

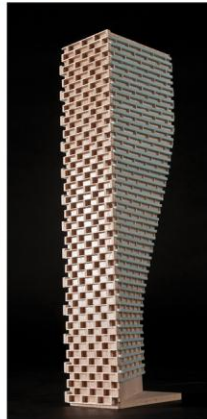
GRADIENTWIND

ENGINEERS & SCIENTISTS

TRANSPORTATION NOISE FEASIBILITY STUDY

5971 Flewellyn Road, 1820 Shea Road,
and 1770 Shea Road
Stittsville, Ontario

Report: 21-420–East Parcel Transportation
Noise Feasibility



April 30, 2026

PREPARED FOR

Caivan (Stittsville) Inc.

3713 Borrisokane Road,
Nepean, ON, K2J 4J4

PREPARED BY

Doryan Saavedra, B.Eng., Junior Acoustic Scientist
Joshua Foster, P.Eng., Lead Engineer

EXECUTIVE SUMMARY

This report describes a transportation noise feasibility study for the proposed east parcel of the Magnolia subdivision located at 5971 Flewellyn Road, 1820 Shea Road, and 1770 Shea Road in Stittsville, Ontario. The proposed development comprises numerous lots and blocks, for which building massing has not been finalized. It is expected that the buildings will comprise single houses and townhouses with outdoor living areas in the rear yard of each dwelling. The major sources of roadway traffic noise are Flewellyn Road to the south and Shea Road to the east, as well as proposed internal collectors. Figure 1 illustrates the site location with the surrounding context.

The assessment is based on (i) theoretical noise prediction methods that conform to the Ministry of the Environment, Conservation and Parks (MECP) and City of Ottawa requirements; (ii) noise level criteria as specified by the City of Ottawa's Environmental Noise Control Guidelines (ENCG); (iii) future vehicular traffic volumes based on the mature state of development; and (iv) conceptual grading plan provided by DSEL in April 2026.

The results of the current analysis indicate that noise levels will range between 55 and 68 dBA during the daytime period (07:00-23:00) and between 49 and 59 dBA during the nighttime period (23:00-07:00). The highest noise level (68 dBA) occurs at receptor 12 near Shea Road. Figures 4-7 illustrate daytime and nighttime noise contours throughout the site at a height of 1.5 m and 4.5 m above grade.

Building components with a higher Sound Transmission Class (STC) rating will be required where exterior noise levels exceed 65 dBA, which occurs on the exterior, road adjacent sides of the subdivision. Detailed outdoor to indoor noise calculations will be required once plans and elevations are finalized to determine appropriate STC ratings for windows and walls. Based on Gradient Wind's experience, window ratings of up to STC 35 may be required, which are readily available. Results of the calculations indicate that parts of the development will require upgraded ventilation including forced air heating, central air conditioning, or a similar mechanical system, which will allow occupants to keep windows closed and maintain a comfortable living/working environment. Type C and D Warning Clauses¹ will also be required on all Lease, Purchase and Sale Agreements, as summarized in Section 6. The contour and setback distances where the ventilation and Warning Clauses are required can be seen in Figure 3.

¹ MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 8



Results of the roadway traffic noise calculations also indicate that the outdoor living areas having direct exposure to traffic noise may require noise control measures. If these roadway adjacent areas are to be designed as OLA's, mitigation measures are described in Section 5.2, with the aim to reduce the L_{eq} to as close to 55 dBA as technically, economically, and administratively feasible. Noise levels may not exceed 60 dBA. Noise barriers will be required on the outdoor living areas of lots where the backyards are adjacent to Shea Road and Flewellyn Road. A preliminary noise barrier investigation was conducted with receptors located at several rear yards. A 2.5 m noise barrier will be sufficient to reduce noise levels below 60 dBA. Where noise levels continue to exceed 55 dBA, a Type B Warning Clause will be required on all Lease, Purchase, and Sale Agreements, as summarized in Section 6. A detailed transportation noise study will be required to determine specific noise control measures for the development.

TABLE OF CONTENTS

1.	INTRODUCTION.....	1
2.	TERMS OF REFERENCE	1
3.	OBJECTIVES	2
4.	METHODOLOGY	2
4.1	Background.....	2
4.2	Roadway Traffic Noise.....	2
4.2.1	Criteria for Roadway Traffic Noise	2
4.2.2	Theoretical Roadway Noise Predictions	4
4.2.3	Roadway Traffic Volumes.....	5
5.	RESULTS	6
5.1	Roadway Traffic Noise Levels.....	6
5.2	Noise Control Measures	7
6.	CONCLUSIONS AND RECOMMENDATIONS	9

FIGURES

APPENDICES

Appendix A – STAMSON 5.04 – Input and Output Data

1. INTRODUCTION

Gradient Wind Engineering Inc. (Gradient Wind) was retained by Caivan (Stittsville) Inc. to undertake a transportation noise feasibility assessment for the proposed east parcel of the Magnolia residential subdivision located at 5971 Flewellyn Road, 1820 Shea Road, and 1770 Shea Road in Stittsville, Ontario. This report summarizes the methodology, results, and recommendations related to the assessment of exterior and interior noise levels generated by local roadway traffic.

This assessment is based on theoretical noise calculation methods conforming to the City of Ottawa² and the Ministry of the Environment, Conservation and Parks (MECP)³ guidelines. Noise calculations were based on conceptual grading plans provided by DSEL in April 2026, with future traffic volumes corresponding to the mature state of development as directed by the project's transportation engineer. Figure 1 illustrates the site location with the surrounding context.

2. TERMS OF REFERENCE

The focus of this transportation noise feasibility study is the proposed east parcel of the Magnolia subdivision located in Stittsville, at the northwest corner of the Shea Road and Flewellyn Road intersection. The proposed development comprises numerous lots and blocks, for which building massing has not been finalized. It is expected that the buildings will comprise single houses and townhouses with outdoor living areas in the rear yard of each dwelling. The individual properties are accessed by a series of internal roadways.

The primary sources of traffic noise include Flewellyn Road to the south and Shea Road to the east. Two of the main internal roadways were also included in this assessment. The study site is surrounded by existing low-rise residential properties to the northwest, along with scattered low-rise residential and office space to the southeast. Furthermore, the area northwest of the development is developed and suburban, while the southwest is undeveloped forest, farmland and rural. Local and interior roads such

² City of Ottawa Environmental Noise Control Guidelines, January 2016

³ Ontario Ministry of the Environment, Conservation and Parks – Environmental Noise Guidelines, Publication NPC-300, Queens Printer for Ontario, Toronto, 2013

as Parade Drive and Beckett Crescent were deemed insignificant due to low traffic volumes. Figure 1 illustrates the site location with the surrounding context.

3. OBJECTIVES

The principal objectives of this study are to (i) calculate the future noise levels produced by local roadway traffic, and (ii) explore potential noise mitigation where required.

