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REGIONAL MUNICIPALITY OF NIAGARA  
SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS

## Archaeological Assessments

Stage 1 AA - Preferred Trunk Sewer

# Revised Report: Stage 1 Archaeological Assessment

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South Niagara Falls Wastewater Treatment Plant, Phase 1 Lands  
Part of Lots 186-187, 198 and 209-210 in the Township of Stamford, Lot 1 Broken  
Front at Chippewa Creek, Township of Crowland and Lots 7-10 Broken Front at  
Chippewa Creek, Township of Willoughby, Former County of Welland, now the  
City of Niagara Falls, Regional Municipality of Niagara, Ontario

Project # OCUL2001

Archaeological Consulting License #P327 (Cary)  
PIF # P327-0013-2021 (Stage 1)

July 22, 2022

**Prepared for:**  
Niagara Region Water & Wastewater Engineering  
1815 Sir Isaac Brock Way, Thorold, Ontario L2V 4T7

**wood.**

# Stage 1 Archaeological Assessment

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South Niagara Falls Wastewater Treatment Plant, Phase 1 Lands  
Part of Lots 186-187, 198 and 209-210 in the Township of Stamford, Lot 1 Broken Front at Chippewa Creek, Township of Crowland and Lots 7-10 Broken Front at Chippewa Creek, Township of Willoughby, Former County of Welland, now the City of Niagara Falls, Regional Municipality of Niagara, Ontario

Project # OCUL2001

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July 22, 2022

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Stage 1 Archaeological Assessment: South Niagara WWTP,  
Phase 1 Lands

## Executive Summary

Wood Environment & Infrastructure Solutions (“Wood”) was retained by the Niagara Region to complete cultural heritage and archaeological consulting services in support of the Schedule “C” Municipal Class Environmental Assessment for the proposed South Niagara Falls Wastewater Treatment Plant (WWTP) and associated infrastructure in the City of Niagara Falls and City of Thorold, Niagara Region, Ontario (Appendix A). This report provides the Stage 1 archaeological assessment for the proposed Phase 1 Sewer Alignment/Construction Shaft Locations in the City of Niagara Falls (the Study Area) (Appendix B: Figure 1 to Figure 3). Overall, the Study Area covers 11.2 hectares (“ha”), incorporating a linear corridor that includes a 10m buffer from the corridor centerline beginning at a small section of land located south of Welland River and north of Reixinger Road, then runs along Reixinger Road, Montrose Road and Brown Road to end at a small section of land running east-west from Montrose Road towards the Welland Canal. The Study Area was historically located on Part of Lots 186-187, 198 and 209-210 in the Township of Stamford, Lot 1 Broken Front at Chippewa Creek, Township of Crowland, and Lots 7-10 Broken Front at Chippewa Creek, Township of Willoughby, former County of Welland (Appendix B: Figure 1 to Figure 3). As currently proposed, the Phase 1 Sewer Alignment will be installed by trenchless construction methods with no impacts to the Welland riverbed anticipated. A development plan for the proposed Phase 1 Lands is provided in Appendix C.

The Stage 1 archaeological assessment was carried out in accordance with the Ontario Ministry of Tourism, Culture and Sport (“MTCS”) *Standards and Guidelines for Consultant Archaeologists* (2011), under an Ontario Professional License to Conduct Archaeological Fieldwork (P327-0013-2021) held by Henry Cary, Senior Archaeologist at Wood. A property assessment of the Study Area was directed and conducted by Wood Field Director Chelsea Dickinson (R1194) on 6 October 2021.

The Stage 1 archaeological assessment property inspection and background research determined that archaeological potential has been removed within 7 ha (62.5%) of the Study Area. Approximately 4.1 ha (36.5%) consists of manicured lawns/mature woodlots and cultivated agricultural fields have general archaeological potential however a review of the current development plan indicates that construction will include below grade directional drilling/tunnelling. In accordance with the advice from MTCS only areas of archaeological potential that will be subject to near surface impacts will require further archaeological assessment. Approximately 0.07 ha (1%) of the Study Area is located within the Welland River.

Based on the findings of the Stage 1 archaeological assessment of the Study Area, the following recommendations are made, subject to the conditions outlined below and in Section 5.0:

1. Approximately 7 ha (62.5%) of the Study Area has no to low archaeological

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Phase 1 Lands

potential due to extensive and deep land alterations and therefore no further archaeological assessment is required (Appendix B: Figure 12A to Figure 12B).

2. Approximately 0.4 ha (3.5%) of the Study Area is an actively cultivated agricultural field that retains archaeological potential (Appendix B: Figure 12B).
  - a. For areas where trenchless construction methods will be deeper than 5 m below surface, no further archaeological assessment is required (Supplementary Documentation, Section 1). However, this exemption from Stage 2 survey must be confirmed with the MTCS at the detailed design phase of the project with engineering drawings that include the proposed trenchless technology and the path and depth of excavations.
  - b. For areas where surface or near surface (i.e., less than 5 m below surface) impacts are anticipated, a Stage 2 pedestrian survey is required (Supplementary Documentation, Section 1). Per Section 2.1.1 Standard 1 of the MTCS *Standards and Guidelines for Consultant Archaeologists* (2011), areas recommended for pedestrian survey must be prepared with a mouldboard plough (and disk harrow if necessary), then weathered through one heavy rainfall or several light rains to improve the visibility of any archaeological resources. To meet MTCS standards for field preparation and visibility at least 80% of the ploughed ground surface must be visible after ploughing. The pedestrian survey should be conducted at maximum intervals of 5 m, with survey transects reduced to 1-m intervals in a 20 m radius where archaeological resources are identified. If archaeological resources are identified, diagnostic artifacts should be collected as appropriate to document the site and determine if subsequent Stage 3 archaeological assessment is warranted.
3. Approximately 3.7 ha (33%) of the Study Area is located within maintained lawns, wooded areas, or narrow corridor (10 m or less) that has archaeological potential but cannot be accessed by plough (Appendix B: Figure 12A to Figure 12B).
  - a. For areas where trenchless construction methods will be deeper than 5 m below surface, no further archaeological assessment is required (Supplementary Documentation, Section 1). However, this exemption must be confirmed with the MTCS at the detailed design phase of the project with engineering drawings that include the proposed trenchless technology and the path and depth of excavations.
  - b. For areas where surface or near surface (i.e., less than 5 m below surface) impacts are anticipated, a Stage 2 test pit survey is required (Supplementary Documentation, Section 1). Per, Section 2.1.2, Standard 1.e, MTCS *Standards and Guidelines for Consultant Archaeologists* (2011), areas recommended for test pit survey should be assessed at 5 m grid intervals with test pits a minimum of 30 centimetres (“cm”) in diameter and dug to a



Stage 1 Archaeological Assessment: South Niagara WWTP,  
Phase 1 Lands

minimum of 5 cm into subsoil. Test pitting should be conducted to within 1 m of all disturbances. Soils and sediments should be screened through 6 millimetre (“mm”) mesh screens in order to facilitate artifact recovery and the test pit profiles examined for cultural deposits prior to being backfilled. All test pits should be backfilled to level grade, and any sod caps replaced and tamped down by foot.

4. Approximately 0.07 ha (1%) of the Study Area is located within the Welland River (Appendix B: Figure 12B). Construction methods in this area are currently proposed to be at depths where impacts to the riverbed are not anticipated; therefore, no further archaeological assessment is recommended.
  - a. However, if it is determined during detailed design that the project will potentially impact the riverbed, the potential for marine archaeological resources must be evaluated using the MTCS’s *Criteria for Evaluating Marine Archaeological Potential, A Checklist for Non-Marine Archaeologists* (MTCS 2016).
5. Adjacent to the southeast portion of the Study Area, on the north side of Reixinger Road at Dell Road, is the historically significant Dell Cemetery. No previous archaeological studies have addressed the southern boundary of the cemetery, nor recommended further archaeological assessment. Wood’s Stage 1 background study determined that all burial plots within the Dell Cemetery are limited to the north portion of the cemetery property, and that the cemetery’s south boundary is well-defined at the north boundary of the Study Area (the Reixinger Road right-of-way). The lands within the Study Area adjacent to the south boundary of the Dell Cemetery have been extensively disturbed through cutting and grading to create a drainage ditch running parallel to the roadway. Given this extensive and deep land disturbance, and the distance between the burial plots and the Study Area (a minimum of 20 m), it is concluded that there is no to low potential for human interments to be encountered within the Study Area. In accordance with Section 1.4.1, Standard 1(f) and Section 7.7.4 of the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011), the lands adjacent to the Dell Cemetery within the Study Area are previously disturbed and do not require Stage 2 archaeological assessment. Additionally, a Stage 3 Burial Site Investigation is not required for any portion of the Study Area adjacent to the south boundary of the Dell Cemetery, within the Reixinger Road right-of-way..

**The above recommendation is subject to approval by the Ministry of Tourism, Culture and Sport. It is an offence to knowingly alter any portion of an archaeological site except by a person holding a professional archaeological license.**

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ONTARIO**

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## 1.0 Section 1 – Project Context

### 1.1 Development Context

Wood Environment & Infrastructure Solutions (“Wood”) was retained by Niagara Region to complete cultural heritage and archaeological consulting services in support of the Schedule “C” Municipal Class Environmental Assessment for the proposed South Niagara Falls Wastewater Treatment Plant (WWTP) and associated infrastructure in the City of Niagara Falls and City of Thorold, Niagara Region, Ontario. The project components assessed by Wood archaeology staff are depicted in Appendix A and summarized in the table below.

Proposed Project Components	Work Completed by Wood
Phase 1 Sewer Alignment/Construction Shaft Locations	<ul style="list-style-type: none"> <li>Stage 1 Archaeological Assessment (P327-0013-2021) (Current Report)</li> </ul>
Phase 2 Wastewater Treatment Plant	<ul style="list-style-type: none"> <li>Stage 1 and 2 Archaeological Assessment (P348-0106-2020 and P348-0107-2020; Wood 2022a)</li> <li>Marine Archaeological Assessment (Marine Archaeological License 2021-22; Wood 2022b)</li> </ul>
South Thorold Trunk and Blackhorse Sewage Pumping Station	<ul style="list-style-type: none"> <li>Stage 1 Archaeological Assessment (P327-0012-2021; Wood 2022c)</li> <li>Stage 2 Archaeological Assessment for Blackhorse Sewage Pumping Station (P327-0019-2021; Wood 2022d)</li> </ul>

This report contains the Stage 1 archaeological assessment for the proposed Phase 1 Sewer Alignment/Construction Shaft Locations. Overall, the Study Area covers 11.2 hectares (“ha”), incorporating a linear corridor that includes a 10m buffer from the corridor centerline beginning at a small section of land located south of Welland River and north of Reixinger Road, then runs along Reixinger Road, Montrose Road and Brown Road to end at a small section of land running east-west from Montrose Road towards the Welland Canal. The Study Area was historically located on Part of Lots 186-187, 198 and 209-210 in the Township of Stamford, Lot 1 Broken Front at Chippewa Creek, Township of Crowland, and Lots 7-10 Broken Front at Chippewa Creek, Township of Willoughby, former County of Welland (Appendix B: Figure 1 to Figure 3). A development plan for the proposed Phase 1 Lands is provided in Appendix C.

The Stage 1 archaeological assessment was carried out in accordance with the Ontario Ministry of Tourism, Culture and Sport (“MTCS”) *Standards and Guidelines for Consultant Archaeologists* (2011), under an Ontario Professional License to Conduct Archaeological Fieldwork (P327) held by Henry Cary, Senior Archaeologist at Wood.

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1 Lands

The project information was acknowledged by the MTCS on 05 October 2021 with the issuance of PIF number P327-0013-2021 (Stage 1). Permission to enter the Study Area for the purposes of the Stage 1 assessment was granted to Wood by the Client on 11 August 2020. This permission extended to all required archaeological fieldwork activities.

A property assessment of the Study Area was directed and conducted by Chelsea Dickinson (R1194) of Wood on 6 October 2021. The weather during the assessment was sunny with some overcast periods and this weather did not impede the inspection in any way.

This report presents the results of the Stage 1 background study and property assessment and makes pertinent recommendations.

## 1.2 Scope of Work

A Stage 1 archaeological assessment is a systematic qualitative process executed to assess the archaeological potential of a Study Area based on its historical use and its potential for Indigenous and Euro-Canadian (early settler) occupation. The objectives of a Stage 1 background study are: 1) to provide information about the Study Area's geography, history, previous archaeological fieldwork and current land conditions; 2) to evaluate in detail the Study Area's archaeological potential which will support recommendations for Stage 2 archaeological assessment for all or parts of the Study Area if warranted; and 3) to recommend appropriate strategies for Stage 2 archaeological assessment if warranted.

The scope of work for the Stage 1 background study consisted of the following tasks:

- Contacting the MTCS to determine if recorded archaeological sites exist in the vicinity (1 kilometre ["km"] radius) of the Study Area, through a search of the *Ontario Archaeological Sites Database* maintained by that Ministry.
- Contacting the MTCS to determine if there are any known reports of previous archaeological field work within the Study Area or within a radius of 50 metres ("m") around the Study Area, through a search of the *Ontario Public Register of Archaeological Reports* maintained by that Ministry.
- A desktop review of the Study Area's physical setting to determine its potential for both pre-contact and post-contact period human occupation, including its topography, hydrology, soils, and proximity to important resources and historical transportation routes and settlements.
- A review of the potential for post-contact period human occupation as documented in historical atlases and other archival sources.
- A visual inspection of the Study Area to gather first-hand and current evidence of its physical setting, and to aid in delineating areas where archaeological potential

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Stage 1 Archaeological Assessment: South Niagara WWTP, Phase  
1 Lands

may have been impacted or removed by recent land-use practices.

- Formulating appropriate field testing strategies for areas of general archaeological potential.
- Mapping, photography, and the production of other relevant graphics.

The Stage 1 background study and property assessment were conducted in accordance with the Standards and Guidelines for Consultant Archaeologists set out by the MTCS (2011) pursuant to the *Ontario Heritage Act*, R.S.O. 1990, c. O.18.



## 2.0 Stage 1 Background Study

As part of the Stage 1 archaeological assessment, Wood queried the *Ontario Archaeological Sites Database*, maintained by the MTCS to determine if archaeological sites have been registered within 1 km of the Study Area (MTCS 2021a), The *Ontario Public Register of Archaeological Reports* was also queried to determine whether previous archaeological assessments have been carried out within the Study Area, or within a 50 m radius of the Study Area (MTCS 2021b). The principal determinants of archaeological potential, namely proximity to water, topography, drainage, soils, and proximity to important resources and historical transportation routes and settlements, were then examined to evaluate the Study Area’s general archaeological potential. The specific potential for post-contact period archaeological resources was assessed through an examination of available historical maps and other archival sources. Finally, a property inspection was conducted to confirm the desktop evaluation of archaeological potential and identify areas where recent land use has impacted or removed that potential.

### 2.1 Archaeological Context

#### 2.1.1 Registered Archaeological Sites

In Ontario, information concerning archaeology sites is stored in the *Ontario Archaeological Sites Database* maintained by the MTCS. This database contains archaeological sites registered within the Borden system (Borden 1952). Under the Borden system, Canada has been divided into grid blocks based on longitude and latitude. A Borden block is approximately 13 km east to west, and approximately 18.5 km north to south. Each Borden block is referred to by a four-letter designation and sites located within the block are numbered sequentially as they are found. The Study Area is located within the AgGs Borden block. On the basis of a search of the *Ontario Archaeological Sites Database* on 27 August 2021, there are 48 registered sites located within 1 km of the Study Area. Of these 48 sites, 13 are located within 300 m of the Study Area.

Table 1 provides a summary of these sites and provides the Cultural Heritage Value or Interest (“CHVI”) of each site, where known.

**Table 1: Registered Archaeological Sites within 1-km Radius**

Borden Number	Site Name	Cultural Affiliation	Site Type	Distance from Study Area	Development Review Status
AgGs-4	Feren	Unknown	Unknown	< 1 km	Unknown
AgGs-5	Walters	Unknown	Unknown	< 1 km	Unknown
AgGs-15	<b>MIA 8469</b>	<b>Unknown</b>	<b>Unknown</b>	<b>&lt; 300 m</b>	Unknown

## e 1 Archaeological Assessment: South Niagara WWTP, Phase 1 Lands

<b>Borden Number</b>	<b>Site Name</b>	<b>Cultural Affiliation</b>	<b>Site Type</b>	<b>Distance from Study Area</b>	<b>Development Review Status</b>
AgGs-16	MIA 8470	Unknown	Unknown	< 1 km	Unknown
AgGs-17	<b>MIA 8471</b>	<b>Unknown</b>	<b>Unknown</b>	<b>&lt; 300 m</b>	Unknown
AgGs-18	MIA 8472	Unknown	Unknown	< 1 km	Unknown
AgGs-19	<b>MIA 8473</b>	<b>Late Archaic Indigenous</b>	<b>Camp/ Campsite</b>	<b>&lt; 300 m</b>	Unknown
AgGs-20	MIA 8474	Late Archaic Indigenous	Camp/ Campsite	< 1 km	Unknown
AgGs-21	<b>MIA 8475</b>	<b>Unknown</b>	<b>Unknown</b>	<b>&lt; 300 m</b>	Unknown
AgGs-27	MIA 8481	Late Archaic Indigenous	Camp/ Campsite	< 1 km	Unknown
AgGs-28	MIA 8482	Unknown	Unknown	< 1 km	Unknown
AgGs-33	<b>MIA 8483</b>	<b>Post-Contact/ Euro-Canadian</b>	<b>House</b>	<b>&lt; 300 m</b>	Unknown
AgGs-34	MIA 8484	Early Woodland, Indigenous	Findspot	< 1 km	Unknown
AgGs-35	MIA 8485	Unknown	Unknown	< 1 km	Unknown
AgGs-48	14-001:3	Unknown	Unknown	< 1 km	Unknown
AgGs-50	Feren	Post-Contact/ Pre-Contact	Aboriginal, Euro-Canadian	< 1 km	Unknown
AgGs-51	Thompsons Creek	Indigenous Paleo-Indian/ Early-Late Woodland	Hunting	< 1 km	Unknown
AgGs-90	Walter	Late Archaic Indigenous	Campsite/ Campsite	< 1 km	Unknown
AgGs-93	TCPL 90-13	Other	Findspot	< 1 km	Unknown
AgGs-95	TCPL 91-3	Other	Findspot	< 1 km	Unknown

## e 1 Archaeological Assessment: South Niagara WWTP, Phase 1 Lands

<b>Borden Number</b>	<b>Site Name</b>	<b>Cultural Affiliation</b>	<b>Site Type</b>	<b>Distance from Study Area</b>	<b>Development Review Status</b>
AgGs-231	John Steinhoff	Post-Contact/ Pre-Contact	Aboriginal/ Euro-Canadian – Homestead	< 1 km	Unknown
AgGs-232	Welland River Camp	Pre-Contact/ Aboriginal	Campsite/ Campsite	< 1 km	Unknown
AgGs-233	Alexander Simpson	Post-Contact/ Pre-Contact	Aboriginal/ Euro-Canadian – Homestead	< 1 km	Unknown
AgGs-235	Cabeiroi Camp I	Pre-Contact/ Aboriginal	Unknown	< 1 km	Unknown
AgGs-236	<b>Cabeiroi Camp 2</b>	<b>Pre-Contact/ Aboriginal</b>	<b>Camp/ Campsite, Scatter</b>	<b>&lt; 300 m</b>	Unknown
AgGs-237	Unknown	Post-Contact/ Euro-Canadian	Unknow	< 1 km	Unknown
AgGs-238	Welland Drain	Pre-Contact Indigenous	Campsite/ Campsite	< 1 km	Unknown
AgGS-277	Unknown	Unknown	Findspot	< 1 km	Unknown
AgGs-278	Unknown	Unknown	Findspot	< 1 km	Unknown
AgGs-281	Unknown	Unknown	Findspot	< 1 km	Unknown
AgGs-289	Unknown	Pre-Contact Indigenous	Scatter	< 1 km	Unknown
AgGs-290	Unknown	Late Archaic Indigenous	Scatter	< 1 km	Unknown
AgGs-292	<b>Unknown</b>	<b>Late Woodland Indigenous</b>	<b>Findspot</b>	<b>&lt; 300 m</b>	Unknown
AgGs-293	<b>P23</b>	<b>Unknown</b>	<b>Unknown</b>	<b>&lt; 300 m</b>	Unknown
AgGs-294	<b>Unknown</b>	<b>Unknown</b>	<b>Unknown</b>	<b>&lt; 300 m</b>	Unknown

<b>Borden Number</b>	<b>Site Name</b>	<b>Cultural Affiliation</b>	<b>Site Type</b>	<b>Distance from Study Area</b>	<b>Development Review Status</b>
AgGs-295	Unknown	Late Woodland Indigenous	Findspot	< 300 m	Unknown
AgGs-296	Unknown	Pre-Contact Indigenous	Campsite/ Campsite	< 300 m	No Further CHVI
AgGs-298	Unknown	Late Archaic Indigenous	Campsite/ Campsite	< 300 m	No Further CHVI
AgGs-299	Unknown	Unknown	Unknown	< 300 m	Unknown
AgGs-300	Unknown	Middle Archaic Indigenous	Findspot	< 1 km	Unknown
AgGs-301	Unknown	Late Archaic Indigenous	Findspot	< 300 m	Unknown
AgGs-302	Unknown	Early Archaic Indigenous	Findspot	< 300 m	Unknown
AgGs-303	Unknown	Late Archaic Indigenous	Findspot	< 1 km	Unknown
AgGs-375	Unknown	Post-Contact/ Euro-Canadian	Farmstead	< 1 km	No Further CHVI
AgGs-379	Unknown	Unknown	Unknown	< 1 km	Unknown
AgGs-380	Unknown	Unknown	Unknown	< 1 km	Unknown
AgGs-381	Unknown	Unknown	Unknown	< 1 km	Unknown
AgGs-399	Parkway Site	Pre-Contact Indigenous	Campsite/ Campsite	< 1 km	No Further CHVI

- Archaeological site AgGs-15 (MIA 8469) is located approximately 225 m to the west of the Study Area. It was originally discovered during controlled surface collection in 1984 and included the recovery of one utilized Onondaga chert flake (MTCS 2021a).

