



**Howe Gastmeier Chapnik Limited**  
2000 Argentia Road, Plaza One, Suite 203  
Mississauga, Ontario, Canada L5N 1P7  
t: 905.826.4044

# ACOUSTIC ASSESSMENT REPORT

**D-Squared Construction**

**5455 Boundary Road**

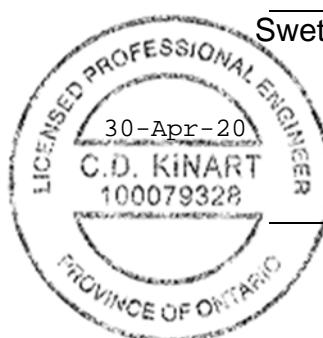
**Navan, Ontario**

Prepared for

D-Squared Construction  
6811 Hiram Drive  
Greely, Ontario  
K4P 1A2

Prepared by

Swetha Kulandaivelan, BASc, EIT



Reviewed By

Corey D. Kinart, MBA, PEng

April 30, 2020

HGC Engineering Project No. 02000048

## VERSION CONTROL

D-Squared Construction, 5455 Boundary Road, Navan, Ontario

Ver.	Date	Version Description	Prepared By
1	30-Apr-20	Original Acoustic Assessment Report in support of an application for an Environmental Compliance Approval	S. Kulandaivelan

# EXECUTIVE SUMMARY

D-Squared Construction retained HGC Engineering to undertake an Acoustic Assessment of their site at 5455 Boundary Road, in Navan, Ontario, which is proposed to host a hot-mix asphalt (“HMA”) plant, aggregate depot and, on occasion, an aggregate crushing operation. The assessment is required to support an application to the Ontario Ministry of the Environment, Conservation and Parks (“MECP”) for an Environmental Compliance Approval.

Sound emissions from key items of equipment were based on manufacturer’s sound data and on measurements of similar equipment conducted by HGC Engineering for past projects. The source sound levels were used to develop an acoustical model of the site in order to prepare a sound source inventory, and thereby determine the contribution of each individual source to the overall offsite sound levels. Acoustic Assessment criteria were established in accordance with the sound level limits in MECP guideline NPC-300.

The acoustical analysis indicates that, with the noise control measures specified herein, the sound levels of the site will be within the limits as set out in MECP guideline NPC-300. Given the absence of any proposed sources of ground-borne vibration, the site will also comply with the vibration limits of the MECP.

# Table of Contents

<b>EXECUTIVE SUMMARY.....</b>	<b>iii</b>
<b>1 INTRODUCTION .....</b>	<b>1</b>
<b>2 FACILITY DESCRIPTION .....</b>	<b>1</b>
<b>3 SOUND SOURCE SUMMARY .....</b>	<b>3</b>
<b>4 POINT OF RECEPTION SUMMARY .....</b>	<b>8</b>
<b>5 ASSESSMENT CRITERIA .....</b>	<b>8</b>
<b>6 RECOMMENDED NOISE CONTROL MEASURES.....</b>	<b>9</b>
<b>7 IMPACT ASSESSMENT .....</b>	<b>11</b>
<b>8 CONCLUSIONS .....</b>	<b>12</b>
<b>REFERENCES .....</b>	<b>13</b>

## Figures 1 to 14

- APPENDIX A – Acoustic Assessment Summary Tables**
- APPENDIX B – Zoning Maps**
- APPENDIX C – Manufacturer’s Sound Data**
- APPENDIX D – Details of Predictive Acoustical Modelling**
- APPENDIX E – Acoustic Assessment Criteria**
- APPENDIX F – Sample Calculation Results – Condensed, Overall dBA Format**
- APPENDIX G – Sample Calculation Results – Octave Band Format**



**Company Name**

D-Squared Construction

**Company Address**

Unit Number	Street Number	Street Name	PO Box
	6811	Hiram Drive	
City/Town		Province	Postal Code

Greely

Ontario

K4P 1A2

Location of Facility

5455 Boundary Road, Navan, Ontario, K4B 1P6

The attached Acoustic Assessment Report was prepared in accordance with the guidance in the ministry document "Information to be Submitted for Approval of Stationary Sources of Sound" (NPC-233) dated October 1995 and the minimum required information identified in the check-list on the reverse of this sheet has been submitted.

**Company Contact**

Company Contact

Last Name	First Name	Middle Initial
Title	Telephone Number	
Signature	Date (yyyy/mm/dd)	

**Technical Contact**

Technical Contact

Last Name	First Name	Middle Initial
Kulandaivelan	Swetha	
Representing	Telephone Number	
HGC Engineering	905-826-4044	
Signature	Date (yyyy/mm/dd)	

	Required Information	Submitted	Explanation/Reference
<b>1.0</b>	<b>Introduction (Project Background and Overview)</b>	<input checked="" type="checkbox"/> Yes	<a href="#">Section 1</a>
<b>2.0</b>	<b>Facility Description</b>		
	2.1 Operating hours of Facility and significant Noise Sources	<input checked="" type="checkbox"/> Yes	<a href="#">Section 2</a>
	2.2 Site Plan identifying all significant Noise Sources	<input checked="" type="checkbox"/> Yes	<a href="#">Figure 3</a>
<b>3.0</b>	<b>Noise Source Summary</b>		
	3.1 Noise Source Summary Table	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix A</a>
	3.2 Source noise emissions specifications	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix A</a>
	3.3 Source power/capacity ratings	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix A</a>
	3.4 Noise control equipment description and acoustical specifications	<input checked="" type="checkbox"/> Yes	<a href="#">Section 6, Figures 3 &amp; 4</a>
<b>4.0</b>	<b>Point of Reception Noise Impact Calculations</b>		
	4.1 Point of Reception Noise Impact Table	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix A</a>
	4.2 Point(s) of Reception (POR) list and description	<input checked="" type="checkbox"/> Yes	<a href="#">Section 4</a>
	4.3 Land-use Zoning Plan	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix B</a>
	4.4 Scaled Area Location Plan	<input checked="" type="checkbox"/> Yes	<a href="#">Figure 1 &amp; 2</a>
	4.5 Procedure used to assess noise impacts at each POR	<input checked="" type="checkbox"/> Yes	<a href="#">Section 3, Appendix D</a>
	4.6 List of parameters/assumptions used in calculations	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix D</a>
<b>5.0</b>	<b>Acoustic Assessment Summary</b>		
	5.1 Acoustic Assessment Summary Table	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix A</a>
	5.2 Rationale for selecting applicable noise guideline limits	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix E</a>
	5.3 Predictable Worst-case Impacts Operating Scenario	<input checked="" type="checkbox"/> Yes	<a href="#">Tables 1, A3 Figures 5 to 14</a>
<b>6.0</b>	<b>Conclusions</b>		
	6.1 Statement of compliance with the selected noise performance limits	<input checked="" type="checkbox"/> Yes	<a href="#">Section 8</a>
<b>7.0</b>	<b>Appendices (Provide details such as)</b>		
	Listing of Insignificant Noise Sources	<input checked="" type="checkbox"/> Yes	<a href="#">Section 3</a>
	Manufacturer's Noise Specifications	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix C</a>
	Calculations	<input checked="" type="checkbox"/> Yes	<a href="#">Appendices F &amp; G</a>
	Instrumentation	<input checked="" type="checkbox"/> Yes	<a href="#">N/A</a>
	Meteorology during Sound Level Measurements	<input checked="" type="checkbox"/> Yes	<a href="#">N/A</a>
	Raw Data from Measurements	<input checked="" type="checkbox"/> Yes	<a href="#">Appendices F &amp; G</a>
	Drawings (Facility/ Equipment)	<input checked="" type="checkbox"/> Yes	<a href="#">Figure 3</a>

## 1 INTRODUCTION

The subject site is located at 5455 Boundary Road in Navan, Ontario. A scaled location map of the surrounding area is included as Figure 1.

This report has been prepared in accordance with the MECP guideline documents NPC-233 “Information to be Submitted for Approval of Stationary Sources of Sound”, dated October 1995 [1], and “Supporting Information for the Preparation of an Acoustic Assessment Report” [2]. The Acoustic Assessment Summary Tables are presented in Appendix A, in the standardized format required by the MECP. The purpose of this assessment is to evaluate the overall sound emissions of the plant during a predictable worst-case hour, which is defined as an hour when typically busy operation of the stationary sources under consideration could coincide with an hour of low background sound.

Zoning maps identifying the land uses surrounding the site, obtained from the City of Ottawa, are included as Appendix B. The lands surrounding the site are zoned Rural Heavy Industrial to the North and East, Rural General Industrial to the South and Rural Countryside to the West. The nearest and most potentially impacted noise sensitive points of reception to the site are single and two storey residences located northwest and southwest of the site. Five key points of reception were selected to represent these residences, and are labelled as locations R1 through R5 in Figures 2 and 5 through 14. One additional location, representing a vacant lot southwest of the site (on which a noise-sensitive use is permitted), is represented herein as V1.

During a site visit by HGC Engineering on February 13, 2020, the background sound in the vicinity of the nearest points of reception was observed to be dominated by local and distant road traffic and by neighbouring industrial/commercial activities. The area is best categorized as a Class 2 acoustical environment, under MECP noise assessment guidelines.

## 2 FACILITY DESCRIPTION

The subject site is proposed to host an HMA plant, aggregate depot and, on occasion, an aggregate crushing operation. Each of these operations is described in the following subsections.

## 2.1 Hot Mix Asphalt Plant

The HMA plant will receive liquid asphalt cement by road tankers which will transfer the material into storage tanks adjacent to the plant using a plant-based pump. Aggregate materials (limestone, gravel and sand) and recycled materials (i.e. reclaimed asphalt pavement, “RAP,” or recycled concrete, “RC”) delivered by trucks will be transferred via a front-end loader to hoppers which will deposit the materials onto a conveyor system for delivery to the mixer/dryer. The mixer/dryer will consist of a rotating cylindrical drum heated by a natural gas/No. 2 Oil fired burner at one end through which the aggregate materials will be tumbled to remove moisture and to heat the aggregate.

### 2.1.1 Batch Process Mode

In the batch process mode, dried aggregate materials exiting the dryer will be transferred by a bucket elevator to the top of the mixing tower where they will pass through a screen deck that will sort the material by size into one of several hot storage bins. From here, the material will be discharged into a pugmill mixer along with a predetermined proportion of asphalt cement. The resulting asphalt product will then be batched directly into asphalt trucks. Once loaded, the asphalt trucks will leave the site via the Boundary Road entrance.

### 2.1.2 Drum Process Mode

When operating in drum process mode, dried aggregate materials exiting the dryer and RAP will be combined with heated asphalt cement in the drum coater. The resulting asphalt product will then be transferred via an inclined drag conveyor to storage silos, from which trucks will be loaded for offsite delivery.

The HMA plant may operate 24 hours a day, 7 days a week. The primary sound sources will be the burner system and associated blower, baghouse fan and exhaust, and various vehicles that will visit the plant, either to deliver aggregate materials, or to take away the asphalt product. In addition, there will be a front-end loader operating in the aggregate stockpile area.

## 2.2 Aggregate Depot

The aggregate depot will receive RAP and RC from offsite sources by aggregate trucks, which will deposit the materials into stockpiles. On occasion, the materials will be processed by a third-party

portable crushing plant (described in the following section) and then either used as input to the HMA plant or shipped off-site. The aggregate depot will receive and ship materials during daytime hours only (07:00 to 19:00).

## 2.3 Third-Party Portable Crushing Plant

On occasion, a third-party portable crushing plant may be present to the northeast of the HMA plant, operating during daytime hours only.

A front-end loader will be used to transfer unprocessed RAP and RC from the aggregate depot to the crusher/screen; processed material output from the crusher/screen will be conveyed (with negligible sound emissions) to a stacker, which will stockpile the processed material. The operation will be powered by a diesel-fired generator.

## 3 SOUND SOURCE SUMMARY

A Sound Source Summary is included as Table A1 in Appendix A, which lists the proposed sources at the site, in the standard format required by the MECP. As part of an application for an Environmental Compliance Approval, an Emission Summary and Dispersion Modelling (“ESDM”) report was prepared by BCX Environmental Consulting. The modelling methodology and assignment of source identifiers in the ESDM differs sufficiently from that employed herein that coordinating the numbering scheme used in the two assessments was not found to be practical or necessary. All noise sources have been given an identification number herein of the form NS-## (e.g. NS-01).

Figure 3 shows the location of each source proposed at the subject site. Because the site was not yet operating at the time of this assessment, sound emissions from key items of equipment were based on manufacturer’s sound data (for the HMA plant sources, with the exception of the batch tower equipment), and on measurements conducted by HGC Engineering for past assessments of numerous similar facilities (crushing plant, onsite trucks, and the front end loader). The primary sources of sound are described below. Except where noted otherwise, all sources were assumed to operate continuously during a predictable worst-case hour of operation.

### **3.1 Aggregate/Asphalt Cement Trucks & Front End Loader**

Trucks delivering/shipping aggregate and unprocessed/processed RAP/RC (NS-01) will enter the west side of the property from Boundary Road and idle at the weigh scale (NS-02), before traveling to the aggregate storage area on the northeast side of the HMA plant; the aggregate will be unloaded (NS-03), and the trucks will exit the property. Liquid asphalt cement trucks (NS-04) will travel to the storage tanks on the west side of the HMA plant where they will be unloaded using an asphalt pump (NS-05), before exiting the property. Deliveries of aggregate and liquid asphalt cement will occur during daytime hours only (07:00 to 19:00), at rates of up to 14 aggregate trucks and one liquid asphalt cement truck during a predictable worst-case hour of operation. The asphalt pump was assumed to operate for 12 minutes per hour, based on information from the equipment manufacturer. Based on observations at similar sites, the aggregate trucks were assumed to unload for 30 seconds each.

A front-end loader (NS-06) will load outbound aggregate materials from the aggregate depot into trucks; this loader will also transfer aggregate material from the virgin stockpiles northeast of the HMA plant to the cold feed bins, and from the RAP stockpiles north of the HMA plant to the RAP bin.

### **3.2 Virgin Aggregate & RAP Feed Systems**

Virgin aggregate materials will be drawn from beneath the cold feed bins (with drives, vibrators and pulleys represented collectively by NS-07) and conveyed to a screen (NS-08) which will remove oversized material inbound to the drum mixer. Similarly, RAP will be drawn from beneath the RAP bin (with associated drives, vibrators, and pulleys represented by NS-09) and conveyed to a screen (NS-10) before being delivered to the drum mixer.

### **3.3 Drum Mixer**

An enclosed natural gas/No. 2 Oil fired burner (NS-11) will be located centrally within the HMA plant, supplied with combustion air by a blower (motor NS-12, casing NS-13, inlet NS-14). This assessment also considers noise emissions from the mixer/dryer drum drive (NS-15).

### **3.4 Baghouse & Dust Return Systems**

Air that is forced into the drum mixer/dryer by the burner/blower will be drawn through the process by a baghouse fan, sound emissions from which are represented by NS-16 (fan casing), NS-17 (motor); the fan will discharge to atmosphere through an exhaust stack (NS-18). A dust blower (NS-19) will be used to divert dust collected in the baghouse to a dust silo.

### **3.5 Batch Mixing Tower (Batch Process Mode)**

Aggregate exiting the dryer system will be transferred to the top of the batch mixing tower by a bucket elevator driven by a topside motor (NS-20). From the elevator, material will pass through a screen deck (NS-21) to be sorted by size into storage bins within the batch mixing tower. Aggregate materials will then be mixed in a pugmill (NS-22) with asphalt cement to produce HMA, which will be batched via pneumatic gates (NS-23) into idling HMA trucks (NS-24) for offsite delivery. The pneumatic batch gates were assumed to operate for 1.3 minutes per hour, based on data from the equipment manufacturer.

### **3.6 Storage Silos (Drum Process Mode)**

Finished HMA exiting the drum dryer/mixer will be transferred by drag conveyor and associated drive (NS-25) to a traverse conveyor and associated drive (NS-26), and finally into one of several storage silos via topside pneumatic gates (NS-28). A second set of pneumatic gates at the bottom of the silos (NS-29) will meter HMA into idling trucks (NS-27) for offsite delivery. The silos will also be equipped with a jet vent (NS-30). Based on data from the equipment manufacturer, the traverse conveyor drive was assumed to operate for 20 minutes per hour and the pneumatic gates were each assumed to operate for 1.3 minutes per hour. All other sources associated with the storage silos (including idling trucks during loading) were assumed to operate continuously during a predictable worst-case hour of plant operation in drum mode.

### **3.7 Miscellaneous Equipment**

The HMA plant will include an air compressor (NS-31), hot oil heater (NS-32), hot oil pump (NS-33), heater pump (NS-34), fuel pump (NS-35) and asphalt pump (NS-36).

### **3.8 Hot-Mix Asphalt Trucks**

Hot mix asphalt trucks (NS-37) will enter the west side of the property from Boundary Road and idle while queued (NS-38), before driving under one of the two loading points to be loaded. Once loading is complete, HMA trucks will depart the site via the Boundary Road entrance. D-Squared personnel indicate that, during a predictable worst-case hour of operation in batch mode, up to 14/10 HMA trucks can enter and exit the site during daytime and evening/nighttime hours, respectively. While operating in drum mode, up to 14 HMA trucks can enter and exit the site in a predictable worst-case hour.

### **3.9 Third-Party Portable Crushing Plant**

Occasionally, a third-party crushing plant may operate on site, situated northeast of the HMA plant and aggregate depot. D-Squared personnel indicate the crushing plant will operate during daytime hours only, independently of the HMA plant.

A front-end loader (NS-39) will transfer unprocessed materials from the stockpiles adjacent to the crushing plant, into the hopper of the crusher/screen (represented by NS-40a through NS-40e). The processed materials will then be stockpiled by a stacker (NS-41). The crushing plant will be powered by a diesel generator, the combustion exhaust and engine radiator of which are represented by NS-42a and NS-42b, respectively.

The combustion exhaust of the generator will be equipped with a muffler, the acoustic performance of which is unknown, explicitly. However, the benefit of the mufflers is implicitly included in the sound emission levels.

### **3.10 Summary of Predictable Worst-Case Hour Activities**

The following table summarizes the predictable worst-case hours of operation at the subject site considered for the purposes of this assessment.

April 30, 2020

**Table 1: Summary of Predictable Worst-Case Hours of Operation**

Source Name	Quantity or Operating Time/Hr						
	Daytime (07:00 to 19:00)			Evening/Nighttime (19:00 to 07:00)			
	Batch Mode	Drum Mode	Crushing Plant	Batch Mode	Drum Mode		
<b>Common Amongst Operations</b>							
Arriving/Departing Aggregate Trucks	14 at 15 km/hr			--			
Idling Aggregate Trucks	60 min/hr			--			
Unloading Aggregate Trucks	7 min/hr			--			
Front-End Loader (HMA Plant & Depot)	60 min/hr						
<b>HMA Plant</b>							
Arriving/Departing Liquid-Asphalt Trucks	1 at 15 km/hr		--	--			
Asphalt Unloading Pump	12 min/hr		--	--			
Arriving/Departing HMA Trucks	14 at 15 km/hr		--	10 at 15 km/hr	14 at 15 km/hr		
<b>Batch Tower Sources</b>							
Pneumatic Batch Gates	1.3 min/hr	--	--	1.3 min/hr	--		
Bucket Elevator, Screen Deck, Pugmill	60 min/hr	--	--	60 min/hr	--		
Idling HMA truck (Batch Tower)	60 min/hr	--	--	60 min/hr	--		
<b>Storage Silo Sources</b>							
Drag Conveyor Drive, Silo Jet Vent	--	60 min/hr	--	--	60 min/hr		
Traverse Conveyor Drive	--	20 min/hr	--	--	20 min/hr		
Silo Pneumatic Gates	--	1.3 min/hr	--	--	1.3 min/hr		
Idling HMA truck (Silos)	--	60 min/hr	--	--	60 min/hr		
All Other HMA Plant Sources	60 min/hr		--	60 min/hr			
<b>Third-Party Portable Crushing Plant</b>							
All Sources	--		60 min/hr	--			

The source sound levels for the equipment/activities outlined above were used to develop the sound source inventory included as Table A1 in Appendix A, and were used as input to a predictive computer model (see Appendix D) to quantify the sound emissions of the facility during the predictable worst-case hours outlined in Table 1 above.

## 4 POINT OF RECEPTION SUMMARY

Nine key receptors were chosen to represent the nearest sound sensitive points of reception to the site, and are shown in Figures 2 and 5 through 14 as locations R1 through R5, and V1.

Location R1 represents a single-storey residence located approximately 70 meters northwest of the site, on the east side of Boundary Road. Locations R2 through R4 represent single-storey residences located between 155 and 175 metres northwest of the site on the west side of Boundary Road.

Location R5 represents a two-storey residence located approximately 115 meters southwest of the site, on the west side of Boundary Road. In addition, the outdoor amenity spaces associated with locations R1, R2 and R5 were also explicitly assessed herein and represented by R1a, R2a and R5a. Each of these locations was selected to represent the most potentially impacted location within 30 metres of the associated dwelling. Additionally, there is a vacant lot to the west the site on which a noise sensitive use is permitted; this is labelled as receptor V1 in Figures 2 and 5 through 14.

The selected points of reception are described briefly in Table A3, the Acoustic Assessment Summary Table.

## 5 ASSESSMENT CRITERIA

The appropriate document for defining the applicable sound level limits for the subject facility is MECP guideline NPC-300 [3]. The details by which the applicable sound level limits were established for the assessment of this facility are provided in Appendix E. For the purposes of this assessment, the following sound level limits are applicable:

**Table 2: Sound Level Limits,  $L_{EQ}$  [dBA]**

Point of Reception	Daytime (07:00 – 19:00)	Evening (19:00 – 23:00)	Nighttime (23:00 – 07:00)
R1, R2, R3, R4, R5	50	50	45
R1a & R5a	50	45	N/A

These limits are included in Tables A3a and A3b of Appendix A.

Some types of sound have a special quality which may tend to increase their audibility and potential for disturbance or annoyance. For tonal sound, MECP guideline NPC-104 [4] stipulates that a penalty of 5 dBA is to be added to the measured source level. A tonal sound is defined as one which has a “pronounced audible tonal quality such as a whine, screech, buzz or hum”. In the subsequent analysis, a tonal penalty has been applied to the sound of the dust blower (NS-19), sound emissions from which are predicted to exhibit a tonal character.

## 6 RECOMMENDED NOISE CONTROL MEASURES

The computational acoustical model detailed in Section 3 and Appendix D was used to determine noise control measures required in order for the site to meet the sound level criteria at locations R1 through R5, and V1, which are detailed below.

### 6.1 Administrative Controls

D-Squared will administratively limit operations as follows:

- Aggregate and asphalt cement deliveries/shipments will occur during daytime hours (07:00 to 19:00) only;
- The crushing plant will operate during daytime hours only;
- The HMA plant and crushing plant will not operate simultaneously;
- While operating in batch process mode during evening/nighttime hours (19:00 to 07:00), the HMA plant will restrict HMA truck load-outs to no more than 10 per hour;

### 6.2 Dust Blower Silencers/Enclosure

The dust silo blower (NS-19) will be equipped with engineering noise control measures (e.g. inlet/outlet silencers and an acoustical enclosure) sufficient to yield an overall sound power level of not great than 104 dBA (equivalent to a sound pressure level of 87 dBA measured at 3 metres from the blower).

### 6.3 Acoustical Barriers

### **6.3.1 Aggregate/RAP Screens & Batch Tower Screen Deck**

Each of the aggregate screen (NS-08), RAP screen (NS-10) and batch tower screen deck (NS-21) will be mitigated with a 3-sided acoustical barrier around the north, west and south sides, as depicted conceptually in Figure 3. As the dimensions of these screens are not specifically known, so too are the dimensions of the barriers required for each. The barriers will be of sufficient extent and height to extend a minimum of 1 metre beyond the outer extents of the screens (e.g. beyond the east sides, and above the tops), and located not more than 1.5 metres from the sides of the screens. The aggregate/RAP screens may be notched to allow the conveyor to pass through.

### **6.3.2 HMA Plant & Crushing Plant**

A 6-metre tall, 115-metre long barrier will be erected along the northwest side of the HMA plant, as depicted in Figure 3. The peak of the barrier will be located no more than 80 metres from the center of the HMA plant.

When in operation, the crushing plant will be shielded by a 6.5-metre tall, 35-metre long barrier along the northwest side, as depicted in Figure 3. The peak of the barrier will be located no more than 35 metres from the center of the crushing plant.

### **6.3.3 Southwest Perimeter Barrier**

A 6-metre tall, 40-metre long perimeter barrier will be erected along the southwest boundary of the site, as depicted in Figure 4.

### **6.3.4 Perimeter Barrier – Contingent on V1**

In the event that a noise sensitive use was to be established on the property represented by location V1, a 7.5-metre tall, 90-metre long, L-shaped perimeter barrier will be erected along the boundary of the site, north of the site entrance, as depicted in Figure 4.

### **6.3.5 Barrier Construction**

Notwithstanding that the obstructions detailed in Sections 6.3.1 through 6.3.4 are described as barriers, they can be constructed from any of a variety of materials such as wood, metal, brick, pre-cast concrete or other concrete/wood composite systems, material stockpiles or earthen berms (with a

barrier atop, if applicable) provided that they are free of gaps or cracks along and below their extents and have a solid construction with a surface density of no less than  $20 \text{ kg/m}^2$ .

## 7 IMPACT ASSESSMENT

The analysis results indicate that the predicted sound emissions from the site will be within the applicable limits, as set out in MECP publication NPC-300. Details of the prediction methods are summarized in Appendix E, and sample calculation results are included as Appendices G and H. The following sub-sections detail the impact assessment results.

### 7.1 Without Contingent Noise Control Measure

Considering the benefit of the noise control measures detailed in Sections 6.1 through 6.3.3, the sound levels of the site were predicted to range between 42 and 49 dBA during daytime hours, and between 41 and 45 dBA during evening/nighttime hours at locations R1 through R5. These results are summarized in Table A2a and A3a of Appendix A. Sound exposure level contours are overlaid on satellite images of the site and surrounding area in figures, as follows:

- Figures 5/6: Daytime with HMA plant operating in batch/drum mode, respectively;
- Figure 7: Daytime with crushing plant operating;
- Figures 8/9: Evening/Nighttime with HMA plant operating in batch/drum mode, respectively;

### 7.2 With Contingent Noise Control Measure

With the additional benefit of the noise control measure detailed in Section 6.3.4, which would be required only if a noise sensitive use were to be established on the lands represented by location V1, the sound levels of the facility are predicted to range between 42 and 50 dBA during daytime hours, and between 41 and 45 dBA during evening/nighttime hours at location V1. These results are summarized in Tables A2b and A3b of Appendix A. Sound exposure level contours are overlaid on satellite images of the site and surrounding area in Figures 10 through 14, which correspond to the same operating conditions as Figures 5 through 9, respectively.

## 8 CONCLUSIONS

The acoustical analysis indicates that, with the mitigation measures outlined in Section 6, the sound levels of the site will be within the applicable sound level limits as set out in NPC-300. Given the absence of any proposed sources of ground-borne vibration, the site will also comply with the vibration limits set out in NPC-207 [5].

## REFERENCES

1. Ontario Ministry of the Environment, Conservation and Parks Publication NPC-233, *Information to be Submitted for Approval of Stationary Sources of Sound*, October, 1995.
2. Ontario Ministry of the Environment, Conservation and Parks Guide, “Supporting Information for the Preparation of an Acoustic Assessment Report” November, 2003.
3. Ontario Ministry of the Environment, Conservation and Parks Publication NPC-300, *Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning*, August, 2013.
4. Ontario Ministry of the Environment, Conservation and Parks Publication NPC-104, *Sound Level Adjustments*, August, 1978.
5. Ontario Ministry of the Environment, Conservation and Parks Publication NPC-207, “Impulse Vibration in Residential Buildings”, November, 1983.
6. International Organization for Standardization, “Acoustics – Attenuation of Sound during Propagation Outdoors – Part 2: General Method of Calculation,” ISO-9613-2, Switzerland, 1996.
7. Google Maps Aerial Imagery, Internet application: *maps.google.com*.