4. METHODOLOGY

4.1 Background

Noise can be defined as any obtrusive sound. It is created at a source, transmitted through a medium, such as air, and intercepted by a receiver. Noise may be characterized in terms of the power of the source or the sound pressure at a specific distance. While the power of a source is characteristic of that particular source, the sound pressure depends on the location of the receiver and the path that the noise takes to reach the receiver. Measurement of noise is based on the decibel unit, dBA, which is a logarithmic ratio referenced to a standard noise level (2×10^{-5} Pascals). The 'A' suffix refers to a weighting scale, which better represents how the noise is perceived by the human ear. With this scale, a doubling of power results in a 3 dBA increase in measured noise levels and is just perceptible to most people. An increase of 10 dBA is often perceived to be twice as loud.

4.2 Roadway Traffic Noise

4.2.1 Criteria for Roadway Traffic Noise

For surface roadway traffic noise, the equivalent sound energy level, L_{eq} , provides a measure of the time-varying noise levels, which is well correlated with the annoyance of sound. It is defined as the continuous sound level, which has the same energy as a time-varying noise level over a period of time. For roadways, the L_{eq} is commonly calculated on the basis of a 16-hour (L_{eq16}) daytime (07:00-23:00) / 8-hour (L_{eq8}) nighttime (23:00-07:00) split to assess its impact on residential buildings. The City of Ottawa's Environmental Noise Control Guidelines (ENCG) specifies that the recommended indoor noise limit range (that is relevant to this study) is 45 and 40 dBA for living rooms and sleeping quarters respectively for roadway as listed in Table 1.

TABLE 1: INDOOR SOUND LEVEL CRITERIA (ROAD)⁴

Type of Space	Time Period	L _{eq} (dBA)
General offices, reception areas, retail stores, etc.	07:00 – 23:00	50
Living/dining/den areas of residences , hospitals, schools, nursing/retirement homes, day-care centres, theatres, places of worship, libraries, individual or semi-private offices, conference rooms, etc.	07:00 – 23:00	45
Sleeping quarters of hotels/motels	23:00 – 07:00	45
Sleeping quarters of residences , hospitals, nursing/retirement homes, etc.	23:00 – 07:00	40

Predicted noise levels at the plane of window (POW) dictate the action required to achieve the recommended sound levels. An open window is considered to provide a 10 dBA reduction in noise, while a standard closed window is capable of providing a minimum 20 dBA noise reduction⁵. A closed window due to a ventilation requirement will bring noise levels down to achieve an acceptable indoor environment⁶. Therefore, where noise levels exceed 55 dBA daytime and 50 dBA nighttime, the ventilation for the building should consider the need for having windows and doors closed, which triggers the need for forced air heating with provision for central air conditioning. Where noise levels exceed 65 dBA daytime and 60 dBA nighttime, air conditioning will be required and building components will require higher levels of sound attenuation⁷.

The sound level criterion for outdoor living areas is 55 dBA, which applies during the daytime (07:00 to 23:00). When noise levels exceed 55 dBA, mitigation must be provided to reduce noise levels where technically and administratively feasible to acceptable levels at or below the criterion. Furthermore, noise levels may not exceed 60 dBA.

⁴ Adapted from ENCG 2016 – Tables 2.2b and 2.2c

⁵ Burberry, P.B. (2014). Mitchell's Environment and Services. Routledge, Page 125

⁶ MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.8

⁷ MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.1.3



4.2.2 Theoretical Roadway Noise Predictions

The impact of transportation noise sources on the development was determined by computer modelling. Transportation noise source modelling is based on the software program *CadnaA*, which utilizes the United States Federal Highway Administration's Traffic Noise Model (TNM) to represent the roadway line sources. The TNM analysis model has been recognized by the Ministry of Transportation Ontario (MTO) as the recommended noise model for transportation projects (ref. Environmental Guide for Noise, 2022, by the Ministry of Transportation (MTO)⁸). The Ministry of Environment, Conservation and Parks has also adopted the TMN model as per their "Draft Guideline Noise Pollution Control Publications 306 (NPC-306)"⁹.

A set of comparative calculations were also performed for comparisons using STAMSON. The *CadnaA* computer program can represent three-dimensional surfaces and the three orders of reflection of sound waves over a suitable spectrum for human hearing. The STAMSON model, however, is an older software and requires each receptor to be calculated separately. STAMSON also does not accurately account for building reflections, multiple screening elements, and curved road geometry. The result of the comparative calculations can be seen in Section 5, Table 4.

Transportation noise calculations were performed by treating each roadway segment as a separate line source of noise and by using existing building locations as noise barriers. In addition to the traffic volumes summarized in Table 2, theoretical noise predictions were based on the following parameters:

- Vehicle parameters such as truck traffic volume percentages, posted speed limit, and day/night split are summarized in Table 2 below.
- Default ground surfaces were taken to be absorptive, due to the abundance of fauna and farmland along the traffic sources.
- The study site was treated as having flat or gently sloping topography.
- For select sources where appropriate, receptors considered the proposed and existing building as a barrier partially or fully obstructing exposure to the source.

⁸ Ministry of Transportation, Environmental Guide for Noise, 2022. Retrieved from [Environmental Guide for Noise 2022](#)

⁹ Ministry of Environment, Conservation and Parks, Ontario, "Methods to determine Sound Levels Due to Road and Rail Traffic", Draft February 12, 2020

- Sixteen (16) receptors were strategically placed throughout the study area, as seen in Figure 2A and Figure 2B.

4.2.3 Roadway Traffic Volumes

The ENCG dictates that noise calculations should consider future sound levels based on a roadway's classification at the mature state of development. Therefore, for exterior roadways, traffic volumes are based on the roadway classifications outlined in the City of Ottawa's Official Plan (OP) and Transportation Master Plan¹⁰ which provide additional details on future roadway expansions. Average Annual Daily Traffic (AADT) volumes are then based on data in Table B1 of the ENCG for each roadway classification. While Table B1 of the ENCG typically prescribes an AADT of 8,000 for 2-lane collector roadways, the specific rural context of this subdivision and input from the transportation engineer suggest a more accurate anticipated traffic volume of 6,000 AADT for the internal collectors. The transportation engineer noted that this estimate has been consistently used for over 10 years and aligns with the TIA forecast of 900 to 4,050 AADT across the three collector road connections. Specifically, the two connections to Flewellyn are projected to reach a combined 6,030 AADT, while the connection to Shea is expected to reach 900 AADT. Table 2 (below) summarizes the AADT values used for each roadway included in this assessment.

TABLE 2: ROADWAY SOURCE DATA

Source	Classification	Speed Limit (km/h)	AADT	Day/Night Split	Medium/Large Truck Pct. (%)
Flewellyn Road	2-Lane Rural Collector	80	8,000	92/8	7/5
Shea Road	2-Lane Rural Collector	80	8,000		
Internal Road 1	2-Lane Residential Collector	40	6,000		
Internal Road 2	2-Lane Residential Collector	40	6,000		

¹⁰ City of Ottawa Transportation Master Plan, November 2013



5. RESULTS

5.1 Roadway Traffic Noise Levels

The results of the current analysis indicate that noise levels will range between 55 and 68 dBA during the daytime period (07:00-23:00) and between 49 and 59 dBA during the nighttime period (23:00-07:00). The highest noise level (68 dBA) occurs at receptor 12 near Shea Road. Figures 4-7 illustrate daytime and nighttime noise contours throughout the site at a height of 1.5 m and 4.5 m above grade.

