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PHASE I - ENVIRONMENTAL SITE ASSESSMENT
VACANT PROPERTY
BANK STREET AT PARKWAY ROAD
CITY OF OTTAWA (GREELY), ONTARIO

Prepared For

Sunset Lakes Development Corporation

December 17, 2003

Report No. E2834-1

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

On December 16, 2003, John D. Paterson and Associates conducted a Phase I - Environmental Site Assessment of a vacant parcel of land located at the southeast corner of Bank Street and Parkway Road, in the City of Ottawa (Greely), Ontario.

Our findings regarding environmental issues at this property and any recommendations are tabulated below.

Summary of Findings and Recommendations

Potential Environmental Concern	Level of Concern	Findings	Recommendation or action taken	Reference Section
Historical Land Use				
Subject Property	low	Mostly vacant and agricultural land with barns.	none	5.1
Adjacent Properties	low	Vacant, residential and agricultural land.	none	5.1
Exterior Assessment				
Fuels and Chemicals	low	No fuels or chemicals observed on the subject site.	none	5.2
Waste Management	low	Debris including wood, old furniture, tires, metal pieces, plastic containers and metal drums were observed on site.	Remove debris from site and dispose of appropriately.	5.2
Polychlorinated Biphenyls (PCBs)	low	Pole mounted transformers. No signs of leakage observed.	none	5.2
Wastewater Discharges	none	No concerns	none	5.2

Summary of Findings and Recommendations				
Potential Environmental Concern	**Level of Concern**	**Findings**	**Recommendation or action taken**	**Reference Section**
Adjacent Land				
Current Use	low	Residential, institutional and vacant. City yard (former MTO yard) for road maintenance located on adjacent property to the north, across Parkway Road. Salt stored on site for approx. 50 years. MTO representatives indicated the presence of a shallow groundwater salt plume beneath the road maintenance facility.	Install a test well in the northwestern portion of the site (near the city yard) as part of the hydrogeological study to assess the bedrock aquifer.	5.3

1.0 INTRODUCTION

At the request of Sunset Lakes Development Corporation, this firm conducted a Phase I - Environmental Site Assessment (ESA) of a property located at the southeast corner of Bank Street and Parkway Road, west of Sale Barn Road, in the City of Ottawa (Greely), Ontario.

This report has been prepared specifically and solely for the above noted project which is described herein. It contains all of our findings and results of the environmental conditions at this site.

2.0 SITE INFORMATION

Location: The property is located at the southeast corner of Bank Street and Parkway Road, west of Sale Barn Road, City of Ottawa (Greely) - Refer to Figure 1- Key Plan in Appendix 2 for the site location.

Legal Description: Part of Lot 73 Registrars Compiled Plan 902, Part 1, Plan 4R-15291, Geographic Township of Osgoode, City of Ottawa.

Site Description:

Configuration:	Irregular
Total Site Area:	44 hectares (approximate)
Current Use:	The subject site is currently vacant agricultural land.
Services:	Hydro is available in the area of the subject site. Residences in the area are serviced by private water wells and private septic systems.

3.0 SCOPE OF WORK

The scope of work for this Phase I - Environmental Site Assessment was as follows:

- Investigate the existing conditions present at the subject site by carrying out a field study and historical review in accordance with CSA Z768-01.
- Present the results of our findings in a comprehensive report.
- Provide a preliminary environmental site evaluation based on our findings.
- Provide preliminary remediation recommendations and further investigative work if contamination is encountered or suspected.

4.0 METHOD OF INVESTIGATION

4.1 Historical Research

The methodology for the Phase I - Environmental Site Assessment program was carried out in two segments. The first consisted of a historical review which included a brief research of the past use of the site. This portion of the program was carried out by our environmental division. The following is a list of the key information sources reviewed by this firm along with other regulatory documents listed in Appendix 1 of this report.

Federal Records

- ❑ Maps and photographs, (Geological Survey of Canada surficial and subsurface mapping).
- ❑ Air photos at the Energy Mines and Resources Air Photo Library.
- ❑ National Archives.

Provincial Records

- ❑ MOE document titled "Waste Disposal Site Inventory in Ontario".
- ❑ Ottawa Office of the Ontario Ministry of Environment.
- ❑ Office of Technical Standards and Safety Authority, Fuels Safety Branch.

Municipal Records

- ❑ City of Ottawa (formerly the Township of Osgoode).

Local Information Sources

- ❑ Personal interviews.
- ❑ Plans provided by Sunset Lakes Development Corporation.

4.2 Field Assessment

The second segment of the assessment consisted of a field investigation which included a cursory inspection and assessment of the environmental conditions of the subject property. The field assessment was carried out on December 16, 2003 by personnel from our Environmental Division.

As part of the field investigation, the site was carefully inspected for signs of the following:

- ❑ Evidence of previous or existing fuel storage tanks.
- ❑ On-site use or storage of hazardous materials.
- ❑ On-site handling or disposal of liquid or solid waste materials.
- ❑ Above-ground piping systems, including pumps, valves and joints.
- ❑ Truck or rail loading or unloading areas.
- ❑ Electrical conduits, abandoned pipelines or pumping stations.
- ❑ Remnants of old buildings.
- ❑ Signs of surficial contamination (ie. staining, distressed vegetation).
- ❑ Unnaturally discoloured, ponded or flowing waters.
- ❑ Surficial drainage, wetlands, natural waterways or watercourses through the property (ie. ditches, creeks, ponds, poor drainage).
- ❑ Any evidence of potable water supply wells or groundwater monitoring wells (such as leak detection monitoring wells for underground storage tank systems, or abandoned systems).
- ❑ Any abnormal odours associated with the site, whether from on-site or off-site sources.
- ❑ The presence of any recent soil disturbances such as soil removal, filling, tilling, grading, etc.
- ❑ Asbestos containing materials (ACM).
- ❑ Urea formaldehyde foam insulation (UFFI).
- ❑ PCB containing products.
- ❑ Ozone depleting substances.
- ❑ Lead-containing materials.
- ❑ Current use of neighbouring properties.

