deg   Angle2 : 29.00 deg
Barrier height            :   2.50 m
Barrier receiver distance :  25.68 / 25.68  m
Source elevation          :  90.22 m
Receiver elevation        :  90.35 m
Barrier elevation         :  90.27 m
Reference angle           :   0.00

Results segment # 1: Century Rd (day)
-------------------------------------

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 !        1.50 !        1.50 !        91.77

ROAD (0.00 + 51.20 + 0.00) = 51.20 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -12     29   0.51  71.52   0.00  -6.59  -6.50   0.00   0.00  -7.23
51.20
-------------------------------------------------------------------------
---

Segment Leq : 51.20 dBA

Total Leq All Segments: 51.20 dBA


Results segment # 1: Century Rd (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 !        4.50 !        2.62 !        92.89

ROAD (0.00 + 50.56 + 0.00) = 50.56 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -12     29   0.42  63.92   0.00  -6.20  -6.48   0.00   0.00  -4.96
46.27*
   -12     29   0.57  63.92   0.00  -6.86  -6.51   0.00   0.00   0.00
50.56
-------------------------------------------------------------------------
---

 * Bright Zone !

Segment Leq : 50.56 dBA

Total Leq All Segments: 50.56 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 51.20
                           (NIGHT): 50.56
```

STAMSON 5.0 NORMAL REPORT Date: 01-04-2019 13:16:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ROA10.te Time Period: Day/Night 16/8 hours
Description: RECEIVER 10 - OUTDOOR ATTENUATED

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 80 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
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: Century Rd (day/night)

Angle1 Angle2 : -59.00 deg 11.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 32.70 / 32.70 m
Receiver height : 1.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -59.00 deg Angle2 : 11.00 deg
Barrier height : 2.50 m
Barrier receiver distance : 17.70 / 17.70 m
Source elevation : 90.15 m
Receiver elevation : 90.65 m
Barrier elevation : 90.27 m
Reference angle : 0.00

Results segment # 1: Century Rd (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	1.61	91.88

ROAD (0.00 + 55.06 + 0.00) = 55.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	11	0.51	71.52	0.00	-5.11	-4.46	0.00	0.00	-6.88	55.06

Segment Leq : 55.06 dBA

Total Leq All Segments: 55.06 dBA

Results segment # 1: Century Rd (night)

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	4.50	2.98	93.25

ROAD (0.00 + 54.11 + 0.00) = 54.11 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	11	0.42	63.92	0.00	-4.81	-4.40	0.00	0.00	-4.32	50.39*
-59	11	0.57	63.92	0.00	-5.31	-4.50	0.00	0.00	0.00	54.11

* Bright Zone !

Segment Leq : 54.11 dBA

Total Leq All Segments: 54.11 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.06
(NIGHT): 54.11

Appendix C AIF CALCULATIONS AND FLOOR PLANS

Mohogany Phase 2 - Single Unit 184

Source: Road Traffic

Predicted free-field day time sound level: 66.3 dBA

Predicted free-field night time sound level: 59 dBA

Table 1.1 - Sound level at building façade

	Day (Living Area)				Night (Bedroom)			
	Wall 1	Wall 2	Wall 3	Wall 4	Wall 1	Wall 2	Wall 3	Wall 4
Source 1	66.3	66.3	66.3	66.3	59	59	59	59
Shielding Correction	0	-3	-15	-3	0	-3	-15	-3
Resultant Sound Level	66.3	63.3	51.3	63.3	59	56	44	56

Table 1.2 - Number of Components

	Wall 1			Wall 2			Wall 3			Wall 4			Total Number of
Room	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	Components
Great Room /Kitchen	1	1		1	1	1							5
Dining Room	1	1			1								3
Den/ Foyer/ Powder Rm	1	1	1							1	1		5
Master Bedroom/ Ensuite	1	1		1	1								4
Bath										1	1		2
Bedroom 2										1	1		2
Bedroom 3	1	1								1	1		4
Bedroom 4	1	1			1								3

Note: Ignore if sound level below 55 dBA

* Component AIF exceeds required value by 10 or more and has been ignored as a component

Table 1.3 - AIF

	Wall 1	Wall 2	Wall 3	Wall 4
Great Room /Kitchen	30	27		
Dining Room	28	25		
Den/ Foyer/ Powder Rm	30			27
Master Bedroom/ Ensuite	29	26		
Bath	26	23		23
Bedroom 2				23
Bedroom 3	29			26
Bedroom 4	28	25		

Note: Max AIF selected between Day and Night

Table 1.4 - Adjustment for Geometry

	Wall 1	Wall 2	Wall 3	Wall 4
Exposure Angle	0-90	30-90		30-90
Adjustment	0	1		1

Table 1.5 - Required AIF

	Wall 1	Wall 2	Wall 3	Wall 4
Great Room /Kitchen	30	28		
Dining Room	28	26		
Den/ Foyer/ Powder Rm	30			28
Master Bedroom/ Ensuite	29	27		
Bath				24
Bedroom 2				24
Bedroom 3	29			27
Bedroom 4	28	26		

Table 2.1 - Component Area (ft^2)

	Wall 1			Wall 2			Wall 3			Wall 4			Room Floor Area
Room	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	
Great Room /Kitchen	20	154		20	181	48							435
Dining Room	20	88			82								150
Den/ Foyer/ Powder Rm	26	92	29							20	132		264
Master Bedroom/ Ensuite	18	124		34	181								378
Bath										9	38		71
Bedroom 2										18	81		162
Bedroom 3	18	78								18	104		185
Bedroom 4	18	117			66								162

Note: Susan D. Smith Architect Layout

Table 2.2 - Component Percentages per Room Floor Area (%)

	Wall 1			Wall 2			Wall 3			Wall 4		
Room	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door
Great Room /Kitchen	5	35		5	42	11						
Dining Room	13	59			55							
Den/ Foyer/ Powder Rm	10	35	11							8	50	
Master Bedroom/ Ensuite	5	33		9	48							
Bath										13	54	
Bedroom 2										11	50	
Bedroom 3	10	42								10	56	
Bedroom 4	11	72			41							

Table 2.3 - Component Selection

	Wall 1			Wall 2			Wall 3			Wall 4		
Room	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door
Great Room /Kitchen	2 (6) 2	EW1		2 (6) 2	EW1	D2						
Dining Room	2 (6) 2	EW1			EW1							
Den/ Foyer/ Powder Rm	2 (6) 2	EW1	D2							2 (6) 2	EW1	
Master Bedroom/ Ensuite	2 (6) 2	EW1		2 (6) 2	EW1							
Bath										2 (6) 2	EW1	
Bedroom 2										2 (6) 2	EW1	
Bedroom 3	2 (6) 2	EW1								2 (6) 2	EW1	
Bedroom 4	2 (6) 2	EW1			EW1							

Note 1: Use Tables 7.2 - 7.4, "Topic 7, Enironmental Noise Assesment in Land Use Planning Manual"

Note 2: Windows are based on 2 mm glass thickness (Double Glaze Windows)

Mohogany Phase 2 - Single Units 171 and 183

Source: Road Traffic

Predicted free-field day time sound level: 68.1 dBA

Predicted free-field night time sound level: 57.3 dBA

Table 1.1 - Sound level at building façade

	Day (Living Area)				Night (Bedroom)			
	Wall 1	Wall 2	Wall 3	Wall 4	Wall 1	Wall 2	Wall 3	Wall 4
Source 1	68.1	68.1	68.1	68.1	57.3	57.3	57.3	57.3
Shielding Correction	-15	-3	0	-3	-15	-3	0	-3
Resultant Sound Level	53.1	65.1	68.1	65.1	42.3	54.3	57.3	54.3

Table 1.2 - Number of Components

Room	Wall 1			Wall 2			Wall 3			Wall 4			Total Number of Components
	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	
Great Room /Kitchen				1	1	1		1					4
Dining Room					1								1
Mud Room/ Hallway								1					1
