Appendix A

Stroud SPS Future Flow Technical Memorandum

Innisfil Heights

Schedule 'B' Municipal Class Environmental Assessment

Stroud Sewage Pumping Station

Technical Memorandum
Future Flows

FINAL

April 2025

Ainley GROUP
CONSULTING ENGINEERS PLANNERS

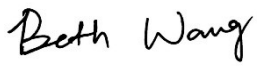
Innisfil Heights
Municipal Class Environmental Assessment

Technical Memorandum
Future Flows

Project No. 121031

Prepared for:
InnServices Utilities Inc.

Prepared By:



Beth Wang, E.I.T.

Reviewed by:

Wendy Smeh, C.E.T., PMP.

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1.0 Introduction

This Technical Memorandum has been prepared in support of the Innisfil Heights Schedule B Municipal Class Environmental Assessment (Class EA). The 2018 Master Servicing Plan (MSP) identified short- and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of new sewage pumping stations (SPS) to service the Innisfil Heights economic district.

This Technical memorandum is for the proposed new Innisfil Heights Stroud Sewage Pumping Station (Stroud SPS) to be located on Yonge Street in the Town of Innisfil, which will receive flows from the Village of Stroud (centered at the intersection of Yonge Street and 10th Line) and direct it to the Lakeshore Wastewater Treatment Plant.

2.0 Objectives

The objectives of this Technical Memorandum are as follows:

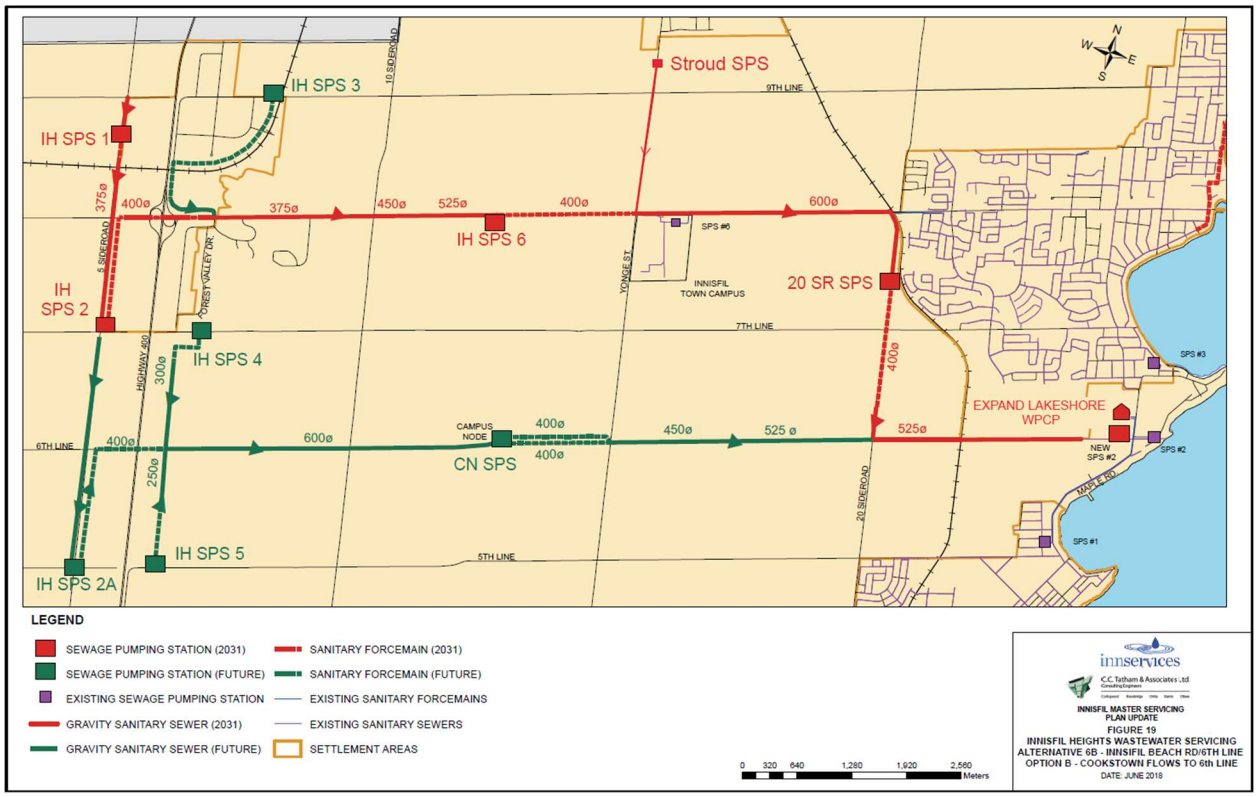
- Review historical documents and provide overview,
- Project future wastewater flows from servicing area to Stroud SPS,
- Assess the quantity of future wastewater flows to proposed truck sewer on Innisfil Beach Road.

3.0 Historical Documents Overview

3.1 Innisfil Master Servicing Plan Update in 2018

As part of the 2018 MSP (completed by C.C. Tatham & Associates Ltd.), various alternatives were examined in order to provide servicing for the first phase of the Innisfil Heights economic district expansion, an area designated as a Strategic Settlement Employment Area. In order to promote, facilitate and maximize the planned expansion of this area, the MSP identified that a municipal sanitary sewage collection system is required. The MSP identified “Alternative 6, Option B” as the preferred option. Alternative 6 establishes a sanitary collection system connected to the Lakeshore wastewater system via Innisfil Beach Road and 20th Sideroad for the first phase of development up to year 2031. An amendment was sought to implement the Stroud SPS and forcemain in advance of the timeline proposed in the MSP Update.

Figure 1 below illustrates the sanitary collection system designed to meet future servicing needs as recommended in the MSP, with the Stroud SPS location indicated.



*Map from 2018 Innisfil Master Servicing Plan Upgrade

Figure 1 – Innisfil Heights MSP: Alternative 6B

4.0 Wastewater Flow Design Basis

4.1 Design Assumptions

Table 1 outlines the design criteria used to generate the estimated average daily flow for new residential, commercial and industrial development as well as inflow and infiltration from development in Town of Innisfil.

Table 1 – Design Criteria

Description	Rate
Population Density	2.52 persons per unit
Residential Average Flow (Incl. Average I&I)	325 L/c/d
Residential Peak Domestic Flow	275 L/c/d
Residential Peak Flow (Incl. Peak I&I)	400 L/c/d
Commercial and Industrial Flow (Incl. Average I&I)	10 m3/ha/d
Peak Commercial and Industrial Flow (Incl. Peak I&I)	20 m3/ha/d

4.2 Build-out of Proposed Servicing Area

The build-out of the servicing area for the Stroud SPS is defined as the complete development of the proposed lands to meet both the short- and long-term needs of the Village of Stroud. The Stroud SPS is proposed to connect to the future sanitary system within the settlement boundary to service new growth. As per the 2023 MSP update, only new growth is planned to be connected to the new sanitary system, however the SPS capacity includes existing residential and commercial peak flows for potential future connections.

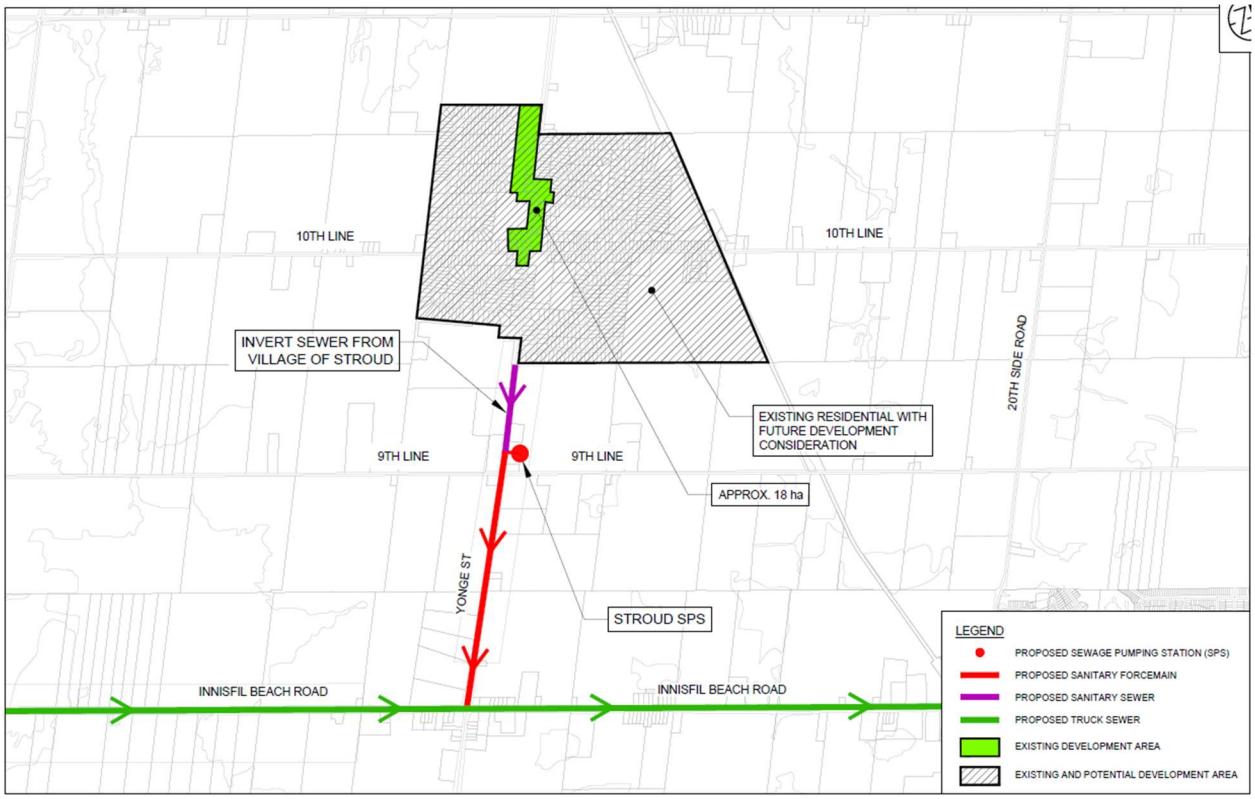


Figure 2 – Planned Development Areas Connected to Stroud SPS

The proposed construction location of Stroud SPS is at the Southwest Corner of 7667 Yonge Street.

Flow contributions from existing residential, future residential, and existing commercial areas are calculated based on the design criteria provided in Table 1 above. The growth areas considered within the analysis are listed in Table 2 and are reflected in Figure 2.

Commercial and Industrial Average Daily Flow (ADF) estimates are calculated on the following basis:

$$ADF = Area * Commercial\ and\ Industrial\ Design\ Flow$$

Commercial and Industrial Peak Wet Weather Flow (PWWF) estimates are calculated on the following basis:

$$PWWF = Area * Peak\ Commercial\ and\ Industrial\ Design\ Flow$$

Residential ADF estimates are calculated on the following basis:

$$ADF = Residence * Residential\ Average\ Flow\ Criteria$$

Residential PWWF estimates are calculated on the following basis:

$$PWWF = Residence * Residential\ Peak\ Domestic\ Flow * Peaking\ Factor + Residence * Residential\ Peak\ Flow\ Criteria$$

Table 2 – Wastewater Flows from Proposed Servicing Area

Identification	Designation	Units	Population	Area (Ha)	ADF Estimate (L/s)	Peak Wet Weather Flow Estimate (L/s)
Existing Residential	Residential	700	1,764	-	6.6	19.4
Existing Commercial*	Commercial	-	-	18	0.2	0.4
Future Residential	Residential	1,600	4,032	-	15.2	44.3
Total	**-**	**2,300**	**5,796**	**18**	**22.0**	**64.1**
*Area provided by Master Servicing Plan project team						

Based on the design criteria provided in Table 2, the total average daily flow of 22.0 L/s and the total peak wet weather flow of 64.1 L/s will flow to the proposed Stroud SPS. Stroud SPS will discharge to the trunk sewer on Innisfil Beach Road.

5.0 Summary

- Stroud SPS will service 700 units of existing residential, 18 hectares of existing commercial area and 1,600 units of future residential.
- The ADF contributes to Stroud SPS is 22.0 L/s and the peak flow is 64.1 L/s.
- SPS capacity will be reviewed during preliminary design to accommodate for potential settlement area expansion.

Appendix B

Geotechnical and Hydrogeological Background Conditions Report

December 16, 2021

Ainley & Associates Limited
550 Welham Road
Barrie, Ontario
L4N 8Z7

Attn: Wendy Smeh, C.E.T., PMP

RE: Geotechnical & Hydrogeological Background Conditions Report
Stroud Sewage Pumping Station
Yonge Street between Southview Avenue and Innisfil Beach Road
Project No. 2103505

GEI Consultants (GEI) was retained by Ainley & Associates Limited (Ainley) to complete geotechnical and hydrogeological reports discussing the background site conditions for five (5) potential Sewage Pumping Stations (SPS) in Innisfil, Ontario. The work is being completed as part of a Municipal Class Environmental Assessment and preliminary design for the Sewage Pumping Stations being carried out by Ainley. Each SPS study area covers a large footprint and the exact SPS locations have not been selected at this time. An overall site plan showing each study area is included in Enclosure 1.

The background reports by GEI review publicly available sources of subsurface information, surficial geology and bedrock mapping, and local experience about nearby soil and groundwater conditions to discuss geotechnical and hydrogeological engineering constraints for each SPS study area. These background reports will help the design team select the best location for the SPS structure within each area. Once the locations are selected, GEI will advance one (1) borehole with a monitoring well installation in each proposed SPS location and provide preliminary geotechnical and hydrogeological design reports.

The current report contains the results of the background review and provides engineering discussion for the Stroud SPS study area, located along Yonge Street between Southview Avenue and 300 metres North of Innisfil Beach Road. The total length of the Stroud study area is approximately 2.0 km and extends about 100 to 150 metres east and west of Yonge Street. A site plan showing the Stroud study area is in Enclosure 1. The background reports for the other SPS study areas are included under separate covers.

1. BACKGROUND REVIEW

The Stroud SPS study area is located along Yonge Street between Southview Avenue and 300 metres North of Innisfil Beach Road. A site plan showing the Stroud study area is in Enclosure 1.

Existing subsurface investigations, geotechnical reports, or hydrogeological reports were not provided by the client for the study area. An overview of the subsurface conditions expected to be encountered on site were established using a range of publicly available information and previous subsurface investigations completed by GEI within the study area, summarized below.

1.1. Physiology and Geology Mapping

Surficial geology mapping from the Ontario Geological Survey (OGS) was reviewed and is provided in Enclosure 2. The mapping indicates that approximately the northern 1.25 km of the study area is underlain mainly by glaciolacustrine silt and clay deposits with a small section of cohesionless glacial till. The mapping shows the southern half of the site predominantly consists of cohesionless glacial till.

The study area is within the physiographic region known as the Peterborough Drumlin Field (Chapman and Putnam, 1984) which is dominated by drumlinized till plains.

At depth, the study area is underlain by bedrock of the Lindsay Formation (Simcoe Group), which consists primarily of limestone. Drift thickness mapping from the Ontario Division of Mines (1974) indicates bedrock is deeper than 140 metres below grade in the area.

Geotechnical boreholes available on a database from the Ministry of Energy, Northern Development and Mines (MENDM) were reviewed. However, no boreholes were found within or around the study area.

1.2. MECP Water Well Records and PTTW Mapping

Ministry of Environment, Conservation and Parks (MECP) water well records were reviewed for the site and surrounding area. Numerous well records were found in the area, but 13 representative well records were selected and are included in Enclosure 3 with their locations also shown in Enclosure 3. Eight (8) wells were completed prior to the 1970s, two (2) completed during the 1970s, one (1) during 1985, and two (2) in the 1990s. The wells were constructed for domestic water supply. The stratigraphic descriptions within the MECP well records are typically inaccurate due to the methodology in which they are determined (observations of cuttings and no consistency between descriptions of soil between different drillers). Though this is the case, an overall sense of the stratigraphy can still be determined.

The well records in the northern part of the study area generally encountered silts or clays (which likely also represent glacial till deposits), underlain by silts and sands at depth. Through the middle section of the study area, the well records primarily encountered clays (or glacial till) at grade, underlain by sands and gravels in some locations. A few locations encountered sand and

gravel at grade. In the southern part of the study area, clay was encountered over sand. Unstabilized water levels were noted to be about 5 metres below grade or deeper on the well records. The wells were typically screened at depths of 12 to 20 metres below grade.

The online MECP Permit to Take Water (PTTW) database shows there are no active PTTWs within the study area. The nearest permits are approximately 1.25 km north of the study area located in Stroud, and consist of the following:

- Three (3) PTTWs – Municipal Water Supply from groundwater. Water taking rates range from 398,000 L/day to 1,638,000 L/day.

1.3. Simcoe County Mapping

Online mapping from Simcoe County was reviewed for the study area and selected maps are provided in Enclosure 4.

Simcoe mapping provides 2 metre contour intervals. The northern extent of the study area is near Elev. 262 metres and slopes up to the south to Elev. 280 to 284 metres. A small tributary flows west from Yonge Street in the northern part of the study area, and the tributary is slightly depressed relative to the surrounding grades. No wetland features or other surface water features were noted on the map.

The study area is not located within a Significant Groundwater Recharge Area. The nearest Wellhead Protection Areas are about 0.75 km northeast of the study area and are associated with the Town of Innisfil municipal drinking water wells. There are no Highly Vulnerable Aquifers beneath the study area.

1.4. MTO Boreholes

The Ontario Ministry of Transportation (MTO) Foundation Library online database was searched for any MTO geotechnical reports and boreholes near the study area. The nearest geotechnical reports were located over 5 km west from the study area and are not included in this report.

1.5. GEI Boreholes

GEI completed two (2) projects in or near the study area in 2021 that advanced boreholes below grade. The first project was southwest of the intersections of Yonge Street and Innisfil Beach Road, approximately 0.35 km south of the study area. Geotechnical boreholes were advanced to a maximum depth of 6.4 metres below grade during the investigation and encountered generally dense to very dense sand and silt glacial till. Two of the boreholes encountered wet and very dense sands below the glacial till at 3 to 4.5 metres below grade. Stabilized groundwater levels were measured at 3.5 to 4.5 metres below grade in the monitoring wells.

The second project was completed along County Road 4 (Yonge Street), between Lockhart Road and County Road 89. Two boreholes were advanced to 3.5 metres below grade through Yonge

Street within the study area as part of the previous investigation. One borehole was advanced just south of Southview Avenue and encountered 3.1 metres of granular and earth fill underlain by stiff sandy silt with some clay. Groundwater was measured at 2.6 metres blow grade. The second borehole was advanced between 9th Line and Innisfil Beach Road and encountered very stiff glacial till at 0.8 metres below grade. Groundwater was deeper than 3.5 metres below grade.

2. GEOTECHNICAL AND HYDROGEOLOGICAL CONSIDERATIONS

Preliminary design drawings or other information for the SPS structures are not available. It is expected that the SPS structure will consist of a wet well extending approximately 9 to 10 metres below grade, a small on-grade structure or pump house, and various pipes and manholes.

The following considerations and recommendations are derived from the surficial geology mapping, GEI boreholes, and MECP well records.

- Glacial Till Deposits:
    - The glacial till deposits encountered in the boreholes were generally cohesive and stiff to very stiff. It is expected that glacial till deposits beneath the site will be competent and favourable for the support of buildings, structures, construction and drilling equipment, and for support of shoring wall tie-backs or anchors.
    - Glacial till deposits are typically well graded and laboratory testing from the GEI boreholes indicate a relatively high percentage of fines. The glacial till is expected to have a lower permeability, which can significantly reduce water taking rates and potential complications during construction dewatering.
    - The lower permeability will reduce the dewatering radius of influence which reduces the potential impacts to nearby surface water features, drinking water wells, or settlement of nearby land.
    - An excavation made fully within glacial till has a reduced potential to require a PTTW from the MECP (i.e. less than 400,000 L/day of pumping).
    - Cobbles and boulders may be embedded within the deposits. This has a potential to interfere with caisson drill rigs (e.g. for shoring wall installation) or during excavations and would need to be addressed in construction contracts.
    - There is a reduced potential for temporary cased holes or drilling mud to install caisson piles for shoring walls or for augered holes for tie-backs.
    - Glacial till is considered the most favourable soil type for the SPS construction.
- Glaciolacustrine Deposits of Clays and Silts:
    - Deposits of clays and silts are expected to be similar to the glacial till in terms of precluding groundwater flow into the excavation, and the benefit this provides during construction as summarized above.
    - The deposits will provide similar support of structures, access roads, shoring systems, etc.
    - Cobbles and boulders are not expected within the glaciolacustrine deposits.

It appears that sand deposits can be expected underlying the surficial glacial till deposits or clays and silts across the study area, based on the well records and borehole results. Considerations for the sand deposits are as follows:

- The major consideration for the sand deposits is groundwater control and constructability. Depending on the grain size distribution and percentage of fines, higher groundwater flow rates are expected for excavations made into the sands.
- Higher flow rates may require a more robust dewatering system and increases the potential for a PTTW from the MECP. The dewatering radius of influence will also be higher in the sands which has an increased potential to impact nearby surface water features, drinking water wells, or settlement of nearby land.
- There is an increased potential for temporary cased holes or drilling mud to install caisson piles for shoring walls or for augered holes for tie-backs.
- There may be cobble or gravel zones within the sands that can increase the difficulty of excavation or caisson installation for shoring walls.

A preferred location based on geotechnical and hydrogeological considerations is less obvious for the Stroud SPS study area as the subsurface conditions appear to be relatively consistent and there are fewer constraints noted. From the information available, it appears that sand deposits will be encountered underlying surficial clay or glacial till across the study area and similar conditions related to foundation support, excavations, dewatering and construction access are expected.

The vacant farmland between the houses in the southern half of the study area (south of 9th Line and north of Innisfil Beach Road) may be preferrable because there is likely more space to facilitate open cut excavations (reducing costs for design and construction of shoring), there are fewer nearby domestic drinking water wells that could be impacted by construction dewatering, and the southern area has a higher elevation than the northern part of the study area which may improve the chance of a deeper groundwater table (resulting in less dewatering) and better surface drainage for construction access.

The northernmost part of the site may be less preferred due to the nearby residential neighbourhoods and potential for more impacts related to construction vibrations, noise, and settlement from construction dewatering. There is also the tributary that flows west from Yonge Street which could be impacted by dewatering.

3. CONCLUSION

We trust this information is sufficient for your present purposes. Should you have any questions concerning the above, or can be of any further assistance, please do not hesitate to contact the undersigned.

Yours truly,
GEI Consultants

Prepared By:

Russell Wiginton, P.Eng.
Senior Geotechnical Engineer

Reviewed By:

Alexander Winkelmann, P.Eng.
Geotechnical and Earth Sciences Manager

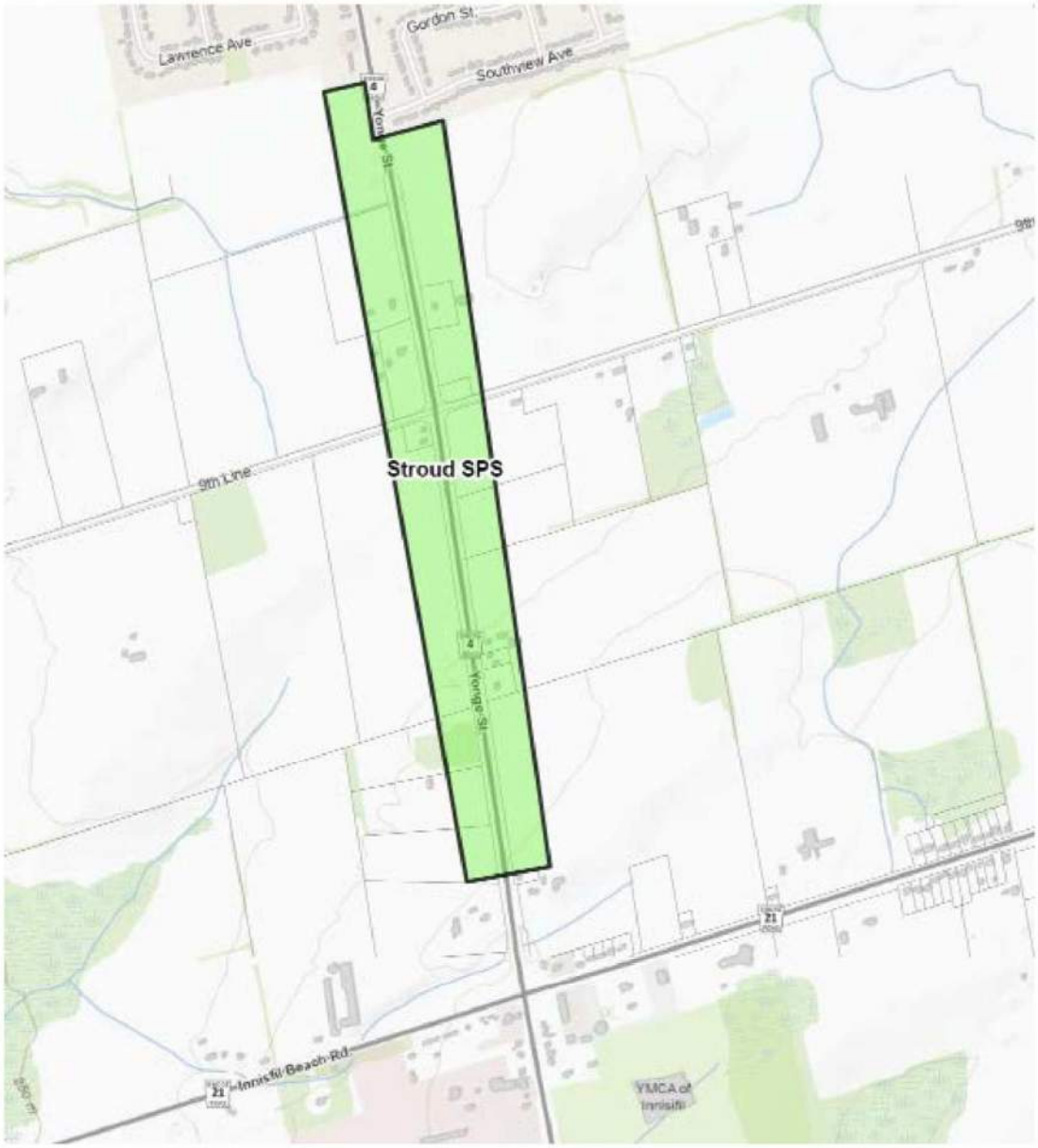
Enclosures (4)

Study Area Locations
Surficial Geology Mapping
MECP Well Record Locations and Well Records
Simcoe County Maps

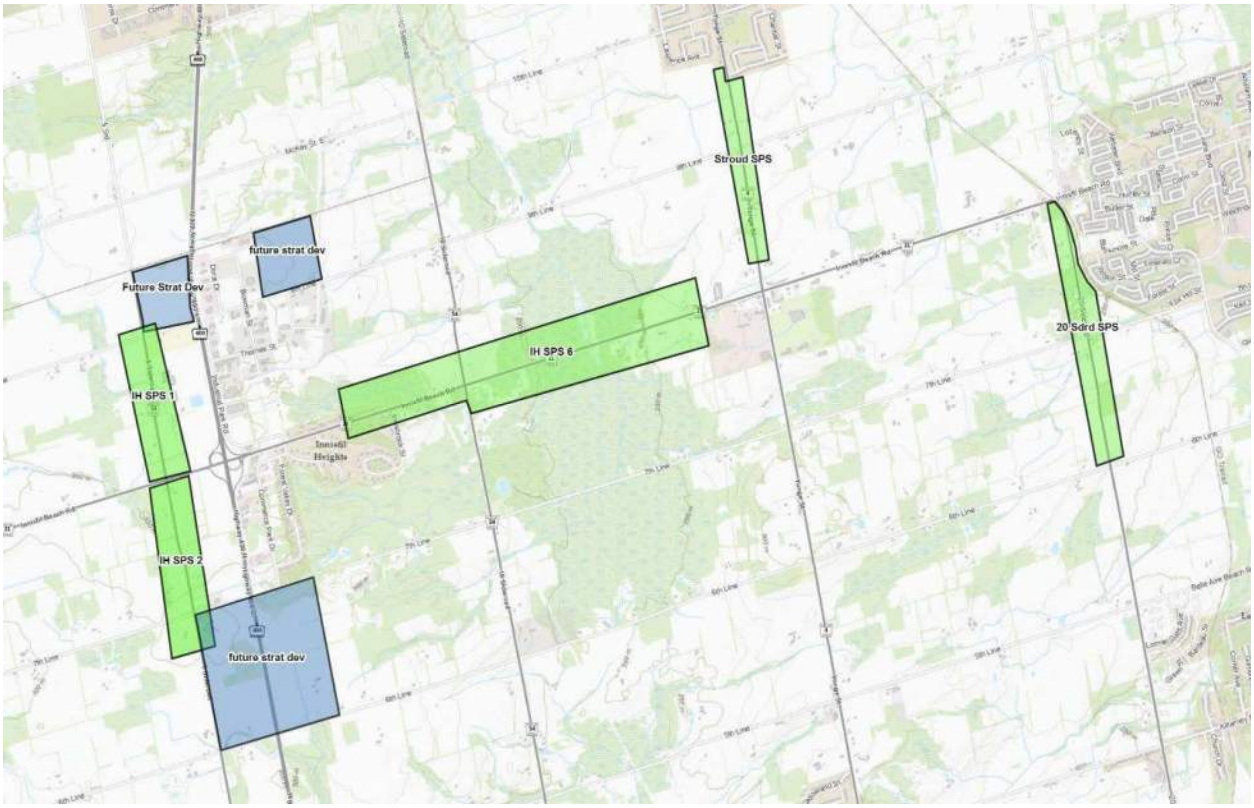
ENCLOSURE 1

Study Area Maps

Stroud SPS


Lawrence Ave
Gordon St
Southview Ave
4
Yonge St
9th Line
Stroud SPS
4
Yonge St
21
Innisfil Beach Rd
21
YMCA of Innisfil

OVERALL PLAN



ENCLOSURE 2

Surficial Geology Mapping


Stroud SPS Study Area
Surficial Geology Mapping
Approx. Stroud
SPS Study Area
4
21
Innisfil
Legend:
Green Hatch - Sandy Silt to Silty Sand Glacial Till
Blue Hatch - Glaciolacustrine Deposits of Clays & Silts
Google Earth
3000 ft

ENCLOSURE 3

MECP Well Record Locations and Well Records


Stroud
Victoria St
5727265
Bramley
5710912
4
5701189
5701200
5701193
5731952
5706181
Approx. Stroud SPS
Study Area
5701140
5701138
5714797
5720734
5705616
5701137
Innisfil
21
4
21
Google Earth
N
4000 ft

Well ID

Well ID Number: 5701137
Well Audit Number:
Well Tag Number:

This table contains information from the original well record and any subsequent updates.

Well Location

Address of Well Location	
Township	INNISFIL TOWNSHIP
Lot	016
Concession	CON 08
County/District/Municipality	SIMCOE
City/Town/Village	
Province	ON
Postal Code	n/a
UTM Coordinates	NAD83 — Zone 17 Easting: 610602.40 Northing: 4906350.00
Municipal Plan and Sublot Number	
Other	

Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
	LOAM			0 ft	1 ft
	CLAY	MSND		1 ft	35 ft
	MSND			35 ft	36 ft

Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed

Method of Construction & Well Use

Method of Construction	Well Use
Boring	
	Domestic

Status of Well

Water Supply

Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
30 inch	CONCRETE		36 ft

Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To

Well Contractor and Well Technician Information

Well Contractor's Licence Number: 3109

Results of Well Yield Testing

After test of well yield, water was	CLEAR
If pumping discontinued, give reason	
Pump intake set at	
Pumping Rate	1 GPM

Duration of Pumping	
Final water level	
If flowing give rate	
Recommended pump depth	35 ft
Recommended pump rate	1 GPM
Well Production	PUMP
Disinfected?	

Draw Down & Recovery

Draw Down Time(min)	Draw Down Water level	Recovery Time(min)	Recovery Water level
SWL	29 ft		
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
45		45	
50		50	
60		60	

Water Details

Water Found at Depth	Kind
35 ft	Fresh

Hole Diameter

Depth From	Depth To	Diameter

Audit Number:

Date Well Completed: August 07, 1964

Date Well Record Received by MOE: December 31, 1964

Well ID

Well ID Number: 5701138
Well Audit Number:
Well Tag Number:

This table contains information from the original well record and any subsequent updates.

Well Location

Address of Well Location	
Township	INNISFIL TOWNSHIP
Lot	016
Concession	CON 08
County/District/Municipality	SIMCOE
City/Town/Village	
Province	ON
Postal Code	n/a
UTM Coordinates	NAD83 — Zone 17 Easting: 610483.40 Northing: 4906880.00
Municipal Plan and Sublot Number	
Other	

Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
	LOAM			0 ft	1 ft
	CLAY			1 ft	14 ft
	CLAY	MSND	STNS	14 ft	60 ft
	MSND			60 ft	62 ft

Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed

Method of Construction & Well Use

Method of Construction	Well Use
Boring	Domestic

Status of Well

Water Supply

Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
30 inch	CONCRETE		62 ft

Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To

Well Contractor and Well Technician Information

Well Contractor's Licence Number: 3109

Results of Well Yield Testing

After test of well yield, water was	CLEAR
If pumping discontinued, give reason	

Pump intake set at	
Pumping Rate	2 GPM
Duration of Pumping	
Final water level	
If flowing give rate	
Recommended pump depth	60 ft
Recommended pump rate	2 GPM
Well Production	PUMP
Disinfected?	

Draw Down & Recovery

Draw Down Time(min)	Draw Down Water level	Recovery Time(min)	Recovery Water level
SWL	35 ft		
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
45		45	
50		50	
60		60	

Water Details

Water Found at Depth	Kind
60 ft	Fresh

Hole Diameter

Depth From	Depth To	Diameter

Audit Number:

Date Well Completed: September 12, 1964

Date Well Record Received by MOE: February 05, 1965

UTM 1 7 | 6 1 0 5 1 9 E

Cons R 4 9 0 6 7 4 3 N

Elev 045 R 1 0 8 8 6

Basin 12

No. 57 1140

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Simcoe Township, Village, Town or City Innisfil

Con. 8 Lot 16 Date completed 2 (day) Dec (month) 1964 (year)

[redacted]ess RR#2 9th ROAD.

Casing and Screen Record

Inside diameter of casing 5"

Total length of casing 65

Type of screen slotted 5" pipe 48' to 68 ft.

Length of screen

Depth to top of screen

Diameter of finished hole 5"

Pumping Test

Static level 41 ft.

Test-pumping rate 5 G.P.M.

Pumping level 60

Duration of test pumping 2 hr.

Water clear or cloudy at end of test clear

Recommended pumping rate 4 G.P.M.

with pump setting of 55 feet below ground surface

Well Log / Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
Dug well	0	48		
clay with gravel + boulders	48	70	60-68	fresh
blue clay with fine grey sand	70	135		
blue clay	135	183		

For what purpose(s) is the water to be used? Domestic + stock

Is well on upland, in valley, or on hillside? upland

Drilling or Boring Firm HENRY HAMMERS

Address RR#3 BARRIE

Licence Number 1303

Name of Driller or Borer AL HAMMERS

Address RR#5 BARRIE

Date Dec 3/64

Henry Hammers

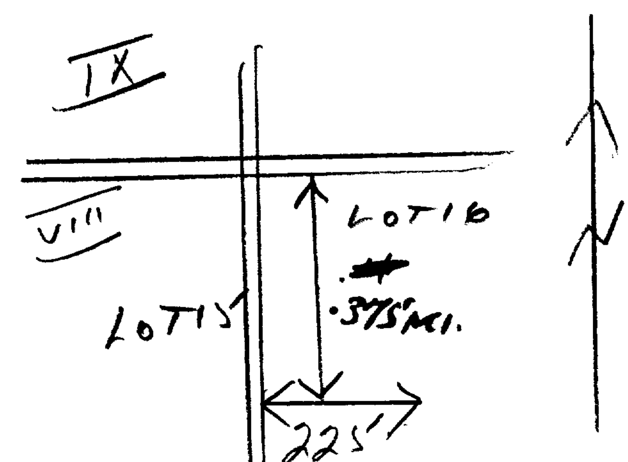
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



FIRST FARM SOUTH OF 9TH LINE

CSS.S8

UTM 1 7 Z 6 1 0 2 2 7 E
5 R 4 9 0 7 6 5 0 N
Elev. 0 9 5 R 0 8 7 0
Basin 1 2 2 1 5

The Ontario Water Resources Commission Act, 1957

GROUND WATER BRANCH
57 No 1189
NOV 2 1960
ONTARIO WATER RESOURCES COMMISSION

WATER WELL RECORD

County or District SIMCOE Township, Village, Town or City INNISFIL

IX 15 [redacted]ate completed 23 (day) AUG (month) 1960 (year)

[redacted]dress

Casing and Screen Record	
Inside diameter of casing	6 1/4
Total length of casing	56'
Type of screen	JOHNSON SLOT 16
Length of screen	3'
Depth to top of screen	56'
Diameter of finished hole	6 1/4

Pumping Test	
Static level	18'
Test-pumping rate	7 G.P.M.
Pumping level	46'
Duration of test pumping	2 HRS.
Water clear or cloudy at end of test	CLEAR
Recommended pumping rate	3 G.P.M.
with pumping level of	30'

Well Log / **Water Record**

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, sulphur)
TOP SOIL	0	1			
BROWN CLAY	1	17			
BLUE "	17	54			
MED SAND	54	59	56	38	FRESH

For what purpose(s) is the water to be used? HOUSE

Is well on upland, in valley, or on hillside? ✓

Drilling Firm H. HAMMERS

Address 103 CODRINGTON ST BARRIE

Licence Number

Name of Driller

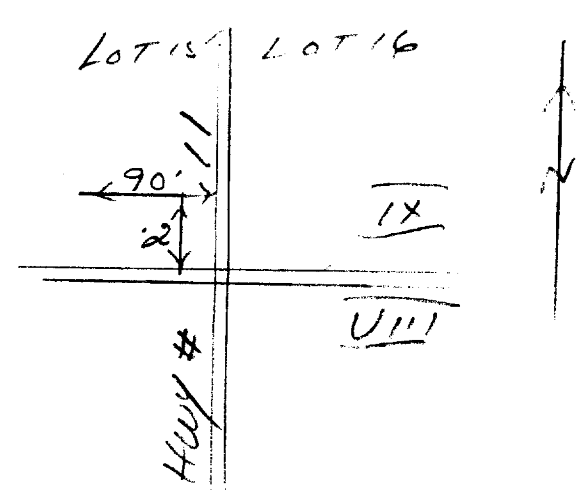
Address SAME

Date OCT 25/60

Gary Hammers
(Signature of Licensed Drilling Contractor)

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



CSS.S8

(2)

UTM | 17 | Z | 6 | 10 | 21 | 2 | E
| | R | 4 | 07 | 458 | N

Elev. | | R | 07 | 70 |

Basin | 22 | | SIMCOE

County or District

Con. 9 Lot 15

Township, Village, Town or City INNISFIL

Date completed 7 (day) APR. (month) 1965 (year)

Address STROUD ONT

WATER RESOURCES DIVISION
MAY 25 1965
ONTARIO WATER RESOURCES COMMISSION

57 No 1193

The Ontario Water Resources Commission Act

WATER WELL RECORD

Casing and Screen Record

Inside diameter of casing 6"
Total length of casing 40'
Type of screen —
Length of screen —
Depth to top of screen —
Diameter of finished hole 6"

Pumping Test

Static level 25 FT
Test-pumping rate 8 G.P.M.
Pumping level 26 FT
Duration of test pumping 2 HRS
Water clear or cloudy at end of test CLEAR
Recommended pumping rate 6 G.P.M.
with pump setting of 35 FT feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
DUG WELL	0	30		
SAND GRAVE	30	40	30-40	FRESH
BOULDERS CLAY	40	48		

For what purpose(s) is the water to be used? FARM Chicken farm.

Is well on upland, in valley, or on hillside? UPLAND

Drilling or Boring Firm H HAMMERS

RR #3 BARRIE ONT

Address

Licence Number 1662

Name of Driller or Borer ANDREAS KNIELSEN

Address RR #2 PHELPSTON

Date APR. 7 1965

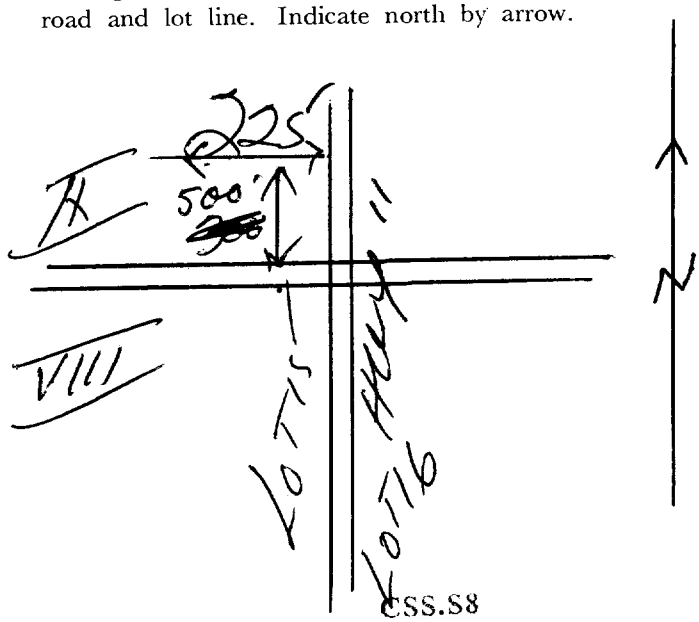
Henry Hammers
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



CSS.S8

UTM 17 Z 610349 E
15 R 4907585 N
Elev. 25 R 10875
Basin 2716

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

57 No 1200

ONTARIO WATER RESOURCES COMMISSION
MAY 15 1959

Water-Well Record

County or Territorial District Simcoe
[redacted]
Township, Village, Town or City Innisfil
Village, Town or City)
Address Stroud
Date completed 12 April /
(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 6 1/4 inch
Length(s) 13 feet
Type of screen None
Length of screen

Pumping Test

Static level 28
Pumping rate 5 g.p.m.
Pumping level 38
Duration of test 2 hrs

Well Log

Overburden and Bedrock Record	From ft.	To ft.
dug well	0	28
sand	28	34½
blue clay	34½	38
sand & gravel	38	41

Water Record

Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
41	13	fresh

For what purpose(s) is the water to be used?
Domestic
Is water clear or cloudy? clear
Is well on upland, in valley, or on hillside? upland

Drilling firm Henry Hammarsen
Address 40 Rose St Barrie

Name of Driller Henry Hammarsen
Address 40 Rose St Barrie

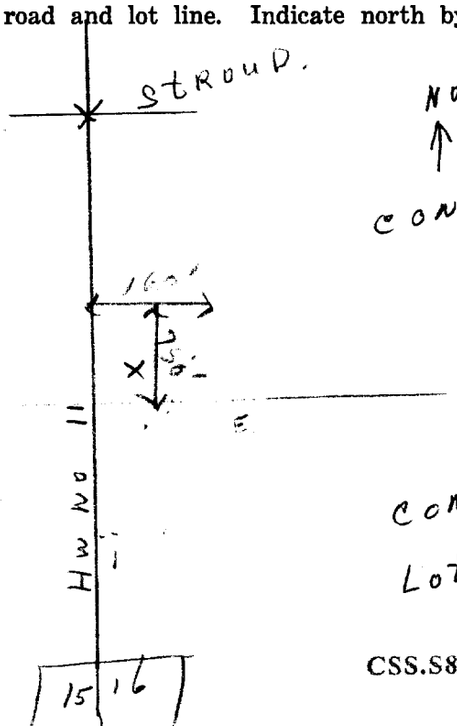
Licence Number 186

I certify that the foregoing statements of fact are true.

Date May 13/59 Henry Hammarsen
Signature of Licensee

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



Form 5

CSS.S8

J.B.

3105E

5705616

3 9

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Simcoe — Township, Village, Town or City Innisfil

Con. IX Lot 15 — Date completed 26 (day) July (month) 1968 (year)

[redacted] ress. 425 University Ave Toronto 2

Casing and Screen Record

Inside diameter of casing 6¼"

Total length of casing 74'

Type of screen Johnson slot 20

Length of screen 3'

Depth to top of screen 74'

Diameter of finished hole 6¼"

Pumping Test

Static level 35'

Test-pumping rate 9 G.P.M.

Pumping level 75'

Duration of test pumping 3½ hrs

Water clear or cloudy at end of test clearing

Recommended pumping rate 7 G.P.M.

with pump setting of 65' feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
Top Soil	0	1		
Brown clay & Pebbles	1	17		
Little Brown clay and Gravel	17	74		
Coarse sand To Fine Gravel	74	77	74-77	Fresh

For what purpose(s) is the water to be used? Domestic (house).

Is well on upland, in valley, or on hillside? upland.

Drilling or Boring Firm Henry Hammers

Address RR#3 Barrie, Ont

Licence Number 2985

Name of Driller or Borer John Zuidervld.

