

TO: ACTING MUNICIPAL MANAGER 1992 May 12

FROM: DIRECTOR PLANNING AND BUILDING Our File: 08.640

SUBJECT: CANADA WAY/EDMONDS INTERSECTION RECONSTRUCTION;  
CORRESPONDENCE FROM MR. F. RANDALL, MLA FOR  
BURNABY-EDMONDS, REGARDING THE DISPOSITION OF  
TREES ON THE EDMONDS SCHOOL PROPERTY

PURPOSE: To respond to concerns expressed by Mr. F. Randall, MLA for Burnaby-Edmonds with regard to the impact of the reconstruction of the intersection of Canada Way and Edmonds on the trees abutting the Edmonds School Property.

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RECOMMENDATION:

1. THAT a copy of this report be forwarded to Mr. F. Randall, MLA for Burnaby-Edmonds, Legislative Buildings, Victoria, B.C.

R E P O R T

1.0 INTRODUCTION

At its regular meeting of 1992 April 27, Council received correspondence from Mr. F. Randall, MLA for the constituency of Burnaby-Edmonds. The correspondence noted concerns of some area residents regarding the required removal of street trees adjacent to the Edmonds School site to accommodate the reconstruction of the intersection of Canada Way and Edmonds. The correspondent requests that municipal staff review this matter in an effort to develop a solution which would not involve removal of the trees on Edmonds.

This report responds to the concerns raised by the correspondent by defining the transportation issues surrounding the Canada Way/Edmonds project, outlining the design of the project and identifying possible measures to ameliorate the impact on the street trees.

2.0 INTERSECTION RECONSTRUCTION

2.1 Traffic Issues

The intersection reconstruction on Canada Way at Edmonds has been noted by staff in discussions with the Ministry of Transportation and Highways as the highest priority for Provincial highway intersection improvements in the Municipality. This view is based on a number of considerations including the extent of traffic queuing, neighbourhood impacts from traffic infiltration and traffic accident rates.

(i) Traffic Queuing

Canada Way and Edmonds is the intersection of two arterial streets. As such, it is one of the most heavily used intersections in the Municipality accommodating approximately 50,000 vehicles daily (Figure 1 attached). The current intersection design combines the left turn and right turn movements with through movements resulting in turning movements obstructing through movements. The traffic queuing which results is especially evident in the A.M. peak period in the westbound direction on Edmonds and the P.M. peak period in the southbound direction on Canada Way. Extended delays are common during these peak periods.

(ii) Traffic Infiltration

In early October a petition was received by the Municipality from 135 residents in the Lakeview neighbourhood concerned about traffic using Lakefield Drive and Fourth Street to bypass the traffic congestion on Canada Way. In response to this petition a public participation process was set up to involve residents in the development of a Community Transportation Plan for the Lakeview area. The subsequent Plan as shown in Figure 2 attached, approved by 89 percent of the residents of the area, proposed traffic circles and stop signs be introduced to control traffic speeds through the area. The volume of traffic through the neighbourhood however, could only be addressed through intersection improvements on Canada Way at Edmonds and Imperial. These improvements were approved by Council as part of the Community Transportation Plan in 1990 December.

(iii) Traffic Accidents

The Canada Way/Edmonds intersection exhibits one of the highest traffic accident rates of any location in the Municipality. As shown in Figure 3 attached, the number of reported accidents in the four year period from 1985 to 1989 was 427 which is equivalent to an average of one traffic accident every 3.5 days.

2.2 Design

The proposed design of the Canada Way/Edmonds intersection is shown in Figure 4 attached. As previously noted, the existing intersection does not provide left or right turn channelization, i.e. separate turning lanes resulting in lengthy traffic queues on both Canada Way and Edmonds. The proposed design would provide left turn channelization at all four legs of the intersection. In addition, separate right turn lanes would be provided on Edmonds in both the east and west legs of the intersection.

