

February 7, 2024

Aercoustics Project #: 17123.05

Waterford Group70 Ewart Ave. RR#8
Brantford, OntarioATTN: Caitlin Port, MHBC
Ed Lamb, Waterford Sand and GravelSubject: Law Quarry Extension Noise Impact Study
JART Comment Letter Responses**1 Introduction**

Aercoustics Engineering Limited (Aercoustics) was retained by the Waterford Group to prepare a Noise Impact Study (NIS) for the proposed Law Quarry Extension in Wainfleet, Ontario.

This document has been prepared to address comments contained in Appendix 6 of a comment letter from Joint Agency Review Team (JART), dated December 21, 2023. This comment response document includes appended materials to serve as an addendum to the most recent version of the Noise Impact Study, dated July 6, 2023.

2 Peer Review Comment Responses

- 2. The reviewer requests clarification on the hourly distribution used for road traffic STAMSON calculations.*

A sample traffic distribution of the Institute of Transportation Engineers (ITE) was utilized and is appended to this document (Table A-1). The minimum hourly traffic count of 232 vehicles per hour were based on the lowest-volume daytime hour, representing a conservative approach. Heavy and medium trucks were assumed to represent 6% of the annual average daily traffic with a 50/50 medium/heavy distribution.

- 4. The reviewer requests that first-order acoustical reflections be considered in the analysis study.*

The acoustical contribution of first order reflections were reviewed in the initial modelling and were evaluated to represent an insignificant contribution.

However, upon additional analysis, one scenario was identified wherein reflections from the Processing Plant had the potential to cause exceedances at Receptors R13 and R14. Additional modelling was carried out to evaluate the contribution of acoustical reflections across all phases of the quarry operation.

The worst-case noise impacts – including the contribution of first-order reflections – are predicted to comply with the MECP sound level limits in all operating phases and scenarios with incorporation of the following revisions to noise controls on the Operation Plan:

Noise Control ¹	Original Control	Revised Control
#9	Prior to extraction in Phase 2, an acoustic barrier with a minimum top-of-barrier elevation of 190 MASL shall be installed along the west boundary of the property as shown (Berm A) on the Operation Plan. This barrier shall remain in place for the duration of extraction and processing operations within the quarry	Prior to extraction in Phase 1a, an acoustic barrier with a minimum top-of-barrier elevation of 190 MASL shall be installed along the west boundary of the property as shown (Berm A) on the Operation Plan. This barrier shall remain in place for the duration of extraction and processing operations within the quarry
#14	Prior to westward extraction in Phase 3, the Processing Plant shall be located between the sections of unextracted land as shown in the Operation Plan and shall remain there for the duration of Phase 3 extraction. During processing operations in Phase 3, the line of sight to receptors R11 to R15 shall be broken by either: <ul style="list-style-type: none"> A) An acoustic barrier with a minimum height of 12 m within 30 m of the Processing plant; or B) Intervening unextracted land with a minimum height of 17 m within 60 m of the Processing Plant. 	During extraction operations in Phase 3, the Processing Plant shall be prohibited from operating in the Phase 3 area and shall not operate within 350 m of the western extraction limit. The line of sight between the Processing Plant and any of Receptors R11 to R15 shall be broken by an acoustic barrier with a minimum height of 12 m within 30 m of the Processing Plant
#19	During extraction of Phase 4, the Processing Plant shall be located between the sections of unextracted land as shown on the Operation Plan and shall remain there for the duration of Phase 4 extraction. The line of sight between the Processing Plant and any of Receptors R11 to R15 shall be broken by either: <ul style="list-style-type: none"> A) An acoustic barrier with a minimum height of 12 m within 30 m of the Processing Plant; or B) Intervening unextracted land with a minimum height of 17 m within 60 m of the Processing Plant. 	During extraction operations in Phase 4, the Processing Plant shall be prohibited from operating in the Phase 3 or 4 areas and shall not operate within 350 m of the western extraction limit. The line of sight between the Processing Plant and any of Receptors R11 to R15 shall be broken by an acoustic barrier with a minimum height of 12 m within 30 m of the Processing Plant

1 – Noise control item per Appendix A of Noise Impact Study dated July 6, 2023.

These changes will be reflected on a revised Operation Plan and are illustrated in the appended Figures A-1 and A-2.

Please do not hesitate to call if there are any questions or concerns.

Sincerely,

AERCOUSTICS ENGINEERING LIMITED



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



Derek Flake, M.Sc., P.Eng.



