

Appendix G PHASE 1 ENVIRONMENTAL SITE ASSESSMENT



GeoPro Consulting Limited

Geotechnical-Hydrogeology-Environmental-Materials-Inspection

Limited Phase One Environmental Site Assessment

Square One Drive Extension

Rathburn Road West to Confederation Parkway

Mississauga, Ontario

Prepared For:

Stantec Consulting Limited



GeoPro Project No.: 15-1151-02

Report Date: May 29, 2017

Professional, Proficient, Proactive

T: (905) 237-8336 E: office@geoproconsulting.ca

Units 57, 40 Vogell Road, Richmond Hill, Ontario L4B 3N6



GeoPro
CONSULTING LIMITED

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1.0 EXECUTIVE SUMMARY

GeoPro Consulting Limited (“GeoPro”) was retained by Stantec Consulting Limited (“Stantec”) on behalf of the City of Mississauga (“the City”) (collectively named as the “Client”) to conduct a Limited Phase One Environmental Site Assessment (“Phase One ESA”) for the proposed extension of Square One Drive from Rathburn Road West to Confederation Parkway, in the City of Mississauga, Ontario (“Subject Area” or “Site”). The Subject Area is an irregularly shaped parcel of land covering a section of Rathburn Road West, a section of Confederation Parkway and a parcel of land between Rathburn Road West and Confederation Parkway.

It is understood that the City together with Stantec are initiating a preliminary design plan for the proposed extension of Square One Drive (“Project”). The City intends to undertake a Class Environmental Assessment “Schedule C” Study, for which environmental information will be required.

The purposes of the Limited Phase One ESA were to identify Potentially Contaminating Activities (“PCAs”) within the Subject Area and on the neighbouring properties located wholly or partly within 250 m radius of the Subject Area (“Study Area”) and to identify Areas with Potential Environmental Concern (“APECs”) within the Subject Area which may have the potential to affect the proposed construction works within the Subject Area and the Study Area.

It should be noted that this ESA was intended to provide a broad-level assessment of the APECs within the Subject Area through a records review and a walkover observation of the Subject Area and the Study Area, evaluation of the available information, and reporting. The methodologies of this Limited Phase One ESA were in general accordance with Ontario Regulation 153/04 (“O. Reg. 153/04”), as amended. However, this Limited Phase One ESA is not a full Phase One ESA as defined by the Canadian Standards Association (CSA Z768-01) and O. Reg. 153/04.

Based on the assessment of the information gathered, the PCAs in relation to use of transformers and waste disposal and management were identified on the Subject Area. As such, one (1) APEC on the Subject Area was considered to be associated with the identified PCAs. The following table summarizes the identified PCAs, their associated APECs, contaminants of potential concern (COPCs) and the media which could potentially be impacted.

APEC No.	Location	PCA No.	Location of PCA	COPC	Media Potentially Impacted
1	390 Rathburn Road West	#55	On-Site	Metals, PHCs, PAHs, PCBs	Soil and/or Groundwater
		#58	On-site	Metals	Soil and/or Groundwater

Note:

- 1) PCA #55 – Transformer Manufacturing, Processing and Use.

- 2) PCA #58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners.
- 3) PHCs – Petroleum Hydrocarbons Fractions F1 to F4
- 4) PAHs – Polycyclic Aromatic Hydrocarbons
- 5) PCBs – Polychlorinated Biphenyls

Based on the findings of the Limited Phase One ESA, GeoPro would recommend the following.

- Should road extension project involve the property acquisitions, a site specific Phase One and/or Phase Two ESAs would be required to be conducted for the transferred areas, which however may depend on the City's requirements related to the land conveyance to the City.
- A further environmental investigation should be conducted in the form of a full Phase One and/or Two ESA at 390 Rathburn Road West.
- Soil and/or groundwater may be impacted by de-icing salt materials in the area on and adjacent to the roadways. Therefore, excess soils generated during the construction on and near Rathburn Road West and Confederation Parkway should be tested to confirm the soil quality for re-use and/or off-site disposal purposes.

2.0 INTRODUCTION

GeoPro Consulting Limited ("GeoPro") was retained by Stantec Consulting Limited ("Stantec") on behalf of the City of Mississauga ("the City") (collectively named as the "Client") to conduct a Limited Phase One Environmental Site Assessment (Phase One ESA) for the proposed extension of Square One Drive from Rathburn Road West to Confederation Parkway, in the City of Mississauga, Ontario ("Subject Area" or "Site"). The Site Location Plan is provided in Drawing No.1.

It is understood that the City together with Stantec are initiating a preliminary and detailed design plan for the proposed extension of Square One Drive ("Project"). The City intends to undertake a Class Environmental Assessment "Schedule C" Study, which environmental information will be required.

The purposes of the Limited Phase One ESA were to identify Potentially Contaminating Activities ("PCAs") within the Subject Area and on the neighbouring properties located wholly or partly within 250 m radius of the Subject Area ("Study Area") and to identify Areas with Potential Environmental Concern ("APECs") within the Subject Area which may have the potential to affect the proposed construction works within the Subject Area and the Study Area.

It should be noted that this Limited Phase One ESA was intended to provide a broad-level assessment of the APECs within the Subject Area through a records review and a walkover observation only for the Subject Area and the Study Area, evaluation of the available information, and reporting. The methodologies of this Limited Phase One ESA was in general accordance with Ontario Regulation 153/04 (O. Reg. 153/04), as amended. However, this Limited Phase One ESA is not a full Phase One ESA as defined by the Canadian Standards Association (CSA Z768-01) and O. Reg. 153/04.

