

CITY OF BURNABY

TRAFFIC AND TRANSPORTATION COMMITTEE  
(TRANSPORTATION AND TRANSIT DIVISION)

*HIS WORSHIP, THE MAYOR  
AND COUNCILLORS*

Re: INLET DRIVE: ACOUSTIC BARRIER GATES

RECOMMENDATION:

1. *THAT* Council approve the installation of gates in the acoustic barrier on Inlet Drive at intersecting streets of Sierra, Belcarra and Ridge Drive at an estimated cost of \$60,000 for inclusion in the 1997 Provisional Capital Budget.

REPORT

The Traffic and Transportation Committee (Transportation and Transit Division), at its meeting held on 1996 May 08 , adopted the attached staff report evaluating the need for gates at the openings in the acoustic barrier at the intersecting street ends on Inlet Drive.

Staff advised that the results of the noise studies conducted by Environmental Health demonstrate the effectiveness of the acoustic barriers in reducing noise levels on residences in the Westridge area. Staff further advised, however, that residences located close to the openings in the acoustic barrier have not received the same benefits as residences located further west along the intersecting streets. Staff concluded by supporting the installation of movable gates at three street ends at an estimated cost of \$60,000.

MEMBERS:

Mrs. Y. Coveney-Boyd  
Ms. L. Tatangelo  
Mr. W.B. Roxburgh  
Mr. L. Werden

Respectfully submitted,

Councillor D. Evans  
Chairman

: COPY - CITY MANAGER  
- DIRECTOR ENGINEERING  
- DIRECTOR FINANCE  
- DIR. PLNG. & BLDG.  
- FIRE CHIEF

Councillor J. Young  
Member

TO: CHAIR AND MEMBERS  
TRAFFIC AND TRANSPORTATION COMMITTEE  
Transportation and Transit Division

1996 MAY 01

FROM: DIRECTOR PLANNING & BUILDING

OUR FILE: 08.640

SUBJECT: INLET DRIVE: ACOUSTIC BARRIER GATES

PURPOSE: To advise the Traffic and Transportation Committee of the need for gates for the openings in the acoustic barrier at the intersecting street ends on Inlet Drive.

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#### RECOMMENDATION:

1. **THAT** the Traffic and Transportation Committee approve the installation of gates in the acoustic barrier on Inlet Drive at intersecting streets of Sierra, Belcarra and Ridge Drive at an estimated cost of \$60,000 for inclusion in the 1997 Provisional Capital Budget.

### REPORT

#### 1.0 BACKGROUND

At its regular meeting of 1994 November 28 Council approved the installation of acoustic fencing on both sides of Inlet Drive from Pandora to Bayview Street as part of the Barnet/Hastings People Moving Project. This acoustic fencing was installed leaving openings at the ends of the streets intersecting with Inlet Drive, including Malibu Drive, Sierra Drive, Belcarra Drive and Ridge Drive as shown in Figure 1 *attached*. These openings were to allow fire trucks to exit from the side streets onto Inlet Drive after responding to an emergency.

Responding to the concerns of some residents of the intersecting streets that these openings would compromise the effectiveness of the acoustic barrier, Council, on 1995 October 10, approved an approach which would involve the following actions:

- i) developing an appropriate design and costing for gates at the street ends which would maintain the option for emergency vehicle access.
- ii) undertaking acoustic studies of the ambient noise levels on the side streets to Inlet Drive including Malibu Drive, Sierra Drive and Ridge Drive before and after completion of the Inlet Drive section of the Barnet/Hastings People Moving Project.

The following sections outline the results of the noise studies with regard to the effectiveness of the acoustic barrier and the need for installation of "gates" in the barrier.

