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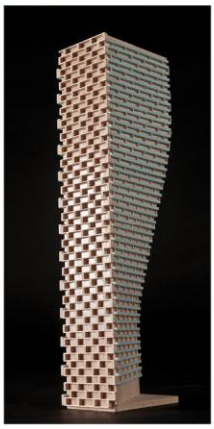
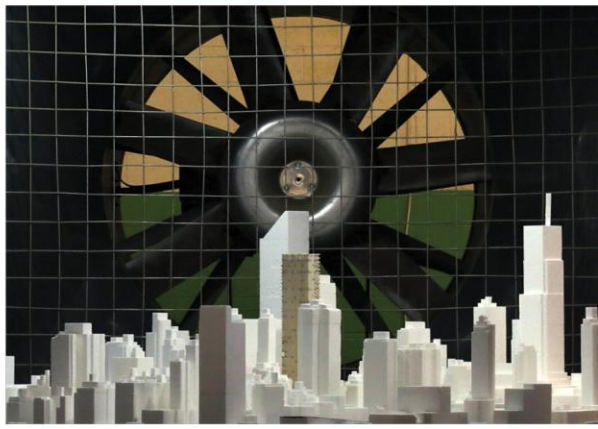
ENVIRONMENTAL NOISE FEASIBILITY ASSESSMENT

MECP-MLITSD Science Facility Complex
Oakville, Ontario

Report: 25-139-Environmental Noise





March 11, 2026

PREPARED FOR

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EXECUTIVE SUMMARY

This report describes an environmental noise feasibility assessment for the proposed development referred to as the MECP-MLITSD Science Facility Complex, located near the intersection between William Halton Parkway West and Glenorchy Road in Oakville, Ontario (hereinafter referred to as the "subject site", "study site", or "proposed development"). The proposed development comprises a science facility building containing laboratory space on Levels 1-4, a science workshop at-grade, and office spaces on Level 2. The building is topped with a mechanical penthouse. Note that the design and height of the building have not been finalized and subject to change. Figure 1 illustrates the site plan and surrounding context.

The major sources of roadway traffic noise are William Halton Parkway West located directly to the southeast, and Third Line to the northeast. Preliminary stationary noise sources evaluated in this assessment include potential rooftop equipment such as a cooling tower, a Make-up Air Unit (MAU), and three strobic fans.

This assessment is based on theoretical noise calculation methods conforming to the Ministry of the Environment, Conservation and Parks (MECP) guidelines. Noise calculations were based on architectural drawings provided by WZMH Architects in August 2025, with future vehicular traffic volumes based on the data provided by Halton Region.

The results of the roadway traffic analysis indicate that noise levels on the proposed development will range between 51 and 56 dBA during the daytime period (07:00-23:00) and between 45 and 49 dBA during the nighttime period (23:00-07:00). The highest noise level (i.e. 56 dBA) occurs along the proposed development's southeast façade at Level 1 which is nearest and most exposed to William Halton Parkway West.

The noise levels predicted due to roadway traffic do not exceed the criteria listed in Section 4.2 for building components. Therefore, standard building components conforming to the Ontario Building Code (2024) requirements will be sufficient to allow indoor noise levels to meet the NPC-300 criteria at the office spaces. Air Conditioning is expected to be provided in the facility, which will help keep windows closed ensuring the indoor sound levels fall below the NPC-300 criteria.

The results of the preliminary stationary noise study indicate that noise levels at nearby points of reception are expected to fall below the NPC-300 noise criteria, provided that the assumptions for noise control as outlined in Section 2.1 are followed. As the design of the proposed development progresses, the location and sound power of rooftop equipment can be reviewed to ensure that noise levels at nearby noise sensitive areas continue to fall below NPC-300 criteria. This can be ensured by judicious placement of rooftop equipment and the incorporation of silencers and noise screens as necessary.

TABLE OF CONTENTS

1. INTRODUCTION

Gradient Wind Engineering Inc. (Gradient Wind) was retained by Sajecki Planning Inc. on behalf of Infrastructure Ontario to undertake an environmental noise feasibility assessment for Infrastructure Ontario's proposed development known as the MECP-MLITSD Science Facility Complex, located near the intersection between William Halton Parkway West and Glenorchy Road in Oakville, Ontario. This report summarizes the methodology, results, and recommendations related to the assessment of exterior noise levels generated by local roadway traffic and future stationary noise sources associated with the proposed development.

This assessment is based on theoretical noise calculation methods conforming to the Ministry of the Environment, Conservation and Parks (MECP)[1] guidelines, and the Town of Oakville Terms of Reference for Noise and Vibration Studies[2]. Noise calculations were based on architectural drawings provided by WZMH Architects in August 2025, with future vehicular traffic volumes based the data provided by Halton Region.

2. TERMS OF REFERENCE

The focus of this environmental noise assessment is the proposed development referred to as the MECP-MLITSD Science Facility Complex, located near the intersection between William Halton Parkway West and Glenorchy Road in Oakville, Ontario. The proposed development comprises a science building containing laboratory space on Levels 1-4, a science workshop at-grade, and office spaces on Level 2. The building is topped with a mechanical penthouse. The project is in the early schematic design phase, and the concept plan is expected to evolve over time. The work in this report is based on preliminary information and is subject to change. The major sources of roadway traffic noise are William Halton Parkway West located directly to the southeast, and Third Line to the northeast. Figure 1 illustrates the site plan and surrounding context.

[1] Ontario Ministry of the Environment and Climate Change – Environmental Noise Guidelines, Publication NPC-300, Queens Printer for Ontario, Toronto, 2013
[2] Town of Oakville, Development application guidelines – Noise and Vibration Study

Near-field surroundings of the subject site comprise a child healthcare center to the northeast and a hospital to the southeast. The remaining surroundings comprise vacant land, and open space.

Preliminary stationary noise sources evaluated in this assessment include potential rooftop equipment such as a cooling tower, a Make-up Air Unit (MAU), and three strobic fans. The surrounding buildings under consideration for stationary noise impacts are 2000 Glenorchy Road (ErinoakKids Centre for Treatment and Development), and 3001 Hospital Gate (Oakville Trafalgar Memorial Hospital), which represent the closest points of reception to the proposed development.

2.1 Assumptions

The following information used in the stationary noise assessment was based on Gradient Wind's experience with similar industrial and institutional developments.

(i) The locations of rooftop units were assumed near the centre of the Mechanical Penthouse roof.

(ii) Sound data for the rooftop was assumed based on Gradient Wind's experience with similar industrial and institutional developments.

(iii) The rooftop mechanical units were assumed to operate continuously over a 1-hour period during the daytime and nighttime.

(iv) The ground region was modelled as reflective for hard ground (pavement), and absorbent (grass / vegetation areas)

(v) Noise receptors were strategically placed at 8 locations in and around the study area (see Figure 3).

3. OBJECTIVES

The principal objectives of this feasibility study are to (i) calculate the future noise levels on the study building produced by local roadway traffic, (ii) determine the future noise level impacts on the proposed development and surrounding buildings due to the rooftop stationary noise sources, and (iii) explore potential noise mitigation where required.

As this is a feasibility assessment, a high-level summary regarding noise mitigation is presented. A future detailed environmental noise assessment should be conducted as the design of the facility develops which

will outline specific/required noise mitigation measures to be implemented into the development design and into the constructed building.

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 vehicular traffic, 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 noise sensitive buildings. NPC-300 specifies that the recommended indoor noise limit range (that are relevant to this study) is 50 dBA for general offices and reception areas, as listed in Table 1.

TABLE 1: INDOOR SOUND LEVEL CRITERIA

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 reduction[3]. A closed window due to a ventilation requirement will bring noise levels down to achieve an acceptable indoor environment[4]. 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 attenuation[5].

[3] Burberry, P.B. (2014). Mitchell's Environment and Services. Routledge, Page 125
[4] MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.8
[5] MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.1.3

4.2.2 Roadway Traffic Volumes

NPC-300 dictates that noise calculations should consider future sound levels based on a roadway's classification at the mature state of development. Therefore, Average Annual Daily Traffic (AADT) traffic volumes have been considered for the mature state of development based on roadway information obtained from Halton Region. For each roadway segment, a 2% growth rate was assumed to project the existing AADT count into 2040, 10 years after building completion if construction is completed in 2030 as estimated in the project timeline. Table 2 (below) summarizes the AADT values used for each roadway included in this assessment.

TABLE 2: ROADWAY TRAFFIC DATA

Segment	Roadway Class	Speed Limit (km/h)	Existing AADT Count	Year of Count	Projected 2040 AADT Count	Day/Night Split (%)	Truck Volume Percentages	
							Medium Truck	Heavy Truck
William Halton Parkway West	Major Arterial	60	4,005	2024	**5,498**	90/10	4.3	0.4
Third Line	Major Arterial	50	3,730	2022	**5,327**	90/10	2.4	1.0

4.2.3 Theoretical Roadway Noise Predictions

Noise predictions were performed with the aid of the MECP computerized noise assessment program, STAMSON 5.04, for road analysis. Appendix A includes the STAMSON 5.04 input and output data.