2.1 Subject Area Information

The Subject Area is an irregularly shaped parcel of land covering a section of Rathburn Road West, a section of Confederation Parkway and a parcel of land between Rathburn Road West and Confederation Parkway. As shown on Drawings No. 2, the Subject Area is comprised of the following properties:

- South portion of 350 Rathburn Road West
- North portion of 390 -410 Rathburn Road West
- Sections of the Rathburn Road West and Confederation Parkway
- Vacant land south of 350 Rathburn Road West and west of Confederation Parkway
- Portions of 385 Prince of Wales Drive and 4220 Living Arts Drive, east of Confederation Parkway

3.0 SCOPE OF INVESTIGATION

The general scope of work for this Limited Phase One ESA consisted of the following tasks:

- A records search and review of the Site and the properties within the Study Area;
- Interpretation of available geological and topographic maps, and federal and municipal heritage plans;
- Site reconnaissance;
- An evaluation of the collected information; and
- Preparation of this Limited Phase One ESA report.

4.0 RECORDS REVIEW

4.1 General

4.1.1 Study Area Determination

The Study Area includes the Subject Area and all other properties wholly or partly located within a 250 m radius from the boundary of the Subject Area. Based on a review of the available historical information and site observations, GeoPro did not note any significant potentially contaminating properties beyond 250 m from the Subject Area. Therefore, the properties within the Study Area were subject to the Limited Phase One ESA and our review of historical records. The limits of the Subject Area and Study Area are presented on Drawings No. 1, No. 2, No. 3 and No. 4.

4.1.2 Fire Insurance Plan

A review of the Catalogue of Canadian Fire Insurance Plan ("FIP") was conducted at the Toronto Reference Library. No FIP information was available for the properties within the Study Area.

4.2 Environmental Source Information

4.2.1 Environmental Database Search

A records and regulatory agency databases review was completed through a database search carried out by Environmental Risk Information Services ("ERIS"). The ERIS report includes a search of provincial and private database records for the Subject Area and the surrounding properties within 250 m from the Subject Area. A copy of the ERIS report is provided in Appendix A.

The results of the ERIS search and the associated potential environmental concerns to the Subject Area are summarized in the following table.

Database	Records		Pertinent Information/Comments
	Subject Area	Study Area	
Certificates of Approval (CA)	0	2	These CAs were related to air emission and municipal sewages and do not represent potential environmental concerns to the Subject Area.
ERIS Historical Searches (EHS)	0	4	Four (4) historical searches were conducted within the Study Area and do not represent environmental concerns to the Subject Area.
Ontario Regulation 347 Waste Generators Summary (GEN)	1	0	One (1) record was listed as waste generator of acid solutions containing heavy metals for Enersource Hydro Mississauga Inc. (Enersource) at 390 Rathburn Road West. This activity would be considered as a concern to the Subject Area because of its location.
TSSA Incidents (INC)	0	1	One (1) record was noted to be related to a fire incident, at 4188 Living Arts Drive, and would not represent environmental concerns considering the distance.
TSSA Pipeline Incidents (PINC)	0	1	One (1) record was noted to be related to natural gas pipeline incident, and because of its nature, it would not present potential environmental concerns to the Subject Area.
Scott's Manufacturing Directory (SCT)	0	2	Two (2) records of SCT were identified; however, the addresses associated with these registrations are residential properties and no industrial activities are expected.
Ontario Spills (SPL)	0	1	One (1) furnace oil spill was identified at 335 Rathburn Road West on October 28, 2009, which may indicate

Database	Records		Pertinent Information/Comments
	Subject Area	Study Area	
			the presence of fuel storage tank or a potentially contaminating activity.
Total	1	11	

4.3 Physical Setting Sources

4.3.1 Aerial Photographs

Aerial photographs were examined for a visual chronology of previous land uses on the Subject Area and the properties within the Study Area. Aerial photographs for the years 1954, 1966, 1975, 1980, 1985, 1989, 1997, 2002, 2007 and 2016 were obtained from the Mississauga Interactive Map. Copies of the aerial photographs are included in Figures No. 1 to No. 10. A summary of the observed features in the aerial photographs are presented in the following table.

Year	Subject Area	Study Area
1954	The Subject area appear to be vacant or used for agricultural purposes. Mary Fix Creek appears to cross the Subject Area.	Vacant or agricultural lands. A creek tributary appears to cross the northeast portion of the Study Area. No development is noted.
1966	Similar to the 1954 Photograph. Two more creeks appear to cross the west and central portions of the Subject Area, respectively.	A single building/structure is noted in the southeast portion of the Study Area. A few creek-like features appear to be at the north portion of the Study Area.
1975	Similar to the 1966 Photograph	Similar to the 1966 Photograph
1980	Similar to the 1975 Photograph.	Similar to the 1975 Photograph. Elora Drive appears to be developed in the southwest portion of the Study Area.
1985	Agricultural activities appear to be evident through the southwest portion of the Subject Area.	Residential development appears to be developed along Elora Drive, in the south of the Study Area. A commercial plaza appears to be developed at the southwest of the intersection of Elora Drive and Rathburn Road West. A highway (Highway 403) can be seen west beyond the Study Area.