In conjunction with the intersection reconstruction, signalization would be upgraded to four phase operation with separate phases for opposing left turn movements. Pedestrian signals would be coordinated to eliminate vehicle/pedestrian conflicts in crosswalks.

### 2.3 Benefits

The improvements to the Canada Way/Edmonds intersection are designed to directly respond to the transportation issues outlined in the previous section as follows:

(i) Traffic Queuing

Separation of the left turn movements from through movements through the provision of left turn storage and separate signal phases is expected to eliminate significant queuing at all legs of the intersection.

(ii) Traffic Infiltration

Elimination of traffic queuing and resulting delay especially on Canada Way would substantially reduce the incentive for drivers to bypass traffic congestion by diverting through the Lakefield neighbourhood.

(iii) Traffic Accidents

The accident potential at the intersection should be substantially reduced due to the elimination of numerous traffic conflict points. Separation of turning movements from through movements in the same lane reduces the potential for rear end collisions while separate signal phases for turning movements reduces the conflict between turning movements and opposing through movements.

### 3.0 IMPACT ON STREET TREES

#### 3.1 Description

The Edmonds school property now partly owned by the Municipality is bordered by street trees fronting on both Canada Way and Edmonds.

(i) Canada Way

On the east side of the Edmonds School property, 11 Chestnut trees, approximately 10m in height, line Canada Way approximately 3.5m from the existing curb. The Chestnut tree, usually reaching a height of 15-20m is usually found in wide open spaces.

(ii) Edmonds

On the Edmonds side, seventeen Sycamore (London plane) trees line the school property approximately 4.5m from the existing curb. The Sycamore is a fast growing tree reaching heights of 15-25m. It is especially suited to use as a street tree due to its ability to withstand city smog, soot, dust and reflected heat and is found extensively in Europe.

The Sycamore trees on Edmonds are generally healthy though they have been severely pruned by BC Hydro to maintain clearance from the power lines which are adjacent to the school area. This pruning has not done much serious damage although there is evidence of stem rot and insect activity in some of the trees in the stand.

### 3.2 Impact of the Intersection Project

The design of the intersection reconstruction project recognized the potential impact of the project on the street trees on the Edmonds school property. Efforts to save as many trees as possible however, were complicated by the close proximity of the trees to the existing curbs on both the Canada Way and Edmonds sides of the school property. As shown in Figure 4, the Chestnut trees on Canada Way are located approximately 3.5m from the existing curb but the provision of a left turn lane will result in the relocation of the curb 5.2m from the existing curb. Preservation of the Chestnut trees is therefore not compatible with the provision of left turn lanes on Canada Way.

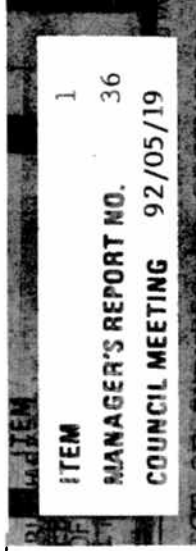
To accommodate a left turn lane from Edmonds northbound on Canada Way and a right turn lane from Edmonds southbound to Canada Way, the design will result in the removal of nine of the nineteen Sycamore trees closest to the intersection. The other ten trees located further west down Edmonds would not be affected by the intersection improvements.

### 4.0 POSSIBLE AMELIORATION

The current design for the intersection attempts to balance the requirements to maximize safety for drivers and pedestrians and minimize both the dislocation to abutting properties and the impact on the street trees. It should therefore be recognized that measures to further protect the existing trees will entail compromising safety considerations to some degree accepting greater impacts on adjacent properties and likely incurring higher costs. Recognizing these consequences, the following amelioration measures could be considered by Council.

