aercoustics

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NOISE IMPACT STUDY – **Project: 21532.00**

Proposed Lichty Pit
County of Centre Wellington

Prepared for:

James Thoume Construction Ltd.
7270 Side Road 14, Ariss, Ontario
N0B 1B0

Prepared by:

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November 7, 2023

Revision History

Version	Description	Author	Reviewed	Date
- -	Initial Report	KC	DF	November 7, 2023

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1 Introduction

James Thoume Construction Ltd. is applying for an above-water licence for the proposed Lichty Pit located at 5999, 6043 8th Line East & 7190 Sideroad 12, Part of Lots 11 & 12, Concession 4 West, Township of Centre Wellington (Geographic Township of Pilkington). The proposed extraction area comprises approximately 26.7 HA.

Aercoustics Engineering Limited has been retained to prepare a Noise Impact Study (NIS) for the proposed pit to support the licence application. The purpose of this study is to provide noise control recommendations for the aggregate pit operations to satisfy the Ministry of the Environment, Conservation, and Parks (MECP) noise guidelines.

Sound level limits for the aggregate pit noise on the nearby noise-sensitive receptors were first established based on the noise guidelines of the MECP as outlined in the MECP guideline NPC-300 *"Stationary and Transportation Sources – Approval and Planning"* (August 2013). Where the predicted sound levels were found to exceed the applicable MECP sound level limits, noise control measures were recommended to satisfy these limits.

Figure 1 provides a key plan showing the proposed location of the aggregate pit. Figure 2 shows the site plan of the proposed aggregate pit, including the critical noise sensitive receptors. Noise control recommendations are provided in Appendix A and are illustrated in Figures 3 through 10.

2 Site Description

The proposed aggregate pit is located at 5999, 6043 8th Line East & 7190 Sideroad 12, Part of Lots 11 & 12, Concession 4 West, Township of Centre Wellington (Geographic Township of Pilkington). The site is bisected by Sideroad 12 and bound to the southwest by 9th Line East. The surrounding land uses are agricultural. The nearby 8th Line East is an active roadway and a major source of noise for dwellings in the area.

The proposed aggregate pit addressed by this noise impact study consists of operations within the lands of each of Area 1 and Area 2 as outlined in Figure 2. These operations include excavation, material processing, and aggregate haulage and shipping. The annual tonnage proposed to be removed from the Lichty Pit is 100,000 tonnes.

Figure 1 provides a key plan showing the location of the proposed Lichty Pit and the surrounding area.

There are two existing detached dwellings which are located within the licensed boundaries and as such have not been considered noise sensitive. The existing detached dwellings in the vicinity of the pit outside of the licensed boundary have been identified as R01 to R11. A vacant lot southeast of the proposed aggregate pit is zoned to permit noise sensitive uses such as a dwelling that could introduce new receptors. The potential noise

sensitive use of the vacant lot has been identified and considered in this assessment as represented by Receptor VL12, which represents a two-storey dwelling. The location of the receptor within the vacant lot has bene determined in accordance with the MECP's Noise Pollution Control Publication, NPC-300 "Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning" (August 2013). Figure 2 provides the receptor locations for R01 to R11 and VL12.

3 Noise Criteria

3.1 Acoustical Classification

The appropriate noise criteria for the receptors in the vicinity of the proposed Lichty Pit were based on the MECP Noise Pollution Control document NPC-300.

Points of Reception R03 and R04 have an acoustical environment consistent with the Class 2 (Urban) designation as defined in NPC-300. In a Class 2 area, the background sound levels during the daytime and evening are defined by man-made sounds, such as those from 8th Line East, with nighttime being dominated by natural sounds.

Points of Reception R01, R02, R05 through R11, and VL12 have an acoustical environment consistent with the Class 3 (Rural) designation. In a Class 3 area, the background sound levels during the daytime, evening, and nighttime are dominated by natural sounds.

During Aercoustics' site visit on April 14, 2022, road traffic noise from 8th Line East was observed to be clearly audible and dominant at receptors along the road.

Receptor VL12 is representative of the vacant lot located southeast of the site and is consistent with adjacent developments such as R05. This receptor has been assessed based on a Class 3 acoustical classification.

3.2 MECP Sound Level Limits

The applicable limits for noise from a stationary source at a noise-sensitive point of reception (receptor) in a Class 2 and Class 3 area are outlined in Table 1.

Table 1: Noise Exclusion Limits – Classes 2 and 3

Time of Day	Sound Level Exclusion Limit* Class 2 Area	Sound Level Exclusion Limit* Class 3 Area
Day (07:00 to 19:00)	50 dBA	45 dBA
Evening (19:00 to 23:00)	50 dBA	40 dBA
Night (23:00 to 07:00)	45 dBA	40 dBA

*or the minimum existing hourly background sound level L_{eq}, whichever is higher

The noise from a stationary source should not exceed these limits during any one-hour period.

A summary of the applicable sound level limits used in this environmental noise impact study is provided in Table 2.

Table 2: Applicable Source Level Limits for Stationary Sources - hourly LA_{EQ}

Receptor	Receptor Height (m)	Sound Level Limit during Pit Operating Times (dBA)
R01	4.5	45
R02	4.5	45
R03	1.5	50
R04	4.5	50
R05	4.5	45
R06	7.5	45
R07	3.0	45
R08	1.5	45
R09	1.5	45
R10	4.5	45
R11	4.5	45
VL12	4.5	45

4 Aggregate Pit Operations

The site plans for the proposed Lichty Pit outline the areas of extraction as well as the direction of operations in each phase. In general terms, the nature of the work consists of the following:

- Site preparation and rehabilitation
- Extraction and processing; and
- Shipment off-site.

4.1 Hours of Operation

The proposed hours of operation are from 07:00 to 19:00, Monday to Friday, with no operations on Weekends or statutory holidays. At no time shall extraction, processing, or shipping take place on a statutory holiday. Equipment maintenance may take place outside of these normal operating hours. The proposed hours of operation are summarized below in Table 3.

Table 3: Operating Hours of Proposed Lichty Pit

Time of Day	Day of Week	Operations
07:00 – 19:00	Monday to Friday	Full Operation – Extraction, Processing, Loading & Shipping

4.2 Site Preparation and Rehabilitation

Site preparation includes the construction of berms and visual screens specified on the site plan. Topsoil and overburden will be removed. This work will be done primarily with bulldozers, scrapers, trucks, loaders, and excavators. Rehabilitation phases will involve similar equipment in establishing the final grade of the site.

The site preparation and rehabilitation work described above is not part of the daily operation of the pit and are of short duration. These construction activities are not considered in the noise control analysis. The equipment used for these activities must satisfy the noise emission requirements of the MECP document NPC-115 “Construction Equipment”. By defining a maximum permissible noise emission for construction equipment, rather than directly limiting the noise impact at a sensitive point of reception, the MECP recognizes that construction is a temporary and largely unavoidable source of noise.

In order to minimize the noise impact associated with the construction activities, it is suggested that operations should be restricted to the daytime hours. When possible, site preparation should be conducted during the fall, winter or spring months when there is a reduced level of extraction and when residential windows are more likely to remain closed.

4.3 Extraction, Processing, and Transport

The maximum annual tonnage to be removed from the proposed Lichty Pit is 100,000 tonnes per year. The aggregate pit will operate with a Processing Plant which will be situated in a designated Processing Area as illustrated in Figure 3 and as indicated on the Operation Plan. Processing equipment, comprising a crusher and screener will follow working face in the direction of extraction.

Aggregate material will be extracted using an extraction loader at the working face. Material will be transported from the working face into the crusher and screener plant either this same loader. Processed materials will be stored in stockpiles in the vicinity of the processing area or in the form of temporary storage berms as noted on the operation

plan. One shipping loader will be used in the processing area to load highway trucks with finished aggregate product for transport to market.

4.4 Equipment

The extraction, processing, and shipment equipment operating in the proposed pit is limited to:

- One Extraction Loader
- One Shipping Loader
- One Screener
- One Crusher
- 8 Highway truck trips/hr (16 passes/hr)

The single Processing Plant may consist of multiple pieces of equipment for purposes such as crushing, screening, and washing. Since the noise predictions considered a single worst-case location for all the plant equipment, the distribution of the plant equipment is permitted at various locations. However, the combined sum sound power from all equipment locations must be less than or equal to the permitted sound power for the Processing Plant, and any local noise controls specific to the Processing Plant shall apply at each location.

5 Noise Predictions and Controls

5.1 Noise Prediction Methodology

The proposed aggregate pit operations, as described above, have been modelled using DataKustik's noise prediction software CadnaA. This modelling is based on established noise prediction methods outlined in the ISO 9613-2 standard entitled "Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method and calculation".

The noise predictions are based on the predictable worst-case noise impact for each of the aggregate pit operation areas at each noise-sensitive receptor. This represents a design case where the pit is operating at full capacity with all of the equipment operating simultaneously and at locations where the noise impact is highest for each receptor. It is expected that a majority of the pit operations would occur in other areas of the site, resulting in lower associated noise impacts.

Noise levels were predicted using existing topography under conditions of downwind propagation, generally with hard ground modelled in the pit area and soft ground conditions elsewhere. Appendix C contains sample stationary noise source calculations.

Where noise predictions have indicated the potential of exceedance of the applicable sound level limits, noise control measures have been established to satisfy these limits.

5.2 Aggregate Pit Noise Sources

The reference sound levels used for the aggregate pit equipment are outlined in Table 4. Sound levels for the crusher and screener were based on measurements of the specific equipment proposed to be used at the Lichty Pit.

The assumed sound levels for the remaining pit equipment were based on Aercoustics' measurements of similar equipment at other aggregate operations.

Table 4: Reference Sound Pressure Levels of Aggregate Pit Equipment

Equipment	Reference Sound Pressure Level at 30 m (dBA)
Extraction Loader	64
Shipping Loader	61[1]
Crusher	78
Screener	77
Highway Truck – 25 km/hr	66

1 – Shipment loader was assumed to operate at a 50% duty cycle

5.3 Recommended Noise Controls

The recommended noise controls presented in this section and in Appendix A have been determined, through noise impact predictions, to be effective in limiting the noise impact from the aggregate pit activities to levels which comply with the MECP sound level limits. It should be noted that there may be other effective noise controls that could replace or revise those put forth in this report. Prior to the implementation of any changes to the noise controls, appropriate studies should be undertaken to demonstrate that the MECP sound level limits will be satisfied.

An acoustic barrier is required to be solid, with no gaps or openings, and shall satisfy a minimum area density of 20 kg/m^2. Such a barrier may take the form of a pit face, stockpile, acoustic fence, ISO container(s), some combination of these, or any other construction satisfying the requirements of an acoustic barrier.

Refer to Figures 3 to 9 for requirements for requirements in Areas 1 and 2. These requirements include an illustration of the timing and implementation of noise controls such as local processing plant acoustical barriers as well as perimeter barriers. Refer to Appendix A for a comprehensive summary of the recommended noise controls for the proposed Lichty Pit.

5.4 Predicted Sound Levels with Controls

The predicted worst-case noise levels produced by operations within the proposed Lichty Pit area are summarized in Table 5 below. The predictable worst-case operation in Areas 1 and 2 are associated with simultaneous processing and extraction in close proximity to

Receptors R01 through R03, R06, and R11 as extraction progresses as illustrated in Figures 3 through 9.

Table 5: Lichty Pit - Worst Case Predicted Sound Levels and Criteria - Hourly L_{AEQ} (dBA)

Receptor	Extraction, Processing, and Shipping Operations (07:00 – 19:00)	
	Daytime Sound Level Limit	Maximum Predicted Sound Level
R01	45	45
R02	45	44
R03	50	50
R04	50	47
R05	45	38
R06	45	45
R07	45	43
R08	45	40
R09	45	44
R10	45	43
R11	45	45
VL12	45	41

6 Truck Traffic Noise on Haul Route

The noise impact of truck traffic on public roadways is not addressed in the MECP noise guidelines. However, the MECP requires consideration of noise impact in choosing the off-property haul route. Further, the MECP document titled, “Noise Guidelines for Landfill Sites”, dated October 1998, provides general guidelines for evaluating the noise impact of truck traffic associated with external haul routes.

The following section considers these guidelines by qualitatively assessing the potential increase in the noise environment on noise-sensitive dwellings along the proposed Lichty Pit haul route.

Trucks hauling aggregate from the pit will exit heading south on Side Road 12 before turning northwest or southeast on 8th Line East with a 50/50 distribution. Aggregate will then be brought to market using Wellington County Road 21 and County Road 86, which are existing established haul routes. It is understood that the peak one-hour truck traffic from the pit will be 8 trucks comprising 16 total truck passes. Sample copies of the traffic noise predictions from MECP’s Road and Rail Traffic Noise Prediction Model STAMSON (Version 5.04) are included in Appendix C.

6.1 Existing Noise Environment

The worst-case evaluation of the increase in road traffic associated with proposed pit operations was based on a comparison of the one-hour period associated with highest-

volume truck traffic and the lowest-volume road traffic. Peak truck traffic is expected between 07:00 and 08:00.

The assessed existing traffic levels were determined based on hourly road traffic counts provided by the County of Centre Wellington. This data was collected in proximity to the proposed site in May 2022.

A worst-case (lowest-volume) hourly traffic count of 8 vehicles per hour, collected between 07:00 – 08:00, was evaluated to assess the worst-case impact of future truck traffic. The hourly road traffic data indicated an average hourly traffic volume of 36 vehicles per hour between 07:00 and 19:00. These traffic counts were also assessed to indicate a representative average increase in hourly traffic noise associated with future truck traffic from the pit.

6.2 Noise Impact of Truck Traffic on Haul Route

The potential noise impact to the noise sensitive dwellings along the proposed haul route has been evaluated conservatively by introducing the assumed maximum truck volumes to the existing minimum and average one hour traffic counts and subsequently determining the perceived impact on the noise environment. As the predicted noise level increases are relative changes in the overall road traffic sound level, all points of reception along the respective roadway will perceive the same relative increase in noise level. These results are presented in Table 6, below.

Table 6: Haul Route Impact Summary

	Increase
Maximum Increase	7 dB
Average Increase	3 dB

The predicted worst-case hourly increase in noise level along 8th Line East is 7 dB, with a predicted average increase in noise level of approximately 3 dB. Based on these predicted levels, the peak hourly truck traffic associated with the pit is expected to produce a noticeable to significant change in noise impact from existing road traffic on the nearby dwellings along 8th Line East.

As noted, County Road 21 and County Road 86 represent higher-volume roadways that are already designated as truck haul routes. Other local roadways in the area are expected to have lower existing traffic levels than 8th Line East; the use of these other roadways would thus result in greater increases in sound level. Accordingly, the use of 8th Line East can be considered the preferred haul route in the context of noise impact.

7 Conclusion

Aercoustics has conducted a noise impact study for the proposed Lichty Pit. The purpose of this noise impact study was to provide noise control recommendations for the pit operations to satisfy the MECP noise guidelines. Figure 2 provides a site plan outlining the aggregate pit areas and the locations of nearby receptors.

Sound level limits were developed based on the MECP noise guidelines. Calculations were then carried out to determine the worst-case noise impact for each phase of the aggregate pit operation, at each noise-sensitive receptor. Where noise predictions indicated the potential of exceedance of the MECP sound level limits, noise control recommendations were provided.

With the implementation of the recommended noise controls, the proposed aggregate pit operation is predicted to satisfy the MECP noise guidelines

aercoustics	Project ID: 21532.00 Scale: NTS Drawn by: KC Reviewed by: DF Date: Oct 17, 2023 Revision: 1	**Project Name** Lichty Pit - Noise Impact Study	
		Figure Title Key Plan Showing Site Location	**Figure 1**

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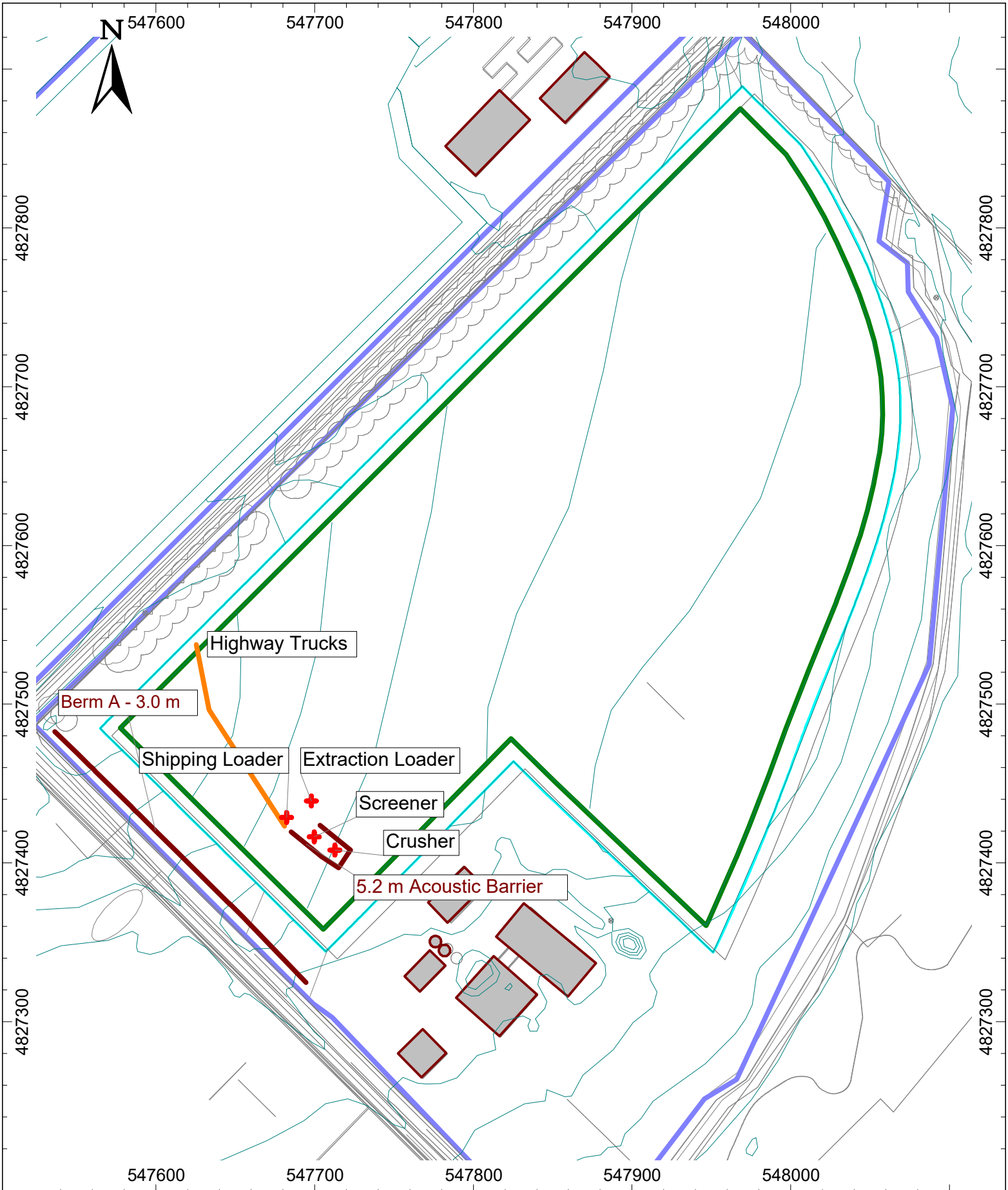
Project ID: 21532.00	**Project Name**
Scale: As Indicated Drawn by: KC Reviewed by: DF Date: Oct 17, 2023 Revision: 1	Lichty Pit - Noise Impact Study
	Figure Title Noise Sensitive Receptors

Figure 2



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Drawn by: KC
Reviewed by: DF
Date: Oct 17, 2023
Revision: 1

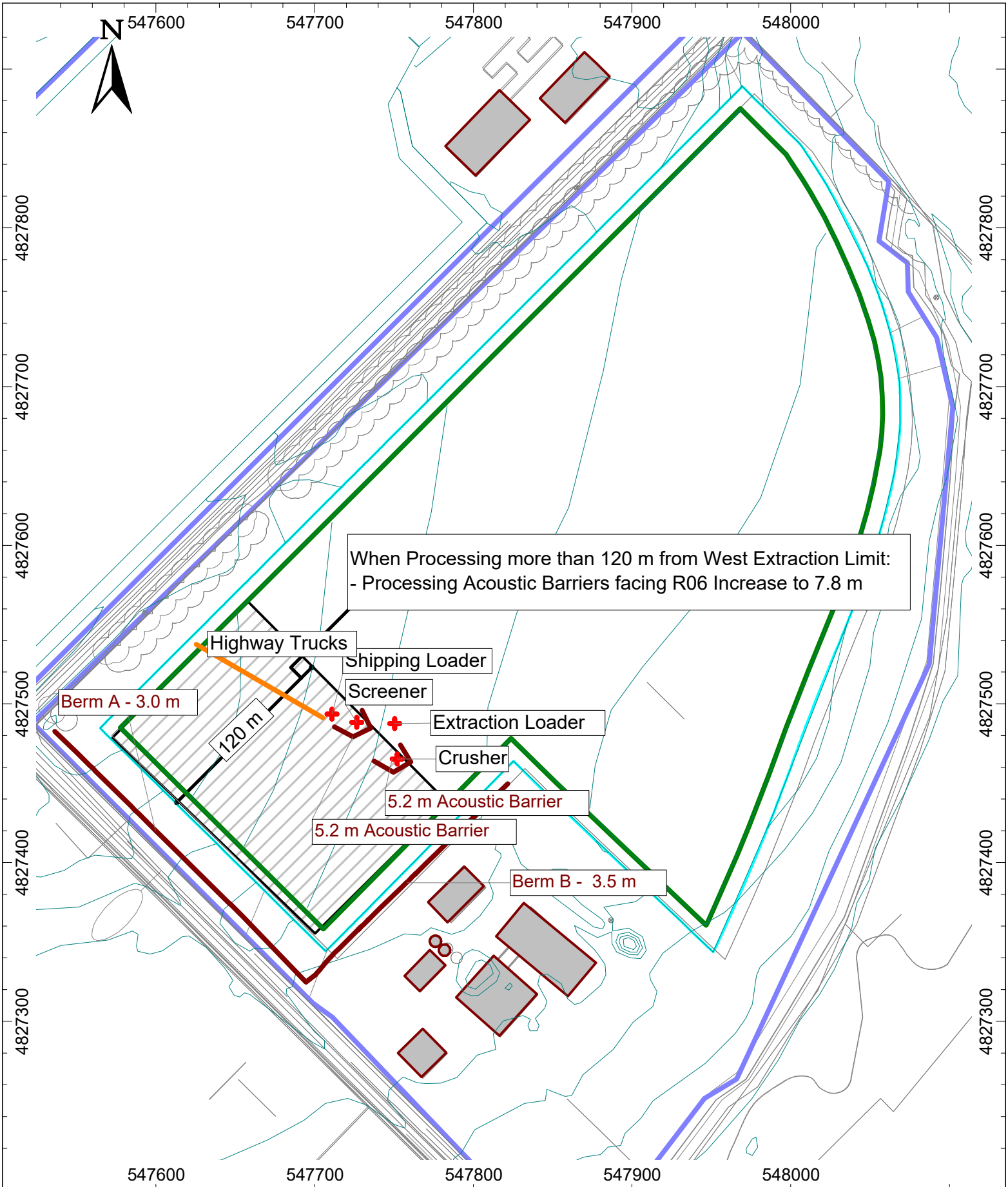
Project Name

Lichty Pit - Noise Impact Study

Figure Title

Noise Control Implimentation - Area 1 (1/4)