Year	Subject Area	Study Area
1989	Major development in the Subject Area. Rathburn Road West is constructed and a high-rise residential building is being developed in the north of the Study Area. Two tennis courts are noted on the south side of Rathburn Road West (Zonta Meadows Park). Previous creek-like features appear to be no longer present.	The west/southwest portions of the Study Area are fully developed with residential subdivisions. Buildings (likely a school) and residential houses are noted in the southeast portion of the Study Area.
1997	A building structure that seems to be the current Enersource Hydro building (390 Rathburn Road West) is developed in the central south of the Subject Area. A tennis court is seen as a part of the high-rise residential property at 350 Rathburn Road West.	Two high-rise residential buildings are noted north adjacent to the Site. Construction appears to begin in the north portion of the Study Area.
2002	Similar to 1997 Photograph	Living Arts Drive is constructed connecting the new parking lots in the north portion of the Study Area. Living Arts Center is developed northeast of to the Study Area.
2007	Confederation Parkway is developed at the northeast of the Subject Area.	Confederation Parkway is constructed. High rise residential buildings are noted to be built in the east and northwest portion of the Study Area.
2016	Similar to the 2007 Photograph	More high-rise residential buildings are completed in the north portion of the Study Area.

Notable observations based on the aerial photographs suggest that most parts of the Subject Area and Study Area were either vacant or agricultural lands prior to 1985. After 1985, the Subject and Study Area were mainly developed for residential, institutional and parkland uses.

4.3.2 Geology, Hydrology, and Topography

Source	<p>The Physiography Map of Southern Ontario prepared by the Ontario Department of Mines and Northern Affairs</p> <p>The Map of Quaternary Geology of Ontario (Map 2556, scale 1:1000000)</p> <p>Bedrock Geology of Ontario by Ontario Geological Survey</p> <p>The Canada Atlas – Toporama</p>
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	The Hydrogeology of Southern Ontario
Geology	<p>The Study Area is located within the physiographical region of South Slope in the area of drumlinized till plains.</p> <p>The Site and the Study Area are underlain with the Halton till predominantly composed of silt to silty clay matrix, high in matrix carbonate content and clast poor of the Pleistocene.</p> <p>The Study Area are underlain by the Georgian Bay Formation, consisting of shale, limestone, dolostone and siltstone. The depth of the bedrock is approximately 5 m below ground surface according to Ontario Geological Survey.</p>
Hydrology	<p>The Site and Study Area are located within the Norval to Port Credit Subwatershed, which is a part of the Credit Valley Conservation's Watershed (Appendix B). According to the Toporama topographical map, Mary Fix Creek, a tributary of the Credit River, flows through the Study Area; however, Mary Fix Creek was not observed within the Study Area during the site reconnaissance. The Credit River empties into Lake Ontario, approximately 6.77 km southeast of the Site.</p> <p>Regional groundwater flow is expected to be southerly towards Lake Ontario. Overburden aquifers within the Study Area are mainly in the Halton till.</p>
Topography	<p>As shown in Figure 11, the topography of the Site and the Study Area is relatively flat and slopes towards the Credit River in the southwest, with the elevations changing from approximately 150 m to 170 m above sea level ("mASL") within the Study Area. The shallow groundwater flow within the Study Area is generally controlled by the topography of the area, and is expected to be flowing southwesterly direction.</p>

4.3.3 Fill material

No obvious areas of fill placement were observed at the Site during the Phase One Site Visit. However, regrading and engineering fill placement for the roadway construction may have previously occurred. Considering the general requirements for the engineering fill, the placement of engineering fill materials may not be considered as a potentially contaminating activity.

4.3.4 Water Bodies and Areas of Natural Significance

To assess the presence of water bodies and areas of natural significance, the Ministry of Natural Resource and Forestry's Heritage Areas map database was reviewed (shown in Appendix C). Based on the above data review, the Subject Area and the Study Area is not located within area of natural heritage system. No water bodies were observed during the site reconnaissance.

The Subject Area is located neither within the Niagara Escarpment area nor within the Oak Ridges Moraine Conservation Area. No other areas of natural significance were identified within the Study Area.

4.3.5 Water Well Records

Water well records maintained by the Ministry of Environment and Climate Change ("MOECC") were searched and reviewed. No well records were found within the Subject Area and Study Area.

It should be noted that during the site visit, no water well was seen on the Subject Area. As the Site and its neighbouring properties are located in an urban area, each property is expected to be serviced by municipal water.

Based on the Region of Peel Source Water Protection Map and the Map of Wellhead Protection Areas in Peel Region, the Subject Area is not located within a wellhead protection area.

5.0 SITE RECONNAISSANCE

A visual site inspection was conducted on March 23, 2017 by Mr. Talent Huang of GeoPro through observing the publically and readily accessible areas of the Subject Area and Study Area.

At the time of site reconnaissance, the weather was sunny with temperatures of around 2°C on March 23, 2017. The site reconnaissance took approximately 4 hours in total.

The Site and Surrounding Land Uses are shown on Drawing No. 2. At the time of the site visit, the observations of the Subject Area were divided into four portions.

- The north portion of the Subject Area consists a parking garage entrance, a parking lot, a storage building, a tennis court and green spaces for the high-rise residential buildings at 330 to 350 Rathburn Road West.
- The south portion consists of the parklands of Zonta Meadows Park with several pad mounted transformer boxes, a substation building, a parking lot, and tennis courts.
- The east portion consists of a vacant land, and a section of Confederation Parkway.
- The west portion consists of Rathburn Road West roadway.

Credit River tributaries, Mary Fix Creek and the tributary near Living Arts Drive, shown on Topographical Map (Figure 11), were not observed on the Subject Area and Study Area.