Address 101 Worcester St. Barrie

Date August 1/68

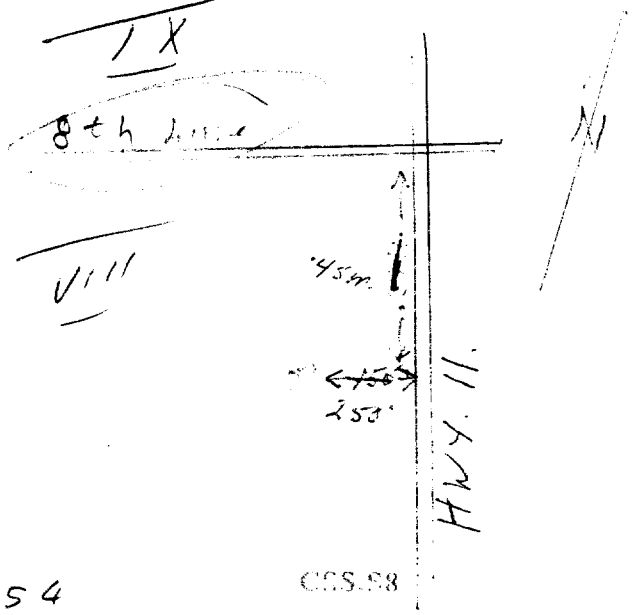
Henry Hammers
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



54

CCS.58

10 17 610550 Con VIII Lot 16
4907350
5 08655
22

DIVISION OF WATER RESOURCES
APR 11 1969
CODED Water management in Ontario
ONTARIO WATER RESOURCES COMMISSION

5706181

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District SIMCOE Township, ~~Village, Town or City~~ INNISFILL

Con. 8 Lot 16 Date completed 18 (day) Mar (month) 1969 (year)

Address [redacted] 9 Con Innisfil Ont

Casing and Screen Record

Inside diameter of casing 5"

Total length of casing 39 FEET

Type of screen JOHNSON S.S. SLOT 25

Length of screen 3 FT

Depth to top of screen 38 FEET

Diameter of finished hole 5"

Pumping Test

Static level 1 FOOT

Test-pumping rate 5 G.P.M.

Pumping level 20 FT

Duration of test pumping 1 HR

Water clear or cloudy at end of test CLEAR

Recommended pumping rate 5" G.P.M.

with pump setting of 35" feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
TOPSOIL	0	2		
CLAY LAYER OF SAND AND STONES	2	23		
CLAY SAND	23	31	31 – 41	FRESH TESTED UNTESTED
SAND FINE TO MED	31	35		
SAND MED TO COARSE	35	41		

For what purpose(s) is the water to be used? HOUSE

Is well on upland, in valley, or on hillside? VALLEY

Drilling or Boring Firm KNELSEN WATER WELLS

R.R. 1

Address BARRIE ONT

Licence Number 3422

Name of Driller or Borer ANDREAS KNELSEN

Address SAME

Date Mar 19 69

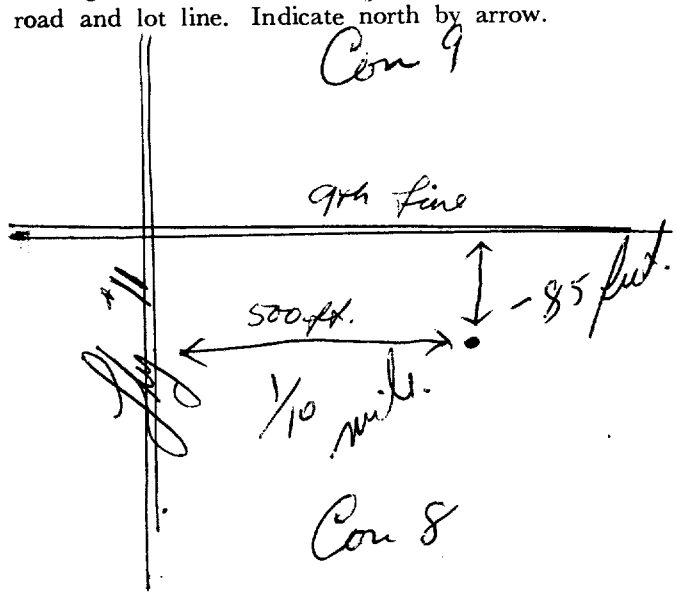
(Signature of Licensed Drilling or Boring Contractor)

Form 7

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



CGS.88

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

310/5E

Ontario

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 | 5710912 | MUNICIP. 57005 | CON. CON | 09

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Simcoe	Innisfil	IX	015

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
Sandycove Acres Ltd.	C/o Kleinfeldt & Assoc. Brampton	DAY 30 MO. July YR. 73

ZONE | EASTING | NORTHING | RC. | ELEVATION | RC. | BASIN CODE | II | III | IV

2 | 5710912 | 17 | 610210 | 4907795 | 4 | 865 | 5 | 23 | OCT 20, 1975 | 82

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
	clay w/ streaks of sand & gravel			0	82
	gravel & clay			82	109
	clay w/ layers of fine sand & silt			109	371
	clay, gravel & stones			371	405

OWRC P.7

31 | 0082 | 05 28 11 | 0109 | 11 05 | 0371 | 10 50 80 6 | 0405 | 06 11 12

32 | 1 2 | 10 | 14 15 | 21 | 32 | 43 | 54 | 65 | 75 | 80

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
10-13	1 ☐ FRESH 3 ☐ SULPHUR 14 / 2 ☐ SALTY 4 ☐ MINERAL
15-18	1 ☐ FRESH 3 ☐ SULPHUR 19 / 2 ☐ SALTY 4 ☐ MINERAL
20-23	1 ☐ FRESH 3 ☐ SULPHUR 24 / 2 ☐ SALTY 4 ☐ MINERAL
25-28	1 ☐ FRESH 3 ☐ SULPHUR 29 / 2 ☐ SALTY 4 ☐ MINERAL
30-33	1 ☐ FRESH 3 ☐ SULPHUR 34 80 / 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
10-11	1 ☐ STEEL 12 / 2 ☐ GALVANIZED / 3 ☐ CONCRETE / 4 ☒ OPEN HOLE		0	13-16
5				405
17-18	1 ☐ STEEL 19 / 2 ☐ GALVANIZED / 3 ☐ CONCRETE / 4 ☐ OPEN HOLE			20-23
24-25	1 ☐ STEEL 26 / 2 ☐ GALVANIZED / 3 ☐ CONCRETE / 4 ☐ OPEN HOLE			27-30

SCREEN

SIZE(S) OF OPENING (SLOT NO.) 31-33	DIAMETER INCHES 34-38	LENGTH FEET 39-40
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN FEET 41-44	80

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
0000 10-13	0405 14-17	drill cuttings
18-21	22-25	
26-29	30-33 80	

71 PUMPING TEST

PUMPING TEST METHOD 10	PUMPING RATE 11-14 GPM	DURATION OF PUMPING 15-16 HOURS 17-18 MINS
1 ☐ PUMP 2 ☐ BAILER		

STATIC LEVEL 19-21 FEET	WATER LEVEL END OF PUMPING 22-24 FEET	WATER LEVELS DURING 25: 1 ☐ PUMPING 2 ☐ RECOVERY	15 MINUTES 26-28 FEET	30 MINUTES 29-31 FEET	45 MINUTES 32-34 FEET	60 MINUTES 35-37 FEET

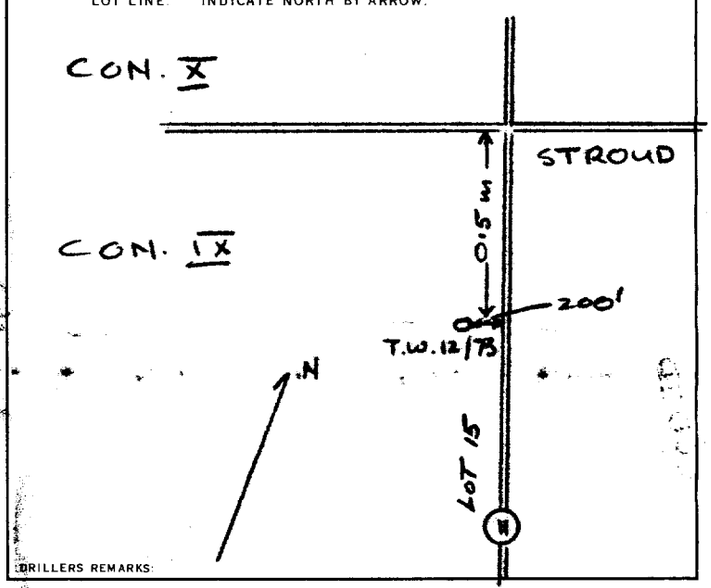
IF FLOWING, GIVE RATE 38-41 GPM	PUMP INTAKE SET AT FEET	WATER AT END OF TEST 42: 1 ☐ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE ☐ SHALLOW ☐ DEEP	RECOMMENDED PUMP SETTING 43-45 FEET	RECOMMENDED PUMPING RATE 46-49 GPM

50-53

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

54 FINAL STATUS OF WELL

1 ☐ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☒ TEST HOLE 4 ☐ RECHARGE WELL 5 ☒ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

55-56 WATER USE

1 ☐ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

57 METHOD OF DRILLING

1 ☐ CABLE TOOL 2 ☒ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR	LICENCE NUMBER
Snider Drilling	4816
ADDRESS	
Craighurst	
NAME OF DRILLER OR BORER	LICENCE NUMBER
Dave Burton	
SIGNATURE OF CONTRACTOR	SUBMISSION DATE DAY MO. YR.
Ralph Snider	

OFFICE USE ONLY

DATA SOURCE 58	CONTRACTOR 59-62	DATE RECEIVED 63-68 80
1	4816	060574
DATE OF INSPECTION	INSPECTOR	
6/12/74		
REMARKS:		

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 07-091

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

31D/5E

Ontario

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 | 5714797 | MUNICIP. 57005 | CON. CH | 08

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Simcoe	Innisfil	8	015

[redacted] R 2 Stroud

DATE COMPLETED: DAY 08 MO. [illegible] YR. 77

UTM 17 | 0606600 | RC 5 | ELEVATION 0885 | RC 5 | BASIN CODE 23

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
	Deepening well				
	50'	to 65'			
	Blue clay			50	58
	Gravel			58	60
	Blue clay			60	65'

31 | 0050 23 | 0058 05 | 0060 11 | 0065 05

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0058'	1 ☒ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
24"	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☒ CONCRETE 4 ☐ OPEN HOLE	2½	50	0065 65'
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

MATERIAL AND TYPE | DEPTH TO TOP OF SCREEN FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER, ETC.)
3	ton	Granular A.

PUMPING TEST

71 | PUMPING TEST METHOD: 1 ☐ PUMP 2 ☒ BAILER | PUMPING RATE: 0003 GPM | DURATION OF PUMPING: 04 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY			
		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
050 FEET	058 FEET	058 FEET	058 FEET	058 FEET	058 FEET

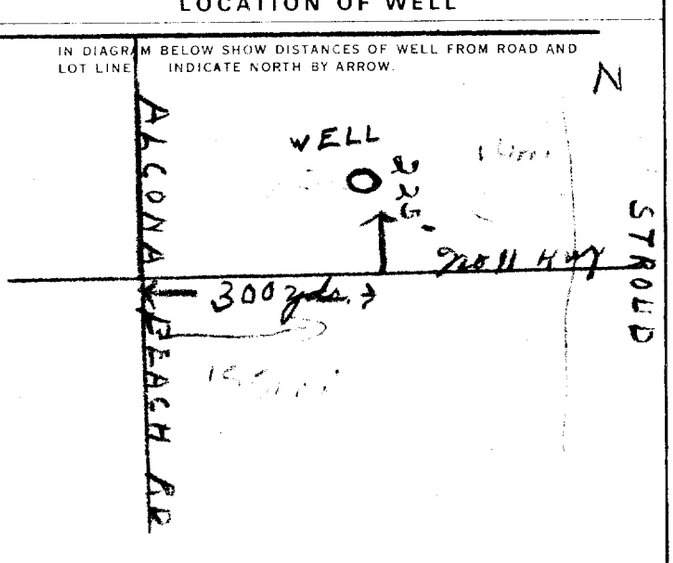
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
— GPM	— FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	063 FEET	0003 GPM

50-53 — — — • — GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS: SM

FINAL STATUS OF WELL 1	1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL	5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED
WATER USE 01	1 ☒ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER	5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED
METHOD OF DRILLING 6	1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION	6 ☒ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Lone Star Well Digging | LICENCE NUMBER: 3413

ADDRESS: RR4 Barrie Ontario L4M4S6

NAME OF DRILLER OR BORER: P. Moore | LICENCE NUMBER: 3413

SIGNATURE OF CONTRACTOR: P. Moore | SUBMISSION DATE: DAY 8 MO. Mar YR. 77

OFFICE USE ONLY

DATA SOURCE 1 | CONTRACTOR 3413 | DATE RECEIVED 07 12 77

DATE OF INSPECTION | INSPECTOR | July 78 SI

REMARKS: CSS.58 | P | WI

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 MOE 07-091

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

5720734

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
SIMCOE	INNISFIL	8 VIT	P-1/15

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
MORRILLO CONSTRUCTION	RR#2 STROUD	DAY 23 MO 8 YR. 85

21

ZONE | EASTING | NORTHING | RC | ELEVATION | RC | BASIN CODE

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
BROWN	TOP-SOIL			0	1
BROWN	SANDY	CLAY		1	21
BROWN	CLAY	STONES		21	26
BROWN	SAND	MOIST		26	50

31

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
26-50	2 SALTY

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
36	3 CONCRETE	3	0	50

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

MATERIAL AND TYPE: GRAVEL

DEPTH TO TOP OF SCREEN FEET:

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☑ PUMP 2 ☐ BAILER	5 GPM	1 HOURS ___ MINS

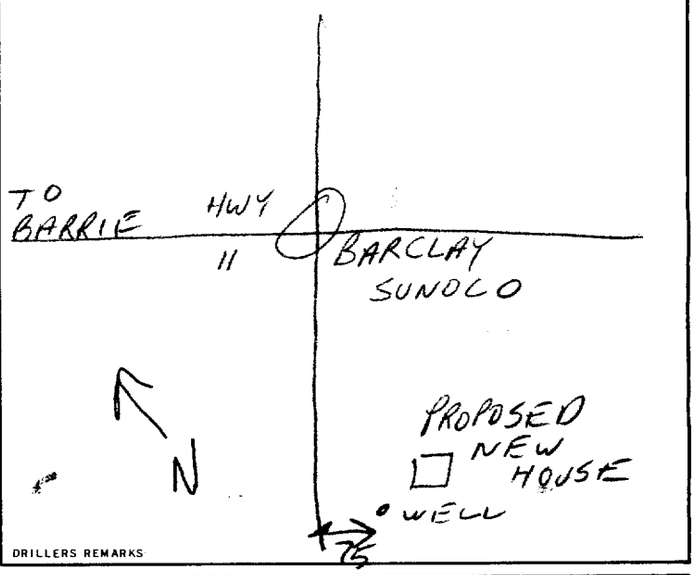
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
26 FEET	FEET	1 ☐ PUMPING 2 ☐ RECOVERY	284 FEET	316 FEET	339 FEET	356 FEET

IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	FEET	1 ☑ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☑ DEEP	45 FEET	3-4 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS

FINAL STATUS OF WELL

1 ☑ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE

1 ☑ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

METHOD OF DRILLING

1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☑ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR	LICENCE NUMBER
Johnson & Bath	3030
ADDRESS: RR#1, Mt. Pleasant	
NAME OF DRILLER OR BORER: J. Bath	LICENCE NUMBER
SIGNATURE OF CONTRACTOR: J. Bath	SUBMISSION DATE: DAY ___ MO. ___ YR. ___

MINISTRY OF THE ENVIRONMENT COPY

OFFICE USE ONLY

DATA SOURCE	CONTRACTOR	DATE RECEIVED
		010686

DATE OF INSPECTION | INSPECTOR

REMARKS: CSS.ES

FORM NO. 0506—4—77 FORM 7

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 — 5727265 — MUNICIP 57005 — CON. CON — 09

COUNTY OR DISTRICT: [redacted] — TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: INNISFIL — (COH) BLOCK, TRACT, SURVEY, ETC: 9 — LOT: 27

233 YONGE ST — STROUD — DATE COMPLETED: DAY 16 MO 08 YR 90

21 — M — RC — ELEVATION — RC — BASIN CODE

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
GREY	SILT	SAND	FILL	0	5
BROWN	SILT	SAND GRAVEL	COMPACTED	5	25
BROWN	GRAVEL	SAND	LOOSE	25	45
GREY	CLAY	—	DENSE	45	47
YELLOW	SAND	—	FINE TO MED. LOOSE	47	60

31

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
59	1 ☑ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6 1/4	1 ☑ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC	.188	+2	53
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
10	6	4

MATERIAL AND TYPE: STAINLESS — DEPTH TO TOP OF SCREEN: 55 FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
51	55	4" PACKER & 5" DROP PIPE

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☐ PUMP 2 ☐ BAILER — AIR — PUMPING RATE: 40+ GPM — DURATION OF PUMPING: 2 HOURS ___ MINS

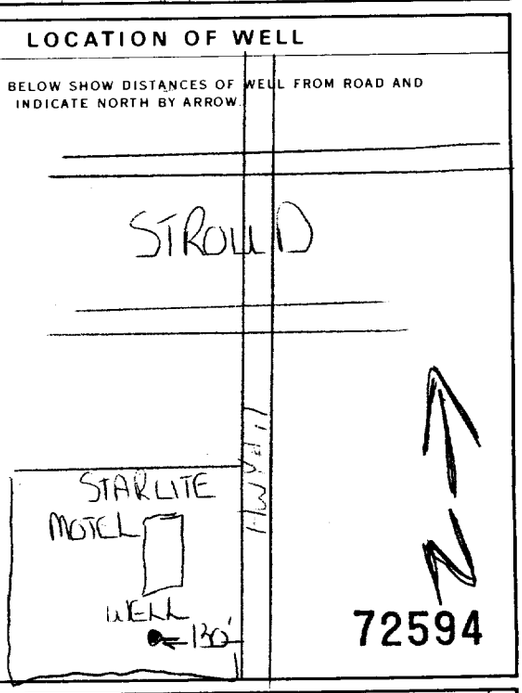
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☐ PUMPING 2 ☐ RECOVERY			
		IS MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
+1 FEET	53 FEET	53 FEET	53 FEET	53 FEET	53 FEET

IF FLOWING, GIVE RATE: ___ GPM — PUMP INTAKE SET AT: ___ FEET — WATER AT END OF TEST: 1 ☑ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☑ DEEP — RECOMMENDED PUMP SETTING: 20 FEET — RECOMMENDED PUMPING RATE: 15 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS

FINAL STATUS OF WELL

1 ☑ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED ☐ DEWATERING

WATER USE

1 ☑ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☑ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

METHOD OF CONSTRUCTION

1 ☑ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING ☐ DIGGING ☐ OTHER

CONTRACTOR

NAME OF WELL CONTRACTOR: K & B WELL DRILLING LTD — WELL CONTRACTOR'S LICENCE NUMBER: 4645

ADDRESS: RR#2 BEETON LOG 1A0

NAME OF WELL TECHNICIAN: CARL M. OMER — WELL TECHNICIAN'S LICENCE NUMBER: 0028

SIGNATURE OF TECHNICIAN/CONTRACTOR: [signature] — SUBMISSION DATE: DAY 22 MO 08 YR 90

OFFICE USE ONLY

DATA SOURCE — CONTRACTOR: 4645 — DATE RECEIVED: SEP 19 1990

DATE OF INSPECTION — INSPECTOR

REMARKS: CSS.ES

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506 (11/86) FORM 9

Ministry of Environment and Energy
Ontario

The Ontario Water Resources Act
WATER WELL RECORD

Print only in spaces provided.
Mark correct box with a checkmark, where applicable.

11 5731952 Municipality 57005 Con. CON 09

Formerly Innisfil Twp.

County or District [redacted]

Township/Borough/City/Town/Village: Innisfil Stroud

Con block tract survey, etc.: IX

Lot: 16

Address: 7835 Yonge St, Stroud, On.

Date completed: 18 day 10 month 95 year

Northing RC Elevation RC Basin Code i ii iii iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth – feet From	Depth – feet To
dark	top soil			0	½
brown	clay &	sand, stones		½	21
grey	silt	clay, sand, boulders		21	35
yellow	sand	silt		35	50
"	sand		fine to medium	50	54

WATER RECORD

Water found at – feet	Kind of water
50 to 54	1 ☒ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas

CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth – feet From	Depth – feet To
6¼	1 ☒ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	.188	+1½	51
	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic			
	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic			

SCREEN

Sizes of opening (Slot No.)	Diameter	Length
12	6 inches	3 feet

Material and type: stainless steel

Depth at top of screen: 51 feet

PLUGGING & SEALING RECORD

☐ Annular space ☐ Abandonment

Depth set at – feet From	Depth set at – feet To	Material and type (Cement grout, bentonite, etc.)
0	10	clay + bentonite chips
10	20	bentonite chips & clay

PUMPING TEST

Pumping test method: 1 ☐ Pump 2 ☒ Bailer

Pumping rate: 20 GPM

Duration of pumping: 1 Hours 0 Mins

Water levels during: 1 ☐ Pumping 2 ☒ Recovery

Static level	Water level end of pumping	15 minutes	30 minutes	45 minutes	60 minutes
6½ feet	45 feet	7 feet	6½ feet	6½ feet	6½ feet

If flowing give rate: GPM

Pump intake set at: feet

Water at end of test: ☒ Clear ☐ Cloudy

Recommended pump type: ☒ Shallow ☐ Deep

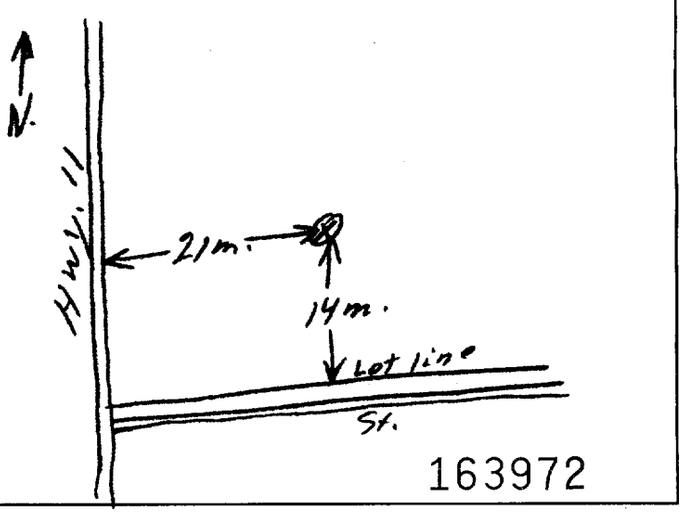
Recommended pump setting: 25 feet

Recommended pump rate: 10 GPM

LOCATION OF WELL

In diagram below show distances of well from road and lot line.
Indicate north by arrow.

Plan M35 Lot 31



163972

FINAL STATUS OF WELL

1 ☒ Water supply 2 ☐ Observation well 3 ☐ Test hole 4 ☐ Recharge well 5 ☐ Abandoned, insufficient supply 6 ☐ Abandoned, poor quality 7 ☐ Abandoned (Other) 8 ☐ Dewatering 9 ☐ Unfinished 10 ☐ Replacement well

WATER USE

1 ☒ Domestic 2 ☐ Stock 3 ☐ Irrigation 4 ☐ Industrial 5 ☐ Commercial 6 ☐ Municipal 7 ☐ Public supply 8 ☐ Cooling & air conditioning 9 ☐ Not used 10 ☐ Other

METHOD OF CONSTRUCTION

1 ☒ Cable tool 2 ☐ Rotary (conventional) 3 ☐ Rotary (reverse) 4 ☐ Rotary (air) 5 ☐ Air percussion 6 ☐ Boring 7 ☐ Diamond 8 ☐ Jetting 9 ☐ Driving 10 ☐ Digging 11 ☐ Other

Name of Well Contractor: Al Hammers Well Drilling Inc. — Well Contractor's Licence No.: 2513

Address: 737 Essa Rd, Barrie, On.

Name of Well Technician: A. Hammers — Well Technician's Licence No.: 20229

Signature of Technician/Contractor: A. Hammers — Submission date: day 13 mo 11 yr 95

MINISTRY USE ONLY

Data source — Contractor: 2513 — Date received: NOV 16 1995

Date of inspection — Inspector

Remarks: CSS.ES

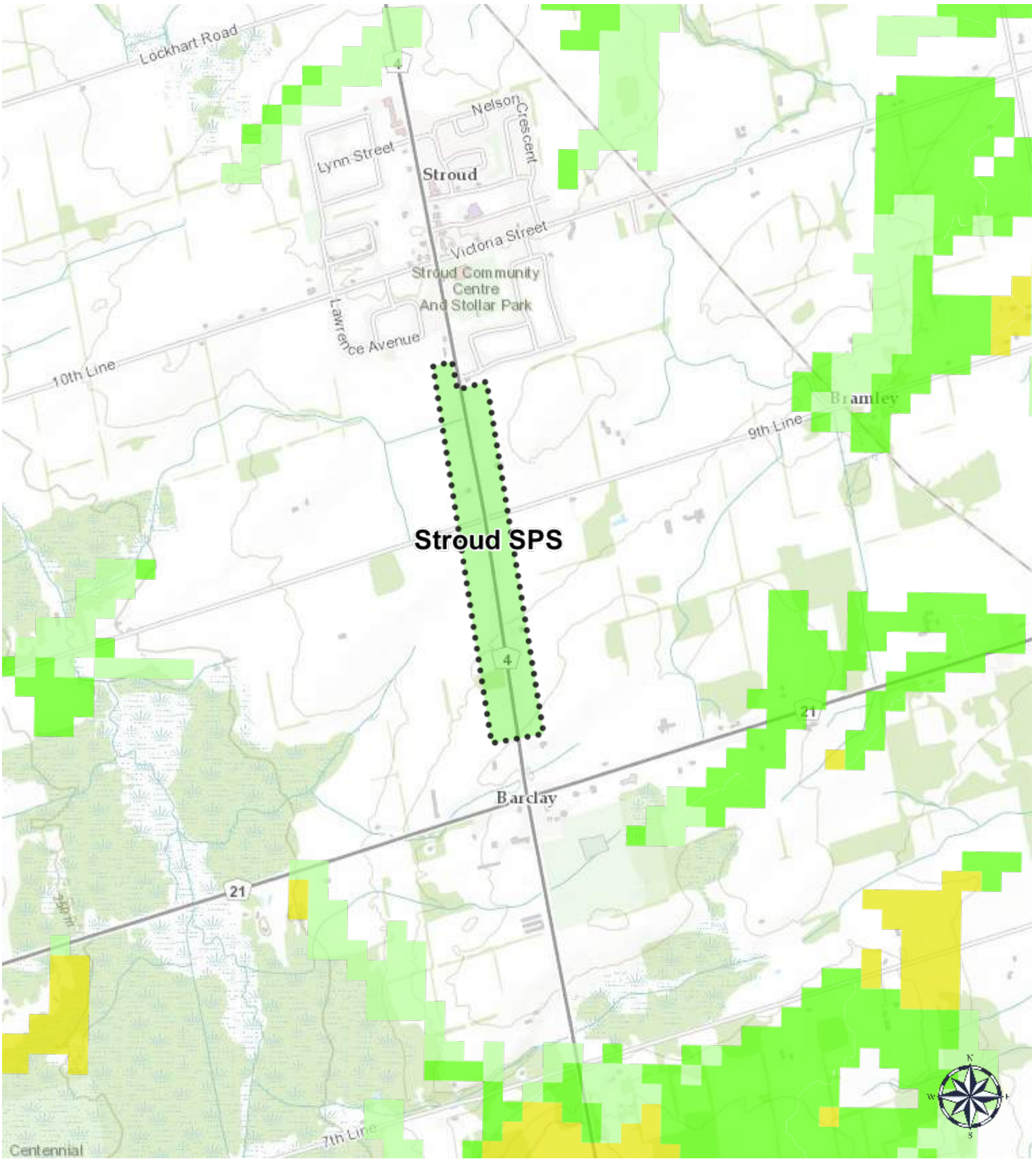
0506 (07/94) Front Form 9

2 - MINISTRY OF ENVIRONMENT & ENERGY COPY

ENCLOSURE 4

Simcoe County Maps

GRA

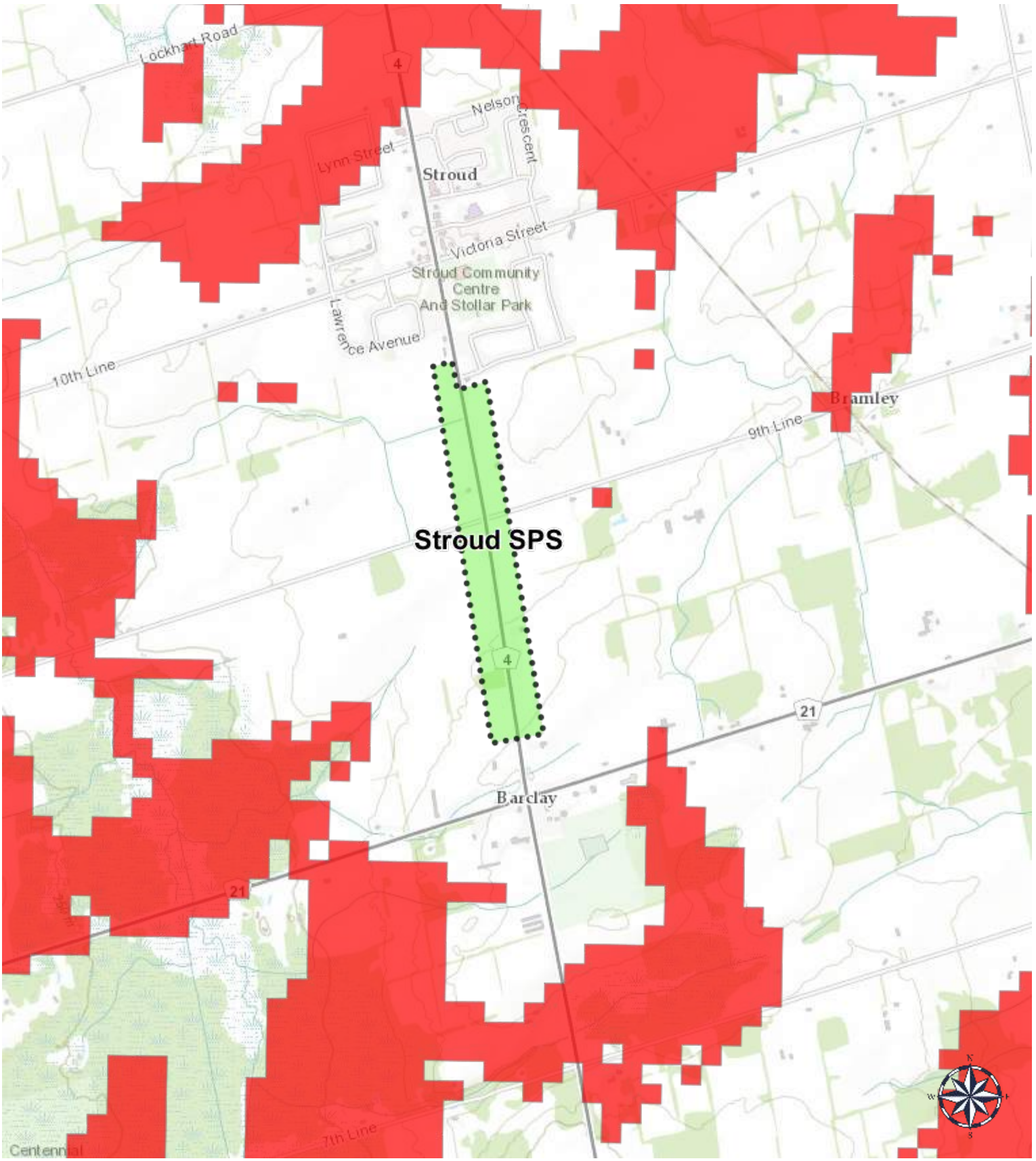


0 500 1000 1500m

1 : 36,112

Nov 29, 2021

HVA



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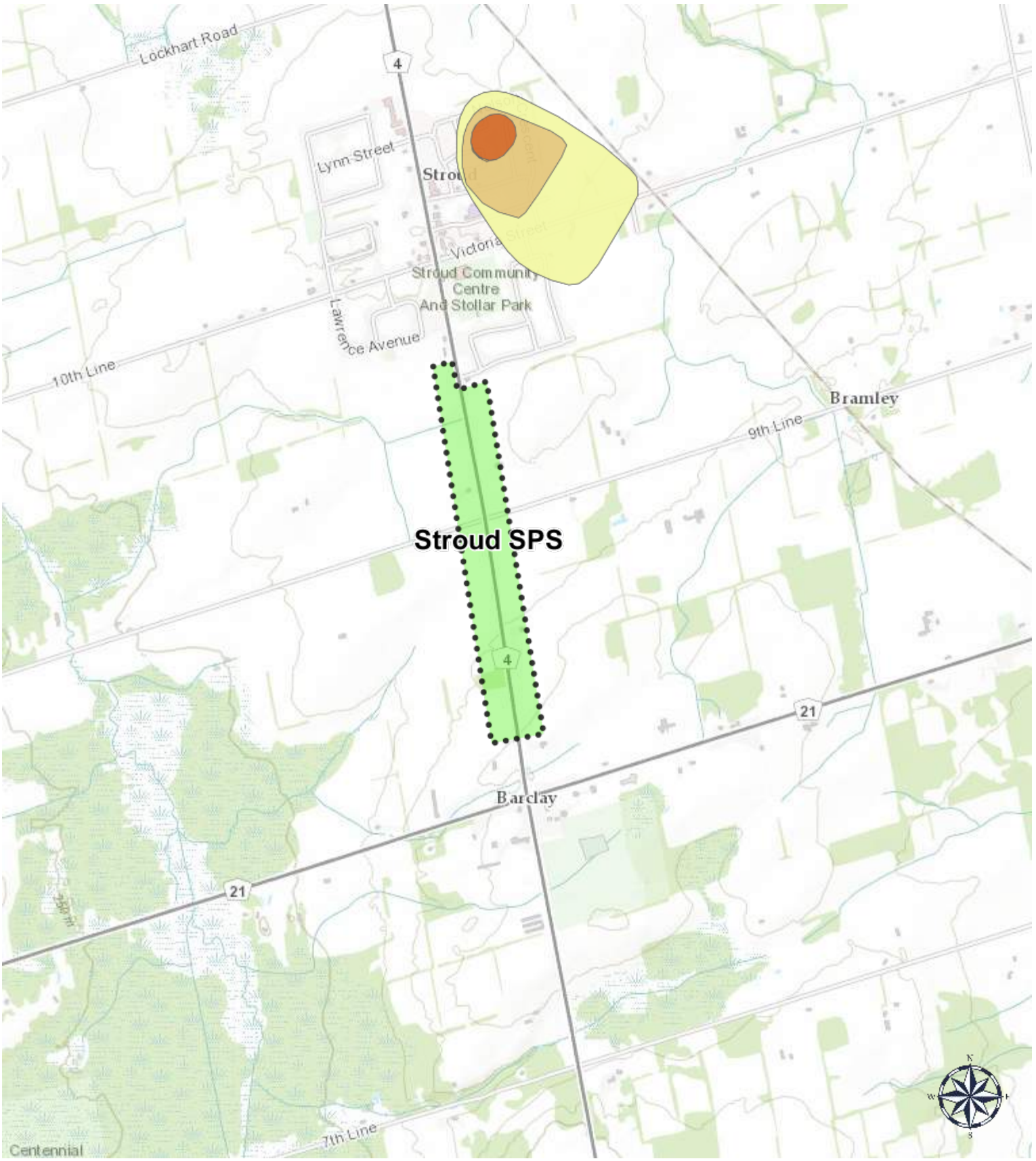
1 : 36,112

Nov 29, 2021

Wellhead Protection Area



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1 : 36,112

Nov 29, 2021

Appendix C

Environmental Constraints Analysis of Natural Heritage Features

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

November 2, 2021 AEC21-242

Ainley Group
195 County Court Blvd., Suite 300
Brampton ON
L6W 4P7

Re: **Environmental Constraints Analysis of Natural Heritage Features**
Innisfil Heights Sewage Pumping Station 6
Town of Innisfil

Dear Mr. Ewan:

Azimuth Environmental Consulting, Inc. (Azimuth) was retained to provide an Environmental Constraints Analysis (ECA) of the potential natural heritage constraints which would require consideration in the evaluation of potential locations for the Stroud Sewage Pumping Station 6 (Stroud SPS) as part of the Schedule B Municipal Class Environmental Assessment (MCEA). Potential locations for the Stroud SPS are being explored as part of the MCEA within the identified study area as provided by Ainley Group (Ainley) and depicted in Figures 1-3. Preliminary constraints are presented in this ECA, as they relate to Key Natural Heritage Features (KNHFs), as defined by Provincial Planning Policy (2020). KNHFs may include woodlands, wetlands, valleylands, Significant Wildlife Habitat (SWH), fish habitat, and habitat for Species at Risk (SAR) protected under Ontario's *Endangered Species Act*, 2007 (ESA).

The ECA includes a summary of recommendations to be considered for future stages of the project including recommendations for additional environmental field study and evaluation, depending upon the ultimate proposed location for Stroud SPS.

Information provided herein will ultimately be included in an Environmental Impact Study (EIS) report once design details are known, and all stages of development are understood in order to adequately identify mitigation requirements for natural heritage protection, and permitting requirements from the regulatory agencies.

1.0 STUDY APPROACH

Prior to undertaking field studies, an initial classification of habitats was undertaken using recent air photo imagery for an area encompassing the study area and adjacent lands (*i.e.* lands within approximately 120 metres (m)). Field surveys were completed by Azimuth ecologists on October 1st and 20th 2021. Environmental features mapping (Figure 2d; attached) illustrates information derived from a combination of desktop mapping resources and field conclusions. The high level field assessment for this ECA was restricted to a 'windshield' survey from within the road right-of-way (ROW). Detailed environmental investigations were not undertaken as part of the ECA. Vegetation units were generally classified using Ecological Land Classification for Southern Ontario (ELC) protocols and illustrated in Figure 2d.

2.0 SUMMARY OF NATURAL HERITAGE CONDITIONS

2.1 Vegetation and Vegetation Communities

The study area is largely dominated by agricultural and rural residential uses and includes several small natural heritage components including woodlands and meadow habitat. A total of two vegetation communities, Dry-Fresh Mixed Meadow (MEMM3) and Fresh-Moist Poplar Deciduous Forest (FODM8-1), were identified by Azimuth in 2021 (Figure 2d).

The ROW was typically composed of open 'field' habitat composed of opportunistic herbaceous/grass species.

Riparian vegetation typically exists in proximity to the mapped watercourse within the study area and within the ROW (*i.e.* where roadside drainage exists) (Figure 2d).

Although not considered a KNHF, many of the rural properties are treed and include hedgerows that border the properties.

There were no Butternut (Threatened) observed during both surveys.

2.2 Wildlife and Wildlife Habitat

The Ministry of Natural Resources and Forestry's (MNRF) NHIC database identifies records for one species listed as provincially Special Concern, Snapping Turtle, and two species listed as Threatened, Bobolink and Eastern Meadowlark. The records for Snapping Turtle are likely associated with the wetland habitat found outside of the study area and adjacent lands including the Lover's Creek Provincially Significant Wetland

(PSW). The records for Bobolink and Eastern Meadowlark are likely associated with the agricultural lands within the area.

2.3 Watercourses and Fish Habitat

The study area includes one drainage feature on the west side of Yonge Street, that conveys flow westward (Figure 2d), ultimately discharging to the main branch of Lover's Creek within the Lover's Creek PSW approximately 2.7 kilometers (km) downstream. In the study area the feature is a straight channel perpendicular to Yonge Street that appears to receive drainage from roadside drainage (there is no defined channel on the east side of Yonge Street). Drainage is in an entrenched, open trapezoidal channel within agricultural lands, and has a narrow herbaceous buffer with minimal cover. This feature is identified as the '8th Line Municipal Drain – Branch B (Town of Innisfil, 2016), as shown on Figure 2d. The feature is managed as a Class 'D' drain (OMAFRA, 2017), characteristic of permanently flowing water, with potential for sensitive fish species including fall spawning Brook Trout within the catchment. Background information from the Barrie Creeks, Lover's Creek, and Hewitt's Creek Subwatershed Plan Report (Lake Simcoe Region Conservation Authority (LSRCA), 2012), indicates that the main Lover's Creek is thermally considered warmwater, however tributaries to the main Lover's Creek have potential to function as coldwater fish habitat.

The drain in the study area is regulated by the LSRCA as shown on Figure 3d, and recognized as a watercourse that requires site specific *Fisheries Act* review for works that have the potential to impact fish habitat (DFO, 2017).

There are no known aquatic SAR known to occur within the Lovers Creek watershed (LSRCA, 2007; DFO, 2019).

3.0 SUMMARY OF CONSTRAINTS AND OPPORTUNITIES

Azimuth has identified several KNHF within the study area based on a review of site conditions. Preliminary Environmental Constraints mapping for the study area is presented in Figure 3d.

3.1 Woodlands

Woodland habitat (FODM8-1) has been identified within the study area (Figure 3d). The FODM8-1 is roughly 1.5ha in size. The Lake Simcoe Protection Plan (2009) indicates that woodlands should be at least 10ha in size to be considered significant and the Natural Heritage Reference Manual (2010) indicates that where tree cover is between 15-30%,

woodlands at least 20ha in size should be considered significant. This woodland is too small and therefore would not be considered significant as per provincial standards.

3.2 Watercourses

They study area includes a Class D municipal drain which functions as a watercourse with potential for fish habitat.

3.3 Significant Wildlife Habitat

Detailed studies are required to confirm the presence/absence of SWH. Typically, SWH functions are associated with other KNHF such as woodlands and wetlands but would require further assessment to confirm. However, in this situation, SWH may be associated with the open agricultural lands that have the potential to be utilized by grassland birds.

3.4 Species at Risk

The following list only considers species that have a moderate or high possibility of occurring within the study area:

- Barn Swallow (Threatened)
    - Several barns were identified within the study area (Figure 2d) which could be utilized by Barn Swallow for nesting;
- Bobolink (Threatened)
    - Potential nesting habitat for Bobolink occurs within the agricultural lands of the study area;
- Butternut (Endangered)
    - While no Butternut were identified during 2021 field surveys, potential habitat for this species occurs within the small deciduous forest community in addition to individual trees on rural properties or within hedgerows;
- Eastern Meadowlark (Threatened)
    - Potential habitat for Eastern Meadowlark occurs within the agricultural lands of the study area; and
- Endangered Bats (Little Brown Myotis, Northern Myotis and Tri-colored Bat)
    - The deciduous forest within the study area provides potential habitat for Endangered bat species.

As illustrated on Figures 2d and 3d, the agricultural lands that may provide habitat for SAR, as discussed above. Potential marginal habitat for SAR bats may be present within the small woodland.

4.0 CONSIDERATIONS AND RECOMMENDATIONS

4.1 Aquatic Considerations

Drainage on the west side of Yonge Street is considered a watercourse protected under the Federal *Fisheries Act*. Any proposal to alter site conditions in water or within lands regulated by the LSRCA (Figure 3d) requires site specific fisheries evaluation of project activities to confirm potential impacts, and mitigation requirements prior to development. Mitigation planning should include best management practices for works around waterbodies, and use of Fisheries and Oceans Canada's (DFO)'s Standards and Interim Codes of Practice where applicable. Land development with potential for impacts to watercourses requires review in accordance with DFO's 'Projects Near Water', acknowledging DFO's permit process for municipal drains (DFO, 2017). Fisheries timing restrictions governed by MNRF are expected to apply for all work around watercourses, to protect fish (either in the study area or downstream) during sensitive spawning periods.

4.2 LSRCA Regulated Lands

The study area contains lands that are regulated by the LSRCA as per Ontario Regulation 179/06, therefore LSRCA consultation is required prior to site alteration in regulated lands.

4.3 Potential Additional Surveys

The need for additional in-season surveys will depend on the proposed location(s) of the Stroud SPS. The following additional surveys may be recommended:

- Detailed summer vegetation (late June-August) inventory to further characterize the limits and extent of vegetation communities within the footprint of the Stroud SPS. This survey will include a screening for SAR flora including a comprehensive search for Butternut trees.
- Complete breeding bird surveys in June to confirm the presence/absence of diurnal birds. The number of surveys required will depend on the habitat.
- Should construction of the Stroud SPS be proposed within woodland habitat, a general survey screened for presence of "snag" trees with potential to provide refuge and maternity roosting habitat for bat species listed as Endangered under the ESA (Little Brown Myotis, Nothern Myotis, and Tri-colored Bat) may be required.
- Obtain up-to-date SAR information from Ministry of Environment, Conservation and Parks (MECP) to determine if any additional SAR need to be considered within the assessment and/or if any SAR have been confirmed within the study area.

- Determine from MECP if additional species specific surveys are recommended relating to potential SAR habitat. If not, confirm mitigation measures that should be implemented to avoid incidental impact to SAR (*i.e.* exclusion fencing, timing restrictions for tree clearing).
- Complete an aquatic habitat assessment to confirm potential for fish use in the study area, and classify fish habitat as 'direct' (fish occur), 'seasonal direct' (fish can access the study area seasonally or under elevated water levels), or 'indirect' (no fish occur but drainage discharges to fish that occur downstream). Confirmation of fish use combined with information on channel characteristics and flow frequency would dictate fish habitat sensitivity for approvals.

Subsequent to the completion of the recommended studies, detailed mitigation measures would be outlined in an EIS.

5.0 CONCLUSIONS

Based on our initial assessment several KNHF have been identified within the study area including:

- Watercourse – municipal drain (fish habitat);
- Potential SAR and/or SAR habitat; and
- Potential SWH.