Den/ Foyer/ Powder Rm										1	1		2
Master Bedroom/ Ensuite				1	1			1					3
Laundry Room/ Hallway							1	1					2
Bedroom 2								1		1	1		3
Bedroom 3								1		1	1		3
Bedroom 4					1								1
Bath										1	1		2

Note: Ignore if sound level below 55 dBA

* Component AIF exceeds required value by 10 or more and has been ignored as a component

Table 1.3 - AIF

	Wall 1	Wall 2	Wall 3	Wall 4
Great Room /Kitchen		28	31	
Dining Room		22		
Mud Room/ Hallway			25	
Den/ Foyer/ Powder Rm				25
Master Bedroom/ Ensuite		27	30	
Laundry Room/ Hallway			28	
Bedroom 2			30	27
Bedroom 3			30	27
Bedroom 4		22		
Bath				25

Note: Max AIF selected between Day and Night

Table 1.4 - Adjustment for Geometry

	Wall 1	Wall 2	Wall 3	Wall 4
Exposure Angle		30-90	0-90	30-90
Adjustment		1	0	1

Table 1.5 - Required AIF

	Wall 1	Wall 2	Wall 3	Wall 4
Great Room /Kitchen		29	31	
Dining Room		23		
Mud Room/ Hallway			25	
Den/ Foyer/ Powder Rm				26
Master Bedroom/ Ensuite		28	30	
Laundry Room/ Hallway			28	
Bedroom 2			30	28
Bedroom 3			30	28
Bedroom 4		23		
Bath				26

Table 2.1 - Component Area (ft^2)

Room	Wall 1			Wall 2			Wall 3			Wall 4			Room Floor Area
	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	
Great Room /Kitchen				20	181	48		174					435
Dining Room					82								150
Mud Room/ Hallway								71					126
Den/ Foyer/ Powder Rm										20	132		264
Master Bedroom/ Ensuite				34	181			71					378
Laundry Room/ Hallway							23	105					222
Bedroom 2								106		18	81		162
Bedroom 3								54		18	104		185
Bedroom 4					66								162
Bath										9	38		71

Note: Susan D. Smith Architect Layout

Table 2.2 - Component Percentages per Room Floor Area (%)

Room	Wall 1			Wall 2			Wall 3			Wall 4		
	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door
Great Room /Kitchen				5	42	11		40				
Dining Room					55							
Mud Room/ Hallway								56				
Den/ Foyer/ Powder Rm										8	50	
Master Bedroom/ Ensuite				9	48			19				
Laundry Room/ Hallway							10	47				
Bedroom 2								65		11	50	
Bedroom 3								29		10	56	
Bedroom 4					41							
Bath										13	54	

Table 2.3 - Component Selection

Room	Wall 1			Wall 2			Wall 3			Wall 4		
	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door
Great Room /Kitchen				2 (6) 2	EW1	D2		EW1				
Dining Room					EW1							
Mud Room/ Hallway								EW1				
Den/ Foyer/ Powder Rm										2 (6) 2	EW1	
Master Bedroom/ Ensuite				2 (6) 2	EW1			EW1				
Laundry Room/ Hallway							2 (6) 2	EW1				
Bedroom 2								EW1		2 (6) 2	EW1	
Bedroom 3								EW1		2 (6) 2	EW1	
Bedroom 4					EW1							
Bath										2 (6) 2	EW1	

Note 1: Use Tables 7.2 - 7.4, "Topic 7, Enironmental Noise Assesment in Land Use Planning Manual"
Note 2: Windows are based on 2 mm glass thickness (Double Glaze Windows)

Mohogany Phase 2 - Town Units Block 768 - south block - south exterior

Source: Road Traffic

Predicted free-field day time sound level: 69.1 dBA

Predicted free-field night time sound level: 61.5 dBA

Table 1.1 - Sound level at building façade

	Day (Living Area)				Night (Bedroom)			
	Wall 1	Wall 2	Wall 3	Wall 4	Wall 1	Wall 2	Wall 3	Wall 4
Source 1	69.13	69.13	69.13	69.13	61.5	61.5	61.5	61.5
Shielding Correction	0	-3	-15	-3	0	-3	-15	-3
Resultant Sound Level	69.13	66.13	54.13	66.13	61.5	58.5	46.5	58.5

Table 1.2 - Number of Components

Room	Wall 1			Wall 2			Wall 3			Wall 4			Total Number of Components
	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	
Foyer					1	1							2
Bedroom 2		1		1	1								3
Main Bathroom	1	1											2
Ensuite	1	1											2
Master Bedroom		1								1	1		3
Living room - Dining room - Kitchen										1	1	1	3

Note: Ignore if sound level below 55 dBA

* Component AIF exceeds required value by 10 or more and has been ignored as a component

Table 1.3 - AIF

	Wall 1	Wall 2	Wall 3	Wall 4
Foyer		26		
Bedroom 2	31	28		
Main Bathroom	29			
Ensuite	29			
Master Bedroom	31			28
Living room - Dining room - Kitchen				28

Note: Max AIF selected between Day and Night

Table 1.4 - Adjustment for Geometry

	Wall 1	Wall 2	Wall 3	Wall 4
Exposure Angle	0-90	30-90		30-90
Adjustment	0	1		1

Table 1.5 - Required AIF

	Wall 1	Wall 2	Wall 3	Wall 4
Foyer		27		
Bedroom 2	31	29		
Main Bathroom	29			
Ensuite	29			
Master Bedroom	31			29
Living room - Dining room - Kitchen				29

Table 2.1 - Component Area (ft^2)

Room	Wall 1			Wall 2			Wall 3			Wall 4			Room Floor Area
	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	
Foyer					12	24							192
Bedroom 2		104		27	66								123
Main Bathroom	5	64											51
Ensuite	5	67											60
Master Bedroom		142								24	75		186
Living room - Dining room - Kitchen										27	129	37	527

Note: Susan D. Smith Architect Layout

Table 2.2 - Component Percentages per Room Floor Area (%)

Room	Wall 1			Wall 2			Wall 3			Wall 4		
	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door
Foyer					6	13						
Bedroom 2		85		22	54							
Main Bathroom	10	125										
Ensuite	8	112										
Master Bedroom		76								13	40	
Living room - Dining room - Kitchen										5	24	7

Table 2.3 - Component Selection

Room	Wall 1			Wall 2			Wall 3			Wall 4		
	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door	Window	Wall	Door
Foyer					EW1	D2						
Bedroom 2		EW1		2 (15) 2	EW1							
Main Bathroom	2 (6) 2	EW1										
Ensuite	2 (6) 2	EW1										
Master Bedroom		EW1								2 (6) 2	EW1	
Living room - Dining room - Kitchen										2 (6) 2	EW1	D2

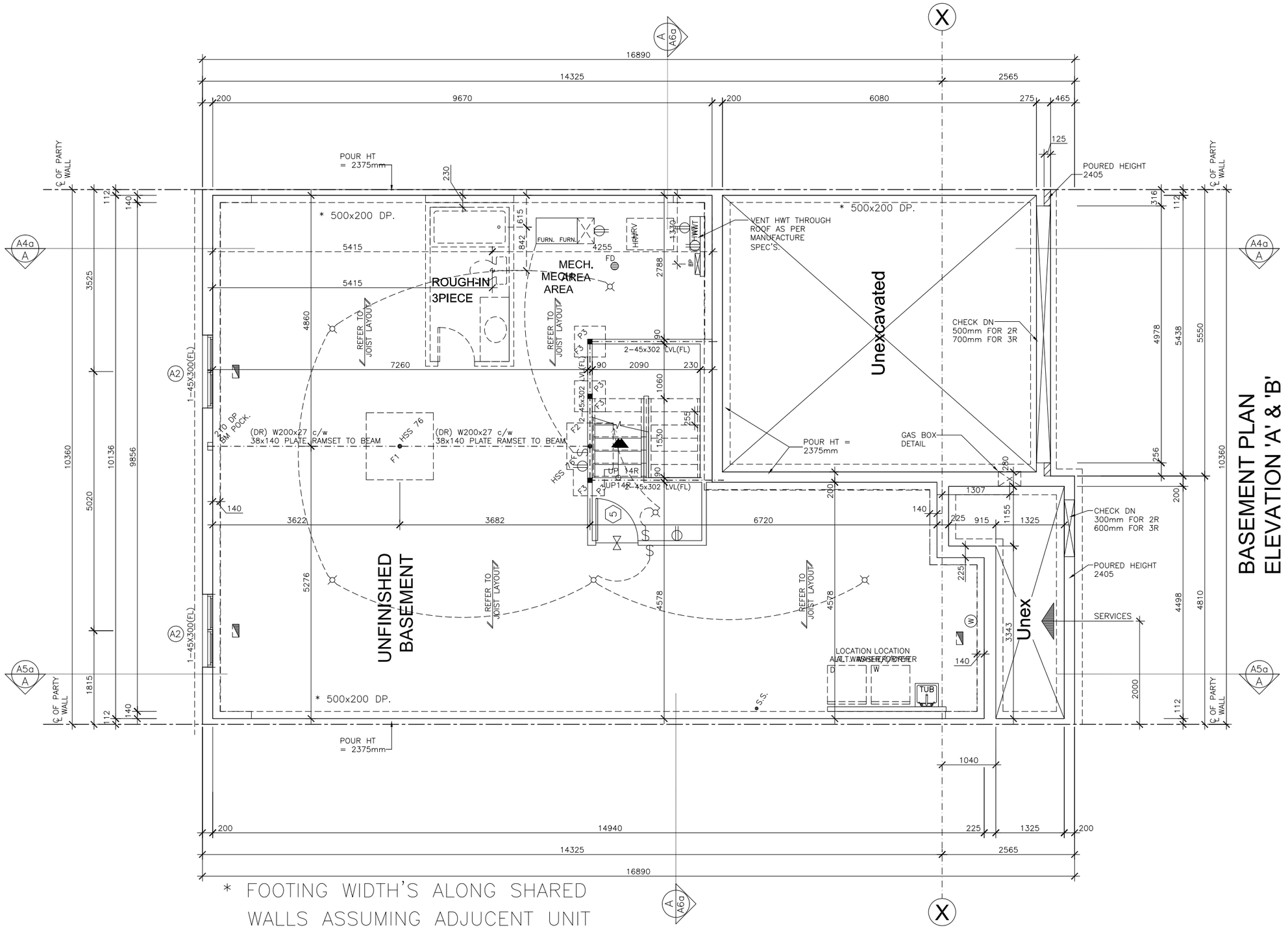
Note 1: Use Tables 7.2 - 7.4, "Topic 7, Enironmental Noise Assesment in Land Use Planning Manual"

Note 2: Windows are based on 2 mm glass thickness (Double Glaze Windows)

Minto Townhome Exterior
-Ensuite

Sample Calculation: 68.5
60.9

	DAY TIME	NIGHT TIME
Table 1.1		
Wall 1 dBA:	69.1 dBA	61.5 dBA
Table 1.2		
Total # of Components:	2	2
Table 1.3		
Equation:	= 68.5-45+10*LOG(2)+2	= 60.9-40+10*LOG(2)+2
AIF:	29	26
	Use higher value	
Table 1.4		
Exposure Angle:	0-90	
Adjustement:	0	
Table 1.5		
Equation:	= AIF + Adjustment	
Required AIF:	29	
Table 2.1		
Floor Area:	60 ft	
Wall Area:	67 ft	
Window Area:	5 ft	
Table 2.2		
Wall % of Floor Area:	112 %	
Window % of Floor Area:	8 %	
Table 2.3		
Wall Component:	EW1	
Window Component:	2(6)2	



STRUCTURAL FRAMING SCHEDULE

For Steel Framing Layout, Beam/Column/Plate Connection Details, see Structural Dwgs ST-* (Also Specs SP-1 & SP-4).

STEEL LINTEL

- S1 – L 90x90x6
- S2 – L 90x90x8
- S3 – L 100x90x6
- S4 – L 125x90x8
- S5 – L 125x90x10
- S6 – L 200x100x12
- S7 – L 150x100x10 (L.L.V.) 200mm BEARING
- S8 – L 100x90x8

WOOD LINTEL

- L1 – 2–38x235 w/ 12.7 PLYWOOD SPACER
- L2 – 2–38x235
- L3 – 3–38x235
- L4 – 3–38x235 c/w 2–12.7 PLYWOOD SPACERS & 2 ROWS OF 90mm C.W.N. @ 200 c/c B/S
- L5 – 3–38x286 c/w 2–12.7 PLYWOOD SPACERS & 2 ROWS OF 90mm C.W.N. @ 200 c/c B/S
- L6 – 2–45x240 M.L.
- L7 – 3–45x240 M.L.
