

## **COMMITTEE OF THE WHOLE SEPTEMBER 2, 2003**

### **NOISE CONCERNS** **QUEEN ISABELLA CRESCENT**

#### **Recommendation**

The Commissioner of Engineering and Public Works recommends:

That this report be received for information purposes.

#### **Purpose**

The purpose of this report is to respond to Council's direction of October 28, 2002 regarding Mr. Mike Kuyumija's and Ms. Cathy Macieri's concerns with the sound barrier constructed along the east side of Highway 400.

#### **Background - Analysis and Options**

At the Committee of the Whole meeting of October 21, 2002, Mr. Mike Kuyumija and Ms. Cathy Macieri expressed concerns on the effectiveness of the sound barrier constructed in this community adjacent to Highway 400. Staff were directed to review the matter and report back to a future Committee of the Whole meeting.

Staff instructed the Developer that constructed the noise barrier, Venturon Developments Inc., to conduct an on-site noise measurement in the affected area and to provide the City with a report regarding the effectiveness of the noise barrier. It should be noted that the residents who appeared at Council live in the adjacent development to the south developed by Alsi Developments Limited.

Jade Acoustics conducted the sound measurements from 3:00 p.m. on Thursday May 22, 2003 until just after noon on Friday May 23, 2003. The sound measurements were terminated on Friday because the forecast called for rain all weekend and the meters had to be retrieved. Although the meters were installed on lots in the Venturon plan to the north, the exposure to the noise from Highway 400 is similar to that of the homes on Queen Isabella Crescent.

The Ministry of the Environment guidelines for traffic noise use a 16 hourly daytime period (from 7 a.m. to 11 p.m.) to assess noise in outdoor amenity areas. This is the most critical time for noise impact on outdoor use in residential developments. The sound levels were recorded on an hourly basis and then combined logarithmically to obtain the 16 hour daytime average. The resultant 16 daytime average ranges from 55dBA to 57 dBA. As such it meets the requirement of not exceeding 60 dBA in accordance with the Ministry's and the City's policies. The Consultant's noise report is reproduced in Attachment No. 2.

It should be noted that sound barriers are provided in residential subdivisions to attenuate noise levels in outdoor amenity areas. Generally this means the residential backyards are protected. The guideline level of 60 dBA was established as an acceptable level of sound that would not unduly interfere with normal conversation. The guideline level does not mean that sounds, in this case vehicular traffic noise from Highway 400, will not be heard. The noise barrier will reduce the sound levels in backyards to levels deemed acceptable by the regulatory agencies.

In recognition of the fact that residents may experience some interference with their activities, the following warning clause was included in all Offers of Purchase and Sale or Lease for all lots in the development in which Queen Isabella Crescent is located:

“Purchasers and/or tenants are advised that despite the inclusion of noise control attenuation features within the development area, and within the individual building units, road noise levels which includes Highway No.400 will continue to increase, occasionally interfering with some activities of the dwelling occupants.”

In addition, the homes on the north side of Queen Isabella Crescent were provided with central air conditioning so that the windows could remain closed thereby reducing indoor noise levels. The appropriate warning clause was attached to these units.

### **Conclusion**

The noise measurement report was submitted to the City on June 23, 2003. After a comprehensive review of the report, staff were satisfied and concurred with Jade Acoustics that the results of the noise measurements were within the approved limits as set out by the MOE Guidelines.