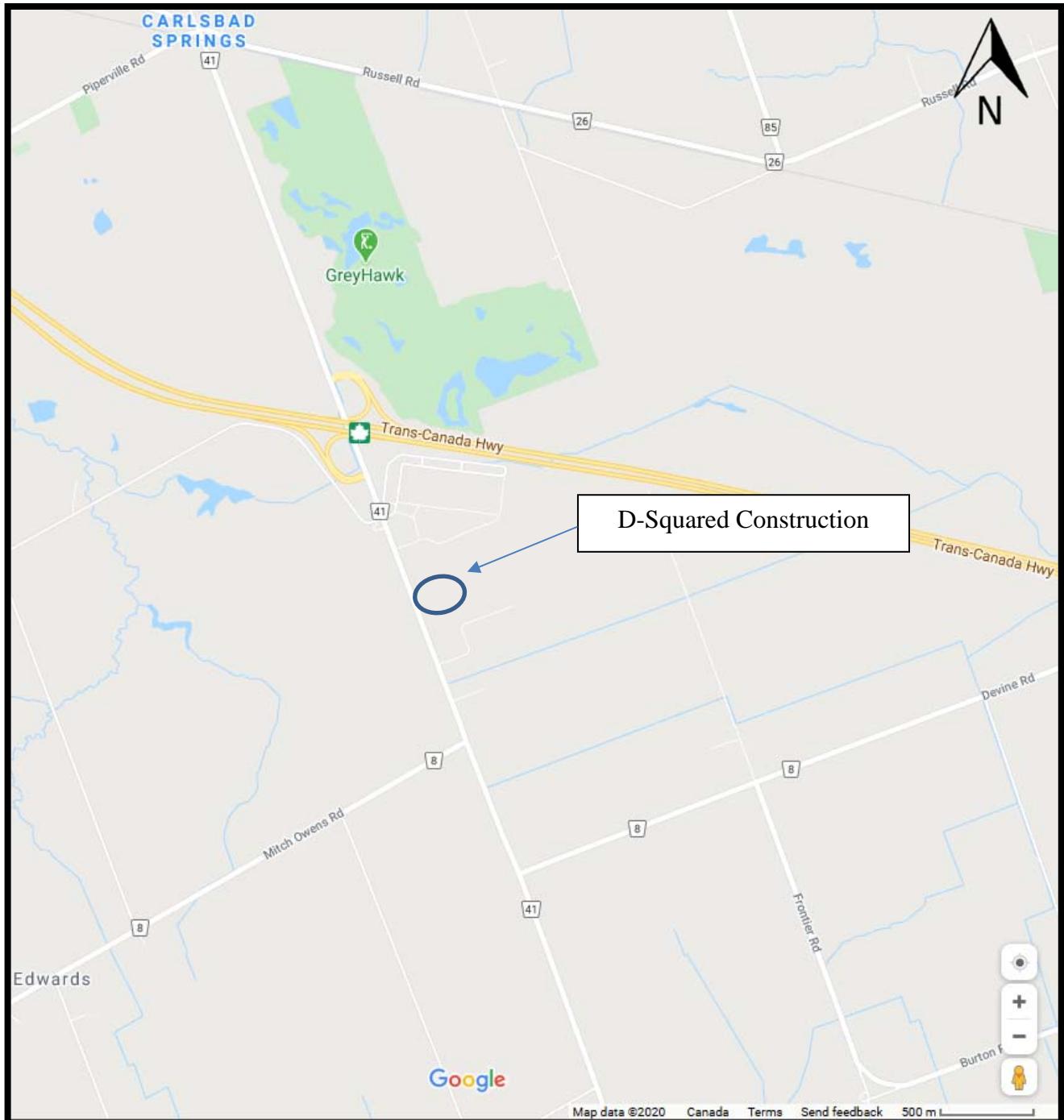


Figure 1: Location Map

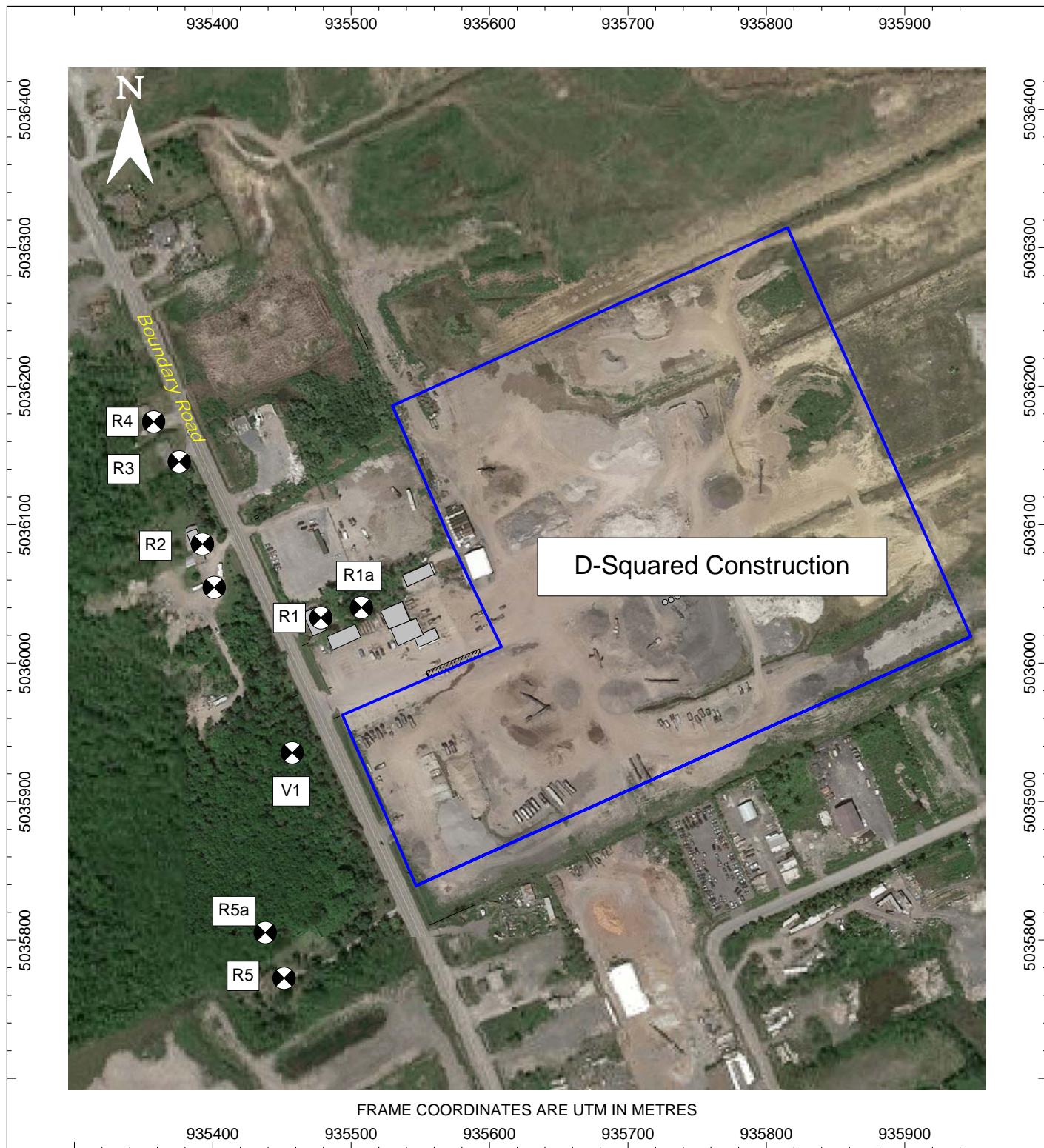


Figure 2: Satellite Image Showing D-Squared Construction Site and Nearest Points of Reception

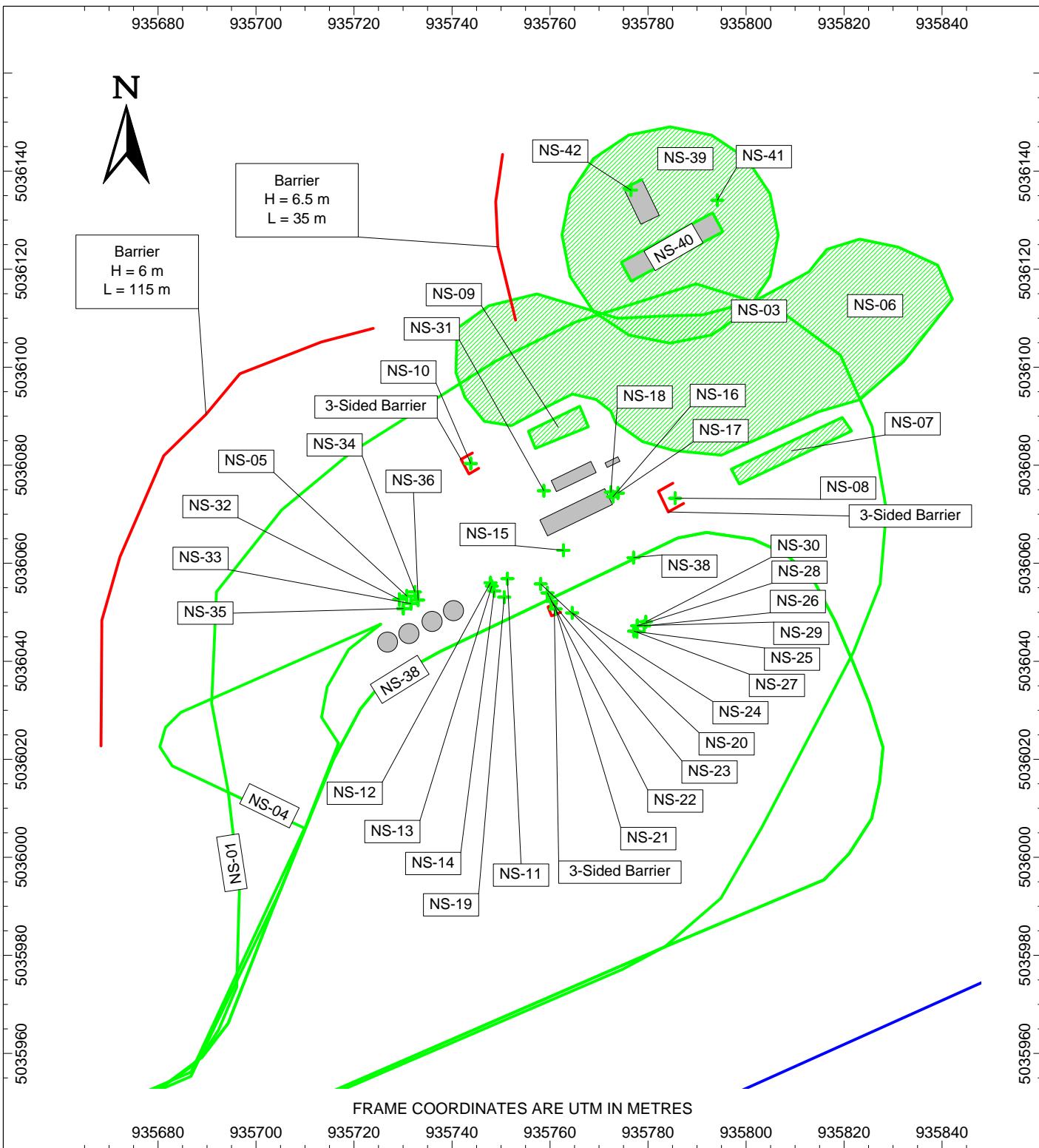


Figure 3: D-Squared Site Plan Showing Locations of Sound Sources and Proposed Barriers

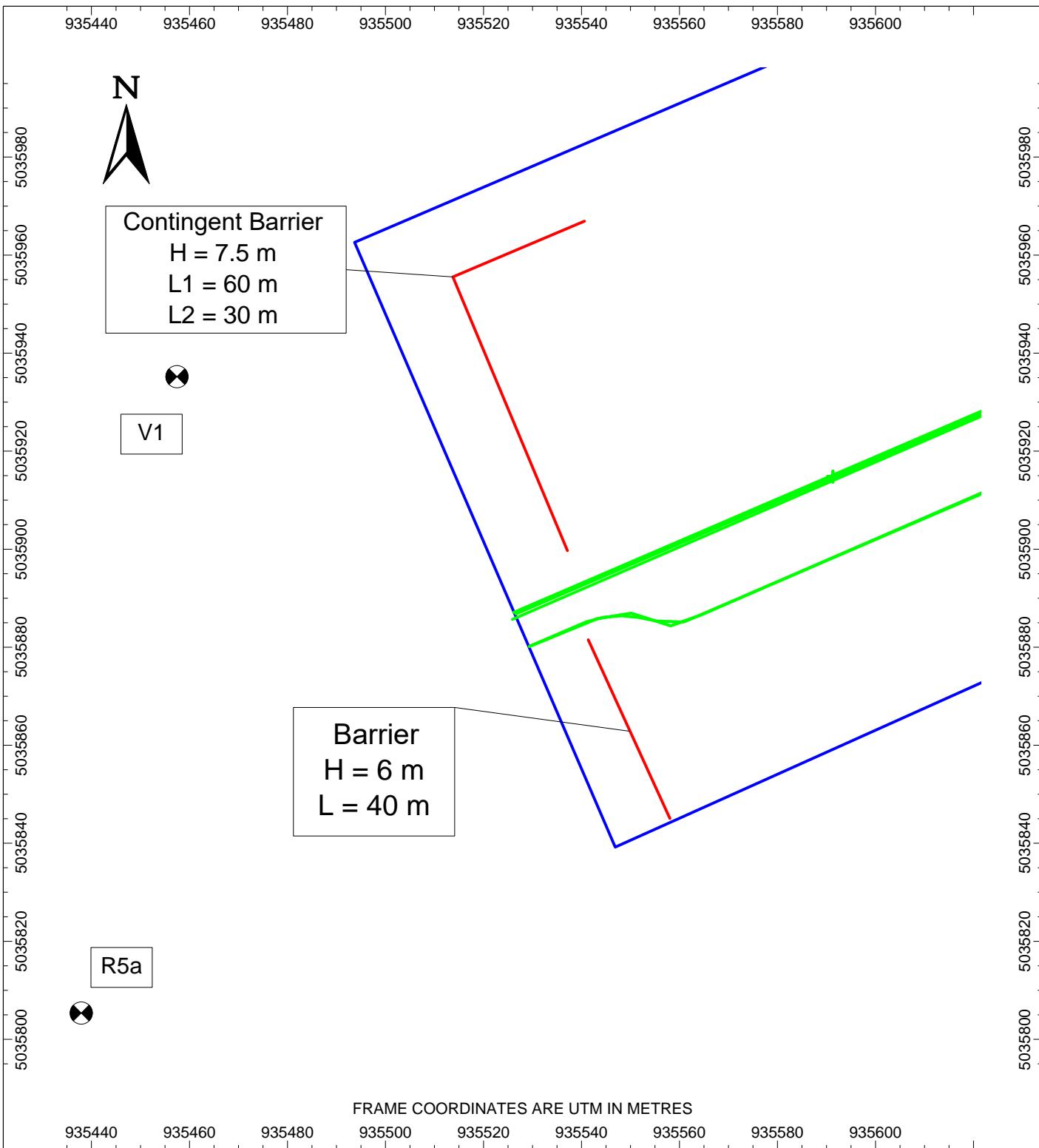


Figure 4: D-Squared Site Plan Showing Locations of Proposed Perimeter Barriers

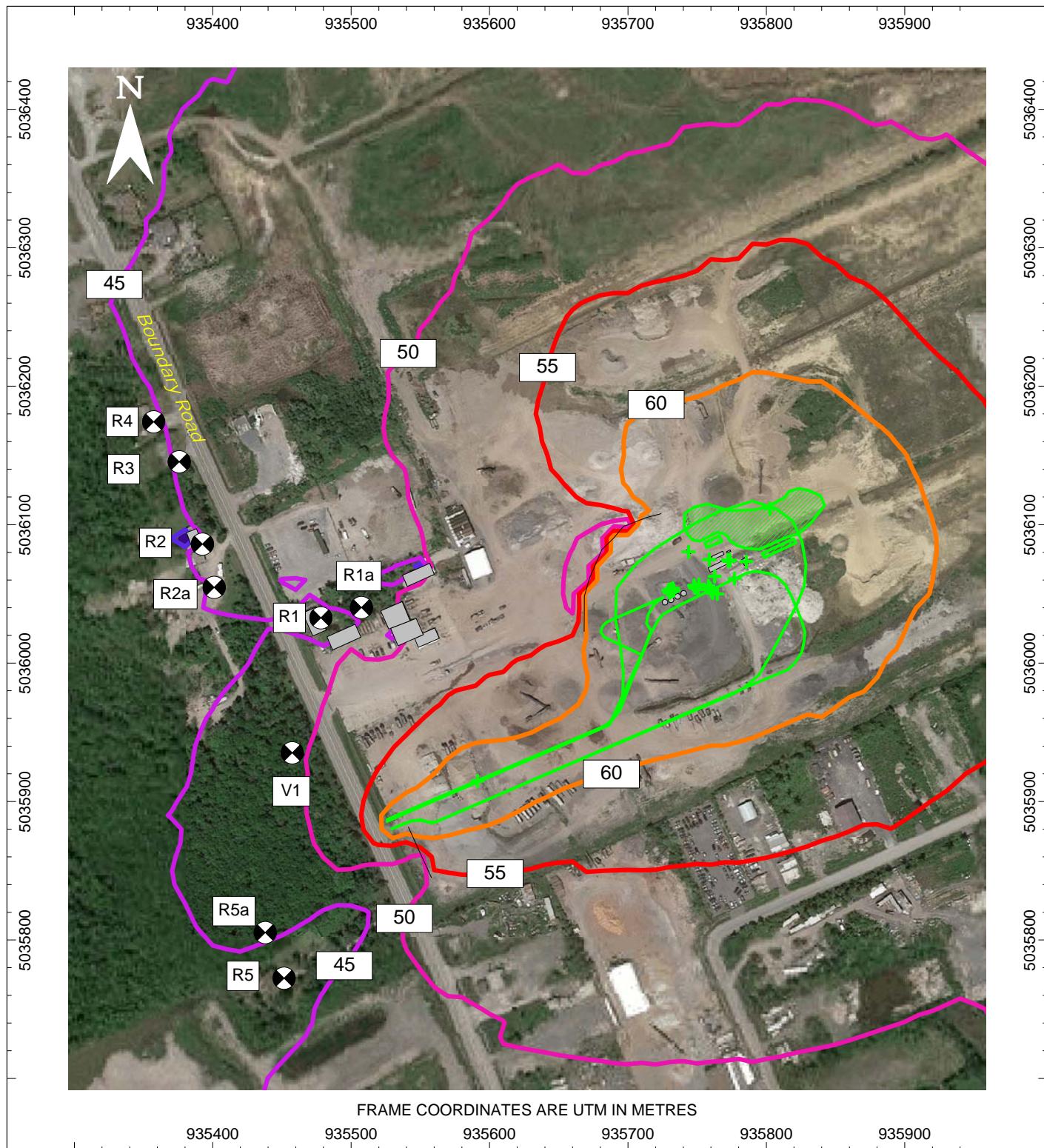


Figure 5: Satellite Image Showing D-Squared Construction Site, Points of Reception, and Predicted Daytime Sound Level Contours, HMA Plant in Batch Mode, Without Contingent Noise Control, LEQ [dBA]  
Prediction Elevation = 1.5 Metres Above Grade

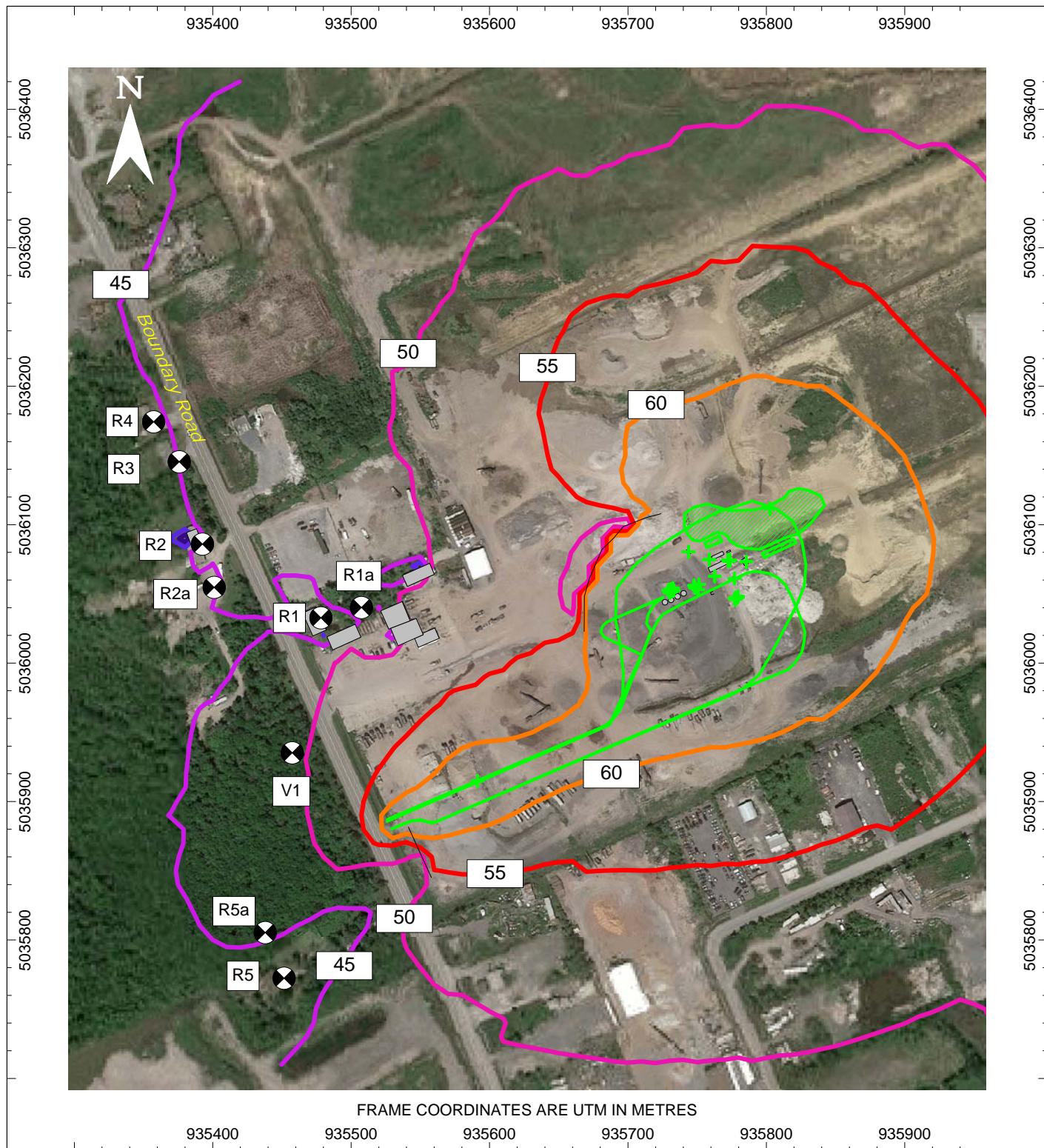


Figure 6: Satellite Image Showing D-Squared Construction Site, Points of Reception, and Predicted Daytime Sound Level Contours, HMA Plant in Drum Mode, Without Contingent Noise Control, LEQ [dBA]  
Prediction Elevation = 1.5 Metres Above Grade

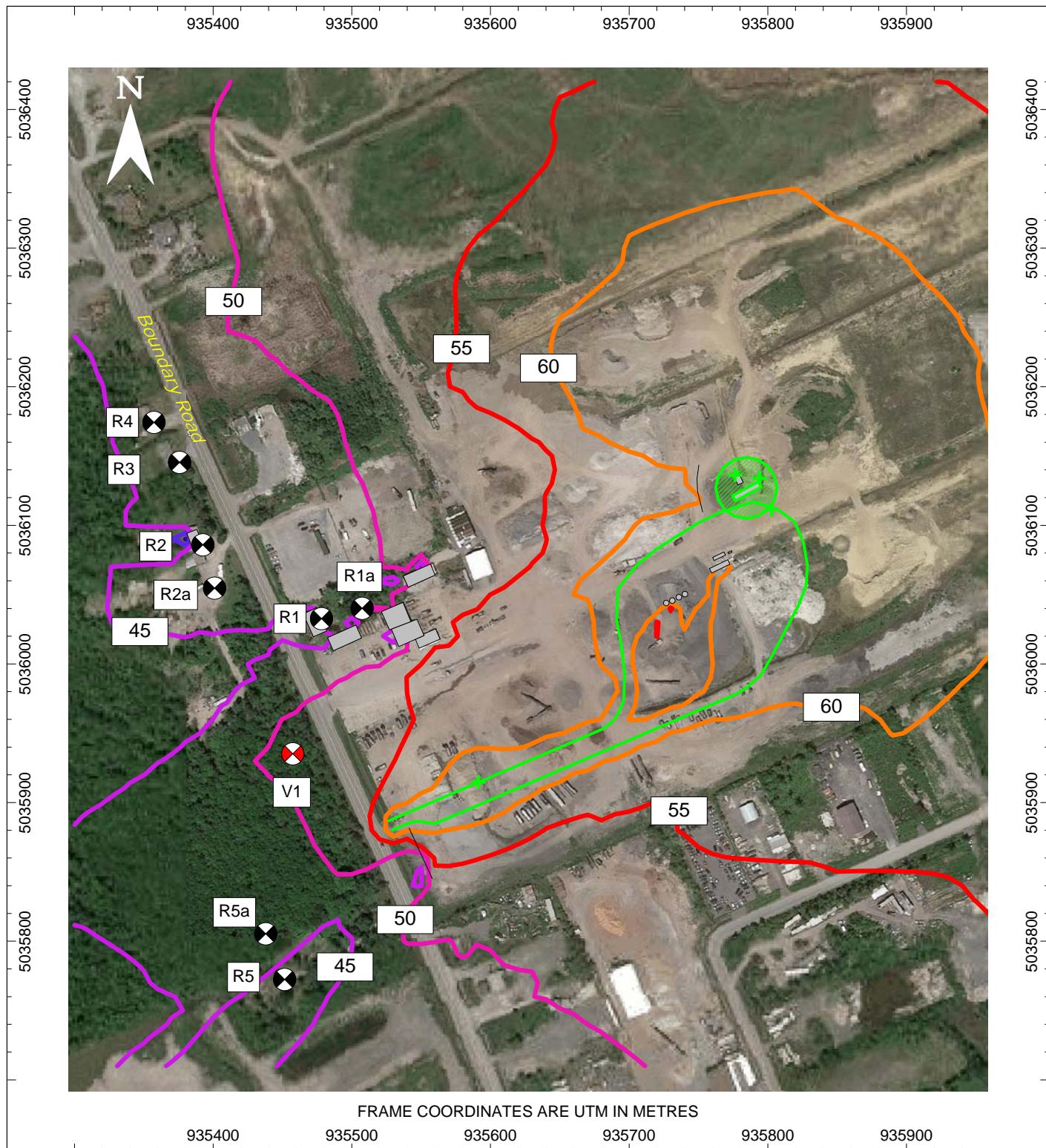


Figure 7: Satellite Image Showing D-Squared Construction Site, Points of Reception, and Predicted Daytime Sound Level Contours, During Aggregate Crushing, Without Contingent Noise Control, LEQ [dBA]  
Prediction Elevation = 1.5 Metres Above Grade

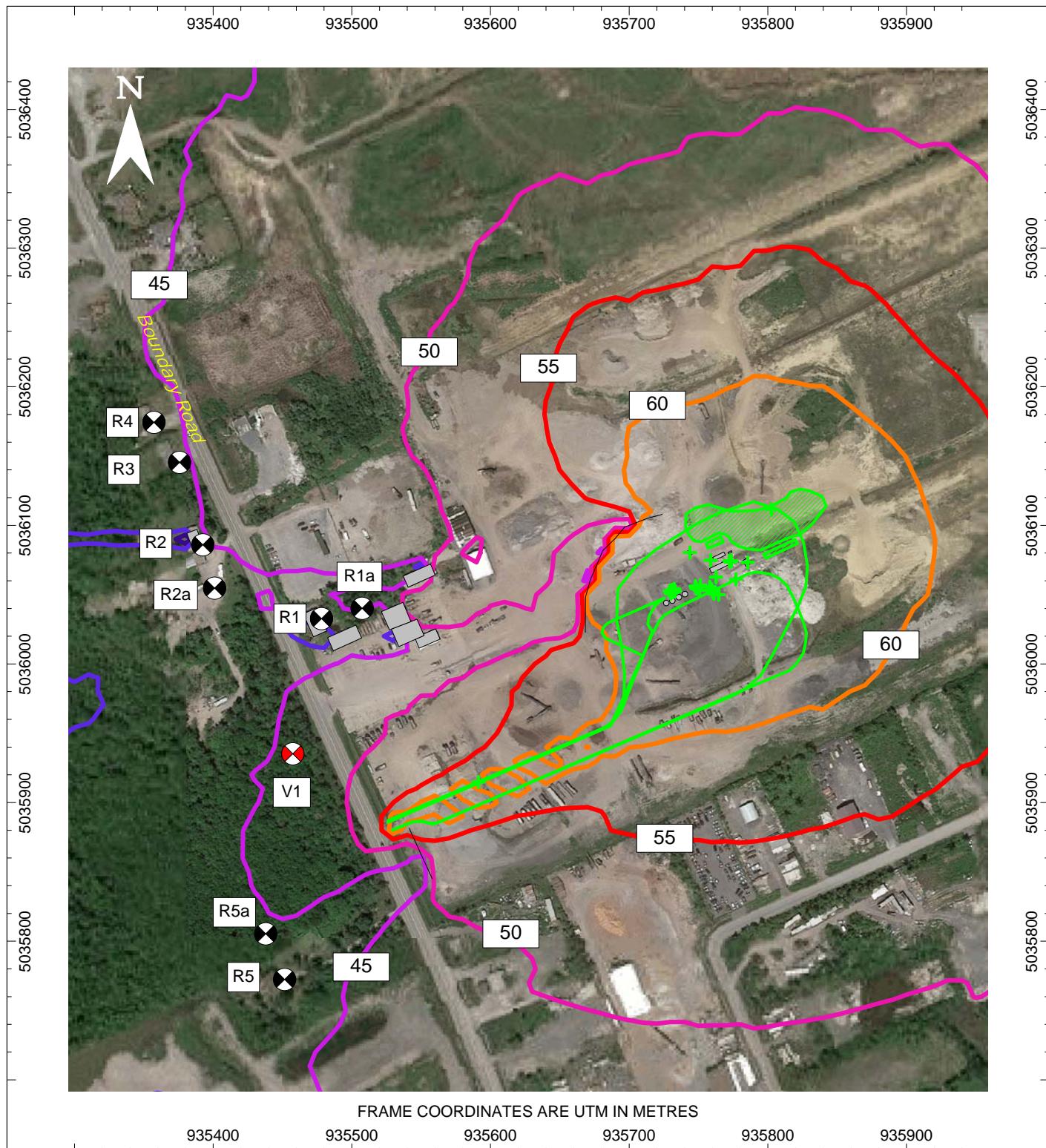


Figure 8: Satellite Image Showing D-Squared Construction Site, Points of Reception, and Predicted Evening/Nighttime Sound Level Contours, HMA Plant in Batch Mode, Without Contingent Noise Control, LEQ [dBA]  
Prediction Elevation = 1.5 Metres Above Grade

