

Stage 1 Archaeological Assessment Report

Part of Lot 215 Broken Front, Part of Lot 222, Part of Lot 223, Part of Lot 223 Broken Front, Part of Lot 224, Part of Lot 229, Part of the Road Allowance Between Lots 222 and 215 Broken Front (Closed by By-Law No 120-2012 As in RO824290), Part of the Road Allowance Between Lots 222 and 222 Broken Front, Part of the Road Allowance Between Lots 223 and 223 Broken Front, Part of the Road Allowance Between Lots 223 and 224, Part of the Road Allowance Between Lots 223 and 229, And Part of the Road Allowance Between Lots 229 and 223 Broken Front

Geographic Township of Thorold

City of Welland & City of Thorold

Regional Municipality of Niagara

Parts of Historic Lots 224, 223, 222, 215, & 229

Historic Township of Thorold

Historic County of Welland

August 23, 2023

Prepared for: The Proponent

Prepared by: Irvin Heritage Inc.

Archaeological Licensee: Thomas Irvin, P379

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EXECUTIVE SUMMARY

Irvin Heritage Inc. was contracted by the proponent to conduct a Stage 1 Archaeological Assessment with Site Inspection in support of a development application for a Study Area which is approximately 73.38 Ha in size. The Stage 1 Archaeological Assessment indicated that the majority of the Study Area has been subject to extensive and deep soil disturbance negating archaeological potential. The high level of disturbance noted in 20th century air photos and associated mapping was confirmed by the completed Stage 1 Site Inspection.

The Stage 1 Archaeological Assessment indicated that while the Study Area has been subject to extensive and deep disturbance, some areas of archaeological potential remain..

Given the results and conclusions of the completed Stage 1 Archaeological Assessment with Site Inspection, the following recommendations are made:

- It is the professional opinion of the archaeological licensee, Thomas Irvin (P379) that the portions of the Study Area identified herein as deeply disturbed are of low archaeological potential and are of no further archaeological concern.
- Stage 2 Archaeological Assessment Survey is recommended for the lands identified as having archaeological potential and should be surveyed via the following:
 - Lands which are not viable to plough must be subject to a test pit survey with the following conditions:
 - ▶ All test pits are to be excavated by hand at 5 m intervals along 5 m transects
 - ▶ Test pits must be excavated to within 1 m of all extant and/or ruined structures when present
 - ▶ All test pits must be 30 cm in diameter and be excavated into the first 5 cm of subsoil
 - ▶ All test pits must be examined for evidence of fill, stratigraphy or cultural features
 - ▶ All excavated soils must be screened through 6 mm wire mesh to facilitate artifact recovery
 - ▶ All artifacts recovered must be retained via their associated test pit
 - ▶ All test pits are to be backfilled unless instructed otherwise by the landowner
- Notwithstanding the above recommendations, the provided Advice On Compliance With Legislation shall take precedent over any recommendations of this report should deeply buried archaeological resources or human remains be found during any future earthworks within the Study Area.

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Archaeological Resources Reported On Herein (Bordenized & Non-Bordenized)

Name	Borden	Affinity	Type	CHVI	Notes
-	-	-	-	-	-

1. ASSESSMENT CONTEXT

1.1. Development Context

Irvin Heritage Inc. was retained by the proponent to conduct a Stage 1 Archaeological Assessment of their property (the Study Area) located within Part of Lot 215 Broken Front, Part of Lot 222, Part of Lot 223, Part of Lot 223 Broken Front, Part of Lot 224, Part of Lot 229, Part of the Road Allowance Between Lots 222 and 215 Broken Front (Closed by By-Law No 120-2012 As in RO824290), Part of the Road Allowance Between Lots 222 and 222 Broken Front, Part of the Road Allowance Between Lots 223 and 223 Broken Front, Part of the Road Allowance Between Lots 223 and 224, Part of the Road Allowance Between Lots 223 and 229, And Part of the Road Allowance Between Lots 229 and 223 Broken Front, Geographic Township of Thoroldm City of Welland & City of Thoroldm Regional Municipality of Niagara Parts of Historic Lots 224, 223, 222, 215, & 229, Historic Township of Thorold in the Historic County of Welland (Map 1).

The requirement for an Archaeological Assessment was triggered by the Approval Authority in response to a Development Application under the Planning Act for the construction of residential units. The assessment reported on herein was undertaken after direction by the Approval Authority and before formal application submission.

The Stage 1 Archaeological Assessment reported on was undertaken for the entirety of the approximate 73.38 Ha Study Area; a Site Inspection as also undertaken. Permission, without limitation, was provided by the proponent to survey, assess, and document the archaeological potential and resources, if present, of the Study Area during the completed Stage 1 Site Inspection.

1.2. Environmental Setting

The Study Area is irregular in shape, approximately 73.38 Ha in size, and consists of predominantly heavily disturbed and modified lands resulting from the associated Welland canal construction (Maps 2 & 3).

The Study Area is situated within the Welland Canal Watershed (OMNRF 2023). There are multiple watercourses and water bodies both within and adjacent to the Study Area. The Study Area is adjacent to the Welland Canal on the eastern limit and about 230 m away from the modified Welland River.

The Study Area is situated within the Haldimand Clay Plain (23) physiographic region of Southern Ontario (Chapman & Putnam 1984).

2. INDIGENOUS CONTEXT

2.1. INDIGENOUS LAND USE CONTEXT

A search was conducted on August 17, 2023 within the Sites Module of the provincial PastPort System for all pre-contact registered archaeological sites within a 5 km radius of the Study Area. The Sites Module is the online registry of all known and registered archaeological sites and is maintained by the Archaeology Program Unit of the Ontario Ministry of Citizenship and Multiculturalism (MCM). This determined that a total of 58 such sites have been registered as of the date of this report.

This baseline review was conducted to better place the specific Study Area within the known archaeological landscape of the surrounding area, in specific relation to land use patterns by Indigenous peoples. A 5 km radius was chosen, by the licensee, to better sample the broader known archaeological landscape in which the Study Area is situated by reviewing sites registered as 'Pre-Contact' or 'Indigenous'. It should be noted that low numbers, or an absence of registered archaeological sites, is directly tied to the degree of archaeological survey conducted within the area. Further, absence or productivity of sites may not accurately reflect the land use patterns of Indigenous peoples within the landscape.

Within the data reviewed for this assessment, it is of note that the highest number of registered sites fall under the 'Pre-Contact' category with no associated temporal or cultural affinity. Within these 58 sites the predominate site type is scatter (n=23), followed by campsites (n=11), thirdly unknown sites (n=17), and finally find-spots (n=7). Other period & site types included in the data search resulted in Archaic, Woodland and Paleo sites.

While it is know that Southern-Ontario, as a whole, has been inhabited by Indigenous peoples from the Paleo period, the specific past land use of the Study Areas location suggests a focused and sustained occupation by various Indigenous peoples specifically dating to the Archaic period. It is of note that there is a distinct number of Archaic period sites as compared to Woodland periods. This may suggest the general location of the Study Area has been an area of focused resource procurement during the Archaic period.

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TABLE 1: REGISTERED INDIGENOUS SITES WITHIN 5 KM RADIUS OF STUDY AREA

Period & Site Type	Registered Sites
Pre-Contact	58
scatter	23
camp / campsite	8
Unknown	8
(blank)	8
findspot	7
Unknown, camp / campsite	1
Othercamp/campsite	1
Otherunknown	1
camp / campsite, processing, scatter	1
Archaic, Late	17
Othercamp/campsite	6
Other tool manufacturing	1
findspot	3
hunting loss	1
camp / campsite	1
scatter	3
Unknown	1
(blank)	1
Archaic, Middle	13
scatter	3
findspot, scatter	1
hunting loss	1
camp / campsite	2
Othercamp/campsite	3
findspot	2
(blank)	1
Woodland, Early	4
findspot	3

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Period & Site Type	Registered Sites
camp / campsite, processing	1
Woodland, Late	3
findspot	2
Othercamp/campsite	1
Archaic, Late, Archaic, Middle	3
Unknown	1
Othercamp/campsite	1
camp / campsite	1
Archaic, Early	2
Othercamp/campsite	1
scatter	1
Woodland, Middle	2
findspot	1
(blank)	1
Paleo-Indian	3
camp / campsite	1
findspot	1
Unknown	1
Archaic	2
Othercamp/campsite	1
Other tool manufacturing	1
Archaic, Early, Archaic, Late	1
Othercamp/campsite	1
Archaic, Middle, Pre-Contact	1
camp / campsite, scatter	1
Archaic, Late, Archaic, Middle, Woodland, Late	1
scatter	1
Archaic, Early, Archaic, Middle	1
scatter	1
Archaic, Paleo-Indian, Woodland, Early, Woodland, Middle	1

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Period & Site Type	Registered Sites
fishing	1
Archaic, Early, Archaic, Late, Archaic, Middle, Pre-Contact	1
scatter	1
Archaic, Early, Pre-Contact	1
scatter	1
Archaic, Late, Archaic, Middle, Pre-Contact	1
Othercamp/campsite	1
Archaic, Late, Archaic, Middle, Paleo Late, Pre-Contact	1
Othercamp/campsite	1
Paleo Early	1
camp / campsite	1
Archaic, Late, Archaic, Middle, Woodland, Woodland, Early, Woodland, Late	1
camp / campsite	1

It should be noted that this list contains site types and designations created in the 20th century and may not accurately reflect the true nature or purpose of the identified sites.

3. HISTORICAL CONTEXT

3.1. Treaty History

The following Treaty No. 3 information is provided by the Mississaugas of the Credit First Nation:

The arrival of Loyalists during and after the American Revolutionary War placed pressure on the British Crown to find lands on which to settle the newcomers. Among the Loyalists were approximately 2000 members of the Six Nations who had lost their homes fighting on behalf of the Crown. Seeking to reward his First Nation allies for their loyalty during the war, Governor Haldimand offered homes to the Six Nations refugees in the remaining British colonies. One group of the Six Nations Loyalists settled at the eastern end of Lake Ontario, while another group, under the leadership of Mohawk Chief Joseph Brant, selected the Grand River Valley as an area for settlement. Recognizing that under the terms of the Royal Proclamation of 1763 the land needed to be purchased from its owners before the resettlement of the Grand River Valley could begin, Col. John Butler was sent to negotiate with the Mississaugas at the western end of Lake Ontario. On May 22, 1784, for the sum of £1180 worth of trade

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goods, the Mississaugas of the Credit ceded to the Crown approximately 3 000 000 acres of land located between Lakes Huron, Ontario, and Erie. Of those lands, some 550 000 acres were granted to the Six Nations in the Haldimand Proclamation of October 25, 1784, with the remainder to be utilized for the settlement of other Loyalists. The land grant to the Six Nations was to extend six miles on both sides of the Grand River from its mouth to its source. When it was later discovered that the upper limits of the Between the Lakes Treaty were in error due to faulty geographical assumptions, actual boundaries were defined and a confirming document signed by the Mississaugas and the Crown in 1792. Major population centres found within the boundaries of the Between the Lakes Treaty include Hamilton, Cambridge, Waterloo, Guelph, Brantford, and St. Catharines. The present location of the Mississaugas of the New Credit First Nation Reserve is located on Between the Lakes Treaty lands. (MCFN 2023)

The Study Area is located within the boundaries of the Between the Lakes Treaty No. 3. This treaty was signed on December 7, 1792 by Chiefs and Principle Women of the Mississauga Nation and John Graves Simcoe on behalf of the British Crown. The treaty includes over 3 million acres between Lake Ontario and Lake Erie. It extends along the northeastern shore of Lake Erie to outside of Port Bruce where it shares its western border with the McKee Purchase, London Township Purchase, and Huron Tract Purchase. It extends north to approximately Arthur and then southeast to Indian Point, Burlington. On the east it's bordered by the Ajetance Purchase, the Head of the Lake Purchase, and the Brant Tract. The Between the Lakes Treaty is split into two sections with the Haldimand Tract running directly down the middle of the treaty lands just shy of 10km on either side the Grand River (MIA 2023).

3.2. County History

The Regional Municipality of Niagara was formed in 1970 when the counties within the Niagara Peninsula, Lincoln and Welland, were amalgamated. Lincoln County ran along the south shore of Lake Ontario between Fifty Point and the Niagara River. The County of Welland accounted for the remainder of the lands within the Niagara Peninsula to the south of Lincoln County (Gayler & Jackson 2020).

The areas of Lincoln and Welland were first settled by United Empire Loyalists around the year 1784, though previous settlers were scattered sparsely through the lands. The area did not see administrative infrastructure until the creation of the district system in 1788 which placed it

within the Nassau District (Page 1876). In 1792, it became part of the Home District and Lincoln was formerly defined as a county, however, the townships included within its jurisdiction would fluctuate over the coming decades (Armstrong 1985)(MOGACS 2022). At this time, the administrative centre for all of Upper Canada was placed at Newark, otherwise known as Niagara or Niagara on the Lake as it was later named. Parliament was held at Newark for 4 years before moving to York, now Toronto, which was strategically safer being further from the border (Page 1876). Welland County was set apart from Lincoln County in 1842 (Page 1876). Pennsylvanian Dutch Mennonite settlers arrived in 1799 from the United States of America founding villages in Louth and Clinton Townships. These settlers along with immigrants from Western Europe cleared the land and shaped it into the fruitful agricultural landscape that drove its economy (Jones 1946) (Page 1877). Milling towns emerged around river ways and well travelled trails (Gayler & Jackson 2020). The Underground Railroad had an effect on the settlement of Lincoln and Welland Counties with many Black refugees of American Slavery moving into the area to build new lives (Henry 2020). In the early to mid 19th century Upper Canada saw an influx of Irish immigration due to the need for labour constructing the Welland and subsequent canals. Toward the end of the 1840s and early 1850s the Great Famine in Ireland caused the rate of Irish immigrants in Upper Canada to increase dramatically. This only exasperated the already high tensions surrounding the Irish in Lincoln and Welland Counties (McGowan 2005). The 1850s brought the constructions of rail lines and with them a boost to Lincoln and Welland's agricultural industries. With more access to trade, farms were able to diversify their produce, small communities grew to flourish along rail lines, and tourism along the lakeshores and towards Niagara Falls increased (Gayler & Jackson 2020).

Modernly, the heart of Niagara Region's economy has changed very little since its pioneer beginnings. Agriculture remains the driving force of the economy with fruit and vineyards being the main focus. Tourism has flourished both because of these industries feeding the wine, spirits, and hospitality industries but also the natural formations of the region bring sightseers to its wooded trails, Great Lakes, and Niagara Falls (Gayler & Jackson 2020).

3.3. Township History

Thorold Township was located along the Welland Canal within Welland County. It ranged from north of the Welland River to the southern border of Grantham Township in Lincoln County. Thorold Township began settlement in 1786 predominantly by United Empire Loyalists, specifically Butler's Rangers (Mika & Mika 1977). The land was offered at a very low price and was widely regarded as exceptional farmland once cleared (H.R. Page & Co 1876). The first mill

was built along the Welland River in 1802 (Mika & Mika 1977). Thorold Township and its residents played a key roll in the War of 1812 defending the Niagara Peninsula against the invading Americans. Just south of the village of Thorold is the DeCow residence where Laura Secord famously warned the British against the impending American attack at Beaverdams (Mika & Mika 1977).

Thorold Township grew rapidly thanks to the Welland Canal project which finished in 1829, at this time a townsite was laid out (Gayler 2015). The shipping industry and accessibility the canals brought boomed the population from 830 residents in 1817 to over 3500 by 1850. Thorold Township boasted a limestone quarry, flour mill, the province's first cotton mill, and various other flourishing industries (Gayler 2015)(Mika & Mika 1977). The village of Thorold was incorporated in 1850 and it became a town in 1875 at which point the town alone had a population of 3000 (Mika & Mika 1977). Thorold's proximity to Niagara and the electricity the Niagara dam generated attracted other industries such as pulp and paper, abrasives, and metal goods (Gayler 2015).

Thorold Township was dissolved into the City of Thorold in 1975 when Lincoln and Welland counties merged to form the Regional Municipality of Niagara.