### **Attachments**

1. Location Map
2. On-site noise measurement report

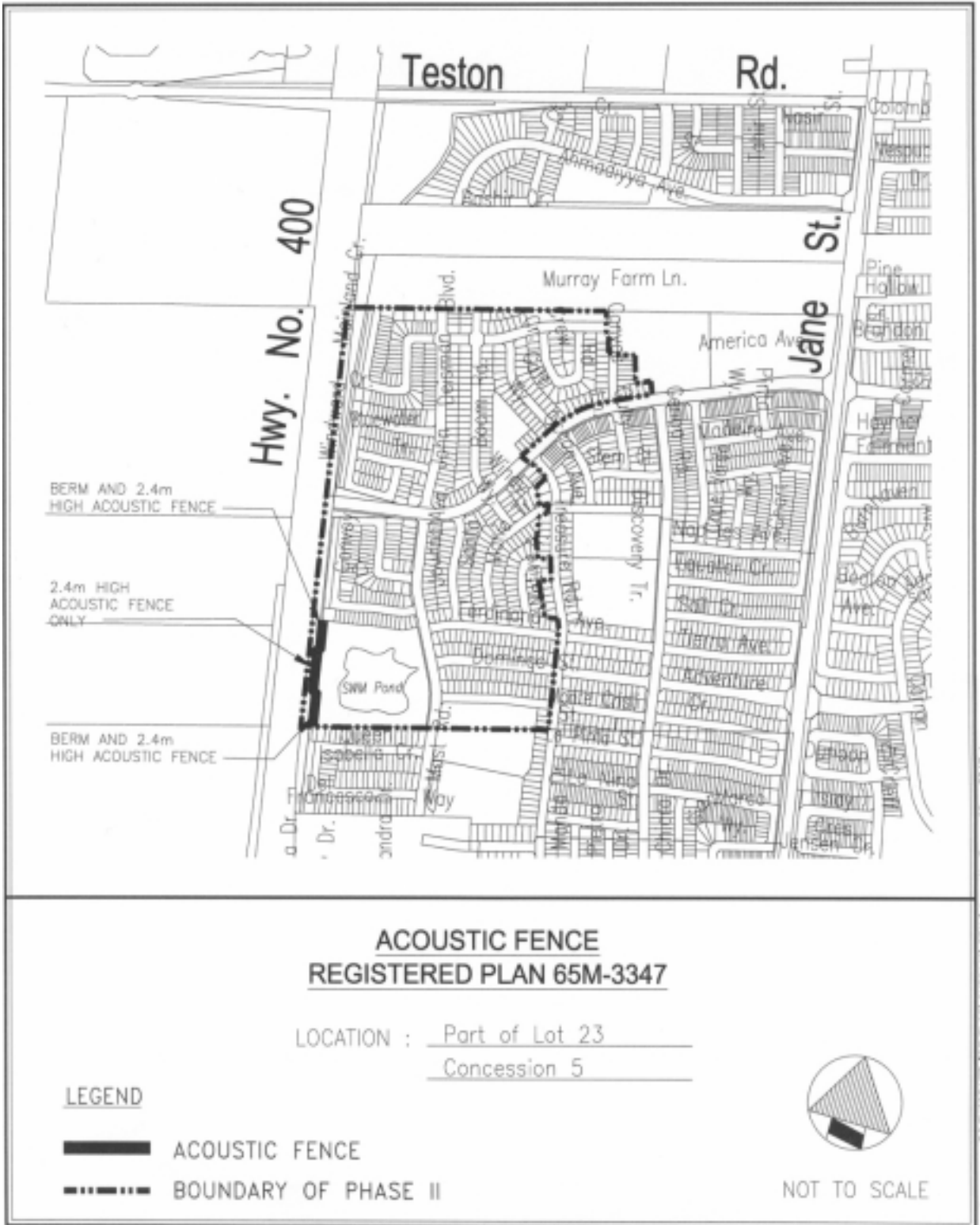
### **Report prepared by**

Seam Goh, Senior Engineering Assistant, ext 8731  
Anthony C.K. Ching, Development Engineer, ext 8711

Respectfully submitted,

Bill Robinson, P. Eng.  
Commissioner of Engineering and Public Works

# ATTACHMENT No. 1



Drawing name: R:\DWG2004\DEVELOP\SUBDIV\32AM\Acoustic Fence 65m-3347.dwg

Jade Consulting 545 North Riva Road Tel: (905) 860-2444  
Acoustics Engineers Suite 203 Fax: (905) 860-4110  
Inc. Concord, Ontario  
L4K 4K1