Roadway traffic noise calculations were performed by treating each roadway segment as a separate line source of noise and by using proposed and 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.
- Default ground surfaces were taken to be reflective due to the presence of hard (paved) ground.
- Topography was assumed to be a flat/gentle slope surrounding the study building.
- Noise receptors were strategically placed at 5 locations around the subject site (see Figure 2).
- For select sources where appropriate, receptors considered the proposed and existing buildings as a barrier partially obstructing exposure to the source.
- Receptor distances and exposure angles are illustrated in Figures A1-A4.

4.3 Stationary Noise

4.3.1 Stationary Noise Source Assessment and Criteria

The equivalent sound energy level, L_{eq}, provides a weighted 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 selected period of time. For stationary sources, the L_{eq} is commonly calculated on an hourly interval, while for roadways, the L_{eq} is calculated on the basis of a 16-hour daytime/8-hour nighttime split.

Noise criteria taken from the NPC-300 apply to points of reception (POR). A POR is defined under NPC-300 as "any location on a noise sensitive land use where noise from a stationary source is received"[6]. A POR can be located on an existing or zoned for future use premises of permanent or seasonal residences, hotels/motels, nursing/retirement homes, rental residences, hospitals, camp grounds, and noise sensitive buildings such as schools and places of worship. The recommended maximum noise levels for a Class 1 area in an urban environment are outlined in Table 3 below. The study site is considered to be in a Class 1 area because it is located near the intersection of two arterial roadways. These conditions indicate that the sound field is dominated by manmade sources.

TABLE 3: EXCLUSIONARY LIMITS FOR CLASS 1 AREA

Time of Day	Outdoor Points of Reception (dBA)	Plane of Window (dBA)
07:00 – 19:00	50	50
19:00 – 23:00	50	50
23:00 – 07:00	N/A	45

[6] NPC – 300, page 14

4.3.2 Determination of Noise Source Power Levels

Mechanical information for the sources located on the subject site was assumed based on Gradient Wind's experience with similar industrial developments. Table 4 summarizes the unmitigated sound power of each noise source used in the analysis. The assumed locations of the noise sources are shown on Figure 4.

TABLE 4: EQUIPMENT SOUND POWER LEVELS (dBA)

Source	Description	Height Above Grade (m)	Correction Applied	Total Sound Power (dBA)
S1	Cooling Tower	25.7	unmitigated	**95**
S2	Make-Up Air Unit	25.7	unmitigated	**90**
S3	Strobic Fans	25.7	unmitigated	**100**
S4				
S5				

4.3.3 Stationary Source Noise Predictions

The impact of the external stationary noise sources on the nearby noise sensitive areas was determined by computer modelling. Stationary noise source modelling is based on the software program *CadnaA*, which uses the International Standards Organization (ISO) standard 9613 Parts 1 and 2. This computer program simulates three-dimensional surfaces and three orders of reflections of sound waves over a suitable spectrum for human hearing. This methodology has been used on numerous assignments and has been accepted by the MECP as part of Environmental Compliance Approvals applications. A total of 8 receptor locations were selected for the study site, as illustrated in Figure 3. Note that receptor locations were chosen differently compared to those used in the roadway noise modelling.

Stationary noise impacts were measured at points of reception (POR) during the daytime/evening period (07:00 – 23:00), as well as during the nighttime period (23:00 – 07:00). POR locations include the plane of windows (POW) of the proposed development. All HVAC units were represented as point sources in the *CadnaA* Model. Table 5 below contains the *CadnaA* calculation settings. These are typical settings that have been based on ISO 9613 standards and guidance from the MECP. Ground absorption over the study area was determined based on topographical features (such as water, concrete, grassland, etc.). An absorption value of 0 is representative of hard ground, while a value of 1 represents grass and similar soft surface conditions. Existing and proposed buildings were added to the model to account for screening and reflection effects from building façades. CadnaA modelling data is available upon request.

TABLE 5: CALCULATION SETTINGS

Parameter	Setting
Meteorological correction method	Single value for C0
Value C0	2.0
Ground attenuation factor for lawn areas	1
Ground attenuation factor for roadways and paved areas	0
Temperature (K)	283.15
Pressure (kPa)	101.33
Air humidity (%)	70

5. RESULTS

5.1 Roadway Traffic Noise Results

The results of the roadway traffic noise calculations are summarized in Table 6 below. The results of the current analysis indicate that noise levels will range between 51 and 56 dBA during the daytime period (07:00-23:00) and between 45 and 49 dBA during the nighttime period (23:00-07:00). The highest noise level (i.e. 56 dBA) occurs along the proposed development's southeast façade at Level 1 which is nearest and most exposed to William Halton Parkway West.

The noise levels predicted due to roadway traffic do not exceed the criteria listed in Section 4.2 for building components. Therefore, standard building components conforming to the Ontario Building Code (2024) requirements will be sufficient to allow indoor noise levels to meet the NPC-300 criteria. Air Conditioning is expected to be provided in the facility which will help ensuring the indoor sound levels fall below the NPC-300 criteria.

TABLE 6: EXTERIOR NOISE LEVELS DUE TO ROADWAY TRAFFIC SOURCES

Receptor Number / Type	Receptor Height Above Grade (m)	Receptor Location	STAMSON 5.04 Noise Level (dBA)	
			Day	Night
R1 / POW	1.5	MECP-MLITSD Science Facility Complex – Level 1 – Southeast Façade	56	49
R2 / POW	1.5	MECP-MLITSD Science Facility Complex – Level 1 – Northeast Façade	52	45
R3 / POW	7.7	MECP-MLITSD Science Facility Complex – Level 2 – Northeast Façade	51	45
R4 / POW	7.7	MECP-MLITSD Science Facility Complex – Level 2 – Southeast Façade	55	49
R5 / POW	7.7	MECP-MLITSD Science Facility Complex – Level 2 – Southwest Façade	52	45

5.2 Stationary Noise Results

Preliminary Noise levels on the surroundings produced by the mechanical equipment associated with the proposed development are presented in Table 7. The sound levels are based on the assumptions outlined in Section 2.1. It should be noted that the results were generated using the unmitigated noise levels, as summarized in Table 4.

TABLE 7: NOISE LEVELS FROM HVAC STATIONARY SOURCES

Receptor Number / Type	Receptor Location	Height Above Grade (m)	Noise Level (dBA)		Sound Level Limits		Meets ENCG Class 1 Criteria	
			Day	Night	Day	Night	Day	Night
R1 / POW	MECP-MLITSD Science Facility Complex – Level 2 Southwest Façade	7.7	34	34	50	45	**Yes**	**Yes**
R2 / POW	MECP-MLITSD Science Facility Complex – Level 2 Northeast Façade	7.7	37	37	50	45	**Yes**	**Yes**
R3 / POW	MECP-MLITSD Science Facility Complex – Level 2 Southeast Façade	7.7	32	32	50	45	**Yes**	**Yes**
R4 / POW	2000 Glenorchy Road – Level 2 Northwest Façade	6	45	45	50	45	**Yes**	**Yes**
R5 / POW	2000 Glenorchy Road – Level 2 Southwest Façade	6	44	44	50	45	**Yes**	**Yes**
R6 / POW	3001 Hospital Gate – Level 4 Northeast Façade	15.5	43	43	50	45	**Yes**	**Yes**
R7 / POW	3001 Hospital Gate – Level 4 Northwest Façade	15.5	44	44	50	45	**Yes**	**Yes**
R8 / POW	3001 Hospital Gate – Level 4 Southwest Façade	15.5	44	44	50	45	**Yes**	**Yes**

As Table 7 summarizes, noise levels fall below NPC-300 criteria at all receptors. Noise contours 7.7 metres and 15.5 metres above grade for HVAC sources can be seen in Figures 5 and 6 for daytime conditions. The results indicate that the strobic fans will have a greater contribution to the noise impact at nearby façades. Installing silencers on the strobic fans is recommended to further reduce the noise impact on the surrounding noise sensitive spaces. As the design of the proposed development progresses, the location and sound power of rooftop equipment can be reviewed to ensure that noise levels at nearby noise

sensitive areas continue to fall below NPC-300 criteria. This can be ensured by judicious placement of rooftop equipment and the incorporation of silencers and noise screens as necessary.

5.3 Noise Control Measures

The noise levels predicted due to roadway traffic do not exceed the criteria listed in Section 4.2 for building components. Therefore, standard building components conforming to the Ontario Building Code (2024) requirements will be sufficient to allow indoor noise levels to meet the NPC-300 criteria. Air Conditioning is expected to be provided in the facility, which will help keep windows closed ensuring the indoor sound levels fall below the NPC-300 criteria.

The results of the stationary noise study indicate that noise levels at nearby points of reception are expected to fall below the NPC-300 noise criteria, provided that the assumptions for noise control as outlined in Section 2.1 are followed.

6. CONCLUSIONS AND RECOMMENDATIONS

The results of the roadway traffic analysis indicate that noise levels on the proposed development will range between 51 and 56 dBA during the daytime period (07:00-23:00) and between 45 and 49 dBA during the nighttime period (23:00-07:00). The highest noise level (i.e. 56 dBA) occurs along the proposed development's southeast façade at Level 1 which is nearest and most exposed to William Halton Parkway West.