TABLE 3: EXTERIOR NOISE LEVELS DUE TO ROADWAY SOURCES

Receptor # / Type	Height (m)	Receptor Location	Roadway Noise Level (dBA)	
			Day	Night
R1 / POW	4.5	Level 2 – North near Shea Road	64	57
R2 / POW		Level 2 – North near Internal Road 2	59	52
R3 / POW		Level 2 – Centre near Shea Road	61	53
R4 / POW		Level 2 – South near Shea Road	66	59
R5 / POW		Level 2 – Centre near Internal Road 2	61	53
R6 / POW		Level 2 – South near Internal Road 2	61	54
R7 / POW		Level 2 – Near Center Site	57	49
R8 / POW		Level 2 – South near Flewellyn Road	63	56
R9 / OLA	1.5	Backyard – North near Shea Road	65	N/A*
R10 / OLA		Backyard – North near Internal Road 2	59	N/A*
R11 / OLA		Backyard – Centre near Shea Road	58	N/A*
R12 / OLA		Backyard – South near Shea Road	68	N/A*
R13 / OLA		Backyard – Centre near Internal Road 2	58	N/A
R14 / OLA		Backyard – South near Internal Road 2	59	N/A*
R15 / OLA		Backyard – Near Center Site	55	N/A*
R16 / OLA		Backyard – South near Flewellyn Road	61	N/A*

*Noise levels during the nighttime are not considered for OLAs

Table 4 below provides a comparison between CadnaA and STAMSON. Noise levels calculated in STAMSON were found to have a good correlation with CadnaA, and variability between the two programs was within an acceptable level of ± 0.1 dBA.



TABLE 4: RESULT CORRELATION WITH STAMSON

Receptor ID	Receptor Location	Receptor Height (m)	CADNAA Noise Level (dBA)		STAMSON 5.04 Noise Level (dBA)	
			Day	Night	Day	Night
R1	Level 2 – North near Shea Road	4.5	64	57	64	57

5.2 Noise Control Measures

The noise levels predicted due to roadway traffic exceed the criteria listed in the NPC-300 for potential outdoor living areas (OLA). Therefore, noise control measures as described below may be required to reduce the L_{eq} below 60 dBA at some receptors:

- Distance setback with soft ground
- Insertion of noise-insensitive land uses between the source and sensitive points of reception
- Orientation of buildings to provide sheltered zones
- Acoustic barriers

It should be noted that outdoor living areas should be designed for the quiet enjoyment of the outdoors. The best way to mitigate excessive noise levels at OLAs is to shield the area from exposure to the roadways by using building massing. However, where necessary, noise screens may be required. Noise barriers will be required on the outdoor living areas of lots where the backyards are adjacent to Shea Road and Flewellyn Road. A preliminary noise barrier investigation was conducted with several receptors located at the rear yards and summarized in Table 5. A 2.5 m noise barrier will be sufficient to reduce noise levels below 60 dBA. Where noise levels continue to exceed 55 dBA, a Type B Warning Clause will be required on all Lease, Purchase, and Sale Agreements, as summarized in Section 6. Specific noise control measures will be explored for each building during the subdivision registration stage.



TABLE 5: RESULTS OF PRELIMINARY NOISE BARRIER INVESTIGATION

Receptor Number	Receptor Height Above Grade (m)	Receptor Location	Daytime L_{eq} Noise Levels (dBA)	
			No Barrier	With 2.5 m Barrier
R9	1.5	Backyard – North near Shea Road	65	57
R10		Backyard – North near Internal Road 2	59	56
R11		Backyard – Centre near Shea Road	58	53
R12		Backyard – South near Shea Road	68	58
R13		Backyard – Centre near Internal Road 2	58	54
R14		Backyard – South near Internal Road 2	59	53
R15		Backyard – Near Center Site	55	-
R16		Backyard – South near Flewellyn Road	61	58



6. CONCLUSIONS AND RECOMMENDATIONS

The results of the current analysis indicate that noise levels will range between 55 and 68 dBA during the daytime period (07:00-23:00) and between 49 and 59 dBA during the nighttime period (23:00-07:00). The highest noise level (68 dBA) occurs at receptor 12 near Shea Road. Figures 4-7 illustrate daytime and nighttime noise contours throughout the site at a height of 1.5 m and 4.5 m above grade.

Building components with a higher Sound Transmission Class (STC) rating will be required where exterior noise levels exceed 65 dBA, which occurs on the exterior, road-adjacent sides of the subdivision. Detailed outdoor-to-indoor noise calculations will be required once plans and elevations are finalized to determine appropriate STC ratings for windows and walls. Based on Gradient Wind's experience, window ratings of up to STC 35 may be required, which are readily available. Results of the calculations indicate that parts of the development will require upgraded ventilation such as forced air heating, central air conditioning, or a similar mechanical system, which will allow occupants to keep windows closed and maintain a comfortable living/working environment. The following Type C and D Warning Clauses¹¹ will also be required on all Lease, Purchase and Sale Agreements, as summarized below. The contour and setback distances where the ventilation and Warning Clauses are required can be seen in Figure 3.

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 in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment."

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 sound level limits of the Municipality and the Ministry of the Environment."

¹¹ MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 8



Results of the roadway traffic noise calculations also indicate that the outdoor living areas having direct exposure to traffic noise may require noise control measures. If these roadway adjacent areas are to be designed as OLA's, mitigation measures are described in Section 5.2, with the aim to reduce the L_{eq} to as close to 55 dBA as technically, economically, and administratively feasible. Noise levels may not exceed 60 dBA. Noise barriers will be required on the outdoor living areas of lots where the backyards are adjacent to Shea Road and Flewellyn Road. A preliminary noise barrier investigation was conducted with receptors located at several rear yards. A 2.5 m noise barrier will be sufficient to reduce noise levels below 60 dBA. Where noise levels continue to exceed 55 dBA, a Type B Warning Clause will be required on all Lease, Purchase, and Sale Agreements, as summarized below. A detailed transportation noise study will be required to determine specific noise control measures for the development.

Type B:

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

This concludes our transportation noise feasibility assessment and report. If you have any questions or wish to discuss our findings, please advise us. In the interim, we thank you for the opportunity to be of service.

Sincerely,

Gradient Wind Engineering Inc.



