

RE: REZONING REFERENCE NO. 8/89
BEAVERBROOK CRESCENT

ITEM 17
MANAGER'S REPORT NO. 7
COUNCIL MEETING 90/01/29

MUNICIPAL MANAGER'S RECOMMENDATION:

1. THAT the recommendation of the Director Planning & Building Inspection be adopted.

* * * * *

TO: MUNICIPAL MANAGER
1990 JANUARY 24

FROM: DIRECTOR PLANNING &
BUILDING INSPECTION

SUBJECT: REZONING REFERENCE #8/89
BEAVERBROOK CRESCENT

PURPOSE: To provide information in response to the daycare and electromagnetic field issues raised at the Public Hearing for Rezoning Reference #8/89.

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RECOMMENDATION:

- 1) THAT this report be received for information.

REPORT

1.0 BACKGROUND:

- 1.1 At the Public Hearing for the rezoning of the subject site, which is located at the end of Beaverbrook Crescent, adjacent to B. C. Hydro's Barnard Substation, electromagnetic fields and the provision of daycare were raised as issues. The purpose of this report is to provide information in this regard.

2.0 ELECTROMAGNETIC FIELDS:

- 2.1 In response to our request, Kelly Gibney of B. C. Hydro has provided a letter (Attachment "A") and information regarding electric and magnetic field levels on the site (Attachment "B"). Various background materials as noted in his letter were also provided and are on file in the Planning division.
- 2.2 Environmental Health staff have reviewed the material submitted by B. C. Hydro and provided a summary (Attachment "C").
- 2.3 The minimum separation provided between the proposed residential buildings and the Barnard Substation totals approximately 47m (155 ft.) comprised of a 32m (105 ft.) buffer on the Substation site and a 15m (50 ft.) setback on the residential site. The letter from B. C. Hydro notes that these buffers would appear to meet even the most stringent of the public policy options examined in a background paper prepared for the Office of Technology Assessment of the U. S. Congress.

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2.4 Environmental Health staff have noted the importance of the grounding capabilities of facilities such as the Substation. B. C. Hydro have commented as follows in this regard:

For safety of the public and our operating employees, our substations are grounded to insure electrical safety is kept within safe limits. Our staff is constantly reviewing technical literature to insure that our substations are up to date with advances in technology. We are not aware of any further substation grounding methods that will reduce the electromagnetic fields that have been measured in the vicinity of the substation area.

2.5 Staff will continue to monitor the progress of research and information regarding possible health impacts of electromagnetic fields.

3.0 DAYCARE PROVISION:

3.1 Staff have requested that the applicant review the possibility of providing a daycare facility within the development. The applicant has written a letter (Attachment "D") explaining why this is not considered feasible in his view.

3.2 For Council's information, it is noted that staff are continuing discussions towards the possible implementation of a daycare facility within the space designated for this purpose in the neighbouring Mountainwood development.

3.3 Staff are currently examining the feasibility and desirability of requesting the Province to amend Section 935 of the Municipal Act to allow municipalities to establish Development Cost Charges on new developments which could be used for child care facilities or other social amenities. We expect to be reporting on this matter in late February.


4.0 CONCLUSION:

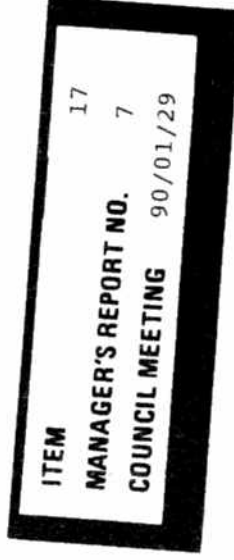
4.1 This report is submitted for the information of Council. Unless otherwise directed by Council, staff will continue processing the subject rezoning in the usual manner.

RR:ap

Attachments

cc: Chief Public Health Inspector


A. L. Parr
DIRECTOR PLANNING &
BUILDING INSPECTION



ATTACHMENT 'A'

BChydro

RRR



proud of our Service

18 December 1989
File: 4595-27-11

Mr. A.L. Parr
Director of Planning and
Building Inspection
The Corporation of the
District of Burnaby
4949 Canada Way
Burnaby, B.C.
V5G 1M2

Dear Mr. Parr:

Re: Electromagnetic Fields
Proposed Townhouse Development
Beaverbrook Crescent
Rezoning Reference #8/89

In response to your enquiry for information on the biological effects of electromagnetic fields and field measurements on the property west of Barnard Substation, I am enclosing for your information the following brief descriptions of recent studies and reviews. This information will provide you with measurements taken at Barnard Substation, and with background information as well as references, and should assist you and council in your assessment of the site:

1. BCUC Public Inquiry Report and Recommendations, July 1989.
2. B.C. Hydro document, "Electric and Magnetic Fields: Are There Biological Effects?" September 1989.
3. Question and Answer Series on Electric Power Lines prepared by Bonneville Power, August 1988.
4. Biological Effects of Power Frequency Electric and Magnetic Fields, Background Paper, Congress of the United States, Office of Technology Assessment May 1989 Section 9 & 10. (A complete copy of the paper is available from the Burnaby Public Library.)
5. Electromagnetic Fields, Health and Welfare Canada, September 1989.
6. Electric and Magnetic Field readings near Barnard Substation, May 1989.

The findings of the July 1989 BCUC Inquiry into the Dunsmuir-Gold River transmission line perhaps summarize the current state of scientific knowledge of the electromagnetic field issue:

"The Inquiry finds that there is cause for concern within the scientific literature about the biological effects on humans of electromagnetic radiation. There is, however, insufficient evidence to support a presumption of an actual health risk. This conclusion holds for effects:

- (a) within residential areas due to distribution wire configuration and measured magnetic field;
- (b) within occupational categories due to implied exposure to EMF at work;
- (c) residences close to high voltage transmission lines."

The concern noted by the BCUC has led recently to an examination of a variety of public policy options. These options are outlined in attached item 4. The currently proposed buffer zones along Barnard substation, although not originally required for that purpose, would appear to meet even the most stringent of the public policy options. The major recommendation that continues to be put forward is to support additional research that will provide the information needed to more accurately define the risk if any risk in fact exists. B.C. Hydro is expanding its research support and will continue to monitor all new research developments.

The information on field measurements (item 6) is based on a paced survey. The vegetation growth and pacing may contribute to minor errors in the field measurements at any specific location. In addition there will be some realignment of 60L39 which will lower fields in the northern tip of the development.

If you would like further detail after you have read the enclosed information, please give me a call.

Yours truly,



Kelly Gibney
Project Manager
EMF Issues
(604) 663-3958

Enclosures
cc: Viam Properties Ltd.
1551 Columbia Street
North Vancouver, B.C.
V7J 1A3

ATTACHMENT 'B'

Inter Office Memo

cc.

Memo to : G. L. March
Howe B-5

From : P. S. Wong
Powertech Labs Inc.

Subject : Project 0752-20-82
Electric and Magnetic Field near Barnard Substation

ENVIRONMENTAL RESOURCES			
MAY 15 1989			
ROUTE	TO	INIT	ACT.
1	GLI		
2	BEJE		
3			
4			
5	May 1989		
6			
C.V. SOATMAN			
FILE NO.	E130E3 4.1 1240		

Introduction

In response to a request from Karen McIlroy of Property Rights Management to G. L. March of Environmental Services, Powertech Labs measured electric and magnetic field levels on the surplus property to the west of the Barnard Substation fence.

As shown in figure 1, a B.C. Hydro right-of-way (ROW) containing an underground 230 kV circuit (2L51) runs across the property. There is also an overhead 60 kV (60L39) and two distribution circuits crossing the northeast corner.

Summary of Findings

The measurements were taken with a Polytek Field Meter, model 100-3-14. The probe was held at one metre above ground and oriented to yield the highest reading. Units of measurement are in volts per meter (V/m) for the electric field and in microtesla (uT) for the magnetic field.

Six magnetic field profiles were made: one along the substation west fence (figure 1), three along the sides (figures 1 to 4) and two on the inside of the surplus property (figures 5 and 6). The profile in figure 5 starts from the location of the highest reading on the east side of the surplus property. Figure 6 shows a profile taken across the 2L51 ROW.

The highest level (5.8 uT) was found on the 2L51 ROW (figure 6). We could not accurately locate the edge of the ROW on site. We estimate that the edge of the ROW to be about 10 m from where 2L51 is located. At this location, the measured level is around 0.7 uT.

The currents on 2L51 during the measurements were between 390 and 500 A. With an expected maximum load current of 650 A, the maximum field could reach 10 uT on the surplus property and 1.2 uT at the edge of the 2L51 ROW.

Due to the presence of large trees, only a few electric field measurements could be made. The highest reading (205 V/m) was found under 60L39 at the northeast corner.

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Conclusion

The highest level of electric field of 205 V/m was found under 60L39.

The highest level of magnetic field of 5.8 uT was found on the 2L51 ROW, but this level could increase to 10 uT during maximum loading condition. At the edge of the 2L51 ROW (estimated to be about 10 m from 2L51), the level could reach 1.2 uT.