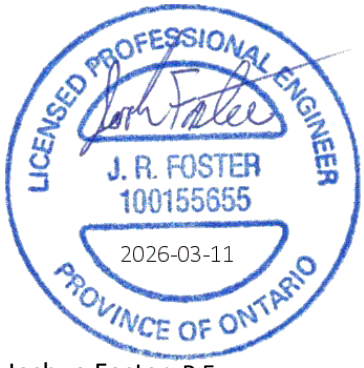
The noise levels predicted due to roadway traffic do not exceed the criteria listed in Section 4.2 for building components. Therefore, standard building components conforming to the Ontario Building Code (2024) requirements will be sufficient to allow indoor noise levels to meet the NPC-300 criteria. Air Conditioning is expected to be provided in the facility which will help keep windows closed, ensuring the indoor sound levels fall below the NPC-300 criteria.

The results of the stationary noise study indicate that noise levels at nearby points of reception are expected to fall below the NPC-300 noise criteria, provided that the assumptions for noise control as outlined in Section 2.1 are followed. As the design of the proposed development progresses, the location and sound power of rooftop equipment can be reviewed to ensure that noise levels at nearby noise sensitive areas continue to fall below NPC-300 criteria. This can be ensured by judicious placement of rooftop equipment and the incorporation of silencers and noise screens as necessary.

This concludes our environmental 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.



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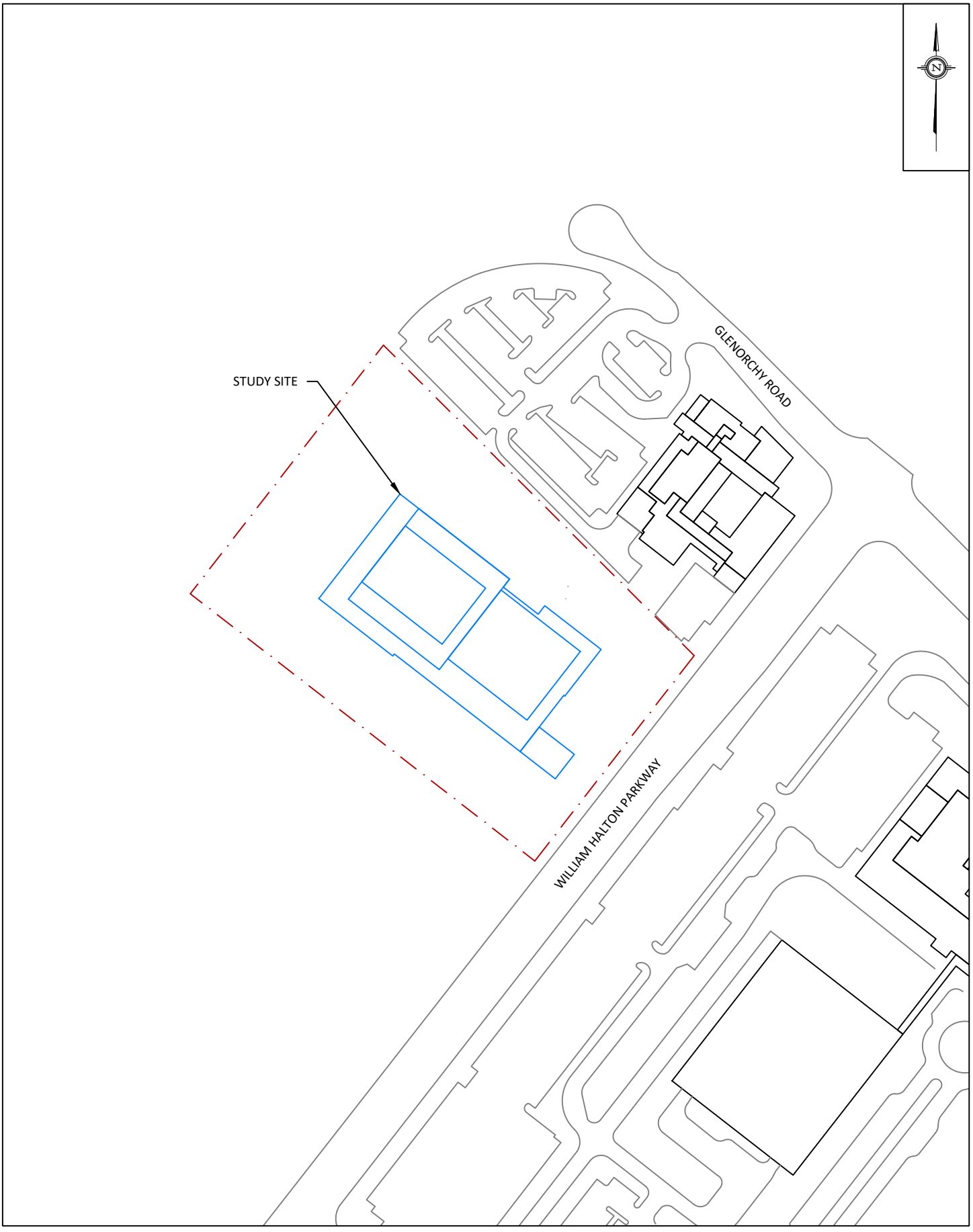
Gradient Wind File #25-139 – Environmental Noise



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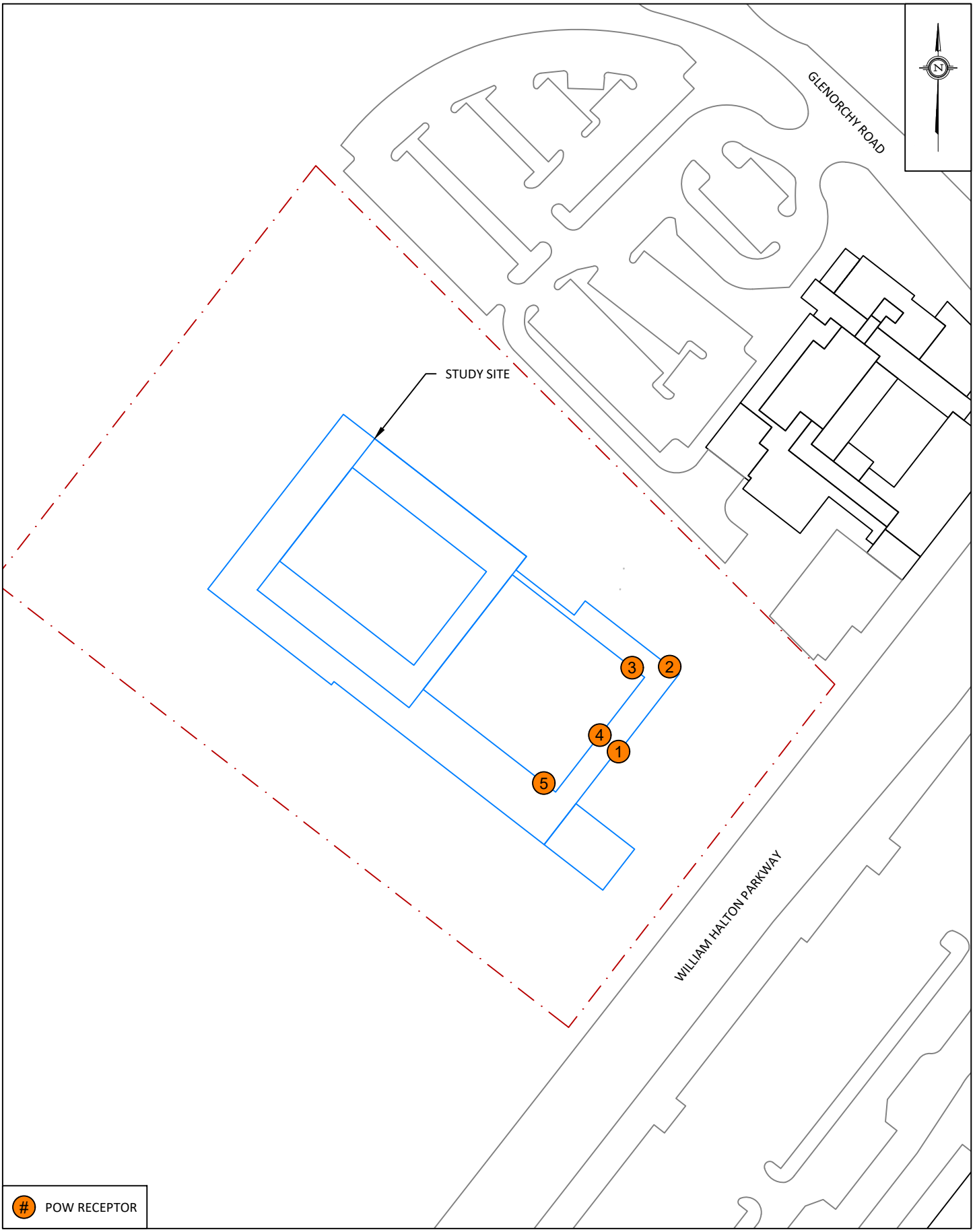
PROJECT	MECP-MLITDS SCIENCE FACILITY COMPLEX, OAKVILLE ENVIRONMENTAL NOISE FEASIBILITY STUDY		
SCALE	1:2500	DRAWING NO.	25-139-1
DATE	MARCH 10, 2026	DRAWN BY	T.K.