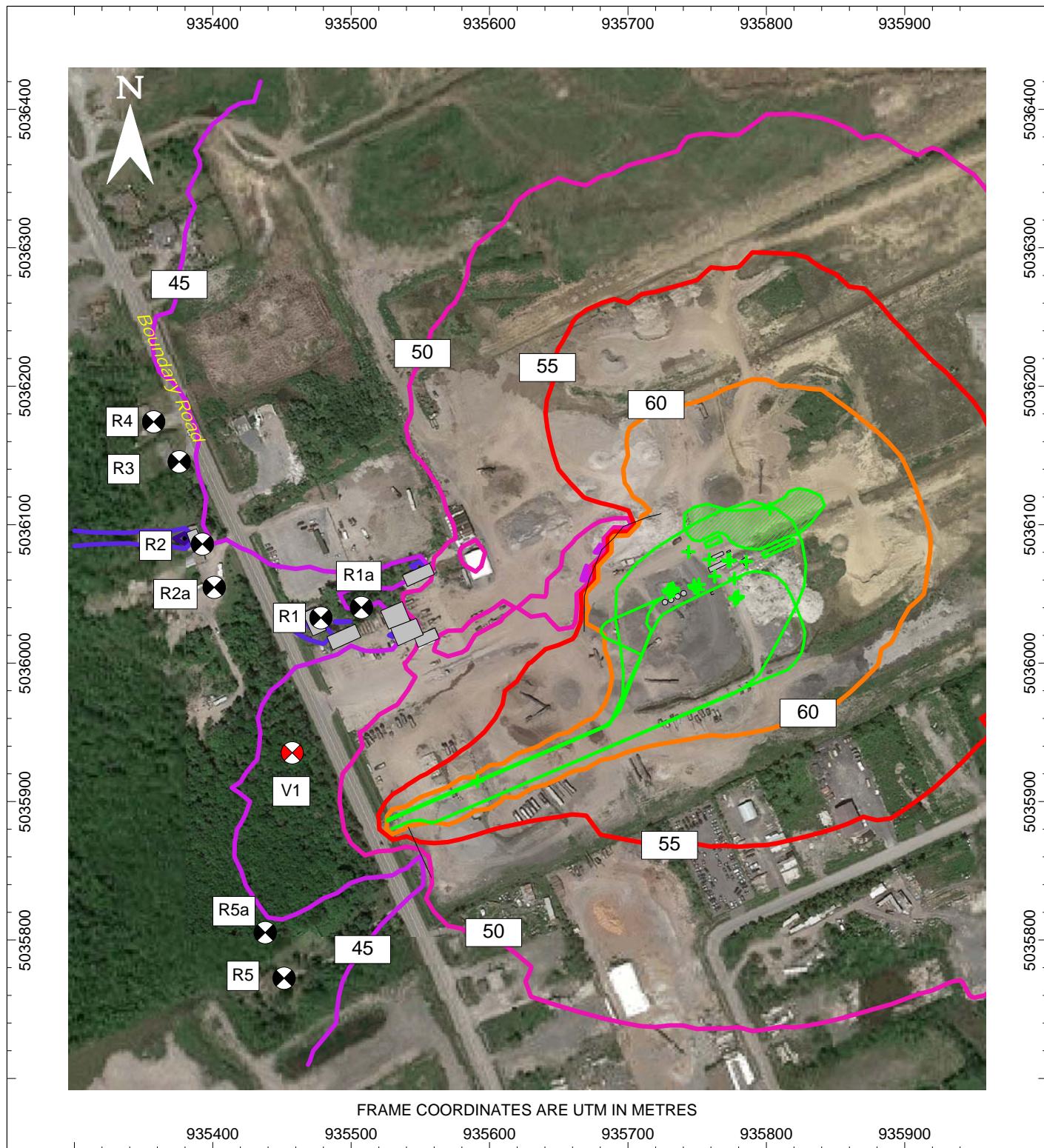


Figure 9: Satellite Image Showing D-Squared Construction Site, Points of Reception, and Predicted Evening/Nighttime Sound Level Contours, HMA Plant in Drum Mode, Without Contingent Noise Control Measure, LEQ [dBA]  
Prediction Elevation = 1.5 Metres Above Grade

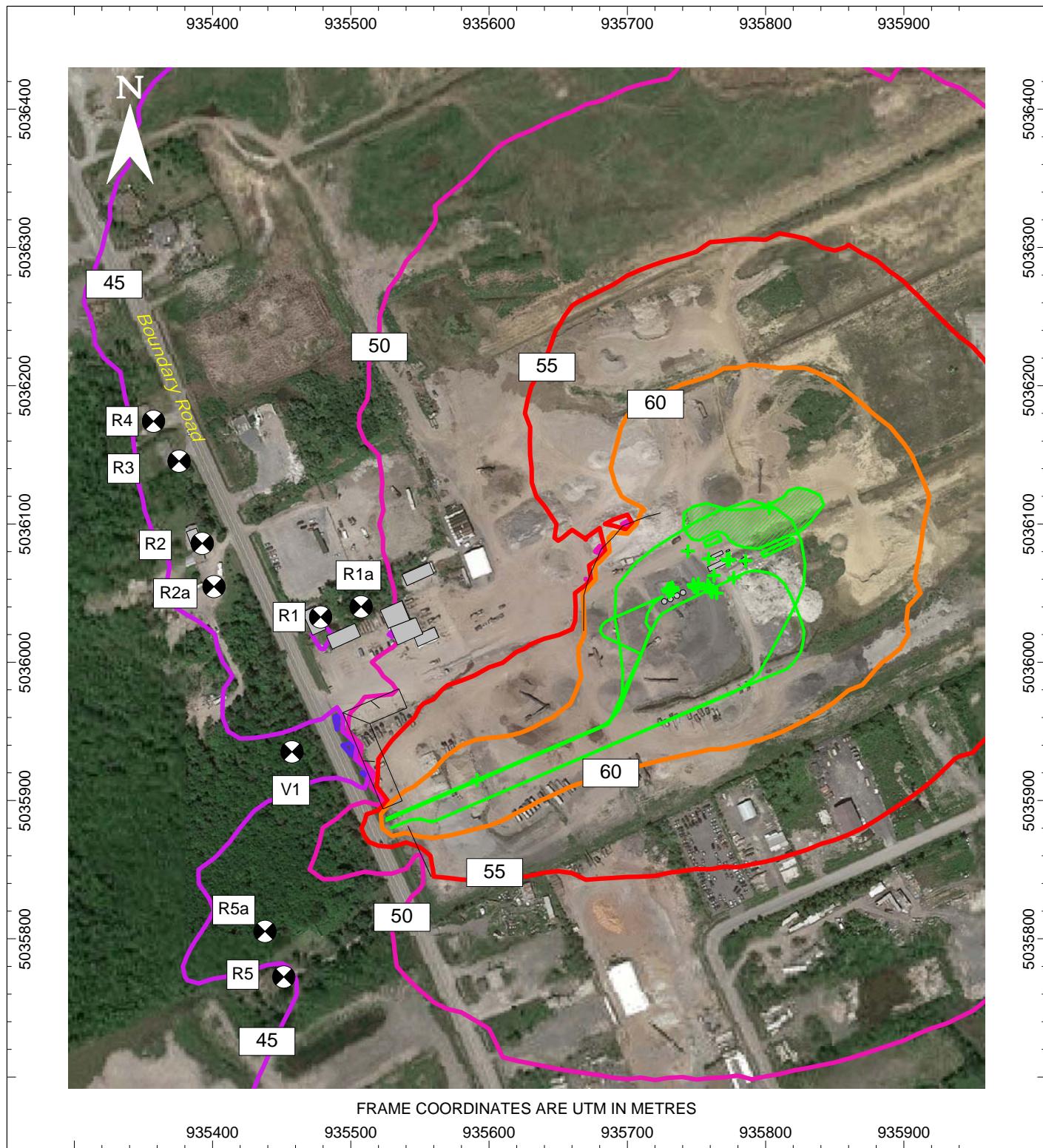


Figure 10: Satellite Image Showing D-Squared Construction Site, Points of Reception, and Predicted Daytime Sound Level Contours, HMA Plant in Batch Mode, with Contingent Noise Control, LEQ [dBA]  
Prediction Elevation = 4.5 Metres Above Grade

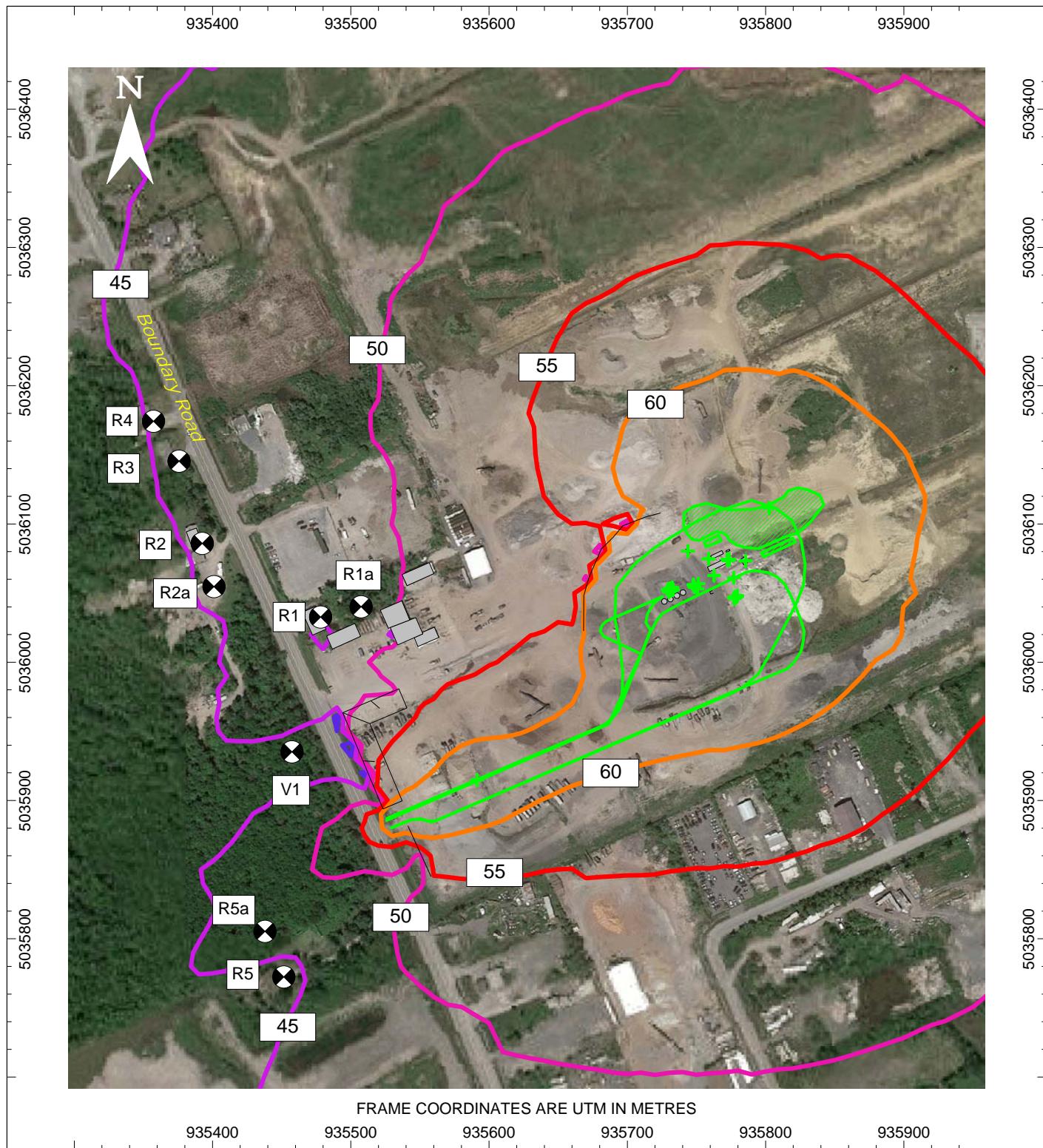


Figure 11: Satellite Image Showing D-Squared Construction Site, Points of Reception, and Predicted Daytime Sound Level Contours, HMA Plant in Drum Mode, with Contingent Noise Control, LEQ [dBA]  
Prediction Elevation = 4.5 Metres Above Grade

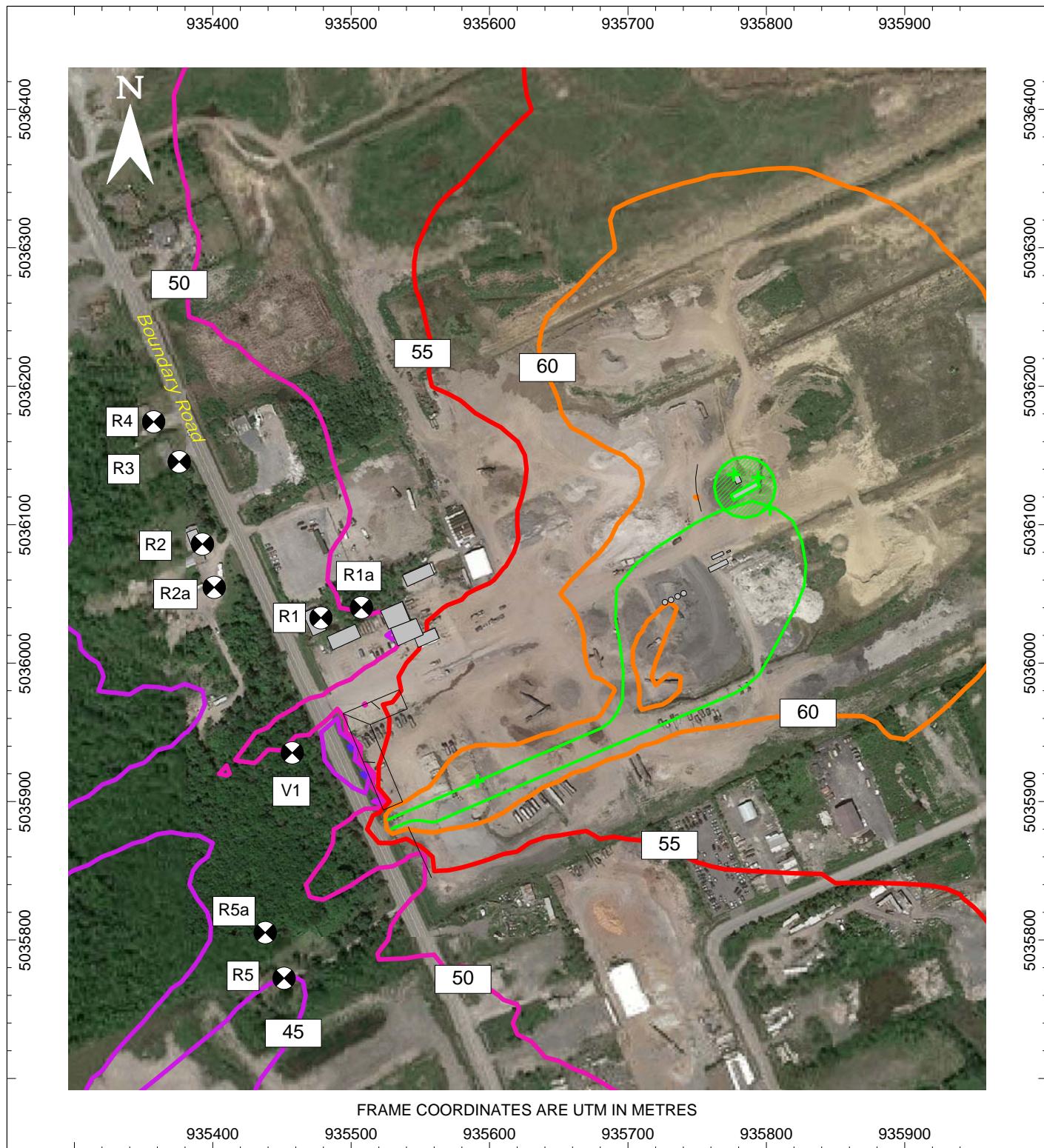


Figure 12: Satellite Image Showing D-Squared Construction Site, Points of Reception, and Predicted Daytime Sound Level Contours, During Aggregate Crushing, with Contingent Noise Control, LEQ [dBA]  
Prediction Elevation = 4.5 Metres Above Grade

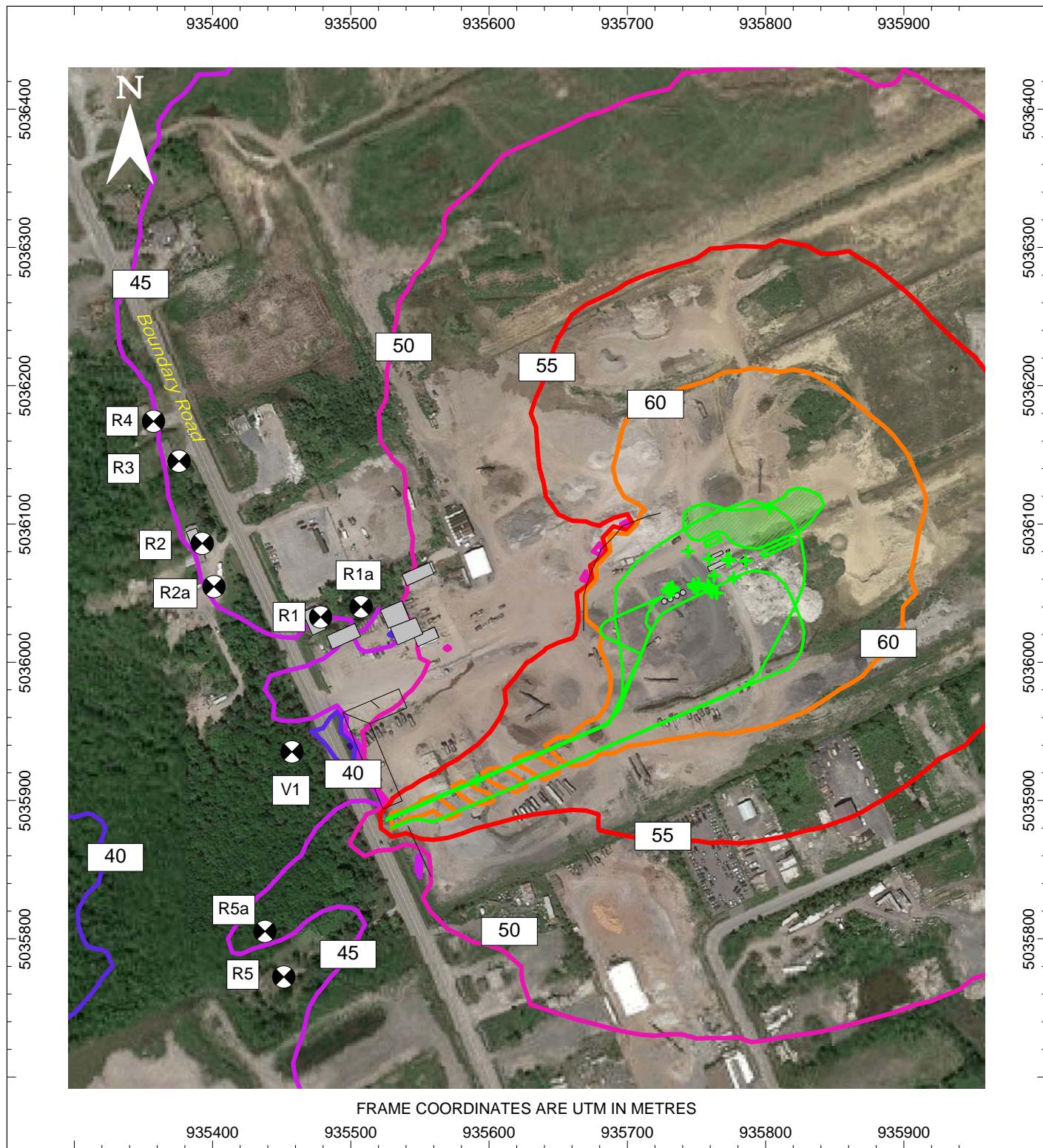


Figure 13: Satellite Image Showing D-Squared Construction Site, Points of Reception, and Predicted Evening/Nighttime Sound Level Contours, HMA Plant in Batch Mode, with Contingent Noise Control, LEQ [dBA]  
Prediction Elevation = 4.5 Metres Above Grade

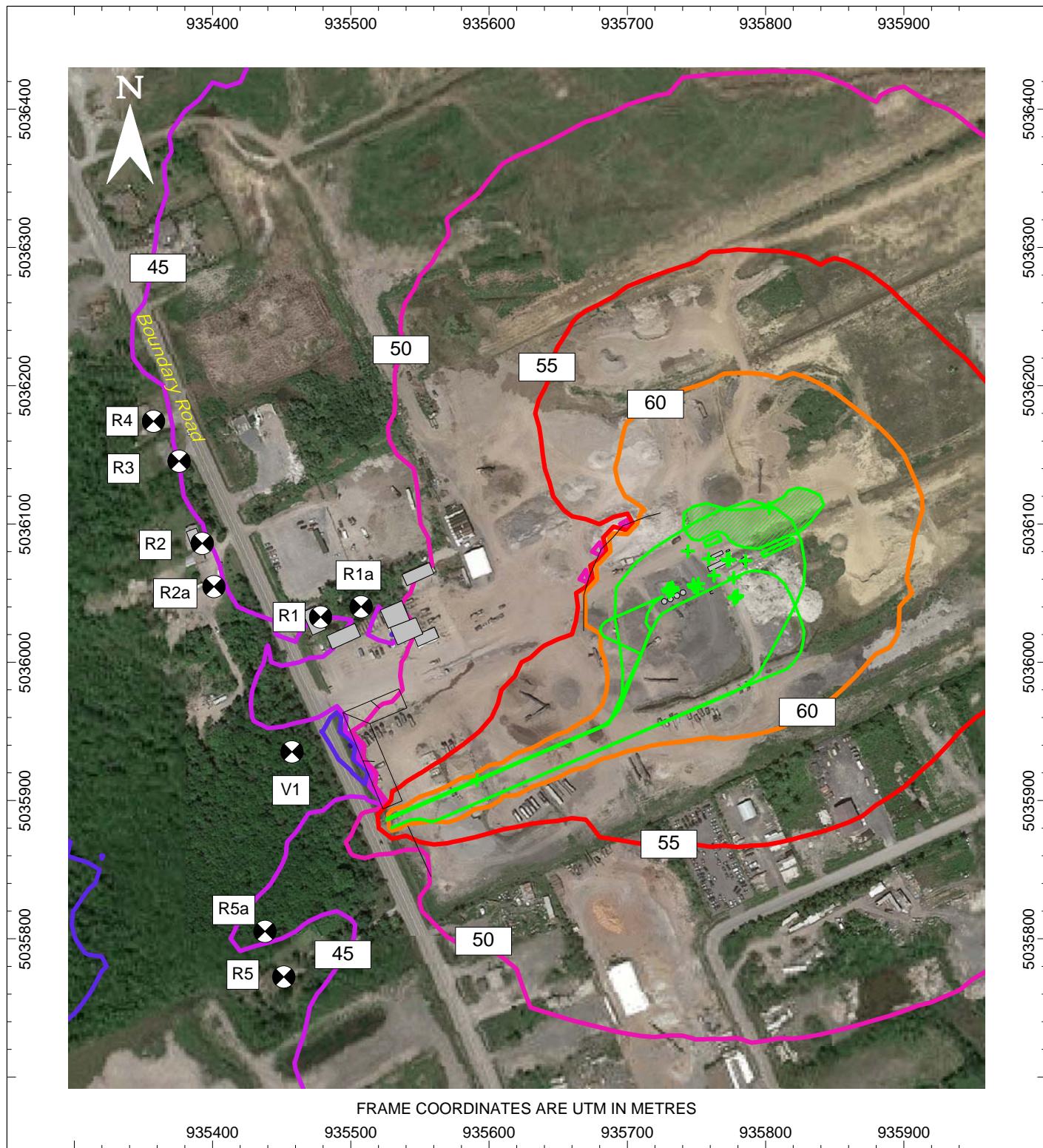


Figure 14: Satellite Image Showing D-Squared Construction Site, Points of Reception, and Predicted Evening/Nighttime Sound Level Contours, HMA Plant in Drum Mode, with Contingent Noise Control, LEQ [dBA]  
Prediction Elevation = 4.5 Metres Above Grade

## **APPENDIX A**

### **Acoustic Assessment Summary Tables**

## ACOUSTIC ASSESSMENT SUMMARY TABLES

### VERSION CONTROL

D-Squared Construction, 5455 Boundary Road, Navan, Ontario

Ver.	Date	Issued as Part of AAR?	Version Description	Prepared By
1.0	30-Apr-20	Y	Original version of tables as part of Ver. 1 of Acoustic Assessment Report	S. Kulandaivelan

Table A1: Noise Source Summary Table

Source ID	Source Description	Sound Power Level [dBA re 10 <sup>-12</sup> W]	Source Location	Sound Characteristic	Noise Control Measure**
NS-01	Arriving/Departing Aggregate Trucks (each)	102*	O	S	U
NS-02	Idling Aggregate Trucks - Weigh Scale	95	O	S	U
NS-03	Unloading Aggregate Truck	101*	O	S	U
NS-04	Arriving/Departing Liquid AC Trucks (each)	101*	O	S	U
NS-05	Asphalt Unloading Pump	99*	O	S	U
NS-06	Front End Loader	106	O	S	U
NS-07	Aggregate Bin Sources	100	O	S	U
NS-08	Aggregate Screen	104	O	S	B
NS-09	RAP Bin Sources	100	O	S	U
NS-10	RAP Screen	97	O	S	B
NS-11	Burner	100	O	S	U
NS-12	Blower Motor	99	O	S	U
NS-13	Blower Casing	88	O	S	U
NS-14	Blower Inlet	80	O	S	U
NS-15	Drum Drive	99	O	S	U
NS-16	Baghouse Fan - Casing	97	O	S	U
NS-17	Baghouse Fan - Motor	105	O	S	U
NS-18	Baghouse - Exhaust	109	O	S	U
NS-19	Dust Silo Blower	104	O	S, T	S, E
NS-20	Bucket Elevator Motor	100	O	S	U
NS-21	Screen Deck	103	O	S	B
NS-22	Pug Mill	97	O	S	U
NS-23	Batch Tower Bottom Gate	98*	O	S	U
NS-24	Idling HMA Trucks - Batch Tower	95	O	S	U
NS-25	Drag Conveyor Drive	101	O	S	U
NS-26	Traverse Conveyor Drive	86*	O	S	U
NS-27	Idling HMA Trucks - Silos	95	O	S	U
NS-28	Top Silo Gate	98*	O	S	U
NS-29	Bottom Silo Gate	98*	O	S	U
NS-30	Silo Jet Vent	98	O	S	U
NS-31	Air Compressor	98	O	S	U
NS-32	Hot Oil Heater	96	O	S	U
NS-33	Hot Oil Pump	91	O	S	U
NS-34	Heater Pump	91	O	S	U
NS-35	Fuel Pump	91	O	S	U
NS-36	Asphalt Pump	82	O	S	U
NS-37	Arriving/Departing HMA Trucks	101*	O	S	U
NS-38	Idling HMA Trucks - Queued	95	O	S	U
NS-39	Front-End Loader	106	O	S	U
NS-40a	Crusher/Screener - Side 1	97	O	S	U
NS-40b	Crusher/Screener - Side 2	110	O	S	U
NS-40c	Crusher/Screener - Side 3	107	O	S	U
NS-40d	Crusher/Screener - Side 4	112	O	S	U
NS-40e	Crusher/Screener - Top	106	O	S	U
NS-41	Stacker Motor	105	O	S	U
NS-42a	Crusher/Screener - Engine Combustion Exhaust	107	O	S	S
NS-42b	Crusher/Screener - Engine Radiator	106	O	S	U

\* Time weighted source. Reported sound power level does not include time weighted factor.