- Archaeological site AgGs-21 (MIA 8475) is located approximately 110 m to the west of the Study Area. It was originally discovered during controlled surface collection in 1984 and included the recovery of one Onondaga chert waste flake and one sandstone abrader (MTCS 2021a).
- Archaeological site AgGs-33 (MIA 8483) is located approximately 230 m to the west of the Study Area. It was originally discovered during controlled surface collection in 1984 and included a scatter of historic material that was attributed to the residence of T. Wilkins. The artifacts recovered some fragments of plates dating to prior to 1850 and included examples of blue-edged scallop ware, polychrome painted ware and blue-painted ware (MOA 1985).
- Archaeological site AgGs-236 (Cabeiroi Camp 2) is located approximately 110 m to the west of the Study Area. It was originally discovered during controlled surface collection and consists of a of lithic scatter of Onondaga chert (MTCS 2021a).
- Archaeological site AgGs-292 is located approximately 50 m to the north of the Study Area. It was originally discovered during pedestrian survey and includes an isolated findspot of a Late Woodland triangular projectile point. However, no further work was recommended at this site (ASI 2007).
- Archaeological site AgGs-294 is located approximately 106 m to the north of the Study Area. It was originally discovered during a controlled surface pick-up and included eight pre-contact artifacts (seven flakes and one projectile point base). The site was recommended for further investigation and in 2014 a Stage 3 excavation was completed. The results of the Stage 3 excavation included the recovery of three additional flakes found in the area where the site was originally documented. A total of ten 1 x 1 m square units were excavated across the site area resulting in the recovery of two additional flakes, the remaining eight test squares were sterile. As a result, no further work was recommended (Detritus Consulting Ltd. 2015).
- Archaeological site AgGs-295 is located approximately 200 m to the north of the Study Area. It was originally discovered during pedestrian survey and includes an isolated findspot of a triangular projectile point base fragment. However, no further work was recommended at this site (ASI 2007).
- Archaeological site AgGs-296 is located approximately 170 m north of the Study Area. It was originally discovered during pedestrian survey and included a scatter of lithic debitage and a Middle Archaic Otter Creek Projectile Point. The site was recommended for further investigation and in 2016 a Stage 3 archaeological excavation was completed. The results of the Stage 3 excavation included the recovery of six additional artifacts recovered during the controlled surface collection. A total of four 1 x 1 m square units were excavated across the site

area resulting in the recovery of four additional artifacts (1 per unit). As a result, no further work was recommended (Detritus Consulting Ltd. 2017).

- Archaeological site AgGs-298 is located approximately 115 m west of the Study Area. It was originally discovered during pedestrian survey and consisted of a scatter of 25 pieces of lithic debitage. The site was recommended for further investigation and in 2016 a Stage 3 archaeological excavation was completed. The results of the Stage 3 excavation included the recovery of 31 lithic artifacts including Onondaga debitage and a single scraper but since the number of artifacts in each unit numbered a maximum of 7, no further work was recommended (Detritus Consulting Ltd. 2017).
- Archaeological site AgGs-301 is located approximately 35m to the north of the Study Area. It was originally discovered during pedestrian survey and includes an isolated findspot of a Late Archaic Innes projectile point. No further work was recommended for this site (ASI 2007).
- Archaeological site AgGs-302 is located approximately 10m to the north of the Study Area. It was originally discovered during pedestrian survey and includes an isolated findspot of an Early Archaic Nettling projectile point. However, no further work was recommended at this site (ASI 2007).

### 2.1.2 History of Archaeological Investigations

Wood completed a search for archaeological reports within 50 m of the Study Area within the *Ontario Register of Archaeological Reports* administered by the MTCS on 27 August 2020. Based on this search (by address, lot and concession, and above-mentioned archaeological sites), one archaeological assessment has been conducted within the Study Area. Five additional assessments were conducted within 50 m of the Study Area.

Appendix B: Figure 11 shows the location of these previous studies.

#### 2.1.2.1 Reports Documenting Archaeological Assessments Within the Study Area

Table 2 lists the reports made available from MTCS documenting archaeological assessments conducted within the Study Area.

**Table 2: Related Archaeological Assessment Reports Within the Study Area**

Year	Title	Author	PIF
2019	Stage 1 Archaeological Assessment, South Niagara Falls Wastewater Solutions Schedule C Class Environmental Assessment, Various Lots and Concessions, Geographic Townships of Stamford, Willoughby and Crowland,	Golder Associates Ltd.	P468-0036-2019

Year	Title	Author	PIF
	Former County of Welland, City of Niagara Falls, Regional Municipality of Niagara, Ontario.		
Ongoing	Stage 1 and 2 Archaeological Assessment South Niagara Falls Wastewater Treatment Plant, Phase 2 Lands. Part of Lots 7 to 10 Broken Front on Chippewa Creek, Geographic Township of Willoughby, Former County of Welland, now in the City of Niagara Falls, Regional Municipality of Niagara, Ontario.	Wood	P348-0106-2020 and P348-0107-2020
Ongoing	Stage 1 Archaeological Assessment South Niagara Wastewater Treatment Plant, South Thorold Trunk and Blackhorse Sewage Pumping Station, located in part of Lots 167-168, 181-184, and 201-208 in the Geographic Township of Stamford, Lincoln County, now City of Niagara Falls, and part of Lots 93-94, 112-117 and 123-140 in the Geographic Township of Thorold, Welland County, now City of Thorold, Regional Municipality of Niagara, Ontario.	Wood	PIF P327-0012-2021

- ***Stage 1 Archaeological Assessment, South Niagara Falls Wastewater Solutions Schedule C Class Environmental Assessment, Various Lots and Concessions, Geographic Townships of Stamford, Willoughby and Crowland, Former County of Welland, City of Niagara Falls, Regional Municipality of Niagara, Ontario. Prepared by Golder Associates Ltd., 29 April 2021. PIF P468-0036-2019.***

Golder Associates Ltd. (“Golder”) conducted a Stage 1 archaeological assessment of distinct areas labelled Areas 1 to 10 as part of a Class C Environmental Assessment. Areas 4 and 8 of their report corresponds to the current Study Area (Golder 2021: Map 1). Area 4 was recommended for Stage 2 test pit survey and a section of Area 8 which is outside of the current study area but within 50 m on the assessment, documented as previously assessed (by MAC 2015, as described below), with five sites in the previously assessed area requiring Stage 3 assessment. The remainder of Area 8, which corresponds to the current Study Area was recommended for Stage 2 assessment at 5 m intervals through either pedestrian survey or test pit survey (Golder 2021: Map 8). Golder also identified Dell Cemetery, as adjacent to Area 8, and that prior

to invasive impacts within 20 m of the cemetery a detailed background research of the cemeteries' history and legal boundaries be completed to determine if there is potential for burials to be located within their project area. It should be noted that the Golder 2021 project area included the areas adjacent to the west, north and east sides of the Dell Cemetery and did not include the south side of the cemetery. Furthermore, any recommendations for further assessment, including the need for additional archaeological assessment or Cemetery Investigation Authorization would be determined based on this research. The remaining Areas 1-3, 5-7, and 9-10 were located more than 50 m from the current Study Area.

- **Stage 1 & 2 Archaeological Assessment South Niagara Falls Wastewater Treatment Plant, Phase 2 Lands. Part of Lots 7 to 10 Broken Front on Chippewa Creek, Geographic Township of Willoughby, Former County of Welland, now in the City of Niagara Falls, Regional Municipality of Niagara, Ontario. PIF P348-0106-2020 (Stage 1) and P348-0107-2020 (Stage 2).**

Impacts related to the Phase 2 component of the project are being addressed under a separate Stage 1-2 Archaeological Assessment (PIF P348-0106-2021 [Stage 1] and P348-107-2021 [Stage 2]) being conducted concurrently Wood. To date, the Stage 1 and 2 Archaeological Assessment report has not been entered into the Ontario Public Register of Archaeological Reports, therefore the associated project footprint is not included in Appendix B: Figure 11.

- **Stage 1 Archaeological Assessment South Niagara Wastewater Treatment Plant, South Thorold Trunk and Blackhorse Sewage Pumping Station, located in part of Lots 167-168, 181-184, and 201-208 in the Geographic Township of Stamford, Lincoln County, now City of Niagara Falls, and part of Lots 93-94, 112-117 and 123-140 in the Geographic Township of Thorold, Welland County, now City of Thorold, Regional Municipality of Niagara, Ontario. PIF P327-0012-2021**

Impacts related to the Trunk and Blackhorse SPS component of the project have been addressed under a separate Stage 1 Archaeological Assessment (PIF P327-0012-2021 [Stage 1]). The area of assessment included a 10 m buffer on both sides of the alignment (20 m total) with sections of agricultural fields, woodlot, manicured lawns and roadways. The results of the background research determined that the entire area of assessment had general archaeological potential. Following fieldwork it was determined that archaeological potential had been removed within 12.2 ha (69%) due to extensive and deep land alterations and therefore no further archaeological assessment is required and the remaining 5.5 ha (31%) was located within maintained lawns, wooded areas, or narrow corridor (10 m or less) and recommended for Stage 2 test pit survey (Appendix B: Figure 11).



**2.1.2.2 Reports Documenting Archaeological Assessments Within 50m of Study Area****Table 3: Related Archaeological Assessment Reports Within 50 m of the Study Area**

Year	Title	Author	PIF
1985	Site Selection Process Phase 4A: Selection of a Preferred Site(s) Archaeology	Museum of Ontario Archaeology	n/a
2007	Stage 1 & 2 Archaeological Assessment of The Warren Woods Property, Part Lots 185, 198 and 199, Geographic Township of Stamford, Now in the City of Niagara Falls, Regional Municipality of Niagara	Archaeological Services Inc.	P117-050, 072 and PI41-02I-2006
2015	Archaeological Assessment (Stages 1 & 2), 7047 Reixinger Road, Part of Lots 8, 9 & 10, Broken Front Concession, Formerly in the Township of Willoughby, Now in the City of Niagara Falls, R.M. of Niagara, Ontario.	Mayer Archaeological Consultants	P066-0210-2014
2015	Archaeological Assessment (Stage 3) Proposed Warren Woods Subdivision Phase 4 AgGs-293, AgGs-294 and AgGs-299 Part of Lot 198, Geographic and Historical Township of Stamford, Historical County of Welland, Now in the City of Niagara Falls Company Project #2014-033-2014 PIF# P017-0324, 0325 and 0326-2014 Municipal File Number (None yet assigned) Revised Report.	Detritus Consulting Ltd	P017-0324-2014, P017-0325-2014 and P017-0326-2014
2017	Archaeological Assessment (Stage 3) Proposed Warren Woods Subdivision P28 (AgGs-296) and P29 (AgGs-298) Part of Lot 198, Geographic and Historical Township of Stamford, Historical County of Welland, Now in the City of Niagara Falls Company Project #2016-086 PIF# P017-0531-2016 (AgGs-296) and P017-0532-2016(AgGs-298) Original Report.	Detritus Consulting Ltd	P017-0531-2016 and P017-0532-2016

- ***Site Selection Process Phase 4A: Selection of a Preferred Site(s) Archaeology. Prepared by Museum of Ontario Archaeology, dated November 1985 (MIA 1985).***

In 1985, the Museum of Ontario Archaeology, formally the Museum of Indian Archaeology conducted an archaeological assessment designed to document archaeological resources on, and in the vicinity of, eight candidate sites with exposed ground surface. Of the eight locations surveyed only PI-27E was located within 50 m of the Study Area. PI-27E was bordered by Grassy Brook Road (north), Montrose Road (east), Biggar Road (south) and Crowland Avenue (west). There were three known sites identified within the PI-27E and an additional seven sites in its vicinity. Following fieldwork and background research the assessment confirmed the presence of 13 Indigenous and 5 Euro-Canadian sites; of these only 1 site (AgGs-19) was considered significant.

- ***Archaeological Assessment (Stages 1 & 2), 7047 Reixinger Road, Part of Lots 8, 9 & 10, Broken Front Concession, Formerly in the Township of Willoughby, Now in the City of Niagara Falls, R.M. of Niagara, Ontario. Prepared by Mayer Archaeological Consultants, dated 21 September 2015, Reference No. 14-001. PIF P066-0210-2014 (MAC 2015).***

In 2014, Mayer Archaeological Consultants (“MAC”) conducted a Stage 1 and 2 archaeological assessment in advance of a residential and commercial development. The project’s 37-ha study area covered a large portion of the preferred WWTP location within 50 m of the current Study Area (see Appendix B: Figure 11). The Stage 1 background research determined that assessment’s study area had archaeological potential due to the proximity of nearby water sources including the Welland River, Grassy Brook Creek, and Lyon’s Creek. In addition, a historic farmstead was noted on the property and there was a historic church and cemetery adjacent to the assessment’s study area. Additionally, two previously registered archaeological sites were located within the assessment’s study area.

Fourteen archaeological locations were documented during MAC’s Stage 1 & 2 assessment (MAC 2015:15). These included seven Indigenous artifact findspots, five Indigenous sites, one Euro-Canadian findspot, and one multi-component site. Further Stage 3 fieldwork was recommended for five of the 14 sites.

For Location 1 (registered as AgGs-50) and Location 3 (AgGs-48), both large and plough-disturbed lithic scatters, Stage 3 fieldwork was recommended to include:

Controlled surface artifact collection followed by the placement of multiple grids over areas of artifact concentration (e.g. greater surface densities of artifacts, concentrations of diagnostics, apparent single-component concentrations, or defined activity areas). Hand excavation of 1 m square test units should be completed across these grids at 5 m intervals. Once these units are excavated,

additional test units, amounting to 20% of the initial grid unit total should be excavated between areas of concentration to document areas of lower concentration. Further units, amounting to 10% of the initial grid unit total, should be placed on the periphery of the scatter to determine the site extent and sample the site periphery. If any features are encountered their planview [sic] should be recorded, covered in geotextiles and backfilled.” (MAC 2015:25-26).

Small, pre-contact Indigenous sites numbered Location 4 (AgGs-379), Location 12 (AgGs-380), and Location 14 (AgGs-381) were of uncertain cultural heritage value or interest so not recommended for Stage 4 excavations. However, MAC did recommend that the Stage 3 fieldwork include “controlled surface artifact collection” and:

This will be followed by the hand-excavation of 1 m square units in a 5 m grid across the site. Grid unit excavation should be followed by excavation of additional test units, amounting to 20% of the grid unit total, focusing on areas of interest within the site extent (such as distinct areas of higher concentrations of artifacts or adjacent to high-yield units) as per Section 3.2.2 and Table 3.2.1 of the *Standards and Guidelines for Consultant Archaeologists*. If any features are encountered their planview [sic] should be recorded, covered in geotextiles and backfilled (MAC 2015:26-28).

The remaining Locations 2, 5, 6, 7, 8, 9, 10, 11, and 12 were determined to have little cultural heritage value and no additional fieldwork was recommended for these locations (MAC 2015:25-28).

The portion of the assessment’s Study Area adjacent to Dell Cemetery (on the west and north sides of the cemetery) was also recommended for further investigations to ensure no unmarked grave shafts extended into the assessment’s Study Area. The woodlots within MAC’s study area were not subject to a Stage 2 assessment due to their designation as part of an Environmentally Sensitive Area. However, these areas were determined to still retain archaeological potential and were recommended for further Stage 2 test pit assessment (MAC 2015:28).

MTCS concurred that MAC’s recommendations were consistent with the conservation, protection, and preservation of the cultural heritage of Ontario and accepted the report into the *Ontario Register of Archaeological Reports* in a letter dated 02 October 2015 (MTCS 2015).

The results of MACs Stage 2 archaeological assessment and areas recommended for further work is located within Section 2 of the Supplementary Documentation.

- ***Stage 1 & 2 Archaeological Assessment of The Warren Woods Property, Part Lots 185,198 and 199, Geographic Township of Stamford, Now in the City of Niagara Falls, Regional Municipality of Niagara. Prepared by Archaeological Services Inc. (ASI), dated January 2005. ASI File: OSPO-36 (formerly 04DEL-01). PIF P117-050, 072 and P141-021-2006.***

Between 2005-2006, ASI was retained by Warren Woods Land Corporation to conduct a Stage 1-2 archaeological assessment on part of Lots 185, 198, and 199 in the Geographic Township of Stamford, now in the City of Niagara Falls. The assessment concluded that the study area exhibited significant archaeological potential based on its proximity to former watercourses and 16 previously identified pre-contact aboriginal and historic Euro-Canadian sites within a 2 km radius. The Stage 2 archaeological assessment consisted of both test pit and pedestrian survey and identified 37 archaeological sites, were 13 of which were recommended for further Stage 3 archaeological assessment. These include: P9 (AgGs-282), P12 (AgGs-284), P15 (AgGs-286), P17 (AgGs-288), P18 (AgGs-297), P19 (AgGs-289), P20 (AgGs-290), P21 (AgGs-291), P23 (AgGs-293), P24 (AgGs-294), P28 (AgGs-296), P29 (AgGs-298), and P30 (AgGs-299).

- ***Archaeological Assessment (Stage 3) Proposed Warren Woods Subdivision Phase 4 AgGs-293, AgGs-294 and AgGs-299 Part of Lot 198, Geographic and Historical Township of Stamford, Historical County of Welland, Now in the City of Niagara Falls Company Project #2014-033-2014 PIF# P017-0324, 0325 and 0326-2014 Municipal File Number (None yet assigned) Revised Report. Prepared by Detritus Consulting Ltd., dated 20 March 2015, PIF P017-0324-2014, P017-0325-2014 and P017-0326-2014 (Detritus Consulting Ltd 2015).***

In 2014, Detritus Consulting Ltd. conducted a Stage archaeological assessment of three sites previously identified during the 2006 Stage 1-2 archaeological assessment as part of the Warren Woods development (AgGs-293, AgGs-294 and AgGs-299). Following the completion of the Stage 3 excavation, further archaeological mitigation was recommended at AgGs-299 while the remaining two sites (AgGs-293 and AgGs-294) were determined not to meet the criteria for cultural heritage value or interest outlined in Section 3.4 of the *Standards and Guidelines for Consultant Archaeologists* and required no further work.