- L8 – 2–38x286
- L9 – 3–38x286

PROVIDE MINIMUM 'P2' POST BOTH ENDS OF LINTEL

POSTS

- P1(8) – 75 ø STEEL TELEPOST (8 Feet Max)
- P1(9) – 75 ø STEEL TELEPOST (9 Feet Max)
- P2 – 2–38x89 or 2–38x140
- P3 – 3–38x89 or 3–38x140
- P4 – 4–38x89 or 4–38x140
- P5 – 5–38x89 or 5–38x140
- P6 – 6–38x89 or 6–38x140
- P11 – HEAVY DUTY STEEL POST, CAPACITY = 55 KN
- P12 – ADJUSTABLE HSS, CAPACITY 100 KN
- HSS 73 OD – HSS 73 O.D. X 4.8 + 12mm PLATE TOP & BOTT.
- HSS 89 OD – HSS 89 O.D. X 4.8 + 12mm PLATE TOP & BOTT.
- HSS 76 – HSS 76.2 X 76.2 X 4.8 + 12mm PLATE TOP & BOTT.
- HSS 89 – HSS 89 X 89 X 4.8 + 12mm PLATE TOP & BOTT.
- HSS 102 – HSS 102 X 102 X 4.8 + 12mm PLATE TOP & BOTT.

FOOTINGS

ALL CONC. FOOTINGS DESIGNED FOR AN ALLOWABLE SOIL CAP.= 100kpa

- F1 – 1050 x 1050 x 300 DP. 5–15M(B) x 900 lg E.W.
- F2 – 900 x 900 x 300 DP. 4–15M(B) x 750 lg E.W.
- F3 – 600 x 600 x 200 DP. 3–15M(B) x 450 lg E.W.

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1	ISSUED PRELIMINARY WORKING TO CLIENT FOR REVIEW	04JUL2018	MGC	

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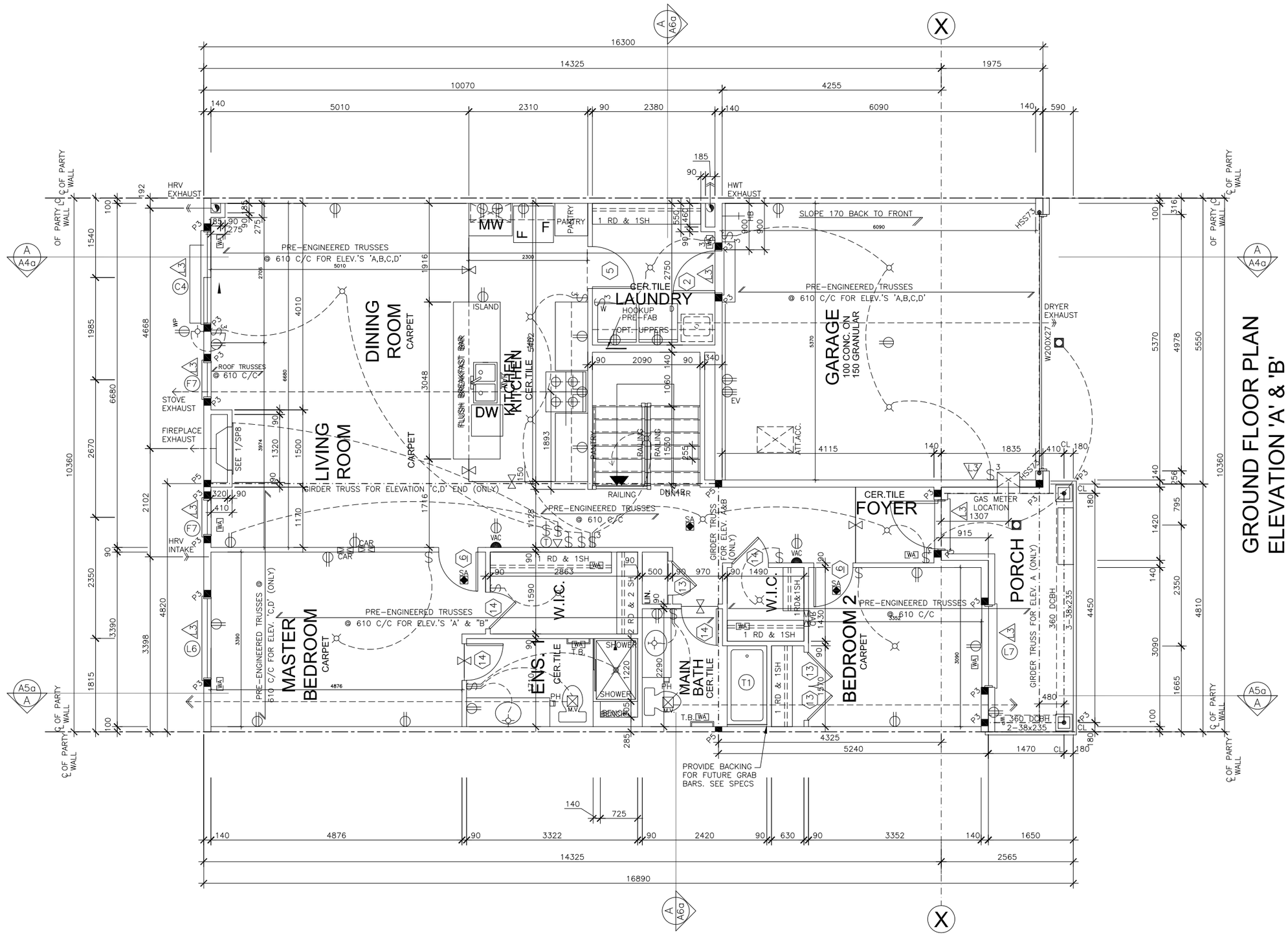
Title: BASEMENT FLOOR PLAN ELEV.: 'A' & 'B'

Acad File W:\18\18-09 Minto Bungalow Town Series

Scale 1:75

2018-34' Wide - Minto Bungalow Town Series
THE PRATT-2018-A
THE PRATT-2018-B
THE PRATT-2018-C,D
(2018 STANDARD DRAWING)

dwg A-1a



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For Steel Framing Layout, Beam/Column/Plate Connection Details, see Structural Dwgs ST-* (Also Specs SP-1 & SP-4).

STEEL LINTEL

- S1 – L 90x90x6
- S2 – L 90x90x8
- S3 – L 100x90x6
- S4 – L 125x90x8
- S5 – L 125x90x10
- S6 – L 200x100x12
- S7 – L 150x100x10 (L.L.V.) 200mm BEARING
- S8 – L 100x90x8

WOOD LINTEL

- L1 – 2–38x235 w/ 12.7 PLYWOOD SPACER
- L2 – 2–38x235
- L3 – 3–38x235
- L4 – 3–38x235 c/w 2–12.7 PLYWOOD SPACERS & 2 ROWS OF 90mm C.W.N. @ 200 c/c B/S
- L5 – 3–38x286 c/w 2–12.7 PLYWOOD SPACERS & 2 ROWS OF 90mm C.W.N. @ 200 c/c B/S
- L6 – 2–45x240 M.L.
- L7 – 3–45x240 M.L.
- L8 – 2–38x286
- L9 – 3–38x286

PROVIDE MINIMUM 'P2' POST BOTH ENDS OF LINTEL

POSTS

- P1(8) – 75 ø STEEL TELEPOST (8 Feet Max)
- P1(9) – 75 ø STEEL TELEPOST (9 Feet Max)
- P2 – 2–38x89 or 2–38x140
- P3 – 3–38x89 or 3–38x140
- P4 – 4–38x89 or 4–38x140
- P5 – 5–38x89 or 5–38x140
- P6 – 6–38x89 or 6–38x140
- P11 – HEAVY DUTY STEEL POST, CAPACITY = 55 KN
- P12 – ADJUSTABLE HSS, CAPACITY 100 KN
- HSS 73 OD – HSS 73 O.D. X 4.8 + 12mm PLATE TOP & BOTT.
- HSS 89 OD – HSS 89 O.D. X 4.8 + 12mm PLATE TOP & BOTT.
- HSS 76 – HSS 76.2 X 76.2 X 4.8 + 12mm PLATE TOP & BOTT.
- HSS 89 – HSS 89 X 89 X 4.8 + 12mm PLATE TOP & BOTT.
- HSS 102 – HSS 102 X 102 X 4.8 + 12mm PLATE TOP & BOTT.

FOOTINGS

ALL CONC. FOOTINGS DESIGNED FOR AN ALLOWABLE SOIL CAP.= 100kpa

F1 – 1050 x 1050 x 300 DP.
5–15M(B) x 900 lg E.W.

F2 – 900 x 900 x 300 DP.
4–15M(B) x 750 lg E.W.

F3 – 600 x 600 x 200 DP.
3–15M(B) x 450 lg E.W.

* 20mm EXT. SHEATHING FOR VERTICAL SIDING

ALL FOOTINGS TO BE 500X200dp. U/N

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STRCT'L FRM'G LEGEND: SEE DWG A3 ELEVATION LEGEND: SEE DWG A4 FLOOR PLAN LEGEND:SEE DWG SP-1 DR/WIN LEGEND:SEE DWG SP-7* FOR ADDT'L INFORMATION, ABBREV'S, SYMBOLS,SEE SPECS. SP-*,SD-*,W-*

Title: GROUND FLOOR PLAN ELEV.: 'A' & 'B'

Acad File W:\18\18-09 Minto Bungalow Town Series

Scale 1:75

2018-34' Wide - Minto Bungalow Town Series
THE PRATT-2018-A
THE PRATT-2018-B
THE PRATT-2018-C,D
(2018 STANDARD DRAWING)

dwg A-2a

* SEE 8/SP4B

STRUCTURAL FRAMING SCHEDULE

For Steel Framing Layout, Beam/Column/Plate Connection Details, see Structural Dwgs ST-* (Also Specs SP-1 & SP-4).

STEEL LINTEL

- S1 – L 90x90x6
- S2 – L 90x90x8
- S3 – L 100x90x6
- S4 – L 125x90x8
- S5 – L 125x90x10
- S6 – L 200x100x12
- S7 – L 150x100x10 (L.L.V.) 200mm BEARING
- S8 – L 100x90x8

WOOD LINTEL

- L1 – 2–38x235 w/ 12.7 PLYWOOD SPACER
- L2 – 2–38x235
- L3 – 3–38x235
- L4 – 3–38x235 c/w 2–12.7 PLYWOOD SPACERS & 2 ROWS OF 90mm C.W.N. @ 200 c/c B/S
- L5 – 3–38x286 c/w 2–12.7 PLYWOOD SPACERS & 2 ROWS OF 90mm C.W.N. @ 200 c/c B/S
- L6 – 2–45x240 M.L.