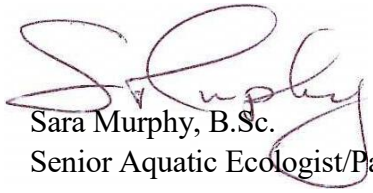
Based on the identified features and functions, it is recommended that siting of the Stroud SPS occur outside/away from of the identified watercourse and LSRCA regulated lands (Figure 3d) to mitigate potential impacts to fish and aquatic resources, as well as outside of potential SAR habitat in the study area. Mitigation in the form of timing restrictions for vegetation removals may be required should the Stroud SPS be proposed within grassland bird SAR habitat (*i.e.* non-row crop agricultural lands) and/or should tree removals be required.

As highlighted in Section 4.3, additional studies will likely be required once the proposed location for the Stroud SPS is known. The need for specific studies can be recommended once this information is available and should be confirmed in consultation with LSRCA.

Should you have any additional questions or concerns, or wish to discuss further please do not hesitate to contact the undersigned.

Yours truly,
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Lisa Moran, B.Sc.Env.
Terrestrial Ecologist



Sara Murphy, B.Sc.
Senior Aquatic Ecologist/Partner

Attach: Figure 1, Figure 2d, Figure 3d

6.0 REFERENCES

Endangered Species Act, Ontario. (2007). An Act to protect species at risk and to make related changes to other Acts. Bill 184 Chapter 6, Statutes of Ontario 2007.

Fisheries and Oceans Canada, 2017. Guidance for Maintaining and Repairing Municipal Drains in Ontario.

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606000.000 609000.000 612000.000 615000.000

4908000.000

4905000.000

LOCKHART ROAD
VETERANS DRIVE
SALEM ROAD
HIGHWAY 400 NORTH
10TH LINE
10 SIDEROAD
9TH LINE
20 SIDEROAD
STROUD SEWAGE PUMPING STATION
MCKAY STREET EAST
MCKAY ROAD WEST
YONGE STREET
INNISFIL BEACH ROAD
20 SIDEROAD SEWAGE PUMPING STATION
OLD ORAL DRIVE
BOWMAN STREET
THOMAS STREET
CLIFFORD COURT
INNISFIL HEIGHTS SEWAGE PUMPING STATION #1
INDUSTRIAL PARK ROAD
INNISFIL HEIGHTS SEWAGE PUMPING STATION #6
7TH LINE
6TH LINE
5TH LINE
WINISBROOK STREET
5 SIDEROAD
HIGHWAY 400 SOUTH
COMMERCE PARK DRIVE
FOREST VALLEY DRIVE
INNISFIL HEIGHTS SEWAGE PUMPING STATION #2
BELLE AIRE BEACH ROAD

0 750 1500
HORIZONTAL SCALE 1: 30000

606000.000 609000.000 612000.000 615000.000

Plotted by: ALIU on October 6, 2021 at 5:14pm
File: O:\21 Projects\21-242 Gore EA_5 Pumping Stations – Innisfil\04.0 – Drafting\21-242 Pumping Station Locations.dwg Layout: Pumping Station Locations Plotscale: 1

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

LEGEND:

INNSERVICES UTILITIES INC.
FIVE SEWAGE PUMPING STATIONS
INNISFIL, ON

PUMPING STATION LOCATIONS

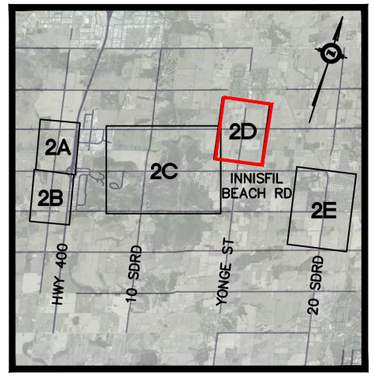
DATE ISSUED:	*SEPTEMBER 2021*	Figure No. 1
CREATED BY:	*A.L.*	
PROJECT NO.:	*21-242*	
REFERENCE:	*SIMCOE COUNTY*	

LEGEND:

- STUDY AREA
- EXISTING WATERCOURSE (ONTARIO MNR, 2020)

ELC VEGETATION COMMUNITIES:

MEMM3	DRY-FRESH MIXED MEADOW ECOSITE
FODM8-1	FRESH-MOIST POPLAR DECIDUOUS FOREST TYPE



KEY MAP

0 150 300

HORIZONTAL SCALE 1:6000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

ENVIRONMENTAL FEATURES
STROUD PUMPING STATION

INNSERVICES UTILITIES INC.
FIVE SEWAGE PUMPING STATIONS

DATE ISSUED:	*SEPTEMBER 2021*	Figure No. 2D
CREATED BY:	*A.L.*	
PROJECT NO.:	*21-242*	
REFERENCE:	*SIMCOE COUNTY*	

Plotted by: ALU on November 1, 2021 at 2:00pm
File: Q:\21 projects\21-242 class ea 5 pumping stations - innisfil\04.0 - drafting\21-242_Environmental Features.dwg Layout: EFStrPS Plotscale: 1

SOUTHVIEW AVENUE

BARN

BARN

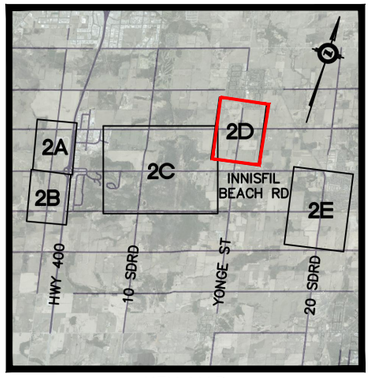
YONGE STREET

BARN

9TH LINE

LEGEND:

- STUDY AREA
- WATERCOURSE (ONTARIO MNR, 2020)
- MUNICIPAL DRAIN CLASS 'D' (OMAFRA, 2017)
- MNFR UNEVALUATED WETLAND (ONTARIO MNR, 2020)
- LOVER'S CREEK PROVINCIALLY SIGNIFICANT WETLAND (ONTARIO MNR, 2020)
- REGULATORY LIMIT (LSRCA, 2021)
- NON-SIGNIFICANT WOODLAND



KEY MAP

0 150 300

HORIZONTAL SCALE 1:6000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

PRELIMINARY ENVIRONMENTAL CONSTRAINTS STROUD PUMPING STATION

INNSERVICES UTILITIES INC.
FIVE SEWAGE PUMPING STATIONS

DATE ISSUED:	SEPTEMBER 2021	Figure No.
CREATED BY:	A.L.	3D
PROJECT NO.:	21-242	
REFERENCE:	SIMCOE COUNTY	

Plotted by: ALU on November 1, 2021 at 2:03pm
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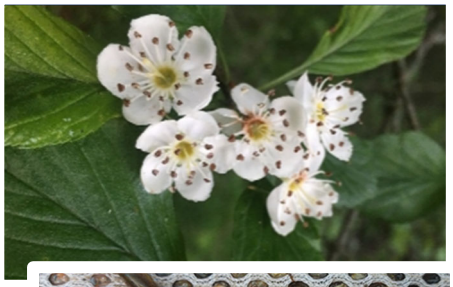
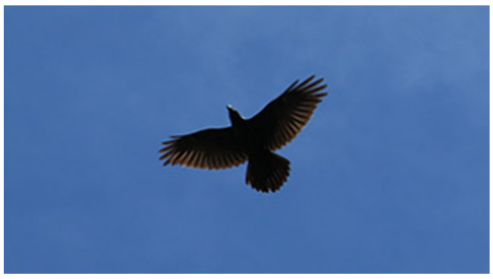
Appendix D

Scoped Environmental Impact Study Report

AZIMUTH

- Environmental Approvals
- Fisheries & Aquatic Ecology
- Terrestrial & Wetland Ecology
- Environmental Engineering
- Hydrogeology & Contaminant Hydrogeology
- Arborist Services
- Environmental Site Assessment
- Species at Risk
- Project Management
- Environmental Impact Assessment
- Water and Wastewater Engineering
- Environmental Site Inspection / Construction Monitoring




Scoped Environmental Impact Study

7667 Yonge Street

Town of Innisfil

InnServices Utilities Inc.

Prepared for the Ainley Group

AEC Project No. 21-242 April 2025

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

April 23, 2025 AEC 21-242

Ainley Group
280 Pretty River Parkway
Collingwood ON
L9Y 4J5

Attention: Wendy Smeh, C.E.T., PMP, Project Manager

Re: **Scoped Environmental Impact Study, InnServices Sewage Pumping Station (Stroud), 7667 Yonge St., Town of Innisfil**

Dear Wendy Smeh,

Azimuth Environmental Consulting, Inc. (Azimuth) is pleased to provide a Scoped Environmental Impact Study (EIS) for the Innisfil Heights Stroud Sewage Pumping Station (Stroud SPS) building in the Town of Innisfil. The EIS represents a continuation of study from the Environmental Constraints Analysis (ECA) completed for the Schedule B Municipal Class Environmental Assessment (Class EA) in 2021.

Should you have any questions or require additional information please do not hesitate to contact the undersigned.

Regards,
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

L. Moran

Lisa Moran, B.Sc.Env.
Senior Ecologist

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1.0 INTRODUCTION

Azimuth Environmental Consulting, Inc. (Azimuth) was retained by the Ainley Group to undertake a Scoped Environmental Impact Study (EIS) for the Innisfil - Stroud Sewage Pumping Stroud (Stroud SPS) located at 7667 Yonge Street in the Town of Innisfil (the "Town"), County of Simcoe (the "County"). A map illustrating the location of the proposed Stroud SPS building in its regional context is shown on Figure 1.

As background, InnServices Utilities Inc. (InnServices) completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the Town of Innisfil and its anticipated growth. The MSP recommended the construction of four (4) new SPS. Each proposed SPS requires a Schedule B Municipal Class Environmental Assessment (MCEA) prior to construction. InnServices has retained the Ainley Group to complete the Schedule B Class EA. This EIS will form a component of the EA in accordance with the Municipal Class Environmental Assessment Document (2000).

Azimuth completed an Environmental Constraints Analysis (ECA) for a larger study area (in which the Stroud SPS was being considered) in November 2021 to identify candidate Key Natural Heritage Features (KNHFs) present that should be avoided when considering potential locations for the Stroud SPS. This EIS represents a continuation of the ECA, to assess the potential impacts associated with Stroud SPS on KNHFs at its proposed location as presented in Figure 1. The EIS includes a review of background information, in combination with results of a detailed field program completed in 2021 and 2023 to confirm natural heritage features and functions. This EIS also examines potential for Species at Risk (SAR) protected under Ontario's *Endangered Species Act,* 2007 (*ESA*), and potential for negative impacts to natural heritage features with recommendations for avoidance and mitigation where required.

For the purposes of this EIS, the study area comprises the proposed footprint of the Stroud SPS and adjacent lands (within approximately 120m) as depicted on Figures 1-2. The EIS does not assess any external connections beyond the footprint of the Stroud SPS. Natural features in the overall planning area beyond the defined study area limits are discussed where applicable throughout the report.

2.0 PLANNING AND POLICY CONTEXT

2.1 County of Simcoe

Section 4.7 of the County of Simcoe's Official Plan (OP) provides direction to lower-tier municipalities with respect to Infrastructure: Sewage and Water.

For those lands within the Lake Simcoe Protection Plan – Watershed Boundary, as shown on Schedule 5.1 Land Use Designations, section 3.13 of this Plan also applies. The study area is within the Lake Simcoe watershed.

Policies related to the Lake Simcoe Protection Plan are discussed in Section 2.3 below.

The County of Simcoe Official Plan identifies the study area as Agricultural. There are no County Greenlands identified within the study area (Appendix A).

2.2 Town of Innisfil

The footprint of the Stroud SPS is within an area designated as Agricultural Area as per Schedule B Land Use. There are no Key Natural Heritage Features & Key Hydrologic Features mapped within the study area (Appendix A).

2.3 Lake Simcoe Protection Plan

The study area is not located within a Settlement Area and is within the Lake Simcoe Watershed. Therefore, applicable provision of the Lake Simcoe Protection Plan (LSPP) are relevant to the proposed works. Relevant Natural Heritage policies of the LSPP are highlighted below, although other policies may be applicable, specific to sewage infrastructure.

Key Natural Heritage Features of the LSPP include wetlands, significant woodlands, significant valleylands and natural areas abutting Lake Simcoe. Key hydrologic features are wetlands, permanent and intermittent streams and lakes other than Lake Simcoe (Section 6.21 and 6.22).

As per Section 6.23-DP, development or site alteration is not permitted within a key natural heritage feature, a key hydrologic feature and within a related vegetation protection zone, except in relation to (g) infrastructure, but only if the need for the project has been demonstrated through an Environmental Assessment or other similar environmental approval and there is no reasonable alternative.

2.4 Lake Simcoe Region Conservation Authority

The study area is located within the jurisdiction of the LSRCA. The study area does not include any lands subject to O. Reg. 41/24 – "Prohibited Activities, Exemptions and Permit" by the LSRCA (Appendix B). Therefore, LSRCA approvals in the form of a permit are not anticipated to be required.

2.5 Endangered Species Act, 2007

Ontario's *ESA* provides regulatory protection to Endangered and Threatened species prohibiting harassment, harm and/or killing of individuals and destruction of their habitats. Habitat is broadly characterized within the ESA as the area prescribed by a regulation as the habitat of the species or an area on which the species depends, directly or indirectly, to carry on its life processes including reproduction, rearing of young, hibernation, migration or feeding.

The various schedules of the *ESA* included under *O. Reg. 230/08* identify SAR in Ontario. These include species listed as Extirpated, Endangered, Threatened and Special Concern. As noted above, only species listed as Endangered and Threatened receive protection from harm and destruction to habitat on which they depend.

3.0 STUDY APPROACH

3.1 Field Program Summary

Azimuth attended the property in 2021 and 2023 to carry out an assessment of the natural features within the study area. Field surveys were completed by Azimuth ecologists on the following dates:

- October 1 and 20, 2021 – site characterization for preparation of a Preliminary Environmental Constraints Memorandum (Azimuth, 2021)
- June 20 and 28, 2023 – Completion of dawn breeding bird surveys (Lisa Moran, Azimuth Terrestrial Ecologist)
- July 27, 2023 – Vegetation assessment of the property (Jordan Wrobel, Azimuth Terrestrial Ecologist)

Prior to undertaking the field study an initial classification of habitats was undertaken using recent air photo imagery for an area encompassing the study area in conjunction with a review of available background mapping.

Vegetation boundaries were checked in the field and delineated as illustrated in Figure 2. Vegetation community types were classified using the Ecological Land Classification for Southern Ontario: First Approximation (ELC; Lee *et al*., 1998, updated 2008).

A SAR screening was undertaken for the scope of this assignment that compares the habitat requirements of species with potential to occur in the overall planning area with habitat types that occur on the property. The screening was based on air photo interpretation combined with onsite evaluation of habitats within the study area.

3.1.1 Breeding Bird Surveys

Two dawn breeding bird surveys were conducted within the study area on June 20 and 28, 2023 guided by point count methodology presented in Appendix D of the OBBA Guide for Participants (2001). All surveys were conducted no earlier than one half hour before sunrise and were completed prior to 10:00a.m. Surveys were completed under suitable weather conditions (*i.e.* no precipitation and light winds (Beaufort wind scale ≤3)), with an observation period of 10 minutes carried out at the point count station shown on Figure 2.

3.2 Background Information

A review of background documents provided information on site characteristics, habitat, wildlife, fisheries, rare species and communities, and general cultural/historic aspects of the study area. This included a review of the following:

- MNR's Natural Heritage Information Center (NHIC; MNR, 2025);
    - Make-A-Map: Natural Heritage Areas application;
- Atlas of the Breeding Birds of Ontario (OBBA; Cadman *et al*., 2007);
- Ontario Reptile and Amphibian Atlas (2020);
- MECP's Species at Risk Ontario list (2025);
- Atlas of the Mammals of Ontario (Dobbyn, 1994).
- LSRCA regulation limit mapping (2024);
- Aerial photographs available for the study area (Google Earth, VuMap);
- County of Simcoe interactive mapping (2025);
- County of Simcoe Official Plan (2023); and
- Town of Innisfil Official Plan (2018).

4.0 EXISTING CONDITIONS

The study area includes active agricultural lands with opportunistic meadow species associated with the road right-of-way. A rural residential property resides to the north of the Stroud SPS footprint and a disturbed meadow community to the south. Agricultural lands and rural properties exist to the west of Yonge Street and south of 9th Line.

4.1 Vegetation and Vegetation Communities

A field survey was undertaken to evaluate vegetation community types including representative plant species compositions on July 27, 2023. The site visit was undertaken by a qualified Terrestrial Ecologist with knowledge of rare, Threatened, and Endangered plant species with potential to occur in the area.

There are no elements of occurrence (EO_ID) within the study area for provincially Endangered or Threatened, or provincially rare vegetation species according to the MNR NHIC database. A detailed survey was undertaken to identify Butternut (*Juglans cinerea*) and Black Ash (*Fraxinus nigra*) trees; however, none were observed along the east side of Yonge Street in proximity to the Stroud SPS footprint or within the agricultural lands.

No plant species considered Endangered or Threatened were identified during the site investigation. Further, no provincially rare species were observed during the field program. None of the vegetation communities or species documented are of federal or provincial conservation concern (MNR, 2025).

Vegetation communities within the study area were determined in accordance with the ELC system and illustrated on Figure 2. Vegetation communities identified within the study area are associated with the adjacent lands only and include:

- MEMM3: Dry-Fresh Mixed Meadow Ecosite: Disturbed meadow community composed of a variety of goldenrods (*Solidago sp*.), New England Aster (*Symphyotrichum novae-angliae*), Common Dandelion (*Taraxacum officinale*) and grasses.

The footprint of the proposed IH SPS6 is within active agricultural lands (*i.e.* row crops). The land that abuts the active agricultural lands, associated with the road right-of-way, is composed of typical 'ditch habitat' largely dominated by Cattail (*Typha sp*.) with Reed Canary Grass (*Phalaris arundinacea*), Riverbank Grape (*Vitis riparia*), Canada Goldenrod (*Solidago canadensis*) and Bird's-foot Trefoil (*Lotus corniculatus*), among others.

4.2 Wildlife and Wildlife Habitat

Direct and indirect observations of wildlife (*i.e.* tracks, scat, fur) were collected as a matter of course during Azimuth's site investigations. Apart from the breeding birds, no additional wildlife was observed during Azimuth's field investigations.

4.2.1 Breeding Bird Surveys

A total of eight (8) bird species were recorded during dawn breeding bird surveys, all of which are typical of open field/agricultural land (Table 1).

4.3 Species at Risk

A screening for SAR occurred within the planning area based on potentially suitable habitat features identified during the site investigation (Table 2). The SAR assessment fully considers SAR with potential to occur within the overall planning area. Based on this assessment in combination with vegetation communities and other environmental features observed during the site investigation, the following species are considered below in this report:

- **Threatened and Endangered:** None
- **Special Concern:** Barn Swallow

4.4 Wetlands

There is no wetland within the study area based on background sources (Appendix A and B) and verified during the site investigation.

4.5 Woodlands

There is no woodland within the study area based on background sources (Appendix A and B) and verified during the site investigation.

4.6 Valleylands

There are no valleyland features within the study area according standards presented in the NHRM and LSPP Technical Definition of Significant Valleyland (MNRF, 2015), principally due to the lack of permanent or intermittent watercourses that constitute a defining component of a valleyland feature. No portion of the study area fulfills the well-defined valley morphology and landform prominence required to be considered Candidate Significant Valleyland.

4.7 Candidate Significant Wildlife Habitat

An assessment of the potential for Significant Wildlife Habitat (SWH) within study area was conducted using the criteria outlined within the Significant Wildlife Habitat Technical Guide (OMNR, 2000) and the accompanying the Ecoregion 6E Criteria Schedules (MNRF, 2015). The following Candidate SWH types were determined to be present, or have potential to be present within the study area based on the results of the field program:

- Special Concern and Rare Wildlife Species (Barn Swallow)

4.8 Areas of Natural and Scientific Interest

There are no Areas of Natural and Scientific Interest located within the study area according to municipal or provincial mapping resources (Appendix A and B).

4.9 Watercourses and Fish Habitat

There are no watercourses or fish habitat within the study area (Appendix A and B).

5.0 KEY NATURAL HERITAGE FEATURES SUMMARY

The results of Azimuth's site investigation combined with review of background information indicate the potential for the following candidate KNHFs within the study area:

- Candidate Significant Wildlife Habitat
    - Special Concern and Rare Wildlife Species (Barn Swallow)

6.0 PROPOSED WORKS

The build-out of the servicing area for the Stroud SPS is defined as the complete development of the proposed lands to meet the short- and long-term needs of the settlement boundary to service new growth. The Stroud SPS is proposed to connect to the future sanitary system within the Village of Stroud, with potential future connections to adjacent lands within the Town of Innisfil Settlement Boundary.

The Stroud SPS is expected to accommodate a total average daily flow of 22.0 L/s and a total peak wet weather flow of 64.1 L/s, which will discharge to the proposed trunk sewer on Innisfil Beach Road and further discharging into Lakeshore Water Pollution Control Plant.

7.0 IMPACT ASSESSMENT

This impact assessment is prepared with regards to the construction footprint of the proposed Stroud SPS, as described above and illustrated in Figure 2.

7.1 Candidate Significant Wildlife Habitat

There is no potentially suitable habitat for Barn Swallow within the footprint of the Stroud SPS. Potentially suitable habitat for the species may occur within the study area (*i.e.* within 120m) due to the presence of rural residential properties and associated outbuildings. There will be no removal of structures on adjacent lands as a result of the proposed works, therefore, there

will be no negative impact to potential Barn Swallow nesting habitat. Furthermore, there is no expectation that the proposed works will impair foraging habitat for the species.

8.0 MITIGATION

8.1 Species at Risk

It should be noted that the absence of a protected species within the study area does not indicate that they will never occur within the area. Given the dynamic character of the natural environment, there is a constant variation in habitat use. Care should be taken in the interpretation of presence of species of concern including those listed under the *ESA*. Changes to policy, or the natural environment, could result in shifts, removal, or addition of new areas to the list of areas currently considered SAR habitat. This report is intended as a point in time assessment of the potential to impact SAR; not to provide long term "clearance" for SAR. While there is no expectation that the assessment should change significantly, it is the responsibility of the proponent to ensure that they are not in contravention of the *ESA* at the time that site works are undertaken. A review of the assessment provided in this report by a qualified person should be sufficient to provide appropriate advice at the time of the onset of future site works.

8.2 Migratory Birds

Activities involving the removal of vegetation should be restricted from occurring during the breeding season. Migratory birds, nests, and eggs are protected by the *Migratory Birds Convention Act*, 1994 (MBCA) and the *Fish and Wildlife Conservation Act,* 1997 (FWCA). Environment Canada outlines dates when activities in any region have potential to impact nests at the Environment Canada Website. In Zones C1 and C2 vegetation clearing should be avoided between **April 1 through August 31** of any given year. If work requires that vegetation clearing is required between these dates screening by an ecologist with knowledge of bird species present in the area could be undertaken to ensure that the vegetation has been confirmed to be free of nests prior to clearing.

8.3 Sediment and Erosion Controls

As indicated above, diligent application of sediment and erosion controls (ESCs) is required for all construction activities to minimize the extent of accidental or unavoidable impacts to adjacent areas. Prior to the commencement of site works, silt fencing should be applied around the work area and routine inspection/maintenance of the silt fencing should occur throughout construction. It is recommended that ESCs be maintained until vegetation is re-established post-construction.

9.0 CONCLUSIONS

Based upon our analysis, it is concluded that the environmental conditions are not limiting to the construction of the Stroud SPS through incorporation of the environmental protection measures described in Section 8 of this report.

At this time, our findings are summarized as follows:

- The proposed infrastructure works are consistent with the applicable natural heritage policies of the *ESA*, County of Simcoe Official Plan, Town of Innisfil Official Plan, and the Lake Simcoe Protection Plan.

- The proposed works are not expected to negatively impact the ecological functions of Candidate Significant Wildlife Habitat outlined in Section 5.

- No Threatened or Endangered species or fish habitat are expected to occur within the study area.

10.0 REFERENCES

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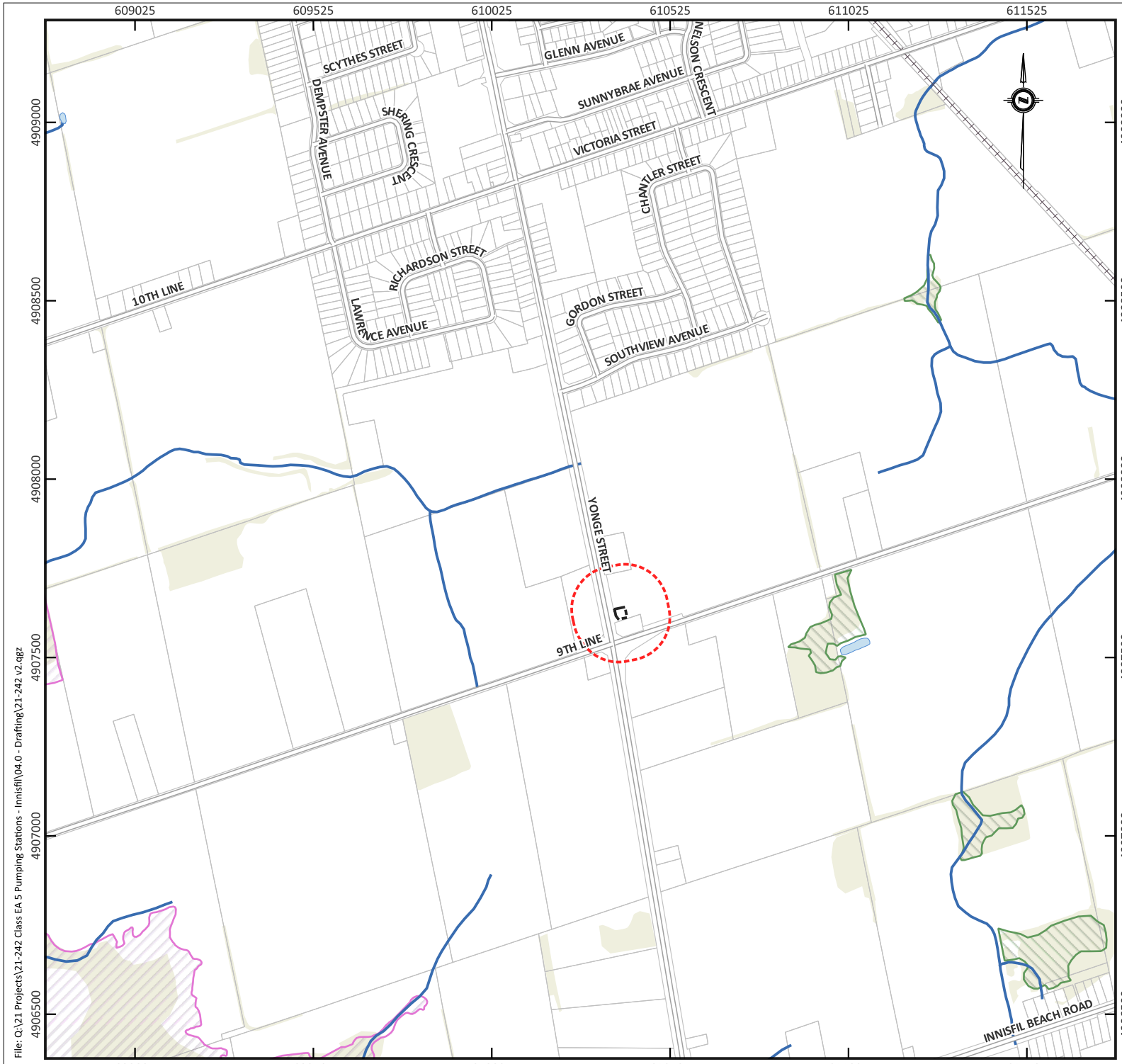


LEGEND

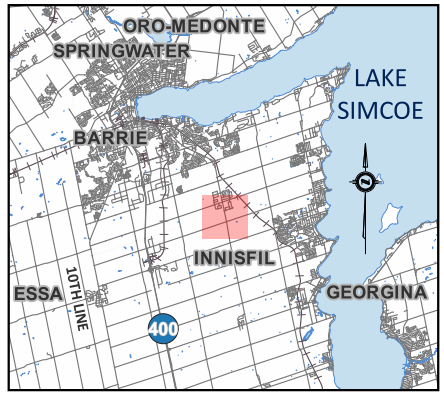
- 120m Radius Study Area (IH SPS Stroud)
- Approximate Location Inn Services Sewage Pumping Station - Stroud
- Waterbody
- Mapped Watercourse
- Unevaluated Wetland
- Provincially Significant Wetland
- Rail
- Wooded Area
- Road

NOTES

1. Watercourse, Waterbody, Wetland, Woodland and ANSI layers are derived from MNRF GIS data, retrieved December 2022.
2. The metric grid displayed on the map corresponds to NAD83 / UTM zone 17N (EPSG:26917).

REGIONAL MAP

SCALE 1:500000



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KILOMETERS

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

SITE LOCATION

INN SERVICES PUMPING STATION - STROUD
INNISFIL, ON

DATE ISSUED:	JANUARY 2025
CREATED BY:	A.L.
PROJECT NO.:	21-242
BASE MAP:	MNRF

Figure No. 1

File: Q:\21 Projects\21-242 Class EA 5 Pumping Stations - Innisfil\04.0 - Drafting\21-242 v2.qgz

LEGEND:

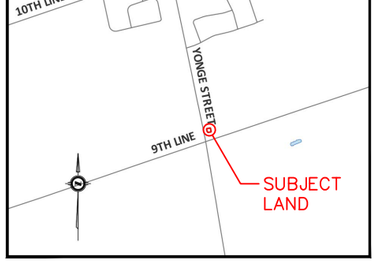
- PROPOSED LOCATION OF STROUD SPS
- 120m RADIUS STUDY AREA
- DRAINAGE FEATURE

ELC UPLAND COMMUNITIES:

MEMM3 DRY–FRESH MIXED MEADOW

DAWN BREEDING BIRD SURVEY STATION

LOCATION PLAN



0 31.25 62.5

HORIZONTAL SCALE 1:1250

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

ENVIRONMENTAL FEATURES & PROPOSED STROUD SPS

INN SERVICES PUMPING STATION - STROUD
INNISFIL, ON

DATE ISSUED:	*JANUARY 2025*	Figure No.
CREATED BY:	*A.L.*	2
PROJECT NO.:	*21-242*	
REFERENCE:	*SIMCOE COUNTY*	

Table 1: Breeding Bird Summary, EIS Stroud Sewage Pumping Station, Town of Innisfil

			Location[1,2]			Conservation Rankings[3]				
FAMILY	SCIENTIFIC NAME	COMMON NAME	1		Adjacent Lands	GRANK	SRANK	ESA	SARA	TRACK
			Visit 1	*Visit 2*						
Fringillidae	*Spinus tristis*	American Goldfinch	S	S		G5	S5			N
Hirundinidae	*Hirundo rustica*	Barn Swallow	FORAGE	FORAGE		G5	S4B	SC		Y
Icteridae	*Agelaius phoeniceus*	Red-winged Blackbird			T	G5	S5			N
Icteridae	*Quiscalus quiscula*	Common Grackle	FO	FO		G5	S5			N
Passerellidae	*Melospiza melodia*	Song Sparrow		S		G5	S5			N
Passerellidae	*Passerculus sandwichensis*	Savannah Sparrow	S	S		G5	S5B,S3N			N
Passerellidae	*Spizella passerina*	Chipping Sparrow	S			G5	S5B,S3N			N
Turdidae	*Turdus migratorius*	American Robin	FO			G5	S5			N

[1] Visit 1: June 20, 2023, Observer: L.Moran, Temperature 14°C, Cloud Cover 5% , Wind: B1, Precipitation: Nil, Search Time 06:49 to 06:59; Visit 2: June 28, 2023, Observer: L.Moran, Temperature 14°C, Cloud Cover 100% , Wind: B3, Precipitation: Nil, Search Time 08:44 to 08:54

[2] Breeding Bird Evidence Codes: X - Species observed, C - Call heard, FO - Flyover (Species presence); H - Species observed in its breeding season in suitable nesting habitat, S - Singing male (Possible Breeding); P - Pair observed , T - Territorial behaviour, A - Agitated behaviour or anxiety calls of adult, V - Visiting a probably nest site, N - Nest building or excavation of nest hole (Probable Breeding); DD - Distraction display or injury feigning, NU - Used Nest or egg shells, FY - Recently fledged young, AE - Adult leaving or entering nest sites, FS - Adult carrying fecal sac, CF - Adult carrying food for young, NE - Nest containing eggs, NY - Nest with young seen or heard (Confirmed Breeding).

[3] Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre (https://www.ontario.ca/page/natural-heritage-information-centre)

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Assessment
Bank Swallow	*Riparia riparia*	THR	THR	Nests in burrows excavated in natural and human-made settings with vertical sand and silt faces. Commonly found in sand or gravel pits, road cuts, lakeshore bluffs, and along riverbanks (COSEWIC, 2013a). ESA Protection: Species and general habitat protection	No potentially suitable habitat for the species within the study area. Not documented during Azimuth's dawn breeding bird surveys.
Barn Swallow	*Hirundo rustica*	SC	THR	Ledges and walls of man-made structures such as buildings, barns, boathouses, garages, culverts and bridges. (COSEWIC, 2011a). ESA Protection: Species and general habitat protection	Barn Swallow was observed foragings during dawn breeding bird surveys. Potentially suitable structures is present within the study area that could provide suitable nesting habitat for the species.
Black Ash	*Fraxinus nigra*	END	No Status	Facultative wetland tree species frequently found in floodplain forests, swamps, seepage areas, shoreline margins and fens. Occupied sites are generally seasonally-flooded (COSEWIC, 2018a). ESA Protection: Species and general habitat protection	No Black Ash observed during Azimuth's field investigations.
Bobolink	*Dolichonyx oryzivorus*	THR	THR	Nests primarily in forage crops (*e.g.* hayfields and pastures) dominated by a variety of species such as clover, Timothy, Kentucky Bluegrass, tall grass, and broadleaved plants. abandoned fields dominated by tall grasses. Does not generally occupy fields of row crops or short-grass prairie. Sensitive to habitat size and has lower reproductive success in small habitat fragments (COSEWIC, 2010). ESA Protection: Species and general habitat protection	No potentially suitable habitat within the Stroud SPS footprint (i.e. row crop). Meadow habitat on adjacent lands is disturbed and/or likely too small to provide suitable habitat for the species. No Bobolink were observed during Azimuth's dawn breeding bird surveys.
Butternut	*Juglans cinerea*	END	END	Commonly found in riparian habitats, but is also found in rich, moist, well-drained loams, and well-drained gravels. Butternut is intolerant of shade (COSEWIC, 2017). ESA Protection: Species and general habitat protection	No Butternut observed during Azimuth's field investigations.
Chimney Swift	*Chaetura pelagica*	THR	THR	Nests primarily in chimneys though some populations (*i.e* . in rural northern areas) may nest in cavity trees (COSEWIC, 2018b). Recent changes in chimney design may be a significant factor in recent declines in numbers (Cadman *et al* ., 2007). ESA Protection: Species and general habitat protection	No potentially suitable habitat for the species within the study area. It is expected that the chimneys within the study area are capped sufficiently to preclude entry of wildlife. Not documented during Azimuth's dawn breeding bird surveys.
Common Nighthawk	*Chordeiles minor*	SC	THR	Open habitats including sand dunes, beaches recently logged/burned over areas, forest clearings, short grass prairies, pastures, open forests, bogs, marshes, lakeshores, gravel roads, mine tailings, quarries, and other open relatively clear areas (COSEWIC, 2018c). ESA Protection: N/A	No potentially suitable habitat for the species within the study area.
Eastern Meadowlark	*Sturnella magna*	THR	THR	Most common in grassland, pastures, savannahs, as well as anthropogenic grassland habitats, including hayfields, weedy meadows, young orchards, golf courses, restored surface mines, *etc* . (COSEWIC, 2011). ESA Protection: Species and general habitat protection	No potentially suitable habitat within the Stroud SPS footprint (i.e. row crop). Meadow habitat on adjacent lands is disturbed and/or likely too small to provide suitable habitat for the species. No Eastern Meadowlark were observed during Azimuth's dawn breeding bird surveys.
Eastern Wood-pewee	*Contopus virens*	SC	SC	Mostly in mature and intermediate-age deciduous and mixed forests having an open understory. It is often associated with forests dominated by Sugar Maple and oak. Usually associated with forest clearings and edges within the vicinity of its nest (COSEWIC, 2012a). ESA Protection: N/A	There is no woodland within the study area. No Eastern Wood-pewee were documented during Azimuth's dawn breeding bird sureys.
Grasshopper Sparrow *pratensis* subspecies	*Ammodramus savannarum pratensis*	SC	SC	Typically breeds in large human-created grasslands (≥5 ha), such as pastures and hayfields, and natural prairies, such as alvars, characterized by well-drained, often poor soil dominated by low, sparse perennial herbaceous vegetation (COSEWIC, 2013b). ESA Protection: N/A	No potentially suitable habitat within the Stroud SPS footprint (i.e. row crop). Meadow habitat on adjacent lands is disturbed and/or likely too small to provide suitable habitat for the species. No Grasshopper Sparrow were observed during Azimuth's dawn breeding bird surveys.
Little Brown Myotis	*Myotis lucifugus*	END	END	Forests and regularly aging human structures as maternity roost sites. Regularly associated with attics of older buildings and barns for summer maternity roost colonies. Overwintering sites are characteristically mines or caves (MNRF, 2014) (COSEWIC, 2013c). ESA Protection: Species and general habitat protection	There is no woodland within the study area. Structures within the study area appear to be well maintained and/or do not provide suitable roosting habitat for bats. The barn that is partially within the study area is located on the west side of Yonge Street and could provide potential habitat for SAR bats, however, due to its proximity to the proposed works, it will not be considered further within the Impact Assessment. No overwintering habitat is present within the study area.
Monarch	*Danaus plexippus*	SC	SC	Breeding habitat is confined to sites where milkweeds, the sole food of caterpillars, grow. Milkweeds grow in a variety of environments, including meadows in farmlands, along roadsides and in ditches, open wetlands, dry sandy areas, short and tall grass prairie, river banks, irrigation ditches, arid valleys, and south-facing hills (COSEWIC, 2016). ESA Protection: N/A	There was not an abundance of Common Milkweed documented within the roadside vegetation. No Monarch were observed during Azimuth's field investigations.
Northern Myotis	*Myotis septentrionalis*	END	END	Maternity roost sites are generally located within deciduous and mixed forests and focused in snags including loose bark and cavities of trees. Overwintering sites are characteristically mines or caves (COSEWIC, 2013c). ESA Protection: Species and general habitat protection	There is no woodland within the study area. No overwintering habitat. No potentially suitable habitat for the species.
Red-headed Woodpecker	*Melanerpes erythrocephalus*	END	END	Occurs in open deciduous forests, particularly those dominated by oak and beech, groves of dead trees, floodplain forests, orchards, cemeteries, savannas and savanna-like grasslands. (COSEWIC, 2018d). ESA Protection: Species and general habitat protection.	There is no woodland within the study area. Species was not documented during Azimuth's dawn breeding bird surveys.
Snapping Turtle	*Chelydra serpentina*	SC	SC	Habitat is characterized by slow-moving water with a soft mud bottom and dense aquatic vegetation. Often located in ponds, sloughs, shallow bays or river edges and slow streams, or areas combining several of these wetland habitats (COSEWIC, 2008). ESA Protection: N/A	There is no wetland within the study area. No potentially suitable habitat for Snapping Turtle.
Tri-colored Bat	*Perimyotis subflavus*	END	END	Maternity roost sites include forests and modified landscapes (barns or human-made structures). Overwintering sites include mines and caves (COSEWIC, 2013c). ESA Protection: Species and general habitat protection	There is no woodland within the study area. Structures within the study area appear to be well maintained and/or do not provide suitable roosting habitat for bats. The barn that is partially within the study area is located on the west side of Yonge Street and could provide potential habitat for SAR bats, however, due to its proximity to the proposed works, it will not be considered further within the Impact Assessment. No overwintering habitat is present within the study area.
Wood Thrush	*Hylocichla mustelina*	SC	THR	Found in moist, deciduous hardwood or mixed stands, often previously disturbed, with a dense deciduous undergrowth and with tall trees for singing perches (COSEWIC, 2012b). ESA Protection: N/A	There is no woodland within the study area. No Wood Thrush were documented during Azimuth's dawn breeding bird surveys.

[1] Habitat as outlined within the MNR's Species at Risk in Ontario website files (https://www.ontario.ca/environment-and-energy/species-risk-ontario-list), or Species Specific COSEWIC Reports referenced in this document.