\*\*All sources are mitigated via barriers, in addition to the above indicated noise control measures

**Legend****Sound Characteristics**

- S: Steady
- Q: Quasi-steady impulsive
- I: Impulsive
- B: Buzzing
- T: Tonal (+5 dBA penalty applied)
- C: Cyclically varying
- O: Occasional

**Noise Control Measures**

- S: Silencer, Acoustic Louvre, Muffler
- A: Acoustic Lining, Plenum
- B: Barrier, Berm, Screening
- L: Lagging (Acoustical Wrapping)
- E: Acoustic Enclosure
- O: Other
- U: Currently Uncontrolled

**Source Location**

- O: Outdoors
- I: Indoors

Table A2a: Point of Reception Noise Impact Table - Without Contingent Noise Control Measures

Source ID	Source Name	Point of Reception												Point of Reception															
		R1 LEQ [dBA]			R1a LEQ [dBA]			R2 LEQ [dBA]			R2a LEQ [dBA]			R3 LEQ [dBA]			R4 LEQ [dBA]			R5 LEQ [dBA]			R5a LEQ [dBA]			V1 LEQ [dBA]			
Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night
NS-01	Arriving/Departing Aggregate Trucks	248	30	--	219	41	--	353	35	--	329	36	--	385	34	--	413	33	--	369	37	--	357	37	--	278	44	--	
NS-02	Idling Aggregate Trucks - Weigh Scale	164	24	--	151	41	--	263	35	--	237	36	--	316	28	--	350	27	--	199	31	--	188	32	--	136	42	--	
NS-03	Unloading Aggregate Truck	334	24	--	304	26	--	411	25	--	405	24	--	428	23	--	450	22	--	488	14	--	476	23	--	388	24	--	
NS-04	Arriving/Departing Liquid AC Trucks	198	16	--	169	30	--	298	23	--	280	24	--	337	21	--	372	20	--	305	25	--	299	26	--	218	32	--	
NS-05	Asphalt Unloading Pump	253	19	--	224	18	--	339	23	--	330	23	--	366	23	--	392	22	--	397	23	--	384	26	--	298	26	--	
NS-06	Front End Loader	315	38	38	284	39	39	401	37	37	391	37	37	419	38	38	444	38	38	442	35	35	435	38	38	363	38	38	
NS-07	Aggregate Bin Sources	335	26	26	305	31	31	413	31	31	408	30	30	434	31	31	457	31	31	474	30	30	461	34	34	378	31	31	
NS-08	Aggregate Screen	310	23	23	280	25	25	393	25	25	385	24	24	416	25	25	440	24	24	450	26	26	439	28	28	356	26	26	
NS-09	RAP Bin Sources	289	28	28	258	34	34	369	32	32	361	30	30	390	31	31	413	31	31	442	31	31	430	35	35	340	32	32	
NS-10	RAP Screen	270	13	13	240	17	17	351	13	13	344	13	13	374	13	13	398	13	13	425	11	11	411	17	17	321	14	14	
NS-11	Burner	274	21	21	244	26	26	360	31	31	350	28	28	386	28	28	411	27	27	413	27	27	402	27	27	318	30	30	
NS-12	Blower Motor	271	25	25	241	27	27	357	30	30	347	31	31	383	29	29	408	29	29	410	13	13	399	23	23	315	35	35	
NS-13	Blower Casing	271	14	14	241	17	17	357	18	18	347	19	19	383	18	18	408	17	17	410	4	4	398	14	14	315	20	20	
NS-14	Blower Inlet	271	5	5	242	8	8	357	12	12	348	12	12	384	10	10	409	10	10	410	11	11	398	10	10	315	9	9	
NS-15	Drum Drive	286	25	25	256	26	26	371	29	29	362	27	27	396	29	29	421	28	28	425	29	29	414	32	32	331	34	34	
NS-16	Baghouse Fan - Casing	298	12	12	268	14	14	381	11	11	372	11	11	404	10	10	428	10	10	440	11	11	429	17	17	345	15	15	
NS-17	Baghouse Fan - Motor	299	21	21	269	22	22	381	20	20	373	20	20	404	20	20	428	20	20	442	20	20	430	28	28	346	25	25	
NS-18	Baghouse - Exhaust	297	33	33	267	36	36	380	35	35	372	35	35	403	35	35	427	34	34	441	34	34	429	28	28	345	37	37	
NS-19	Dust Silo Blower	273	14	14	243	23	23	360	28	28	350	28	28	386	29	29	412	27	27	410	30	30	398	31	31	316	27	27	
NS-20	Bucket Elevator Motor	281	34	34	252	34	34	367	35	35	357	35	35	393	35	35	418	34	34	418	35	35	407	33	33	324	35	35	
NS-21	Screen Deck	284	27	27	254	28	28	371	30	30	360	27	27	397	30	30	423	30	30	416	30	30	406	29	29	325	32	32	
NS-22	Pug Mill	282	31	31	253	31	31	368	33	33	359	33	33	395	33	33	420	32	32	417	33	33	407	31	31	325	36	36	
NS-23	Batch Tower Bottom Gate	282						369	13	13	359	13	13	396	12	12	421	11	11	415	11	11	405	16	16	324	19	19	
NS-24	Idling HMA Trucks - Batch Tower	287	10	10	257	12	12	374	10	10	363	9	9	400	26	26	426	26	26	418	26	26	408	30	30	328	33	33	
NS-25	Drag Conveyor Drive	301	33	33	272	32	32	388	35	35	378	35	35	415	34	34	440	33	33	426	34	34	417	33	33	340	37	37	
NS-26	Traverse Conveyor Drive	302	14	14	273	13	13	389	15	15	379	16	16	416	15	15	441	14	14	428	14	14	419	14	14	342	18	18	
NS-27	Idling HMA Trucks - Silos	299	17	17	270	11	11	387	11	11	376	9	9	413	26	26	439	25	25	425	26	26	416	27	27	338	33	33	
NS-28	Top Silo Gate	301	13	13	271	6	6	388	16	16	377	16	16	414	16	16	440	15	15	427	15	15	418	15	15	340	18	18	
NS-29	Bottom Silo Gate	300	--	--	271	--	--	387	--	--	377	--	--	414	12	12	439	11	11	427	11	11	417	13	13	340	18	18	
NS-30	Silo Jet Vent	302	24	24	273	21	21	389	29	29	379	28	28	416	32	32	441	31	31	429	32	32	419	31	31	342	35	35	
NS-31	Air Compressor	284	23	23	254	31	31	366	30	30	358	27	27	389	27	27	413	21	21	432	10	10	419	33	33	333	32	32	
NS-32	Hot Oil Heater	252	20	20	222	19	19	338	26	26	328	26	26	365	25	25	391	25	25	394	26	26	382	29	29	296	29	29	
NS-33	Hot Oil Pump	254	15	15	224	14	14	341	21	21	331	21	21	368	21	21	394	20	20	396	21	21	383	24	24	298	25	25	
NS-34	Heater Pump	255	15	15	225	14	14	341	22	22	331	22	22	368	21	21	394	21	21	398	22	22	385	25	25	300	25	25	
NS-35	Fuel Pump	253	16	16	223	15	15	339	22	22	329	22	22	367	22	22	392	21	21	394	22	22	382	26	26	297	26	26	
NS-36	Asphalt Pump	256	6	6	226	5	5	342	12	12	332	12	12	369	12	12	395	11	11	397	--	--	385	17	17	300	17	17	
NS-37	Arriving/Departing HMA Trucks - Batch	254	28	27	223	40	38	357	34	34	335	35	34	392	33	31	423	31	30	339	36	35	332	36	34	272	43	41	
NS-38	Idling HMA Trucks - Waiting	300	21	21	270	25	25	385	27	27	376	25	25	410	26	26	435	21	21	435	26	26	424	30	30	343	33	33	
NS-39	Front-End Loader	326	36	36	294	37	37	397	36	36	391	35	35	409	37	37	429	37	37	479	35	35	484	38	38	381	37	37	
NS-40a	Crusher/Screen - Side 1	309	27	--	279	28	--	385	28	--	380	28	--	401	28	--	423	28	--	475	30	--	459	33	--	367	32	--	
NS-40b	Crusher/Screen - Side 2	324	41	--	294	41	--	397	41	--	389	41	--	410	41	--	430	40	--	493	30	--	464	34	--	374	36	--	
NS-40c	Crusher/Screen - Side 3	316	28	--	286	29	--	393	26	--	387	26	--	410	29	--	431	30	--	483	39	--	470	42	--	376	42	--	
NS-40d	Crusher/Screen - Side 4	335	32	--	305	33	--	404	30	--	401	30	--	417	31	--	438	31	--	506	29	--	492	32	--	391	31	--	
NS-40e	Crusher/Screen - Top	323	38	--	293	38	--	395	37	--	388	37	--	411	37	--	432	37	--	479	36	--	466	38	--	379	38	--	
NS-41	Stacker Motor	332	35	--	302	34	--	404	32	--	401	32	--	418	28	--	438	28	--	499	20	--	485	25	--	392	29	--	
NS-42a	Crusher/Screen - Engine Combustion Exhaust	316	40	--	286	41	--	387	39	--	384	39	--	400	39	--	421	38	--	488	37	--	473	36	--	377	40		

Table A2b: Point of Reception Noise Impact Table - With Contingent Noise Control Measures

Source ID	Source Name	Point of Reception																										
		R1 LEQ [dBA]			R1a LEQ [dBA]			R2 LEQ [dBA]			R2a LEQ [dBA]			R3 LEQ [dBA]			R4 LEQ [dBA]			R5 LEQ [dBA]			R5a LEQ [dBA]			V1 LEQ [dBA]		
		Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night	Dist [m]	Day	Night
NS-01	Arriving/Departing Aggregate Trucks	245	30	--	217	39	--	344	34	--	325	34	--	378	33	--	406	33	--	369	37	--	357	37	--	269	40	--
NS-02	Idling Aggregate Trucks - Weigh Scale	164	24	--	151	41	--	263	26	--	237	27	--	316	28	--	350	27	--	199	31	--	188	32	--	136	31	--
NS-03	Unloading Aggregate Truck	334	24	--	304	26	--	411	25	--	405	24	--	428	23	--	450	22	--	488	14	--	476	23	--	388	24	--
NS-04	Arriving/Departing Liquid AC Trucks	199	15	--	169	28	--	283	21	--	273	22	--	327	20	--	360	19	--	305	25	--	299	26	--	211	28	--
NS-05	Asphalt Unloading Pump	253	19	--	224	18	--	339	23	--	330	23	--	366	23	--	392	22	--	397	23	--	384	26	--	298	26	--
NS-06	Front End Loader	315	38	38	284	39	39	401	37	37	391	37	37	419	38	38	444	38	38	442	35	35	435	37	37	363	38	38
NS-07	Aggregate Bin Sources	335	26	26	305	31	31	413	31	31	408	30	30	434	31	31	457	31	31	474	30	30	461	34	34	378	31	31
NS-08	Aggregate Screen	310	23	23	280	25	25	393	25	25	385	24	24	416	25	25	440	24	24	450	26	26	439	28	28	356	26	26
NS-09	RAP Bin Sources	289	28	28	258	34	34	369	32	32	361	30	30	390	31	31	413	31	31	442	31	31	430	35	35	340	32	32
NS-10	RAP Screen	270	13	13	240	17	17	351	13	13	344	13	13	374	13	13	398	13	13	425	11	11	411	17	17	321	14	14
NS-11	Burner	274	21	21	244	26	26	360	31	31	350	28	28	386	28	28	411	27	27	413	27	27	402	27	27	318	30	30
NS-12	Blower Motor	271	25	25	241	27	27	357	30	30	347	31	31	383	29	29	408	29	29	410	13	13	399	23	23	315	35	35
NS-13	Blower Casing	271	14	14	241	17	17	357	18	18	347	19	19	383	18	18	408	17	17	410	4	4	398	14	14	315	20	20
NS-14	Blower Inlet	271	5	5	242	8	8	357	12	12	348	12	12	384	10	10	409	10	10	410	11	11	398	10	10	315	9	9
NS-15	Drum Drive	286	25	25	256	26	26	371	29	29	362	27	27	396	29	29	421	28	28	425	29	29	414	32	32	331	34	34
NS-16	Baghouse Fan - Casing	298	12	12	268	14	14	381	11	11	372	11	11	404	10	10	428	10	10	440	11	11	429	17	17	345	15	15
NS-17	Baghouse Fan - Motor	299	21	21	269	22	22	381	20	20	373	20	20	404	20	20	428	20	20	442	20	20	430	28	28	346	25	25
NS-18	Baghouse - Exhaust	297	33	33	267	36	36	380	35	35	372	35	35	403	35	35	427	34	34	441	34	34	429	28	28	345	37	37
NS-19	Dust Silo Blower	273	14	14	243	23	23	360	28	28	350	28	28	386	29	29	412	27	27	410	30	30	398	31	31	316	27	27
NS-20	Bucket Elevator Motor	281	34	34	252	34	34	367	35	35	357	35	35	393	35	35	418	34	34	418	35	35	407	33	33	324	35	35
NS-21	Screen Deck	284	27	27	254	28	28	371	30	30	360	27	27	397	30	30	423	30	30	416	30	30	406	29	29	325	32	32
NS-22	Pug Mill	282	31	31	253	31	31	368	33	33	359	33	33	395	33	33	420	32	32	417	33	33	407	31	31	325	36	36
NS-23	Batch Tower Bottom Gate	282						369	13	13	359	13	13	396	12	12	421	11	11	415	11	11	405	16	16	324	19	19
NS-24	Idling HMA Trucks - Batch Tower	287	10	10	257	12	12	374	10	10	363	9	9	400	26	26	426	26	26	418	26	26	408	30	30	328	31	31
NS-25	Drag Conveyor Drive	301	33	33	272	32	32	388	35	35	378	35	35	415	34	34	440	33	33	426	34	34	417	33	33	340	37	37
NS-26	Traverse Conveyor Drive	302	14	14	273	13	13	389	15	15	379	16	16	416	15	15	441	14	14	428	14	14	419	14	14	342	18	18
NS-27	Idling HMA Trucks - Silos	299	17	17	270	11	11	387	11	11	376	9	9	413	26	26	439	25	25	425	26	26	416	27	27	338	29	29
NS-28	Top Silo Gate	301	13	13	271	6	6	388	16	16	377	16	16	414	16	16	440	15	15	427	15	15	418	15	15	340	16	16
NS-29	Bottom Silo Gate	300	--	--	271	--	--	387	--	--	377	--	--	414	12	12	439	11	11	427	11	11	417	13	13	340	15	15
NS-30	Silo Jet Vent	302	24	24	273	21	21	389	29	29	379	28	28	416	32	32	441	31	31	429	32	32	419	31	31	342	32	32
NS-31	Air Compressor	284	23	23	254	31	31	366	30	30	358	27	27	389	27	27	413	21	21	432	10	10	419	33	33	333	32	32
NS-32	Hot Oil Heater	252	20	20	222	19	19	338	26	26	328	26	26	365	25	25	391	25	25	394	26	26	382	29	29	296	29	29
NS-33	Hot Oil Pump	254	15	15	224	14	14	341	21	21	331	21	21	368	21	21	394	20	20	396	21	21	383	24	24	298	25	25
NS-34	Heater Pump	255	15	15	225	14	14	341	22	22	331	22	22	368	21	21	394	21	21	398	22	22	385	25	25	300	25	25
NS-35	Fuel Pump	253	16	16	223	15	15	339	22	22	329	22	22	367	22	22	392	21	21	394	22	22	382	26	26	297	26	26
NS-36	Asphalt Pump	256	6	6	226	5	5	342	12	12	332	12	12	369	12	12	395	11	11	397	--	--	385	17	17	300	17	17
NS-37	Arriving/Departing HMA Trucks - Batch	249	28	26	220	38	37	346	32	31	328	33	31	384	32	31	414	31	30	339	36	35	332	36	34	266	39	38
NS-37	Arriving/Departing HMA Trucks - Drum	253	28	28	226	38	38	352	32	32	332	33	33	389	32	32	419	31	31	341	36	36	335	36	36	267	39	39
NS-38	Idling HMA Trucks - Waiting	300	21	21	270	25	25	385	27	27	376	25	25	410	26	26	435	21	21	435	26	26	424	30	30	343	33	33
NS-39	Front-End Loader	326	36	36	294	37	37	397	36	36	361	35	35	409	37	37	429	37	37	479	35	35	484	38	38	381	37	37
NS-40a	Crusher/Screen - Side 1	309	27	--	279	28	--	385	28	--	380	28	--	401	28	--	423	28	--	475	30	--	459	33	--	367	32	--
NS-40b	Crusher/Screen - Side 2	324	41	--	294	41	--	397	41	--	389	41	--	410	41	--	430	40	--	493	30	--	464	34	--	374	36	--
NS-40c	Crusher/Screen - Side 3	316	28	--	286	29	--	393	26	--	387	26	--	410	29	--	431	30	--	483	39	--	470	42	--	376	42	--
NS-40d	Crusher/Screen - Side 4	335	32	--	305	33	--	404	30	--	401	30	--	417	31	--	438	31	--	506	29	--	492	32	--	391	31	--
NS-40e	Crusher/Screen - Top	323	38	--	293	38	--	395	37	--	388	37	--	411	37	--	432	37	--	479	36	--	466	38	--	379	38	--
NS-41	Stacker Motor	332	35	--	302	34	--	404	32	--	401	32	--	418	28	--	438	28	--	499	20	--	485	25	--	392	29	--
NS-42a	Crusher/Screen - Engine Combustion Exhaust	316	40	--																								

Table A3a: Acoustic Assessment Summary Table - Without Contingent Noise Control Measures

Point of Reception	Point of Reception Description	Sound Level at Point of Reception, LEQ [dBA]					Verified by Acoustic Audit	Performance Limit, LEQ [dBA]			Compliance with Performance Limit	Acoustical Classification Area	
		Day			Eve/Night			Day	Eve	Night			
		Batch Mode	Drum Mode	Crushing Plant	Batch Mode	Drum Mode							
R1	Single Storey Residence - 70 m NW	42	42	47	42	41	No	50	50	45	Yes/Yes/Yes/Yes/Yes	Class 2	
R1a	Outdoor Ammenity Area of R1	48	48	49	45	45	No	50	45	--	Yes/Yes/Yes/Yes	Class 2	
R2	Single Storey Residence - 165 m NW	45	45	47	44	44	No	50	50	45	Yes/Yes/Yes/Yes/Yes	Class 2	
R2a	Outdoor Ammenity Area of R2	45	45	47	44	44	No	50	45	--	Yes/Yes/Yes/Yes	Class 2	
R3	Single Storey Residence - 155 m NW	45	45	47	45	44	No	50	50	45	Yes/Yes/Yes/Yes/Yes	Class 2	
R4	Single Storey Residence - 175 m NW	45	44	46	44	44	No	50	50	45	Yes/Yes/Yes/Yes/Yes	Class 2	
R5	Single Storey Residence - 115 m SW	45	45	45	43	43	No	50	50	45	Yes/Yes/Yes/Yes/Yes	Class 2	
R5a	Outdoor Ammenity Area of R5	46	46	47	45	45	No	50	45	--	Yes/Yes/Yes/Yes	Class 2	
V1	Vacant Lot - 40 metres W	50	50	50	47	48	No	50	50	45	Yes/Yes/Yes/No/No	Class 2	

Table A3b: Acoustic Assessment Summary Table - With Contingent Noise Control Measures

Point of Reception	Point of Reception Description	Sound Level at Point of Reception, LEQ [dBA]					Verified by Acoustic Audit	Performance Limit, LEQ [dBA]			Compliance with Performance Limit	Acoustical Classification Area	
		Day			Eve/Night			Day	Eve	Night			
		Batch Mode	Drum Mode	Crushing Plant	Batch Mode	Drum Mode							
R1	Single Storey Residence - 70 m NW	42	42	48	42	41	No	50	50	45	Yes/Yes/Yes/Yes/Yes	Class 2	
R1a	Outdoor Ammenity Area of R1	47	47	50	45	45	No	50	45	--	Yes/Yes/Yes/Yes	Class 2	
R2	Single Storey Residence - 165 m NW	45	45	47	44	44	No	50	50	45	Yes/Yes/Yes/Yes/Yes	Class 2	
R2a	Outdoor Ammenity Area of R2	44	44	47	44	43	No	50	45	--	Yes/Yes/Yes/Yes	Class 2	
R3	Single Storey Residence - 155 m NW	45	45	47	45	44	No	50	50	45	Yes/Yes/Yes/Yes/Yes	Class 2	
R4	Single Storey Residence - 175 m NW	45	44	46	44	44	No	50	50	45	Yes/Yes/Yes/Yes/Yes	Class 2	
R5	Single Storey Residence - 115 m SW	45	45	45	43	43	No	50	50	45	Yes/Yes/Yes/Yes/Yes	Class 2	
R5a	Outdoor Ammenity Area of R5	46	46	47	45	45	No	50	45	--	Yes/Yes/Yes/Yes	Class 2	
V1	Vacant Lot - 40 metres W	44	43	46	42	42	No	50	50	45	Yes/Yes/Yes/Yes/Yes	Class 2	

## **APPENDIX B**

### **Zoning Maps**

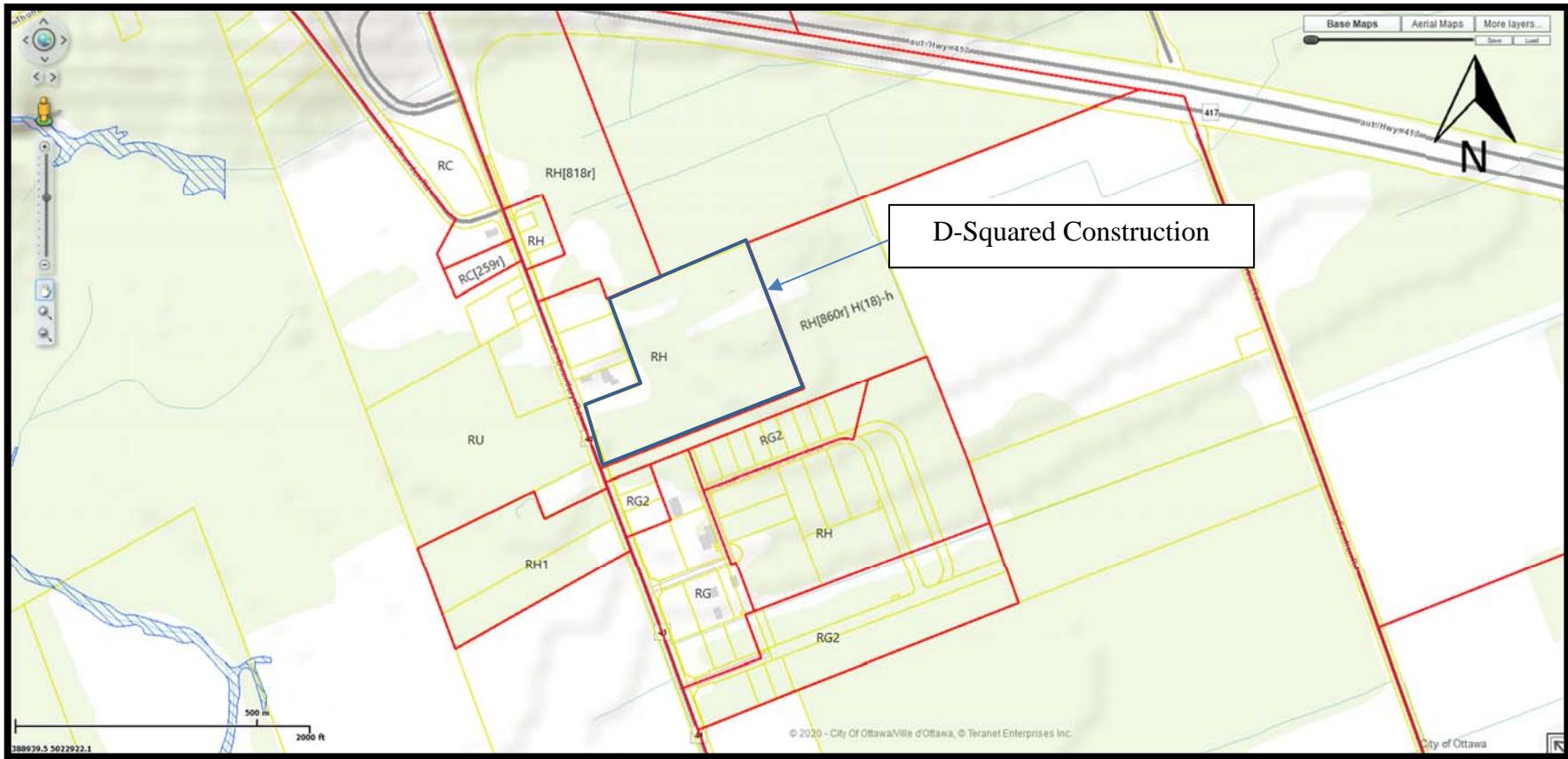


Figure B1: Zoning Map



ACOUSTICS



NOISE



VIBRATION

[www.hgcengineering.com](http://www.hgcengineering.com)

**TABLE 35(B)- LIST OF PRIMARY ZONES AND CODES**

(I) Zone Name	(II) Zone Code
<b>RESIDENTIAL ZONES</b>	
(1) Residential First Density Zone	R1
(2) Residential Second Density Zone	R2
(3) Residential Third Density Zone	R3
(4) Residential Fourth Density Zone	R4
(5) Residential Fifth Density Zone	R5
(6) Mobile Home Park Zone	RM
<b>INSTITUTIONAL ZONES</b>	
(7) Minor Institutional Zone	I1
(8) Major Institutional Zone	I2
<b>OPEN SPACE AND LEISURE ZONES</b>	
(9) Parks and Open Space Zone	O1
(10) Community Leisure Facility Zone	L1
(11) Major Leisure Facility Zone	L2
(12) Central Experimental Farm Zone	L3
<b>ENVIRONMENTAL ZONE</b>	
(13) Environmental Protection Zone	EP
<b>COMMERCIAL/MIXED USE ZONES</b>	
(14) Local Commercial Zone	LC
(15) General Mixed Use Zone	GM
(16) Traditional Mainstreet Zone	TM
(17) Arterial Mainstreet Zone	AM
(18) Mixed Use Centre Zone	MC
(19) Mixed Use Downtown Zone	MD

<b>(I) Zone Name</b>	<b>(II) Zone Code</b>
<b>INDUSTRIAL ZONES</b>	
(20) Business Park Industrial Zone	IP
(21) Light Industrial Zone	IL
(22) General Industrial Zone	IG
(23) Heavy Industrial Zone	IH
<b>TRANSPORTATION ZONES</b>	
(24) Air Transportation Facility Zone	T1
(25) Ground Transportation Facility Zone	T2
<b>RURAL ZONES</b>	
(26) Agricultural Zone	AG
(27) Mineral Extraction Zone	ME
(28) Mineral Aggregate Reserve Zone	MR
(29) Rural Commercial Zone	RC
(30) Rural General Industrial Zone	RG
(31) Rural Heavy Industrial Zone	RH
(32) Rural Institutional Zone	RI
(33) Rural Residential Zone	RR
(34) Rural Countryside Zone	RU
(35) Village Mixed Use Zone	VM
(36) Village Residential First Density Zone	V1
(37) Village Residential Second Density Zone	V2
(38) Village Residential Third Density Zone	V3
<b>OTHER ZONES</b>	
(39) Development Reserve Zone	DR

## **APPENDIX C**

### **Manufacturer's Sound Data**

Astec Plant Sound Power Levels

D Squared 19-310

13 March 2020

Octave Band Hz	Double Barrel Sources					Baghouse Sources				Silo Sources			
	DB Mounted Burner	Burner Inlet	Burner Casing	Burner Motor	Drum Drive	Exhaust Stack	Exhaust Fan Casing	Exhaust Fan Motor	Air Compressor	Drag Drive	Traverse Drive x3	Jet Vent	Dust Blower
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
31.5	69	68	71	45	58	76	79	51	47	46	48	43	42
63	82	80	84	58	71	89	92	64	57	55	65	56	66
125	83	80	85	72	80	93	92	78	72	77	77	67	95
250	83	75	87	83	89	101	94	89	78	81	82	67	92
500	90	73	80	93	98	102	89	99	82	92	75	83	113
1000	93	76	83	96	98	105	92	102	88	93	69	93	114
2000	90	74	82	92	93	104	92	98	94	97	84	94	110
4000	95	69	76	89	93	98	85	95	91	94	68	89	104
8000	92	63	60	83	86	90	68	89	82	87	60	84	96
Overall dB(A)	100	85	92	93	103	110	100	105	97	101	87	98	118
H (in)	198.1	161.8	235.6	161.8	188.8	402.0	82.0	48.0	24.0	1050.0	936.0	720.0	
Frequency (%)													33.3

Octave Band Hz	Virgin Material Sources							RAP Material Sources							
	Fines Bin Drive x2	Coarse Bin Drive x4	Collecting Tail Pulley	Collecting Head Pulley	Incl Conv Tail Pulley	Incl Conv Head Pulley	Virgin Screen	Bin Vibrator x2	RAP Bin Drive x3	Collecting Tail Pulley	Collecting Head Pulley	Incl Conv Tail Pulley	Incl Conv Head Pulley	RAP Screen	Bin Vibrator x2
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
31.5	50	50	53	44	53	44	70	44	50	53	44	53	44	22	44
63	61	61	65	58	65	58	77	67	61	65	58	65	58	39	67
125	70	70	72	66	72	66	86	77	70	72	66	72	66	52	77
250	78	78	87	75	87	75	95	83	78	87	75	87	75	63	83
500	81	81	88	80	88	80	97	91	81	88	80	88	80	74	91
1000	80	80	86	80	86	80	99	97	80	86	80	86	80	90	97
2000	80	80	81	78	81	78	98	90	80	81	78	81	78	92	90
4000	76	76	74	83	74	83	95	86	76	74	83	74	83	91	86
8000	70	70	62	74	62	74	91	77	70	62	74	62	74	90	77
Overall dB(A)	87	87	92	87	92	87	104	99	87	92	87	92	87	97	99
Height (m)	1.8	1.8	1.0	4.9	0.8	8.4	3.1	2.3	2.0	1.1	4.4	0.6	8.3	2.7	2.0
H (in)	71.0	71.0	41.0	191.6	32.0	332.3	124.0	88.9	79.8	43.0	175.0	25.0	326.0	105.5	79.8
Frequency (%)															

Octave Band Hz	Heatec Sources						Other Sources		**Pneumatic Sources (Impulse)			
	Hot Oil Heater	Heater Pump	Hot Oil Pump	Asphalt Pump	Fuel Pump	Asphalt UL Pump	Pneumatic Sources	Source	Frequency (%)	Height (m)	Height (in)	
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)					
31.5	41	52	34	50	52	57	43	Silo Bottom Gate x6	2.2	5.4	212.75	
63	66	69	59	63	69	78	56	Batcher Gate x6	1.9	20.6	811	
125	74	77	64	69	77	82	67	Drag Dropout	0.01	12.0	473	
250	80	82	71	75	82	88	67	Silo Top Gate x6	0.01	19.6	772	
500	91	85	87	73	85	93	83	Virgin Bypass	0.01	7.5	294	
1000	89	86	82	61	86	94	93	RAP Bypass	0.01	5.8	230	
2000	90	86	86	80	86	91	94					
4000	88	81	83	64	81	87	89					
8000	81	74	75	60	74	79	84					
Overall dB(A)	96	92	91	91	92	99	98					
Height (m)	1.0	1.0	1.0	1.0	1.0	1.0	**					
Frequency (%)							**					

**No Data Available**

Batch Tower components

Air Conditioner

## **APPENDIX D**

### **Details of Predictive Acoustical Modelling**

The predictive model used for this Assessment (*Cadna-A version 2020 MR1, build 177.501*) is based on the methods from ISO Standard 9613-2.2 “Acoustics - Attenuation of Sound During Propagation Outdoors” [6], which accounts for reduction in sound level with distance due to geometrical spreading, air absorption, ground attenuation and acoustical shielding by intervening structures (or by topography and foliage where applicable). This modelling technique is acceptable to the MECP.