- ***Archaeological Assessment (Stage 3) Proposed Warren Woods Subdivision P28 (AgGs-296) and P29 (AgGs-298) Part of Lot 198, Geographic and Historical Township of Stamford, Historical County of Welland, Now in the City of Niagara Falls Company Project #2016-086 PIF# P017-0531-2016 (AgGs-296) and P017-0532-2016 (AgGs-298) Original Report. Prepared by Detritus Consulting Ltd., dated 18 January 2017, PIF P017-0531-2016 and P017-0532-2016 (Detritus Consulting Ltd 2017).***

In 2016, Detritus Consulting Ltd. conducted a Stage 3 archaeological assessment of two sites (AgGs-296, and AgGs-298) previously identified during the 2006 Stage 1-2 archaeological assessment. Both sites were found to not meet the criteria for cultural heritage value or interest outlined in Section 3.4 of the *Standards and Guidelines for Consultant Archaeologists* and Detritus recommended that no further work be required.

### 2.1.3 Environmental Context

The Study Area (Appendix B: Figure 1 to Figure 3) is situated in the Haldimand Clay Plain physiographic region (Chapman and Putnam 1984). This region is made up of a series of parallel belts between Lake Erie and the Niagara Escarpment that were once submerged by Glacial Lake Warren. The highest ground adjoins the Niagara Escarpment. The soils of this region are known for their heavy clay texture and are often characterized by poor drainage. Several square kms of Welland County are covered in peat bogs.

The *Soil Survey of Welland County* (Acton 1935) indicates that the dominant surface soil types within the Study Area is Niagara Clay and Welland Clay. Niagara Clay has fair to good surface drainage while Welland Clay has fair to poor natural drainage. The topography of the Study Area is generally smooth to undulating uplands with some low swales and pond holes.

It is crucial to consider the proximity of water sources in any evaluation of archaeological potential because the availability of water is arguably the single most important determinant of human land use, past and present. The *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011) lists proximity to water as one of the prime indicators of potential for the presence of archaeological sites. Distance from potable water has been one of the most commonly used variables for predictive modeling of archaeological site location. Water, both potable and non-potable, also facilitated the transportation of people and goods and served to focus animal and plant resources. According to the 2011 *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011), lands within 300 m of an extant or formerly mapped river or creek have potential for the presence of early Indigenous and Euro-Canadian archaeological sites. The Welland River and its tributary Grassy Creek cross the Study Area east to west in the southern portion of the Study Area. Two additional tributaries transect the Study Area, from the Welland River at the northern portion of the Study Area and from Lyons Creek at the southeast portion of the Study Area (Appendix B: Figure 2).

## 2.2 Historical Context

### 2.2.1 A Cultural History for Southern and Eastern Ontario

The majority of interpretations of pre-contact Indigenous adaptations in Ontario derive from the analysis and interpretation of stone tools. Stone tools are made from specific types of rocks that fracture in ways that can be controlled, so that they are easily shaped into useful forms. These rocks include chert, chalcedony, quartzite, petrified wood, and volcanic glass, known as obsidian. Most stone tools found in southern Ontario are formed from types of chert that outcrop in local limestone formations, such as: Onondaga and Haldimand cherts, found near the north shore of Lake Erie; Kettle Point chert, which outcrops near Lake Huron; and Collingwood chert, which outcrops

along the Niagara Escarpment near Georgian Bay.

Stone tools used as spear tips and arrowheads are the most commonly studied tool type. These are referred to as projectile points. As projectile point technology changed over time, styles and shapes of points changed also. Studying these changing point types has resulted in the development of a chronological framework for pre-contact times prior to 3,000 years ago, when Indigenous Nations began to make clay pottery. Later periods are defined both by point types and pottery characteristics. Radiocarbon dating of archaeological sites can only be done when organic materials are collected from those sites, so the dating of most sites is done by comparing the artifacts from dated sites to those from undated sites.

The following is an overview of the cultural history of southern and eastern Ontario as understood by archaeologists. It is based upon published syntheses of Indigenous cultural occupations (Wright 1968, Ellis and Ferris 1990, Adams 1994). For additional reference, Ellis and Ferris (1990) provide greater detail of the distinctive characteristics of each time period and cultural group.

The cultural history of southern Ontario began approximately 11,000 years ago when the glaciers had melted, and the land was re-exposed. The land was quickly settled by bands of hunters and gatherers who are thought to have been large game hunters. These people used large spear points that are distinctively shaped with long central grooves, called “flutes”. Archaeologists have defined a number of point types that date to this time, including Gainey, Barnes, Crowfield, and Hi-Lo types. This period is referred to as the Paleo-Indian Period and it is thought to have lasted until approximately 9,000 years ago.

After 9,500 years ago, there was a long period when the climate was variable and the bare lands left by the glaciers were becoming re-forested, resulting in patchier, more diverse ecozones. During this time, which lasted until 3,000 years ago, people were adapting to diverse environmental settings. There appears to have been more reliance on local stone for making tools and more variable tool manufacturing technologies. The adoption of a spear-throwing board, known as an atlatl, was an important innovation, resulting in the ability to throw smaller darts with more force. Projectile points from this period, called the Archaic Period, are commonly side or corner-notched and are smaller than those of the preceding period. The Archaic adaptation is generally thought to have centered on localized resources, often forest resources, and groups of people are thought to have been less mobile, an adaptation that continued to develop until the arrival of Europeans.

In southern Ontario, the Archaic Period is divided into the Early, Middle and Late Archaic. Early point types include serrated Nettling and Bifurcate Base points. Middle types include Brewerton Corner Notched and Otter Creek, and Late types include Lamoka, Genesee, Crawford Knoll, and Innes. Most of these point types are named after archaeological sites where they were first identified.

The Archaic Period is followed by the Woodland Period. The major technological change in the Early Woodland Period is the introduction of pottery. During this time, people are thought to have developed more community organization and the manufacture of clay pottery is thought to indicate less residential mobility. Burial sites dating to this time often display evidence of ceremonial activities. Projectile points made at this time include much smaller types, probably used as arrow tips. Point types include Meadowood and Kramer and early ceramics were crudely-made vessels with conoidal (pointed) bases. The Early Woodland Period transitioned into the Middle Woodland Period approximately 2,400 years ago.

During the Middle Woodland Period in southern Ontario community and kin identity became more deeply entrenched, and more sedentary communities developed. Point types made at this time include Saugeen, Vanport, and Snyders. Ceramic vessels were conoidal in shape but were decorated with stamped designs in the soft clay. The Middle Woodland Period transitioned into the Late Woodland Period A.D. 500–900 with the earliest direct evidence for agriculture.

The Late Woodland Period saw the development of recognizable Iroquoian and Algonquian cultures in southern Ontario, characterized by the intensification of agriculture and the increased utilization of corn. Greater sedentism led to increasing settlement populations and greater complexity of settlement organization. Sites dating to this time are often found on terraces overlooking the floodplains of large rivers. Iroquoian villages tended to be small, palisaded compounds with longhouses occupied by families. As the Late Woodland Period progressed, more intercommunity communication and integration became necessary to maintain the sedentary agricultural way of life. Later Iroquoian villages were larger and more heavily palisaded, and longhouses were larger also. Algonquian settlements tended to be less populous and temporary.

When European explorers and missionaries arrived in southern Ontario in the early 17th century, they described the local Iroquoian social organization as being under the direction of elected chiefs. Tribal confederacies and allegiances resulted in intertribal warfare, which was only made worse by the European presence. Three Ontario Iroquoian confederacies, the Huron, Petun, and Neutral, were driven from their traditional territories before the middle of the 17th century.

Archaeologists tend to describe a period of transition from Late Woodland to post-contact times as “proto-historic”. The dating of this period is variable and may be different from site to site within a region as it describes a time when local Indigenous peoples were acquiring European trade goods indirectly through other Indigenous middlemen rather than directly from European traders. This period was generally very short and is often difficult to differentiate archaeologically from later post-contact times, when trade goods were widely available, but it usually is identified by evidence of an intact traditional cultural adaptation with occasional European items used in traditional

ways.

**Table 4: Simplified Cultural Chronology of Southern and Eastern Ontario**

Period	Complexes/Cultures, Some Diagnostic Artifacts
Early Paleo-Indian (9000–8500 B.C.)	Small nomadic hunter-gatherer bands. Early Paleo-Indian (EPI) rarely found in eastern Ontario. Gainey, Barnes, Crowfield fluted points.
Late Paleo-Indian (8500–7500 B.C.)	Small nomadic hunter-gatherer bands. Hi-Lo, Holcombe points, Lanceolate Bifaces.
Early Archaic (7500–6000/4500 B.C.)	Small nomadic hunter-gatherer bands. Nettling, Stanley/Neville points.
Middle Archaic (6000/4500–2500 B.C.)	Transition to territorial settlements. Seasonal round of subsistence introduced. Thebes (6000–5000 B.C.), Otter Creek points (4500–3000 B.C.). Brewerton Complex (3000–2500 B.C.). Brewerton points. Laurentian Complex (6000–2500 B.C.) (Eastern Ontario)
Late Archaic (2500–1000 B.C.)	More numerous territorial hunter-gatherer bands, increasing use of exotic materials and artistic items for grave offerings, regional trade networks. Narrowpoint Complex (2500–1850 B.C.). Lamoka points. Broadpoint Complex (1850–1650 B.C.). Adder Orchard, Genesee points. Smallpoint Complex (1650–1000 B.C.). Crawford Knoll, Innes points. Terminal Archaic (1100–1000 B.C.) Glacial Kame Complex. Hind points.
Early Woodland (1000–400 B.C.)	Pottery introduced. Meadowood Notched points, Meadowood Cache Blades, Kramer, Adena points. Meadowood Complex (1000–400 B.C.). Middlesex Complex (650–400 B.C.). Introduction of true cemeteries.
Middle Woodland (400 B.C.–A.D. 500/900)	Saugeen, Snyders, Vanport, Port Maitland points. Point Peninsula Complex (Southcentral and eastern Ontario)



Period	Complexes/Cultures, Some Diagnostic Artifacts
	Saugeen Complex (Southeast of Lake Huron and the Bruce Peninsula, London area, and possibly as far east as the Grand River) Couture Complex (Lake St. Clair and the western end of Lake Erie). Burial ceremonialism.
Transitional Woodland (A.D. 500–900)	Agriculture introduced. Levanna, Jacks Reef points. Princess Point Complex (Eastern end of Lake Erie and the western end of Lake Ontario). Rivière au Vase Phase of the Younge / Western Basin Tradition (Lake St. Clair and western end of Lake Erie) Sandbanks Complex (Kingston area).
Late Woodland (A.D. 900–1650)	Tribal differentiation. Transition to settled village life. Dewaele, Glen Meyer Tanged, Triangular Naticoke, Notched Naticoke, Triangular Daniels/Madison points. Ontario Iroquoian and St. Lawrence Iroquoian Traditions (Southcentral and eastern Ontario, respectively). Algonkian Western Basin Tradition (Lake St. Clair and the western end of Lake Erie).
Early Post-Contact (A.D. 1650–1763)	Iroquoian, Algonkian migrations and resettlement. French exploration and colonization
Late Post-Contact (A.D. 1763–1867)	Iroquoian, Algonkian migrations and resettlement. British and other European immigration increases.

In southern Ontario, significant post-contact archaeological sites are those that have an affiliation with an important historic event, figure, or family, but can also be anything dating to the original European settlement of a region. Often, these archaeological sites date to before A.D. 1830, but archaeologically significant Euro-Canadian sites can date into the 20th century.

### 2.2.2 Review of Historical Records

Historically, the Study Area was located within the former Townships of Willoughby, Crowland, and Stamford in the County of Welland. The earliest recorded European visitor to the area is Father Louis Hennepin, who explored as a missionary in 1678. He is best known for publishing an account of his travels, which include the first written description of Niagara Falls, published in 1689 (Page 1876). In the last two decades of the 18<sup>th</sup> century large numbers of United Empire Loyalists (UEL) moved into the Niagara region after receiving land grants for siding with the British during the American Revolutionary War. By 1784, at least 40 families had settled in what would become Welland County (Murphy 1887). The closest historic community to the Study Area is the

Village of Chippawa, established in 1792. The first permanent Euro-Canadian settler in Chippawa was Thomas Cummings, who took up land on the south side of the Welland River 1783. Chippawa had a post office and was a centre for ship building and foundry work (Bond 1964; Jackson 1997).

Welland County was formed in 1851 from land severed from the southern section of Lincoln County (Mika and Mika 1983). The county was named after the Welland River, which had been named in 1792 by John Graves Simcoe after the Welland River in Lincolnshire, England (Middleton and Landon 1927; Rayburn 1997:366). The building of the first Welland Canal in the 1820s stimulated settlement growth in the area (Mika and Mika 1983).

Willoughby Township was first surveyed in 1787 and was named for British politician Sir Peregrine Bertie, 19<sup>th</sup> Baron Willoughby (Armstrong 1930; Rayburn 1997:375). In addition to UEL, groups of pacifist Pennsylvania Dutch families arrived in the 1790s. The 19th century saw increasing settlement by German-speaking farmers from Switzerland, and other German regions attracted by cheap land (Page 1876). Willoughby Township is also the site of the War of 1812 Battle of Chippawa, fought between British and American forces on 5 July 1814 (Page 1876).

Crowland Township was named after a town of the same name on the Welland River in Lincolnshire (Rayburn 1997:85). It was first settled in 1788 and organized by 1803. The Township's first post office opened in 1841 at Cooks Mill in the store of Luther Boardman. Multiple churches were erected including one Methodist church, one Presbyterian church in 1850, and a Wesleyan and Episcopal Methodist church in 1862. A schoolhouse was erected in the mid-1800s at Cooks Mill on land donated by a Mr. Street (Mika and Mika 1977).

Stamford Township in the County of Welland was first settled in 1784 by Colonel John Butlers Rangers and other UELs. Originally named Township #2 because it was the second township surveyed in Welland County (Page 1876:14), by 1784 it was known as Mount Dorchester, and in 1793 Simcoe named it for the borough of Stamford on the Welland River in Lincolnshire (Rayburn 1997:328). The Township was first surveyed in 1787 by Philip R. Frey but its Portage Road between Chippawa and Queenston was one of the earliest routes in the Niagara Peninsula, following a trail used by Indigenous people to portage around Niagara Falls. The Township's first Euro-Canadian settler was Philip George Bender, who settled near the Falls in 1781, and by the 1790s the Township was populated with Loyalists and other British settlers (Mika & Mika 1983:39). In 1831, Drummondville was the first incorporated village in the Township.

Dell Cemetery is located at the intersection of Reixinger Road and Dell Road directly north of the Study Area. Henry Dell, Sr. the son of Basnett Dell Jr. and Ann (DeFields) was a UEL soldier who petitioned for land in 1796. He is listed in the 1851 census as being a farmer (Library & Archives Canada 2020). The same year, Henry Dell, Sr. deeded one acre of land to the Methodist Episcopal Church to be known as the Dell

Chapel and Cemetery. The first known burial was Robert Dell's wife Mary, who was interred on 14 November 1849 (City of Niagara Falls 2013). Several other Dell family members are buried in the cemetery along with members of pioneer families Hexamer, Morley and Reixinger. The City of Niagara Falls acquired the cemetery in 1973 and it is currently inactive (City of Niagara Falls 2019, Bereavement Authority of Ontario 2017). In accordance with the recommendations proposed by Golder (Golder 2021) both the City of Niagara Falls and the Bereavement Authority of Ontario (BAO) were contacted to gather additional information on the cemetery to confirm its southern boundary, adjacent to the Study Area. Although no legal survey or map of the cemetery was filed with the BAO (Appendix B: Figure 5-Figure 10; Supplementary Documentation: Sections 4 and 5), information provided from the City (Supplementary Documentation: Section 4) is conclusive that the southern boundary of the cemetery coincides with the northern boundary of the Study Area (Reixinger Road right-of-way). This boundary is consistent with the historical mapping, present day parcel data, and the chain link fence line observed during field review. . In addition, the cemetery mapping provided by the City indicates that no burial plots are located within 20 m of the Study Area (Supplementary Documentation: Section 4), rather the plots are concentrated in the north portion of the cemetery property; the interments were located here since the Dell Chapel, now demolished, was located in the south portion of the property.

Historical records and mapping were examined for evidence of early Euro-Canadian use of the Study Area. The Study Area was located within Part of Lots 186-187, 198 and 209-210 in the Township of Stamford, Lot 1 Broken Front at Chippewa Creek, Township of Crowland and Lots 7-10 Broken Front at Chippewa Creek, Township of Willoughby, in the County of Welland, Ontario.

Table 5 lists the historical records examined to determine archaeological potential within the Study Area.

**Table 5: Review of Historical Records**

Figure No.	Year	Map Title	Historical Feature(s)
Appendix B: Figure 4	1795	1795 Augustus Jones Willoughby Township No. 1 Map (Jones 1795)	<ul style="list-style-type: none"> <li>• Study Area is located within the following Lots and Concessions:                             <ul style="list-style-type: none"> <li>○ Lot 8-10 Broken Front at Chippewa Creek</li> </ul> </li> <li>• The Welland River and one of its tributaries are illustrated transecting the Study Area</li> <li>• Property owners are listed but due to degradation of the document and file resolutions the names are mostly illegible. Names that are legible are:                             <ul style="list-style-type: none"> <li>○ Lot 7 - Jonas N/A</li> <li>○ Lot 8 - John Thomas</li> <li>○ Lot 9 – John N/A</li> <li>○ Lot 10 – James N/A</li> </ul> </li> </ul>
Appendix B: Figure 5	1797	1797 Augustus Jones Stamford Township No. 2 Map (Jones 1797)	<ul style="list-style-type: none"> <li>• Study Area is located within the following Lots and Concessions:                             <ul style="list-style-type: none"> <li>○ Lots 186-187, 198, 209-210, Stamford Township</li> </ul> </li> <li>• The Welland River and one of its tributaries are illustrated transecting the Study Area</li> <li>• Property owners are listed but due to degradation of the document and file resolutions the names are mostly illegible. Names that are legible are:                             <ul style="list-style-type: none"> <li>○ Lot 186– John N/A</li> <li>○ Lot 187- Peter Weaver</li> <li>○ Lot 198: N/A</li> <li>○ Lot 209: N/A</li> </ul> </li> </ul>
Appendix B: Figure 6	1862	1862 Tremaine’s Map of the Counties of Lincoln and Welland (Tremaine 1862)	<p>Study Area is located within the following Lots and Concessions:</p> <ul style="list-style-type: none"> <li>○ Lots 186-187, 197-198, 209-211 Stamford Township</li> <li>○ Lot 1 Broken Front at Chippewa Creek, Township of Crowland</li> <li>○ Lots 8-10 Broken Front at Chippewa Creek, Township of Willoughby</li> </ul> <p>Information concerning the various property owners and property features included below:</p> <ul style="list-style-type: none"> <li>• Lots 186-187, 198, 209-210, Stamford Township:                             <ul style="list-style-type: none"> <li>○ Listed property owners: Estate of John Howey and Isaac Howey (Lot 186), Everat De Witt (187), Isaac Howey (Lot 198), Archibald Thompson (Lot 209), Archibald Gray (Lot 210).</li> <li>○ A tributary of Welland River is illustrated transecting the Study Area</li> <li>○ On Lot 209, one (1) residence is depicted within 100m to the south of the Study Area</li> <li>○ On Lot 210, three (3) residences are depicted within 100m to the east of the Study Area</li> </ul> </li> <li>• Lot 1, Broken Front at Chippewa Creek, Crownland Township                             <ul style="list-style-type: none"> <li>○ Listed property owners: Estate of W. T Willkins and Johnathan Dell</li> <li>○ No additional features depicted</li> </ul> </li> <li>• Lot 7- 10, Broken Front at Chippewa Creek                             <ul style="list-style-type: none"> <li>○ Listed property owners: Estate of W. Miller (Lot 7), Henry Dell (Lot 8), no owner listed (Lot 9) and Estate of W. Miller (Lot 10)</li> <li>○ A tributary of Welland River is illustrated transecting the the Lot</li> <li>○ Welland River is adjacent to the Lot to the north</li> </ul> </li> </ul>