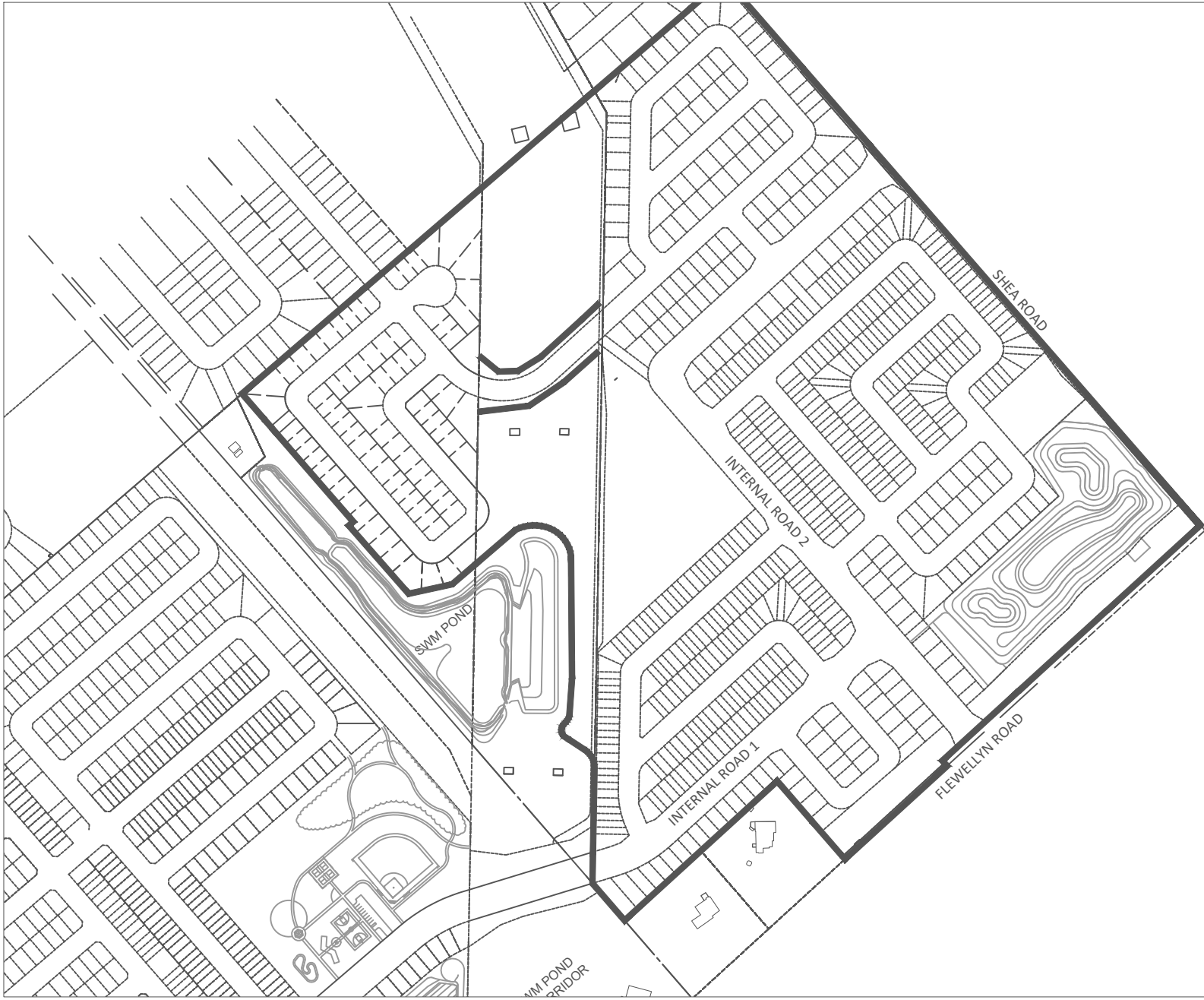
Doryan Saavedra, B.Eng.
Junior Acoustic Scientist

Joshua Foster, P.Eng.
Lead Engineer

Gradient Wind File #21-420 – East Parcel Transportation Noise Feasibility

Caivan (Stittsville) Inc.
5971 FLEWELLYN ROAD, 1820 SHEA ROAD, AND 1770 SHEA ROAD, STITTVILLE:
TRANSPORTATION NOISE FEASIBILITY ASSESSMENT





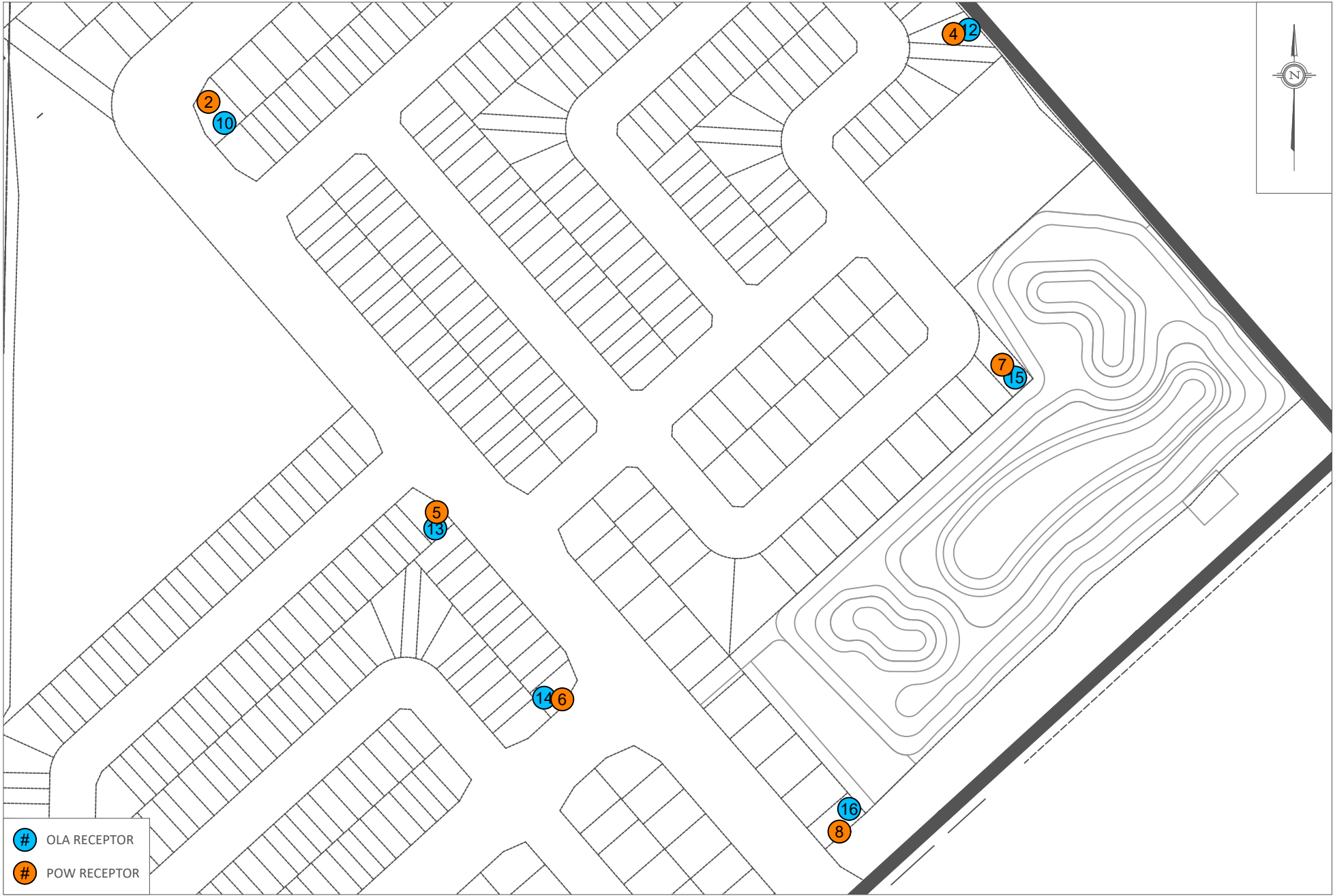
PROJECT	MAGNOLIA EAST PARCEL, STITTVILLE TRANSPORTATION NOISE STUDY		DESCRIPTION
SCALE	1:5000 (APPROX.)	DRAWING NO.	21-420-ANV-1
DATE	APRIL 28, 2026	DRAWN BY	D.S.