#### (i) Canada Way

Due to the proximity of the chestnut trees to the existing curb on Canada Way, measures to retain the trees would require maintaining the curb in its current location and shifting the alignment of Canada Way eastward. The entire widening to accommodate the left turn lane would then be taken from abutting properties on the east side of Canada Way. Properties near the Edmonds intersection would be particularly affected including a church, a service station and a grocery store as well as residences along the east side of Canada Way north of Edmonds. As the viability of these land uses could not be maintained under these circumstances, the option of realigning Canada Way cannot be supported. The Ministry of Transportation and Highways concurs with this conclusion but recognizing the value of the Chestnut trees to the community, the Ministry is prepared to replace these trees with large caliper trees of the same variety.



(ii) Edmonds

The location of the Sycamore trees further into the Edmonds school property than the Chestnut trees provides some opportunities for retaining these trees. With this as a primary objective, staff have reassessed the design to incorporate all reasonable measures to limit the widening of Edmonds to a minimum. The redesign as shown in Figure 5 attached removes the right turn lane, replaces the raised median with a painted pavement marking to define the left turn lane and relocates the sidewalks inside of the Edmonds school property. These measures enable the curb to be moved north to a location 1.2m outside the trees.

While sixteen of the eighteen Sycamore trees can be retained with this redesign, the long term health of the remaining trees remains a concern. It is the view of staff that the proximity of the new curb to the trees would probably not appreciably affect the health of the trees provided that sensitive construction methods avoided damage to root systems. Construction of the Edmonds section however, will require relocation of overhead power lines inside the curb above the Sycamore trees. As a result B.C. Hydro will require that the trees be topped to a maximum height of approximately 12-15m.

As severe pruning of this magnitude would affect the viability of the trees, the redesign of the Edmonds section must be accompanied by a relocation of the power lines either underground or into the school property. The latter option however, is not recommended due to its proximity to the playing fields and possible danger to schoolchildren. Therefore, measures to ensure the retention and long term viability of the Sycamore trees would need to include undergrounding of the power lines for a distance of approximately 160m. It is estimated that the additional costs to the Municipality of this work would be in the range of \$300,000-\$400,000.

5.0 CONCLUSION

The improvements to the Canada Way/Edmonds intersection are necessary to eliminate the serious traffic congestion which exposes neighbourhoods in S.E. Burnaby to excessive volumes of traffic and to improve safety for the many drivers and pedestrians using this intersection. Recognizing that the trees on the Edmonds school property are a significant community resource, the measures proposed by staff take advantage of every available opportunity to retain as many trees as possible without unduly compromising safety or further affecting adjacent properties.

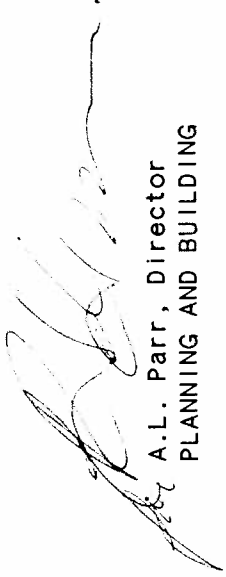
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While the retention of the trees on Canada Way is not compatible with the reconstruction of the intersection, there are opportunities to preserve most of the trees abutting Edmonds which will entail higher costs to the Municipality. Council may wish to refer this matter to the Traffic and Transportation Committee to further assess the measures proposed to retain the Edmonds trees with a view to bringing back a further report identifying specific options.