3.4. Local or Community History

The Welland Canal was fully envisioned by businessman William Hamilton Merritt, a St. Catharines local who took the first step on making the bypass a reality (Bonikowsky 2013). Before its construction, trade and transport between Lake Ontario and Lake Erie was laborious and dangerous, but with its completion in 1834 a direct lifeline of trade and commerce was opened to inland North America (Bonikowsky 2013). With the first canals success, demand for transportation increased resulting in greater vessel size and transport congestion (Brock University Archives 2022). For this reason, construction for a wider, sturdier and deeper canal was proposed, and by 1841 development of the second Welland canal started under the ownership of the Government of Canada (Brock University Archives 2022). Unlike the first canal, the second ran south through Port Robinson, passing Welland, and down to Port Colborne which opened up to Lake Erie. Coincidentally, a portion of the second canal ran through the northern borders of the Study Area, Other major modifications to the canal included the replacement of wooden locks to limestone locks, and a reduced number of lift locks from 40 to 27 (Brock University Archives 2022). By 1845 the canal was open and it continued to enhance the productivity and prosperity of the area (Rayburn 1997). With

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continued demand for larger ship transport and trade, the Welland canal required further modifications which resulted in the development of the third Welland canal on 1875 (Brock University Archives 2022). However, the path was much more direct and it no longer followed the twelve mile creek route (Cameron 2022). The third canal was open and operational by 1881 but its 14 foot draft was completed on 1887 (Brock University Archives 2022). Similar to the second canal, a portion of the third canal runs through the northern border of the Study Area, proving massive disturbance and earthworks. Despite multiple modifications in width, depth and routes, the third canal required further adjustments to meet the demand of transport and trade vessels. This led to the construction of the fourth Welland canal which continues to be used in present day. Construction for the fourth Welland canal started in 1913 but was delayed by the First World War (Mika & Mika 1983). Having resumed in 1919 the canal prepared to receive larger steamers of the time and introduced 7 lift locks and 1 guard lock (Cameron 2022). This forced development to change the original aqueduct river crossing route, and rearrange the river itself (Brock University Archives 2022). Eventually, construction was completed in 1932 and the canal was officially named the Welland Ship Canal (Brock University Archives 2022). On that same year the third canal stopped operating (Brock University Archives 2022). The fourth canal had the ability take on 730 feet long ships weighing at 28,000 tons (Rayburn 1997). Continued reliance on the canals capacity and the increasing number of inhabitants lead to the 1967 Welland By-Pass project which aimed to further improve congestion and allow for further expansion of the city of Welland (Rayburn 1997). This completely changed the City of Welland by relocating the canal away from the urban centre and allowed for further expansion (Rayburn 1997).

3.5. Study Area History

A review of historical resources resulted in the following data relevant to the Study Area:

Map 4: 1833 Sketch of the Welland Canal U.C. (Brock University Maps, Data & GIS Library 2023)

The First Welland Canal appears to be recorded on the southern border of the study area and there are no recorded structures. The location of the canal on this mapping is likely skewed owing to the age and lack of scale on the sketch map.

Map 5: 1862 Tremaine's Map of the Counties of Lincoln & Welland, Canada West (Tremaine 1862)

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The Study Area is situated within parts of Lots 224, 223, 222, 215, & 229 adjacent to the Welland Canal. The land containing the Study Area is listed under the ownership of *Joh. Marr, Joh. Hagar, F.M. Hagar, Jacob Silverthorn, J. Hagar, and M. Silverthorn*. The Welland Canal is recorded on the northern border of the Study Area and there are no recorded structures.

Map 6: 1876 Historical Atlas of the Counties of Lincoln & Welland (Page 1876)

The Study Area is situated within parts of Lots 224, 223, 222, 215, & 229 adjacent to the Welland Canal. The land containing the Study Area is listed under the ownership of *Jon. Marr, J.W. Hagar, B. Stringer, and Welland Canal and Govt Lands*. There appears to be 5 homesteads and a mill noted within the or directly on the limits of the Study Area. Outside the western border of the Study Area the canal towpath is now noted, which now aligns with modern Towpath Road.

Map 7: 1916 NTS Map (Brock University Maps, Data & GIS Library 2023)

The 1916 NTS map depicts the Third Welland Canal, an electric power transmission line, and a homestead adjacent to historic road within the Study Area are present. Outside the western border of the Study Area the canal towpath is noted, which now aligns with modern Towpath Road.

Map 8: 1921 Air Photo (Brock University Maps, Data & GIS Library 2023)

The air photo depicts the excavated Third Welland Canal which is within almost the entirety of the western limit of the Study Area. The central portion of the Study Area is relatively unimpacted with, agricultural lands, and homesteads still present.

Map 9: 1925 Map of the “General Plan of Ship Canal” (Brock University Maps, Data & GIS Library 2023)

This map depicts the Third Welland Canal which is now noted as “To Be Filled In”. The map also includes designs and notation of the later canal as well as the realignment of the Welland River. This map illustrates the extensive soil movement and land modifications conducted to backfill, excavate and realign both the canals and the river.

Map 10: 1934 Air Photo (Brock University Maps, Data & GIS Library 2023)

The air photo depicts the excavation of the present Welland Canal and the extensive realignment the Welland River. The Study Area area has undergone extensive soil disturbance and grading.

Map 11: 1938 NTS Map (Brock University Maps, Data & GIS Library 2023)

The 1938 NTS map map depicts treed areas, and elevation markings confirming the artificial modification of the landscape through earthworks.

Map 12: 1955 Air Photo

The air photo depicts tree lines and sporadic vegetation throughout the Study Area.

Map 13: 1965 Air Photo

The air photo depicts major earthworks ongoing throughout the Study Area. It is clear that extensive soil alteration and disturbance is occurring.

Map 14: 1970 NTS Map

The 1970 NTS map depicts the Study Area as having treed areas, sporadic vegetation, a series of small water bodies and water ways, and elevation markings confirming the artificial modification of the landscape through earthworks. It should be noted that a notation of 'Waste' is present; this may suggest portions of the Study Area have been used for landfill.

Map 15: 1990s NTS Map

The 1990s NTS map depicts the Study Area as having treed areas, sporadic vegetation, and either elevation markings or pathways noted.. It should be noted that the previously noted area of 'Waste' is no longer present.

The following should be noted in regard to the review of historic maps:

- Study Area placement within historic maps is only approximate
- Many historic maps were subscriber based, meaning only individuals who paid a fee would have their property details mapped

4. ARCHAEOLOGICAL CONTEXT

The Study Area is situated within an overall historic landscape that would have been appropriate for both resource procurement and habitation by both Indigenous and Euro-Canadian peoples.

4.1. Registered Archaeological Sites

A search of the Ontario Sites Database conducted on August 17, 2023, using a Study Area centroid of 17T E 643556 N 4764779 indicated that there are 39 registered archaeological sites within a 1 km radius of the Study Area. None of the registered archaeological sites are within the Study Area.

TABLE 2: REGISTERED ARCHAEOLOGICAL SITES WITHIN 1 KM

Borden #	Site Name	Time Period	Affinity	Site Type
AgGt-83	<i>Round</i>	Post-Contact	Euro-Canadian	homestead
AgGt-64	<i>Port robinson Swing Bridge</i>	Post-Contact	Euro-Canadian	bridge, manufacturing, transportation
AgGt-329	<i>None Provided</i>	<i>None Provided</i>	<i>None Provided</i>	<i>None Provided</i>
AgGt-327	<i>Zeina 2</i>	Archaic, Late	Aboriginal	findspot
AgGt-326	<i>Zeina 1</i>	Post-Contact	Euro-Canadian	farmstead
AgGt-322	<i>None Provided</i>	Post-Contact	Euro-Canadian	agricultural
AgGt-321	<i>None Provided</i>	Post-Contact	Euro-Canadian	farmstead
AgGt-320	<i>None Provided</i>	Post-Contact	Euro-Canadian	farmstead
AgGt-318	<i>None Provided</i>	Pre-Contact	<i>None Provided</i>	scatter
AgGt-317	<i>None Provided</i>	Archaic, Middle	<i>None Provided</i>	findspot
AgGt-316	<i>None Provided</i>	Archaic, Late	<i>None Provided</i>	findspot
AgGt-315	<i>None Provided</i>	Woodland, Early	<i>None Provided</i>	findspot
AgGt-312	<i>None Provided</i>	Pre-Contact	<i>None Provided</i>	scatter
AgGt-311	<i>None Provided</i>	Pre-Contact	<i>None Provided</i>	scatter
AgGt-307	<i>None Provided</i>	Pre-Contact	<i>None Provided</i>	scatter
AgGt-306	<i>None Provided</i>	Pre-Contact	<i>None Provided</i>	scatter
AgGt-305	<i>None Provided</i>	Archaic, Late	<i>None Provided</i>	scatter
AgGt-303	<i>None Provided</i>	Pre-Contact	<i>None Provided</i>	scatter
AgGt-302	<i>None Provided</i>	Archaic, Late	<i>None Provided</i>	scatter

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Borden #	Site Name	Time Period	Affinity	Site Type
AgGt-301	<i>None Provided</i>	Archaic, Middle	<i>None Provided</i>	scatter
AgGt-300	<i>None Provided</i>	Pre-Contact	<i>None Provided</i>	scatter
AgGt-298	<i>None Provided</i>	Woodland, Early	<i>None Provided</i>	findspot
AgGt-297	<i>None Provided</i>	Woodland, Late	<i>None Provided</i>	findspot
AgGt-291	<i>Audet Site</i>	Paleo-Indian, Early	<i>None Provided</i>	camp / campsite
AgGt-258	<i>None Provided</i>	Archaic, Late	<i>None Provided</i>	Unknown
AgGt-257	<i>None Provided</i>	Pre-Contact	<i>None Provided</i>	camp / campsite
AgGt-256	<i>None Provided</i>	Archaic, Late, Archaic, Middle	<i>None Provided</i>	camp / campsite
AgGt-249	<i>None Provided</i>	Post-Contact	Euro-Canadian	scatter
AgGt-230	<i>Location 4</i>	Post-Contact	Euro-Canadian	homestead
AgGt-229	<i>Location 3</i>	Pre-Contact	Aboriginal	scatter
AgGt-228	<i>Location 2</i>	Post-Contact	Euro-Canadian	homestead
AgGt-227	<i>Location 1</i>	Pre-Contact	Aboriginal	camp / campsite
AgGt-174	<i>AgGt174</i>	<i>None Provided</i>	<i>None Provided</i>	<i>None Provided</i>
AgGt-173	<i>None Provided</i>	<i>None Provided</i>	<i>None Provided</i>	<i>None Provided</i>
AgGt-172	<i>None Provided</i>	<i>None Provided</i>	<i>None Provided</i>	<i>None Provided</i>
AgGt-103	<i>Richileau</i>	Woodland, Late	Aboriginal	Othercamp/campsite
AgGt-102	<i>Woodlawn</i>	Archaic, Late, Archaic, Middle, Post-Contact, Woodland, Early	Aboriginal, Euro-Canadian	Unknown
AgGt-101	<i>Shumlick 6</i>	Archaic, Middle	Aboriginal	findspot
AgGt-10	<i>Canada Century</i>	Archaic	Aboriginal	Othertoolmanufacturing

4.2. Related and/or Adjacent Archaeological Assessments

A review of Archaeological Assessment reports currently accepted into the provincial register of archaeological reports that have been completed within, directly adjacent too, or detail site excavations within a 50 m buffer of the Study Area resulted in the following accepted reports.

PIF/CIF#: P017-0643-2017

Consultant Firm: Detritus Consulting Ltd.

Report Title: *Stage 1-2 Archaeological Assessment Grisdale Road Property*

Executive Summary:

Detritus Consulting Inc. ('Detritus') was retained by Upper Canada Consulting on behalf of 1977658 Ontario Inc. to conduct a Stage 1-2 archaeological assessment on an agricultural field located on parts 1 and 2 of Township Lot 222, Geographic Township of Thorold, Historical County of Welland, Region of Niagara, Ontario (Figure 1). The Study Area represents the agricultural field and two small sections of woodlot of a large property bound to the east by Kottmeier Road, to the north by a woodlot, to the west by Grisdale Road and to the south by Towpath Road. The portion of the property subject to development ('the Study Area') is irregular in shape, and measures 4.2ha. At the time of assessment, the Study Area comprised an agricultural field and. The remaining 7.25ha of the property is a woodlot abutting the Study Area on the north side that is restricted from development and which has been officially zoned as an area of EH land.

The assessment was triggered by the Provincial Policy Statement ('PPS') that is informed by the Planning Act (Government of Ontario 1990a), which states that decisions affecting planning matters must be consistent with the policies outlined in the larger Ontario Heritage Act (1990b). According to Section 2.6.2 of the PPS, "development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved." To meet this condition, a Stage 1-2 assessment of the Study Area was conducted as part of the Development Application under archaeological consulting license P017 issued to Mr. Garth Grimes by the Ministry of Heritage, Sport, Tourism and Culture Industries ('MHSTCI') and adheres to the archaeological license report requirements under subsection 65 (1) of the Ontario Heritage Act (Government of Ontario 1990b) and the MHSTCI' 2011 Standards and Guidelines for Consultant Archaeologists ('Standards and Guidelines'; Government of Ontario 2011).

The Stage 1 background research indicated that the Study Area exhibited moderate to high potential for the identification and recovery of archaeological resources. A Stage 2 assessment was recommended for the entire Study Area. The subsequent Stage 2 assessment was conducted on November 29 and 30, 2017, and September 9, 2019 (Figure 3). The agricultural field, which was accessible for ploughing, was assessed using a typical pedestrian survey at a five metre (5m) interval. The Stage 2 assessment resulted in the identification and documentation of three pre-contact Aboriginal archaeological sites; P1 (AgGt-257), P2 (AgGt-256), and P3.

P1 (AgGt-257) was identified in the eastern portion of the agricultural field within the Study Area, approximately 35m to the east of P2 and 106m to the east of P2 (AgGt-256). The Stage 2 assessment of P1 (AgGt-257) resulted in the documentation of eight pieces of Onondaga chert debitage scattered across an area of 21m by 12m. These artifacts are considered to be temporally non-diagnostic, other than being produced by pre-contact Aboriginal peoples. For this reason, artifacts such as these cannot help place the archaeological site within a specific time period or cultural group. Given the close proximity of P1 (AgGt-257) to P2 (AgGt-256) and the presence of four pre-contact Aboriginal sites within 1km of the Study Area P1 (AgGt-257) was determined to retain CHVI. P1 (AgGt-257) fulfills the criteria for a Stage 3 archaeological investigation as per Section 2.2 Guideline 2 of the MHSTCI' 2011 Standards and Guidelines (Government of Ontario

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2011). To further evaluate the site's CHVI, a Stage 3 archaeological assessment is recommended for P1 (AgGt-257).

P2 (AgGt-256) was identified in the south-central portion of the agricultural field within the Study Area, approximately 73m to the west of P2. The Stage 2 assessment of P2 (AgGt-256) resulted in the documentation of fourteen pieces of Onondaga chert debitage, one core and one projectile point scattered across an area of 24m by 13m. The projectile point recovered from P2 (AgGt-256) was determined to date to the Middle (c. 6000-3200 BC) or Late Archaic (c. 3200-1000/900 BC) periods. Given the diagnostic nature of the projectile point recovered from P2 (AgGt-256), the CHVI of P2 (AgGt-256) is deemed to be significant. P2 (AgGt-256) fulfills the criteria for a Stage 3 archaeological investigation as per Section 2.2 Standard 1a(i)1 of the MHSTCI' 2011 Standards and Guidelines (Government of Ontario 2011). To further evaluate the site's CHVI, a Stage 3 archaeological assessment is recommended for P2 (AgGt-256).

P3 was identified 35m to the west of P1 (AgGt-257) in the eastern portion of the agricultural field within the Study Area. The Stage 2 assessment of P3 resulted in the documentation of a single Onondaga secondary flake. This artifact is considered to be temporally non-diagnostic, other than being produced by pre-contact Aboriginal peoples. For this reason, artifacts such as these cannot help place the archaeological site within a specific time period or cultural group. Given the isolated nature of this non-diagnostic artifact, the CHVI of P3 is judged to be sufficiently documented. P3 does not fulfill the criteria for a Stage 3 archaeological investigation as per Section 2.2 of the MHSTCI' 2011 Standards and Guidelines (Government of Ontario 2011). Therefore, no further archaeological assessment is recommended for P3.