Figure No.	Year	Map Title	Historical Feature(s)
			<ul style="list-style-type: none"> <li>○ The Evangelical Methodist Church is located directly to the south of the Study Area</li> <li>○ Reixinger Road transects the Study Area</li> <li>○ A historic road transects the Study Area between Lots 8 and 9</li> <li>○ A historic road is adjacent to the Study Area to the east</li> <li>● No additional buildings depicted within Study Area</li> </ul>
<p><b>Appendix B: Figure 7</b></p>	<p>1876</p>	<p>1876 Illustrated Historical Atlas of Lincoln and Welland Counties (Page, H. R. &amp; Co. 1876)</p>	<p>Study Area is located within the following Lots and Concessions:</p> <ul style="list-style-type: none"> <li>● Lots 186-187, 197-198, 209-211 Stamford Township</li> <li>● Lot 1 Broken Front at Chippewa Creek, Township of Crowland</li> <li>● Lots 8-10 Broken Front at Chippewa Creek, Township of Willoughby</li> </ul> <p>Information concerning the various property owners and property features included below:</p> <ul style="list-style-type: none"> <li>● Lots 186-187, 198, 209-210, Stamford Township: <ul style="list-style-type: none"> <li>○ Listed property owners: Richard Howey (Lot 186), Everat De Witt (187), Archie Gray and Lanty McGilly (Lot 198), Archibald Thompson (Lot 209), Archibald Gray (Lot 210).</li> <li>○ A tributary of Welland River is illustrated transecting the Study Area</li> <li>○ On Lot 186, one (1) residence and orchard are depicted within 100m to the west of the Study Area</li> <li>○ On Lot 187, one (1) residence is depicted within 100m to the south of the Study Area</li> <li>○ On Lot 197, one (1) residence is depicted within 100m to the east of the Study Area</li> <li>○ On Lot 209, one (1) residence is depicted within 500m to the east of the Study Area</li> <li>○ On Lot 210, three (3) residences are depicted within 100m to the east of the Study Area</li> </ul> </li> <li>● Lot 1, Broken Front at Chippewa Creek, Crownland Township <ul style="list-style-type: none"> <li>○ Listed property owners: Estate of W. T Willkins and Thomas Dell</li> <li>○ Three (3) residences, five (5) orchards, and one (1) hotel are depicted within Lot 1</li> </ul> </li> <li>● Lot 7- 10, Broken Front at Chippewa Creek <ul style="list-style-type: none"> <li>○ Listed property owners: Estate of Henry Dewitt (Lots 7 &amp; 8), Edward Dell (Lots 8, 9 &amp; 10) and James Malone (Lots 9 &amp; 10)</li> <li>○ Reixinger Road transects the Study Area</li> <li>○ A historic road transects the Study Area between Lots 8 &amp; 9</li> <li>○ A historic road is adjacent to the Study Area to the east</li> <li>○ A tributary of Lyons Creek is illustrated transecting Lot 10 to the southwest of the Study Area</li> <li>○ Welland River is adjacent to the Study Area to the north</li> <li>○ A farmstead &amp; orchard are shown within the Study Area</li> <li>○ Two orchards are depicted on Lots 9 &amp; 10, to the northwest of the Study Area</li> </ul> </li> <li>● Dell Chapel (Evangelical Methodist Church) &amp; Dell Cemetery are located directly to the north of the Study Area within Lot 8, Broken Front at Chippewa Creek</li> </ul>

### 2.2.3 Historical Plaques

The MTCS's *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011:18) stipulates those areas of early Euro-Canadian settlement, including places of early military pioneer settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries, are considered to have archaeological potential. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the *Ontario Heritage Act* or a federal, provincial, or municipal historic landmark or site, and properties that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations are also considered to have archaeological potential.

A plaque detailing the history of Dell Cemetery is situated adjacent to the Dell Cemetery, along Reixinger Road. The plaque, placed by the City of Niagara Falls, reads:

*History: Henry Dell Sr., a loyalist soldier, received a portion of land in 1797. Henry Sr. deeded one acre of land to the Methodist Episcopal church in 1851 and was known as the Dell Chapel & Cemetery.*

*First Known Burial: Mary, wife of Robert Dell, November 14, 1849.*

### 2.3 Recent Land Use History

Land use at the beginning of the 20th century remained largely unchanged in the Study Area as agricultural land use was still predominant and the process of industrialization ongoing. The 20th century saw dramatic changes as the population increased including city expansion, and residential developments.

Historical records and mapping were examined to gain an understanding of 20th century land use in the Study Area. While maps from 1906-1908, 1915, 1920, 1925, 1928, 1930, 1938, 1939, and 1942 were examined, historic maps from the years 1906, 1925 and 1942 best illustrate the prominent changes of the Study Area within the early 20th century and its surrounding areas. A summary of these historical records is presented below in Table 6.

**Table 6: Review of 20th-Century Historical Mapping**

Figure No.	Map Title	Historical Feature (s)
<b>Appendix B: Figure 8</b>	1906 Topographic Map of Ontario, Niagara Sheet (Department of Militia and Defence)	<ul style="list-style-type: none"> <li>• Nine (9) wood residences depicted within 100 m of the Study Area</li> <li>• One (1) schoolhouse depicted within 100 m of the Study Area</li> </ul>

Figure No.	Map Title	Historical Feature (s)
	1906)	<ul style="list-style-type: none"> <li>• One (1) brick/stone blacksmith shop depicted within 100 m of the Study Area</li> <li>• One (1) post office depicted within 100 m west of the Study Area</li> <li>• One (1) hotel depicted within 100 m west of the Study Area</li> <li>• One (1) railway transecting Study Area</li> <li>• Welland River transecting Study Area</li> <li>• Dell Cemetery is located immediately north of the Study Area</li> <li>• Dell Chapel is located immediately north of the Study Area</li> </ul>
<b>Appendix B: Figure 9</b>	1925 Topographic Map of Ontario, Niagara Sheet (Department of Militia and Defence 1925)	<ul style="list-style-type: none"> <li>• Thirteen (13) wood residences depicted within 100 m of the Study Area</li> <li>• One (1) post office depicted within 100 m west of the Study Area</li> <li>• One (1) hotel depicted within 100 m west of the Study Area</li> <li>• One (1) railway depicted transecting the Study Area</li> <li>• Welland River depicted transecting Study Area</li> <li>• Dell Cemetery is located immediately north of the Study Area</li> <li>• Dell Chapel is located immediately north of the Study Area</li> </ul>
<b>Appendix B: Figure 10</b>	1942 Department of National Defence Geographical Section, Canada Sheet 30 (Department of National Defense 1942)	<ul style="list-style-type: none"> <li>• Nineteen (19) wood residences depicted within 100 m of the Study Area</li> <li>• One (1) railway transecting Study Area</li> <li>• Welland River transecting Study Area</li> <li>• Dell Cemetery is located immediately north of the Study Area</li> <li>• Dell Chapel is located immediately north of the Study Area</li> </ul>

In conjunction, a review of recent aerial photographs was completed for the Study Area to discern past and present land uses in the Study Area (Appendix D). Table 7 provides a summary of these findings.

**Table 7: Review of 20th-Century Historical Records**

Year	Features
1934 ( <b>Appendix D:</b> Plate B1; Brock University 2016)	The following features are observed. <ul style="list-style-type: none"> <li>• The Welland River transects the Study Area</li> <li>• The Great Trunk Railway transects the Study Area</li> </ul>
1954-55 ( <b>Appendix D:</b> Plate B2; Brock University 2016)	The following features are observed. <ul style="list-style-type: none"> <li>• The Welland River transects the Study Area</li> <li>• The Great Trunk Railway transects the Study Area</li> <li>• The Queen Elizabeth Way (QEW) is depicted transecting the Study Area</li> </ul>
1965 ( <b>Appendix D:</b> Plate B3; Brock University 2016)	The following features are observed. <ul style="list-style-type: none"> <li>• The Welland River transects the Study Area</li> <li>• The Great Trunk Railway transects the Study Area</li> <li>• The QEW is depicted transecting the Study Area</li> </ul> Additional roadways depicted west of the Study Area on the south side of the Welland River
1968 ( <b>Appendix D:</b> Plate B4; Brock University 2016)	The following features are observed. <ul style="list-style-type: none"> <li>• The Welland River transects the Study Area</li> <li>• The Great Trunk Railway transects the Study Area</li> <li>• The QEW is depicted transecting the Study Area</li> </ul> Additional roadways depicted west of the Study Area on the south and north side of the Welland River
1995 ( <b>Appendix D:</b> Plate B5; Brock University 2016)	The following features are observed. <ul style="list-style-type: none"> <li>• The Welland River transects the Study Area</li> <li>• The Great Trunk Railway transects the Study Area</li> <li>• The QEW is depicted transecting the Study Area</li> </ul> Additional residences located east of the Study Area
Various (2000 to 2020 Online Google Earth Aerial Imagery)	The configuration of the Study Area mirrors earlier imagery.

## 2.4 Archaeological Master Plans

The Region of Niagara retained Archaeological Services Inc. to prepare a Regional Archaeological Management Plan. The *Niagara Region Archaeological Management Plan* (AMP) represents best practices in municipal archaeological resource management and includes planning and management guidelines and an archaeological potential model consistent with provincial legislation and policies. According to the



Region of Niagara Archaeological Management Plan the majority of the land within the Study Area was identified as having archaeological potential and therefore requiring an archaeological assessment prior to development (ASI 2021).

## 2.5 Potential for Archaeological Resources

Archaeological potential is defined as the likelihood of finding archaeological sites within a Study Area. For planning purposes, determining archaeological potential provides a preliminary indication that archaeological sites might be found within the Study Area, and consequently, that it may be necessary to allocate time and resources for archaeological survey and mitigation.

The framework for determining the presence of archaeological potential within a Study Area is drawn from provincial standards found in the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011, Sections 1.3.1 and 1.3.2). The following are features or characteristics that can indicate archaeological potential:

- previously identified archaeological sites;
- water sources (it is important to distinguish types of water and shoreline, and to distinguish natural from artificial water sources, as these features affect site locations and types to varying degrees):
  - primary water sources (e.g. lakes, rivers, streams, creeks);
  - secondary water sources (e.g. intermittent streams and creeks, springs, marshes, swamps);
  - features indicating past water sources (e.g. glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches); and,
  - accessible or inaccessible shoreline (e.g. high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh).
- elevated topography (e.g. eskers, drumlins, large knolls, plateaus);
- pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground;
- distinctive land formation that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings;
- resource areas, including:
  - food or medicinal plants (e.g. migratory routes, spawning areas, prairie);
  - scarce raw materials (e.g. quartz, copper, ochre or outcrops of chert); and,
  - early Euro-Canadian industry (e.g. fur trade, logging, prospecting, mining).

- areas of early Euro-Canadian settlement. These include places of early military or pioneer settlement (e.g. pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and cemeteries. There may be commemorative markers of their history, such as local provincial, or federal monuments or heritage parks;
- early transportation routes (e.g. trails, passes, roads, railways, portages); and,
- property listed on a municipal register or designated under the *Ontario Heritage Act* or that is a federal, provincial or municipal historic landmark or property that local histories or informants have identified with possible archaeological sites, historical events, activities or occupations.

Archaeological potential can be determined to not be present for either the entire Study Area or parts of it when the area under consideration has been subjected to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources. This is commonly referred to as “disturbed” or “disturbance” and may include:

- quarrying;
- major landscaping involving grading below topsoil;
- building footprints;
- sewage and infrastructure development; and,

However, activities such as agricultural cultivation, gardening, minor grading, and landscaping do not necessarily affect archaeological potential.

The Study Area is comprised of roadways, agricultural lands and wooded areas interspersed with residential and commercial properties. Actively or formerly cultivated agricultural fields line the Welland River and Grassy Creek, as well as a small section of land running east-west from Montrose Road towards the Welland Canal. A house, barn and outbuildings are located to the north of the Study Area along Reixinger Road and the buildings are surrounded by manicured lawn. Adjacent to the southeast portion of the Study Area, on the north side of Reixinger Road at Dell Road, is the historically significant Dell Cemetery. Its boundaries are delineated by chain link fencing, and the lands within the Study Area immediately south of the cemetery have been extensively cut and graded to create a drainage ditch running parallel to Reixinger Road.

Several factors can be used to assess the potential for recovery of Indigenous archaeological resources within the Study Area.

First, the Study Area is located within 300m of 13 archaeological sites, this includes eight Indigenous archaeological sites, one Euro-Canadian archaeological site and four archaeological sites with an unknown cultural affiliation providing evidence that the general area has been intensively utilized by both Indigenous peoples and Euro-Canadians.

Second, the Study Area is largely comprised of well-drained land that is suitable for human habitation. Third, natural water sources transect the Study Area, including Welland River directly to the northeast and Grassy Creek directly to the northwest. Two tributaries, a secondary water source and resource extraction area, one from the Welland River and the second from Lyons creek also transect through the Study Area. There is also direct evidence that this general area has been intensively utilized by Indigenous people; in addition to two previously registered Indigenous sites within the Study Area, there are thirteen Indigenous sites located within 300 m of the Study Area.

As per the MTCS's *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011), any areas within 100 m of early transportation routes and 300 m of early Euro-Canadian settlement have archaeological potential. The Study Area is located adjacent to historical roadways and transportation routes, including Reixinger Road, Dell Road, Montrose Road (Regional Road 98), the former Michigan Central Railroad, and the Welland River. Several farmsteads and orchards are illustrated on the 1876 historical atlas mapping within the Study Area, and the Dell Chapel and Cemetery are adjacent to the Study Area (Appendix B: Figure 6). Historical records indicate the cemetery was in use as early as 1849 (City of Niagara Falls, 2019). Finally, according to the AMP the majority of the Study Area was identified as having overall archaeological potential.

Given the above, background archival research supports the conclusion that all previously undisturbed portions of the Study Area exhibit general archaeological potential for the presence of both Indigenous and Euro-Canadian archaeological resources and therefore a Stage 2 archaeological assessment is required.

Areas that have been disturbed by modern activities, both extensive and intensive, have low potential for the recovery of archaeological resources. Disturbance includes paved roadways and roadside ditches located within the Study Area, which makes up 7 ha of the Study Area.

## 2.6 Indigenous Engagement

The Study Area is within within the treaty and/or traditional territories of numerous Indigenous Nations. This area was used and shared by many Indigenous groups over the millennia, each with their own traditions as to how they arrived, lived, and the major events of their history. One perspective is provided in the MCFN treaties booklet (Appendix F) which details the history of the Mississauga of the Credit First Nation and the 1792 Between the Lakes Treaty, No.3. It should be noted that this booklet does not necessarily reflect the views of other Nations, nor the consultant archaeologist.

A draft of this report was shared with the following three Indigenous Nations:

- Haudenosaunee Development Institute (HDI)
- Mississaugas of the Credit First Nation (MCFN)
- Six Nations of the Grand River Elected Council (SNGREC)

To date no comments from HDI have been received.

Comments received from MCFN and SNGREC are summarized in the Supplementary Documentation accompanying this report.

### 3.0 Stage 1 Property Assessment

#### 3.1 Methods

A property assessment of the Study Area was directed and conducted by Chelsea Dickinson (R1194) of Wood on 6 October 2021. The weather during the assessment was sunny with some overcast periods with a maximum temperature of 23°C and did not impede the inspection or assessment in any way. As such, it is confirmed that the assessment met Section 2.1 Standard 3 of the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011) regarding weather and lighting.

The Stage 1 archaeological assessment property inspection confirmed archaeological site potential and determined the degree to which development and landscape alteration have affected that potential. It included a walk-through of the entire Study Area. The property inspection was thoroughly photo-documented. Field observations were recorded on aerial maps and field forms. All land conditions were recorded as shown in Appendix B: Figure 12 and Appendix E: Photographs 1 to 44.

#### 3.2 Results

The Study Area is comprised of mostly roadways, agricultural lands and shrublands, interspersed with residential and commercial properties. The Study Area is comprised of a small section of land located south of Welland River and north of Reixinger Road and runs along the following roadways: Reixinger Road across the QEW, Montrose Road and Brown Road. Finally, the Study Area includes a small section of land running east-west from Montrose Road across the QEW and Oakwood Drive towards the Welland Canal in the City of Niagara, Ontario.

Reixinger Road within the Study Area is a two-lane asphalt roadway until it reaches the Queen Elizabeth Way (QEW) when it narrows into a single lane. The roadway is bordered by mature trees and moderate ditching on both sides. Montrose Road (Regional Road 98) within the Study Area is a two-lane asphalt roadway with moderate to deep ditching on both sides and is bordered by woodlots, agricultural lands, residential properties and commercial developments. Brown Road within the Study Area is a two-lane asphalt roadway bordered by woodlots to the south and recent residential complexes to the north. The Study Area continues eastward across the QEW and Oakwood Drive towards the Welland Canal. This portion of the Study Area is an open field with undulating topography.

Based on the Stage 1 property inspection and background research Wood determined that archaeological potential has been removed within 7 ha (62.5%) of the Study Area. These areas, identified as disturbed, have had the integrity of the topsoil compromised by earth moving activities to the point where archaeological potential has been removed. These areas include the right-of-way, recent residential complexes and moderate to deep roadside ditching and culverts.

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Approximately 0.07 ha (1%) of the Study Area is located within the Welland River.

The remainder of the Study Area, consisting of manicured lawns/mature woodlots and cultivated agricultural fields have general archaeological potential (Appendix B: Figure 12A to Figure 12B).

### 3.2.1 Documentary Record

The inventory of documentary records accumulated as part of this assessment is provided in Table 8.

**Table 8: Inventory of Documentary Record**

Repository	Map and Photo(s)	Field Notes
Wood PLC (Burlington Office) 3450 Harvester Rd, Burlington, ON L7N 3W5	Copies of 7 historical maps, 44 Stage 1 photographs and 5 aerial photographs	Stage 1 photo logs and field notes

Documentation related to the archaeological assessment of this project will be curated by Wood until such time that arrangements for their ultimate transfer to Her Majesty the Queen in Right of Ontario, or other public institution, can be made to the satisfaction of the project owner, the MTCS and any other legitimate interest groups.

### 3.3 Stage 1 Analysis and Conclusions

The Stage 1 background study indicated that the Study Area has general archaeological potential for the following reasons: (1) 13 archaeological sites are located within 300 m of the Study Area; (2) the Study Area is largely comprised of well-drained land that is suitable for human habitation; (3) primary water sources are located within 300 m of the Study Area, including the Welland River directly to the northeast and Grassy Creek directly to the northwest; (4) two secondary water sources (a tributary of the Welland River and of Lyons Creek) and a resource extraction area transect the Study Area; (5) the Study Area is located adjacent to several historical roadways and transportation routes, including Reixinger Road, Dell Road, Montrose Road (Regional Road 98), CN Railway (Michigan Central Railroad [MC]) and the Welland River; (6) several farmsteads and orchards are illustrated within the Study Area on a 1876 historical atlas map (Appendix B: Figure 7); (7) the Dell Chapel and Cemetery are shown adjacent to the Study Area on a 1876 historical atlas mapping, dating as early as 1849 (Appendix B: Figure 7); and (8) according to the *Niagara Region Archaeological Management Plan* (AMP) the majority of the Study Area was identified as having overall archaeological potential.

The Stage 1 archaeological assessment property inspection and background research determined that archaeological potential has been removed within 7 ha (62.5%) of the Study Area. These areas, identified as disturbed, have had the integrity of the topsoil compromised by earth moving activities to the point where archaeological potential has

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been removed. These areas include the right-of-way, recent residential complexes and moderate to deep roadside ditching and culverts.

The portion of the Study Area immediately adjacent to the south side of the Dell Cemetery, on the north side of Reixinger Road, are included in this category of previously disturbed lands due to the cutting and grading of the lands to create a drainage ditch running parallel to the roadway (Appendix B: Figure 12B; Appendix E: Photographs 9 and 10). The Stage 1 background study has confirmed the southern boundary of the Dell Cemetery property as coinciding with the north edge of the Study Area (Reixinger Road right-of-way) and this southern boundary of the cemetery has not changed through time. The background study has also confirmed that no burial plots are located within 20 m of the southern boundary of the cemetery property/ northern boundary of the Study Area. The burial plots are concentrated in the north portion of the cemetery property because the Dell Chapel, now demolished, was located in the south portion the cemetery property; 11 burial plots were located to the rear (or north) of the chapel. Therefore, it is concluded that there is low to no potential for unknown, early-to-mid nineteenth century interments to be located outside of the southern cemetery boundary and within the Study Area.