- L7 – 3–45x240 M.L.
- L8 – 2–38x286
- L9 – 3–38x286

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- P2 – 2–38x89 or 2–38x140
- P3 – 3–38x89 or 3–38x140
- P4 – 4–38x89 or 4–38x140
- P5 – 5–38x89 or 5–38x140
- P6 – 6–38x89 or 6–38x140
- P11 – HEAVY DUTY STEEL POST, CAPACITY = 55 KN
- P12 – ADJUSTABLE HSS, CAPACITY 100 KN
- HSS 73 OD – HSS 73 O.D. X 4.8 + 12mm PLATE TOP & BOTT.
- HSS 89 OD – HSS 89 O.D. X 4.8 + 12mm PLATE TOP & BOTT.
- HSS 76 – HSS 76.2 X 76.2 X 4.8 + 12mm PLATE TOP & BOTT.
- HSS 89 – HSS 89 X 89 X 4.8 + 12mm PLATE TOP & BOTT.
- HSS 102 – HSS 102 X 102 X 4.8 + 12mm PLATE TOP & BOTT.

FOOTINGS

ALL CONC. FOOTINGS DESIGNED FOR AN ALLOWABLE SOIL CAP.= 100kpa

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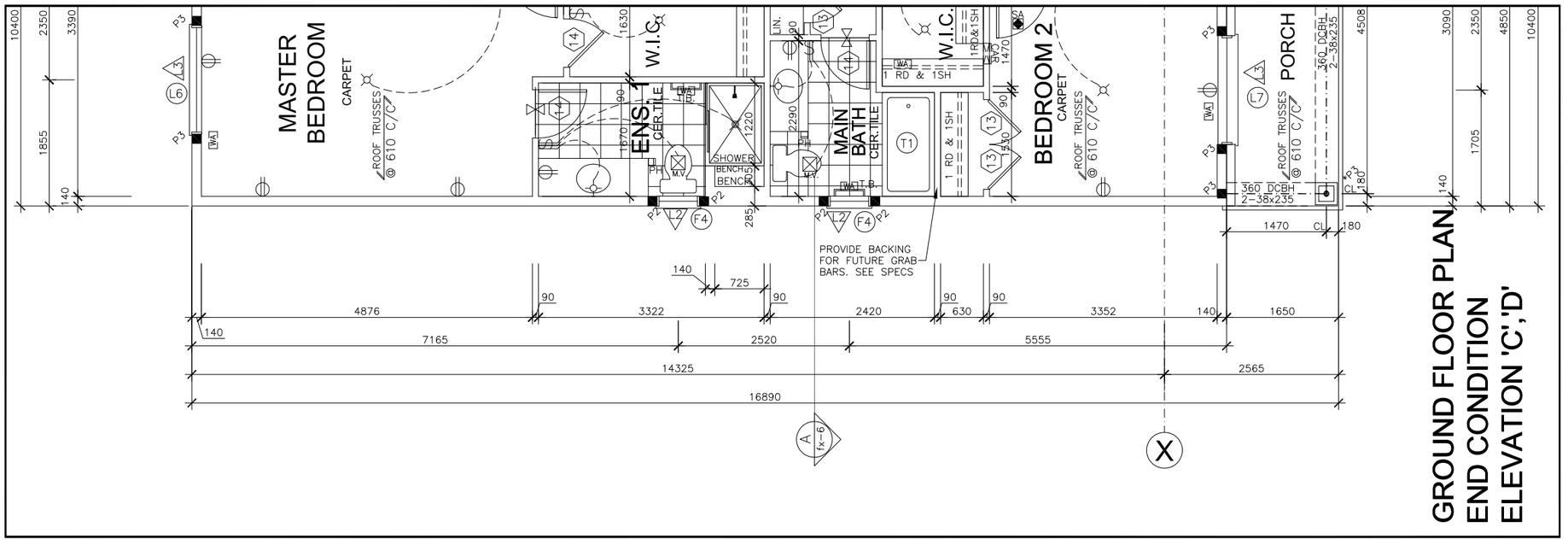
5–15M(B) x 900 lg E.W.

F2 – 900 x 900 x 300 DP.
4–15M(B) x 750 lg E.W.

F3 – 600 x 600 x 200 DP.
3–15M(B) x 450 lg E.W.

* 20mm EXT. SHEATHING FOR VERTICAL SIDING

ALL FOOTINGS TO BE 500X200dp. U/N



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BASEMENT FLOOR PLANS ELEV.: 'C,D'

Acad File W:\18\18-09 Minto Bungalow Town Series

Scale 1:75

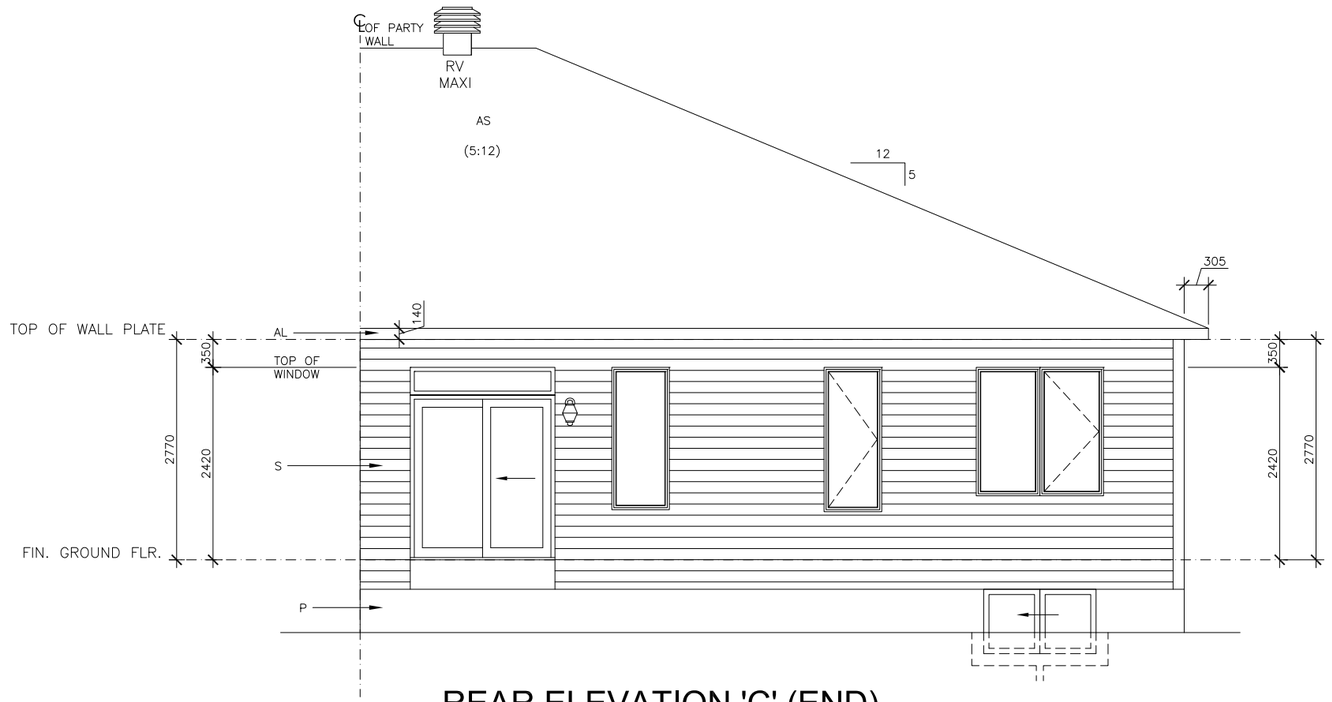
2018-34' Wide - Minto Bungalow Town Series
THE PRATT-2018-A
THE PRATT-2018-B
THE PRATT-2018-C,D
(2018 STANDARD DRAWING)

dwg A2b

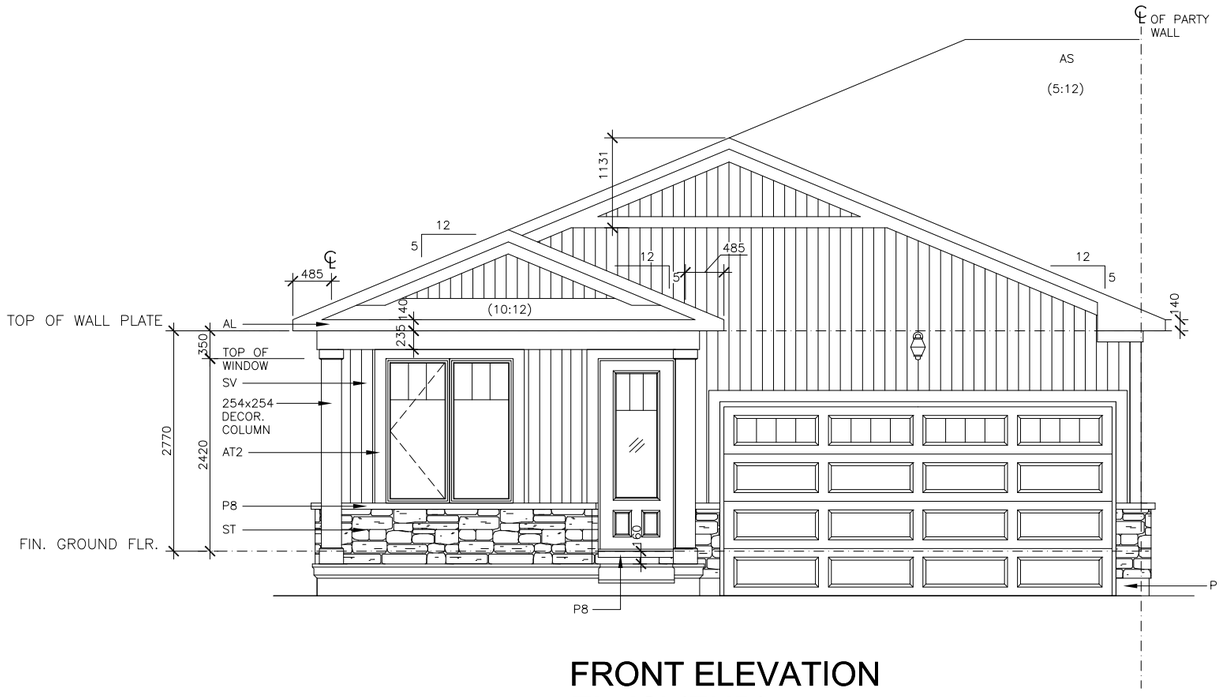
EXTERIOR FINISHES

AC	–	ACRYLIC FINISH
ACT1	–	ACRYLIC FINISH TRIM (90mm)
ACT2	–	ACRYLIC FINISH TRIM (140mm)
AL	–	ALUMINUM
AT1	–	ALUMINUM TRIM (90mm)
AT2	–	ALUMINUM TRIM (140mm)
AS	–	ASPHALT SHINGLES
B	–	BRICK VENEER (nominal size = 260x80)
B1	–	BRICK SOLDIER COURSE
B2	–	BRICK SOLDIER COURSE (20mm projection)
B3	–	BRICK STRETCHER COURSE
B4	–	BRICK STACK BOND
B5	–	BRICK SILL ROWLOCK (SLOPED)
B6	–	BRICK ROWLOCK
B7	–	BRICK CORBELLING
B8	–	BRICK COINING (20mm projection)
B9	–	BRICK HERRINGBONE
+20	–	BRICK PROJECTING 20mm
–20	–	BRICK RECESSED 20mm
CB	–	CEMENT BOARD PANEL
EB	–	EXTRA BRICK
F	–	FLASHING
HP	–	HARDBOARD PANEL TEXTURED
P	–	PARGING
PCS	–	POURED CONCRETE SILL (ONE PIECE)
PC	–	PRECAST CONC. BLOCK SHAPE (SEE DWG)
PCC	–	PRECAST CAP – 90mm
P1	–	PRECAST CONC. SILL 60mm HIGH
P2	–	PRECAST CONC. KEYSTONE
P3	–	PRECAST CONC. BLOCK 260mm SQ. PROJECTION TO MATCH SOLDIER COURSE
P4	–	PRECAST CONC. BLOCK 260mm HIGH PROJECTION TO MATCH SOLDIER COURSE
P5	–	****
P6	–	PRECAST CONC. BLOCK 150mm HIGH
P7	–	PRECAST CONC. BLOCK 78mm HIGH
P8	–	PRECAST CONC. SILL 78mm HIGH
PTW	–	PRESSURE TREATED WOOD
RV	–	ROOF VENT
S	–	SIDING HORIZONTAL
SA	–	SIDING (ALUMINUM)
SV	–	SIDING VERTICAL (VINYL)
S1	–	SIDING HALF ROUND PANELS
S2	–	SIDING SHAKE
S3	–	SIDING STAGGERED SHAKE