The Stage 3 archaeological assessment will be conducted according to the procedures outlined in the Standards and Guidelines (Government of Ontario 2011). Typically, a Stage 3 assessment begins with an intensive controlled surface pickup ('CSP') across the Stage 2 limits of the sites, conducted as per Section 3.2.1 of the Standards and Guidelines (Government of Ontario 2011). The Stage 2 pedestrian survey, however, consisted of an intensive surface collection across the entire site limits within the agricultural fields; all artifacts were mapped digitally and collected for laboratory analysis. Thus, the conditions for a Stage 3 CSP were met during the Stage 2 assessment.

Given that it is not yet evident that the level of CHVI at the site will result in a recommendation to proceed to Stage 4 (see Section 4.3), the Stage 3 assessments of P1 (AgGt-257) and P2 (AgGt-256) will consist of the hand excavation of 1m square test units every 5m in systematic levels and into the first 5cm of subsoil as per Table 3.1, Standard 1 of the Standards and Guidelines (Government of Ontario 2011). Additional 1m test units, amounting to 20% of the grid total, will be placed in areas of interest within the site extent as per Table 3.1, Standard 2 of the Standards and

Guidelines (Government of Ontario 2011). All excavated soil will be screened through six-millimetre mesh; all recovered artifacts will be recorded by their corresponding grid unit designation and collected for laboratory analysis. If a subsurface cultural feature is encountered, the plan of the exposed feature will be recorded and geotextile fabric will be placed over the unit before backfilling the unit.

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This recommendation applies to the Study Area only, which corresponds with the portion of the property included within the current SPA. The portion of the property designated as EH land is restricted from development without explicit permission from the Approval Authority (see Development Context below). This area was not subject to Stage 2 assessment, but was photo documented only as per Section 2.1, Standard 2a and Standard 6 of the Standards and Guidelines (Government of Ontario 2011).

Furthermore, the portion of the property designated as an area of environmental concern will be protected and no construction impacts will be allowed. Therefore, it is recommended that a temporary fence be installed along the northern boundary of the Study Area during construction and that any construction activities, including the erection of the protective fencing itself, be monitored by a licensed archaeological consultant in order to prevent any impacts outside of the Study Area. 'No-go' instructions will be issued to all on-site construction crews, engineers, architects and any others involved in day-to-day decisions during construction. The location of the area to be avoided will be depicted on all applicable contract drawings and include explicit instructions to avoid the area.

The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.

Relation to Study Area: This Archaeological Assessment was conducted in support of proposed development outside of the limits of the Study Area but within 50 m of the north-western Study Area limit. The Study Area bordering these project lands consist of previously excavated and infilled canal, thus there is no archaeological potential for the identified sites within this report to traverse into the current Study Area.

PIF/CIF#: P389-0348-2018

Consultant Firm: Detritus Consulting Ltd.

Report Title: Stage 3 Archaeological Assessment P1 (AgGt-257), P2 (AgGt-256), and P4 (AgGt-258) Grisdale Road Property

Executive Summary:

Detritus Consulting Ltd. ('Detritus') was retained by Upper Canada Consulting ('the Proponent') to conduct Stage 3 archaeological assessments for archaeological sites P1 (AgGt-257), P2 (AgGt-256), and P4 (AgGt-258), located on Parts 1 and 2 of Township Lot 222, Geographic Township of Thorold, Historical County of Welland, Region of Niagara, Ontario (Figure 1). These investigations were conducted in advance of a proposed residential development at the vacant property bound by Grisdale Road to the west, Towpath Road to the South, Kottmeier Road (Highway 406) to the east, within the town of Thorold, Ontario (Figures 7 and 8).

The assessments of the three sites were triggered by the Provincial Policy Statement ('PPS') that is informed by the Planning Act (Government of Ontario 1990a), which states that decisions affecting planning matters must be consistent with the policies outlined in the larger Ontario Heritage Act (Government of Ontario 1990b). According to Section 2.6.2 of the PPS,

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“development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved.” To meet this condition, Stage 3 assessments were conducted for P1 (AgGt-257), P2 (AgGt-256), and P4 (AgGt-258) during the pre-approval phase of the proposed development under archaeological consulting license P389, issued to Dr. Walter McCall by the Ministry of Heritage, Sport, Culture, and Heritage Industries (‘MHSTCI’), and adhere to the archaeological license report requirements under subsection 65 (1) of the Ontario Heritage Act (Government of Ontario 1990b) and the MHSTCI’s 2011 Standards and Guidelines for Consultant Archaeologists (‘Standards and Guidelines’; Government of Ontario 2011).

Two of the three sites currently under review, P1 (AgGt-257) and P2 (AgGt-256), were identified during a Stage 2 assessment conducted by Detritus in November 2017 (Detritus 2020; PIF# P017-0643-2017; Figure 2 and Tile 2 of the Supplementary Documentation). Only the portion of the development property that is proposed for development was subject to assessment. This reduced Study Area measures 4.2 hectares (‘ha’) and occupies the southern third of the development property. At the time of the assessment, the majority of the Study Area comprised agricultural land, which was subject to a typical pedestrian survey at a five-metre (m) interval. Two small wooded areas occupied the fringes of this field to the south and northwest, and were subject to a test pit survey at a 5m interval. The remaining 7.25ha of the property is covered in woodlot that has been officially zoned as an area of Environmental Hazard and is currently restricted from development.

P1 (AgGt-257) was observed in the agricultural land in the eastern half of the Study Area, approximately 100m to the east of P2 (AhGt-256). The Stage 2 assessment of the site resulted in the documentation of eight pieces of Onondaga chert debitage scattered across an area of 21m by 12m. These artifacts were considered to be temporally non-diagnostic, other than being produced by Aboriginal people during the pre-contact period. Given the proximity of P1 (AgGt-257) to P2 (AgGt-256) and the presence of four registered pre-contact Aboriginal sites within one kilometre of the Study Area, P1 (AgGt-257) was determined to retain cultural heritage value or interest (‘CHVI’) and was recommended for a Stage 3 archaeological assessment, as per Section 2.2 Guideline 2 of the Standards and Guidelines (Government of Ontario 2011a).

P2 (AgGt-256) was identified in the central portion of the agricultural land, along the southern edge of the Study Area. The Stage 2 assessment of the site resulted in the documentation of fourteen pieces of Onondaga chert debitage, one core, and one projectile point scattered across an area of 24m by 13m. The projectile point was heavily reworked and unable to be classified; however, it was side-notched and shared characteristics common to points manufactured during the Middle and Late Archaic periods. Given the results of the Stage 2 assessment, P2 (AgGt-256) was determined to retain CHVI and was recommended for Stage 3 archaeological investigation, as per Section 2.2, Standard 1a(i)1 of the Standards and Guidelines (Government of Ontario 2011). The Stage 3 assessments of P1 (AgGt-257), and P2 (AgGt-256) were conducted between May 14 and 18, 2018. In accordance with Section 3.4, Standard 2 of the Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011a) and Section 1.1, Standard 1 of the Engaging Aboriginal Communities in Archaeology draft technical bulletin (Government of

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Ontario 2011b), local First Nations communities were contacted prior to the commencement of the investigations. For the duration of the Stage 3 assessments, representatives from the Six Nations of the Grand River First Nation, the Mississaugas of the Credit First Nation, and the Haudenosaunee Development Institute participated alongside Detritus field team members as monitors. Additional information on the Aboriginal engagement practices conducted during the Stage 3 assessments is provided in the Supplementary Documentation to this report.

The Stage 3 assessment of P1 (AgGt-257) resulted in the recovery 83 pieces of Onondaga chert chipping detritus from the hand excavation of 14 1m test units (Figure 4). Artifact yields ranged from 0 to 20 with the highest count occurring in the centre of the site. Morphological analysis of the Stage 3 flake assemblage suggests that all stages of lithic reduction occurred at the site. These results are opposite to those of the Stage 2 assessment of the site, which yielded five primary flakes and two secondary flakes, as compared to just a single thinning flake. Overall, the variety of flake types observed during both the Stage 2 and Stage 3 assessments of the site suggest that all stages of lithic reduction occurred at the site. No formal tools, Aboriginal ceramics, or fire cracked rock were recovered during any stage of assessment, nor were any subsurface features observed.

Given all the available evidence, P1 (AgGt-257) has been interpreted as a small activity area occupied seasonally by pre-contact Aboriginal people and characterized by all stages of lithic reduction. Based on the results of the Stage 3 assessment, wherein two test units yielded 10 or more artifacts, P1 (AgGt-257) fulfils the criteria for a Stage 4 archaeological investigation as per Section 3.4.1, Standard 1a of the Standards and Guidelines (Government of Ontario 2011) and retains further CHVI. Stage 4 archaeological mitigation of impacts to P1 (AgGt-257) is recommended.

The Stage 3 assessment of P2 (AgGt-256) resulted in the recovery 165 pre-contact Aboriginal artifacts from the hand excavation of 19 test units (Figure 5). Artifact yields ranged from 0 to 60 with the highest count occurring in the centre of the site at Unit 210E, 520N, in the vicinity of the highest concentration of Stage 2 surface artifacts. The artifact assemblage consisted primarily of pieces of chipping detritus; two utilised flakes and two bifacial tools were also recovered. All of the artifacts within the Stage 3 assemblage were manufactured from Onondaga chert.

Morphological analysis of the flake assemblage suggests that late stage lithic reduction occurred at the site. These results, however, are opposite to those of the previous Stage 2 assessment of the site, which yielded one primary flake and eight secondary flakes as compared to a single thinning flake. Overall, the variety of flake types represented in both the Stage 2 and Stage 3 assessments suggest that all stage of lithic reduction occurred at the site. Additional evidence for early stages of lithic reduction at the site includes the chert core in the Stage 2 assemblage, and the two bifacial tools in the Stage 3 assemblage. Additional evidence for late stage lithic reduction is provided by the Middle to Late Archaic projectile point in the Stage 2 assemblage, and the two expedient tools in the Stage 3 assemblage. No Aboriginal ceramics, or fire cracked rock were recovered during any stage of assessment, nor were any subsurface features observed.

Based on all available evidence, including the projectile point observed during the Stage 2

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assessment of the site, P2 (AgGt-256) has been interpreted as a medium size activity area occupied seasonally by pre-contact Aboriginal people during the Middle or Late Archaic periods and characterized by all stages of lithic reduction including early reduction for the creation of preforms and bifaces, and late reduction for the creation and maintenance of formal tools and projectile points. Based on the results of the Stage 3 assessment, wherein five test units yielded ten or more lithic artifacts, P2 (AgGt-256) fulfills the criteria for a Stage 4 archaeological investigation as per Section 3.4.1, Standard 1a of the Standards and Guidelines (Government of Ontario 2011) and retains further CHVI. Stage 4 archaeological mitigation of impacts to P2 (AgGt-256) is recommended.

During the course of the Stage 3 assessments at P1 (AgGt-257) and P2 (AgGt-256), the First Nations monitors on site observed an additional artifact scatter at the western end of the Study Area. Given the weathering of the agricultural land over the winter, the area was subject to a controlled surface pick-up ('CSP'), conducted as per Section 3.2.1 of the Standards and Guidelines (Government of Ontario 2011a). This surface collection was conducted on May 24, 2018, and resulted in the documentation of 229 pre-contact Aboriginal artifacts spanning an area of 48m by 46m (Tile 6 of the Supplementary Documentation). Most of the observed artifacts (n=224) were pieces of chipping detritus. Also present in the assemblage were two bifacial tools, a preform, a scraper, and a projectile point. All of the surface artifacts were manufactured from Onondaga chert. Given the quantity of observed surface artifacts, the scatter was identified in the field as P4 (AgGt-258), and was recommended for Stage 3 test unit excavation.

The test unit excavation at P4 (AgGt-258) was conducted between May 24 and June 13, 2018 and resulted in the documentation of an additional 281 pieces of Onondaga chert chipping detritus from the hand excavation of 28 Stage 3 units (Figure 6). Artifact yields ranged from 0 to 77 with the highest counts occurring in the northeastern quadrant of the site, in the area of highest surface artifact concentration. The two highest yielding units, located at 500N and 505N along the 200E grid line, produced almost half of the artifacts recovered during the test unit excavation (48.4%; n=136). Two units to the east, at 500N and 505N along the 205E grid line, and two units to the west, at 190E and 195E along the 500N grid line, yielded between 11 and 27 artifacts respectively.

The morphological analysis of the Stage 3 flake assemblage suggests that all stages of lithic reduction activities were undertaken at the site including early reduction for the production of preforms and bifaces, and late stage reduction for the production and maintenance of formal tools and projectile points. This conclusion is supported by the variety of tools documented among the surface artifacts. The projectile point was fragmentary, but reminiscent of a Brewerton Corner notched variety, dating to the Middle Archaic period. Given all the available evidence, P4 (AgGt-258) has been interpreted as a large activity area occupied seasonally by pre-contact Aboriginal

people during the Middle Archaic period and characterized by all stages of lithic reduction. Based on the results of the Stage 3 assessment, wherein five test units yielded 10 or more artifacts, P4 (AgGt-258) fulfills the criteria for a Stage 4 archaeological investigation as per Section 3.4.1, Standard 1a of the Standards and Guidelines (Government of Ontario 2011a) and retains further

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CHVI. Stage 4 archaeological mitigation of impacts to P4 (AgGt-258) is recommended.

The MHSTCI prefers that sites recommended for Stage 4 mitigation of impacts be avoided and protected rather than excavated, as per Section 7.9.4, Standard 2 of the Standards and Guidelines (Government of Ontario 2011). Options to reduce or eliminate impacts to archaeological sites include redesigning the Project Location, excluding the archaeological site area from the Project Location, or incorporating the area of the archaeological site into the Project Location but without alteration, as outlined in Section 3.5 of the Standards and Guidelines (Government of Ontario 2011a). If these options are not feasible, Stage 4 archaeological mitigation by hand excavation is an alternative.

In consultation with the client, the Stage 4 mitigations of P1 (AgGt-257), P2 (AgGt-256), and P4 (AgGt-258) by avoidance and protection are not viable options. As such, a Stage 4 mitigation by hand excavation is recommended at each of the three sites, conducted as per Sections 4.2.1 and 4.2.2 of the Standards and Guidelines (Government of Ontario 2011a). The Stage 4 excavation will consist of a hand excavated block of 1m units surrounding the Stage 3 test units that yielded at least 10 artifacts at each site. The extent of the excavation blocks will be determined according to Section 4.3, Table 4.1 of the Standards and Guidelines (Government of Ontario 2011a). More specifically, for small pre-contact sites, Table 4.1 states that excavation can not be considered to be completed until there are fewer than ten artifacts from units at the edge of the block excavation. Additionally, excavation must be continued if units include either two formal tools or diagnostic artifacts, or two fire-cracked rock, bone or burnt artifacts.

Soil from all units will be screened through 6mm hardware cloth to facilitate the recovery of any artifacts that may be present. All artifacts will be bagged and tagged by provenience. The exposed subsoil surface will be cleaned by shovel or trowel and will be examined for cultural features. If any subsurface cultural features are encountered, they will be recorded and excavated by hand in accordance with Section 4.2.2, Standard 7 of the Standards and Guidelines (Government of Ontario 2011a). Block excavation will continue to 2m beyond any cultural feature identified in accordance with Section 4.2.2, Standard 7c of the Standards and Guidelines (Government of Ontario 2011a).

The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.

Relation to Study Area: This Archaeological Assessment was conducted in support of proposed development outside of the limits of the Study Area but within 50 m of the north-western Study Area limit. The Study Area bordering these project lands consist of previously excavated and infilled canal, thus there is no archaeological potential for the identified sites within this report to traverse into the current Study Area.

PIF/CIF#: P389-0369-2018

Consultant Firm: Detritus Consulting Ltd.