#### 2.0 NOISE STUDIES

##### 2.1 Process

To determine the effectiveness of the acoustic barriers on Inlet Drive, a study of noise levels on the side streets intersecting Inlet Drive was conducted by Environmental Health for both the pre-project and post-project conditions as follows:

- i) **Pre-project:** "baseline" noise measurements were taken at the locations shown in Figure 1 on Malibu, Sierra and Ridge Drive in 1995 August prior to installation of the acoustic barriers. These readings were not taken prior to construction activity commencing on Inlet Drive. Nonetheless, as these noise measurements were averaged over a 24 hour period, the effect of intermittent increases in noise on overall noise levels due to construction activity on Inlet Drive were minimized.
- ii) **Post-project:** noise measurements were taken in 1996 February at the same locations and a number of additional locations over a 24 hour period after installation of the acoustic fencing and the completion of construction.

These studies permitted an evaluation of the effectiveness of the acoustic barriers in reducing noise exposure on the residences located on the local streets in Westridge.

## 2.2 Measurements

On-site noise readings were obtained by City staff on 1995 August 26 and 1996 February 08. Values in decibels were recorded for sites along Malibu Drive, Sierra Drive, Belcarra Drive and Ridge Drive to construct noise contour maps for the area before and after implementation of the noise barrier (see Figures 2 and 3 **attached**). Spot measurements taken outside the noise barrier on Inlet Drive are circled on Figure 3.

## 2.3 Results

The noise readings indicate significant mitigation effects due to the acoustic barrier on the west side of Inlet Drive. At similar points along side streets in the Westridge area measurements taken before and after installation of the acoustic barrier show a reduction of up to 15 dBA. However, the report from Environmental Health also notes the presence of small "bubble" areas not shown on the contour maps where the openings in the fence at street level are 5 - 10 dBA higher than elsewhere on the side streets. While these areas have received some benefit in terms of reduced noise exposure, noise levels are significantly higher than in areas located further from the openings in the acoustic barrier. Installation of gates at these street ends would be necessary to achieve comparable noise reduction.

## 3.0 ACOUSTIC BARRIER GATES

### 3.1 Design

The gates proposed for installation on the intersecting streets on Inlet Drive are similar in design to one installed by the City of Burnaby on a fire access from the Greentree townhouse development to Deer Lake Parkway (see Figure 4 **attached**). These gates would consist of a movable barrier at the street ends set back slightly from the existing acoustic barriers to allow free passage of pedestrians (see **attached** Figure 5). This approach has been discussed with the Fire Department who have indicated that they could easily function with the gates in place.

As it was not possible to provide a fire truck exit from Malibu Drive to Inlet Drive due to steep grades, the opening in the acoustic barrier was kept to a minimum 1.8 m to allow passage for pedestrians and cyclists only. As this opening is relatively small and should be maintained to provide pedestrian access, movable gates are required at Sierra, Belcarra and Ridge Drive only. Instead a low cost stationary gate would be installed at Malibu Drive.

### 3.2 Financing

Based on the cost of the single gate in the Greentree subdivision at \$20,000, it is estimated that the three gates on Inlet Drive would cost \$60,000. The relatively high cost is due to the need to custom build each gate to accommodate specific site conditions at each street end.

As the cost of the acoustic barrier gates is not included in the 1996-2000 Capital Budget, it is recommended that allowance for this item be made in the 1997 Provisional Capital Budget.

### 4.0 CONCLUSION

The results of the noise studies conducted by Environmental Health demonstrate the effectiveness of the acoustic barriers in reducing noise levels on residences in the Westridge area. Residences located close to the openings in the acoustic barrier, however, have not received the same benefits as residences located further west along the intersecting streets. It is therefore recommended that Council approve the installation of movable gates at three street ends at an estimated cost of \$60,000. If Council concurs, this item would be included in the 1997 Provisional Capital Budget for implementation in early 1997.