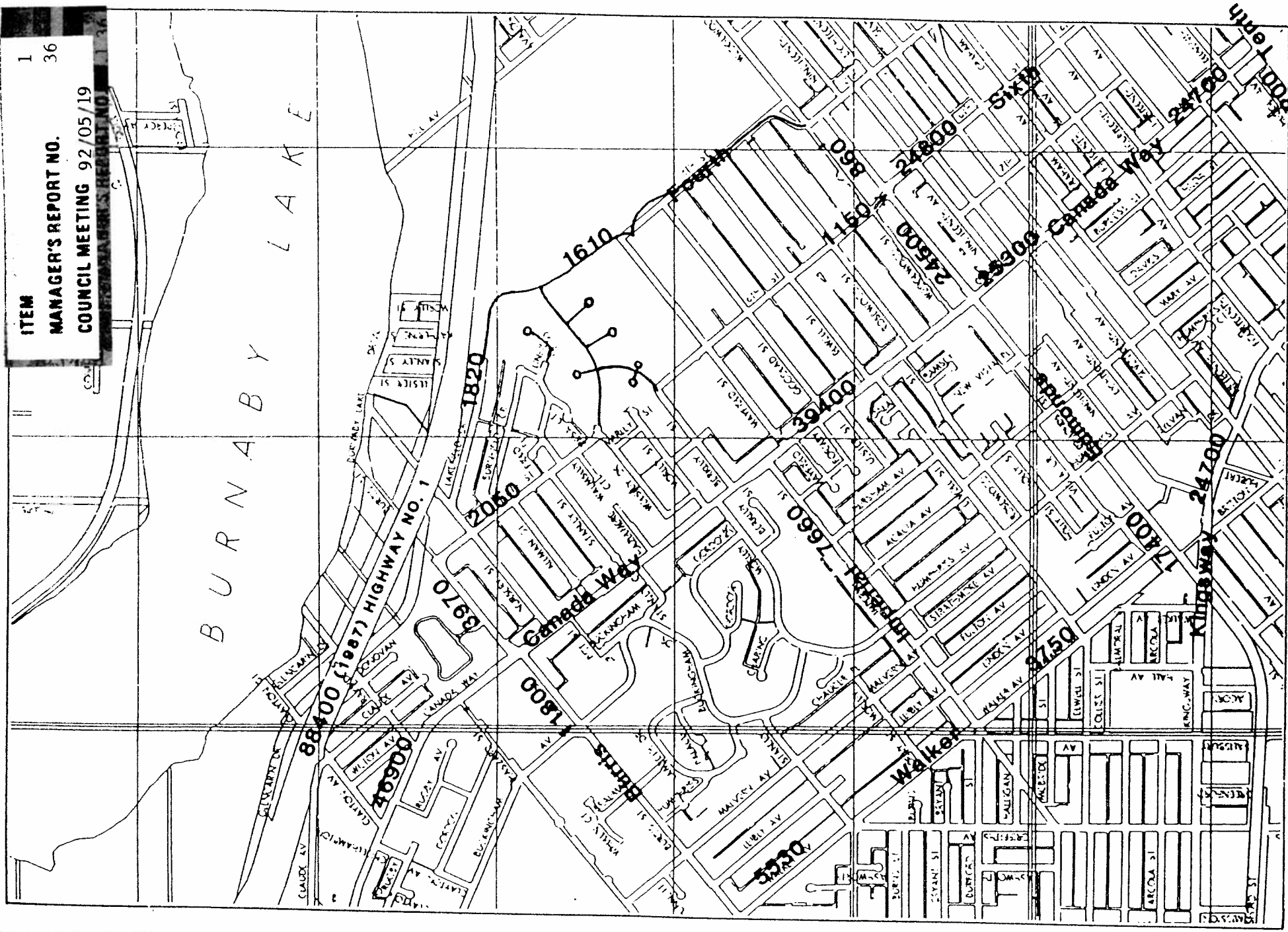
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