Report Title: *Stage 4 Mitigation of Impacts P4 (AgGt-258) Grisdale Road Property*

Executive Summary:

Detritus Consulting Ltd. ('Detritus') was retained by Upper Canada Consulting ('the Proponent') to conduct a Stage 4 mitigation of impacts for archaeological site P4 (AgGt-258), located on Township Lot 222 within the geographic Township of Thorold and historical County of Welland, now the Region of Niagara, Ontario (Figure 1). This investigation was conducted in advance of a proposed subdivision development at the vacant property bound by Grisdale Road to the west, Towpath Road to the South, and Kottmeier Road (Highway 406) to the east, within the town of Thorold, Ontario (Figure 5)

According to the Provincial Policy Statement ('PPS') that is informed by the Planning Act (Government of Ontario 1990a), decisions affecting planning matters must be consistent with the policies outlined in the larger Ontario Heritage Act (1990b). Section 2.6.2 of the PPS states that "development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved." To meet this condition, the Stage 4 investigation at P4 (AgGt-258) was conducted during the pre-approval phase of development under archaeological consulting license P389 issued to Dr. Walter McCall by the Ministry of Heritage, Sport, Tourism and Culture Industries ('MHSTCI') and adheres to the archaeological license report requirements under subsection 65 (1) of the Ontario Heritage Act (Government of Ontario 1990b) and the MHSTCI's 2011 Standards and Guidelines for Consultant Archaeologists ('Standards and Guidelines'; Government of Ontario 2011a).

The original Stage 2 assessment of the development property was conducted by Detritus in November 2017 (Detritus 2019; PIF# P017-0643-2017; Figure 2). Only the portion of the property that is proposed for development was subject to assessment. This reduced Study Area measures 4.2 hectares (ha) and occupies the southern third of the development property. At the time of the assessment, the majority of the Study Area comprised agricultural land, which was subject to a typical pedestrian survey at a 5m interval. Two small wooded areas occupied the fringes of this field to the south and northwest, and were subject to a test pit survey at a 5m interval.

This investigation resulted in the documentation of two archaeological sites, P1 (AgGt-257) and P2 (AgGt-256), as well as a single findspot, P3; the two sites were recommended for additional assessment (Tile 2 of the Supplementary Documentation). The Stage 3 assessments of P1 (AgGt-257), and P2 (AgGt-256) were conducted between May 14 and 18, 2018 (Detritus 2020; PIF#s P389-0348-2028, P389-0349-2028). For the duration of the Stage 3 assessments, representatives from the Six Nations of the Grand River First Nation, the Mississaugas of the Credit First Nation, and the Haudenosaunee Development Institute participated alongside Detritus field team members as monitors.

During the course of the Stage 3 assessments at P1 (AgGt-257) and P2 (AgGt-256), the First

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Nations monitors on site observed an additional artifact scatter at the western end of the Study Area. Given the weathering of the agricultural land over the winter, the area was subject to a controlled surface pick-up ('CSP') on May 24, 2018. This surface collection resulted in the documentation of 229 pre-contact Aboriginal artifacts spanning an area of 48m by 46m. Most of the observed artifacts were pieces of chipping detritus. Also present in the assemblage were two bifacial tools, a preform, a scraper, and a projectile point. All of the surface artifacts were manufactured from Onondaga chert. Given the quantity of observed surface artifacts, the scatter was identified in the field as P4 (AgGt-258), and was recommended for Stage 3 test unit excavation (Detritus 2020).

The test unit excavation at P4 (AgGt-258) was conducted between May 24 and June 13, 2018 and resulted in the documentation of an additional 281 pieces of Onondaga chert chipping detritus from the hand excavation of 28 Stage 3 units. Artifact yields ranged from 0 to 77 with the highest counts occurring in the northeastern quadrant of the site, in the area of highest surface artifact concentration. The two highest yielding units, located at 500N and 505N along the 200E grid line, produced almost half of the artifacts recovered during the test unit excavation. Two units to the east, at 500N and 505N along the 205E grid line, and two units to the west, at 190E and 195E along the 500N grid line, yielded between 11 and 27 artifacts respectively.

The morphological analysis of the Stage 3 flake assemblage from P4 (AgGt-258) suggested that all stages of lithic reduction activities were undertaken at the site including early reduction for the production of preforms and bifaces, and late stage reduction for the production and maintenance of formal tools and projectile points. This conclusion was supported by the variety of tools documented among the surface artifacts. The projectile point was fragmentary, but reminiscent of a Brewerton Corner notched variety, dating to the Middle Archaic period. Based on the results of the Stage 3 assessment, wherein six test units yielded ten or more artifacts, P4 (AgGt-258) fulfilled the criteria for a Stage 4 archaeological investigation as per Section 3.4.1, Standard 1a of the Standards and Guidelines (Government of Ontario 2011a).

In consultation with the client, avoidance and protection at the site was not a viable option. As such, it was recommended that the Stage 4 mitigation at P4 (AgGt-258) consist of a hand excavated block of 1m units surrounding the highest yielding Stage 3 test units. This investigation was conducted between July 24 and August 22, 2018. Once again, representatives from local First Nations communities participated alongside Detritus field team members as monitors. Additional information on the Aboriginal engagement practices conducted during the Stage 4 mitigation is provided in the Supplementary Documentation to this report

The Stage 4 excavation at P4 (AgGt-258) resulted in the hand excavation of 176 1m units, surrounding the six highest yielding Stage 3 units along the 500N and 505N grid lines (Figure 4). This investigation resulted in a single continuous excavation block that measured 22m east-west by 13m north-south, and incorporated 11 of the Stage 3 units and most of the CSP findspots.

A total of 4,339 pre-contact Aboriginal artifacts were recovered during the excavation, most of which (n=4,336) were pieces of chipping detritus; the remainder of the assemblage included a

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biface, a projectile point, and a scraper. All of the artifacts were manufactured Onondaga chert. Artifact yields among the Stage 4 units ranged from 0 to 155, with the highest counts occurring in the northeast quadrant of the site, in the vicinity of the highest concentration of surface artifacts. The scraper and biface were recovered from units within this concentration, nearer the centre of the site. The projectile point was recovered from Unit 191E, 499N in the southwest corner of the site.

According to the morphological analysis of the chipping detritus, most of the chert flakes were fragmentary (n=3,462), and unable to be classified. Secondary (n=421) and thinning/micro flakes (n=381) were represented in almost equal amounts; the remainder of the flake assemblage ten primary flakes and 60 pieces of block shatter. These results build upon those of the previous Stage 3 assessment, which also produced nearly equal amounts of secondary (n=90) and thinning/micro flakes (n=108), but no primary flakes. The variety of flake types encountered during all three stages of investigation suggest that both early and late stages of lithic reduction occurred at the site, with a predilection towards late stage lithic reduction for the production and maintenance of formal tools and projectile points. Additional evidence for early stage lithic reduction is provided by the preform and bifacial tool in the Stage 3 assemblage and a second bifacial tool in the Stage 4 assemblage. Additional evidence for late stage lithic reduction is provided by the variety of formal tools represented within the Stage 3 and 4 artifact assemblages, including two projectile points.

The exclusive use of Onondaga chert at P4 (AgGt-258), meanwhile, suggests that the occupants of the site were largely relying on a single source of raw material. Outcrops of Onondaga chert can be found along the north shore of Lake Erie between Long Point and the Niagara River, which is approximately 18km to the south of the site.

Finally, 42 of the flakes within the Stage 4 assemblage demonstrated signs of surface burning. Most of these (n=31) were recovered from Unit 199E, 501N in the centre of the site, in the vicinity of the scraper and biface and just west of the highest yielding Stage 4 units. The remaining burnt flakes were recovered from ten units scattered primarily throughout the western half of the site. No Aboriginal ceramics, or fire cracked rock were recovered during the Stage 4 mitigation, nor were any subsurface features observed.

Given all of the available evidence, P4 (AgGt-258) has been interpreted as a large campsite occupied seasonally by pre-contact Aboriginal people throughout the Archaic period and characterized by early stage lithic reduction for the production of blanks and preforms, and late stage lithic reduction for the production and maintenance of formal tools and bifaces.

The Stage 4 mitigation of P4 (AgGt-258) is now complete. The CHVI of P4 (AgGt-258) has been fully documented and the information will be preserved for future study. P4 (AgGt-258) no further CHVI, as per Section 7.11.4 Standard 1 of the Standards and Guidelines (Government of Ontario 2011a).

The Executive Summary highlights key points from the report only; for complete information

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and findings, the reader should examine the complete report.

PIF/CIF#: P389-0360-2018

Consultant Firm: Detritus Consulting Ltd.

Report Title: Stage 4 Mitigation of Impacts P2 (AgGt-258) Grisdale Road Property

Executive Summary:

Detritus Consulting Ltd. ('Detritus') was retained by Upper Canada Consulting ('the Proponent') to conduct a Stage 4 mitigation of impacts for archaeological site P2 (AgGt-256), located on Township Lot 222 within the geographic Township of Thorold and historical County of Welland, now the Region of Niagara, Ontario (Figure 1). This investigation was conducted in advance of a proposed subdivision development at the vacant property bound by Grisdale Road to the west, Towpath Road to the South, and Kottmeier Road (Highway 406) to the east, within the town of Thorold, Ontario (Figure 5)

According to the Provincial Policy Statement ('PPS') that is informed by the Planning Act (Government of Ontario 1990a), decisions affecting planning matters must be consistent with the policies outlined in the larger Ontario Heritage Act (1990b). Section 2.6.2 of the PPS states that "development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved." To meet this condition, the Stage 4 investigation at P1 (AgGt-257) was conducted during the pre-approval phase of development under archaeological consulting license P389 issued to Dr. Walter McCall by the Ministry of Heritage, Sport, Tourism and Culture Industries ('MHSTCI') and adheres to the archaeological license report requirements under subsection 65 (1) of the Ontario Heritage Act (Government of Ontario 1990b) and the MHSTCI's 2011 Standards and Guidelines for Consultant Archaeologists ('Standards and Guidelines'; Government of Ontario 2011a).

P2 (AgGt-256) was one of three sites identified during a Stage 2 assessment of the development property, conducted by Detritus in November, 2017 (Detritus 2019; PIF# P017-0643-2017; Figure 2 and Tile 2 of the Supplementary Documentation). Only the portion of the development property that is proposed for development was subject to assessment. This reduced Study Area measures 4.2 hectares ('ha') and occupies the southern third of the property. At the time of the assessment, the majority of the Study Area comprised agricultural land, which was subject to a typical pedestrian survey at a five-metre (m) interval.

P2 (AgGt-256) was identified in the central portion of the agricultural land, along the southern edge of the Study Area, approximately 100m to the east of P1 (AgGt-257). The Stage 2 assessment of the site resulted in the documentation of fourteen pieces of Onondaga chert debitage, one core, and one projectile point scattered across an area of 24m by 13m. The projectile point was heavily reworked and unable to be classified; however, it was side-notched and shared characteristics common to points manufactured during the Middle and Late Archaic periods. Given the results of the Stage 2 assessment, P2 (AgGt-256) was determined to retain cultural heritage value or interest ('CHVI') and was recommended for Stage 3 archaeological investigation, as per Section

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2.2, Standard 1a(i)1 of the Standards and Guidelines (Government of Ontario 2011).

The Stage 3 assessment of P2 (AgGt-256) was conducted on May 17 and May 18, 2018 (Detritus 2020; PIF# P389-0349-2018; Figure 2 and Tile 2 of the Supplementary Documentation). During this investigation, representatives from the Six Nations of the Grand River First Nation, the Mississaugas of the Credit First Nation, and the Haudenosaunee Development Institute participated alongside Detritus field team members as monitors.

The Stage 3 assessment of the site resulted in the recovery 165 pre-contact Aboriginal artifacts from the hand excavation of 19 test units (Figure 4). Artifact yields ranged from 0 to 60 with the highest count occurring in the centre of the site at Unit 210E, 520N, in the vicinity of the highest concentration of Stage 2 surface artifacts. The artifact assemblage consisted primarily of pieces of chipping detritus; two utilised flakes and two bifacial tools were also recovered. All of the artifacts within the Stage 3 assemblage were manufactured from Onondaga chert.

Overall, the variety of flake types represented in both the Stage 2 and Stage 3 assessments of the site suggest that all stages of lithic reduction occurred at the site. Additional evidence for early stages of lithic reduction at the site included the chert core in the Stage 2 assemblage, and the two bifacial tools in the Stage 3 assemblage. Additional evidence for late stage lithic reduction was provided by the Middle to Late Archaic projectile point in the Stage 2 assemblage, and the two expedient tools in the Stage 3 assemblage.

Based on the results of the Stage 3 assessment, wherein five test units yielded ten or more artifacts, P2 (AgGt-256) was determined to retain CHVI and thus fulfilled the criteria for a Stage 4 mitigation of developmental impacts, as per Section 3.4.1, Standard 1a of the Standards and Guidelines (Government of Ontario 2011a).

In consultation with the client, avoidance and protection at the site was not a viable option. As such, it was recommended that the Stage 4 mitigation at P2 (AgGt-256) consist of a hand excavated block of 1m units surrounding the highest yielding Stage 3 test units. This investigation was conducted between June 20 and July 23, 2018. Once again, representatives from local First Nations communities participated alongside Detritus field team members as monitors. Additional information on the Aboriginal engagement practices conducted during the Stage 4 mitigation is provided in the Supplementary Documentation to this report

The Stage 4 mitigation of P2 (AgGt-256) resulted in the hand excavation of 153 1m units, surrounding the five highest yielding Stage 3 units along the 520N and 525N grid lines. This investigation resulted in a single, continuous Stage 4 excavation block that measured 19m east-west by 12m north-south, and incorporated seven Stage 3 units and most of the Stage 2 findspots.

A total of 3,285 pre-contact Aboriginal artifacts were recovered during the excavation, most of which (n=3272) were pieces of chipping detritus. The remainder of the assemblage comprised four utilized flakes, four scrapers, three projectile points, one biface, and one drill. Most of the artifacts were manufactured Onondaga chert; one of the projectile points was manufactured from

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Ancaster chert. Artifact yields among the Stage 4 units ranged from 0 to 119, with the highest counts occurring in the centre of the site, in the vicinity of the highest yielding Stage 3 units. Most of the formal tools were recovered in the northern half of the site, north of the 521N grid line. Included among these specimens were two of the three projectile points. Both were fragmentary, although one shared characteristics that are considered typical Brewerton types from the Middle Archaic period. The third projectile point, identified as a Late Archaic variety, was recovered from the southeast corner of the site in Test Unit 214E, 518N.

According to the morphological analysis of the chipping detritus, over three quarters of the chert flakes were fragmentary, and unable to be classified. Secondary (n=330) and thinning flakes (n=329) were represented in almost equal amounts; the remainder of the flake assemblage comprised 30 primary flakes and 92 pieces of block shatter. These results build upon those of earlier assessments. The Stage 3 assessment yielded 54 flakes that were able to be classified, most of which were identified as thinning flakes (n=40). The Stage 2 flake assemblage, meanwhile, was dominated by secondary flakes (n=8), with just a single primary flake and thinning flake represented. The variety of flake types encountered during all three stages of investigation suggest that both early and late stages of lithic reduction occurred at the site. The predominant use of Onondaga chert at P2 (AgGt-256), meanwhile, suggests that the occupants of the site were largely relying on a single source of raw material. Outcrops of Onondaga chert can be found along the north shore of Lake Erie between Long Point and the Niagara River, which is approximately 17km to the south of the site.

No Aboriginal ceramics or fire cracked rock were recovered during any stage of investigation, nor were any subsurface features observed. Given all of the available evidence, P2 (AgGt-256) has been interpreted as a medium size campsite occupied seasonally by pre-contact Aboriginal people throughout the Middle and Late Archaic periods, and characterized by early stage lithic reduction for the production of blanks and preforms, and late stage lithic reduction for the production and maintenance of formal tools and bifaces. The variety of tools recovered during all stages of assessment, including three bifacial tools and four projectile points, supports this conclusion.

The Stage 4 mitigation of P2 (AgGt-256) is now complete. The CHVI of P2 (AgGt-256) has been fully documented and the information will be preserved for future study. P2 (AgGt-256) no further CHVI, as per Section 7.11.4 Standard 1 of the Standards and Guidelines (Government of Ontario 2011a).

The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.

Relation to Study Area: This Archaeological Assessment was conducted in support of proposed development outside of the limits of the Study Area but within 50 m of the north-western Study Area limit. The Study Area bordering these project lands consist of previously excavated and infilled canal, thus there is no archaeological potential for the identified sites within this report to traverse into the current Study Area.

PIF/CIF#: P389-0361-2018

Consultant Firm: Detritus Consulting Ltd.