Approximately 4.1 ha (36.5%) consists of manicured lawns/mature woodlots and cultivated agricultural fields have general archaeological potential and warrant Stage 2 archaeological assessment. This consists of 0.4 ha (3.5%) of ploughed agricultural field and 3.7 ha (33%) of wooded area where ploughing is not viable.

The remainder of the Study Area approximately 0.07 ha (1%) of the Study Area is located within the Welland River. The current development plan indicates that below grade directional drilling will be utilized to install the wastewater pipeline and that presently no impacts to the riverbed are anticipated. Therefore, no further archaeological assessment is required.

A review of current development plans indicate that construction of the sewer alignment will include directional drilling/tunnelling. In accordance with the advice from MTCS regarding directional drilling only areas of archaeological potential that will be subject to near surface impacts will require further archaeological assessment. Near surface impacts are defined as ground disturbance impacts less than 5 metres from ground surface. The requirement for further archaeological assessment will be confirmed during the detailed design phase of the project and is subject to the conditions regarding directional drilling provided by MTCS located within the Supplementary Documentation.

Stage 1 Archaeological Assessment: South Niagara WWTP,  
Phase 1 Lands

## 4.0 Recommendations

Considering the findings of the Stage 1 archaeological assessment of the Study Area, the following recommendations are made, subject to the conditions outlined below and in Section 5.0:

1. Approximately 7 ha (62.5%) of the Study Area has no to low archaeological potential due to extensive and deep land alterations and therefore no further archaeological assessment is required (Appendix B: Figure 12A to Figure 12B).
2. Approximately 0.4 ha (3.5%) of the Study Area is an actively cultivated agricultural field that retains archaeological potential (Appendix B: Figure 12B).
  - a. For areas where trenchless construction methods will be deeper than 5 m below surface, no further archaeological assessment is required (Supplementary Documentation, Section 1). For areas where trenchless construction methods will be deeper than 5 m below surface, no further archaeological assessment is required (Supplementary Documentation, Section 1). However, this exemption must be confirmed with the MTCS at the detailed design phase of the project with engineering drawings that include the proposed trenchless technology and the path and depth of excavations.
  - b. For areas where surface or near surface (i.e., less than 5 m below surface) impacts are anticipated, a Stage 2 pedestrian survey is required (Supplementary Documentation, Section 1). Per Section 2.1.1 Standard 1 of the MTCS *Standards and Guidelines for Consultant Archaeologists* (2011), areas recommended for pedestrian survey must be prepared with a mouldboard plough (and disk harrow if necessary), then weathered through one heavy rainfall or several light rains to improve the visibility of any archaeological resources. To meet MTCS standards for field preparation and visibility at least 80% of the ploughed ground surface must be visible after ploughing. The pedestrian survey should be conducted at maximum intervals of 5 m, with survey transects reduced to 1-m intervals in a 20 m radius where archaeological resources are identified. If archaeological resources are identified, diagnostic artifacts should be collected as appropriate to document the site and determine if subsequent Stage 3 archaeological assessment is warranted.
3. Approximately 3.7 ha (33%) of the Study Area is located within maintained lawns, wooded areas, or narrow corridor (10 m or less) that has archaeological potential but cannot be accessed by plough (Appendix B: Figure 12A to Figure 12B).
  - a. For areas where trenchless construction methods will be deeper than 5 m below surface, no further archaeological assessment is required (Supplementary Documentation, Section 1). However, this exemption must be confirmed with the MTCS at the detailed design phase of the project with



Stage 1 Archaeological Assessment: South Niagara WWTP,  
Phase 1 Lands

engineering drawings that include the proposed trenchless technology and the path and depth of excavations.

- b. For areas where surface or near surface (i.e., less than 5 m below surface) impacts are anticipated, a Stage 2 test pit survey is required (Supplementary Documentation, Section 1). Per, Section 2.1.2, Standard 1.e, MTCS *Standards and Guidelines for Consultant Archaeologists* (2011), areas recommended for test pit survey should be assessed at 5 m grid intervals with test pits a minimum of 30 centimetres (“cm”) in diameter and dug to a minimum of 5 cm into subsoil. Test pitting should be conducted to within 1 m of all disturbances. Soils and sediments should be screened through 6 millimetre (“mm”) mesh screens in order to facilitate artifact recovery and the test pit profiles examined for cultural deposits prior to being backfilled. All test pits should be backfilled to level grade, and any sod caps replaced and tamped down by foot.
4. Approximately 0.07 ha (1%) of the Study Area is located within the Welland River (Appendix B: Figure 12B). Construction methods in this area are currently proposed to be at depths where impacts to the riverbed are not anticipated; therefore no further archaeological assessment is recommended.
  - a. However, if it is determined during detailed design that the project will potentially impact the riverbed, the potential for marine archaeological resources must be evaluated using the MTCS’s *Criteria for Evaluating Marine Archaeological Potential, A Checklist for Non-Marine Archaeologists* (MTCS 2016).
5. Adjacent to the southeast portion of the Study Area, on the north side of Reixinger Road at Dell Road, is the historically significant Dell Cemetery. No previous archaeological studies have addressed the southern boundary of the cemetery, nor recommended further archaeological assessment. Wood’s Stage 1 background study determined that all burial plots within the Dell Cemetery are limited to the north portion of the cemetery property, and that the cemetery’s south boundary is well-defined at the north boundary of the Study Area (the Reixinger Road right-of-way). The lands within the Study Area adjacent to the south boundary of the Dell Cemetery have been extensively disturbed through cutting and grading to create a drainage ditch running parallel to the roadway. Given this extensive and deep land disturbance, and the distance between the burial plots and the Study Area (a minimum of 20 m), it is concluded that there is no to low potential for human interments to be encountered within the Study Area. In accordance with Section 1.4.1, Standard 1(f) and Section 7.7.4 of the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011), the lands adjacent to the Dell Cemetery within the Study Area are previously disturbed and do not require Stage 2 archaeological assessment. Additionally, a Stage 3 Burial Site Investigation is not

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Stage 1 Archaeological Assessment: South Niagara WWTP,  
Phase 1 Lands

required for any portion of the Study Area adjacent to the south boundary of the Dell Cemetery, within the Reixinger Road right-of-way.

**The above recommendation is subject to approval by the Ministry of Tourism, Culture and Sport. It is an offence to knowingly alter any portion of an archaeological site except by a person holding a professional archaeological license.**

## 5.0 Advice on Compliance with Legislation

- a) This report is submitted to the Minister of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part IV of the *Ontario Heritage Act, R.S.O. 1990, c O.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 Ministry of Tourism, Culture and Sport, 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.
- b) 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 a 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 Archaeological Reports referred to in Section 65.1 of the *Ontario Heritage Act*.
- c) 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*.
- d) The *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33* requires that any person discovering human remains must notify the local police or coroner and the Registrar of Cemeteries at the Ministry of Government and Consumer Services. 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 license.
- e) 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 license

## 6.0 Assessor Qualifications

This report was prepared and reviewed by the undersigned, employees of Wood. Wood is one of North America's leading engineering firms, with more than 50 years of experience in the earth and environmental consulting industry. The qualifications of the assessors involved in the preparation of this report are provided in Appendix G.

## 7.0 Closure

This report was prepared for the exclusive use of Niagara Region and is intended to provide a Stage 1 archaeological assessment of the Study Area. The Study Area is comprised of a small section of land located south of Welland River and north of Reixinger Road, then runs along Reixinger Road, Montrose Road and Brown Road, and ends at a small section of land running east-west from Montrose Road towards the Welland Canal. The Study Area was historically located on Part of Lots 186-187, 198 and 209-210 in the Township of Stamford, Lot 1 Broken Front at Chippewa Creek, Township of Crowland, and Lots 7-10 Broken Front at Chippewa Creek, Township of Willoughby, former County of Welland Ontario.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from Wood will be required. With respect to third parties, Wood has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The report is based on data and information collected during the Stage 1 background study conducted by Wood. It is based solely a review of historical information, a property inspection conducted on 6 October 2021 and data obtained by Wood as described in this report. Except as otherwise maybe specified, Wood disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to Wood after the time during which Wood conducted the archaeological assessment. In evaluating the property, Wood has relied in good faith on information provided by other individuals noted in this report. Wood has assumed that the information provided is factual and accurate. In addition, the findings in this report are based, to a large degree, upon information provided by the current owner/occupant. Wood accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

Wood makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

This report is also subject to the further Standard Limitations contained in Appendix H.

We trust that the information presented in this report meets your current requirements. Should you have any questions, or concerns, please do not hesitate to contact the undersigned.

Respectfully Submitted,

**Wood Environment & Infrastructure,  
a Division of Wood Canada Limited**

Prepared By:



Chelsea Dickinson, B.A. (R1194)  
Cultural Heritage Specialist | Research  
Archaeologist

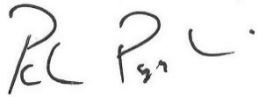
Reviewed By:



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Associate Archaeologist

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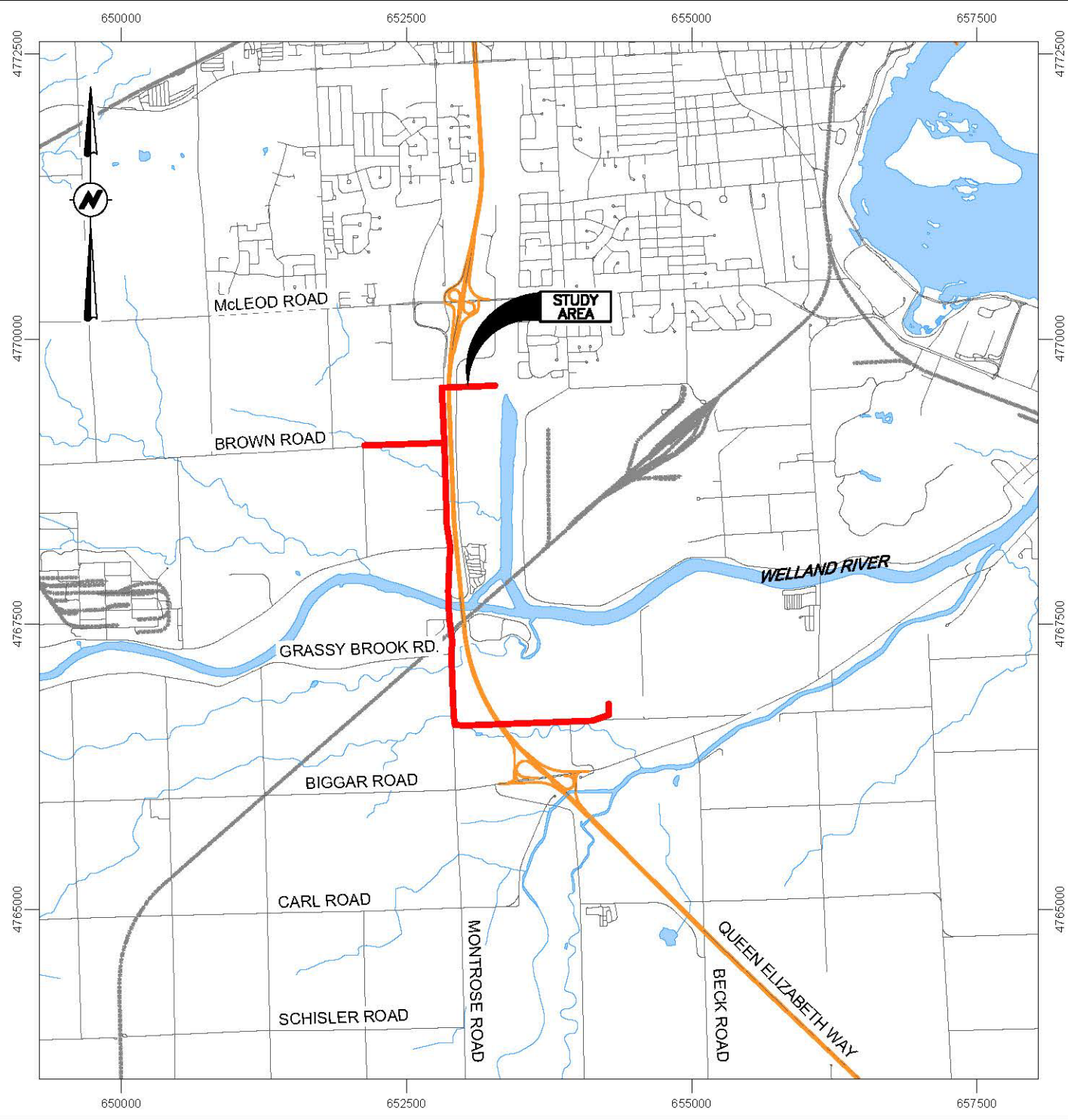
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# Appendix A: Summary of Archaeological Assessments




# Appendix B: Figures

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 SOUTH NIAGARA FALLS WASTEWATER TREATMENT PLANT, PHASE 1 LANDS,  
 LOTS 186-187, 198 AND 209-210 IN THE TOWNSHIP OF STAMFORD, LOT 1  
 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF CROWLAND AND LOTS  
 7-10 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF WILLOUGHBY,  
 FORMER COUNTY OF WELLAND, NOW IN THE CITY OF NIAGARA FALLS,  
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:  
**LOCATION OF THE STUDY AREA**

LEGEND:  
 STUDY AREA

NOTES:  
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE  
 WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS  
 REPORT No. OCUL2001.100.  
 ALL LOCATIONS ARE APPROXIMATE.  
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 CANMAP STREETFILES V2008.4.



CLIENT:  
  
**NIAGARA REGION WATER & WASTEWATER ENGINEERING**  
 1815 SIR ISAAC BROCK WAY  
 THOROLD, ONTARIO, L2V 4T7

**wood.**  
 Wood Environment & Infrastructure Solutions  
 201 KING STREET  
 LONDON, ONTARIO  
 N6A 1C3  
 519-681-2400

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 STAGE 1 ARCHAEOLOGICAL ASSESSMENT  
 SOUTH NIAGARA FALLS WASTEWATER TREATMENT PLANT, PHASE 1 LANDS,  
 LOTS 186-187, 198 AND 209-210 IN THE TOWNSHIP OF STAMFORD, LOT 1  
 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF CROWLAND AND LOTS  
 7-10 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF WILLOUGHBY,  
 FORMER COUNTY OF WELLAND, NOW IN THE CITY OF NIAGARA FALLS,  
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

**TITLE:**  
 AERIAL PHOTOGRAPH SHOWING THE  
 LOCATION OF THE STUDY AREA

**LEGEND:**  
 STUDY AREA

**NOTES:**  
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE  
 WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS  
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**REFERENCES:**  
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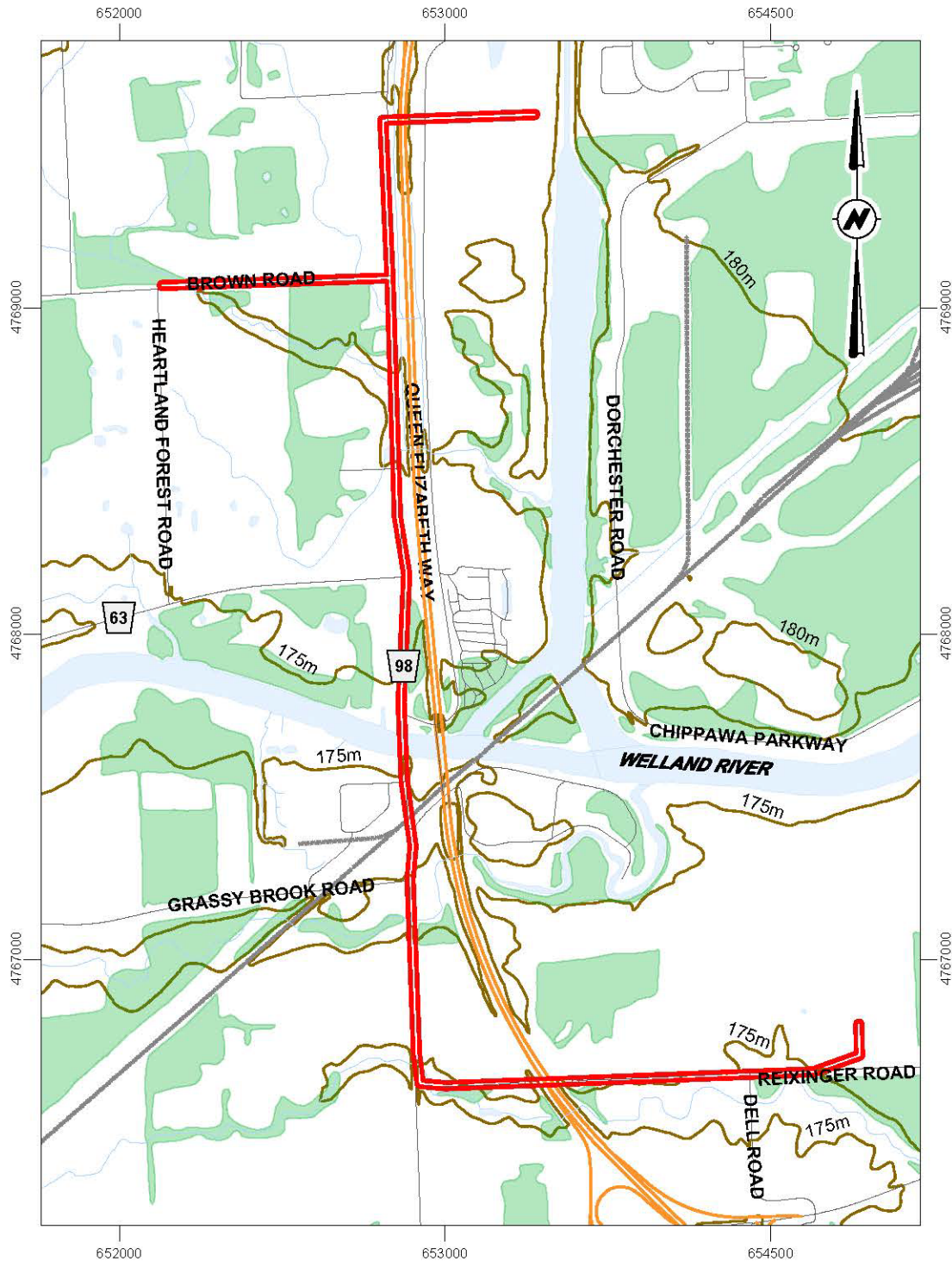
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**NIAGARA REGION WATER &  
 WASTEWATER ENGINEERING**  
 1815 SIR ISAAC BROCK WAY  
 THOROLD, ONTARIO, L2V 4T7

**wood.**  
 Wood Environment &  
 Infrastructure Solutions  
 201 KING STREET  
 LONDON, ONTARIO  
 N6A 1C3  
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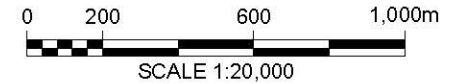
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 LOTS 196-197, 198 AND 209-210 IN THE TOWNSHIP OF STAMFORD, LOT 1  
 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF CROWLAND AND LOTS  
 7-10 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF WILLOUGHBY,  
 FORMER COUNTY OF WELLAND, NOW IN THE CITY OF NIAGARA FALLS,  
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:  
 TOPOGRAPHIC MAP SHOWING THE LOCATION OF  
 THE STUDY AREA

LEGEND:  
 STUDY AREA

NOTES:  
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE  
 WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS  
 REPORT No. OCUL2001.100.  
 ALL LOCATIONS ARE APPROXIMATE.