The highest magnetic field level along the east, north, and west sides of the surplus property were 2.9, 1.8, and 5.7 uT respectively. Because of the difficulty in locating the edge of the 2L51 ROW, the 5.7 uT reading could actually have been measured on the ROW.

Reulwong

KT/PSW/wp

cc: R. P. Ritter
K. McIlroy

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MAGNETIC FIELD LEVELS
 AT BARNARD SUBSTATION
 ON 2 MAY 1989
 UNITS ARE UT ROUNDED TO NEAREST 0.1

*Note: Outline of substation property and location of rights of way from drawing supplied by karen McIlroy of Property Rights Management.



Barnard Substation

* 60739 R.O.W.

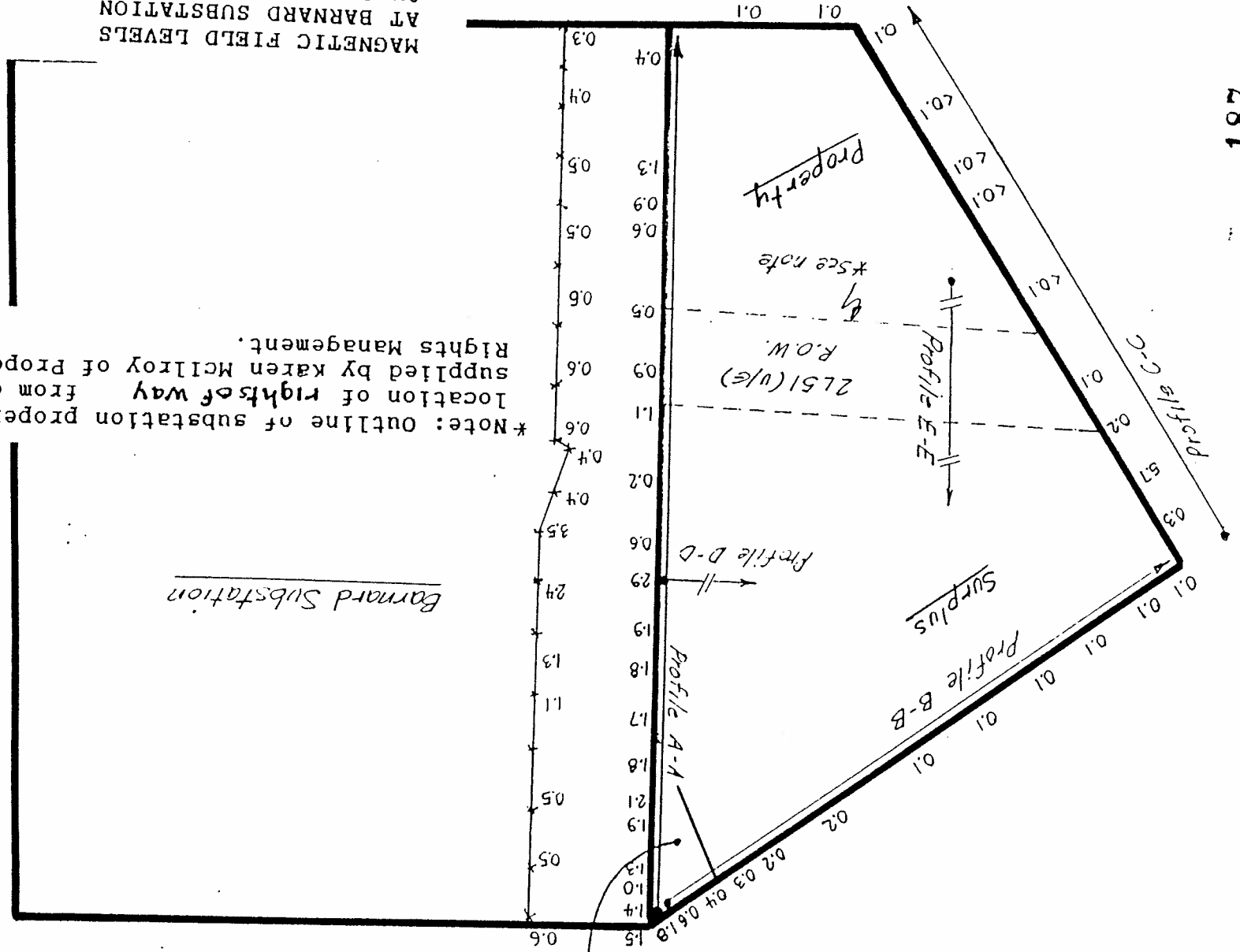


Figure 1. Magnetic field levels and location of profiles.

