

1. DESIGN STANDARDS FOR NOISE BARRIERS ALONG REGIONAL ROADS

COMMITTEE RECOMMENDATION AS AMENDED

That Council approve that the RMOC revisit the available products for compliance with the RMOC Standards for Noise Barriers - November 1994.

DOCUMENTATION

1. Planning and Development Approvals Commissioner report dated 20 May 98 is immediately attached.
2. Extract of Draft Minute, Transportation Committee 17 June 98 immediately follows the report and includes a record of the vote.
3. Ministry of Transportation letter dated 27 September 98 is held on file with the Clerk's Department.

Our File/N/Réf. 23 49-98-0000

DATE 20 May 1998

TO/DEST. Co-ordinator, Transportation Committee

FROM/EXP. Commissioner, Planning and Development Approvals Department

SUBJECT/OBJET **DESIGN STANDARDS FOR NOISE BARRIERS ALONG
REGIONAL ROADS**

DEPARTMENTAL RECOMMENDATION

That the Transportation Committee receive this report for information.

BACKGROUND

At the Planning and Environment Committee meeting on 14 October 1997, the following motion was adopted:

"That staff prepare a report on the design standards for noise barriers along Regional Roads."

DISCUSSION

1. Noise Barrier Standards

The standards for noise barriers erected along Regional Roads are laid out in a document entitled "RMOC: Standard for Noise Barriers" developed in 1994, and which is based on the seventh draft of CSA/CAN-Z107.9-M Standard for Noise Barriers on Roadways. This draft CSA Standard was developed in co-operation with the Ministry of Transportation of Ontario (MTO).

A copy of this document is attached at Annex 'A' (*issued separately*).

It is understood that the draft Canadian Standard document will be finalized in the near future.

2. Noise Control Guidelines

There are two specific noise control situations in the RMOC for which guidelines have been adopted by Regional Council.

In January 1993, Regional Council adopted a document entitled "Noise Control Guidelines for New Developments Adjacent to Existing and Proposed Regional Roads and Transitways" (available through the Regional Clerk's Department).

This document lays out the process that is to be followed by developers when noise sensitive development is being planned along the RMOC's transportation corridors.

In October 1995, Regional Council adopted a document entitled "Noise Control Guidelines for New Construction and Widening of Regional Roads and Transitways" (available through the Regional Clerk's Department).

This document describes the process that is followed, usually as part of an Environmental Assessment, when the RMOC is implementing new or expanded transportation facilities.

3. Privacy Fence on Baseline Road - Four-Laning from Greenbank Road to Cedarview Road

The purpose of privacy fences and noise barriers is to mitigate noise. The difference between the two was that MTO/MOE established guidelines to determine if mitigation (construction of noise barriers) was warranted and qualified for MTO subsidy. Privacy fences were unwarranted noise barriers totally paid for by the RMOC. This distinction does not apply now that the MTO no longer subsidizes road reconstruction on a project by project basis.

The implementation of a privacy fence (i.e., an unwarranted noise barrier) along Baseline Road between Greenbank and Cedarview, which has been widened from two to four lanes, is used here as an example of the most recent application of the above mentioned documents to a real situation.

As the increase in noise levels resulting from the widening of Baseline Road will not meet the MOE warrants requiring noise mitigation, staff recommended that, in accordance with the RMOC's guidelines, privacy fences should be erected. Regional Council and the City of Nepean approved this recommendation, as required by the guidelines.

A specification of the privacy fence was included in the general contract for the Baseline Road reconstruction. The specification is attached at Annex 'B'.

The privacy fence types that were evaluated by staff were:

- a) Durisol panels with concrete posts, manufactured by Durisol Ltd.
- b) Precast concrete wall panels and posts, manufactured by Precast Concrete Ltd.
- c) Brick fence system, manufactured by Canada Brick.
- d) Wood panels with concrete/wooden (intermediate) posts, manufactured by Prestige Ltd.