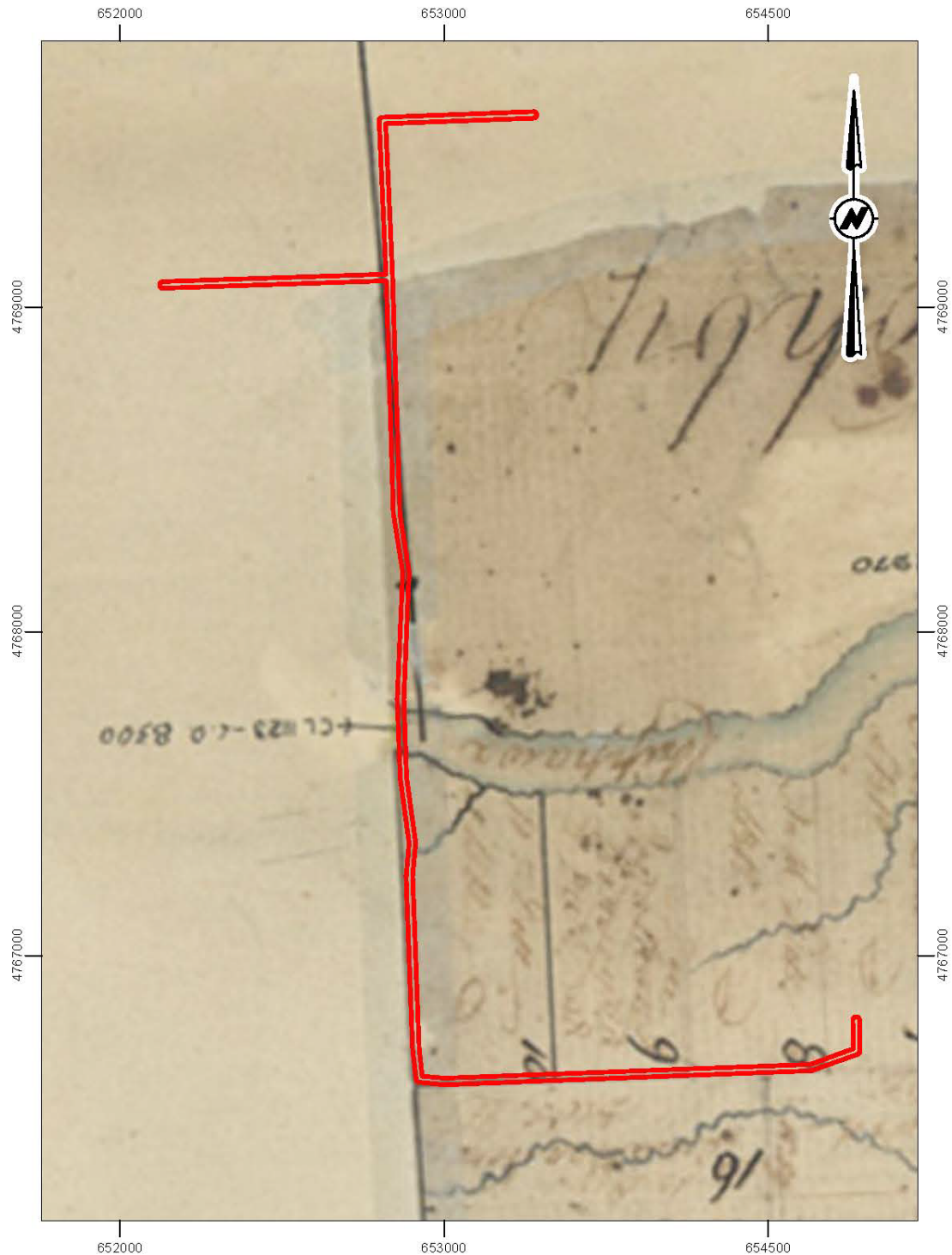
REFERENCES:  
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CLIENT:  
  
**NIAGARA REGION WATER &  
 WASTEWATER ENGINEERING**  
 1815 SIR ISAAC BROCK WAY  
 THOROLD, ONTARIO, L2V 4T7

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DWN BY:	LMK	CHK'D BY:	LC	DATE:	OCT. 26, 2021
DATUM:	NAD83	PROJECTION:	UTM Zone 17	PROJECT No:	OCUL2001.100
REV No:	0			FIGURE No:	<b>3</b>



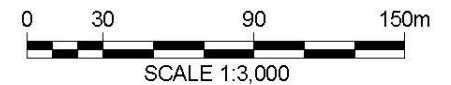
PROJECT: STAGE 1 ARCHAEOLOGICAL ASSESSMENT  
 SOUTH NIAGARA FALLS WASTEWATER TREATMENT PLANT, PHASE 1 LANDS,  
 LOTS 186-187, 198 AND 209-210 IN THE TOWNSHIP OF STAMFORD, LOT 1  
 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF CROWLAND AND LOTS  
 7-10 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF WILLOUGHBY,  
 FORMER COUNTY OF WELLAND, NOW IN THE CITY OF NIAGARA FALLS,  
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:  
**1795 AUGUSTUS JONES WILLOUGHBY TOWNSHIP  
 NO. 1 MAP**

LEGEND:  
 STUDY AREA

NOTES:  
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE  
 WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS  
 REPORT No. OCUL2001.100.  
 ALL LOCATIONS ARE APPROXIMATE.

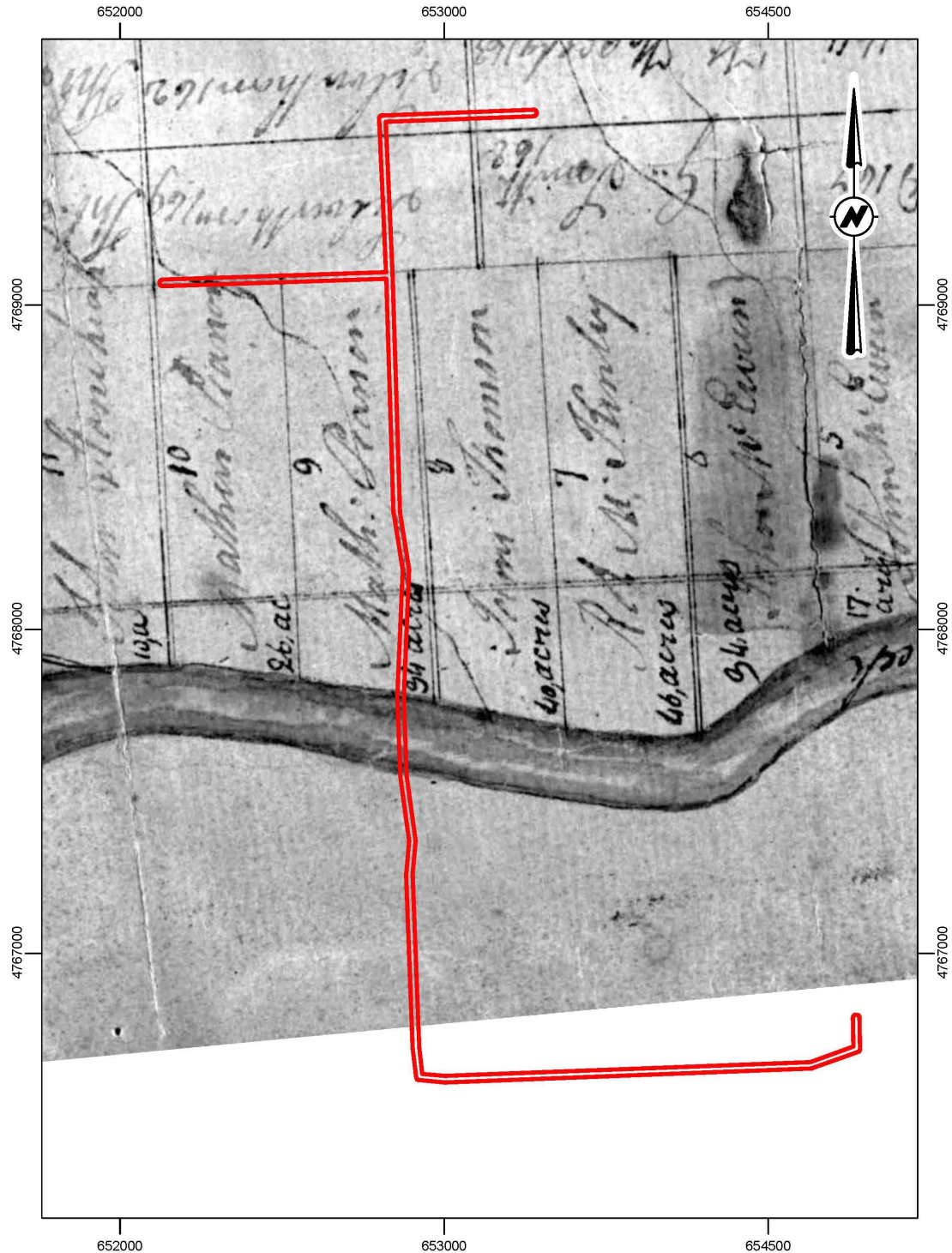
REFERENCES:  
 AUGUSTUS JONES 1795. WILLOUGHBY TOWNSHIP NO. 1 MAP.  
 COPIED FROM AN ORIGINAL MAP SIGNED BY JOHN FREDERIK  
 HOLLAND, SAMUEL HOLLAND AND D.W. SMITH. SOURCE:  
 ONTARIO HERITAGE PROPERTY INDEX.



CLIENT:  
  
**Niagara  
 Region**  
 NIAGARA REGION  
 1815 Sir Isaac Brock Way  
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DWN BY: LMK	CHK'D BY: LC	DATE: OCT. 26, 2021
DATUM: NAD83	PROJECTION: UTM Zone 17	PROJECT No: OCUL2001.100
REV No: 0		FIGURE No: 4

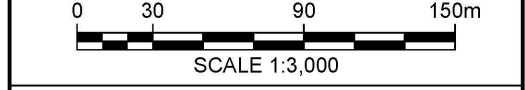


**PROJECT:**  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT  
 SOUTH NIAGARA FALLS WASTEWATER TREATMENT PLANT, PHASE 1 LANDS,  
 LOTS 186-187, 198 AND 209-210 IN THE TOWNSHIP OF STAMFORD, LOT 1  
 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF CROWLAND AND LOTS  
 7-10 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF WILLOUGHBY,  
 FORMER COUNTY OF WELLAND, NOW IN THE CITY OF NIAGARA FALLS,  
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

**TITLE:**  
 1797 AUGUSTUS JONES STAMFORD TOWNSHIP NO.  
 2 MAP

**LEGEND:**  
 STUDY AREA

**NOTES:**  
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE  
 WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS  
 REPORT No. OCUL2001.100.  
 ALL LOCATIONS ARE APPROXIMATE.  
**REFERENCES:**  
 AUGUSTUS JONES 1797. STAMFORD TOWNSHIP NO. 2 MAP.  
 SOURCE: ONTARIO HERITAGE PROPERTY INDEX.



**CLIENT:**

**NIAGARA REGION**  
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DWN BY: LMK	CHK'D BY: LC	DATE: OCT. 26, 2021
DATUM: NAD83	PROJECTION: UTM Zone 17	PROJECT No: OCUL2001.100
REV No: 0		FIGURE No: 5



PROJECT: STAGE 1 ARCHAEOLOGICAL ASSESSMENT  
 SOUTH NIAGARA FALLS WASTEWATER TREATMENT PLANT, PHASE 1 LANDS,  
 LOTS 186-187, 198 AND 209-210 IN THE TOWNSHIP OF STAMFORD, LOT 1  
 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF CROWLAND AND LOTS  
 7-10 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF WILLOUGHBY,  
 FORMER COUNTY OF WELLAND, NOW IN THE CITY OF NIAGARA FALLS,  
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:  
 1862 TREMAINE'S MAP OF THE COUNTIES OF  
 LINCOLN AND WELLAND

LEGEND:  
 STUDY AREA

NOTES:  
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE  
 WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS  
 REPORT No. OCUL2001.100.  
 ALL LOCATIONS ARE APPROXIMATE.  
 REFERENCES:  
 TREMAINE 1862.

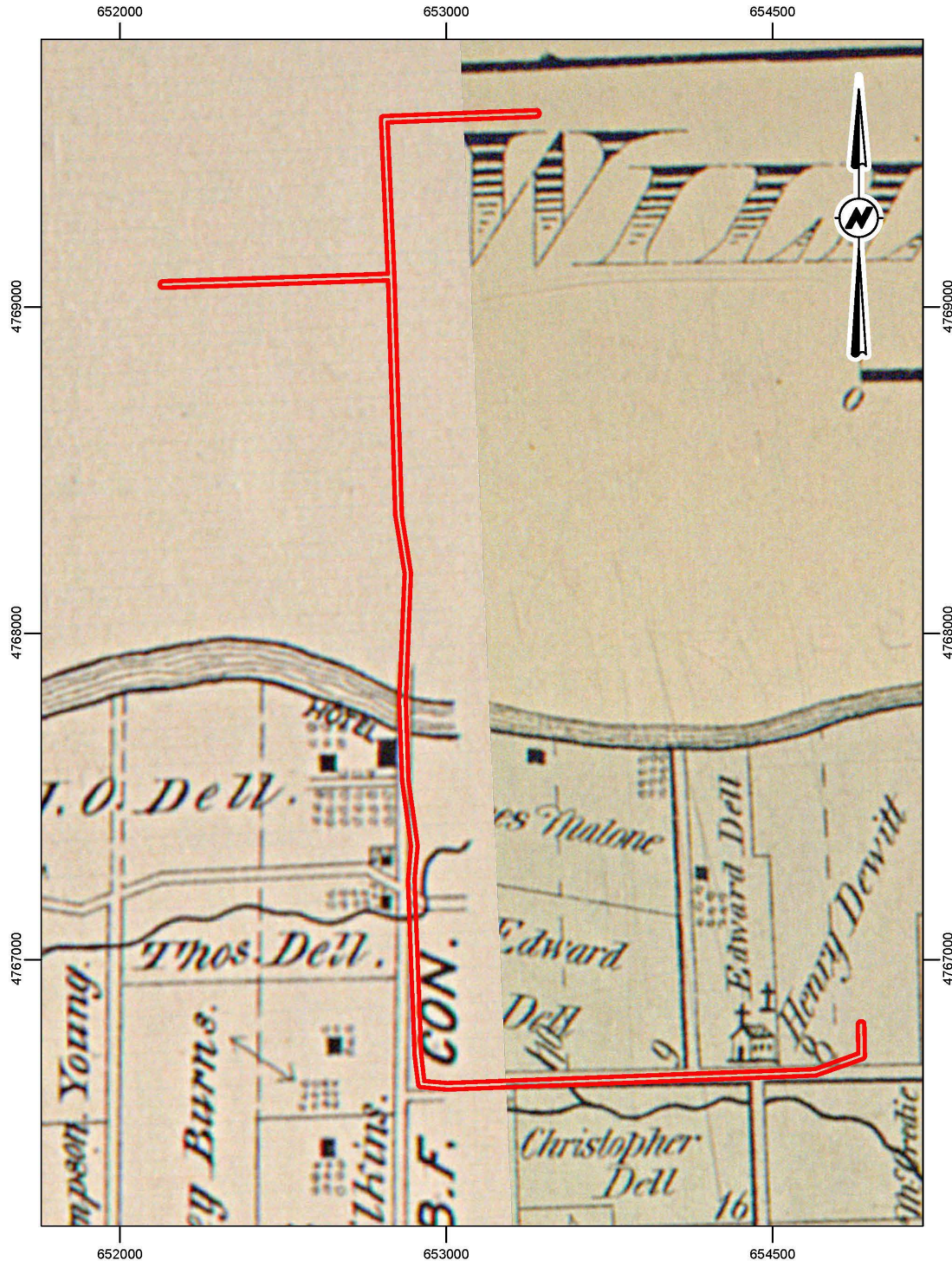


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DWN BY: LMK	CHKD BY: LC	DATE: OCT. 26, 2021
DATUM: NAD83	PROJECTION: UTM Zone 17	PROJECT No: OCUL2001.100
REV No: 0		FIGURE No: 6

DATE PLOTTED: 11/30/2021 2:04:49 PM  
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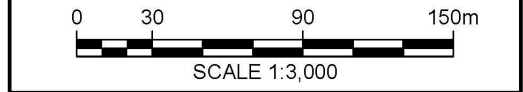


PROJECT: STAGE 1 ARCHAEOLOGICAL ASSESSMENT  
 SOUTH NIAGARA FALLS WASTEWATER TREATMENT PLANT, PHASE 1 LANDS,  
 LOTS 186-187, 198 AND 209-210 IN THE TOWNSHIP OF STAMFORD, LOT 1  
 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF CROWLAND AND LOTS  
 7-10 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF WILLOUGHBY,  
 FORMER COUNTY OF WELLAND, NOW IN THE CITY OF NIAGARA FALLS,  
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:  
 1876 ILLUSTRATED HISTORICAL ATLAS MAP OF  
 LINCOLN AND WELLAND COUNTIES

LEGEND:  
 STUDY AREA

NOTES:  
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE  
 WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS  
 REPORT No. OCUL2001.100.  
 ALL LOCATIONS ARE APPROXIMATE.  
 REFERENCES:  
 PAGE, H. R. & CO. 1876.

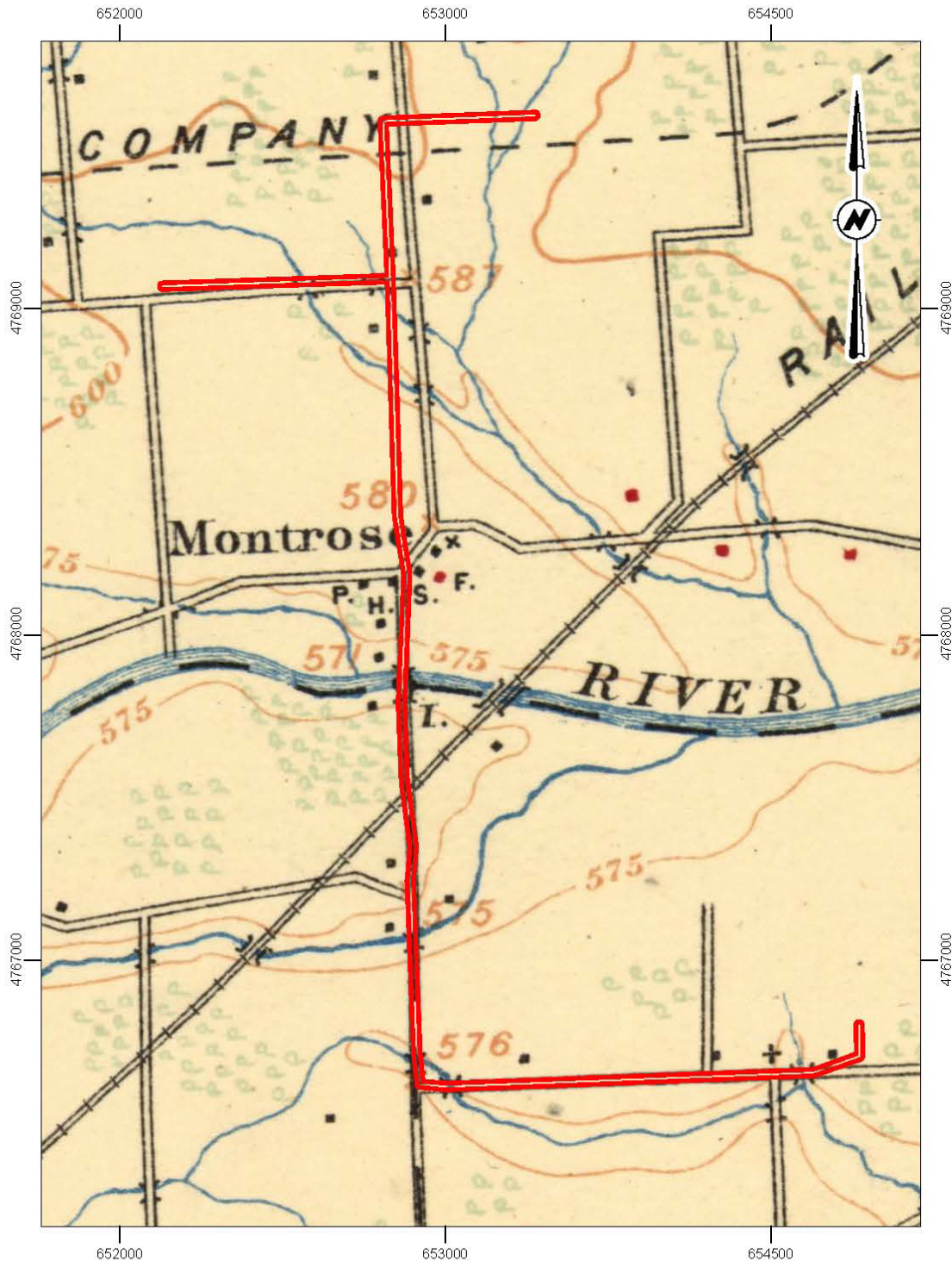


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DATUM:	NAD83	PROJECTION:	UTM Zone 17	PROJECT No:	OCUL2001.100
REV No:	0			FIGURE No:	7

DATE PLOTTED: 11/30/2021 3:05:38 PM  
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PROJECT: STAGE 1 ARCHAEOLOGICAL ASSESSMENT  
 SOUTH NIAGARA FALLS WASTEWATER TREATMENT PLANT, PHASE 1 LANDS,  
 LOTS 186-187, 198 AND 209-210 IN THE TOWNSHIP OF STAMFORD, LOT 1  
 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF CROWLAND AND LOTS  
 7-10 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF WILLOUGHBY,  
 FORMER COUNTY OF WELLAND, NOW IN THE CITY OF NIAGARA FALLS,  
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

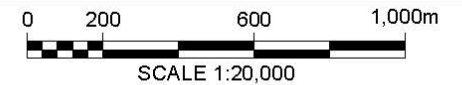
TITLE:  
 1906 TOPOGRAPHIC MAP OF ONTARIO, NIAGARA  
 SHEET SHOWING THE LOCATION OF THE STUDY  
 AREA

LEGEND:  
 STUDY AREA

NOTES:  
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE  
 WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS  
 REPORT No. OCUL2001.100.