5.0 ENVIRONMENTAL ASSESSMENT FINDINGS

5.1 Historical Review

Air Photo Research

Historical air photos of the subject site were reviewed at the National Air Photo Library. Based on the review, the following observations have been made:

1945 The subject and neighbouring properties were used for agricultural purposes.

1956 No major changes were made to the subject property or neighbouring sites. Bank Street was constructed along the west property line of the subject site.

1970 *(Partial Coverage)*. No significant changes have been made to the subject property. Residential dwellings were constructed on the adjacent properties to the west and southwest.

1984 No significant changes were made to the subject property with the exception of a barn constructed in the northwestern portion of the site. A road maintenance facility, a church and residential dwellings were constructed on the north side of Parkway Road.

1989 No significant changes have been made to the subject site with the exception of an additional barn constructed near the previously mentioned structure. No significant changes were made to the neighbouring properties. The road maintenance yard appears like it does today.

1997 No significant changes were made to the subject site. A commercial building was constructed on the adjacent property to the northwest.

Laser copies of the aerial photographs listed above are included in Appendix 2 of this report.

Ontario Ministry of Environment (MOE)

The Ontario Ministry of Environment, document titled "Waste Disposal Site Inventory in Ontario, 1991" was reviewed as part of the historical research. This document includes all recorded active and closed waste disposal sites, industrial manufactured gas plants, and coal tar distillation plants in the Province of Ontario. Based on the available information, there is no documented evidence of abandoned waste disposal sites or above mentioned industrial sites within the vicinity of the subject property.

Technical Standards and Safety Authority (TSSA)

The TSSA, Fuels Safety Branch in Toronto, formerly the Ontario Ministry of Consumer and Commercial Relations was contacted by fax on December 11, 2003. There are no underground storage tanks recorded in the TSSA registry for the subject property. The subject site is not registered with the TSSA as a private fuel outlet. Neighbouring properties to the subject site are also not registered with the TSSA.

Personal Interviews

Mr. Brian Burnett, farmer currently using the lands was interviewed as part of this assessment. Mr. Burnett indicated that he has been farming the subject lands for approximately ten years. Mr. Burnett indicated that he never stored any fuels or chemicals (other than weed control chemicals) on site and had no knowledge of any spills that would have occurred on the subject site. Mr. Burnett had no environmental concern with the subject site.

Mr. Terry Shields, current property owner was interviewed as part of this assessment. Mr. Shields farmed the lands prior to Mr. Burnett. Mr. Shields indicated that the barns formerly located on site were used for the storage of hay and machinery but mentioned that no fuels or chemicals were ever used on site. According to Mr. Shields, maintenance on the equipment was done off-site and no accidental spills occurred on the property. The barns were demolished approximately 5 to 6 years ago. Mr. Shields had no environmental concerns with respect to the subject site.

Mr. Larry O'Keefe with the City of Ottawa was interviewed as part of this assessment with regards to the City facility (former MTO yard) adjacent to the site, across Parkway Road. According to Mr. O'Keefe, the property is used for the storage of salt and sand and as a garage for equipment. Based on Mr. O'Keefe, all maintenance on equipment is done off-site. The salt was always stored inside the storage dome. Mr. O'Keefe indicated that no fuels or chemicals are stored at the Surface Operations facility and he was not aware of any spills that would have occurred on site. Mr. O'Keefe indicated that a remediation was completed for the property prior to the transfer from the MTO.

Mr. Barry Irbane, manager of operations with the MTO was interviewed as part of this assessment. Mr. Irbane indicated that fuel underground storage tanks (USTs) were formerly used on site. The tanks were removed from site in the late 1990s. Mr. Irbane indicated that the facility has been in operation for approximately 50 years and that salt was formerly stored in sheds.

Mr. Gordon McRae with the MTO environmental department in Kingston was interviewed on December 16, 2003. Mr. McRae indicated that a Phase I-ESA, a geophysical survey as well as a Phase II-ESA were completed for the former MTO yard. Based on the results of the Phase II investigation, all hydrocarbon levels remaining on site are in compliance with the MOE Table A guidelines. However, based on the results of the geophysical survey and on analytical test results from groundwater samples recovered from four (4) monitoring wells on site, elevated salt levels exist in the shallow groundwater table beneath the former MTO yard. Mr. McRae mentioned that the monitoring wells were terminated in overburden materials at depths ranging between 3 and 5 metres and the groundwater table was encountered between 0.75 and 1.5 m below grade. According to Mr. McRae, elevated salt levels were detected in the groundwater recovered from the monitoring well installed in the southeast corner of the site, which is closest to Parkway Drive. It is our understanding that the deep bedrock aquifer, that would be used for potable purposes beneath the area of the site, was not assessed for salt impact.

5.2 Exterior Assessment

The subject site is located on the south side of Parkway Road, between Bank Street and Sale Barn Road, near the Village of Greely, Ontario. The site topography is undulating. The subject site consists of agricultural land. Drainage ditches were observed along the property lines and between the crop fields. An old circular concrete foundation (possibly silo base) was observed in the northwestern portion of the site along with piles of debris and a number of bee hives.

Surface drainage mainly consists of infiltration and of sheet drainage flowing to the ditches across the site. It should be noted that the site was snow covered at the time of the inspection.

Potential Environmental Concerns

- ***Fuels and Chemical Storage***

  There were ***no*** signs of underground or aboveground fuel storage tanks observed on the exterior of the subject property at the time of the investigation. There were ***no*** hazardous chemicals, spills or stains observed on the subject site at the time of the investigation. It should be noted that the ground surface was snow covered at the time of the inspection.

- ***Wastewater Discharges***

  There were ***no*** signs of wastewater emerging or entering the subject property at the time of the investigation.

- ***Waste Management***

  There is no waste currently generated on site. Piles of debris including wood, metal pieces, furniture, an old freezer, plastic pails and planters, a roll of carpet, tires and 170 litre metal drums were observed in the northwestern portion of the subject property, at the former location of the barns. Some of the 170 litre drums could not be opened to verify their contents. However, the remaining drums contained yellow paint and cherry concentrates (to feed the bees).