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PROFILE A-A, ALONG EAST PROPERTY LINE

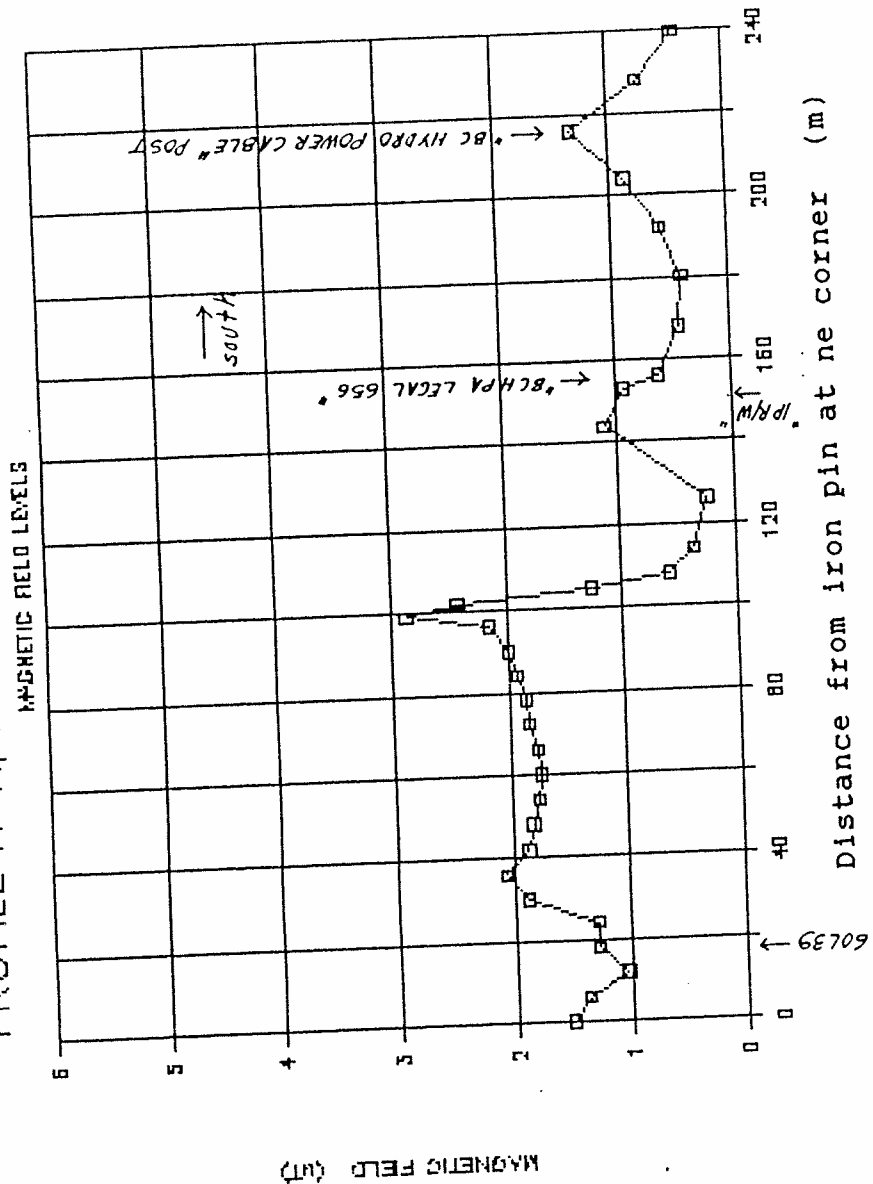


Figure 2.