The site and surrounding area were modelled as flat ground based on observations made during a site visit by HGC Engineering on February 13, 2020. Ground attenuation was assumed to be spectral for all sources, with the ground factor (G) assumed to be 0.5 in sand and gravel covered areas, and 1.0 in all other areas, representative of soft grassy boulevards and open fields. The temperature and relative humidity were assumed to be 10° C and 70%, respectively.

The predictive modelling considered three orders of reflection, with onsite shielding/reflections at the subject plant afforded by several onsite buildings/structures, with spectral absorptive characteristics applied to each structure as appropriate, with values representative of corrugated metal or steel.

All mechanical sources were modelled as point sources of sound (shown as green crosses in Figures 3 through 14). The front-end loaders, aggregate and RAP bin sources, and top of the crusher/screen were modelled as area sources of sound (shown as green hatched areas in Figures 3 through 14). Movement of all trucks were modelled as line sources (vehicle trajectories are shown as thin lines in Figures 3 through 14). Time weighting factors were applied to the sound from on-site vehicles, based on an on-site speed of 15 km/h.

## **APPENDIX E**

### **Acoustic Assessment Criteria**

The MECP noise assessment guidelines draw a distinction between sound produced by traffic sources and that produced by industrial or commercial activities, which are classified as stationary sources of sound. In essence, the sound from the stationary sources is evaluated against (i.e. compared to) the typical background sound at any potentially impacted, sound-sensitive points of reception (e.g., residences). Background sound is considered to include road traffic sound and other typical sounds, but excludes the sound of the facility under assessment. MECP Publication NPC-300, “Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning” [3] is a guideline for developing applicable sound level limits. In general, the acceptability limits for stationary sources are site dependent, and are based on the existing ambient background sound levels in the area of the subject site.

Publication NPC-300 states that the sound level limit for a stationary source which operates in a Class 2 environment is the greater of the minimum one-hour energy-equivalent ( $L_{EQ}$ ) background sound level, or the following exclusionary minimum limits:

**Table E1: Exclusionary Minimum Limits,  $L_{EQ}$  [dBA]**

Point of Reception	Daytime (07:00 – 19:00)	Evening (19:00 – 23:00)	Nighttime (23:00 – 07:00)
Plane of Window of Noise Sensitive Spaces	50	50	45
Outdoor Amenity Areas	50	45	N/A

Observations in the vicinity of locations R1 to R5, and V1 indicate that, although background sound is likely to be elevated above the exclusionary minimum limits at most locations during many hours of the day, it may fall below the exclusionary minimum limits during the quietest hours of the day and night. Accordingly, the exclusionary sound level limits tabled above have been adopted for the purposes of this assessment.

## APPENDIX F

### Sample Calculation Results - Condensed, Overall dBA Format

In the following tables of calculation results, the column headings for the various sound attenuation mechanisms follow the terminology of ISO Standard 9613-2. LxD and LxN are the A-weighted, one-hour energy-equivalent source sound power levels for day and evening/night, respectively, which include the effects of any source-abatement measures included in the model, and any time-averaging effects for intermittent sources. LrD and LrN are the A-weighted, one-hour energy-equivalent sound levels at the points of reception. The results are presented in terms of overall A-weighted results, at the most impacted off-site points of reception.

R1	Single Storey Residence - 70 metres NW	935478	5036033	77.0															
Src ID	Src Name	Easting	Northing	Elevation	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Atm	Afol	Ahous	Cmet	Refl	LrD	LrN	
NS-01	Arriving/Departing Aggregate Trucks	935726	5036014	78.0	101	--	61.9	0	0.0	-2.0	25.0	40.8	0.0	0.0	0.0	0.0	30	--	
NS-02	Idling Aggregate Trucks - Weigh Scale	935592	5035914	78.0	95	--	55.3	0	0.0	0.0	15.2	0.7	0.0	0.0	0.0	24	--		
NS-03	Unloading Aggregate Truck	935803	5036112	78.0	91	--	61.5	0	0.0	0.8	3.0	1.6	0.0	0.0	0.0	24	--		
NS-04	Arriving/Departing Liquid AC Trucks	935673	5035994	78.0	87	--	60.4	0	0.0	-1.9	21.6	34.4	0.0	0.0	0.0	0.0	16	--	
NS-05	Asphalt Unloading Pump	935731	5036055	76.5	92	--	59.1	0	0.0	4.7	9.4	0.6	0.0	0.0	0.0	0.7	19	--	
NS-06	Front End Loader	935791	5036063	78.0	106	106	61.1	0	0.0	1.0	4.3	1.9	0.0	0.0	0.0	0.0	38	38	
NS-07	Aggregate Bin Sources	935809	5036087	77.5	100	100	61.5	0	0.0	1.5	10.1	1.5	0.0	0.0	0.0	0.0	26	26	
NS-08	Aggregate Screen	935786	5036074	78.6	104	104	60.8	0	0.0	1.4	16.5	1.7	0.0	0.0	0.0	0.0	23	23	
NS-09	RAP Bin Sources	935762	5036087	77.5	100	100	60.2	0	0.0	1.3	9.4	1.4	0.0	0.0	0.0	0.0	28	28	
NS-10	RAP Screen	935744	5036081	78.1	97	97	59.6	0	0.0	-0.9	21.9	2.8	0.0	0.0	0.0	0.0	13	13	
NS-11	Burner	935751	5036057	77.3	100	100	59.8	0	0.0	0.8	15.2	2.5	0.0	0.0	0.0	0.0	21	21	
NS-12	Blower Motor	935748	5036056	76.7	99	99	59.6	0	0.0	2.1	13.0	1.4	0.0	0.0	0.0	0.0	25	25	
NS-13	Blower Casing	935748	5036056	76.7	88	88	59.7	0	0.0	4.7	9.4	1.1	0.0	0.0	0.0	0.0	14	14	
NS-14	Blower Inlet	935749	5036055	76.7	80	80	59.7	0	0.0	2.9	11.4	1.1	0.0	0.0	0.0	0.0	5	5	
NS-15	Drum Drive	935763	5036063	76.5	99	99	60.1	0	0.0	4.9	7.8	0.8	0.0	0.0	0.0	0.0	25	25	
NS-16	Baghouse Fan - Casing	935773	5036074	77.6	97	97	60.5	0	0.0	3.2	19.3	1.7	0.0	0.0	0.0	0.0	12	12	
NS-17	Baghouse Fan - Motor	935774	5036075	77.6	105	105	60.5	0	0.0	0.9	21.2	1.7	0.0	0.0	0.0	0.0	21	21	
NS-18	Baghouse - Exhaust	935772	5036075	85.7	109	109	60.5	0	0.0	-0.3	2.1	3.1	1.2	0.0	0.0	0.0	33	33	
NS-19	Dust Silo Blower	935751	5036053	76.0	104	104	59.7	0	0.0	5.2	17.9	7.0	0.0	0.0	0.0	0.0	14	14	
NS-20	Bucket Elevator Motor	935758	5036056	94.5	100	100	60.0	0	0.0	1.4	2.6	1.7	0.0	0.0	0.0	0.0	34	34	
NS-21	Screen Deck	935761	5036051	92.5	103	103	60.1	0	0.0	2.3	13.3	0.6	0.0	0.0	0.0	0.0	27	27	
NS-22	Pug Mill	935760	5036054	85.5	97	97	60.0	0	0.0	2.4	2.7	0.9	0.0	0.0	0.0	0.0	31	31	
NS-23	Batch Tower Bottom Gate	935760	5036051	80.9	82	82	60.0	0	0.0	-1.0	24.5	2.7	0.0	0.0	0.0	0.0	--	--	
NS-24	Idling HMA Trucks - Batch Tower	935764	5036050	78.0	95	95	60.2	0	0.0	-0.3	23.2	1.8	0.0	0.0	0.0	0.0	10	10	
NS-25	Drag Conveyor Drive	935778	5036046	102.5	101	101	60.6	0	0.0	-0.2	4.1	3.5	0.0	0.0	0.0	0.0	33	33	
NS-26	Traverse Conveyor Drive	935779	5036048	99.5	81	81	60.6	0	0.0	0.3	3.7	2.7	0.0	0.0	0.0	0.0	14	14	
NS-27	Idling HMA Trucks - Silos	935777	5036048	78.0	95	95	60.5	0	0.0	0.1	22.6	1.7	0.0	0.0	0.0	0.0	6.8	17	
NS-28	Top Silo Gate	935778	5036048	96.1	82	82	60.6	0	0.0	-0.5	5.7	2.7	0.0	0.0	0.0	0.0	13	13	
NS-29	Bottom Silo Gate	935778	5036048	80.9	82	82	60.5	0	0.0	-1.0	24.4	2.8	0.0	0.0	0.0	0.0	--	--	
NS-30	Silo Jet Vent	935780	5036048	93.5	98	98	60.6	0	0.0	-0.3	11.7	2.2	0.0	0.0	0.0	0.0	24	24	
NS-31	Air Compressor	935759	5036076	77.9	98	98	60.1	0	0.0	-0.7	15.4	2.8	0.0	0.0	0.0	0.0	23	23	
NS-32	Hot Oil Heater	935729	5036053	76.5	96	96	59.0	0	0.0	3.9	12.8	1.6	0.0	0.0	0.0	0.0	20	20	
NS-33	Hot Oil Pump	935732	5036052	76.5	91	91	59.1	0	0.0	4.3	12.2	1.6	0.0	0.0	0.0	0.0	14	15	
NS-34	Heater Pump	935732	5036054	76.5	91	91	59.1	0	0.0	3.5	12.8	1.4	0.0	0.0	0.0	0.0	15	15	
NS-35	Fuel Pump	935730	5036052	76.5	91	91	59.0	0	0.0	3.4	13.0	1.4	0.0	0.0	0.0	0.0	21	16	
NS-36	Asphalt Pump	935733	5036053	76.5	82	82	59.2	0	0.0	3.3	13.2	1.9	0.0	0.0	0.0	0.0	6	6	
NS-37	Arriving/Departing HMA Trucks - Batch	935732	5036015	78.0	99	98	58.2	0	0.0	1.6	10.4	0.6	0.0	0.0	0.0	0.0	28	27	
NS-37	Arriving/Departing HMA Trucks - Drum	935733	5035999	78.0	99	99	58.2	0	0.0	1.6	10.4	0.6	0.0	0.0	0.0	0.0	28	28	
NS-38	Idling HMA Trucks - Queued	935777	5036061	78.0	95	95	60.5	0	0.0	1.0	11.3	1.4	0.0	0.0	0.0	0.0	21	21	
NS-39	Front-End Loader	935785	5036143	78.0	106	106	61.1	0	0.0	1.5	6.0	1.7	0.0	0.0	0.0	0.0	36	36	
NS-40a	Crusher/Screener - Side 1	935776	5036117	77.8	--	--	60.8	3	0.0	2.0	9.2	0.7	0.0	0.0	0.0	0.0	27	--	
NS-40b	Crusher/Screener - Side 2	935785	5036135	77.8	--	--	61.1	3	0.0	3.4	5.8	1.3	0.0	0.0	0.0	0.0	41	--	
NS-40c	Crusher/Screener - Side 3	935782	5036120	77.8	--	--	61.1	3	0.0	4.2	15.7	1.1	0.0	0.0	0.0	0.0	28	--	
NS-40d	Crusher/Screener - Side 4	935793	5036147	77.8	--	--	61.4	3	0.0	3.7	17.1	1.2	0.0	0.0	0.0	0.0	32	--	
NS-40e	Crusher/Screener - Top	935786	5036131	80.3	--	--	61.1	0	0.0	2.8	3.3	1.3	0.0	0.0	0.0	0.0	38	--	
NS-41	Stacker Motor	935794	5036135	76.5	105	--	61.4	0	0.0	2.9	6.7	1.6	0.0	0.0	0.0	0.0	26	--	
NS-42a	Crusher/Screener - Engine Combustion Exhaust	935776	5036137	81.0	107	--	61.0	0	0.0	1.5	2.9	1.9	0.0	0.0	0.0	0.0	40	--	
NS-42b	Crusher/Screener - Engine Radiator	935776	5036140	77.6	--	--	61.0	3	0.0	3.5	4.7	0.7	0.0	0.0	0.0	0.0	39	--	

R1a	Outdoor Ammenity Area of R1	935507	5036040	77.0															
Src ID	Src Name	Easting	Northing	Elevation	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Atm	Afol	Ahous	Cmet	Refl	LrD	LrN	
NS-01	Arriving/Departing Aggregate Trucks	935725	5036017	78.0	101	--	61.0	0	0.0	-2.2	25.0	37.1	0.0	0.0	0.0	0.0	1.4	41	--
NS-02	Idling Aggregate Trucks - Weigh Scale	935592	5035914	78.0	95	--	54.6	0	0.0	-1.1	0.0	1.0	0.0	0.0	0.0	0.0	41	--	
NS-03	Unloading Aggregate Truck	935803	5036112	78.0	91	--	60.6	0	0.0	0.2	3.6	3.5	0.0	0.0	0.0	0.0	26	--	
NS-04	Arriving/Departing Liquid AC Trucks	935673	5035997	78.0	87	--	59.5	0	0.0	-2.0	25.0	31.0	0.0	0.0	0.0	0.0	16	--	
NS-05	Asphalt Unloading Pump	935731	5036055	76.5	92	--	58.0	0	0.0	3.4	12.6	0.6	0.0	0.0	0.0	0.0	18	--	
NS-06	Front End Loader	935790	5036061	78.0	106	106	60.3	0	0.0	0.3	4.2	1.7	0.0	0.0	0.0	0.0	39	39	
NS-07	Aggregate Bin Sources	935809	5036085	77.5	100	100	60.8	0	0.0	-0.3	8.3	1.7	0.0	0.0	0.0	0.0	1.4	31	
NS-08	Aggregate Screen	935786	5036074	78.6	104	104	59.9	0	0.0	0.4	18.5	1.6	0.0	0.0	0.0	0.0	1.5	25	
NS-09	RAP Bin Sources	935761	5036086	77.5	100	100	59.3	0	0.0	-0.1	5.9	1.4	0.0	0.0	0.0	0.0	34	34	
NS-10	RAP Screen	935744	5036081	78.1	97	97	58.6	0	0.0	-1.3	21.1	2.5	0.0	0.0	0.0	0.0	14	17	
NS-11	Burner	935751	5036057	77.3	100	100	58.8	0	0.0	0.1	18.6	2.3	0.0	0.0	0.0	0.0	5.9	26	
NS-12	Blower Motor	935748	5036056	76.7	99	99	58.6	0	0.0	1.3	16.3	1.2	0.0	0.0	0.0	0.0	5.6	27	
NS-13	Blower Casing	935748	5036056	76.7	88	88	58.6	0	0.0	3.4	13.0	0.9	0.0	0.0	0.0	0.0	5.2	17	
NS-14	Blower Inlet	935749	50360																

Src ID	Src Name	Easting	Northing	Elevation	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	LrD	LrN
NS-40b	Crusher/Screener - Side 2	935786	5036135	77.8	--	--	60.3	3	0.0	2.8	7.0	1.1	0.0	0.0	0.0	0.0	41	--
NS-40c	Crusher/Screener - Side 3	935782	5036120	77.8	--	--	60.3	3	0.0	3.2	16.7	1.1	0.0	0.0	0.0	0.0	29	--
NS-40d	Crusher/Screener - Side 4	935793	5036147	77.8	--	--	60.6	3	0.0	2.8	17.9	1.2	0.0	0.0	0.0	0.0	33	--
NS-40e	Crusher/Screener - Top	935786	5036131	80.3	--	--	60.3	0	0.0	2.2	4.2	1.1	0.0	0.0	0.0	0.0	38	--
NS-41	Stacker Motor	935794	5036135	76.5	105	--	60.6	0	0.0	2.2	7.5	1.5	0.0	0.0	0.0	1.2	34	--
NS-42a	Crusher/Screener - Engine Combustion Exhaust	935776	5036137	81.0	107	--	60.1	0	0.0	1.0	3.3	1.7	0.0	0.0	0.0	0.0	41	--
NS-42b	Crusher/Screener - Engine Radiator	935776	5036140	77.6	--	--	60.1	3	0.0	3.0	4.7	0.6	0.0	0.0	0.0	0.0	40	--

R2	Single Storey Residence - 165 metres NW	935393	5036086	77.0														
Src ID	Src Name	Easting	Northing	Elevation	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	LrD	LrN
NS-01	Arriving/Departing Aggregate Trucks	935739	5036019	78.0	101	--	63.6	0	0.0	-2.2	7.0	50.0	0.0	0.0	0.0	0.0	35	--
NS-02	Idling Aggregate Trucks - Weigh Scale	935592	5035914	78.0	95	--	59.4	0	0.0	-0.6	0.0	1.7	0.0	0.0	0.0	0.0	35	--
NS-03	Unloading Aggregate Truck	935803	5036112	78.0	91	--	63.3	0	0.0	-0.7	1.7	2.0	0.0	0.0	0.0	0.0	25	--
NS-04	Arriving/Departing Liquid AC Trucks	935676	5035995	78.0	87	--	63.3	0	0.0	-2.2	25.0	48.0	0.0	0.0	0.0	0.0	23	--
NS-05	Asphalt Unloading Pump	935731	5036055	76.5	92	--	61.6	0	0.0	3.4	3.2	1.3	0.0	0.0	0.0	1.2	23	--
NS-06	Front End Loader	935794	5036096	78.0	106	106	63.0	0	0.0	-0.3	3.7	2.3	0.0	0.0	0.0	0.0	37	37
NS-07	Aggregate Bin Sources	935805	5036084	77.5	100	100	63.4	0	0.0	-0.7	3.9	2.4	0.0	0.0	0.0	0.0	31	31
NS-08	Aggregate Screen	935786	5036074	78.6	104	104	62.9	0	0.0	0.1	14.1	2.1	0.0	0.0	0.0	0.0	25	25
NS-09	RAP Bin Sources	935762	5036088	77.5	100	100	62.3	0	0.0	-0.6	4.7	2.0	0.0	0.0	0.0	0.0	32	32
NS-10	RAP Screen	935744	5036081	78.1	97	97	61.9	0	0.0	-1.6	20.3	3.1	0.0	0.0	0.0	0.0	13	13
NS-11	Burner	935751	5036057	77.3	100	100	62.1	0	0.0	-0.7	5.7	4.5	0.0	0.0	0.0	0.0	2.5	31
NS-12	Blower Motor	935748	5036056	76.7	99	99	62.0	0	0.0	0.5	4.8	2.2	0.0	0.0	0.0	0.0	30	30
NS-13	Blower Casing	935749	5036055	76.7	88	88	62.1	0	0.0	1.7	3.6	2.1	0.0	0.0	0.0	0.0	18	18
NS-14	Blower Inlet	935749	5036055	76.7	80	80	62.1	0	0.0	0.8	4.4	2.2	0.0	0.0	0.0	0.0	12	12
NS-15	Drum Drive	935763	5036063	76.5	99	99	62.4	0	0.0	2.9	2.2	1.7	0.0	0.0	0.0	0.0	29	29
NS-16	Baghouse Fan - Casing	935733	5036074	77.6	97	97	62.6	0	0.0	1.9	19.8	1.9	0.0	0.0	0.0	0.0	11	11
NS-17	Baghouse Fan - Motor	935774	5036075	77.6	105	105	62.6	0	0.0	-0.2	20.8	1.9	0.0	0.0	0.0	0.0	20	20
NS-18	Baghouse - Exhaust	935772	5036075	85.7	109	109	62.6	0	0.0	0.3	0.0	1.8	0.0	0.0	0.0	0.0	35	35
NS-19	Dust Silo Blower	935751	5036053	76.0	104	104	61.6	0	0.0	5.3	5.2	3.4	0.0	0.0	0.0	0.0	28	28
NS-20	Bucket Elevator Motor	935758	5036056	94.5	100	100	62.3	0	0.0	0.3	0.0	2.0	0.0	0.0	0.0	0.0	35	35
NS-21	Screen Deck	935761	5036051	92.5	103	103	62.4	0	0.0	1.8	8.3	0.9	0.0	0.0	0.0	0.0	30	30
NS-22	Pug Mill	935760	5036054	85.5	97	97	62.3	0	0.0	0.8	0.0	1.2	0.0	0.0	0.0	0.0	33	33
NS-23	Batch Tower Bottom Gate	935760	5036051	80.9	82	82	62.3	0	0.0	-1.5	4.6	3.4	0.0	0.0	0.0	0.0	13	13
NS-24	Idling HMA Trucks - Batch Tower	935764	5036050	78.0	95	95	62.5	0	0.0	0.0	20.5	1.7	0.0	0.0	0.0	0.0	10	10
NS-25	Drag Conveyor Drive	935778	5036046	102.5	101	101	62.8	0	0.0	-0.6	0.0	4.1	0.0	0.0	0.0	0.0	35	35
NS-26	Traverse Conveyor Drive	935779	5036048	99.5	81	81	62.8	0	0.0	-0.5	0.0	3.3	0.0	0.0	0.0	0.0	15	15
NS-27	Idling HMA Trucks - Silos	935777	5036046	78.0	95	95	62.7	0	0.0	0.1	19.9	1.7	0.0	0.0	0.0	0.0	11	11
NS-28	Top Silo Gate	935778	5036048	96.1	82	82	62.8	0	0.0	-0.8	0.0	3.5	0.0	0.0	0.0	0.0	16	16
NS-29	Bottom Silo Gate	935778	5036048	80.9	82	82	62.8	0	0.0	-1.3	22.3	3.0	0.0	0.0	0.0	0.0	--	--
NS-30	Silo Jet Vent	935780	5036048	93.5	98	98	62.8	0	0.0	-0.7	3.7	3.4	0.0	0.0	0.0	0.0	29	29
NS-31	Air Compressor	935759	5036076	77.9	98	98	62.3	0	0.0	-1.9	5.6	4.2	0.0	0.0	0.0	0.0	28	30
NS-32	Hot Oil Heater	935729	5036053	76.5	96	96	61.3	0	0.0	1.6	14.1	1.6	0.0	0.0	0.0	0.0	22	22
NS-33	Fuel Pump	935730	5036052	76.5	91	91	61.6	0	0.0	1.6	5.4	2.3	0.0	0.0	0.0	0.0	17	22
NS-34	Heater Pump	935732	5036054	76.5	91	91	61.7	0	0.0	1.6	5.3	2.3	0.0	0.0	0.0	0.0	13	22
NS-35	Asphalt Pump	935733	5036053	76.5	82	82	61.7	0	0.0	0.7	5.9	3.0	0.0	0.0	0.0	0.0	16	12
NS-36	Asphalt Pump	935743	5036015	78.0	99	98	60.6	0	0.0	1.1	1.8	1.7	0.0	0.0	0.0	0.0	34	32
NS-37	Arriving/Departing HMA Trucks - Drum	935746	5036005	78.0	99	99	60.6	0	0.0	1.1	1.8	1.7	0.0	0.0	0.0	0.0	34	34
NS-38	Arriving/Departing HMA Trucks - Queued	935777	5036061	78.0	95	95	62.7	0	0.0	-0.9	4.2	2.5	0.0	0.0	0.0	0.0	27	27
NS-39	Front-End Loader	935786	5036139	78.0	106	106	62.9	0	0.0	0.2	5.8	2.0	0.0	0.0	0.0	0.0	36	36
NS-40a	Crusher/Screener - Side 1	935776	5036117	77.8	--	--	62.7	3	0.0	0.7	6.8	1.4	0.0	0.0	0.0	0.0	28	--
NS-40b	Crusher/Screener - Side 2	935786	5036135	77.8	--	--	62.9	3	0.0	1.6	5.2	1.7	0.0	0.0	0.0	0.0	41	--
NS-40c	Crusher/Screener - Side 3	935785	5036120	77.8	--	--	62.9	3	0.0	2.3	17.5	1.4	0.0	0.0	0.0	0.0	26	--
NS-40d	Crusher/Screener - Side 4	935794	5036135	77.8	--	--	63.1	3	0.0	1.8	18.3	1.5	0.0	0.0	0.0	0.0	30	--
NS-40e	Crusher/Screener - Top	935785	5036129	80.3	--	--	62.9	0	0.0	0.7	3.2	1.9	0.0	0.0	0.0	0.0	37	--
NS-41	Stacker Motor	935794	5036135	76.5	105	--	63.1	0	0.0	1.6	14.1	1.6	0.0	0.0	0.0	0.0	7.4	32
NS-42a	Crusher/Screener - Engine Combustion Exhaust	935776	5036137	81.0	107	--	62.8	0	0.0	0.0	3.6	2.2	0.0	0.0	0.0	0.0	39	--
NS-42b	Crusher/Screener - Engine Radiator	935776	5036140	77.6	--	--	62.8	3	0.0	4.1	2.7	0.9	0.0	0.0	0.0	0.0	38	--

R2a	Outdoor Ammenity Area of R2	935401	5036055	77.0														
Src ID	Src Name	Easting	Northing	Elevation	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	LrD	LrN
NS-01	Arriving/Departing Aggregate Trucks	935728	5036017	78.0	101	--	63.6	0	0.0	-2.0	25.0	49.6	0.0	0.0	0.0	0.0	36	--
NS-02	Idling Aggregate Trucks - Weigh Scale	935592	5035914	78.0	95	--	58.5	0	0.0	-0.6	0.0	1.5	0.0	0.0	0.0	0.0	36	--
NS-03	Unloading Aggregate Truck	935803	5036112	78.0	91	--	63.2	0	0.0	-0.3	3.0	1.9	0.0	0.0	0.0	0.0	24	--
NS-04	Arriving/Departing Liquid AC Trucks	935675	5035994	78.0	87	--	62.8	0	0.0	-1.9	25.0	45.7	0.0	0.0	0.0	0.0	24	--
NS-05	Asphalt Unloading Pump	935731	5036055	76.5	92	--	61.4	0	0.0	4.0	2.9	1.3	0.0	0.0	0.0	1.0	23	--
NS-06	Front End Loader	935792	5036071	78.0	106	106	62.9	0	0.0	0.0	3.9	2.3	0.0</					

Src ID	Src Name	Easting	Northing	Elevation	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	LrD	LrN
NS-34	Heater Pump	935732	5036054	76.5	91	91	61.4	0	0.0	2.1	5.1	2.2	0.0	0.0	0.0	1.3	22	22
NS-35	Fuel Pump	935730	5036052	76.5	91	91	61.3	0	0.0	2.2	5.2	2.2	0.0	0.0	0.0	1.7	22	22
NS-36	Asphalt Pump	935733	5036053	76.5	82	82	61.4	0	0.0	1.2	5.8	2.9	0.0	0.0	0.0	1.6	12	12
NS-37	Arriving/Departing HMA Trucks - Batch	935734	5036015	78.0	99	98	59.5	0	0.0	1.1	1.9	1.6	0.0	0.0	0.0	0.0	35	34
NS-37	Arriving/Departing HMA Trucks - Drum	935736	5036000	78.0	99	99	59.5	0	0.0	1.1	1.9	1.6	0.0	0.0	0.0	0.0	35	35
NS-38	Idling HMA Trucks - Queued	935777	5036061	78.0	95	95	62.5	0	0.0	-0.3	5.4	2.2	0.0	0.0	0.0	0.0	25	25
NS-39	Front-End Loader	935785	5036125	78.0	106	106	62.9	0	0.0	0.5	5.7	2.0	0.0	0.0	0.0	0.5	35	35
NS-40a	Crusher/Screen - Side 1	935776	5036117	77.8	--	--	62.6	3	0.0	1.0	6.7	1.3	0.0	0.0	0.0	0.0	28	--
NS-40b	Crusher/Screen - Side 2	935784	5036121	77.8	--	--	62.8	3	0.0	2.0	4.7	1.7	0.0	0.0	0.0	0.0	41	--
NS-40c	Crusher/Screen - Side 3	935782	5036120	77.8	--	--	62.8	3	0.0	2.6	17.0	1.3	0.0	0.0	0.0	0.0	26	--
NS-40d	Crusher/Screen - Side 4	935794	5036135	77.8	--	--	63.0	3	0.0	2.2	18.0	1.4	0.0	0.0	0.0	0.0	30	--
NS-40e	Crusher/Screen - Top	935784	5036116	80.3	--	--	62.8	0	0.0	1.1	3.0	1.9	0.0	0.0	0.0	0.0	37	--
NS-41	Stacker Motor	935794	5036135	76.5	105	--	63.1	0	0.0	2.0	14.1	1.5	0.0	0.0	0.0	7.6	32	--
NS-42a	Crusher/Screen - Engine Combustion Exhaust	935776	5036137	81.0	107	--	62.7	0	0.0	0.3	3.4	2.2	0.0	0.0	0.0	0.0	39	--
NS-42b	Crusher/Screen - Engine Radiator	935776	5036140	77.6	--	--	62.7	3	0.0	2.7	4.3	0.9	0.0	0.0	0.0	0.0	38	--