ALL LOCATIONS ARE APPROXIMATE.

REFERENCES:  
 DEPARTMENT OF MILITIA AND DEFENSE, 1906.



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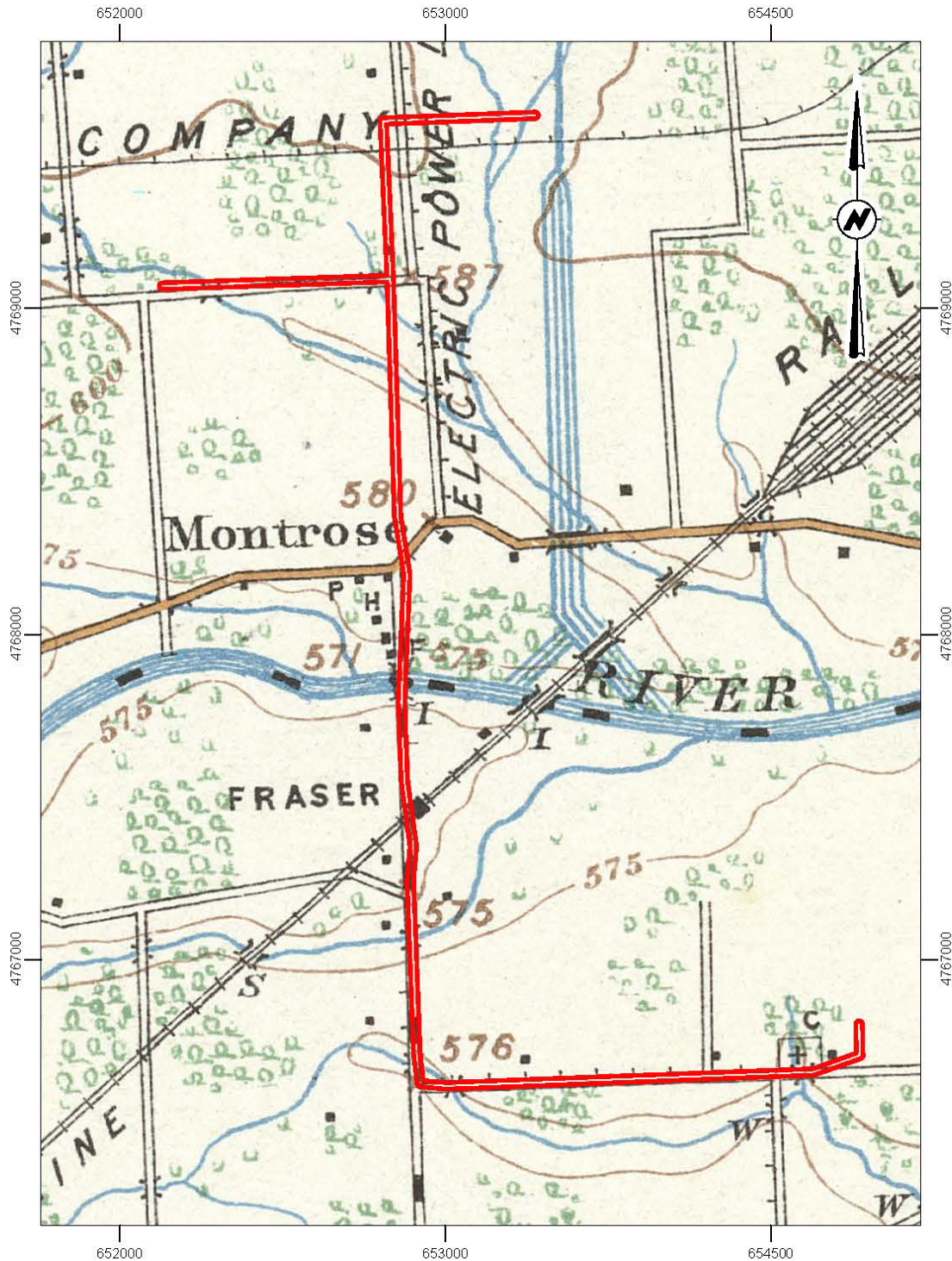
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 519-681-2400

DWN BY: LMK	CHKD BY: LC	DATE: OCT. 26, 2021
DATUM: NAD83	PROJECTION: UTM Zone 17	PROJECT No: OCUL2001.100
REV No: 0		FIGURE No: <b>8</b>

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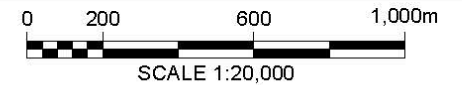


PROJECT: STAGE 1 ARCHAEOLOGICAL ASSESSMENT  
 SOUTH NIAGARA FALLS WASTEWATER TREATMENT PLANT, PHASE 1 LANDS,  
 LOTS 186-187, 198 AND 209-210 IN THE TOWNSHIP OF STAMFORD, LOT 1  
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 7-10 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF WILLOUGHBY,  
 FORMER COUNTY OF WELAND, NOW IN THE CITY OF NIAGARA FALLS,  
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:  
 1925 TOPOGRAPHIC MAP OF ONTARIO, NIAGARA  
 SHEET SHOWING THE LOCATION OF THE STUDY  
 AREA

LEGEND:  
 STUDY AREA

NOTES:  
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE  
 WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS  
 REPORT No. OCUL2001.100.  
 ALL LOCATIONS ARE APPROXIMATE.  
 REFERENCES:  
 DEPARTMENT OF MILITIA AND DEFENSE, 1925.

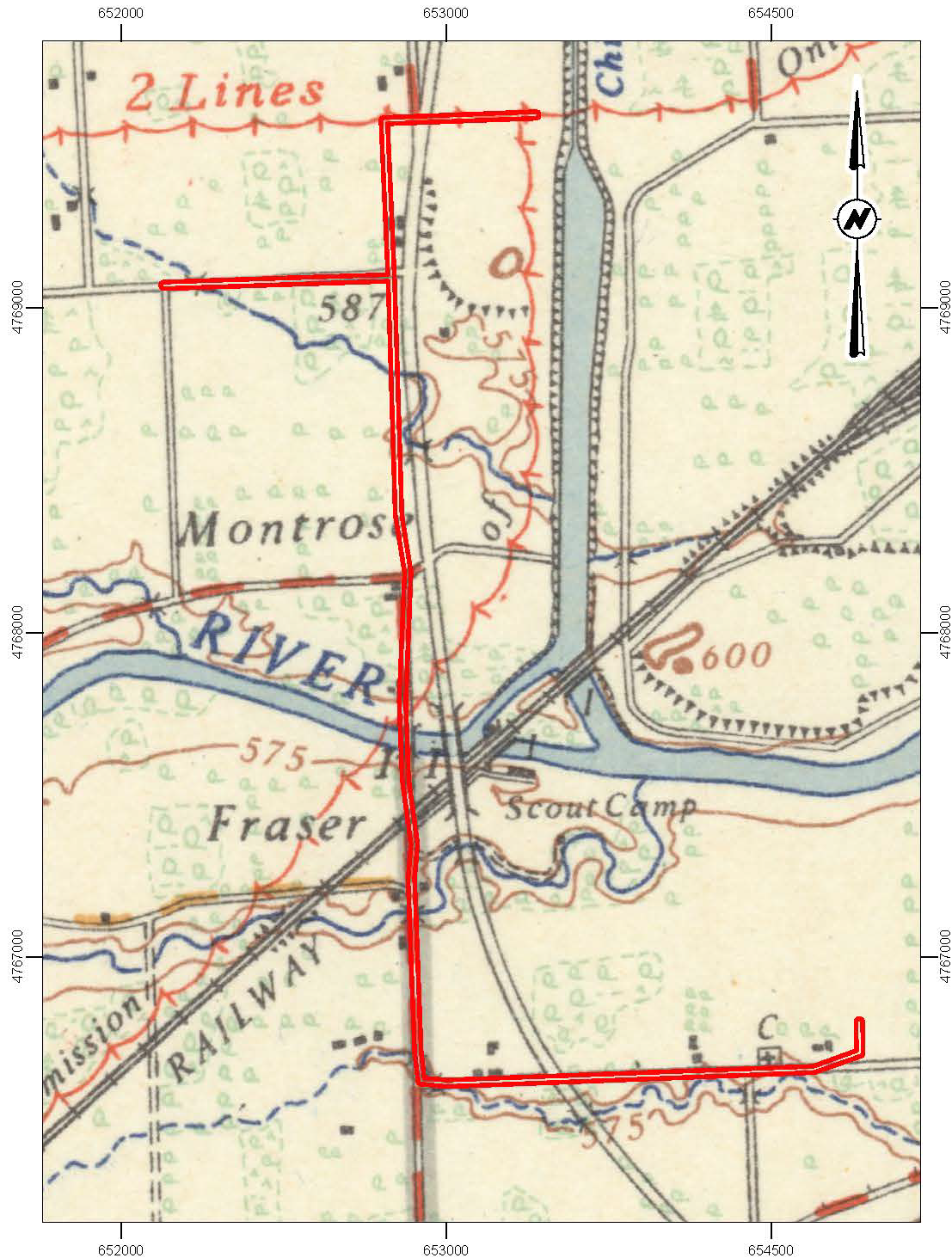


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 THOROLD, ONTARIO, L2V 4T7

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DWN BY: LMK	CHKD BY: LC	DATE: OCT. 26, 2021
DATUM: NAD83	PROJECTION: UTM Zone 17	PROJECT No: OCUL2001.100
REV No: 0		FIGURE No: 9

DATE PLOTTED: 11/30/2021 4:51:06 PM  
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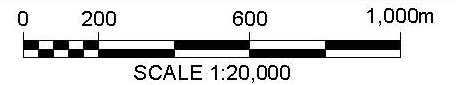


PROJECT: STAGE 1 ARCHAEOLOGICAL ASSESSMENT  
 SOUTH NIAGARA FALLS WASTEWATER TREATMENT PLANT, PHASE 1 LANDS,  
 LOTS 186-187, 198 AND 209-210 IN THE TOWNSHIP OF STAMFORD, LOT 1  
 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF CROWLAND AND LOTS  
 7-10 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF WILLOUGHBY,  
 FORMER COUNTY OF WELLAND, NOW IN THE CITY OF NIAGARA FALLS,  
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:  
**1942 TOPOGRAPHIC MAP OF ONTARIO, NIAGARA  
 SHEET SHOWING THE LOCATION OF THE STUDY  
 AREA**

LEGEND:  
 STUDY AREA

NOTES:  
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE  
 WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS  
 REPORT No. OCUL2001.100.  
 ALL LOCATIONS ARE APPROXIMATE.  
 REFERENCES:  
 DEPARTMENT OF MILITIA AND DEFENSE, 1942.



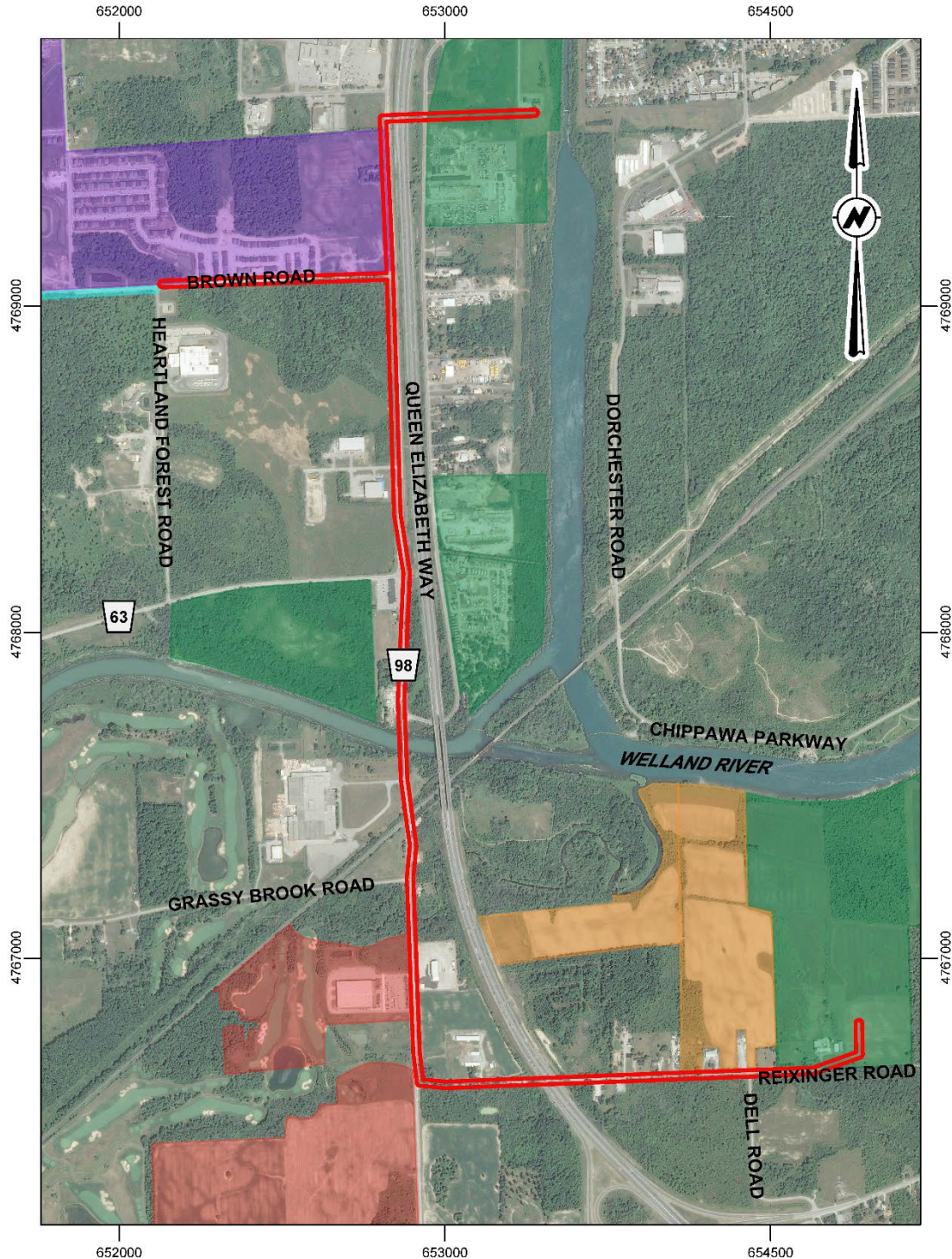
CLIENT:  
  
**NIAGARA REGION WATER &  
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DWN BY: LMK	CHK'D BY: LC	DATE: OCT. 26, 2021
DATUM: NAD83	PROJECTION: UTM Zone 17	PROJECT No: OCUL2001.100
REV No: 0		FIGURE No: <b>10</b>



DATE PLOTTED: 7/21/2022 11:35:58 AM  
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**PROJECT:**

STAGE 1 ARCHAEOLOGICAL ASSESSMENT STAGE 1 AA SOUTH NIAGARA WWTP, PHASE 1 LANDS, LOTS 188-187, 198 AND 209-210 IN THE TOWNSHIP OF STAMFORD, LOT 1 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF CROWLAND AND LOTS 7-10 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF WILLOUGHBY, FORMER COUNTY OF WELLAND, NOW IN THE CITY OF NIAGARA FALLS, REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

**TITLE:**

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS WITHIN THE STUDY AREA AND WITHIN 50m OF THE STUDY AREA

**LEGEND:**

- STUDY AREA
- MUSEUM OF ONTARIO ARCHAEOLOGY, 1984
- STAGE 1 ARCHAEOLOGICAL ASSESSMENT (P066-0210-2014; MAC 2015)
- STAGE 1 ARCHAEOLOGICAL ASSESSMENT (P468-0036-2019; GOLDER 2019)
- STAGE 3 ARCHAEOLOGICAL ASSESSMENT (P017-0324, 0325 & 0326; DETRITUS 2015, 2017)
- STAGE 1 ARCHAEOLOGICAL ASSESSMENT (P327-0012-2021; WOOD 2021)

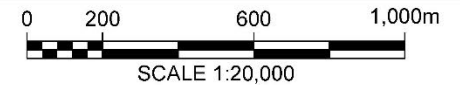
**NOTES:**

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS REPORT No. OCUL2001.100.

ALL LOCATIONS ARE APPROXIMATE.

**REFERENCES:**

BING IMAGERY AS OF OCTOBER 15, 2020 (IMAGE DATE UNKNOWN); BING IMAGERY USED FOR ILLUSTRATION PURPOSES ONLY AND NOT TO BE USED FOR MEASUREMENTS.