PROFILE B-B, ALONG NORTH PROPERTY LINE

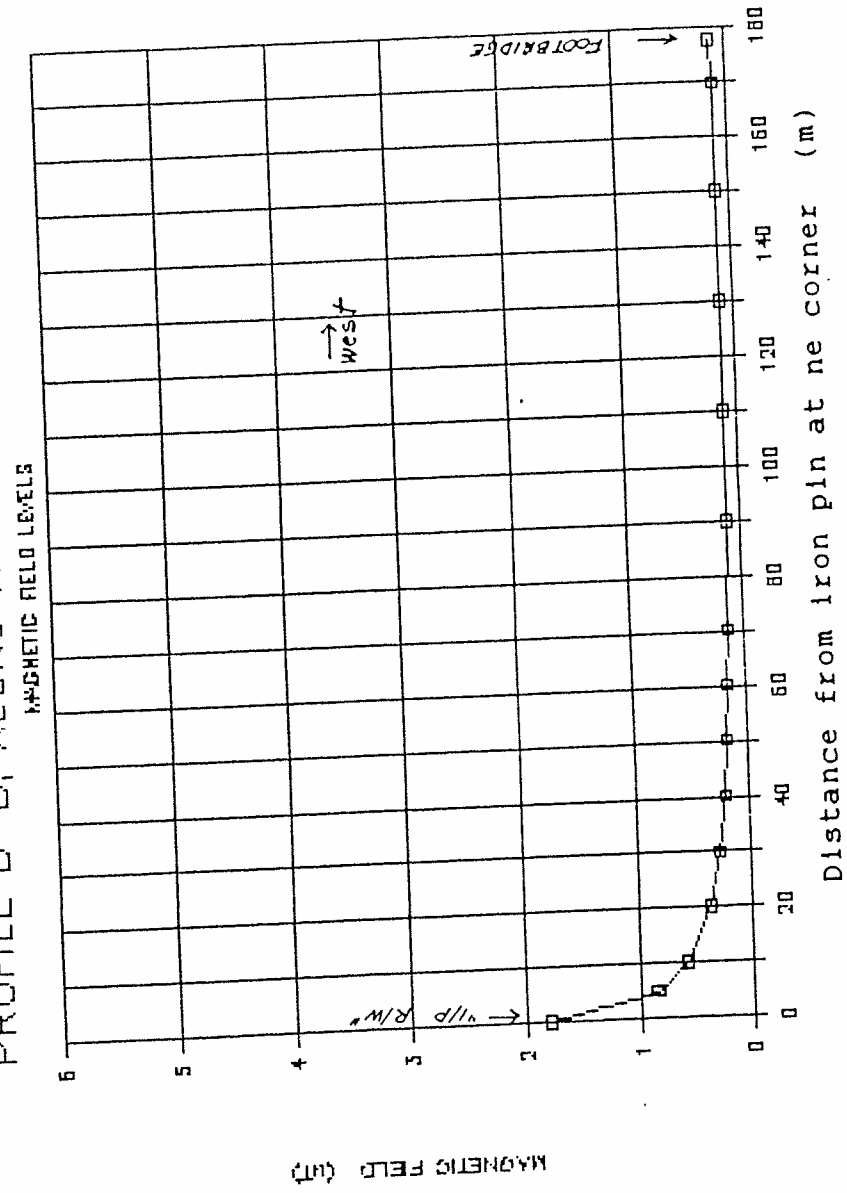


Figure 3.

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PROFILE C-G, ALONG WEST PROPERTY LINE