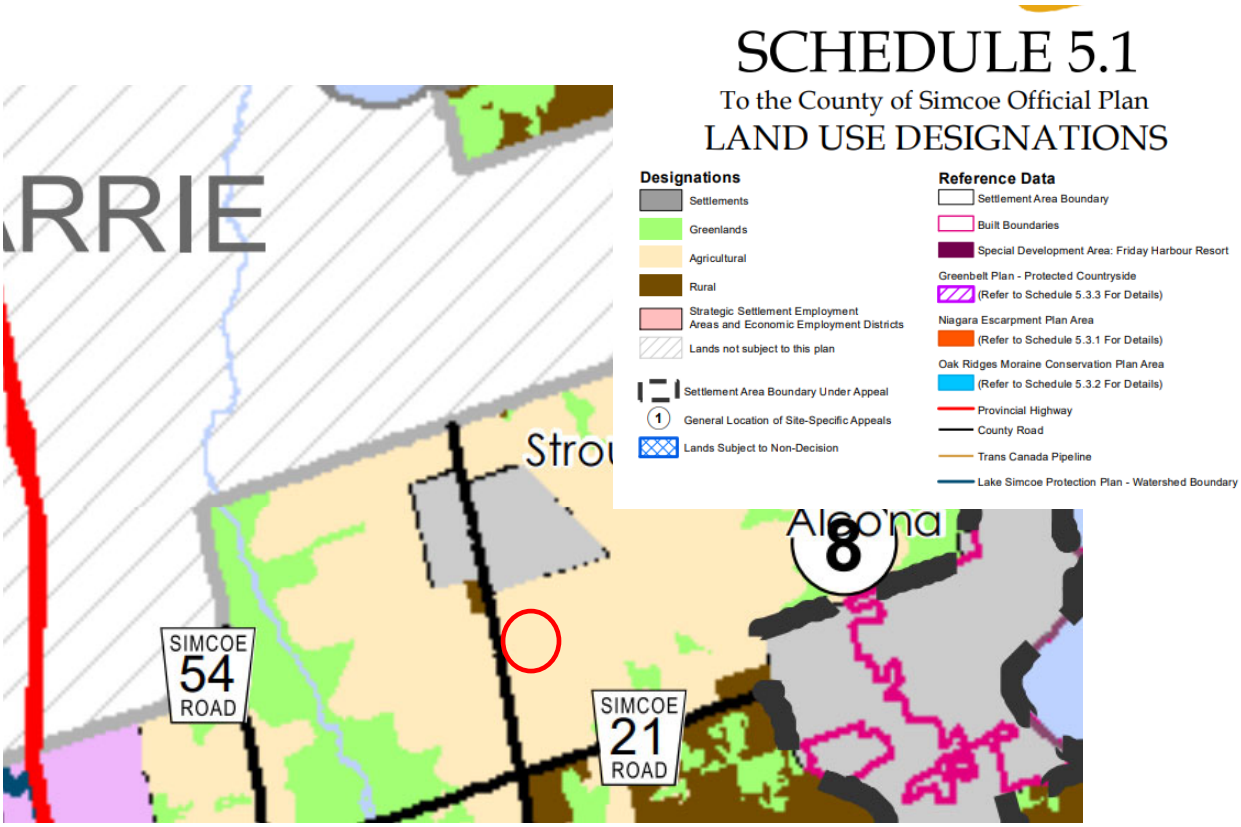
Species at Risk in Ontario List
Best, T., and J. Jennings. 1997. Mammalian Species, *Myotis leibii* . The American Society of Mammalogists. No. 547, pp. 1-6, 5 figs.
Cadman, M., D. Sutherland, G. Beck, D. Lepage and A. Couturier. 2007. Atlas of the Breeding Birds of Ontario 2001-2005. Bird Studies Canada, Environment
COSEWIC. 2008. COSEWIC assessment and status report on the Snapping Turtle *Chelydra serpentina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp.
COSEWIC. 2010. COSEWIC assessment and update status report on the Bobolink *Dolichonyx oryzivorus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 42 pp.
COSEWIC. 2011a. COSEWIC assessment and update status report on the Barn Swallow *Hirundo rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 37 pp.
COSEWIC. 2011. COSEWIC assessment and update status report on the Eastern Meadowlark *Sturnella magna* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 40 pp.
COSEWIC. 2012a. COSEWIC assessment and status report on the Eastern Wood-pewee *Contopus virens* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 39 pp.
COSEWIC. 2012b. COSEWIC assessment and status report on the Wood Thrush *Hylocichla mustelina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 46 pp.
COSEWIC. 2013a. COSEWIC assessment and update status report on the Bank Swallow *Riparia riparia* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 48 pp.
COSEWIC. 2013b. COSEWIC assessment and status report on the Grasshopper Sparrow pratensis subspecies *Ammodramus savannarum pratensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 36 pp.
COSEWIC. 2013c. COSEWIC assessment and update status report on the Little Brown Myotis *Myotis lucifugus* , Northern Myotis *Myotis septentrionalis* and Tri-colored Bat *Perimyotis subfalvus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp.
COSEWIC. 2016. COSEWIC assessment and status report on the Monarch *Danaus plexippus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 59 pp.
COSEWIC. 2017. COSEWIC assessment and status report on the Butternut *Juglans cinerea* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 74 pp.
COSEWIC. 2018a. COSEWIC assessment and status report on the Black Ash *Fraxinus nigra* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 95 pp.
COSEWIC. 2018b. COSEWIC assessment and status report on the Chimney Swift *Chaetura pelagic* a in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 49 pp.
COSEWIC. 2018c. COSEWIC assessment and status report on the Common Nighthawk *Chordeiles minor* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 50 pp.
COSEWIC. 2018d. COSEWIC assessment and status report on the Red-headed Woodpecker *Melanerpes erythrocephalu* s in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 60 pp.
Ministry of the Environment, Conservation and Parks (MECP). 2024. Species at Risk in Ontario (https://www.ontario.ca/page/species-risk-ontario)

APPENDICES

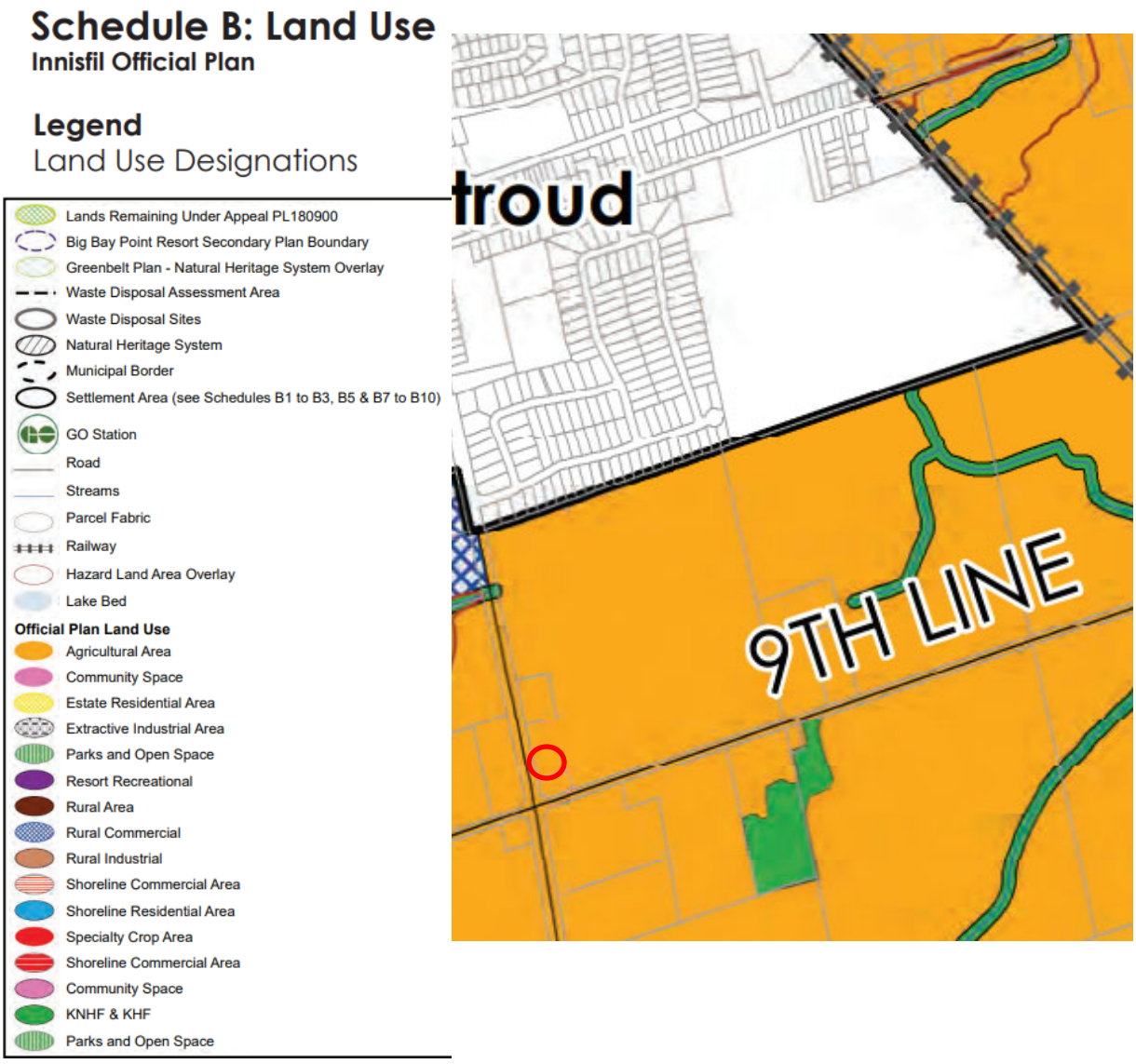
Appendix A: Natural Heritage Policy Information
Appendix B: Background Information

APPENDIX A

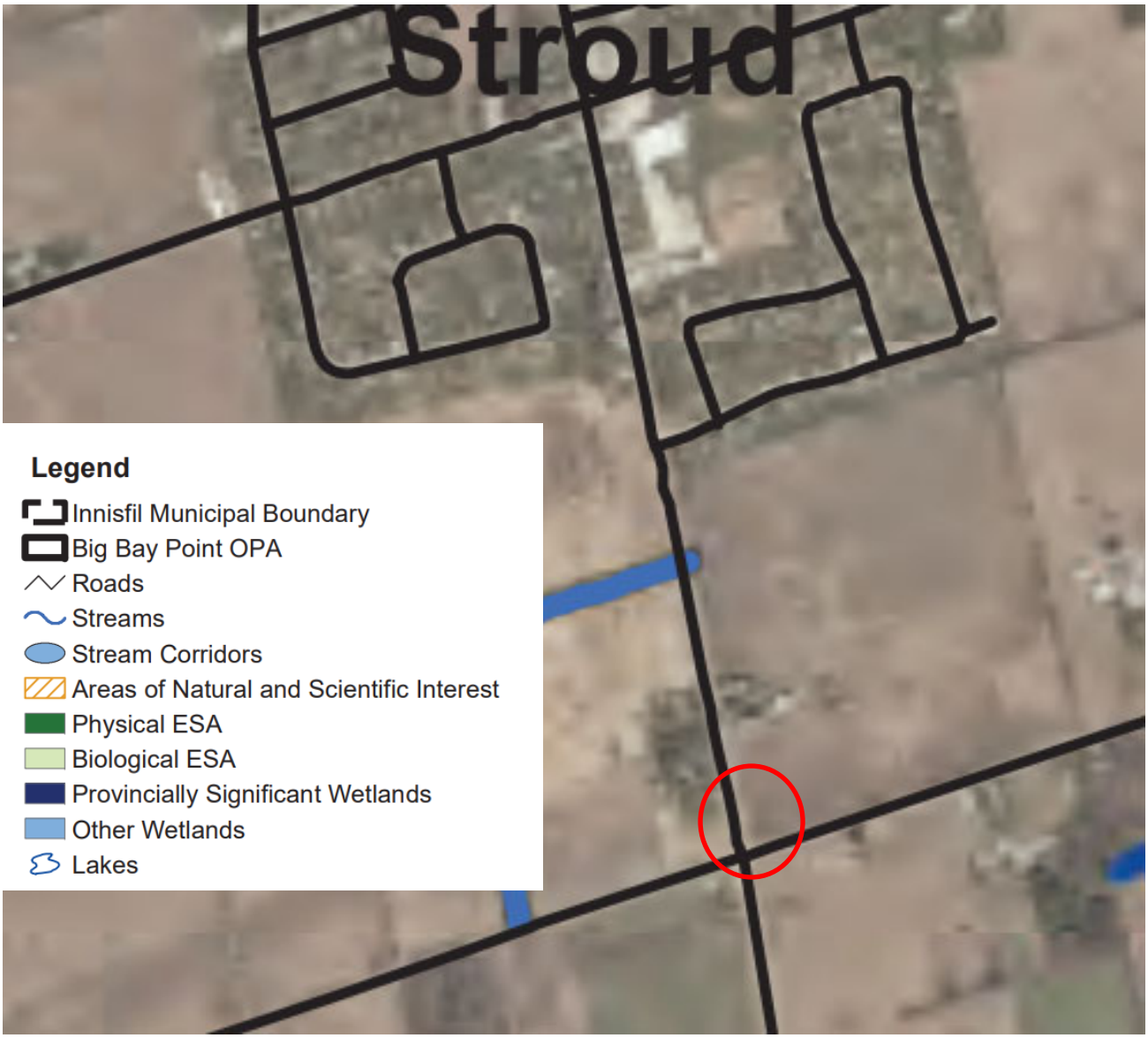
Natural Heritage Policy Information



Appendix A: Excerpt from the County of Simcoe's Official Plan Schedule 5.1: Land Use Designations (Note: Approximate study are contained within red circle drawn on map)



Appendix A: Excerpt from the Town of Innisfil's Official Plan Schedule B: Land Use (Note: Approximate study area located within red circle drawn on map)



Appendix A: Excerpt from the Town of Innisfil's Official Plan Appendix 9: Natural Areas (Note: Study area contained within red circle drawn on map)

Appendix A: Excerpt from the Town of Innisfil's Official Plan Appendix 10: Natural Areas (Note: Study area contained within red circle drawn on map)

APPENDIX B

Background Information

Lake Simcoe Region conservation authority

Stroud SPS - 7667 Yonge St, Town of Innisfil

Features

- LSRCA Watershed Boundary
- Watercourse
- Regulation Limit
- Address Labels
- Road Labels
- Assessment Parcel
- Roads
  - Hwy 400 Series
  - Highway, Arterials
  - Local Road
- Railway

Printed On:
12/16/2024

WGS_1984_Web_Mercator_Auxiliary_Sphere

Mapped By:

Scale 1: 3,521

179 0 89 179 **Meters**

Ontario

Ministry of Natural Resources

Make-a-Map: Natural Heritage Areas

Stroud SPS

Map created:12/16/2024

Notes:

Enter map notes

Legend

- Assessment Parcel
- NHIC 1 Km Grid
- ANSI
- Earth Science Provincially Significant/sciences de la terre d'importance provinciale
- Earth Science Regionally Significant/sciences de la terre d'importance régionale
- Life Science Provincially Significant/sciences de la vie d'importance provinciale
- Life Science Regionally Significant/sciences de la vie d'importance régionale
- Evaluated Wetland
- Provincially Significant/considérée d'importance provinciale
- Non-Provincially Significant/non considérée d'importance provinciale
- Unevaluated Wetland
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System

0.2 0 0.08 0.2 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources(OMNR) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

Appendix E

Stage 1 Archaeological Report

Stage 1 Archaeological Assessment
Stroud Sewage Pumping Station
(Lot 15 and 16, Concession 8 and 9, Former Township of Innisfil, County of Simcoe)
Town of Innisfil, Simcoe County

Original Report

Prepared for:

Ainley Group

280 Pretty River Parkway

Collingwood, ON L9Y 4J5

Archaeological Licence: P383 (Williams)

PIF P383-0305-2021

Archaeological Services Inc. File: 21EA-087

9 February 2022

Executive Summary

Archaeological Services Inc. was contracted by Ainley Group, on behalf of the Town of Innisfil, to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of Stroud Sewage Pumping Station Municipal Class Environmental Assessment project. The Environmental Assessment is part of the Innisfil Master Servicing Plan update which identifies various alternatives to provide servicing to the Innisfil Heights economic district, an area designated as a Strategic Settlement Employment Area. The Master Servicing Plan identified Yonge Street as one of the proposed sewage pumping stations identified along this sewer route.

The Stage 1 background study determined that there are two previously registered archaeological sites located within one kilometre of the Study Area, none of which are within 50 metres. The property inspection determined that parts of the Study Area exhibit archaeological potential and will require Stage 2 assessment.

In light of these results, the following recommendations are made:

1 Parts of the Study Area exhibit archaeological potential. These lands require Stage 2 archaeological assessment by test pit and pedestrian survey at five metre intervals, where appropriate. Stage 2 is required prior to any proposed construction activities on these lands;

2 The remainder of the Study Area does not retain archaeological potential on account of deep and extensive land disturbance, low and wet conditions, slopes in excess of 20 degrees, or being previously assessed. These lands do not require further archaeological assessment; and,

3 Should the proposed work extend beyond the current Study Area, further archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

Project Personnel

- **Senior Project Manager**: Lisa Merritt, MSc. (P094) Partner, Director, Environmental Assessment Division
- **Project Coordinator**: Katrina Thach, Hon. BA (R1225), Associate Archaeologist, Project Coordinator, Environmental Assessment Division
- **Project Administrator**: Rachel Wedekind, Hon. BA, Archaeologist, Project Administrator, Environmental Assessment Division
- **Project Director**: Blake Williams, MLitt (P383), Lead Archaeologist, Project Manager, Environmental Assessment Division
- **Project Manager**: Eliza Brandy, MA (R1109), Associate Archaeologist, Project Manager, Environmental Assessment Division
- **Field Director**: Blake Williams
- **Report Preparation**: Laura Burke, Hons BA (R1113), Associate Archaeologist, Technical Writer and Researcher, Environmental Assessment Division;
- **Graphics**: Carolyn Nettleton, BA, Archaeologist, GIS Technician, Operation Division
- **Report Reviewer**: Lisa Merritt

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1.0 Project Context

Archaeological Services Inc. (ASI) was contracted by Ainley Group, on behalf of the Town of Innisfil, to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the Stroud Sewage Pumping Station Municipal Class Environmental Assessment project. The Environmental Assessment is part of the Innisfil Master Servicing Plan update which identifies various alternatives to provide servicing to the Innisfil Heights economic district, an area designated as a Strategic Settlement Employment Area. The Master Servicing Plan identified Yonge Street as one of the proposed sewage pumping stations identified along this sewer route. The Stage 1 Study Area is on the east and west side of Yonge Street (County Road 4) between Victoria Street and Innisfil Beach Road (Figure 1).

All activities carried out during this assessment were completed in accordance with the *Ontario Heritage Act* (Ontario Heritage Act, R.S.O. c. O.18, 1990, as amended in 2019) and the 2011 *Standards and Guidelines for Consultant Archaeologists* (S & G), administered by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI 2011).

1.1 Development Context

All work has been undertaken as required by the *Environmental Assessment Act, RSO* (Environmental Assessment Act, R.S.O., 1990 as amended 2020) and regulations made under the Act, and are therefore subject to all associated legislation. This project is being conducted in accordance with the Municipal Engineers' Association document *Municipal Class Environmental Assessment* (Municipal Class Environmental Assessment, 2000, as amended 2015).

The *County of Simcoe Archaeological Management Plan* (ASI, 2019) was also consulted.

Authorization to carry out the activities necessary for the completion of the Stage 1 archaeological assessment and property inspection was granted by Ainley Group on September 2, 2021.

1.1.1 Treaties and Traditional Territories

The Nottawasaga Purchase (Treaty 18)

The Study Area is within the Nottawasaga Purchase (Treaty 18), a provisional agreement sometimes called the Lake Simcoe-Nottawasaga Treaty, signed on October 17, 1818, by representatives of the Government of Upper Canada and the Anishinaabe (Ministry of Indigenous Affairs, 2020; Williams Treaties First Nations, 2021). Treaty 18 encompassed 1,592,000 acres of land between the District of London in the west, Lake Huron in the north, the west limit of the Penetanguishine Purchase (1815) in the east, and the west shore of Lake Simcoe, Cook's Bay, and the Holland River in the northwest. In exchange for the land, the Crown agreed to pay an annual sum of £1200 in goods at the "Montreal price" (Crown-Indigenous Relations and Northern Affairs, 2016; Ministry of Indigenous Affairs, 2020). The Nottawasaga Purchase territory includes the present-day communities of Wasaga, Bradford, and Collingwood.

1.2 Historical Context

1.2.1 Indigenous Land Use and Settlement

Southern Ontario has been occupied by human populations since the retreat of the Laurentide glacier approximately 13,000 years before present (B.P.) (Ferris 2013). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000 B.P., the environment had progressively warmed (Edwards and Fritz 1988) and populations now occupied less extensive territories (Ellis and Deller 1990).

Between approximately 10,000-5,500 B.P., the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 B.P.; the latter was acquired from the north shore of Lake Superior, evidence of extensive

exchange networks throughout the Great Lakes region. The earliest evidence for cemeteries dates to approximately 4,500-3,000 B.P. and is indicative of increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Ellis et al. 1990; Ellis et al. 2009; Brown 1995:13).

Between 3,000-2,500 B.P., populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2,500 B.P. and exchange and interaction networks broaden at this time (Spence et al. 1990:136, 138) and by approximately 2,000 B.P., evidence exists for small community camps, focusing on the seasonal harvesting of resources (Spence et al. 1990:155, 164). By 1,500 B.P. there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2,300 B.P. - it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch and Williamson 2013:13–15). As is evident in detailed Anishinaabek ethnographies, winter was a period during which some families would depart from the larger group as it was easier to sustain smaller populations (Rogers 1962). It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 B.P., lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (C.E.), the communal site is replaced by the village focused on horticulture. Seasonal disintegration of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson 1990:317). By 1300-1450 C.E., this episodic community disintegration was no longer practised and populations now communally occupied sites throughout the year (Dodd et al. 1990:343). By the mid-sixteenth century these small villages had coalesced into larger communities (Birch et al. 2021). Through this process, the socio-political organization of the First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed.

By 1600 C.E., the communities within Simcoe County had formed the Confederation of Nations encountered by the first European explorers and missionaries. In the 1640s, the traditional enmity between the Haudenosaunee and the Huron-Wendat (and their Algonquian allies such as the Nippissing and Odawa) led to the dispersal of the Huron-Wendat. Shortly afterwards, the Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. By the 1690s however, the Anishinaabeg were the only communities with a permanent presence in southern Ontario. From the beginning of the eighteenth century to the assertion of British sovereignty in 1763, there was no interruption to Anishinaabeg control and use of southern Ontario.

1.2.2 Post-Contact Settlement

Historically, the Study Area is located in the Township of Innisfil, County of Simcoe in parts of Lots 15 and 16, Concessions 8 and 9.

The S & G stipulate that areas of early Euro-Canadian settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches, and early cemeteries are considered to have archaeological potential. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the Ontario Heritage Act or a federal, provincial, or municipal historic landmark or site are also considered to have archaeological potential.

For the Euro-Canadian period, the majority of early nineteenth century farmsteads (i.e., those that are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth century maps) are likely to be located in proximity to water. The development of the network of concession roads and railroads through the course of the nineteenth century frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 metres of an early settlement road are also considered to have potential for the presence of Euro-Canadian archaeological sites.

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading

posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes followed existing Indigenous trails, both along the lakeshore and adjacent to various creeks and rivers (ASI 2006).

Township of Innisfil

The Township of Innisfil was surveyed in 1820 and the first settlement began that year. The township was named after the poetical name for Ireland, Innisfail, by its early settlers. Growth was slow during the first ten years of the township and the first sawmill was not erected until the 1830s and in 1835 a grist mill was constructed. Early settlement focused around Kempenfeldt Bay and the southwestern area of the township was not settled until after 1840. By 1843, the first school was constructed and the following year the Innisfil Methodist Congregation built the first church. The first census of the township recorded a population of only 762 inhabitants, by 1850, the township had a population of 1,807.

Following the connection of the Northern Railway in 1853, the township became an important shipping hub for the lumber industry of central Ontario (Mika & Mika, 1981). With the arrival of the railway a number of communities developed and prospered, Allandale, Lefroy, and Craigvale all boasted stations. On the western border of the township, Thorton was a stop for the Hamilton and Northwestern Railway. The community of St. Paul's was established at the corner of Penetanguishene Road (Yonge Street) and Mapleview Drive, and was centered around St. Paul's Anglican Church (established 1851) and a schoolhouse as depicted on the 1879 Illustrated Historical Atlas (Belden, 1881). The small community consisted of a cluster of houses and would have been along the main path of anyone travelling between Toronto and Georgian Bay along Penetanguishene Road. Other early post office communities included Bramley, Cherry Creek, Fennell, Holly, Innisfil, Killyleagh, Beaumont, Painswick, and Stroud. Today, Innisfil attracts large numbers of tourists and cottagers in the summertime who travel from Toronto via Highway 400 and Highway 11, the northern extension of Yonge Street. This extension travels the length of the township and

was built in the late seventeenth century by Colonel John Graves Simcoe from York (Toronto) to Lake Simcoe (Mika & Mika, 1981).

Stroud

The first post office in the historical community of Stroud was opened in May 1873, with Thomas Webb appointed to serve as postmaster. The village was first named "Victoria." It is related that the present name was selected by William Carruthers Little, an MP who represented Simcoe between 1867 and 1881, after a place in Gloucestershire, England (Rayburn 1997). One of the first homes was constructed by John Lawrence in Stroud in 1840 and on his property a wooden Methodist church was built in 1852. A new brick church was erected by the congregation in 1864 and the former building was used as a Sunday school. A fire burned both buildings in 1905. Since 1925, the present church has been known as St. James United and was started a year after the fire. The Presbyterian church in Stroud dates to 1909. An early storekeeper in Stroud was John Chantler and, in his store, the first library was housed. The library received its first donations of books from the members of the Stroud's Women's Institute in 1912 (Mika & Mika, 1983).

Innisfil

The first post office of the historical crossroads community of Innisfil was opened in February 1841, with Benjamin Ross appointed to serve as postmaster. An alternate name for the village during the early 1870s appears to have been "Victoria." The name of the office was changed to Barclay in February 1906, this was during the tenure of George Barclay who had served as postmaster since 1876. In 1873, the population numbered approximately 150 inhabitants (Crossby, 1873); (ASI, 2019).

1.2.3 Map Review

The 1871 *Map of the County of Simcoe* (Hogg, 1871) and the 1881 *Illustrated Historical Atlas of the County of Simcoe* (Belden, 1881) were examined to determine the presence of historical features within the Study Area during the nineteenth century (Figure 2 and Figure 3).

The Study Area is shown to be within a rural agricultural context in the nineteenth century. The 1871 *Map* illustrates that the properties along present-day Yonge Street were large plots of land (Figure 2). The western portion of the Study Area is on land once owned by J. Richardson, J. Robins, Gd. Merric. T and B. Ross. Landowners on the eastern portion of the Study Area were J. Dyer, B. Ross, W. McConkey and J. Smith. No structures are illustrated within the Study Area on this map. The settlement of Victoria, which features a post office and schoolhouse, is illustrated north of the Study Area at the intersection of Yonge Street and 10th Line. Directly south of the Study Area the Innisfil Post Office is identified on the northwest corner of what is now Innisfil Beach Road.

The 1881 *Atlas* (Figure 3) shows three structures illustrated within the Study Area, which suggests the establishment of farmsteads. John Robins is identified as owning the northwest lot while R.M. McConkey is shown as the owner of the southeast lot. The intersection of present-day Yonge Street and Victoria Street is the settlement of Stroud/Victoria. Innisfil Beach Road is illustrated in its current location to the south of the Study Area. The Northern Railway is depicted in a northwest-southeast orientation to the northeast of the Study Area.

1928 and 1986 topographic maps from Barrie (Figure 4 and Figure 5) were also examined to determine the presence of historical features within the Study Area (Department of National Defence, 1928) (Department of Energy, Mines and Resources, 1986).

The 1928 topographic map illustrates additional structures located sporadically along Yonge Street within the Study Area (Figure 4). The community of Stroud has experienced modest growth and features densely developed commercial structures at the intersection of Yonge Street (labelled as Penetang Road) and 10th Line. The rail line running beyond the northwest corner of the Study Area is labeled “Canadian National Railway” indicating a change in ownership. The 1986 topographic map shows Stroud is now a densely developed community as well as the intersection at Innisfil Beach Road and Yonge Street (identified as Barclay on the map).

1.2.4 Aerial and Orthoimagery Review

Aerial photography from 1954 indicates a continued rural agricultural land use within the Study Area (Figure 6). Several farmsteads are visible in the approximate location of the structures illustrated in 1928, surrounded by agricultural fields. The community of Stroud is depicted as a crossroads community with some additional development observed since the early twentieth century.

A review of available Google satellite imagery from 2004 to 2019 shows no significant land alterations within the Study Area during this time frame.

1.3 Archaeological Context

This section provides background research pertaining to previous archaeological fieldwork conducted within and in the vicinity of the Study Area, its environmental characteristics (including drainage, soils or surficial geology and topography, etc.), and current land use and field conditions. Three sources of information were consulted to provide information about previous archaeological research: the site record forms for registered sites available online from the MHSTCI through "Ontario's Past Portal"; published and unpublished documentary sources; and the files of ASI.

1.3.1 Current Land Use and Field Conditions

The Study Area consists of a portion of Yonge Street located between Southview Road in the north and Innisfil Beach Road in the south, and includes the roadway's intersection with 9th Line. The Study Area can generally be described as rural, with areas of agricultural land use. Yonge Street is a north-south running roadway that features one lane of traffic in each direction with gravel shoulders throughout most of the Study Area. Residences in the settlement of Stroud are located to the north of the Study Area, and residences and a gas station are located at the intersection with Innisfil Beach Road to the south. Yonge Street widens to the north of Innisfil Beach Road and at 9th Line and features additional turn lanes. The intersection of Yonge Street and Innisfil Beach Road south of the Study Area is the crossroads community of Barclay, and is in a rural context with some residential and commercial land uses.

The intersection of 9th Line and Yonge Street in the central portion of the Study Area is in a rural agricultural context, with 9th Line carrying one lane of east-west traffic and featuring gravel shoulders and shallow ditches.

1.3.2 Geography

In addition to the known archaeological sites, the state of the natural environment is a helpful indicator of archaeological potential. Accordingly, a description of the physiography and soils are briefly discussed for the Study Area.

The S & G stipulates that primary water sources (lakes, rivers, streams, creeks, etc.), secondary water sources (intermittent streams and creeks, springs, marshes, swamps, etc.), ancient water sources (glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches, etc.), as well as accessible or inaccessible shorelines (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.) are characteristics that indicate archaeological potential.

Water has been identified as the major determinant of site selection and the presence of potable water is the single most important resource necessary for any extended human occupation or settlement. Since water sources have remained relatively stable in Ontario since 5,000 BP (Karrow & Warner, 1990, p. Figure 2.16), proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most commonly used variables for predictive modeling of site location.

Other geographic characteristics that can indicate archaeological potential include elevated topography (eskers, drumlins, large knolls, and plateaux), pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground, distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings. Resource areas, including; food or medicinal

plants (migratory routes, spawning areas) are also considered characteristics that indicate archaeological potential (S & G, Section 1.3.1).

The Study Area is situated within the Peterborough Drumlin Field physiographic region of southern Ontario (Chapman & Putnam, 1984). The Peterborough Drumlin Field extends from Simcoe County east to Hastings County and is generally characterized by rolling till plains overlying limestone bedrock and contains over 3,000 drumlins (Chapman & Putnam, 1984). The drumlins are composed of highly calcareous till but there are local differences in composition. The till plains of the regions were formed during the retreat of the Lake Ontario ice lobe of the Laurentide glacier. Till is produced from the advance of continental glacial ice in which soil and rock is carried forward by the ice, mixed and milled, producing a heterogeneous soil (Chapman & Putnam, 1984). The rolling topography of the Study Area is representative of the drumlin and till formations of this physiographic region. The agricultural history of the area can be connected to the till plains formed through glacial movement.

The surficial geology of the eastern portion of the Study Area consists of stone poor, carbonate derived silty to sandy till, while the west side has these same features as well as massive, well laminated patches (Figure 7).

Soil types within the Study Area consist of Bondhead, a light grey, calcareous and non-calcareous sandy loam till with good drainage, Smithfield, a calcareous, lacustrine, varved silt loam and clay with imperfect drainage and Dundonald, outwash sand underlain by grey calcareous loam or sandy loam with good drainage (Figure 8).

All the lands within the Lake Simcoe watershed ultimately drain into Lake Simcoe, via one of the tributary rivers. The Barrie Creeks, Lovers Creek, and Hewitt's Creek subwatersheds are three of the 18 subwatersheds that make up the Lake Simcoe watershed. All three drain into Kempenfelt Bay, a western arm of Lake Simcoe, which is approximately 37.8 kilometres squared in size, or about 5.5 percent of Lake Simcoe. The Lovers Creek subwatershed is 59.9 kilometres squared in area and comprises 2.3 percent of the Lake Simcoe watershed. Lovers Creek is the only named stream within the Lovers Creek subwatershed. It begins in the southern part of the subwatershed, where the headwater portions are channelized, and

flows north towards Lake Simcoe. The majority of the subwatershed is within the Town of Innisfil (Lake Simcoe Region Conservation Authority, 2012).

1.3.3 Previously Registered Archaeological Sites

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MHSTCI. This database contains archaeological sites registered within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on latitude and longitude. A Borden block is approximately 13 kilometres east to west, and approximately 18.5 kilometres north to south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found. The Study Area under review is located in Borden block *BbGv.*

According to the OASD, two previously registered archaeological sites are located within one kilometre of the Study Area, none of which are located within 50 metres (MHSTCI, 2021). A summary of the sites is provided below in Table 1.

Table 1: Registered Sites within One Kilometre of the Study Area

Borden number	Site Name	Temporal/ Cultural Affiliation	Site type	Researcher
BbGv-16	Poltree	Woodland, Late	Campsite	Warrick, 1986
BbGv-18	Blubettle	Woodland, Late	Campsite, cabin	Warrick, 1986

1.3.4 Previous Archaeological Assessments

According to the background research, no previous reports detail fieldwork within 50 metres of the Study Area.

2.0 Field Methods

A Stage 1 property inspection must adhere to the S & G, Section 1.2, Standards 1-6, which are discussed below. The entire property and its periphery must be inspected. The inspection may be either systematic or random. Coverage must be sufficient to identify the presence or absence of any features of archaeological potential. The inspection must be conducted when weather conditions permit good visibility of land features. Natural landforms and watercourses are to be confirmed if previously identified. Additional features such as elevated topography, relic water channels, glacial shorelines, well-drained soils within heavy soils and slightly elevated areas within low and wet areas should be identified and documented, if present. Features affecting assessment strategies should be identified and documented such as woodlots, bogs or other permanently wet areas, areas of steeper grade than indicated on topographic mapping, areas of overgrown vegetation, areas of heavy soil, and recent land disturbance such as grading, fill deposits and vegetation clearing. The inspection should also identify and document structures and built features that will affect assessment strategies, such as heritage structures or landscapes, cairns, monuments or plaques, and cemeteries.

The Stage 1 archaeological assessment property inspection was conducted under the field direction of Blake Williams (P383) of ASI, on November 15th, 2021, in order to gain first-hand knowledge of the geography, topography, and current conditions and to evaluate and map archaeological potential of the Study Area. It was a systematic visual inspection from public right-of-ways only and did not include excavation or collection of archaeological resources. Fieldwork was conducted when weather conditions were deemed clear with good visibility (partly cloudy with seasonal temperatures), per S & G Section 1.2., Standard 2. Field observations are compiled onto the existing conditions of the Study Area in Section 8.0 (Figures 10 and 11) and associated photographic plates are presented in Section 7.0 (Images 1-14).

3.0 Analysis and Conclusions

The historical and archaeological contexts have been analyzed to help determine the archaeological potential of the Study Area. Results of the analysis of the Study Area property inspection and background research are presented in Section 3.1.

3.1 Analysis of Archaeological Potential

The S & G, Section 1.3.1, lists criteria that are indicative of archaeological potential. The Study Area meets the following criteria indicative of archaeological potential:

- Previously identified archaeological sites (See Table 1);
- Water sources: primary, secondary, or past water source (Lovers Creek);
- Early historic transportation routes (Yonge Street);
- Proximity to early settlements (Stroud/Innisfil); and
- Well-drained soils (Bondhead loam, Dundonald sandy loam)

According to the S & G, Section 1.4 Standard 1e, no areas within a property containing locations listed or designated by a municipality can be recommended for exemption from further assessment unless the area can be documented as disturbed. The Municipal Heritage Register was consulted and there are no properties within the Study Area that are Listed or Designated under the Ontario Heritage Act.

Four potential Cultural Heritage Landscapes were identified in ASI's associated Cultural Heritage Report: Existing Conditions Stroud Sewage Pumping Station Municipal Class Environmental Assessment, 2022.

The *County of Simcoe Archaeological Management Plan* (ASI, 2019) was also consulted and the whole Study Area is identified as having archaeological potential.

These criteria are indicative of potential for the identification of archaeological resources, depending on soil conditions and the degree to which soils have been subject to deep disturbance.

The property inspection determined that parts of the Study Area exhibit archaeological potential. These areas will require Stage 2 archaeological assessment prior to any construction activities. According to the S & G Section 2.1.1, pedestrian survey is required in actively or recently cultivated fields (Images 1, 2, 3, 7, 9, 12, 13, 14; Figures 10-11: areas highlighted in orange). According to the S & G Section 2.1.2, test pit survey is required on terrain where ploughing is not viable, such as wooded areas, properties where existing landscaping or infrastructure would be damaged, overgrown farmland with heavy brush or rocky pasture, and narrow linear corridors up to 10 metres wide (Images 2, 3, 10, 11, 12, 13, 14; Figures 10-11: areas highlighted in green).

The remainder of the Study Area has been subjected to deep soil disturbance events due to construction of Yonge Street and structures and laneways built on private properties. According to the S & G Section 1.3.2 these areas do not retain archaeological potential (Images 2, 3, 4, 5, 6, 7, 8, 9, 11, 12; Figures 10-11: areas highlighted in yellow) and do not require further survey.

3.2 Conclusions

The Stage 1 background study and property inspection determined places in the Study Area that require Stage 2 assessment.

4.0 Recommendations

In light of these results, the following recommendations are made:

1 Parts of the Study Area exhibit archaeological potential. These lands require Stage 2 archaeological assessment by test pit and/or pedestrian survey at five metre intervals, where appropriate. Stage 2 is required prior to any proposed construction activities on these lands;

2 The remainder of the Study Area does not retain archaeological potential on account of deep and extensive land disturbance. These lands do not require further archaeological assessment; and,

3 Should the proposed work extend beyond the current Study Area, further archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

NOTWITHSTANDING the results and recommendations presented in this study, ASI notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. In the event that archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Cultural Programs Unit of the Ministry of Heritage, Sport, Tourism and Culture Industries should be immediately notified.

The above recommendations are subject to Ministry approval and it is an offence to alter any archaeological site without Ministry of Heritage, Sport, Tourism and Culture Industries concurrence. No grading or other activities that may result in the destruction or disturbance of any archaeological sites are permitted until notice of MHSTCI approval has been received.

5.0 Legislation Compliance Advice

ASI advises compliance with the following legislation:

- This report is submitted to the Ministry of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, RSO 2005, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological field work and report recommendations ensure the conservation, preservation, and protection of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Heritage, Sport, Tourism and Culture Industries, a letter will be issued by the Ministry stating that there are no further concerns with regards to alterations to archaeological sites by the proposed development.

- It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological field work on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the Ontario Heritage Act.

- Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.

- The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the

Registrar of Cemeteries at the Ministry of Consumer Services is also immediately notified.

- Archaeological sites recommended for further archaeological field work or protection remain subject to Section 48(1) of the Ontario Heritage Act and may not be altered, nor may artifacts be removed from them, except by a person holding an archaeological license.

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7.0 Images

7.1 Field Photography

Image 1: West of Yonge Street; agricultural field, requires Stage 2 pedestrian survey.

Image 2: West of Yonge Street; agricultural field requires Stage 2 assessment beyond disturbed road right-of-way.

Image 3: East of Yonge Street; agricultural field beyond disturbed road right-of-way requires Stage 2 assessment.

Image 4: Yonge Street facing north; disturbed road right-of-way, no potential.

Image 5: Modern residential lawn east of Yonge Street; disturbed, no potential.

Image 6: Northern part of Yonge Street and 9th line intersection; disturbed, no potential.

Image 7: Yonge Street and 9th line intersection; Agricultural field beyond disturbed road right-of-way requires Stage 2 assessment.

Image 8: North of 9th line road; disturbed residential driveway and utilities; no potential.

Image 9: Yonge Street and 9th line intersection facing north; disturbed road right-of-way with utilities, no potential.

Image 10: South of 9th Line road; garden, requires Stage 2 test pit survey.

Image 11: Yonge Street facing north; Lawn to the east of disturbed road right-of-way requires Stage 2 test pit survey.

Image 12: Yonge Street facing north; disturbed road pit survey, no potential.

Image 13: Yonge Street facing north; area beyond disturbed road right-of-way requires Stage 2 survey.

Image 14: Facing northeast; area beyond disturbed road right-of-way requires Stage 2 survey.

8.0 Maps

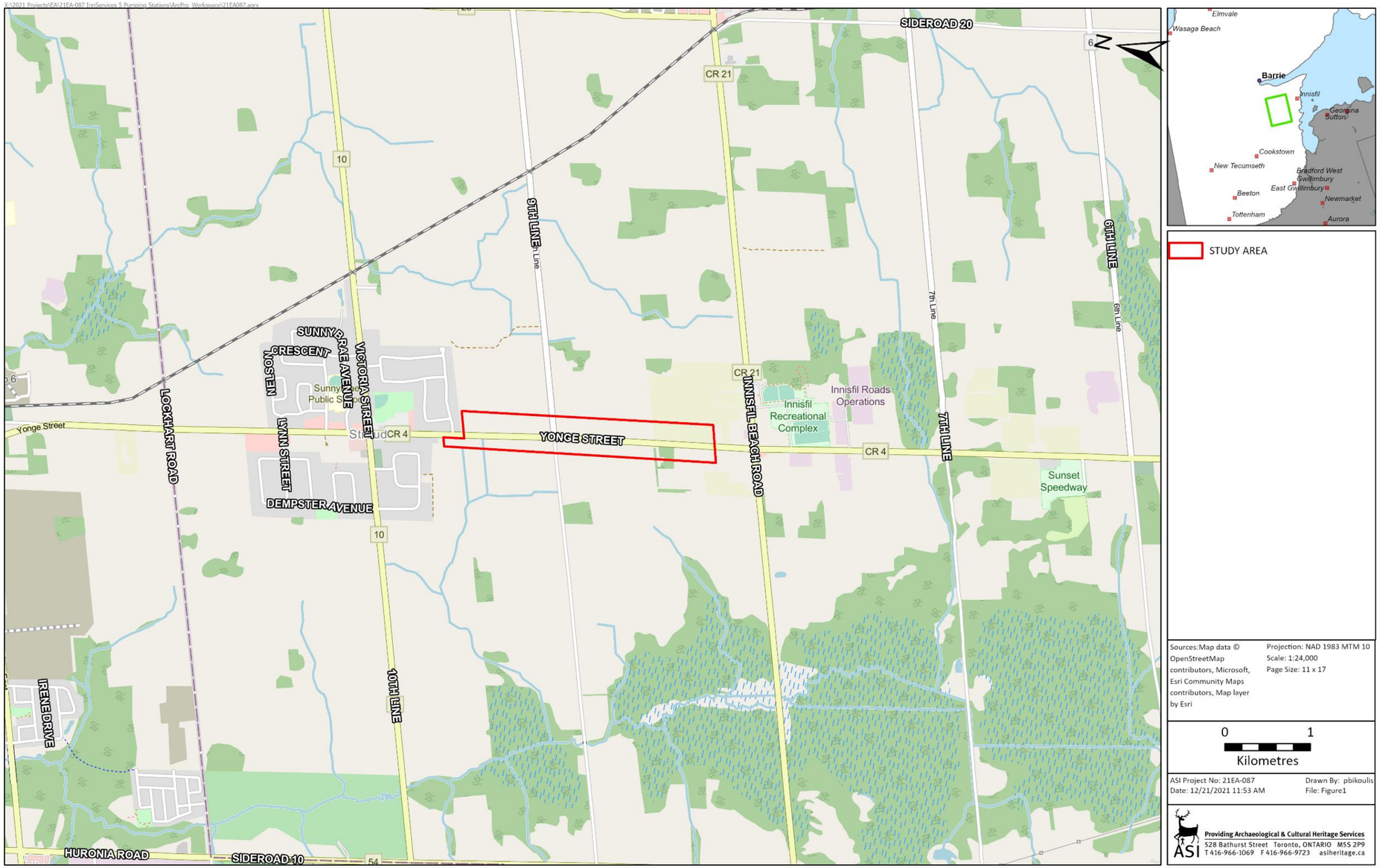

Figure 1: Stroud Sewage Pumping Station Study Area

Figure 2: The Study Area overlaid on the 1871 Hoggs Map of the County of Simcoe (Base Map:(Hogg, 1871).

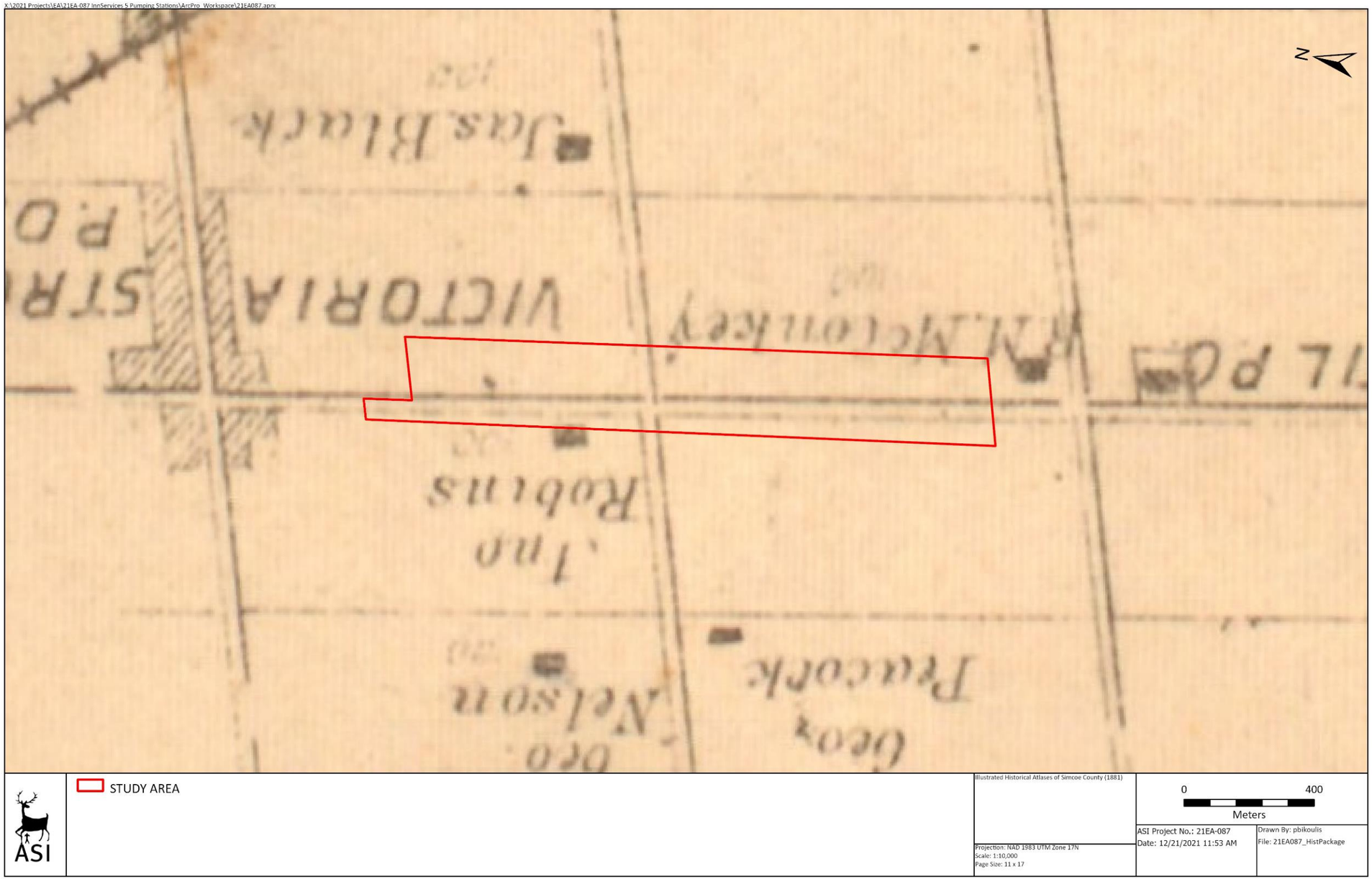

Figure 3: The Study Area overlaid on the 1881 Historical Atlas of the County of Simcoe (Base Map: (Belden, 1881).