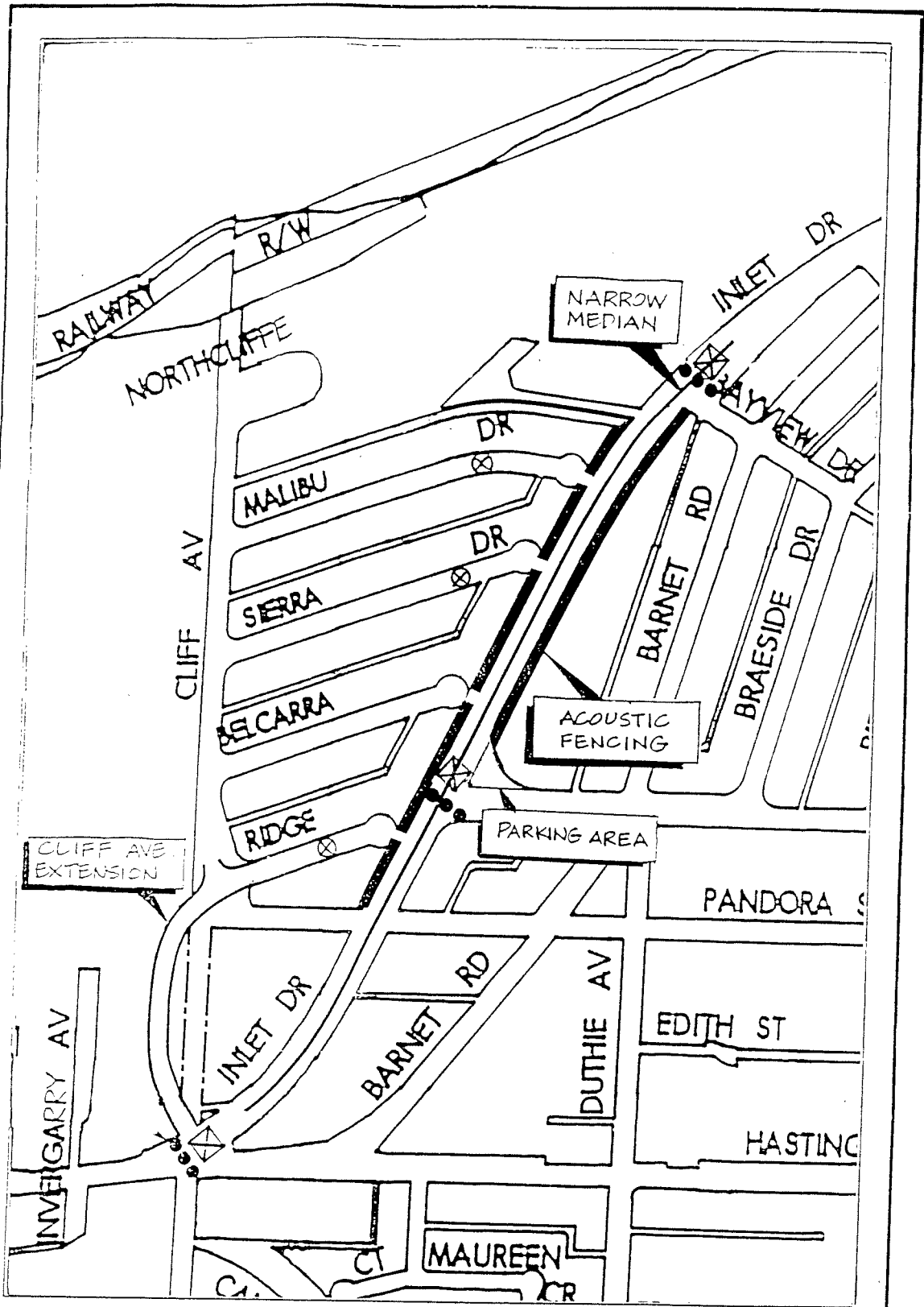
 RG/jp

  
D.G. Stenson, Director  
PLANNING & BUILDING

Attachments (5)

copy: Director Engineering  
Director Finance  
Fire Chief, Burnaby Fire Department