Figure 3



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Project ID: 21532.00

Scale: As Indicated
Drawn by: KC
Reviewed by: DF
Date: Oct 17, 2023
Revision: 1

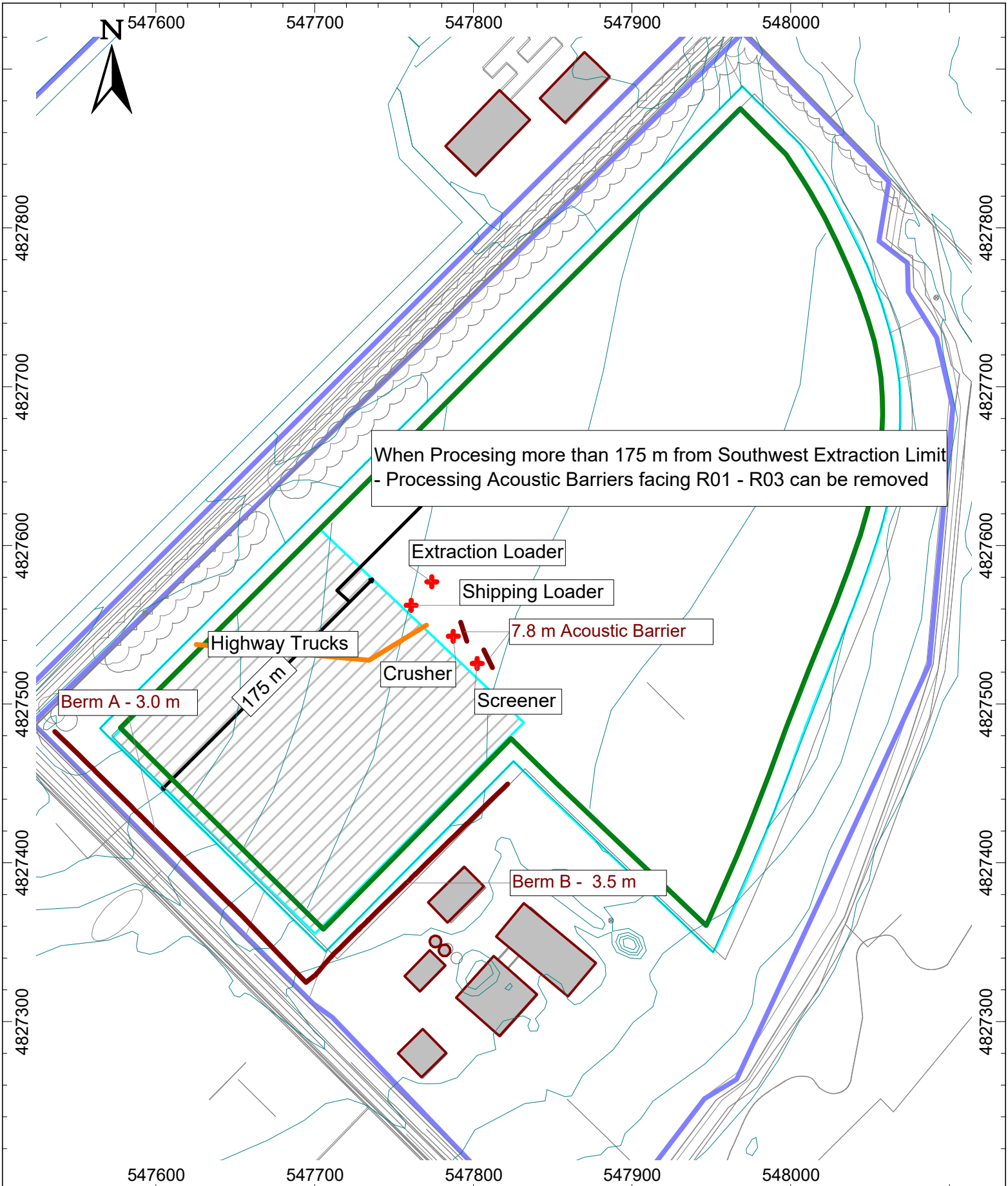
Project Name

Lichty Pit - Noise Impact Study

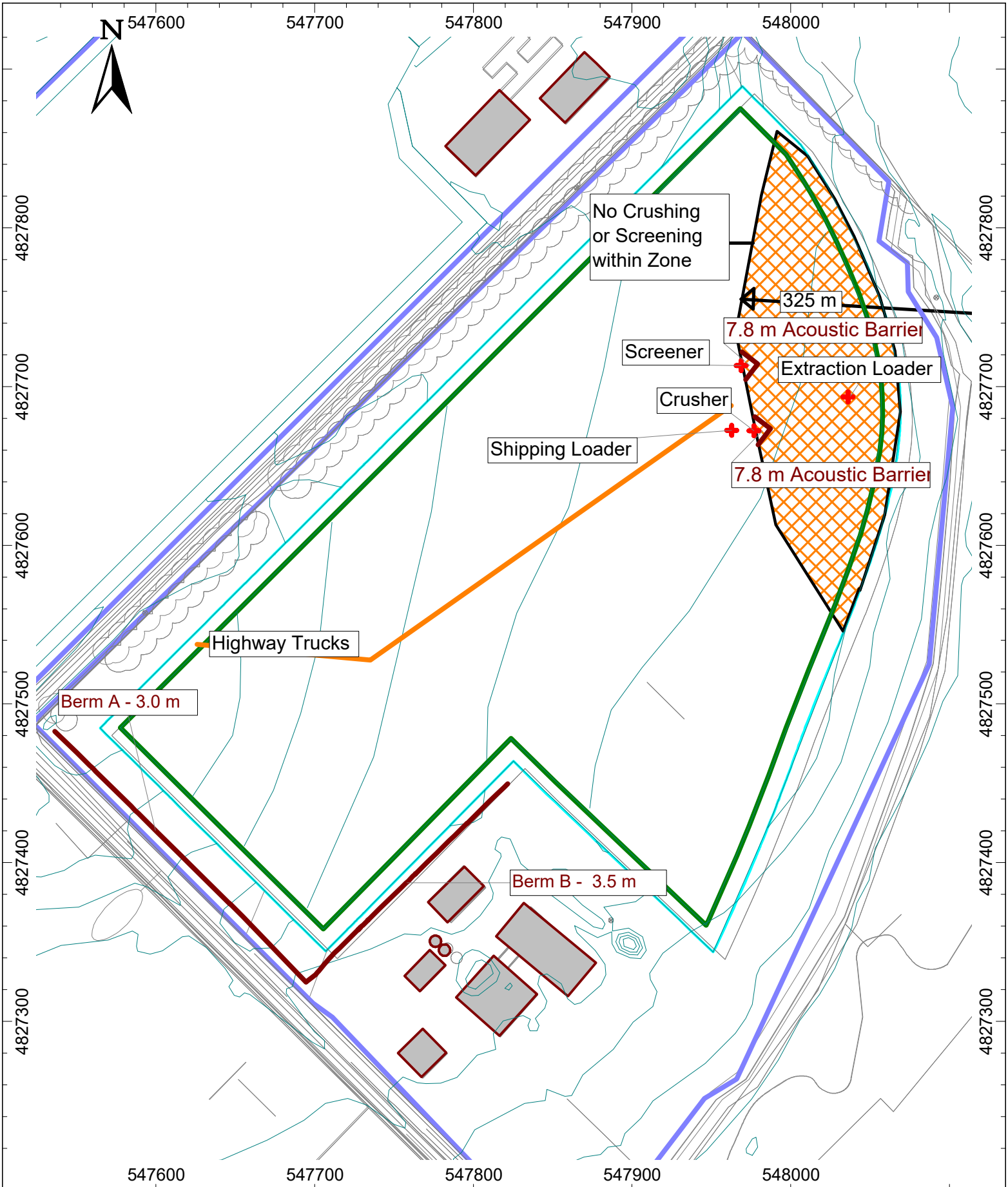
Figure Title

Noise Control Implimentation - Area 1 (2/4)

Figure 4



aercoustics	Project ID: 21532.00 Scale: As Indicated Drawn by: KC Reviewed by: DF Date: Oct 17, 2023 Revision: 1	**Project Name** Lichty Pit - Noise Impact Study **Figure Title** Noise Control Implimentation - Area 1 (3/4)	**Figure 5**



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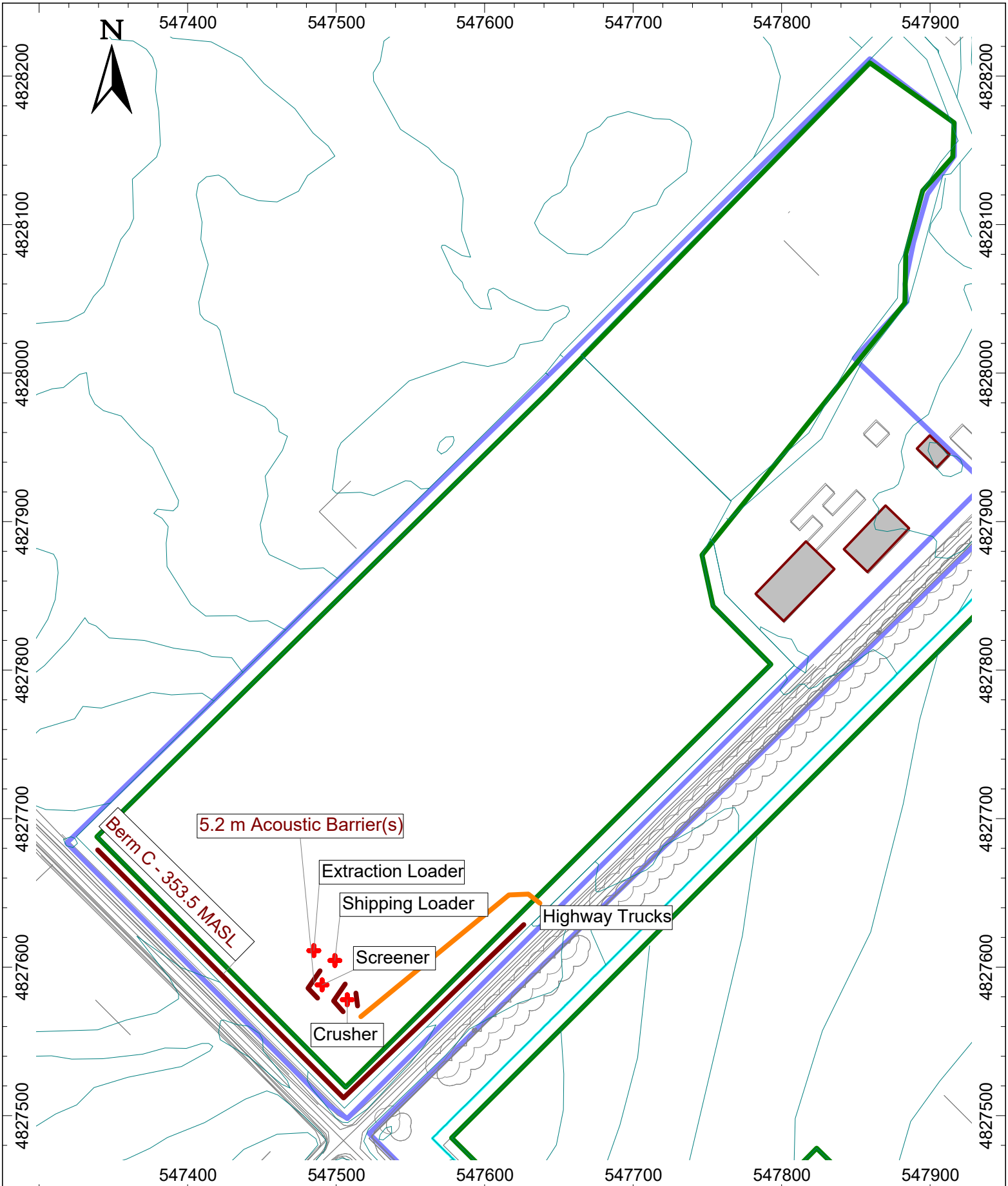
Project Name

Lichty Pit - Noise Impact Study

Figure Title

Noise Control Implimentation - Area 1 (4/4)

Figure 6



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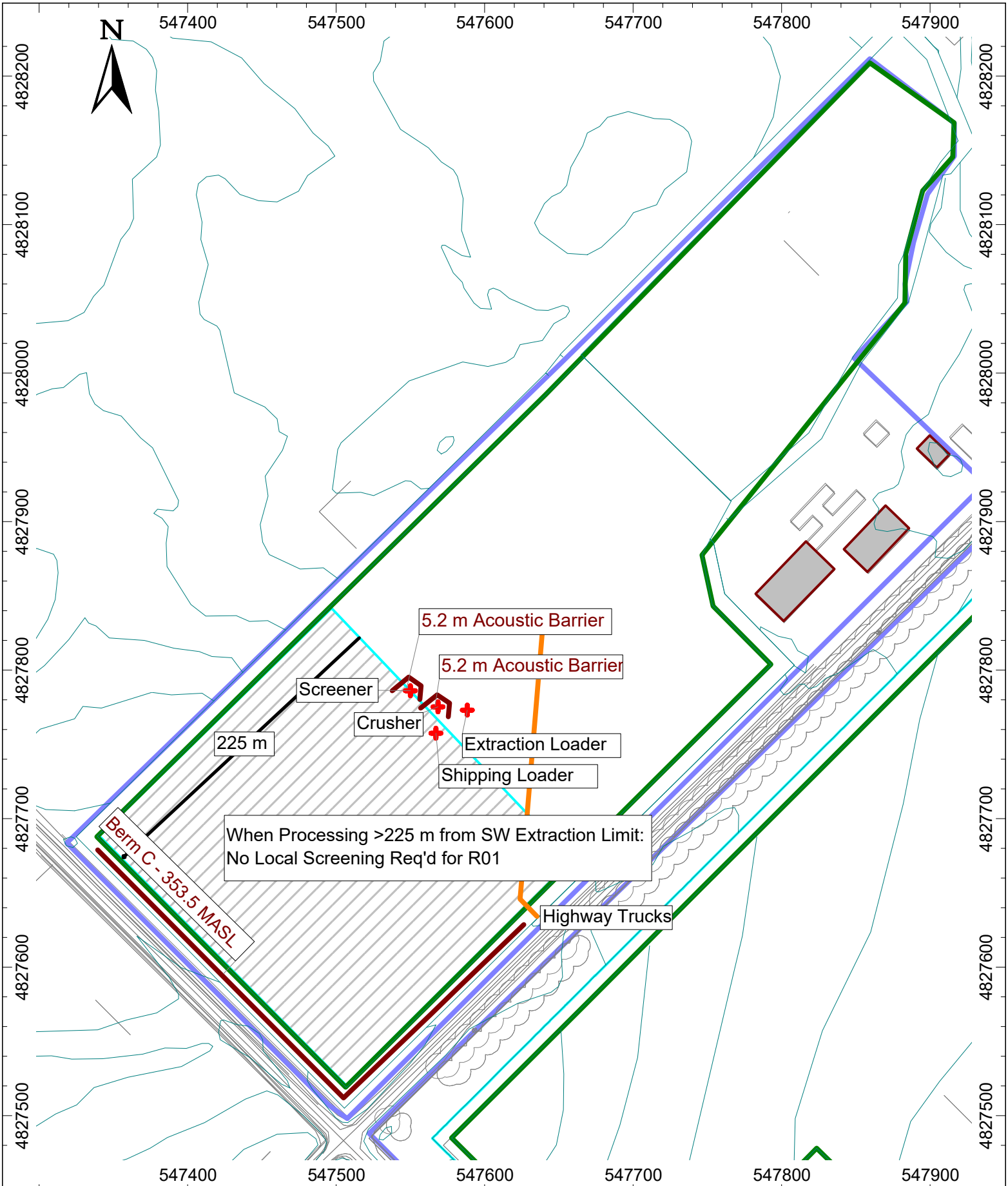
Project ID: 21532.00	**Project Name**
Scale: As Indicated Drawn by: KC Reviewed by: DF Date: Oct 17, 2023 Revision: 1	Lichty Pit - Noise Impact Study
	Figure Title Noise Control Implimentation - Area 2 (1/4)
	Figure 7



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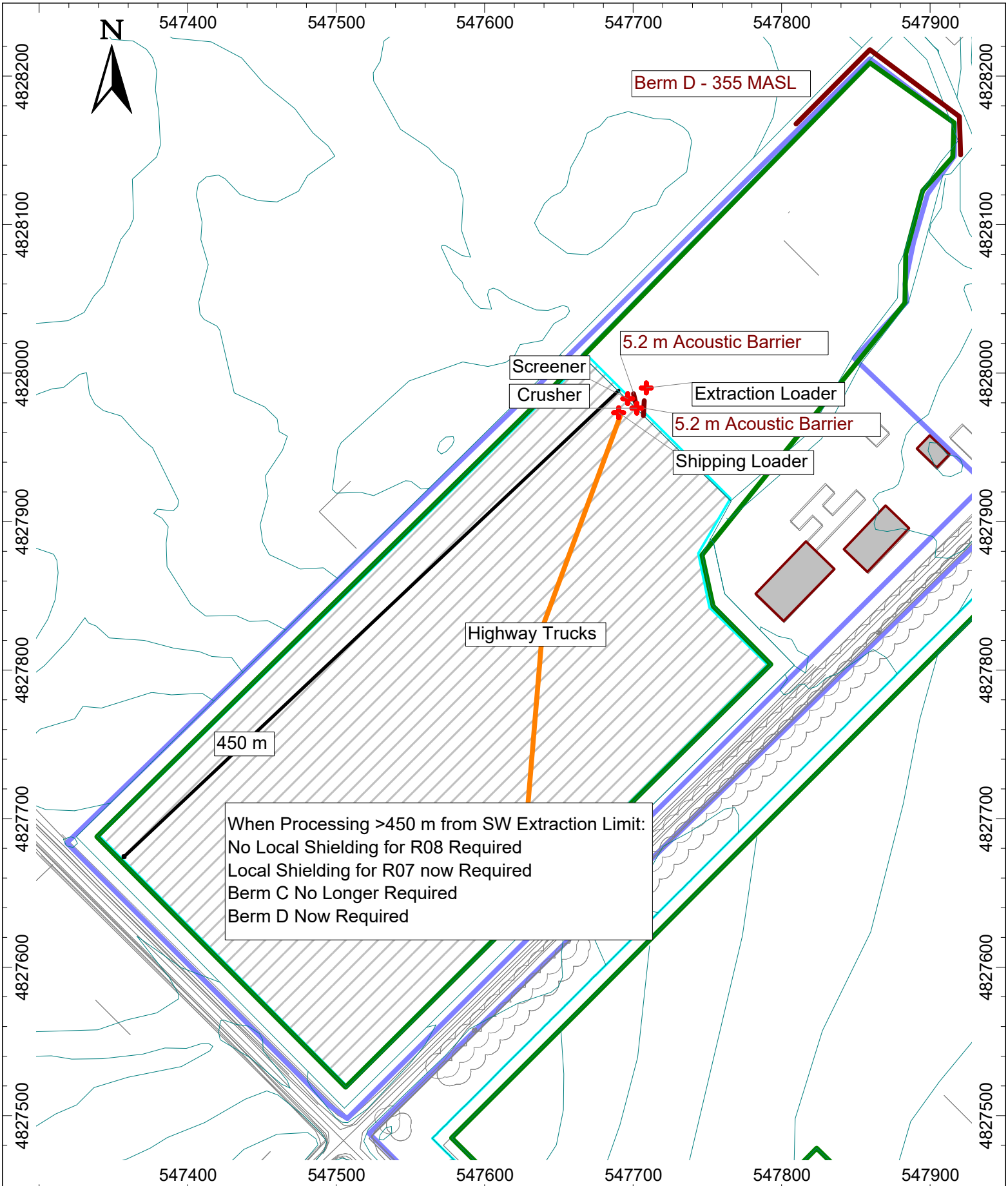

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Revision: 1

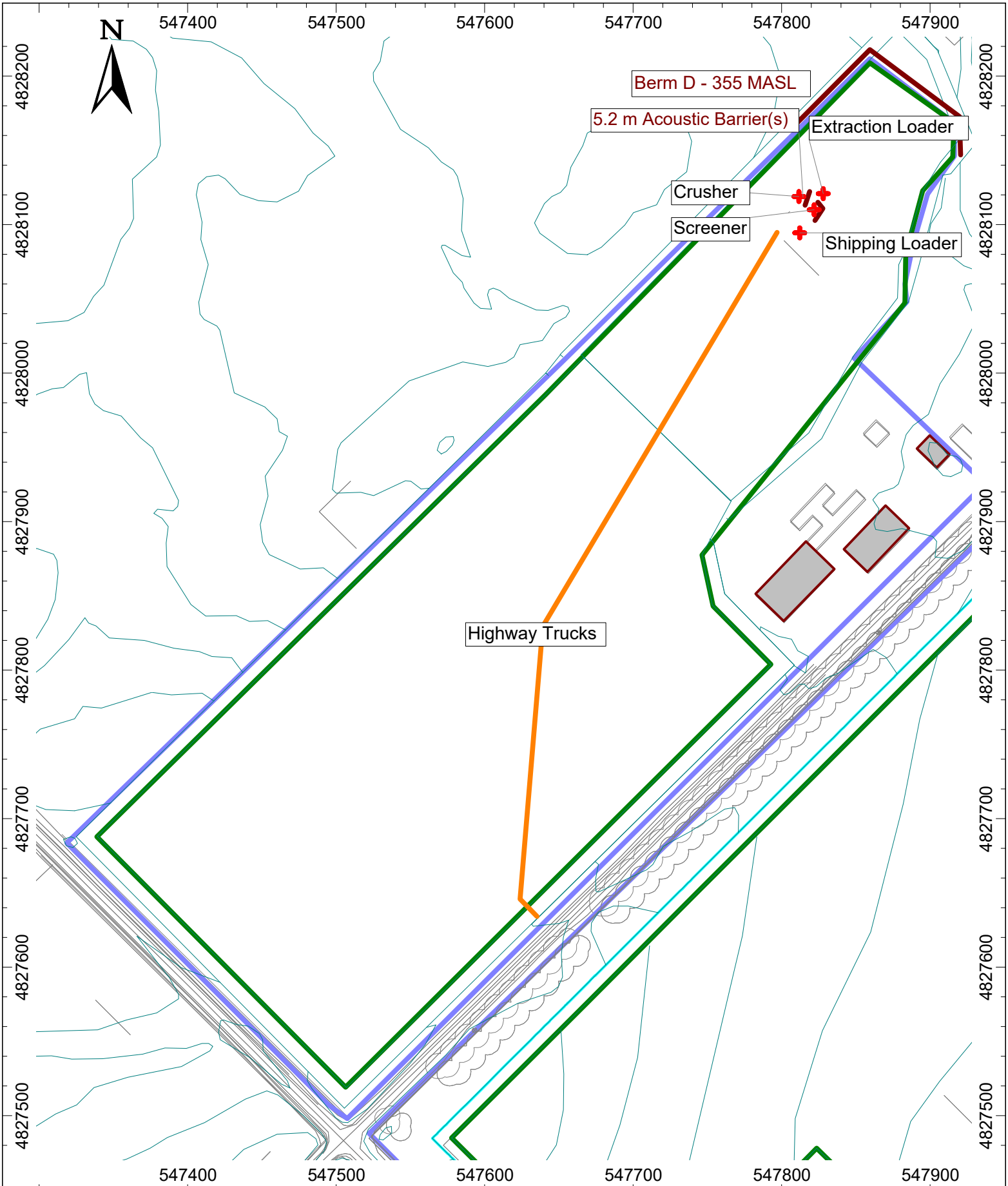
Project Name

Lichty Pit - Noise Impact Study

Figure Title

Noise Control Implimentation - Area 2 (3/4)

Figure 9



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Revision: 1

Project Name

Lichty Pit - Noise Impact Study

Figure Title

Noise Control Implimentation - Area 2 (4/4)

Figure 10

Appendix A
Noise Control Recommendations

General:

1. The proposed hours of extraction, processing, and shipping operations shall be limited to the daytime hours only (07:00 to 19:00)

2. The extraction, processing, and shipping equipment operating in the pit is limited to:

    - One Extraction Loader
    - One Shipment Loader
    - One Crusher
    - One Screener
    - 8 Highway truck trips per hour (16 passes per hour)

3. The aggregate pit equipment shall satisfy the noise emission levels listed in Table A:

Table A: Reference Sound Pressure Levels of Aggregate Pit Equipment

Equipment	Reference Sound Pressure Level at 30m (dBA)
Extraction Loader	64
Shipping Loader	61[1]
Crusher	78
Screener	77
Highway Truck – 20 km/h	71

1 – The shipment loaders were assumed to operate at a 50% duty cycle.

4. The sound emissions of all construction equipment involved in site preparation and rehabilitation activities shall comply with the sound level limits specified in the MECP publication NPC-115 “Construction Equipment”.

5. New equipment technology or different configurations may allow proposed changes to any portion of the extraction and processing operations including additional equipment to operate on the site, equipment to be substituted, and/or different berm heights, while still meeting the applicable sound level limits. Changes may be permitted to the site operations and noise controls provided that the changes still meet the sound level limits, as confirmed through documentation prepared by a Professional Engineer specializing in noise control. Prior to any modification, the licensee shall confirm with MNRF whether a site plan amendment is required to permit those proposed changes.

6. An acoustic barrier is required to be solid, with no gaps or openings, and shall satisfy a minimum area density of 20 kg/m^2. It could take the form of a working face, stockpile, acoustic fence, ISO containers, a combination of these, or any construction satisfying the requirements of an acoustic barrier.

7. Prior to extraction, an acoustic barrier with a minimum height of 3.0 m relative to the existing grade shall be established along the southwest boundary of the property as shown (Berm A) on the Operation Plan. This barrier shall remain in place for the duration of processing operations in Area 1.

8. Prior to extraction more than 120 m from the Area 1 southwest extraction limit, an acoustic barrier with a minimum height of 3.5 m relative to the existing grade shall be established along the southeast extraction limit as shown (Berm B) on the Operation Plan. This barrier shall remain in place for the duration of processing operations in Area 1.

9. The Crusher and Screener shall always be positioned such that the line-of-sight between the equipment and Receptor R01 through R03 is interrupted.

10. The Crusher and Screener shall not operate within 375 m of Receptor R06.

11. During processing operations in Area 1, the Crusher and Screener shall be shielded from dwellings using local barriers with heights as indicated in the table below. Acoustical barriers shall be positioned such that the top height of the barrier is no more than 7 m from the Crusher or Screener in the direction of the listed Receptor.