DESCRIPTION

FIGURE 1:
PROPERTY LINE AND SURROUNDING CONTEXT



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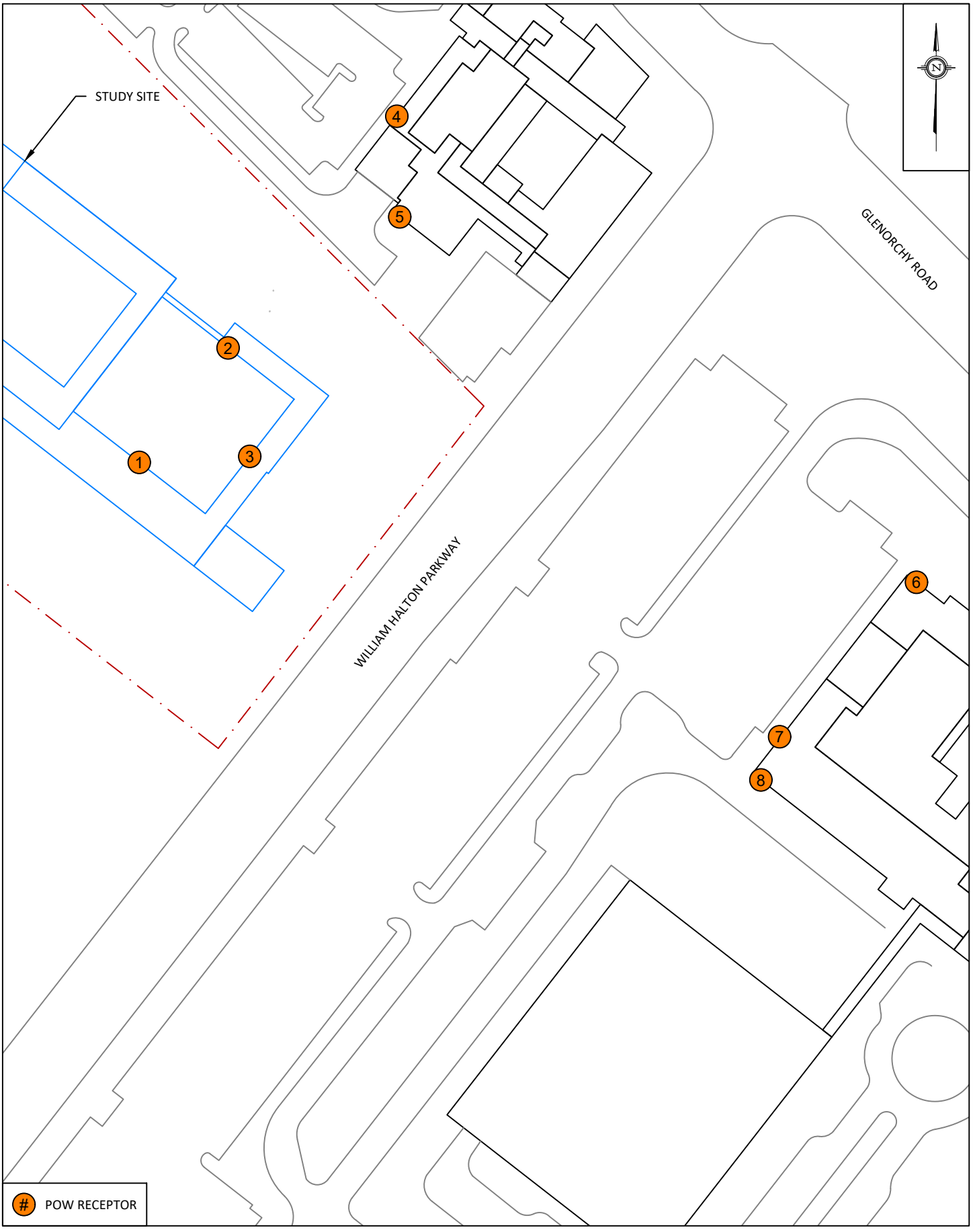
PROJECT	MECP-MLITDS SCIENCE FACILITY COMPLEX, OAKVILLE ENVIRONMENTAL NOISE FEASIBILITY STUDY
SCALE	1:1500
DRAWING NO.	25-139-2
DATE	MARCH 10, 2026
DRAWN BY	T.K.

DESCRIPTION

FIGURE 2:
TRANSPORTATION NOISE RECEPTOR LOCATIONS



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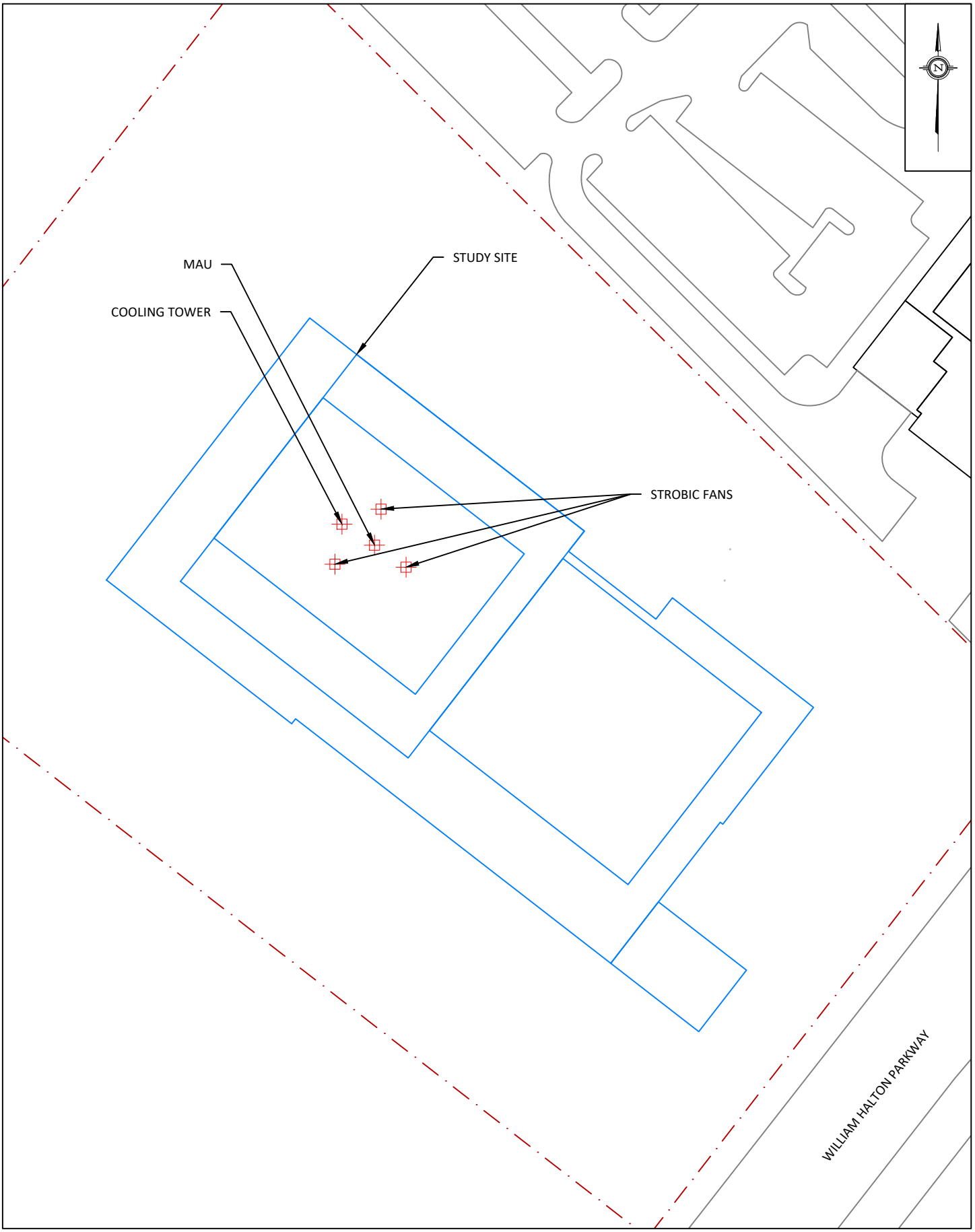
PROJECT	MECP-MLITDS SCIENCE FACILITY COMPLEX, OAKVILLE ENVIRONMENTAL NOISE FEASIBILITY STUDY		DESCRIPTION
SCALE	1:1500	DRAWING NO. 25-139-3	FIGURE 3: STATIONARY NOISE RECEPTOR LOCATIONS
DATE	MARCH 10, 2026	DRAWN BY T.K.	



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PROJECT	MECP-MLITDS SCIENCE FACILITY COMPLEX, OAKVILLE ENVIRONMENTAL NOISE FEASIBILITY STUDY		DESCRIPTION
SCALE	1:1000	DRAWING NO. 25-139-4	FIGURE 4: STATIONARY NOISE SOURCE LOCATIONS
DATE	MARCH 10, 2026	DRAWN BY T.K.	