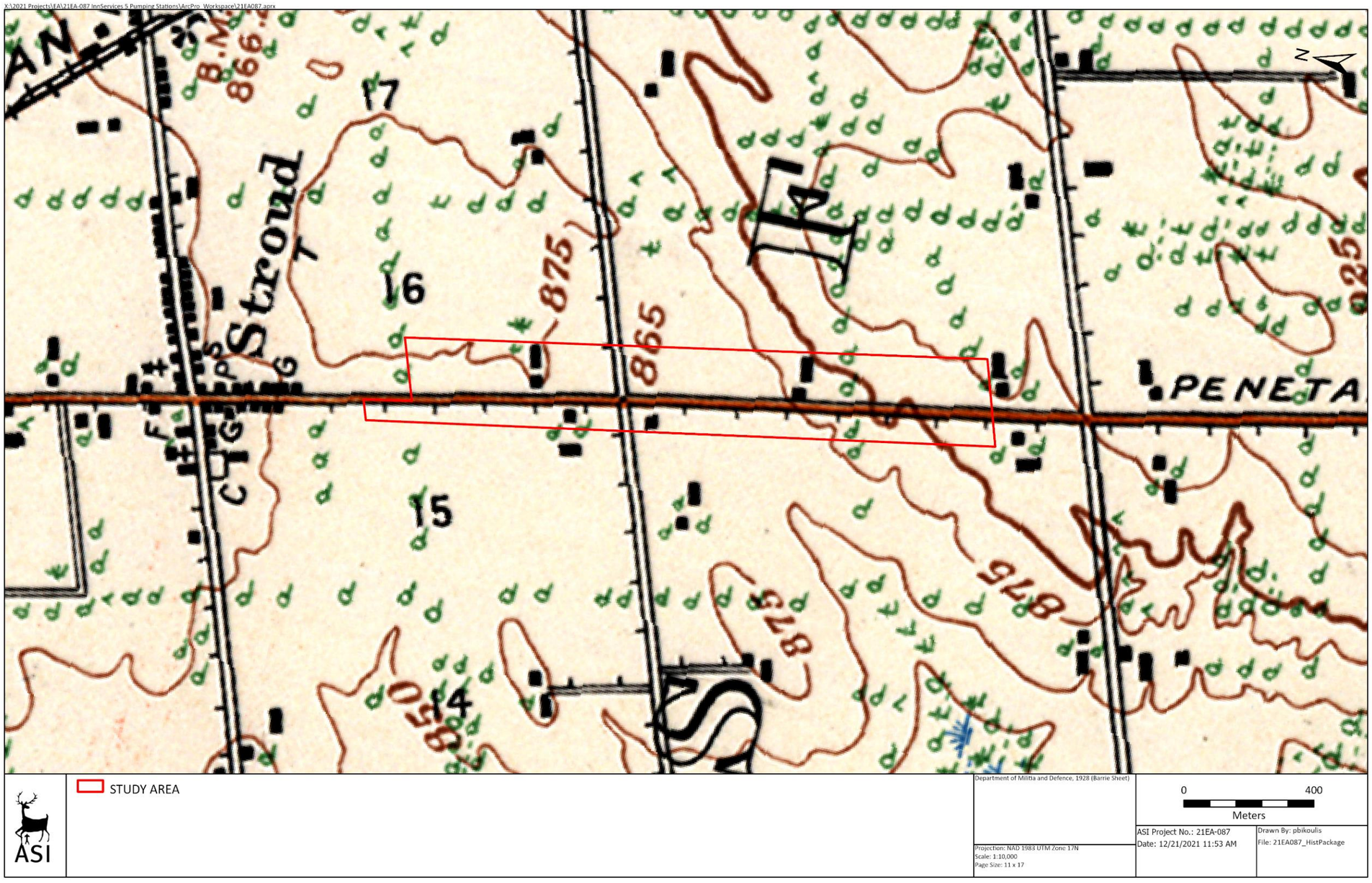

Figure 4: The Study Area overlaid on the 1928 topographic map of Barrie (Department of National Defence, 1928).

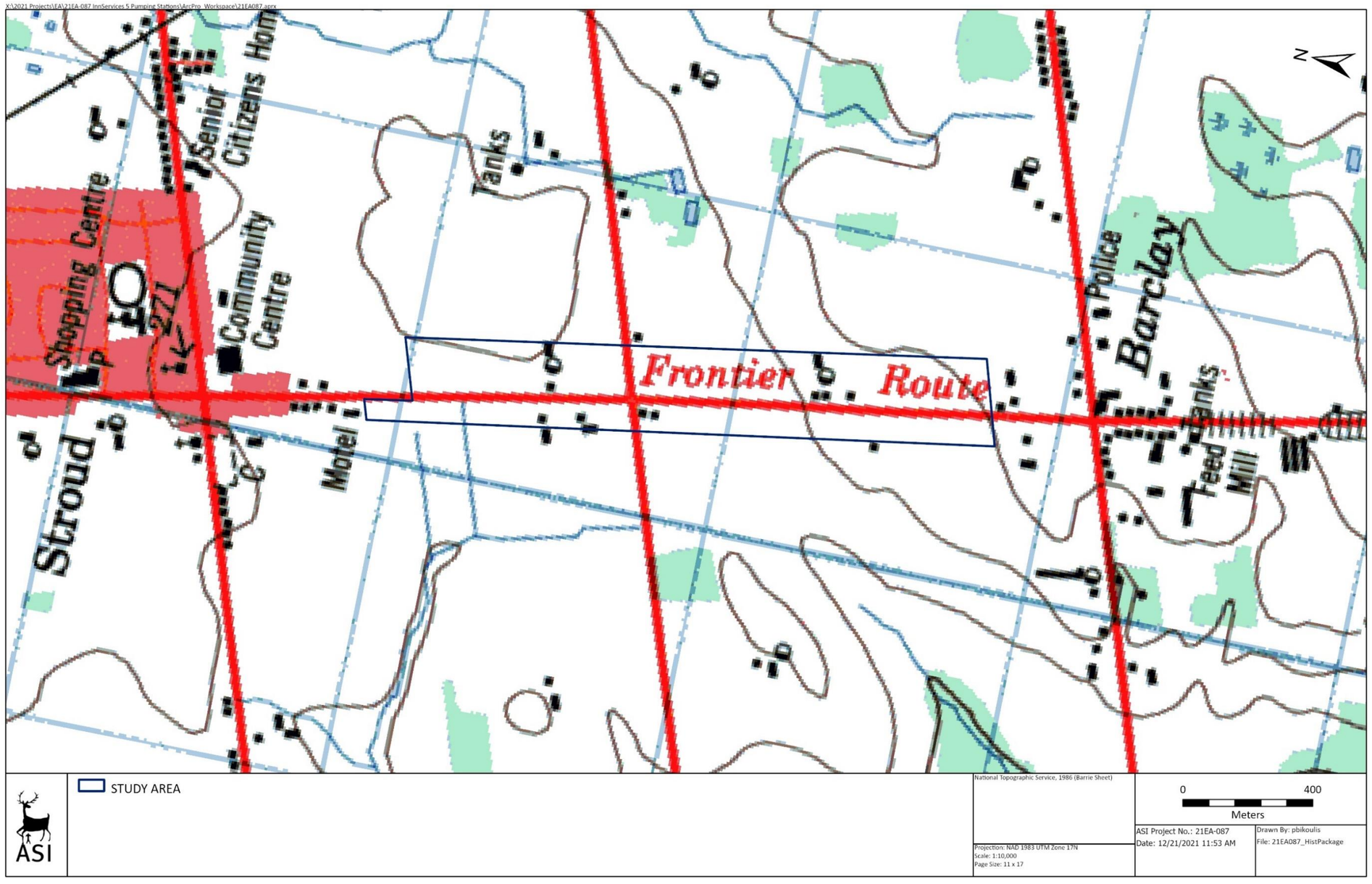

Figure 5: The Study Area overlaid on the 1986 topographic map of Barrie (Department of Energy, Mines and Resources, 1986).

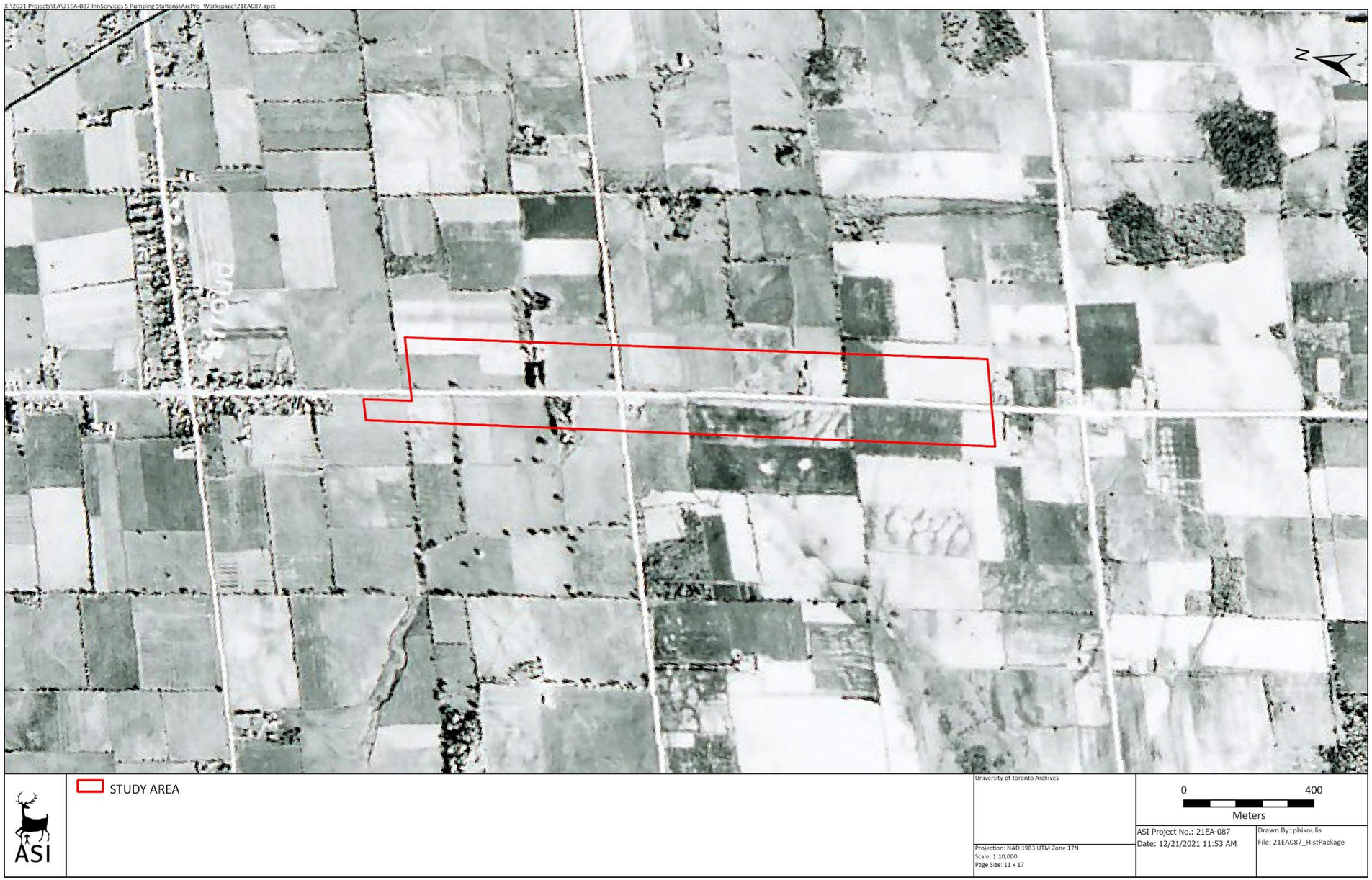

Figure 6: **The Study Area overlaid on the 1954 aerial photograph of Innisfil (Base Map: (Hunting Survey Corporation Limited, 1954).**

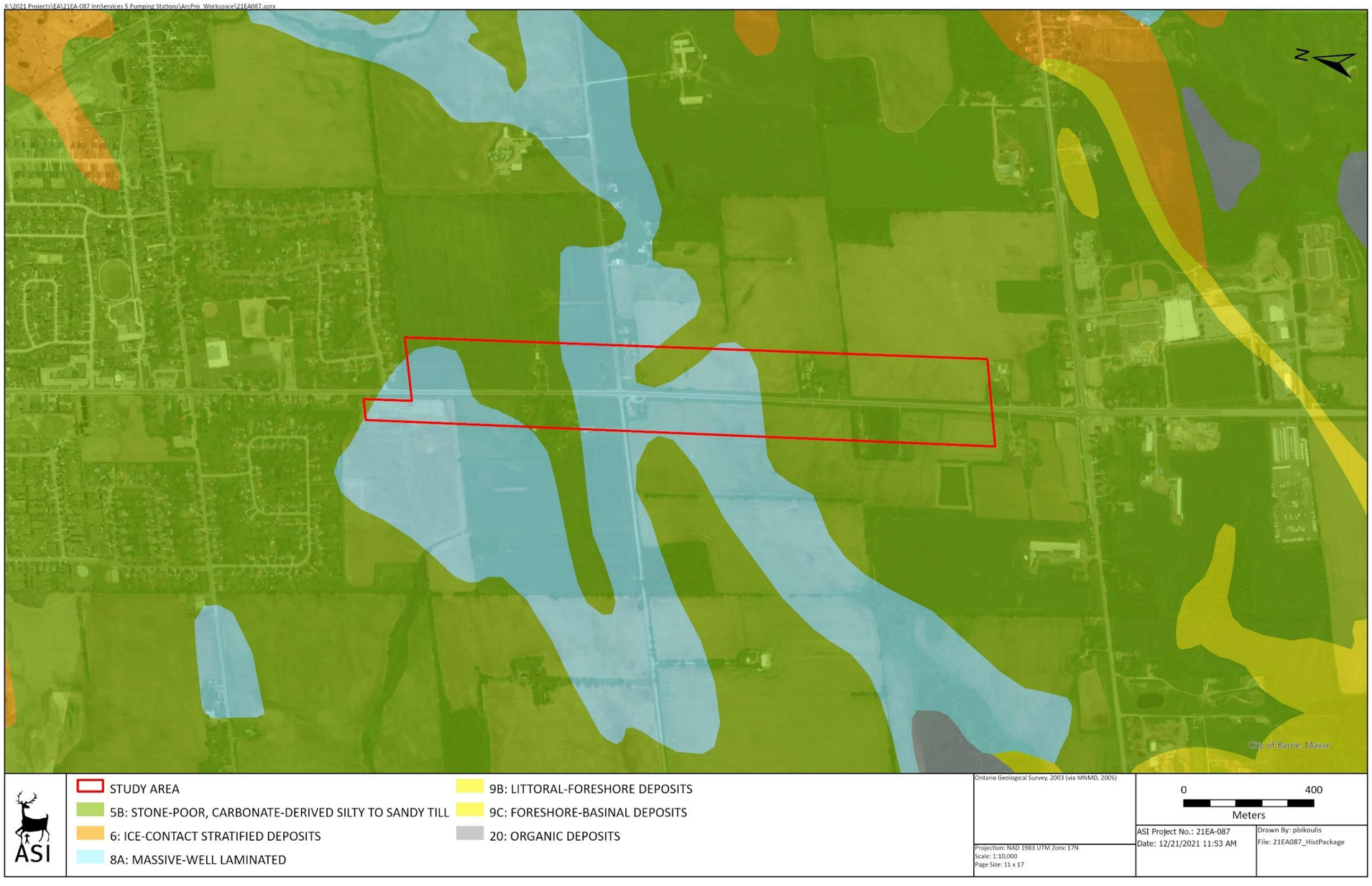

Figure 7: Study Area – Surficial Geology

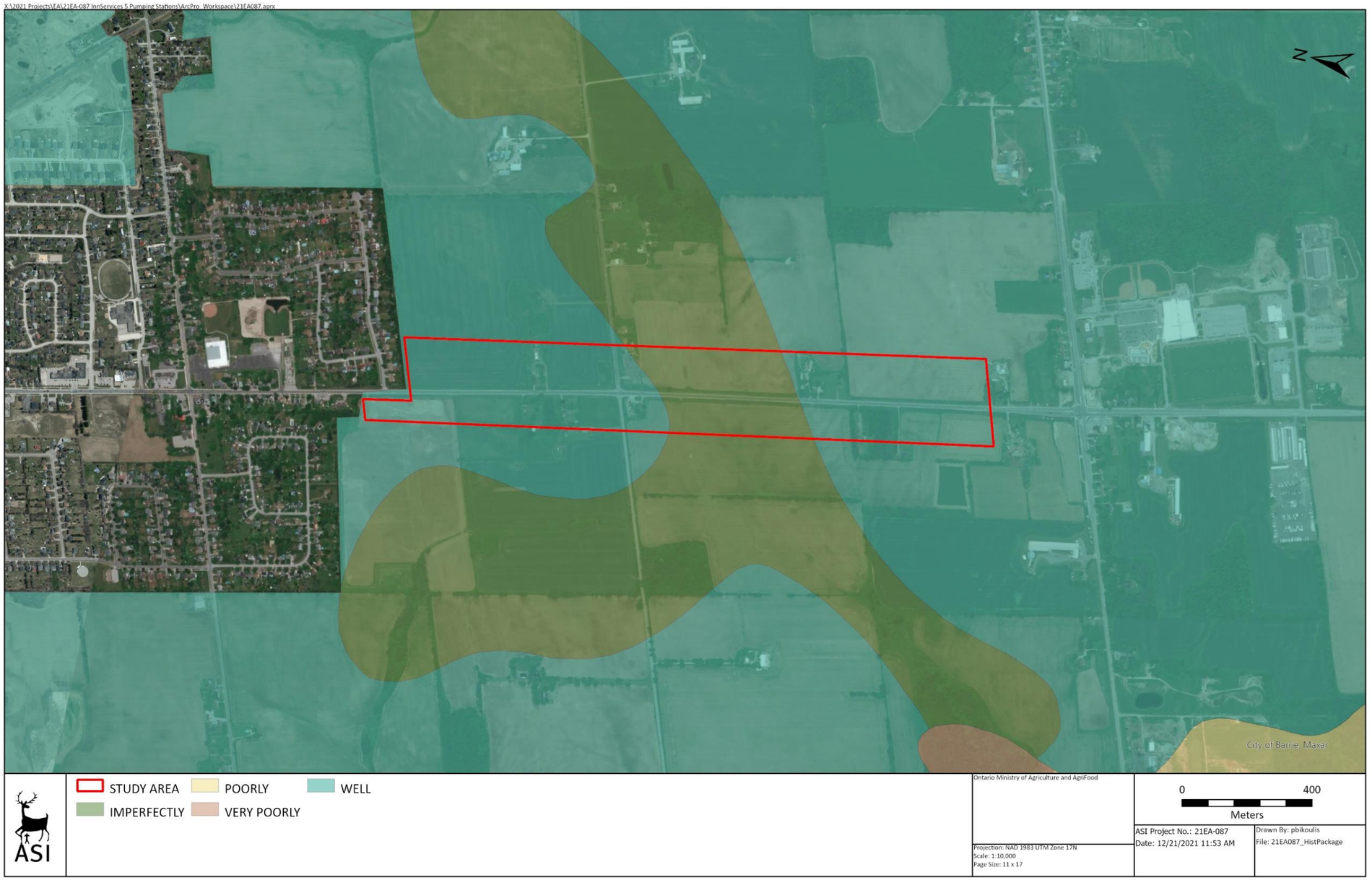

Figure 8: Study Area - Soil Drainage

Figure 9: Archaeological Existing Conditions (from the County of Simcoe Archaeological Management Plan (ASI, 2019).

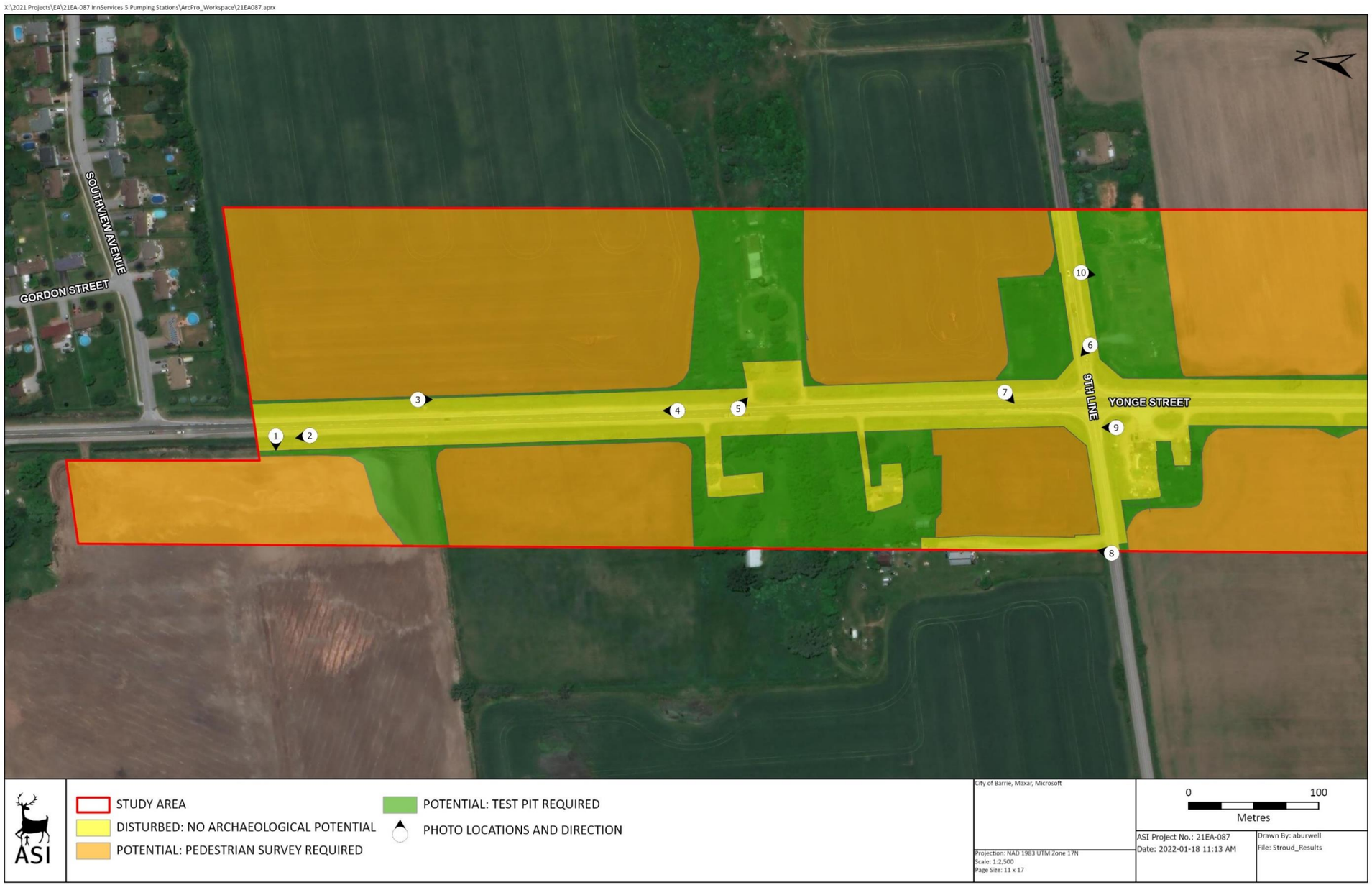

Figure 10: Stage 1 Results for Stroud Sewage Pumping Station Sheet 1

Figure 11: Stage 1 Results for Stroud Sewage Pumping Station Sheet

Appendix F

Stage 1 and 2 Archaeological Assessment Report

Stage 1 and 2 Archaeological Assessment of 7665 and 7667 Yonge Street, Part of Lot 16, Concession 9, Geographic Township of Innisfil, County of Simcoe, now in the Town of Innisfil, County of Simcoe

Original Report

Prepared for:

SanDiego Homes Inc.

P.O. Box 10039 Alcona Beach

Innisfil, ON L9S 4Y7

Archaeological Licence: P449 (Bhardwaj)

Project Information Form P449-0735-2023

Archaeological Services Inc. File: 23PL-250

19 September 2024

Executive Summary

Archaeological Services Inc. was contracted by SanDiego Homes Inc. to undertake a Stage 1 and 2 Archaeological Assessment of 7665 and 7667 Yonge Street, part of Lot 16, Concession 9, Geographic Township of Innisfil, County of Simcoe, now in the Town of Innisfil, County of Simcoe. The subject property is approximately 38 hectares.

The Stage 1 background research entailed consideration of the proximity of previously registered archaeological sites and the original environmental setting of the property, along with nineteenth- and twentieth-century settlement trends and a review of aerial imagery. The general guidance of the *County of Simcoe Archaeological Management Plan* (Archaeological Services Inc., 2019) was also considered. This research indicated that there was potential for encountering both Indigenous and Euro-Canadian archaeological sites within the subject property.

The Stage 2 field assessment was conducted on August 9-11, 2023, and June 11, 12, 14, 17, 2024, by means of a combined pedestrian and test pit survey. During the assessment, a total of five non-diagnostic Indigenous findspots and one Euro-Canadian historical site was documented.

Given the isolated and non-diagnostic nature of the five Indigenous findspots, none of these locations exhibit cultural heritage value or interest and may be considered free of any further archaeological assessment.

The historical Thompson (BbGv-74) site dates to the early- to mid-nineteenth-century. It is therefore recommended that this site be subject to a comprehensive Stage 3 Site-Specific Assessment in order to fully identify the character, extent, and significance of the archaeological deposit, in accordance with the Ministry of Citizenship and Multiculturalism's 2011 *Standards and Guidelines for Consultant Archaeologists*.

ASI

Project Personnel

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1.0 Project Context

Archaeological Services Inc. was contracted by SanDiego Homes Inc. to undertake a Stage 1 and 2 Archaeological Assessment of 7665 and 7667 Yonge Street, Part of Lot 16, Concession 9, in the Geographic Township of Innisfil, County of Simcoe, now in the Town of Innisfil, County of Simcoe (Figure 1). The subject property is approximately 38 hectares.

1.1 Development Context

This assessment was conducted under the senior project management of Jennifer Ley (R376), the project management of Emily Fitzpatrick (R1092), and the project direction of Robb Bhardwaj (P449) under Ministry of Citizenship and Multiculturalism (hereafter, "the Ministry") Project Information Form P449-0735-2023. All activities carried out during this assessment were completed prior to development approvals, as required by the Town of Innisfil and the *Planning Act* (Ministry of Municipal Affairs and Housing, 1990). All work was completed in accordance with the *Ontario Heritage Act* (Ministry of Culture [now the Ministry], 1990) and the 2011 *Standards and Guidelines for Consultant Archaeologists* (hereafter, "the *Standards*") (Ministry of Tourism and Culture [now the Ministry], 2011).

The work carried out for this assessment was also guided by *The County of Simcoe Archaeological Management Plan* (Archaeological Services Inc., 2019). which provides further refinement regarding potential buffers surrounding any noted features or characteristics that affect archaeological potential.

Permission to access the subject property and to carry out all activities necessary for the completion of the assessment was granted by the proponent on July 4, 2023. Buried utility locates were obtained prior to fieldwork.

1.2 Historical Context

The purpose of this section is to describe the past and present land use and settlement history, and any other relevant historical information gathered through the Stage 1 background research. First, a summary is presented of the

current understanding of the Indigenous land use of the subject property. This is followed by a review of historical Euro-Canadian settlement trends.

1.2.1 Indigenous Land Use and Settlement

Southern Ontario has been occupied by human populations since the retreat of the Laurentide glacier by approximately 11,000 years Before Common Era (B.C.E.). Populations at this time would have been highly mobile, inhabiting a boreal parkland similar to the modern sub-arctic. By approximately 8000 B.C.E., the environment had progressively warmed (Edwards and Fritz, 1988) and populations now occupied less extensive territories (Ellis and Deller, 1990).

Between approximately 8000-3500 B.C.E., the Great Lakes basins experienced low-water levels, and many sites that would have been located on those former shorelines are now submerged. This period produced the earliest evidence of heavy woodworking tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production, and indication of prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 6000 B.C.E.; the latter was acquired from the north shore of Lake Superior, which suggests extensive exchange networks throughout the Great Lakes region. The earliest evidence for cemeteries dates to approximately 2500-1000 B.C.E., which demonstrates increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Brown, 1995; Ellis *et alia*, 1990).

Between 1000-500 B.C.E., populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period began around 500 B.C.E. and exchange and interaction networks broadened at this time (Spence *et alia*, 1990:136, 138). By end of the first millennium B.C.E., evidence exists for macro-band camps, focusing on the seasonal harvesting of resources (Spence *et alia*, 1990:155, 164). By the year 500 in the Common Era (C.E.), there is macro botanical evidence for maize in southern Ontario. Although it is thought that maize only supplemented people's diet, there is phytolithic evidence for maize in central New York State by 300 B.C.E., indicating that similar analyses conducted on Ontario ceramic vessels of the same

period could result in the same evidence here (Birch and Williamson, 2013:13-15). Bands likely retreated to interior camps during the winter. It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1000 C.E., lifeways became more similar to those described in early historical documents. Between approximately 1000-1300 C.E., the communal site was replaced by the village focused on horticulture. Seasonal dispersal of the community for the exploitation of a wider territory and more varied resource base was still the norm (Williamson, 1990:317). By 1300-1450 C.E., this episodic dispersal waned, and populations began to occupy sites throughout the year (Dodd *et alia*, 1990:343). Within the Toronto area, these communities represent the ancestors of the Huron-Wendat. From 1450-1649 C.E., this process continued with the coalescence of these small villages into larger communities (Birch and Williamson, 2013). The ancestral Huron-Wendat on the north shore of Lake Ontario gradually began to move northward during this period. Through this process, the socio-political organization of the First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed. By 1600 C.E., the Wendat were the northernmost of the Iroquoians, inhabiting the area between Lake Simcoe and Georgian Bay known historically as Wendake and forming a confederation of individual nations.

By 1600 C.E., the communities within Simcoe County had formed the Confederation of Nations encountered by the first European explorers and missionaries. In the 1640s, devastating epidemics and the traditional enmity between the Haudenosaunee and the Attawandaron and the Huron-Wendat (and their Algonquian allies such as the Nippissing and Odawa) led to the dispersal of the Huron-Wendat from Southern Ontario. Shortly afterwards, the Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. By the 1690s, however, the Anishinaabeg were the only communities with a permanent presence in southern Ontario. From the beginning of the eighteenth century to the assertion of British sovereignty in 1763, there was no interruption to Anishinaabeg control and use of southern Ontario.

The ethnohistoric record of historic Wendake (northern Simcoe County) suggests that initial Huron-Wendat alliance building and confederacy formation occurred during the mid-fifteenth century, some 200 years before the arrival of Europeans (Thwaites, 1896:16:227). Attignawantan (Bear) and Attigneenongnahac (Cord) were the original co-founders of the Wendat confederacy, since both had been resident in Wendake for at least 200 years (Thwaites, 1896:16:227-229). Settled by the mid-fourteenth century, Attignwantan villages were located in western Wendake and across the Penetang Peninsula, while Attigneenongnahac villages were clustered to the southeast. Later additions to the confederacy were Arendahronon (Rock), who moved into Wendake *circa* 1590, and Tahontaenrat (Deer), which joined *circa* 1610.

Due to the extensive surveys of Simcoe County by Gary Warrick, Jamie Hunter, and Richard Sutton, among others, clusters of late thirteenth- and fourteenth-century sites have been found on upland locations to the west of Kempenfeldt Bay.

1.2.2 Post-Contact Settlement

The Nottawasaga Purchase (Treaty 18)

The subject property is within the Nottawasaga Purchase (Treaty 18), a provisional agreement sometimes called the Lake Simcoe-Nottawasaga Treaty, signed on October 17, 1818, by representatives of the Government of Upper Canada and the Anishinaabe (Ministry of Indigenous Affairs, 2020; Williams Treaties First Nations, 2021). Treaty 18 encompassed 1,592,000 acres of land between the District of London in the west, Lake Huron in the north, the west limit of the Penetanguishine Purchase (1815) in the east, and the west shore of Lake Simcoe, Cook's Bay, and the Holland River in the northwest. In exchange for the land, the Crown agreed to pay an annual sum of £1200 in goods at the "Montreal price" (Ministry of Indigenous Affairs, 2020). The Nottawasaga Purchase territory includes the present-day communities of Innisfil, Wasaga, Bradford, and Collingwood.

Simcoe County

The area within what is now Simcoe County was inhabited by the ancestral Huron-Wendat at the time of European contact. European goods reached the area before 1600, and Recollet and Jesuit missionaries arrived soon after. Sainte Marie was established in 1639 as a Jesuit mission to the Huron-Wendat and became the first European settlement in Upper Canada before the mission was abandoned in 1649 (Mika and Mika, 1983:340).

After the Province of Upper Canada was created by an Act of British Parliament in 1791, the judicial and administrative needs at the local government level were served by the Home District. The Home District was composed of geographical counties within which townships were surveyed for colonial settlement, land grants were registered, militias formed, and elections were held. Simcoe County was added to the Home District in 1798, before Treaty 18 was signed, and existed only for the purpose of military enlistment if needed (Hunter, 1909:235).

As the size of Upper Canada expanded through the acquisition of Indigenous land, and the population grew through immigration, new districts were added, and old districts were renamed, expanded, or subdivided. The first townships in Simcoe County to be surveyed after Treaty 18 was signed included West Gwillimbury (1819), Tecumseth (1820), and Innisfil (1820), thus the boundary of Simcoe County was redefined in 1821 (Mika and Mika, 1983:394).

A new Simcoe District was created by the Upper Canada legislature in 1837 to serve the residents of Simcoe County and a courthouse and jail were constructed in Barrie in the 1840s. After the colonial government in Canada was reorganized and the district system was abolished in 1849, the duties of the counties were expanded to include those of the former districts. Simcoe County assumed its new status as a municipality in 1850 and Barrie was named the county seat (Mika and Mika, 1983:394). At this time, Simcoe County included townships now included as part of Grey and Dufferin Counties, and the unorganized territory that would become the Muskoka and Parry Sound Districts. In 1881, the borders of Simcoe County were again redefined and the present townships of Tiny, Tay, Matchedash, Flos, Medonte, Orillia, Nottawasaga, Sunnidale, Vespra, Oro,

Tosorontio, Essa, Innisfil, Adjala, Tecumseth, and West Gwillimbury were contained within (Mika and Mika, 1983:394-398).

Early Euro-Canadian settlement was made by the children of United Empire Loyalists, who were entitled to 100 acres of land. Many of the other early settlers were from Great Britain and Ireland. Among the earliest of them were the Scottish "Selkirk" settlers of 1815 (Mika and Mika, 1983:394-398). Land grants of 100 acres were also made available for Black settlers who served during the War of 1812, the majority of which settled in Oro and Flos townships (French, 1978:10-18; Hunter, 1909). By 1861, the total population of Simcoe County numbered 44,720 inhabitants (Library and Archives Canada, 1861).

Township of Innisfil

The Township of Innisfil was surveyed in 1820, and the first settlement began that same year. The name "Innisfil" is derived from an archaic name for Ireland, derived from "Innisfail" or "Innis Vail." An early provincial *Gazetteer,* published in 1805, noted that the land "westward" between the mouth of the Holland River and Kempenfeldt Bay contained "oak plains," where the local inhabitants "cultivate corn, and on the east is a tract of land of excellent quality."

Growth was slow during the initial years of the township. The first sawmill was not erected until the 1830s, and in 1835 a grist mill was constructed. Early settlement focused around Kempenfeldt Bay; the southwestern area of the township was not settled until after 1840. By 1843, the first school was constructed and the following year the Innisfil Methodist Congregation built the first church. The first census of the township recorded a population of only 762 inhabitants, and by 1850, the township had a population of 1,807 (Boulton, 1805:46; Gardiner, 1899:227; Mika and Mika, 1981; Ramsay, 2017; Town of Innisfil, 2006).

The Toronto, Simcoe, and Lake Huron Union Railroad Company was incorporated in 1844, renamed in 1850 to the Ontario, Simcoe, and Huron Union Railroad Company. Under this new name, the first northbound railway line was completed in 1853, connecting Toronto to Newmarket, and from there through Lefroy and Allandale, to Collingwood on Georgian Bay. A branch line between Lefroy and the

Lake Simcoe waterfront in Belle Ewart was completed one year later. Following the connection of the Northern Railway in 1853, Innisfil became an important shipping hub for the lumber industry of central Ontario (Mika and Mika, 1981:347-349).

With the arrival of the railways, several communities developed and prospered, including Allandale, Lefroy, and Craigvale, which all boasted stations. On the western border of the township, Thorton was a stop for the Hamilton and Northwestern Railway. Other early post office communities included Bramley, Cherry Creek, Fennell, Holly, Innisfil, Killyleagh, Beaumont, Painswick, and Stroud. Today, Innisfil attracts large numbers of tourists and cottagers in the summertime who travel from Toronto via Highway 400 and Yonge Street along an extension of the road that travels the length of the township.

Community of Stroud

The community of Stroud is located at the crossroads of Victoria Street and Yonge Street (Highway 4), southeast of the City of Barrie. The first settler was John Lawrence, who built a house in 1840 (Mika and Mika, 1983:461; Scott, 1997:210). The first store opened a decade later, and a Methodist Church was constructed on Lawrence's farm in 1852. In 1860, the S.S. Number 10 schoolhouse was opened (Barrie Today, 2021), and by 1864, a brick church had been built, with the earlier wood frame structure reused for Sunday School classes. By the late nineteenth century, the settlement had grown to a village. Although the village had first been called Victoria, when a post office was established in 1873 it was renamed to Stroud after the birthplace of local Member of Parliament W.C. Little, because there were already three other post offices called Victoria (Mika and Mika, 1983:461; Rayburn, 1997:333; Scott, 1997:210; Barrie Today, 2021).

One of the earliest storekeepers in Stroud was John Chandler, who created the community' first library in his store in 1912. In 1923, a new brick school replaced the original schoolhouse, and in 1925, after the destruction of the church and Sunday School by fire, St. James United church was erected (Mika and Mika, 1983:461). By the mid-twentieth century, Stroud had a population of 700, and included three churches, a restaurant and motel, a post office, fire hall, police station, and several small businesses (Barrie Today, 2021).

Lot 16, Concession 9

The "Township Papers" for Innisfil show that this 200-acre (80.94-hectare) lot was originally set aside by the Upper Canadian government for use as a Clergy Reserve. The lot was first granted to a prospective settler named John McConkey, who appears to have been the son of Thomas McConkey of Innisfil. Thomas McConkey had been granted another lot (Lot 16, Concession 3) on behalf of his son in 1830, which they had improved; therefore, on April 23, 1831, John McConkey wrote to the Crown lands department and requested that his name be removed from their books so that Lot 16, Concession 9 could be granted to some other settler. Two days later, on April 25, 1831, John Thompson applied to the government to purchase this lot. During the next several years, Thompson and his son, John Thompson, Junior, cleared and improved the property. They were named as the occupants of the lot in the 1837 City of Toronto and the Home District Commercial Directory and Register. On July 1, 1843, Thompson paid the various fees for the land (purchase price, survey fees), which amounted to £129.19.8. John Thompson "the elder" patented the lot on September 4, 1843 (Anonymous, no date[a]:1427-1432; Walton, 1837:95).

Little biographical information could be located for the various members of the Thompson family. A tombstone in St. James' United Cemetery in Stroud, near the subject property, commemorates "John Thompson, Sen.," who died Feb. 5, 1864, aged 78.

In December 1843, Thompson severed his property and sold the north half of the lot (100-acres or 40.47 hectares) to John Dyer of Innisfil for £114.11.8. This was a shrewd transaction on Thompson's part, because the money realized from the sale nearly paid for his entire cash outlay to purchase the property. He was left with the southerly 100-acres, which ended up costing him a mere £15.8.0, far less than what the property was worth. Dyer then subdivided part of his land at the northwest corner of the lot into building lots, and he sold the first ¼-acre (0.101 hectare) lot in November 1852, marking the beginnings of the development of Stroud (Anonymous, no date[b]:#5074, 11486).

In March 1854, John Thompson sold the remaining southern half (100 acres) of Lot 16 to Henry Thompson of Innisfil for £200. At the time of the purchase, Henry

Thompson granted a lease to John and Lucy Thompson for the southwest 30 acres (12.14 hectare). In July of that same year, Thompson mortgaged his property in favour of John Rogers of West Gwillimbury for £294.2.4. In the spring of 1859, Rogers assigned (transferred) this mortgage to Thomas David McConkey. Payments under the mortgage must have fallen into default, since the amount assigned is shown in the abstract index as £379.3.2 (Anonymous, no date[b]:#13746, 14441, 17029, 26575).

In April 1859, a deed poll was issued by Benjamin Walker Smith, the Sheriff of Simcoe County in favour of John Alexander of Barrie. This document was the equivalent of a transfer under "power of sale," and it cut out any interest that the Thompson family held in the land (Anonymous, no date[b]: #27057). Three weeks later, in late April 1859, Alexander flipped the property to Benjamin Ross of Innisfil for $200. On the same day, Ross mortgaged the land for $4,000 in favour of Thomas David McConkey. In March 1865, the widow Lucinda Thompson executed a "release of dower", which removed that cloud from the title to the land (Anonymous, no date[b]:#27036, 27037, 27057, 39788).

Benjamin Leaper Ross (August 16, 1822-March 16, 1904) was a native of Thistleton, Yorkshire, and the son of Benjamin and Mary Ann Foster (Blythe) Ross. He emigrated to Upper Canada with his family *circa* 1828-1829. Benjamin Ross Senior (1789-1876) resided nearby on Lot 15, Concession 8. A sister, Jane Ross (1829-1892) was married to Robert McConkey. Benjamin L. Ross resided on the south half of the lot, where he farmed. Ross was married in mid-March 1861 to Eliza Ann Haughton (October 15, 1842), a native of Quebec and the daughter of Edward and Margaret Haughton. They raised a family of at least four daughters who were born between 1865 and 1880. The family belonged to the Church of England (Anonymous, no date[c]:70; Library and Archives Canada, 1861, 1871, 1891, 1901; McEvoy and Company, 1866:32, 35).

The 1861 census data suggests that the Ross farm was worked by John Dyer, who owned and lived on the north half of the lot. Fifty-two acres (21.04 hectares) were under crop, 15 acres (6.07 hectares) was pasture, and 30 acres (12.14 hectares) was "wild" or "wooded." The farm was assessed at $3,200 in 1860, with an additional $100 in farm implements and equipment. Twenty acres (8 hectares)

was planted in spring wheat (500 bushels), 4 acres (1.6 hectares) in peas (100 bushels), 14 acres (5.7 hectares) in oats (300 bushels), 3 acres (1.2 hectares) in potatoes (300 bushels), and 1 acre (0.4 hectare) in turnips (100 bushels). Dyer cut eight tons of hay in 1860. Unfortunately, the agricultural census is defective; the remainder of the schedule, which listed livestock and additional farm produce, is missing (Library and Archives Canada, 1861).

The 1861 personal census for Innisfil shows that John Dyer (born *circa* 1796) was a native of England and a farmer. He and his wife Hannah (born *circa* 1804) resided in a one-storey log house that was built on the north half of Lot 16, Concession 9. His brothers lived across the road in Concession 10 in single-storey log houses. They either belonged to the Church of England or were adherents of the Wesleyan Methodist Church. The agricultural census does not enumerate any residents in the south half of the lot (Library and Archives Canada, 1861).

The 1871 agricultural census for Innisfil shows that Benjamin Ross was the owner and occupant of the south half of Lot 16, Concession 9. He owned 100 acres (40.47 hectares) upon which was situated a house and three barns/sheds. The chattels included three carriages/sleighs, two wagons, two ploughs, one reaper, and one fanning mill. Ninety acres (36.42 hectares) were “improved” and under cultivation. This included 18 acres (7.28 hectares) in pasture and two acres (0.8094 hectare) of garden/orchard. An additional two acres was listed as “salt or dyked marsh” land. The farm contained 32 acres (12.95 hectares) of spring wheat (200 bushels), 0.5 acres (0.202 hectare) of potatoes (80 bushels), and 6 acres (2.42 hectares) of land where 12 tons of hay had been cut. Other crops were simply listed by the number of bushels harvested: fall wheat (100 bushels), barley (40), oats (250), peas (150), and corn (10). Twenty cords of firewood were cut on this land. The farm livestock included: horses (3), milch cows (3), “horned cattle” (5), sheep (12), and pigs (6). Additional farm produce included: barrels of cured beef, mutton, and pork, butter 300 pounds (136 kilograms), and wool 68 pounds or 30.84 kilograms (Library and Archives Canada, 1871).

In November 1888, Benjamin Ross transferred title to the south half of Lot 16 to J.T. Sproule of Barrie, who, on the same day, flipped it to Benjamin’s wife, Eliza Ross (Anonymous, no date[b]:#5142, 5143).

In January 1893, Ross sold this land to Robert James McConkey of Innisfil for $5,250 (Anonymous, no date[b]:#5144). McConkey (September 15, 1865-November 15, 1942) was a native of Innisfil and the son of Robert and Hannah (Smith) McConkey. His father was an Irish farmer who emigrated to Upper Canada around 1837, and his mother was a native of Scarborough. Records show that Robert James farmed the south half of the lot and that he was an unmarried man and a member of the Presbyterian Church. He remained owner of the property until his death (Library and Archives Canada, 1871; 1881; 1901; 1911; 1931).

Summary

In summary, Lot 16, Concession 9 was originally a Clergy Reserve that had been granted to John McConkey in 1830, but he renounced his interest in the land in April 1831. At that point, a settler named John Thompson, Senior applied for a grant for this lot. Records show that he and his son John occupied this property and improved it, which would have included the construction of a dwelling, and he was able to purchase the land from the Crown Lands Department in July 1843. He obtained the Crown patent a few months later in September of that year. Thompson severed the lot and sold the north half to John Dyer, while the south half of the lot then passed through the hands of his sons, Henry and John Thompson, Junior. The property was mortgaged, but later sold under “power of sale” to John Alexander, the Crown Lands Agent at Barrie, in 1859. Alexander sold the land to Benjamin L. Ross that same year, who owned this property until 1893. The agricultural census data showed that the Ross farm contained a house and three ancillary structures (barns/sheds). Ross grew a variety of crops on his land (cereals, root crops and other vegetables), and he raised livestock (horses, cattle, sheep, and pigs). It is interesting to note that the farm contained an area that was described as a “dyked marsh.” The farm was then owned by a bachelor farmer named Robert J. McConkey until his death in 1942.