Report Title: *Stage 4 Mitigation of Impacts P1 (AgGt-257) Grisdale Road Property*

Executive Summary:

Detritus Consulting Ltd. ('Detritus') was retained by Upper Canada Consulting ('the Proponent') to conduct a Stage 4 mitigation of impacts for archaeological site P1 (AgGt-257), located on Township Lot 222 within the geographic Township of Thorold and historical County of Welland, now the Region of Niagara, Ontario (Figure 1). This investigation was conducted in advance of a proposed subdivision development at the vacant property bound by Grisdale Road to the west, Towpath Road to the South, and Kottmeier Road (Highway 406) to the east, within the town of Thorold, Ontario (Figure 5)

According to the Provincial Policy Statement ('PPS') that is informed by the Planning Act (Government of Ontario 1990a), decisions affecting planning matters must be consistent with the policies outlined in the larger Ontario Heritage Act (1990b). Section 2.6.2 of the PPS states that "development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved." To meet this condition, the Stage 4 investigation at P1 (AgGt-257) was conducted during the pre-approval phase of development under archaeological consulting license P389 issued to Dr. Walter McCall by the Ministry of Heritage, Sport, Tourism and Culture Industries ('MHSTCI') and adheres to the archaeological license report requirements under subsection 65 (1) of the Ontario Heritage Act (Government of Ontario 1990b) and the MHSTCI's 2011 Standards and Guidelines for Consultant Archaeologists ('Standards and Guidelines'; Government of Ontario 2011a).

P1 (AgGt-257) was one of three sites identified during a Stage 2 assessment of the development property, conducted by Detritus in November 2017 (Detritus 2020a; PIF# P017-0643-2017; Figure 2 and Tile 2 of the Supplementary Documentation). Only the portion of the development property that is proposed for development was subject to assessment. This reduced Study Area measures 4.2 hectares ('ha') and occupies the southern third of the property. At the time of the assessment, the majority of the Study Area comprised agricultural land, which was subject to a typical pedestrian survey at a five-metre (m) interval.

P1 (AgGt-257) was observed in the agricultural land in the eastern half of the Study Area, approximately 100m to the east of P2 (AhGt-256). The Stage 2 assessment of the site resulted in the documentation of eight pieces of Onondaga chert debitage scattered across an area of 21m by 12m. These artifacts were considered to be temporally non-diagnostic, other than being produced by Aboriginal people during the pre-contact period. Given the proximity of P1 (AgGt-257) to P2 (AgGt-256) and the presence of four registered pre-contact Aboriginal sites within one kilometre of the Study Area, P1 (AgGt-257) was determined to retain cultural heritage value or interest ('CHVI') and was recommended for a Stage 3 archaeological assessment, as per Section 2.2 Guideline 2 of the Standards and Guidelines (Government of Ontario 2011a).

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The Stage 3 assessment of P1 (AgGt-257) was conducted on May 14 and 16, 2018. During this investigation, representatives from the Six Nations of the Grand River First Nation, the Mississaugas of the Credit First Nation, and the Haudenosaunee Development Institute participated alongside Detritus field team members as monitors.

The Stage 3 assessment of the site resulted in the recovery 83 pieces of Onondaga chert chipping detritus from the hand excavation of 14 1m test units (Figure 4). Artifact yields ranged from 0 to 20 with the highest count occurring in the centre of the site. Overall, the variety of flake types observed during both the Stage 2 and Stage 3 assessments of the site suggest that all stages of lithic reduction occurred at the site. Based on the results of the Stage 3 assessment, wherein two test units yielded ten or more artifacts, P1 (AgGt-257) was determined to retain further CHVI and was recommended for a Stage 4 archaeological mitigation of impacts, as per Section 3.4.1, Standard 1a of the Standards and Guidelines (Government of Ontario 2011a).

In consultation with the client, avoidance and protection at the site was not a viable option. As such, it was recommended that the Stage 4 mitigation at P1 (AgGt-257) consist of a hand excavated block of 1m units surrounding the highest yielding Stage 3 test units. This investigation was conducted between June 4 and June 15, 2018. Once again, representatives from local First Nations communities participated alongside Detritus field team members as monitors. Additional information on the Aboriginal engagement practices conducted during the Stage 4 mitigation is provided in the Supplementary Documentation to this report

The Stage 4 excavation at P1 (AgGt-257) involved the hand excavation of 75 1m units surrounding the two highest yielding Stage 3 units at 192E, 527N and 195E, 525N, resulting in a single continuous excavation block measuring 12m by 10m (Figure 4). This excavation block incorporated most of the Stage 3 units (n=10), but only one of the eight Stage 2 artifact findspots.

A total of 769 pre-contact Aboriginal artifacts were recovered during the excavation, most of which (n=766) were pieces of chipping detritus; two preforms and a single scraper were also represented in the Stage 4 assemblage. All of the artifacts were manufactured Onondaga chert. Artifact yields among the Stage 4 units ranged from 0 to 32, with the highest counts occurring in the vicinity of the highest yielding Stage 3 units. The three formal tools were recovered from the northern end of the site.

According to the morphological analysis of the chipping detritus, almost two thirds of the chert flakes were fragmentary, and unable to be classified. Secondary (n=127) and thinning/micro flakes (n=100) were represented in almost equal amounts; the remainder of the flake assemblage comprised block shatter. These results build upon those of earlier assessments. The Stage 3 assessment yielded 21 flakes that were able to be classified, most of which were identified as thinning flakes (n=18). The Stage 2 flake assemblage, meanwhile, was dominated by primary (n=5) and secondary (n=2) flakes, as compared to a single thinning flake. The variety of flake types encountered during all three stages of investigation suggest that both early and late stages of lithic reduction occurred at the site. The exclusive use of Onondaga chert at P1 (AgGt-257), meanwhile, suggests that the occupants of the site were largely relying on a single source of raw

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material. Outcrops of Onondaga chert can be found along the north shore of Lake Erie between Long Point and the Niagara River, which is approximately 18km to the south of the site.

No diagnostic artifacts, Aboriginal ceramics, or fire cracked rock were recovered during any stage of investigation, nor were any subsurface features observed. Given all the available evidence, P1 (AgGt-257) has been interpreted as a small activity area occupied seasonally by Aboriginal people during the pre-contact period and characterized by early stage lithic reduction for the production of blanks and preforms, and late stage lithic reduction for the production and maintenance of formal tools and bifaces. The presence of two preforms and a scraper in the Stage 4 assemblage supports this conclusion.

The Stage 4 mitigation of P1 (AgGt-257) is now complete. The CHVI of P1 (AgGt-257) has been fully documented and the information will be preserved for future study. P1 (AgGt-257) no further CHVI, as per Section 7.11.4 Standard 1 of the Standards and Guidelines (Government of Ontario 2011a).

The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.

Relation to Study Area: This Archaeological Assessment was conducted in support of proposed development outside of the limits of the Study Area but within 50 m of the north-western Study Area limit. The Study Area bordering these project lands consist of previously excavated and infilled canal, thus there is no archaeological potential for the identified sites within this report to traverse into the current Study Area.

4.3. Cemeteries & Burials

As per a cursory search conducted on August 17, 2023, there are no known or registered cemeteries or burials within or directly adjacent to the Study Area.

4.4. Archaeological Management Plan

There is no active and/or approved Archaeological Management/Master Plan for the area in which the Study Area is located.

4.5. Heritage Conservation District

The Study Area is not situated within an existing or proposed Heritage Conservation District (OHT 2023).

4.6. Heritage Properties

The Study Area contains no registered or listed heritage properties.

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4.7. Historic Plaques

There are no historic plaques within a 100 m radius of the Study Area (Ontario Heritage Trust 2023).

4.8. Study Area Archaeological Potential

The Study Area retains the following criteria of indicating archaeological potential:

- Registered archaeological sites within 300 m of the Study Area
- Present or past water sources within 300 m of the Study Area,
- Proximity to early historic transportation routes
- The Study Area is situated within an area suitable for resource procurement, transit and habitation by both pre-historic and pre-contact Indigenous Peoples.

5. STAGE 1 SITE INSPECTION

Prior to the initiation of fieldwork, the Field Director reviewed the existing Stage 1 archaeological analysis and recommendations; all field staff were then briefed on the archaeological potential of the Study Area. Fieldwork was conducted in August 2023. The weather consisted of light cloud cover or sunny conditions, but at all times the assessment was conducted under appropriate weather conditions.

The assessment began with a visual review of the Study Area conditions.

TABLE 3: DATES & DIRECTORS OF ASSESSMENT

Date	Weather	Field Director(s)	Assistant Field Director(s)
August 17 2023	22°C, light cloud cover	D. Jimenez (R1371)	-

The Study Area was subject to a Stage 1 Site Inspection Visual Survey with no ground disturbances being conducted. This inspection was done to confirm the general disturbances as noted in the background research completed for this report. Extensive visual evidence of such disturbances was seen in both the topography and the exposed soils (Images 1-54).

It should be noted that the largest area of potential identified was bordered by distinct areas of disturbance and grading (Maps 16 & 17, Images 22-25 & 47). This area appears to perhaps have been avoided during 20th century earthworks, and further to this, this area is adjacent to

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the older Welland River shoreline. As such, this area, along with the smaller identified area of potential must be subject to further archaeological survey.

6. RECORD OF FINDS

The completed archaeological assessment resulted in the creation of various documentary records (Table 4).

TABLE 4: INVENTORY OF STAGE 2 HOLDINGS

Record Type or Item	Details	# of Boxes
Field Notes: P379-0602-2023	Digital Files	-
Photos: P379-0602-2023	Digital Files	-

7. STAGE 1 ANALYSIS & CONCLUSIONS

It is clear that the Study Area has undergone extensive and deep soil disturbance over multiple decades of the 20th century, this has negated the majority of the archaeological potential (Maps 16 & 17). However, based upon a review of available air photos, and the completed Stage 1 Site Inspection, small area of archaeological potential may be present and as such a Stage 2 Archaeological Assessment Survey is recommended.

8. STAGE 1 ARCHAEOLOGICAL ASSESSMENT RECOMMENDATIONS

Given the results and conclusions of the completed Stage 1 Archaeological Assessment with Site Inspection, the following recommendations are made:

- It is the professional opinion of the archaeological licensee, Thomas Irvin (P379) that the portions of the Study Area identified herein as deeply disturbed are of low archaeological potential and are of no further archaeological concern.
- Stage 2 Archaeological Assessment Survey is recommended for the lands identified as having archaeological potential and should be surveyed via the following:
 - Lands which are not viable to plough must be subject to a test pit survey with the following conditions:
 - ▶ All test pits are to be excavated by hand at 5 m intervals along 5 m transects
 - ▶ Test pits must be excavated to within 1 m of all extant and/or ruined structures when present

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- ▶ All test pits must be 30 cm in diameter and be excavated into the first 5 cm of subsoil
 - ▶ All test pits must be examined for evidence of fill, stratigraphy or cultural features
 - ▶ All excavated soils must be screened through 6 mm wire mesh to facilitate artifact recovery
 - ▶ All artifacts recovered must be retained via their associated test pit
 - ▶ All test pits are to be backfilled unless instructed otherwise by the landowner
-
- Notwithstanding the above recommendations, the provided Advice On Compliance With Legislation shall take precedent over any recommendations of this report should deeply buried archaeological resources or human remains be found during any future earthworks within the Study Area.

9. ADVICE ON COMPLIANCE WITH LEGISLATION

The Standards and Guidelines for Consultant Archaeologists requires that the following standard statements be provided within all archaeological reports for the benefit of the proponent and approval authority in the land use planning and development process (MTC 2011:126):

This report is submitted to the Minister of Tourism, Culture and Sport 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 fieldwork and report recommendations ensure the conservation, protection and preservation 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 MTCS, a letter will be issued by the ministry stating that there are no further concerns with regard 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 fieldwork 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 Section 48 (1) of the Ontario Heritage Act.

Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the Ontario Heritage Act and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.

The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Service.

10. IMAGES



Image 1: Exposed disturbed soils and grading.



Image 2: Graded lands within Study Area.



Image 3: Vegetation on top of graded soils.



Image 4: Exposed disturbed soils and grading.

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Image 5: Vegetation on top of graded soils.



Image 6: Field Archaeologist demonstrating cut slope/grading.



Image 7: Exposed example of disturbed soil.



Image 8: Field Archaeologist demonstrating cut slope/grading.

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Image 9: Vegetation atop disturbed soils and noticeable grading.



Image 10: Exposed example of disturbed soil.



Image 11: Exposed asphalt.



Image 12: Areas of dense refuse.

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Image 13: Exposed disturbed soils and grading.



Image 14: Exposed disturbed soils and grading.



Image 15: Graded lands within Study Area.



Image 16: Low Lying & Wet area within disturbed lands.

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Image 17: Exposed disturbed soils and grading.



Image 18: Exposed disturbed soils and grading.



Image 19: Exposed disturbed soils and grading.



Image 20: Exposed disturbed soils and grading.

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Image 21: Exposed disturbed soils and grading.



Image 22: Noticeable sloping and grading on the eastern side of the Study Area.



Image 23: Noticeable sloping and grading on the eastern side of the Study Area.



Image 24: Noticeable sloping and grading on the eastern side of the Study Area.

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Image 25: Noticeable sloping and grading alongside the paved walkway on the eastern side of the Study Area.



Image 26: Artificial Low Lying & Wet area.



Image 27: Exposed disturbed soils and grading.



Image 28: Extensive grading and disturbance.

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Image 29: Exposed disturbed soils and grading.



Image 30: Exposed disturbed soils and grading.



Image 31: Exposed disturbed soils and grading.



Image 32: Exposed disturbed soils and grading.

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Image 33: Small body of water surrounded by disturbed soils and grading.



Image 34: Exposed disturbed soils and grading.



Image 35: Exposed disturbed soils and refuse inclusions.



Image 36: Exposed disturbed soils and grading.

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Image 37: Exposed disturbed soils and grading.



Image 38: Exposed disturbed soils and grading..



Image 39: Exposed disturbed soils and grading.



Image 40: Exposed disturbed soils and grading.

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Image 41: Exposed disturbed soils and grading.



Image 42: Exposed disturbed soils and grading.



Image 43: Exposed disturbed soils and grading.



Image 44: Exposed disturbed soils and grading.

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Image 45: Gravel access road adjacent to highly graded soils.



Image 46: Exposed disturbed soils and grading.



Image 47: Vegetation atop graded lands.



Image 48: Exposed disturbed soils and grading.

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Image 49: Exposed disturbed soils and grading.



Image 50: Forested area atop disturbed lands.



Image 51: Exposed disturbed soils and grading.



Image 52: Paved walkway and gravel road adjacent to graded lands and ditched lands.