FIGURE 1:
SITE PLAN AND SURROUNDING CONTEXT



PROJECT	MAGNOLIA EAST PARCEL, STITTSVILLE TRANSPORTATION NOISE STUDY	
SCALE	1:2000 (APPROX.)	DRAWING NO. GW21-420-2A
DATE	APRIL 28, 2026	DRAWN BY D.S.

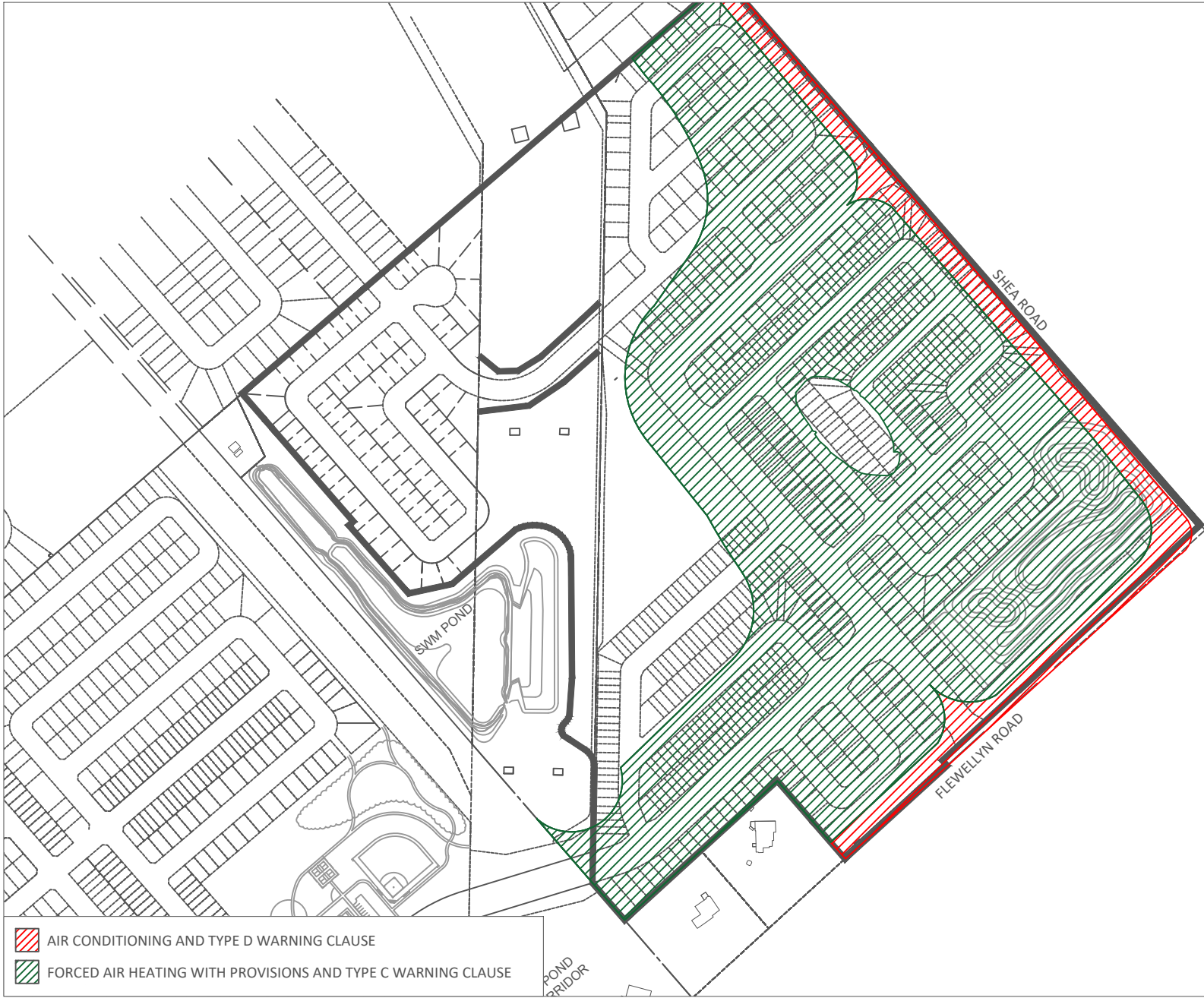
DESCRIPTION	FIGURE 2A: TRAFFIC NOISE RECEPTOR LOCATIONS
-------------	--



PROJECT	MAGNOLIA EAST PARCEL, STITTVILLE TRANSPORTATION NOISE STUDY	
SCALE	1:2000 (APPROX.)	DRAWING NO. GW21-420-2B
DATE	APRIL 28, 2026	DRAWN BY D.S.