SH1	–	SHUTTERS (305mm)
SH2	–	SHUTTERS (380 mm)
ST	–	STONE VENEER
ST1	–	STONE VENEER STACK BOND 20mm PROJECTION
ST2	–	STONE VENEER SOLDIER COURSE 20mm PROJECTION
ST3	–	LIMESTONE STARTER
U.P.O	–	UNPROTECTED OPENING (SEE OBC 9.10.14)
VF	–	VALLEY FLASHING
WT1	–	WOOD TRIM (100mm)
WT2	–	WOOD TRIM (150mm)
WT3	–	WOOD TRIM (200mm)
WT4	–	WOOD TRIM (250mm – 20mm THICK)
WT5	–	WOOD TRIM (250mm – 30mm THICK)
XXX	–	ADDRESS LOCATION

FOR PRECAST ANGLESTONE SEE SPECS.



REAR ELEVATION 'C' (END)



FRONT ELEVATION
EL. 'C' (END)

** ALL FASCIA BOARD 140mm **

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Title: FRONT, REAR ELEVATION ELEV.: 'C' END

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2018-34' Wide - Minto Bungalow Town Series

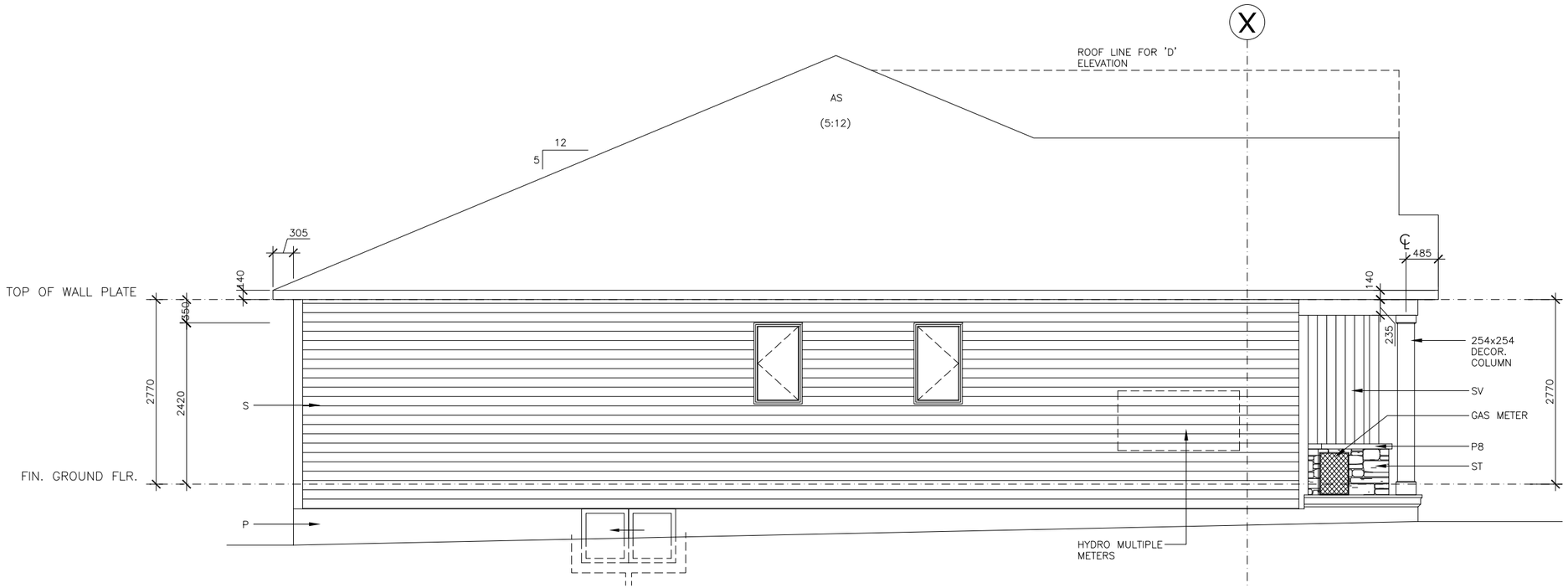
THE PRATT-2018-A
THE PRATT-2018-B
THE PRATT-2018-C,D
(2018 STANDARD DRAWING)

dwg A-3c

EXTERIOR FINISHES

AC	–	ACRYLIC FINISH	P3	–	PRECAST CONC. BLOCK 260mm SQ. PROJECTION TO MATCH SOLDIER COURSE
ACT1	–	ACRYLIC FINISH TRIM (90mm)	P4	–	PRECAST CONC. BLOCK 260mm HIGH PROJECTION TO MATCH SOLDIER COURSE
ACT2	–	ACRYLIC FINISH TRIM (140mm)	P5	–	****
AL	–	ALUMINUM	P6	–	PRECAST CONC. BLOCK 150mm HIGH
AT1	–	ALUMINUM TRIM (90mm)	P7	–	PRECAST CONC. BLOCK 78mm HIGH
AT2	–	ALUMINUM TRIM (140mm)	P8	–	PRECAST CONC. SILL 78mm HIGH
AS	–	ASPHALT SHINGLES	PTW	–	PRESSURE TREATED WOOD
B	–	BRICK VENEER (nominal size = 260x80)	RV	–	ROOF VENT
B1	–	BRICK SOLDIER COURSE	S	–	SIDING HORIZONTAL
B2	–	BRICK SOLDIER COURSE (20mm projection)	SA	–	SIDING (ALUMINUM)
B3	–	BRICK STRETCHER COURSE	SV	–	SIDING VERTICAL (VINYL)
B4	–	BRICK STACK BOND	S1	–	SIDING HALF ROUND PANELS
B5	–	BRICK SILL ROWLOCK (SLOPED)	S2	–	SIDING SHAKE
B6	–	BRICK ROWLOCK	S3	–	SIDING STAGGERED SHAKE
B7	–	BRICK CORBELLING	SH1	–	SHUTTERS (305mm)
B8	–	BRICK COINING (20mm projection)	SH2	–	SHUTTERS (380 mm)
B9	–	BRICK HERRINGBONE	ST	–	STONE VENEER
+20	–	BRICK PROJECTING 20mm	ST1	–	STONE VENEER STACK BOND 20mm PROJECTION
–20	–	BRICK RECESSED 20mm	ST2	–	STONE VENEER SOLDIER COURSE 20mm PROJECTION
CB	–	CEMENT BOARD PANEL	ST3	–	LIMESTONE STARTER
EB	–	EXTRA BRICK	U.P.O	–	UNPROTECTED OPENING (SEE OBC 9.10.14)
F	–	FLASHING	VF	–	VALLEY FLASHING
HP	–	HARDBOARD PANEL TEXTURED	WT1	–	WOOD TRIM (100mm)
P	–	PARGING	WT2	–	WOOD TRIM (150mm)
PCS	–	POURED CONCRETE SILL (ONE PIECE)	WT3	–	WOOD TRIM (200mm)
PC	–	PRECAST CONC. BLOCK SHAPE (SEE DWG)	WT4	–	WOOD TRIM (250mm – 20mm THICK)
PCC	–	PRECAST CAP – 90mm	WT5	–	WOOD TRIM (250mm – 30mm THICK)
P1	–	PRECAST CONC. SILL 60mm HIGH	XXX	–	ADDRESS LOCATION
P2	–	PRECAST CONC. KEYSTONE			

FOR PRECAST ANGLESTONE SEE SPECS.