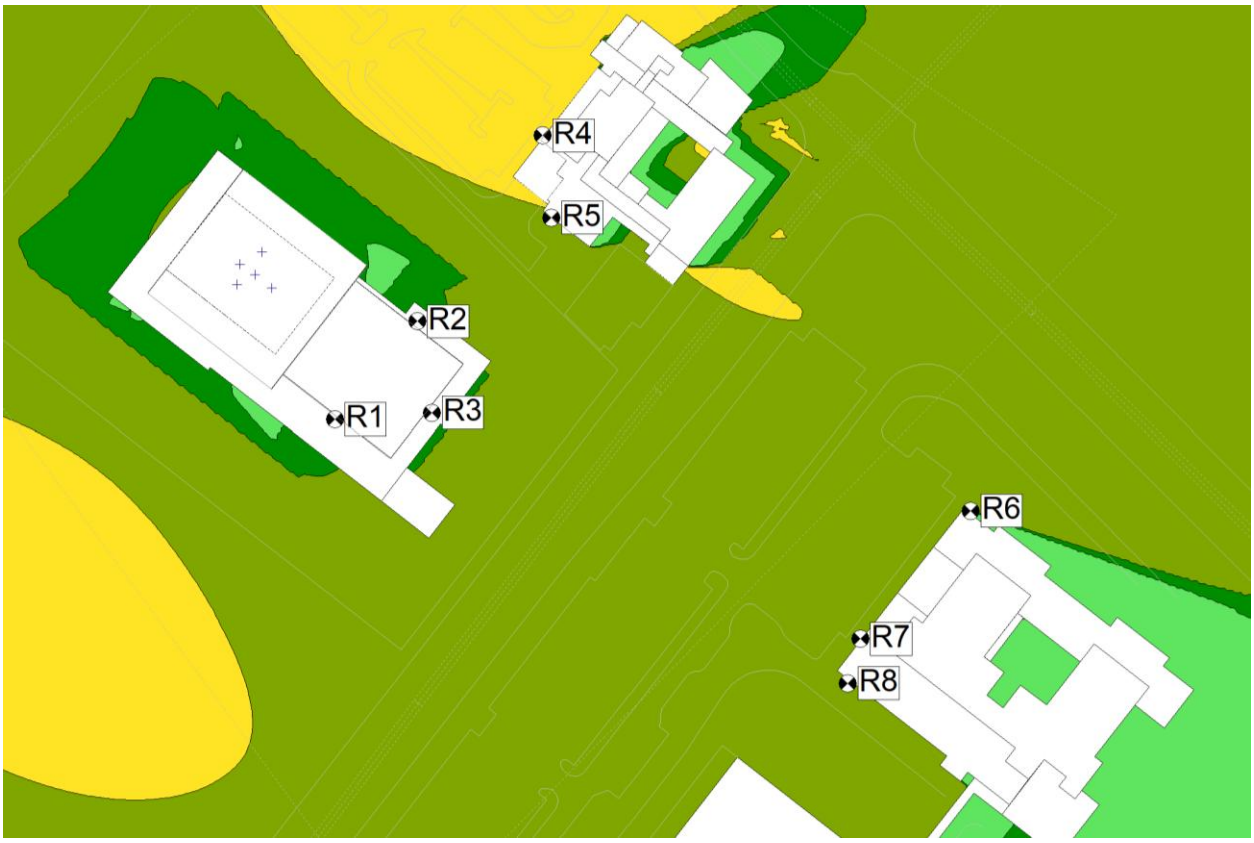


FIGURE 5: DAYTIME STATIONARY NOISE CONTOUR (7.7 METERS ABOVE GRADE)

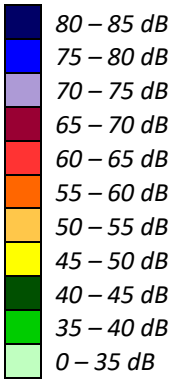
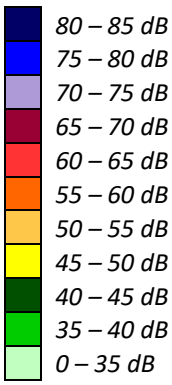


FIGURE 6: DAYTIME STATIONARY NOISE CONTOUR (15.5 METERS ABOVE GRADE)



APPENDIX A

STAMSON 5.04 – INPUT AND OUTPUT DATA

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STAMSON 5.0 NORMAL REPORT Date: 03-09-2025 10:10:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1.te Time Period: Day/Night 16/8 hours
Description: POW Level 1 Southeast Facade

```
Road data, segment # 1: WH Parkway (day/night)
-----------------------------------------------
Car traffic volume  :  4737/526   veh/TimePeriod  *
Medium truck volume :   191/21    veh/TimePeriod  *
Heavy truck volume  :    21/2     veh/TimePeriod  *
Posted speed limit  :    60 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):   4005
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  16.00
    Medium Truck % of Total Volume     :   3.85
    Heavy Truck  % of Total Volume     :   0.42
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: WH Parkway (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  :  54.00 / 54.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -70.00 deg
Barrier height            :  10.00 m
Barrier receiver distance :  35.00 / 35.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Road data, segment # 2: Third Line (day/night)
----------------------------------------------
Car traffic volume  :  4680/520   veh/TimePeriod  *
Medium truck volume :    67/7     veh/TimePeriod  *
Heavy truck volume  :    48/5     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):   3730
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  18.00
    Medium Truck % of Total Volume     :   1.40
    Heavy Truck  % of Total Volume     :   1.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Third Line (day/night)
--------------------------------------------
Angle1   Angle2           :   9.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 178.00 / 178.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :   9.00 deg   Angle2 : 10.00 deg
Barrier height            :  10.00 m
Barrier receiver distance :  84.00 / 84.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Results segment # 1: WH Parkway (day)
-------------------------------------

Source height = 0.81 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.81 !        1.50 !        1.05 !         1.05

ROAD (0.00 + 33.75 + 55.43) = 55.46 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -70   0.00  61.51   0.00  -5.56  -9.54   0.00   0.00 -12.66  33.75
-------------------------------------------------------------------------------
   -70     90   0.00  61.51   0.00  -5.56  -0.51   0.00   0.00   0.00  55.43
-------------------------------------------------------------------------------

Segment Leq : 55.46 dBA

Results segment # 2: Third Line (day)
-------------------------------------

Source height = 1.00 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.00 !        1.50 !        1.26 !         1.26

ROAD (0.00 + 9.23 + 45.17) = 45.18 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     9     10   0.00  59.44   0.00 -10.74 -22.55   0.00   0.00 -16.91   9.23
-------------------------------------------------------------------------------
    10     90   0.00  59.44   0.00 -10.74  -3.52   0.00   0.00   0.00  45.17
-------------------------------------------------------------------------------

Segment Leq : 45.18 dBA

Total Leq All Segments: 55.85 dBA
```

```
Results segment # 1: WH Parkway (night)
---------------------------------------

Source height = 0.78 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.78 !        1.50 !        1.03 !         1.03

ROAD (0.00 + 27.11 + 48.81) = 48.84 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -70   0.00  54.88   0.00  -5.56  -9.54   0.00   0.00 -12.67  27.11
-------------------------------------------------------------------------------
   -70     90   0.00  54.88   0.00  -5.56  -0.51   0.00   0.00   0.00  48.81
-------------------------------------------------------------------------------

Segment Leq : 48.84 dBA

Results segment # 2: Third Line (night)
---------------------------------------

Source height = 0.98 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.98 !        1.50 !        1.26 !         1.26

ROAD (0.00 + 2.57 + 38.52) = 38.52 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     9     10   0.00  52.78   0.00 -10.74 -22.55   0.00   0.00 -16.92   2.57
-------------------------------------------------------------------------------
    10     90   0.00  52.78   0.00 -10.74  -3.52   0.00   0.00   0.00  38.52
-------------------------------------------------------------------------------

Segment Leq : 38.52 dBA

Total Leq All Segments: 49.23 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.85
                           (NIGHT): 49.23
```

