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37 Years

Provence Orleans
2128 Trim Road (Block 126)
Ottawa, Ontario

Noise Impact Assessment

PROVENCE ORLEANS
2128 TRIM ROAD (BLOCK 126)
OTTAWA, ONTARIO

NOISE IMPACT ASSESSMENT
IN SUPPORT OF AN APPLICATION FOR
SITE PLAN CONTROL

Prepared For:

Provence Orleans Realty Investments Inc. (c/o Regional Group of Companies)

Prepared by:

NOVATECH
240 Michael Cowpland Drive, Suite 200
Ottawa, Ontario, K2M 1P6

June 29, 2020

Ref: R-2020-086
Novatech File No. 120057

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Engineers, Planners & Landscape Architects

June 29, 2020

BY COURIER

City of Ottawa
Planning and Growth Management Department
110 Laurier Avenue West, 4th Floor
Ottawa, ON K1P 1J1

Attention: Julie Lebrun, Planner II

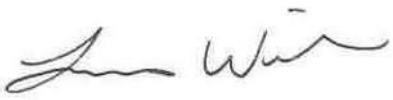
Reference: Provence Orleans
2128 Trim Road (Block 126)
Noise Impact Assessment
Our File No.: 120057

Please find enclosed three (3) copies of the 'Noise Impact Assessment' for the proposed Block 126 development in the Provence Orleans Subdivision.

Please contact the undersigned with any questions, or if you require additional information.

Sincerely,

NOVATECH



Lucas Wilson, P.Eng.
Project Coordinator

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICIES

1.0 INTRODUCTION

Novatech has been retained to prepare a detailed Noise Impact Assessment for the Provence Orleans Subdivision – Block 126 Development, located at 2128 Trim Road, in the City of Ottawa. The site will be developed by Provence Orleans Realty Investments Inc. c/o Regional Group.

The development is located in the east end of Ottawa, south of Innes Road between Provence Avenue and Trim Road. **Figure 1-1** shows the location of the Provence Orleans Subdivision Lands and the Block 126 development.

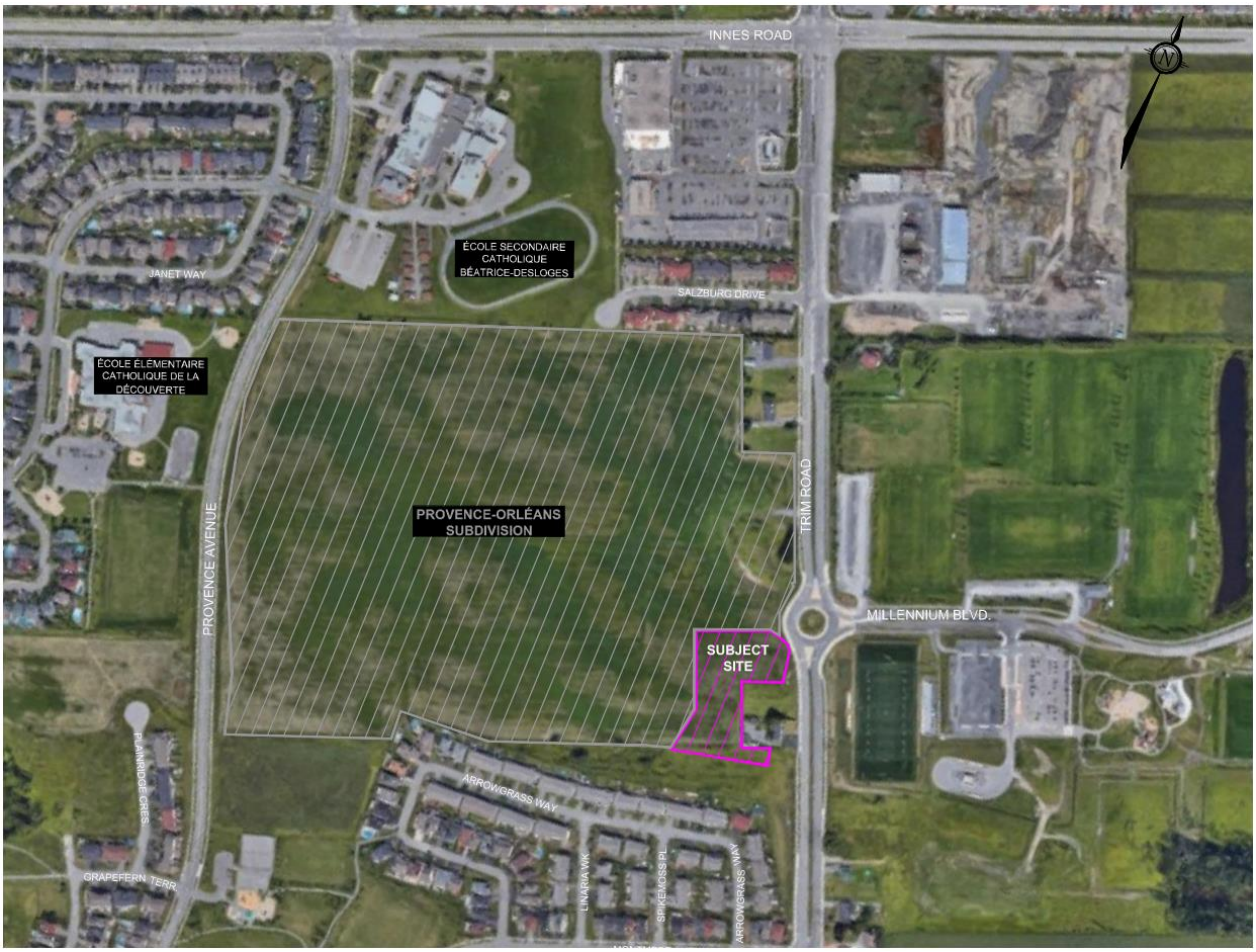


Figure 1-1 Key Plan

The proposed development will consist of four back-to-back townhome buildings, with 10 units each, as shown in **Figure 1-2**.

The proposed development is approximately 0.98ha and will be bordered by the future Phase 2 of Provence Orleans Subdivision, Ventoux Avenue to the north, Trim Road to the east and existing residential as well as a potential future Transitway to the south.

This report assesses the impacts of sound from vehicular traffic on the proposed development using the Ministry of the Environment (MOE) Stamson 5.0 software and outlines any necessary noise attenuation requirements for compliance with the City of Ottawa Environmental Noise Control Guidelines (ENCG) and the MOE Environmental Noise Guidelines (MOE Publication NPC-300).

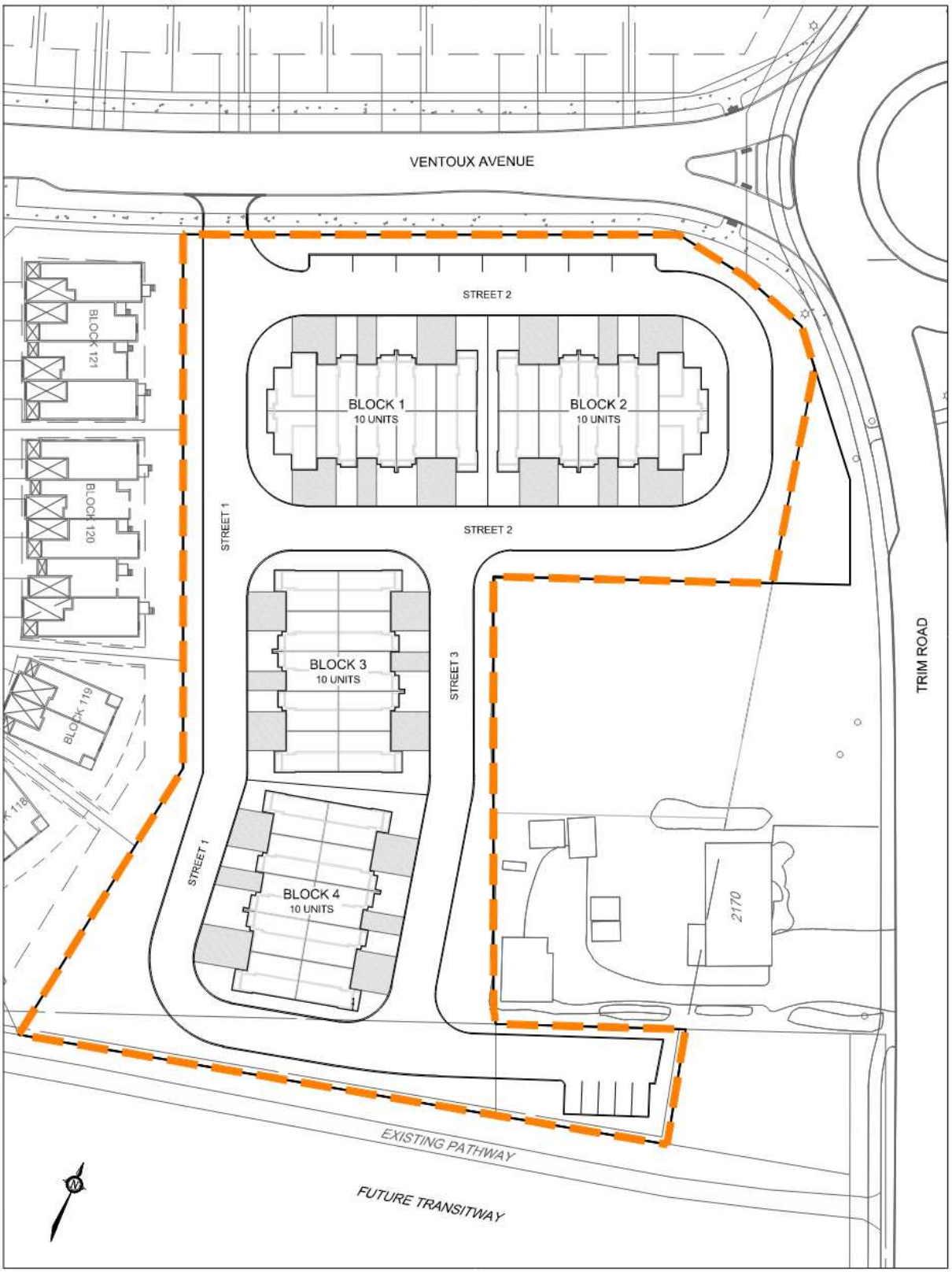


Figure 1-2 Site Plan

2.0 CITY OF OTTAWA ENVIRONMENTAL NOISE CONTROL GUIDELINES

2.1 Sound Level Criteria

The City of Ottawa is concerned with noise from aircraft, roads, railways and transitways as expressed in the City of Ottawa Official Plan (May 2003). These policies are supported by the Environmental Noise Control Guidelines (ENCG) which is a technical document that outlines the specific sound level criteria. The City of Ottawa's *Environmental Noise Control Guidelines (ENCG)*, January, 2016 and the Ministry of Environment's *Environmental Noise Guidelines, Stationary and Transportation Sources – Approval and Planning, Publication NPC-300* have been used for the purpose of this report. As per Section 2.2 of the City of Ottawa Noise Control Guidelines (2016), unless otherwise noted, developments should be consistent with NPC-300 (MOE publication, 2013).

The areas that must be assessed for acoustic protection include the Outdoor Living Area (OLA) and the Outdoor Plane of Window (POW).

These locations are defined as:

- **Outdoor Living Area (OLA):** The Outdoor Living Area is defined as that part of the outdoor amenity area provided for the quiet enjoyment of the outdoor environment during the daytime period. These amenity areas are typically backyards, gardens, terraces, patios and common outdoor living areas. The OLA noise target for traffic noise sources is 55 dBA. This criterion may be exceeded by an amount not greater than 5 dBA, subject to justification and the use of a Warning Clause. The proposed development does not contain any shared amenity space therefore no OLA analysis is required.

- **Plane of Window (POW):** The plane of window is defined as the indoor living space where the sound levels will affect the living room area during daytime hours and bedrooms during night time hours. The residential Plane of Window noise target for traffic noise sources is 55 dBA during the day and 50 dBA at night. If this criterion is exceeded, the property may be subject to building component analysis and warning clauses. POW noise levels are analysed 1.5m above grade for the first storey, 4.5m above grade for the second storey and 7.5m above grade for the third storey.

Table 2-1 City of Ottawa Outdoor Plane of Window Sound Level Criteria

TIME PERIOD	RECEIVER LOCATION	SOUND LEVEL CRITERIA
Daytime (07:00 - 23:00 hrs)	Plane of Living Room Window	55 dBA
Night time (23:00 - 07:00 hrs)	Plane of Bedroom Window	50 dBA

Compliance with the outdoor sound level criteria generally ensures compliance with the indoor sound level criteria which is summarized below in **Table 2-2**.

Table 2-2 Indoor Sound Level Criteria

TIME PERIOD	RECEIVER LOCATION	SOUND LEVEL CRITERIA
Daytime (07:00 - 23:00 hrs)	**Living/Dining Rooms of residential dwelling units**, hospitals, schools, nursing homes, day-care centres, theatres, places of worship, individual or semiprivate offices, conference rooms etc.	45 dBA
Night Time (23:00 - 07:00 hrs)	**Sleeping quarters of residential units**, hospitals, nursing homes, senior citizen homes, etc.	40 dBA

2.2 Noise Attenuation Requirements

When sound levels are predicted to be less than the specified criteria for daytime and night time conditions, no attenuation measures are required on the part of the proponent. As the noise criteria are exceeded, a combination of attenuation measures is recommended by the City of Ottawa and the MOE to modify the development environment.

These attenuation measures may include any or all of the following:

- Distance setback with soft ground;
- Insertion of noise insensitive land uses between the source and sensitive receptor;
- Orientation of building to provide sheltered zone;
- Construction of a noise barrier wall and/or berm;
- Installation of a forced air ventilation system with provision for central air;
- Installation of central air;
- Acoustically selected building façade components

2.2.1 *Noise Barrier*

Noise barriers should only be used when other noise control measures have been considered, and there is no other alternative. The proposed development does not contain a communal amenity area and as such, there is no need to analyse the Outdoor Living Area.

2.2.2 *Ventilation Requirements*

A forced air heating system with provision for a central air conditioning system is required if the daytime noise levels are between 55 dBA and 65 dBA and/or night time noise levels are between 50 dBA and 60 dBA.

The installation of a central air conditioning system is required when the daytime noise level exceeds 65 dBA and/or night time noise levels exceed 60 dBA.

2.2.3 *Building Component Assessment*

When noise levels exceed 65 dBA (daytime) or 60 dBA (night time) the exterior cladding system of the building envelope must be acoustically assessed to ensure the indoor sound criteria is achieved. This includes analysis of the exterior wall, door, and/or glazing system specifications as appropriate.