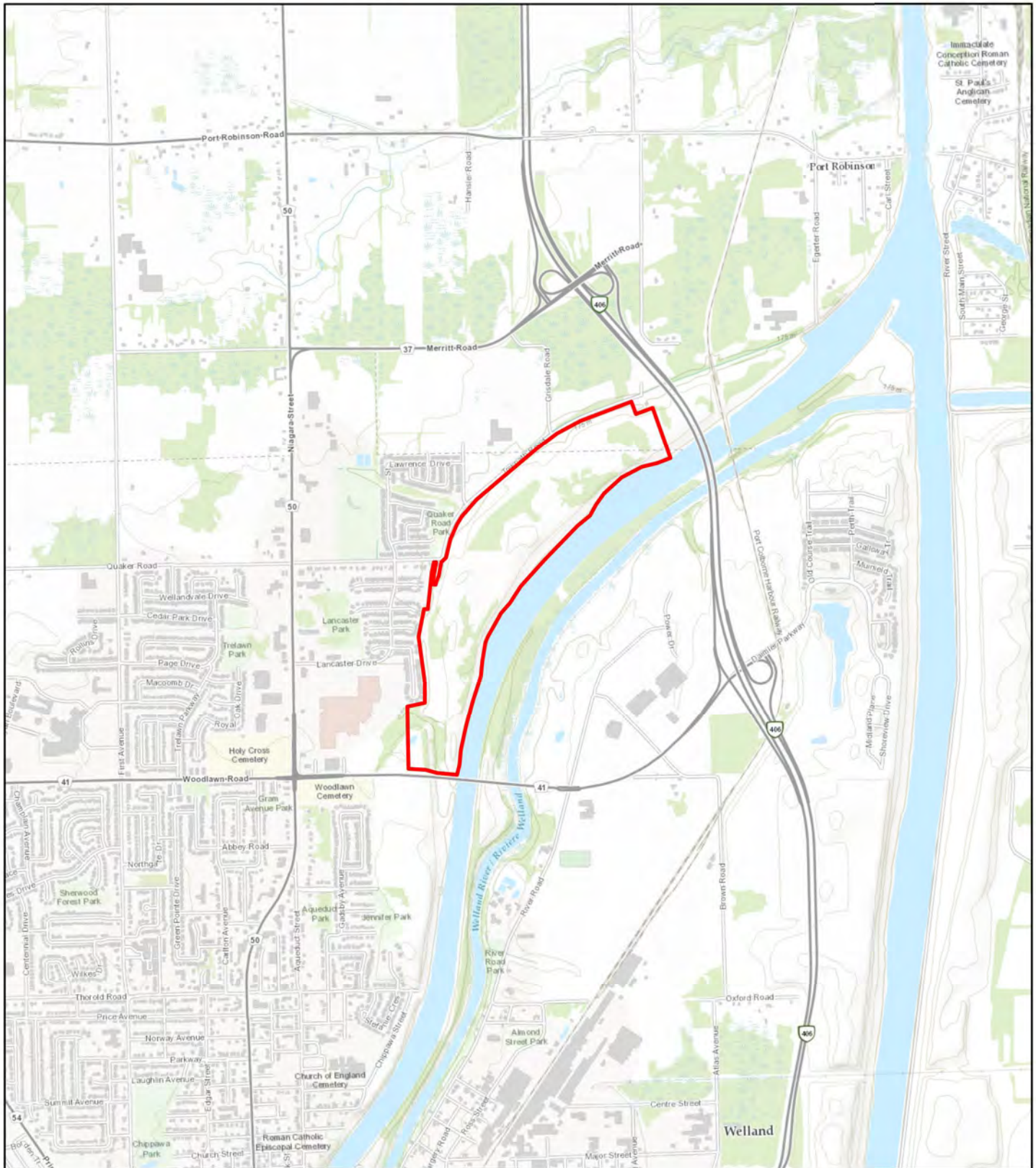


Image 53: Graded and disturbed lands.



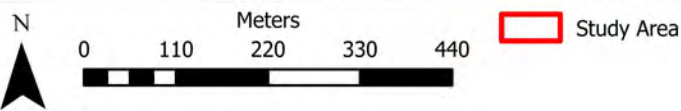
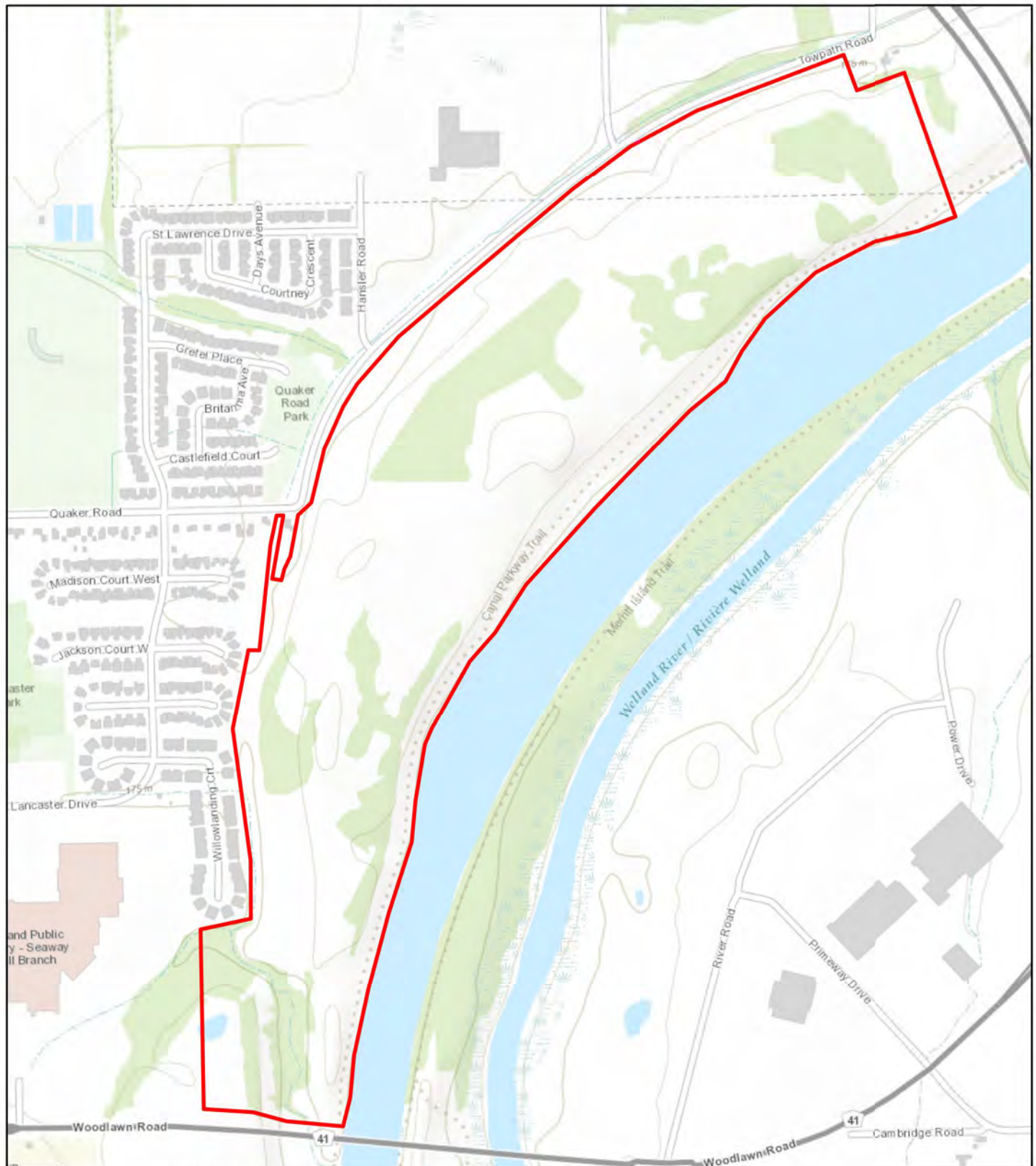
Image 54: Exposed disturbed soils and grading.

11. MAPS



Source: City of Welland, Niagara Region, Regional Municipality of Niagara, Province of Ontario, Ontario MNR, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA, AAFC, NRCan

Map 1: Study Area Location



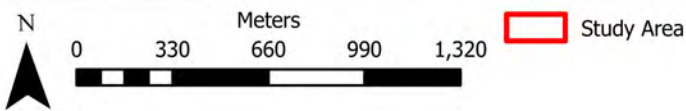
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Map 2: Study Area Topographic Detail



Source: City of Welland, Maxar

Map 3: Study Area Environmental Detail



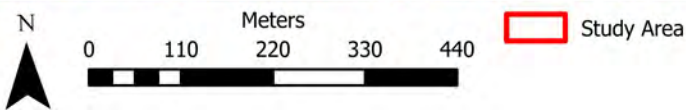
Source: Unknown 1833

Map 4: Study Area showing First Welland Canal on 1833 Historic Map



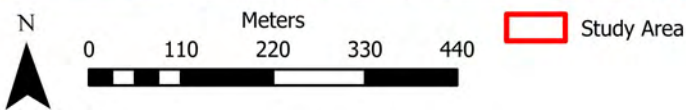
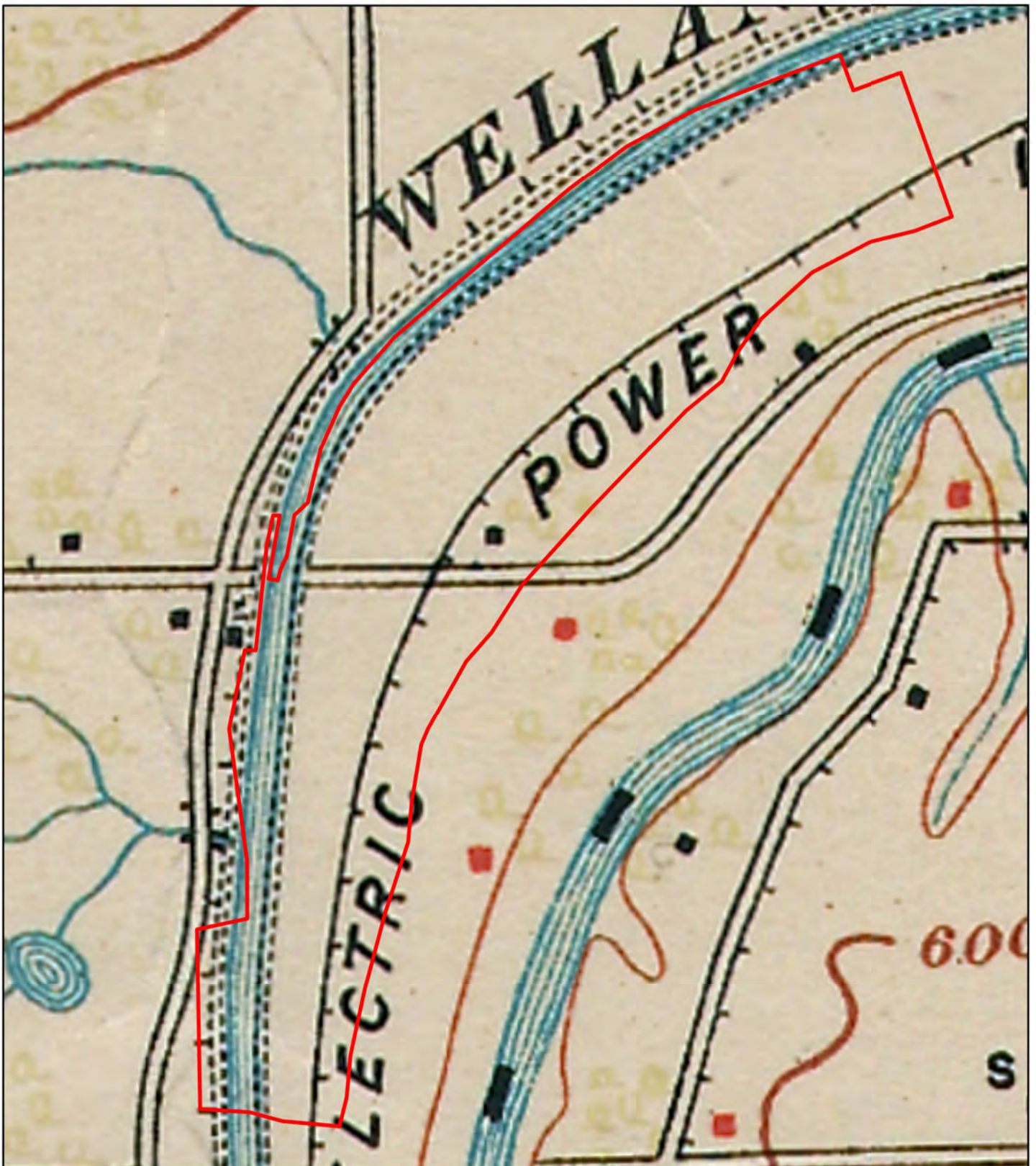
Source: 1862 Tremaine

Map 5: Study Area top 1862 Map



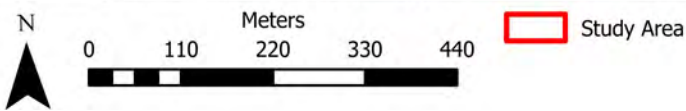
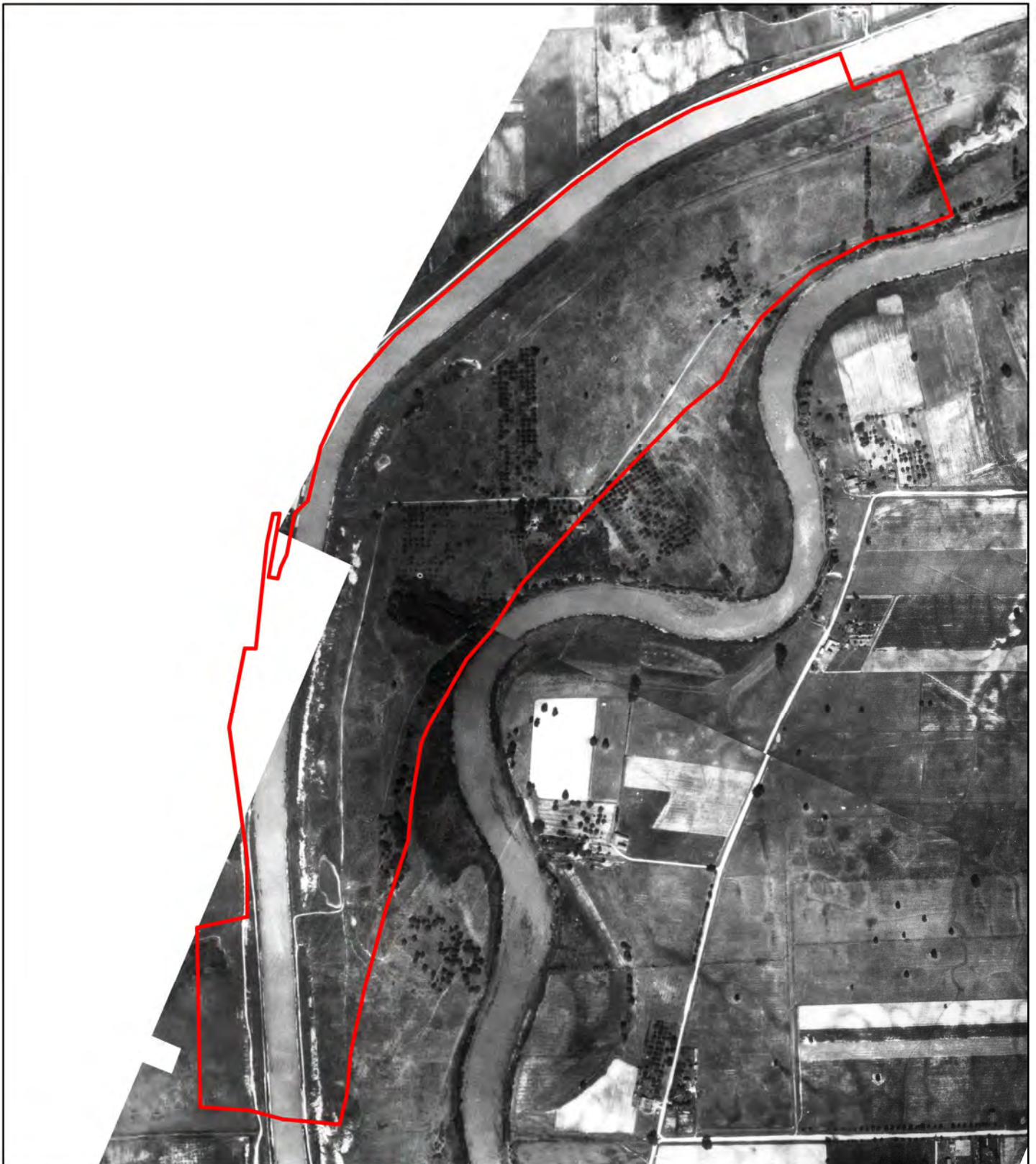
Source: 1876 Page