1.2.3 Review of Map Sources

A review of nineteenth- and early twentieth-century mapping was completed to determine if these sources depict any nineteenth-century Euro-Canadian settlement features that may represent potential historical archaeological sites within or adjacent to the subject property. Historical map sources are used to

reconstruct/predict the location of former features within the modern landscape by cross-referencing points between the various sources and then georeferencing them in order to provide the most accurate determination of the location of any property from historical mapping sources. The results can be imprecise (or even contradictory) because sources of error, such as the vagaries of map production, differences in scale or resolution, and distortions caused by the reproduction of the sources, introduce error into the process. The impacts of this error are dependent on the size of the feature in question, the constancy of reference points on mapping, the distances between them, and the consistency with which both are depicted on historical mapping.

In addition, not all settlement features were depicted systematically in the compilation of these historical map sources, given that they were financed by subscription, and subscribers were given preference with regards to the level of detail provided. Thus, not every feature of interest from the perspective of archaeological resource management would have been within the scope of these sources.

On the Hogg's 1871 *Map of the County of Simcoe* (Hogg, 1871) the subject property is shown to be subdivided into two parcels owned by B. Ross in the west and C. Ross in the east, however this does not align with the land use history which indicates B. Ross owned the south half of Lot 16, Concession 9 from 1859-1888 (Figure 2). There are no settlement features or watercourses illustrated within the subject property limits, but it is important to note that with the exception of some schoolhouses, post offices and mills, individual features such as homesteads, churches or cemeteries are not often shown on this map. The property is bounded by settlement roads along the west (Yonge Street) and south (Ninth Line). The village of Victoria (Stroud), including a schoolhouse and post office, is indicated approximately 500 metres north of the property. A railway corridor passes northeast of the property, with a station indicated at Bramley (east of the property on Ninth Line).

Early topographic mapping was also reviewed for the presence of potential historical features. Figure 3 illustrates the subject property located on the 1928 *Barrie Topographic Map* (Department of National Defence, 1928). Land features

such as waterways, wetlands, woodlots, and elevation are clearly illustrated on this series of mapping, along with roads and structure locations. The subject property is illustrated on the 875-foot (267-metre) elevation contour on an area of land that slopes southwest. Rows of trees are illustrated along the north and east limits of the subject property. Ninth Line and Yonge Street, both on the telegraph line, bound the property to the south and west, respectively. A house and barn are illustrated in the centre-west of the subject property. The Village of Stroud is now shown to begin approximately 300 metres north of the property, where two garages, a foundry, a post office, school, cemetery, and church are indicated, as well as several residences.

1.2.4 Review of Twentieth-Century Aerial Imagery

In order to further understand the previous land use on the subject property, aerial imagery spanning from 1954 and 1989 was reviewed (Hunting Survey Corporation Limited, 1954; County of Simcoe, 2022) (Figure 4).

In 1954 imagery, the subject property is comprised of nine cultivated fields surrounding a farm complex, which consists of a house, barn, and laneway to Yonge Street surrounded by trees in the centre-east. There is a second farm complex, comprised of a house, a barn, and outbuildings, approximately 120 metres east of the property fronting Ninth Line.

Aerial imagery from 1989 indicates that the laneway was redirected to bend north at the barn and to follow the limits of the northern cultivated fields, and an area of scrub spanned between the barn to the end of the lane. A residential subdivision is now shown on the intersection of Yonge Street and Victoria Avenue, with a subdivision immediately adjacent to the north side of the subject property.

1.3 Archaeological Context

This section provides background research pertaining to previous archaeological fieldwork conducted within and in the vicinity of the subject property, its environment characteristics (including drainage, soils, surficial geology, and topography), and current land use and field conditions.

1.3.1 Registered Archaeological Sites

In order that an inventory of archaeological resources could be compiled for the subject property, three sources of information were consulted: the site record forms for registered sites housed at the Ministry, published and unpublished documentary sources, and the files of Archaeological Services Inc.

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database, which is maintained by the Ministry. This database contains archaeological sites registered within the Borden system. The Borden system was first proposed by Doctor Charles E. Borden and is based on a block of latitude and longitude. Each Borden block measures approximately 13 kilometres east-west by 18.5 kilometres north-south and is referenced by a four-letter designator. Sites within a block are numbered sequentially as they are found. The subject property is located in the north of the BbGv Borden block.

No archaeological sites have been registered within an approximate one-kilometre radius of the subject property (Ministry of Citizenship and Multiculturalism, 2024; accessed April 18, 2024). The paucity of documented archaeological sites in the general vicinity of the property is likely related to the lack of archaeological investigation of the area prior to the implementation of systematic archaeological assessments under provincial legislation, as well as the rural agricultural setting of the area. It does not necessarily reflect the intensity of Indigenous settlement or land use prior to Euro-Canadian colonization, nor the absence of early Euro-Canadian settlement, and thus should not be taken as an indicator of any lack of Indigenous or Euro-Canadian land use or occupation.

1.3.2 Previous Assessments

During the course of the background research, it was determined that three archaeological assessments are known to have been completed within 50 metres of the subject property limits.

Within the Subject Property

In 2022, Archaeological Services Inc. completed a Stage 1 Archaeological Assessment of a proposed sewage pumping station (Archaeological Services Inc.,

2022a; Project Information Form: P383-0239-2020). The study area included the east and west side of Yonge Street (County Road 4) between Victoria Street and Innisfil Beach Road, incorporating approximately 9.59 hectares (25 percent) of west side of the current subject property. The report concluded that portions of the study area retained archaeological potential, including the majority of the portion overlapping the current subject property. As such, the report recommended a Stage 2 Archaeological Assessment for all areas of archaeological potential.

In 2022, Archaeological Services Inc. completed a Stage 1 Archaeological Assessment in advance of the proposed widening of County Road 4, under Project Information Form: P383-0303-2021 (Archaeological Services Inc., 2022b). The study corridor comprised 13.8 kilometres, from County Road 89 (Shore Acres Drive) to the Barrie City Limits (Lockhart Road) and incorporated a narrow linear section of the current subject property, on the east side. The report concluded that portions of the study area retained archaeological potential, including the majority of the portion overlapping the current subject property. As such, the report recommended a Stage 2 Archaeological Assessment for all areas of archaeological potential.

Within 50 Metres of the Subject Property

In 2020, AMICK Consultants Limited completed a Stage 1 and 2 Archaeological Assessment of a 39-hectare parcel in the north part of Lots 17 and 18, Concession 9 under Project Information Form: P058-1848-2020 (AMICK Consultants Limited, 2020), immediately northeast of the current subject property. The combined test pit and pedestrian survey was carried out at five-metre intervals, during which no archaeological resources were encountered. No further work was recommended for this property.

1.3.3 Physiography

The subject property is located on the drumlinized till plains of the Peterborough Drumlin Field physiographic region. The Peterborough Drumlin Field extends from Simcoe County east to Hastings County and is generally characterized by rolling till plains overlying limestone bedrock, as well as numerous drumlins and eskers

(Chapman and Putnam, 1984:169-172). The region is approximately 4,532 square kilometres and contains over 3,000 drumlins in addition to many other drumlinoid hills and surface flutings (Chapman and Putnam, 1984). The drumlins are composed of highly calcareous till but there are local differences in composition. The till plains of the regions were formed during the retreat of the Lake Ontario ice lobe of the Laurentide glacier, and they indicate directionality of glacial advance and retreat. Till is produced from the advance of continental glacial ice. Soil and rock is carried forward by the ice, mixed and milled, producing a heterogeneous soil which is characteristic of glaciations (Chapman and Putnam, 1984).

In a more recent study (MacDonald, 2002), this area has been classified as the eastern lobe of the Innisfil Uplands, which comprises a gently to moderately rolling till plain extending from Kempenfeldt Bay in the north to the Holland River in the south, and westward from Cook's Bay to the Nottawasaga River. Newmarket and Kettleby tills are the primary surface deposits, with secondary deposits of outwash sand and glaciolacustrine silt and clay.

The surficial geology of the majority of the subject property consists of stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain (Ontario Geological Survey, 2018). The northwest corner and southwest portions of the subject property are overlain with fine-textured glaciolacustrine deposits of silt and clay, minor sand and gravel that is massive to well-laminated. Three areas of moraine (ribbed or Rogen moraine) are located to the east of the subject property.

The subject property is within the Lovers Creek subwatershed (Figure 1) (Ministry of Natural Resources and Forestry, 2020), part of the larger Lake Simcoe watershed. The Lake Simcoe Watershed consists of 18 major river systems and drains an area of approximately 3,400 square kilometres, from the Oro Moraine in the north to the Oak Ridges Moraine in the south, ultimately draining into Lake Huron to the west. Lake Simcoe supports a diverse aquatic ecosystem, home to over 50 different species of fish (Lake Simcoe Region Conservation Authority, no date). The watershed consists of varied environments, 13 percent consists of wetlands, another 13 percent consisting of forested area, 36 percent agricultural

land, and 8 percent urban land (Lake Simcoe Region Conservation Authority, no date). Lake Simcoe is also part of the larger Trent-Severn waterway.

A tributary of Lovers Creek begins approximately 20 metres west of the subject property on the opposite side of Yonge Street and flows north to empty into Lake Simcoe. A tributary of Hewitt's Creek begins approximately 222 metres east of the subject property, which also flows north to drain into Lake Simcoe.

1.3.4 Existing Conditions

The Stage 2 field assessment, conducted on August 9-11, 2023, and June 11, 12, 14, and 17, 2024, was initiated with a review of the physical features of the subject property. The property is approximately 38 hectares, comprising cultivated fields throughout the majority of the property (Figure 5). A farm complex, consisting of a house and barn, is situated in the centre-west of the property surrounded by scrub dotted with trees, connected to Yonge Street by a driveway and to Ninth Line by a narrow secondary access lane. The subject property is bounded by Ninth Line to the south, Yonge Street to the west, a residential subdivision to the north, and cultivated fields and a farm complex to the east.

1.3.5 Review of Archaeological Potential

The *Standards*, Section 1.3.1 stipulates that primary water sources (such as, lakes, rivers, streams, and creeks), secondary water sources (intermittent streams and creeks, springs, marshes, and swamps), as well as ancient water sources (glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, and cobble beaches) are characteristics that indicate archaeological potential. Geographic characteristics also indicate archaeological potential and include distinct topographic features and soils.

Potable water is the single most important resource necessary for any extended human occupation or settlement. Since water sources have remained relatively stable in south central Ontario after the Pleistocene era, proximity to water can be regarded as a useful index for the evaluation of archaeological site potential.

Indeed, distance from water has been one of the most used variables for predictive modelling of site location.

The generic distance to water potential model has been refined for the *County of Simcoe Archaeological Management Plan* (Archaeological Services Inc., 2019). According to the modelling criteria, undisturbed lands within 250 metres of major rivers and their tributaries, in addition to the Lake Simcoe shoreline has potential for the presence of Indigenous archaeological sites. This 250-metre potential zone is also extended to the lands above glacial lake strands, while 200 metre buffers are applied to the lands below glacial lake strands. Archaeological potential buffers are also applied within 100 metres of documented Indigenous sites and within 200 metres of villages.

Other geographic characteristics can indicate pre-contact archaeological potential, including elevated topography (eskers, drumlins, large knolls, plateaux), pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground, and distinctive land formations that might have been special or spiritual places for Indigenous populations, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use by Indigenous peoples, such as burials, structures, offerings, rock paintings or carvings. Resource areas, including food or medicinal plants (migratory routes, spawning areas, prairie), and scarce raw materials (quartz, copper, ochre, or outcrops of chert) are also considered characteristics that indicate pre-contact archaeological potential.

For the post-contact period, Section 1.3.1 of the *Standards* stipulates that those areas of early Euro-Canadian settlement, including places of early military pioneer settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches, and early cemeteries, are considered to have archaeological potential. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage plaques. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the *Ontario Heritage Act* or a federal, provincial, or municipal historical landmark or site, and properties that local histories or informants have identified with possible

archaeological sites, historical events, activities, or occupations are also considered to have archaeological potential.

The majority of early nineteenth century farmsteads, which are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth century maps, are likely to be captured by the basic proximity to water model, since these occupations were subject to similar environmental constraints. An added factor, however, is the development of the network of concession roads and railroads through the course of the nineteenth century. These transportation routes frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 metres of an early historical transportation route are also considered to have potential for the presence of Euro-Canadian archaeological sites.

The *County of Simcoe Archaeological Management Plan* considers a similar suite of criteria or indicators (Archaeological Services Inc., 2019). There is potential for historical sites within 100 metres of registered or designated historical sites, cemeteries and features illustrated on historical maps. There is also potential within 100 metres of settlement roads and within 50 metres of early railways.

The subject property is approximately 20 metres east of Lovers Creek and bound by early settlement roads to the west (Yonge Street) and south (Ninth Line). Historically, two acres of the property were classified as a dyked marsh, and despite the mapping showing no structures, the land use history does indicate the property was occupied in the nineteenth century. As such, there is potential for the presence of archaeological resources remaining *in situ* on the subject property, depending on the degree of subsequent land alteration.

2.0 Field Methods

The Stage 2 field assessment was conducted in order to inventory, identify, and describe any archaeological resources extant within the subject property prior to development. All fieldwork was conducted under the field direction of Poorya Kashani (P1133) on August 9-11, 2023, and Marc DiBenedetto (R1374) on June 11, 12, 14, and 17, 2024 and was carried out in accordance with the *Standards*. The

weather conditions were appropriate for the completion of fieldwork, permitting good visibility of the land features.

Representative photos documenting the field conditions during the Stage 2 fieldwork are presented in Section 8.0 of this report, and photo locations and field observations have been compiled on project mapping (Images 1-14, 16-22; Figures 6 and 7; Image 15; Supplementary Documentation: Figure 1). Field observations and photographs were recorded with a Trimble Catalyst Global Navigation Satellite System unit using World Geodetic System 1984.

2.1 Areas of No Potential

The assessment was initiated by conducting a visual review in order to identify areas of no archaeological potential. During this review, approximately 1.5 percent of the subject property was found to be previously disturbed (Figure 6). The areas of disturbance include the structural footprints of the house and barn (Images 1-5), a gravel driveway surrounding the house in the west of the property (Images 6-9), as well as the foundations of demolished barns and outbuildings (Images 10-11), and a large artificial berm/stockpile (Image 12), all within the farm complex portion of the property. In accordance with the *Standards*, Section 2.1, Standard 2b, these areas of deep and extensive land disturbance are considered to have no archaeological potential.

2.2 Pedestrian Survey

Approximately 88 percent of the subject property consisted of agricultural land that was assessed by means of a pedestrian survey at five-metre intervals (Images 13-14; Figure 7). It should be noted that a narrow, four-metre-wide access lane in the south of the property was ploughed on either side and fit within the survey intervals.

In accordance with Section 2.1.1 of the *Standards*, the fields were ploughed and allowed to weather appropriately prior to survey, and ploughing was deep enough to provide total topsoil exposure but did not extend beyond the depth of previous ploughing. Ground surface visibility conditions were excellent at well over 80 percent and the soils consisted of sandy loam.

2.2.1 Intensified Pedestrian Survey

During the course of the pedestrian survey, both Indigenous and historical Euro-Canadian artifacts were encountered (Supplementary Documentation: Figures 1 and 2). In accordance with the *Standards*, Section 2.1.1, Standard 7, when archaeological material was encountered, an intensified pedestrian survey at one-metre transects was conducted at a radius of 20-metres around all surface artifacts (Image 15; Supplementary Documentation: Figure 1).

2.3 Test Pit Survey

The balance of the subject property, approximately 10.5 percent, comprised lawns, areas of scrub dotted with trees surrounding the farm complex, as well as areas of scrub on the southeast and northeast boundaries of the property, and a small, circular area in the north part of the property (Figure 7). In accordance with the *Standards*, Section 2.1.2, areas with closed surface visibility were assessed by means of a test pit survey at intervals of five metres and increased to 10 metres upon encountering disturbance (the *Standards,* Section 2.1.8). Test pits were hand excavated stratigraphically at least five centimetres into the subsoil and all soil was screened through six-millimetre mesh to facilitate artifact recovery (Images 16-18). Test pits were examined for stratigraphy, cultural features, and evidence of fill. All test pits were at least 30 centimetres in diameter and excavated within one metre of all structures and/or disturbances where possible. Upon completion, all test pits were backfilled.

Intact test pit soil profiles (approximately 7.2 percent of the property) were encountered north of the house and barns, in the southeast and northeast corners of the property, and the small area of scrub in the north. These areas were surveyed at five-metre intervals. Test pit soil profiles in these areas consisted of approximately 25 centimetres of very dark grayish brown (10YR 3/2) sandy loam A-horizon, overlying yellowish brown (10YR 5/4) sand B-horizon (Image 19).

Disturbed test pit soil profiles were encountered in approximately 3.3 percent of the property, in the areas surrounding the house and in the south of the farm complex. Test pits in these areas were placed at 10-metre intervals where

disturbance was identified. In the area surrounding the farmhouse in the central-west part of the subject property, test pit soil profiles consisted of approximately 50 centimetres of very dark grayish brown (10YR 3/2) sandy loam landscape fill, overlying yellowish brown (10YR 5/4) sand subsoil (Image 20).

In the south of farm complex, south of the existing barn, test pits contained approximately 40 centimetres of very dark grayish brown (10YR 3/2) sandy loam landscape fill, overlying a light brownish gray (10YR 6/2) sand and gravel construction fill to the limit of excavation (120 centimetres below grade) (Image 21).

The eastern part of the farm complex, consisting of scrub vegetation and trees, contained test pit soil profiles of approximately 40 centimetres of very dark grayish brown (10YR 3/2) sandy loam, overlying various construction fill layers of sand and gravel to the limit of excavation (120 centimetres below grade) (Image 22).

3.0 Record of Finds

During the course of the Stage 2 field assessment, five isolated Indigenous findspots and one Euro-Canadian site were documented during the pedestrian survey of the ploughed fields.

All observed lithic artifacts were collected, and each artifact was recorded according to provenience. None of the isolated Indigenous findspots meet the requirements for registry in the Ontario Archaeological Sites Database as outlined by the *Standards*, Section 7.12, Standard 1, due to their low density and non-diagnostic character.

All observed artifacts were collected from the Euro-Canadian historical site and retained for analysis. The limits of the historical site were recorded, and the site has been registered in the Ontario Archaeological Sites Database as BbGv-74, in accordance with the *Standards*, Section 7.12.

3.1 Inventory of Documentary and Material Record

The documentation and materials related to this project will be curated by Archaeological Services Inc. until such a time that arrangements for their ultimate transfer to His Majesty the King in right of Ontario, or other public institution, can be made to the satisfaction of the project owner(s), the Ontario Ministry of Citizenship and Multiculturalism, and any other legitimate interest groups.

Table 1 provides an inventory and location of the documentary and material record for the project in accordance with the *Standards*, Sections 6.7 and 7.8.2.3.

Table 1: Inventory of Documentary and Material Record

Document/Material	Location	Comments
Written Field Notes, Annotated Field Maps, and Geographic Positioning System Logs.	Archaeological Services Inc., 528 Bathurst Street, Toronto, ON, M5S 2P9	Hard copy notes stored in Archaeological Services Inc. project folder 23PL-250; Geographic Positioning System and digital information stored on Archaeological Services Inc. network servers.
Field Photography (Digital)	Archaeological Services Inc., 528 Bathurst Street, Toronto, ON, M5S 2P9	Stored on Archaeological Services Inc. network servers.
Research, Analysis and Reporting Materials (Various Formats)	Archaeological Services Inc., 528 Bathurst Street, Toronto, ON, M5S 2P9	Digital files stored on Archaeological Services Inc. network servers.

Document/Material	Location	Comments
Artifacts	Archaeological Services Inc., 528 Bathurst Street, Toronto, ON, M5S 2P9	All artifacts collected stored by class and provenience. Artifacts stored in 12.7-centimetre x 20.32-centimetre plastic bags and further separated into 5.08-centimetre x 7.62-centimetre plastic bags. All material housed in a standard banker's box (width 30-centimetre, depth 38-centimetre, height 25 centimetre). Artifact assemblage stored in one box labeled: 23PL-250 7665-7667 Yonge Street, Innisfil Stage 1-2

Geographic Positioning System coordinates for all surface artifacts were recorded with a Trimble Catalyst Global Navigation Satellite System unit using World Geodetic System 1984. No correction was used for the coordinates, and conditions (such as clear skies or tree cover) were optimal for recording accuracy. Detailed site mapping and Geographic Positioning System coordinates are provided in the Supplementary Documentation associated with this project.

3.2 Indigenous Locations

A pre-contact Indigenous site is distinguished from an isolated find by either the quantity of material encountered (three or more artifacts) or by the presence of a diagnostic artifact (for example, a projectile point). Whenever artifacts were encountered, a unique field designation (P-number) was assigned. In total, five P-numbers were assigned in the field (P1-P5). All findspots were located more than 20 metres from each other (see Supplementary Documentation: Figure 1).

3.2.1 Indigenous Findspots

A total of five isolated, non-diagnostic Indigenous findspots were documented across the subject property (see Supplementary Documentation: Figures 1 and 2). Findspot P1 was documented in the southwestern part of the property, to the south of the farm complex and yard. Findspots P2, P3, P4, and P5 are all located in the northwestern part of the property. All findspots consisted of a single non-diagnostic isolated lithic. A full catalogue of all findspot material is presented in Appendix A and the artifacts are displayed in Section 8.0 (Image 23).

Findspot P1 consists of a single secondary retouch flake of Onondaga chert that displays thermal alteration. Findspots P2, P3, and P4 each comprise a single flake fragment of Onondaga chert; the fragment from Findspot P3 displays dorsal lateral retouch. Findspot P5 comprises a flake fragment of indeterminate chert type with a whitish patina.

3.3 Historical Location

An historical site is evaluated based on the quantity of the material encountered (more than 20 artifacts) and the presence of diagnostic artifacts pre-dating 1900. Historical artifacts are dated by both the material from which they are made and by the type of decoration and/or motif they feature.

Table 2 provides a summary of the date ranges of nineteenth-century artifacts in Ontario.

Table 2: Nineteenth Century Artifact Date Ranges in Ontario

Artifact Type	Before 1830	1830-1845	1845-1870	1870-1890	After 1890
Nails	Wrought	Machine Cut	Machine Cut	Machine Cut	Wire
Ceramic Wares	Pearlware Creamware	Refined White Earthenware (RWE)	Refined White Earthenware (RWE) Ironstone introduced	Ironstone common	Semi-porcelain introduced
Edge	Blue and Green scalloped	Mostly blue scalloped	Blue straight	Not common	Not common
Painted	All Blue or Early Palette	Late Palette	Late Palette	Not common	Not common
Sponged	Not found	Rare	Common	Becomes rare	Rare
Printed	Blue only	Blue, brown, black, red, purple or green	Blue, brown, black	Blue and browns	Many colours; over glaze

Artifact Type	Before 1830	1830-1845	1845-1870	1870-1890	After 1890
Nails	Wrought	Machine Cut	Machine Cut	Machine Cut popular in 1880's	Wire
Flow	Not found	Not found	Popular	Not common	Revival of Flow
Yelloware	Not found	Introduced in 1840's	Present	Present	Present
Guns	Flintlocks: Percussion invented in 1807	Percussion; Flintlocks in decline	Percussion; rise of cartridge in 1860s	Cartridge	Cartridge
Glass Bottles: Bases	Pontil mark	Pontil mark	Pontil mark in cline	No pontil mark	No pontil mark
Glass Bottles: Manufacture	Cup mould, two-piece open mold, and	Cup mould, two-piece open mold, and three-piece mold	Cup mould, two-piece open mold, and three-piece mold	Seam from base to lip	Seam from base onto lip and over lip

Artifact Type	Before 1830	1830-1845	1845-1870	1870-1890	After 1890
Nails	Wrought three-piece mold	Machine Cut	Machine Cut	Machine Cut	Wire
Glass Bottles: Finish					"Crown" finish; threaded lips common
Other					U.S. McKinley tariff act of 1891 requires country of origin to be marked on goods.

3.3.1 Thompson Site (BbGv-74)

The Thompson site (BbGv-74) was documented in the south of the subject property and measures approximately 29 metres north-south by 27 metres east-west (see Supplementary Documentation: Figure 2). All observed artifacts were collected for analysis.

A modified *Classification System for Historical Collections* (Canadian Parks Service, 1992) was used to organize the artifacts recovered from the site. Four classes are represented in the sample: architectural, kitchen/food-related, personal, and indeterminate artifacts (Table 3). Detailed historical artifact catalogues can be found in Appendices B-1 and B-2. A sample of the recovered artifacts is displayed in Section 8.0 (Images 24-26).

Table 3: Thompson (BbGv-74) Historical Artifacts by Functional Class

Artifact Type	Class Totals
Window glass	6
Architectural Class Total	***6***
Container, liquor	1
Tableware	52
Teaware	17
Kitchen/Food Class Total	***70***
Button	1
Smoking Pipe	2
Personal Artifacts Class Total	***3***
Container, Unidentified	1
Indeterminate Class Total	***1***
Artifact Totals	80

Kitchen/Food-related Class

The kitchen/food-related class (Image 24) artifacts (*n*=70) are related to the consumption, preparation, service, and storage of food and beverages. The sample is dominated by the ceramics (*n*=69) (Table 4), which includes tableware (*n*=52) and teaware (*n*=17) (Appendix B; Image 24).

Table 4: Thompson (BbGv-74) Ceramic Artifacts by Ware and Motif

Ceramic Ware and Motif	Ceramic Totals
Pearlware, Edgeware general	2
Pearlware, Edgeware embossed design	1
Pearlware, Hand painted monochrome blue	5
Pearlware, undecorated	8
Pearlware Total	**16**
Refined white earthenware, Hand painted Late Palette	8
Refined white earthenware, Moulded general	1
Refined white earthenware, Spongeware	4
Refined white earthenware, Transfer print general	13
Refined white earthenware, Transfer print sheet pattern	5

Ceramic Ware and Motif	Ceramic Totals
Refined white earthenware, Undecorated	19
Refined white earthenware, Unidentified	1
Refined white earthenware Total	***51***
Yellow Ware, Undecorated	1
Yellow Ware Total	***1***
Unidentifiable, Edgeware, Embossed Design	1
Unidentifiable Total	***1***
Ceramic Artifact Totals	**69**

Ceramics are a useful tool for dating archaeological sites because of the historical progression of types in industrial-era ceramic production.

The ceramic ware type with the earliest established date of availability in Ontario in the assemblage is Pearlware (*n*=16). Pearlware was introduced by Wedgwood in 1779 as an alternative to creamware (Majewski and O'Brien, 1987) and was available in Ontario from 1780-1835, with a peak in popularity at the turn of the nineteenth century (Kenyon, 1995). Pearlware has an off-white clay body with a lead glaze tinted blue, which is most evident in places where the glaze pools, such as footrings.

In this assemblage, three sherds of pearlware feature an embossed edgewear motif. Catalogue #13 displays impressed curved lines and blue motif on the top of the rim, which was produced between 1802-1832, and Catalogue #14 is decorated with feathered blue strokes and an embossed grape motif, which was made between 1823-1835 (Miller *et alia*, 2000: Table 1). Five pearlware sherds

in the assemblage feature a hand painted (monochrome blue) motif (*circa* 1780-1835).

The ceramic ware type most represented in the assemblage is refined white earthenware (R.W.E.) (*n*=51). R.W.E is believed to have evolved from pearlware, when potters started to decrease the amount of cobalt they were adding to the glaze and added it instead to the ceramic paste formula to create a whiter appearance (G. L. Miller, 1980). The body is harder than creamware or pearlware, and is nearly white and very dense with a clear lead glaze (G. L. Miller, 1991). R.W.E. came into common use in Ontario in the 1830s, replacing earlier wares such as creamware and pearlware (Kenyon, 1995). R.W.E. grew in popularity during the mid-nineteenth century (Majewski and O'Brien, 1987:120) since many different underglaze colours looked better on its white-bodied ceramic than they did on the earlier pearlware.

Decorative motifs present in the R.W.E. assemblage include hand painted (late palette) (*n*=8), with floral motifs in red, green and blue. The hand painted (late palette) motif can be dated in Ontario to *circa* 1830-1870 (Kenyon, 1995). The R.W.E. assemblage also includes a moulded general (*n*=1) motif, and spongeware (*n*=4) in blue. In Ontario, sponged teawares typically are found on sites dating to *circa* 1843-1875 (Kenyon, 1995:12). The most prevalent motif in the R.W.E. assemblage is transfer print (*n*=18). Transfer print motifs were first used in the late eighteenth century and remained popular through the twentieth century. Earlier examples were usually printed in blue tones, and other colours, such as light blue, red, black, and brown became popular in the middle of the nineteenth century (Kenyon, 1995). The assemblage features transfer print (general) in blue (n=7), black (*n*=4), and brown (*n*=2), and, as well as transfer print (sheet pattern) in a blue floral (*n*=2).

A single sherd of undecorated yellow ware was also recovered. Yellow ware has a hard, dense, yellow-to-buff coloured body with a clear, lead glaze (G. L. Miller, 1991). It was first manufactured in the United Kingdom in the late eighteenth century with North American production beginning shortly thereafter and continuing until the mid-twentieth century (Samford, 2014:43). Yellow ware was available in Ontario *circa* 1830-1920.

The kitchen/food-related class also includes one fragment of dark olive-green liquor bottle glass (Catalogue #30).

Architectural Class

The architectural class of artifacts is represented by six fragments of aqua-coloured window glass (Catalogue #32) (Appendix B-2, Image 25). The presence of windows in a log house signified that an important improvement had been made to the homesteader's cabin. Windows could be placed in log, mud, sod, or timber-framed homes and were often moved from old to new structures.

No nails or other architectural artifacts were recovered from the surface scatter.

Personal Class

The personal artifacts class includes two fragments of white ball clay smoking pipe and one cuprous metal button (Appendix B-2, Image 26). Neither of the white ball clay pipe fragments feature a maker's mark indicating place of origin or manufacturer. Catalogue #33 is a fragment of a stem with one side highly exfoliated. Catalogue #34 is a pipe bowl fragment with an exterior edge featuring a circular impressed motif. The cuprous button is a flat disc type 14.7 millimetres in diameter and impressed on the dorsal surface around the outer edge with "_ELLE/GILT/9190/_" (Catalogue #35). Gilded buttons were often stamped with slogans indicating their quality and were particularly popular in the first half of the nineteenth century (Ferris, 1986).

Indeterminate Class

The indeterminate class is represented by a single fragment of colourless container glass, with no visible seams and of indeterminate manufacture type (Catalogue #31) (Appendix B-2, Image 25).

4.0 Analysis and Conclusions

Archaeological Services Inc. was contracted by SanDiego Homes Inc. to complete a Stage 1 and 2 Archaeological Assessment of 7665 and 7667 Yonge Street, Part of Lot 16, Concession 9, Geographic Township of Innisfil, County of Simcoe, now

in the Town of Innisfil, County of Simcoe. The subject property is approximately 38 hectares.

The Stage 1 background research entailed consideration of the proximity of previously registered archaeological sites and the original environmental setting of the property, along with nineteenth- and twentieth-century settlement trends and a review of aerial imagery. The general guidance of the *County of Simcoe Archaeological Management Plan* (Archaeological Services Inc., 2019) was also considered. This research indicated that there was potential for encountering both Indigenous and Euro-Canadian archaeological sites within the subject property.

The Stage 2 field assessment was conducted on August 9-11, 2023, and June 11, 12, 14 and 17, 2024, by means of a combined pedestrian and test pit survey in all areas of archaeological potential. During the course of the survey, five isolated Indigenous findspots (P1-P5) and the historical Euro-Canadian Thompson (BbGv-74) site were encountered.

4.1 Indigenous Locations

Due to the proximity of the subject property relative to Lovers Creek and the presence of a dyked marsh noted in the historical records, evidence of pre-contact Indigenous activity within the subject property was possible. Five dispersed, non-diagnostic findspots were encountered within the subject property. Their presence in this area is likely evidence of past travel through this area for hunting, resource procurement, or other loss events *en route* to other destinations.

Given the isolated and non-diagnostic nature of the findspots, it is likely they were the product of ephemeral activity and/or casual loss, rather than locations of prolonged occupation or activity. As such, none of the findspots meet the criteria for cultural heritage value or interest outlined in the *Standards,* Section 2.2, Standard 1.

4.2 Thompson Site (BbGv-74)

The Thompson site (BbGv-74) was documented south of the existing farm complex within the south half of Lot 16, Concession 9, in the former Township of Innisfil.

The land use history indicates that Lot 16, Concession 9 was initially part of a Clergy Reserve that had been granted to John McConkey in 1830, who renounced interest in the land in April 1831, at which point John Thompson, Senior, applied for a grant for Lot 16. Historical records indicate that both John Thompson and his son, John Thompson Junior, occupied this property and improved it, which would have included the construction of a dwelling; both father and son were named occupants in 1837. Thompson Senior eventually purchased the land from the Crown Lands Department in July 1843 and obtained the Crown patent in September 1843. The south half of Lot 16, including the subject property, passed to Thompson's sons, Henry and John Junior. The property was eventually mortgaged, and later sold under "power of sale" in 1859, passing to the Ross family who owned it from 1859 to 1893.

The Thompson site (BbGv-74) artifact assemblage consists of 80 artifacts collected from the surface of the ploughed field, ranging in date from the early- to mid-nineteenth century. Dateable ceramic artifacts in the assemblage include pearlware (*n*=16), popular in Ontario from the turn of the nineteenth century to the 1830s, R.W.E. (*n*=51) displaying a variety of hand painted, transfer print, and spongeware motifs, which came into common use in the 1830s in Ontario and grew in popularity until the mid-nineteenth century, and yellow ware (*n*=1), which was introduced in the 1840s. The architectural class contains six fragments of window glass, which suggests the presence of a structure, and the personal class includes an early nineteenth century gilt button and two fragments of smoking pipes.

Given the early- to mid-nineteenth-century date range of the artifact assemblage, the Thompson site (BbGv-74) appears to correspond with the Thompson family's occupation of the property from 1831-1859. In accordance

with the *Standards*, Section 2.2, Standard 1c, the site meets the criteria for cultural heritage value or interest.

5.0 Recommendations

In light of these results, the following recommendations are made:

1. Given the isolated and non-diagnostic nature of Indigenous findspots P1, P2, P3, P4, and P5, these locations do not exhibit cultural heritage value or interest and may be considered free of any further archaeological concern.

2. The Thompson site (BbGv-74) is considered to be an archaeological resource of cultural heritage value or interest for which a Stage 4 recommendation will be required. As such, it is recommended that the site first be subject to a comprehensive Stage 3 Site-Specific Archaeological Assessment in order to more fully identify the character, extent and significance of the archaeological deposits, in accordance with the Ministry of Citizenship and Multiculturalism's 2011 *Standards and Guidelines for Consultant Archaeologists,* Section 3.2.2 and Table 3.1, Standards 3 and 4*.*

    a) The Stage 3 assessment should commence with the creation of a recording grid on a fixed datum, the position of which has been recorded using a Global Positioning System unit. As the site was initially documented during pedestrian survey within a ploughed context, a controlled surface collection must be conducted within the ploughed field to precisely define the nature and extent of the site. This work will require that this portion of the site area be re-ploughed and allowed to weather for a least one substantial rainfall prior to commencing this work. The location of each artifact must be mapped with the aid of a tape measure and transit, and a surface map produced for the site.
    b) A series of one-metre-square test units must then be excavated across the site area at 10-metre intervals within an established grid in order to determine the nature and extent of the cultural deposits. An additional 40 percent of the total number of units excavated on the

grid must be strategically excavated throughout the site area, around units of high artifact counts, or in other significant areas of the site. The test units must be excavated five centimetres into the sterile subsoil and soil fills screened through six-millimetre wire mesh to facilitate artifact recovery. The sterile subsoil must be troweled, and all soil profiles examined for undisturbed cultural deposits.

NOTWITHSTANDING the results and recommendations presented in this study, Archaeological Services Inc. notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. In the event that archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Cultural Programs Unit of the Ministry of Citizenship and Multiculturalism must be immediately notified.

The above recommendations are subject to Ministry approval, and it is an offence to alter any archaeological site without Ministry of Citizenship and Multiculturalism concurrence. No grading or other activities that may result in the destruction or disturbance of any archaeological sites are permitted until notice of Ministry of Citizenship and Multiculturalism approval has been received.

The documentation and materials related to this project will be curated by Archaeological Services Inc. until such a time that arrangements for their ultimate transfer to His Majesty the King in right of Ontario, or other public institution, can be made to the satisfaction of the project owner(s), the Ontario Ministry of Citizenship and Multiculturalism, and any other legitimate interest groups.

6.0 Advice on Compliance with Legislation

Archaeological Services Inc. advises compliance with the following legislation:

- This report is submitted to the Ministry of Citizenship and Multiculturalism as a condition of licensing in accordance with Part VI of

the Ontario Heritage Act, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological field work and report recommendations ensure the conservation, preservation, and protection of the cultural heritage of Ontario. When all matters relating to archaeological sites within the subject property of a development proposal have been addressed to the satisfaction of the Ministry of Citizenship and Multiculturalism, a letter will be issued by the Ministry stating that there are no further concerns with regards to alterations to archaeological sites by the proposed development.

- It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological field work on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the Ontario Heritage Act.

- Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the Ontario Heritage Act.

- The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar, Funeral, Burial, Ministry of Public and Business Services Delivery also is immediately notified.

- Archaeological sites recommended for further archaeological field work or protection remain subject to Section 48(1) of the Ontario Heritage Act

and may not be altered, nor may artifacts be removed from them, except by a person holding an archaeological license.

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8.0 Images

Image 1: View of the front of the house in the west of the subject property (2023).

Image 2: View of the back of the house in the west of the subject property (2023)

Image 3: View of the west side of the barn within the farm complex (2023).

Image 4: View of the north side of the barn within the farm complex (2023).

Image 5: View of the east side of the barn within the farm complex (2023).

Image 6: View of the driveway north of the farmhouse in the west of the subject property (2023).

Image 7: View of the driveway along the west limit of the subject property (2023).

Image 8: View of the driveway along the south side of the farm complex in the west of the subject property (2023).

Image 9: View of the driveway area along the north of the farm complex in the west of the subject property (2023).

Image 10: View of an outbuilding within the north part of the farm complex (2023).

Image 11: View of demolished structure within the farm complex (2023).

Image 12: View of artificial berm east of the barn within the farm complex (2023).

Image 13: View of field crew conducting pedestrian survey in the southwest of the subject property (2024).

Image 14: View of field crew conducting pedestrian survey in the north of the subject property (2024).

Image 15: Field crew conducting intensified pedestrian survey (2024).

Image 16: View of field crew conducting test pit survey in the areas of maintained lawn in the west of the subject property (2023).

Image 17: View of field crew conducting test pit survey in the areas of scrub in the southeast of the subject property (2023).

Image 18: View of field crew conducting test pit survey in the north of the subject property (2023).

Image 19: View of typical intact test pit soil profile (2023).

Image 20: View of disturbed test pit soil profile surrounding the farmhouse in the west of the subject property (2023). Note large rock protruding from the side of the test pit.

Image 21: View of disturbed test pit soil profile south of the barn within the farm complex (2023).

Image 22: View of disturbed test pit soil profile east of the farm complex (2023).

Image 23: Lithic artifacts from Findspots P1, P2, P3, P5 and P5.

Image 24: Sample of ceramics from the Thompson site (BbGv-74).

Image 25: Sample of glass artifacts from the Thompson site (BbGv-74).

Image 26: Personal artifacts from the Thompson site (BbGv-74).

9.0 Maps

See following pages for detailed assessment mapping and figures.