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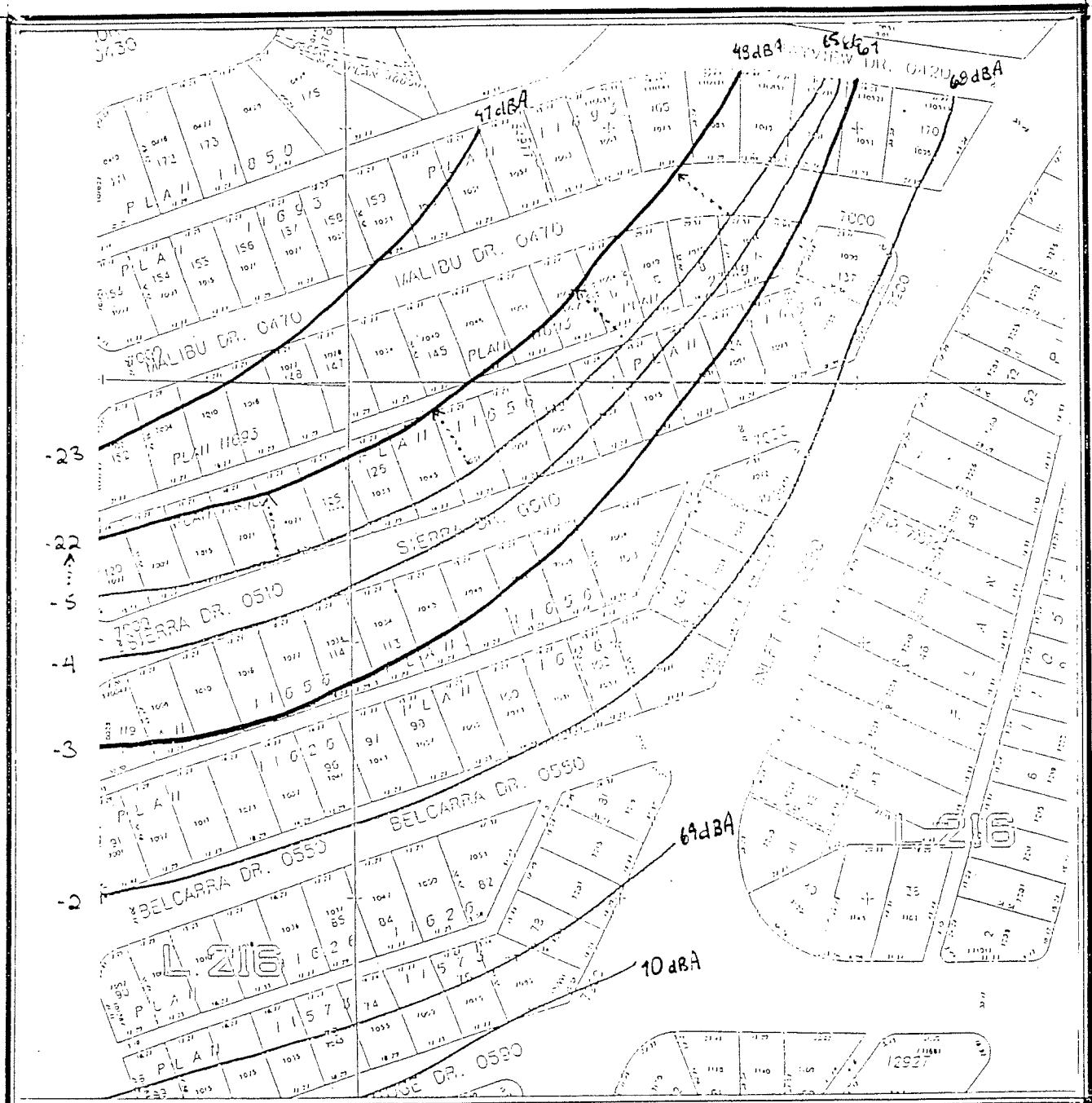
**BURNABY**