Map 6: Study Area top 1876 Map



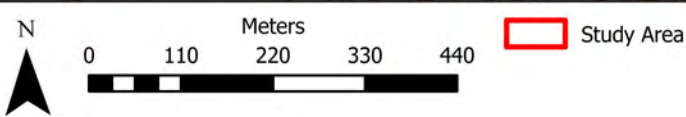
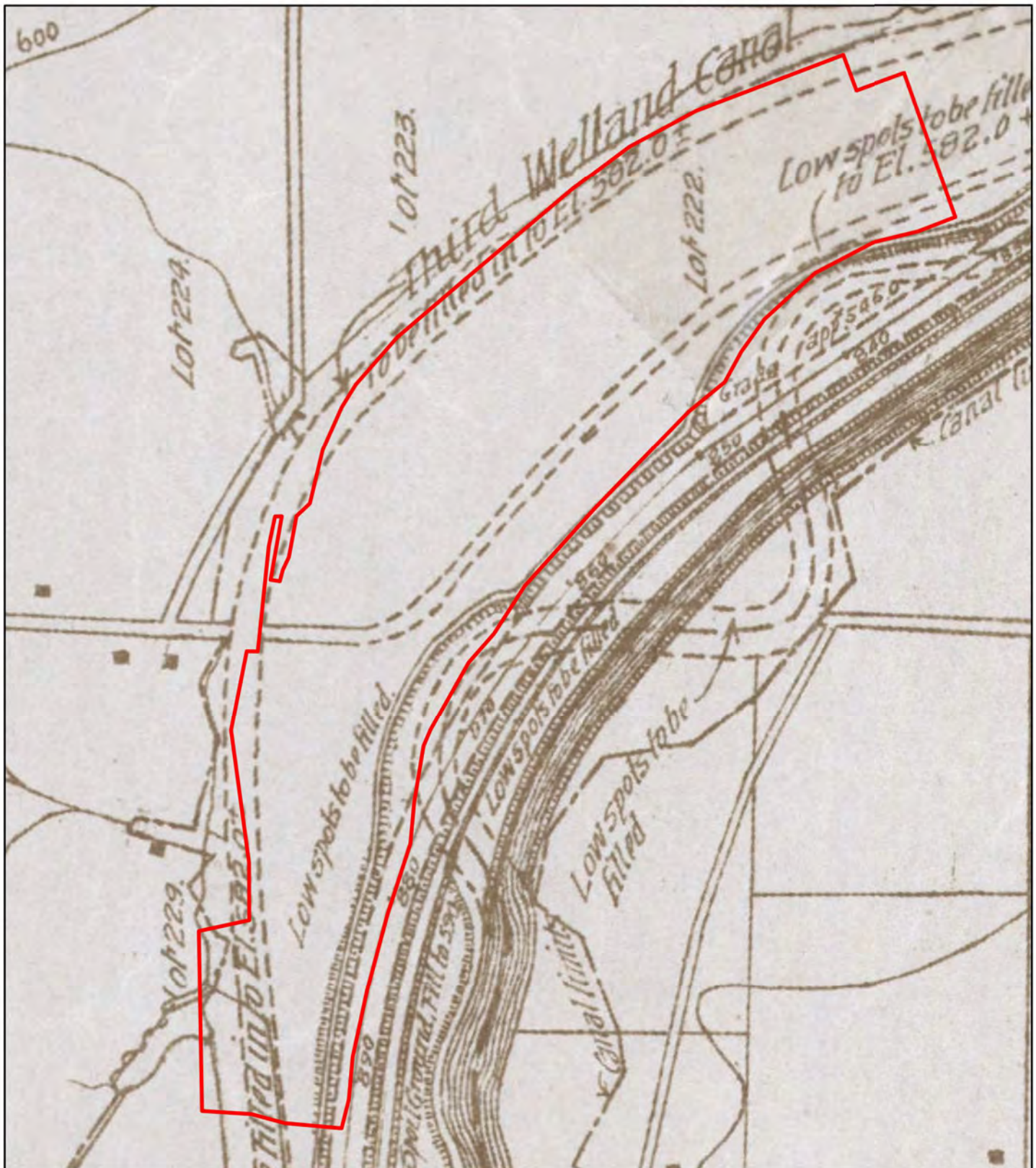
Source: Brock University Map, Data & GIS Library, Canada
Department of Militia and Defence, Natural Resources
Canada

Map 7: Study Area atop 1916 NTS Map



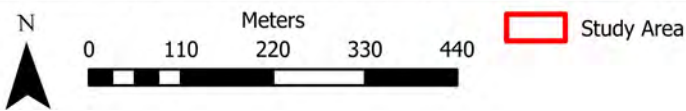
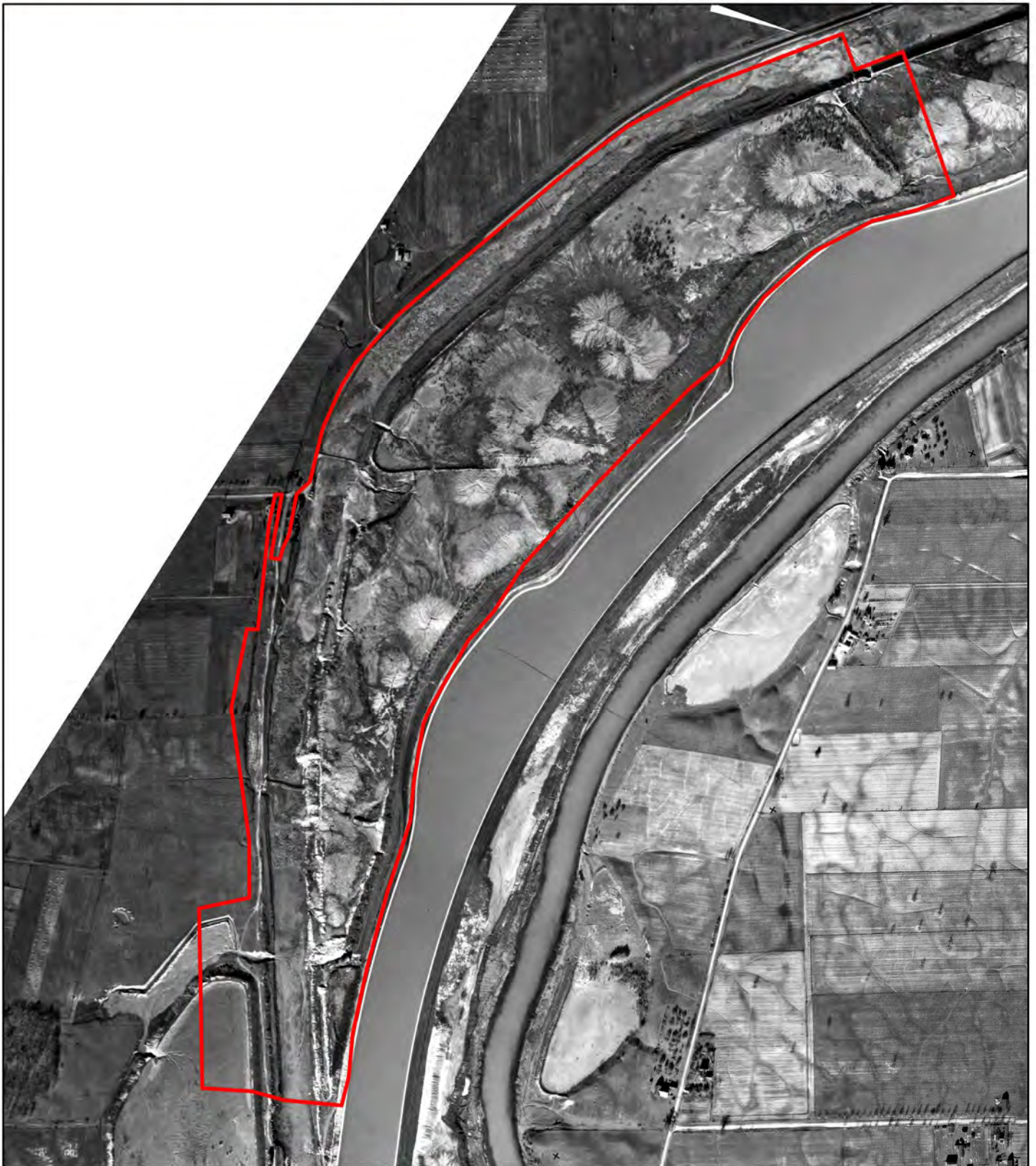
Source: Brock University, Map, Data & GIS Library, Niagara
Air Photo Index

Map 8: Study Area atop 1921 Air Photo



Source: Map, Data & GIS Library, Brock University.

Map 9: Study Area atop 1925 Map of the "General Plan of Ship Canal"



Source: Brock University, Map, Data & GIS Library Brock University Maps, Data & GIS

Map 10: Study Area atop 1934 Air Photo



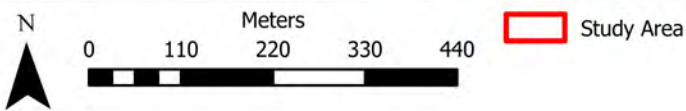
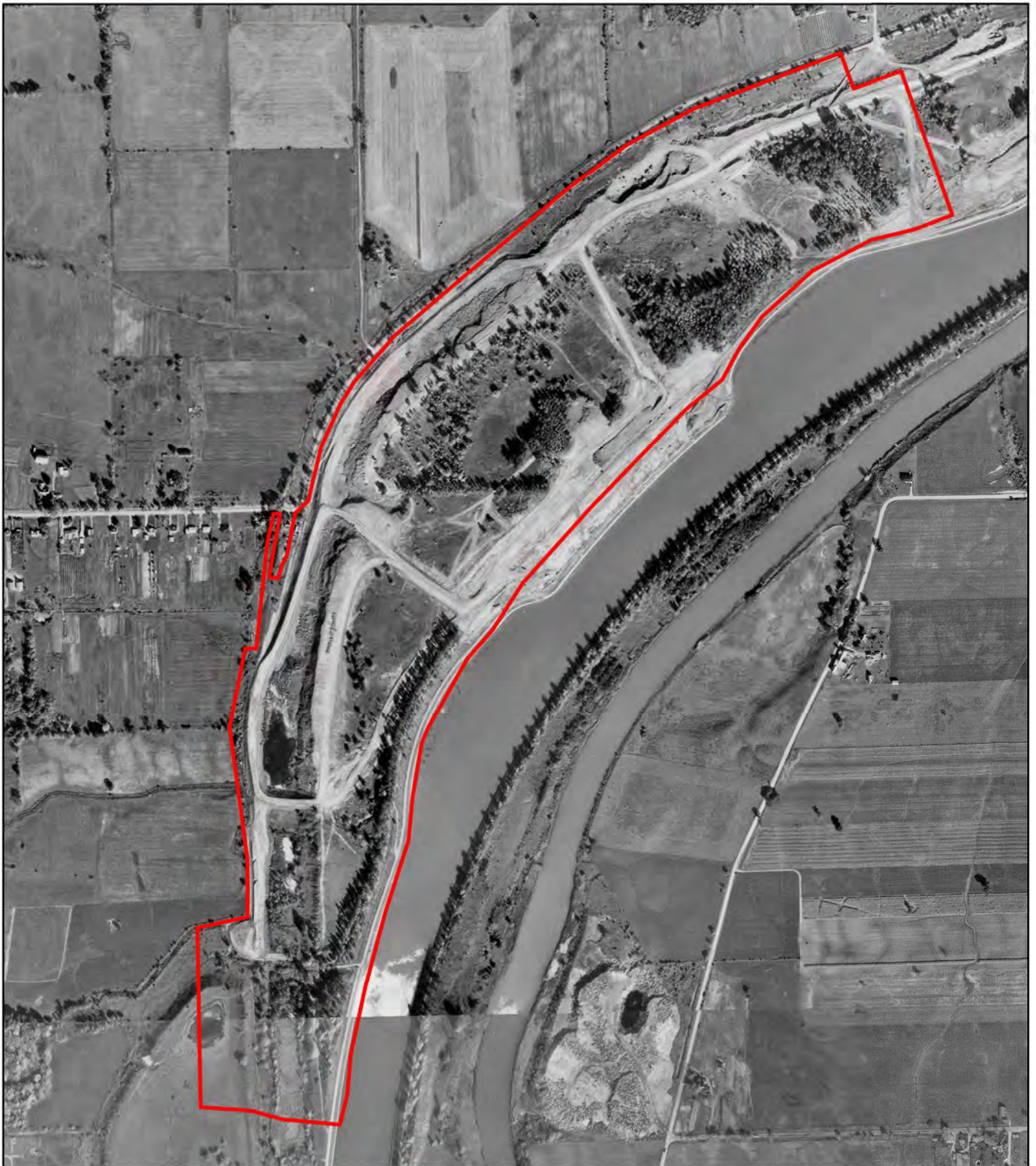
Source: Brock University, Map, Data & GIS Library

Map 11: Study Area atop 1938 NTS Map



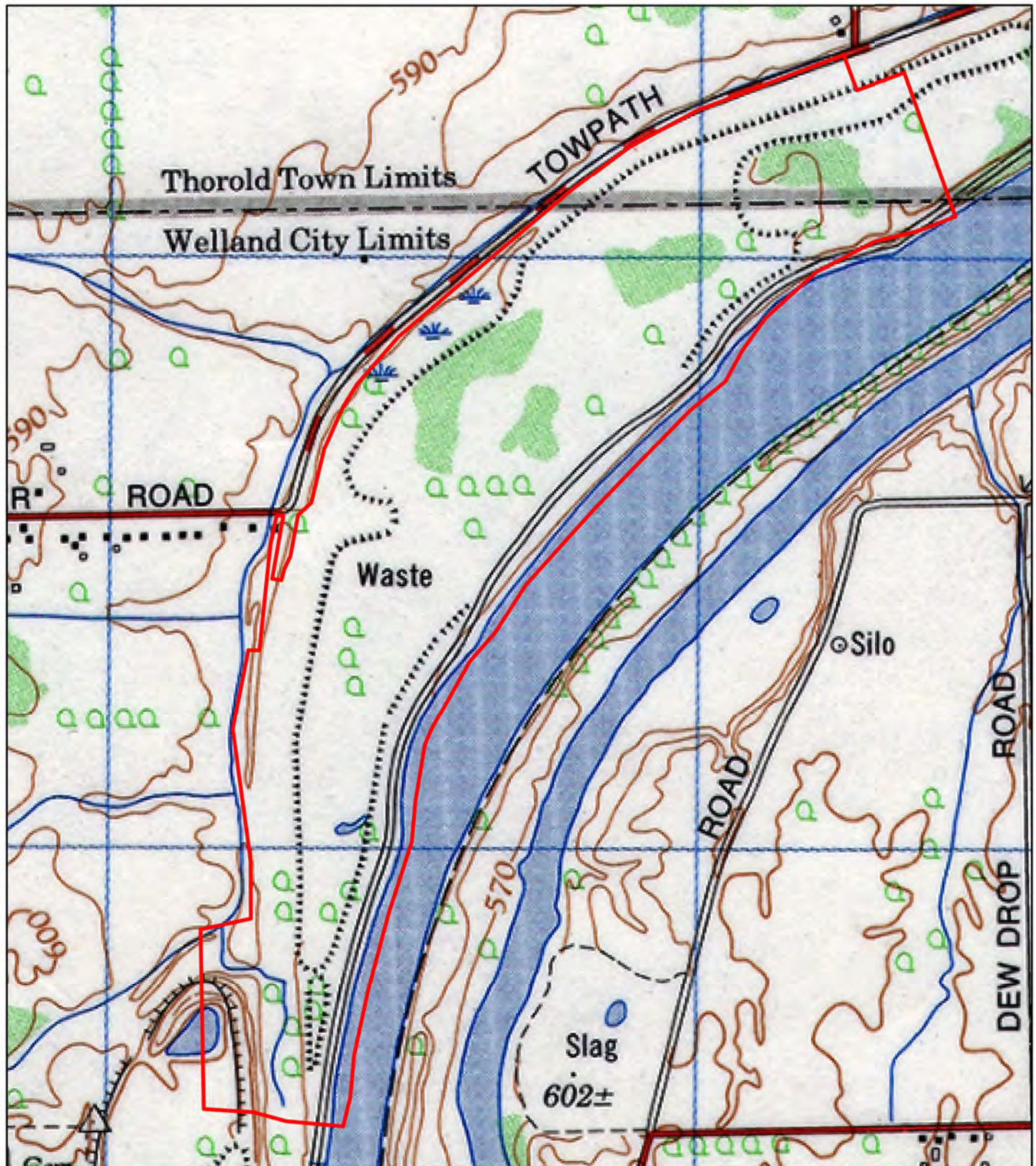
Source: Brock University Map, Data & GIS Library