Processing Equipment Distance from SW Extraction Limit – Area 1	Local Shielding for R01 – R03	Local Shielding for R06
< 120 m	5.2 m	5.2 m
120 m – 175 m	5.2 m	7.8 m
>175 m	None	7.8 m

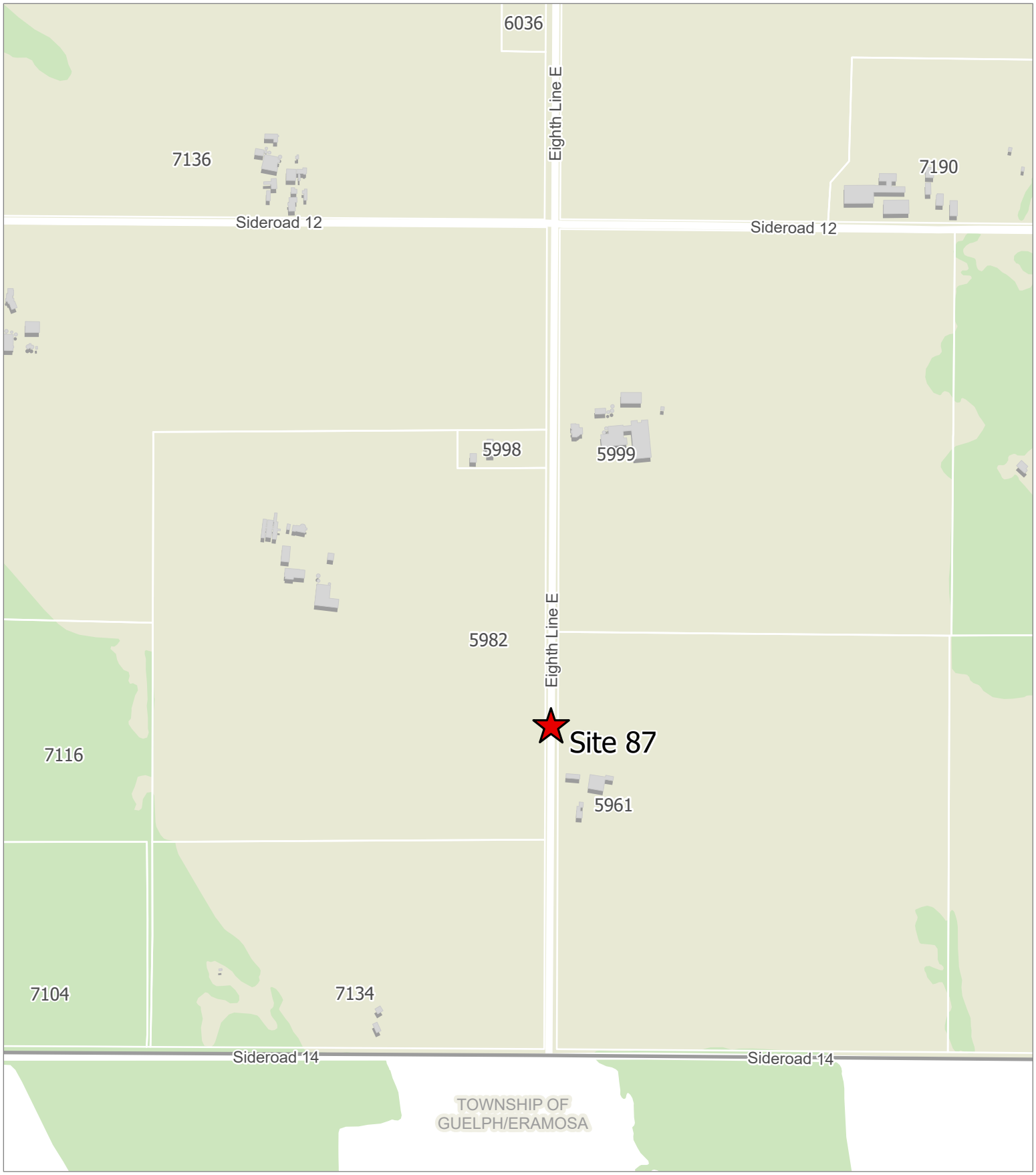
12. Prior to extraction in Area 2, an acoustic barrier with a minimum top-of-barrier elevation of 353.5 MASL shall be established extending 240 m northwest and 170 m northeast from the southern corner of Area 2, as shown (Berm C) on the Operation Plan. This barrier shall remain in place for the duration of processing in Area 2 within 450 m of the southwestern Area 2 extraction limit.

13. During processing operations in Area 2, the Crusher and Screener shall be shielded from dwellings using local barriers with heights as indicated in the table below. Acoustical barriers shall be positioned such that the top height of the barrier is no more than 7 m from the Crusher or Screen in the direction of the listed Receptor.

Processing Equipment Distance from SW Extraction Limit – Area 2	Receptors for Local Shielding			
	R01	R06	R07 & R08	R11
< 225 m	5.2 m	5.2 m	None	5.2 m
225 m – 450 m	None	5.2 m	None	5.2 m
> 450 m	None	5.2 m	5.2 m	None

14. Prior to extraction in Area 2 more than 450 m from the southwest extraction limit, an acoustic barrier with a minimum top-of-barrier elevation of 355 MASL shall be established extending 70 m southwest and 100 m southeast from the northern corner of Area 2, as shown (Berm D) on the Operation Plan. This barrier shall remain in place for the duration of processing in Area 2.

Appendix B
Road Traffic Data & Sample Calculations



Township of Centre Wellington Traffic Count Locations

Eighth Line (Sideroad 12 to Sideroad 14)

★ Traffic Count Site

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1:8,000

0 0.2 0.4 km

Report-1.1

Location : **CW22-87NS** **EIGHT LINE W - NORTH OF SIDEROAD 14**

Direction : **North** Road :

Dates : **05/17/2022**

Classes ---------->		Class-1	Class-2	Class-3	Class-4	Class-5	Class-6	Class-7	Class-8	Class-9	Class-10	Class-11	Class-12	Class-13	Total	
OO:OO	**0:15**															
0:15	**0:30**															
0:30	**0:45**			1											**1**	0.2%
0:45	**1:00**															
OO:OO	**1:00**			1											**1**	0.2%
1:00	**1:15**															
1:15	**1:30**															
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4:00	**5:00**			1											**1**	0.2%
5:00	**5:15**															
5:15	**5:30**															
5:30	**5:45**															
5:45	**6:00**		2				1								**3**	0.7%
5:00	**6:00**		2				1								**3**	0.7%
6:00	**6:15**		1	1											**2**	0.5%
6:15	**6:30**															
6:30	**6:45**		1	3											**4**	0.9%
6:45	**7:00**															
6:00	**7:00**		2	4											**6**	1.4%
7:00	**7:15**		3												**3**	0.7%
7:15	**7:30**		3												**3**	0.7%
7:30	**7:45**		3	1	1	1			1						**7**	1.6%
7:45	**8:00**		3	3	1										**7**	1.6%
7:00	**8:00**		12	4	2	1			1						**20**	4.7%
8:00	**8:15**			1											**1**	0.2%
8:15	**8:30**		3	1		1									**5**	1.2%
8:30	**8:45**		3	1											**4**	0.9%
8:45	**9:00**		2			2	1								**5**	1.2%
8:00	**9:00**		8	3		3	1								**15**	3.5%
9:00	**9:15**		1	4											**5**	1.2%
9:15	**9:30**		3	2		1	1								**7**	1.6%
9:30	**9:45**		2	4											**6**	1.4%
9:45	**10:00**			2		1									**3**	0.7%
9:00	**10:00**		6	12		2	1								**21**	4.9%
10:00	**10:15**		2	1	1										**4**	0.9%
10:15	**10:30**		2	2											**4**	0.9%
10:30	**10:45**		5	1											**6**	1.4%
10:45	**11:00**		2				3								**5**	1.2%
10:00	**11:00**		11	4	1		3								**19**	4.4%
11:00	**11:15**		3	1		1									**5**	1.2%
11:15	**11:30**		9			1									**10**	2.3%
11:30	**11:45**		3	2			1								**6**	1.4%
11:45	**12:00**		3	1											**4**	0.9%
11:00	**12:00**		18	4		2	1								**25**	5.8%

12:00	**12:15**	2	1			1			**4**	0.9%
12:15	**12:30**	5	5		1				**11**	2.6%
12:30	**12:45**	4	1			1			**6**	1.4%
12:45	**13:00**	3							**3**	0.7%
12:00	**13:00**	14	7		1	2			**24**	5.6%
13:00	**13:15**	5			1				**6**	1.4%
13:15	**13:30**	1	1						**2**	0.5%
13:30	**13:45**	6	2		2				**10**	2.3%
13:45	**14:00**	2	1		2				**5**	1.2%
13:00	**14:00**	14	4		5				**23**	5.4%
14:00	**14:15**	5	3		1	1	1	1	**12**	2.8%
14:15	**14:30**	7	1	1	1				**10**	2.3%
14:30	**14:45**	8	1						**9**	2.1%
14:45	**15:00**	8	1						**9**	2.1%
14:00	**15:00**	28	6	1	2	1	1	1	**40**	9.3%
15:00	**15:15**	3	2		1	1			**7**	1.6%
15:15	**15:30**	5	3				1	1	**10**	2.3%
15:30	**15:45**	6	3						**9**	2.1%
15:45	**16:00**	14	5	1					**20**	4.7%
15:00	**16:00**	28	13	1	1	1	1	1	**46**	10.7%
16:00	**16:15**	6	5		2				**13**	3.0%
16:15	**16:30**	6	4	1	3				**14**	3.3%
16:30	**16:45**	13	6		1				**20**	4.7%
16:45	**17:00**	10	3		1				**14**	3.3%
16:00	**17:00**	35	18	1	7				**61**	14.2%
17:00	**17:15**	5	7		1	1			**14**	3.3%
17:15	**17:30**	4	2						**6**	1.4%
17:30	**17:45**	7	3						**10**	2.3%
17:45	**18:00**	10	2		1				**13**	3.0%
17:00	**18:00**	26	14		2	1			**43**	10.0%
18:00	**18:15**	5	6		1				**12**	2.8%
18:15	**18:30**	4	4		1				**9**	2.1%
18:30	**18:45**	2	3		1				**6**	1.4%
18:45	**19:00**	4	1						**5**	1.2%
18:00	**19:00**	15	14		3				**32**	7.5%
19:00	**19:15**	6	2		1				**9**	2.1%
19:15	**19:30**	3	1						**4**	0.9%
19:30	**19:45**	4	1						**5**	1.2%
19:45	**20:00**	3			1				**4**	0.9%
19:00	**20:00**	16	4		2				**22**	5.1%
20:00	**20:15**	2	1						**3**	0.7%
20:15	**20:30**		1						**1**	0.2%
20:30	**20:45**	1			1				**2**	0.5%
20:45	**21:00**	3	2		2				**7**	1.6%
20:00	**21:00**	6	4		3				**13**	3.0%
21:00	**21:15**	1	3						**4**	0.9%
21:15	**21:30**									
21:30	**21:45**	3							**3**	0.7%
21:45	**22:00**	1			1				**2**	0.5%
21:00	**22:00**	5	3		1				**9**	2.1%
22:00	**22:15**	1							**1**	0.2%
22:15	**22:30**	1							**1**	0.2%
22:30	**22:45**									
22:45	**23:00**		1						**1**	0.2%
22:00	**23:00**	2	1						**3**	0.7%
23:00	**23:15**									
23:15	**23:30**	1							**1**	0.2%
23:30	**23:45**									
23:45	**OO:OO**									
23:00	**OO:OO**	1							**1**	0.2%
Total		**250**	**121**	**6**	**35**	**12**	**2**	**3**	**429**	
		58.3%	28.2%	1.4%	8.2%	2.8%	0.5%	0.7%		
AM PEAK		**9**	**4**	**1**	**2**	**3**		**1**	**10**	
period		11:15	9:00	7:30	8:45	10:45		7:30	11:15	
% of class		3.6%	3.3%	16.7%	5.7%	25.0%		33.3%		2.3%
PM PEAK		**14**	**7**	**1**	**3**	**1**	**1**	**1**	**20**	
period		15:45	17:00	14:15	16:15	12:00	14:00	14:00	15:45	
% of class		5.6%	5.8%	16.7%	8.6%	8.3%	50.0%	33.3%		4.7%

Report-1.2

Location : **CW22-87NS** **EIGHT LINE W - NORTH OF SIDEROAD 14**

Direction : **North** Road :

Dates : **05/18/2022**

Classes ---------->		Class-1	Class-2	Class-3	Class-4	Class-5	Class-6	Class-7	Class-8	Class-9	Class-10	Class-11	Class-12	Class-13	Total	
OO:OO	**0:15**															
0:15	**0:30**															
0:30	**0:45**		1	1											**2**	0.4%
0:45	**1:00**															
OO:OO	**1:00**		1	1											**2**	0.4%
1:00	**1:15**			1											**1**	0.2%
1:15	**1:30**															
1:30	**1:45**															
1:45	**2:00**															
1:00	**2:00**			1											**1**	0.2%
2:00	**2:15**															
2:15	**2:30**															
2:30	**2:45**															
2:45	**3:00**		1												**1**	0.2%
2:00	**3:00**		1												**1**	0.2%
3:00	**3:15**															
3:15	**3:30**															
3:30	**3:45**															
3:45	**4:00**															
3:00	**4:00**															
4:00	**4:15**															
4:15	**4:30**															
4:30	**4:45**		1												**1**	0.2%
4:45	**5:00**			1											**1**	0.2%
4:00	**5:00**		1	1											**2**	0.4%
5:00	**5:15**															
5:15	**5:30**		1												**1**	0.2%
5:30	**5:45**		1	1											**2**	0.4%
5:45	**6:00**															
5:00	**6:00**		2	1											**3**	0.7%
6:00	**6:15**		1	1											**2**	0.4%
6:15	**6:30**		1	1											**2**	0.4%
6:30	**6:45**			5	1	2	2								**10**	2.2%
6:45	**7:00**		1	1		1									**3**	0.7%
6:00	**7:00**		3	8	1	3	2								**17**	3.7%
7:00	**7:15**		1												**1**	0.2%
7:15	**7:30**		3	1		3									**7**	1.5%
7:30	**7:45**		3	1	1										**5**	1.1%
7:45	**8:00**		1	1	2	1									**5**	1.1%
7:00	**8:00**		8	3	3	4									**18**	4.0%
8:00	**8:15**		2	4		1									**7**	1.5%
8:15	**8:30**		2												**2**	0.4%
8:30	**8:45**		1	2		3		1			1				**8**	1.8%
8:45	**9:00**		2	1		1								1	**5**	1.1%
8:00	**9:00**		7	7		5		1			1			1	**22**	4.8%
9:00	**9:15**		1	1		1									**3**	0.7%
9:15	**9:30**		5	1	1										**7**	1.5%
9:30	**9:45**		2	2		1									**5**	1.1%
9:45	**10:00**		3												**3**	0.7%
9:00	**10:00**		11	4	1	2									**18**	4.0%
10:00	**10:15**		8			1									**9**	2.0%
10:15	**10:30**		2	4		2									**8**	1.8%
10:30	**10:45**															
10:45	**11:00**		2	2											**4**	0.9%
10:00	**11:00**		12	6		3									**21**	4.6%
11:00	**11:15**		3	1			1								**5**	1.1%
11:15	**11:30**		5	2		1									**8**	1.8%
11:30	**11:45**		4	2											**6**	1.3%
11:45	**12:00**		3	4											**7**	1.5%
11:00	**12:00**		15	9		1	1								**26**	5.7%

12:00	**12:15**		8	1		1						**10**	2.2%
12:15	**12:30**		7	3								**10**	2.2%
12:30	**12:45**		4	4			1					**9**	2.0%
12:45	**13:00**	1	2			3						**6**	1.3%
12:00	**13:00**	1	21	8		4	1					**35**	7.7%
13:00	**13:15**		3									**3**	0.7%
13:15	**13:30**		7									**7**	1.5%
13:30	**13:45**		4	2								**6**	1.3%
13:45	**14:00**		2	3					1			**6**	1.3%
13:00	**14:00**		16	5					1			**22**	4.8%
14:00	**14:15**		2	3								**5**	1.1%
14:15	**14:30**	1	5	1			1					**8**	1.8%
14:30	**14:45**		8	3								**11**	2.4%
14:45	**15:00**		6	1			1					**8**	1.8%
14:00	**15:00**	1	21	8			2					**32**	7.0%
15:00	**15:15**		5	6	1	1						**13**	2.9%
15:15	**15:30**		7	5		1						**13**	2.9%
15:30	**15:45**		12	7		1						**20**	4.4%
15:45	**16:00**		9	5	1							**15**	3.3%
15:00	**16:00**		33	23	2	3						**61**	13.4%
16:00	**16:15**		8	7		1						**16**	3.5%
16:15	**16:30**		9	4	2	3				1		**19**	4.2%
16:30	**16:45**		3	2		2						**7**	1.5%
16:45	**17:00**		5	3								**8**	1.8%
16:00	**17:00**		25	16	2	6				1		**50**	11.0%
17:00	**17:15**		13	4		1						**18**	4.0%
17:15	**17:30**		8	3								**11**	2.4%
17:30	**17:45**		9	2		2				1		**14**	3.1%
17:45	**18:00**		5	7					1			**13**	2.9%
17:00	**18:00**		35	16		3			1	1		**56**	12.3%
18:00	**18:15**		6	3								**9**	2.0%
18:15	**18:30**		3	3								**6**	1.3%
18:30	**18:45**		1	1		1						**3**	0.7%
18:45	**19:00**		1	1		1						**3**	0.7%
18:00	**19:00**		11	8		2						**21**	4.6%
19:00	**19:15**		3	1				1				**5**	1.1%
19:15	**19:30**		6									**6**	1.3%
19:30	**19:45**		3	1								**4**	0.9%
19:45	**20:00**		2	1								**3**	0.7%
19:00	**20:00**		14	3				1				**18**	4.0%
20:00	**20:15**		2	3								**5**	1.1%
20:15	**20:30**		2									**2**	0.4%
20:30	**20:45**		3	2								**5**	1.1%
20:45	**21:00**		2	1		1						**4**	0.9%
20:00	**21:00**		9	6		1						**16**	3.5%
21:00	**21:15**		2	1								**3**	0.7%
21:15	**21:30**			1								**1**	0.2%
21:30	**21:45**		1									**1**	0.2%
21:45	**22:00**		3	1								**4**	0.9%
21:00	**22:00**		6	3								**9**	2.0%
22:00	**22:15**												
22:15	**22:30**		1	1								**2**	0.4%
22:30	**22:45**												
22:45	**23:00**												
22:00	**23:00**		1	1								**2**	0.4%
23:00	**23:15**												
23:15	**23:30**		1									**1**	0.2%
23:30	**23:45**		1									**1**	0.2%
23:45	**OO:OO**												
23:00	**OO:OO**		2									**2**	0.4%
Total		**2**	**255**	**138**	**9**	**37**	**6**	**2**	**2**	**3**	**1**	**455**	
		0.4%	56.0%	30.3%	2.0%	8.1%	1.3%	0.4%	0.4%	0.7%	0.2%		
AM PEAK			**8**	**5**	**2**	**3**	**2**	**1**		**1**	**1**	**10**	
period			10:00	6:30	7:45	7:15	6:30	8:30		8:30	8:45	6:30	
% of class			3.1%	3.6%	22.2%	8.1%	33.3%	50.0%		33.3%	100.0%		2.2%
PM PEAK		**1**	**13**	**7**	**2**	**3**	**1**	**1**	**1**	**1**		**20**	
period		12:45	17:00	15:30	16:15	12:45	12:30	19:00	13:45	16:15		15:30	
% of class		50.0%	5.1%	5.1%	22.2%	8.1%	16.7%	50.0%	50.0%	33.3%			4.4%

Report-1.3

Location : **CW22-87NS** **EIGHT LINE W - NORTH OF SIDEROAD 14**
Direction : **South** Road :
Dates : **05/17/2022**

Classes ---------->		Class-1	Class-2	Class-3	Class-4	Class-5	Class-6	Class-7	Class-8	Class-9	Class-10	Class-11	Class-12	Class-13	Total	
OO:OO	**0:15**															
0:15	**0:30**															
0:30	**0:45**															
0:45	**1:00**															
OO:OO	**1:00**															
1:00	**1:15**			1											**1**	0.3%
1:15	**1:30**															
1:30	**1:45**		1												**1**	0.3%
1:45	**2:00**															
1:00	**2:00**		1	1											**2**	0.5%
2:00	**2:15**															
2:15	**2:30**															
2:30	**2:45**															
2:45	**3:00**															
2:00	**3:00**															
3:00	**3:15**															
3:15	**3:30**															
3:30	**3:45**			2											**2**	0.5%
3:45	**4:00**		1												**1**	0.3%
3:00	**4:00**		1	2											**3**	0.8%
4:00	**4:15**					1									**1**	0.3%
4:15	**4:30**															
4:30	**4:45**		1												**1**	0.3%
4:45	**5:00**															
4:00	**5:00**		1			1									**2**	0.5%
5:00	**5:15**															
5:15	**5:30**		1												**1**	0.3%
5:30	**5:45**		2												**2**	0.5%
5:45	**6:00**		1	3		2									**6**	1.5%
5:00	**6:00**		4	3		2									**9**	2.3%
6:00	**6:15**		2	3											**5**	1.3%
6:15	**6:30**		1	3		2									**6**	1.5%
6:30	**6:45**		8	1		3									**12**	3.0%
6:45	**7:00**		2	6		2	1							1	**12**	3.0%
6:00	**7:00**		13	13		7	1							1	**35**	8.8%
7:00	**7:15**		3	2		2									**7**	1.8%
7:15	**7:30**		4	2	1	1									**8**	2.0%
7:30	**7:45**		7	4											**11**	2.8%
7:45	**8:00**		5	3		1									**9**	2.3%
7:00	**8:00**		19	11	1	4									**35**	8.8%
8:00	**8:15**		3	4	1										**8**	2.0%
8:15	**8:30**		5	3		1									**9**	2.3%
8:30	**8:45**		3	2	1	2									**8**	2.0%
8:45	**9:00**		5	2		2									**9**	2.3%
8:00	**9:00**		16	11	2	5									**34**	8.5%
9:00	**9:15**		3	5											**8**	2.0%
9:15	**9:30**		2	4		2								1	**9**	2.3%
9:30	**9:45**			1						1					**2**	0.5%
9:45	**10:00**		3	1		1									**5**	1.3%
9:00	**10:00**		8	11		3				1				1	**24**	6.0%
10:00	**10:15**		3	3											**6**	1.5%
10:15	**10:30**		1	3											**4**	1.0%
10:30	**10:45**		3	3		1									**7**	1.8%
10:45	**11:00**		1	4		1									**6**	1.5%
10:00	**11:00**		8	13		2									**23**	5.8%
11:00	**11:15**		3	2											**5**	1.3%
11:15	**11:30**		1	3		1									**5**	1.3%
11:30	**11:45**		5												**5**	1.3%
11:45	**12:00**		3	2		1									**6**	1.5%
11:00	**12:00**		12	7		2									**21**	5.3%

12:00	**12:15**	3	3											**6**	1.5%
12:15	**12:30**	5	1						1					**7**	1.8%
12:30	**12:45**	1	2		1									**4**	1.0%
12:45	**13:00**	3	2											**5**	1.3%
12:00	**13:00**	12	8		1				1					**22**	5.5%
13:00	**13:15**	5	1		1									**7**	1.8%
13:15	**13:30**	1	3											**4**	1.0%
13:30	**13:45**	3					1		1					**5**	1.3%
13:45	**14:00**	3	2											**5**	1.3%
13:00	**14:00**	12	6		1		1		1					**21**	5.3%
14:00	**14:15**	4			1									**5**	1.3%
14:15	**14:30**	1	3		2				1					**7**	1.8%
14:30	**14:45**	3	2											**5**	1.3%
14:45	**15:00**	2	2											**4**	1.0%
14:00	**15:00**	10	7		3				1					**21**	5.3%
15:00	**15:15**	5	3		1									**9**	2.3%
15:15	**15:30**	5	3			1								**9**	2.3%
15:30	**15:45**	2	2		1									**5**	1.3%
15:45	**16:00**	1		2										**3**	0.8%
15:00	**16:00**	13	8	2	2	1								**26**	6.5%
16:00	**16:15**	6	3	1										**10**	2.5%
16:15	**16:30**	2	3	1								1		**7**	1.8%
16:30	**16:45**	3	3											**6**	1.5%
16:45	**17:00**	6	7	1	1				1			1		**17**	4.3%
16:00	**17:00**	17	16	3	1				1			2		**40**	10.0%
17:00	**17:15**	5	2			1								**8**	2.0%
17:15	**17:30**	5	2		1									**8**	2.0%
17:30	**17:45**	3	2		1									**6**	1.5%
17:45	**18:00**	3	3											**6**	1.5%
17:00	**18:00**	16	9		2	1								**28**	7.0%
18:00	**18:15**	2	1											**3**	0.8%
18:15	**18:30**	2	2		1									**5**	1.3%
18:30	**18:45**		3											**3**	0.8%
18:45	**19:00**	1			1	1								**3**	0.8%
18:00	**19:00**	5	6		2	1								**14**	3.5%
19:00	**19:15**	4	2		1						1			**8**	2.0%
19:15	**19:30**	1	1											**2**	0.5%
19:30	**19:45**	2	1											**3**	0.8%
19:45	**20:00**	2	1											**3**	0.8%
19:00	**20:00**	9	5		1						1			**16**	4.0%
20:00	**20:15**	1												**1**	0.3%
20:15	**20:30**	2												**2**	0.5%
20:30	**20:45**		1											**1**	0.3%
20:45	**21:00**	1												**1**	0.3%
20:00	**21:00**	4	1											**5**	1.3%
21:00	**21:15**	1			1									**2**	0.5%
21:15	**21:30**														
21:30	**21:45**		1											**1**	0.3%
21:45	**22:00**	2												**2**	0.5%
21:00	**22:00**	3	1		1									**5**	1.3%
22:00	**22:15**	1			1									**2**	0.5%
22:15	**22:30**	1												**1**	0.3%
22:30	**22:45**	1												**1**	0.3%
22:45	**23:00**	1												**1**	0.3%
22:00	**23:00**	4			1									**5**	1.3%
23:00	**23:15**	4	1											**5**	1.3%
23:15	**23:30**	1												**1**	0.3%
23:30	**23:45**	2												**2**	0.5%
23:45	**OO:OO**	1												**1**	0.3%
23:00	**OO:OO**	8	1											**9**	2.3%
Total		**196**	**140**	**8**	**41**	**4**	**1**	**4**	**2**	**2**		**2**		**400**	
		49.0%	35.0%	2.0%	10.3%	1.0%	0.3%	1.0%	0.5%	0.5%		0.5%			
AM PEAK		**8**	**6**	**1**	**3**	**1**			**1**			**1**		**12**	
period		6:30	6:45	7:15	6:30	6:45			9:30			6:45		6:30	
% of class		4.1%	4.3%	12.5%	7.3%	25.0%			50.0%			50.0%			3.0%
PM PEAK		**6**	**7**	**2**	**2**	**1**	**1**	**1**	**1**	**1**				**17**	
period		16:00	16:45	15:45	14:15	15:15	13:30	12:15	19:00	16:15				16:45	
% of class		3.1%	5.0%	25.0%	4.9%	25.0%	100.0%	25.0%	50.0%	50.0%					4.3%

Report-1.4

Location : **CW22-87NS** **EIGHT LINE W - NORTH OF SIDEROAD 14**

Direction : **South** Road :