The Study Area was noted to be occupied by a combination of residential, institutional, community, parkland, mixed and commercial land uses, and undeveloped and wooded lands. Selected photographs taken during the reconnaissance are presented in Appendix D.

A summary of the features observed on the properties used for commercial and industrial purposes is presented in the following table.

Address	Current Occupants and Other Observations
Subject Area or Site	
390 Rathburn Road West	Enersource Hydro electrical utilities building and transformer boxes
Study Area	
4056 Confederation Parkway	Mixed residential and multi – tenant commercial buildings
4070- 4100 Living Arts Drive	Mixed residential and multi – tenant commercial buildings
4141 Living Arts Drive	Living Arts Centre
4188 Living arts Drive	Mixed residential and multi – tenant commercial buildings
4180 and 4226 Living Arts Drive	Sheridan College Campus buildings
385 Prince of Wales Drive	Mixed residential and multi – tenant commercial buildings
388 Prince of Wales Drive	Mixed residential and multi – tenant commercial buildings (with Quality Care Cleaners dry cleaner depot)
355 Princess Royal Drive	Community Common Park
380 Princess Royal Drive	Mixed residential and multi – tenant commercial buildings
299-309 Rathburn Road West	Cineplex Theatre commercial complex
592 Rathburn Road West	Commercial Plaza (with Kleenlook Cleaners dry cleaner depot)

Three (3) transformer boxes mounted on concrete pads were noted on the Enersource substation property at 390 Rathburn Road West, which appeared to be in good condition. However, given the year of construction of the substation building (prior to 1997), a close inspection may be required to further assess the potential environmental concerns in relation to the transformers and other electrical equipment used in the substation.

One (1) dry cleaner shop (namely Kleenlook Cleaners) was noted in a commercial plaza located at 592 Rathburn Road West, and another shop (namely Quality Care Cleaners) was observed in a commercial/residential high-rise building at 388 Price of Wales Drive.

No other property uses or activities that may be of environmental concern to the Subject Site were noted within the Study Area.

Note this Limited Phase One ESA was a broad-level assessment within the Subject Area and Study Area. Only the walkover observation was conducted and no access to the individual properties within the Subject Area were provided and arranged.

6.0 REVIEW AND EVALUATION OF INFORMATION

6.1 Potentially Contaminating Activity

Based on the information obtained, PCAs have been identified on the Project Area and in the Study Area, and are summarized in the following table and shown on Drawing No. 3.

Location, Distance and Direction from the Site	Operations or Activity Identified (Source)	PCA Number	PCA Contributing to Environmental Concern
Project Area			
Enersource facility property at 390 Rathburn Road West On site – 0 m	Presence of three (3) transformer boxes (as per site visit)	PCA #55: Transformer Manufacturing, Processing and Use	Yes. Considering the location, the activities associated with the operation of transformers and generation of wastes may contribute to environmental concern on the Subject Area
	waste generator of acid solutions containing heavy metals (as per ERIS report)	PCA #58: Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners	
Study Area			
592 Rathburn Road West; Off-site, about 230 m south	Operation of Dry Cleaner shop (namely Kleenlook Cleaners) as per site visit	PCA #37: Operation of dry cleaning equipment (where chemicals are used)	No. Based on the location of the shops, no ventilation pipes were noted, and these dry cleaning shops should be drop-off depots. It is unlikely that the operation of a drop-off depot would contribute to an environmental concern to a site.
388 Price of Wales Drive; off-site, about 100 m east of the Subject Area	Operation of Dry Cleaner shop (Quality Care Cleaners) as per site visit	PCA #37: Operation of dry cleaning equipment (where chemicals are used)	
335 Rathburn Road West; off-site, about 100 m north/northwest of the Subject Area	Record of furnace oil spill (as per ERIS report), indicating the presence of storage tank	PCA# 28: Gasoline and Associated Products Storage in Fixed Tanks	No. The original property has been re-developed with a high-rise residential building. It is unlikely that the former storage tank would contribute to an environmental concern

Location, Distance and Direction from the Site	Operations or Activity Identified (Source)	PCA Number	PCA Contributing to Environmental Concern
			to the Subject Area after the site redevelopment.

Note: PCA numbers are in accordance with Table 2, Schedule D of O. Reg. 153/04.

In addition, it is common that soil and/or groundwater would be impacted by de-icing salt materials in the area on and adjacent to the roadways. Therefore, the soils on and near the roadways of Rathburn Road West and Confederation Parkway may be impacted by salt.

All other properties within the Study Area (including residential, commercial, community, mixed and institutional properties) were considered to have low risk for potential environmental impacts to the Subject Area.

6.2 APECs

Based on the Phase One ESA completed by GeoPro, PCAs were identified on the Project Area and on the Study Area. Further analysis of the PCAs indicated that an APEC would be considered to be present in the Project Area, which are summarized in the following table and shown on Drawing No. 4.

APEC No.	Location	PCA No.	Location of PCA	COPC	Media Potentially Impacted
1	390 Rathburn Road West	#55	On-Site	Metals, PHCs, PAHs, PCBs	Soil and/or Groundwater
		#58	On-site	Metals	Soil and/or Groundwater

Note:

- 1) PCA #55 – Transformer Manufacturing, Processing and Use.
- 2) PCA #58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners.
- 3) PHCs – Petroleum Hydrocarbons Fractions F1 to F4
- 4) PAHs – Polycyclic Aromatic Hydrocarbons
- 5) PCBs – Polychlorinated Biphenyls

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the assessment of the information gathered, the PCAs in relation to use of transformers and management of wastes were identified, which may contribute to an environmental concern to the Subject Area. As such, one (1) APEC on the Subject Area was considered to be associated with the identified PCAs.