The NRC research *Acoustic Insulation Factor: A Rating for the Insulation of Buildings against Noise (*June 1980, JD Quirt) is used to assess the building components and the required acoustic insulation factor (AIF). This method is recognized by the City of Ottawa.

The required AIF is based on the Outside L_{eq}, Indoor L_{eq} required, and the number of exterior façade components.

Minimum Required AIF = Outside L_{eq} – Indoor L_{eq} + $\log_{10}$ (Number of Components) + 2dB

Where, N = Number of components (walls, windows and roof);
L = Sound Level expressed on a common decibel scale.

2.2.4 *Warning Clauses*

When predicted noise levels exceed the specified criteria, the City of Ottawa and the MOE recommend warning clauses be registered as a notice on title and incorporated into the sales agreements to warn potential purchaser/buyers/tenants of the possible elevated noise levels.

The following typical warning clauses are extracted from Section C8.1 of the MOE NPC-300 document.

Warning Clause Type C
"This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the City's and the Ministry of the Environment's noise criteria."

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

2.2.5 *Summary of Noise Attenuation Measure Requirements*

Table 2-3 summarizes the noise attenuation measure requirements and warning clauses should sound criteria be exceeded.

Table 2-3 Outdoor, Ventilation and Warning Clause Requirements (NPC-300)

Assessment Location	L_{eq} (dBA)	Outdoor Control Measures	Indoor Control Measures		Warning Clause
			Ventilation Requirements	Building Components	
Outdoor Living Area (OLA)	Less than 55	None required	N/A	N/A	None required
	Between 55 and 60	Control measures (barriers) may not be required but should be considered	N/A	N/A	Required if resultant L_{eq} exceeds 55 dBA Type A
	More than 60	Barriers required	N/A	N/A	Required if resultant L_{eq} exceeds 55 dBA Type B
Plane of Living Room Window (POW)	Less than 55	N/A	None Required	None Required	None Required
	Between55 and 65	N/A	Forced air heating with provision for central air conditioning	None Required	Required Type C
	More Than 65	N/A	Central Air Conditioning	Acoustical performance of the windows and walls should be specified	Required Type D
Plane of Bedroom Window (POW)	Less than 50	N/A	None Required	None Required	None Required
	Between50 and 60	N/A	Forced air heating with provision for central air conditioning	None Required	Required Type C
	More than 60	N/A	Central Air Conditioning	Acoustical performance of the windows and walls should be specified	Required Type D

3.0 NOISE SOURCES

The City of Ottawa Official Plan and Environmental Noise Control Guidelines (ENCG) stipulate that a noise impact assessment is required when a noise sensitive development is within proximity to a surface transportation (road or rail), stationary or aircraft noise sources.

Due to the site location, only roadway noise will be considered. The following distances to roadway noise sources are applicable to the subject site:

- Within 100m from the right-of-way of an existing/proposed arterial/collector.

Figure 3-1 shows the noise sources that have an impact on this development. Trim Road (Arterial) and Ventoux Avenue (Collector) are located within 100m of the development.

This report does not consider the proposed transitway, located south of the site, as a noise source because, as per Map 5 of the Transportation Master Plan, Rapid Transit and Transit Priority Network – 2031 Affordable Network, the transitway is not included in the City's affordable transportation budget. The design of the transitway will be required to mitigate the increased noise levels on the surrounding residential areas; the preliminary transit design prepared for the Environmental Assessment anticipates noise walls with the transitway.

3.1 Trim Road (Arterial)

Trim Road is classified as a 4-Lane Urban Divided Arterial (4-UAD) Roadway in the 2013 Transportation Master Plan. An Annual Average Daily Traffic (AADT) value of 35,000 is specified for this type of road. The posted speed limit in the area of the proposed development is 60km/h.

As per Table B1 of Appendix B of the ENCG, **Table 3-1** outlines the traffic parameters used to calculate the sound levels for the development.

Table 3-1 Robert Grant Avenue Noise Parameters

Roadway Classification	4-Lane Urban Arterial-Divided
Annual Average Daily Traffic (AADT)	35,000 veh/day
Day/Night Split (%)	92/8
Heavy Trucks (%)	5
Medium Trucks (%)	7
Posted Speed Limit	60 km/h
Road Gradient	1.0%

3.2 Ventoux Avenue (Collector)

Ventoux Avenue will be classified as a 2-Lane Collector (2-UCU). An Annual Average Daily Traffic (AADT) value of 8,000 is specified for this type of road.

As per Table B1 of Appendix B of the ENCG, **Table 3-3** outlines the traffic parameters used to calculate the sound levels for the development.

Table 3-2 Cope Drive Noise Parameters

Roadway Classification	2-Lane Collector
Annual Average Daily Traffic (AADT)	8,000 veh/day
Day/Night Split (%)	92/8
Heavy Trucks (%)	5
Medium Trucks (%)	7
Posted Speed Limit	50 km/h
Road Gradient	1.0%

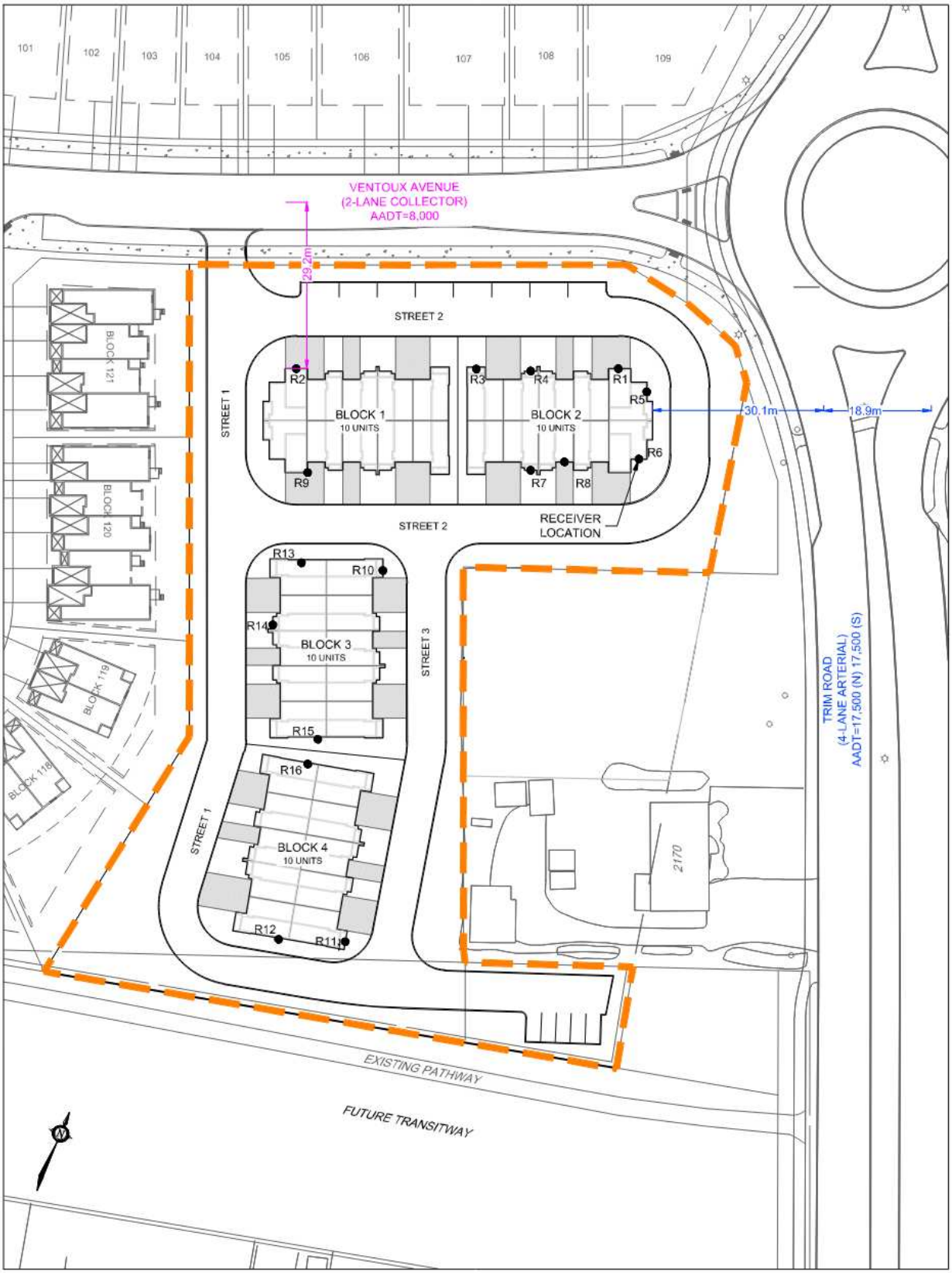


Figure 3-1 Noise Sources

4.0 NOISE LEVEL PREDICTIONS

4.1 Modeling

Noise levels are calculated using the STAMSON computer program, version 5.03. Road data is input into the program as applicable, whereupon the program calculates an A-weighted 16 hour L_{eq} noise level for the daytime and an 8 hour L_{eq} noise level for the night time. The results of these computer calculations are presented in **Appendix A** and summarized in **Table 4-1**.

Table 4-1 POW Noise Level Summary

LOCATION	PLANE OF WINDOW (POW) NOISE LEVEL – L_{eq} - (dBA)	
	DAYTIME	NIGHT TIME
R1	66.61	59.02
R2	63.14	55.55
R3	64.67	57.07
R4	65.26	57.66
R5	69.86	62.26
R6	66.50	58.91
R7	64.76	57.16
R8	65.23	57.64
R9	60.00	52.41
R10	64.01	56.42
R11	64.83	57.24
R12	59.61	52.01
R13	55.40	47.81
R14	51.15	43.82
R15	57.97	50.37
R16	56.99	49.39

4.2 Indoor Control Measures

Warning clauses are required on title relating to the requirement of forced air heating with provision for central air conditioning and required central air conditioning.

Units requiring forced air heating with provision for central air conditioning and associated warning clause Type C are listed below and identified in **Figure 5-1**:

- Block #1 – Units 1 to 10;
- Block #2 – Units 1, 9 and 10;
- Block #3 – Units 1, 5 and 6 to 10;
- Block #4 – Units 1, 5 and 6 to 10.

Typical wording for Type C warning clause: “This dwelling unit has been designed with the provision for adding central air conditioning at the occupant’s discretion. Installation of central air conditioning by the occupant will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the City’s and the Ministry of the Environment’s noise criteria.”

Units requiring central air conditioning and associated warning clause Type D are listed below and identified in **Figure 5-1**:

- Block #2 – Units 2 to 8.

Typical wording for Type D warning clause: “This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor noise levels are within the City’s and the Ministry of the Environment’s noise criteria.”

4.3 Building Component Assessment

4.3.1 *Units Facing Trim Road*

The highest sound level occurs at the building face of Block 2 fronting onto Trim Road at receiver location R5 with noise levels of 69.86 dBA daytime and 62.26 dBA night-time. Sound levels are above the 65 dBA (daytime) and 60 dBA (night-time) allowances therefore, an analysis of the cladding system is warranted. To comply with the ENCG policies, the building envelope will require a minimum AIF rating or Sound Transmission Class (STC) rating to provide the indoor noise levels as shown above in **Table 2-2**.

The acoustical insulation factor for residential living rooms and bedrooms with two and three building components are calculated as follows:

Two Components:
Daytime: AIF = 69.86 dBA – 45 dBA + 10log(2) dBA + 2 dBA = 30
Night-time: AIF = 62.26 dBA – 40 dBA + 10log(2) dBA + 2 dBA = 27

Three Components:
Daytime: AIF = 69.86 dBA – 45 dBA + 10log(3) dBA + 2 dBA = 32
Night-time: AIF = 62.26 dBA – 40 dBA + 10log(3) dBA + 2 dBA = 29

To comply with the ENCG policies, the building components facing Trim Road at Block 2 will require a minimum AIF rating ranging from 30 to 32 for living/dining rooms and a minimum AIF of 27 for bedrooms to provide the appropriate indoor noise levels. The AIF can further be approximated to an STC equivalent, if building floor plans are available. Presented below are the window-to-floor and wall-to-floor ratios, based on the provided floor plans, that are required to calculate the equivalent STC values.

The living rooms facing Trim Road have an exterior wall to interior floor area ratio of 80% and a window-to-floor area ratio of 50%. Table 11 in **Appendix B** can be used to determine the approximate STC equivalent. The living rooms require windows with an STC of 35 and exterior walls with an STC of 38. The den facing Trim Road has an exterior wall to interior floor area ratio of 182% and a window-to-floor area ratio of 9%, requiring an STC of 40 and 26 respectively. The bedrooms facing Trim Road have an exterior wall to interior floor area ratio of 183% and a window-

to-floor area ratio of 17%, requiring an STC of 37 and 25 respectively. Results are summarized in the table below.

Table 4-2 Required STC Façade Facing Trim Road

Block/Unit	Room	Window/ Floor Ratio (%)	Exterior Wall/ Floor Ratio (%)	Required Window STC	Required Wall STC
Block 2 Units 5 & 6 (Facing Trim)	Living Room	50	80	35	38
	Den	9	182	26	40
	Bedroom 2	-	170	-	38
	Bedroom 3	17	83	25	37

When the exterior facade has been finalized, the tables in **Appendix C** shall be referenced to ensure that the selected building components exceed the minimum AIF or STC ratings.

4.3.2 *Units Facing Ventoux Avenue and Street 2*

For all remaining units not facing Trim Road, the highest noise level occurs at the building face of Block 2 at receiver location R1 fronting onto Ventoux Avenue with noise levels of 66.61 dBA daytime and 59.02 dBA night-time. Sound levels are above the 65 dBA (daytime) allowance therefore, an analysis of the cladding system is warranted. To comply with the ENCG policies, the building envelope will require a minimum AIF rating or Sound Transmission Class (STC) rating to provide the indoor noise levels as shown above in **Table 2-2**. Compliance at the worst-case receiver points will demonstrate compliance for all locations.

The acoustical insulation factor for residential living rooms with two and three building components are calculated as follows:

Two Components:
Daytime: AIF = 66.61 dBA – 45 dBA + 10log(2) dBA + 2 dBA = 27

Three Components:
Daytime: AIF = 66.61 dBA – 45 dBA + 10log(3) dBA + 2 dBA = 28

To comply with the ENCG policies, the building components facing Ventoux and Street 2 at Block 2 will require a minimum AIF rating of 28 for living/dining rooms to provide the appropriate indoor noise levels. The AIF can further be approximated to an STC equivalent, if building floor plans are available. Presented below are the window-to-floor and wall-to-floor ratios, based on the provided floor plans, that are required to calculate the equivalent STC values.