- ***Polychlorinated Biphenyls***

  A number of pole mounted transformers were observed on the subject site. The transformers may contain PCBs. No signs of leakage were observed on the transformers or on the poles. The transformers are not considered to represent an environmental concern for the subject property.

5.3 Adjacent Properties

Land use adjacent to the subject site was a combination of residential, commercial and vacant land.

- North - *Parkway Road, commercial (City yard), church and residential;*
- South - *Residential;*
- East - *Sale Barn Road followed by commercial farm and vacant fields;*
- West - *Bank Street followed by residential.*

The environmental impact of the neighbouring properties upon the subject site was considered to be low with the possible exception of the road maintenance facility located across Parkway Road. Based on interviews with MTO personnel, it was determined that the storage and handling of salt on has impacted the shallow groundwater aquifer beneath the former MTO site, although no information was available for the deeper groundwater aquifer. The potential for impacted groundwater, in the shallow aquifer to have migrated onto the subject property is difficult to assess, since the nature and depth of the overburden materials, the bedrock formation and the groundwater flow direction are not well known. However, it is our opinion that the potential for the deeper aquifer to have been significantly impacted is low. Furthermore, road salt impacted groundwater can be readily treated and it is not considered to represent a significant liability to the subject land.

Land use adjacent to the subject site is illustrated on Drawing No. E2834-1 - Site Plan in Appendix 2 of this report.

6.0 ASSESSMENT AND RECOMMENDATIONS

Assessment

A Phase I - Environmental Site Assessment was carried out on a parcel of land located at the southeast corner of Bank Street and Parkway Road, in the City of Ottawa (Greely), Ontario. The purpose of this environmental assessment was to research the past use of the site and identify any potential concerns associated with the site or adjacent properties that could potentially impact the subject property.

The historical data researched for this site indicates that the property has always been vacant or used for agricultural purposes. Based on a review of aerial photographs, barns were formerly located in the northwestern portion of the site. Adjacent properties have been used for agricultural, residential and commercial purposes including a City yard (former MTO yard) at the northeast corner of Bank Street and Parkway Road. Based on a conversation with representatives from the City of Ottawa and from the MTO, a shallow groundwater salt plume exists beneath the facility.

A site inspection was conducted to assess any potential areas of concern. No significant environmental concerns were identified from the current use of the subject site or neighbouring properties.

Based on the findings of this assessment, it is our opinion that **a Phase II-Environmental Site Assessment is not required for the subject site.**

Recommendations

Groundwater

It is our understanding that a hydrogeological study will be required prior to the development of the site. As part of this study, it is recommended that one of the test well be installed in relatively close proximity to the road maintenance facility in order to assess the groundwater quality in the bedrock aquifer.

Waste Management

Debris including wood, metal pieces, furniture, an old freezer, plastic pails and planters, a roll of carpet, tires and 170 litre metal drums were observed in the northwestern portion of the subject property. These items do not pose a significant concern and can be appropriately disposed during future development of the site. Some of the 170 litre drums contained yellow paint and cherry concentrates while others could not be opened to verify their contents. The contents of the drums should be determined in order to determine the appropriate disposal method.

7.0 STATEMENT OF LIMITATIONS

This Phase I - Environmental Site Assessment report has been prepared in general accordance with the agreed scope-of-work and the requirements of CSA Z768-01. The conclusions presented herein are based on information gathered from a limited historical review and field inspection program. The findings of the Phase I - ESA are based on a review of readily available geological, historical and regulatory information and a cursory review made at the time of the field assessment. The historical research relies on information supplied by others, such as, local, provincial and federal agencies and was limited within the scope-of-work, time and budget of the project herein.

Should any conditions be encountered at the subject site that differ from our findings, we request that we be notified immediately in order to allow for a reassessment.

This report was prepared for the sole use of Sunset Lakes Development Corporation. Permission and notification from the above noted party and this firm will be required to release this report to any other party.

JOHN D. PATERSON AND ASSOCIATES LIMITED

Cynthia Tremblay, B. Eng.

Mark S. D'Arcy, P. Eng.

Report Distribution:

Sunset Lakes Development Corporation (3 copies)
John D. Paterson and Associates (1 copy)

APPENDIX 1

REGULATORY DOCUMENTS

APPENDIX 1
REGULATORY FRAMEWORK

FEDERAL

Legislation:

Canadian Environmental Protection Act; 1988:

- Chlorobiphenyl Regulation, 1991
- Regulation for the Registration of Underground Storage Tank Systems Containing Petroleum Products or Allied Petroleum Products
- Storage of PCB Material Regulations, 1992

Pest Control Products Act, 1985

Transportation of Dangerous Goods Act/Regulations, 1992

Canada Labour Code

- Occupational Safety and Health Regulations

Hazardous Products Act, 1988

- Controlled Products Regulations
- Hazardous Products Regulations

Canadian Environmental Assessment Act, 1994

Canadian Council of Ministers of the Environment (CCME)

National Action Plan for the Environmental Control of Ozone Depleting Substances and their Halocarbon Derivatives, 1997

Environmental Code of Practice for Reduction of Solvent Emissions from Dry Cleaning Facilities, 1992

Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks, 1995

Canadian Soil Quality Guidelines for Copper: Environmental and Human Health, 1997

Canadian Soil Quality Guidelines for Pentachlorophenol: Environmental and Human Health, 1997

APPENDIX 1
REGULATORY FRAMEWORK

FEDERAL (CONTINUED)

Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products, 1994

Environmental Code of Practice for Underground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products, 1993

A Framework for Ecological Risk Assessment: General Guidance, 1996

Guidance Document on the Management of Contaminated Sites in Canada, 1997

Guidance Manual for Developing Site-specific Soil Quality Remediation Objectives for Contaminated Sites in Canada, 1996

Guidance Manual on Sampling , Analysis and Data Management for Contaminated Sites, 1993

National Classification System for Contaminated Sites, 1992

Recommended Canadian Soils Quality Guidelines, 1997

Subsurface Assessment Handbook for Contaminated Sites, 1994

PCB Transformer Decontamination: Standards and Protocols, 1995

Canadian Water Quality Guidelines, 1997

APPENDIX 1
REGULATORY FRAMEWORK

PROVINCIAL - ONTARIO

Legislation:

Environmental Protection Act, 1990
- General: Air Pollution Regulation Reg. 346, 1990
- Sulphur Content of Fuels Regulation Reg. 361, 1990
- Boilers Regulation Reg 338, 1990
- General Waste Management Regulation Reg. 347, 1990
- Waste Management PCBs Regulation Reg. 362, 1990

General Regulation - Reg. 914

Spills Regulation - Reg 360

Boilers and Pressure Vessels Act, 1997

Dangerous Goods Transportation Act - Reg. 261/90

Gasoline Handling Act, 1990
- Gasoline Handling Code, 1993

Energy Act
- Ontario Fuel Oil Code Regulation 288

Fish and Wildlife Conservation Act, 1997

Occupational Health and Safety Act
- Regulation Respecting Asbestos on Construction Projects and in Buildings and Repair Operations - Reg. 838, 1990
- Regulation Respecting Lead

Ontario Water Resources Act

Conservation Authorities Act

Planning Act

Pesticides Act

Environmental Assessment Act, R.S.O. 1990

APPENDIX 1
REGULATORY FRAMEWORK

PROVINCIAL - ONTARIO (CONTINUED)

Municipal Board Act

Management of Underground Petroleum Storage Tanks at Federal Facilities in Ontario, Environment Canada, 1991

Policies, Guidelines and Codes:

Guidelines for Use at Contaminated Sites in Ontario, June 1996

Ontario Drinking Water Objectives, Revised 1994

Ontario Fire Code, 1998

Environmental Site Assessments, CMHC, 1993

Phase I Environmental Site Assessment, CSA - Z768-94, 1994

Identification of Lamp Ballasts Containing PCBs, Environmental Protection Series, 1991

PCB Site Listings - Ottawa-Carleton, Ontario Ministry of the Environment, 1998

Mapping and Assessment of Former Industrial Sites - City of Ottawa, Intera Technologies Limited, 1988

Waste Disposal Site Inventory, Ontario Ministry of the Environment, 1991

APPENDIX 1
REGULATORY FRAMEWORK

MUNICIPAL

Chapter 5 Sewer and Waste Disposal, Part 5.2 Sewers, Sewer Treatment Works & Discharge of Industrial Waste into Municipal Sewers.