DESCRIPTION

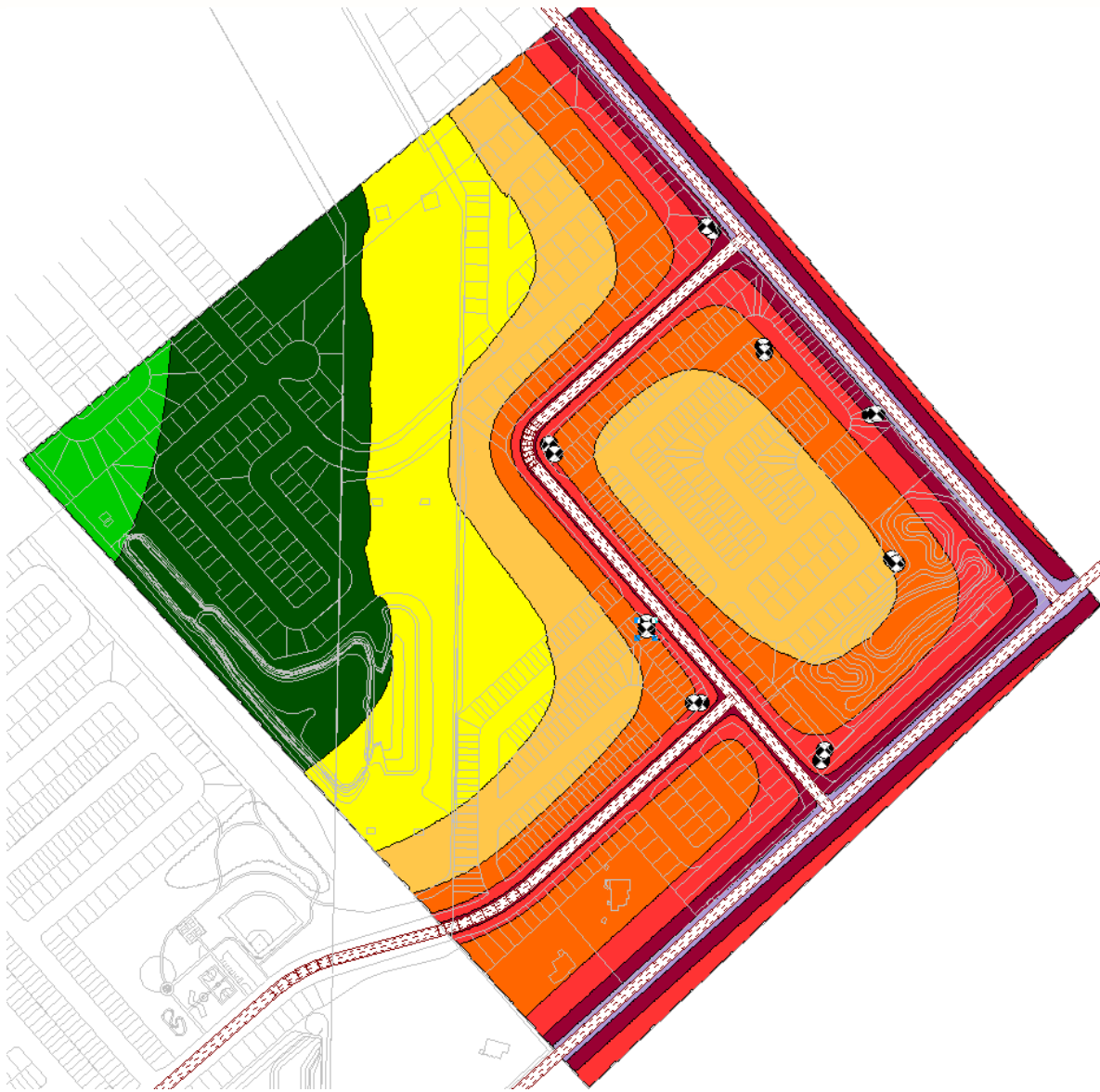
FIGURE 2B:
TRAFFIC NOISE RECEPTOR LOCATIONS



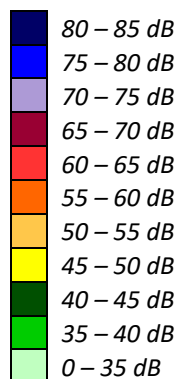
-  AIR CONDITIONING AND TYPE D WARNING CLAUSE
-  FORCED AIR HEATING WITH PROVISIONS AND TYPE C WARNING CLAUSE

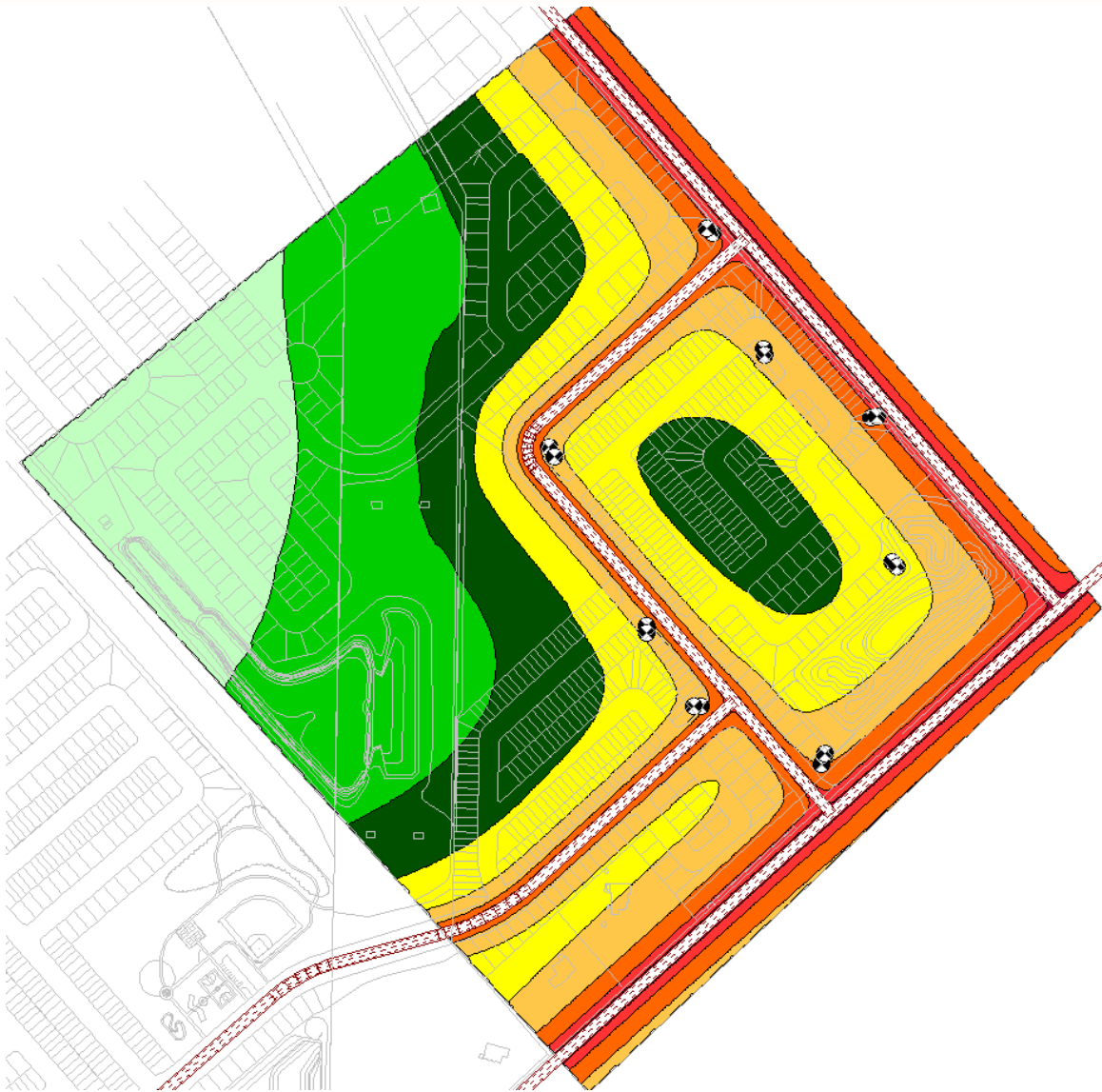
PROJECT	MAGNOLIA EAST PARCEL, STITTSVILLE TRANSPORTATION NOISE STUDY	
SCALE	1:5000 (APPROX)	DRAWING NO. 21-420-ANV-3
DATE	APRIL 28, 2026	DRAWN BY D.S.