END ELEVATION 'C','D'

AREA OF EXPOSED BUILDING FACE	57.61 m²
x 7% (LIMITING DISTANCE @ 1.2m)	x 0.07%
MAX. UNPROTECTED AREA ALLOWED	4.03 m²
UNPROTECTED AREA PROVIDED	2.90 m²

** ALL FASCIA BOARD 140mm **

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Title: END ELEVATION
ELEV.: 'C,D'

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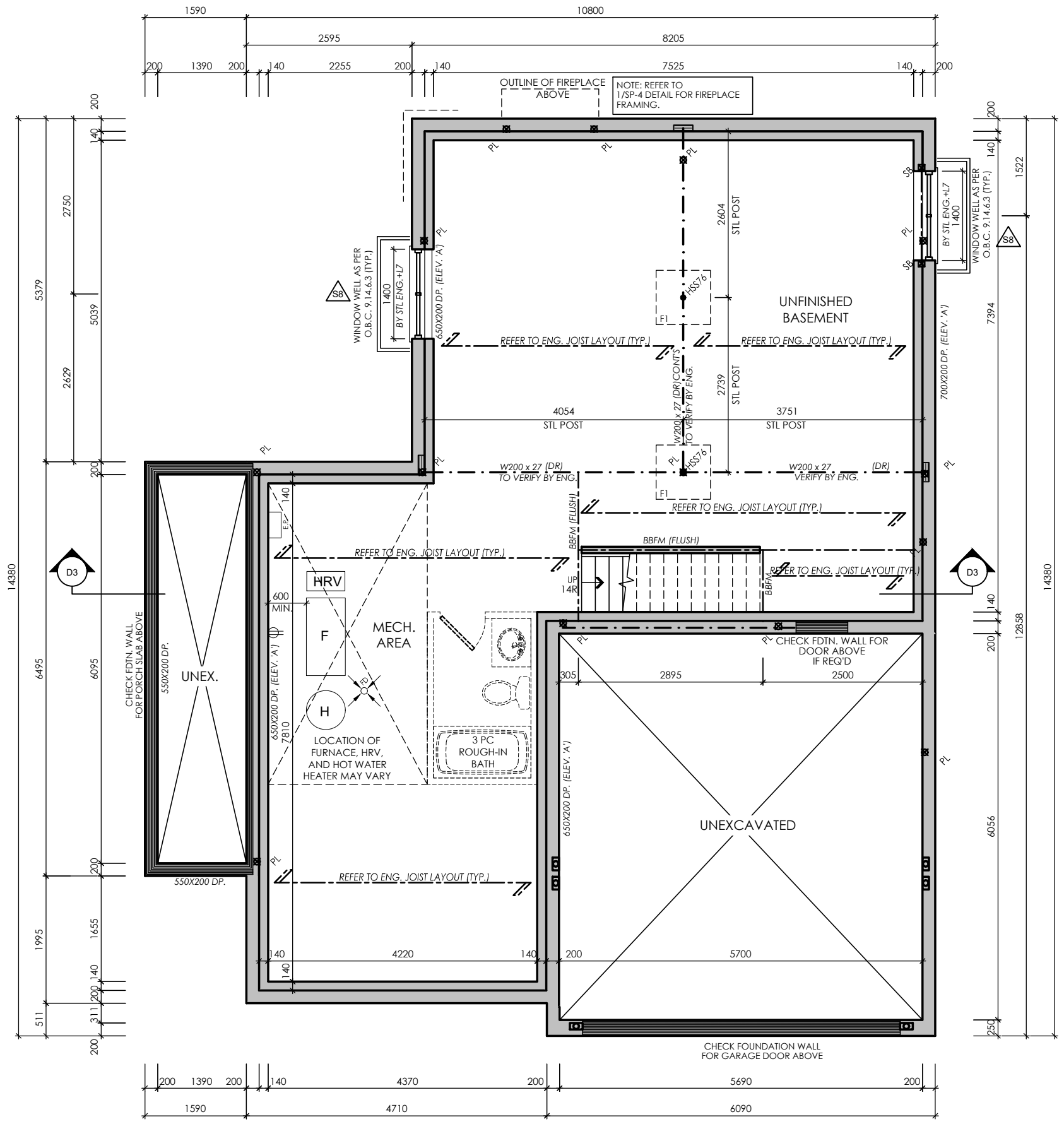
(2018 STANDARD DRAWING)

dwg A-3e



BASEMENT FLOOR ELEV. 'A'

NOTE: ELECTRICAL, GAS AND VENT LOCATIONS ARE SCHEMATIC ONLY. TO BE COORDINATED WITH ELECTRICAL AND MECHANICAL DRAWINGS BY THE CONTRACTOR.

NOTE: REFER TO FLOOR JOIST DRAWINGS FOR APPROVED FLOOR JOIST LAYOUT

F1: 1000x1000x250 DP. c/w 3-15M(B) x 850Lg. E.W.

File:D:\acadm projects\14074\Architecturals\Models\Model Type 47s\47-04-GARDENIA\14074-47-04-FINAL.dwg Plotted: May 18, 2016 By:DanielH

I, NATALIE PANDOLFI DECLARE THAT I HAVE REVIEWED AND TAKEN DESIGN RESPONSIBILITY FOR THE DESIGN WORK ON BEHALF OF **RN DESIGN LTD**,UNDER DIVISION C,PART-3 SUBSECTION-3.2.4 OF THE BUILDING CODE. I AM QUALIFIED AND THE FIRM IS REGISTERED IN THE APPROPRIATE CLASSES / CATEGORIES.

QUALIFIED DESIGNER BCIN: 41549
FIRM BCIN: 26995
DATE: NOV-19-15

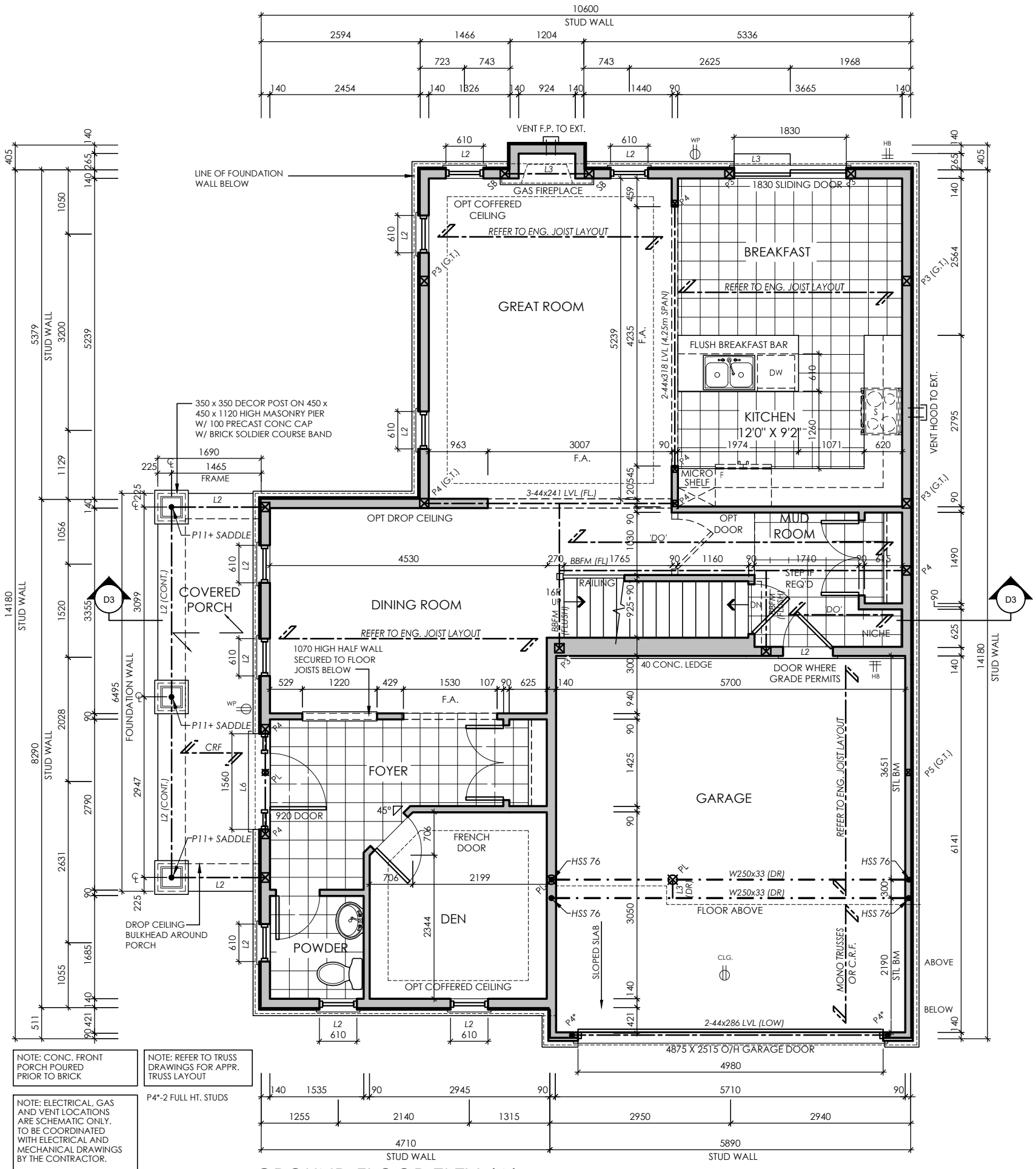
SIGNATURE:

client: Minto Communities - Ontario
location: Ottawa
project: Mahogany
marketing name: Gardenia

#	revisions	date	dwn	chk	#	revisions	date	dwn	chk
1	ISSUED FOR CLIENT REVIEW	27-Mar-15	REM	NP	5	ISSUED FOR CONSTRUCTION	11/19/2015	JR	NP
2	REMOVED CONSTRUCTION NOTES AS PER CLIENT COMMENTS	24-Jun-15	REM	NP	6	REVISED AS PER ENG. COMMENTS	1/7/2016	JR	NP
3	REVISED AS PER CLIENT COMMENTS	2-Jul-15	REM	NP	7				
4	REVISED AS PER ENG. COMMENTS	10-Nov-15	JR	JR	8				

RN design
Imagine ▸ Inspire ▸ Create

model: 47-04
scale: 1:75
project #: 14074
page: A1



NOTE: CONC. FRONT PORCH POURED PRIOR TO BRICK

NOTE: REFER TO TRUSS DRAWINGS FOR APPR. TRUSS LAYOUT

P4*-2 FULL HT. STUDS

NOTE: ELECTRICAL, GAS AND VENT LOCATIONS ARE SCHEMATIC ONLY. TO BE COORDINATED WITH ELECTRICAL AND MECHANICAL DRAWINGS BY THE CONTRACTOR.