Sewer Use By-Law number 163-73

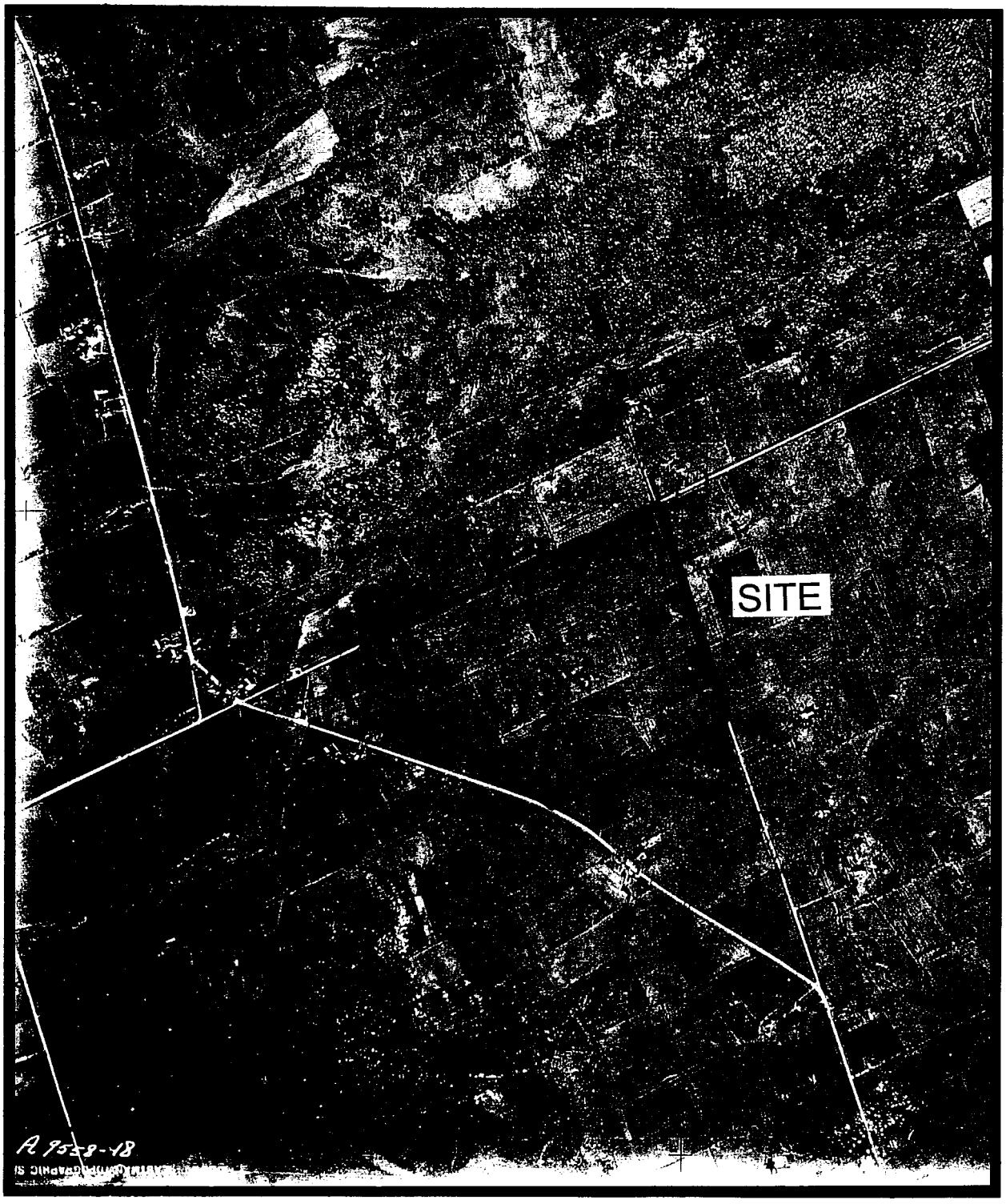
Zoning By-Law number Z2-K

APPENDIX 2

AERIAL PHOTOGRAPHS

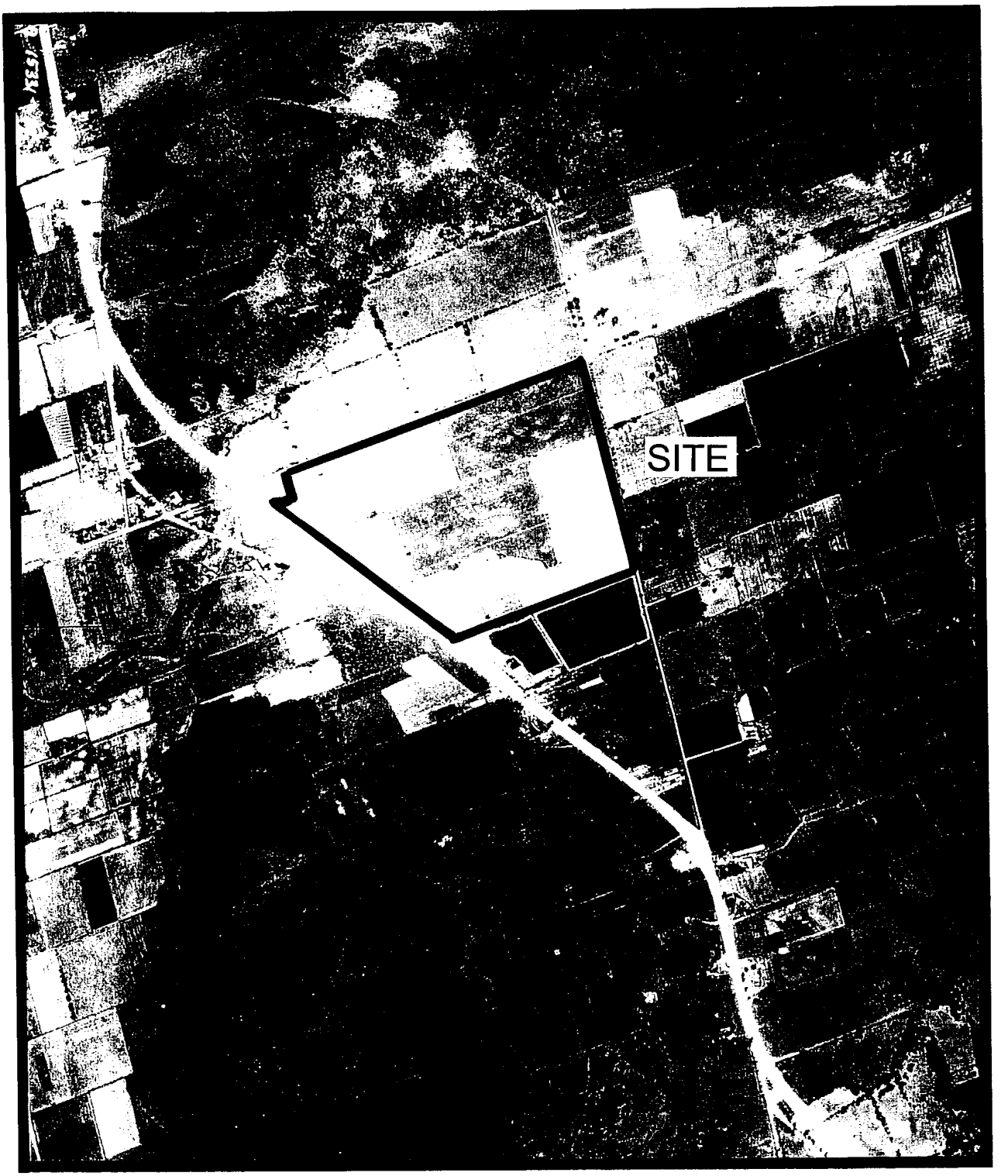
FIGURE 1 - KEY PLAN

DRAWING NO. E2834-1 - SITE PLAN



AERIAL PHOTOGRAPH
1945

JOHN D. PATERSON AND ASSOCIATES LIMITED



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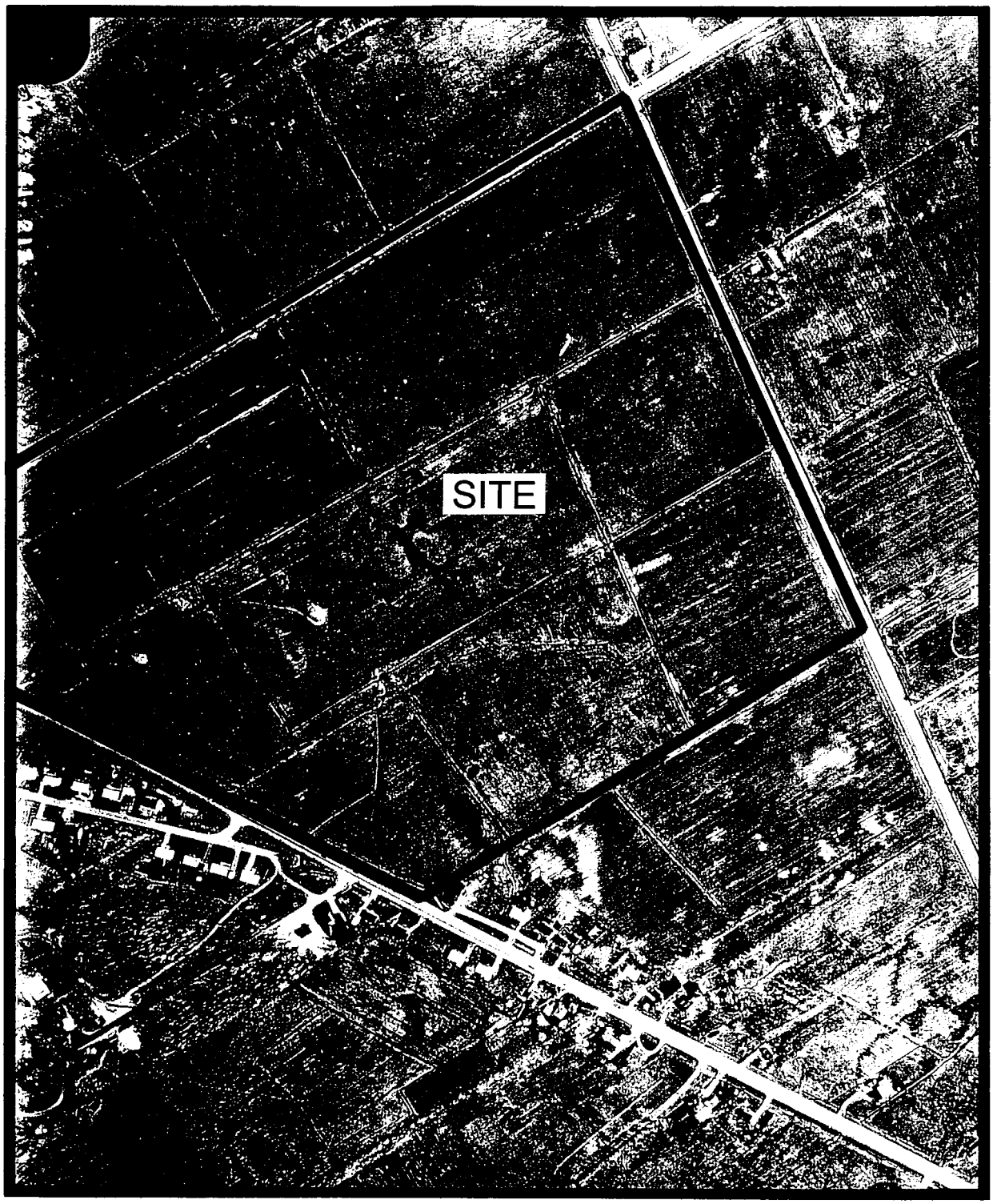
1956