Dates : **05/18/2022**

Classes ---------->		Class-1	Class-2	Class-3	Class-4	Class-5	Class-6	Class-7	Class-8	Class-9	Class-10	Class-11	Class-12	Class-13	Total	
OO:OO	**0:15**															
0:15	**0:30**		1												**1**	0.3%
0:30	**0:45**															
0:45	**1:00**															
OO:OO	**1:00**		1												**1**	0.3%
1:00	**1:15**															
1:15	**1:30**															
1:30	**1:45**															
1:45	**2:00**															
1:00	**2:00**															
2:00	**2:15**															
2:15	**2:30**															
2:30	**2:45**															
2:45	**3:00**															
2:00	**3:00**															
3:00	**3:15**															
3:15	**3:30**															
3:30	**3:45**															
3:45	**4:00**		1												**1**	0.3%
3:00	**4:00**		1												**1**	0.3%
4:00	**4:15**					1									**1**	0.3%
4:15	**4:30**															
4:30	**4:45**															
4:45	**5:00**		3												**3**	0.8%
4:00	**5:00**		3			1									**4**	1.1%
5:00	**5:15**			2											**2**	0.5%
5:15	**5:30**															
5:30	**5:45**		3	1											**4**	1.1%
5:45	**6:00**		1	2											**3**	0.8%
5:00	**6:00**		4	5											**9**	2.4%
6:00	**6:15**		2	4											**6**	1.6%
6:15	**6:30**		3	2		2									**7**	1.8%
6:30	**6:45**		4	2		2									**8**	2.1%
6:45	**7:00**		3	8		1									**12**	3.2%
6:00	**7:00**		12	16		5									**33**	8.7%
7:00	**7:15**		3	1		1									**5**	1.3%
7:15	**7:30**		8	3	1	3									**15**	4.0%
7:30	**7:45**		5	1		1	1								**8**	2.1%
7:45	**8:00**		5	2											**7**	1.8%
7:00	**8:00**		21	7	1	5	1								**35**	9.2%
8:00	**8:15**		8		1				1						**10**	2.6%
8:15	**8:30**		3	3											**6**	1.6%
8:30	**8:45**		2	2		1	1								**6**	1.6%
8:45	**9:00**		3	2		2									**7**	1.8%
8:00	**9:00**		16	7	1	3	1		1						**29**	7.7%
9:00	**9:15**		1	2		2									**5**	1.3%
9:15	**9:30**		1	1	1	1									**4**	1.1%
9:30	**9:45**		3	3		1									**7**	1.8%
9:45	**10:00**		1	1		3					1				**6**	1.6%
9:00	**10:00**		6	7	1	7					1				**22**	5.8%
10:00	**10:15**		3	1											**4**	1.1%
10:15	**10:30**		3	1											**4**	1.1%
10:30	**10:45**		3	4		1									**8**	2.1%
10:45	**11:00**		7	2										1	**10**	2.6%
10:00	**11:00**		16	8		1								1	**26**	6.9%
11:00	**11:15**		1	2		4									**7**	1.8%
11:15	**11:30**			2											**2**	0.5%
11:30	**11:45**			3		2			1						**6**	1.6%
11:45	**12:00**		5	2		1	1								**9**	2.4%
11:00	**12:00**		6	9		7	1		1						**24**	6.3%

12:00	**12:15**	2	1											**3**	0.8%
12:15	**12:30**	1	2		1				1					**5**	1.3%
12:30	**12:45**	6			1									**7**	1.8%
12:45	**13:00**	3	3											**6**	1.6%
12:00	**13:00**	12	6		2				1					**21**	5.5%
13:00	**13:15**	3	1		1									**5**	1.3%
13:15	**13:30**	3	2			1		1						**7**	1.8%
13:30	**13:45**		4											**4**	1.1%
13:45	**14:00**	4	1											**5**	1.3%
13:00	**14:00**	10	8		1	1		1						**21**	5.5%
14:00	**14:15**	4	2											**6**	1.6%
14:15	**14:30**	3												**3**	0.8%
14:30	**14:45**	5	5		2									**12**	3.2%
14:45	**15:00**	2	1											**3**	0.8%
14:00	**15:00**	14	8		2									**24**	6.3%
15:00	**15:15**	5	2		2									**9**	2.4%
15:15	**15:30**	3	2											**5**	1.3%
15:30	**15:45**	1	2	1	1									**5**	1.3%
15:45	**16:00**	4		1	1									**6**	1.6%
15:00	**16:00**	13	6	2	4									**25**	6.6%
16:00	**16:15**	2	1	2	2									**7**	1.8%
16:15	**16:30**	4	2	1										**7**	1.8%
16:30	**16:45**	10	3		1	1		1						**16**	4.2%
16:45	**17:00**	4	1	1						1				**7**	1.8%
16:00	**17:00**	20	7	4	3	1		1		1				**37**	9.8%
17:00	**17:15**	2	2		1									**5**	1.3%
17:15	**17:30**	4	6		1	1								**12**	3.2%
17:30	**17:45**	1	3		2	1								**7**	1.8%
17:45	**18:00**	1												**1**	0.3%
17:00	**18:00**	8	11		4	2								**25**	6.6%
18:00	**18:15**	3	2			1								**6**	1.6%
18:15	**18:30**	1	1		1									**3**	0.8%
18:30	**18:45**	2	1		1									**4**	1.1%
18:45	**19:00**														
18:00	**19:00**	6	4		2	1								**13**	3.4%
19:00	**19:15**	2	1		1									**4**	1.1%
19:15	**19:30**	1	2											**3**	0.8%
19:30	**19:45**	2												**2**	0.5%
19:45	**20:00**	3	3											**6**	1.6%
19:00	**20:00**	8	6		1									**15**	4.0%
20:00	**20:15**														
20:15	**20:30**	2												**2**	0.5%
20:30	**20:45**	1			1									**2**	0.5%
20:45	**21:00**														
20:00	**21:00**	3			1									**4**	1.1%
21:00	**21:15**		1											**1**	0.3%
21:15	**21:30**		1											**1**	0.3%
21:30	**21:45**	1												**1**	0.3%
21:45	**22:00**	3												**3**	0.8%
21:00	**22:00**	4	2											**6**	1.6%
22:00	**22:15**	1	1											**2**	0.5%
22:15	**22:30**	1												**1**	0.3%
22:30	**22:45**														
22:45	**23:00**														
22:00	**23:00**	2	1											**3**	0.8%
23:00	**23:15**														
23:15	**23:30**														
23:30	**23:45**	1												**1**	0.3%
23:45	**OO:OO**														
23:00	**OO:OO**	1												**1**	0.3%
Total		**187**	**118**	**9**	**49**	**8**		**4**	**1**	**2**			**1**	**379**	
		49.3%	31.1%	2.4%	12.9%	2.1%		1.1%	0.3%	0.5%			0.3%		
AM PEAK		**8**	**8**	**1**	**4**	**1**		**1**		**1**			**1**	**15**	
period		7:15	6:45	7:15	11:00	7:30		8:00		9:45			10:45	7:15	
% of class		4.3%	6.8%	11.1%	8.2%	12.5%		25.0%		50.0%			100.0%		4.0%
PM PEAK		**10**	**6**	**2**	**2**	**1**		**1**	**1**	**1**				**16**	
period		16:30	17:15	16:00	14:30	13:15		13:15	12:15	16:45				16:30	
% of class		5.3%	5.1%	22.2%	4.1%	12.5%		25.0%	100.0%	50.0%					4.2%

Report-1.5

Location : **CW22-87NS** **EIGHT LINE W - NORTH OF SIDEROAD 14**
Direction : **North + South** Road :
Dates : **05/17/2022**

Classes ---------->		Class-1	Class-2	Class-3	Class-4	Class-5	Class-6	Class-7	Class-8	Class-9	Class-10	Class-11	Class-12	Class-13	Total	
OO:OO	**0:15**															
0:15	**0:30**															
0:30	**0:45**			1											**1**	0.1%
0:45	**1:00**															
OO:OO	**1:00**			1											**1**	0.1%
1:00	**1:15**			1											**1**	0.1%
1:15	**1:30**															
1:30	**1:45**		1												**1**	0.1%
1:45	**2:00**															
1:00	**2:00**		1	1											**2**	0.2%
2:00	**2:15**															
2:15	**2:30**		1												**1**	0.1%
2:30	**2:45**															
2:45	**3:00**															
2:00	**3:00**		1												**1**	0.1%
3:00	**3:15**															
3:15	**3:30**															
3:30	**3:45**			2											**2**	0.2%
3:45	**4:00**		1												**1**	0.1%
3:00	**4:00**		1	2											**3**	0.4%
4:00	**4:15**					1									**1**	0.1%
4:15	**4:30**															
4:30	**4:45**		1												**1**	0.1%
4:45	**5:00**			1											**1**	0.1%
4:00	**5:00**		1	1		1									**3**	0.4%
5:00	**5:15**															
5:15	**5:30**		1												**1**	0.1%
5:30	**5:45**		2												**2**	0.2%
5:45	**6:00**		3	3		2	1								**9**	1.1%
5:00	**6:00**		6	3		2	1								**12**	1.4%
6:00	**6:15**		3	4											**7**	0.8%
6:15	**6:30**		1	3		2									**6**	0.7%
6:30	**6:45**		9	4		3									**16**	1.9%
6:45	**7:00**		2	6		2	1							1	**12**	1.4%
6:00	**7:00**		15	17		7	1							1	**41**	4.9%
7:00	**7:15**		6	2		2									**10**	1.2%
7:15	**7:30**		7	2	1	1									**11**	1.3%
7:30	**7:45**		10	5	1	1			1						**18**	2.2%
7:45	**8:00**		8	6	1	1									**16**	1.9%
7:00	**8:00**		31	15	3	5			1						**55**	6.6%
8:00	**8:15**		3	5	1										**9**	1.1%
8:15	**8:30**		8	4		2									**14**	1.7%
8:30	**8:45**		6	3	1	2									**12**	1.4%
8:45	**9:00**		7	2		4	1								**14**	1.7%
8:00	**9:00**		24	14	2	8	1								**49**	5.9%
9:00	**9:15**		4	9											**13**	1.6%
9:15	**9:30**		5	6		3	1							1	**16**	1.9%
9:30	**9:45**		2	5						1					**8**	1.0%
9:45	**10:00**		3	3		2									**8**	1.0%
9:00	**10:00**		14	23		5	1			1				1	**45**	5.4%
10:00	**10:15**		5	4	1										**10**	1.2%
10:15	**10:30**		3	5											**8**	1.0%
10:30	**10:45**		8	4		1									**13**	1.6%
10:45	**11:00**		3	4		1	3								**11**	1.3%
10:00	**11:00**		19	17	1	2	3								**42**	5.1%
11:00	**11:15**		6	3		1									**10**	1.2%
11:15	**11:30**		10	3		2									**15**	1.8%
11:30	**11:45**		8	2			1								**11**	1.3%
11:45	**12:00**		6	3		1									**10**	1.2%
11:00	**12:00**		30	11		4	1								**46**	5.5%

12:00	**12:15**	5	4			1								**10**	1.2%
12:15	**12:30**	10	6		1			1						**18**	2.2%
12:30	**12:45**	5	3		1	1								**10**	1.2%
12:45	**13:00**	6	2											**8**	1.0%
12:00	**13:00**	26	15		2	2		1						**46**	5.5%
13:00	**13:15**	10	1		2									**13**	1.6%
13:15	**13:30**	2	4											**6**	0.7%
13:30	**13:45**	9	2		2		1	1						**15**	1.8%
13:45	**14:00**	5	3		2									**10**	1.2%
13:00	**14:00**	26	10		6		1	1						**44**	5.3%
14:00	**14:15**	9	3		2	1	1	1						**17**	2.1%
14:15	**14:30**	8	4	1	3			1						**17**	2.1%
14:30	**14:45**	11	3											**14**	1.7%
14:45	**15:00**	10	3											**13**	1.6%
14:00	**15:00**	38	13	1	5	1	1	2						**61**	7.4%
15:00	**15:15**	8	5		2	1								**16**	1.9%
15:15	**15:30**	10	6			1	1	1						**19**	2.3%
15:30	**15:45**	8	5		1									**14**	1.7%
15:45	**16:00**	15	5	3										**23**	2.8%
15:00	**16:00**	41	21	3	3	2	1	1						**72**	8.7%
16:00	**16:15**	12	8	1	2									**23**	2.8%
16:15	**16:30**	8	7	2	3					1				**21**	2.5%
16:30	**16:45**	16	9		1									**26**	3.1%
16:45	**17:00**	16	10	1	2			1		1				**31**	3.7%
16:00	**17:00**	52	34	4	8			1		2				**101**	12.2%
17:00	**17:15**	10	9		1	2								**22**	2.7%
17:15	**17:30**	9	4		1									**14**	1.7%
17:30	**17:45**	10	5		1									**16**	1.9%
17:45	**18:00**	13	5		1									**19**	2.3%
17:00	**18:00**	42	23		4	2								**71**	8.6%
18:00	**18:15**	7	7		1									**15**	1.8%
18:15	**18:30**	6	6		2									**14**	1.7%
18:30	**18:45**	2	6		1									**9**	1.1%
18:45	**19:00**	5	1		1	1								**8**	1.0%
18:00	**19:00**	20	20		5	1								**46**	5.5%
19:00	**19:15**	10	4		2				1					**17**	2.1%
19:15	**19:30**	4	2											**6**	0.7%
19:30	**19:45**	6	2											**8**	1.0%
19:45	**20:00**	5	1		1									**7**	0.8%
19:00	**20:00**	25	9		3				1					**38**	4.6%
20:00	**20:15**	3	1											**4**	0.5%
20:15	**20:30**	2	1											**3**	0.4%
20:30	**20:45**	1	1		1									**3**	0.4%
20:45	**21:00**	4	2		2									**8**	1.0%
20:00	**21:00**	10	5		3									**18**	2.2%
21:00	**21:15**	2	3		1									**6**	0.7%
21:15	**21:30**														
21:30	**21:45**	3	1											**4**	0.5%
21:45	**22:00**	3			1									**4**	0.5%
21:00	**22:00**	8	4		2									**14**	1.7%
22:00	**22:15**	2			1									**3**	0.4%
22:15	**22:30**	2												**2**	0.2%
22:30	**22:45**	1												**1**	0.1%
22:45	**23:00**	1	1											**2**	0.2%
22:00	**23:00**	6	1		1									**8**	1.0%
23:00	**23:15**	4	1											**5**	0.6%
23:15	**23:30**	2												**2**	0.2%
23:30	**23:45**	2												**2**	0.2%
23:45	**OO:OO**	1												**1**	0.1%
23:00	**OO:OO**	9	1											**10**	1.2%
Total		**446**	**261**	**14**	**76**	**16**	**3**	**7**	**2**	**2**		**2**		**829**	
		53.8%	31.5%	1.7%	9.2%	1.9%	0.4%	0.8%	0.2%	0.2%		0.2%			
AM PEAK		**10**	**9**	**1**	**4**	**3**		**1**	**1**			**1**		**18**	
period		7:30	9:00	7:15	8:45	10:45		7:30	9:30			6:45		7:30	
% of class		2.2%	3.4%	7.1%	5.3%	18.8%		14.3%	50.0%			50.0%			2.2%
PM PEAK		**16**	**10**	**3**	**3**	**2**	**1**	**1**	**1**	**1**				**31**	
period		16:30	16:45	15:45	14:15	17:00	13:30	12:15	19:00	16:15				16:45	
% of class		3.6%	3.8%	21.4%	3.9%	12.5%	33.3%	14.3%	50.0%	50.0%					3.7%

Report-1.6

Location : **CW22-87NS** **EIGHT LINE W - NORTH OF SIDEROAD 14**

Direction : **North + South** Road :

Dates : **05/18/2022**

Classes ---------->		Class-1	Class-2	Class-3	Class-4	Class-5	Class-6	Class-7	Class-8	Class-9	Class-10	Class-11	Class-12	Class-13	Total	
OO:OO	**0:15**															
0:15	**0:30**		1												**1**	0.1%
0:30	**0:45**		1	1											**2**	0.2%
0:45	**1:00**															
OO:OO	**1:00**		2	1											**3**	0.4%
1:00	**1:15**			1											**1**	0.1%
1:15	**1:30**															
1:30	**1:45**															
1:45	**2:00**															
1:00	**2:00**			1											**1**	0.1%
2:00	**2:15**															
2:15	**2:30**															
2:30	**2:45**															
2:45	**3:00**		1												**1**	0.1%
2:00	**3:00**		1												**1**	0.1%
3:00	**3:15**															
3:15	**3:30**															
3:30	**3:45**															
3:45	**4:00**		1												**1**	0.1%
3:00	**4:00**		1												**1**	0.1%
4:00	**4:15**					1									**1**	0.1%
4:15	**4:30**															
4:30	**4:45**		1												**1**	0.1%
4:45	**5:00**		3	1											**4**	0.5%
4:00	**5:00**		4	1		1									**6**	0.7%
5:00	**5:15**			2											**2**	0.2%
5:15	**5:30**		1												**1**	0.1%
5:30	**5:45**		4	2											**6**	0.7%
5:45	**6:00**		1	2											**3**	0.4%
5:00	**6:00**		6	6											**12**	1.4%
6:00	**6:15**		3	5											**8**	1.0%
6:15	**6:30**		4	3		2									**9**	1.1%
6:30	**6:45**		4	7	1	4	2								**18**	2.2%
6:45	**7:00**		4	9		2									**15**	1.8%
6:00	**7:00**		15	24	1	8	2								**50**	6.0%
7:00	**7:15**		4	1		1									**6**	0.7%
7:15	**7:30**		11	4	1	6									**22**	2.6%
7:30	**7:45**		8	2	1	1	1								**13**	1.6%
7:45	**8:00**		6	3	2	1									**12**	1.4%
7:00	**8:00**		29	10	4	9	1								**53**	6.4%
8:00	**8:15**		10	4	1	1			1						**17**	2.0%
8:15	**8:30**		5	3											**8**	1.0%
8:30	**8:45**		3	4		4	1	1			1				**14**	1.7%
8:45	**9:00**		5	3		3								1	**12**	1.4%
8:00	**9:00**		23	14	1	8	1	1	1		1			1	**51**	6.1%
9:00	**9:15**		2	3		3									**8**	1.0%
9:15	**9:30**		6	2	2	1									**11**	1.3%
9:30	**9:45**		5	5		2									**12**	1.4%
9:45	**10:00**		4	1		3					1				**9**	1.1%
9:00	**10:00**		17	11	2	9					1				**40**	4.8%
10:00	**10:15**		11	1		1									**13**	1.6%
10:15	**10:30**		5	5		2									**12**	1.4%
10:30	**10:45**		3	4		1									**8**	1.0%
10:45	**11:00**		9	4										1	**14**	1.7%
10:00	**11:00**		28	14		4								1	**47**	5.6%
11:00	**11:15**		4	3		4	1								**12**	1.4%
11:15	**11:30**		5	4		1									**10**	1.2%
11:30	**11:45**		4	5		2			1						**12**	1.4%
11:45	**12:00**		8	6		1	1								**16**	1.9%
11:00	**12:00**		21	18		8	2		1						**50**	6.0%

12:00	**12:15**		10	2		1								**13**	1.6%
12:15	**12:30**		8	5		1				1				**15**	1.8%
12:30	**12:45**		10	4		1	1							**16**	1.9%
12:45	**13:00**	1	5	3		3								**12**	1.4%
12:00	**13:00**	1	33	14		6	1			1				**56**	6.7%
13:00	**13:15**		6	1		1								**8**	1.0%
13:15	**13:30**		10	2			1		1					**14**	1.7%
13:30	**13:45**		4	6										**10**	1.2%
13:45	**14:00**		6	4					1					**11**	1.3%
13:00	**14:00**		26	13		1	1		2					**43**	5.2%
14:00	**14:15**		6	5										**11**	1.3%
14:15	**14:30**	1	8	1			1							**11**	1.3%
14:30	**14:45**		13	8		2								**23**	2.8%
14:45	**15:00**		8	2			1							**11**	1.3%
14:00	**15:00**	1	35	16		2	2							**56**	6.7%
15:00	**15:15**		10	8	1	3								**22**	2.6%
15:15	**15:30**		10	7		1								**18**	2.2%
15:30	**15:45**		13	9	1	2								**25**	3.0%
15:45	**16:00**		13	5	2	1								**21**	2.5%
15:00	**16:00**		46	29	4	7								**86**	10.3%
16:00	**16:15**		10	8	2	3								**23**	2.8%
16:15	**16:30**		13	6	3	3						1		**26**	3.1%
16:30	**16:45**		13	5		3	1		1					**23**	2.8%
16:45	**17:00**		9	4	1							1		**15**	1.8%
16:00	**17:00**		45	23	6	9	1		1			2		**87**	10.4%
17:00	**17:15**		15	6		2								**23**	2.8%
17:15	**17:30**		12	9		1	1							**23**	2.8%
17:30	**17:45**		10	5		4	1					1		**21**	2.5%
17:45	**18:00**		6	7					1					**14**	1.7%
17:00	**18:00**		43	27		7	2		1			1		**81**	9.7%
18:00	**18:15**		9	5			1							**15**	1.8%
18:15	**18:30**		4	4		1								**9**	1.1%
18:30	**18:45**		3	2		2								**7**	0.8%
18:45	**19:00**		1	1		1								**3**	0.4%
18:00	**19:00**		17	12		4	1							**34**	4.1%
19:00	**19:15**		5	2		1		1						**9**	1.1%
19:15	**19:30**		7	2										**9**	1.1%
19:30	**19:45**		5	1										**6**	0.7%
19:45	**20:00**		5	4										**9**	1.1%
19:00	**20:00**		22	9		1		1						**33**	4.0%
20:00	**20:15**		2	3										**5**	0.6%
20:15	**20:30**		4											**4**	0.5%
20:30	**20:45**		4	2		1								**7**	0.8%
20:45	**21:00**		2	1		1								**4**	0.5%
20:00	**21:00**		12	6		2								**20**	2.4%
21:00	**21:15**		2	2										**4**	0.5%
21:15	**21:30**			2										**2**	0.2%
21:30	**21:45**		2											**2**	0.2%
21:45	**22:00**		6	1										**7**	0.8%
21:00	**22:00**		10	5										**15**	1.8%
22:00	**22:15**		1	1										**2**	0.2%
22:15	**22:30**		2	1										**3**	0.4%
22:30	**22:45**														
22:45	**23:00**														
22:00	**23:00**		3	2										**5**	0.6%
23:00	**23:15**														
23:15	**23:30**		1											**1**	0.1%
23:30	**23:45**		2											**2**	0.2%
23:45	**OO:OO**														
23:00	**OO:OO**		3											**3**	0.4%
Total		**2**	**442**	**256**	**18**	**86**	**14**	**2**	**6**	**1**	**5**		**2**	**834**	
		0.2%	53.0%	30.7%	2.2%	10.3%	1.7%	0.2%	0.7%	0.1%	0.6%		0.2%		
AM PEAK			**11**	**9**	**2**	**6**	**2**	**1**	**1**		**1**		**1**	**22**	
period			7:15	6:45	7:45	7:15	6:30	8:30	8:00		8:30		8:45	7:15	
% of class			2.5%	3.5%	11.1%	7.0%	14.3%	50.0%	16.7%		20.0%		50.0%		2.6%
PM PEAK		**1**	**15**	**9**	**3**	**4**	**1**	**1**	**1**	**1**	**1**			**26**	
period		12:45	17:00	15:30	16:15	17:30	12:30	19:00	13:15	12:15	16:15			16:15	
% of class		50.0%	3.4%	3.5%	16.7%	4.7%	7.1%	50.0%	16.7%	100.0%	20.0%				3.1%

Report-2.1

Location : **CW22-87NS** **EIGHT LINE W - NORTH OF SIDEROAD 14**

Direction : **North** Road :

Dates : 05/17/2022

Speeds,km/h ------->		11	21	31	41	51	61	71	81	91	101	111	121	131	140	Total	Pace Speed	Number in Pace
OO:OO	0:15																	
0:15	0:30																	
0:30	0:45						1									1	34.1-54.1	1
0:45	1:00																	
OO:OO	1:00						1									1	34.1-54.1	
1:00	1:15																	
1:15	1:30																	
1:30	1:45																	
1:45	2:00																	
1:00	2:00																	
2:00	2:15																	
2:15	2:30					1										1	28.3-48.3	1
2:30	2:45																	
2:45	3:00																	
2:00	3:00					1										1	28.3-48.3	
3:00	3:15																	
3:15	3:30																	
3:30	3:45																	
3:45	4:00																	
3:00	4:00																	
4:00	4:15																	
4:15	4:30																	
4:30	4:45																	
4:45	5:00										1					1	71.3-91.3	1
4:00	5:00										1					1	71.3-91.3	
5:00	5:15																	
5:15	5:30																	
5:30	5:45																	
5:45	6:00								1	1	1					3	65.5-85.5	2
5:00	6:00								1	1	1					3	65.5-85.5	
6:00	6:15				1						1					2	14.0-34.0	1
6:15	6:30																	
6:30	6:45									3	1					4	75.9-95.9	4
6:45	7:00																	
6:00	7:00				1					3	2					4	75.9-95.9	
7:00	7:15									3						3	67.4-87.4	3
7:15	7:30						1				2					3	76.5-96.5	2
7:30	7:45							2	2	3						7	63.2-83.2	5
7:45	8:00					1		1	1	3	1					7	75.8-95.8	5
7:00	8:00					1	1	3	3	9	3					3	76.5-96.5	
8:00	8:15									1						1	62.8-82.8	1
8:15	8:30								2	3						5	69.4-89.4	5
8:30	8:45							1	1		1	1				4	54.5-74.5	2
8:45	9:00				1				1		2	1				5	84.6-104.6	3
8:00	9:00				1			1	4	4	3	2				5	84.6-104.6	
9:00	9:15				1					1	3					5	73.3-93.3	4
9:15	9:30				1			1	3	1	1					7	60.4-80.4	4
9:30	9:45				1			1	1	1	2					6	78.7-98.7	4
9:45	10:00									2	1					3	72.8-92.8	3
9:00	10:00				3			2	4	5	7					6	78.7-98.7	
10:00	10:15				1			2	1							4	59.2-79.2	3
10:15	10:30								2	2						4	66.0-86.0	4
10:30	10:45							3	1	2						6	51.4-71.4	4
10:45	11:00			2	1				1	1						5	19.6-39.6	3
10:00	11:00			2	2			5	5	5						4	66.0-86.0	
11:00	11:15							2	1	1	1					5	67.3-87.3	4
11:15	11:30				1			3	2	4						10	61.8-81.8	7
11:30	11:45				1		1		2	2						6	66.9-86.9	4
11:45	12:00								1	1	2					4	76.0-96.0	3
11:00	12:00				2		1	5	6	8	3					4	76.0-96.0	