Based on the findings of the Limited Phase One ESA, GeoPro would recommend the following.

- Should road extension project involve the property acquisitions, a site specific Phase One and/or Phase Two ESAs would be required to be conducted for the transferred areas, which however may depend on the City's requirements related to the land conveyance to the City.
- A further environmental investigation should be conducted in the form of a full Phase One and/or Two ESA at 390 Rathburn Road West.
- Soil and/or groundwater may be impacted by de-icing salt materials in the area on and adjacent to the roadways. Therefore, excess soils generated during the construction on and near Rathburn Road West and Confederation Parkway should be tested to confirm the soil quality for re-use and/or off-site disposal purposes.

8.0 LIMITATIONS

GeoPro has performed this Limited Phase One ESA in accordance with local generally accepted professional practices and environmental site assessment protocol. This assessment does not include any sampling or testing for potential contaminants such as asbestos, PCBs, radon gas, or airborne pollutants, etc. Occupancy use, codes, rules, and procedures change rapidly with time in the environmental engineering field and the reader is advised to update the findings and recommendations on a regular basis. The report herein comprises a statement of professional opinion based on visual observation only and the reader is advised that visual observation is not effective in determining all conditions that affect environmental compliance. These services are not subject to any express or implied warranties and none should be inferred. This report was prepared for the account of the Client. The material in this report reflects GeoPro's judgment in light of the information available to it at the time of preparation. Any use, which a Third Party not noted above makes of this report, or any reliance on decisions to be made based on it, are the responsibility of such Third Parties. GeoPro accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.

9.0 SIGNATURE

This Limited Phase One ESA was conducted and supervised by Mr. Yu Li and Mr. Bujing Guan who are Qualified Persons with the MOECC as defined under Ontario Regulation 153/04.

GeoPro Consulting Limited is a consulting firm which offers a comprehensive range of professional engineering services including geotechnical, geo-environmental, hydrogeological, material testing and inspection services for clients in various sectors including land development, government, institutional, commercial/retail, contractors and other professionals (engineers, architects, planners, lawyers, etc.).

Talent Huang is an Environmental Project Coordinator with GeoPro. Mr. Huang has a Master of Environmental Science from the University of Toronto. He has been trained and involved in conducting Phase One and Two ESAs. He has coordinated and managed Phase One and Two ESAs projects since 2015.

Mr. Yu Li is a Senior Environmental Engineer with GeoPro. Mr. Li has a Master of Engineering in Environmental Engineering from the University of Guelph and has been a Professional Engineer since 2006. Mr. Li has conducted and managed numerous Phase I and II ESAs, soil and groundwater remediation projects, Brownfield re-development projects and hydrogeological investigations. Mr. Li has over twenty years of extensive project management and engineering experience for a broad range of clients.

Bujing Guan is an environmental specialist and senior contaminant hydro-geologist with GeoPro. Mr. Guan has a Bachelor of Engineering Degree in Hydrogeology and Geotechnical Engineering from Chengdu University of Technology, Chengdu, China. He also has a Master of Applied Science Degree in Environmental Engineering from The University of Toronto. He has been a registered Professional Geoscientist with The Association of Professional Scientists of Ontario since 2007. He has conducted and managed numerous geo-environmental and hydrogeological investigation projects including Phase One and Two ESAs, site remediation, groundwater investigation, monitoring and PTTW application in Ontario and Alberta. He also has overseas experience in conducting investigations on water supply assessment, mineral deposit investigation, engineering site characterization.

We trust that the information contained in this report is complete within our terms of reference. If you have any questions or require further information, please do not hesitate to contact our office.