R3	Single Storey Residence - 155 metres NW	935376	5036146	77.0	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	LrD	LrN
Src ID	Src Name	Easting	Northing	Elevation	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	LrD	LrN
NS-01	Arriving/Departing Aggregate Trucks	935740	5036021	78.0	101	--	64.5	0	0.0	-2.4	25.0	55.1	0.0	0.0	0.0	0.0	34	--
NS-02	Idling Aggregate Trucks - Weigh Scale	935592	5035914	78.0	95	--	61.0	0	0.0	-0.5	4.1	2.0	0.0	0.0	0.0	0.0	28	--
NS-03	Unloading Aggregate Truck	935803	5036112	78.0	91	--	63.6	0	0.0	-0.8	4.3	1.6	0.0	0.0	0.0	0.0	23	--
NS-04	Arriving/Departing Liquid AC Trucks	935679	5036000	78.0	87	--	63.8	0	0.0	-2.4	25.0	51.1	0.0	0.0	0.0	0.0	21	--
NS-05	Asphalt Unloading Pump	935731	5036055	76.5	92	--	62.3	0	0.0	2.8	3.5	1.4	0.0	0.0	0.0	1.3	23	--
NS-06	Front End Loader	935791	5036088	78.0	106	106	63.4	0	0.0	-0.9	2.8	2.4	0.0	0.0	0.0	0.0	38	38
NS-07	Aggregate Bin Sources	935805	5036081	77.5	100	100	63.8	0	0.0	-1.1	4.0	2.5	0.0	0.0	0.0	0.0	31	31
NS-08	Aggregate Screen	935786	5036074	78.6	104	104	63.4	0	0.0	-0.5	14.0	2.2	0.0	0.0	0.0	0.0	25	25
NS-09	RAP Bin Sources	935762	5036088	77.5	100	100	62.8	0	0.0	-1.0	4.9	2.1	0.0	0.0	0.0	0.0	31	31
NS-10	RAP Screen	935744	5036081	78.1	97	97	62.5	0	0.0	-1.9	20.0	3.2	0.0	0.0	0.0	0.0	13	13
NS-11	Burner	935751	5036057	77.3	100	100	62.7	0	0.0	0.0	5.0	2.3	0.0	0.0	0.0	0.0	28	28
NS-12	Blower Motor	935748	5036056	76.7	99	99	62.7	0	0.0	1.2	3.7	2.3	0.0	0.0	0.0	0.0	29	29
NS-13	Blower Casing	935748	5036056	76.7	88	88	62.7	0	0.0	0.3	4.5	2.3	0.0	0.0	0.0	0.0	18	18
NS-14	Blower Inlet	935749	5036055	76.7	80	80	62.7	0	0.0	0.3	4.5	2.3	0.0	0.0	0.0	0.0	10	10
NS-15	Drum Drive	935763	5036063	76.5	99	99	62.9	0	0.0	2.4	2.3	1.8	0.0	0.0	0.0	0.0	29	29
NS-16	Baghouse Fan - Casing	935773	5036074	77.6	97	97	63.1	0	0.0	1.1	20.3	2.0	0.0	0.0	0.0	0.0	10	10
NS-17	Baghouse Fan - Motor	935774	5036075	77.6	105	105	63.1	0	0.0	-0.7	20.7	2.0	0.0	0.0	0.0	0.0	20	20
NS-18	Baghouse - Exhaust	935772	5036075	85.7	109	109	63.1	0	0.0	-9.7	-0.1	0.0	2.0	0.0	0.0	0.0	35	35
NS-19	Dust Silo Blower	935751	5036053	76.0	104	104	62.7	0	0.0	4.8	4.7	3.9	0.0	0.0	0.0	0.0	29	29
NS-20	Bucket Elevator Motor	935758	5036056	94.5	100	100	62.9	0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	35	35
NS-21	Screen Deck	935761	5036051	92.5	103	103	63.0	0	0.0	1.1	8.2	1.0	0.0	0.0	0.0	0.0	30	30
NS-22	Pug Mill	935760	5036054	85.5	97	97	62.9	0	0.0	0.3	6.0	1.3	0.0	0.0	0.0	0.0	33	33
NS-23	Batch Tower Bottom Gate	935760	5036051	80.9	82	82	62.9	0	0.0	-1.7	4.6	3.6	0.0	0.0	0.0	0.0	12	12
NS-24	Idling HMA Trucks - Batch Tower	935764	5036050	78.0	95	95	63.0	0	0.0	-1.2	4.4	2.5	0.0	0.0	0.0	0.0	26	26
NS-25	Drag Conveyor Drive	935778	5036046	102.5	101	101	63.4	0	0.0	-0.8	0.8	4.3	0.0	0.0	0.0	0.0	34	34
NS-26	Traverse Conveyor Drive	935779	5036048	99.5	81	81	63.4	0	0.0	-0.7	0.0	3.5	0.0	0.0	0.0	0.0	15	15
NS-27	Idling HMA Trucks - Silos	935777	5036046	78.0	95	95	63.0	0	0.0	-1.3	4.2	2.6	0.0	0.0	0.0	0.0	26	26
NS-28	Top Silo Gate	935778	5036048	96.1	82	82	63.3	0	0.0	-1.0	0.0	3.6	0.0	0.0	0.0	0.0	16	16
NS-29	Bottom Silo Gate	935778	5036048	80.9	82	82	62.9	0	0.0	-1.8	4.6	3.7	0.0	0.0	0.0	0.0	12	12
NS-30	Silo Jet Vent	935780	5036048	93.5	98	98	63.4	0	0.0	-1.0	0.0	3.7	0.0	0.0	0.0	0.0	32	32
NS-31	Air Compressor	935759	5036076	77.9	98	98	62.8	0	0.0	-2.1	5.6	4.4	0.0	0.0	0.0	0.0	27	27
NS-32	Hot Oil Heater	935729	5036053	76.5	96	96	62.3	0	0.0	1.7	5.3	2.7	0.0	0.0	0.0	0.0	25	25
NS-33	Hot Oil Pump	935732	5036052	76.5	91	91	62.3	0	0.0	2.0	4.6	2.9	0.0	0.0	0.0	0.0	21	21
NS-34	Heater Pump	935732	5036054	76.5	91	91	62.3	0	0.0	1.0	5.4	2.5	0.0	0.0	0.0	0.0	21	21
NS-35	Fuel Pump	935730	5036052	76.5	91	91	62.3	0	0.0	1.0	5.5	2.4	0.0	0.0	0.0	1.9	22	22
NS-36	Asphalt Pump	935733	5036053	76.5	82	82	62.3	0	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.8	12	12
NS-37	Arriving/Departing HMA Trucks - Batch	935745	5036014	78.0	99	98	62.1	0	0.0	0.6	1.7	1.9	0.0	0.0	0.0	0.0	33	31
NS-37	Arriving/Departing HMA Trucks - Drum	935747	5036006	78.0	99	99	62.1	0	0.0	0.6	1.7	1.9	0.0	0.0	0.0	0.0	33	33
NS-38	Idling HMA Trucks - Queued	935777	5036061	78.0	95	95	63.3	0	0.0	-1.3	4.3	2.6	0.0	0.0	0.0	0.0	26	26
NS-39	Front-End Loader	935785	5036136	78.0	106	106	63.3	0	0.0	-0.6	5.1	2.2	0.0	0.0	0.0	0.9	37	37
NS-40a	Crusher/Screen - Side 1	935776	5036117	77.8	--	--	63.1	3	0.0	0.0	6.8	1.4	0.0	0.0	0.0	0.0	28	--
NS-40b	Crusher/Screen - Side 2	935786	5036135	77.8	--	--	63.2	3	0.0	0.9	6.1	1.8	0.0	0.0	0.0	0.0	41	--
NS-40c	Crusher/Screen - Side 3	935785	5036120	77.8	--	--	63.3	3	0.0	1.4	17.7	1.4	0.0	0.0	0.0	3.4	29	--
NS-40d	Crusher/Screen - Side 4	935793	5036147	77.8	--	--	63.4	3	0.0	1.0	18.1	1.5	0.0	0.0	0.0	0.0	31	--
NS-40e	Crusher/Screen - Top	935787	5036127	80.3	--	--	63.2	0	0.0	0.1	3.6	2.0	0.0	0.0	0.0	0.0	37	--
NS-41	Stacker Motor	935794	5036135	76.5	105	--	63.4	0	0.0	0.8	13.4	1.6	0.0	0.0	0.0	0.0	20	28
NS-42a	Crusher/Screen - Engine Combustion Exhaust	935776	5036137	81.0	107	--	63.1	0	0.0	-0.5	3.7	2.3	0.0	0.0	0.0	0.0	39	--
NS-42b	Crusher/Screen - Engine Radiator	935776	5036140	77.6	--	--	63.1	3	0.0	3.2	3.1	0.9	0.0	0.0	0.0	0.0	38	--

Src ID	Src Name	Easting	Northing	Elevation	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	LrD	LrN
NS-26	Traverse Conveyor Drive	935779	5036048	99.5	81	81	63.9	0	0.0	-0.6	0.0	3.7	0.0	0.0	0.0	0.0	14	14
NS-27	Idling HMA Trucks - Silos	935777	5036046	78.0	95	95	63.8	0	0.0	-1.0	4.0	2.8	0.0	0.0	0.0	0.0	25	25
NS-28	Top Silo Gate	935778	5036048	96.1	82	82	63.9	0	0.0	-0.9	0.0	3.8	0.0	0.0	0.0	0.0	15	15
NS-29	Bottom Silo Gate	935778	5036048	80.9	82	82	63.9	0	0.0	-1.7	4.6	3.9	0.0	0.0	0.0	0.0	11	11
NS-30	Silo Jet Vent	935780	5036048	93.5	98	98	63.9	0	0.0	-0.9	0.0	3.8	0.0	0.0	0.0	0.0	31	31
NS-31	Air Compressor	935759	5036076	77.9	98	98	63.3	0	0.0	-1.7	11.1	4.0	0.0	0.0	0.0	0.0	21	21
NS-32	Hot Oil Heater	935729	5036053	76.5	96	96	62.9	0	0.0	2.1	4.6	2.9	0.0	0.0	0.0	0.0	25	25
NS-33	Hot Oil Pump	935732	5036052	76.5	91	91	62.9	0	0.0	2.4	4.0	3.0	0.0	0.0	0.0	0.0	20	20
NS-34	Heater Pump	935732	5036054	76.5	91	91	62.9	0	0.0	1.4	4.9	2.6	0.0	0.0	0.0	0.0	21	21
NS-35	Fuel Pump	935730	5036052	76.5	91	91	62.9	0	0.0	1.4	5.0	2.6	0.0	0.0	0.0	0.0	21	21
NS-36	Asphalt Pump	935733	5036053	76.5	82	82	62.9	0	0.0	0.5	5.4	3.4	0.0	0.0	0.0	0.0	11	11
NS-37	Arriving/Departing HMA Trucks - Batch	935750	5036018	78.0	99	98	62.8	0	0.0	1.2	1.8	2.0	0.0	0.0	0.0	0.0	31	30
NS-37	Arriving/Departing HMA Trucks - Drum	935753	5036009	78.0	99	99	62.8	0	0.0	1.2	1.8	2.0	0.0	0.0	0.0	0.0	31	31
NS-38	Idling HMA Trucks - Queued	935777	5036061	78.0	95	95	63.8	0	0.0	-0.4	8.6	2.1	0.0	0.0	0.0	0.0	21	21
NS-39	Front-End Loader	935785	5036137	78.0	106	106	63.7	0	0.0	-0.4	4.3	2.3	0.0	0.0	0.0	0.0	37	37
NS-40a	Crusher/Screen - Side 1	935776	5036117	77.8	--	--	63.5	3	0.0	0.4	6.3	1.5	0.0	0.0	0.0	0.0	28	--
NS-40b	Crusher/Screen - Side 2	935786	5036135	77.8	--	--	63.6	3	0.0	1.2	5.8	1.9	0.0	0.0	0.0	0.0	40	--
NS-40c	Crusher/Screen - Side 3	935785	5036120	77.8	--	--	63.7	3	0.0	1.9	17.4	1.5	0.0	0.0	0.0	0.0	30	--
NS-40d	Crusher/Screen - Side 4	935794	5036135	77.8	--	--	63.9	3	0.0	1.4	17.6	1.6	0.0	0.0	0.0	0.0	31	--
NS-40e	Crusher/Screen - Top	935787	5036127	80.3	--	--	63.7	0	0.0	0.4	3.2	2.1	0.0	0.0	0.0	0.0	37	--
NS-41	Stacker Motor	935794	5036135	76.5	105	--	63.8	0	0.0	1.0	12.2	1.8	0.0	0.0	0.0	0.0	28	--
NS-42a	Crusher/Screen - Engine Combustion Exhaust	935776	5036137	81.0	107	--	63.5	0	0.0	-0.2	3.4	2.4	0.0	0.0	0.0	0.0	38	--
NS-42b	Crusher/Screen - Engine Radiator	935776	5036140	77.6	--	--	63.5	3	0.0	2.3	3.6	1.0	0.0	0.0	0.0	0.0	38	--

R5	Single Storey Residence - 115 metres SW	935452	5035773	80.0	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	LrD	LrN
Src ID	Src Name	Easting	Northing	Elevation	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	LrD	LrN
NS-01	Arriving/Departing Aggregate Trucks	935726	5036019	78.0	101	--	64.9	0	0.0	-1.8	25.0	57.7	0.0	0.0	0.0	0.0	37	--
NS-02	Idling Aggregate Trucks - Weigh Scale	935592	5035914	78.0	95	--	57.0	0	0.0	-0.6	6.2	1.1	0.0	0.0	0.0	0.0	31	--
NS-03	Unloading Aggregate Truck	935803	5036112	78.0	91	--	64.8	0	0.0	-2.3	14.0	0.6	0.0	0.0	0.0	0.0	14	--
NS-04	Arriving/Departing Liquid AC Trucks	935665	5035990	78.0	87	--	63.7	0	0.0	-1.7	4.8	50.5	0.0	0.0	0.0	0.0	25	--
NS-05	Asphalt Unloading Pump	935731	5036055	76.5	92	--	63.0	0	0.0	1.0	2.7	1.9	0.0	0.0	0.0	0.0	23	--
NS-06	Front End Loader	935794	5036051	78.0	106	106	64.5	0	0.0	-1.2	5.3	2.5	0.0	0.0	0.0	0.0	35	35
NS-07	Aggregate Bin Sources	935809	5036083	77.5	100	100	64.5	0	0.0	-1.4	4.4	2.6	0.0	0.0	0.0	0.0	30	30
NS-08	Aggregate Screen	935786	5036074	78.6	104	104	64.1	0	0.0	-1.3	15.3	2.2	0.0	0.0	0.0	0.0	19	26
NS-09	RAP Bin Sources	935762	5036088	77.5	100	100	63.9	0	0.0	-1.4	4.4	2.4	0.0	0.0	0.0	0.0	31	31
NS-10	RAP Screen	935744	5036081	78.1	97	97	63.6	0	0.0	-1.6	20.3	3.4	0.0	0.0	0.0	0.0	11	11
NS-11	Burner	935751	5036057	77.3	100	100	63.3	0	0.0	-1.4	4.7	5.5	0.0	0.0	0.0	0.0	27	27
NS-12	Blower Motor	935748	5036056	76.7	99	99	63.3	0	0.0	-0.5	21.0	2.3	0.0	0.0	0.0	0.0	13	13
NS-13	Blower Casing	935748	5036056	76.7	88	88	63.3	0	0.0	0.8	17.4	1.8	0.0	0.0	0.0	0.0	4	4
NS-14	Blower Inlet	935749	5036055	76.7	80	80	63.2	0	0.0	-0.3	3.6	2.7	0.0	0.0	0.0	0.0	11	11
NS-15	Drum Drive	935763	5036063	76.5	99	99	63.6	0	0.0	0.9	2.7	2.0	0.0	0.0	0.0	0.0	29	29
NS-16	Baghouse Fan - Casing	935773	5036074	77.6	97	97	63.9	0	0.0	-0.2	19.8	2.0	0.0	0.0	0.0	0.0	11	11
NS-17	Baghouse Fan - Motor	935774	5036075	77.6	105	105	63.9	0	0.0	-1.4	20.1	2.0	0.0	0.0	0.0	0.0	20	20
NS-18	Baghouse - Exhaust	935772	5036075	85.7	109	109	63.9	0	0.0	-0.8	0.0	2.8	0.0	0.0	0.0	0.0	34	34
NS-19	Dust Silo Blower	935751	5036053	76.0	104	104	63.3	0	0.0	2.7	2.5	6.1	0.0	0.0	0.0	0.0	30	30
NS-20	Bucket Elevator Motor	935758	5036056	94.5	100	100	63.4	0	0.0	-0.4	0.0	2.2	0.0	0.0	0.0	0.0	35	35
NS-21	Screen Deck	935761	5036051	92.5	103	103	63.4	0	0.0	0.4	9.0	1.0	0.0	0.0	0.0	0.0	30	30
NS-22	Pug Mill	935760	5036054	85.5	97	97	63.4	0	0.0	-0.7	0.0	1.4	0.0	0.0	0.0	0.0	33	33
NS-23	Batch Tower Bottom Gate	935760	5036051	80.9	82	82	63.4	0	0.0	-1.4	4.8	3.7	0.0	0.0	0.0	0.0	11	11
NS-24	Idling HMA Trucks - Batch Tower	935764	5036050	78.0	95	95	63.4	0	0.0	-1.4	4.4	2.5	0.0	0.0	0.0	0.0	26	26
NS-25	Drag Conveyor Drive	935778	5036046	102.5	101	101	63.6	0	0.0	-0.8	0.0	4.4	0.0	0.0	0.0	0.0	34	34
NS-26	Traverse Conveyor Drive	935779	5036048	99.5	81	81	63.6	0	0.0	-0.6	0.0	3.6	0.0	0.0	0.0	0.0	14	14
NS-27	Idling HMA Trucks - Silos	935777	5036046	78.0	95	95	63.6	0	0.0	-1.4	4.3	2.5	0.0	0.0	0.0	0.0	26	26
NS-28	Top Silo Gate	935778	5036048	96.1	82	82	63.6	0	0.0	-0.8	0.0	3.7	0.0	0.0	0.0	0.0	15	15
NS-29	Bottom Silo Gate	935778	5036048	80.9	82	82	63.6	0	0.0	-1.4	4.8	3.7	0.0	0.0	0.0	0.0	11	11
NS-30	Silo Jet Vent	935780	5036048	93.5	98	98	63.6	0	0.0	-0.8	0.0	3.7	0.0	0.0	0.0	0.0	32	32
NS-31	Air Compressor	935759	5036076	77.9	98	98	63.7	0	0.0	-1.6	21.7	4.2	0.0	0.0	0.0	0.0	10	10
NS-32	Hot Oil Heater	935729	5036053	76.5	96	96	62.9	0	0.0	0.1	3.3	3.7	0.0	0.0	0.0	0.0	26	26
NS-33	Hot Oil Pump	935732	5036052	76.5	91	91	62.9	0	0.0	0.2	3.1	3.7	0.0	0.0	0.0	0.0	21	21
NS-34	Heater Pump	935732	5036054	76.5	91	91	63.0	0	0.0	-0.2	3.6	3.1	0.0	0.0	0.0	0.0	22	22
NS-35	Fuel Pump	935730	5036052	76.5	91	91	62.9	0	0.0	-0.2	3.6	3.1	0.0	0.0	0.0	0.0	22	22
NS-36	Asphalt Pump	935733	5036053	76.5	82	82	63.0	0	0.0	-0.1	17.6	3.3	0.0	0.0	0.0	0.0	--	--
NS-37	Arriving/Departing HMA Trucks - Batch	935717	5035984	78.0	99	98	59.3	0	0.0	-0.2	2.5	1.2	0.0	0.0	0.0	0.0	36	35
NS-37	Arriving/Departing HMA Trucks - Drum	935717	5035987	78.0	99	99	59.3	0	0.0	-0.2	2.5	1.2	0.0	0.0	0.0	0.0	36	36
NS-38	Idling HMA Trucks - Queued	935777	5036061	78.0	95	95	63.8	0	0.0	-1.4	4.4	2.6	0.0	0.0	0.0	0.0	26	26
NS-39	Front-End Loader	935788	5036114	78.0	106	106	64.7	0	0.0	-1.2	4.9	2.6	0.0	0.0	0.0	0.0	35	35
NS-40a	Crusher/Screen - Side																	

Src ID	Src Name	Easting	Northing	Elevation	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	LrD	LrN
NS-18	Baghouse - Exhaust	935772	5036075	85.7	109	109	63.7	0	-9.4	2.0	4.2	1.8	0.0	0.0	0.0	0.0	28	28
NS-19	Dust Silo Blower	935751	5036053	76.0	104	104	63.0	0	0.0	2.9	0.0	7.1	0.0	0.0	0.0	0.0	31	31
NS-20	Bucket Elevator Motor	935758	5036056	94.5	100	100	63.2	0	0.0	1.3	0.0	2.1	0.0	0.0	0.0	0.0	33	33
NS-21	Screen Deck	935761	5036051	92.5	103	103	63.2	0	0.0	3.5	6.8	0.9	0.0	0.0	0.0	0.0	29	29
NS-22	Pug Mill	935760	5036054	85.5	97	97	63.2	0	0.0	1.4	0.0	1.8	0.0	0.0	0.0	0.0	31	31
NS-23	Batch Tower Bottom Gate	935760	5036051	80.9	82	82	63.2	0	0.0	-0.9	0.0	3.6	0.0	0.0	0.0	0.0	16	16
NS-24	Idling HMA Trucks - Batch Tower	935764	5036050	78.0	95	95	63.2	0	0.0	-0.6	0.0	2.5	0.0	0.0	0.0	0.0	30	30
NS-25	Drag Conveyor Drive	935778	5036046	102.5	101	101	63.4	0	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.0	33	33
NS-26	Traverse Conveyor Drive	935779	5036048	99.5	81	81	63.4	0	0.0	0.1	0.0	3.6	0.0	0.0	0.0	0.0	14	14
NS-27	Idling HMA Trucks - Silos	935777	5036046	78.0	95	95	63.4	0	0.0	-0.1	2.0	2.6	0.0	0.0	0.0	0.0	27	27
NS-28	Top Silo Gate	935778	5036048	96.1	82	82	63.4	0	0.0	-0.2	0.0	3.7	0.0	0.0	0.0	0.0	15	15
NS-29	Bottom Silo Gate	935778	5036048	80.9	82	82	63.4	0	0.0	-0.8	2.7	3.6	0.0	0.0	0.0	0.0	13	13
NS-30	Silo Jet Vent	935780	5036048	93.5	98	98	63.5	0	0.0	-0.2	0.0	3.7	0.0	0.0	0.0	0.0	31	31
NS-31	Air Compressor	935759	5036076	77.9	98	98	63.4	0	0.0	-1.4	0.0	4.8	0.0	0.0	0.0	0.0	33	33
NS-32	Hot Oil Heater	935729	5036053	76.5	96	96	62.6	0	0.0	0.3	0.0	3.3	0.0	0.0	0.0	0.0	29	29
NS-33	Hot Oil Pump	935732	5036052	76.5	91	91	62.7	0	0.0	0.4	0.0	3.3	0.0	0.0	0.0	0.0	24	24
NS-34	Heater Pump	935732	5036054	76.5	91	91	62.7	0	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	25	25
NS-35	Fuel Pump	935730	5036052	76.5	91	91	62.6	0	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	26	26
NS-36	Asphalt Pump	935733	5036053	76.5	82	82	62.7	0	0.0	-1.0	0.0	3.4	0.0	0.0	0.0	0.0	17	17
NS-37	Arriving/Departing HMA Trucks - Batch	935718	5035984	78.0	99	98	58.3	0	0.0	2.1	1.8	1.3	0.0	0.0	0.0	0.0	36	34
NS-37	Arriving/Departing HMA Trucks - Drum	935719	5035988	78.0	99	99	58.3	0	0.0	2.1	1.8	1.3	0.0	0.0	0.0	0.0	36	36
NS-38	Idling HMA Trucks - Queued	935777	5036061	78.0	95	95	63.6	0	0.0	-0.6	0.0	2.5	0.0	0.0	0.0	0.0	30	30
NS-39	Front-End Loader	935786	5036143	78.0	106	106	64.5	0	0.0	0.1	1.5	2.3	0.0	0.0	0.0	0.6	38	38
NS-40a	Crusher/Screener - Side 1	935776	5036117	77.8	--	--	64.3	3	0.0	0.3	0.0	2.4	0.0	0.0	0.0	0.0	33	--
NS-40b	Crusher/Screener - Side 2	935778	5036122	77.8	--	--	64.5	3	0.0	2.6	9.4	1.8	0.0	0.0	0.0	0.0	34	--
NS-40c	Crusher/Screener - Side 3	935786	5036122	77.8	--	--	64.5	3	0.0	1.0	0.1	2.3	0.0	0.0	0.0	0.0	42	--
NS-40d	Crusher/Screener - Side 4	935793	5036147	77.8	--	--	64.7	3	0.0	3.7	13.2	1.5	0.0	0.0	0.0	0.0	32	--
NS-40e	Crusher/Screener - Top	935785	5036117	80.3	--	--	64.5	0	0.0	1.0	0.3	2.0	0.0	0.0	0.0	0.0	38	--
NS-41	Stacker Motor	935794	5036135	76.5	105	--	64.7	0	0.0	2.0	10.9	2.1	0.0	0.0	0.0	0.0	25	--
NS-42a	Crusher/Screener - Engine Combustion Exhaust	935776	5036137	81.0	107	--	64.5	0	0.0	1.5	2.4	2.6	0.0	0.0	0.0	0.0	36	--
NS-42b	Crusher/Screener - Engine Radiator	935776	5036150	77.6	--	--	64.5	3	0.0	6.3	10.7	0.8	0.0	0.0	0.0	0.0	26	--

V1	Vacant Lot - 40 metres W	935457	5035935	80.0	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	LrD	LrN
Src ID	Src Name	Easting	Northing	Elevation	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	LrD	LrN
NS-01	Arriving/Departing Aggregate Trucks	935724	5036013	78.0	101	--	60.1	0	0.0	-1.7	0.0	33.5	0.0	0.0	0.0	0.0	44	--
NS-02	Idling Aggregate Trucks - Weigh Scale	935592	5035914	78.0	95	--	53.6	0	0.0	-1.2	0.0	0.9	0.0	0.0	0.0	0.0	42	--
NS-03	Unloading Aggregate Truck	935803	5036112	78.0	91	--	62.8	0	0.0	-1.8	4.4	1.9	0.0	0.0	0.0	0.0	24	--
NS-04	Arriving/Departing Liquid AC Trucks	935668	5035992	78.0	87	--	63.4	0	0.0	-2.1	4.8	48.8	0.0	0.0	0.0	0.0	32	--
NS-05	Asphalt Unloading Pump	935731	5036055	76.5	92	--	60.5	0	0.0	0.6	3.4	1.2	0.0	0.0	0.0	0.0	26	--
NS-06	Front End Loader	935795	5036067	78.0	106	106	62.4	0	0.0	-1.6	4.5	2.2	0.0	0.0	0.0	0.0	38	38
NS-07	Aggregate Bin Sources	935806	5036081	77.5	100	100	62.6	0	0.0	-1.7	7.2	1.7	0.0	0.0	0.0	0.0	31	31
NS-08	Aggregate Screen	935786	5036074	78.6	104	104	62.0	0	0.0	-1.7	15.3	1.8	0.0	0.0	0.0	0.0	26	26
NS-09	RAP Bin Sources	935761	5036088	77.5	100	100	61.6	0	0.0	-1.6	6.4	1.8	0.0	0.0	0.0	0.0	32	32
NS-10	RAP Screen	935744	5036081	78.1	97	97	61.1	0	0.0	-1.8	20.6	2.8	0.0	0.0	0.0	0.0	14	14
NS-11	Burner	935751	5036057	77.3	100	100	61.1	0	0.0	-1.7	5.1	4.6	0.0	0.0	0.0	0.0	30	30
NS-12	Blower Motor	935748	5036056	76.7	99	99	61.0	0	0.0	-1.1	2.1	2.0	0.0	0.0	0.0	0.0	35	35
NS-13	Blower Casing	935748	5036056	76.7	88	88	61.0	0	0.0	-0.7	5.2	2.0	0.0	0.0	0.0	0.0	20	20
NS-14	Blower Inlet	935749	5036055	76.7	80	80	61.0	0	0.0	-0.6	9.3	1.6	0.0	0.0	0.0	0.0	9	9
NS-15	Drum Drive	935763	5036063	76.5	99	99	61.4	0	0.0	0.2	1.6	1.2	0.0	0.0	0.0	0.0	34	34
NS-16	Baghouse Fan - Casing	935773	5036074	77.6	97	97	61.7	0	0.0	-0.7	19.0	1.6	0.0	0.0	0.0	0.0	15	15
NS-17	Baghouse Fan - Motor	935774	5036075	77.6	105	105	61.8	0	0.0	-1.7	18.8	1.6	0.0	0.0	0.0	0.0	25	25
NS-18	Baghouse - Exhaust	935772	5036075	85.7	109	109	61.7	0	0.0	-9.1	0.0	2.3	0.0	0.0	0.0	0.0	37	37
NS-19	Dust Silo Blower	935751	5036053	76.0	104	104	61.0	0	0.0	2.3	10.8	3.5	0.0	0.0	0.0	0.0	27	27
NS-20	Bucket Elevator Motor	935758	5036056	94.5	100	100	61.2	0	0.0	-1.0	2.6	1.5	0.0	0.0	0.0	0.0	35	35
NS-21	Screen Deck	935761	5036051	92.5	103	103	61.2	0	0.0	-0.6	9.8	0.8	0.0	0.0	0.0	0.0	32	32
NS-22	Pug Mill	935760	5036054	85.5	97	97	61.2	0	0.0	-1.2	0.0	1.1	0.0	0.0	0.0	0.0	36	36
NS-23	Batch Tower Bottom Gate	935760	5036054	85.5	82	82	61.2	0	0.0	-1.5	0.0	3.0	0.0	0.0	0.0	0.0	19	19
NS-24	Idling HMA Trucks - Batch Tower	935764	5036050	78.0	95	95	61.3	0	0.0	-1.7	0.0	2.0	0.0	0.0	0.0	0.0	33	33
NS-25	Drag Conveyor Drive	935778	5036046	102.5	101	101	61.6	0	0.0	-1.3	0.0	3.7	0.0	0.0	0.0	0.0	37	37
NS-26	Traverse Conveyor Drive	935779	5036048	99.5	81	81	61.7	0	0.0	-1.2	0.0	2.9	0.0	0.0	0.0	0.0	18	18
NS-27	Idling HMA Trucks - Silos	935777	5036046	78.0	95	95	61.6	0	0.0	-1.8	0.0	2.1	0.0	0.0	0.0	0.0	33	33
NS-28	Top Silo Gate	935778	5036048	96.1	82	82	61.6	0	0.0	-1.3	0.0	3.1	0.0	0.0	0.0	0.0	18	18
NS-29	Bottom Silo Gate	935778	5036048	80.9	82	82	61.6	0	0.0	-1.6	0.0	3.1	0.0	0.0	0.0	0.0	18	18
NS-30	Silo Jet Vent	935780	5036048	93.5	98	98	61.7	0	0.0	-1.3	0.0	3.1	0.0	0.0	0.0	0.0	35	35
NS-31	Air Compressor	935759	5036076	77.9	98	98	61.4	0	0.0	-1.9	4.8	3.9	0.0	0.0	0.0	0.0	27	27
NS-32	Hot Oil Heater	935729	5036053	76.5	96	96	60.4	0	0.0	-0.1	4.8	2.3	0.0	0.0	0.0	0.0	1.2	29
NS-33	Hot Oil Pump																	

## **APPENDIX G**

### **Sample Calculation Results – Octave Band Format**

In the following tables of calculation results, the column headings for the various sound attenuation mechanisms follow the terminology of ISO Standard 9613-2. LxD and LxN are the A-weighted, one-hour energy-equivalent source sound power levels for day and evening/night, respectively, which include the effects of any source-abatement measures included in the model, and any time-averaging effects for intermittent sources. LrD and LrN are the A-weighted, one-hour energy-equivalent sound levels at the points of reception. The results are presented in terms of full octave band sound levels, at the most impacted off-site points of reception.