The living rooms facing Ventoux and Street 2 have a maximum exterior wall to interior floor area ratio of 93% and a maximum window-to-floor area ratio of 39%. Table 11 in **Appendix B** can be used to determine the approximate STC equivalent. The living rooms require windows with an STC of 29 and exterior walls with an STC of 34. A standard residential window section employs 3mm glazing x 13mm air space x 3mm glazing, which has an STC of 30 with a window-to-floor area ratio of 39% exceeding the minimum STC requirement of 29. A wall with type EW1 composition has an STC of 38 with a wall-to-floor area ratio of 93% which exceeds the minimum STC requirement of 34. All building facades facing Ventoux and Street 2 will meet the required STC values using EW1

walls and 3mm glazing x 13mm air space x 3mm glazing. Results are summarized in the table below.

Table 4-3 Required and Provided STC Façade Facing Ventoux Avenue and Street 2

Block/Unit	Room	Window/ Floor Ratio (%)	Exterior Wall/ Floor Ratio (%)	Required Window STC	Provided Window STC (3x13x3)	Required Wall STC	Provided Wall STC (EW1)
Block 2 Unit 5 (Facing Ventoux)	Living/Dining Room	39	93	29	30	34	38

5.0 CONCLUSIONS AND RECOMMENDATIONS

To meet the requirements for compliance with the City of Ottawa Environmental Noise Control Guidelines and the MOE Environmental Noise Guideline the following measures are required.

Indoor Control Measures

All units that require warning clause Type C are described below and presented in **Figure 5-1**.

- Block 1: Units 1 to 10;
- Block 2: Units 1, 9 to 10;
- Block 3: Units 1, 5 and 6 to 10;
- Block 4: Units 1, 5 and 6 to 10.

All units that require warning clause Type D are described below and presented in **Figure 5-1**.

- Block 2: Units 2 to 8.

Building Component Assessment

- Units with façades facing Trim Road at Block 2 require the following minimum STC values to comply with the ENCG indoor noise policy:
    - Living Room: STC 35 for windows and STC 38 for walls.
    - Den: STC 26 for windows and STC 40 for walls.
    - Bedroom 2: STC 38 for walls.
    - Bedroom 3: STC 25 for windows and STC 37 for walls.
- All remaining units will meet the ENCG indoor noise policy with EW1 walls and windows with 3mm glazing x 13mm air space x 3mm glazing.

Warning Clauses

Warning clauses are to be placed on title and in the purchase and sale agreements as indicated above and in **Figure 5-1**. The following typical warning clauses are extracted from Section C8.1 of the MOE NPC-300 document.

Warning Clause Type ‘C’
“This dwelling unit has been designed with the provision for adding central air conditioning at the occupant’s discretion. Installation of central air conditioning by the occupant will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the City’s and the Ministry of the Environment’s noise criteria.”

Warning Clause Type ’D’
“This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the City’s and the Ministry of the Environment’s noise criteria.”

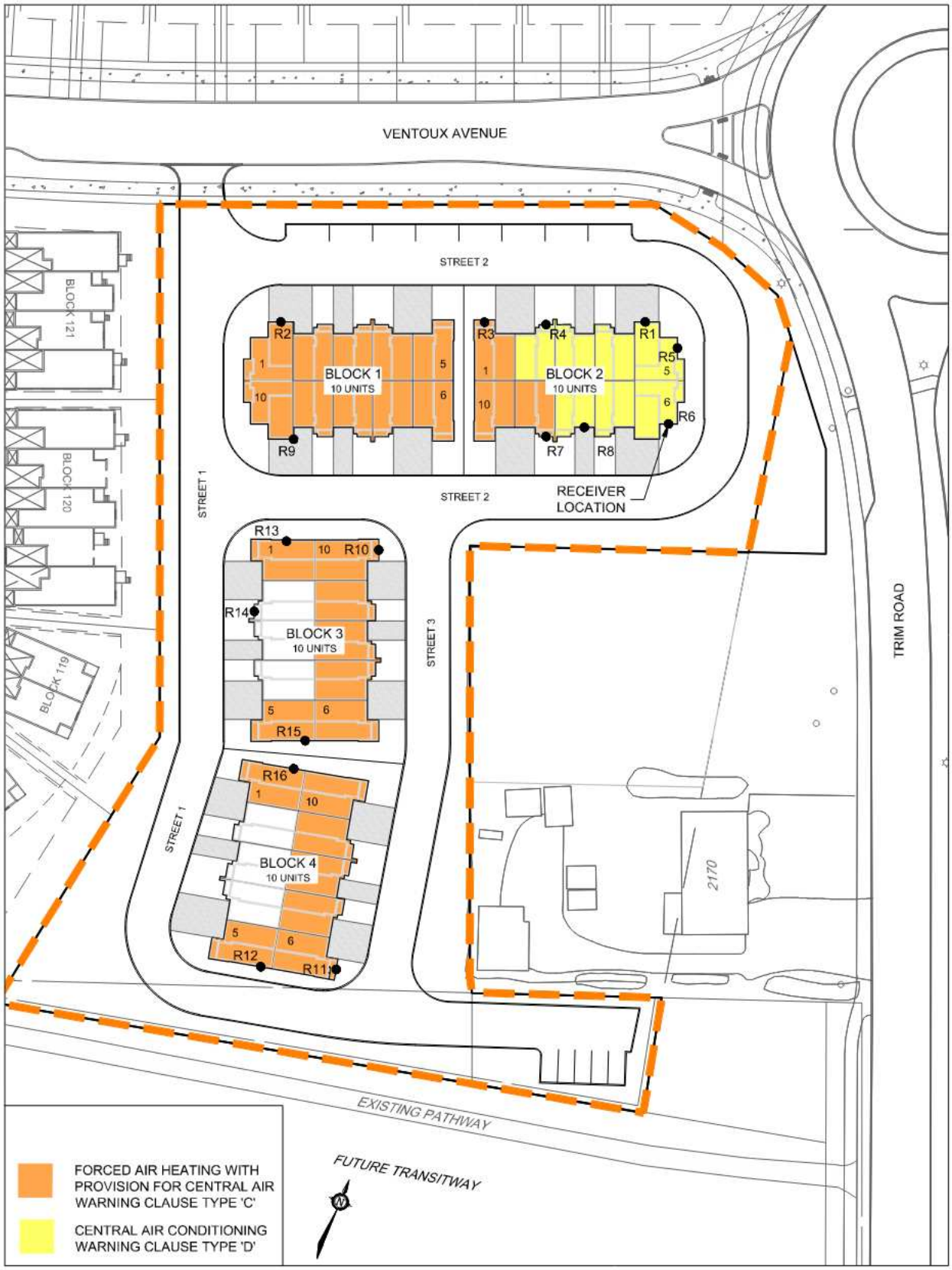


Figure 5-1 Construction Requirements and Warning Clauses

If you have any questions or comments with regards to this report, please do not hesitate to contact the undersigned.

Respectfully issued,

NOVATECH

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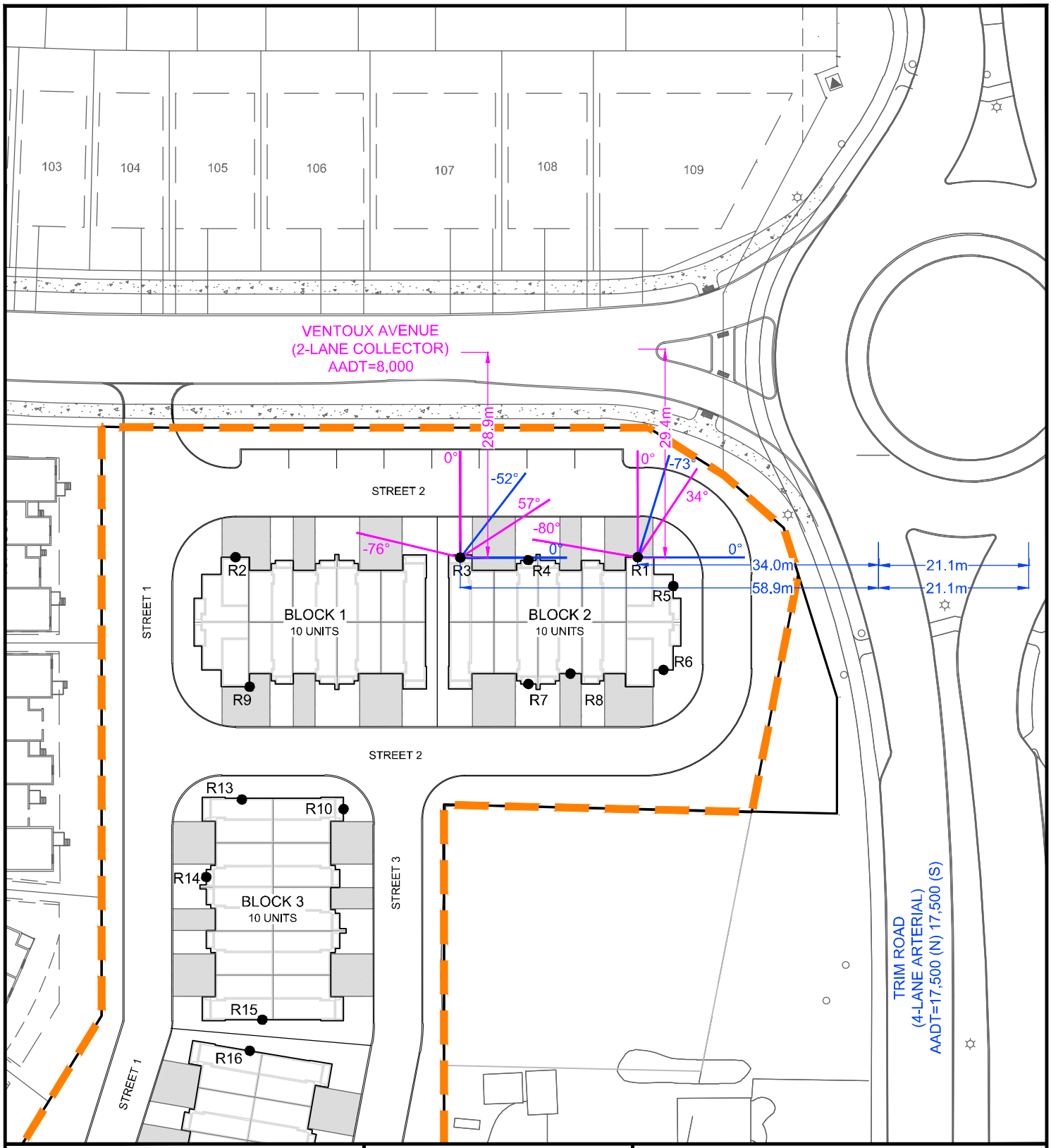
Lucas Wilson, P.Eng.
Project Coordinator

Reviewed By:

Mark Bissett, P.Eng.
Senior Project Manager

APPENDIX A

Receiver Location Figures
Stamson Model Output



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LEGEND

- Trim Road Noise Angle
- Ventoux Avenue Noise Angle
- Receiver Location

PROVENCE ORLEANS SUBDIVISION

NOISE RECEIVER LOCATION R1 & R3

SCALE 1 : 750 (0, 10, 20, 30)

DATE	JOB	FIGURE
MAY 2020	120057	NS-1

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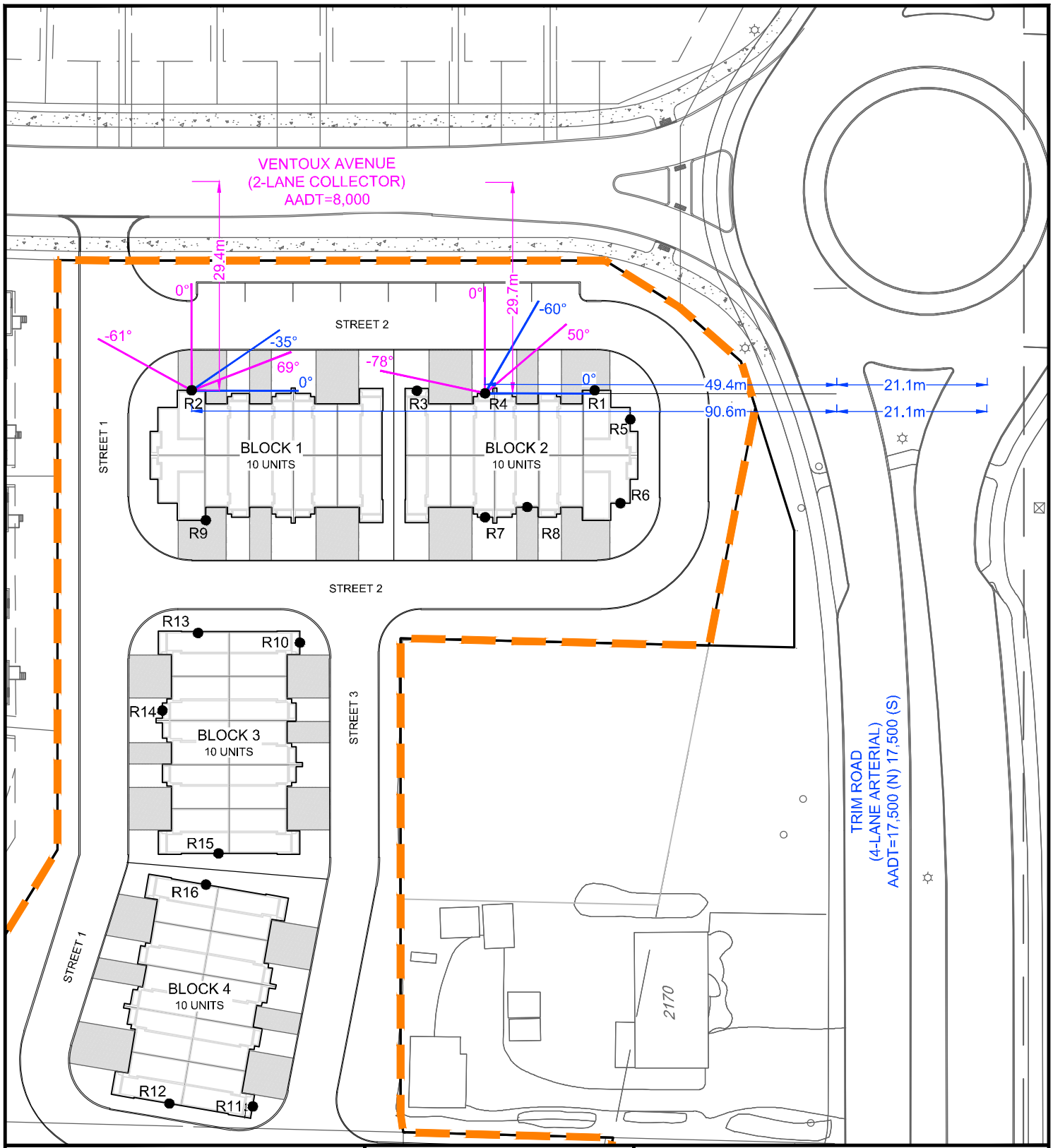