## ATTACHMENT NO. 2

June 23, 2003

Venturon Development Corporation  
291 Edgeley Blvd.  
Concord, Ontario  
L4K 3K4

Attention: Ms. Donna Lue

Dear Ms. Lue:



Re: Highway 400 Noise Complaint  
Convoy Crescent  
Columbus Trail Phase 2  
Block 33 East, Maple  
19T-96V10 Phase 2  
City of Vaughan  
Our File: 91-063

At the City's request and upon your instruction, we conducted sound measurements for approximately a 24 hour period at selected homes on Convoy Crescent only as these homes are on the lands developed by Venturon and are located on the north side of the storm water pond. We did not consider homes on Queen Isabella Crescent or the south side of the pond because they are not located on lands developed by Venturon.

As you are aware, on-site sound measurements are not generally part of the development process for residential lands. The guidelines published by the Ministry of the Environment for municipalities to use rely on the prediction of traffic noise using mathematical models. A noise report is prepared and once approved, various details are incorporated into the development agreement. In this case, Section 21.4.2 deals with acoustic barriers and for the noise consultant to certify compliance with the requirements of the noise report. This certification was completed for the barrier along Highway 400 through on-site inspections. Venturon decided to conduct sound measurements, despite the fact that they are not required, in order to maintain a positive relationship with the City and homeowners.

We selected Lot 229 Right and Lot 226 Left to give a reasonable sample of the range in sound level. We were informed that the occupants of these homes had no concerns about Highway 400 traffic noise. The lot locations are shown on the attached plan.

The sound measurements were conducted from 3:00 p.m. on Thursday, May 22, 2003 until just after noon on Friday May 23, 2003. The weather was clear with no precipitation but forecasts called for rain all weekend thus the meters were retrieved on Friday. Larson Davis Model 700 and 712 meters were mounted at



1.5 m above grade at a distance of 3 m from the rear of the houses in accordance with Ministry procedures. They were checked for calibration before and after the measurements and found to be accurate.

The Ministry of the Environment guidelines for traffic noise use a 16 hour daytime period (from 7 a.m. to 11 p.m.) to assess noise in outdoor amenity areas. This is considered the most critical time for noise impact on outdoor use in residential developments. The nighttime period from 11 p.m. to 7 a.m. is used to assess noise indoors only. The parameter measured is the Leq, the equivalent sound level which is the continuous sound level that is equivalent to the actual time varying sound. Sound barriers are only used to treat the outdoor amenity areas during the daytime period.

The sound levels were recorded on an hourly basis and then combined logarithmically to obtain the 16 hour daytime average. For the hours starting at 1 p.m. and 2 p.m., the data were interpolated by taking the difference in values between 12 and 3 p.m., dividing by 3 and subtracting the result from the value for 12 p.m. to obtain the value for 1 p.m. and then again from the value obtained for 1 p.m. to obtain the value for 2 p.m.

The attached graphs show the results of the measurements. For Lot 229R the Leq16 was 57 dBA and for Lot 226L it was 55 dBA.

The approved noise study for this development predicted sound levels would not exceed 60 dBA in accordance with Ministry and City policies.

Thus the sound measurements show that the levels are within the approved limits.

If there are any questions, please call.

Yours truly,

JADE ACOUSTICS INC.

Per:

  
James A. Feibers, P.Eng.  


Att.