Map 12: Study Area atop 1955 Air Photo



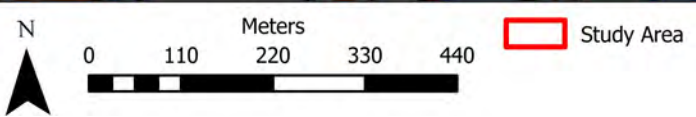
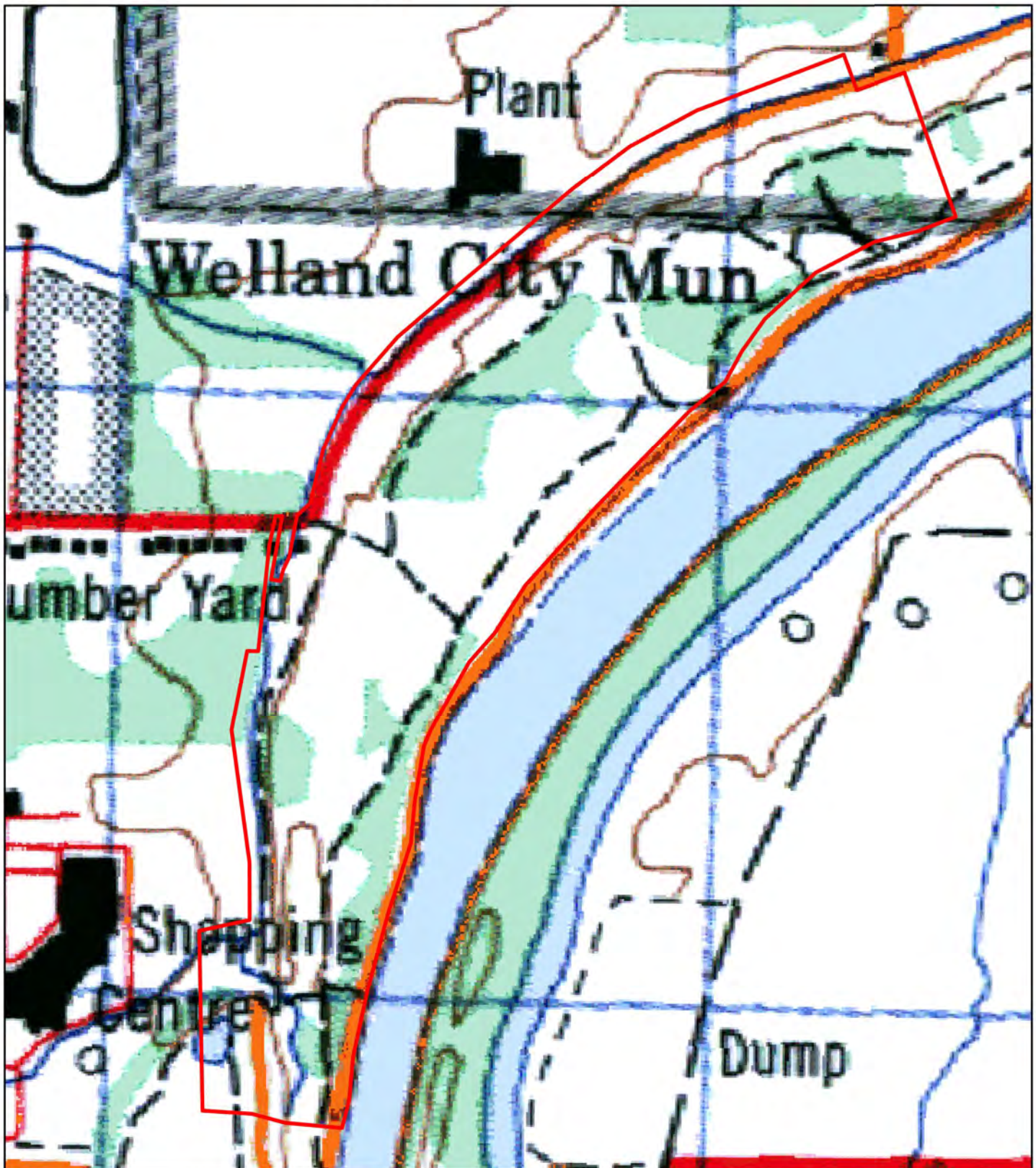
Source: Brock University, Map, Data & GIS Library Ministry of Natural Resources

Map 13: Study Area atop 1965 Air Photo



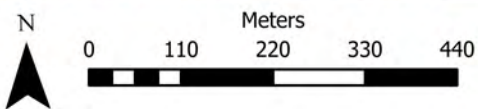
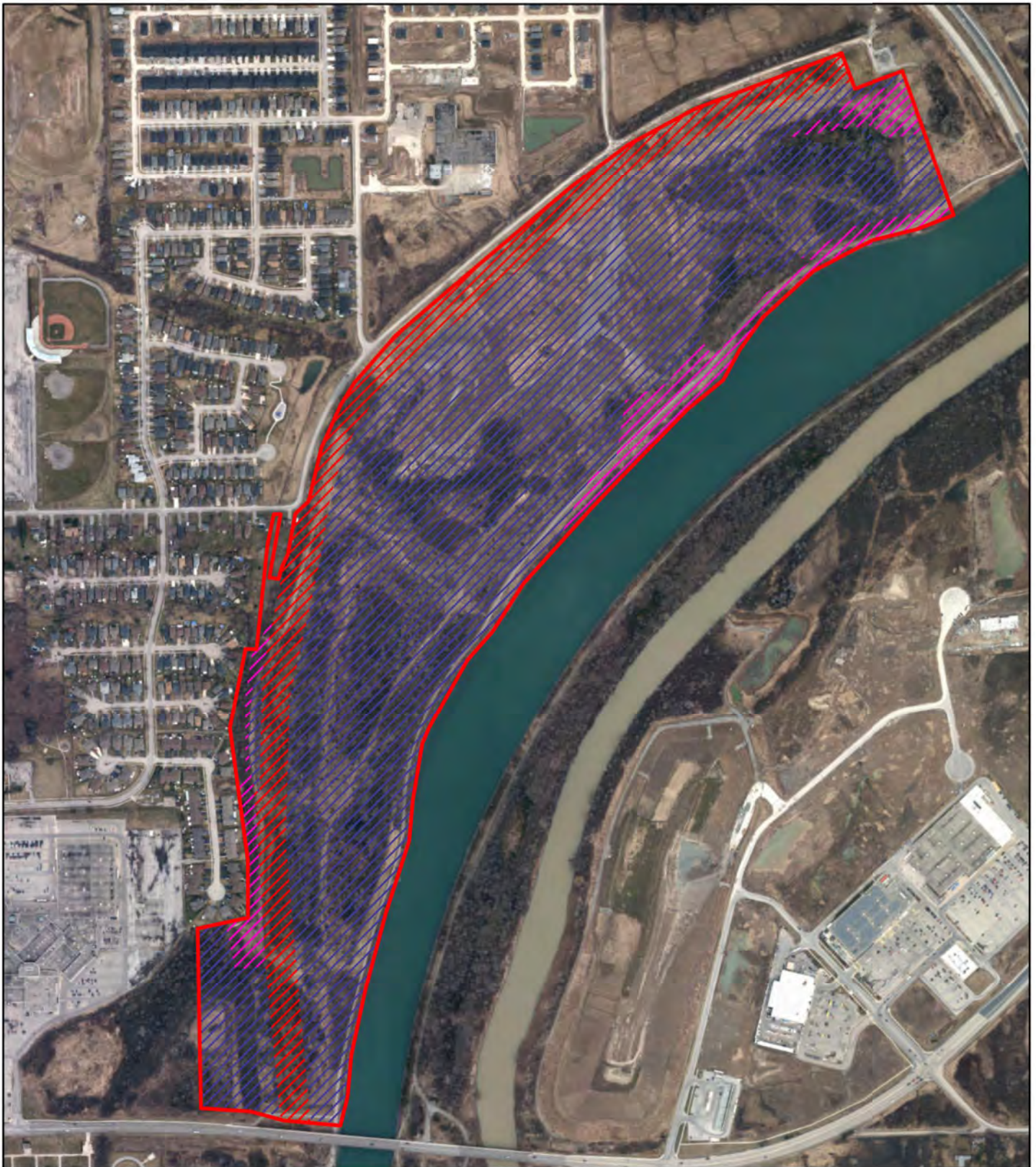
Source: Brock University, Map, Data & GIS Library





Map 14: Study Area atop 1970 NTS Map



Source: Brock University, Map, Data & GIS Library

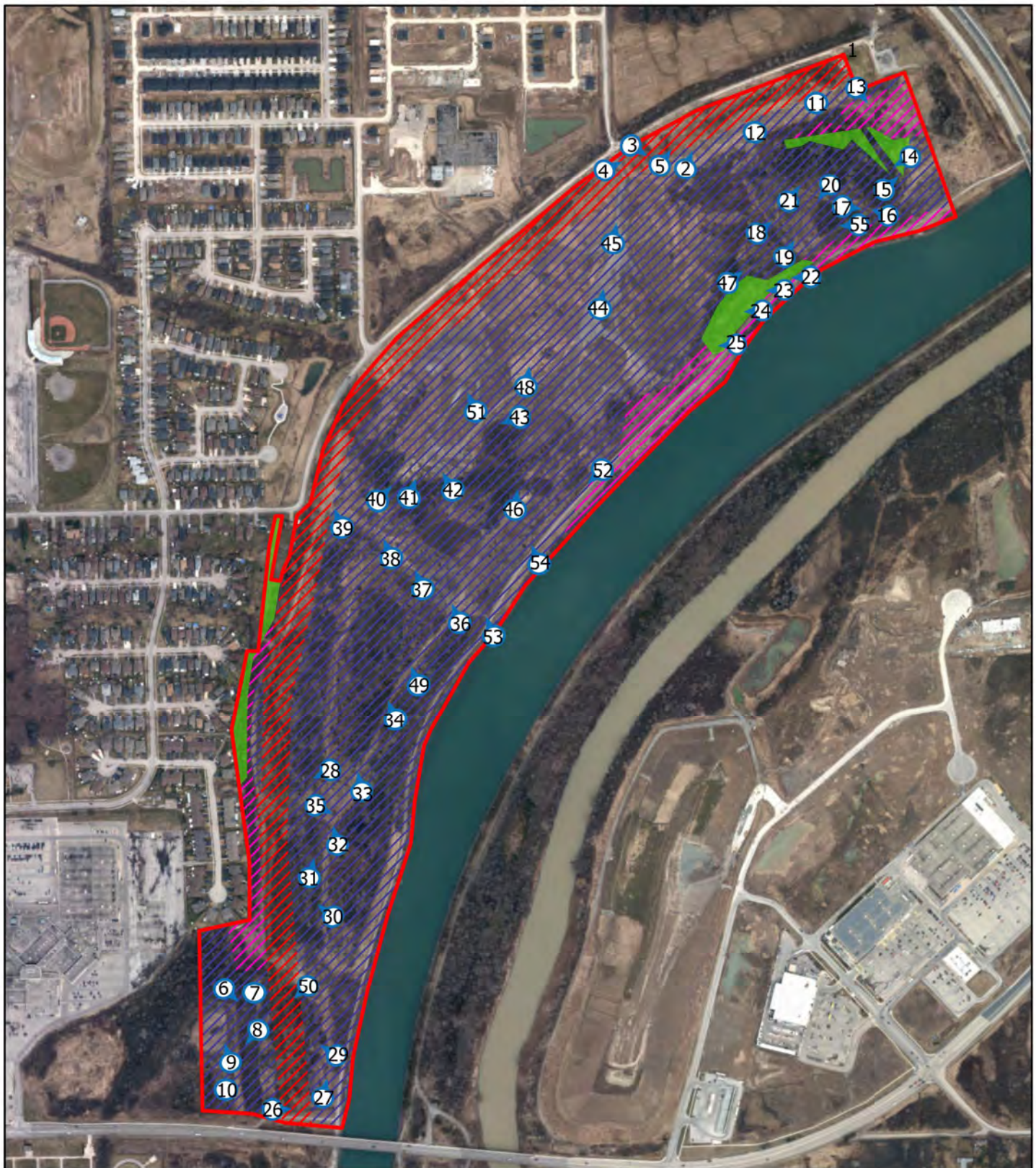
Map 15: Study Area atop 1990s NTS Map



-  Study Area
-  1934 Deep Disturbance, Excavation, Grading & Filling
-  1921 Deep Disturbance, Excavation, Grading & Filling
-  1965 Deep Disturbance, Excavation, Grading & Filling

Source: Brock University, Map, Data & GIS Library City of Welland, Maxar

Map 16: Study Area with 20th Century Morphology



Study Area
 Photo # & Direction

1934 Deep Disturbance, Excavation, Grading & Filling

1921 Deep Disturbance, Excavation, Grading & Filling

1965 Deep Disturbance, Excavation, Grading & Filling

Archaeological Potential: 5m Test Pit Survey Recommended

Source: Brock University, Map, Data & GIS Library City of Welland, Maxar

Map 17: Stage 1 Site Inspection Results with Stage 1 Results & Recommendations

12. REFERENCES

Archives and Special Collections, Brock University Library

2022 "Welland Canal: Construction" Brock University library: Accessed Online.

Armstrong, Frederick H.

1985 Handbook of Upper Canadian Chronology. Dundurn Press: Toronto.

Bonikowski, Laura N..

2015 "The Evolution of the Welland Canal" The Canadian Encyclopedia. Historica Canada: Accessed Online.

Brock Map, Data & GIS Library

2023 1833 Canal Sketch. Accessed Online.

2023 1916 NTS Map. Accessed Online

2023 1921 Air Photo. Accessed Online.

2023 1925 General Plan of Ship Canal. Accessed Online.

2023 1934 Air Photo. Accessed Online

2023 1938 NTS Map. Accessed Online.

2023 1955 Air Photo. Accessed Online.

2023 1965 Air Photo. Accessed Online.

2023 1970 NTS Map. Accessed Online.

2023 1990s NTS Map. Accessed Online

Cameron, Cameron.

2022 "The Welland Canal: Then and Now" Storymaps.Arcgis: Accessed Online.

Chapman, L.J., and Putnam, D.F.

1984 "Physiography of Southern Ontario; Ontario Geological Survey", Map P.2715 (coloured). Scale 1:600 00.

Gayler, Hugh J..

2015 "Lincoln." The Canadian Encyclopedia. Historica Canada: Accessed Online.

Gayler, Hugh J.

2015 "Thorold." The Canadian Encyclopedia. Historica Canada: Accessed Online.

Gayler, Hugh J. , and John N. Jackson.

2020 "Niagara Peninsula." The Canadian Encyclopedia. Historica Canada: Accessed Online Online.

Henry, Natasha

2020 "Underground Railroad." The Canadian Encyclopedia. Historica Canada: Accessed Online.

Irvin Heritage Inc (IHI)

2023 Archaeological Catalogue Dating System (ACDS) v2023A.

Stage 1 Archaeological Assessment

Jones, Robert Leslie

1946 The History of Agriculture in Ontario 1613-1880. University of Toronto Press: Toronto.

McGowan, Mark G.

2005 Michael Power: The Struggle to Build the Catholic Church on the Canadian Frontier McGill Queens University Press: Toronto.

Mika, H. and Mika, N.

1977 Places In Ontario Part I A-E. Belleville: Mika Publishing Company.

Mika, H. and Mika, N.

1983 Places In Ontario Part III N-Z. Belleville: Mika Publishing Company.

Ontario Heritage Trust (OHT)

2023 Heritage Conservation Districts in Ontario. Ontario Heritage Trust: Accessed Online.

Ontario Ministry of Citizenship and Multiculturalism

2023 "Site Data Search" Ontario's Past Portal. King's Printer for Ontario: Accessed Online.

Ontario Ministry of Indigenous Affairs (MIA)

2023 Map of Ontario Treaties and Reserves. King's Printer for Ontario: Accessed Online.

Ontario Ministry of Natural Resources and Forestry (OMNRF)

2023 Ontario Watershed Information Tool (OWIT). King's Printer for Ontario: Accessed Online.

Page, H.G.

1876 Illustrated Historical Atlas of the Counties of Lincoln and Welland, Ontario. H.R. Page: Toronto. Reprint Edition: Cumming Publishers: Stratford, 1984.

Rayburn, Alan

1997 Place Names of Ontario. University of Toronto Press: Toronto.

Tremaine, Geo. R & G.M..

1862 "Map of the County of Niagara, Upper Canada." Geo R & GM Tremaine: Toronto.