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LEGEND

- Trim Road Noise Angle
- Ventoux Avenue Noise Angle
- Receiver Location

PROVENCE ORLEANS SUBDIVISION

NOISE RECEIVER LOCATION R2 & R4

SCALE 1 : 750 (0, 10, 20, 30)

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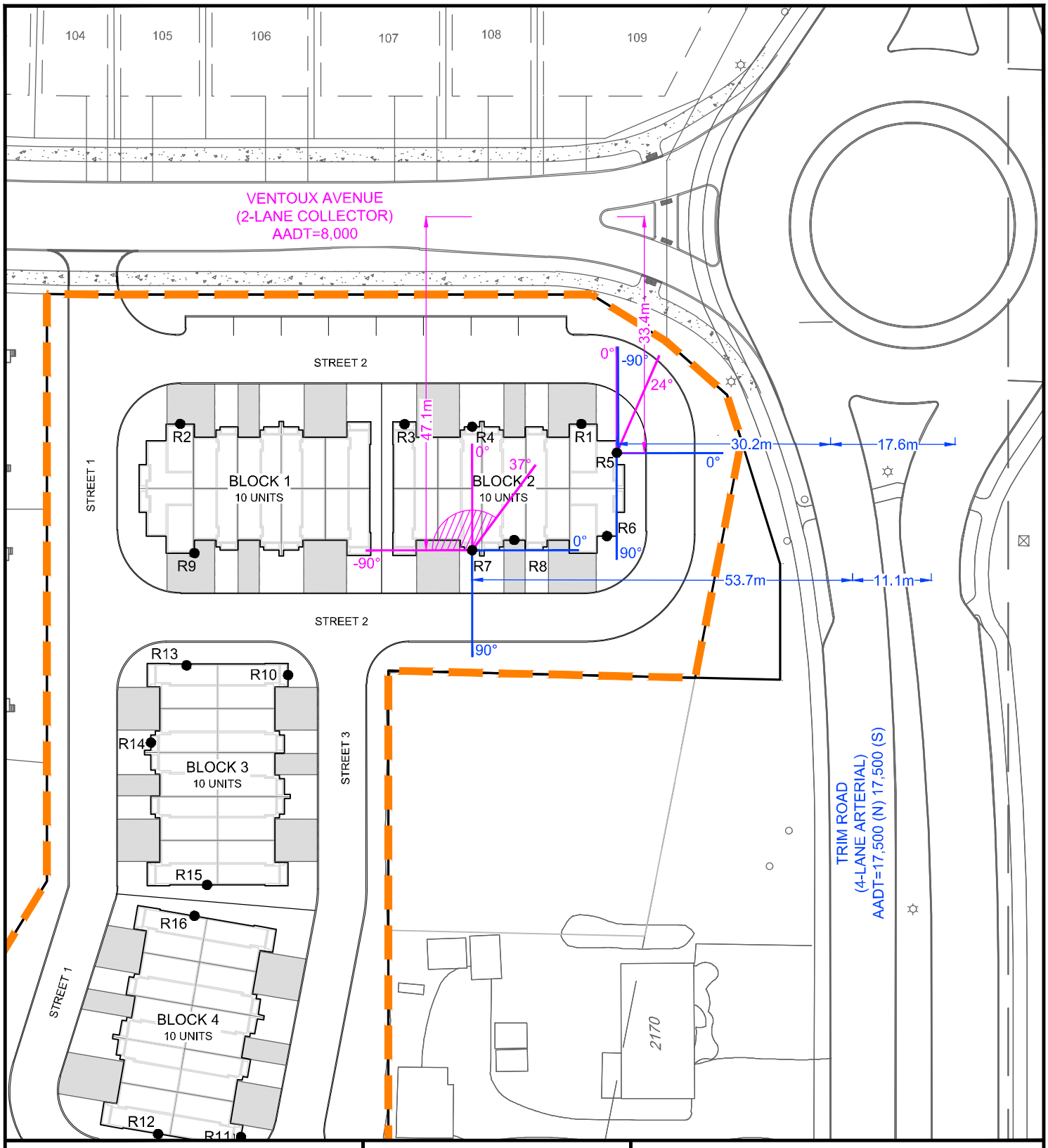

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LEGEND

- Trim Road Noise Angle
- Ventoux Avenue Noise Angle
- Ventoux Avenue Noise Barrier Angle
- Receiver Location

PROVENCE ORLEANS SUBDIVISION

NOISE RECEIVER LOCATION R5 & R7

SCALE 1 : 750 (0, 10, 20, 30)

DATE	JOB	FIGURE
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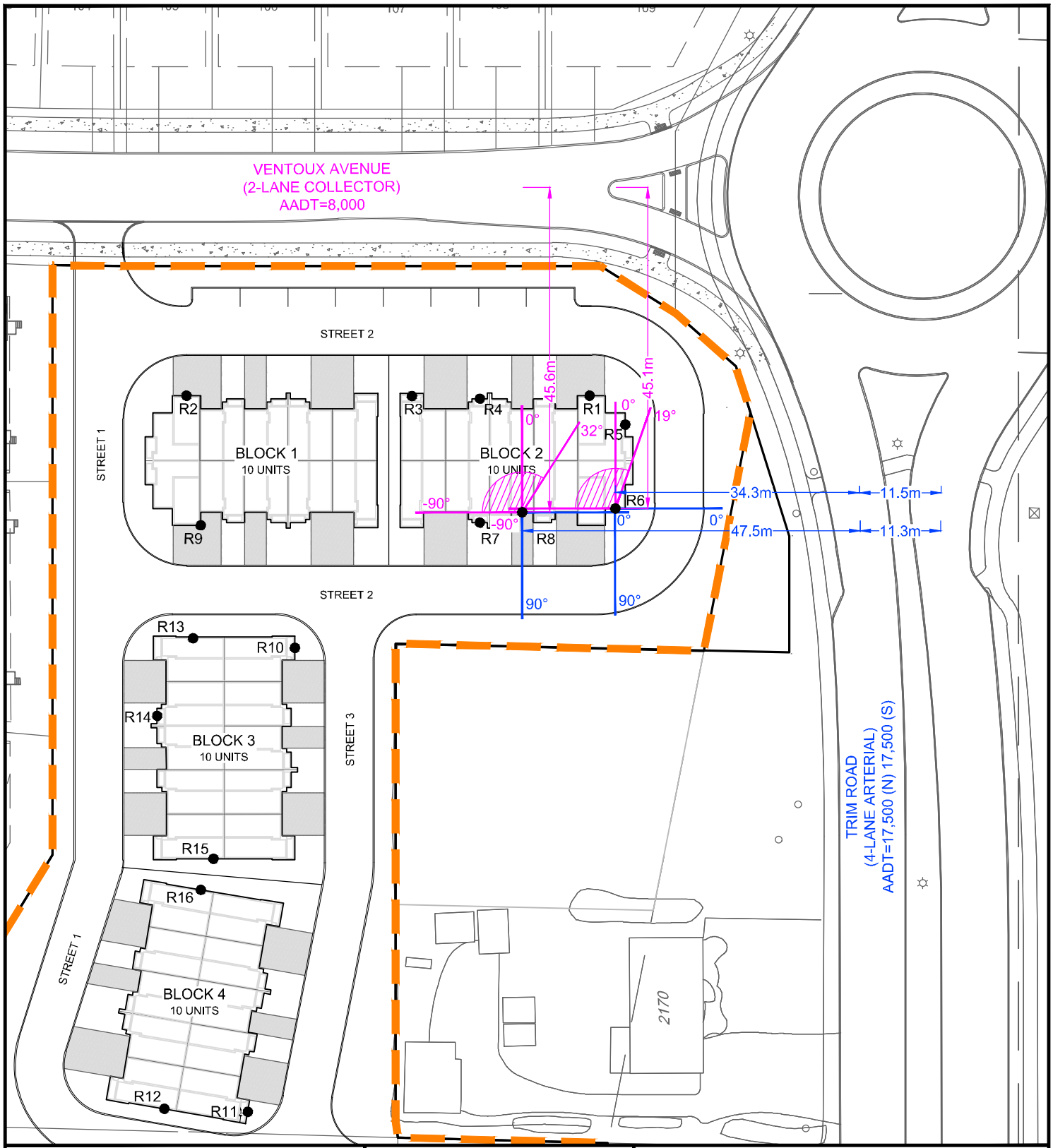

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LEGEND

- Trim Road Noise Angle
- Ventoux Avenue Noise Angle
- Ventoux Avenue Noise Barrier Angle
- Receiver Location

PROVENCE ORLEANS SUBDIVISION

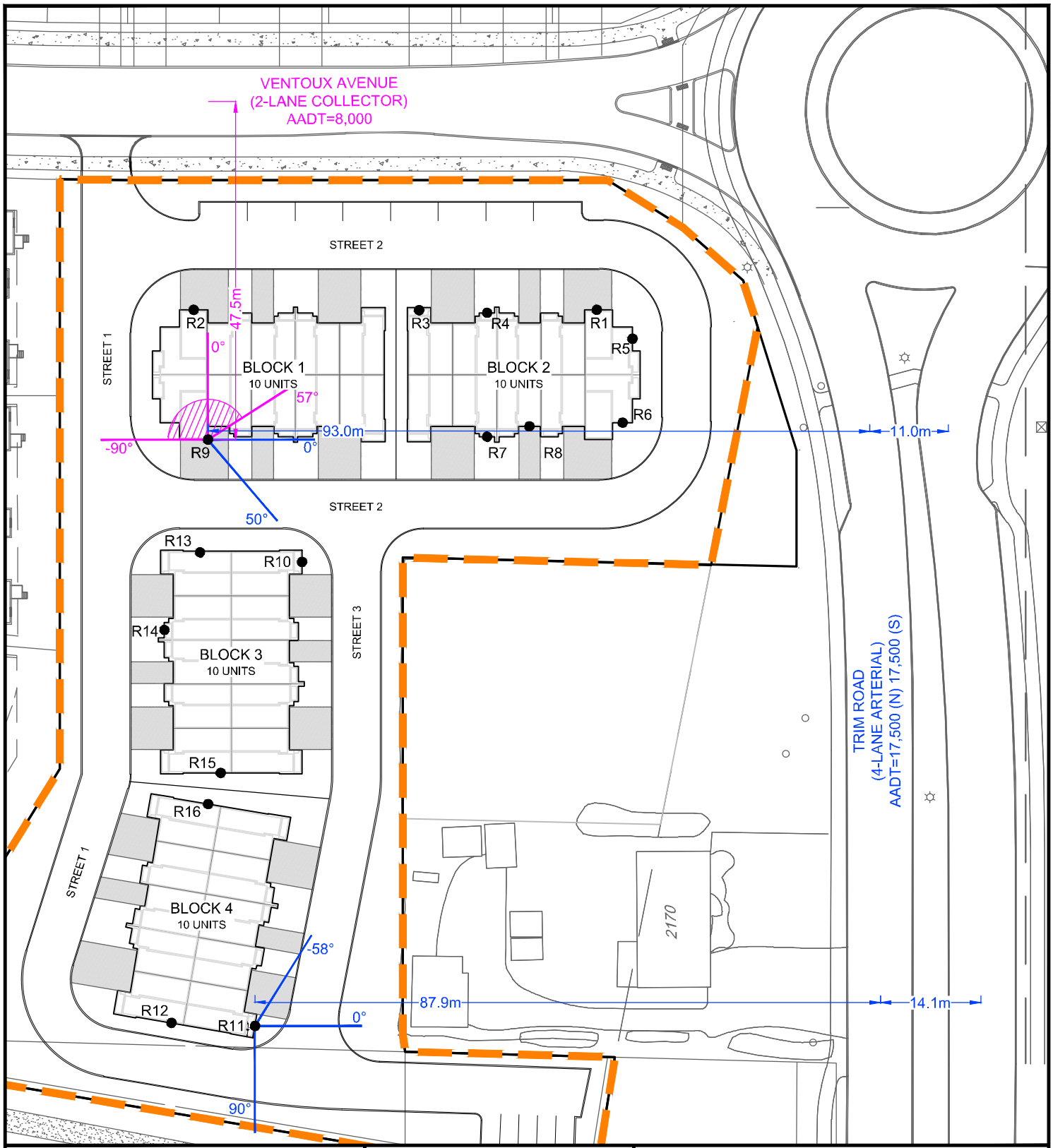
NOISE RECEIVER LOCATION R6 & R8

SCALE 1 : 750 (0, 10, 20, 30)

DATE	JOB	FIGURE
MAY 2020	120057	NS-4

M:\2020\120057\CAD\Design\Figures\Noise\120057-Noise.dwg, R6&R8, May 26, 2020 - 3:47pm, bfife

SHT8X11.DWG - 216mmx279mm



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LEGEND

- Trim Road Noise Angle
- Ventoux Avenue Noise Angle
- Ventoux Avenue Noise Barrier Angle
- Receiver Location

PROVENCE ORLEANS SUBDIVISION

NOISE RECEIVER LOCATION R9 & R11

SCALE 1 : 750 (0, 10, 20, 30)