12:00	**12:15**		1			1		1	1					**4**	75.3-95.3	2
12:15	**12:30**					1	2	5	3					**11**	76.6-96.6	10
12:30	**12:45**					1	4	1						**6**	60.1-80.1	5
12:45	**13:00**							2	1					**3**	72.9-92.9	3
12:00	**13:00**		1			3	6	9	5					**11**	76.6-96.6	
13:00	**13:15**					1	2	1	2					**6**	74.9-94.9	4
13:15	**13:30**							1		1				**2**	83.8-103.8	2
13:30	**13:45**					2	2	2	3	1				**10**	84.9-104.9	6
13:45	**14:00**					1	3		1					**5**	57.9-77.9	4
13:00	**14:00**					4	7	4	6	2				**10**	84.9-104.9	
14:00	**14:15**		2		2	1	4	2	1					**12**	70.3-90.3	7
14:15	**14:30**				1		4	3	2					**10**	63.8-83.8	7
14:30	**14:45**					1	2	2	2	2				**9**	79.2-99.2	6
14:45	**15:00**					1	2	4	1		1			**9**	68.4-88.4	6
14:00	**15:00**		2		3	3	12	11	6	2	1			**9**	79.2-99.2	
15:00	**15:15**				1			3	2	1				**7**	79.5-99.5	5
15:15	**15:30**			1			3	2	3	1				**10**	72.9-92.9	6
15:30	**15:45**		1	1		2	2	1	2					**9**	58.1-78.1	4
15:45	**16:00**					3	4	7	4	1	1			**20**	73.2-93.2	13
15:00	**16:00**		1	2	1	5	9	13	11	3	1			**7**	79.5-99.5	
16:00	**16:15**						3	1	3	5	1			**13**	95.0-115.0	9
16:15	**16:30**					2	3	3	5		1			**14**	77.3-97.3	8
16:30	**16:45**		1	1	1	3	5	5	4					**20**	71.9-91.9	12
16:45	**17:00**				1		4	6	2		1			**14**	70.7-90.7	10
16:00	**17:00**		1	1	2	5	15	15	14	5	3			**13**	95.0-115.0	
17:00	**17:15**				1		1	3	5	3		1		**14**	84.6-104.6	10
17:15	**17:30**					1	1	3	1					**6**	68.0-88.0	5
17:30	**17:45**					2	1	4	2	1				**10**	69.7-89.7	7
17:45	**18:00**					1	2	5	4	1				**13**	74.2-94.2	10
17:00	**18:00**				1	4	5	15	12	5		1		**14**	84.6-104.6	
18:00	**18:15**			1			2	5	4					**12**	75.2-95.2	10
18:15	**18:30**						2	6		1				**9**	71.0-91.0	8
18:30	**18:45**						1	2	1	1		1		**6**	86.5-106.5	4
18:45	**19:00**						1	1	3					**5**	75.2-95.2	4
18:00	**19:00**			1			6	14	8	2		1		**6**	86.5-106.5	
19:00	**19:15**							3	6					**9**	80.7-100.7	9
19:15	**19:30**					1			2		1			**4**	74.9-94.9	2
19:30	**19:45**						2	2	1					**5**	70.7-90.7	4
19:45	**20:00**			1			1		1		1			**4**	73.4-93.4	2
19:00	**20:00**			1		1	3	5	10		2			**9**	80.7-100.7	
20:00	**20:15**					1		1	1					**3**	65.6-85.6	2
20:15	**20:30**								1					**1**	77.3-97.3	1
20:30	**20:45**					1		1						**2**	46.7-66.7	1
20:45	**21:00**	1					2	4						**7**	67.0-87.0	6
20:00	**21:00**	1				2	2	6	2					**1**	77.3-97.3	
21:00	**21:15**							3	1					**4**	78.1-98.1	4
21:15	**21:30**															
21:30	**21:45**						1	1			1			**3**	66.3-86.3	2
21:45	**22:00**							2						**2**	63.7-83.7	2
21:00	**22:00**						1	6	1		1			**4**	78.1-98.1	
22:00	**22:15**	1												**1**	5.5-25.5	1
22:15	**22:30**								1					**1**	76.5-96.5	1
22:30	**22:45**															
22:45	**23:00**							1						**1**	64.8-84.8	1
22:00	**23:00**	1						1	1					**1**	76.5-96.5	
23:00	**23:15**															
23:15	**23:30**					1								**1**	45.6-65.6	1
23:30	**23:45**															
23:45	**OO:OO**															
23:00	**OO:OO**					1								**1**	45.6-65.6	
Total		**4**	**14**	**7**	**10**	**44**	**89**	**134**	**96**	**21**	**8**	**2**		**429**		
		0.9%	3.3%	1.6%	2.3%	10.3%	20.7%	31.2%	22.4%	4.9%	1.9%	0.5%				
AM PEAK		**2**	**1**	**1**	**1**	**3**	**3**	**4**	**3**	**1**				**10**		
period		10:45	6:00	2:15	0:30	10:30	9:15	11:15	9:00	8:30			11:15			
% of class		50.0%	7.1%	14.3%	10.0%	6.8%	3.4%	3.0%	3.1%	4.8%					2.3%	
PM PEAK		**1**	**2**	**1**	**2**	**3**	**5**	**7**	**6**	**5**	**1**	**1**		**20**		
period		20:45	14:00	15:15	14:00	15:45	16:30	15:45	19:00	16:00	14:45	17:00	15:45			
% of class		25.0%	14.3%	14.3%	20.0%	6.8%	5.6%	5.2%	6.3%	23.8%	12.5%	50.0%			4.7%	

15% Percentile :	**68**	KPH
50% Percentile :	**84**	KPH
85% Percentile :	**98**	KPH
95% Percentile :	**106**	KPH

20 KPH Pace Speed:	**77.5-97.5**	KPH
Number in Pace:	**250**	
Percent in Pace:	**58.3**	%
Number of Vehicles >80 KPH:	**270**	
Percent of Vehicles >80 KPH:	**62.9**	%
Mean Speed(average):	**82**	KPH

Report-2.2		Location :	CW22-87NS	EIGHT LINE W - NORTH OF SIDEROAD 14															
		Direction :	North	Road :															
		Dates :	05/18/2022																
			11	21	31	41	51	61	71	81	91	101	111	121	131			Pace	Number
Speeds,km/h ------->		11	21	31	41	51	61	71	81	91	101	111	121	131	140		Total	Speed	in Pace
00:00	0:15																		
0:15	0:30																		
0:30	0:45								1		1						2	72.6-92.6	2
0:45	1:00																		
00:00	1:00								1		1						2	72.6-92.6	
1:00	1:15								1								1	58.2-78.2	1
1:15	1:30																		
1:30	1:45																		
1:45	2:00																		
1:00	2:00								1								1	58.2-78.2	
2:00	2:15																		
2:15	2:30																		
2:30	2:45																		
2:45	3:00					1											1	28.0-48.0	1
2:00	3:00					1											1	28.0-48.0	
3:00	3:15																		
3:15	3:30																		
3:30	3:45																		
3:45	4:00																		
3:00	4:00																		
4:00	4:15																		
4:15	4:30																		
4:30	4:45										1						1	79.9-99.9	1
4:45	5:00										1						1	77.0-97.0	1
4:00	5:00										2						1	79.9-99.9	
5:00	5:15																		
5:15	5:30									1							1	70.6-90.6	1
5:30	5:45									2							2	65.7-85.7	2
5:45	6:00																		
5:00	6:00									3							1	70.6-90.6	
6:00	6:15				1								1				2	16.1-36.1	1
6:15	6:30									1	1						2	74.7-94.7	2
6:30	6:45			1				2	1	2	3		1				10	75.8-95.8	5
6:45	7:00							1		1	1						3	71.5-91.5	2
6:00	7:00			1	1			3	1	4	5		2				10	75.8-95.8	
7:00	7:15									1							1	67.5-87.5	1
7:15	7:30								1	2	4						7	80.8-100.8	6
7:30	7:45							1	3	1							5	61.4-81.4	5
7:45	8:00							1	1		2	1					5	82.4-102.4	3
7:00	8:00							2	5	4	6	1					5	82.4-102.4	
8:00	8:15					1			3	1	1	1					7	72.4-92.4	5
8:15	8:30										1	1					2	81.2-101.2	2
8:30	8:45								4	2	1	1					8	68.2-88.2	6
8:45	9:00						1	2	1		1						5	49.7-69.7	3
8:00	9:00					1	1	2	8	3	4	3					2	81.2-101.2	
9:00	9:15							1	1	1							3	68.0-88.0	3
9:15	9:30						1		2	2	1		1				7	72.4-92.4	5
9:30	9:45							1	2	2							5	66.2-86.2	5
9:45	10:00								1	1	1						3	68.3-88.3	2
9:00	10:00						1	2	6	6	2		1				7	72.4-92.4	
10:00	10:15							3	3	3							9	61.0-81.0	6
10:15	10:30						2	2	3		1						8	53.4-73.4	5
10:30	10:45																		
10:45	11:00							1				3					4	90.1-110.1	3
10:00	11:00						2	6	6	3	1	3					4	90.1-110.1	
11:00	11:15				1		2				1	1					5	31.8-51.8	2
11:15	11:30							2	2	1	3						8	63.1-83.1	5
11:30	11:45							2	2		1	1					6	61.0-81.0	4
11:45	12:00								2	5							7	69.9-89.9	7
11:00	12:00				1		2	4	6	6	5	2					7	69.9-89.9	

12:00	**12:15**					1		1	4	3	1					**10**	69.2-89.2	8
12:15	**12:30**					1		1	4	4						**10**	65.7-85.7	9
12:30	**12:45**					1		5		2	1					**9**	61.3-81.3	6
12:45	**13:00**			1				1	2	1				1		**6**	63.5-83.5	4
12:00	**13:00**			1	3			8	10	10	2			1		**10**	69.2-89.2	
13:00	**13:15**								2	1						**3**	70.1-90.1	3
13:15	**13:30**			1				2	1	3						**7**	62.7-82.7	5
13:30	**13:45**							3	1	1		1				**6**	61.6-81.6	5
13:45	**14:00**								2	3	1					**6**	72.7-92.7	6
13:00	**14:00**			1				5	6	8	1	1				**6**	72.7-92.7	
14:00	**14:15**				1					2	1		1			**5**	74.2-94.2	3
14:15	**14:30**	1		1					3	1	2					**8**	68.1-88.1	4
14:30	**14:45**				1				2	3	3	2				**11**	82.2-102.2	8
14:45	**15:00**		1	1						3	2	1				**8**	76.3-96.3	5
14:00	**15:00**	1	1	2	2				5	9	8	3	1			**11**	82.2-102.2	
15:00	**15:15**							1	3	8	1					**13**	69.9-89.9	11
15:15	**15:30**						1	2	2	6	1	1				**13**	75.8-95.8	9
15:30	**15:45**					1	1	2	4	8	2		2			**20**	64.8-84.8	13
15:45	**16:00**								4	3	5	3				**15**	82.4-102.4	10
15:00	**16:00**					1	2	5	13	25	9	4	2			**15**	82.4-102.4	
16:00	**16:15**					1			2	7	5	1				**16**	78.3-98.3	14
16:15	**16:30**			1					8	5	2	3				**19**	73.0-93.0	15
16:30	**16:45**							1		3	2	1				**7**	73.4-93.4	5
16:45	**17:00**			1					1	3	2	1				**8**	71.2-91.2	5
16:00	**17:00**			2	1			1	11	18	11	6				**16**	78.3-98.3	
17:00	**17:15**						1	2	1	3	8	3				**18**	84.7-104.7	12
17:15	**17:30**							1	2	4	3	1				**11**	76.3-96.3	9
17:30	**17:45**						1		2	6	2	3				**14**	84.9-104.9	10
17:45	**18:00**								2	3	5	2		1		**13**	87.7-107.7	10
17:00	**18:00**						2	3	7	16	18	9		1		**13**	87.7-107.7	
18:00	**18:15**							1	4	2	2					**9**	64.5-84.5	7
18:15	**18:30**								2	3	1					**6**	70.4-90.4	5
18:30	**18:45**								1	1			1			**3**	62.2-82.2	2
18:45	**19:00**								1	1	1					**3**	72.5-92.5	3
18:00	**19:00**							1	8	7	4		1			**3**	72.5-92.5	
19:00	**19:15**									3	1	1				**5**	81.7-101.7	5
19:15	**19:30**							1		3	1	1				**6**	65.6-85.6	4
19:30	**19:45**								2	1	1					**4**	69.2-89.2	3
19:45	**20:00**								1	2						**3**	69.8-89.8	3
19:00	**20:00**							1	3	9	3	2				**5**	81.7-101.7	
20:00	**20:15**							1		2	2					**5**	78.9-98.9	4
20:15	**20:30**					1	1									**2**	32.8-52.8	2
20:30	**20:45**								2	1	1	1				**5**	62.0-82.0	3
20:45	**21:00**							1		1	2					**4**	79.3-99.3	3
20:00	**21:00**					1	1	2	2	4	5	1				**4**	79.3-99.3	
21:00	**21:15**								1	1	1					**3**	61.5-81.5	2
21:15	**21:30**					1										**1**	30.4-50.4	1
21:30	**21:45**											1				**1**	88.9-108.9	1
21:45	**22:00**										3					**4**	77.4-97.4	3
21:00	**22:00**					1			1	1	4	1				**1**	88.9-108.9	
22:00	**22:15**																	
22:15	**22:30**										2					**2**	80.2-100.2	2
22:30	**22:45**																	
22:45	**23:00**																	
22:00	**23:00**										2					**2**	80.2-100.2	
23:00	**23:15**																	
23:15	**23:30**											1				**1**	84.8-104.8	1
23:30	**23:45**									1						**1**	68.5-88.5	1
23:45	**OO:OO**																	
23:00	**OO:OO**									1		1				**1**	84.8-104.8	
Total		**1**	**2**	**8**	**11**	**11**	**45**	**100**	**137**	**93**	**37**	**7**	**2**			**455**		
		0.2%	0.4%	1.8%	2.4%	2.4%	9.9%	22.0%	30.1%	20.4%	8.1%	1.5%	0.4%					
AM PEAK			**1**	**1**	**1**	**2**	**3**	**4**	**5**	**4**	**3**	**1**				**10**		
period			6:30	6:00	2:45	10:15	10:00	8:30	11:45	7:15	10:45	6:00			6:30			
% of class			50.0%	12.5%	9.1%	18.2%	6.7%	4.0%	3.6%	4.3%	8.1%	14.3%					2.2%	
PM PEAK		**1**	**1**	**1**	**1**	**1**	**5**	**8**	**8**	**8**	**3**	**2**	**1**			**20**		
period		14:15	14:45	12:45	12:00	15:15	12:30	16:15	15:00	17:00	15:45	15:30	12:45		15:30			
% of class		100.0%	50.0%	12.5%	9.1%	9.1%	11.1%	8.0%	5.8%	8.6%	8.1%	28.6%	50.0%				4.4%	

15% Percentile :	**69**	KPH
50% Percentile :	**85**	KPH
85% Percentile :	**99**	KPH
95% Percentile :	**108**	KPH

20 KPH Pace Speed:	**74.9-94.9**	KPH
Number in Pace:	**247**	
Percent in Pace:	**54.3**	%
Number of Vehicles >80 KPH:	**286**	
Percent of Vehicles >80 KPH:	**62.9**	%
Mean Speed(average):	**83**	KPH

Report-2.3		Location :	CW22-87NS	EIGHT LINE W - NORTH OF SIDEROAD 14															
		Direction :	South	Road :															
		Dates :	05/17/2022																
			11	21	31	41	51	61	71	81	91	101	111	121	131			Pace	Number
Speeds,km/h ------->			11	21	31	41	51	61	71	81	91	101	111	121	131	140	Total	Speed	in Pace
00:00	0:15																		
0:15	0:30																		
0:30	0:45																		
0:45	1:00																		
00:00	1:00																		
1:00	1:15										1						1	66.3-86.3	1
1:15	1:30																		
1:30	1:45												1				1	86.7-106.7	1
1:45	2:00																		
1:00	2:00										1		1				1	86.7-106.7	
2:00	2:15																		
2:15	2:30																		
2:30	2:45																		
2:45	3:00																		
2:00	3:00																		
3:00	3:15																		
3:15	3:30																		
3:30	3:45												1	1			2	98.2-118.2	2
3:45	4:00										1						1	66.7-86.7	1
3:00	4:00										1		1	1			2	98.2-118.2	
4:00	4:15										1						1	66.2-86.2	1
4:15	4:30																		
4:30	4:45										1						1	68.0-88.0	1
4:45	5:00																		
4:00	5:00										2						1	68.0-88.0	
5:00	5:15																		
5:15	5:30											1					1	80.0-100.0	1
5:30	5:45											1	1				2	86.3-106.3	2
5:45	6:00											4	2				6	88.8-108.8	6
5:00	6:00											6	3				6	88.8-108.8	
6:00	6:15										1	3	1				5	90.0-110.0	5
6:15	6:30										1	1	2	2			6	98.1-118.1	5
6:30	6:45											3	8	1			12	89.7-109.7	11
6:45	7:00						1		3	2	4		2				12	66.7-86.7	8
6:00	7:00						1		3	2	6	7	13	3			6	98.1-118.1	
7:00	7:15					1					2	1	2				7	83.6-103.6	4
7:15	7:30									1	2	2	2		1		8	81.7-101.7	5
7:30	7:45										3	7		1			11	80.8-100.8	10
7:45	8:00									2	5	1	1				9	79.0-99.0	8
7:00	8:00					1				3	12	11	5	1	1		7	83.6-103.6	
8:00	8:15								1		2	3	1	1			8	82.1-102.1	6
8:15	8:30								2	1		3	3				9	90.5-110.5	6
8:30	8:45			1						1	1	1	4				8	86.8-106.8	5
8:45	9:00						1				2	2	3	1			9	92.0-112.0	6
8:00	9:00			1			1		3	2	5	9	11	2			9	92.0-112.0	
9:00	9:15									1	1	4	2				8	76.1-96.1	6
9:15	9:30					1	1			1	1	2	1	2			9	75.9-95.9	4
9:30	9:45										1	1					2	80.2-100.2	2
9:45	10:00							1			1	2	1				5	85.7-105.7	4
9:00	10:00					1	1	1		2	4	9	4	2			5	85.7-105.7	
10:00	10:15					1					2	2	1				6	83.9-103.9	5
10:15	10:30										4						4	69.0-89.0	4
10:30	10:45						1	1		2		2			1		7	54.8-74.8	3
10:45	11:00							1		1	1	3					6	78.5-98.5	4
10:00	11:00					1	1	2		3	7	7	1		1		6	83.9-103.9	
11:00	11:15							1		1	1	2					5	72.8-92.8	4
11:15	11:30					1			1	2		1					5	58.0-78.0	3
11:30	11:45									2	3						5	70.0-90.0	5
11:45	12:00								1	1	2	1	1				6	61.6-81.6	4
11:00	12:00					1		1	2	6	6	4	1				5	72.8-92.8	

12:00	**12:15**		1		1		1	1	1	1			**6**	79.4-99.4	3
12:15	**12:30**			1		1	3	1	1				**7**	62.1-82.1	5
12:30	**12:45**					2		2					**4**	62.3-82.3	3
12:45	**13:00**				1		2	1	1				**5**	67.5-87.5	3
12:00	**13:00**		1	1	2	3	6	5	3	1			**6**	79.4-99.4	
13:00	**13:15**						2	3		1	1		**7**	69.0-89.0	5
13:15	**13:30**					2		1	1				**4**	48.9-68.9	2
13:30	**13:45**					1	2	1	1				**5**	70.5-90.5	4
13:45	**14:00**						1	1	1	2			**5**	88.3-108.3	4
13:00	**14:00**					3	5	6	3	3	1		**5**	88.3-108.3	
14:00	**14:15**					1		3		1			**5**	66.6-86.6	3
14:15	**14:30**					1	1	3	2				**7**	79.4-99.4	5
14:30	**14:45**				2	2		1					**5**	44.9-64.9	4
14:45	**15:00**					1	1		1	1			**4**	59.6-79.6	2
14:00	**15:00**				2	5	2	7	3	2			**7**	79.4-99.4	
15:00	**15:15**			1	1	1	2		3	1			**9**	52.2-72.2	4
15:15	**15:30**			1	2	1	1	2		2			**9**	55.9-75.9	4
15:30	**15:45**					1	2	1	1				**5**	65.0-85.0	4
15:45	**16:00**					2		1					**3**	48.4-68.4	2
15:00	**16:00**			2	3	5	5	4	4	3			**5**	65.0-85.0	
16:00	**16:15**					1	2	2	4	1			**10**	77.9-97.9	8
16:15	**16:30**							3	2		2		**7**	79.8-99.8	5
16:30	**16:45**							1	5				**6**	76.4-96.4	6
16:45	**17:00**				1	2	7	2	3	1	1		**17**	64.1-84.1	10
16:00	**17:00**				1	3	9	8	14	2	3		**7**	79.8-99.8	
17:00	**17:15**					2	1	3		2			**8**	69.6-89.6	4
17:15	**17:30**					2		2	3		1		**8**	79.9-99.9	5
17:30	**17:45**			1	1	1		1	2				**6**	73.0-93.0	3
17:45	**18:00**			2	1			1		2			**6**	32.4-52.4	3
17:00	**18:00**			3	2	5	1	7	5	4	1		**8**	79.9-99.9	
18:00	**18:15**				1					1	1		**3**	96.0-116.0	2
18:15	**18:30**						1	3		1			**5**	65.9-85.9	4
18:30	**18:45**							1	2				**3**	74.0-94.0	3
18:45	**19:00**			1				1		1			**3**	27.1-47.1	1
18:00	**19:00**			1	1		1	5	2	3	1		**3**	96.0-116.0	
19:00	**19:15**				1		1	1	3	1	1		**8**	75.7-95.7	5
19:15	**19:30**						1	1					**2**	64.6-84.6	2
19:30	**19:45**			1			1		1				**3**	77.5-97.5	2
19:45	**20:00**							2	1				**3**	71.1-91.1	3
19:00	**20:00**			1	1		3	4	5	1	1		**3**	77.5-97.5	
20:00	**20:15**											1	**1**	103.8-123.8	1
20:15	**20:30**								2				**2**	73.5-93.5	2
20:30	**20:45**											1	**1**	104.0-124.0	1
20:45	**21:00**					1							**1**	43.9-63.9	1
20:00	**21:00**					1			2			2	**2**	73.5-93.5	
21:00	**21:15**						1	1					**2**	61.2-81.2	2
21:15	**21:30**														
21:30	**21:45**								1				**1**	74.9-94.9	1
21:45	**22:00**								1	1			**2**	87.5-107.5	2
21:00	**22:00**						1	1	2	1			**2**	87.5-107.5	
22:00	**22:15**									1		1	**2**	101.4-121.4	2
22:15	**22:30**					1							**1**	43.2-63.2	1
22:30	**22:45**						1						**1**	57.4-77.4	1
22:45	**23:00**						1						**1**	53.8-73.8	1
22:00	**23:00**					1	2			1		1	**1**	57.4-77.4	
23:00	**23:15**						2	2	1				**5**	70.0-90.0	4
23:15	**23:30**								1				**1**	78.6-98.6	1
23:30	**23:45**						1		1				**2**	58.5-78.5	1
23:45	**OO:OO**									1			**1**	84.4-104.4	1
23:00	**OO:OO**						3	2	3	1			**1**	84.4-104.4	
Total		**1**	**5**	**12**	**16**	**34**	**56**	**93**	**99**	**62**	**16**	**5**	**400**		
		0.3%	1.3%	3.0%	4.0%	8.5%	14.0%	23.3%	24.8%	15.5%	4.0%	1.3%			
AM PEAK		**1**	**1**	**1**	**1**	**3**	**2**	**5**	**7**	**8**	**2**	**1**	**12**		
period		8:30	7:00	6:45	9:45	6:45	6:45	7:45	7:30	6:30	6:15	7:15	6:30		
% of class		100.0%	20.0%	8.3%	6.3%	8.8%	3.6%	5.4%	7.1%	12.9%	12.5%	20.0%		3.0%	
PM PEAK			**1**	**2**	**2**	**2**	**7**	**3**	**5**	**2**	**2**	**1**	**17**		
period			12:00	17:45	14:30	12:30	16:45	13:00	16:30	13:45	16:15	20:00	16:45		
% of class			20.0%	16.7%	12.5%	5.9%	12.5%	3.2%	5.1%	3.2%	12.5%	20.0%		4.3%	

15% Percentile :	**69**	KPH
50% Percentile :	**89**	KPH
85% Percentile :	**105**	KPH
95% Percentile :	**112**	KPH

20 KPH Pace Speed:	**81.0-101.0**	KPH
Number in Pace:	**192**	
Percent in Pace:	**48.0**	%
Number of Vehicles >80 KPH:	**281**	
Percent of Vehicles >80 KPH:	**70.3**	%
Mean Speed(average):	**87**	KPH

Report-2.4

Location : **CW22-87NS** **EIGHT LINE W - NORTH OF SIDEROAD 14**

Direction : **South** Road :