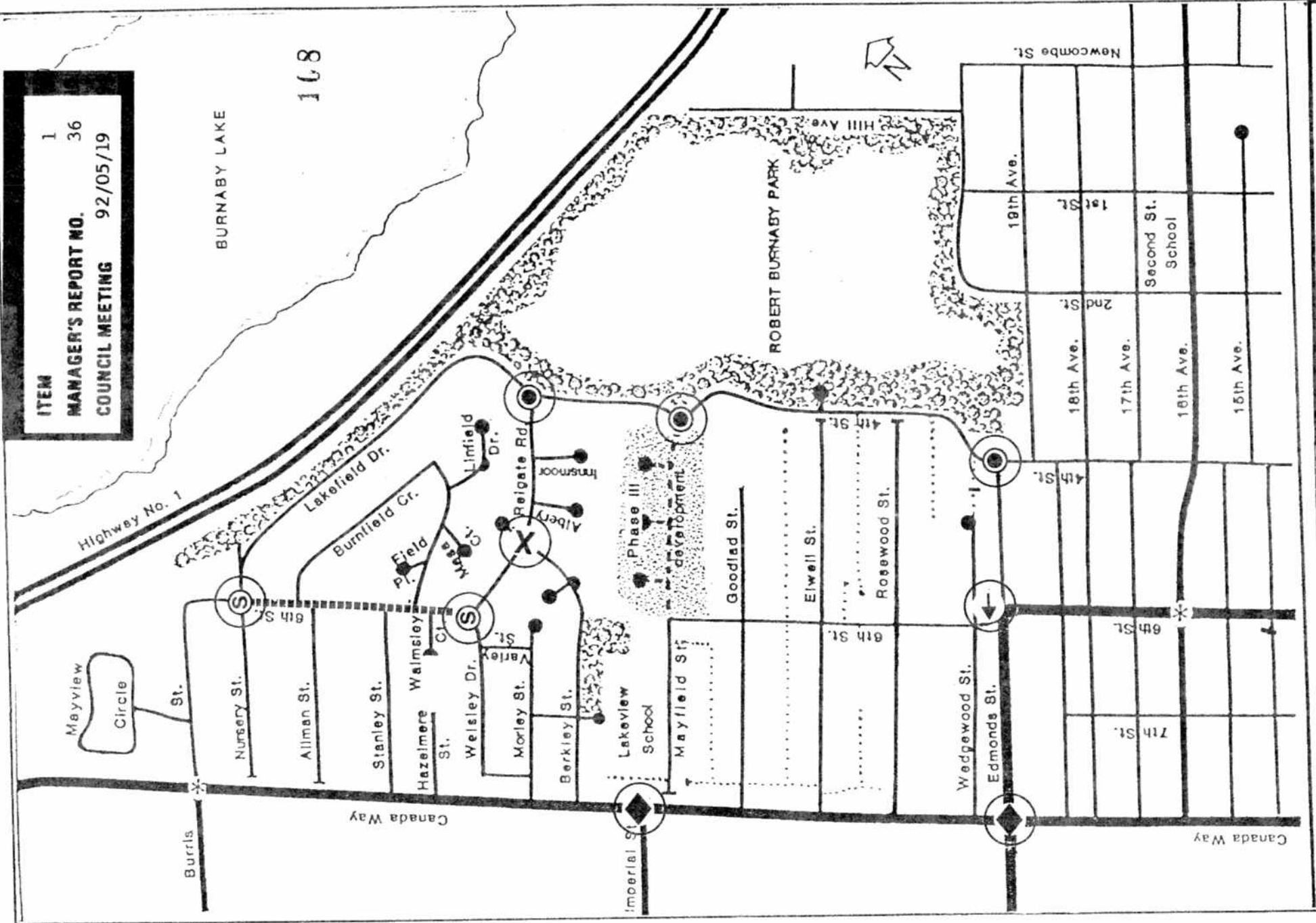
  