DATE	JOB	FIGURE
MAY 2020	120057	NS-5

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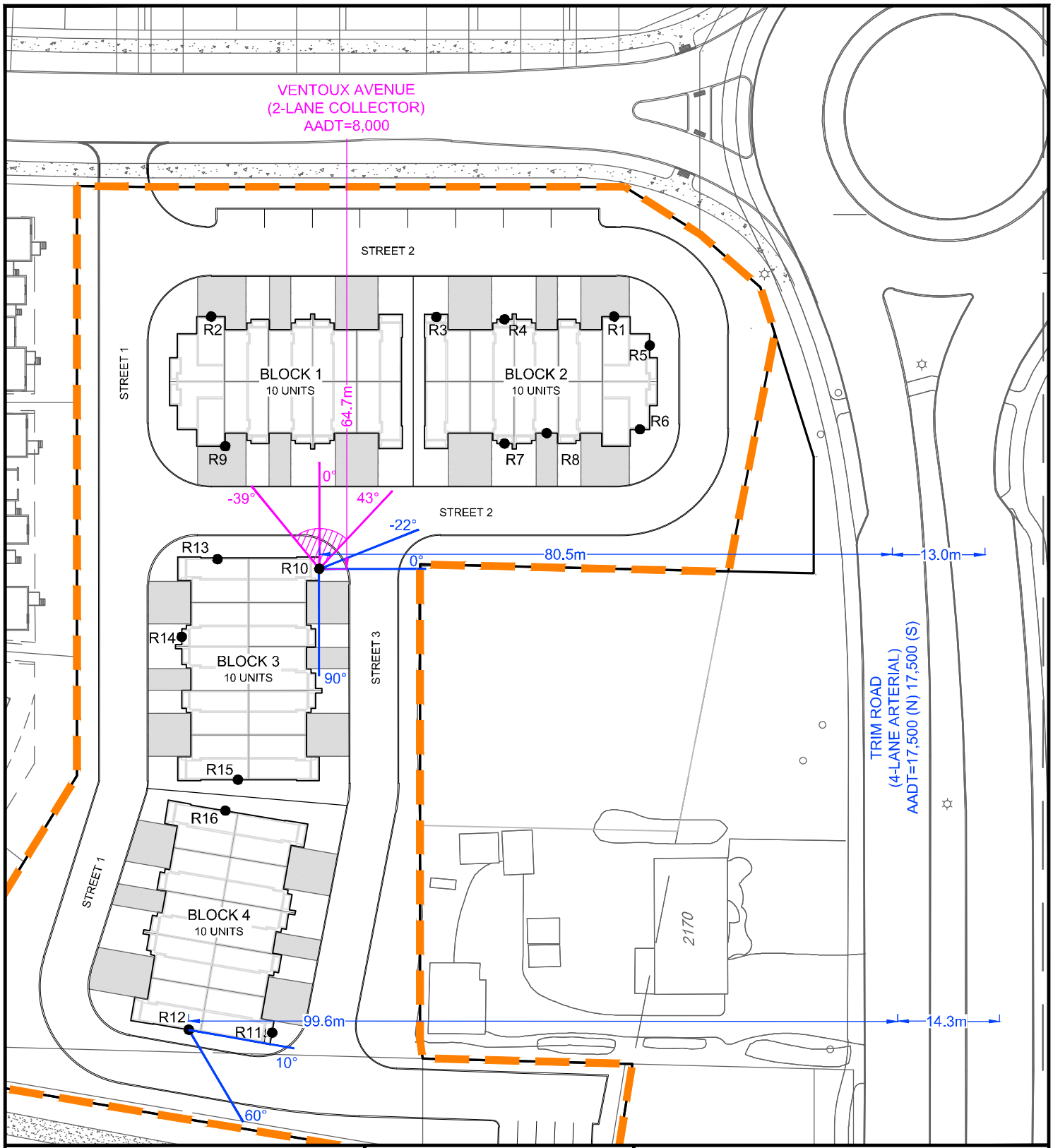
SHT8X11.DWG - 216mmx279mm



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LEGEND

- Trim Road Noise Angle
- Ventoux Avenue Noise Angle
- Ventoux Avenue Noise Barrier Angle
- Receiver Location

PROVENCE ORLEANS SUBDIVISION

NOISE RECEIVER LOCATION R10 & R12

SCALE 1 : 750 (0, 10, 20, 30)

DATE	JOB	FIGURE
MAY 2020	120057	NS-6

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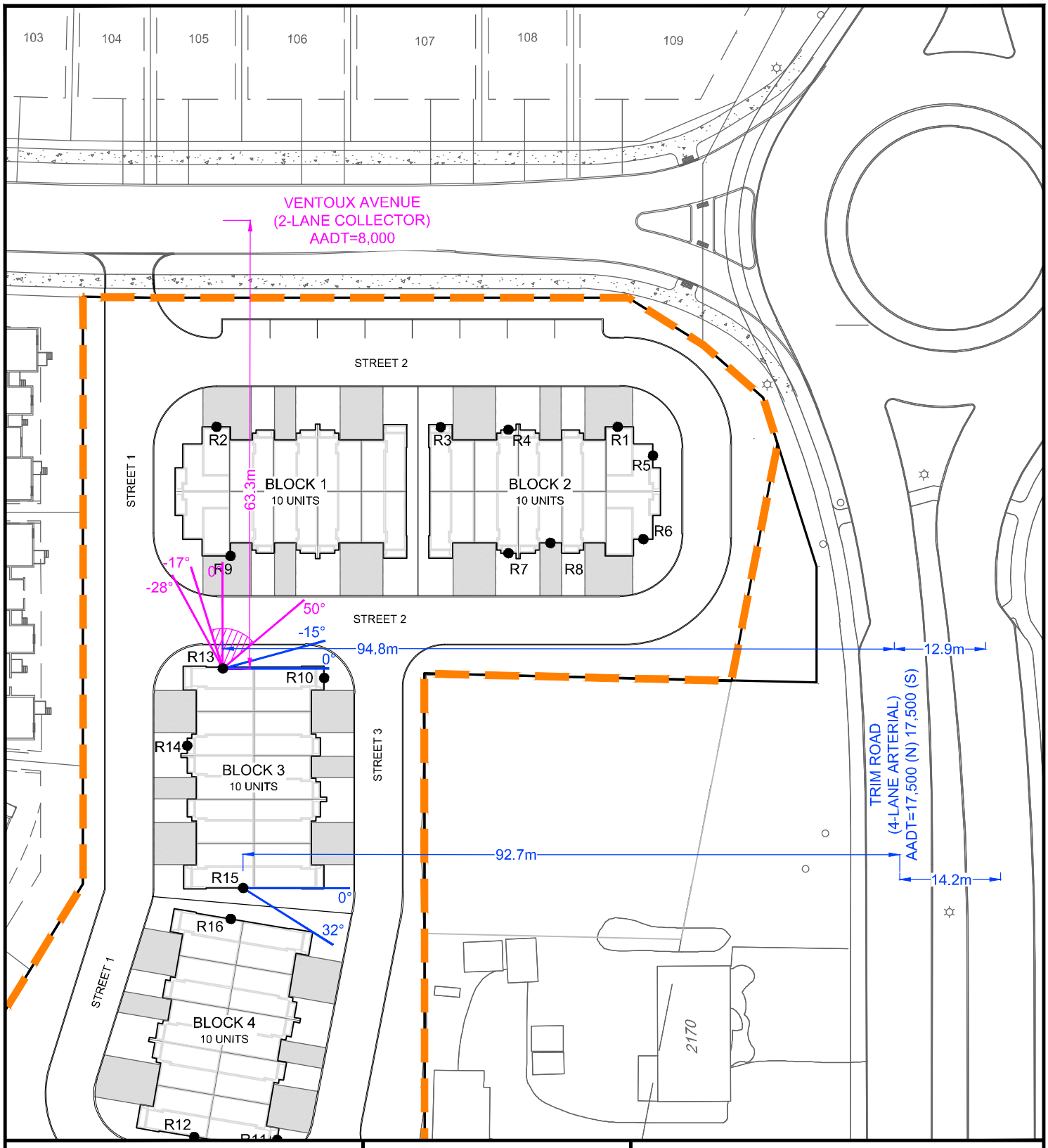
SHT8X11.DWG - 216mmx279mm



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LEGEND

- Trim Road Noise Angle
- Ventoux Avenue Noise Angle
- Ventoux Avenue Noise Barrier Angle
- Receiver Location

PROVENCE ORLEANS SUBDIVISION

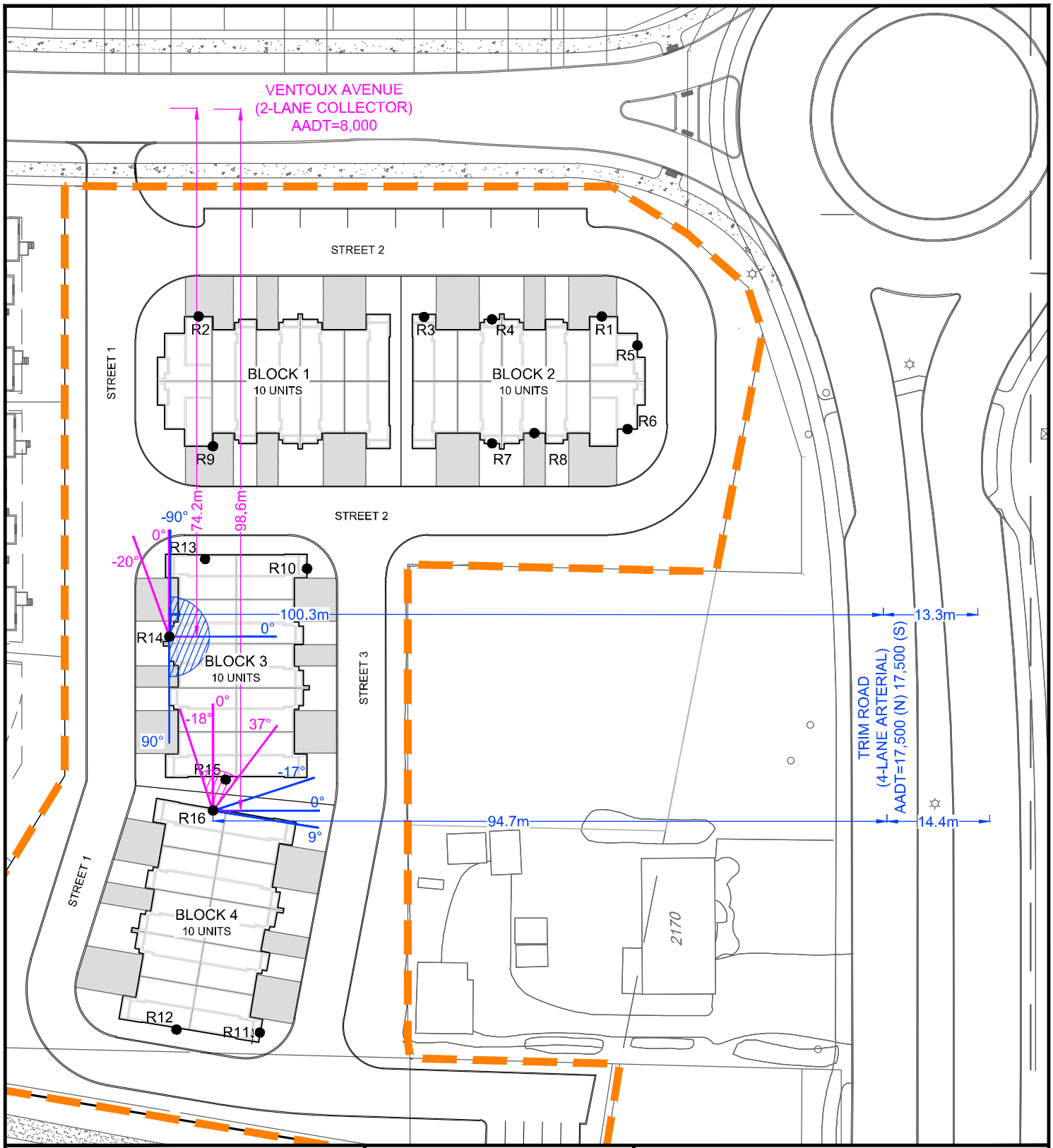
NOISE RECEIVER LOCATION R13 & R15

SCALE 1 : 750 (0, 10, 20, 30)

DATE	JOB	FIGURE
MAY 2020	120057	NS-7

M:\2020\120057\CAD\Design\Figures\Noise\120057-Noise.dwg, R13&R15, May 26, 2020 - 3:47pm, bfife

SHT8X11.DWG - 216mmx279mm



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LEGEND

- Trim Road Noise Angle
- Ventoux Avenue Noise Angle
- Ventoux Avenue Noise Barrier Angle
- Trim Road Noise Barrier Angle
- Receiver Location

PROVENCE ORLEANS SUBDIVISION - CITY TOWNS

NOISE RECEIVER LOCATION R14 & R16

SCALE 1 : 750 (0, 10, 20, 30)

DATE	JOB	FIGURE
MAY 2020	120057	NS-8

M:\2020\120057\CAD\Design\Figures\Noise\120057-Noise.dwg, R14&R16, May 28, 2020 - 4:00pm, bfife

SHT8X11.DWG - 216mmx279mm

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 11:57:06
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1.te Time Period: Day/Night 16/8 hours
Description: R1 POW - BLOCK #2 (Facing Ventoux)

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : -73.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 55.10 / 55.10 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : -73.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 34.00 / 34.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Ventoux (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Ventoux (day/night)

Angle1 Angle2 : -80.00 deg 34.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 29.40 / 29.40 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 61.10 + 0.00) = 61.10 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	0	0.00	70.67	0.00	-5.65	-3.92	0.00	0.00	0.00	61.10

Segment Leq : 61.10 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 63.19 + 0.00) = 63.19 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	0	0.00	70.67	0.00	-3.55	-3.92	0.00	0.00	0.00	63.19

Segment Leq : 63.19 dBA

Results segment # 3: Ventoux (day)

Source height = 1.50 m

ROAD (0.00 + 60.84 + 0.00) = 60.84 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	34	0.00	65.75	0.00	-2.92	-1.98	0.00	0.00	0.00	60.84

Segment Leq : 60.84 dBA

Total Leq All Segments: 66.61 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 53.50 + 0.00) = 53.50 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	0	0.00	63.07	0.00	-5.65	-3.92	0.00	0.00	0.00	53.50

Segment Leq : 53.50 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 55.60 + 0.00) = 55.60 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	0	0.00	63.07	0.00	-3.55	-3.92	0.00	0.00	0.00	55.60

Segment Leq : 55.60 dBA

Results segment # 3: Ventoux (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
-80	34	0.00	58.16	0.00	-2.92	-1.98	0.00	0.00	0.00	53.25

Segment Leq : 53.25 dBA

Total Leq All Segments: 59.02 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.61
(NIGHT): 59.02

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 11:57:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2.te Time Period: Day/Night 16/8 hours
Description: R2 POW - BLOCK #1 (Facing Ventoux)

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : -35.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 111.70 / 111.70 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : -35.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 90.60 / 90.60 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Ventoux (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Ventoux (day/night)

Angle1 Angle2 : -61.00 deg 69.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 29.40 / 29.40 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 54.83 + 0.00) = 54.83 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-35	0	0.00	70.67	0.00	-8.72	-7.11	0.00	0.00	0.00	54.83

Segment Leq : 54.83 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 55.74 + 0.00) = 55.74 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-35	0	0.00	70.67	0.00	-7.81	-7.11	0.00	0.00	0.00	55.74

Segment Leq : 55.74 dBA

Results segment # 3: Ventoux (day)

Source height = 1.50 m

ROAD (0.00 + 61.41 + 0.00) = 61.41 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-61	69	0.00	65.75	0.00	-2.92	-1.41	0.00	0.00	0.00	61.41

Segment Leq : 61.41 dBA

Total Leq All Segments: 63.14 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 47.24 + 0.00) = 47.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-35	0	0.00	63.07	0.00	-8.72	-7.11	0.00	0.00	0.00	47.24