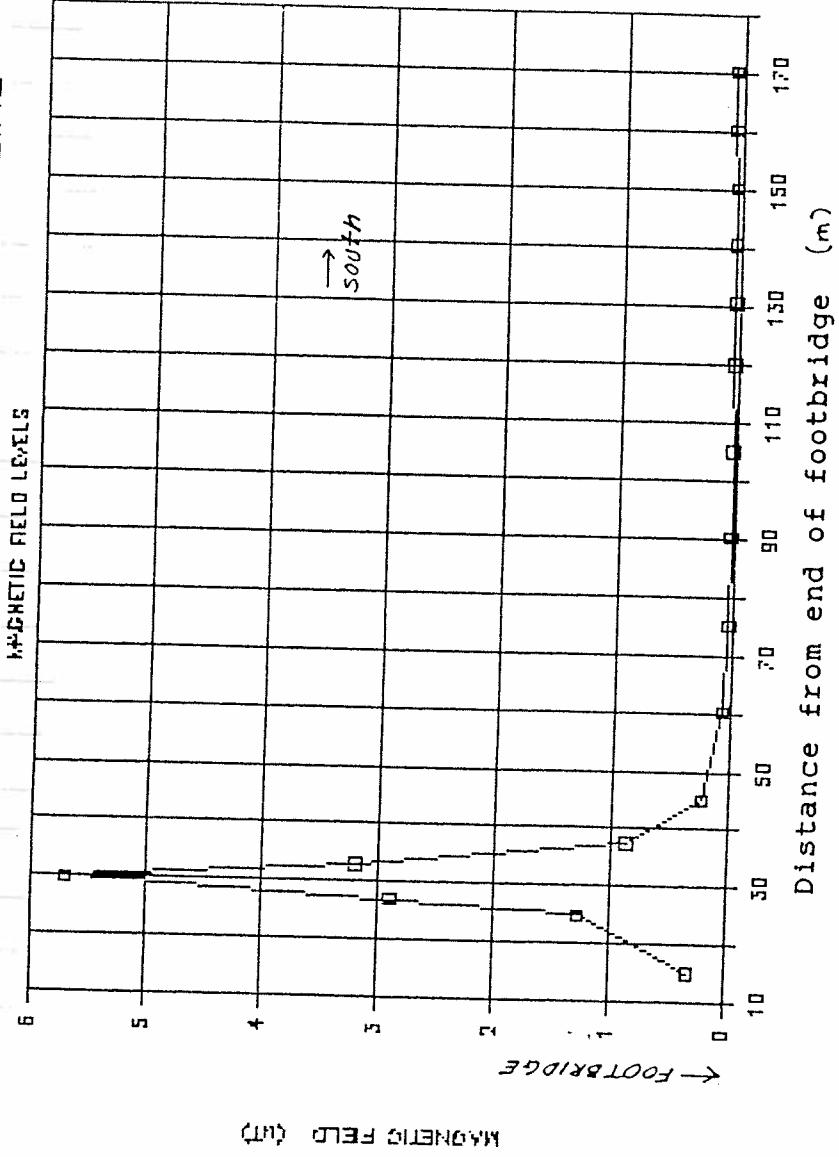


Figure 4.