Following an evaluation of each option by staff and the affected homeowners, it was decided that wood panels with concrete/wooden posts (Prestige Ltd.) would be the most cost effective and provide the best aesthetics for the location.

This privacy fence is now in place.

*Approved by
N. Tunnacliffe, MCIP, RPP*

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Date: May 1996

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**PRIVACY FENCE, INCLUDING CONCRETE POSTS
AND WOODEN POSTS (2.44 m height)
PRIVACY FENCE PANELS, INCLUDING WOODEN POSTS (1.83 m height)**

SCOPE

This Special Provision covers the requirements for constructing a wooden privacy fence with concrete posts and wooden intermediate posts as shown on the Drawings and the requirements for constructing privacy fence panels with intermediate wooden posts between existing masonry units.

MATERIALS

Privacy Fence

Wood fencing panels, wood posts and metal components shall be Prestige Fence as manufactured N.G.H. Industries Inc., 163 Cardevco Road, R.R. #2, Carp, Ontario; or an approved equal.*

*** Note:**

Approved equal of the Prestige Fence System will require the approvals of the RMOC, City of Nepean, and consultation with the residents of properties abutting or adjoining locations where privacy fence is to be constructed.

Concrete Posts

Concrete posts with brick facade shall be 450 x 450 precast concrete units as manufactured by Central Precast, 23 Bongard Avenue, Nepean, Ontario; or an approved equal.

Metals

Metal flashings over the top and bottom steel rails shall be pre-finished steel, coloured Forest-Green, Series 5000 Colour No. QC 307.

Unit Masonry

Brick facade units shall be of a colour and style selected by the RMOC. The Contractor shall submit unit samples to the Engineer for selection prior to construction of the concrete posts. Mortar for the bricks shall have integral water repellent admixture and shall be DRY-BLOCK by W.R. Grace Ltd., of 255 La fleur Avenue, La Salle, Quebec.

Concrete

Concrete shall conform to OPSS 1350 and shall be 215 MP a at 28 days.

Granular Foundation Materials

Granular material for foundations and backfill shall be Granular A conforming to OPSS 1010.

CONSTRUCTION

Operational Constraints

Priority of the Work

The Contractor shall complete the construction of the privacy fence with concrete posts and the construction of the privacy fence between existing masonry units prior to undertaking any other work under this Contract. All work on these properties shall be completed in a timely and diligent manner.

The Contractor shall also complete all the necessary work, including landscape work on the affected private properties in conjunction with the construction of the privacy fence.

Swimming Pools

Properties having swimming pools, where the work is such that the security fence is removed or damaged by construction activities, the contractor shall install temporary fencing in compliance with the applicable City by-law regarding fencing, for pools.

Fence Post Installation

Post holes shall be augured to required depth on established alignment and at specified spacing. A depth of 100 mm of Granular A shall be placed and compacted in the bottom of the post holes to promote drainage.

Intermediate posts shall be set plumb, placed accurately in line and position, and cast in concrete. Concrete placing, curing and protection shall conform to OPSS 904, December 12983. Concrete foundations shall be domed above grade to shed water.

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Fence Rails and Brackets

Steel rails and brackets shall be galvanized and erected in accordance with the details shown in the Contract and securely fastened with galvanized screws and rivets.

Fasteners

Steel galvanized fasteners for attachment to the concrete posts and the existing masonry units shall be designed by the Contractor and submitted to the Engineer for approval prior to fabrication.

Concrete Footing and Grade Beam

Concrete shall be placed to the limits and extents shown on the Contract Drawings and shall be allowed to sit undisturbed for a minimum period of 5 days prior to erection of the fencing panels.

Concrete posts shall be at 30.225 metre spacing C/C. Intermediate wood posts shall be at 3.048 m spacing C/C.

MEASUREMENT FOR PAYMENT**Privacy Fence, Including Concrete Poles and Wooden Posts (2.44 m height)**

Privacy fence shall be measured horizontally in metres from end to end of the installation.