Segment Leq : 47.24 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 48.15 + 0.00) = 48.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-35	0	0.00	63.07	0.00	-7.81	-7.11	0.00	0.00	0.00	48.15

Segment Leq : 48.15 dBA

Results segment # 3: Ventoux (night)

Source height = 1.50 m

ROAD (0.00 + 53.82 + 0.00) = 53.82 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-61	69	0.00	58.16	0.00	-2.92	-1.41	0.00	0.00	0.00	53.82

Segment Leq : 53.82 dBA

Total Leq All Segments: 55.55 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.14
(NIGHT): 55.55

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:04:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r3.te Time Period: Day/Night 16/8 hours
Description: R3 POW - BLOCK #1 (Facing Ventoux)

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : -52.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 80.00 / 80.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : -52.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 58.90 / 58.90 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Ventoux (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Ventoux (day/night)

Angle1 Angle2 : -76.00 deg 57.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 28.90 / 28.90 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 58.00 + 0.00) = 58.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-52	0	0.00	70.67	0.00	-7.27	-5.39	0.00	0.00	0.00	58.00

Segment Leq : 58.00 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 59.33 + 0.00) = 59.33 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-52	0	0.00	70.67	0.00	-5.94	-5.39	0.00	0.00	0.00	59.33

Segment Leq : 59.33 dBA

Results segment # 3: Ventoux (day)

Source height = 1.50 m

ROAD (0.00 + 61.59 + 0.00) = 61.59 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-76	57	0.00	65.75	0.00	-2.85	-1.31	0.00	0.00	0.00	61.59

Segment Leq : 61.59 dBA

Total Leq All Segments: 64.67 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 50.41 + 0.00) = 50.41 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-52	0	0.00	63.07	0.00	-7.27	-5.39	0.00	0.00	0.00	50.41

Segment Leq : 50.41 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 51.74 + 0.00) = 51.74 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-52	0	0.00	63.07	0.00	-5.94	-5.39	0.00	0.00	0.00	51.74

Segment Leq : 51.74 dBA

Results segment # 3: Ventoux (night)

Source height = 1.50 m

ROAD (0.00 + 53.99 + 0.00) = 53.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-76	57	0.00	58.16	0.00	-2.85	-1.31	0.00	0.00	0.00	53.99

Segment Leq : 53.99 dBA

Total Leq All Segments: 57.07 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.67
(NIGHT): 57.07

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:05:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r4.te Time Period: Day/Night 16/8 hours
Description: R4 POW - BLOCK #2 (Facing Ventoux)

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : -60.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 70.50 / 70.50 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : -60.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 49.40 / 49.40 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Ventoux (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Ventoux (day/night)

Angle1 Angle2 : -78.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 29.70 / 29.70 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 59.17 + 0.00) = 59.17 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-60	0	0.00	70.67	0.00	-6.72	-4.77	0.00	0.00	0.00	59.17

Segment Leq : 59.17 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 60.72 + 0.00) = 60.72 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-60	0	0.00	70.67	0.00	-5.18	-4.77	0.00	0.00	0.00	60.72

Segment Leq : 60.72 dBA

Results segment # 3: Ventoux (day)

Source height = 1.50 m

ROAD (0.00 + 61.30 + 0.00) = 61.30 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-78	50	0.00	65.75	0.00	-2.97	-1.48	0.00	0.00	0.00	61.30

Segment Leq : 61.30 dBA

Total Leq All Segments: 65.26 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 51.58 + 0.00) = 51.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-60	0	0.00	63.07	0.00	-6.72	-4.77	0.00	0.00	0.00	51.58

Segment Leq : 51.58 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 53.12 + 0.00) = 53.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-60	0	0.00	63.07	0.00	-5.18	-4.77	0.00	0.00	0.00	53.12

Segment Leq : 53.12 dBA

Results segment # 3: Ventoux (night)

Source height = 1.50 m

ROAD (0.00 + 53.71 + 0.00) = 53.71 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-78	50	0.00	58.16	0.00	-2.97	-1.48	0.00	0.00	0.00	53.71

Segment Leq : 53.71 dBA

Total Leq All Segments: 57.66 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.26
(NIGHT): 57.66

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:05:50
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r5.te Time Period: Day/Night 16/8 hours
Description: R5 POW - BLOCK #2 (Facing Trim)

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 47.80 / 47.80 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 30.20 / 30.20 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Ventoux (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Ventoux (day/night)

Angle1 Angle2 : 0.00 deg 24.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 33.40 / 33.40 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 65.63 + 0.00) = 65.63 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	70.67	0.00	-5.03	0.00	0.00	0.00	0.00	65.63

Segment Leq : 65.63 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 67.63 + 0.00) = 67.63 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	70.67	0.00	-3.04	0.00	0.00	0.00	0.00	67.63

Segment Leq : 67.63 dBA

Results segment # 3: Ventoux (day)

Source height = 1.50 m

ROAD (0.00 + 53.52 + 0.00) = 53.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	24	0.00	65.75	0.00	-3.48	-8.75	0.00	0.00	0.00	53.52

Segment Leq : 53.52 dBA

Total Leq All Segments: 69.86 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 58.04 + 0.00) = 58.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	63.07	0.00	-5.03	0.00	0.00	0.00	0.00	58.04

Segment Leq : 58.04 dBA

Results segment # 2: Trim (S) (night)

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
-90	90	0.00	63.07	0.00	-3.04	0.00	0.00	0.00	0.00	60.03

Segment Leq : 60.03 dBA

Results segment # 3: Ventoux (night)

Source height = 1.50 m

ROAD (0.00 + 45.93 + 0.00) = 45.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	24	0.00	58.16	0.00	-3.48	-8.75	0.00	0.00	0.00	45.93

Segment Leq : 45.93 dBA

Total Leq All Segments: 62.26 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 69.86
(NIGHT): 62.26

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:06:18
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6.te Time Period: Day/Night 16/8 hours
Description: R6 POW - BLOCK #2

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 45.80 / 45.80 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 34.30 / 34.30 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Ventoux (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Ventoux (day/night)

Angle1 Angle2 : -90.00 deg 19.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 45.10 / 45.10 m
Receiver height : 1.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 19.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 62.81 + 0.00) = 62.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	70.67	0.00	-4.85	-3.01	0.00	0.00	0.00	62.81

Segment Leq : 62.81 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 64.06 + 0.00) = 64.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	70.67	0.00	-3.59	-3.01	0.00	0.00	0.00	64.06

Segment Leq : 64.06 dBA

Results segment # 3: Ventoux (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	1.50	1.50

ROAD (0.00 + 39.97 + 0.00) = 39.97 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	19	0.00	65.75	0.00	-4.78	-2.18	0.00	0.00	-18.82	39.97

Segment Leq : 39.97 dBA

Total Leq All Segments: 66.50 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 55.21 + 0.00) = 55.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	63.07	0.00	-4.85	-3.01	0.00	0.00	0.00	55.21

Segment Leq : 55.21 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 56.47 + 0.00) = 56.47 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	63.07	0.00	-3.59	-3.01	0.00	0.00	0.00	56.47

Segment Leq : 56.47 dBA

Results segment # 3: Ventoux (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	4.43	4.43

ROAD (0.00 + 32.94 + 0.00) = 32.94 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	19	0.00	58.16	0.00	-4.78	-2.18	0.00	0.00	-18.26	32.94

Segment Leq : 32.94 dBA

Total Leq All Segments: 58.91 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.50
(NIGHT): 58.91

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:06:52
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r7.te Time Period: Day/Night 16/8 hours
Description: R7 POW - BLOCK #2

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 64.80 / 64.80 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 53.70 / 53.70 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Ventoux (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Ventoux (day/night)

Angle1 Angle2 : -90.00 deg 37.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 47.10 / 47.10 m
Receiver height : 1.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 37.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 61.30 + 0.00) = 61.30 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	70.67	0.00	-6.35	-3.01	0.00	0.00	0.00	61.30

Segment Leq : 61.30 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 62.12 + 0.00) = 62.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	70.67	0.00	-5.54	-3.01	0.00	0.00	0.00	62.12

Segment Leq : 62.12 dBA

Results segment # 3: Ventoux (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	1.50	1.50

ROAD (0.00 + 40.30 + 0.00) = 40.30 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	37	0.00	65.75	0.00	-4.97	-1.51	0.00	0.00	-18.97	40.30

Segment Leq : 40.30 dBA

Total Leq All Segments: 64.76 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 53.70 + 0.00) = 53.70 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	63.07	0.00	-6.35	-3.01	0.00	0.00	0.00	53.70

Segment Leq : 53.70 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 54.52 + 0.00) = 54.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	63.07	0.00	-5.54	-3.01	0.00	0.00	0.00	54.52

Segment Leq : 54.52 dBA

Results segment # 3: Ventoux (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	4.44	4.44

ROAD (0.00 + 33.21 + 0.00) = 33.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	37	0.00	58.16	0.00	-4.97	-1.51	0.00	0.00	-18.46	33.21

Segment Leq : 33.21 dBA

Total Leq All Segments: 57.16 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.76
(NIGHT): 57.16

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:07:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r8.te Time Period: Day/Night 16/8 hours
Description: R8 POW - BLOCK #2

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 58.80 / 58.80 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 47.50 / 47.50 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Ventoux (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Ventoux (day/night)

Angle1 Angle2 : -90.00 deg 32.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 45.60 / 45.60 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 : 10.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 61.72 + 0.00) = 61.72 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	70.67	0.00	-5.93	-3.01	0.00	0.00	0.00	61.72

Segment Leq : 61.72 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 62.65 + 0.00) = 62.65 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	70.67	0.00	-5.01	-3.01	0.00	0.00	0.00	62.65

Segment Leq : 62.65 dBA

Results segment # 3: Ventoux (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	1.50	1.50

ROAD (0.00 + 40.30 + 0.00) = 40.30 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	32	0.00	65.75	0.00	-4.83	-1.69	0.00	0.00	-18.93	40.30

Segment Leq : 40.30 dBA

Total Leq All Segments: 65.23 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 54.13 + 0.00) = 54.13 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	63.07	0.00	-5.93	-3.01	0.00	0.00	0.00	54.13

Segment Leq : 54.13 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 55.05 + 0.00) = 55.05 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	63.07	0.00	-5.01	-3.01	0.00	0.00	0.00	55.05

Segment Leq : 55.05 dBA

Results segment # 3: Ventoux (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	4.43	4.43

ROAD (0.00 + 33.22 + 0.00) = 33.22 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	32	0.00	58.16	0.00	-4.83	-1.69	0.00	0.00	-18.41	33.22

Segment Leq : 33.22 dBA

Total Leq All Segments: 57.64 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.23
(NIGHT): 57.64

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:07:37
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r9.te Time Period: Day/Night 16/8 hours
Description: R9 POW - BLOCK #1

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : 0.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 104.00 / 104.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : 0.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 93.00 / 93.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Ventoux (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Ventoux (day/night)

Angle1 Angle2 : -90.00 deg 57.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 47.50 / 47.50 m
Receiver height : 1.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 57.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 56.69 + 0.00) = 56.69 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	50	0.00	70.67	0.00	-8.41	-5.56	0.00	0.00	0.00	56.69

Segment Leq : 56.69 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 57.18 + 0.00) = 57.18 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	50	0.00	70.67	0.00	-7.92	-5.56	0.00	0.00	0.00	57.18

Segment Leq : 57.18 dBA

Results segment # 3: Ventoux (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	1.50	1.50

ROAD (0.00 + 40.77 + 0.00) = 40.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	57	0.00	65.75	0.00	-5.01	-0.88	0.00	0.00	-19.09	40.77

Segment Leq : 40.77 dBA

Total Leq All Segments: 60.00 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 49.10 + 0.00) = 49.10 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	50	0.00	63.07	0.00	-8.41	-5.56	0.00	0.00	0.00	49.10

Segment Leq : 49.10 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 49.58 + 0.00) = 49.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	50	0.00	63.07	0.00	-7.92	-5.56	0.00	0.00	0.00	49.58

Segment Leq : 49.58 dBA

Results segment # 3: Ventoux (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	4.44	4.44

ROAD (0.00 + 33.63 + 0.00) = 33.63 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	57	0.00	58.16	0.00	-5.01	-0.88	0.00	0.00	-18.64	33.63

Segment Leq : 33.63 dBA

Total Leq All Segments: 52.41 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.00
(NIGHT): 52.41

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:08:07
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r10.te Time Period: Day/Night 16/8 hours
Description: R10 POW - BLOCK #3

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : -22.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 93.50 / 93.50 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : -22.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 80.50 / 80.50 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Ventoux (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Ventoux (day/night)

Angle1 Angle2 : -39.00 deg 43.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 64.70 / 64.70 m
Receiver height : 1.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -39.00 deg Angle2 : 43.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 17.80 / 17.80 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 60.66 + 0.00) = 60.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-22	90	0.00	70.67	0.00	-7.95	-2.06	0.00	0.00	0.00	60.66

Segment Leq : 60.66 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 61.31 + 0.00) = 61.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-22	90	0.00	70.67	0.00	-7.30	-2.06	0.00	0.00	0.00	61.31

Segment Leq : 61.31 dBA

Results segment # 3: Ventoux (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	1.50	1.50

ROAD (0.00 + 35.99 + 0.00) = 35.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-39	43	0.00	65.75	0.00	-6.35	-3.41	0.00	0.00	-20.00	35.99

Segment Leq : 35.99 dBA

Total Leq All Segments: 64.01 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 53.06 + 0.00) = 53.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-22	90	0.00	63.07	0.00	-7.95	-2.06	0.00	0.00	0.00	53.06

Segment Leq : 53.06 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 53.71 + 0.00) = 53.71 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-22	90	0.00	63.07	0.00	-7.30	-2.06	0.00	0.00	0.00	53.71

Segment Leq : 53.71 dBA

Results segment # 3: Ventoux (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	3.67	3.67

ROAD (0.00 + 29.34 + 0.00) = 29.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-39	43	0.00	58.16	0.00	-6.35	-3.41	0.00	0.00	-19.05	29.34

Segment Leq : 29.34 dBA

Total Leq All Segments: 56.42 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.01
(NIGHT): 56.42

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:08:27
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r11.te Time Period: Day/Night 16/8 hours
Description: R11 POW - BLOCK #4

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : -58.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 102.20 / 102.20 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : -58.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 87.90 / 87.90 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 61.48 + 0.00) = 61.48 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-58	90	0.00	70.67	0.00	-8.33	-0.85	0.00	0.00	0.00	61.48

Segment Leq : 61.48 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 62.14 + 0.00) = 62.14 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-58	90	0.00	70.67	0.00	-7.68	-0.85	0.00	0.00	0.00	62.14