Dates : 1 **05/18/2022**

Speeds,km/h ------>		11	21	31	41	51	61	71	81	91	101	111	121	131	140	Total	Pace Speed	Number in Pace
OO:OO	**0:15**																	
0:15	**0:30**									1						**1**	65.6-85.6	1
0:30	**0:45**																	
0:45	**1:00**																	
OO:OO	**1:00**									1						**1**	65.6-85.6	
1:00	**1:15**																	
1:15	**1:30**																	
1:30	**1:45**																	
1:45	**2:00**																	
1:00	**2:00**																	
2:00	**2:15**																	
2:15	**2:30**																	
2:30	**2:45**																	
2:45	**3:00**																	
2:00	**3:00**																	
3:00	**3:15**																	
3:15	**3:30**																	
3:30	**3:45**																	
3:45	**4:00**									1						**1**	61.8-81.8	1
3:00	**4:00**									1						**1**	61.8-81.8	
4:00	**4:15**								1							**1**	57.3-77.3	1
4:15	**4:30**																	
4:30	**4:45**																	
4:45	**5:00**									1		1	1			**3**	88.0-108.0	2
4:00	**5:00**								1	1		1	1			**3**	88.0-108.0	
5:00	**5:15**											1	1			**2**	94.1-114.1	2
5:15	**5:30**																	
5:30	**5:45**								1	1	1		1			**4**	65.8-85.8	2
5:45	**6:00**										2	1				**3**	85.9-105.9	3
5:00	**6:00**								1	1	3	2	2			**2**	94.1-114.1	
6:00	**6:15**										3	1	1			**6**	84.2-104.2	4
6:15	**6:30**						1				4	1		1		**7**	83.2-103.2	5
6:30	**6:45**									2	3	1	2			**8**	82.1-102.1	6
6:45	**7:00**									5	2	3	2			**12**	84.3-104.3	9
6:00	**7:00**						1			7	12	6	5	1		**12**	84.3-104.3	
7:00	**7:15**									1	2	1		1		**5**	80.5-100.5	3
7:15	**7:30**			1			1		1	2	4	5	1			**15**	86.3-106.3	11
7:30	**7:45**								4		3		1			**8**	71.5-91.5	5
7:45	**8:00**									3	3	1				**7**	76.5-96.5	6
7:00	**8:00**			1			1		5	6	12	7	2	1		**15**	86.3-106.3	
8:00	**8:15**								1	2	4	3				**10**	86.2-106.2	9
8:15	**8:30**							1		3	1	1				**6**	74.0-94.0	4
8:30	**8:45**							1		2	2	1				**6**	79.7-99.7	4
8:45	**9:00**								1	3	3					**7**	77.7-97.7	7
8:00	**9:00**							2	2	10	10	5				**10**	86.2-106.2	
9:00	**9:15**								1		3	1				**5**	81.3-101.3	4
9:15	**9:30**							1	1	1	1					**4**	65.1-85.1	3
9:30	**9:45**							1	1	2	3					**7**	77.6-97.6	6
9:45	**10:00**							1	1	1	3					**6**	72.9-92.9	4
9:00	**10:00**							3	4	4	10	1				**5**	81.3-101.3	
10:00	**10:15**								1	1	2					**4**	73.9-93.9	4
10:15	**10:30**							2		1	1					**4**	48.1-68.1	2
10:30	**10:45**					1		3	2	2						**8**	63.6-83.6	6
10:45	**11:00**							2	1	5	2					**10**	70.4-90.4	7
10:00	**11:00**					1		7	4	9	5					**4**	73.9-93.9	
11:00	**11:15**						3	1		1	2					**7**	49.4-69.4	4
11:15	**11:30**						1		1							**2**	54.5-74.5	2
11:30	**11:45**					1				3	1	1				**6**	75.4-95.4	4
11:45	**12:00**								5	4						**9**	67.3-87.3	9
11:00	**12:00**					1	4	1	6	8	3	1				**6**	75.4-95.4	

12:00	**12:15**					1	1		1					**3**	59.5-79.5	2
12:15	**12:30**						3	2						**5**	68.0-88.0	5
12:30	**12:45**					1	2	3		1				**7**	67.1-87.1	6
12:45	**13:00**				1	2	1		2					**6**	55.6-75.6	4
12:00	**13:00**				1	4	7	5	3	1				**5**	68.0-88.0	
13:00	**13:15**				2			3						**5**	70.0-90.0	3
13:15	**13:30**				1	1	2	2	1					**7**	65.3-85.3	5
13:30	**13:45**		1	1				1		1				**4**	23.1-43.1	2
13:45	**14:00**				1	1	3							**5**	57.0-77.0	4
13:00	**14:00**		1	1	4	2	5	6	1	1				**5**	70.0-90.0	
14:00	**14:15**					1	3	1	1					**6**	71.4-91.4	5
14:15	**14:30**					1	1	1						**3**	66.2-86.2	3
14:30	**14:45**			4	3	2	3							**12**	41.8-61.8	8
14:45	**15:00**				1	2								**3**	47.8-67.8	3
14:00	**15:00**			4	4	6	7	2	1					**6**	71.4-91.4	
15:00	**15:15**			1		2	2	2		2				**9**	62.5-82.5	6
15:15	**15:30**			1			2	1				1		**5**	67.2-87.2	3
15:30	**15:45**						1	1	2	1				**5**	81.5-101.5	4
15:45	**16:00**						2	1	3					**6**	75.1-95.1	5
15:00	**16:00**			2		2	7	5	5	3		1		**5**	81.5-101.5	
16:00	**16:15**			1	1	2		3						**7**	50.3-70.3	4
16:15	**16:30**					1	3	2	1					**7**	66.4-86.4	6
16:30	**16:45**				5	5	2	1	3					**16**	50.0-70.0	10
16:45	**17:00**					1	2	3	1					**7**	70.5-90.5	5
16:00	**17:00**			1	6	9	7	9	5					**7**	70.5-90.5	
17:00	**17:15**						1	1	3					**5**	74.5-94.5	4
17:15	**17:30**		2	1		2		3	1	1	2			**12**	82.3-102.3	5
17:30	**17:45**		1	1		1	2		2					**7**	54.4-74.4	3
17:45	**18:00**				1									**1**	39.8-59.8	1
17:00	**18:00**		3	2	1	3	3	4	6	1	2			**12**	82.3-102.3	
18:00	**18:15**			1				2	2		1			**6**	79.5-99.5	4
18:15	**18:30**			1				2						**3**	68.3-88.3	2
18:30	**18:45**							1	1	1	1			**4**	92.8-112.8	3
18:45	**19:00**															
18:00	**19:00**			2				5	3	1	2			**4**	92.8-112.8	
19:00	**19:15**			1					2	1				**4**	85.3-105.3	3
19:15	**19:30**					1	1		1					**3**	57.4-77.4	2
19:30	**19:45**							1	1					**2**	73.9-93.9	2
19:45	**20:00**			1	1		2	1	1					**6**	72.5-92.5	4
19:00	**20:00**			2	1	1	3	2	5	1				**4**	85.3-105.3	
20:00	**20:15**															
20:15	**20:30**					1				1				**2**	49.2-69.2	1
20:30	**20:45**						2							**2**	58.0-78.0	2
20:45	**21:00**															
20:00	**21:00**					1	2			1				**2**	58.0-78.0	
21:00	**21:15**							1						**1**	63.8-83.8	1
21:15	**21:30**							1						**1**	67.7-87.7	1
21:30	**21:45**						1							**1**	60.7-80.7	1
21:45	**22:00**						3							**3**	58.6-78.6	3
21:00	**22:00**						4	2						**1**	67.7-87.7	
22:00	**22:15**									2				**2**	90.6-110.6	2
22:15	**22:30**									1				**1**	85.7-105.7	1
22:30	**22:45**															
22:45	**23:00**															
22:00	**23:00**									3				**2**	90.6-110.6	
23:00	**23:15**															
23:15	**23:30**															
23:30	**23:45**									1				**1**	89.7-109.7	1
23:45	**OO:OO**															
23:00	**OO:OO**									1				**1**	89.7-109.7	
Total		**1**	**4**	**16**	**23**	**41**	**68**	**88**	**84**	**36**	**14**	**3**		**379**		
		0.3%	1.1%	4.2%	6.1%	10.8%	17.9%	23.2%	22.2%	9.5%	3.7%	0.8%				
AM PEAK		**1**		**1**	**3**	**3**	**5**	**5**	**4**	**5**	**2**	**1**		**15**		
period		7:15		10:30	11:00	10:30	11:45	6:45	6:15	7:15	6:30	6:15	7:15			
% of class		100.0%		6.3%	13.0%	7.3%	7.4%	5.7%	4.8%	13.9%	14.3%	33.3%			4.0%	
PM PEAK			**2**	**4**	**5**	**5**	**3**	**3**	**3**	**2**	**2**	**1**		**16**		
period			17:15	14:30	16:30	16:30	12:15	12:30	15:45	15:00	17:15	15:15	16:30			
% of class			50.0%	25.0%	21.7%	12.2%	4.4%	3.4%	3.6%	5.6%	14.3%	33.3%			4.2%	

15%	Percentile :	**64**	KPH
50%	Percentile :	**85**	KPH
85%	Percentile :	**101**	KPH
95%	Percentile :	**111**	KPH

20 KPH Pace Speed:	**81.5-101.5**	KPH
Number in Pace:	**176**	
Percent in Pace:	**46.4**	%
Number of Vehicles >80 KPH:	**232**	
Percent of Vehicles >80 KPH:	**61.2**	%
Mean Speed(average):	**83**	KPH

Report-2.5

Location : **CW22-87NS** **EIGHT LINE W - NORTH OF SIDEROAD 14**

Direction : **North + South** Road :

Dates : 1 **05/17/2022**

Speeds,km/h ------>		11	21	31	41	51	61	71	81	91	101	111	121	131	140	Total	Pace Speed	Number in Pace
OO:OO	**0:15**																	
0:15	**0:30**																	
0:30	**0:45**						1									**1**	34.1-54.1	1
0:45	**1:00**																	
OO:OO	**1:00**						1									**1**	34.1-54.1	
1:00	**1:15**									1						**1**	66.3-86.3	1
1:15	**1:30**																	
1:30	**1:45**										1					**1**	86.7-106.7	1
1:45	**2:00**																	
1:00	**2:00**									1		1				**1**	86.7-106.7	
2:00	**2:15**																	
2:15	**2:30**					1										**1**	28.3-48.3	1
2:30	**2:45**																	
2:45	**3:00**																	
2:00	**3:00**					1										**1**	28.3-48.3	
3:00	**3:15**																	
3:15	**3:30**																	
3:30	**3:45**										1	1				**2**	98.2-118.2	2
3:45	**4:00**									1						**1**	66.7-86.7	1
3:00	**4:00**									1		1	1			**2**	98.2-118.2	
4:00	**4:15**									1						**1**	66.2-86.2	1
4:15	**4:30**																	
4:30	**4:45**									1						**1**	68.0-88.0	1
4:45	**5:00**										1					**1**	71.3-91.3	1
4:00	**5:00**									2	1					**1**	71.3-91.3	
5:00	**5:15**																	
5:15	**5:30**										1					**1**	80.0-100.0	1
5:30	**5:45**										1	1				**2**	86.3-106.3	2
5:45	**6:00**								1	1	5	2				**9**	88.8-108.8	7
5:00	**6:00**								1	1	7	3				**9**	88.8-108.8	
6:00	**6:15**				1					1	4	1				**7**	90.0-110.0	6
6:15	**6:30**									1	1	2	2			**6**	98.1-118.1	5
6:30	**6:45**									3	4	8	1			**16**	88.8-108.8	13
6:45	**7:00**					1		3	2	4		2				**12**	66.7-86.7	8
6:00	**7:00**				1	1		3	2	9	9	13	3			**6**	98.1-118.1	
7:00	**7:15**				1					5	1	2				**10**	83.6-103.6	7
7:15	**7:30**						1		1	2	4	2		1		**11**	81.7-101.7	7
7:30	**7:45**							2	2	6	7		1			**18**	80.8-100.8	13
7:45	**8:00**					1		1	3	8	2	1				**16**	79.0-99.0	13
7:00	**8:00**				1	1	1	3	6	21	14	5	1	1		**10**	83.6-103.6	
8:00	**8:15**							1		3	3	1	1			**9**	82.1-102.1	7
8:15	**8:30**							2	3	3	3	3				**14**	79.6-99.6	7
8:30	**8:45**			1				1	2	1	2	5				**12**	86.8-106.8	7
8:45	**9:00**				1	1			1	2	4	4	1			**14**	92.0-112.0	9
8:00	**9:00**			1	1	1		4	6	9	12	13	2			**14**	92.0-112.0	
9:00	**9:15**				1				1	2	7	2				**13**	76.1-96.1	10
9:15	**9:30**				2	1		1	4	2	3	1	2			**16**	74.5-94.5	7
9:30	**9:45**				1			1	1	2	3					**8**	80.2-100.2	6
9:45	**10:00**						1			3	3	1				**8**	78.1-98.1	6
9:00	**10:00**				4	1	1	2	6	9	16	4	2			**8**	80.2-100.2	
10:00	**10:15**				2			2	1	2	2	1				**10**	83.9-103.9	5
10:15	**10:30**								2	6						**8**	69.0-89.0	8
10:30	**10:45**					1	1	3	3	2	2			1		**13**	54.8-74.8	7
10:45	**11:00**			2	1		1		2	2	3					**11**	74.5-94.5	5
10:00	**11:00**			2	3	1	2	5	8	12	7	1		1		**10**	83.9-103.9	
11:00	**11:15**						1	2	2	2	3					**10**	74.1-94.1	7
11:15	**11:30**				2			4	4	4	1					**15**	61.8-81.8	10
11:30	**11:45**				1		1		4	5						**11**	70.0-90.0	9
11:45	**12:00**							1	2	3	3	1				**10**	77.6-97.6	6
11:00	**12:00**				3		2	7	12	14	7	1				**10**	77.6-97.6	

12:00	**12:15**			2		1	1	1	2	2	1					**10**	79.4-99.4	5
12:15	**12:30**				1		2	5	6	4						**18**	72.1-92.1	12
12:30	**12:45**						3	4	3							**10**	62.3-82.3	8
12:45	**13:00**					1		2	3	2						**8**	74.3-94.3	6
12:00	**13:00**			2	1	2	6	12	14	8	1					**10**	79.4-99.4	
13:00	**13:15**						1	4	4	2	1	1				**13**	74.9-94.9	9
13:15	**13:30**						2		2	1	1					**6**	83.8-103.8	4
13:30	**13:45**						3	4	3	4	1					**15**	73.1-93.1	9
13:45	**14:00**						1	4	1	2	2					**10**	57.9-77.9	5
13:00	**14:00**						7	12	10	9	5	1				**6**	83.8-103.8	
14:00	**14:15**			2		2	2	4	5	1	1					**17**	70.3-90.3	10
14:15	**14:30**					1	1	5	6	4						**17**	63.9-83.9	11
14:30	**14:45**					2	3	2	3	2	2					**14**	79.2-99.2	7
14:45	**15:00**						2	3	4	2	1	1				**13**	68.4-88.4	8
14:00	**15:00**			2		5	8	14	18	9	4	1				**14**	79.2-99.2	
15:00	**15:15**				1	2	1	2	3	5	2					**16**	79.6-99.6	8
15:15	**15:30**				2	2	1	4	4	3	3					**19**	65.9-85.9	9
15:30	**15:45**			1	1		3	4	2	3						**14**	65.0-85.0	8
15:45	**16:00**						5	4	8	4	1	1				**23**	73.2-93.2	14
15:00	**16:00**			1	4	4	10	14	17	15	6	1				**16**	79.6-99.6	
16:00	**16:15**						1	5	3	7	6	1				**23**	78.4-98.4	13
16:15	**16:30**						2	3	6	7		3				**21**	79.8-99.8	13
16:30	**16:45**			1	1	1	3	5	6	9						**26**	76.4-96.4	18
16:45	**17:00**					2	2	11	8	5	1	2				**31**	70.7-90.7	19
16:00	**17:00**			1	1	3	8	24	23	28	7	6				**21**	79.8-99.8	
17:00	**17:15**					1	2	2	6	5	5		1			**22**	88.2-108.2	14
17:15	**17:30**						3	1	5	4		1				**14**	75.2-95.2	9
17:30	**17:45**				1	1	3	1	5	4	1					**16**	78.3-98.3	9
17:45	**18:00**				2	1	1	2	6	4	3					**19**	74.2-94.2	11
17:00	**18:00**				3	3	9	6	22	17	9	1	1			**22**	88.2-108.2	
18:00	**18:15**				1	1		2	5	4	1	1				**15**	75.2-95.2	10
18:15	**18:30**							3	9		2					**14**	71.0-91.0	12
18:30	**18:45**							1	3	3	1		1			**9**	86.5-106.5	7
18:45	**19:00**				1			1	2	3	1					**8**	75.2-95.2	5
18:00	**19:00**				2	1		7	19	10	5	1	1			**9**	86.5-106.5	
19:00	**19:15**					1		1	4	9	1	1				**17**	77.8-97.8	13
19:15	**19:30**						1	1	1	2		1				**6**	74.9-94.9	4
19:30	**19:45**				1			3	2	2						**8**	78.0-98.0	6
19:45	**20:00**				1			1	2	2		1				**7**	73.4-93.4	5
19:00	**20:00**				2	1	1	6	9	15	1	3				**8**	78.0-98.0	
20:00	**20:15**						1		1	1			1			**4**	65.6-85.6	2
20:15	**20:30**									3						**3**	77.3-97.3	3
20:30	**20:45**						1		1				1			**3**	46.7-66.7	1
20:45	**21:00**		1				1	2	4							**8**	62.8-82.8	6
20:00	**21:00**		1				3	2	6	4			2			**3**	77.3-97.3	
21:00	**21:15**							1	4	1						**6**	78.1-98.1	6
21:15	**21:30**																	
21:30	**21:45**							1	1	1		1				**4**	74.9-94.9	3
21:45	**22:00**								2	1	1					**4**	75.2-95.2	3
21:00	**22:00**							2	7	3	1	1				**6**	78.1-98.1	
22:00	**22:15**		1								1		1			**3**	101.4-121.4	2
22:15	**22:30**						1			1						**2**	43.2-63.2	1
22:30	**22:45**							1								**1**	57.4-77.4	1
22:45	**23:00**							1	1							**2**	64.8-84.8	2
22:00	**23:00**		1				1	2	1	1	1		1			**2**	64.8-84.8	
23:00	**23:15**							2	2	1						**5**	70.0-90.0	4
23:15	**23:30**						1			1						**2**	45.6-65.6	1
23:30	**23:45**							1		1						**2**	58.5-78.5	1
23:45	**OO:OO**										1					**1**	84.4-104.4	1
23:00	**OO:OO**						1	3	2	3	1					**1**	84.4-104.4	
Total			**5**	**19**	**19**	**26**	**78**	**145**	**227**	**195**	**83**	**24**	**7**			**829**		
			0.6%	2.3%	2.3%	3.1%	9.4%	17.5%	27.4%	23.5%	10.0%	2.9%	0.8%					
AM PEAK			**2**	**2**	**1**	**1**	**4**	**4**	**8**	**7**	**8**	**2**	**1**			**18**		
period			10:45	9:15	2:15	0:30	11:15	9:15	7:45	7:30	6:30	6:15	7:15		7:30			
% of class			40.0%	10.5%	5.3%	3.8%	5.1%	2.8%	3.5%	3.6%	9.6%	8.3%	14.3%				2.2%	
PM PEAK			**1**	**2**	**2**	**2**	**5**	**11**	**9**	**9**	**6**	**3**	**1**			**31**		
period			20:45	12:00	15:15	14:00	15:45	16:45	18:15	16:30	16:00	16:15	17:00		16:45			
% of class			20.0%	10.5%	10.5%	7.7%	6.4%	7.6%	4.0%	4.6%	7.2%	12.5%	14.3%				3.7%	

15% Percentile :	**68**	KPH
50% Percentile :	**86**	KPH
85% Percentile :	**101**	KPH
95% Percentile :	**110**	KPH

20 KPH Pace Speed:	**77.7-97.7**	KPH
Number in Pace:	**427**	
Percent in Pace:	**51.5**	%
Number of Vehicles >80 KPH:	**550**	
Percent of Vehicles >80 KPH:	**66.3**	%
Mean Speed(average):	**85**	KPH

Report-2.6

Location : **CW22-87NS** **EIGHT LINE W - NORTH OF SIDEROAD 14**

Direction : **North + South** Road :

Dates : 1 **05/18/2022**

Speeds,km/h ------>		11	11 21	21 31	31 41	41 51	51 61	61 71	71 81	81 91	91 101	101 111	111 121	121 131	131 140	Total	Pace Speed	Number in Pace
OO:OO	**0:15**																	
0:15	**0:30**									1						**1**	65.6-85.6	1
0:30	**0:45**								1		1					**2**	72.6-92.6	2
0:45	**1:00**																	
OO:OO	**1:00**								1	1	1					**2**	72.6-92.6	
1:00	**1:15**								1							**1**	58.2-78.2	1
1:15	**1:30**																	
1:30	**1:45**																	
1:45	**2:00**																	
1:00	**2:00**								1							**1**	58.2-78.2	
2:00	**2:15**																	
2:15	**2:30**																	
2:30	**2:45**																	
2:45	**3:00**					1										**1**	28.0-48.0	1
2:00	**3:00**					1										**1**	28.0-48.0	
3:00	**3:15**																	
3:15	**3:30**																	
3:30	**3:45**																	
3:45	**4:00**									1						**1**	61.8-81.8	1
3:00	**4:00**									1						**1**	61.8-81.8	
4:00	**4:15**								1							**1**	57.3-77.3	1
4:15	**4:30**																	
4:30	**4:45**										1					**1**	79.9-99.9	1
4:45	**5:00**									1	1	1	1			**4**	88.0-108.0	3
4:00	**5:00**								1	1	2	1	1			**4**	88.0-108.0	
5:00	**5:15**											1	1			**2**	94.1-114.1	2
5:15	**5:30**									1						**1**	70.6-90.6	1
5:30	**5:45**								1	3	1		1			**6**	65.8-85.8	4
5:45	**6:00**										2	1				**3**	85.9-105.9	3
5:00	**6:00**								1	4	3	2	2			**2**	94.1-114.1	
6:00	**6:15**				1						3	1	2			**8**	84.2-104.2	4
6:15	**6:30**						1			1	5	1		1		**9**	83.2-103.2	7
6:30	**6:45**			1				2	1	4	6	1	3			**18**	82.1-102.1	11
6:45	**7:00**							1		6	3	3	2			**15**	84.3-104.3	11
6:00	**7:00**			1	1		1	3	1	11	17	6	7	1		**15**	84.3-104.3	
7:00	**7:15**									2	2	1		1		**6**	80.5-100.5	4
7:15	**7:30**			1			1		2	4	8	5	1			**22**	82.9-102.9	16
7:30	**7:45**							1	7	1	3		1			**13**	61.4-81.4	9
7:45	**8:00**							1	1	3	5	2				**12**	82.4-102.4	9
7:00	**8:00**			1			1	2	10	10	18	8	2	1		**22**	82.9-102.9	
8:00	**8:15**					1			4	3	5	4				**17**	86.2-106.2	11
8:15	**8:30**							1		3	2	2				**8**	81.2-101.2	6
8:30	**8:45**							1	4	4	3	2				**14**	68.7-88.7	9
8:45	**9:00**						1	2	2	3	4					**12**	69.1-89.1	7
8:00	**9:00**					1	1	4	10	13	14	8				**17**	86.2-106.2	
9:00	**9:15**							1	2	1	3	1				**8**	74.5-94.5	5
9:15	**9:30**						1	1	3	3	2		1			**11**	72.4-92.4	8
9:30	**9:45**							2	3	4	3					**12**	66.5-86.5	9
9:45	**10:00**							1	2	2	4					**9**	72.9-92.9	6
9:00	**10:00**						1	5	10	10	12	1	1			**8**	74.5-94.5	
10:00	**10:15**							3	4	4	2					**13**	73.9-93.9	9
10:15	**10:30**						2	4	3	1	2					**12**	53.4-73.4	7
10:30	**10:45**					1		3	2	2						**8**	63.6-83.6	6
10:45	**11:00**							3	1	5	2	3				**14**	83.7-103.7	9
10:00	**11:00**					1	2	13	10	12	6	3				**14**	83.7-103.7	
11:00	**11:15**				1		5	1		1	3	1				**12**	49.4-69.4	6
11:15	**11:30**						1	2	3	1	3					**10**	54.5-74.5	6
11:30	**11:45**					1		2	2	3	2	2				**12**	67.5-87.5	7
11:45	**12:00**								7	9						**16**	69.9-89.9	16
11:00	**12:00**				1	1	6	5	12	14	8	3				**16**	69.9-89.9	