PROFILE D-D, AT 99m OF PROFILE A-A

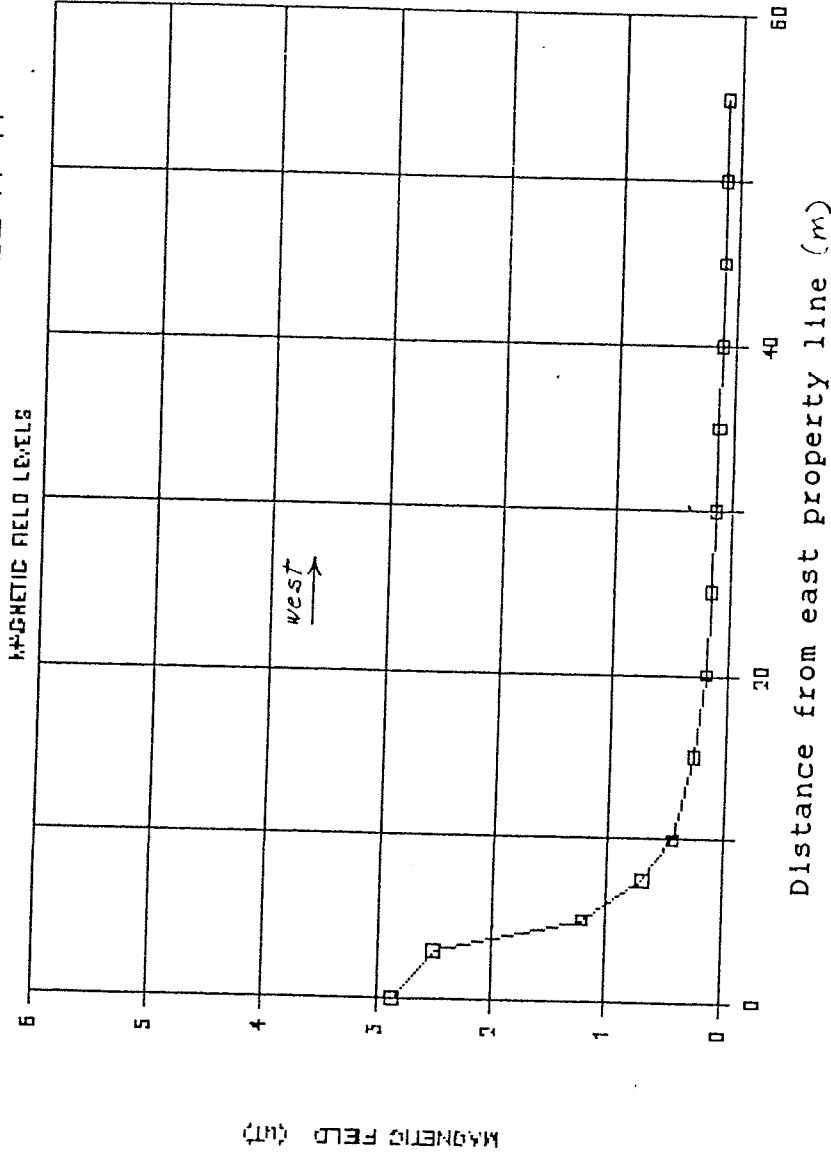
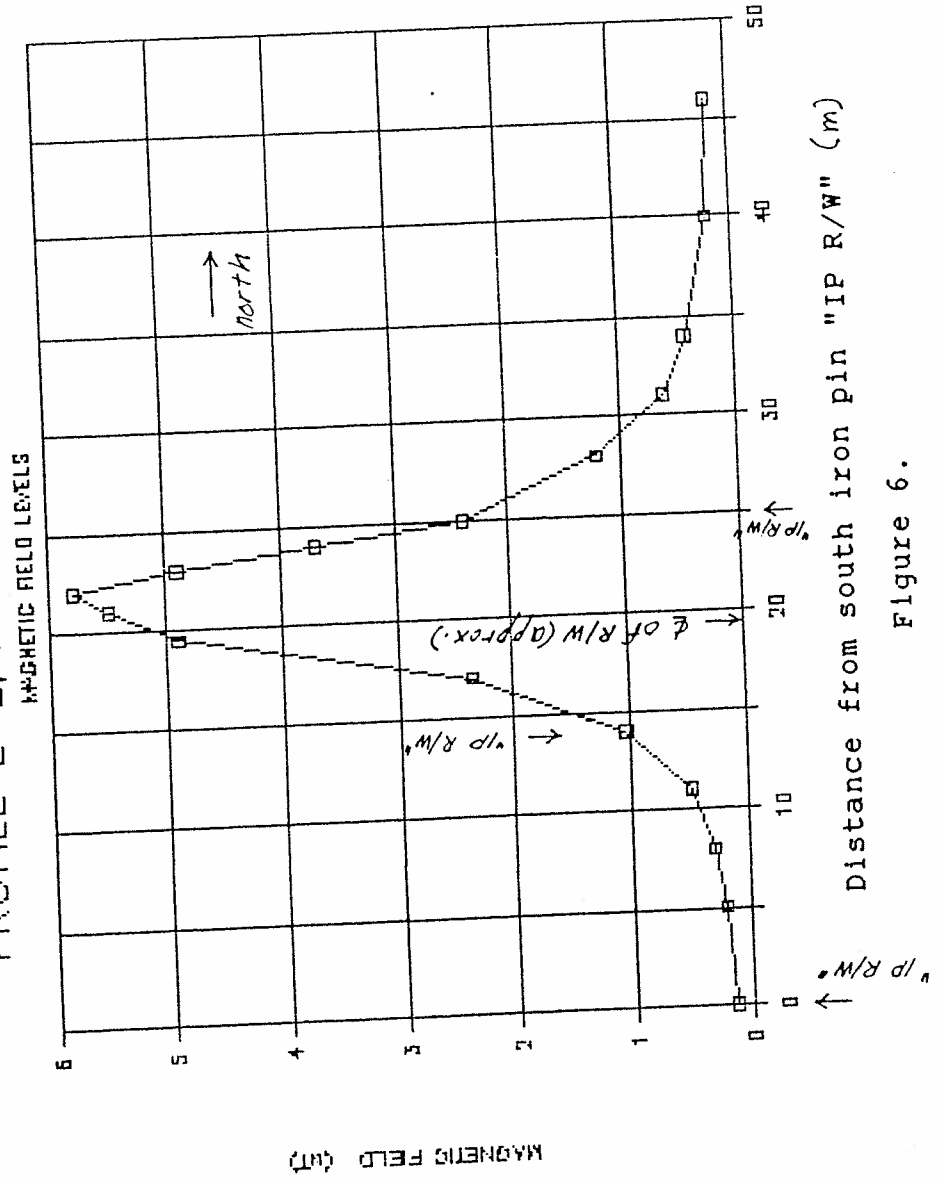


Figure 5.

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PROFILE E-E, X-SECTION OF R.O.W.



Distance from south iron pin "IP R/W" (m)
 Figure 6.

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ATTACHMENT 'C'

RJF

**THE CORPORATION OF
THE DISTRICT OF BURNABY**

INTER-OFFICE COMMUNICATION

TO: GEORGE HARVIE, CHIEF PUBLIC HEALTH INSPECTOR 1990 JANUARY 18
FROM: D. SHAWN MITTON, PUBLIC HEALTH INSPECTOR
RE: ELECTROMAGNETIC FIELD; LITERATURE REVIEW

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The information submitted by the Director of Planning and Building Inspection, in his memorandum of 1990 January 04, has been reviewed. A summary of the text is attached for your information.