Planning &  
Building Inspection  
Department

FIGURE 1

INLET DRIVE  
PROPOSED  
ACOUSTIC FENCING

- PEDESTRIAN CROSSING
- ⊗ MEASUREMENT LOCATIONS
- ◇ SIGNALS



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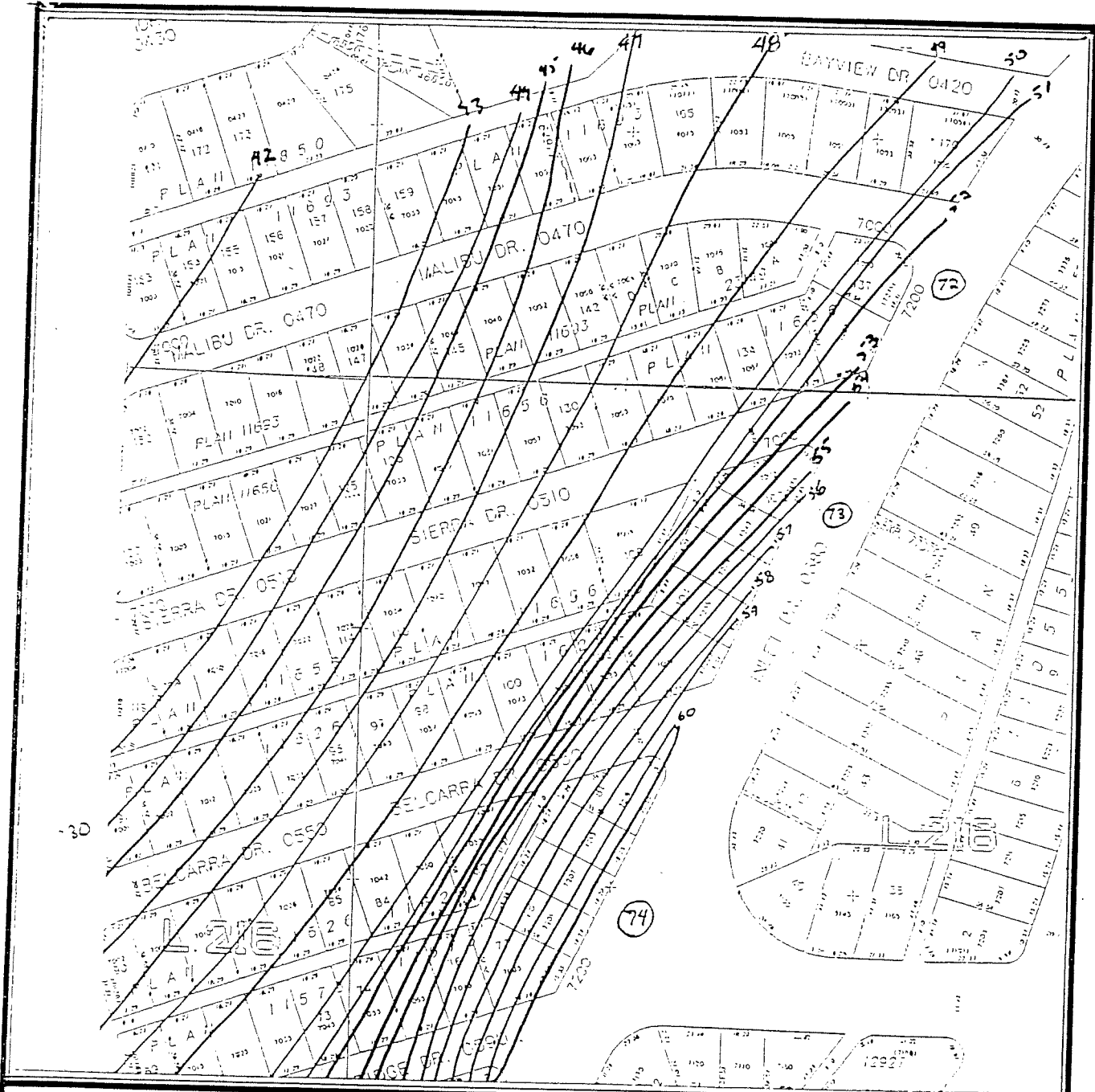
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City of  
Burnaby  
Planning & Building Dept