GROUND FLOOR ELEV. 'A'

I, NATALIE PANDOLFI DECLARE THAT I HAVE REVIEWED AND TAKEN DESIGN RESPONSIBILITY FOR THE DESIGN WORK ON BEHALF OF **RN DESIGN LTD**,UNDER DIVISION C,PART-3 SUBSECTION-3.2.4 OF THE BUILDING CODE. I AM QUALIFIED AND THE FIRM IS REGISTERED IN THE APPROPRIATE CLASSES / CATEGORIES.

QUALIFIED DESIGNER BCIN: 41549
FIRM BCIN: 26995
DATE: NOV-19-15

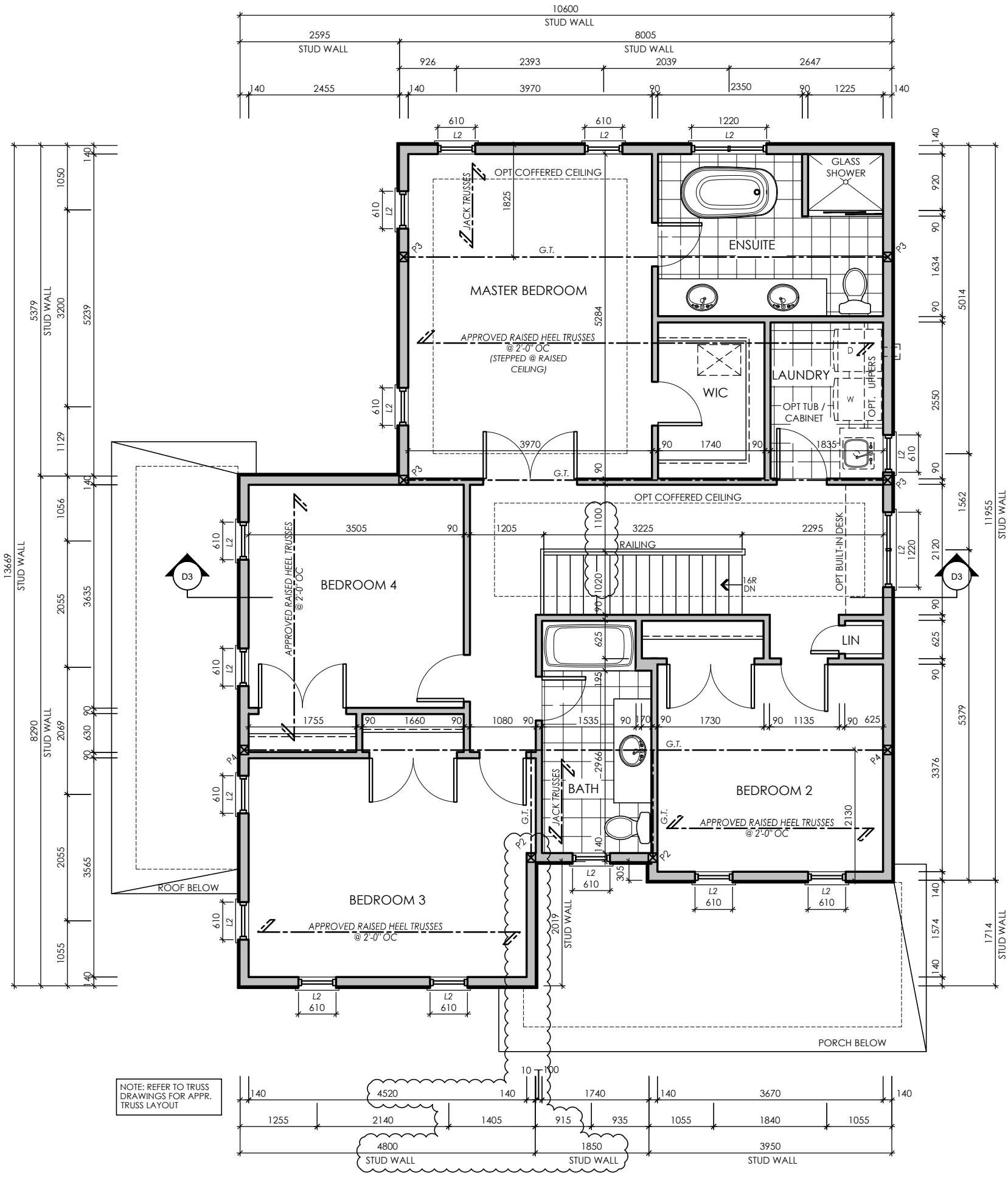
SIGNATURE:

client: Minto Communities - Ontario
location: Ottawa
project: Mahogany
marketing name: Gardenia

#	revisions	date	dwn	chk	#	revisions	date	dwn	chk
1	ISSUED FOR CLIENT REVIEW	27-Mar-15	REM	NP	5	REVISED AS PER ENG. COMMENTS	1/7/2016	JR	NP
2	REMOVED CONSTRUCTION NOTES AS PER CLIENT COMMENTS	24-Jun-15	REM	NP	6				
3	REVISED AS PER ENG. COMMENTS	10-Nov-15	JR	JR	7				
4	ISSUED FOR CONSTRUCTION	11/19/2015	JR	NP	8				

RN design
Imagine ▸ Inspire ▸ Create

model: 47-04
scale: 1:75
project #: 14074
page: A2



SECOND FLOOR ELEV. 'A'

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QUALIFIED DESIGNER BCIN: 41549
FIRM BCIN: 26995
DATE: NOV-19-15

SIGNATURE:

client: Minto Communities - Ontario
location: Ottawa
project: Mahogany
marketing name: Gardenia

#	revisions	date	dwn	chk	#	revisions	date	dwn	chk
1	ISSUED FOR CLIENT REVIEW	27-Mar-15	REM	NP	5	REV. BEDROOM 3 FRONT JOG & 2nd FL STAIR WIDTH DIMENSION	18-May-16	DJH	DJH
2	REMOVED CONSTRUCTION NOTES AS PER CLIENT COMMENTS	24-Jun-15	REM	NP	6				
3	REVISED AS PER ENG. COMMENTS	10-Nov-15	JR	JR	7				
4	ISSUED FOR CONSTRUCTION	11/19/2015	JR	NP	8				

RN design
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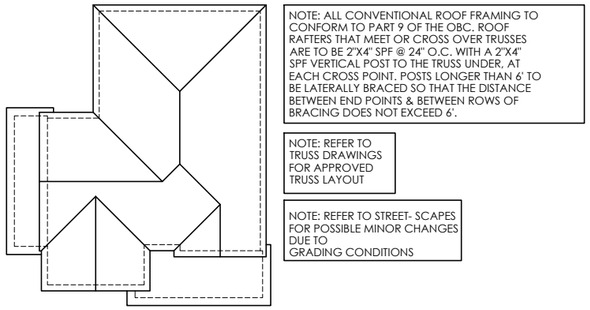
scale: 1:75
project #: 14074
page: A3

GROSS GLAZING AREA

TOTAL PERIPHERAL WALL AREA	3135.12 SF	291.25 m²
FRONT GLAZING AREA	62.64 SF	5.82 m²
LEFT SIDE GLAZING AREA	122.49 SF	11.38 m²
RIGHT SIDE GLAZING AREA	34.97 SF	3.25 m²
REAR GLAZING AREA	114.71 SF	10.66 m²
TOTAL GLAZING AREA	334.81 SF	31.10 m²
TOTAL GLAZING PERCENTAGE	10.68 %	



NOTE: ALL CONVENTIONAL ROOF FRAMING TO CONFORM TO PART 9 OF THE OBC. ROOF RAFTERS THAT MEET OR CROSS OVER TRUSSES ARE TO BE 2"X4" SPF @ 24" O.C. WITH A 2"X4" SPF VERTICAL POST TO THE TRUSS UNDER, AT EACH CROSS POINT. POSTS LONGER THAN 6' TO BE LATERALLY BRACED SO THAT THE DISTANCE BETWEEN END POINTS & BETWEEN ROWS OF BRACING DOES NOT EXCEED 6'.