JOHN D. PATERSON AND ASSOCIATES LIMITED



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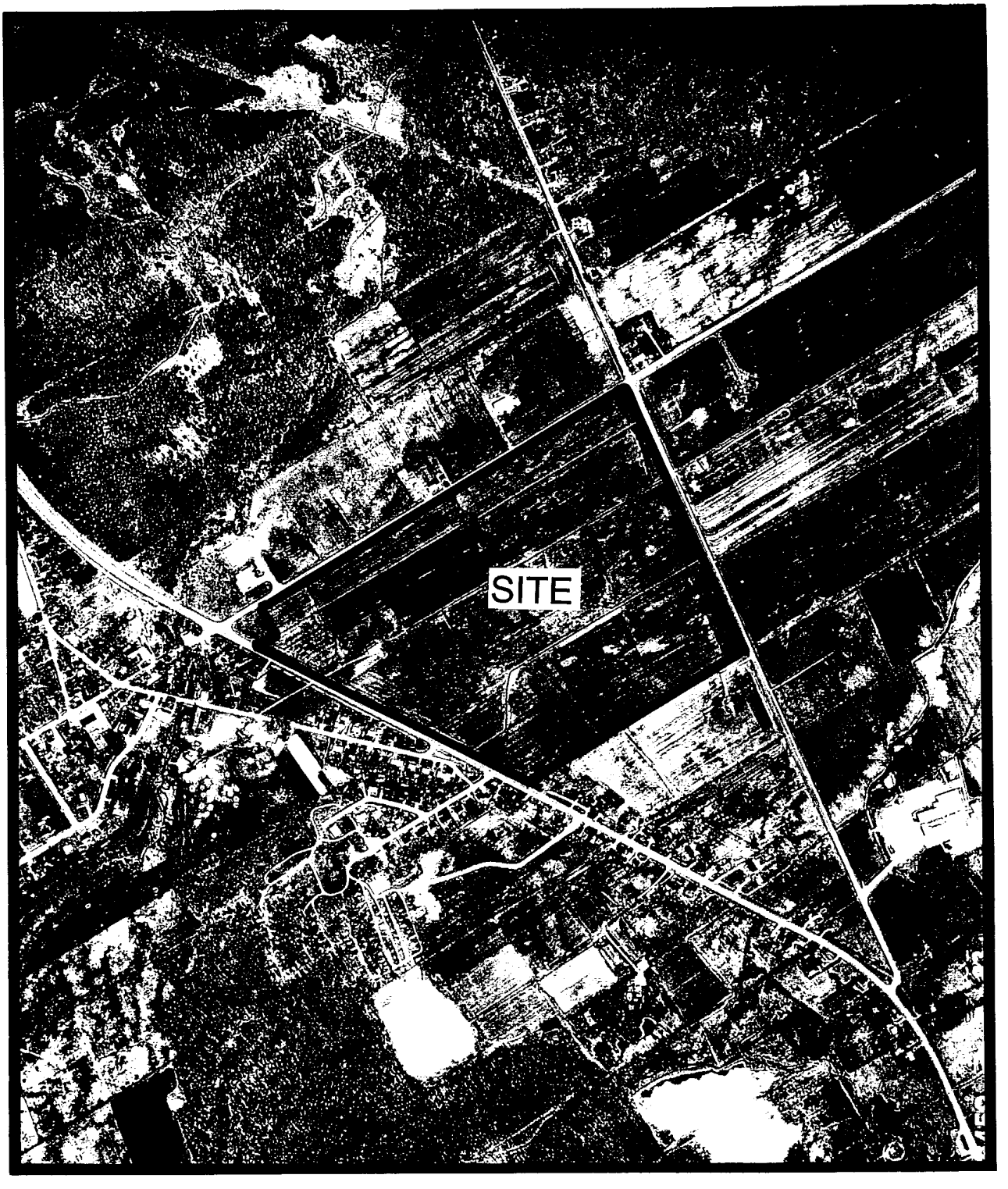
1970