Segment Leq : 62.14 dBA

Total Leq All Segments: 64.83 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 53.89 + 0.00) = 53.89 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-58	90	0.00	63.07	0.00	-8.33	-0.85	0.00	0.00	0.00	53.89

Segment Leq : 53.89 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 54.54 + 0.00) = 54.54 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-58	90	0.00	63.07	0.00	-7.68	-0.85	0.00	0.00	0.00	54.54

Segment Leq : 54.54 dBA

Total Leq All Segments: 57.24 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.83
(NIGHT): 57.24

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:08:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r12.te Time Period: Day/Night 16/8 hours
Description: R12 POW - BLOCK #4

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : 10.00 deg 60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 113.90 / 113.90 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : 10.00 deg 60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 99.60 / 99.60 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 56.30 + 0.00) = 56.30 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	60	0.00	70.67	0.00	-8.80	-5.56	0.00	0.00	0.00	56.30

Segment Leq : 56.30 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 56.88 + 0.00) = 56.88 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	60	0.00	70.67	0.00	-8.22	-5.56	0.00	0.00	0.00	56.88

Segment Leq : 56.88 dBA

Total Leq All Segments: 59.61 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 48.70 + 0.00) = 48.70 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	60	0.00	63.07	0.00	-8.80	-5.56	0.00	0.00	0.00	48.70

Segment Leq : 48.70 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 49.28 + 0.00) = 49.28 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	60	0.00	63.07	0.00	-8.22	-5.56	0.00	0.00	0.00	49.28

Segment Leq : 49.28 dBA

Total Leq All Segments: 52.01 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.61
(NIGHT): 52.01

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:09:05
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r13.te Time Period: Day/Night 16/8 hours
Description: R13 POW - BLOCK #3

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : -15.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 107.70 / 107.70 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : -15.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 94.80 / 94.80 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Ventoux (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Ventoux (day/night)

Angle1 Angle2 : -28.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 63.30 / 63.30 m
Receiver height : 1.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -17.00 deg Angle2 : 50.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 15.90 / 15.90 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 51.31 + 0.00) = 51.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	0	0.00	70.67	0.00	-8.56	-10.79	0.00	0.00	0.00	51.31

Segment Leq : 51.31 dBA

Results segment # 2: Trim (S) (day)

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
-15	0	0.00	70.67	0.00	-8.01	-10.79	0.00	0.00	0.00	51.87

Segment Leq : 51.87 dBA

Results segment # 3: Ventoux (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	1.50	1.50

ROAD (47.36 + 35.20 + 0.00) = 47.61 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-28	-17	0.00	65.75	0.00	-6.25	-12.14	0.00	0.00	0.00	47.36
-17	50	0.00	65.75	0.00	-6.25	-4.29	0.00	0.00	-20.00	35.20

Segment Leq : 47.61 dBA

Total Leq All Segments: 55.40 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 43.72 + 0.00) = 43.72 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	0	0.00	63.07	0.00	-8.56	-10.79	0.00	0.00	0.00	43.72

Segment Leq : 43.72 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 44.27 + 0.00) = 44.27 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	0	0.00	63.07	0.00	-8.01	-10.79	0.00	0.00	0.00	44.27

Segment Leq : 44.27 dBA

Results segment # 3: Ventoux (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	3.75	3.75

ROAD (39.77 + 28.41 + 0.00) = 40.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-28	-17	0.00	58.16	0.00	-6.25	-12.14	0.00	0.00	0.00	39.77
-17	50	0.00	58.16	0.00	-6.25	-4.29	0.00	0.00	-19.20	28.41

Segment Leq : 40.07 dBA

Total Leq All Segments: 47.81 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.40
(NIGHT): 47.81

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:09:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r14.te Time Period: Day/Night 16/8 hours
Description: R14 POW - BLOCK #3

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 113.60 / 113.60 m
Receiver height : 1.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)
------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 100.30 / 100.30 m
Receiver height           :   1.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :  10.00 m
Barrier receiver distance :   1.00 / 1.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00

Road data, segment # 3: Ventoux (day/night)
-------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Ventoux (day/night)
-----------------------------------------
Angle1   Angle2           : -20.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  74.20 / 74.20  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Trim (N) (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 !         1.50

ROAD (0.00 + 43.34 + 0.00) = 43.34 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  70.67   0.00  -8.79   0.00   0.00   0.00 -18.54  43.34
-------------------------------------------------------------------------------