Sincerely,

GeoPro Consulting Limited

Geotechnical - Hydrogeology - Environmental - Materials Testing - Inspection



Talent Huang, M. Env. Sc.
Environmental Scientist



Yu Li, M.Eng., P.Eng., QP_{ESA}
Senior Environmental Engineer



Bujing Guan, M.A.Sc., P. Geo., QP_{ESA}
Senior Hydrogeologist



10.0 REFERENCES

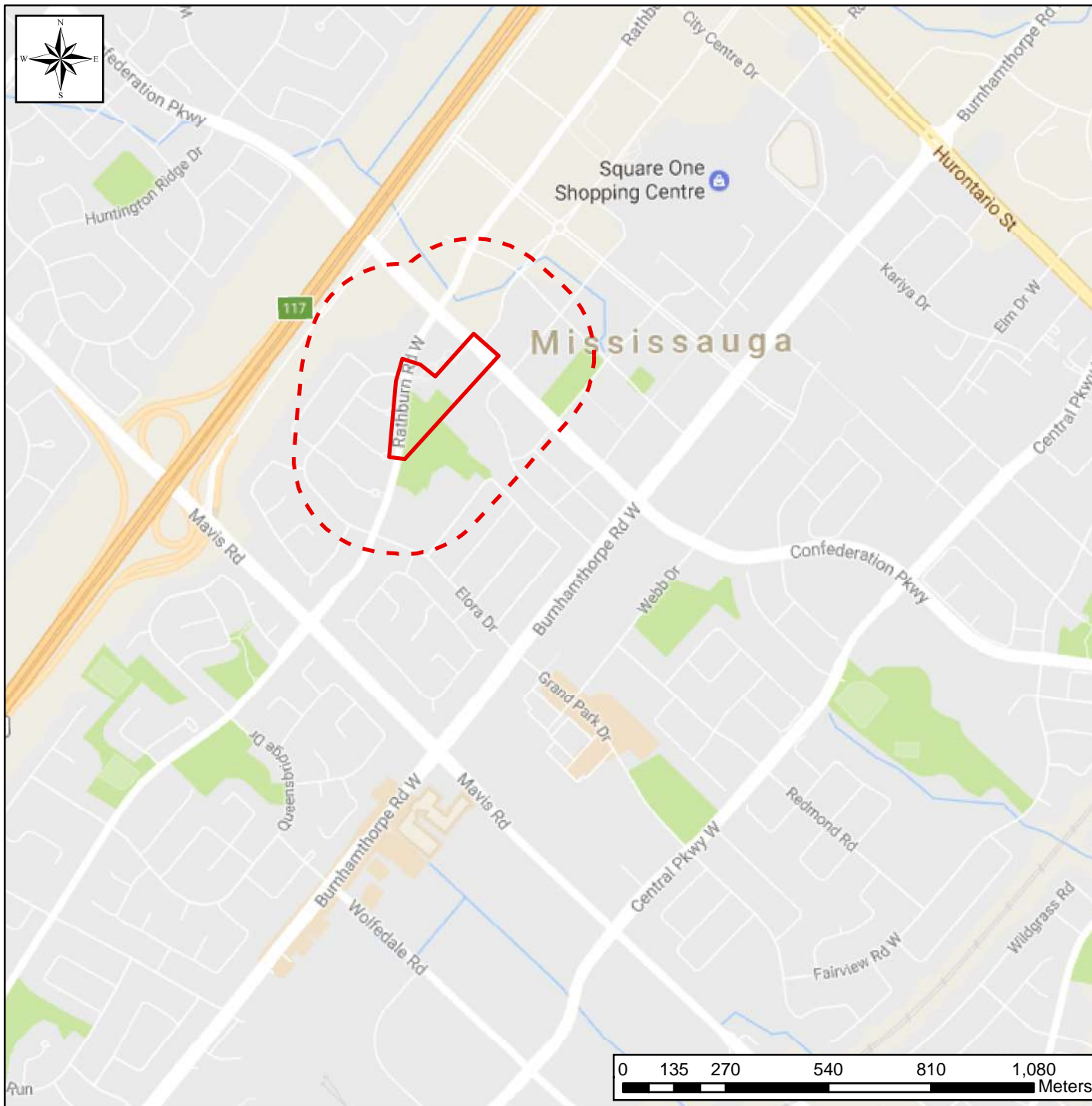
1. Google Earth
2. Oak Ridges Moraine Conservation Plan Land Use Designation Map
3. O. Reg. 153/04, as amended
4. MOECC database
5. Technical Standards and Safety Authority
6. Ministry of Natural Resources and Forestry database
7. Credit Valley Conservation Norval to Port Credit Subwatershed
8. Peel Region Source Water Protection Wellhead Protection Areas
9. Mississauga Interactive Map
10. The Atlas of Canada – Toporama
11. Chapman, L.J. and Putnam, D.F., 2007; Physiography of Southern Ontario, Ontario Geological Survey, Miscellaneous Release--Data 228,
12. Ontario Geological Survey, 2010; Surficial Geology of Southern Ontario, Ontario Geological Survey, Miscellaneous Release--Data 128-REV
13. Ontario Geological Survey, 2011; 1:250 000 scale, Bedrock Geology of Ontario, Ontario Geological Survey, Miscellaneous Release---Data 126-Revision 1.
14. Gao, C., Shiota, J., Kelly, R. I., Brunton, F.R., van Haaften, S., 2006; Bedrock Topography and Overburden Thickness Mapping, Southern Ontario, Ontario Geological Survey, Miscellaneous Release--Data 207.