FIGURE 3:
PRELIMINARY VENTILATION AND WARNING CLAUSE CONTOURS

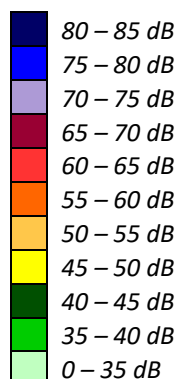


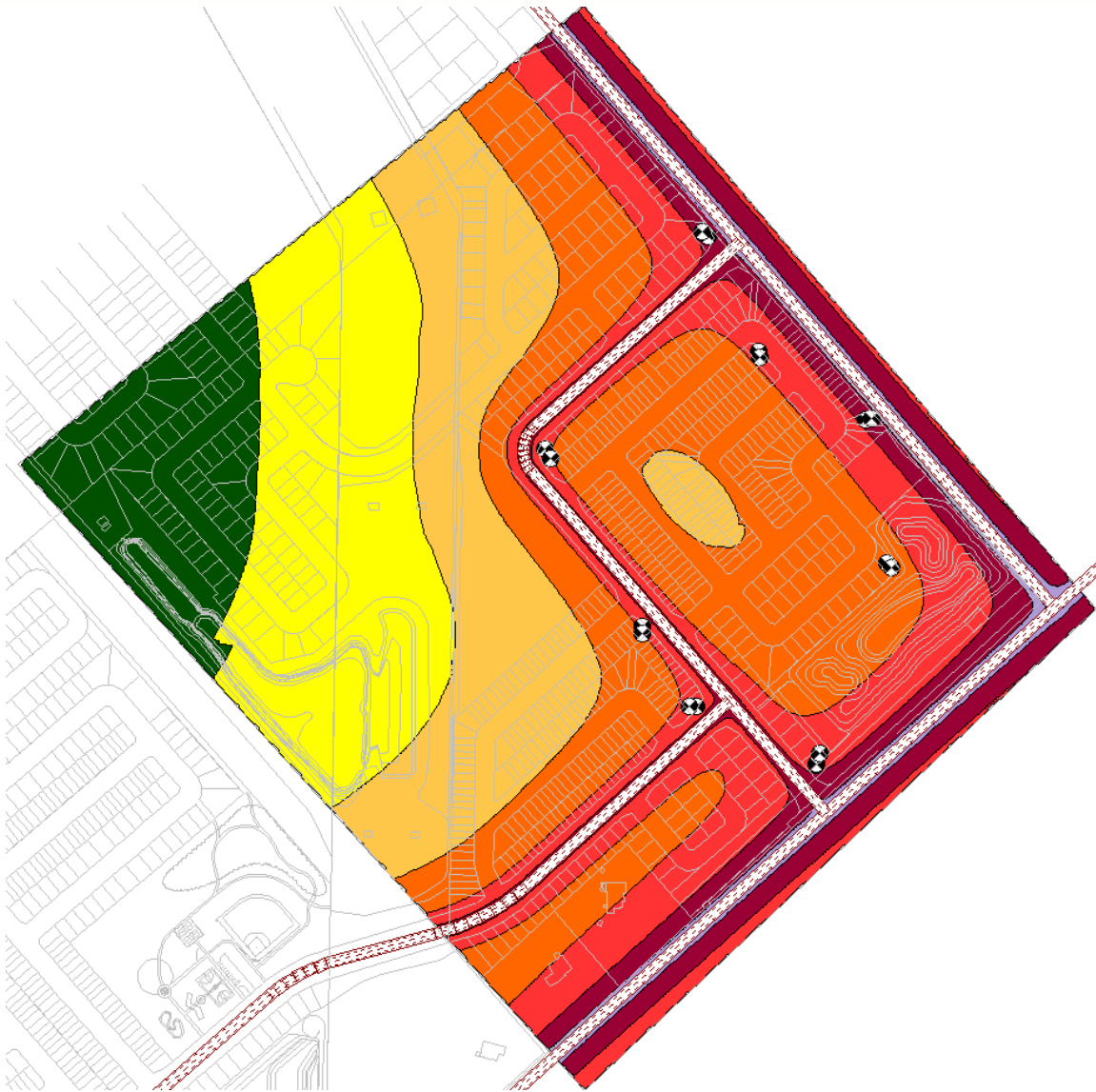
**FIGURE 4: DAYTIME ROADWAY TRAFFIC NOISE CONTOURS
(1.5m ABOVE GRADE)**



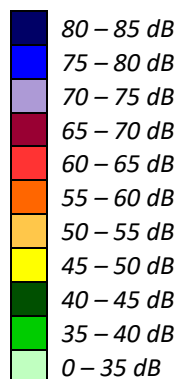


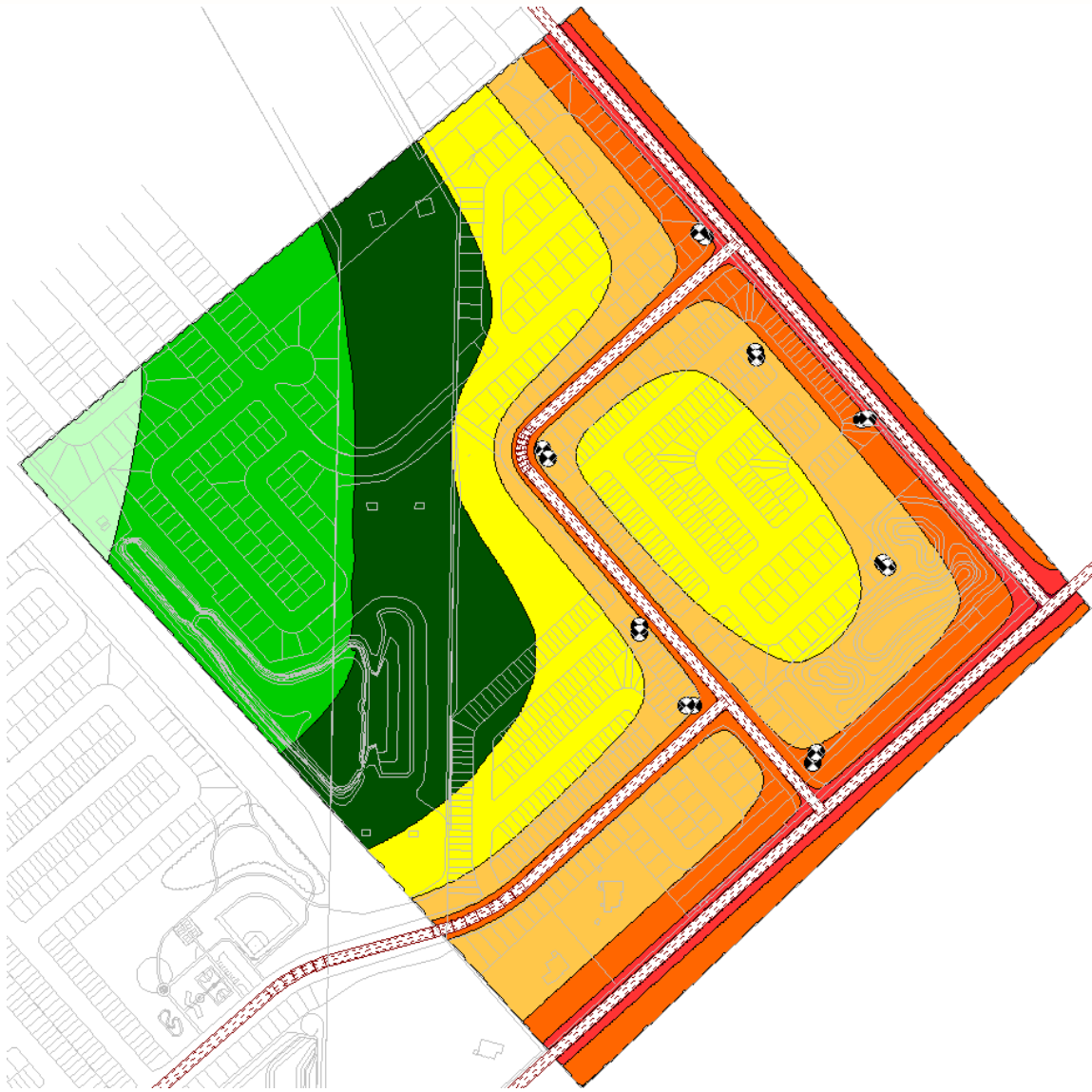
**FIGURE 5: NIGHTTIME ROADWAY TRAFFIC NOISE CONTOURS
(1.5m ABOVE GRADE)**



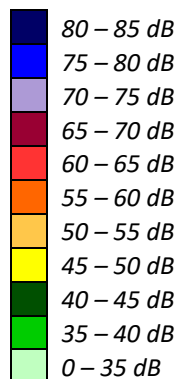


**FIGURE 6: DAYTIME ROADWAY TRAFFIC NOISE CONTOURS
(4.5m ABOVE GRADE)**





**FIGURE 7: NIGHTTIME ROADWAY TRAFFIC NOISE CONTOURS
(4.5m ABOVE GRADE)**



GRADIENTWIND

ENGINEERS & SCIENTISTS



APPENDIX A

STAMSON 5.04 – INPUT AND OUTPUT DATA

GRADIENTWIND

ENGINEERS & SCIENTISTS

STAMSON 5.0 NORMAL REPORT Date: 29-04-2026 10:10:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1.te Time Period: Day/Night 16/8 hours
Description: POW R1

Road data, segment # 1: Shea (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 : 80 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

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

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

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



GRADIENTWIND

ENGINEERS & SCIENTISTS

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

Car traffic volume : 4858/422 veh/TimePeriod *
Medium truck volume : 386/34 veh/TimePeriod *
Heavy truck volume : 276/24 veh/TimePeriod *
Posted speed limit : 40 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): 6000