JOHN D. PATERSON AND ASSOCIATES LIMITED



AERIAL PHOTOGRAPH
1984

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AERIAL PHOTOGRAPH
1989

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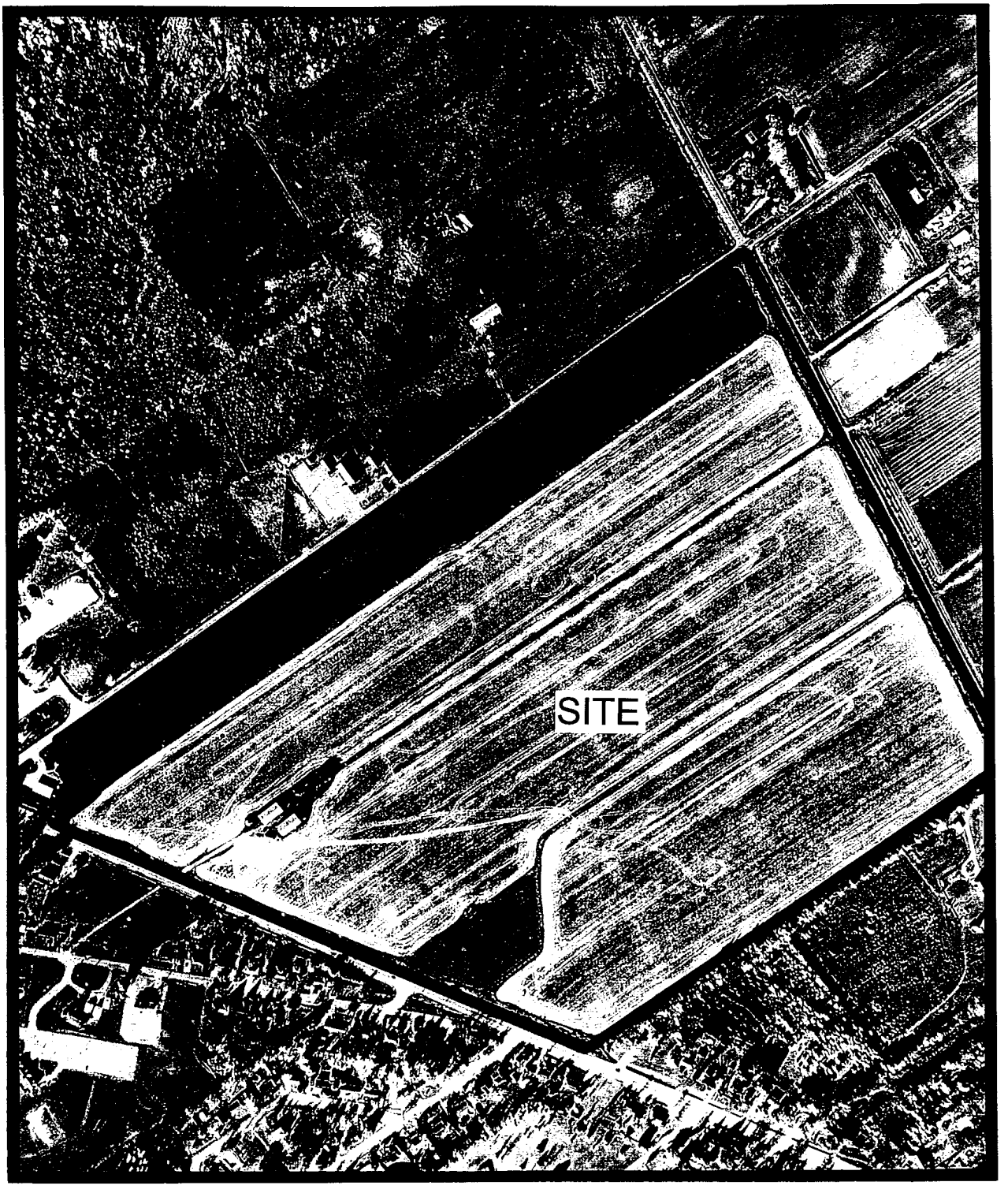