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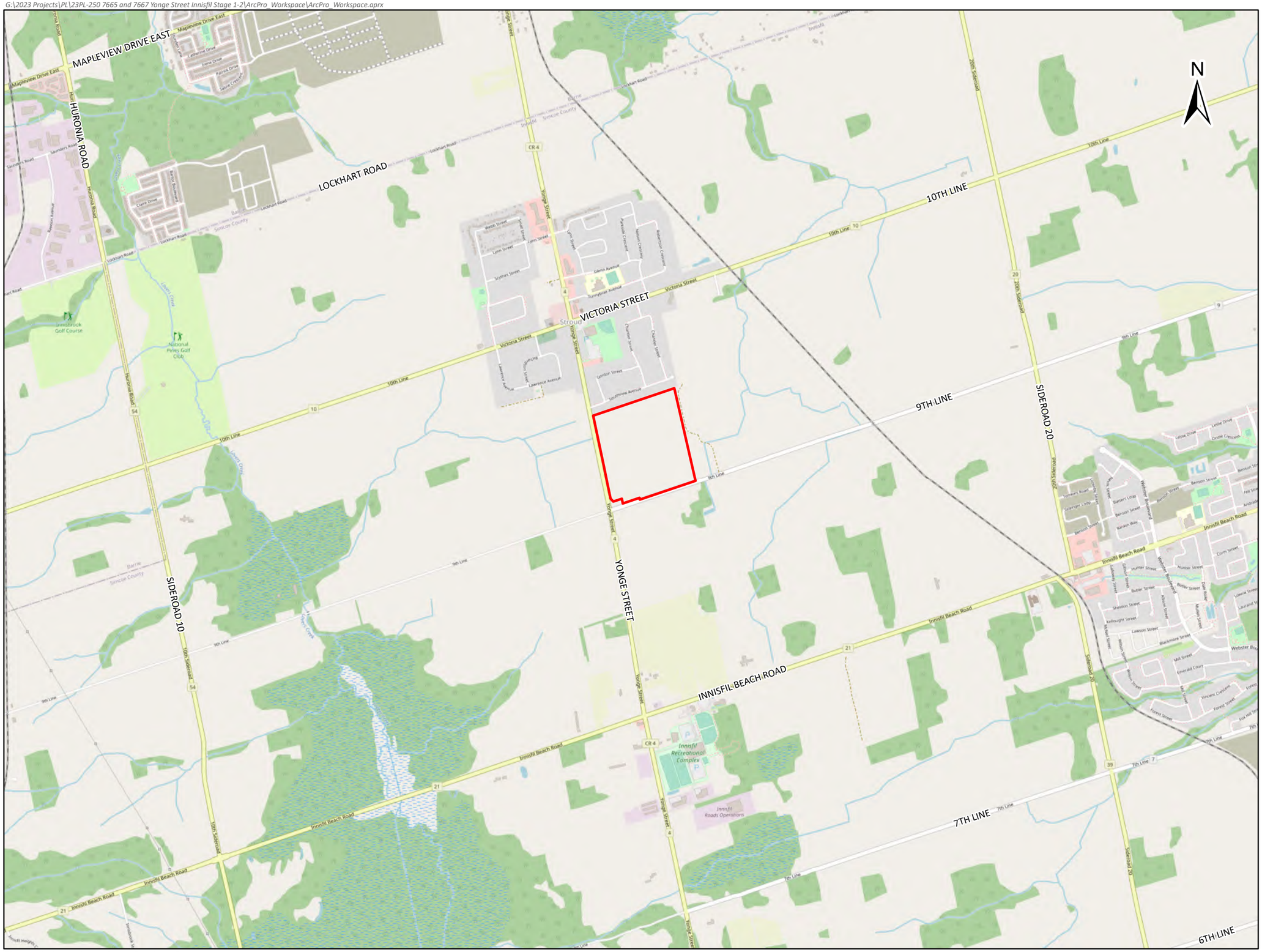
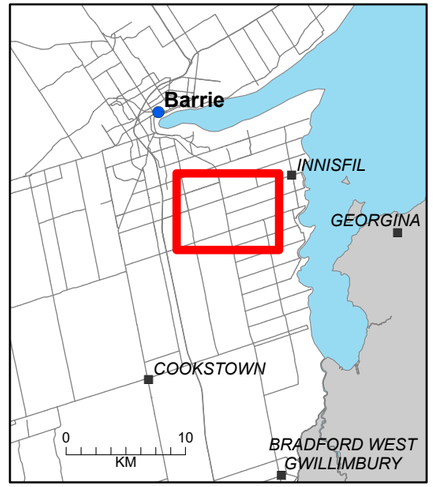




SUBJECT PROPERTY

Sources:
Open Street Map

Projection: NAD 1983 UTM Zone 17N

Scale: 1:500,000

Page Size: 11 x 17

0 1
Kilometres

ASI PROJECT NO.: 23PL-250
DATE: 7/20/2023

DRAWN BY: A.C.
FILE: ArcPro_Workspace

Providing Archaeological & Cultural Heritage Services
528 Bathurst Street Toronto, ONTARIO M5S 2P9
T 416-966-1069 F 416-966-9723 asiheritage.ca

Figure 1: Location of the Subject Property

Figure 2: Subject Property located on the 1871 Hogg Map of the County of Simcoe

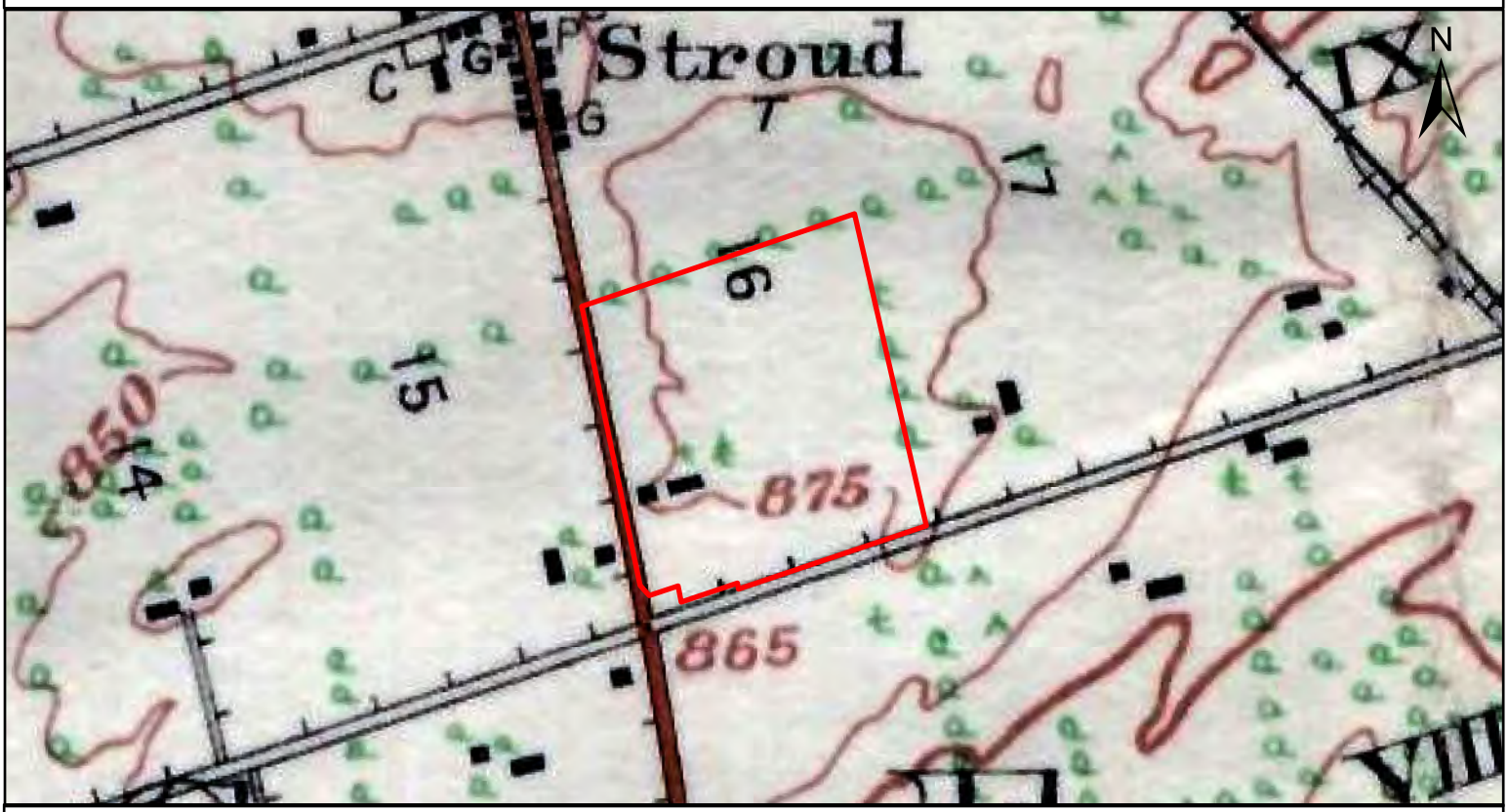


Figure 3: Subject Property located on the 1928 Barrie Topographic Map

SUBJECT PROPERTY

Source:
Hogg Map of the County of Simcoe, 1871
DMD Topographic map, Barrie Sheet, 1928

0 250
Metres

Projection: NAD 1983 UTM Zone 17N
Scale: 1:15,000
Page Size: 8.5 x 11

ASI Project No.: 23PL-250
Date: 7/17/2023

Drawn By: jfernandez
File: 23PL250_Fig2_3

G:\2023 Projects\PL\23PL-250 7665 and 7667 Yonge Street Innisfil Stage 1-2\ArcPro_Workspace\ArcPro_Workspace.aprx

1954

1989

ASI

SUBJECT PROPERTY

Source:
Simcoe Open Data GIS portal

0 320
Metres

Projection: NAD 1983 UTM Zone 17N
Scale: 1:10,000
Page Size: 8.5 x 11

ASI Project No.: 23PL-250
Date: 1/17/2024

Drawn By: jfernandez
File: 23PL250_Fig4_Hist_v2

Figure 4: Subject Property located on Twentieth Century Aerial Imagery

G:\2023 Projects\PL\23PL-250 7665 and 7667 Yonge Street Innisfil Stage 1-2\ArcPro_Workspace\ArcPro_Workspace.aprx

SUBJECT PROPERTY

Source:
Simcoe Open Data GIS portal

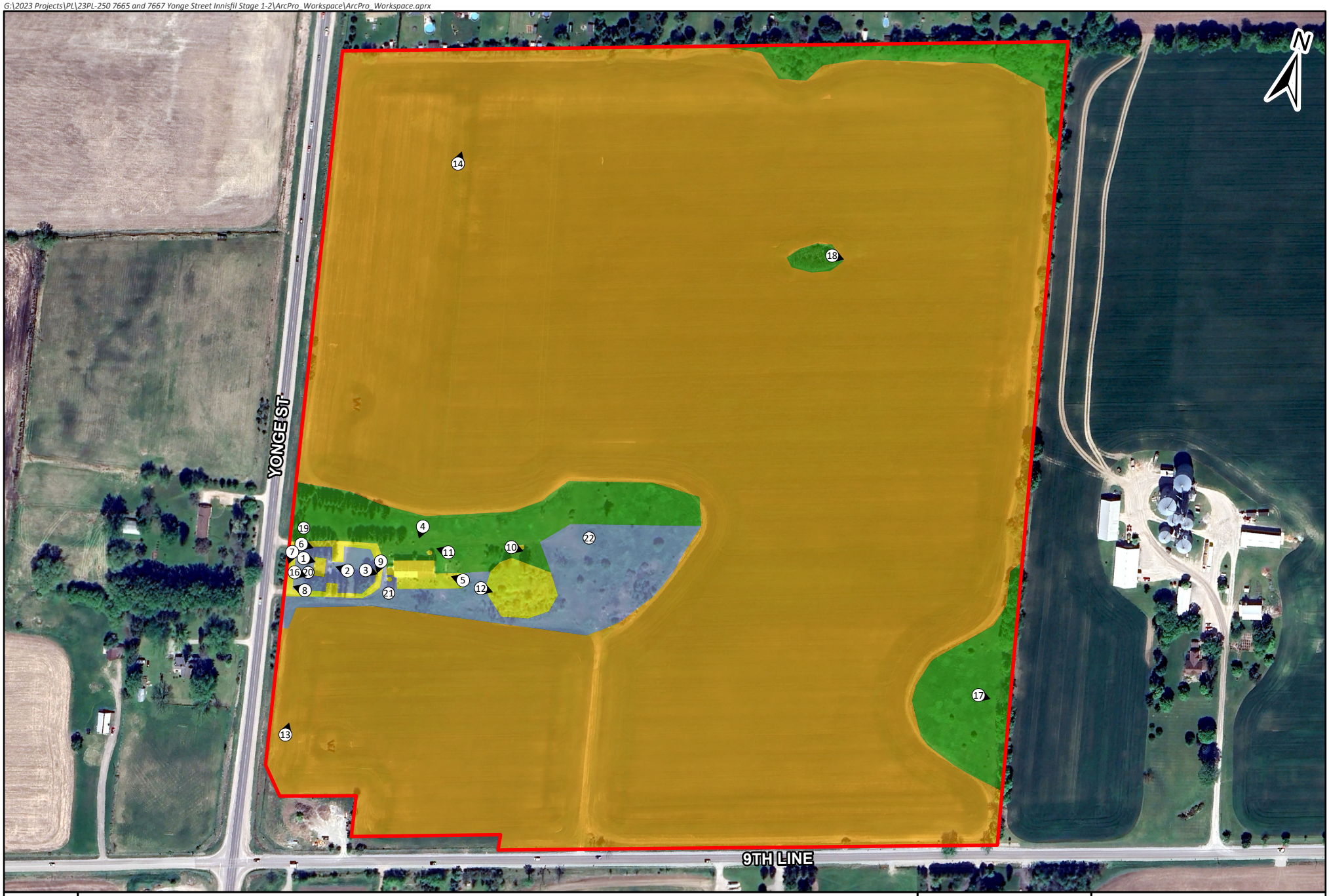
0 100
Metres

Projection: NAD 1983 UTM Zone 17N
Scale: 1:5,000
Page Size: 8.5x11

ASI Project No.: 23PL-250
Date: 7/17/2023

Drawn By: jfernandez
File:
23PL250_fig6_existing

Figure 5: Existing Conditions of the Subject Property



ASI

SUBJECT PROPERTY
PHOTO LOCATION AND DIRECTION
TEST PIT PHOTO
AREA OF NO POTENTIAL - DISTURBED
PEDESTRIAN SURVEY (5 METRES)
TEST PIT SURVEY (10 METRES)
TEST PIT SURVEY (5 METRES)

Source: Google Earth (2023)

0 100
Metres

Projection: NAD 1983 UTM Zone 17N
Scale: 1:4,000
Page Size: 8.5x11

ASI Project No.: 23PL-250
Date: 9/16/2024

Drawn By: pbikoulis
File: 23PL250_Fig7_Stg2

Figure 6: Stage 1 and 2 Archaeological Assessment Results

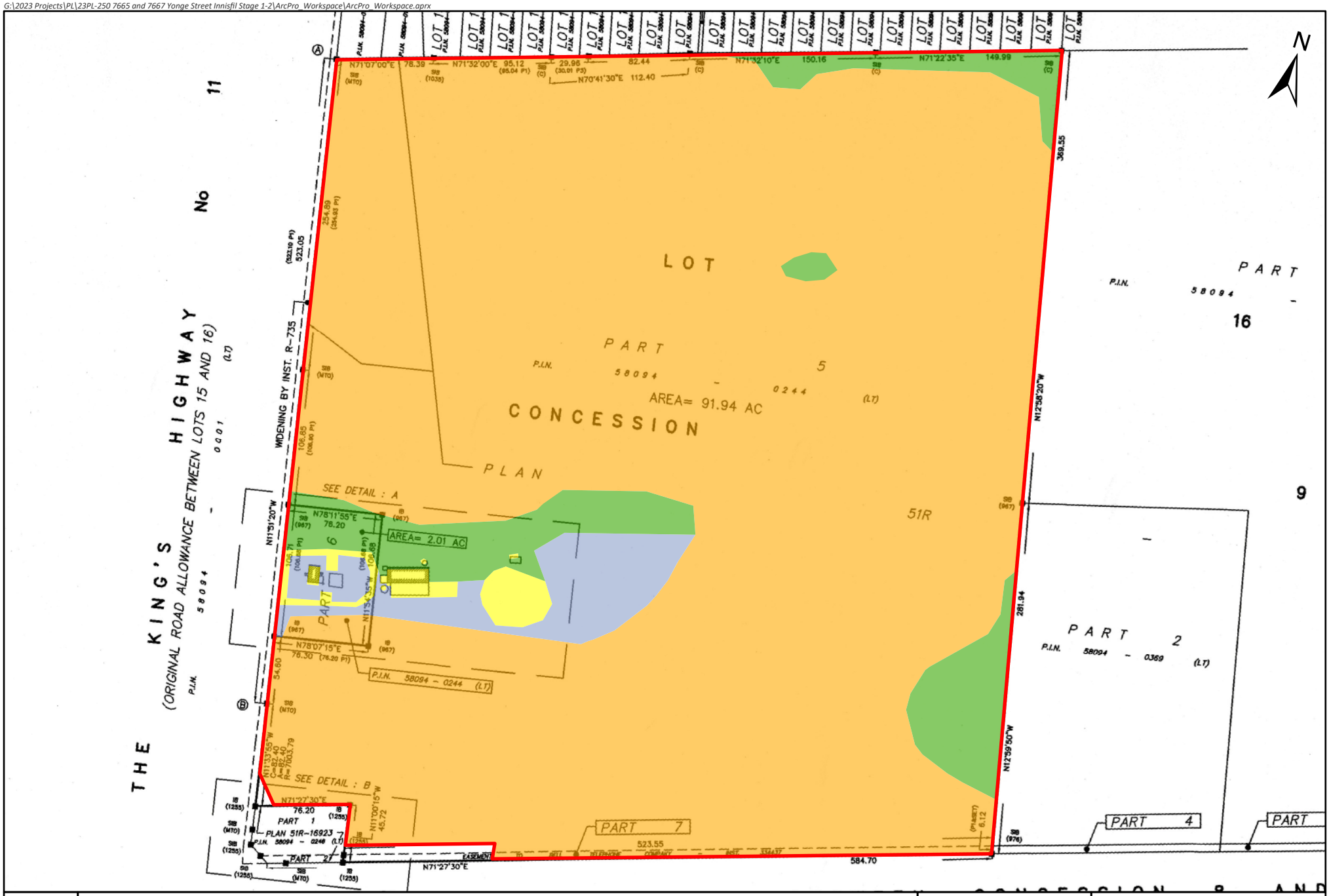


Figure 7: Stage 1 and 2 Archaeological Assessment Results on Survey Map

Appendix A: Stage 2 Flaked Lithic Artifact Catalogue

Cat#	Qty	Provenience	Stratum	Type	Material	Comments
P1						
1	1	Surface	Ploughzone	Secondary Retouch Flake	Onondaga Chert	thermally-altered
Total : 1 artifact						
P2						
1	1	Surface	Ploughzone	Flake Fragment	Onondaga Chert	
Total : 1 artifact						
P3						
1	1	Surface	Ploughzone	Flake Fragment	Onondaga Chert	dorsal lateral utilization/ retouch
Total : 1 artifact						
P4						
1	1	Surface	Ploughzone	Flake Fragment	Onondaga Chert	
Total : 1 artifact						
P5						
1	1	Surface	Ploughzone	Flake Fragment	Indeterminate	translucent material with a whitish patina- may be chalcedony? Or Huronian chert?
Total : 1 artifact						
Grand Total : 5 artifacts						

Appendix B-1 - Thompson (BbGv-74) Site Stage 2 Ceramic Artifact Catalogue

Cat#	Qty	Context	Stratum	Ware	Motif	Form	Comments
1	6	Surface		Pearlware	Undecorated	Flatware	Portion: Body
2	1	Surface		Pearlware	Undecorated	Flatware	Portion: Brink
3	12	Surface		RWE	Undecorated	Flatware	One very burnt sherd; Portion: Body
4	1	Surface		Pearlware	Undecorated	Flatware	Footrim; Portion: Footring
5	6	Surface		RWE	Undecorated	Flatware	Four footrims, one rounded footring, and one sherd where the footring has broken off; Portion: Footring
6	1	Surface		RWE	Moulded - General	Flatware	Rim is scalloped. Interior mostly exfoliated and exterior is entirely exfoliated; Portion: Rim
7	1	Surface		Yellow Ware	Undecorated	Hollowware	Exterior is undecorated and the interior is exfoliated. Footring broken off; Portion: Footring
8	4	Surface		Pearlware	Hand Painted - Monochrome Blue	Saucer	Floral motif on interior of three sherds. Interior of fourth has a handpainted motif similar to a lightbulb. Exteriors are undecorated or exfoliated. Tiny sherds; Portion: Body; Colour: Blue
9	1	Surface		Pearlware	Hand Painted - Monochrome Blue	Saucer	Edge of unidentifiable motif on mostly exfoliated interior. Exterior is undecorated and also mostly exfoliated. Rounded footring. Tiny sherd; Portion: Footring; Colour: Blue
10	3	Surface		RWE	Spongeware	Teas	Blue sponge motif on one side of each sherd. Other side is either exfoliated or undecorated. Sherds too tiny to ID; Portion: Body; Colour: Blue
11	1	Surface		RWE	Spongeware	Teacup	Solid sponge motif on exterior. Interior rim has a thin blue band painted; Portion: Rim; Colour: Blue
12	1	Surface		Unidentifiable	Edgeware - Embossed Design	Flatware	Tiny sherd with exfoliated exterior. Interior has an embossed motif that is likely foliage. Rim is scalloped but the sherd is too small to tell if it is evenly so; Portion: Rim; Colour: Green
13	2	Surface		Pearlware	Edgeware - General	Flatware	Two sherds have impressed curved lines. Three sherds have exfoliated interiors but the typical blue motif is on top of the rim. Two sherds have feathered blue on the interior. All are scalloped but not evenly. Exteriors exfoliated or undecorated; Portion:
14	1	Surface		Pearlware	Edgeware - Embossed Design	Flatware	Exterior is exfoliated. Interior has feathered blue strokes and an embossed grape motif; Portion: Rim; Colour: Blue

Appendix B-1 - Thompson (BbGv-74) Site Stage 2 Ceramic Artifact Catalogue

Cat#	Qty	Context	Stratum	Ware	Motif	Form	Comments
15	1	Surface		RWE	Hand Painted - Late Palette	Saucer	Interior rim has thin red band. Exterior is undecorated; Portion: Rim; Colour: Red
16	1	Surface		RWE	Hand Painted - Late Palette	Teas	Top of rim is painted blue. One side has the edge of a green foliage motif. Other side is exfoliated; Portion: Rim; Colours: Blue; Green
17	2	Surface		RWE	Hand Painted - Late Palette	Saucer	One sherd has a red floral motif on the mostly exfoliated interior. Other sherd has a very thin black line and an unidentifiable blue motif along one edge of mostly exfoliated interior. Exteriors for both are mostly exfoliated and undecorated; Portion: Bo
18	4	Surface		RWE	Hand Painted - Late Palette	Teas	Tiny sherds. Interior of one is red, other is green foliage, another is blue floral with thin green stems, and the last has a thin black line with a bit of red and green. Exteriors exfoliated or undecorated; Portion: Body; True
19	4	Surface		RWE	Transfer Print - General	Hollowware	Interiors/exteriors of two sherds have a foliage/floral pattern. Third sherd has foliage pattern on exterior and hints of a pattern on the mostly exfoliated interior. Fourth sherd has a stippled pattern on the concave exterior and an exfoliated interior;
20	2	Surface		RWE	Transfer Print - General	Flatware	One sherd has an unidentifiable pattern on the mostly exfoliated interior. Mostly exfoliated interior of burnt sherd has a fragment of a building and some foliage. Exteriors for both are undecorated; Portion: Body; Colour: Brown
21	2	Surface		RWE	Transfer Print - Sheet Pattern	Flatware	One rim and one body sherd that mend. Interiors have floral sheet pattern. Exteriors are exfoliated. Rim too destroyed to ID; Portion: Rim; Colour: Blue
22	3	Surface		RWE	Transfer Print - Sheet Pattern	Flatware	Blue floral pattern on interior of all sherds. Exteriors undecorated; Portion: Body; Colour: Blue
23	1	Surface		RWE	Transfer Print - General	Hollowware	Interior is mostly exfoliated but has a pattern of tightly clustered small circles. The exterior has a shrub pattern; Portion: Body; Colour: Blue
24	1	Surface		RWE	Transfer Print - General	Plate - Muffin	Exterior is exfoliated and interior mostly is. Interior brim has repeating diamond pattern below a fish roe band; Portion: Rim; Colour: Blue

Appendix B-1 - Thompson (BbGv-74) Site Stage 2 Ceramic Artifact Catalogue

Cat#	Qty	Context	Stratum	Ware	Motif	Form	Comments
25	5	Surface		RWE	Transfer Print - General	Flatware	Exteriors exfoliated. Interior of two are different floral patterns. Interior of 3rd is repeating diamonds. 4th has a fish and dot pattern. The fifth is unidentifiable; Portion: Body; Colour: Blue
26	1	Surface		RWE	Undecorated	Hollowware	Rim is absent but internal lid gallery is present. Exterior is exfoliated and so is most of the interior; Portion: Rim
27	1	Surface		RWE	Unidentified	Flatware	Interior is exfoliated and footring is broken off. Tiny bits of blue on edge of broken rim but not enough to ID; Portion: Rim; Colour: Blue

Grand Total : 69 artifacts

Appendix B-2 - Thompson (BbGv-74) Site Stage 2 Non-Ceramic Artifact Catalogue

Cat#	Qty	Context	Stratum	Type	Material	Comments
30	1	Surface		Container - Liquor	Glass	No visible seams or scars.; Colour: Dark Olive Green; Manufacture: Mouth Blown
31	1	Surface		Container - Unidentified	Glass	No visible seams.; Colour: Colourless; Manufacture: Indeterminate
32	6	Surface		Window Glass	Glass	Colour: Aqua; Manufacture: Indeterminate
33	1	Surface		Smoking Pipe	White Ball Clay	Small piece with no impressions or embossing. One side is very exfoliated/broken.
34	1	Surface		Smoking Pipe	White Ball Clay	Fragment of the bowl. Exterior has the edge of what was likely a circular impressed motif with a further design inside.
35	1	Surface		Button	Metal - Cuprous	Back of button has impressed letters around outer edge "_ELLE/GILT/9190/_".; Flat Disc; Metal - Cuprous; Diameter: 14.7 mm

Grand Total : 11 artifacts

Stage 1 and 2 Archaeological Assessment of 7665 and 7667 Yonge Street, Part of Lot 16, Concession 9, Geographic Township of Innisfil, County of Simcoe, now in the Town of Innisfil, County of Simcoe

Supplementary Documentation: Detailed Site Location Information

Prepared for:

SanDiego Homes Inc.

P.O. Box 10039 Alcona Beach

Innisfil, ON L9S 4Y7

Archaeological Licence: P449 (Bhardwaj)

Project Information Form P449-0735-2023

Archaeological Services Inc. File: 23PL-250

19 September 2024

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1.0 Detailed Locations

Universal Transverse Mercator Grid Zone: 17T

Datum: World Geodetic System 1984

Method of Correction: n/a

Global Positioning System readings were recorded with a Trimble Catalyst Global Navigation Satellite System receiver with sub-metre accuracy. At the time of recording, the conditions were optimal.

Table 1: Findspot Coordinates

Location	Coordinates (Easting, northing)	Coordinate Type	Elevation (above sea level)
P1	610614, 4907798	Findspot	270 metres
P2	610366, 4907879	Findspot	266 metres
P3	610469, 4908033	Findspot	268 metres
P4	610422, 4908038	Findspot	270 metres
P5	610414, 4907958	Findspot	269 metres
Hydro Pole	610698, 4907638	Off-site datum	265 metres
Hydro pole	610313, 4907694	Off-site datum	265 metres

Table 2: Thompson (BbGv-74) Site Coordinates

Location	Coordinates (Easting, northing)	Coordinate Type	Elevation (above sea level)
Thompson (BbGv-74) site	610628, 4907815	North limit	269 metres
	610630, 4907802	East limit	268 metres
	610605, 4907786	West limit	269 metres
	610615, 4907785	South limit	268 metres
	610619, 4907797	Site Centre	269 metres

2.0 Maps

See following pages for detailed assessment maps and site locations.

G:\2023 Projects\PL\23PL-250 7665 and 7667 Yonge Street Innisfil Stage 1-2\ArcPro_Workspace\ArcPro_Workspace.aprx

ASI

SUBJECT PROPERTY

SITE LIMIT OF THOMPSON (BBGV-74)

PHOTO LOCATION AND DIRECTION

OFFSITE DATUM

FINDSPOT

Source: Maxar

0 100

Metres

Projection: NAD 1983 UTM Zone 17N
Scale: 1:4,000
Page Size: 8.5x11

ASI Project No.: 23PL-250
Date: 9/13/2024

Drawn By: pbikoulis
File: 23PL250_SDFig1

Figure 1: Detailed Location of Sites and Findspots

G:\2023 Projects\PL\23PL-250 7665 and 7667 Yonge Street Innisfil Stage 1-2\ArcPro_Workspace\ArcPro_Workspace.aprx

ASI

SITE LIMIT

PHOTO LOCATION AND DIRECTION

FINDSPOT

Source: City of Barrie, Maxar, Microsoft

0 25

Metres

Projection: NAD 1983 UTM Zone 17N
Scale: 1:750
Page Size: 8.5x11

ASI Project No.: 23PL-250
Date: 7/22/2024

Drawn By: rlatour
File: 23PL250_SDFig1

Figure 2: Detailed Location of the Thompson (BbGv-74) Site

Appendix G

Cultural Heritage Report: Existing Condition and Preliminary Impact Assessment

Cultural Heritage Report:
Existing Conditions and Preliminary Impact Assessment

Stroud Sewage Pumping Station
Municipal Class Environmental Assessment

Town of Innisfil
Simcoe County, Ontario

Final Report

Prepared for:

Ainley Group
280 Pretty River Parkway
Collingwood, ON L9Y 4J5
T 705-445-3451

Archaeological Services Inc. File: 21CH-080

December 2021 (Revised April 2025)

Executive Summary

Archaeological Services Inc. was contracted by Ainley Group, on behalf of the Town of Innisfil, to conduct a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment as part of the Stroud Sewage Pumping Station Municipal Class Environmental Assessment (Stroud S.P.S.). The Environmental Assessment is part of the Innisfil Master Servicing Plan (M.S.P.) update which identifies various alternatives to provide servicing to the Innisfil Heights economic district, an area designated as a Strategic Settlement Employment Area. The M.S.P. identified a sanitary collection system connected to the Lakeshore wastewater system via Innisfil Beach Road for the first phase of development. Stroud S.P.S. is one of the proposed sewage pumping stations identified along this sewer route. The project study area consists of several properties located on the east and west sides of Yonge Street, between Southview Avenue and Innisfil Beach Road.

The purpose of this report is to present an inventory of known and potential built heritage resources (B.H.R.s) and cultural heritage landscapes (C.H.L.s), identify existing conditions of the project study area, provide a preliminary impact assessment, and propose appropriate mitigation measures. An interim draft submission including the Existing Conditions component of the assessment was prepared in December 2021 and was updated in April 2025 to include the Preliminary Impact Assessment when a preferred location of the proposed sewage pumping station had been chosen.

The results of background historical research and a review of secondary source material, including historical mapping, indicate a study area with an Indigenous history spanning several millennia and a Euro-Canadian rural land use history dating back to the early nineteenth century. A review of federal, provincial, and municipal registers, inventories, and databases revealed that there are no previously identified features of cultural heritage value within the Stroud S.P.S. study area. Four potential C.H.L.s were identified during the fieldwork.

No direct or indirect adverse impacts are anticipated for any of these C.H.L.s in the proposed undertaking. Based on the results of the assessment, the following recommendations have been developed:

1. Construction activities and staging should be suitably planned and undertaken to avoid unintended negative impacts to identified C.H.L.s. Avoidance measures may include, but are not limited to: erecting temporary fencing, establishing buffer zones, issuing instructions to construction crews to avoid identified C.H.L.s, etc.

2. Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.

3. This Cultural Heritage Report should be submitted by the proponent to the Town of Innisfil and the Ministry of Citizenship and Multiculturalism for review and comment, and any other local heritage stakeholders that may have an interest in this project. The final report should be submitted to the Town of Innisfil for their records.

Report Accessibility Features

This report has been formatted to meet the Information and Communications Standards under the *Accessibility for Ontarians with Disabilities Act*, 2005 (A.O.D.A.). Features of this report which enhance accessibility include: headings, font size and colour, alternative text provided for images, and the use of periods within acronyms. Given this is a technical report, there may be instances where additional accommodation is required in order for readers to access the report's information. If additional accommodation is required, please contact Annie Veilleux, Manager of the Cultural Heritage Division at Archaeological Services Inc., by email at aveilleux@asiheritage.ca or by phone 416-966-1069 ext. 255.

Project Personnel

- **Senior Project Manager**: Lindsay Graves, M.A., C.A.H.P., Senior Cultural Heritage Specialist, Manager – Infrastructure, Cultural Heritage
- **Project Coordinator:** Katrina Thach, B.A. (Hon), Assistant Manager - Infrastructure
- **Project Manager**: John Sleath, M.A., Cultural Heritage Specialist, Project Manager - Cultural Heritage
- **Field Review**: Meredith Stewart, M.A., M.S.c., C.A.H.P., Cultural Heritage Specialist, Project Manager - Cultural Heritage
- **Report Production**: John Sleath and Meredith Stewart
- **Graphics Production**: Peter Bikoulis, PhD., Archaeologist, GIS Technician - Operations
- **Report Reviewer(s)**: Kirstyn Allam, B.A. (Hon), Advanced Dipl. Applied Museum Studies, Cultural Heritage Analyst, Project Manager - Cultural Heritage, Lindsay Graves, and John Sleath

Qualified Persons Involved in the Project

Lindsay Graves, M.A., C.A.H.P.
Senior Cultural Heritage Specialist, Manager – Infrastructure, Cultural Heritage

The Senior Project Manager for this Cultural Heritage Report is **Lindsay Graves** (M.A., Heritage Conservation), Senior Cultural Heritage Specialist and Manager of Infrastructure in the Cultural Heritage Practice Area. She was responsible for: overall project scoping and approach; development and confirmation of technical findings and study recommendations; application of relevant standards, guidelines and regulations; and implementation of quality control procedures. Lindsay is academically trained in the fields of heritage conservation, cultural anthropology, archaeology, and collections management and has over 15 years of experience in the field of cultural heritage resource management. This work has focused on the assessment, evaluation, and protection of above ground cultural heritage resources. Lindsay has extensive experience undertaking archival research, heritage survey work, heritage evaluation and heritage impact assessment. She has also contributed to cultural heritage landscape studies and heritage conservation plans, led heritage commemoration and interpretive programs, and worked collaboratively with multidisciplinary teams to sensitively plan interventions at historic sites/places. In addition, she is a leader in the completion of heritage studies required to fulfill Class Environmental Assessment processes and has served as Project Manager for over 100 heritage assessments during her time at A.S.I. Lindsay is a member of the Canadian Association of Heritage Professionals.

John Sleath, M.A.
Cultural Heritage Specialist, Project Manager - Cultural Heritage

The Project Manager for this Cultural Heritage Report is **John Sleath** (M.A.), who is a Cultural Heritage Specialist and Project Manager within the Cultural Heritage Practice Area with A.S.I. He was responsible for the day-to-day management activities, including scoping of research activities and site surveys and drafting of study findings and recommendations. John has worked in a variety of contexts within the field of cultural heritage resource management for the past 15 years,

as an archaeologist and as a cultural heritage professional. An exposure to both land-based and underwater archaeology and above ground cultural heritage assessments has provided John with a holistic understanding of heritage in a variety of contexts. In 2015 John began working in the Cultural Heritage Practice Area researching and preparing a multitude of cultural heritage assessment reports and for which he was responsible for a variety of tasks including: completing archival research, investigating built heritage and cultural heritage landscapes, report preparation, historical map regression, and municipal consultation. Since 2018 John has been a project manager responsible for a variety of tasks required for successful project completion. This work has allowed John to engage with stakeholders from the public and private sector, as well as representatives from local municipal planning departments, museums, and Indigenous communities. John has conducted hundreds of cultural heritage assessments across Ontario, with a focus on transit and rail corridor infrastructure including bridges and culverts.

Meredith Stewart, M.A., M.S.c., C.A.H.P.
Cultural Heritage Specialist, Project Manager - Cultural Heritage

The report writer for this report is **Meredith Stewart** (M.A., Art History, M.S.c., Historic Preservation), who is a Cultural Heritage Specialist and Project Manager within the Cultural Heritage Practice Area. She was responsible for preparing and contributing research and technical reporting as well as conducting the field survey. Meredith's work as a cultural heritage professional has focused on historical research, large-area studies, and survey work. Meredith holds a M.A. in Art History from Carleton University, where she focused on architectural history and the built environment, and graduated with a M.S.c. in Historic Preservation from the School of the Art Institute of Chicago. Meredith utilizes her knowledge of architectural history and building materials in the identification and evaluation of heritage buildings and structures. Meredith is member in good standing of C.A.H.P.

Glossary

Built Heritage Resource (B.H.R.)
Definition: "…a building, structure, monument, installation or any manufactured or constructed part or remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community" (Ministry of Municipal Affairs and Housing, 2024a, p. 40).

Cultural Heritage Landscape (C.H.L.)
Definition: "…a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association"(Ministry of Municipal Affairs and Housing, 2024a, p. 41).

Known Built Heritage Resource or Cultural Heritage Landscape
Definition: A known built heritage resource or cultural heritage landscape is a property that has recognized cultural heritage value or interest. This can include a property listed on a Municipal Heritage Register, designated under Part IV or V of the *Ontario Heritage Act*, or protected by a heritage agreement, covenant or easement, protected by the *Heritage Railway Stations Protection Act or the Heritage Lighthouse Protection Act*, identified as a Federal Heritage Building, or located within a U.N.E.S.C.O. World Heritage Site (Ministry of Citizenship and Multiculturalism, 2022).

Impact
Definition: Includes negative and positive, direct and indirect effects to an identified built heritage resource and cultural heritage landscape. Direct impacts include destruction of any, or part of any, significant heritage attributes or features and/or unsympathetic or incompatible alterations to an identified resource. Indirect impacts include, but are not limited to, creation of shadows, isolation of heritage attributes, direct or indirect obstruction of significant views, change in land use, and land disturbances (Ministry of Citizenship and

Multiculturalism, 2006c). Indirect impacts also include potential vibration impacts (See Section 2.7 for complete definition and discussion of potential impacts).

Mitigation

Definition: Mitigation is the process of lessening or negating anticipated adverse impacts to built heritage resources or cultural heritage landscapes and may include, but are not limited to, such actions as avoidance, monitoring, protection, relocation, remedial landscaping, and documentation of the cultural heritage landscape and/or built heritage resource if to be demolished or relocated (Ministry of Citizenship and Multiculturalism, 2006a).

Potential Built Heritage Resource or Cultural Heritage Landscape

Definition: A potential built heritage resource or cultural heritage landscape is a property that has the potential for cultural heritage value or interest. This can include properties/project area that contain a parcel of land that is the subject of a commemorative or interpretive plaque, is adjacent to a known burial site and/or cemetery, is in a Canadian Heritage River Watershed, or contains buildings or structures that are 40 or more years old (Ministry of Citizenship and Multiculturalism, 2022).

Significant

Definition: With regard to cultural heritage and archaeology resources, significant means "resources that have been determined to have cultural heritage value or interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the *Ontario Heritage Act*" (Ministry of Municipal Affairs and Housing, 2024a, p. 52).

Vibration Zone of Influence

Definition: Area within a 50-metre buffer of construction-related activities in which there is potential to affect an identified built heritage resource or cultural heritage landscape. A 50-metre buffer is applied in the absence of a project-specific defined vibration zone of influence based on existing secondary source literature (Carman et al., 2012; Crispino & D'Apuzzo, 2001; P. Ellis, 1987; Rainer, 1982; Wiss, 1981). This buffer accommodates the additional threat from collisions with heavy machinery or subsidence (Randl, 2001).

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1.0 Introduction

Archaeological Services Inc. was contracted by Ainley Group, on behalf of the Town of Innisfil, to conduct a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment as part of the Stroud Sewage Pumping Station (Stroud S.P.S.) Municipal Class Environmental Assessment. The purpose of this report is to present an inventory of known and potential built heritage resources (B.H.R.s) and cultural heritage landscapes (C.H.L.s), identify existing conditions of the project study area, provide a preliminary impact assessment, and propose appropriate mitigation measures. An interim draft submission including the Existing Conditions component of the assessment was prepared in December 2021 was updated in April 2025 to include the Preliminary Impact Assessment when a preferred location of the proposed sewage pumping station has been chosen.

1.1 Project Overview

The Stroud S.P.S. Municipal Class Environmental Assessment is part of the Innisfil Master Servicing Plan (M.S.P.) update which identifies various alternatives to provide servicing to the Innisfil Heights economic district, an area designated as a Strategic Settlement Employment Area. The M.S.P. identified a sanitary collection system connected to the Lakeshore wastewater system via Innisfil Beach Road for the first phase of development. Stroud S.P.S. is one of the proposed sewage pumping stations identified along this sewer route. The project study area consists of several properties located on the east and west sides of Yonge Street, between Southview Avenue and Innisfil Beach Road.

1.2 Description of Study Area

This Cultural Heritage Report will focus on the Stroud S.P.S. project study area centered on Yonge Street, between Southview Avenue and Innisfil Beach Road (Figure 1). This project study area has been defined as inclusive of those lands that may contain B.H.R.s or C.H.L.s that may be subject to direct or indirect

impacts as a result of the proposed undertaking. Properties within the study area are located in the Town of Innisfil.

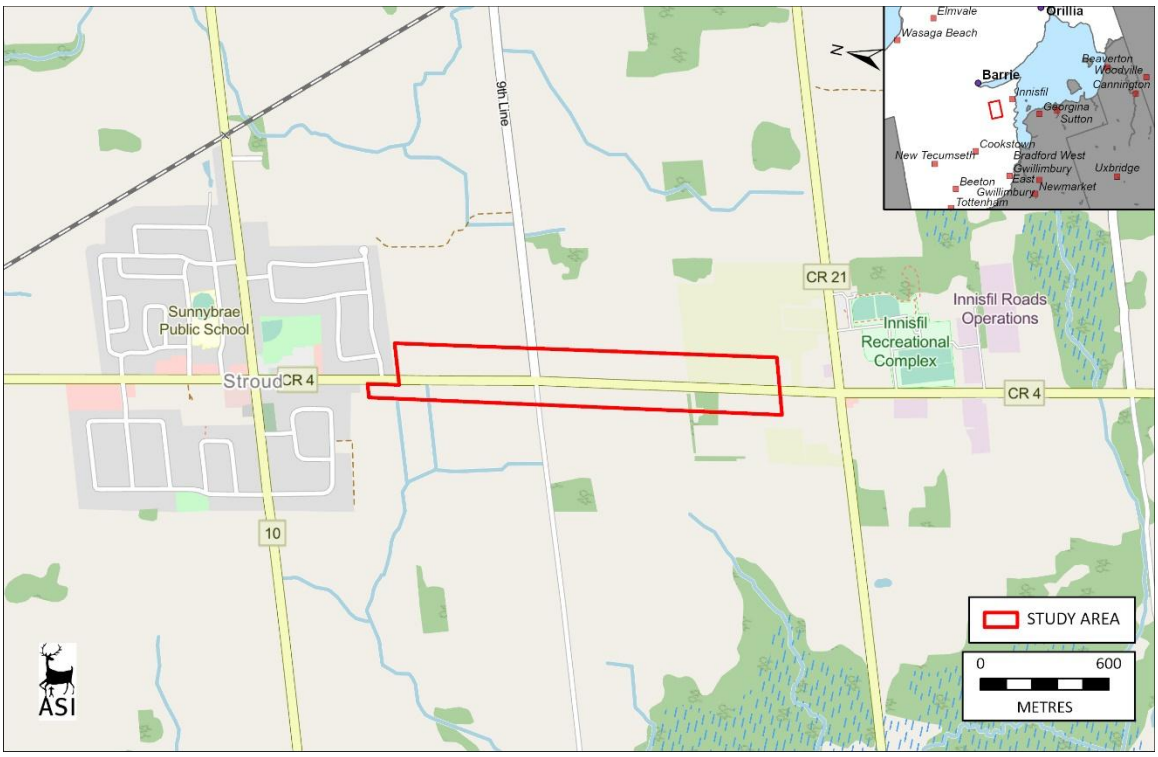

Figure 1: Location of the study area (Base Map: ©OpenStreetMap and contributors, Creative Commons-Share Alike License (CC-BY-SA))

2.0 Methodology

The following sections provide a summary of regulatory requirements and municipal and regional heritage policies that guide this cultural heritage assessment. In addition, an overview of the process undertaken to identify known and potential built heritage resources (B.H.R.s) and cultural heritage landscapes (C.H.L.s) is provided, along with a description of how the preliminary impact assessment will be undertaken.

2.1 Master Servicing Plan Context

The Stroud Sewage Pumping Station (Stroud S.P.S.) Municipal Class Environmental Assessment (M.C.E.A.) is part of the Innisfil Master Servicing Plan (M.S.P.) Update

which identifies various alternatives to provide servicing to the Innisfil Heights economic district, an area designated as a Strategic Settlement Employment Area. The M.S.P. identified a sanitary collection system connected to the Lakeshore wastewater system via Innisfil Beach Road for the first phase of development.

M.S.P.s are long range plans which integrate infrastructure requirements for existing and future land use with Environmental Assessment planning principles. The plans examine the existing infrastructure systems to develop a framework for planning for subsequent projects and developments.

An M.C.E.A. is a process through which municipalities investigate projects related to infrastructure, including transportation, water, wastewater, and stormwater. M.C.E.A.s generally have five phases:

- Phase 1, Problem or Opportunity Statement;
- Phase 2, Alternative Solutions;
- Phase 3, Alternative Design Concepts for Preferred Solution;
- Phase 4, Environmental Study Report (E.S.R.); and
- Phase 5, Implementation (B.M. Ross & Associates Limited, 2018).

2.2 Regulatory Requirements

The *Ontario Heritage Act* (O.H.A.) (Ontario Heritage Act, R.S.O. c. O.18, [as Amended in 2024], 1990) is the primary piece of legislation that determines policies, priorities and programs for the conservation of Ontario's heritage. There are many other provincial acts, regulations and policies governing land use planning and resource development that support heritage conservation, including:

- The *Planning Act* (Planning Act, R.S.O. 1990, c. P.13, 1990), which states that "conservation of features of significant architectural, cultural, historical, archaeological or scientific interest" (cultural heritage resources) is a "matter of provincial interest". The *Provincial Planning Statement* (Ministry of Municipal Affairs and Housing, 2024b), issued under the

Planning Act, requires municipalities and the Crown to conserve significant B.H.R.s and C.H.L.s.

- The *Environmental Assessment Act* (Ministry of the Environment, 1990), which defines "environment" to include cultural conditions that influence the life of humans or a community. Cultural heritage resources, which includes archaeological resources, B.H.R.s and C.H.L.s, are important components of those cultural conditions.

The Ministry of Citizenship and Multiculturalism (herein after "The Ministry" or M.C.M.) is charged under Section 2.0 of the O.H.A. with the responsibility to determine policies, priorities, and programs for the conservation, protection, and preservation of the heritage of Ontario. The Ministry of Tourism, Culture and Sport (now administered by M.C.M.) published *Standards and Guidelines for Conservation of Provincial Heritage Properties* (Ministry of Citizenship and Multiculturalism, 2010) (hereinafter "*Standards and Guidelines*"). These *Standards and Guidelines* apply to properties the Government of Ontario owns or controls that have "cultural heritage value or interest" (C.H.V.I.). The *Standards and Guidelines* provide a series of guidelines that apply to provincial heritage properties in the areas of identification and evaluation; protection; maintenance; use; and disposal. For the purpose of this report, the *Standards and Guidelines* provide points of reference to aid in determining potential heritage significance in identification of B.H.R.s and C.H.L.s. While not directly applicable for use in properties not under provincial ownership, the *Standards and Guidelines* are regarded as best practice for guiding heritage assessments and ensure that additional identification and mitigation measures are considered.

Similarly, the *Ontario Heritage Tool Kit* (Ministry of Citizenship and Multiculturalism, 2006b) provides a guide to evaluate heritage properties. To conserve a B.H.R. or C.H.L., the *Ontario Heritage Tool Kit* states that a municipality or approval authority may require a heritage impact assessment and/or a conservation plan to guide the approval, modification, or denial of a proposed development.

2.3 Municipal/Regional Heritage Policies

The study area is located within the Town of Innisfil, in Simcoe County. Policies relating to B.H.R.s and C.H.L.s were reviewed from the following sources:

- *"Our Place" Innisfil Official Plan* (Town of Innisfil, 2018)
- *Official Plan of the County of Simcoe* (Simcoe County, 2023)

2.4 Identification of Built Heritage Resources and Cultural Heritage Landscapes

This Cultural Heritage Report follows guidelines presented in the *Ontario Heritage Tool Kit* (Ministry of Citizenship and Multiculturalism, 2006b) and *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* (Ministry of Citizenship and Multiculturalism, 2022). The objective of this report is to present an inventory of known and potential B.H.R.s and C.H.L.s, and to provide a preliminary understanding of known and potential B.H.R.s and C.H.L.s located within areas anticipated to be directly or indirectly impacted by the proposed project.

In the course of the cultural heritage assessment process, all potentially affected B.H.R.s and C.H.L.s are subject to identification and inventory. Generally, when conducting an identification of B.H.R.s and C.H.L.s within a study area, three stages of research and data collection are undertaken to appropriately establish the potential for and existence of B.H.R.s and C.H.L.s in a geographic area: background research and desktop data collection; field review; and identification.

Background historical research, which includes consultation of primary and secondary source research and historical mapping, is undertaken to identify early settlement patterns and broad agents or themes of change in a study area. This stage in the data collection process enables the researcher to determine the presence of sensitive heritage areas that correspond to nineteenth- and twentieth-century settlement and development patterns. To augment data collected during this stage of the research process, federal, provincial, and

municipal databases and/or agencies are consulted to obtain information about specific properties that have been previously identified and/or designated as having cultural heritage value. Typically, resources identified during these stages of the research process are reflective of particular architectural styles or construction methods, associated with an important person, place, or event, and contribute to the contextual facets of a particular place, neighbourhood, or intersection.

A field review is then undertaken to confirm the location and condition of previously identified B.H.R.s and C.H.L.s. The field review is also used to identify potential B.H.R.s and C.H.L.s that have not been previously identified on federal, provincial, or municipal databases or through other appropriate agency data sources.