GeoPro Consulting Limited

Geotechnical-Hydrogeology-Environmental-Materials-Inspection

DRAWINGS



Legend

- Study Area
- Subject Area/Site

Map Source:
Google Maps

Client: Stantec Consulting Limited

Prepared by: HL

Approved: YL

Date: May 2017

Scale: As Shown

Original Size: Letter

Rev: BG

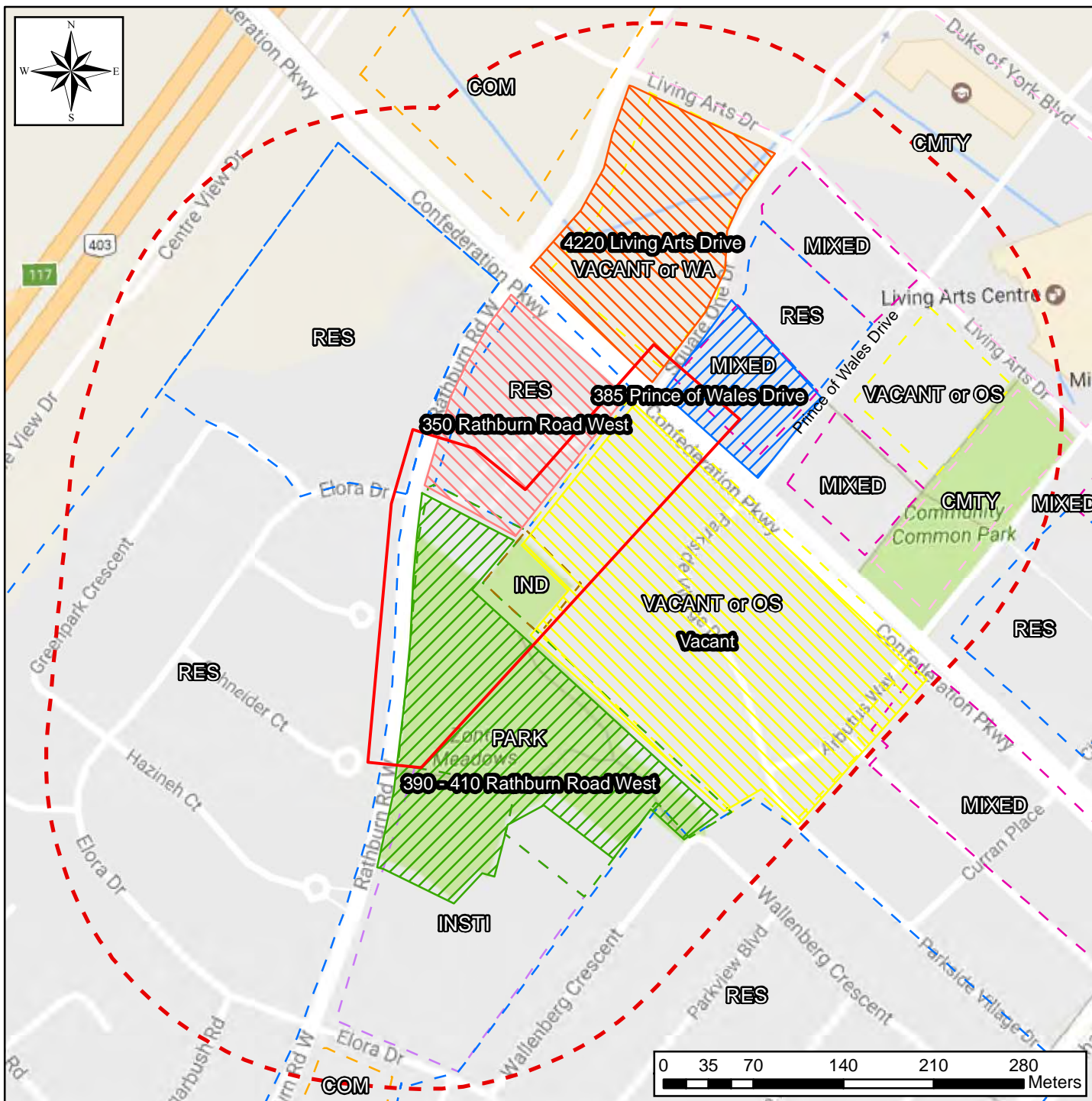
Project No.: 15-1151-02

Drawing No.: 1

Title: Site Location Plan

Limited Phase One Environmental Site Assessment
Square One Drive Extension
Rathburn Road West to Confederation Parkway
Mississauga, Ontario

 **GeoPro Consulting Limited**



Legend

- Subject Area/Site
- Study Area

Note:

1. Map Source:
Google Maps projected in
NAD83 UTM Zone 17N
2. Land Use Abbreviations:
VACANT or OS - Vacant or Open Space
VACANT or WA - Vacant or Wood Area
RES - Residential Use
COM - Commercial Use
IND - Industrial Use
PARK - Parkland Use
INSTI - Institutional Use
CMTY - Community Use
MIXED - Mixed Use