STAMSON 5.0 NORMAL REPORT Date: 03-09-2025 09:53:40
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2.te Time Period: Day/Night 16/8 hours
Description: POW Level 1 Northeast Facade

```
Road data, segment # 1: WH Parkway (day/night)
-----------------------------------------------
Car traffic volume  :  4737/526   veh/TimePeriod  *
Medium truck volume :   191/21    veh/TimePeriod  *
Heavy truck volume  :    21/2     veh/TimePeriod  *
Posted speed limit  :    60 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):   4005
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  16.00
    Medium Truck % of Total Volume     :   3.85
    Heavy Truck  % of Total Volume     :   0.42
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: WH Parkway (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.00 / 58.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -61.00 deg
Barrier height            :  10.00 m
Barrier receiver distance :  38.00 / 38.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Road data, segment # 2: Third Line (day/night)
----------------------------------------------
Car traffic volume  :  4680/520   veh/TimePeriod  *
Medium truck volume :    67/7     veh/TimePeriod  *
Heavy truck volume  :    48/5     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):   3730
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  18.00
    Medium Truck % of Total Volume     :   1.40
    Heavy Truck  % of Total Volume     :   1.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Third Line (day/night)
--------------------------------------------
Angle1   Angle2           :  14.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 150.00 / 150.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  14.00 deg   Angle2 : 19.00 deg
Barrier height            :  10.00 m
Barrier receiver distance :  55.00 / 55.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Results segment # 1: WH Parkway (day)
-------------------------------------

Source height = 0.81 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.81 !        1.50 !        1.05 !         1.05

ROAD (0.00 + 34.08 + 50.93) = 51.02 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -61   0.00  61.51   0.00  -5.87  -7.93   0.00   0.00 -13.63  34.08
-------------------------------------------------------------------------------
   -61      0   0.00  61.51   0.00  -5.87  -4.70   0.00   0.00   0.00  50.93
-------------------------------------------------------------------------------

Segment Leq : 51.02 dBA

Results segment # 2: Third Line (day)
-------------------------------------

Source height = 1.00 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.00 !        1.50 !        1.32 !         1.32

ROAD (0.00 + 16.11 + 45.40) = 45.40 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    14     19   0.00  59.44   0.00 -10.00 -15.56   0.00   0.00 -17.77  16.11
-------------------------------------------------------------------------------
    19     90   0.00  59.44   0.00 -10.00  -4.04   0.00   0.00   0.00  45.40
-------------------------------------------------------------------------------

Segment Leq : 45.40 dBA

Total Leq All Segments: 52.07 dBA
```

```
Results segment # 1: WH Parkway (night)
---------------------------------------

Source height = 0.78 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.78 !        1.50 !        1.03 !         1.03

ROAD (0.00 + 27.44 + 44.31) = 44.40 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -61   0.00  54.88   0.00  -5.87  -7.93   0.00   0.00 -13.64  27.44
-------------------------------------------------------------------------------
   -61      0   0.00  54.88   0.00  -5.87  -4.70   0.00   0.00   0.00  44.31
-------------------------------------------------------------------------------

Segment Leq : 44.40 dBA

Results segment # 2: Third Line (night)
---------------------------------------

Source height = 0.98 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.98 !        1.50 !        1.31 !         1.31

ROAD (0.00 + 9.44 + 38.74) = 38.75 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    14     19   0.00  52.78   0.00 -10.00 -15.56   0.00   0.00 -17.78   9.44
-------------------------------------------------------------------------------
    19     90   0.00  52.78   0.00 -10.00  -4.04   0.00   0.00   0.00  38.74
-------------------------------------------------------------------------------

Segment Leq : 38.75 dBA

Total Leq All Segments: 45.45 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.07
                           (NIGHT): 45.45
```

STAMSON 5.0 NORMAL REPORT Date: 03-09-2025 10:15:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r3.te Time Period: Day/Night 16/8 hours
Description: POW Level 2 Northeast Facade

```
Road data, segment # 1: WH Parkway (day/night)
-----------------------------------------------
Car traffic volume  :  4737/526   veh/TimePeriod  *
Medium truck volume :   191/21    veh/TimePeriod  *
Heavy truck volume  :    21/2     veh/TimePeriod  *
Posted speed limit  :    60 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):   4005
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  16.00
    Medium Truck % of Total Volume     :   3.85
    Heavy Truck  % of Total Volume     :   0.42
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: WH Parkway (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  66.00 / 66.00  m
Receiver height           :   7.70 / 7.70   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -59.00 deg
Barrier height            :  10.00 m
Barrier receiver distance :  47.00 / 47.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Road data, segment # 2: Third Line (day/night)
----------------------------------------------
Car traffic volume  :  4680/520   veh/TimePeriod  *
Medium truck volume :    67/7     veh/TimePeriod  *
Heavy truck volume  :    48/5     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):   3730
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  18.00
    Medium Truck % of Total Volume     :   1.40
    Heavy Truck  % of Total Volume     :   1.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Third Line (day/night)
--------------------------------------------
Angle1   Angle2           :  16.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 158.00 / 158.00 m
Receiver height           :   7.70 / 7.70   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  16.00 deg   Angle2 : 22.00 deg
Barrier height            :  10.00 m
Barrier receiver distance :  62.00 / 62.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Results segment # 1: WH Parkway (day)
-------------------------------------

Source height = 0.81 m

Barrier height for grazing incidence
-------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.81 !        7.70 !        2.79 !         2.79

ROAD (0.00 + 35.13 + 50.23) = 50.36 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -59   0.00  61.51   0.00  -6.43  -7.64   0.00   0.00 -12.30  35.13
-------------------------------------------------------------------------------
   -59      0   0.00  61.51   0.00  -6.43  -4.84   0.00   0.00   0.00  50.23
-------------------------------------------------------------------------------

Segment Leq : 50.36 dBA

Results segment # 2: Third Line (day)
-------------------------------------

Source height = 1.00 m

Barrier height for grazing incidence
-------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.00 !        7.70 !        5.07 !         5.07

ROAD (0.00 + 21.83 + 44.99) = 45.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    16     22   0.00  59.44   0.00 -10.23 -14.77   0.00   0.00 -12.61  21.83
-------------------------------------------------------------------------------
    22     90   0.00  59.44   0.00 -10.23  -4.23   0.00   0.00   0.00  44.99
-------------------------------------------------------------------------------

Segment Leq : 45.01 dBA

Total Leq All Segments: 51.47 dBA
```

```
Results segment # 1: WH Parkway (night)
---------------------------------------

Source height = 0.78 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.78 !        7.70 !        2.77 !         2.77

ROAD (0.00 + 28.49 + 43.60) = 43.74 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -59   0.00  54.88   0.00  -6.43  -7.64   0.00   0.00 -12.32  28.49
-------------------------------------------------------------------------------
   -59      0   0.00  54.88   0.00  -6.43  -4.84   0.00   0.00   0.00  43.60
-------------------------------------------------------------------------------

Segment Leq : 43.74 dBA

Results segment # 2: Third Line (night)
---------------------------------------

Source height = 0.98 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.98 !        7.70 !        5.06 !         5.06

ROAD (0.00 + 15.16 + 38.33) = 38.35 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    16     22   0.00  52.78   0.00 -10.23 -14.77   0.00   0.00 -12.62  15.16
-------------------------------------------------------------------------------
    22     90   0.00  52.78   0.00 -10.23  -4.23   0.00   0.00   0.00  38.33
-------------------------------------------------------------------------------

Segment Leq : 38.35 dBA

Total Leq All Segments: 44.84 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 51.47
                           (NIGHT): 44.84
```

STAMSON 5.0 NORMAL REPORT Date: 03-09-2025 10:06:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r4.te Time Period: Day/Night 16/8 hours
Description: POW Level 2 Southeast Facade

```
Road data, segment # 1: WH Parkway (day/night)
-----------------------------------------------
Car traffic volume  :  4737/526   veh/TimePeriod  *
Medium truck volume :   191/21    veh/TimePeriod  *
Heavy truck volume  :    21/2     veh/TimePeriod  *
Posted speed limit  :    60 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):   4005
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  16.00
    Medium Truck % of Total Volume     :   3.85
    Heavy Truck  % of Total Volume     :   0.42
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: WH Parkway (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  :  62.00 / 62.00  m
Receiver height           :   7.70 / 7.70   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : -67.00 deg
Barrier height            :  10.00 m
Barrier receiver distance :  42.00 / 42.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Road data, segment # 2: Third Line (day/night)
----------------------------------------------
Car traffic volume  :  4680/520   veh/TimePeriod  *
Medium truck volume :    67/7     veh/TimePeriod  *
Heavy truck volume  :    48/5     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):   3730
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  18.00
    Medium Truck % of Total Volume     :   1.40
    Heavy Truck  % of Total Volume     :   1.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Third Line (day/night)
--------------------------------------------
Angle1   Angle2           :  12.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 178.00 / 178.00 m
Receiver height           :   7.70 / 7.70   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  12.00 deg   Angle2 : 14.00 deg
Barrier height            :  10.00 m
Barrier receiver distance :  83.00 / 83.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Results segment # 1: WH Parkway (day)
-------------------------------------

Source height = 0.81 m

Barrier height for grazing incidence
-------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.81 !        7.70 !        3.03 !         3.03

ROAD (0.00 + 35.16 + 54.75) = 54.80 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -67   0.00  61.51   0.00  -6.16  -8.94   0.00   0.00 -11.25  35.16
-------------------------------------------------------------------------------
   -67     90   0.00  61.51   0.00  -6.16  -0.59   0.00   0.00   0.00  54.75
-------------------------------------------------------------------------------

Segment Leq : 54.80 dBA

Results segment # 2: Third Line (day)
-------------------------------------

Source height = 1.00 m

Barrier height for grazing incidence
-------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.00 !        7.70 !        4.58 !         4.58

ROAD (0.00 + 16.30 + 44.95) = 44.96 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    12     14   0.00  59.44   0.00 -10.74 -19.54   0.00   0.00 -12.85  16.30
-------------------------------------------------------------------------------
    14     90   0.00  59.44   0.00 -10.74  -3.74   0.00   0.00   0.00  44.95
-------------------------------------------------------------------------------

Segment Leq : 44.96 dBA

Total Leq All Segments: 55.23 dBA
```