J.Fig  
C:\Documents\Leads\1989-1990\1994\063 June 23-03.doc

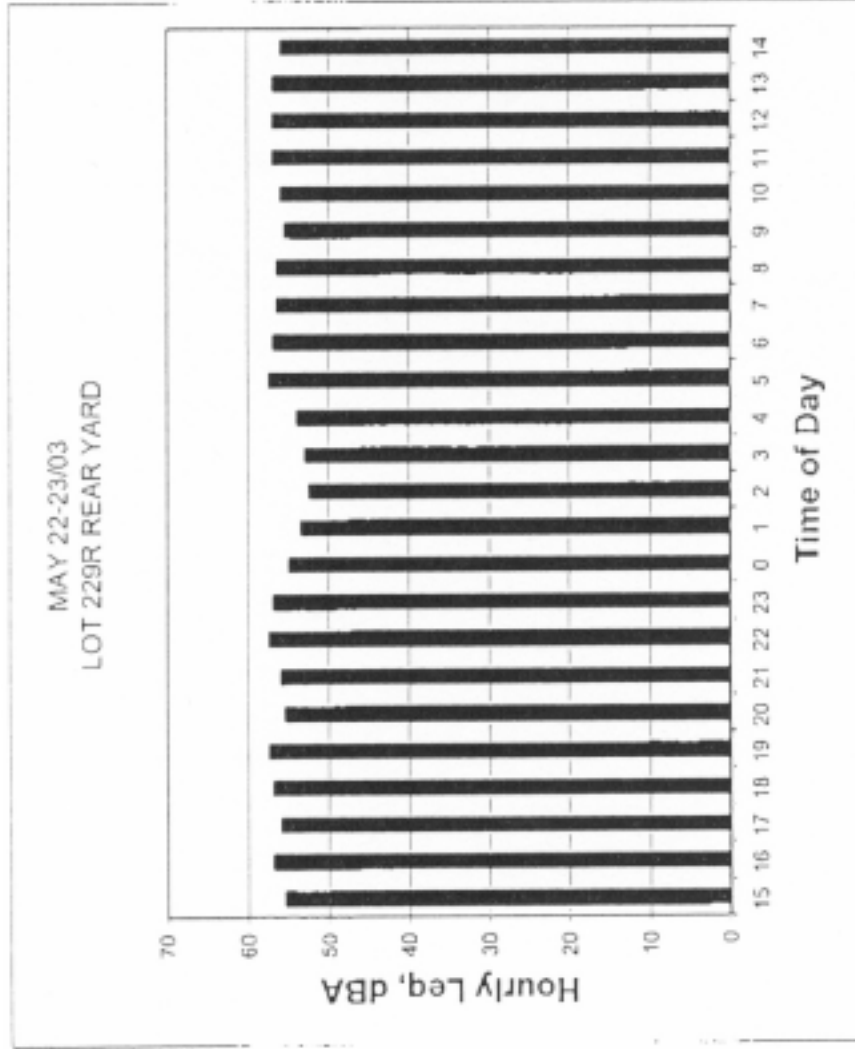
Printed 26/06/2003

Jade Acoustics Inc

Hour	Leq(dBA)	Day
15	55.5	May 22
16	57.0	May 22
17	56.0	May 22
18	57.0	May 22
19	57.5	May 22
20	55.5	May 22
21	56.0	May 22
22	57.5	May 22
23	57.0	May 22
0	55.0	May 23
1	53.5	May 23
2	52.5	May 23
3	53.0	May 23
4	54.0	May 23
5	57.5	May 23
6	57.0	May 23
7	56.5	May 23
8	56.5	May 23
9	55.5	May 23
10	56.0	May 23
11	57.0	May 23
12	57.0	May 23
13	57.0	May 23
14	56.0	May 23