12:00	**12:15**				1		2	5	3	2					**13**	69.2-89.2	9
12:15	**12:30**				1		1	7	6						**15**	68.0-88.0	14
12:30	**12:45**				1		6	2	5	1	1				**16**	67.1-87.1	10
12:45	**13:00**			1		1	3	3	1	2			1		**12**	60.5-80.5	7
12:00	**13:00**			1	3	1	12	17	15	5	1		1		**13**	69.2-89.2	
13:00	**13:15**					2		2	4						**8**	70.1-90.1	6
13:15	**13:30**			1		1	3	3	5	1					**14**	65.3-85.3	10
13:30	**13:45**			1	1		3	1	2		2				**10**	61.6-81.6	6
13:45	**14:00**					1	1	5	3	1					**11**	72.7-92.7	9
13:00	**14:00**			2	1	4	7	11	14	2	2				**11**	72.7-92.7	
14:00	**14:15**				1		1	3	3	2		1			**11**	71.4-91.4	7
14:15	**14:30**	1		1			1	4	2	2					**11**	68.1-88.1	7
14:30	**14:45**				5	3	2	5	3	3	2				**23**	41.8-61.8	9
14:45	**15:00**		1	1		1	2		3	2	1				**11**	76.3-96.3	5
14:00	**15:00**	1	1	2	6	4	6	12	11	9	3	1			**11**	76.3-96.3	
15:00	**15:15**				1		3	5	10	1	2				**22**	69.9-89.9	15
15:15	**15:30**				1	1	2	4	7	1	1		1		**18**	70.2-90.2	11
15:30	**15:45**				1	1	2	5	9	4	1	2			**25**	67.4-87.4	15
15:45	**16:00**							6	4	8	3				**21**	79.1-99.1	14
15:00	**16:00**				3	2	7	20	30	14	7	2	1		**21**	79.1-99.1	
16:00	**16:15**				2	1	2	2	10	5	1				**23**	78.3-98.3	17
16:15	**16:30**			1			1	11	7	3	3				**26**	73.0-93.0	21
16:30	**16:45**					5	6	2	4	5	1				**23**	50.6-70.6	11
16:45	**17:00**			1			1	3	6	3	1				**15**	71.2-91.2	10
16:00	**17:00**			2	2	6	10	18	27	16	6				**23**	78.3-98.3	
17:00	**17:15**					1	2	2	4	11	3				**23**	84.7-104.7	16
17:15	**17:30**			2	1		3	2	7	4	2	2			**23**	76.3-96.3	13
17:30	**17:45**			1	1	1	1	4	6	4	3				**21**	84.9-104.9	12
17:45	**18:00**					1		2	3	5	2		1		**14**	87.7-107.7	10
17:00	**18:00**			3	2	3	6	10	20	24	10	2	1		**14**	87.7-107.7	
18:00	**18:15**				1		1	4	4	4		1			**15**	72.0-92.0	9
18:15	**18:30**				1			2	5	1					**9**	70.4-90.4	7
18:30	**18:45**							1	2	1	1	2			**7**	92.8-112.8	4
18:45	**19:00**							1	1	1					**3**	72.5-92.5	3
18:00	**19:00**				2		1	8	12	7	1	3			**7**	92.8-112.8	
19:00	**19:15**				1				3	3	2				**9**	81.7-101.7	7
19:15	**19:30**						2	1	3	2	1				**9**	77.2-97.2	6
19:30	**19:45**							2	2	2					**6**	77.4-97.4	5
19:45	**20:00**				1	1		3	3	1					**9**	72.5-92.5	7
19:00	**20:00**				2	1	2	6	11	8	3				**9**	81.7-101.7	
20:00	**20:15**						1		2	2					**5**	78.9-98.9	4
20:15	**20:30**				1	1	1				1				**4**	49.2-69.2	3
20:30	**20:45**							4	1	1	1				**7**	62.0-82.0	5
20:45	**21:00**						1		1	2					**4**	79.3-99.3	3
20:00	**21:00**				1	1	3	4	4	5	2				**4**	79.3-99.3	
21:00	**21:15**							1	2	1					**4**	63.8-83.8	3
21:15	**21:30**				1				1						**2**	30.4-50.4	1
21:30	**21:45**							1			1				**2**	60.7-80.7	1
21:45	**22:00**							3		3					**7**	77.4-97.4	5
21:00	**22:00**				1			5	3	4	1				**7**	77.4-97.4	
22:00	**22:15**										2				**2**	90.6-110.6	2
22:15	**22:30**									2	1				**3**	85.7-105.7	3
22:30	**22:45**																
22:45	**23:00**																
22:00	**23:00**									2	3				**2**	90.6-110.6	
23:00	**23:15**																
23:15	**23:30**										1				**1**	84.8-104.8	1
23:30	**23:45**								1		1				**2**	68.5-88.5	1
23:45	**OO:OO**																
23:00	**OO:OO**								1		2				**1**	84.8-104.8	
Total		**1**	**3**	**12**	**27**	**34**	**86**	**168**	**225**	**177**	**73**	**21**	**5**		**834**		
		0.1%	0.4%	1.4%	3.2%	4.1%	10.3%	20.1%	27.0%	21.2%	8.8%	2.5%	0.6%				
AM PEAK			**1**	**1**	**1**	**5**	**4**	**7**	**9**	**8**	**5**	**3**	**1**		**22**		
period			6:30	6:00	2:45	11:00	10:15	7:30	11:45	7:15	7:15	6:30	6:15	7:15			
% of class			33.3%	8.3%	3.7%	14.7%	4.7%	4.2%	4.0%	4.5%	6.8%	14.3%	20.0%			2.6%	
PM PEAK		**1**	**1**	**2**	**5**	**5**	**6**	**11**	**10**	**11**	**3**	**2**	**1**		**26**		
period		14:15	14:45	17:15	14:30	16:30	12:30	16:15	15:00	17:00	15:45	15:30	12:45	16:15			
% of class		100.0%	33.3%	16.7%	18.5%	14.7%	7.0%	6.5%	4.4%	6.2%	4.1%	9.5%	20.0%			3.1%	

15% Percentile :	**67**	KPH
50% Percentile :	**85**	KPH
85% Percentile :	**100**	KPH
95% Percentile :	**109**	KPH

20 KPH Pace Speed:	**77.2-97.2**	KPH
Number in Pace:	**419**	
Percent in Pace:	**50.2**	%
Number of Vehicles >80 KPH:	**518**	
Percent of Vehicles >80 KPH:	**62.1**	%
Mean Speed(average):	**83**	KPH

Report-3.1		Location :		CW22-87NS		EIGHT LINE W - NORTH OF SIDEROAD 14					
						Road :					
		Dates :		05/17/2022							
		North		South		East		West		Total	
Directions ---------->		Volume	%	Volume	%	Volume	%	Volume	%	Volume	%
00:00	0:15										
0:15	0:30										
0:30	0:45	1	0.2%							1	0.1%
0:45	1:00										
00:00	1:00	1	0.2%							1	0.1%
1:00	1:15			1	0.3%					1	0.1%
1:15	1:30										
1:30	1:45			1	0.3%					1	0.1%
1:45	2:00										
1:00	2:00			2	0.5%					2	0.2%
2:00	2:15										
2:15	2:30	1	0.2%							1	0.1%
2:30	2:45										
2:45	3:00										
2:00	3:00	1	0.2%							1	0.1%
3:00	3:15										
3:15	3:30										
3:30	3:45			2	0.5%					2	0.2%
3:45	4:00			1	0.3%					1	0.1%
3:00	4:00			3	0.8%					3	0.4%
4:00	4:15			1	0.3%					1	0.1%
4:15	4:30										
4:30	4:45			1	0.3%					1	0.1%
4:45	5:00	1	0.2%							1	0.1%
4:00	5:00	1	0.2%	2	0.5%					3	0.4%
5:00	5:15										
5:15	5:30			1	0.3%					1	0.1%
5:30	5:45			2	0.5%					2	0.2%
5:45	6:00	3	0.7%	6	1.5%					9	1.1%
5:00	6:00	3	0.7%	9	2.3%					12	1.4%
6:00	6:15	2	0.5%	5	1.3%					7	0.8%
6:15	6:30			6	1.5%					6	0.7%
6:30	6:45	4	0.9%	12	3.0%					16	1.9%
6:45	7:00			12	3.0%					12	1.4%
6:00	7:00	6	1.4%	35	8.8%					41	4.9%
7:00	7:15	3	0.7%	7	1.8%					10	1.2%
7:15	7:30	3	0.7%	8	2.0%					11	1.3%
7:30	7:45	7	1.6%	11	2.8%					18	2.2%
7:45	8:00	7	1.6%	9	2.3%					16	1.9%
7:00	8:00	20	4.7%	35	8.8%					55	6.6%
8:00	8:15	1	0.2%	8	2.0%					9	1.1%
8:15	8:30	5	1.2%	9	2.3%					14	1.7%
8:30	8:45	4	0.9%	8	2.0%					12	1.4%
8:45	9:00	5	1.2%	9	2.3%					14	1.7%
8:00	9:00	15	3.5%	34	8.5%					49	5.9%
9:00	9:15	5	1.2%	8	2.0%					13	1.6%
9:15	9:30	7	1.6%	9	2.3%					16	1.9%
9:30	9:45	6	1.4%	2	0.5%					8	1.0%
9:45	10:00	3	0.7%	5	1.3%					8	1.0%
9:00	10:00	21	4.9%	24	6.0%					45	5.4%
10:00	10:15	4	0.9%	6	1.5%					10	1.2%
10:15	10:30	4	0.9%	4	1.0%					8	1.0%
10:30	10:45	6	1.4%	7	1.8%					13	1.6%
10:45	11:00	5	1.2%	6	1.5%					11	1.3%
10:00	11:00	19	4.4%	23	5.8%					42	5.1%
11:00	11:15	5	1.2%	5	1.3%					10	1.2%
11:15	11:30	10	2.3%	5	1.3%					15	1.8%
11:30	11:45	6	1.4%	5	1.3%					11	1.3%
11:45	12:00	4	0.9%	6	1.5%					10	1.2%
11:00	12:00	25	5.8%	21	5.3%					46	5.5%

12:00	12:15	4	0.9%	6	1.5%			10	1.2%
12:15	12:30	11	2.6%	7	1.8%			18	2.2%
12:30	12:45	6	1.4%	4	1.0%			10	1.2%
12:45	13:00	3	0.7%	5	1.3%			8	1.0%
12:00	13:00	24	5.6%	22	5.5%			46	5.5%
13:00	13:15	6	1.4%	7	1.8%			13	1.6%
13:15	13:30	2	0.5%	4	1.0%			6	0.7%
13:30	13:45	10	2.3%	5	1.3%			15	1.8%
13:45	14:00	5	1.2%	5	1.3%			10	1.2%
13:00	14:00	23	5.4%	21	5.3%			44	5.3%
14:00	14:15	12	2.8%	5	1.3%			17	2.1%
14:15	14:30	10	2.3%	7	1.8%			17	2.1%
14:30	14:45	9	2.1%	5	1.3%			14	1.7%
14:45	15:00	9	2.1%	4	1.0%			13	1.6%
14:00	15:00	40	9.3%	21	5.3%			61	7.4%
15:00	15:15	7	1.6%	9	2.3%			16	1.9%
15:15	15:30	10	2.3%	9	2.3%			19	2.3%
15:30	15:45	9	2.1%	5	1.3%			14	1.7%
15:45	16:00	20	4.7%	3	0.8%			23	2.8%
15:00	16:00	46	10.7%	26	6.5%			72	8.7%
16:00	16:15	13	3.0%	10	2.5%			23	2.8%
16:15	16:30	14	3.3%	7	1.8%			21	2.5%
16:30	16:45	20	4.7%	6	1.5%			26	3.1%
16:45	17:00	14	3.3%	17	4.3%			31	3.7%
16:00	17:00	61	14.2%	40	10.0%			101	12.2%
17:00	17:15	14	3.3%	8	2.0%			22	2.7%
17:15	17:30	6	1.4%	8	2.0%			14	1.7%
17:30	17:45	10	2.3%	6	1.5%			16	1.9%
17:45	18:00	13	3.0%	6	1.5%			19	2.3%
17:00	18:00	43	10.0%	28	7.0%			71	8.6%
18:00	18:15	12	2.8%	3	0.8%			15	1.8%
18:15	18:30	9	2.1%	5	1.3%			14	1.7%
18:30	18:45	6	1.4%	3	0.8%			9	1.1%
18:45	19:00	5	1.2%	3	0.8%			8	1.0%
18:00	19:00	32	7.5%	14	3.5%			46	5.5%
19:00	19:15	9	2.1%	8	2.0%			17	2.1%
19:15	19:30	4	0.9%	2	0.5%			6	0.7%
19:30	19:45	5	1.2%	3	0.8%			8	1.0%
19:45	20:00	4	0.9%	3	0.8%			7	0.8%
19:00	20:00	22	5.1%	16	4.0%			38	4.6%
20:00	20:15	3	0.7%	1	0.3%			4	0.5%
20:15	20:30	1	0.2%	2	0.5%			3	0.4%
20:30	20:45	2	0.5%	1	0.3%			3	0.4%
20:45	21:00	7	1.6%	1	0.3%			8	1.0%
20:00	21:00	13	3.0%	5	1.3%			18	2.2%
21:00	21:15	4	0.9%	2	0.5%			6	0.7%
21:15	21:30								
21:30	21:45	3	0.7%	1	0.3%			4	0.5%
21:45	22:00	2	0.5%	2	0.5%			4	0.5%
21:00	22:00	9	2.1%	5	1.3%			14	1.7%
22:00	22:15	1	0.2%	2	0.5%			3	0.4%
22:15	22:30	1	0.2%	1	0.3%			2	0.2%
22:30	22:45			1	0.3%			1	0.1%
22:45	23:00	1	0.2%	1	0.3%			2	0.2%
22:00	23:00	3	0.7%	5	1.3%			8	1.0%
23:00	23:15			5	1.3%			5	0.6%
23:15	23:30	1	0.2%	1	0.3%			2	0.2%
23:30	23:45			2	0.5%			2	0.2%
23:45	OO:OO			1	0.3%			1	0.1%
23:00	OO:OO	1	0.2%	9	2.3%			10	1.2%
Total		**429**		**400**				**829**	100.0%
		51.7%		**48.3%**				100.0%	
AM PEAK		**10**		**12**				**18**	
period		**11:15**		**6:30**				**7:30**	
% of class			2.3%		3.0%				2.2%
PM PEAK		**20**		**17**				**31**	
period		**15:45**		**16:45**				**16:45**	
% of class			4.7%		4.3%				3.7%

Report-3.2		Location :		CW22-87NS		EIGHT LINE W - NORTH OF SIDEROAD 14 Road :					
		Dates :		05/18/2022							
Directions ---------->		North Volume	%	South Volume	%	East Volume	%	West Volume	%	Total Volume	%
00:00	0:15										
0:15	0:30			1	0.3%					1	0.1%
0:30	0:45	2	0.4%							2	0.2%
0:45	1:00										
00:00	1:00	2	0.4%	1	0.3%					3	0.4%
1:00	1:15	1	0.2%							1	0.1%
1:15	1:30										
1:30	1:45										
1:45	2:00										
1:00	2:00	1	0.2%							1	0.1%
2:00	2:15										
2:15	2:30										
2:30	2:45										
2:45	3:00	1	0.2%							1	0.1%
2:00	3:00	1	0.2%							1	0.1%
3:00	3:15										
3:15	3:30										
3:30	3:45										
3:45	4:00			1	0.3%					1	0.1%
3:00	4:00			1	0.3%					1	0.1%
4:00	4:15			1	0.3%					1	0.1%
4:15	4:30										
4:30	4:45	1	0.2%							1	0.1%
4:45	5:00	1	0.2%	3	0.8%					4	0.5%
4:00	5:00	2	0.4%	4	1.1%					6	0.7%
5:00	5:15			2	0.5%					2	0.2%
5:15	5:30	1	0.2%							1	0.1%
5:30	5:45	2	0.4%	4	1.1%					6	0.7%
5:45	6:00			3	0.8%					3	0.4%
5:00	6:00	3	0.7%	9	2.4%					12	1.4%
6:00	6:15	2	0.4%	6	1.6%					8	1.0%
6:15	6:30	2	0.4%	7	1.8%					9	1.1%
6:30	6:45	10	2.2%	8	2.1%					18	2.2%
6:45	7:00	3	0.7%	12	3.2%					15	1.8%
6:00	7:00	17	3.7%	33	8.7%					50	6.0%
7:00	7:15	1	0.2%	5	1.3%					6	0.7%
7:15	7:30	7	1.5%	15	4.0%					22	2.6%
7:30	7:45	5	1.1%	8	2.1%					13	1.6%
7:45	8:00	5	1.1%	7	1.8%					12	1.4%
7:00	8:00	18	4.0%	35	9.2%					53	6.4%
8:00	8:15	7	1.5%	10	2.6%					17	2.0%
8:15	8:30	2	0.4%	6	1.6%					8	1.0%
8:30	8:45	8	1.8%	6	1.6%					14	1.7%
8:45	9:00	5	1.1%	7	1.8%					12	1.4%
8:00	9:00	22	4.8%	29	7.7%					51	6.1%
9:00	9:15	3	0.7%	5	1.3%					8	1.0%
9:15	9:30	7	1.5%	4	1.1%					11	1.3%
9:30	9:45	5	1.1%	7	1.8%					12	1.4%
9:45	10:00	3	0.7%	6	1.6%					9	1.1%
9:00	10:00	18	4.0%	22	5.8%					40	4.8%
10:00	10:15	9	2.0%	4	1.1%					13	1.6%
10:15	10:30	8	1.8%	4	1.1%					12	1.4%
10:30	10:45			8	2.1%					8	1.0%
10:45	11:00	4	0.9%	10	2.6%					14	1.7%
10:00	11:00	21	4.6%	26	6.9%					47	5.6%
11:00	11:15	5	1.1%	7	1.8%					12	1.4%
11:15	11:30	8	1.8%	2	0.5%					10	1.2%
11:30	11:45	6	1.3%	6	1.6%					12	1.4%
11:45	12:00	7	1.5%	9	2.4%					16	1.9%
11:00	12:00	26	5.7%	24	6.3%					50	6.0%

12:00	12:15	10	2.2%	3	0.8%			13	1.6%
12:15	12:30	10	2.2%	5	1.3%			15	1.8%
12:30	12:45	9	2.0%	7	1.8%			16	1.9%
12:45	13:00	6	1.3%	6	1.6%			12	1.4%
12:00	13:00	35	7.7%	21	5.5%			56	6.7%
13:00	13:15	3	0.7%	5	1.3%			8	1.0%
13:15	13:30	7	1.5%	7	1.8%			14	1.7%
13:30	13:45	6	1.3%	4	1.1%			10	1.2%
13:45	14:00	6	1.3%	5	1.3%			11	1.3%
13:00	14:00	22	4.8%	21	5.5%			43	5.2%
14:00	14:15	5	1.1%	6	1.6%			11	1.3%
14:15	14:30	8	1.8%	3	0.8%			11	1.3%
14:30	14:45	11	2.4%	12	3.2%			23	2.8%
14:45	15:00	8	1.8%	3	0.8%			11	1.3%
14:00	15:00	32	7.0%	24	6.3%			56	6.7%
15:00	15:15	13	2.9%	9	2.4%			22	2.6%
15:15	15:30	13	2.9%	5	1.3%			18	2.2%
15:30	15:45	20	4.4%	5	1.3%			25	3.0%
15:45	16:00	15	3.3%	6	1.6%			21	2.5%
15:00	16:00	61	13.4%	25	6.6%			86	10.3%
16:00	16:15	16	3.5%	7	1.8%			23	2.8%
16:15	16:30	19	4.2%	7	1.8%			26	3.1%
16:30	16:45	7	1.5%	16	4.2%			23	2.8%
16:45	17:00	8	1.8%	7	1.8%			15	1.8%
16:00	17:00	50	11.0%	37	9.8%			87	10.4%
17:00	17:15	18	4.0%	5	1.3%			23	2.8%
17:15	17:30	11	2.4%	12	3.2%			23	2.8%
17:30	17:45	14	3.1%	7	1.8%			21	2.5%
17:45	18:00	13	2.9%	1	0.3%			14	1.7%
17:00	18:00	56	12.3%	25	6.6%			81	9.7%
18:00	18:15	9	2.0%	6	1.6%			15	1.8%
18:15	18:30	6	1.3%	3	0.8%			9	1.1%
18:30	18:45	3	0.7%	4	1.1%			7	0.8%
18:45	19:00	3	0.7%					3	0.4%
18:00	19:00	21	4.6%	13	3.4%			34	4.1%
19:00	19:15	5	1.1%	4	1.1%			9	1.1%
19:15	19:30	6	1.3%	3	0.8%			9	1.1%
19:30	19:45	4	0.9%	2	0.5%			6	0.7%
19:45	20:00	3	0.7%	6	1.6%			9	1.1%
19:00	20:00	18	4.0%	15	4.0%			33	4.0%
20:00	20:15	5	1.1%					5	0.6%
20:15	20:30	2	0.4%	2	0.5%			4	0.5%
20:30	20:45	5	1.1%	2	0.5%			7	0.8%
20:45	21:00	4	0.9%					4	0.5%
20:00	21:00	16	3.5%	4	1.1%			20	2.4%
21:00	21:15	3	0.7%	1	0.3%			4	0.5%
21:15	21:30	1	0.2%	1	0.3%			2	0.2%
21:30	21:45	1	0.2%	1	0.3%			2	0.2%
21:45	22:00	4	0.9%	3	0.8%			7	0.8%
21:00	22:00	9	2.0%	6	1.6%			15	1.8%
22:00	22:15			2	0.5%			2	0.2%
22:15	22:30	2	0.4%	1	0.3%			3	0.4%
22:30	22:45								
22:45	23:00								
22:00	23:00	2	0.4%	3	0.8%			5	0.6%
23:00	23:15								
23:15	23:30	1	0.2%					1	0.1%
23:30	23:45	1	0.2%	1	0.3%			2	0.2%
23:45	OO:OO								
23:00	OO:OO	2	0.4%	1	0.3%			3	0.4%
Total		**455**		**379**				**834**	100.0%
		54.6%		**45.4%**				100.0%	
AM PEAK		**10**		**15**				**22**	
period		**6:30**		**7:15**				**7:15**	
% of class			2.2%		4.0%				2.6%
PM PEAK		**20**		**16**				**26**	
period		**15:30**		**16:30**				**16:15**	
% of class			4.4%		4.2%				3.1%

```
STAMSON 5.0        NORMAL REPORT        Date: 16-10-2023 15:02:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: Min.te               Time Period: 1 hours
Description: Assessment of Minimum Existing Hourly Traffic (7-8am)
Note: Counts are multiplied by 5 to reach the minimum 40 vehicles per hour for
comparison.


Road data, segment # 1:
-----------------------
Car traffic volume  :    20 veh/TimePeriod
Medium truck volume :    15 veh/TimePeriod
Heavy truck volume  :     5 veh/TimePeriod
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

Results segment # 1:
--------------------

Source height = 1.88 m

ROAD (0.00 + 55.06 + 0.00) = 55.06 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  61.03   0.00  -4.69  -1.28   0.00   0.00   0.00  55.06
-------------------------------------------------------------------------------

Segment Leq : 55.06 dBA

Adjustment to account for 5x traffic counts: -7 dB

Total Leq All Segments: 48.06 dBA
```

```
STAMSON 5.0        NORMAL REPORT        Date: 16-10-2023 15:03:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: Max.te               Time Period: 1 hours
Description: Assessment of Future Hourly Traffic (7-8am) including Pit Truck
Traffic
Note: Counts are multiplied by 5 to reach the minimum 40 vehicles per hour for
comparison.


Road data, segment # 1:
-----------------------
Car traffic volume  :    20 veh/TimePeriod
Medium truck volume :    15 veh/TimePeriod
Heavy truck volume  :    45 veh/TimePeriod
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

Results segment # 1:
--------------------

Source height = 2.40 m

ROAD (0.00 + 62.28 + 0.00) = 62.28 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.54  68.17   0.00  -4.64  -1.25   0.00   0.00   0.00  62.28
-------------------------------------------------------------------------------

Segment Leq : 62.28 dBA

Adjustment to account for 5x traffic counts: -7 dB

Total Leq All Segments: 55.28 dBA
```

```
STAMSON 5.0        NORMAL REPORT        Date: 16-10-2023 15:06:01
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: Avg_e.te1            Time Period: 1 hours
Description: Assessment of Average Existing Hourly Traffic
Note: Counts are multiplied by 5 to reach the minimum 40 vehicles per hour for
comparison.


Road data, segment # 1:
------------------------
Car traffic volume  :   131 veh/TimePeriod
Medium truck volume :    21 veh/TimePeriod
Heavy truck volume  :    28 veh/TimePeriod
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

Results segment # 1:
---------------------

Source height = 1.99 m

ROAD (0.00 + 60.89 + 0.00) = 60.89 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  66.85   0.00  -4.68  -1.28   0.00   0.00   0.00  60.89
-------------------------------------------------------------------------------

Segment Leq : 60.89 dBA

Adjustment to account for 5x traffic counts: -7 dB

Total Leq All Segments: 53.89 dBA
```

```
STAMSON 5.0        NORMAL REPORT        Date: 16-10-2023 15:05:28
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: Avg_f.te1            Time Period: 1 hours
Description: Assessment of Average Future Hourly Traffic including Pit Truck
Traffic
Note: Counts are multiplied by 5 to reach the minimum 40 vehicles per hour for
comparison.

Road data, segment # 1:
------------------------
Car traffic volume  :   131 veh/TimePeriod
Medium truck volume :    21 veh/TimePeriod
Heavy truck volume  :    68 veh/TimePeriod
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

Results segment # 1:
---------------------

Source height = 2.36 m

ROAD (0.00 + 64.15 + 0.00) = 64.15 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.54  70.06   0.00  -4.65  -1.26   0.00   0.00   0.00  64.15
-------------------------------------------------------------------------------

Segment Leq : 64.15 dBA

Adjustment to account for 5x traffic counts: -7 dB

Total Leq All Segments: 57.15 dBA
```

Appendix C
Stationary Noise Sample Calculations

Project: Lichty Pit NIS
Project Number: 21532

Source ID	Source Name	Point of Reception R01		Point of Reception R02		Point of Reception R03		Point of Reception R04	
		Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day
Crusher	Crusher	904	39	902	39	576	43	840	40
FEL	Extraction Loader	966	25	949	25	626	29	847	25
Trucks	Highway Trucks	670	26	789	25	449	30	835	25
Screen	Screener	919	39	936	38	609	42	881	32
FEL	Shipping Loader	892	23	897	22	570	27	844	23
Total Level [dBA]			**42**		**42**		**46**		**41**

Source ID	Source Name	Point of Reception R05		Point of Reception R06		Point of Reception R07		Point of Reception R08	
		Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day
Crusher	Crusher	1259	29	321	41	668	35	877	34
FEL	Extraction Loader	1206	20	258	37	613	28	842	25
Trucks	Highway Trucks	1366	22	463	34	812	28	1068	24
Screen	Screener	1277	29	323	41	643	35	840	34
FEL	Shipping Loader	1272	16	334	27	677	30	881	21
Total Level [dBA]			**33**		**45**		**39**		**38**