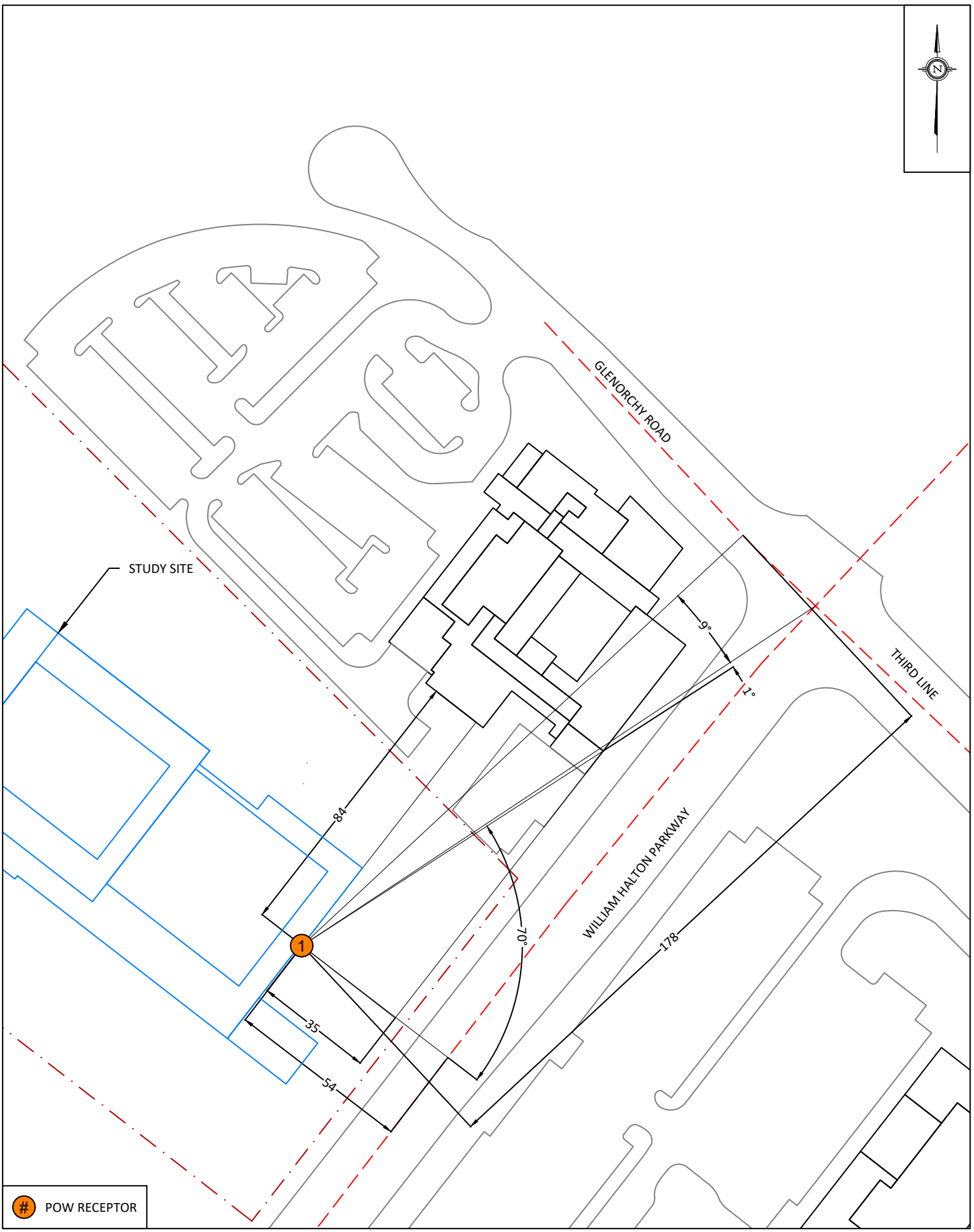
```
Results segment # 1: WH Parkway (night)
---------------------------------------

Source height = 0.78 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.78 !        7.70 !        3.01 !         3.01

ROAD (0.00 + 28.52 + 48.13) = 48.17 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -67   0.00  54.88   0.00  -6.16  -8.94   0.00   0.00 -11.26  28.52
-------------------------------------------------------------------------------
   -67     90   0.00  54.88   0.00  -6.16  -0.59   0.00   0.00   0.00  48.13
-------------------------------------------------------------------------------

Segment Leq : 48.17 dBA

Results segment # 2: Third Line (night)
---------------------------------------

Source height = 0.98 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.98 !        7.70 !        4.57 !         4.57

ROAD (0.00 + 9.64 + 38.29) = 38.30 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    12     14   0.00  52.78   0.00 -10.74 -19.54   0.00   0.00 -12.86   9.64
-------------------------------------------------------------------------------
    14     90   0.00  52.78   0.00 -10.74  -3.74   0.00   0.00   0.00  38.29
-------------------------------------------------------------------------------

Segment Leq : 38.30 dBA

Total Leq All Segments: 48.60 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.23
                           (NIGHT): 48.60
```

STAMSON 5.0 NORMAL REPORT Date: 03-09-2025 10:08:07
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r5.te Time Period: Day/Night 16/8 hours
Description: POW Level 2 Southwest Facade

```
Road data, segment # 1: WH Parkway (day/night)
-----------------------------------------------
Car traffic volume  :  4737/526   veh/TimePeriod  *
Medium truck volume :   191/21    veh/TimePeriod  *
Heavy truck volume  :    21/2     veh/TimePeriod  *
Posted speed limit  :    60 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):   4005
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  16.00
    Medium Truck % of Total Volume     :   3.85
    Heavy Truck  % of Total Volume     :   0.42
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: WH Parkway (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  :  66.00 / 66.00  m
Receiver height           :   7.70 / 7.70   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Results segment # 1: WH Parkway (day)
-------------------------------------

Source height = 0.81 m

ROAD (0.00 + 52.06 + 0.00) = 52.06 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.00  61.51   0.00  -6.43  -3.01   0.00   0.00   0.00  52.06
-------------------------------------------------------------------------------

Segment Leq : 52.06 dBA

Total Leq All Segments: 52.06 dBA

Results segment # 1: WH Parkway (night)
---------------------------------------

Source height = 0.78 m

ROAD (0.00 + 45.44 + 0.00) = 45.44 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.00  54.88   0.00  -6.43  -3.01   0.00   0.00   0.00  45.44
-------------------------------------------------------------------------------

Segment Leq : 45.44 dBA

Total Leq All Segments: 45.44 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.06
                           (NIGHT): 45.44
```



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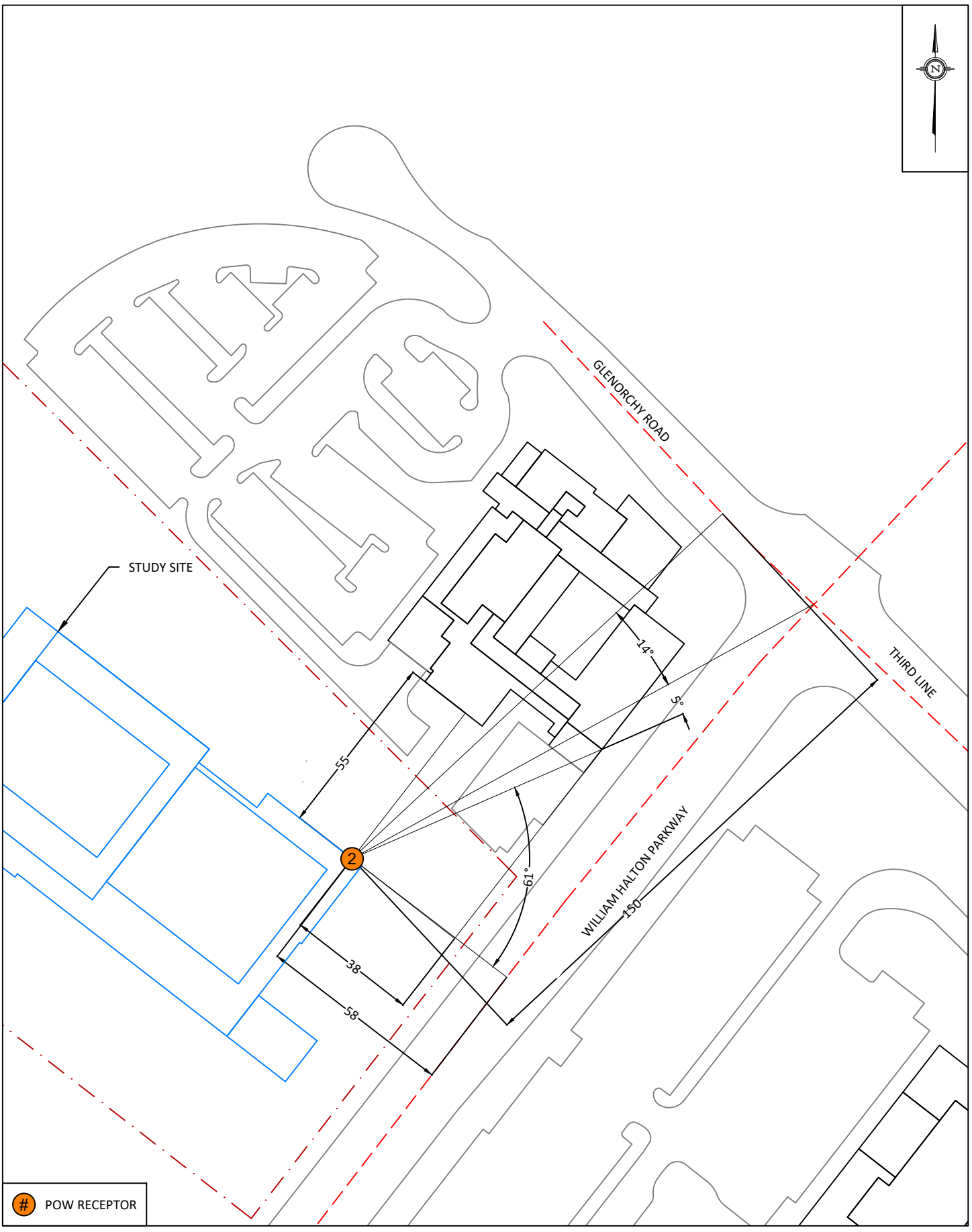
SCALE	1:1500	DRAWING NO.	25-139-A1
DATE	MARCH 10, 2026	DRAWN BY	T.K.