AERIAL PHOTOGRAPH
1997

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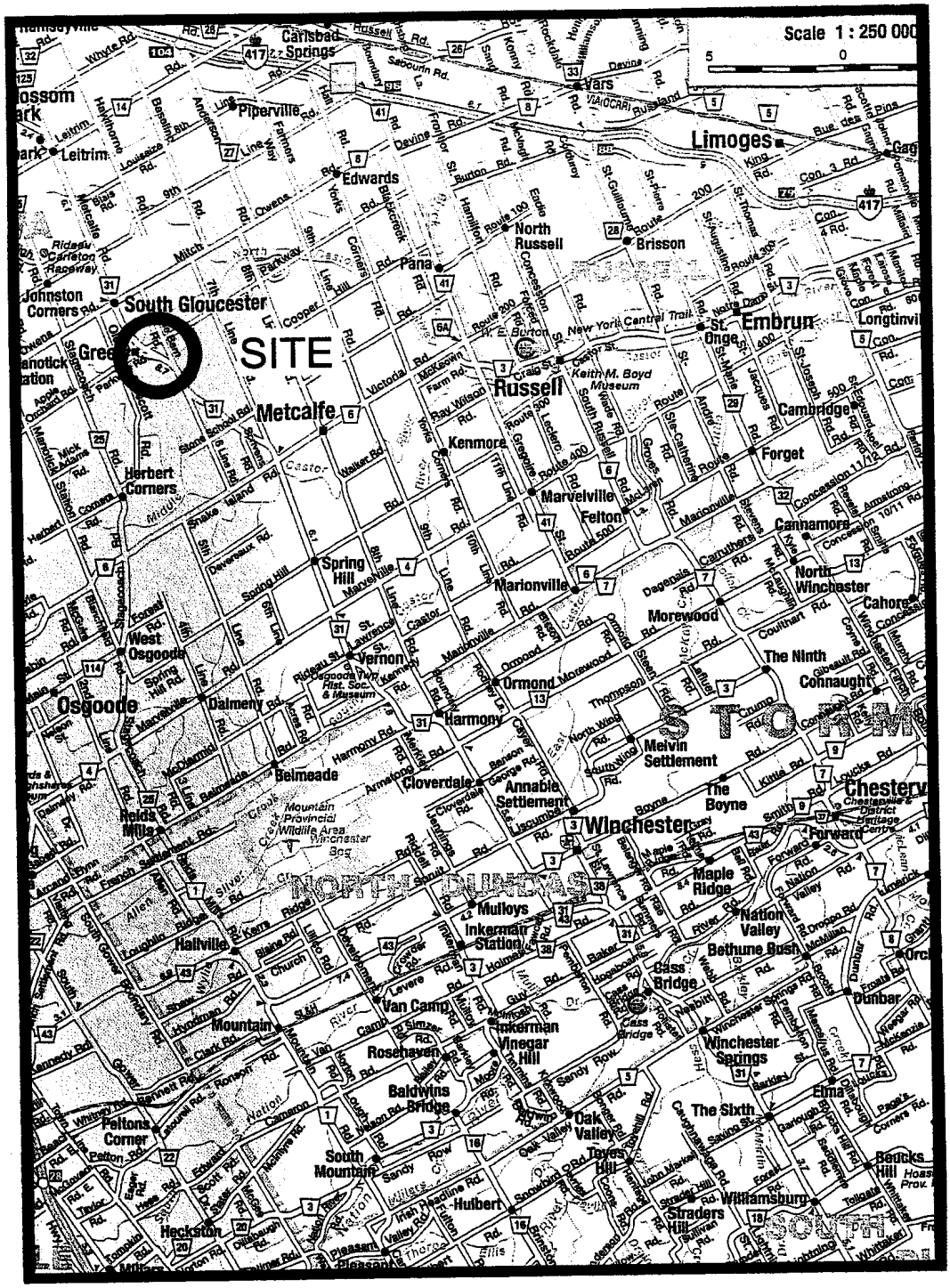
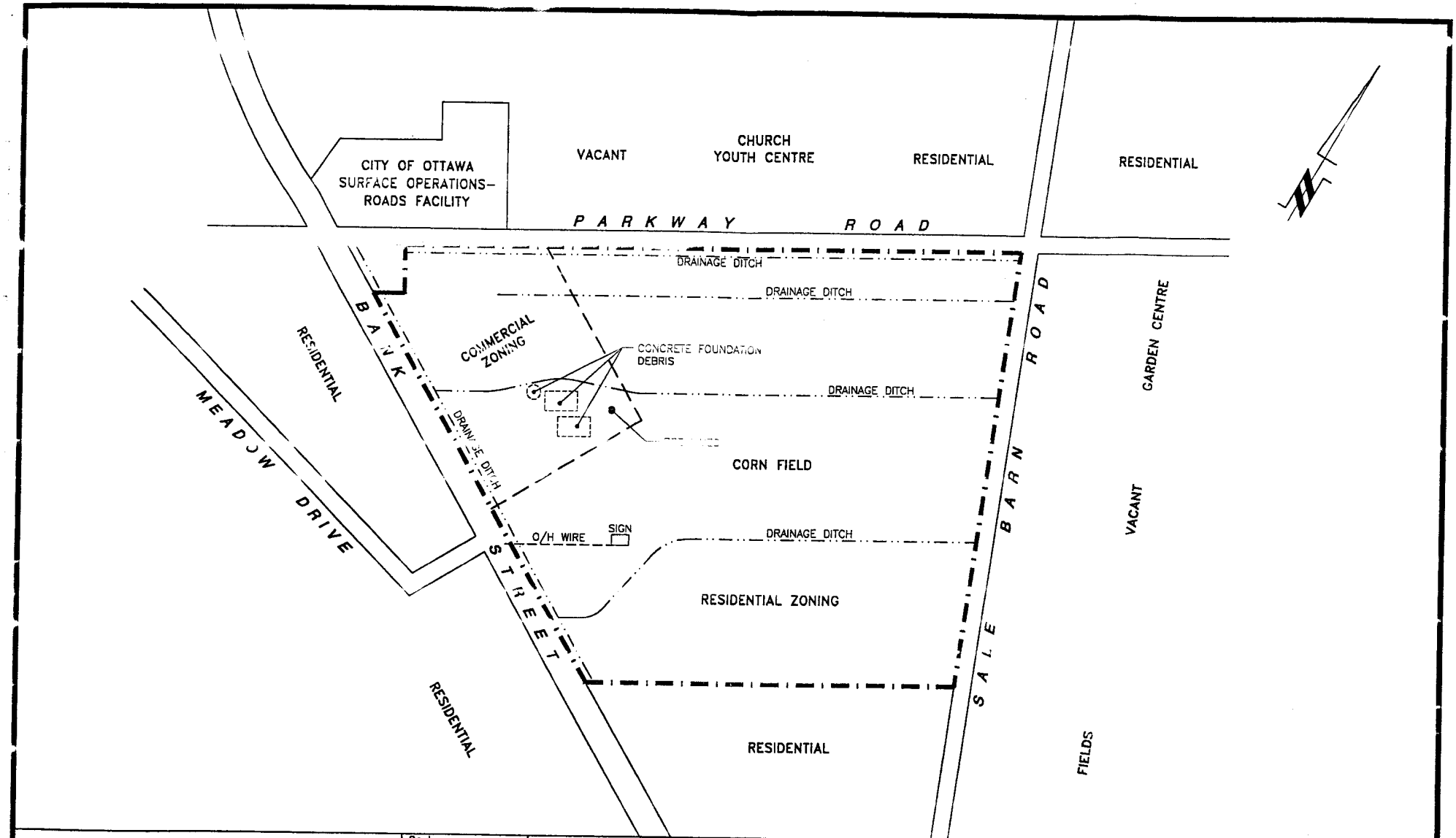


FIGURE 1

KEY PLAN



JOHN D. PATERSON AND ASSOC. LTD. Consulting Engineers 28 Concourse Gate, Unit 1, Nepean, Ontario K2E 7T7	Scale: N.T.S. Des.: CT Dwn: MPG Chkd: MSD	SUNSET LAKES DEVELOPMENT CORPORATION PHASE I–ENVIRONMENTAL SITE ASSESSMENT BANK ST. @ PARKWAY RD. & SALE BARN RD. OTTAWA (GREELY), ONTARIO	SITE PLAN	Dwg. No. E2834–1 Report No. E2834–01 Date: 12/2003

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