Law Quarry Extension - Addendum

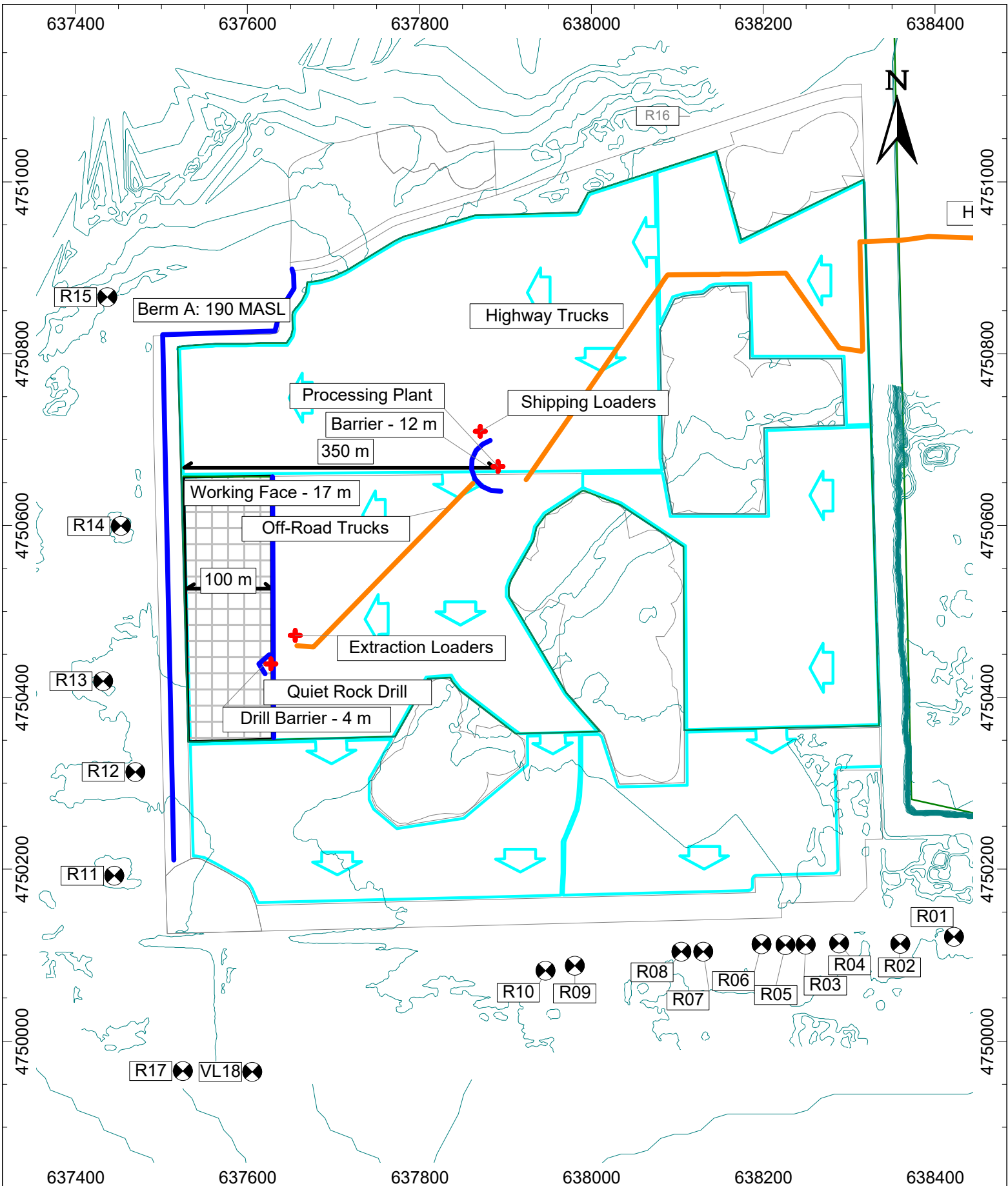
Table A-1


ITE Traffic Distribution - Urban Fringe Area

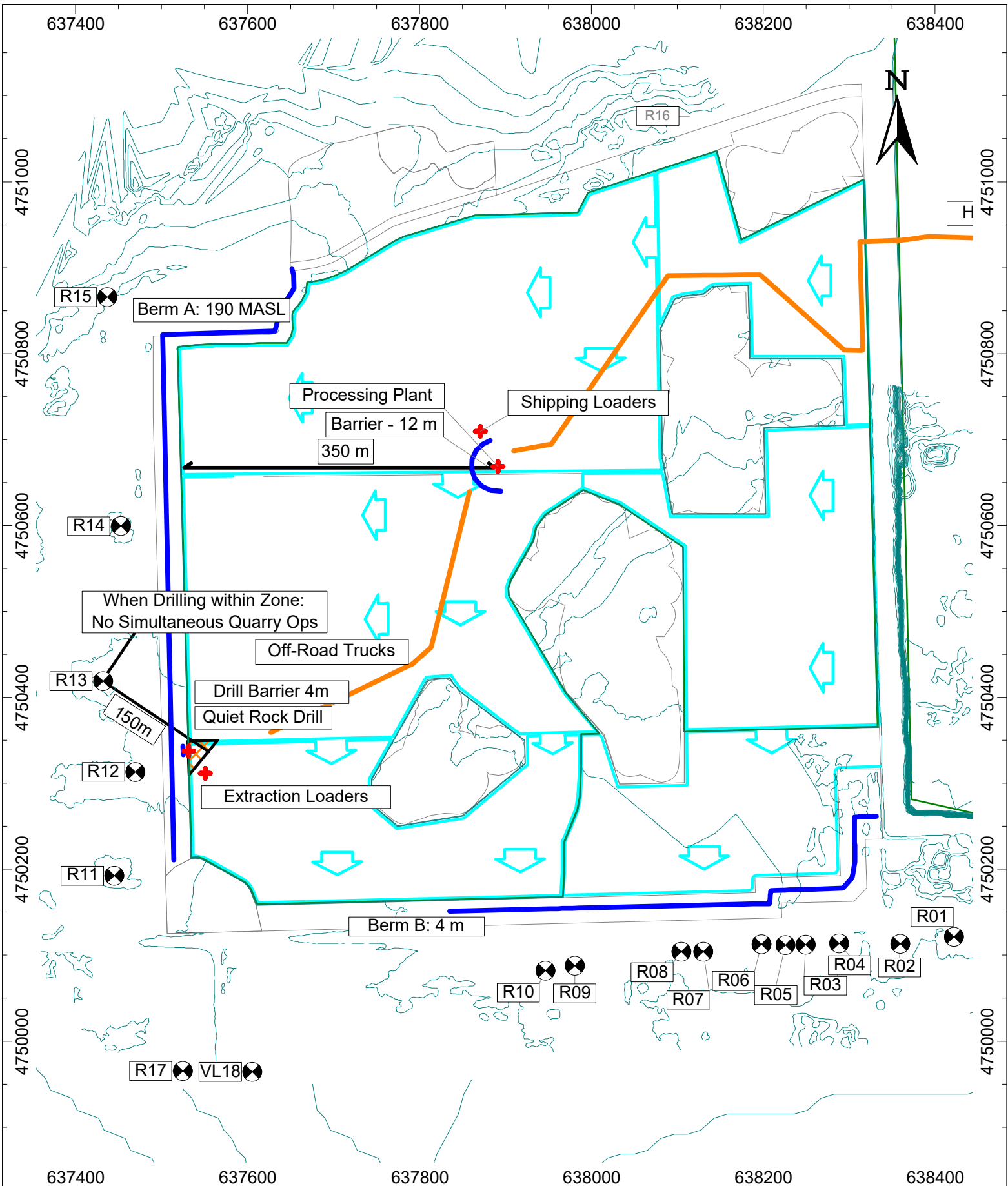
ON-3


AADT: 6630

Hour Ending	% of AADT	Total
0:00	2.8%	186
1:00	1.5%	99
2:00	1.0%	66
3:00	0.5%	33
4:00	0.3%	20
5:00	0.3%	20
6:00	0.6%	40
7:00	2.9%	192
8:00	5.3%	351
9:00	6.6%	438
10:00	4.9%	325
11:00	5.1%	338
12:00	5.7%	378
13:00	5.9%	391
14:00	6.0%	398
15:00	6.4%	424
16:00	6.7%	444
17:00	8.4%	557
18:00	7.0%	464
19:00	5.2%	345
20:00	5.2%	345
21:00	4.3%	285
22:00	3.9%	259
23:00	3.5%	232



	Project ID: 17132.02	Project Name Law Crushed Stone - Quarry Extension	Figure A-1
	Scale: As Indicated Drawn by: KC Reviewed by: DF Date: Feb. 2024 Revision: 2	Figure Title Noise Control Implementation - Phase 3	



	Project ID: 17132.02	Project Name Law Crushed Stone - Quarry Extension
	Scale: As Indicated Drawn by: KC Reviewed by: DF Date: Feb. 2024 Revision: 2	Figure Title Noise Control Implementation - Phase 4