Privacy Fence Panels, Including Wooden Posts Between Existing Masonry Units (1.83 m height)

Privacy fence panels including wooden posts shall be measured horizontally in metres from end to end of installation.

BASIS OF PAYMENT

Payment at the Contract price for the above tender item(s) shall be full compensation for all labour, equipment and material required to do the work.

2. DESIGN STANDARDS FOR NOISE BARRIERS ALONG REGIONAL ROADS
- Commissioner, Planning and Development Approvals Department report dated
20 May 98

Brendan Reid of the Project and Infrastructure Planning Branch introduced Hazim Ghadami, an acoustical consultant with S.S. Wilson from Toronto. Mr. Ghadami has assisted the Region on many projects, environmental assessments and the development of its noise guidelines and was present to answer any questions of committee.

Councillor Legendre indicated that in the past, noise barriers were installed when they met provincial criteria and attracted subsidy as a result; where such criteria was not met, but where Council determined that some form of noise attenuation should be installed, it was referred to as privacy fencing. However, with provincial subsidy no longer available, he questioned whether the two different classification of fencing are in fact, physically and functionally, the same thing. Mr. Reid advised that a privacy fence was the terminology used for an unwarranted noise barrier (by provincial standards) and confirmed that Council approved a policy whereby privacy fences are erected where a noise barrier would have been unwarranted. The example noted in the report (Baseline Road) is such a situation.

Councillor Legendre further questioned whether privacy fences and noise barriers share the same standards with respect to material/construction/noise attenuation characteristics. B. Reid indicated that in general terms, the same standard would be expected in a privacy fence. The councillor noted that the acceptable standard from the Region's point of view are those included in the RMOC's "Standard for Noise Barriers report of November 1994" (as amended in May 1995). He referred to the letter dated 27 September 1996 to Regional staff from the Ministry of Transportation (MTO), which referred to standards that have been approved by the Region, but in fact do not meet Regional standards. He noted that the Canadian Standard Association (CSA) is adopting the MTO standards for noise barriers and Mr. Ghadami informed committee that he believed the standards set by the Ministry would be tighter than those of the CSA because the Ministry has approved only one or two products for use on provincial highways while the CSA standard can accept a variety of products.

Councillor Legendre made reference to acceptable wood components for noise barriers as contained in the November report; however, he was aware of two situations where wood products were used but do not meet those standards. He maintained this was a significant modification of the Region's standards because as mentioned previously, there were two projects that he was aware of where the Region allowed a very inferior product to be used and the effect of approving an inferior product will allow companies to provide an inferior product.

When questioned how many legal noise barriers have in fact been installed along a Regional road, staff advised the extension of Hunt Club Road called for a noise barrier and it was acceptable to the Region's standards. Councillor Legendre pointed out however, that he was aware of at least two projects where a substandard product was used and should not have been accepted, according to the Region's noise guidelines. He believed the Region should at least maintain as good a standard as it can, but the standards established in 1994 are not what the Region does today.

In response to a question posed by Councillor Cantin, B. Reid indicated that when noise barriers are erected, there is a certification process to ensure that the end result is certified by the consultant who carried out the study and who advise the developer that the end result is an acceptable noise barrier; this is how the Region ensures that what is erected is an acceptable noise barrier as defined.

Councillor Bellemare was concerned that the Region appears to be looking at a one-size-fits-all type of approach for noise barriers and felt committee should be looking at it in terms of what are acceptable materials, because noise absorption requirements, for example, differ from one location to the next. He went on to state that what should be evaluated is the noise level in a particular situation and how much it needs to be reduced in order to meet Regional policy on the level of decibels that are acceptable around a residential area. Mr. Ghadami acknowledged that the issue of sound absorption of a sound barrier is very important in certain applications and agreed there is not one singular barrier design that will fit all applications; for a sound barrier to be effective, the extent, height, thickness and absorption level must be examined. He confirmed the Region does have a consistent approach in that its noise guidelines specify to consultants what rules apply with respect to two, four and six-laned roadways. A privacy fence, however, has only three conditions: that the installation will be at the cost of the RMOC; the area municipality be responsible for future maintenance, and; details of the privacy fence are to be agreed to between the Region and the local municipality.