During the cultural heritage assessment process, a property is identified as a potential B.H.R. or C.H.L. based on research, the Ministry screening tool, and professional expertise and best practice. In addition, use of a 40-year-old benchmark is a guiding principle when conducting a preliminary identification of B.H.R.s and C.H.L.s. While identification of a resource that is 40 years old or older does not confer outright heritage significance, this benchmark provides a means to collect information about resources that may retain heritage value. Similarly, if a resource is slightly younger than 40 years old, this does not preclude the resource from having C.H.V.I.

2.5 Background Information Review

To make an identification of previously identified known or potential B.H.R.s and C.H.L.s within the study area, the following sections present the resources were consulted as part of this Cultural Heritage Report.

2.5.1 Review of Existing Heritage Inventories

A number of resources were consulted in order to identify previously identified B.H.R.s and C.H.L.s within the study area. These resources, reviewed on 13 and 15 September 2021, include:

- The Town of Innisfil's Municipal Heritage Register (Town of Innisfil, n.d.);
- Historical maps (including historical atlases, topographic maps, and aerial photography);
- The *Ontario Heritage Act Register* (Ontario Heritage Trust, n.d.b);
- The *Places of Worship Inventory* (Ontario Heritage Trust, n.d.c);
- The inventory of Ontario Heritage Trust easements (Ontario Heritage Trust, n.d.a);
- The Ontario Heritage Trust's *An Inventory of Provincial Plaques Across Ontario*: a PDF of Ontario Heritage Trust Plaques and their locations (Ontario Heritage Trust, 2023);
- Inventory of known cemeteries/burial sites in the Ontario Genealogical Society's online databases (Ontario Genealogical Society, n.d.);
- Canada's Historic Places website: available online, the searchable register provides information on historic places recognized for their heritage value at the local, provincial, territorial, and national levels (Parks Canada, n.d.a);
- Directory of Federal Heritage Designations: a searchable on-line database that identifies National Historic Sites, National Historic Events, National Historic People, Heritage Railway Stations, Federal Heritage Buildings, and Heritage Lighthouses (Parks Canada, n.d.b);
- Canadian Heritage River System: a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage (Canadian Heritage Rivers Board and Technical Planning Committee, n.d.); and,
- United Nations Educational, Scientific and Cultural Organization (U.N.E.S.C.O.) World Heritage Sites (U.N.E.S.C.O. World Heritage Centre, n.d.).

2.5.2 Review of Previous Heritage Reporting

Additional cultural heritage studies were sought for review, however, no previous studies within the study area were identified.

2.5.3 Community Information Gathering

The following individuals, groups, and/or organizations were contacted to gather information on known and potential B.H.R.s and C.H.L.s, active and inactive cemeteries, and areas of identified Indigenous interest within the study area:

- Gaelen Pierce, Planner/Placemaker, Town of Innisfil (email communication 20 December 2021 and 22 March 2022). A response confirmed that there are no listed or designated properties within the study area.
- The Ministry (email communication 20 December 2021). Email correspondence confirmed that there are no properties designated by the Minister and they are not aware of any Provincial Heritage Properties within or adjacent to the study area.
- The Ontario Heritage Trust (email communications 13 December 2021 and 14 April 2025). A response confirmed that there are no Part IV designated properties and no Ontario Heritage Trust-owned properties or heritage conservation easements within the study area.

2.6 Community Engagement

Indigenous Nations Engagement for this project is being completed by Ainley Group to Indigenous Nations that have an interest in this study area. This Cultural Heritage Report should be submitted to the Town of Innisfil for review and comment, to the Innisfil Heritage Advisory Committee, and to other cultural heritage stakeholders with an interest in this project.

No feedback has been received by Ainley Group regarding the Cultural Heritage Report for this project at the time of report submission (April 2025). Any feedback received will be considered and incorporated into the final report as appropriate.

2.7 Preliminary Impact Assessment Methodology

To assess the potential impacts of the undertaking, identified B.H.R.s and C.H.L.s are considered against a range of possible negative impacts, based on the *Ontario Heritage Tool Kit InfoSheet #5: Heritage Impact Assessments and Conservation Plans* (Ministry of Citizenship and Multiculturalism, 2006c). These include:

Direct impacts:

- Destruction of any, or part of any, significant heritage attributes or features; and
- Alteration that is not sympathetic, or is incompatible, with the historic fabric and appearance.

Indirect impacts:

- Shadows created that alter the appearance of a heritage attribute or change the viability of a natural feature or plantings, such as a garden;
- Isolation of a heritage attribute from its surrounding environment, context or a significant relationship;
- Direct or indirect obstruction of significant views or vistas within, from, or of built and natural features;
- A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces; and
- Land disturbances such as a change in grade that alters soils, and drainage patterns that adversely affect an archaeological resource.

Indirect impacts from construction-related vibration have the potential to negatively affect B.H.R.s and C.H.L.s depending on the type of construction methods and machinery selected for the project and proximity and composition of the identified resources. Potential vibration impacts are defined as having potential to affect an identified B.H.R.s and C.H.L.s where work is taking place

within 50 metres of features on the property. A 50-metre buffer is applied in the absence of a project-specific defined vibration zone of influence based on existing secondary source literature (Carman et al., 2012; Crispino & D'Apuzzo, 2001; P. Ellis, 1987; Rainer, 1982; Wiss, 1981). This buffer accommodates any additional or potential threat from collisions with heavy machinery or subsidence (Randl, 2001).

Several additional factors are also considered when evaluating potential impacts on identified B.H.R.s and C.H.L.s. These are outlined in a document set out by the Ministry of Culture and Communications (now Ministry of Citizenship and Multiculturalism) and the Ministry of the Environment entitled *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (1992) and include:

- Magnitude: the amount of physical alteration or destruction which can be expected;
- Severity: the irreversibility or reversibility of an impact;
- Duration: the length of time an adverse impact persists;
- Frequency: the number of times an impact can be expected;
- Range: the spatial distribution, widespread or site specific, of an adverse impact; and
- Diversity: the number of different kinds of activities to affect a heritage resource.

The proposed undertaking should endeavor to avoid adversely affecting known and potential B.H.R.s and C.H.L.s and interventions should be managed in such a way that identified features are conserved. When the nature of the undertaking is such that adverse impacts are unavoidable, it may be necessary to implement alternative approaches or mitigation strategies that alleviate the negative effects on identified B.H.R.s and C.H.L.s. Mitigation is the process of lessening or negating anticipated adverse impacts and may include, but are not limited to, such actions as avoidance, monitoring, protection, relocation, remedial landscaping, and documentation of the B.H.R. and C.H.L. if it is to be demolished or relocated.

Various works associated with infrastructure improvements have the potential to affect B.H.R.s and C.H.L.s in a variety of ways, and as such, appropriate mitigation measures for the undertaking need to be considered.

3.0 Summary of Historical Development Within the Study Area

This section provides a brief summary of historical research. A review of available primary and secondary source material was undertaken to produce a contextual overview of the study area, including a general description of physiography, Indigenous land use, and Euro-Canadian settlement.

3.1 Physiography

The study area is situated within the Peterborough Drumlin Field physiographic region of southern Ontario (Chapman & Putnam, 1984). The Peterborough Drumlin Field extends from Simcoe County east to Hastings County and is generally characterized by rolling till plains overlying limestone bedrock and contains over 3,000 drumlins ((Chapman & Putnam, 1984)). The drumlins are composed of highly calcareous till but there are local differences in composition. The till plains of the regions were formed during the retreat of the Lake Ontario ice lobe of the Laurentide glacier. Till is produced from the advance of continental glacial ice in which soil and rock is carried forward by the ice, mixed and milled, producing a heterogeneous soil (Chapman & Putnam, 1984). The rolling topography of the study area is representative of the drumlin and till formations of this physiographic region. The agricultural history of the area can be connected to the till plains formed through glacial movement.

3.2 Indigenous Land Use and Settlement

Current archaeological evidence indicates humans were present in southern Ontario approximately 13,000 years before present (B.P.) (Ferris, 2013). Populations at this time would have been highly mobile, inhabiting a boreal-

parkland similar to the modern sub-arctic. By approximately 10,000 B.P., the environment had progressively warmed (Edwards & Fritz, 1988) and populations now occupied less extensive territories (C. J. Ellis & Deller, 1990).

Between approximately 10,000-5,500 B.P., the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 B.P.; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest archaeological evidence for cemeteries dates to approximately 4,500-3,000 B.P. and is interpreted by archaeologists to be indicative of increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Brown, 1995, p. 13; C. J. Ellis et al., 1990, 2009).

Between 3,000-2,500 B.P., populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2,500 B.P. and exchange and interaction networks broaden at this time (Spence et al., 1990, pp. 136, 138) and by approximately 2,000 B.P., evidence exists for small community camps, focusing on the seasonal harvesting of resources (Spence et al., 1990, pp. 155, 164). By 1,500 B.P. there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2,300 B.P. - it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch & Williamson, 2013, pp. 13–15). As is evident in detailed Anishinaabek ethnographies, winter was a period during which some families would depart from the larger group as it was easier to sustain smaller

populations (Rogers, 1962). It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 B.P., lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (C.E.), larger settlement sites focused on horticulture begin to dominate the archaeological record. Seasonal dispersal of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson, 1990, p. 317). By 1300-1450 C.E., archaeological research focusing on these horticultural societies note that this episodic community dispersal was no longer practised and these populations now occupied sites throughout the year (Dodd et al., 1990, p. 343). By the mid-sixteenth century these small villages had coalesced into larger communities thought to house several thousand people (Birch et al., 2021). Through this process, the socio-political organization of these First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed. Other First Nation communities continued to practice residential mobility and to harvest available resources across landscapes they returned to seasonally/annually.

By 1600 C.E., the Confederation of Nations were encountered by the first European explorers and missionaries in Simcoe County. By the 1640s, devastating epidemics and the traditional enmity between the Haudenosaunee[1] and the Attawandaron and the Huron-Wendat (and their Algonquian allies such as the Nippissing and Odawa) led to their dispersal from southern Ontario. Shortly afterwards, the Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario.

[1] The Haudenosaunee are also known as the New York Iroquois or Five Nations Iroquois and after 1722 Six Nations Iroquois. They were a confederation of five distinct but related Iroquoian–speaking nations - the Seneca, Onondaga, Cayuga, Oneida, and Mohawk. Each lived in individual territories in what is now known as the Finger Lakes district of Upper New York. In 1722 the Tuscarora joined the confederacy.

In 1763, following the fall of Quebec, New France was transferred to British control at the Treaty of Paris. The British government began to pursue major land purchases to the north of Lake Ontario in the early nineteenth century.

The Study Area is within the Nottawasaga Purchase (Treaty 18), a provisional agreement sometimes called the Lake Simcoe-Nottawasaga Treaty, signed on October 17, 1818, by representatives of the Government of Upper Canada and the Anishinaabe (Ministry of Indigenous Affairs, 2020). Treaty 18 encompassed 1,592,000 acres of land between the District of London in the west, Lake Huron in the north, the west limit of the Penetanguishene Purchase (1815) in the east, and the west shore of Lake Simcoe, Cook's Bay, and the Holland River in the northwest. In exchange for the land, the Crown agreed to pay an annual sum of £1200 in goods at the "Montreal price" Ministry of Indigenous Affairs, 2020). The Nottawasaga Purchase territory includes the present-day communities of Wasaga, Bradford, and Collingwood.

3.3 Historical Euro-Canadian Township Survey and Settlement

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes followed existing Indigenous trails, both along the lakeshore and adjacent to various creeks and rivers (ASI 2006). Early European settlements occupied similar locations as Indigenous settlements as they were generally accessible by trail or water routes and would have been in locations with good soil and suitable topography to ensure adequate drainage.

Throughout the period of initial European settlement, Indigenous groups continued to inhabit Southern Ontario, and continued to fish, gather, and hunt within their traditional and treaty territories, albeit often with legal and informal

restrictions imposed by colonial authorities and settlers. In many cases, Indigenous peoples acted as guides and teachers, passing on their traditional knowledge to Euro-Canadian settlers, allowing them to sustain themselves in their new homes. Indigenous peoples entered into economic arrangements and partnerships, and often inter-married with settlers. However, pervasive and systemic oppression and marginalization of Indigenous peoples also characterized Euro-Canadian colonization, with thousands being displaced from their lands, denied access to traditional and treaty hunting, fishing, and collecting grounds, and forced to assimilate with Euro-Canadian culture through mandatory attendance at Day and Residential Schools (Ray, 2005; Rogers & Smith, 1994).

Historically, the study area is located in the Township of Innisfil, County of Simcoe in part of Lots 15 and 16, Concessions 8 and 9.

3.3.1 County of Simcoe

The area within what is now Simcoe County was first inhabited by the Indigenous Huron-Wendat. European goods reached the area before 1600 and missionaries and Jesuits arrived soon after. In 1798, the County of Simcoe was formed as part of the "Home District." The boundaries of the county were refined in 1821. Almost 20 years later, in 1843, the area was declared a separate district and attained county status in 1850, with Barrie as the county seat. At this time Simcoe County included portions of Grey and Dufferin Counties, and Muskoka and Parry Sound Districts. In 1881, the borders of Simcoe County were again redefined and the present townships of Tiny, Tay, Matchedash, Flos, Medonte, Orillia, Nottawasaga, Sunnidale, Vespra, Oro, Tosorontio, Essa, Innisfil, Adjala, Tecumseth, and West Gwillimbury were contained within. As of the late twentieth century, Simcoe County had two cities, seven towns, and eight villages (Mika & Mika, 1983).

3.3.2 Township of Innisfil

The Township of Innisfil was surveyed in 1820 and the first settlement began that year. The township was named after the poetical name for Ireland, Innis Fáil, by

its early settlers. Growth was slow during the first ten years of the township and the first sawmill was not erected until the 1830s and in 1835 a grist mill was constructed. Early settlement focused around Kempenfelt Bay and the southwestern area of the township was not settled until after 1840. By 1843, the first school was constructed and the following year the Innisfil Methodist Congregation built the first church. The first census of the township recorded a population of only 762 inhabitants. By 1850, the township had a population of 1,807.

Following the connection of the Northern Railway in 1853, the township became an important shipping hub for the lumber industry of central Ontario(Mika & Mika, 1981). With the arrival of the railway a number of communities developed and prospered; Allandale, Lefroy, and Craigvale all boasted stations. On the western border of the township, Thornton was a stop for the Hamilton and Northwestern Railway. Today, Innisfil attracts large numbers of tourists and cottagers in the summertime who travel from Toronto via Highway 400 (Mika & Mika, 1981).

3.4 Review of Historical Mapping

The 1871 *Map of the County of Simcoe* (Hogg, 1871) and the 1881 *Illustrated Historical Atlas of the County of Simcoe* (Belden, 1881) were examined to determine the presence of historical features within the study area during the nineteenth century (Figure 2 and Figure 3). Historically, the study area is located in part of Lots 15 and 16, Concessions 8 and 9 in the Township of Innisfil, County of Simcoe.

It should be noted, however, that not all features of interest were mapped systematically in the Ontario series of historical atlases. For instance, they were often financed by subscription limiting the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases. The use of historical map sources to reconstruct or predict the location of former features within the modern landscape generally begins by using common reference points between the various sources. The historical maps are geo-

referenced to provide the most accurate determination of the location of any property on a modern map. The results of this exercise can often be imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including differences of scale and resolution, and distortions introduced by reproduction of the sources.

The study area is shown to be within a rural agricultural context in the nineteenth century. Mapping from 1871 illustrates that the properties along present-day Yonge Street were large plots of land (Figure 2). The northern portion of the study area is on land owned by J. Richardson on the west of Yonge Street and J. Dyer on the east, with the southern portion under the ownership of J. Roberts to the west of Yonge Street and B. Ross on the east. No structures are illustrated within the study area. The settlement of Victoria, which features a post office and schoolhouse, is illustrated north of the study area at the intersection of Yonge Street and 10th Line.

The further settlement of the area is depicted in mapping from 1881 (Figure 3). Some structures are illustrated within the study area, suggesting the establishment of farmsteads within the area. The northwest portion of the study area is depicted with a farmstead under the ownership of John Robbins, and the southeast portion is depicted with a farmstead under the ownership of R.M. McConkey. The intersection of present-day Yonge Street and Victoria Street is the settlement of Stroud/Victoria. Innisfil Beach Road is illustrated in its current location to the south of the study area. The Northern Railway is depicted in a northwest-southeast orientation to the northeast of the study area.

In addition to nineteenth-century mapping, historical topographic mapping and aerial photographs from the twentieth century were examined. This report presents maps and aerial photographs from 1928, 1954, and 1986 (Figure 4 to Figure 6). These do not represent the full range of maps consulted for the purpose of this study but were judged to cover the full range of land uses that occurred in the area during this period.

In the twentieth century the study area is illustrated to show a continued rural agricultural land use with some additional development. Topographic mapping from 1928 illustrates additional structures located sporadically along the roadways within the study area and surrounding land indicative of rural and agricultural land use (Figure 4). The community of Stroud to the north of the study area is demonstrated to have experienced modest growth, and features densely developed commercial structures at the intersection of Yonge Street (labelled as Penetang Road) and 10th Line. The rail line running beyond the northwest corner of the study area is labeled "Canadian National Railway" indicating a change in ownership of the line.

Aerial photography from 1954 indicates a continued rural agricultural land use within the study area (Figure 5). Several farmsteads are visible in the approximate location of the structures illustrated in 1928, with crop fields surrounding. The land surrounding the study area also displays a continued rural context with agricultural land use. The community of Stroud is depicted as a crossroads community with some additional development observed since the early twentieth century.

By the end of the twentieth century the study area has remained primarily unchanged, though an increased development of the surrounding area, particularly in Stroud, is indicated. Stroud is observed to be a densely developed community with a secondary road network connected to Yonge Street (now labelled Frontier Route) and 10th Line. Little development continues to be shown in the centre of the study area where the study area remains under active agricultural cultivation. The intersection of Innisfil Beach Road and Yonge Street, located south of the study area, is labeled as Barclay, and features a number of structures including a feed mill and police station. The Canadian National rail line remains active to the north and east of the study area.

Figure 2: The study area overlaid on the 1871 *Hoggs Map of the County of Simcoe* (Base Map:(Hogg, 1871)).

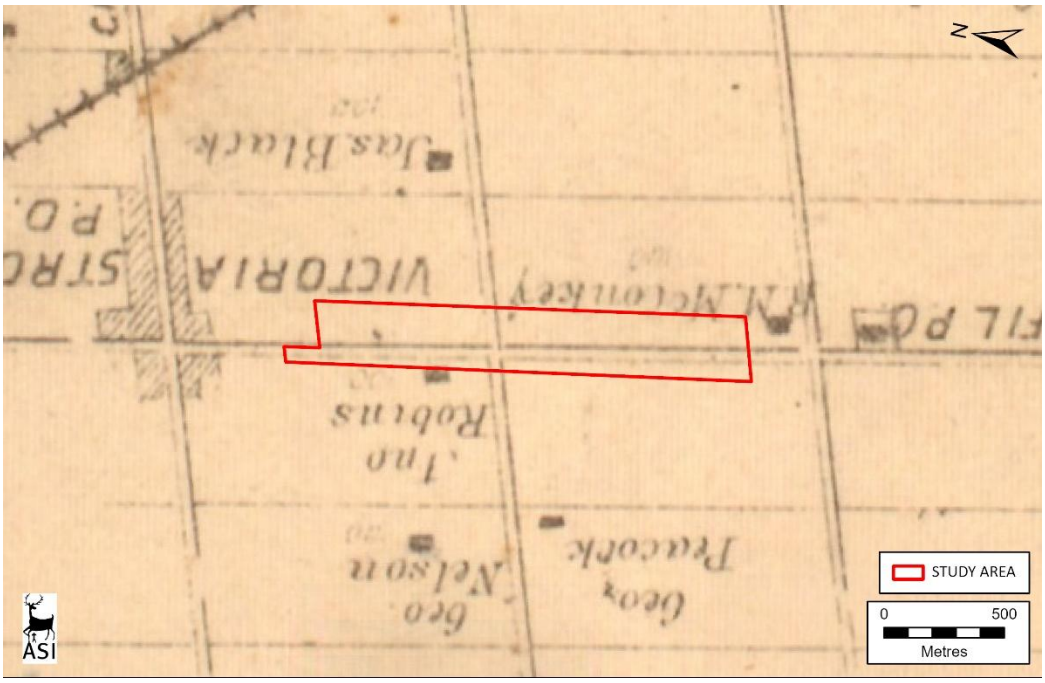

Figure 3: The study area overlaid on the 1881 Illustrated Historical Atlas of the County of Simcoe (Base Map: (Belden, 1881)).

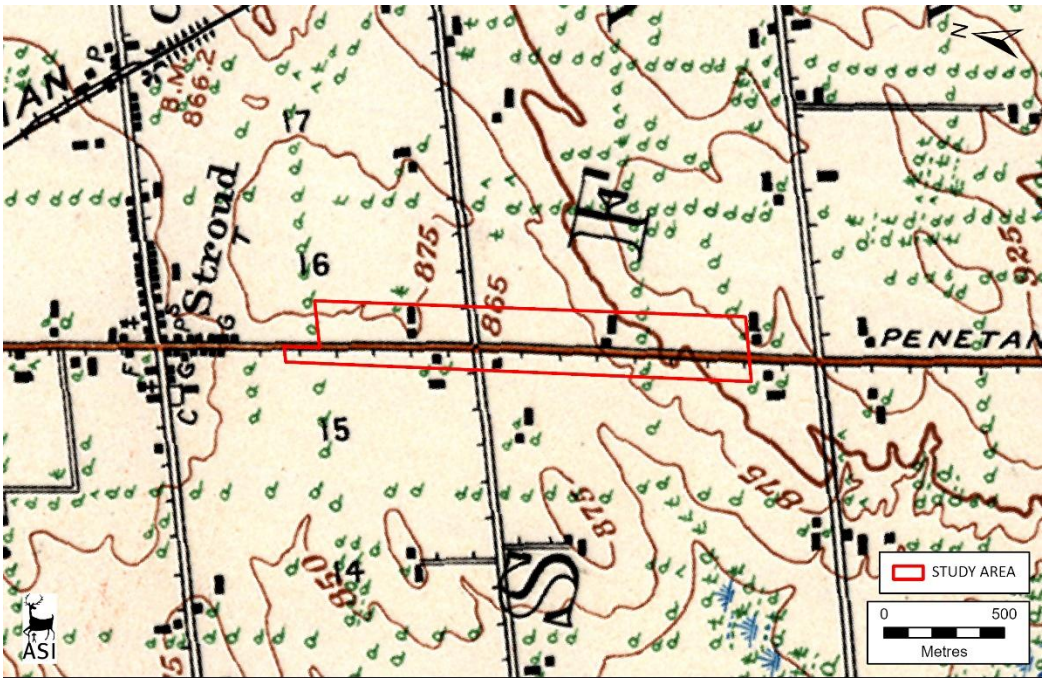

Figure 4: The study area overlaid on the 1928 topographic map of Barrie (Base Map: (Department of National Defence, 1928).

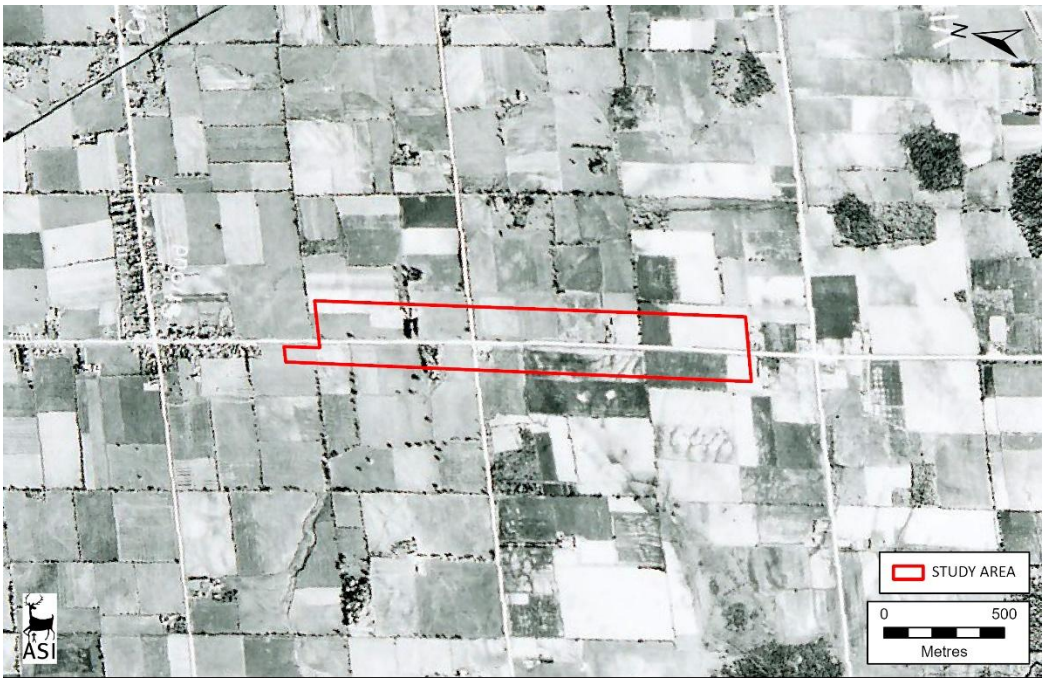

Figure 5: The study area overlaid on the 1954 aerial photograph of Innisfil (Base Map: (Hunting Survey Corporation Limited, 1954)).

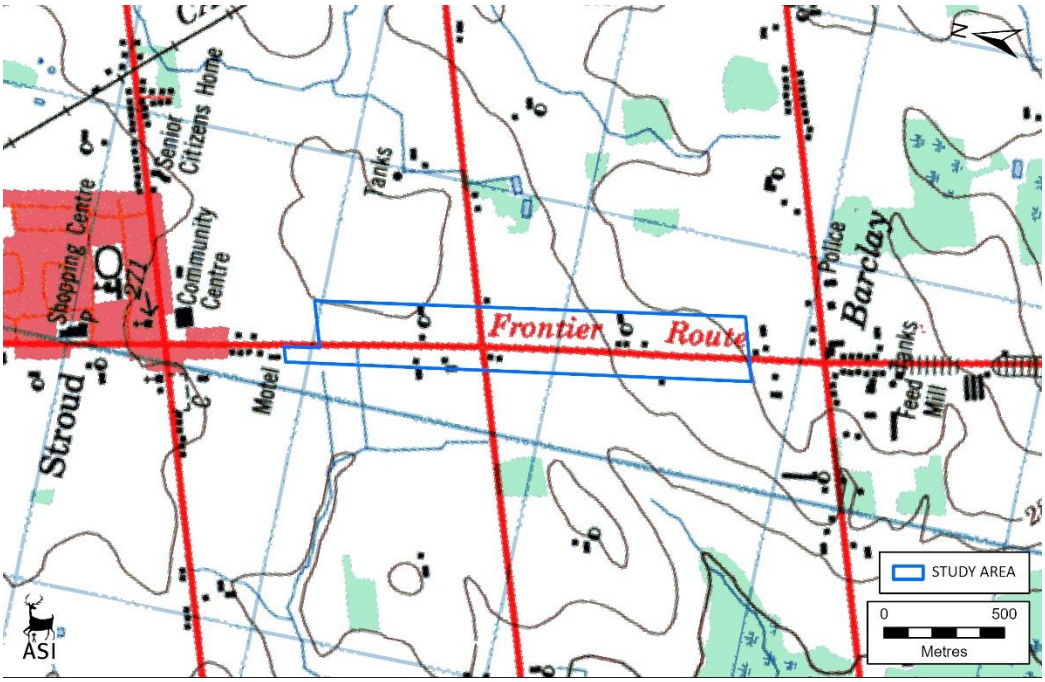

Figure 6: The study area overlaid on the 1986 topographic map of Barrie (Base Map: (Department of Energy, Mines and Resources, 1986)).

4.0 Existing Conditions

A field review of the study area was undertaken by Meredith Stewart of Archaeological Services Inc., on 21 September 2021 to document the existing conditions of the study area from existing rights-of-way. The existing conditions of the study area are described below and captured in Plate 1 to Plate 6.

4.1 Description of Field Review

The study area consists of a portion of Yonge Street located between Southview Road in the north and Innisfil Beach Road in the south, and includes the roadway's intersection with 9th Line. The study area can generally be described as a rural context, with areas of agricultural land use. Yonge Street is a north-south running roadway that features one lane of traffic in each direction with gravel shoulders throughout most of the study area. Residences in the settlement of Stroud are located to the north of the study area, and residences and a gas station are located at the intersection with Innisfil Beach Road to the south.

Yonge Street widens to the north of Innisfil Beach Road and at 9th Line and features additional turn lanes. The intersection of Yonge Street and Innisfil Beach Road south of the study area is the crossroads community of Barclay, and is in a rural context with some residential and commercial land uses.

The intersection of 9th Line and Yonge Street in the central portion of the study area is in a rural agricultural context, with 9th Line carrying one lane of east-west traffic and featuring gravel shoulders and shallow ditches.

Plate 1: Yonge Street, looking north towards residences north of Southview Avenue (A.S.I., 2021).

Plate 2: Yonge Street, looking south from Southview Avenue with active agricultural fields on both sides of the roadway (A.S.I., 2021).

Plate 3: Yonge Street, looking south from the intersection with 9th Line (A.S.I., 2021).

Plate 4: 9th Line, looking west from Yonge Street in the central portion of the study area (A.S.I., 2021).

Plate 5: Yonge Street, looking north from the southern portion of the study area (A.S.I., 2021).

Plate 6: Yonge Street, looking south from the southern limit of the study area towards the intersection with Innisfil Beach Road (A.S.I., 2021).

4.2 Identification of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes

Based on the results of the background research and field review four potential cultural heritage landscapes (C.H.L.s) were identified within the study area. A detailed inventory of potential C.H.L.s within the study area is presented below in Table 1. See Figure 7 for study area mapping.

Table 1: Inventory of Potential Cultural Heritage Landscapes within the Study Area

Feature I.D.	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential Cultural Heritage Value or Interest	Photographs/ Digital Image
C.H.L. 1	Farmstead	7424 Yonge Street	Potential C.H.L. – Identified during field review/desktop research	The potential C.H.L. contains a farmstead/rural property. The farmstead property (Plate 7) is located to the northwest corner of the intersection of Innisfil Beach Road and Yonge Street. Potential attributes include a residence with hipped roof, outbuildings, a barn, a treed entrance drive, and mature trees adjacent to the Yonge Street right-of-way. The 1928 topographic map illustrates a residence and barn in this general location (Figure 4). The 1871 Hogg's Map indicates that the property owner was B. Ross at this time (Figure 2). The property has the potential to have design/physical, historical/associative, and contextual value in the Town of Innisfil.	 Plate 7: Looking southwest towards farmstead with residence at left and barn at right (A.S.I., 2021).

Feature I.D.	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential Cultural Heritage Value or Interest	Photographs/ Digital Image
C.H.L. 2	Farmstead	7429 Yonge Street	Potential C.H.L. – Identified during field review/desktop research	The potential C.H.L. contains a farmstead/rural property. The farmstead property (Plate 8) is located to the northeast of the intersection of Innisfil Beach Road and Yonge Street. Potential attributes include a residence with an L-shaped plan and rear (eastern) addition. The property also features a gambrel-roofed barn, an outbuilding, and mature trees adjacent to the Yonge Street right-of-way. The 1928 topographic map illustrates a residence and barn in this general location (Figure 4). The 1871 Hogg's Map indicates that the property owner was J. Smith at this time (Figure 2). The property has the potential to have design/physical, historical/associative, and contextual value in the Town of Innisfil.	 Plate 8: West elevation of the residence (A.S.I., 2021).

Feature I.D.	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential Cultural Heritage Value or Interest	Photographs/ Digital Image
C.H.L. 3	Farmscape	7545 Yonge Street	Potential C.H.L. – Identified during field review/desktop research	The potential C.H.L. contains a farmstead/rural property. The farmstead property (Plate 9) is located on the east side of Yonge Street. Potential attributes include a residence with an L-shaped plan. The property also features a gambrel-roofed barn, an outbuilding, and mature trees adjacent to the Yonge Street right-of-way. The 1928 topographic map illustrates a residence and barn in this general location (Figure 4). The 1871 Hogg's Map indicates that the property owner was Wm. McConkey at this time (Figure 2). The property has the potential to have design/physical, historical/associative, and contextual value in the Town of Innisfil.	 Plate 9: West elevation of the residence with the barn at rear right (A.S.I., 2021).
C.H.L. 4	Farmscape	7650 Yonge Street	Potential C.H.L. – Identified during field review/desktop research	The potential C.H.L. contains a farmstead/rural property. The farmstead property (Plate 10) is located on the northwest corner of the intersection of Yonge Street and 9th Line. Potential attributes include a two-and-a-half-storey residence with rectangular massing and a hipped gable roof with offset gable dormer. The property also features a small gambrel-roofed barn, and mature trees. The 1928 topographic map illustrates a residence and barn in this general location (Figure 4). The 1871 Hogg's Map indicates that the property owner was J. Roberts at this time (Figure 2).	 Plate 10: East elevation of the residence (A.S.I., 2021).

Feature I.D.	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential Cultural Heritage Value or Interest	Photographs/ Digital Image
				The property has the potential to have design/physical, historical/associative, and contextual value in the Town of Innisfil.	

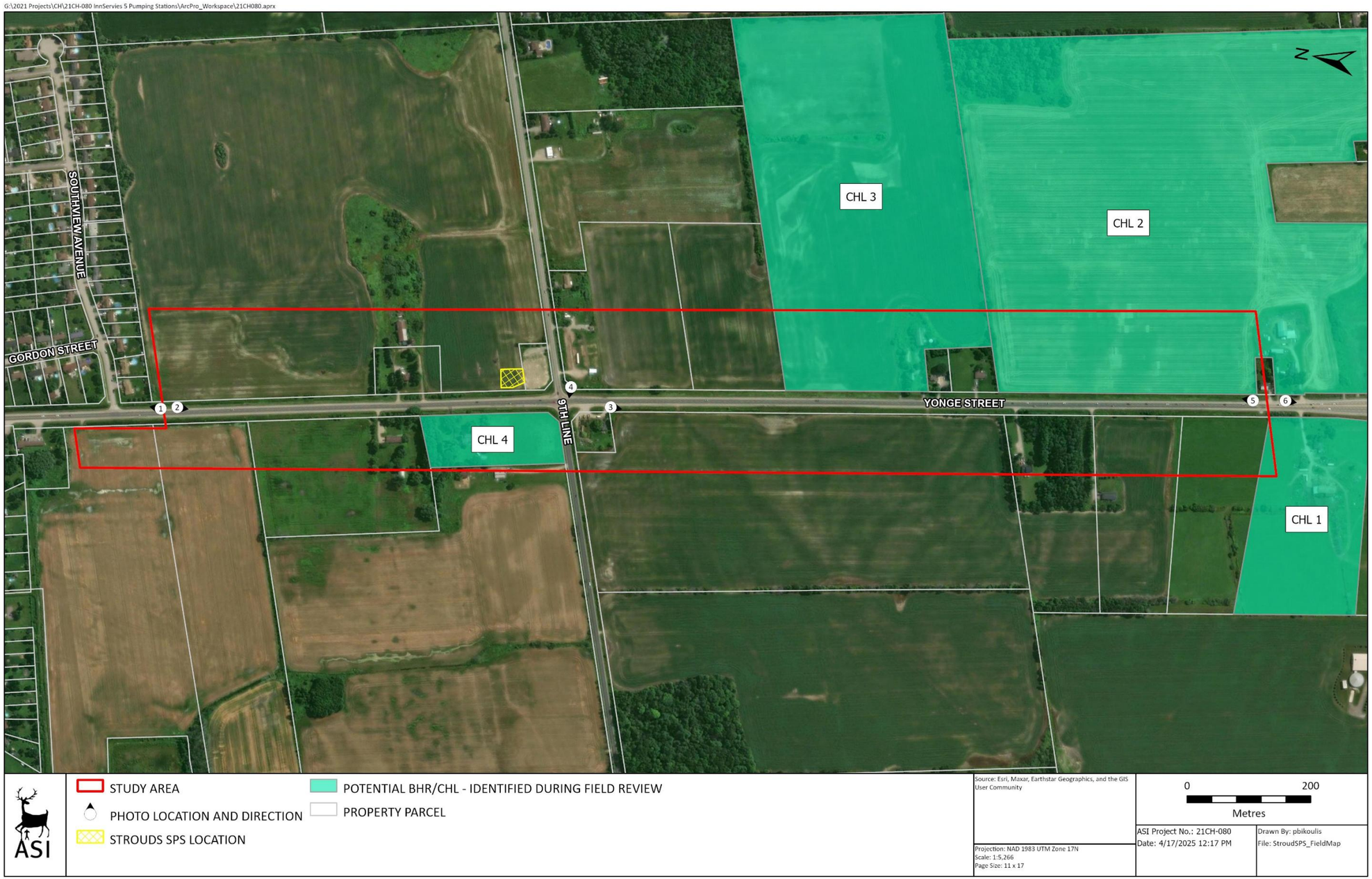

Figure 7: Location of identified cultural heritage landscapes (C.H.L.s) in the study area and photo plate locations.

5.0 Preliminary Impact Assessment

The following sections provide more detailed information regarding the proposed project undertaking and analysis of the potential impacts on the identified cultural heritage landscapes (C.H.L.s).

5.1 Description of Proposed Undertaking

The proposed undertaking for the Stroud Sewage Pumping Station Municipal Class Environmental Assessment study area consists of the construction of a sewage pumping station as part of the Innisfil Master Servicing Plan (M.S.P.) update. The preferred site location is in an active agricultural field on the east side of Yonge Street approximately 50 metres north of Ninth Line on the property at 7667 Yonge Street. The footprint of the proposed site is anticipated to be approximately 1035 metres square (measuring 30 metres by 35.34 metres) and will feature the pump infrastructure. Mapping depicting the preferred Stroud Sewage Pumping Station (S.P.S.) site location footprint is provided in Figure 8.

5.2 Analysis of Potential Impacts

Table 2 outlines the potential impacts on all identified C.H.L.s within the study area.

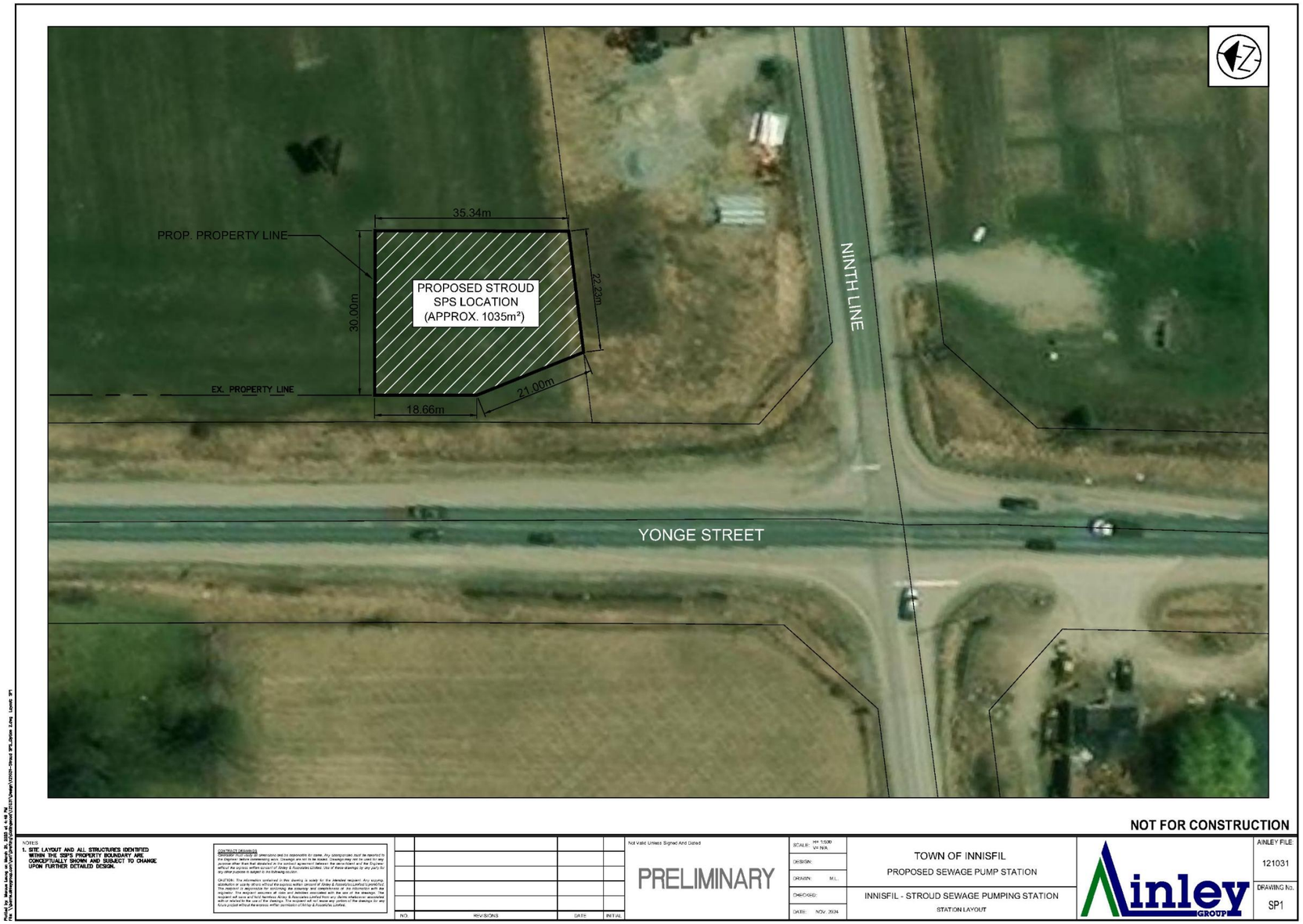

Figure 8: Preferred Stroud S.P.S. Location (provided by Ainley Group April 2025)

Table 2: Preliminary Impact Assessment and Recommended Mitigation Measures

Feature I.D.	Location/Name and Recognition	Type and Description of Potential/Anticipated Impact(s)	Mitigation Strategies
C.H.L. 1	7424 Yonge Street Potential C.H.L. – Identified during field review/desktop research	It is understood that the proposed work will be limited to the east side of Yonge Street, north of Ninth Line. As C.H.L. 1 is not adjacent to this site, no direct adverse impacts to this property are anticipated. As the subject property does not lie within a 50 metres radius of the proposed work, no vibration-related impacts or any other indirect adverse impacts are anticipated.	No further work required.
C.H.L. 2	7429 Yonge Street Potential C.H.L. – Identified during field review/desktop research	It is understood that the proposed work will be limited to the east side of Yonge Street, north of Ninth Line. As C.H.L. 2 is not adjacent to this site, no direct adverse impacts to this property are anticipated. As the subject property does not lie within a 50 metres radius of the proposed work, no vibration-related impacts or any other indirect adverse impacts are anticipated.	No further work required.
C.H.L. 3	7545 Yonge Street Potential C.H.L. – Identified during field review/desktop research	It is understood that the proposed work will be limited to the east side of Yonge Street, north of Ninth Line. As C.H.L. 3 is not adjacent to this site, no direct adverse impacts to this property are anticipated. As the subject property does not lie within a 50 metres radius of the proposed work, no vibration-related impacts or any other indirect adverse impacts are anticipated.	No further work required.
C.H.L. 4	7650 Yonge Street Potential C.H.L. – Identified during field review/desktop research	It is understood that the proposed work will be limited to the east side of Yonge Street, north of Ninth Line. As C.H.L. 4 is located on the west side of Yonge Street, and the residence is approximately 80 metres from the proposed Stroud S.P.S. site, no direct adverse impacts to this property are anticipated. As no heritage attributes on the property are within 50 metres of the proposed work, no vibration-related impacts or any other indirect adverse impacts are anticipated.	No further work required.

5.3 Summary of Potential Impacts

No direct or indirect adverse impacts are anticipated for any identified C.H.L. as a result of the proposed construction of Stroud S.P.S.

6.0 Results and Mitigation Recommendations

The results of background historical research and a review of secondary source material, including historical mapping, indicate a study area with an Indigenous history spanning several millennia and a Euro-Canadian rural land use history dating back to the early nineteenth century. A review of federal, provincial, and municipal registers, inventories, and databases revealed that there are no previously identified features of cultural heritage value or interest within the Stroud Sewage Pumping Station study area. Four potential cultural heritage landscapes (C.H.L.s) were identified during the fieldwork.

6.1 Key Findings

A total of four C.H.L.s was identified within the Stroud Sewage Pumping Station study area:

- All four identified potential C.H.L.s were identified during background research/field review (C.H.L. 1 to 4);
- Identified C.H.L.s are historically, architecturally, and contextually associated with land use patterns in the Town of Innisfil and more specifically representative of the early agricultural settlement on Yonge Street; and
- The proposed undertaking is not anticipated to have any direct or indirect adverse impacts on the four identified C.H.L.s.

6.2 Recommendations

Based on the results of the assessment, the following recommendations have been developed:

1. Construction activities and staging should be suitably planned and undertaken to avoid unintended negative impacts to identified C.H.L.s. Avoidance measures may include, but are not limited to: erecting temporary fencing, establishing buffer zones, issuing instructions to construction crews to avoid identified C.H.L.s, etc.

2. Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.

3. This Cultural Heritage Report should be submitted by the proponent to the Town of Innisfil and the Ministry of Citizenship and Multiculturalism for review and comment, and any other local heritage stakeholders that may have an interest in this project. The final report should be submitted to the Town of Innisfil for their records.

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