Segment Leq : 43.34 dBA
```

Results segment # 2: Trim (S) (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	1.50	1.50

ROAD (0.00 + 43.87 + 0.00) = 43.87 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	70.67	0.00	-8.25	0.00	0.00	0.00	-18.54	43.87

Segment Leq : 43.87 dBA

Results segment # 3: Ventoux (day)

Source height = 1.50 m

ROAD (0.00 + 49.26 + 0.00) = 49.26 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-20	0	0.00	65.75	0.00	-6.94	-9.54	0.00	0.00	0.00	49.26

Segment Leq : 49.26 dBA

Total Leq All Segments: 51.15 dBA

Results segment # 1: Trim (N) (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	4.47	4.47

ROAD (0.00 + 36.45 + 0.00) = 36.45 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	63.07	0.00	-8.79	0.00	0.00	0.00	-17.83	36.45

Segment Leq : 36.45 dBA

Results segment # 2: Trim (S) (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	4.47	4.47

ROAD (0.00 + 36.98 + 0.00) = 36.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	63.07	0.00	-8.25	0.00	0.00	0.00	-17.84	36.98

Segment Leq : 36.98 dBA

Results segment # 3: Ventoux (night)

Source height = 1.50 m

ROAD (0.00 + 41.67 + 0.00) = 41.67 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-20	0	0.00	58.16	0.00	-6.94	-9.54	0.00	0.00	0.00	41.67

Segment Leq : 41.67 dBA

Total Leq All Segments: 43.82 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 51.15
(NIGHT): 43.82

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:09:44
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r15.te Time Period: Day/Night 16/8 hours
Description: R15 POW - BLOCK #3

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : 0.00 deg 32.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 106.90 / 106.90 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : 0.00 deg 32.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 92.70 / 92.70 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 54.64 + 0.00) = 54.64 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	32	0.00	70.67	0.00	-8.53	-7.50	0.00	0.00	0.00	54.64

Segment Leq : 54.64 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 55.25 + 0.00) = 55.25 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	32	0.00	70.67	0.00	-7.91	-7.50	0.00	0.00	0.00	55.25

Segment Leq : 55.25 dBA

Total Leq All Segments: 57.97 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 47.04 + 0.00) = 47.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	32	0.00	63.07	0.00	-8.53	-7.50	0.00	0.00	0.00	47.04

Segment Leq : 47.04 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 47.66 + 0.00) = 47.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	32	0.00	63.07	0.00	-7.91	-7.50	0.00	0.00	0.00	47.66

Segment Leq : 47.66 dBA

Total Leq All Segments: 50.37 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.97
(NIGHT): 50.37

STAMSON 5.0 NORMAL REPORT Date: 20-05-2020 12:10:04
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r16.te Time Period: Day/Night 16/8 hours
Description: R16 POW - BLOCK #4

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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: Trim (N) (day/night)

Angle1 Angle2 : -17.00 deg 9.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 109.10 / 109.10 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Trim (S) (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 60 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): 17500
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 # 2: Trim (S) (day/night)

Angle1 Angle2 : -17.00 deg 9.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 94.70 / 94.70 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Ventoux (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Ventoux (day/night)

Angle1 Angle2 : -18.00 deg 37.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 98.60 / 98.60 m
Receiver height : 1.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -18.00 deg Angle2 : 37.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 4.30 / 4.30 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Trim (N) (day)

Source height = 1.50 m

ROAD (0.00 + 53.65 + 0.00) = 53.65 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	9	0.00	70.67	0.00	-8.62	-8.40	0.00	0.00	0.00	53.65

Segment Leq : 53.65 dBA

Results segment # 2: Trim (S) (day)

Source height = 1.50 m

ROAD (0.00 + 54.26 + 0.00) = 54.26 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	9	0.00	70.67	0.00	-8.00	-8.40	0.00	0.00	0.00	54.26

Segment Leq : 54.26 dBA

Results segment # 3: Ventoux (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	1.50	1.50

ROAD (0.00 + 32.42 + 0.00) = 32.42 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	37	0.00	65.75	0.00	-8.18	-5.15	0.00	0.00	-20.00	32.42

Segment Leq : 32.42 dBA

Total Leq All Segments: 56.99 dBA

Results segment # 1: Trim (N) (night)

Source height = 1.50 m

ROAD (0.00 + 46.05 + 0.00) = 46.05 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	9	0.00	63.07	0.00	-8.62	-8.40	0.00	0.00	0.00	46.05

Segment Leq : 46.05 dBA

Results segment # 2: Trim (S) (night)

Source height = 1.50 m

ROAD (0.00 + 46.66 + 0.00) = 46.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	9	0.00	63.07	0.00	-8.00	-8.40	0.00	0.00	0.00	46.66

Segment Leq : 46.66 dBA

Results segment # 3: Ventoux (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	4.37	4.37

ROAD (0.00 + 24.83 + 0.00) = 24.83 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	37	0.00	58.16	0.00	-8.18	-5.15	0.00	0.00	-20.00	24.83

Segment Leq : 24.83 dBA

Total Leq All Segments: 49.39 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.99
(NIGHT): 49.39

APPENDIX B

Building Component Assessment

TABLE 5: Acoustic Insulation Factor for Various Types of Windows

Window area as a percentage of total floor area of room[1]													
4	5	6	8	10	13	16	20	25	32	40	50	63	80
Acoustic Insulation Factor (AIF)[2]													
35	34	33	32	31	30	29	28	27	26	25	24	23	22
36	35	34	33	32	31	30	29	28	27	26	25	24	23
37	36	35	34	33	32	31	30	29	28	27	26	25	24
38	37	36	35	34	33	32	31	30	29	28	27	26	25
39	38	37	36	35	34	33	32	31	30	29	28	27	26
40	39	38	37	36	35	34	33	32	31	30	29	28	27
41	40	39	38	37	36	35	34	33	32	31	30	29	28
42	41	40	39	38	37	36	35	34	33	32	31	30	29
43	42	41	40	39	38	37	36	35	34	33	32	31	30
44	43	42	41	40	39	38	37	36	35	34	33	32	31
45	44	43	42	41	40	39	38	37	36	35	34	33	32
46	45	44	43	42	41	40	39	38	37	36	35	34	33
47	46	45	44	43	42	41	40	39	38	37	36	35	34
48	47	46	45	44	43	42	41	40	39	38	37	36	35
49	48	47	46	45	44	43	42	41	40	39	38	37	36
50	49	48	47	46	45	44	43	42	41	40	39	38	37

Single glazing	Double glazing of indicated glass thickness					Triple Glazing	
	2mm and 2mm glass	3mm and 3mm glass	4mm and 4mm glass	3mm and 6mm glass	6mm and 6mm glass	3mm, 3mm and 3mm glass	3mm, 3mm and 6mm glass
Thickness	Interpane spacing in mm[3]					Interpane spacings in mm[5]	
3mm	6						
	13						
3mm	19	6					
4mm, 6mm	18	13	6				
	22	16	13	6	6	6,6	
9mm[4]	28	20	16	13	13	6,10	6,6
	35	25	20	16	16	6,15	6,10
12mm[4]	42	32	25	20	20	6,20	6,15
	50	40	32	25	24	6,30	6,20
	63	50	40	32	30	6,40	6,30
	80	63	50	40	37	6,50	6,40
	100	80	63	55	50	6,65	6,50
	125	100	80	75	70	6,80	6,65
	130	125	100	95	90	6,100	6,80
		150	125	110	100		6,100
			150	135	125		

Source: National Research Council, Division of Building Research, June 1980.

Explanatory Notes:

1) Where the calculated percentage window area is not presented as a column heading, the nearest percentage column in the table values should be used.
2) AIF data listed in the table are for well-fitted weatherstripped units that can be opened. The AIF values apply only when the windows are closed. For windows fixed and sealed to the frame, add three (3) to the AIF given in the table.
3) If the interpane spacing or glass thickness for a specific double glazed window is not listed in the table, the nearest listed values should be used.
4) The AIF ratings for 9mm and 12mm glass are for laminated glass only; for solid glass subtract two (2) from the AIF values listed in the table.
5) If the interpane spacings for a specific triple-glazed window are not listed in the table, use the listed case whose combined spacings are nearest the actual combined spacing.
6) The AIF data listed in the table are for typical windows, but details of glass mounting, window seals, etc. may result in slightly different performance for some manufacturers' products. If laboratory sound transmission loss data (conforming to ASTM test method E-90) are available, these should be used to calculate the AIF.

Table 6.3 - Acoustic Insulation Factor for Various Types of Exterior Wall

Percentage of exterior wall area to total floor area of room											Type of Exterior Wall
16	20	25	32	40	50	63	80	100	125	160	
Acoustic Insulation Factor											
39	38	37	36	35	34	33	32	31	30	29	EW1
41	40	39	38	37	36	35	34	33	32	31	EW2
44	43	42	41	40	39	38	37	36	35	34	EW3
47	46	45	44	43	42	41	40	39	38	37	EW4
48	47	46	45	44	43	42	41	40	39	38	EW1R
49	48	47	46	45	44	43	42	41	40	39	EW2R
50	49	48	47	46	45	44	43	42	41	40	EW3R
55	54	53	52	51	50	49	48	47	46	45	EW5
56	55	54	53	52	51	50	49	48	47	46	EW4R
58	57	56	55	54	53	52	51	50	49	48	EW6
59	58	57	56	55	54	53	52	51	50	49	EW7 or EW5R
63	62	61	60	59	58	57	56	55	54	53	EW8

Source : National Research Council, Division of Building Research, December 1980.

Explanatory Notes :

1) Where the calculated percentage wall area is not presented as a column heading, the nearest percentage column in the table should be used.
2) The common structure of walls EW1 to EW5 is composed of 12.7 mm gypsum board, vapour barrier, and 38 x 89 mm studs with 50 mm (or thicker) mineral wool or glass fibre batts in inter-stud cavities
3) EW1 denotes exterior wall as in Note 2), plus sheathing, plus wood siding or metal siding and fibre backer board.
EW2 denotes exterior wall as in Note 2), plus rigid insulation (25-30 mm), and wood siding or metal siding and fibre backer board.
EW3 denotes simulated mansard with structure as in Note 2), plus sheathing, 28 x 89 mm framing, sheathing, and asphalt roofing material.
EW4 denotes exterior wall as in Note 2), plus sheathing and 20 mm stucco.
EW5 denotes exterior wall as in Note 2), plus sheathing, 25 mm air space, 100 mm brick veneer.
EW6 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 100 mm back-up block, 100 mm face brick.
EW7 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 140 mm back-up block, 100 mm face brick.
EW8 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25-50 mm), 200 mm concrete.
4) R signifies the mounting of the interior gypsum board on resilient clips.
5) An exterior wall conforming to rainscreen design principles and composed of 12.7 mm gypsum board, 100 mm concrete block, rigid insulation (25-50 mm), 25 mm air space, and 100 mm brick veneer has the same AIF as EW6.
6) An exterior wall described in EW1 with the addition of rigid insulation (25-50 mm) between the sheathing and the external finish has the same AIF as EW2.

TABLE 11: Approximate conversion from STC to AIF for windows and doors:

Window (or door) area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
80	STC-5
63	STC-4
50	STC-3
40	STC-2
32	STC-1
25	STC
20	STC+1
16	STC+2
12.5	STC+3
10	STC+4
8	STC+5
6.3	STC+6
5	STC+7
4	STC+8

Note: For area percentages not listed in the table use the nearest listed value.

Examples: For a window whose area = 20% of the room floor area and STC = 32 the AIF is 32 + 1 = 33.

For a window whose area = 60% of the room floor area and STC = 29 the AIF is 29 - 4 = 25.

TABLE 12: Approximate conversion from STC to AIF for exterior walls:

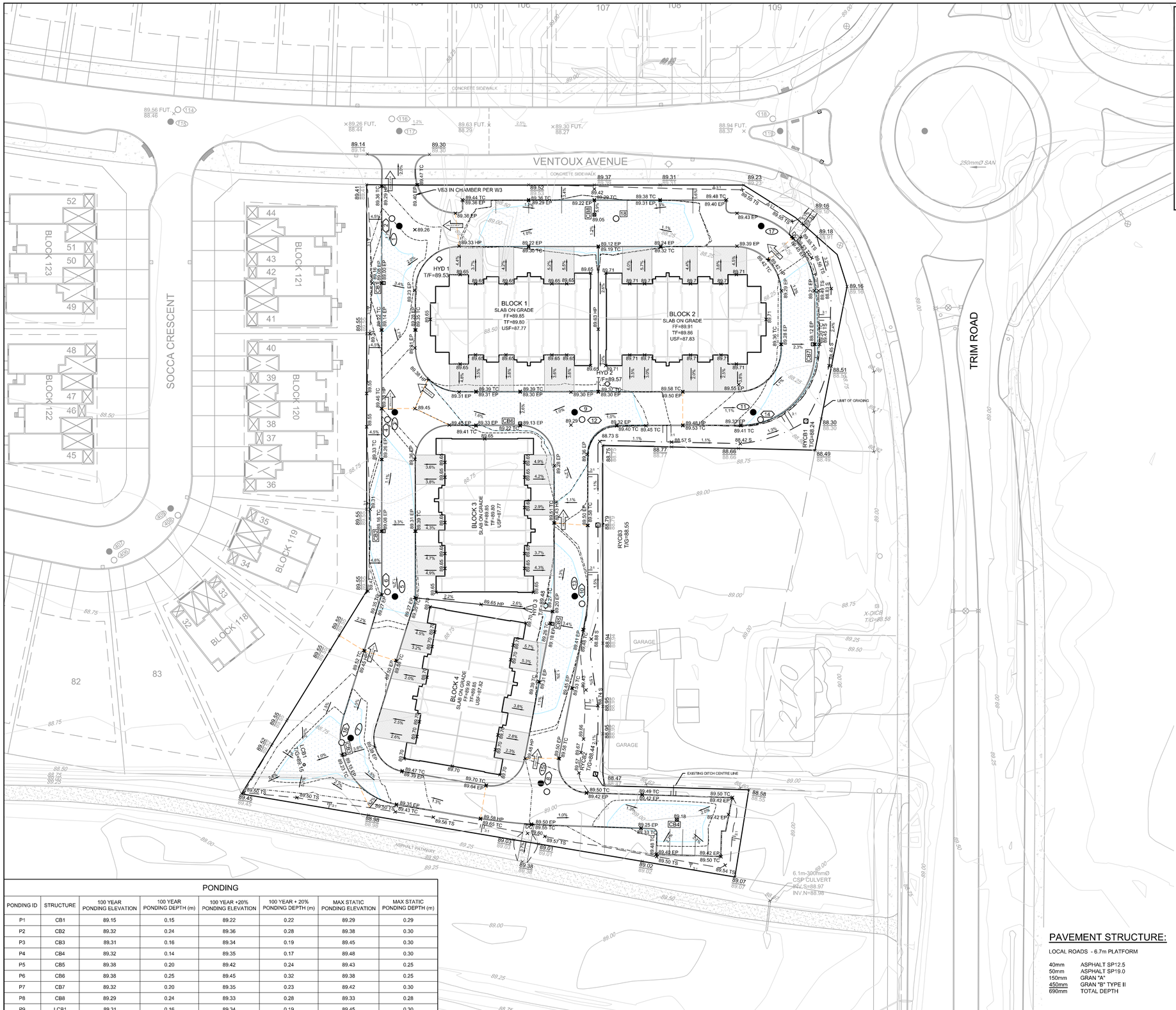
Exterior wall area expressed as percentage of room floor area	Acoustic Insulation Factor (AIF)
200	STC-10
160	STC-9
125	STC-8
100	STC-7
80	STC-6
63	STC-5
50	STC-4
40	STC-3
32	STC-2
25	STC-1
20	STC
16	STC+1
12.5	STC+2
10	STC+3
8	

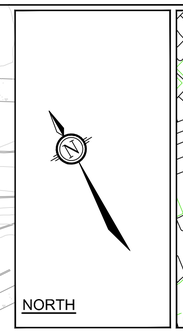
Note: For area percentages not listed in the table use the nearest listed value.

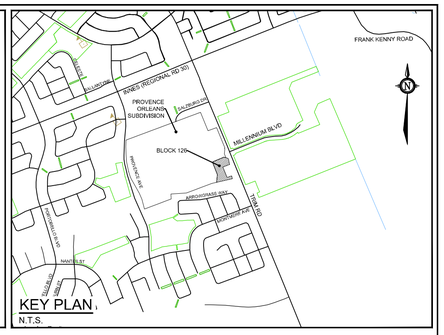
Example: For a wall whose area = 120% of room floor area and STC = 48 the AIF is 48 - 8 = 40.

APPENDIX C

120057-GR (Grading Plan)







LEGEND

- PROPOSED GRADE AND DIRECTION (2.5%)
- PROPOSED ELEVATION AT HIGH POINT (105.59 HP)
- PROPOSED ELEVATION / EXISTING ELEVATION (105.53 / 105.58)
- EXISTING ELEVATION (×55.88)
- EXISTING ELEVATION AT BACK OF SIDEWALK (56.13 BS)
- EXISTING CONTOUR AND ELEVATION (55.00)
- PROPOSED VALVE & VALVE BOX LOCATION (VB)
- PROPOSED HYDRANT WITH TOP OF FLANGE ELEVATION (HYD)
- PROPOSED SANITARY MANHOLE (101)
- PROPOSED STORM MANHOLE (100)
- PROPOSED CATCHBASIN WITH ICD (95)
- PROPOSED REAR YARD CATCHBASIN WITH ICD (RYCB1)
- PROPOSED LANDSCAPE TYPE CATCHBASIN WITH TOP OF GRATE ELEVATION (96)
- SWALE AND TERRACE
- 100 yr PONDING AREA
- 100 yr + 20% PONDING AREA
- MAX. STATIC PONDING AREA

GENERAL NOTES:

1. DIMENSIONS AND LAYOUT INFORMATION SHALL BE CONFIRMED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. THE ORIGINAL TOPOGRAPHY AND GROUND ELEVATIONS, SERVICING AND SURVEY INFORMATION SHOWN ON THIS PLAN ARE SUPPLIED FOR INFORMATION PURPOSES ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACCURACY OF ALL INFORMATION OBTAINED FROM THIS PLAN.
3. CO-ORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
4. BEFORE COMMENCING CONSTRUCTION, PROVIDE PROOF OF COMPREHENSIVE ALL RISK AND OPERATIONAL LIABILITY INSURANCE INCLUDING BLASTING. INSURANCE POLICY TO NAME THE OWNER, ENGINEER AND THE CITY AS CO-INSURED. AMOUNT OF INSURANCE TO BE SPECIFIED BY OWNER'S AGENT.
5. CONNECT TO EXISTING SYSTEMS AS DETAILED, INCLUDING ALL RESTORATION WORK NECESSARY TO REINSTATE SURFACES TO EXISTING CONDITIONS OR BETTER.
6. DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME ALL RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THESE DRAWINGS.
7. OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS BEFORE COMMENCING CONSTRUCTION.
8. RESTORE ALL TRENCHES AND SURFACE FEATURES TO EXISTING CONDITIONS OR BETTER AND TO THE SATISFACTION OF CITY OF OTTAWA AUTHORITIES.
   - ASPHALT RESTORATION SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA DETAIL R-10.
   - THICKNESS OF GRANULAR MATERIAL AND ASPHALT LAYERS TO MATCH EXISTING.
   - BOULEVARDS SHALL BE REINSTATED WITH 100mm OF TOPSOIL, SEED AND MULCH.
9. REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL UNLESS OTHERWISE INSTRUCTED BY ENGINEER.
10. ALL ELEVATIONS ARE GEODETIC AND UTILIZE METRIC UNITS.
11. ALL FENCING TO BE LOCATED 0.15m INSIDE PROPERTY LINE. REFER TO LANDSCAPING PLAN FOR DETAILS.
12. REFER TO GEOTECHNICAL INVESTIGATION REPORT PG4278-1(DATED JULY 5, 2018), PREPARED BY PATERSON GROUP FOR SUBSURFACE CONDITIONS AND CONSTRUCTION RECOMMENDATIONS.
13. PERFORATED PIPE SUB-DRAINS TO BE PROVIDED AT SUBGRADE LEVEL EXTENDING FROM THE ROADSIDE CATCHBASIN FOR A DISTANCE OF 3.0m, PARALLEL TO THE CURB IN TWO DIRECTIONS.
14. GRADE RAISE RESTRICTIONS ON SITE AS PER GEOTECHNICAL INVESTIGATION (DATED 10/2019) PREPARED BY PATERSON GROUP.

GRADING AND PAVEMENT NOTES:

1. ALL TOPSOIL, ORGANIC OR DELETERIOUS MATERIAL MUST BE ENTIRELY REMOVED FROM BENEATH THE PROPOSED HARD SURFACE (ie. PAVEMENT, CURB, SIDEWALK, ETC.) AREAS AS DIRECTED BY THE SITE ENGINEER OR GEOTECHNICAL ENGINEER.
2. EXPOSED SUBGRADES IN PROPOSED PAVED AREAS SHOULD BE HEAVILY PROOF ROLLED WITH A LARGE (10 TON) VIBRATORY STEEL DRUM ROLLER UNDER DRY CONDITIONS AND INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF GRANULARS.
3. ANY SOFT AREAS EVIDENT FROM THE PROOF ROLLING SHOULD BE SUB-EXCAVATED AND REPLACED WITH SUITABLE MATERIAL THAT IS FROST COMPATIBLE WITH THE EXISTING SOILS AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
4. THE GRANULAR BASE SHOULD BE PLACED IN MAXIMUM 300mm LIFTS AND COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE. ANY ADDITIONAL GRANULAR FILL USED BELOW THE PROPOSED PAVEMENT SHOULD BE PLACED IN MAXIMUM 300mm LIFTS AND COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE.
5. BUILD ROADWAYS WITH 2% CROSSFALL INCLUDING SUBGRADE AND GRANULAR BASE.
6. ROADWAY SUBGRADE TO BE INSPECTED BY THE GEOTECHNICAL ENGINEER AT THE TIME OF CONSTRUCTION TO REVIEW IF A WOVEN GEOTEXTILE IS REQUIRED BELOW THE GRANULAR MATERIALS; AND TO CONFIRM THE DEPTH AND COMPACTION OF GRANULAR 'B'
7. PRIOR TO PLACEMENT OF TOPLIFT, THE CONTRACTOR SHALL ADJUST ALL STRUCTURES TO FINAL GRADE PER CITY OF OTTAWA STANDARDS.
8. MINIMUM OF 2% GRADE FOR ALL GRASS AREAS UNLESS OTHERWISE NOTED.
9. MAXIMUM TERRACING GRADE TO BE 3:1 UNLESS OTHERWISE NOTED.
10. ALL GRADES BY CURBS ARE EDGE OF PAVEMENT GRADES UNLESS OTHERWISE INDICATED.
11. ALL CURBS SHALL BE MOUNTABLE CURB UNLESS OTHERWISE NOTED AND CONSTRUCTED PER CITY OF OTTAWA STANDARD (SC1.3).
12. REFER TO LANDSCAPE PLAN FOR PLANTING AND OTHER LANDSCAPE FEATURE DETAILS.

PAVEMENT STRUCTURE:

LOCAL ROADS - 6.7m PLATFORM

40mm	ASPHALT SP12.5
50mm	ASPHALT SP19.0
150mm	GRAN "A"
450mm	GRAN "B" TYPE II
690mm	TOTAL DEPTH

PONDING

PONDING ID	STRUCTURE	100 YEAR PONDING ELEVATION	100 YEAR PONDING DEPTH (m)	100 YEAR +20% PONDING ELEVATION	100 YEAR + 20% PONDING DEPTH (m)	MAX STATIC PONDING ELEVATION	MAX STATIC PONDING DEPTH (m)
P1	CB1	89.15	0.15	89.22	0.22	89.29	0.29
P2	CB2	89.32	0.24	89.36	0.28	89.38	0.30
P3	CB3	89.31	0.16	89.34	0.19	89.45	0.30
P4	CB4	89.32	0.14	89.35	0.17	89.48	0.30
P5	CB5	89.38	0.20	89.42	0.24	89.43	0.25
P6	CB6	89.38	0.25	89.45	0.32	89.38	0.25
P7	CB7	89.32	0.20	89.35	0.23	89.42	0.30
P8	CB8	89.29	0.24	89.33	0.28	89.33	0.28
P9	LCB1	89.31	0.16	89.34	0.19	89.45	0.30

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
1.	ISSUED FOR APPROVAL	JUN 29/20	MAB

SCALE
1:400
1:400
0 4 8 12 16

DESIGN DTD
CHECKED MAB
DRAWN DTD
CHECKED MAB
APPROVED JGR

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER
L.R. WILSON
100160065
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
M.A. BISSETT
2020.06.29
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CITY OF OTTAWA
PROVENCE ORLEANS - 2128 TRIM ROAD (BLOCK 126)

GRADING PLAN

PROJECT No. 120057
REV REV # 1
DRAWING No. 120057-GR