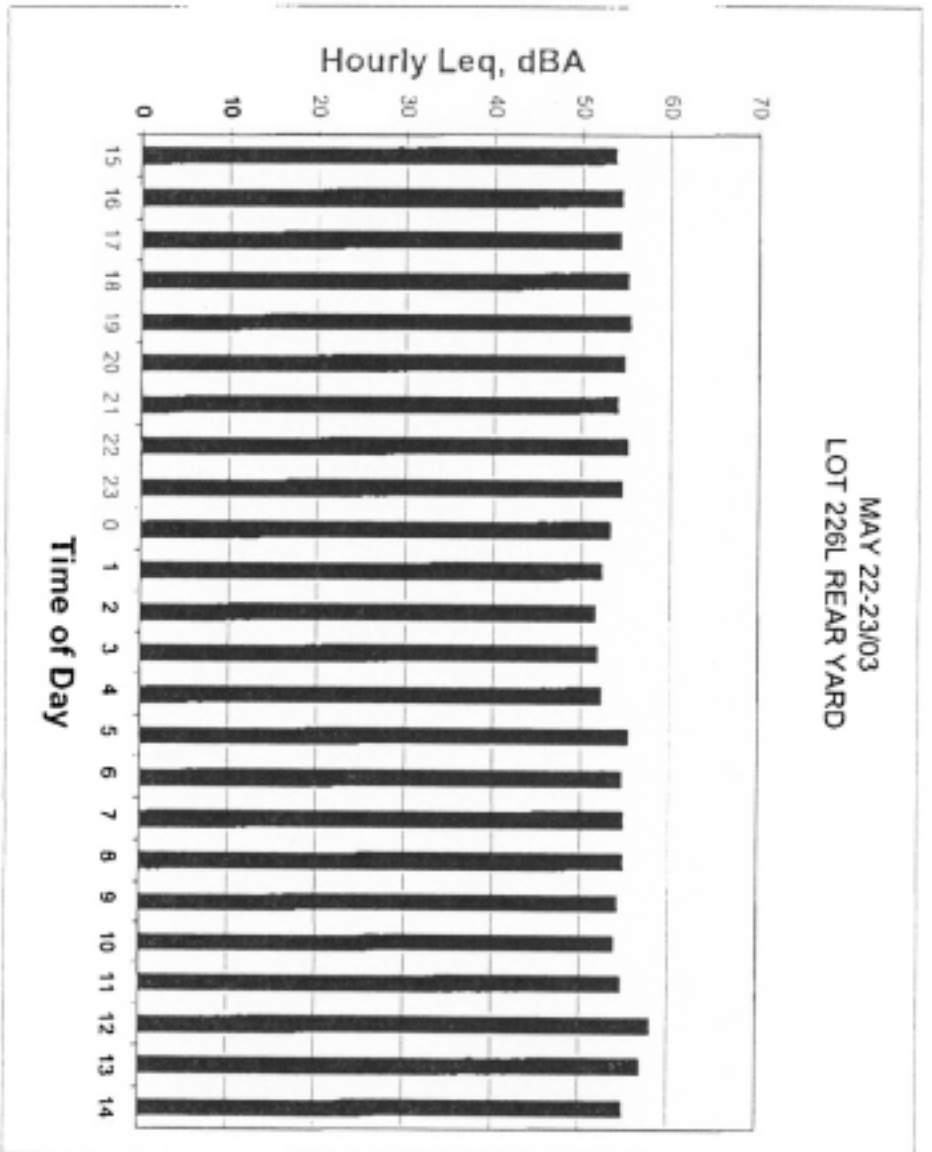
• Interpolated

LeqDay(16) = 56.52



Leq Day Plot.xls

Lot 229R 24 Hr



- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

\* Interpolated

LeqDay(16) = 55.16

Leq Day Plot.xls

Lot 226L, Nr

LOT 25 CONCESSION 5

Acoustic Barrier to extend a minimum of 30 m from boundary



44/10/03

NOTES  
 THIS DRAWING IS BASED ON PLANS SUPPLIED BY JCB-RHES LTD AND DATED FEBRUARY 4, 1999

Proposed Residential Development  
 Block 22 (East) Phase 1  
 City of Vaughan  
 197-6615

**FIGURE 2**  
 BASE PLAN SHOWING  
 MINIMUM NOISE  
 ABATEMENT  
 REQUIREMENTS

**JADE**  
 CONSULTANTS

Feb 8, 1999 444/10/03