Client: Stantec Consulting Limited

Prepared by: HL

Approved: YL

Date: May 2017

Scale: As Shown

Original Size: Letter

Rev: BG

Project No.: 15-1151-02

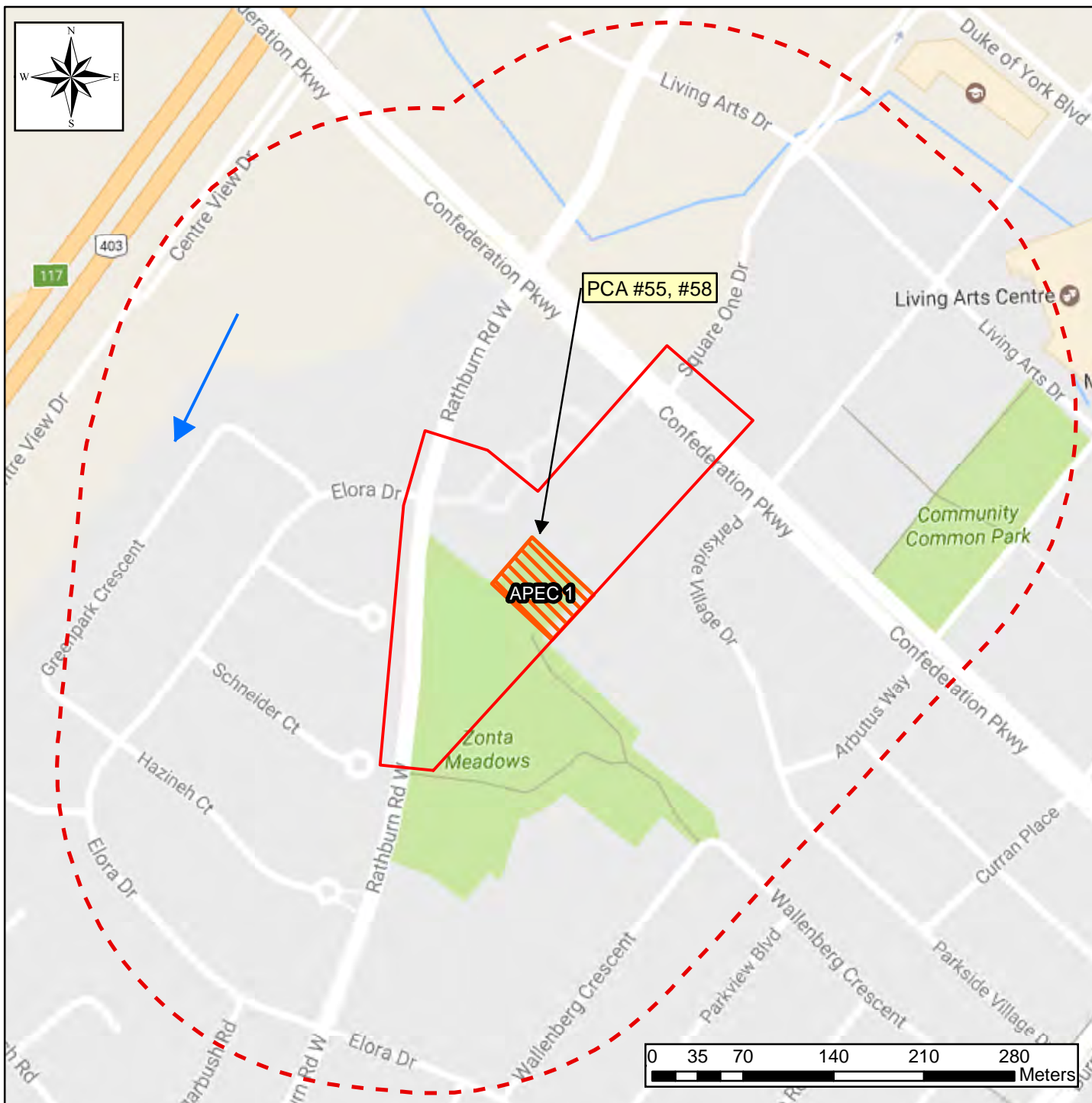
Drawing No.: 2

Title: Subject Area and Surrounding Land Use Plan

Limited Phase One Environmental Site Assessment
Square One Drive Extension
Rathburn Road West to Confederation Parkway
Mississauga, Ontario



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Legend

- Subject Area
- Study Area
- APEC 1
- ➔ Inferred Groundwater Flow Direction

Note:

1. Map Source:
Google Maps projected in NAD83 UTM Zone 17N
2. Identified Areas of Potential Environmental Concern:
1 - 390 Rathburn Road West - Enersource Hydro Building
3. PCA - Potentially Contaminating Activity
4. PCA #55 - Transformer manufacturing, processing and use
PCA #58 - Waste disposal and waste management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners

Client: Stantec Consulting Limited

Prepared by: HL

Approved: YL

Date: May 2017

Scale: As Shown

Original Size: Letter

Rev: BG

Project No.: 15-1151-02

Drawing No.: 4

Title: Areas of Potential Environmental Concern

Project: Phase One Environmental Site Assessment
Proposed Square One Drive Extension from
Rathburn Road West to Confederation Parkway
City of Mississauga, Ontario



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Geotechnical-Hydrogeology-Environmental-Materials-Inspection

FIGURES



Legend

-  Study Area
-  Subject Area

Map Source:
Mississauga Interactive Map

Client: Stantec Consulting Limited

Prepared by: HL

Approved: BG

Date: May 2017

Scale: As Shown

Original Size: Letter

Rev: BG

Project No.: 15-1151-02



Drawing No.: 1

Title: Aerial Photograph - 1954

Limited Phase One Environmental Site Assessment
Square One Drive Extension
Rathburn Road West to Confederation Parkway
Mississauga, Ontario



Legend

-  Study Area
-  Subject Area

Map Source:
Mississauga Interactive Map

Client: Stantec Consulting Limited

Prepared by: HL

Approved: BG

Date: May 2017

Scale: As Shown

Original Size: Letter

Rev: BG

Project No.: 15-1151-02

Drawing No.: 2

Title: Aerial Photograph - 1966



Limited Phase One Environmental Site Assessment
Square One Drive Extension
Rathburn Road West to Confederation Parkway
Mississauga, Ontario



GeoPro Consulting Limited



Legend

-  Study Area
-  Subject Area

Map Source:
Mississauga Interactive Map

Client: Stantec Consulting Limited

Prepared by: HL

Approved: BG

Date: May 2017

Scale: As Shown

Original Size: Letter

Rev: BG

Project No.: 15-1151-02

Drawing No.: 3

Title: Aerial Photograph - 1975



Limited Phase One Environmental Site Assessment
Square One Drive Extension
Rathburn Road West to Confederation Parkway
Mississauga, Ontario



GeoPro Consulting Limited





Legend

-  Study Area
-  Subject Area

Map Source: Mississauga Interactive Map	
Client: Stantec Consulting Limited	
Prepared by: HL	Approved: BG
Date: May 2017	Scale: As Shown
Original Size: Letter	Rev: BG
Project No.: 15-1151-02	Drawing No.: 4
Title: Aerial Photograph - 1980	
Limited Phase One Environmental Site Assessment Square One Drive Extension Rathburn Road West to Confederation Parkway Mississauga, Ontario	



Legend

-  Study Area
-  Subject Area

Map Source:
Mississauga Interactive Map

Client: Stantec Consulting Limited

Prepared by: HL

Approved: BG

Date: May 2017

Scale: As Shown

Original Size: Letter

Rev: BG

Project No.: 15-1151-02

Drawing No.: 5

Title: Aerial Photograph - 1985

Limited Phase One Environmental Site Assessment
Square One Drive Extension
Rathburn Road West to Confederation Parkway
Mississauga, Ontario



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