NOTE: REFER TO TRUSS DRAWINGS FOR APPROVED TRUSS LAYOUT

NOTE: REFER TO STREET- SCAPES FOR POSSIBLE MINOR CHANGES DUE TO GRADING CONDITIONS

ROOF PLAN 'A'

FRONT ELEVATION 'A'

model 47-04
scale 1:75
project # 14074
page A10

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location Ottawa
marketing name Gardenia

#	revisions	date	dwn	chk	#
1	ISSUED FOR CLIENT REVIEW	27-Mar-15	REM	NP	5
2	REMOVED CONSTRUCTION NOTES AS PER CLIENT COMMENTS	24-Jun-15	REM	NP	6
3	ISSUED FOR CONSTRUCTION	11/19/2015	JR	NP	7
4					8

client Minto Communities - Ontario
project Mahogany

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LEFT SIDE ELEVATION 'A'

model 47-04
scale 1:75
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page A11

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location Ottawa
marketing name Gardenia
project Mahogany
client Minto Communities - Ontario

#	revisions	date	dwn	chk
1	ISSUED FOR CLIENT REVIEW	27-Mar-15	REM	NP
2	REMOVED CONSTRUCTION NOTES AS PER CLIENT COMMENTS	24-Jun-15	REM	NP
3	ISSUED FOR CONSTRUCTION	11/19/2015	JR	NP
4				
5				NP
6				NP
7				NP
8				

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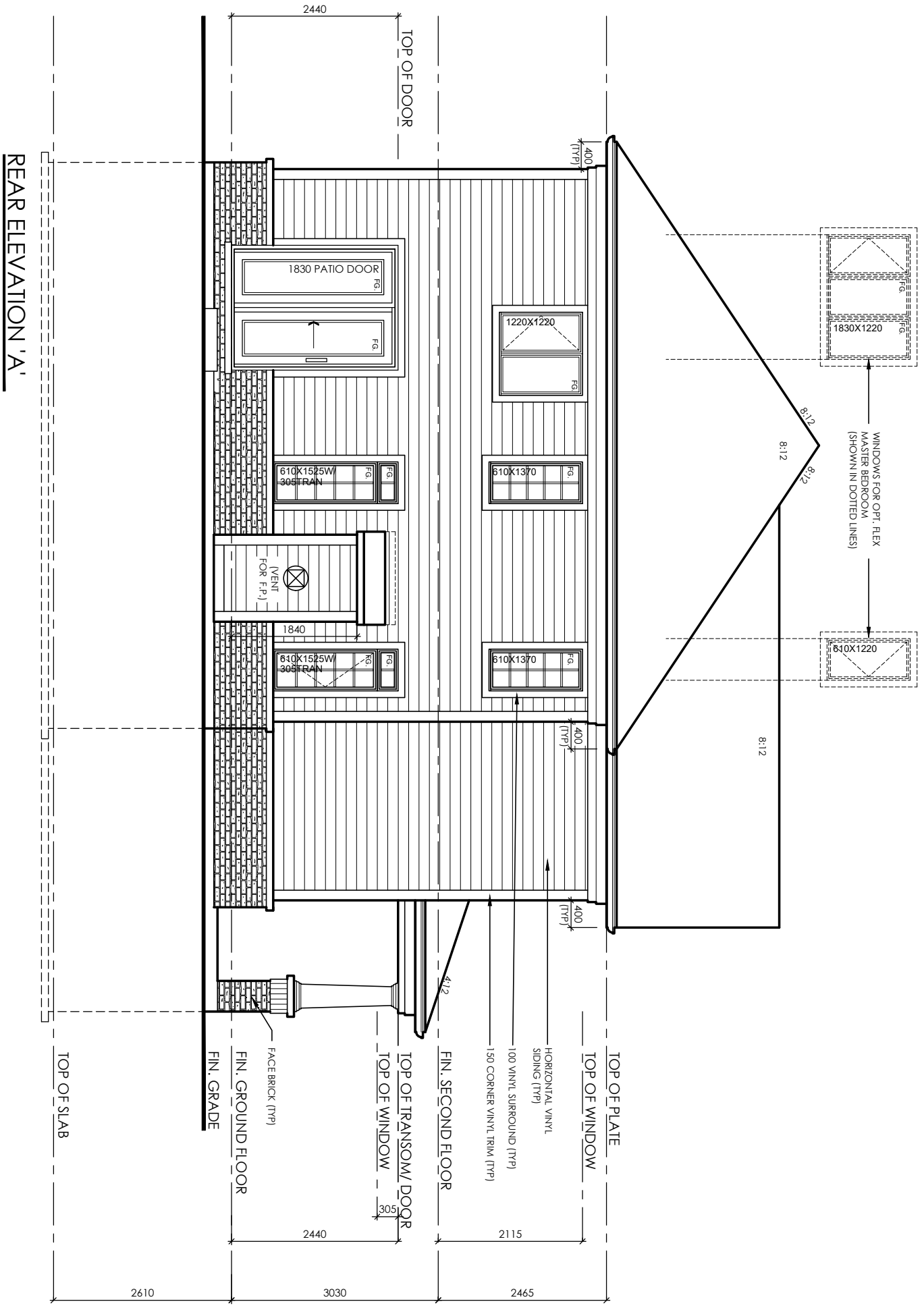
QUALIFIED DESIGNER BCIN: 41549
FIRM BCIN: 26995
DATE: NOV-19-15

SIGNATURE:

REAR ELEVATION 'A'



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QUALIFIED DESIGNER BCIN: 41549
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DATE: NOV-19-15

SIGNATURE:

client
Minto Communities - Ontario

location
Ottawa

project
Mahogany

marketing name
Gardenia

#	revisions	date	dwn	chk	#	revisions	date	dwn	chk
1	ISSUED FOR CLIENT REVIEW	27-Mar-15	REM	NP	5				
2	REMOVED CONSTRUCTION NOTES AS PER CLIENT COMMENTS	24-Jun-15	REM	NP	6				
3	ISSUED FOR CONSTRUCTION	11/19/2015	JR	NP	7				
4					8				

RN design
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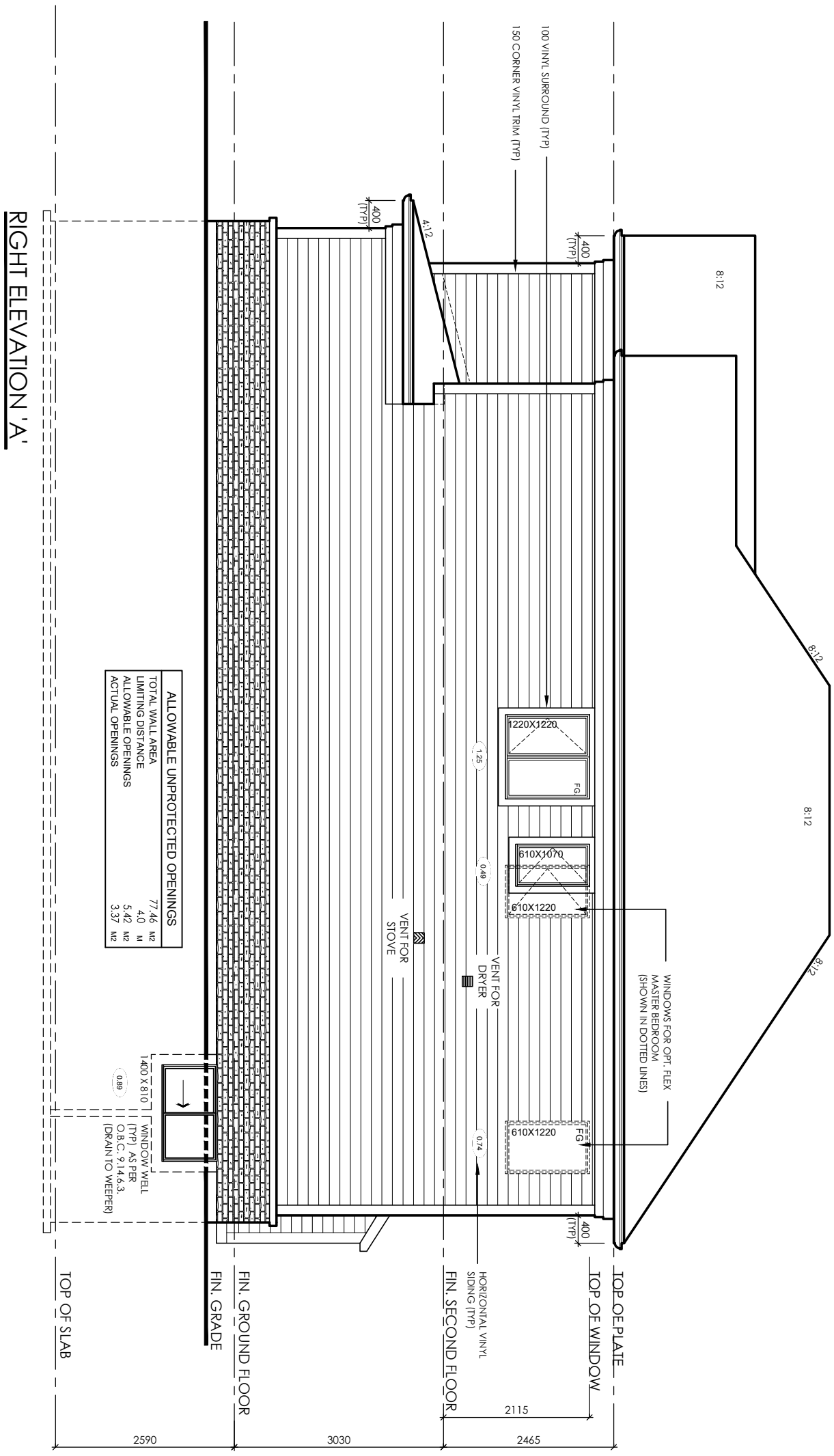
model
47-04

scale
1:75

project #
14074

page
A12

RIGHT ELEVATION 'A'



ALLOWABLE UNPROTECTED OPENINGS		
TOTAL WALL AREA	77.46	M2
LIMITING DISTANCE	4.0	M
ALLOWABLE OPENINGS	5.42	M2
ACTUAL OPENINGS	3.37	M2

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4					8				

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scale: 1:75
project #: 14074
page: A13

Appendix D TRANSPORTATION MASTER PLAN – MAP 8

8

City of / Ville de GATINEAU

McNAB/ BRAESIDE

MISSISSIPPI MILLS

BECKWITH

MONTAGUE

NORTH GRENVILLE

NORTH DUNDAS

THE NATION

CLARENCE-ROCKLAND

RUSSELL

Fitzroy Harbour
Constance Bay
Galetta
Kilburn
Dunrobin
Carp
Fallowfield
Manotick
Richmond
Ashton
Munster
North Gower
Kars
Osgoode
Burrit's Rapids
Greely
Metcalfe
Kenmore
Marionville
Vernon
Cumberland
Sarsfield
Notre-Dame-des-Champs
Navan
Carlsbad Springs
Vars

SEE MAP 6
VOIR CARTE 6

SEE MAP 6
VOIR CARTE 6

Rivière des Outaouais / Ottawa River

Rivière Rideau River

Existing Highway — Route Établie
Arterial - Existing — Artère - Établie
Arterial - Proposed (alignment defined) — Artère - Proposé (alignement déterminée)
Arterial - Conceptual (alignment undefined) — Artère - Conceptuelle (alignement à déterminée)
Collector - Existing — Collectrice - Établie
Collector - Proposed — Collectrice - Proposé
New Interchange — Nouvel échanger

Ottawa

2.5 1.25 0 2.5 5 7.5 10 km

Prepared by: Planning and Growth Management Department, Mapping & Graphics Unit, 201 5 Revision
Préparé par: Service de l'urbanisme et de la gestion de la croissance, Unité de la cartographie et des graphiques, Révision 2015

Note:
1) This map forms part of the Transportation Master Plan of the City of Ottawa and must be read in conjunction with the text.
2) This map is intended as a framework for planning and design; consequently alignments of proposed roads are approximate and subject to detailed study.
3) Reference should be made to Map 9 for clarity of road network in certain villages.

Note:
1) La présente carte fait partie du Plan directeur des transports de la Ville d'Ottawa et doit être consultée en se reportant au texte même du Plan officiel.
2) La présente carte doit servir de guide en matière de planification et de conception;il s'ensuit que le tracé des routes proposées n'est qu'approximatif et donnera lieu à une étude plus approfondie.
3) On devrait faire référence à carte 9 pour plus de détails sur le réseau routier dans certains villages.

TRANSPORTATION MASTER PLAN - Map 8
ROAD NETWORK - RURAL

PLAN DIRECTEUR DES TRANSPORTS - Carte 8
RÉSEAU ROUTIER RURAL