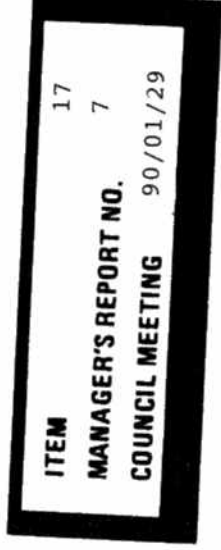
The scientific literature does not dismiss the positive findings on the health effects of electromagnetic field (EMF) levels on living cells and test organisms, and subsequently states there is cause for concern regarding the biological effects on humans. However, the majority of research concludes there is insufficient evidence to support the presumption of actual health risk or the indication of a cause and effect relationship.

The proposed Burnard substation emits an electrical field level of approximately 0.20 kv/m at its right-of-way (R.O.W.) edge and in comparison the British Columbia Utilities Commission approved a 230 kv/m line that emits approximately 1.238 kv/m at the R.O.W. edge for the Comox-Strathcona Regional District.

Although many States have set EMF limits (i.e. Montana at 1kv/m adjacent subdivisions), the problem still exists in the inability to define dose and the possible false sense of security a limit would create at this time.

At present we can only infer long term health effects a residential development adjacent Burnard Substation and should request that the best available technology such as:

1. Site planning to maximize distances of habitable structures from the substation.
2. Increasing grounding capabilities of these facilities.



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- 2 -

3. Critical review of residential zoning adjacent nonresidential sites.
4. Long term planning to prevent future concerns.

The presence of EMF levels should be of concern to human health and we should take efforts to disperse and reduce potential exposures to EMF.



D.S. Mitton, B.S.C, C.P.H.I. (C)
PUBLIC HEALTH INSPECTOR

Attachment

cc: Dipak Dattani, Supervisor
Public Health Inspector



VIAM PROPERTIES LTD.

1551 Columbia Street, North Vancouver, B.C. V7J 1A3 (604) 986-2211

9 January 1990

via COURIER

The Corporation Of The
District Of Burnaby
Planning & Building
Inspection Department
4949 Canada Way
BURNABY, B.C.
V5G 1M2

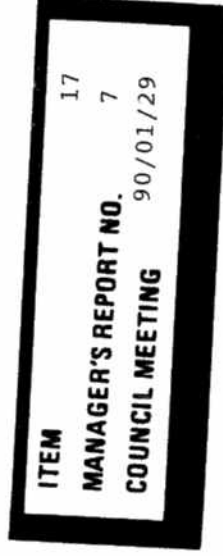
ATTENTION: Mr. A. L. Parr, Director

Dear Mr. Parr:

**RE: Proposed Townhouse Development
Beaverbrook Crescent
Rezoning Reference #8/89**

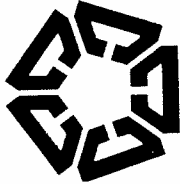
We are writing in response to your request that we review the possibility of a daycare facility within our proposed development. After due consideration, we have decided that a daycare centre is not feasible in this project for the following reasons:

- a) The proposed development is strata title and as such should remain a private residential project without public uses being incorporated into it, bringing outside traffic and loss of privacy to each owner.
- b) Daycare centres are not economically viable without the commercial uses and the owners of the strata title units cannot be expected to subsidize such a venture. If a need for a daycare centre exists in the area now, then it should be in a central location with commercial use.
- c) Being one of the smallest developments in the area, we feel the site is not suitable for commercial and residential use. A daycare facility would only be viable if combined with retail and with our site being at the end of the road, the location is not suitable.



ATTACHMENT 'D'

RR



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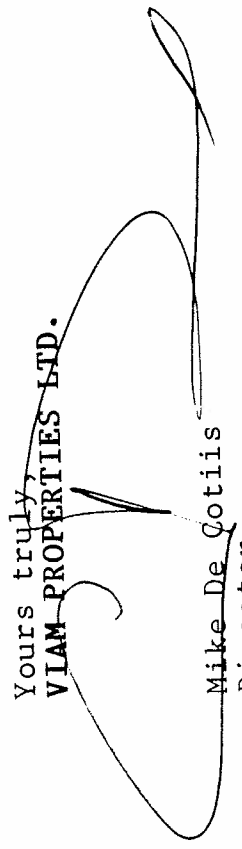
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- d) We understand that an adjacent development has a designated daycare facility that has never been put into operation because of the economics of such a venture.

To sum up, we feel a daycare centre would be an unreasonable hardship to place on a development that does not have a predetermined commercial component accessible to the public and as such, we feel our site is unsuitable. As noted above, it would result in a severe loss of privacy and cause on going difficulties for the future owners of the units in the development.

We trust the above explains our position on this matter.

Yours truly,
~~VIAM PROPERTIES LTD.~~


Mike De Gottiis
Director

MDC/mf