Source ID	Source Name	Point of Reception R09		Point of Reception R10		Point of Reception R11		Point of Reception VL12	
		Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day
Crusher	Crusher	1030	30	1254	29	906	37	1139	30
FEL	Extraction Loader	997	23	1243	21	949	23	1095	22
Trucks	Highway Trucks	1196	19	1301	20	799	20	1253	23
Screen	Screener	992	33	1213	35	879	37	1164	29
FEL	Shipping Loader	1033	19	1252	18	894	20	1151	16
Total Level [dBA]			**35**		**36**		**40**		**33**

Receiver: R01
Project: Lichty Pit NIS
Project Number: 21532

Time Period	Total (dBA)*
Day	42

Receiver Name	Receiver ID	X	Y	Z
R01	R01	547199 m	4827212 m	351.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
Crusher	Crusher	547976.8	4827672.2	349.1	0	116	0.0	A	70.1	0.0	-2.2	4.7	3.8	0.0	0.0	0.0	0.0	0.0	39
FEL	Extraction Loader	548036.2	4827693.5	348.4	0	102	0.0	A	70.7	0.0	-2.6	4.7	4.2	0.0	0.0	0.0	0.0	0.0	25
Trucks	Highway Trucks	547848.8	4827607.7	349.1	0	73	24.4	A	68.6	0.0	-2.2	4.8	3.1	0.0	0.0	0.0	0.0	0.0	24
Trucks	Highway Trucks	547680.5	4827532.6	349.5	0	73	20.4	A	66.2	0.0	-1.6	4.8	2.5	0.0	0.0	0.0	0.0	0.0	22
Screen	Screener	547968.7	4827713.3	349.2	0	115	0.0	A	70.3	0.0	-2.2	4.7	3.4	0.0	0.0	0.0	0.0	0.0	39
FEL	Shipping Loader	547962.9	4827672.5	348.5	0	102	0.0	A	70.0	0.0	-2.4	4.7	3.9	0.0	0.0	0.0	0.0	0.0	23

*The total value shown accounts for all modelled sources and may include small contributions from sources not described in the table above

Receiver: R02
Project: Lichty Pit NIS
Project Number: 21532

Time Period	Total (dBA)*
Day	42

Receiver Name	Receiver ID	X	Y	Z
R02	R02	547580 m	4826862 m	354.4 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
Crusher	Crusher	547976.8	4827672.2	349.1	0	116	0.0	A	70.1	0.0	-1.7	4.4	3.8	0.0	0.0	0.0	0.0	0.0	39
FEL	Extraction Loader	548036.2	4827693.5	348.4	0	102	0.0	A	70.5	0.0	-2.1	4.6	4.1	0.0	0.0	0.0	0.0	0.0	25
Trucks	Highway Trucks	547820.0	4827587.5	349.2	0	73	20.1	A	68.7	0.0	-1.8	4.8	3.2	0.0	0.0	0.0	0.0	0.0	19
Trucks	Highway Trucks	547762.6	4827547.0	349.4	0	73	15.7	A	68.0	0.0	-1.9	4.8	3.0	0.0	0.0	0.0	0.0	0.0	15
Trucks	Highway Trucks	547680.5	4827532.6	349.5	0	73	20.4	A	67.6	0.0	-1.6	4.8	2.9	0.0	0.0	0.0	0.0	0.0	20
Screen	Screener	547968.7	4827713.3	349.2	0	115	0.0	A	70.4	0.0	-1.7	4.7	3.5	0.0	0.0	0.0	0.0	0.0	38
FEL	Shipping Loader	547962.9	4827672.5	348.5	0	102	0.0	A	70.1	0.0	-1.9	4.7	3.9	0.0	0.0	0.0	0.0	0.0	22

*The total value shown accounts for all modelled sources and may include small contributions from sources not described in the table above

Receiver: R03
Project: Lichty Pit NIS
Project Number: 21532

Time Period	Total (dBA)*
Day	46

Receiver Name	Receiver ID	X	Y	Z
R03	R03	547691 m	4827172 m	347.6 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
Crusher	Crusher	547976.8	4827672.2	349.1	0	116	0.0	A	66.2	0.0	-0.6	4.0	2.8	0.0	0.0	0.0	0.0	0.0	43
FEL	Extraction Loader	548036.2	4827693.5	348.4	0	102	0.0	A	66.9	0.0	-1.0	4.4	3.0	0.0	0.0	0.0	0.0	0.0	29
Trucks	Highway Trucks	547896.5	4827641.3	348.9	0	73	14.7	A	65.2	0.0	-0.5	4.2	2.3	0.0	0.0	0.0	0.0	0.0	17
Trucks	Highway Trucks	547877.2	4827627.8	348.9	0	73	12.4	A	64.9	0.0	-0.5	4.2	2.2	0.0	0.0	0.0	0.0	0.0	15
Trucks	Highway Trucks	547819.8	4827587.4	349.2	0	73	20.9	A	63.8	0.0	-0.6	4.2	2.0	0.0	0.0	0.0	0.0	0.0	25
Trucks	Highway Trucks	547752.3	4827539.8	349.5	0	73	16.3	A	62.4	0.0	-0.7	4.3	1.7	0.0	0.0	0.0	0.0	0.0	22
Trucks	Highway Trucks	547727.5	4827528.3	349.6	0	73	9.0	A	62.1	0.0	-0.8	4.2	1.7	0.0	0.0	0.0	0.0	0.0	15
Trucks	Highway Trucks	547711.9	4827529.7	349.5	0	73	13.7	A	62.1	0.0	-0.8	4.2	1.7	0.0	0.0	0.0	0.0	0.0	20
Trucks	Highway Trucks	547663.2	4827534.1	349.5	0	73	18.7	A	62.2	0.0	-0.6	4.0	1.7	0.0	0.0	0.0	0.0	0.0	25
Screen	Screener	547968.7	4827713.3	349.2	0	115	0.0	A	66.7	0.0	0.1	3.9	2.6	0.0	0.0	0.0	0.0	0.0	42
FEL	Shipping Loader	547962.9	4827672.5	348.5	0	102	0.0	A	66.1	0.0	-0.8	4.3	2.8	0.0	0.0	0.0	0.0	0.0	27

*The total value shown accounts for all modelled sources and may include small contributions from sources not described in the table above

Receiver: R04
Project: Lichty Pit NIS
Project Number: 21532

Time Period	Total (dBA)*
Day	41

Receiver Name	Receiver ID	X	Y	Z
R04	R04	548201 m	4826863 m	354.8 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
Crusher	Crusher	547976.8	4827672.2	349.1	0	116	0.0	A	69.5	0.0	-1.4	4.7	3.6	0.0	0.0	0.0	0.0	0.0	40
FEL	Extraction Loader	548036.2	4827693.5	348.4	0	102	0.0	A	69.6	0.0	-1.2	5.2	3.8	0.0	0.0	0.0	0.0	0.0	25
Trucks	Highway Trucks	547879.4	4827629.3	348.9	0	73	23.1	A	69.4	0.0	-2.0	4.2	3.4	0.0	0.0	0.0	0.0	0.0	22
Trucks	Highway Trucks	547778.1	4827557.9	349.4	0	73	16.5	A	69.2	0.0	-1.5	0.0	3.3	0.0	0.0	0.0	0.0	0.0	19
Screen	Screener	547968.7	4827713.3	349.2	0	115	0.0	A	69.9	0.0	-1.4	11.5	3.3	0.0	0.0	0.0	0.0	0.0	32
FEL	Shipping Loader	547962.9	4827672.5	348.5	0	102	0.0	A	69.5	0.0	-1.6	4.5	3.8	0.0	0.0	0.0	0.0	0.0	23

*The total value shown accounts for all modelled sources and may include small contributions from sources not described in the table above

Receiver: R05
Project: Lichty Pit NIS
Project Number: 21532

Time Period	Total (dBA)*
Day	33

Receiver Name	Receiver ID	X	Y	Z
R05	R05	549202 m	4827381 m	359.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
Crusher	Crusher	547976.8	4827672.2	349.1	0	116	0.0	A	73.0	0.0	-1.0	10.0	4.8	0.0	0.0	0.0	0.0	0.0	29
FEL	Extraction Loader	548036.2	4827693.5	348.4	0	102	0.0	A	72.6	0.0	0.1	4.3	4.9	0.0	0.0	0.0	0.0	0.0	20
Trucks	Highway Trucks	547837.8	4827600.0	349.1	0	73	24.0	A	73.8	0.0	-1.6	0.0	5.1	0.0	0.0	0.0	0.0	0.0	20
Trucks	Highway Trucks	547680.5	4827532.6	349.5	0	73	20.4	A	74.7	0.0	-1.9	0.0	5.5	0.0	0.0	0.0	0.0	0.0	16
Screen	Screener	547968.7	4827713.3	349.2	0	115	0.0	A	73.1	0.0	-1.1	10.3	4.3	0.0	0.0	0.0	0.0	0.0	29
FEL	Shipping Loader	547962.9	4827672.5	348.5	0	102	0.0	A	73.1	0.0	-1.4	6.9	5.1	0.0	0.0	0.0	0.0	0.0	16

*The total value shown accounts for all modelled sources and may include small contributions from sources not described in the table above

Receiver: R06
Project: Lichty Pit NIS
Project Number: 21532

Time Period	Total (dBA)*
Day	45

Receiver Name	Receiver ID	X	Y	Z
R06	R06	548291 m	4827737 m	355.9 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
Crusher	Crusher	547976.8	4827672.2	349.1	0	116	0.0	A	61.1	0.0	-1.3	13.0	1.8	0.0	0.0	0.0	0.0	0.0	41
FEL	Extraction Loader	548036.2	4827693.5	348.4	0	102	0.0	A	59.2	0.0	-0.1	4.6	1.4	0.0	0.0	0.0	0.0	0.0	37
Trucks	Highway Trucks	547953.4	4827681.5	348.6	0	73	13.5	A	61.7	0.0	-1.8	0.0	1.6	0.0	0.0	0.0	0.0	0.0	25
Trucks	Highway Trucks	547923.1	4827660.1	348.7	0	73	17.2	A	62.5	0.0	-2.0	4.7	1.7	0.0	0.0	0.0	0.0	0.0	24
Trucks	Highway Trucks	547818.4	4827586.4	349.2	0	73	23.1	A	64.9	0.0	-2.6	0.0	2.2	0.0	0.0	0.0	0.0	0.0	32
Trucks	Highway Trucks	547680.5	4827532.6	349.5	0	73	20.4	A	67.2	0.0	-3.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	27
Screen	Screener	547968.7	4827713.3	349.2	0	115	0.0	A	61.2	0.0	-1.4	12.7	1.6	0.0	0.0	0.0	0.0	0.0	41
FEL	Shipping Loader	547962.9	4827672.5	348.5	0	102	0.0	A	61.5	0.0	-1.7	10.5	1.8	0.0	0.0	0.0	0.0	0.0	27

*The total value shown accounts for all modelled sources and may include small contributions from sources not described in the table above

Receiver: R07
Project: Lichty Pit NIS
Project Number: 21532

Time Period	Total (dBA)*
Day	39

Receiver Name	Receiver ID	X	Y	Z
R07	R07	548421 m	4828171 m	356.9 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
Crusher	Crusher	547976.8	4827672.2	349.1	0	116	0.0	A	67.5	0.0	-1.0	11.2	3.1	0.0	0.0	0.0	0.0	0.0	35
FEL	Extraction Loader	548036.2	4827693.5	348.4	0	102	0.0	A	66.8	0.0	-0.2	4.5	2.9	0.0	0.0	0.0	0.0	0.0	28
Trucks	Highway Trucks	547951.9	4827680.4	348.6	0	73	14.2	A	67.6	0.0	-1.5	0.0	2.9	0.0	0.0	0.0	0.0	0.0	19
Trucks	Highway Trucks	547905.2	4827647.5	348.8	0	73	19.5	A	68.3	0.0	-1.7	3.2	3.1	0.0	0.0	0.0	0.0	0.0	20
Trucks	Highway Trucks	547802.1	4827574.8	349.3	0	73	22.2	A	69.7	0.0	-2.1	0.0	3.5	0.0	0.0	0.0	0.0	0.0	25
Trucks	Highway Trucks	547680.5	4827532.6	349.5	0	73	20.4	A	70.8	0.0	-2.3	0.0	3.9	0.0	0.0	0.0	0.0	0.0	22
Screen	Screener	547968.7	4827713.3	349.2	0	115	0.0	A	67.2	0.0	-0.8	11.6	2.7	0.0	0.0	0.0	0.0	0.0	35
FEL	Shipping Loader	547962.9	4827672.5	348.5	0	102	0.0	A	67.6	0.0	-1.4	0.0	3.2	0.0	0.0	0.0	0.0	0.0	30

*The total value shown accounts for all modelled sources and may include small contributions from sources not described in the table above

Receiver: R08
Project: Lichty Pit NIS
Project Number: 21532

Time Period	Total (dBA)*
Day	38

Receiver Name	Receiver ID	X	Y	Z
R08	R08	548221 m	4828514 m	352.6 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
Crusher	Crusher	547976.8	4827672.2	349.1	0	116	0.0	A	69.9	0.0	0.3	7.6	3.7	0.0	0.0	0.0	0.0	0.0	34
FEL	Extraction Loader	548036.2	4827693.5	348.4	0	102	0.0	A	69.5	0.0	0.7	3.8	3.7	0.0	0.0	0.0	0.0	0.0	25
Trucks	Highway Trucks	547846.2	4827606.0	349.1	0	73	24.3	A	70.8	0.0	-0.1	0.0	3.9	0.0	0.0	0.0	0.0	0.0	23
Screen	Screener	547968.7	4827713.3	349.2	0	115	0.0	A	69.5	0.0	1.2	7.5	3.2	0.0	0.0	0.0	0.0	0.0	34
FEL	Shipping Loader	547962.9	4827672.5	348.5	0	102	0.0	A	69.9	0.0	0.0	4.8	3.9	0.0	0.0	0.0	0.0	0.0	21

*The total value shown accounts for all modelled sources and may include small contributions from sources not described in the table above

Receiver: R09
Project: Lichty Pit NIS
Project Number: 21532

Time Period	Total (dBA)*
Day	35

Receiver Name	Receiver ID	X	Y	Z
R09	R09	548210 m	4828675 m	352.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
Crusher	Crusher	547976.8	4827672.2	349.1	0	116	0.0	A	71.3	0.0	0.4	9.9	4.2	0.0	0.0	0.0	0.0	0.0	30
FEL	Extraction Loader	548036.2	4827693.5	348.4	0	102	0.0	A	71.0	0.0	0.7	3.7	4.3	0.0	0.0	0.0	0.0	0.0	23
Trucks	Highway Trucks	547853.5	4827611.1	349.0	0	73	24.2	A	72.0	0.0	0.1	3.8	4.3	0.0	0.0	0.0	0.0	0.0	17
Screen	Screener	547968.7	4827713.3	349.2	0	115	0.0	A	70.9	0.0	1.3	6.3	3.6	0.0	0.0	0.0	0.0	0.0	33
FEL	Shipping Loader	547962.9	4827672.5	348.5	0	102	0.0	A	71.3	0.0	0.1	4.1	4.4	0.0	0.0	0.0	0.0	0.0	19

*The total value shown accounts for all modelled sources and may include small contributions from sources not described in the table above

Receiver: R10

Project: Lichty Pit NIS
Project Number: 21532

Time Period	Total (dBA)*
Day	36

Receiver Name	Receiver ID	X	Y	Z
R10	R10	547810 m	4828915 m	363.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
Crusher	Crusher	547976.8	4827672.2	349.1	0	116	0.0	A	73.0	0.0	-1.4	10.2	4.7	0.0	0.0	0.0	0.0	0.0	29
FEL	Extraction Loader	548036.2	4827693.5	348.4	0	102	0.0	A	72.9	0.0	-1.4	4.7	5.0	0.0	0.0	0.0	0.0	0.0	21
Trucks	Highway Trucks	547680.5	4827532.6	349.5	0	73	20.4	A	73.9	0.0	-1.1	0.0	5.1	0.0	0.0	0.0	0.0	0.0	16
Screen	Screener	547968.7	4827713.3	349.2	0	115	0.0	A	72.7	0.0	-1.2	4.7	4.1	0.0	0.0	0.0	0.0	0.0	35
FEL	Shipping Loader	547962.9	4827672.5	348.5	0	102	0.0	A	73.0	0.0	-1.6	4.7	5.1	0.0	0.0	0.0	0.0	0.0	18

*The total value shown accounts for all modelled sources and may include small contributions from sources not described in the table above

Receiver: R11
Project: Lichty Pit NIS
Project Number: 21532

Time Period	Total (dBA)*
Day	40

Receiver Name	Receiver ID	X	Y	Z
R11	R11	547188 m	4828118 m	357.8 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
Crusher	Crusher	547976.8	4827672.2	349.1	0	116	0.0	A	70.1	0.0	-1.4	6.2	3.8	0.0	0.0	0.0	0.0	0.0	37
FEL	Extraction Loader	548036.2	4827693.5	348.4	0	102	0.0	A	70.5	0.0	-1.7	6.6	4.1	0.0	0.0	0.0	0.0	0.0	23
Trucks	Highway Trucks	547855.3	4827612.3	349.0	0	73	24.2	A	69.5	0.0	-1.5	7.5	3.4	0.0	0.0	0.0	0.0	0.0	19
Screen	Screener	547968.7	4827713.3	349.2	0	115	0.0	A	69.9	0.0	-1.2	6.4	3.3	0.0	0.0	0.0	0.0	0.0	37
FEL	Shipping Loader	547962.9	4827672.5	348.5	0	102	0.0	A	70.0	0.0	-1.6	7.1	3.9	0.0	0.0	0.0	0.0	0.0	20

*The total value shown accounts for all modelled sources and may include small contributions from sources not described in the table above

Receiver: VL12
Project: Lichty Pit NIS
Project Number: 21532

Time Period	Total (dBA)*
Day	33

Receiver Name	Receiver ID	X	Y	Z
VL12	VL12	549008 m	4827189 m	357.7 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
Crusher	Crusher	547976.8	4827672.2	349.1	0	116	0.0	A	72.1	0.0	-1.1	10.9	4.5	0.0	0.0	0.0	0.0	0.0	30
FEL	Extraction Loader	548036.2	4827693.5	348.4	0	102	0.0	A	71.8	0.0	0.0	4.4	4.6	0.0	0.0	0.0	0.0	0.0	22
Trucks	Highway Trucks	547841.6	4827602.7	349.1	0	73	24.2	A	72.9	0.0	-1.7	0.0	4.6	0.0	0.0	0.0	0.0	0.0	22
Trucks	Highway Trucks	547680.5	4827532.6	349.5	0	73	20.4	A	73.7	0.0	-1.9	0.0	5.0	0.0	0.0	0.0	0.0	0.0	17
Screen	Screener	547968.7	4827713.3	349.2	0	115	0.0	A	72.3	0.0	-1.1	11.0	4.0	0.0	0.0	0.0	0.0	0.0	29
FEL	Shipping Loader	547962.9	4827672.5	348.5	0	102	0.0	A	72.2	0.0	-1.4	7.8	4.7	0.0	0.0	0.0	0.0	0.0	16

*The total value shown accounts for all modelled sources and may include small contributions from sources not described in the table above

Appendix D
Qualifications of the Authors

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Derek Flake M.Sc., P.Eng.

Profile

Derek is an employee of Aercoustics Engineering Limited, an engineering consulting company specializing in acoustics, noise and vibration. Prior to that, he worked for several years at another acoustics, noise and vibration firm and he completed a Master of Science in the field of ultrasound transducer design. Derek is a Professional Engineer with the Professional Engineers Ontario.

Derek has been recognized by the Local Planning Appeal Tribunal (LPAT) and previously by the Ontario Municipal Board (OMB) as an expert in environmental noise and has provided expert opinion testimony to the Board and in civil litigation.

Employment History

2012 – Present	Acoustical Engineer, Aercoustics Engineering Limited
2009 – 2012	Engineering Intern, Jade Acoustics Incorporated

Additional Activities / Committees

2019 – Present	Officer on the Board of Directors and Chair of the Membership Committee at the Air & Waste Management Association (A&WMA) Ontario Section (OS)
2018 – Present	Member of Environment Committee at the Ontario Sand, Stone and Gravel Association (OSSGA)
2014 – Present	Member of Training and Development Committee at the Ontario Sand, Stone and Gravel Association (OSSGA)

Education

Master of Science (M.Sc.)	Medical Biophysics (Ultrasound Physics) University of Toronto
Bachelor of Applied Science (B.A.Sc.)	Engineering Physics (Mechanical) Queen's University

Professional Registration / Affiliations

Licensed Professional Engineer with the Professional Engineers of Ontario (PEO)

Courses and Speaking Events

Instructor, Municipal Law Enforcement Officers' Association (MLEOA) Environmental Noise training courses. This is an annual four-day training program which provides the officers with an understanding of sound measurement and its relationship with environmental noise impact. The officer is trained in the utilization of technical equipment required in the application of sound measurement theories. This course also covers the unique elements of qualitative noise regulations and is authorized by the Ministry of the Environment and Climate Change.

Speaker, "Overview of Noise & Vibration Issues in Land-Use Planning", A&WMA OS Environment Issues in Land-Use Planning, Guelph, October 30, 2019.

Attended A&WMA Course "Consultant Liability and Expert Witness Testimony", Guelph, 2019.

Speaker, "Environmental Noise: Modelling Techniques to Quiet your Acoustic Troubles", ACE 2019, Quebec City, 2019.

Attended PSMJ Resources Project Management Bootcamp, Toronto, 2016.

Attended OSSGA Health and Safety Seminar courses *"Aggregates 101" and "Aggregates 201"*, Toronto, 2015. Mr. Flake both attended and aided in the development for parts of the course.

Speaker, "*The New NPC-300 Noise Guideline: What does it mean for your noise by-law?*" MLEOA Annual General Meeting, Kingston, 2014.

Professional Activities

Land Use Planning

In the field of environmental acoustics, Mr. Flake has completed numerous projects involving noise impact from planned stationary sources as well as noise impact studies for proposed new noise sensitive uses. These projects included conducting studies for proposed operations and developments and addressing noise concerns for existing operations. Peer reviews of noise studies prepared by other acoustic consultants were also conducted by Mr. Flake. In the land use planning process, Mr. Flake has completed studies which provide assessments of the noise impact on proposed residential, commercial, institutional and industrial developments from the local environment which includes noise from road, rail, and aircraft traffic and stationary noise sources such as industrial and commercial uses. Also, vibration measurements and studies were conducted to assess vibration from rail traffic such as trains, streetcars and subways. The studies include recommendations for noise control of the sources, dwelling building components, wall, window, and door constructions to satisfy the Ministry of Environment, Conservation and Parks noise guidelines.

In addition, Mr. Flake has conducted architectural drawing reviews and provided design advice for residential and commercial developments. These have ensured the construction plans will meet the municipal and Ontario Building Code requirements.

Environmental Compliance Approvals & EASR
Mr. Flake was involved in noise and vibration impact studies for industrial, institutional and commercial uses. He has prepared Acoustic Assessment Reports for use in applications for Environmental Compliance Approvals (ECA) and the Environmental Activity & Sector Registry (EASR). These studies provided conceptual as well as detailed designs of noise mitigation to reduce in-plant noise or noise emission into the environment. In-plant projects generally involved noise surveys, detailed noise and vibration measurements of equipment, data analysis and computer modelling of noise controls to evaluate effectiveness. In some cases, detailed designs and specifications have been provided. Mr. Flake has a good record of submitting applications that are accepted as fully complete according to MECP records.

Aggregates
Mr. Flake has done work in the aggregates industry which involved the preparation and support of noise impact studies to determine technical feasibility of aggregate licence applications to the Ministry of Natural Resources & Forestry. This work included preparing the noise impact studies, supporting the findings at public meetings, and performing acoustic audits to confirm compliance with the noise requirements.

Mining
Mr. Flake has acted as a third-party peer reviewer for the City of Timmins, overseeing all aspects of environmental compliance (including acoustics, noise & vibration) for the Hollinger Pit Open Mine in Timmins.

Acoustic Audits were also conducted at Goldcorp's Red Lake Balmerton & Cochenour sites.

Renewable Energy
Mr. Flake has performed IEC 61400 testing of Wind Turbines and Transformer Station noise audits.

Noise Source Investigations and Room Acoustics
Mr. Flake has completed several projects involving design of spaces where sound privacy and room acoustics were critical. These projects have included noise complaint investigation, room acoustics, mechanical noise, noise measurements to quantify sound isolation, and environmental noise impact. Examples of spaces include cinemas, offices, hospitals and residential condominiums.

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Kohl Clark, B.Eng., P.Eng.

Senior Project Manager

Profile

Kohl holds a Bachelor of Engineering in Mechanical Engineering from McMaster University. As an Acoustical Engineer at Aercoustics Engineering Ltd., Kohl brings experience tackling projects in a variety of industries, including architectural design, residential, environmental and transit. Kohl is a Professional Engineer with Professional Engineers Ontario.

Education & Experience

- Bachelor of Engineering, Mechanical Engineering, McMaster University, June 2016
- Acoustical Engineer, Aercoustics Engineering Ltd. August 2016 to present

Relevant Project Experience

Aggregate site modelling and design experience includes:

Law Quarry Extension	Wainfleet ON
Wallace Pit	Thamesford, ON
Robinson Pit	Central Frontenac, ON
Cunningham Pit	Ottawa, ON
Greely Quarry	Ottawa, ON
Lichty Pit	Various, ON
Bury Road Quarry	Bruce Peninsula, ON

Aggregate site review and audit experience includes:

Vinemount Quarries	Stoney Creek, ON
Brown Pit	North Dumfries, ON
Hennig Pit	North Dumfries, ON
Dance & Dabrowski Pits	North Dumfries, ON
Melancthon Pit	Melancthon, ON

Other relevant industrial noise modelling and assessment experience includes:

D. Crupi and Sons Ltd. Asphalt Plant	Oshawa, ON
Hamilton Wastewater Treatment Plant	Hamilton, ON
Lafarge Bath Cement Plant	Bath, ON
PureGold Mine	Madsen, ON
Cochenour Mine	Cochenour, ON
Red Lake Gold Mine	Red Lake, ON

End of Report