FIGURE 2

PRE-PROJECT  
NOISE LEVELS



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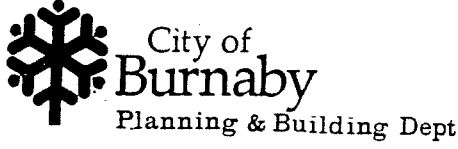
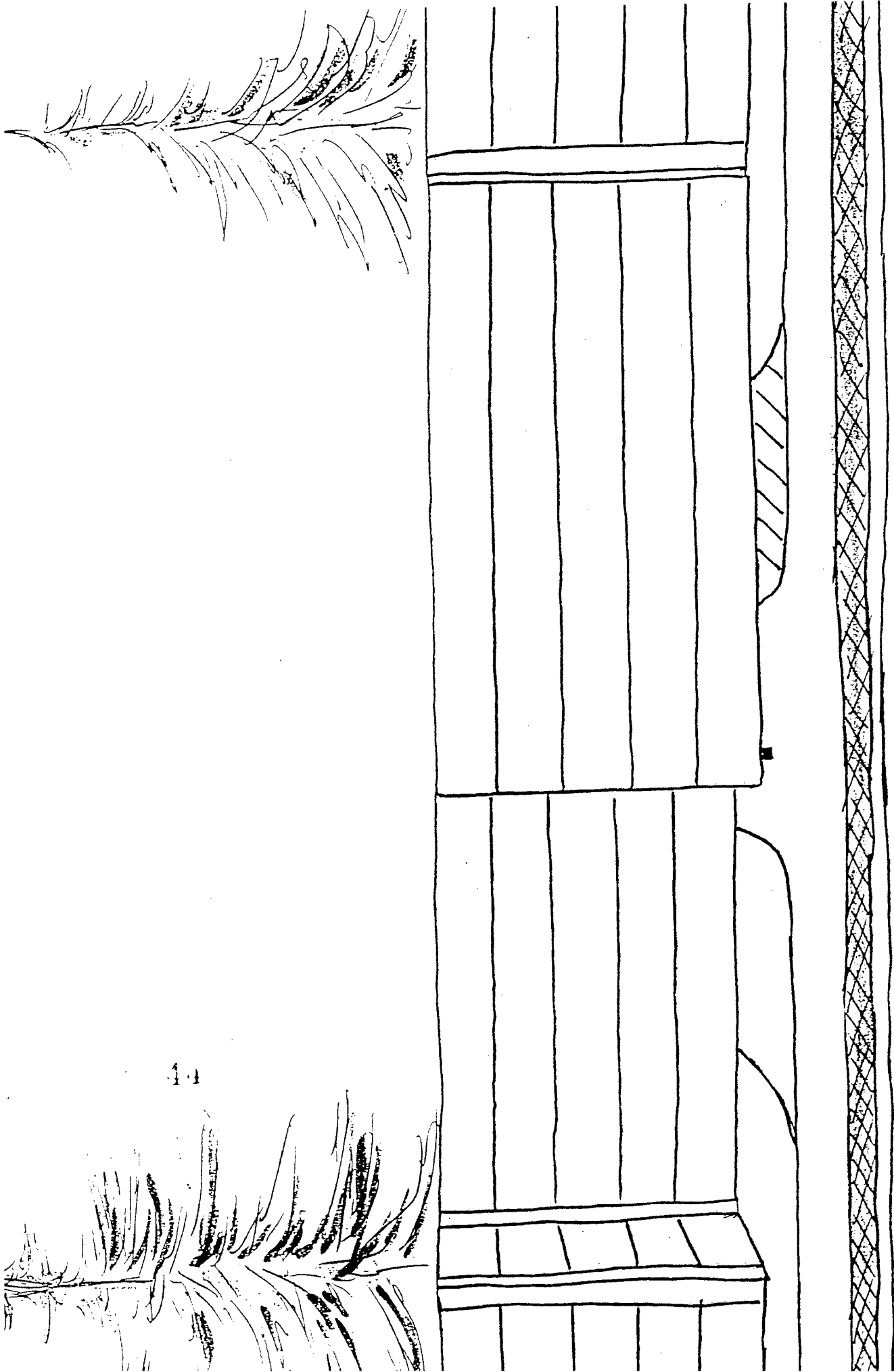