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: Road 2 (day/night)

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



Results segment # 1: Shea (day)

Source height = 1.50 m

ROAD (0.00 + 63.83 + 0.00) = 63.83 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.57	69.76	0.00	-1.61	-4.31	0.00	0.00	0.00	63.83

Segment Leq : 63.83 dBA

Results segment # 2: Road 2 (day)

Source height = 1.50 m

ROAD (0.00 + 55.48 + 0.00) = 55.48 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.57	62.71	0.00	-2.91	-4.31	0.00	0.00	0.00	55.48

Segment Leq : 55.48 dBA

Total Leq All Segments: 64.42 dBA

Results segment # 1: Shea (night)

Source height = 1.50 m

ROAD (0.00 + 56.24 + 0.00) = 56.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.57	62.16	0.00	-1.61	-4.31	0.00	0.00	0.00	56.24

Segment Leq : 56.24 dBA

Results segment # 2: Road 2 (night)

Source height = 1.50 m

ROAD (0.00 + 47.89 + 0.00) = 47.89 dBA

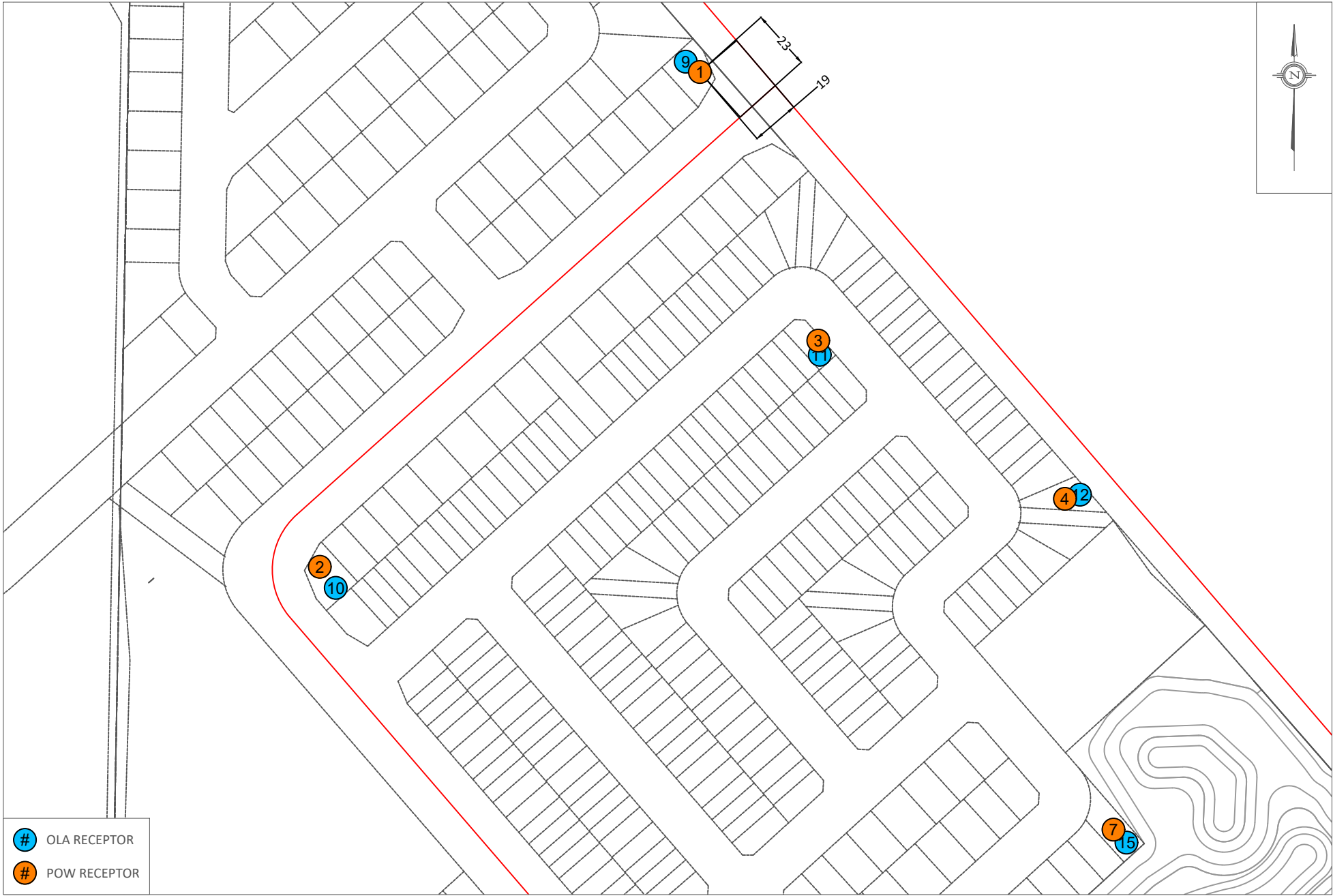
Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.57	55.12	0.00	-2.91	-4.31	0.00	0.00	0.00	47.89

Segment Leq : 47.89 dBA

Total Leq All Segments: 56.83 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.42
(NIGHT): 56.83





PROJECT	MAGNOLIA EAST PARCEL, STITTSVILLE TRANSPORTATION NOISE STUDY	
SCALE	1:2000 (APPROX.)	DRAWING NO. GW21-420-A1
DATE	APRIL 28, 2026	DRAWN BY D.S.

DESCRIPTION	FIGURE A1: STAMSON INPUT PARAMETERS RECEPTOR 1
-------------	--