A.L. Parr, Director  
PLANNING AND BUILDING

cc: Director Engineering  
Director Recreation and Cultural Services

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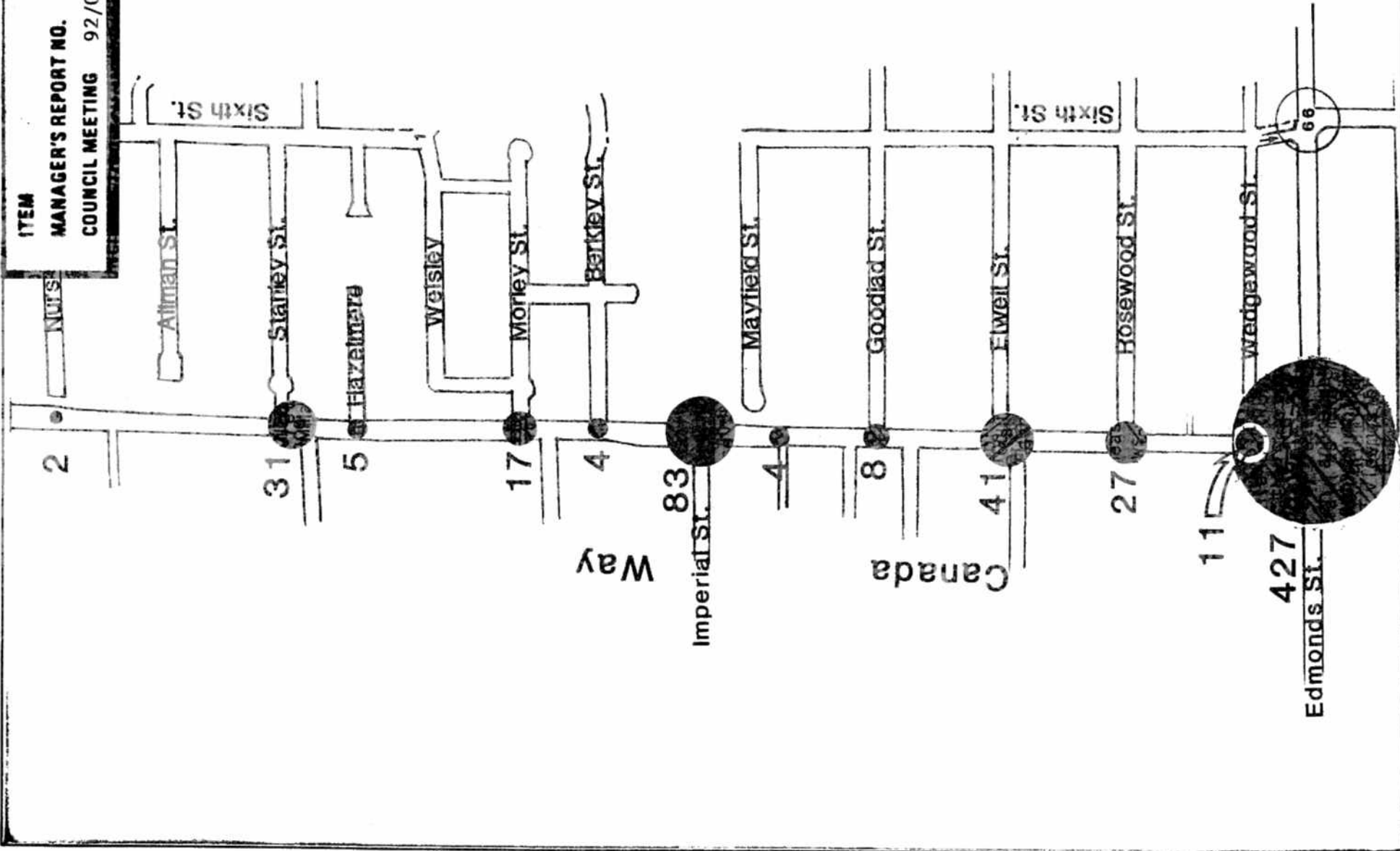
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FIGURE 2

- (S) STOP SIGNS 1990
- ◆ INTERSECTION IMPROVEMENTS 1991
- TRAFFIC CIRCLES 1991
- X PEDESTRIAN CROSSWALK 1990
- ← LEFT ARROW 1990
- 6<sup>th</sup> AVENUE WIDENING 1992



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Date:

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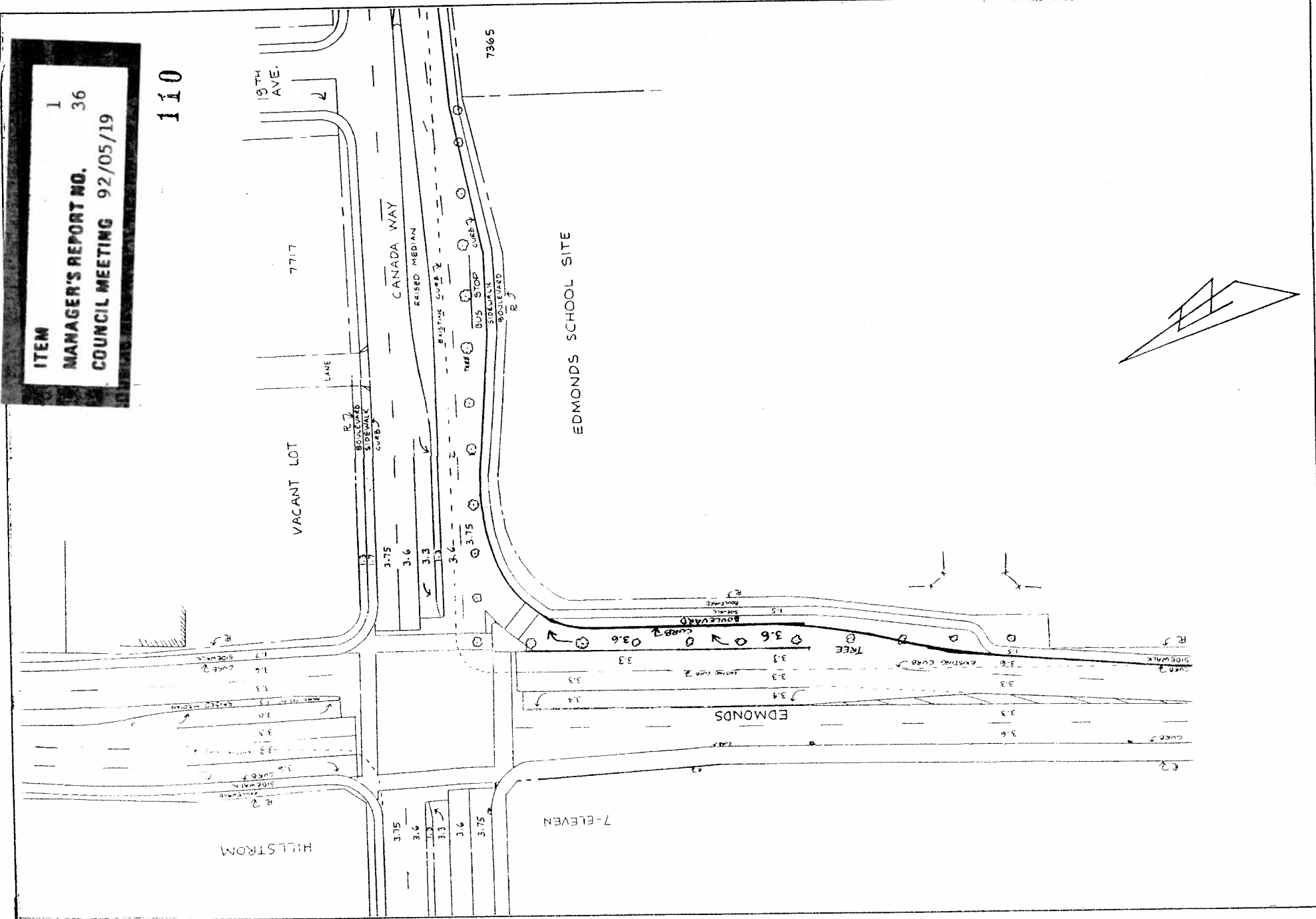
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FIGURE 3