DESCRIPTION

FIGURE A1:
STAMSON INPUT PARAMETERS
RECEPTOR 1



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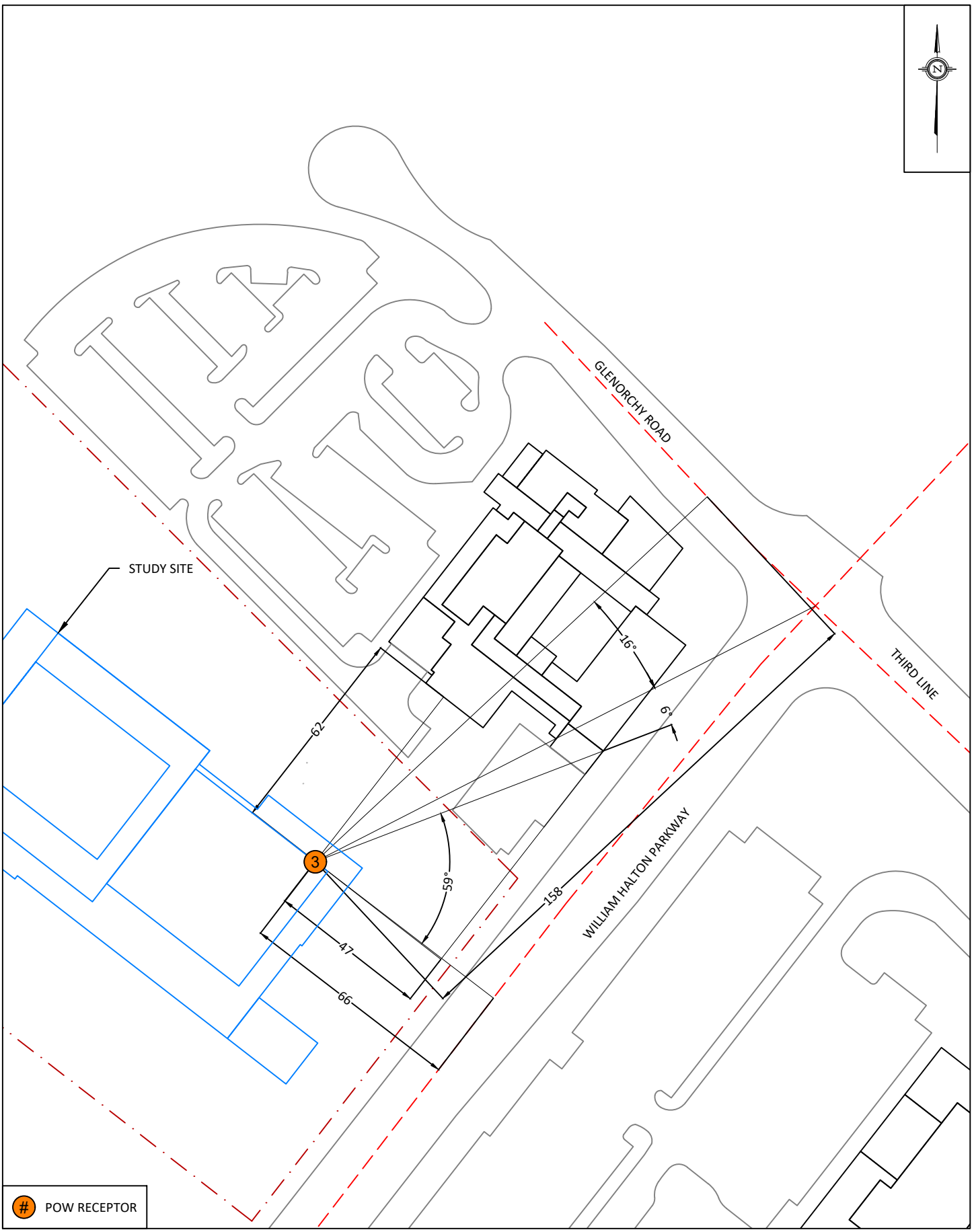
SCALE	1:1500	DRAWING NO.	25-139-A2
DATE	MARCH 10, 2026	DRAWN BY	T.K.

DESCRIPTION

FIGURE A2:
STAMSON INPUT PARAMETERS
RECEPTOR 2



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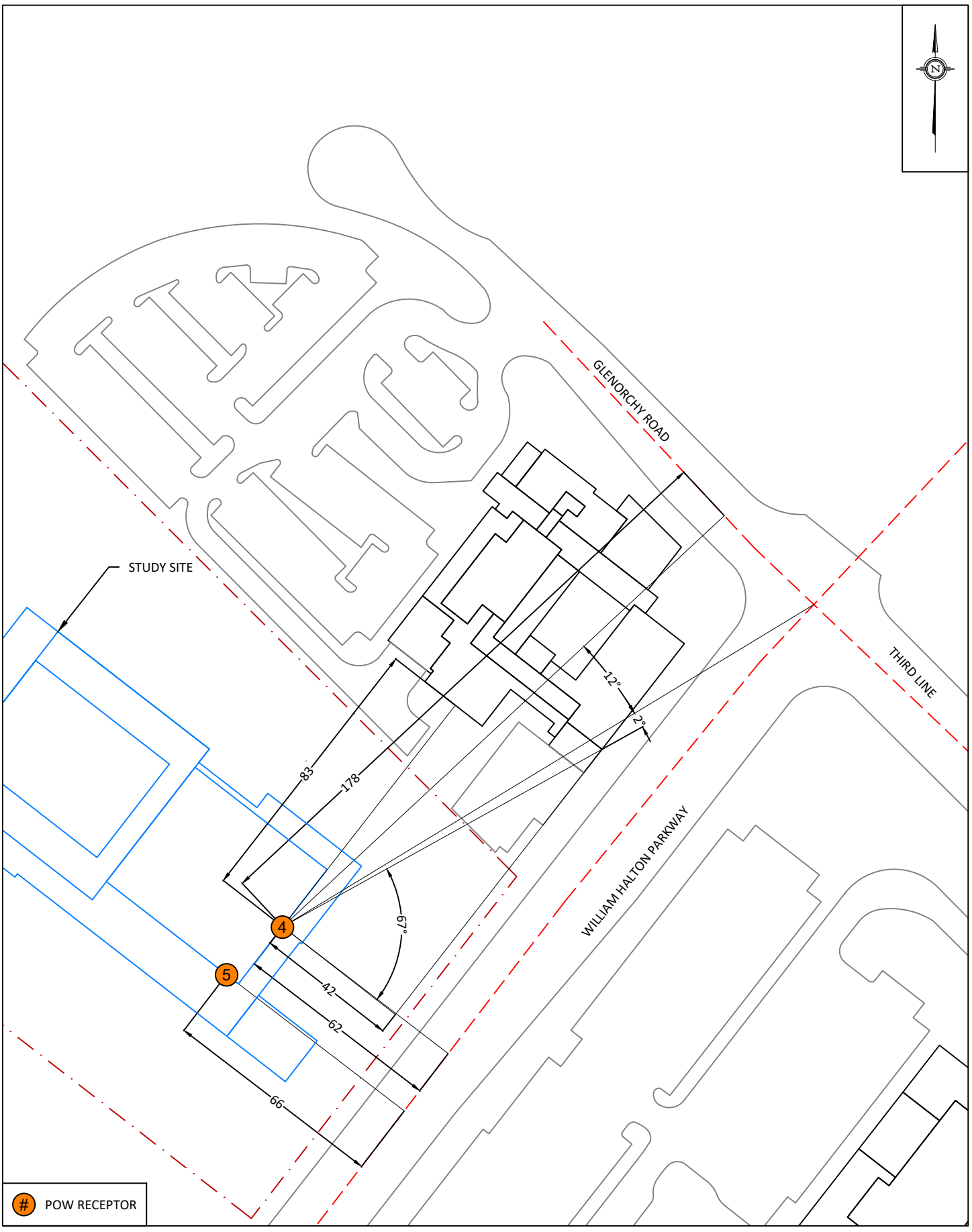
SCALE	1:1500	DRAWING NO.	25-139-A3
DATE	MARCH 10, 2026	DRAWN BY	T.K.

DESCRIPTION

FIGURE A3:
STAMSON INPUT PARAMETERS
RECEPTOR 3



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PROJECT	MECP-MLITDS SCIENCE FACILITY COMPLEX, OAKVILLE ENVIRONMENTAL NOISE FEASIBILITY STUDY		DESCRIPTION
SCALE	1:1500	DRAWING NO. 25-139-A4	FIGURE A4: STAMSON INPUT PARAMETERS RECEPTORS 4 & 5
DATE	MARCH 10, 2026	DRAWN BY T.K.	