FIGURE 3  
POST-PROJECT  
NOISE LEVELS 43

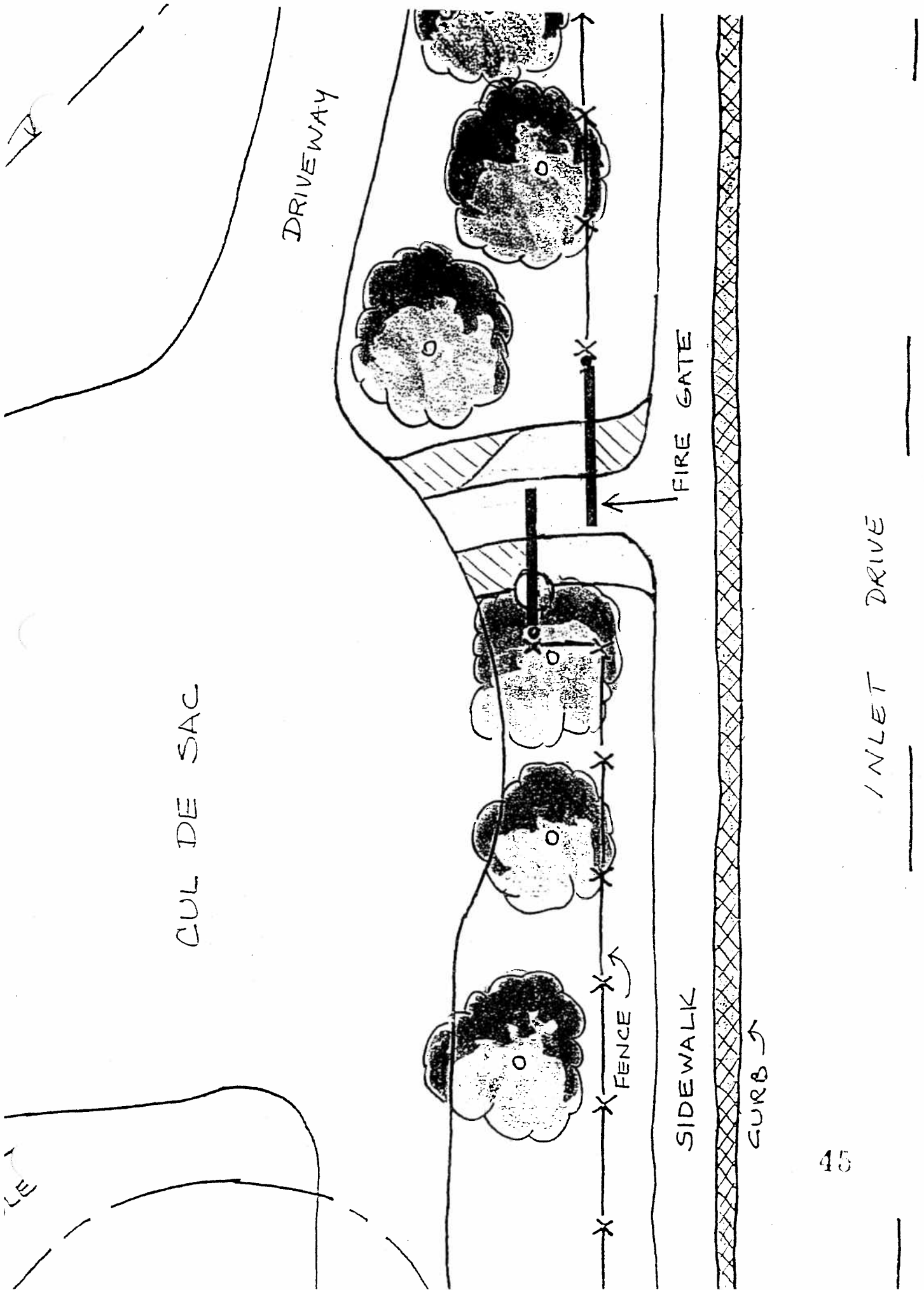


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MOVABLE NOISE ATTENUATION GATE

FIGURE 4





CUL DE SAC

DRIVEWAY

FIRE GATE

FENCE

SIDEWALK

CURB

INLET DRIVE

FIGURE 5