R1	Single Storey Residence - 70 metres NW	935478	5036033	77.0															
Src ID	Src Name	Band	Eastng	Northng	Elevation	LxD	LxN	Adiv	K0	Dc	Agnrd	Abar	Aatm	Afol	Ahous	Cmet	Refl	LrD	LrN
NS-01	Arriving/Departing Aggregate Trucks	31.5	935730	5036011	78.0	50	--	57.9	0	0.0	-4.4	5.2	0.0	0.0	0.0	0.0	0.0	--	--
NS-01	Arriving/Departing Aggregate Trucks	63	935730	5036011	78.0	76	--	57.9	0	0.0	-4.4	5.6	0.0	0.0	0.0	0.0	0.0	17	--
NS-01	Arriving/Departing Aggregate Trucks	125	935730	5036011	78.0	84	--	57.9	0	0.0	-0.2	6.6	0.1	0.0	0.0	0.0	0.0	20	--
NS-01	Arriving/Departing Aggregate Trucks	250	935730	5036011	78.0	91	--	57.9	0	0.0	5.1	3.5	0.2	0.0	0.0	0.0	0.0	23	--
NS-01	Arriving/Departing Aggregate Trucks	500	935730	5036011	78.0	94	--	57.9	0	0.0	1.7	10.0	0.4	0.0	0.0	0.0	0.0	25	--
NS-01	Arriving/Departing Aggregate Trucks	1000	935730	5036011	78.0	96	--	57.9	0	0.0	-1.5	14.9	0.8	0.0	0.0	0.0	0.0	25	--
NS-01	Arriving/Departing Aggregate Trucks	2000	935730	5036011	78.0	94	--	57.9	0	0.0	-1.9	17.9	2.1	0.0	0.0	0.0	0.0	21	--
NS-01	Arriving/Departing Aggregate Trucks	4000	935730	5036011	78.0	89	--	61.9	0	0.0	-2.0	25.0	11.4	0.0	0.0	0.0	0.7	8	--
NS-01	Arriving/Departing Aggregate Trucks	8000	935730	5036011	78.0	78	--	61.9	0	0.0	-2.0	25.0	40.8	0.0	0.0	0.0	0.0	--	--
NS-02	Idling Aggregate Trucks - Weight Scale	31.5	935591	5035915	78.0	--	--	55.3	0	0.0	-3.8	4.3	0.0	0.0	0.0	0.0	0.0	0	--
NS-02	Idling Aggregate Trucks - Weight Scale	63	935591	5035915	78.0	70	--	55.3	0	0.0	-3.8	5.4	0.0	0.0	0.0	0.0	0.0	13	--
NS-02	Idling Aggregate Trucks - Weight Scale	125	935591	5035915	78.0	75	--	55.3	0	0.0	-0.4	7.2	0.1	0.0	0.0	0.0	0.0	13	--
NS-02	Idling Aggregate Trucks - Weight Scale	250	935591	5035915	78.0	79	--	55.3	0	0.0	4.5	5.9	0.2	0.0	0.0	0.0	0.0	14	--
NS-02	Idling Aggregate Trucks - Weight Scale	500	935591	5035915	78.0	85	--	55.3	0	0.0	1.4	12.2	0.3	0.0	0.0	0.0	0.0	16	--
NS-02	Idling Aggregate Trucks - Weight Scale	1000	935591	5035915	78.0	91	--	55.3	0	0.0	-1.4	16.6	0.6	0.0	0.0	0.0	0.0	20	--
NS-02	Idling Aggregate Trucks - Weight Scale	2000	935591	5035915	78.0	91	--	55.3	0	0.0	-1.8	19.6	1.6	0.0	0.0	0.0	0.0	17	--
NS-02	Idling Aggregate Trucks - Weight Scale	4000	935591	5035915	78.0	82	--	55.3	0	0.0	-1.8	22.6	5.4	0.0	0.0	0.0	0.0	1	--
NS-03	Unloading Aggregate Truck	31.5	935803	5036112	78.0	--	--	61.5	0	0.0	-4.9	3.2	0.0	0.0	0.0	0.0	0	--	--
NS-03	Unloading Aggregate Truck	63	935803	5036112	78.0	78	--	61.5	0	0.0	-4.9	3.7	0.0	0.0	0.0	0.0	0.0	18	--
NS-03	Unloading Aggregate Truck	125	935803	5036112	78.0	72	--	61.5	0	0.0	1.4	3.0	0.1	0.0	0.0	0.0	0.0	6	--
NS-03	Unloading Aggregate Truck	250	935803	5036112	78.0	80	--	61.5	0	0.0	7.6	0.0	0.3	0.0	0.0	0.0	0.0	11	--
NS-03	Unloading Aggregate Truck	500	935803	5036112	78.0	85	--	61.5	0	0.0	3.6	1.3	0.6	0.0	0.0	0.0	0.0	18	--
NS-03	Unloading Aggregate Truck	1000	935803	5036112	78.0	87	--	61.5	0	0.0	-1.0	5.0	1.2	0.0	0.0	0.0	0.0	20	--
NS-03	Unloading Aggregate Truck	2000	935803	5036112	78.0	85	--	61.5	0	0.0	-1.7	5.3	3.2	0.0	0.0	0.0	0.0	17	--
NS-03	Unloading Aggregate Truck	4000	935803	5036112	78.0	80	--	61.5	0	0.0	-1.7	5.8	10.9	0.0	0.0	0.0	2.6	6	--
NS-03	Unloading Aggregate Truck	8000	935803	5036112	78.0	76	--	61.5	0	0.0	-1.7	6.6	39.0	0.0	0.0	0.0	2.4	--	--
NS-04	Arriving/Departing Liquid AC Trucks	31.5	935673	5035985	78.0	--	--	57.1	0	0.0	-4.2	7.2	0.0	0.0	0.0	0.0	0.0	0	--
NS-04	Arriving/Departing Liquid AC Trucks	63	935673	5035985	78.0	61	--	57.1	0	0.0	-4.2	9.3	0.0	0.0	0.0	0.0	0.0	3	--
NS-04	Arriving/Departing Liquid AC Trucks	125	935673	5035985	78.0	70	--	57.1	0	0.0	0.1	11.6	0.1	0.0	0.0	0.0	0.0	6	--
NS-04	Arriving/Departing Liquid AC Trucks	250	935673	5035985	78.0	71	--	57.1	0	0.0	6.0	8.4	0.2	0.0	0.0	0.0	0.0	4	--
NS-04	Arriving/Departing Liquid AC Trucks	500	935673	5035985	78.0	79	--	57.1	0	0.0	2.4	14.7	0.4	0.0	0.0	0.0	0.0	9	--
NS-04	Arriving/Departing Liquid AC Trucks	1000	935673	5035985	78.0	83	--	57.1	0	0.0	-1.2	20.0	0.7	0.0	0.0	0.0	0.0	12	--
NS-04	Arriving/Departing Liquid AC Trucks	2000	935673	5035985	78.0	82	--	60.4	0	0.0	-1.9	15.9	2.8	0.0	0.0	0.0	0.0	7	--
NS-04	Arriving/Departing Liquid AC Trucks	4000	935673	5035985	78.0	78	--	60.4	0	0.0	-1.9	18.7	9.7	0.0	0.0	0.0	0.0	--	--
NS-04	Arriving/Departing Liquid AC Trucks	8000	935673	5035985	78.0	71	--	60.4	0	0.0	-1.9	21.6	34.4	0.0	0.0	0.0	0.0	--	--
NS-05	Asphalt Unloading Pump	31.5	935731	5036054	76.5	--	--	59.1	0	0.0	-5.1	6.0	0.0	0.0	0.0	0.0	0.0	0	--
NS-05	Asphalt Unloading Pump	63	935731	5036054	76.5	71	--	59.1	0	0.0	-5.1	7.3	0.0	0.0	0.0	0.0	0.0	10	--
NS-05	Asphalt Unloading Pump	125	935731	5036054	76.5	76	--	59.1	0	0.0	-0.1	9.0	0.1	0.0	0.0	0.0	0.0	8	--
NS-05	Asphalt Unloading Pump	250	935731	5036054	76.5	81	--	59.1	0	0.0	8.0	3.3	0.3	0.0	0.0	0.0	0.0	11	--
NS-05	Asphalt Unloading Pump	500	935731	5036054	76.5	86	--	59.1	0	0.0	6.7	7.1	0.5	0.0	0.0	1.0	1.3	13	--
NS-05	Asphalt Unloading Pump	1000	935731	5036054	76.5	87	--	59.1	0	0.0	-0.4	16.5	0.9	0.0	0.0	0.0	1.3	12	--
NS-05	Asphalt Unloading Pump	2000	935731	5036054	76.5	84	--	59.1	0	0.0	-2.0	19.3	2.4	0.0	0.0	0.0	1.5	7	--
NS-05	Asphalt Unloading Pump	4000	935731	5036054	76.5	80	--	59.1	0	0.0	-2.0	22.3	8.3	0.0	0.0	0.0	1.5	--	--
NS-05	Asphalt Unloading Pump	8000	935731	5036054	76.5	72	--	59.1	0	0.0	-2.0	25.0	29.6	0.0	0.0	0.0	1.2	--	--
NS-06	Front End Loader	31.5	935791	5036098	78.0	59	59	61.1	0	0.0	-4.9	3.8	0.0	0.0	0.0	0.0	0.0	--	--
NS-06	Front End Loader	63	935791	5036098	78.0	83	83	61.1	0	0.0	-4.9	4.3	0.0	0.0	0.0	0.0	0.0	23	23
NS-06	Front End Loader	125	935791	5036098	78.0	88	88	61.1	0	0.0	1.3	3.7	0.1	0.0	0.0	0.0	0.0	22	22
NS-06	Front End Loader	250	935791	5036098	78.0	94	94	61.1	0	0.0	7.6	0.1	0.3	0.0	0.0	0.0	0.0	25	25
NS-06	Front End Loader	500	935791	5036098	78.0	97	97	61.1	0	0.0	3.6	2.2	0.6	0.0	0.0	0.0	0.0	30	30
NS-06	Front End Loader	1000	935791	5036098	78.0	102	102	61.1	0	0.0	-1.0	6.2	1.2	0.0	0.0	0.0	0.0	34	34
NS-06	Front End Loader	2000	935791	5036098	78.0	101	101	61.1	0	0.0	-1.7	6.7	3.1	0.0	0.0	0.0	0.0	32	32
NS-06	Front End Loader	4000	935791	5036098	78.0	94	94	61.1	0	0.0	-1.7	7.8	10.3	0.0	0.0	0.0	2.1	19	19
NS-06	Front End Loader	8000	935791	5036098	78.0	87	87	60.8	0	0.0	-1.6	9.6	36.5	0.0	0.0	0.0	1.9	--	--
NS-07	Aggregate Bin Sources	31.5	935809	5036084	77.5	19	19	61.2	0	0.0	-5.0	5.3	0.0	0.0	0.0	0.0	0.0	--	--
NS-07	Aggregate Bin Sources	63	935809	5036084	77.5	46	46	61.5	0	0.0	-5.1	5.9	0.0	0.0	0.0	0.0	0.0	--	--
NS-07	Aggregate Bin Sources	125	935809	5036084	77.5	64	64	61.5	0	0.0	1.1	5.7	0.1	0.0	0.0	0.0	0.0	--	--
NS-07	Aggregate Bin Sources	250	935809	5036084	77.5	83	83	61.5	0	0.0	7.9	0.5	0.3	0.0	0.0	0.0	0.0	13	13
NS-07	Aggregate Bin Sources	500	935809	5036084	77.5	92	92	61.5	0	0.0	4.1	6.0	0.6	0.0	0.0	0.0	0.0	19	19
NS-07	Aggregate Bin Sources	1000	935809	5036084	77.5	98	98	61.5	0	0.0	-1.1	12.3	1.2	0.0	0.0	0.0	0.0	24	24
NS-07	Aggregate Bin Sources	2000	935809	5036084	77.5	93	93	61.5	0	0.0	-1.8	14.9	3.2	0.0	0.0	0.0	0.0	15	15
NS-07	Aggregate Bin Sources	4000	935809	5036084	77.5	91	91	61.5	0	0.0	-1.8	17.6	11.0	0.0	0.0	0.0	0.0	2	2
NS-07	Aggregate Bin Sources	8000	935809	5036084	77.5	80	80	61.5	0	0.0	-1.8	20.7	39.0	0.0	0.0	0.0	0.0	--	--
NS-08	Aggregate Screen	31.5	935786	5036074	78.6	31	31	60.8	0	0.0	-4.7	6.7	0.0	0.0	0.0	0.0	0.0	--	--
NS-08	Aggregate Screen	63	935786	5036074	78.6	51	51</td												

Src ID	Src Name	Band	Easting	Northing	Elevation	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Atm	Afol	Ahours	Cmet	Refl	LrD	LrN
NS-12	Blower Motor	31.5	935748	5036056	76.7	6	6	59.6	0	0.0	-5.1	5.7	0.0	0.0	0.0	0.0	0.0	--	--
NS-12	Blower Motor	63	935748	5036056	76.7	32	32	59.6	0	0.0	-5.1	6.8	0.0	0.0	0.0	0.0	0.0	--	--
NS-12	Blower Motor	125	935748	5036056	76.7	56	56	59.6	0	0.0	0.1	8.2	0.1	0.0	0.0	0.0	0.0	--	--
NS-12	Blower Motor	250	935748	5036056	76.7	74	74	59.6	0	0.0	7.9	2.5	0.3	0.0	0.0	0.0	0.0	4	4
NS-12	Blower Motor	500	935748	5036056	76.7	90	90	59.6	0	0.0	5.9	6.8	0.5	0.0	0.0	0.0	0.0	17	17
NS-12	Blower Motor	1000	935748	5036056	76.7	96	96	59.6	0	0.0	-0.7	15.4	1.0	0.0	0.0	0.0	0.0	24	24
NS-12	Blower Motor	2000	935748	5036056	76.7	93	93	59.6	0	0.0	-2.0	18.2	2.6	0.0	0.0	0.0	0.0	18	18
NS-12	Blower Motor	4000	935748	5036056	76.7	90	90	59.6	0	0.0	-2.0	21.1	8.9	0.0	0.0	0.0	0.0	5	5
NS-12	Blower Motor	8000	935748	5036056	76.7	82	82	59.6	0	0.0	-2.0	24.1	31.6	0.0	0.0	0.0	0.0	1.8	--
NS-13	Blower Casing	31.5	935748	5036056	76.7	32	32	59.7	0	0.0	-5.1	5.7	0.0	0.0	0.0	0.0	0.0	--	--
NS-13	Blower Casing	63	935748	5036056	76.7	58	58	59.7	0	0.0	-5.1	6.8	0.0	0.0	0.0	0.0	0.0	--	--
NS-13	Blower Casing	125	935748	5036056	76.7	69	69	59.7	0	0.0	0.1	8.2	0.1	0.0	0.0	0.0	0.0	1	1
NS-13	Blower Casing	250	935748	5036056	76.7	78	78	59.7	0	0.0	7.8	2.5	0.3	0.0	0.0	0.0	0.0	8	8
NS-13	Blower Casing	500	935748	5036056	76.7	77	77	59.7	0	0.0	5.9	6.8	0.5	0.0	0.0	0.0	0.0	4	4
NS-13	Blower Casing	1000	935748	5036056	76.7	83	83	59.7	0	0.0	-0.7	15.3	1.0	0.0	0.0	0.0	0.0	11	11
NS-13	Blower Casing	2000	935748	5036056	76.7	83	83	59.7	0	0.0	-2.0	18.2	2.6	0.0	0.0	0.0	0.0	2.8	8
NS-13	Blower Casing	4000	935748	5036056	76.7	77	77	59.7	0	0.0	-2.0	21.1	8.9	0.0	0.0	0.0	0.0	2.7	--
NS-13	Blower Casing	8000	935748	5036056	76.7	59	59	59.7	0	0.0	-2.0	24.0	31.7	0.0	0.0	0.0	0.0	1.7	--
NS-14	Blower Inlet	31.5	935749	5036055	76.7	29	29	59.7	0	0.0	-5.1	5.7	0.0	0.0	0.0	0.0	0.0	--	--
NS-14	Blower Inlet	63	935749	5036055	76.7	54	54	59.7	0	0.0	-5.1	6.8	0.0	0.0	0.0	0.0	0.0	--	--
NS-14	Blower Inlet	125	935749	5036055	76.7	64	64	59.7	0	0.0	0.1	8.2	0.1	0.0	0.0	0.0	0.0	--	--
NS-14	Blower Inlet	250	935749	5036055	76.7	66	66	59.7	0	0.0	7.8	2.5	0.3	0.0	0.0	0.0	0.0	--	--
NS-14	Blower Inlet	500	935749	5036055	76.7	70	70	59.7	0	0.0	5.9	6.8	0.5	0.0	0.0	0.0	0.0	--	--
NS-14	Blower Inlet	1000	935749	5036055	76.7	76	76	59.7	0	0.0	-0.8	15.3	1.0	0.0	0.0	0.0	0.0	1	1
NS-14	Blower Inlet	2000	935749	5036055	76.7	75	75	59.7	0	0.0	-2.0	18.1	2.6	0.0	0.0	0.0	0.0	--	--
NS-14	Blower Inlet	4000	935749	5036055	76.7	70	70	59.7	0	0.0	-2.0	21.0	8.9	0.0	0.0	0.0	0.0	--	--
NS-14	Blower Inlet	8000	935749	5036055	76.7	62	62	59.7	0	0.0	-2.0	24.0	31.7	0.0	0.0	0.0	0.0	--	--
NS-15	Drum Drive	31.5	935763	5036063	76.5	--	--	60.1	0	0.0	-5.2	5.6	0.0	0.0	0.0	0.0	0.0	0	--
NS-15	Drum Drive	63	935763	5036063	76.5	78	78	60.1	0	0.0	-5.2	6.6	0.0	0.0	0.0	0.0	0.0	16	16
NS-15	Drum Drive	125	935763	5036063	76.5	83	83	60.1	0	0.0	0.2	7.9	0.1	0.0	0.0	0.0	0.0	15	15
NS-15	Drum Drive	250	935763	5036063	76.5	88	88	60.1	0	0.0	8.2	1.9	0.3	0.0	0.0	0.0	0.0	18	18
NS-15	Drum Drive	500	935763	5036063	76.5	93	93	60.1	0	0.0	6.8	5.5	0.6	0.0	0.0	0.0	0.0	20	--
NS-15	Drum Drive	1000	935763	5036063	76.5	94	94	60.1	0	0.0	-0.4	14.9	1.0	0.0	0.0	0.0	0.0	18	18
NS-15	Drum Drive	2000	935763	5036063	76.5	91	91	60.1	0	0.0	-2.0	17.7	2.8	0.0	0.0	0.0	0.0	13	13
NS-15	Drum Drive	4000	935763	5036063	76.5	87	87	60.1	0	0.0	-2.0	20.6	9.4	0.0	0.0	0.0	0.0	--	--
NS-15	Drum Drive	8000	935763	5036063	76.5	79	79	60.1	0	0.0	-2.0	23.6	33.4	0.0	0.0	0.0	0.0	--	--
NS-16	Baghouse Fan - Casing	31.5	935773	5036074	77.6	40	40	60.5	0	0.0	-4.9	10.7	0.0	0.0	0.0	0.0	0.0	--	--
NS-16	Baghouse Fan - Casing	63	935773	5036074	77.6	66	66	60.5	0	0.0	-4.9	13.3	0.0	0.0	0.0	0.0	0.0	--	--
NS-16	Baghouse Fan - Casing	125	935773	5036074	77.6	76	76	60.5	0	0.0	0.8	15.3	0.1	0.0	0.0	0.0	0.0	6	6
NS-16	Baghouse Fan - Casing	250	935773	5036074	77.6	85	85	60.5	0	0.0	7.7	11.3	0.3	0.0	0.0	0.0	0.0	3	3
NS-16	Baghouse Fan - Casing	500	935773	5036074	77.6	86	86	60.5	0	0.0	3.8	18.1	0.6	0.0	0.0	0.0	0.0	7	7
NS-16	Baghouse Fan - Casing	1000	935773	5036074	77.6	92	92	60.5	0	0.0	-1.1	24.8	1.1	0.0	0.0	0.0	0.0	7	7
NS-16	Baghouse Fan - Casing	2000	935773	5036074	77.6	93	93	60.5	0	0.0	-1.8	25.0	2.9	0.0	0.0	0.0	0.0	7	--
NS-16	Baghouse Fan - Casing	4000	935773	5036074	77.6	86	86	60.5	0	0.0	-1.8	25.0	34.8	0.0	0.0	0.0	0.0	--	--
NS-17	Baghouse Fan - Motor	31.5	935774	5036075	77.6	12	12	60.5	0	0.0	-4.9	9.4	0.0	0.0	0.0	0.0	0.0	--	--
NS-17	Baghouse Fan - Motor	63	935774	5036075	77.6	38	38	60.5	0	0.0	-4.9	11.8	0.0	0.0	0.0	0.0	0.0	--	--
NS-17	Baghouse Fan - Motor	125	935774	5036075	77.6	62	62	60.5	0	0.0	0.8	13.6	0.1	0.0	0.0	0.0	0.0	--	--
NS-17	Baghouse Fan - Motor	250	935774	5036075	77.6	80	80	60.5	0	0.0	7.7	9.4	0.3	0.0	0.0	0.0	0.0	2	2
NS-17	Baghouse Fan - Motor	500	935774	5036075	77.6	96	96	60.5	0	0.0	3.8	16.2	0.6	0.0	0.0	0.0	0.0	15	15
NS-17	Baghouse Fan - Motor	1000	935774	5036075	77.6	102	102	60.5	0	0.0	-1.1	23.0	1.1	0.0	0.0	0.0	0.0	19	19
NS-17	Baghouse Fan - Motor	2000	935774	5036075	77.6	99	99	60.5	0	0.0	-1.8	25.0	2.9	0.0	0.0	0.0	0.0	13	13
NS-17	Baghouse Fan - Motor	4000	935774	5036075	77.6	96	96	60.5	0	0.0	-1.8	25.0	9.8	0.0	0.0	0.0	0.0	3	3
NS-17	Baghouse Fan - Motor	8000	935774	5036075	77.6	88	88	60.5	0	0.0	-1.8	25.0	34.9	0.0	0.0	0.0	0.0	--	--
NS-18	Baghouse - Exhaust	31.5	935772	5036075	85.7	37	37	60.5	0	0.0	-3.0	1.9	0.0	0.0	0.0	0.0	0.0	--	--
NS-18	Baghouse - Exhaust	63	935772	5036075	85.7	63	63	60.5	0	0.0	-1.0	-3.0	2.1	0.0	0.0	0.0	0.0	2	2
NS-18	Baghouse - Exhaust	125	935772	5036075	85.7	77	77	60.5	0	0.0	-2.1	1.0	1.8	0.1	0.0	0.0	0.0	11	11
NS-18	Baghouse - Exhaust	250	935772	5036075	85.7	92	92	60.5	0	0.0	-3.1	5.9	0.0	0.3	0.0	0.0	0.0	23	23
NS-18	Baghouse - Exhaust	500	935772	5036075	85.7	99	99	60.5	0	0.0	-6.1	4.0	0.4	0.6	0.0	0.0	0.0	27	27
NS-18	Baghouse - Exhaust	1000	935772	5036075	85.7	105	105	60.5	0	0.0	-9.2	-0.1	4.2	1.1	0.0	0.0	0.0	30	30
NS-18	Baghouse - Exhaust	2000	935772	5036075	85.7	105	105	60.5	0	0.0	-14.1	-0.7	5.1	2.9	0.0	0.0	0.0	23	23
NS-18	Baghouse - Exhaust	4000	935772	5036075	85.7	99	99	60.5	0	0.0	-16.1	-0.7	6.4	9.7	0.0	0.0	0.0	7	7
NS-18	Baghouse - Exhaust	8000	935772	5036075	85.7	89	89	60.5	0	0.0	-17.1	-0.7	8.0	34.8	0.0	0.0	0.0	--	--
NS-19	Dust Silo Blower	31.5	935751	5036053	76.0	8	8	59.7	0	0.0	-5.3	14.4	0.0	0.0	0.0	0.0	0.0	--	--
NS-19	Dust Silo Blower	63	935751	5036053	76.0	45	45	59.7	0	0.0	-5.3	17.6	0.0	0.0	0.0	0.0	0.0	--	--
NS-19	Dust Silo Blower	125	935751	5036053	76.0	84	84	59.7	0	0.0	-0.1</td								