TRAFFIC ACCIDENTS  
 ON CANADA WAY  
 1985 - 1989



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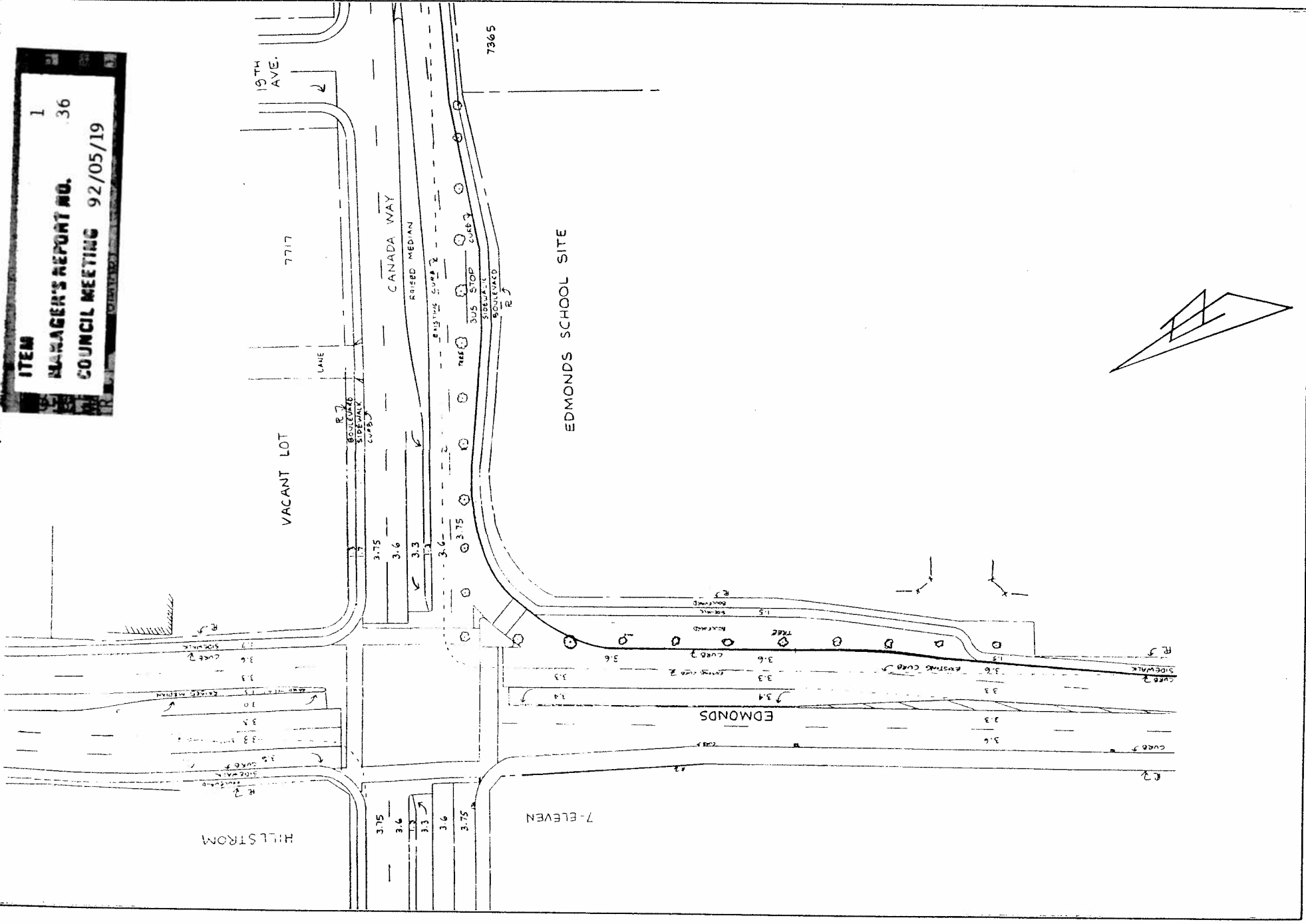


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FIGURE 4

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PROPOSED CANADA WAY EDMONDS STREET  
 INTERSECTION DESIGN



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FIGURE 5

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POSSIBLE REDESIGN OF EDMONDS SECTION