In response to these comments, Councillor Bellemare wanted assurance from staff that when the Region looks at individual requests for noise barriers, the objective is to provide protection from a certain level of decibels in terms of noise acceptance. B. Reid advised that the Region does not have a policy for the building of noise barriers for residents who may be affected by increasing noise levels over time (i.e. retrofitting); however, there is a policy for new developments adjacent to existing and new Regional roads to protect new inhabitants from the impacts of increasing noise over time. Another noise policy the Region has is when there is new construction/reconstruction and in these cases, it is the Region's responsibility to apply the MTO policy with respect to noise mitigation or modify existing noise barriers which may be considered at that time to be substandard. He believed the products available to respond to the current standard for noise barriers in the

Region is acceptable level. Mr. Ghadami added that the sound barrier on Hunt Club Road is one example of a product that will give a 20-year warranty. However, he believed there are real problems with the CSA standards because they refer to products that are difficult to maintain. For example, wood barriers are good and long-lasting types of fences/barriers and can be maintained by the homeowner. If the Region is looking at continuing with its use of mandatory sound barriers, he recommended that it review or revisit that policy to determine what products are available, being mindful of the fact that the CSA standard is not a law, but rather a recommendation.

Chris Hughes, Woodlea Carleton Condominium Corporation #51 spoke specifically to the issue of noise as it relates to the earth berm along Hunt Club Road in his community. In particular, residents feel the berm is not high enough to deflect roadway noise, particularly the second storey area of the condominium development. Also, the emergency exit in the berm is directly opposite the Graham Creek Ravine which only serves to carry noise down into neighbouring backyards. In general, the residents of this condominium are dissatisfied with the mitigating factors that have been put in place and will be requesting changes accordingly.

Moved by J. Legendre

That RMOC revisit the available products for compliance with the RMOC Standards for Noise Barriers - November 1994.

CARRIED

Further to the above, the councillor proposed that when noise barriers or privacy fences not meeting the RMOC's "Standard for Noise Barriers - November 1994", that such proposal be submitted to the Transportation Committee for approval. He explained that very inflexible standards in all situations might be inappropriate and while it is important to have standards, when there is a deviation from those standards, it should be brought to the attention of the Committee.

Councillor Meilleur was hesitant to approve the Motion proposed, suggesting it is micro-management and undermines the quality of the work carried out by staff. She maintained that if members of the committee have difficulty with what staff approves, their concerns should be brought to the attention of the Environment and Transportation Commissioner and/or the Committee Chair.

Councillor Legendre defended the intent of his Motion stating that in most cases it is an artificial difference between noise barriers and privacy fences. The Acting Environment and Transportation Commissioner, Andre Proulx, indicated that the Region has standards

Extract of Draft Minute
Transportation Committee
17 June 98

for both and they are to be met. Councillor Legendre stated that he was just seeking assurance that the Region has a product that meets specific criteria and if not, staff should advised the committee why that particular product is being used. He did not anticipate a lot of cases being brought forward, but felt the Motion would provide some flexibility and would make committee members aware of specific situations where the standards are not being met.

Moved by J. Legendre

That when noise barriers or privacy fences not meeting the RMOC's Standards for Noise Barriers - November 1994, that such proposal be submitted to the Transportation Committee for approval.

LOST

YEAS: M. Bellemare, C. Doucet, J. Legendre....3

NAYS: W. Byrne, D. Holmes, H. Kreling, M. Meilleur....4

That the Transportation Committee receive this report for information.

RECEIVED