Src ID	Src Name	Band	Easting	Northing	Elevation	LxD	LxN	Adv	K0	Dc	AgnD	Abar	Atm	Afol	Ahous	Cmet	Refl	LrD	LrN
NS-23	Batch Tower Bottom Gate	63	935760	5036052	80.9	13	13	60.0	0	0.0	-3.8	15.2	0.0	0.0	0.0	0.0	0.0	--	--
NS-23	Batch Tower Bottom Gate	125	935760	5036052	80.9	34	34	60.0	0	0.0	1.5	17.1	0.1	0.0	0.0	0.0	0.0	--	--
NS-23	Batch Tower Bottom Gate	250	935760	5036052	80.9	42	42	60.0	0	0.0	4.9	17.3	0.3	0.0	0.0	0.0	0.0	--	--
NS-23	Batch Tower Bottom Gate	500	935760	5036052	80.9	63	63	60.0	0	0.0	2.9	21.6	0.5	0.0	0.0	0.0	0.0	--	--
NS-23	Batch Tower Bottom Gate	1000	935760	5036052	80.9	76	76	60.0	0	0.0	-0.8	24.5	1.0	0.0	0.0	0.0	0.0	--	--
NS-23	Batch Tower Bottom Gate	2000	935760	5036052	80.9	79	79	60.0	0	0.0	-1.4	24.8	2.7	0.0	0.0	0.0	0.0	--	--
NS-23	Batch Tower Bottom Gate	4000	935760	5036052	80.9	73	73	60.0	0	0.0	-1.4	24.9	9.3	0.0	0.0	0.0	0.0	--	--
NS-23	Batch Tower Bottom Gate	8000	935760	5036052	80.9	66	66	60.0	0	0.0	-1.4	24.9	33.1	0.0	0.0	0.0	0.0	--	--
NS-24	Idling HMA Trucks - Batch Tower	31.5	935765	5036050	78.0	--	--	60.2	0	0.0	-4.7	12.7	0.0	0.0	0.0	0.0	0.0	0	--
NS-24	Idling HMA Trucks - Batch Tower	63	935765	5036050	78.0	70	70	60.2	0	0.0	-4.7	16.0	0.0	0.0	0.0	0.0	0.0	--	--
NS-24	Idling HMA Trucks - Batch Tower	125	935765	5036050	78.0	75	75	60.2	0	0.0	0.6	18.6	0.1	0.0	0.0	0.0	0.0	--	--
NS-24	Idling HMA Trucks - Batch Tower	250	935765	5036050	78.0	79	79	60.2	0	0.0	6.5	16.5	0.3	0.0	0.0	0.0	0.0	--	--
NS-24	Idling HMA Trucks - Batch Tower	500	935765	5036050	78.0	85	85	60.2	0	0.0	2.7	21.8	0.6	0.0	0.0	0.0	0.0	--	--
NS-24	Idling HMA Trucks - Batch Tower	1000	935765	5036050	78.0	91	91	60.2	0	0.0	-1.3	24.5	1.0	0.0	0.0	0.0	0.0	7	7
NS-24	Idling HMA Trucks - Batch Tower	2000	935765	5036050	78.0	91	91	60.2	0	0.0	-1.9	24.8	2.8	0.0	0.0	0.0	0.0	5	5
NS-24	Idling HMA Trucks - Batch Tower	4000	935765	5036050	78.0	82	82	60.2	0	0.0	-1.9	24.9	9.4	0.0	0.0	0.0	0.0	--	--
NS-24	Idling HMA Trucks - Batch Tower	8000	935765	5036050	78.0	69	69	60.2	0	0.0	-1.9	24.9	33.5	0.0	0.0	0.0	0.0	--	--
NS-25	Drag Conveyor Drive	31.5	935778	5036046	102.5	7	7	60.6	0	0.0	-3.0	4.8	0.0	0.0	0.0	0.0	0.0	--	--
NS-25	Drag Conveyor Drive	63	935778	5036046	102.5	29	29	60.6	0	0.0	-3.0	4.8	0.0	0.0	0.0	0.0	0.0	--	--
NS-25	Drag Conveyor Drive	125	935778	5036046	102.5	61	61	60.6	0	0.0	0.5	4.3	0.1	0.0	0.0	0.0	0.0	--	--
NS-25	Drag Conveyor Drive	250	935778	5036046	102.5	72	72	60.6	0	0.0	4.9	0.0	0.3	0.0	0.0	0.0	0.0	7	7
NS-25	Drag Conveyor Drive	500	935778	5036046	102.5	89	89	60.6	0	0.0	3.2	1.6	0.6	0.0	0.0	0.0	0.0	23	23
NS-25	Drag Conveyor Drive	1000	935778	5036046	102.5	93	93	60.6	0	0.0	-0.4	4.8	1.1	0.0	0.0	0.0	0.0	27	27
NS-25	Drag Conveyor Drive	2000	935778	5036046	102.5	98	98	60.6	0	0.0	-0.9	4.8	2.9	0.0	0.0	0.0	0.0	31	31
NS-25	Drag Conveyor Drive	4000	935778	5036046	102.5	95	95	60.6	0	0.0	-0.9	4.8	9.9	0.0	0.0	0.0	0.0	21	21
NS-25	Drag Conveyor Drive	8000	935778	5036046	102.5	86	86	60.6	0	0.0	-0.9	4.8	35.2	0.0	0.0	0.0	0.0	--	--
NS-26	Traverse Conveyor Drive	31.5	935779	5036047	99.5	4	4	60.6	0	0.0	-3.0	4.8	0.0	0.0	0.0	0.0	0.0	--	--
NS-26	Traverse Conveyor Drive	63	935779	5036047	99.5	34	34	60.6	0	0.0	-3.0	4.8	0.0	0.0	0.0	0.0	0.0	--	--
NS-26	Traverse Conveyor Drive	125	935779	5036047	99.5	56	56	60.6	0	0.0	0.5	4.2	0.1	0.0	0.0	0.0	0.0	--	--
NS-26	Traverse Conveyor Drive	250	935779	5036047	99.5	69	69	60.6	0	0.0	4.9	0.0	0.3	0.0	0.0	0.0	0.0	3	3
NS-26	Traverse Conveyor Drive	500	935779	5036047	99.5	67	67	60.6	0	0.0	3.2	1.6	0.6	0.0	0.0	0.0	0.0	1	1
NS-26	Traverse Conveyor Drive	1000	935779	5036047	99.5	64	64	60.6	0	0.0	-0.4	4.8	1.1	0.0	0.0	0.0	0.0	--	--
NS-26	Traverse Conveyor Drive	2000	935779	5036047	99.5	80	80	60.6	0	0.0	-0.9	4.8	2.9	0.0	0.0	0.0	0.0	13	13
NS-26	Traverse Conveyor Drive	4000	935779	5036047	99.5	64	64	60.6	0	0.0	-0.9	4.8	9.9	0.0	0.0	0.0	0.0	--	--
NS-26	Traverse Conveyor Drive	8000	935779	5036047	99.5	54	54	60.6	0	0.0	-0.9	4.8	35.3	0.0	0.0	0.0	0.0	--	--
NS-27	Idling HMA Trucks - Silos	31.5	935777	5036046	78.0	--	--	60.5	0	0.0	-4.8	11.2	0.0	0.0	0.0	0.0	0.0	0	--
NS-27	Idling HMA Trucks - Silos	63	935777	5036046	78.0	70	70	60.5	0	0.0	-4.8	14.3	0.0	0.0	0.0	0.0	0.0	--	--
NS-27	Idling HMA Trucks - Silos	125	935777	5036046	78.0	75	75	60.5	0	0.0	0.6	16.7	0.1	0.0	0.0	0.0	0.0	--	--
NS-27	Idling HMA Trucks - Silos	250	935777	5036046	78.0	79	79	60.5	0	0.0	0.6	14.3	0.3	0.0	0.0	0.0	0.0	--	--
NS-27	Idling HMA Trucks - Silos	500	935777	5036046	78.0	85	85	60.5	0	0.0	2.6	20.9	0.6	0.0	0.0	0.0	0.0	0	0
NS-27	Idling HMA Trucks - Silos	1000	935777	5036046	78.0	91	91	60.5	0	0.0	-1.3	24.6	1.1	0.0	0.0	0.0	0.0	6	6
NS-27	Idling HMA Trucks - Silos	2000	935777	5036046	78.0	91	91	60.5	0	0.0	-1.9	24.8	2.9	0.0	0.0	0.0	0.0	11.3	16
NS-27	Idling HMA Trucks - Silos	4000	935777	5036046	78.0	82	82	60.5	0	0.0	-1.9	24.9	9.8	0.0	0.0	0.0	0.0	8.2	--
NS-27	Idling HMA Trucks - Silos	8000	935777	5036046	78.0	69	69	60.5	0	0.0	-1.9	24.9	35.0	0.0	0.0	0.0	0.0	3.8	--
NS-28	Top Silo Gate	31.5	935778	5036048	96.1	--	--	60.6	0	0.0	-3.0	4.8	0.0	0.0	0.0	0.0	0.0	0	--
NS-28	Top Silo Gate	63	935778	5036048	96.1	13	13	60.6	0	0.0	-3.0	4.8	0.0	0.0	0.0	0.0	0.0	--	--
NS-28	Top Silo Gate	125	935778	5036048	96.1	34	34	60.6	0	0.0	0.5	4.3	0.1	0.0	0.0	0.0	0.0	--	--
NS-28	Top Silo Gate	250	935778	5036048	96.1	42	42	60.6	0	0.0	4.9	0.0	0.3	0.0	0.0	0.0	0.0	--	--
NS-28	Top Silo Gate	500	935778	5036048	96.1	63	63	60.6	0	0.0	3.2	1.9	0.6	0.0	0.0	0.0	0.0	--	--
NS-28	Top Silo Gate	1000	935778	5036048	96.1	76	76	60.6	0	0.0	-0.4	5.4	1.1	0.0	0.0	0.0	0.0	10	10
NS-28	Top Silo Gate	2000	935778	5036048	96.1	73	73	60.6	0	0.0	-0.9	6.9	9.9	0.0	0.0	0.0	0.0	--	--
NS-28	Top Silo Gate	4000	935778	5036048	96.1	66	66	60.6	0	0.0	-0.9	8.3	35.1	0.0	0.0	0.0	0.0	--	--
NS-29	Bottom Silo Gate	31.5	935778	5036048	80.9	--	--	60.5	0	0.0	-3.0	9.9	0.0	0.0	0.0	0.0	0.0	--	--
NS-29	Bottom Silo Gate	63	935778	5036048	80.9	13	13	60.5	0	0.0	-3.9	12.8	0.0	0.0	0.0	0.0	0.0	--	--
NS-29	Bottom Silo Gate	125	935778	5036048	80.9	34	34	60.5	0	0.0	1.5	14.4	0.1	0.0	0.0	0.0	0.0	--	--
NS-29	Bottom Silo Gate	250	935778	5036048	80.9	42	42	60.5	0	0.0	4.7	14.4	0.3	0.0	0.0	0.0	0.0	--	--
NS-29	Bottom Silo Gate	500	935778	5036048	80.9	63	63	60.5	0	0.0	2.7	19.3	0.6	0.0	0.0	0.0	0.0	--	--
NS-29	Bottom Silo Gate	1000	935778	5036048	80.9	76	76	60.5	0	0.0	-0.9	24.5	1.1	0.0	0.0	0.0	0.0	--	--
NS-29	Bottom Silo Gate	2000	935778	5036048	80.9	79	79	60.5	0	0.0	-1.5	24.8	2.9	0.0	0.0	0.0	0.0	--	--
NS-29	Bottom Silo Gate	4000	935778	5036048	80.9	73	73	60.5	0	0.0	-1.5	24.9	9.8	0.0	0.0	0.0	0.0	--	--
NS-29	Bottom Silo Gate	8000	935778	5036048	80.9	66	66	60.5	0	0.0	-1.5	24.9	35.1	0.0	0.0	0.0	0.0	--	--
NS-30	Silo Jet Vent	31.5	935780	5036048	93.5	4	4	60.6	0	0.0	-3.0	3.8	0.0	0.0	0.0	0.0	0.0	--	--
NS-30	Silo Jet Vent	63	935780	5036048	93.5	30	30	60.6	0	0.0	-3.0	4.6	0.0	0.0	0.0	0.0	0.0	--	--
NS-30	Silo Jet Vent	125	935780	5036048	93.5	51	51	60.6	0	0.0	0.5	5.0	0.1	0.0	0.0	0.0	0.0	--	--
NS-30	Silo Jet Vent	250	935780	5036048	93.5	58	58	60.6	0	0.0	4.9	2.0	0.3	0.0					

Src ID	Src Name	Band	Easting	Northing	Elevation	LxD	LxN	Adv	K0	Dc	Agnd	Abar	Atm	Afol	Ahous	Cmet	Refl	LxD	LrN
NS-34	Heater Pump	125	935732	5036054	76.5	61	61	59.1	0	0.0	-0.1	9.0	0.1	0.0	0.0	0.0	0.0	--	--
NS-34	Heater Pump	250	935732	5036054	76.5	73	73	59.1	0	0.0	8.0	3.2	0.3	0.0	0.0	0.0	0.0	3	3
NS-34	Heater Pump	500	935732	5036054	76.5	82	82	59.1	0	0.0	6.7	7.0	0.5	0.0	0.0	0.0	1.0	9	9
NS-34	Heater Pump	1000	935732	5036054	76.5	86	86	59.1	0	0.0	-0.4	16.4	0.9	0.0	0.0	0.0	1.2	11	11
NS-34	Heater Pump	2000	935732	5036054	76.5	87	87	59.1	0	0.0	-2.0	19.2	2.5	0.0	0.0	0.0	1.3	10	10
NS-34	Heater Pump	4000	935732	5036054	76.5	82	82	59.1	0	0.0	-2.0	22.2	8.4	0.0	0.0	0.0	1.4	--	--
NS-34	Heater Pump	8000	935732	5036054	76.5	73	73	59.1	0	0.0	-2.0	25.0	29.8	0.0	0.0	0.0	1.2	--	--
NS-35	Fuel Pump	31.5	935730	5036051	76.5	13	13	59.0	0	0.0	-5.1	6.0	0.0	0.0	0.0	0.0	0.0	--	--
NS-35	Fuel Pump	63	935730	5036051	76.5	43	43	59.0	0	0.0	-5.1	7.3	0.0	0.0	0.0	0.0	0.0	--	--
NS-35	Fuel Pump	125	935730	5036051	76.5	61	61	59.0	0	0.0	-0.1	9.1	0.1	0.0	0.0	0.0	0.0	--	--
NS-35	Fuel Pump	250	935730	5036051	76.5	73	73	59.0	0	0.0	7.9	3.4	0.3	0.0	0.0	0.0	0.7	3	3
NS-35	Fuel Pump	500	935730	5036051	76.5	82	82	59.0	0	0.0	6.6	7.2	0.5	0.0	0.0	0.0	1.2	10	10
NS-35	Fuel Pump	1000	935730	5036051	76.5	86	86	59.0	0	0.0	-0.4	16.5	0.9	0.0	0.0	0.0	1.3	11	11
NS-35	Fuel Pump	2000	935730	5036051	76.5	87	87	59.0	0	0.0	-2.0	19.4	2.4	0.0	0.0	0.0	3.9	12	12
NS-35	Fuel Pump	4000	935730	5036051	76.5	82	82	59.0	0	0.0	-2.0	22.3	8.3	0.0	0.0	0.0	3.6	--	--
NS-35	Fuel Pump	8000	935730	5036051	76.5	73	73	59.0	0	0.0	-2.0	25.0	29.5	0.0	0.0	0.0	2.5	--	--
NS-36	Asphalt Pump	31.5	935733	5036053	76.5	11	11	59.2	0	0.0	-5.1	5.9	0.0	0.0	0.0	0.0	0.0	--	--
NS-36	Asphalt Pump	63	935733	5036053	76.5	37	37	59.2	0	0.0	-5.1	7.2	0.0	0.0	0.0	0.0	0.0	--	--
NS-36	Asphalt Pump	125	935733	5036053	76.5	53	53	59.2	0	0.0	-0.1	9.0	0.1	0.0	0.0	0.0	0.0	--	--
NS-36	Asphalt Pump	250	935733	5036053	76.5	66	66	59.2	0	0.0	7.9	3.2	0.3	0.0	0.0	0.0	1.2	--	--
NS-36	Asphalt Pump	500	935733	5036053	76.5	70	70	59.2	0	0.0	6.6	7.0	0.5	0.0	0.0	0.0	1.2	--	--
NS-36	Asphalt Pump	1000	935733	5036053	76.5	61	61	59.2	0	0.0	-0.4	16.3	0.9	0.0	0.0	0.0	1.2	--	--
NS-36	Asphalt Pump	2000	935733	5036053	76.5	81	81	59.2	0	0.0	-2.0	19.2	2.5	0.0	0.0	0.0	1.5	4	4
NS-36	Asphalt Pump	4000	935733	5036053	76.5	65	65	59.2	0	0.0	-2.0	22.1	8.4	0.0	0.0	0.0	1.6	--	--
NS-36	Asphalt Pump	8000	935733	5036053	76.5	59	59	59.2	0	0.0	-2.0	25.0	29.9	0.0	0.0	0.0	1.5	--	--
NS-37	Arriving/Departing HMA Trucks - Batch	31.5	935733	5036000	78.0	--	--	61.9	0	0.0	-5.0	4.9	0.0	0.0	0.0	0.0	0	--	--
NS-37	Arriving/Departing HMA Trucks - Batch	63	935733	5036000	78.0	74	73	57.8	0	0.0	-4.2	5.3	0.0	0.0	0.0	0.0	0.0	15	14
NS-37	Arriving/Departing HMA Trucks - Batch	125	935733	5036000	78.0	86	84	57.7	0	0.0	-0.2	7.0	0.1	0.0	0.0	0.0	0.0	21	20
NS-37	Arriving/Departing HMA Trucks - Batch	250	935733	5036000	78.0	89	87	58.1	0	0.0	5.0	4.5	0.2	0.0	0.0	0.0	0.0	21	20
NS-37	Arriving/Departing HMA Trucks - Batch	500	935733	5036000	78.0	94	92	58.3	0	0.0	1.7	10.1	0.4	0.0	0.0	0.0	0.0	23	22
NS-37	Arriving/Departing HMA Trucks - Batch	1000	935733	5036000	78.0	93	92	58.5	0	0.0	-1.5	14.3	0.8	0.0	0.0	0.0	0.0	21	20
NS-37	Arriving/Departing HMA Trucks - Batch	2000	935733	5036000	78.0	93	91	58.4	0	0.0	-1.9	17.1	2.2	0.0	0.0	0.0	0.0	17	15
NS-37	Arriving/Departing HMA Trucks - Batch	4000	935733	5036000	78.0	87	86	57.7	0	0.0	-1.9	20.5	7.3	0.0	0.0	0.0	0.0	4	2
NS-37	Arriving/Departing HMA Trucks - Batch	8000	935733	5036000	78.0	77	75	56.0	0	0.0	-1.8	24.7	22.8	0.0	0.0	0.0	0.0	--	--
NS-37	Arriving/Departing HMA Trucks - Drum	31.5	935734	5036001	78.0	--	--	61.9	0	0.0	-5.0	4.9	0.0	0.0	0.0	0.0	0	--	--
NS-37	Arriving/Departing HMA Trucks - Drum	63	935734	5036001	78.0	74	74	57.8	0	0.0	-4.2	5.3	0.0	0.0	0.0	0.0	0.0	15	15
NS-37	Arriving/Departing HMA Trucks - Drum	125	935734	5036001	78.0	86	86	57.7	0	0.0	-0.2	7.0	0.1	0.0	0.0	0.0	0.0	21	21
NS-37	Arriving/Departing HMA Trucks - Drum	250	935734	5036001	78.0	77	77	56.0	0	0.0	-1.8	24.7	22.8	0.0	0.0	0.0	0.0	21	21
NS-37	Arriving/Departing HMA Trucks - Drum	500	935734	5036001	78.0	91	91	56.5	0	0.0	-1.2	13.1	1.1	0.0	0.0	0.0	0.0	21	21
NS-37	Arriving/Departing HMA Trucks - Drum	1000	935734	5036001	78.0	82	82	56.5	0	0.0	-1.8	18.7	9.8	0.0	0.0	0.0	0.0	21	21
NS-38	Idle HMA Trucks - Waiting	31.5	935777	5036061	78.0	--	--	60.5	0	0.0	-4.8	5.3	0.0	0.0	0.0	0.0	0.0	8	8
NS-38	Idle HMA Trucks - Waiting	63	935777	5036061	78.0	70	70	60.5	0	0.0	-4.8	6.0	0.0	0.0	0.0	0.0	0.0	8	8
NS-38	Idle HMA Trucks - Waiting	125	935777	5036061	78.0	75	75	60.5	0	0.0	0.8	6.3	0.1	0.0	0.0	0.0	0.0	7	7
NS-38	Idle HMA Trucks - Waiting	250	935777	5036061	78.0	79	79	60.5	0	0.0	0.8	6.8	1.9	0.3	0.0	0.0	0.0	10	10
NS-38	Idle HMA Trucks - Waiting	500	935777	5036061	78.0	85	85	60.5	0	0.0	2.9	7.8	0.6	0.0	0.0	0.0	0.0	13	13
NS-38	Idle HMA Trucks - Waiting	1000	935777	5036061	78.0	91	91	60.5	0	0.0	-1.2	13.1	1.1	0.0	0.0	0.0	0.0	17	17
NS-38	Idle HMA Trucks - Waiting	2000	935777	5036061	78.0	82	82	60.5	0	0.0	-1.8	18.7	9.8	0.0	0.0	0.0	0.0	14	14
NS-38	Idle HMA Trucks - Waiting	4000	935777	5036061	78.0	69	69	60.5	0	0.0	-1.8	21.6	35.1	0.0	0.0	0.0	0.0	--	--
NS-39	Front-End Loader	31.5	935785	5036129	78.0	59	59	61.1	0	0.0	-4.9	4.7	0.0	0.0	0.0	0.0	0.0	--	--
NS-39	Front-End Loader	63	935785	5036129	78.0	83	83	61.1	0	0.0	-4.9	5.1	0.0	0.0	0.0	0.0	0.0	22	22
NS-39	Front-End Loader	125	935785	5036129	78.0	88	88	61.1	0	0.0	1.3	4.5	0.1	0.0	0.0	0.0	0.0	21	21
NS-39	Front-End Loader	250	935785	5036129	78.0	94	94	61.1	0	0.0	7.6	0.4	0.3	0.0	0.0	0.0	0.0	24	24
NS-39	Front-End Loader	500	935785	5036129	78.0	97	97	61.1	0	0.0	3.6	3.7	0.6	0.0	0.0	0.0	0.0	28	28
NS-39	Front-End Loader	1000	935785	5036129	78.0	102	102	61.2	0	0.0	-1.0	8.3	1.2	0.0	0.0	0.0	0.0	32	32
NS-39	Front-End Loader	2000	935785	5036129	78.0	101	101	61.1	0	0.0	-1.6	9.4	3.1	0.0	0.0	0.0	0.0	29	29
NS-39	Front-End Loader	4000	935785	5036129	78.0	94	94	61.1	0	0.0	-1.6	10.6	10.5	0.0	0.0	0.0	0.6	14	14
NS-39	Front-End Loader	8000	935785	5036129	78.0	87	87	61.1	0	0.0	-1.6	12.3	37.3	0.0	0.0	0.0	0.6	--	--
NS-40a	Crusher/Screener - Side 1	31.5	935776	5036120	77.8	--	--	60.8	3	0.0	-4.9	5.5	0.0	0.0	0.0	0.0	0.0	8	--
NS-40a	Crusher/Screener - Side 1	63	935776	5036120	77.8	--	--	60.8	3	0.0	-4.8	6.5	0.0	0.0	0.0	0.0	0.0	21	--
NS-40a	Crusher/Screener - Side 1	125	935776	5036120	77.8	--	--	60.8	3	0.0	-7.6	2.0	0.3	0.0	0.0	0.0	0.0	17	--
NS-40a	Crusher/Screener - Side 1	250	935776	5036120	77.8	--	--	60.8	3	0.0	4.5	7.1	0.6	0.0	0.0	0.0	0.0	19	--
NS-40a	Crusher/Screener - Side 1	500	935776	5036120	77.8	--	--	60.8	3	0.0	4.5	7.1	0.6	0.0	0.0	0.0	0.0	19	--
NS-40a	Crusher/Screener - Side 1	1000	935776	5036120	77.8	--	--	60.8	3	0.0	-1.5	16.4	3.0	0.0	0.0	0.0	0.0	16	--
NS-40a	Crusher/Screener - Side 1	2000	935776	5036120	77.8	--	--	60.8	3	0.0	-1.5	19.1	10.2	0.0	0.0	0.0	1	--	--
NS-40a	Crusher/Screener - Side 1																		

Src ID	Src Name	Band	Easting	Northing	Elevation	LxD	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahours	Cmet	Refl	LrD	LrN
NS-40e	Crusher/Screen - Top	250	935786	5036126	80.3	--	--	61.1	0	0.0	6.1	0.0	0.3	0.0	0.0	0.0	0.0	31	--
NS-40e	Crusher/Screen - Top	500	935786	5036126	80.3	--	--	61.1	0	0.0	3.5	2.2	0.6	0.0	0.0	0.0	0.0	31	--
NS-40e	Crusher/Screen - Top	1000	935786	5036126	80.3	--	--	61.1	0	0.0	-0.7	6.5	1.2	0.0	0.0	0.0	0.0	33	--
NS-40e	Crusher/Screen - Top	2000	935786	5036126	80.3	--	--	61.1	0	0.0	-1.3	7.7	3.1	0.0	0.0	0.0	0.0	29	--
NS-40e	Crusher/Screen - Top	4000	935786	5036126	80.3	--	--	61.1	0	0.0	-1.3	9.4	10.4	0.0	0.0	0.0	0.0	15	--
NS-40e	Crusher/Screen - Top	8000	935786	5036126	80.3	--	--	61.1	0	0.0	-1.3	11.6	37.3	0.0	0.0	0.0	0.0	--	--
NS-41	Stacker Motor	31.5	935794	5036134	76.5	32	--	61.4	0	0.0	-5.3	4.7	0.0	0.0	0.0	0.0	0.0	--	--
NS-41	Stacker Motor	63	935794	5036134	76.5	78	--	61.4	0	0.0	-5.3	5.1	0.0	0.0	0.0	0.0	0.0	17	--
NS-41	Stacker Motor	125	935794	5036134	76.5	87	--	61.4	0	0.0	0.9	4.8	0.1	0.0	0.0	0.0	0.0	20	--
NS-41	Stacker Motor	250	935794	5036134	76.5	87	--	61.4	0	0.0	8.9	0.0	0.3	0.0	0.0	0.0	0.0	16	--
NS-41	Stacker Motor	500	935794	5036134	76.5	95	--	61.4	0	0.0	7.4	0.5	0.6	0.0	0.0	0.0	2.7	28	--
NS-41	Stacker Motor	1000	935794	5036134	76.5	102	--	61.4	0	0.0	-0.2	9.7	1.2	0.0	0.0	0.0	2.8	33	--
NS-41	Stacker Motor	2000	935794	5036134	76.5	99	--	61.4	0	0.0	-1.9	12.0	3.2	0.0	0.0	0.0	3.0	28	--
NS-41	Stacker Motor	4000	935794	5036134	76.5	94	--	61.4	0	0.0	-1.9	14.6	10.9	0.0	0.0	0.0	2.8	12	--
NS-41	Stacker Motor	8000	935794	5036134	76.5	87	--	61.4	0	0.0	-1.9	17.4	38.8	0.0	0.0	0.0	2.8	--	--
NS-42a	Crusher/Screener - Engine Combustion Exhaust	31.5	935777	5036136	81.0	63	--	61.0	0	0.0	-4.0	4.8	0.0	0.0	0.0	0.0	0.0	1	--
NS-42a	Crusher/Screener - Engine Combustion Exhaust	63	935777	5036136	81.0	63	--	61.0	0	0.0	-4.0	4.8	0.0	0.0	0.0	0.0	0.0	1	--
NS-42a	Crusher/Screener - Engine Combustion Exhaust	125	935777	5036136	81.0	86	--	61.0	0	0.0	2.1	2.7	0.1	0.0	0.0	0.0	0.0	21	--
NS-42a	Crusher/Screener - Engine Combustion Exhaust	250	935777	5036136	81.0	95	--	61.0	0	0.0	6.0	0.0	0.3	0.0	0.0	0.0	0.0	28	--
NS-42a	Crusher/Screener - Engine Combustion Exhaust	500	935777	5036136	81.0	100	--	61.0	0	0.0	3.7	1.2	0.6	0.0	0.0	0.0	0.0	34	--
NS-42a	Crusher/Screener - Engine Combustion Exhaust	1000	935777	5036136	81.0	103	--	61.0	0	0.0	-0.5	4.9	1.2	0.0	0.0	0.0	0.0	36	--
NS-42a	Crusher/Screener - Engine Combustion Exhaust	2000	935777	5036136	81.0	102	--	61.0	0	0.0	-1.2	5.1	3.1	0.0	0.0	0.0	0.0	34	--
NS-42a	Crusher/Screener - Engine Combustion Exhaust	4000	935777	5036136	81.0	96	--	61.0	0	0.0	-1.2	5.3	10.3	0.0	0.0	0.0	0.0	20	--
NS-42a	Crusher/Screener - Engine Combustion Exhaust	8000	935777	5036136	81.0	87	--	61.0	0	0.0	-1.2	5.8	36.9	0.0	0.0	0.0	0.0	--	--
NS-42b	Crusher/Screener - Engine Radiator	31.5	935777	5036137	77.6	--	--	61.0	3	0.0	-4.9	4.7	0.0	0.0	0.0	0.0	0.0	--	--
NS-42b	Crusher/Screener - Engine Radiator	63	935777	5036137	77.6	--	--	61.0	3	0.0	-4.9	5.2	0.0	0.0	0.0	0.0	0.0	19	--
NS-42b	Crusher/Screener - Engine Radiator	125	935777	5036137	77.6	--	--	61.0	3	0.0	1.3	4.6	0.1	0.0	0.0	0.0	0.0	29	--
NS-42b	Crusher/Screener - Engine Radiator	250	935777	5036137	77.6	--	--	61.0	3	0.0	7.7	0.0	0.3	0.0	0.0	0.0	0.0	37	--
NS-42b	Crusher/Screener - Engine Radiator	500	935777	5036137	77.6	--	--	61.0	3	0.0	4.7	3.2	0.6	0.0	0.0	0.0	0.0	28	--
NS-42b	Crusher/Screener - Engine Radiator	1000	935777	5036137	77.6	--	--	61.0	3	0.0	-0.7	9.4	1.2	0.0	0.0	0.0	0.0	30	--
NS-42b	Crusher/Screener - Engine Radiator	2000	935777	5036137	77.6	--	--	61.0	3	0.0	-1.5	11.4	3.1	0.0	0.0	0.0	0.0	25	--
NS-42b	Crusher/Screener - Engine Radiator	4000	935777	5036137	77.6	--	--	61.0	3	0.0	-1.5	13.6	10.4	0.0	0.0	0.0	0.0	13	--
NS-42b	Crusher/Screener - Engine Radiator	8000	935777	5036137	77.6	--	--	61.0	3	0.0	-1.5	16.1	36.9	0.0	0.0	0.0	0.0	--	--

Where: Lr = Lx - Adiv + K0 + Dc - Agnd - Abar - Aatm - Afol - Ahours + Cmet + Refl