**CLIENT:**



**NIAGARA REGION WATER & WASTEWATER ENGINEERING**

1815 SIR ISAAC BROCK WAY  
 THOROLD, ONTARIO, L2V 4T7

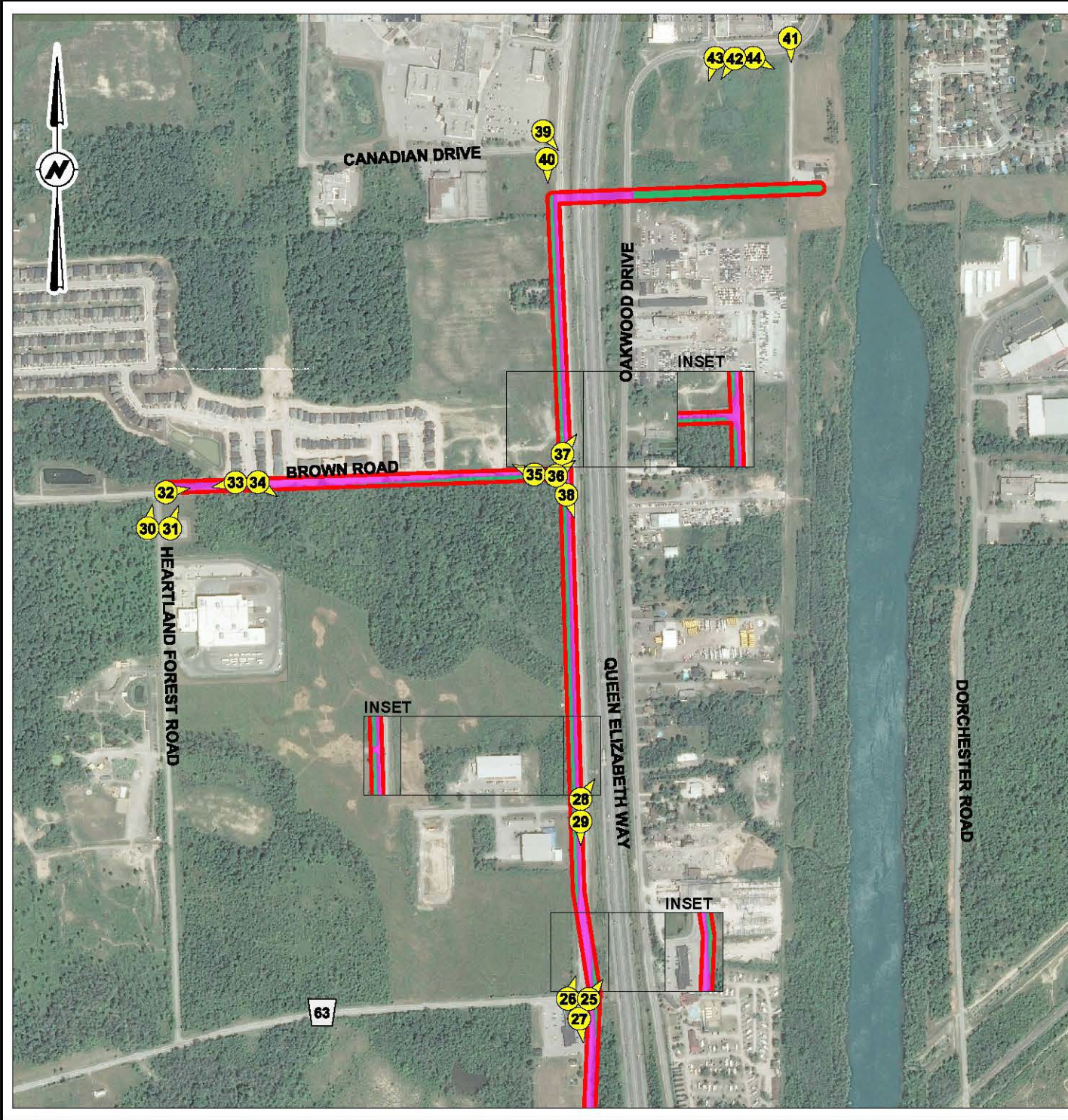


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DWN BY: LMK/SJL	CHK'D BY: LC	DATE: JULY 20, 2022
DATUM: NAD83	PROJECTION: UTM Zone 17	PROJECT No: OCUL2001.100
REV No: 1		FIGURE No: 11

DATE PLOTTED: 2/23/2022 5:01:12 PM  
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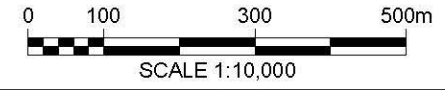
**PROJECT:**  
 STAGE 1 & 2 ARCHAEOLOGICAL ASSESSMENT  
 SOUTH NIAGARA FALLS WASTEWATER TREATMENT PLANT, PHASE 1 LANDS,  
 LOTS 186-187, 198 AND 209-210 IN THE TOWNSHIP OF STAMFORD, LOT 1  
 BROKEN FRONT AT CHIPPEWA CREEK, TOWNSHIP OF CROWLAND AND LOTS  
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 FORMER COUNTY OF WELAND, NOW IN THE CITY OF NIAGARA FALLS,  
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

**TITLE:**  
 STAGE 1 RESULTS WITH PHOTOGRAPH LOCATIONS  
 AND DIRECTIONS

- LEGEND:**
- STUDY AREA
  - AREA OF ARCHAEOLOGICAL POTENTIAL:**
    - STAGE 2 AA PEDESTRIAN SURVEY REQUIRED IN ADVANCE OF GROUND DISTURBANCE
    - STAGE 2 AA TEST PIT SURVEY REQUIRED IN ADVANCE OF GROUND DISTURBANCE
    - WATERBODY - MARINE ASSESSMENT REQUIRED IN ADVANCE OF IMPACTS TO THE RIVERBED
  - AREA OF NO OR LOW ARCHAEOLOGICAL POTENTIAL:**
    - DISTURBED: NO FURTHER ASSESSMENT REQUIRED
  - 2 PHOTOGRAPH LOCATION, VIEWING DIRECTION, AND PLATE NUMBER

**NOTES:**  
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE  
 WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS  
 REPORT No. OCUL2001.100.  
 ALL LOCATIONS ARE APPROXIMATE.

**REFERENCES:**  
 BING IMAGERY AS OF OCTOBER 15, 2020 (IMAGE DATE  
 UNKNOWN); BING IMAGERY USED FOR ILLUSTRATION  
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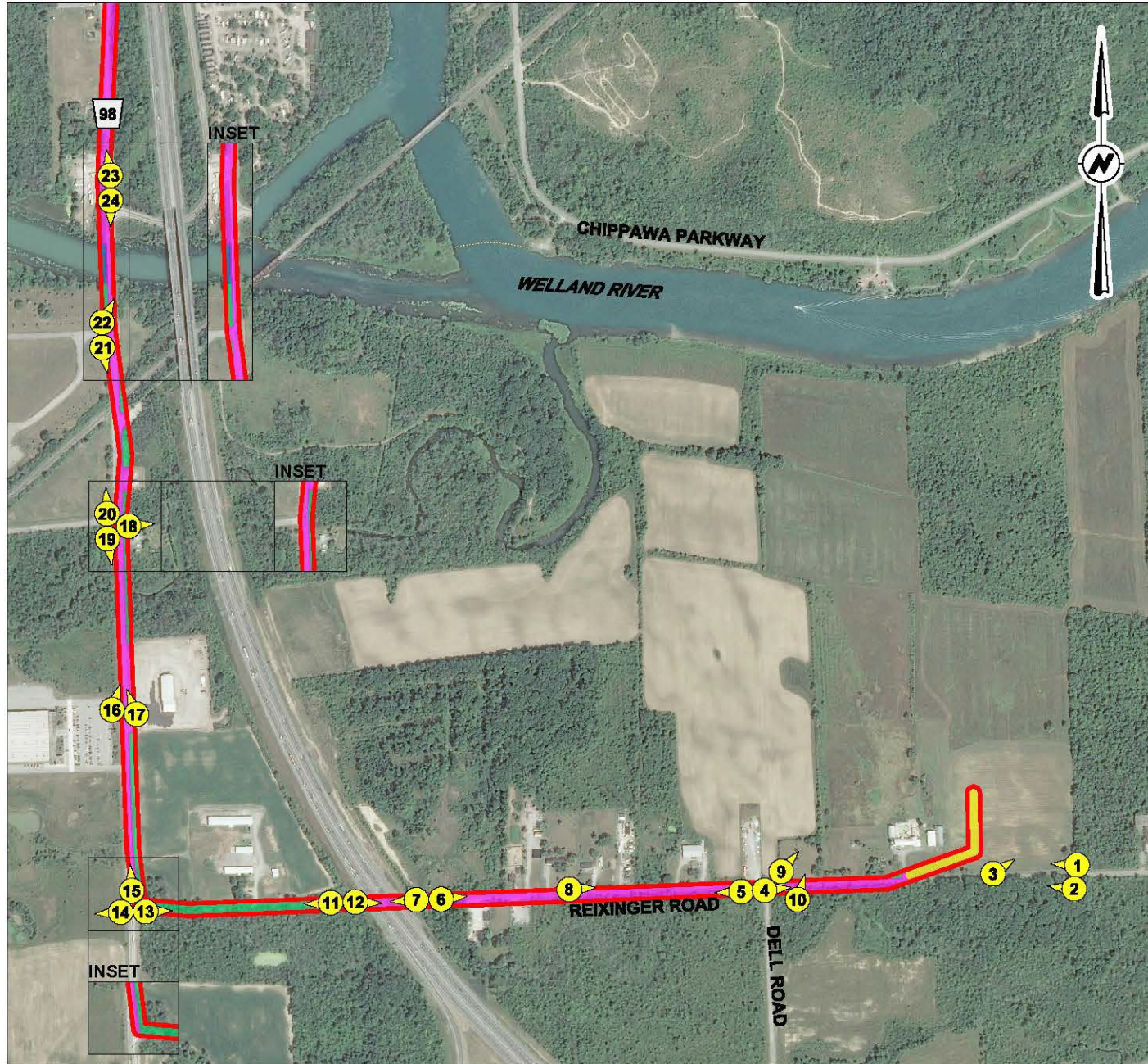
  
**Niagara Region**

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 1815 SIR ISAAC BROCK WAY  
 THOROLD, ONTARIO, L2V 4T7

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DWN BY: LMK	CHK'D BY: CD	DATE: FEB. 23, 2022
DATUM: NAD83	PROJECTION: UTM Zone 17	PROJECT No: OCUL2001.100
REV No: 0		FIGURE No: <b>12A</b>

DATE PLOTTED: 2/23/2022 5:02:17 PM  
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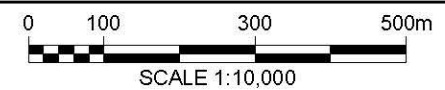


PROJECT: STAGE 1 & 2 ARCHAEOLOGICAL ASSESSMENT  
 SOUTH NIAGARA FALLS WASTEWATER TREATMENT PLANT, PHASE 1 LANDS,  
 LOTS 186-187, 198 AND 209-210 IN THE TOWNSHIP OF STAMFORD, LOT 1  
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 FORMER COUNTY OF WELLAND, NOW IN THE CITY OF NIAGARA FALLS,  
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:  
**STAGE 1 RESULTS WITH PHOTOGRAPH LOCATIONS  
 AND DIRECTIONS**

- LEGEND:
- STUDY AREA
  - AREA OF ARCHAEOLOGICAL POTENTIAL:**
    - STAGE 2 AA PEDESTRIAN SURVEY REQUIRED IN ADVANCE OF GROUND DISTURBANCE
    - STAGE 2 AA TEST PIT SURVEY REQUIRED IN ADVANCE OF GROUND DISTURBANCE
    - WATERBODY - MARINE ASSESSMENT REQUIRED IN ADVANCE OF IMPACTS TO THE RIVERBED
  - AREA OF NO OR LOW ARCHAEOLOGICAL POTENTIAL:**
    - DISTURBED: NO FURTHER ASSESSMENT REQUIRED
    - 2 PHOTOGRAPH LOCATION, VIEWING DIRECTION, AND PLATE NUMBER

NOTES:  
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE  
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 REPORT No. OCUL2001.100.  
 ALL LOCATIONS ARE APPROXIMATE.  
 REFERENCES:  
 BING IMAGERY AS OF OCTOBER 15, 2020 (IMAGE DATE  
 UNKNOWN); BING IMAGERY USED FOR ILLUSTRATION  
 PURPOSES ONLY AND NOT TO BE USED FOR MEASUREMENTS.



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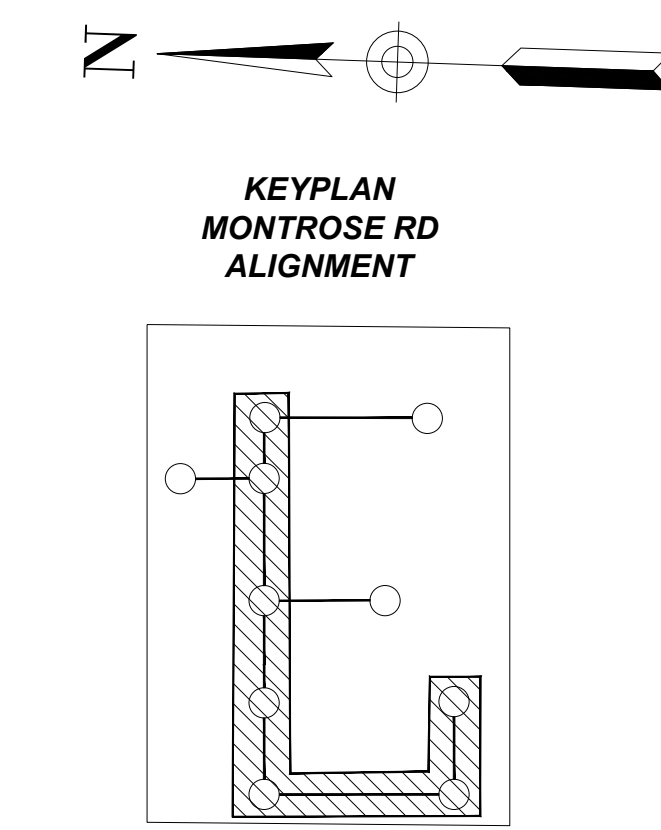
  
**Niagara  
 Region**

**NIAGARA REGION WATER &  
 WASTEWATER ENGINEERING**  
 1815 SIR ISAAC BROCK WAY  
 THOROLD, ONTARIO, L2V 4T7

**wood.**  
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DWN BY: LMK	CHK'D BY: CD	DATE: FEB. 23, 2022
DATUM: NAD83	PROJECTION: UTM Zone 17	PROJECT No: OCUL2001.100
REV No: 0		FIGURE No: <b>12B</b>

# Appendix C: Development Plan



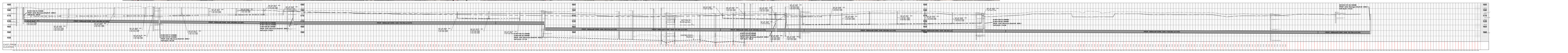
NOTES/LEGEND			
1. THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.			
2. PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION.			
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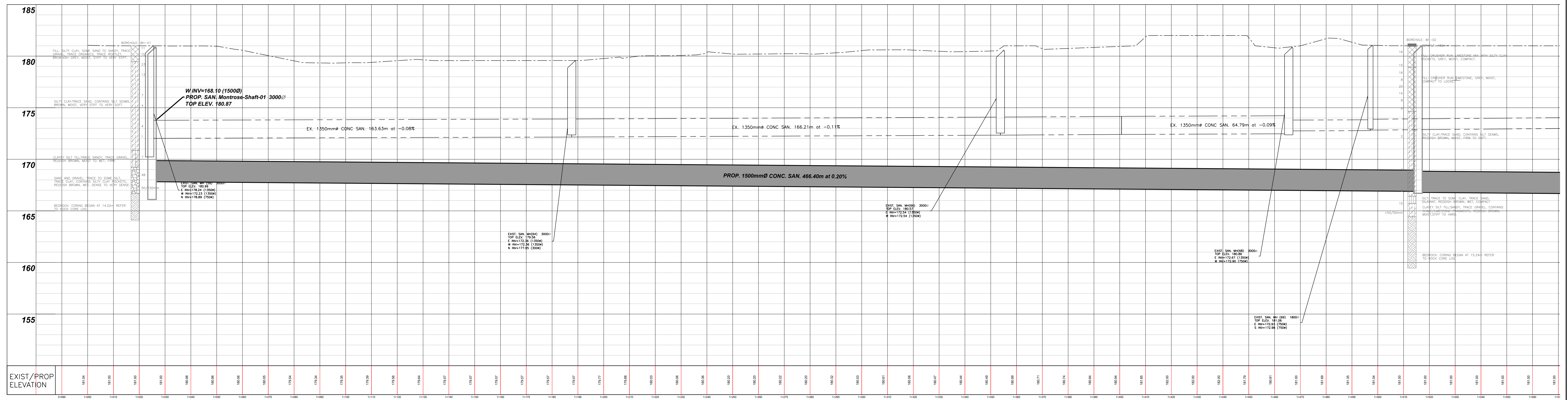
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**SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS**  
**TRUNK SANITARY SEWER**  
**CONCEPTUAL DESIGN**  
**from STA 1+000 to STA 5+800**  
**NIAGARA REGION**  
**PLAN & PROFILE**

CONSULTANT FILE No. 718002  
 DATE 2021-06-07  
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NO.	REVISION	DATE	INIT.
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**NOTES/LEGEND**

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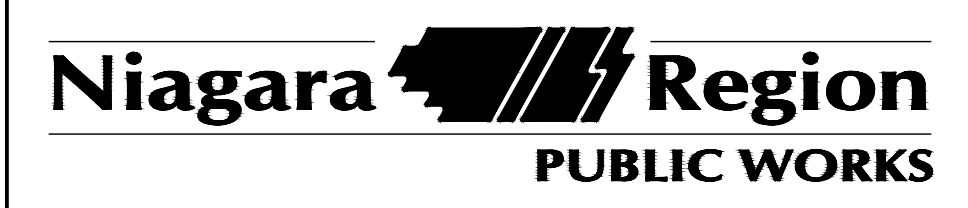
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**SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS**

**TRUNK SANITARY SEWER**

**CONCEPTUAL DESIGN**

from STA 1+000 to STA 1+550

NIAGARA REGION

**PLAN & PROFILE**

CONSULTANT FILE No. 718002

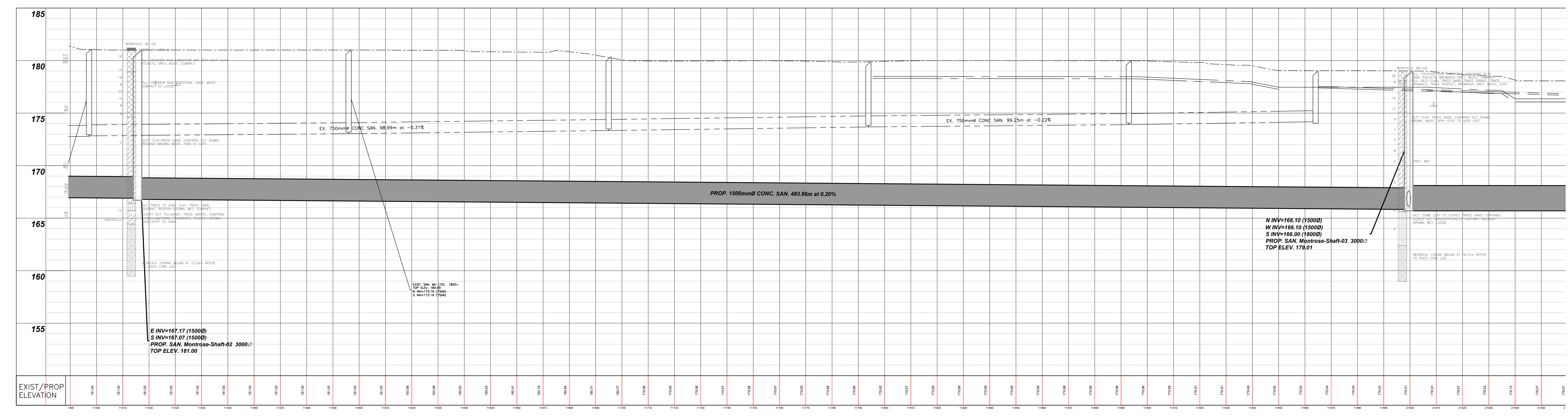
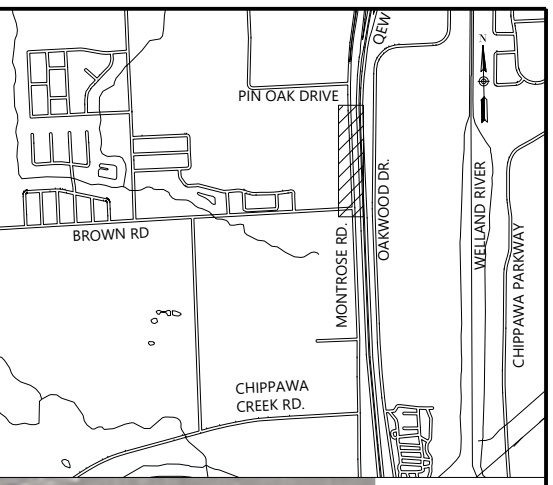
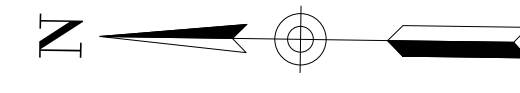
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NO.	REVISION	DATE	INIT.
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**NOTES/LEGEND**

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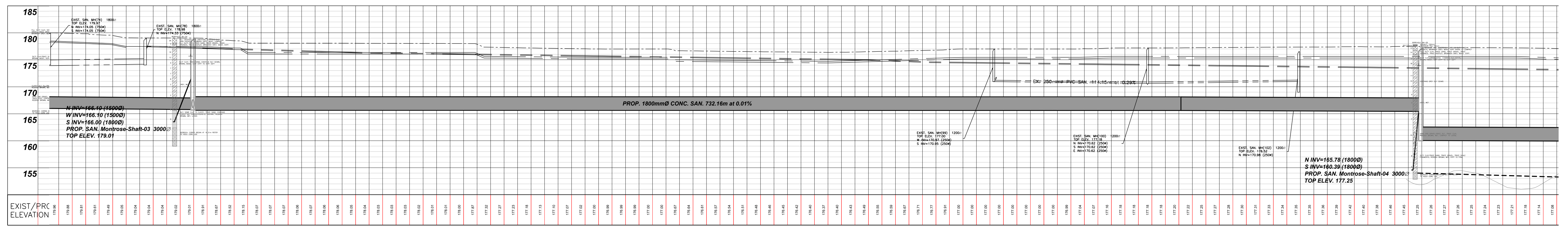
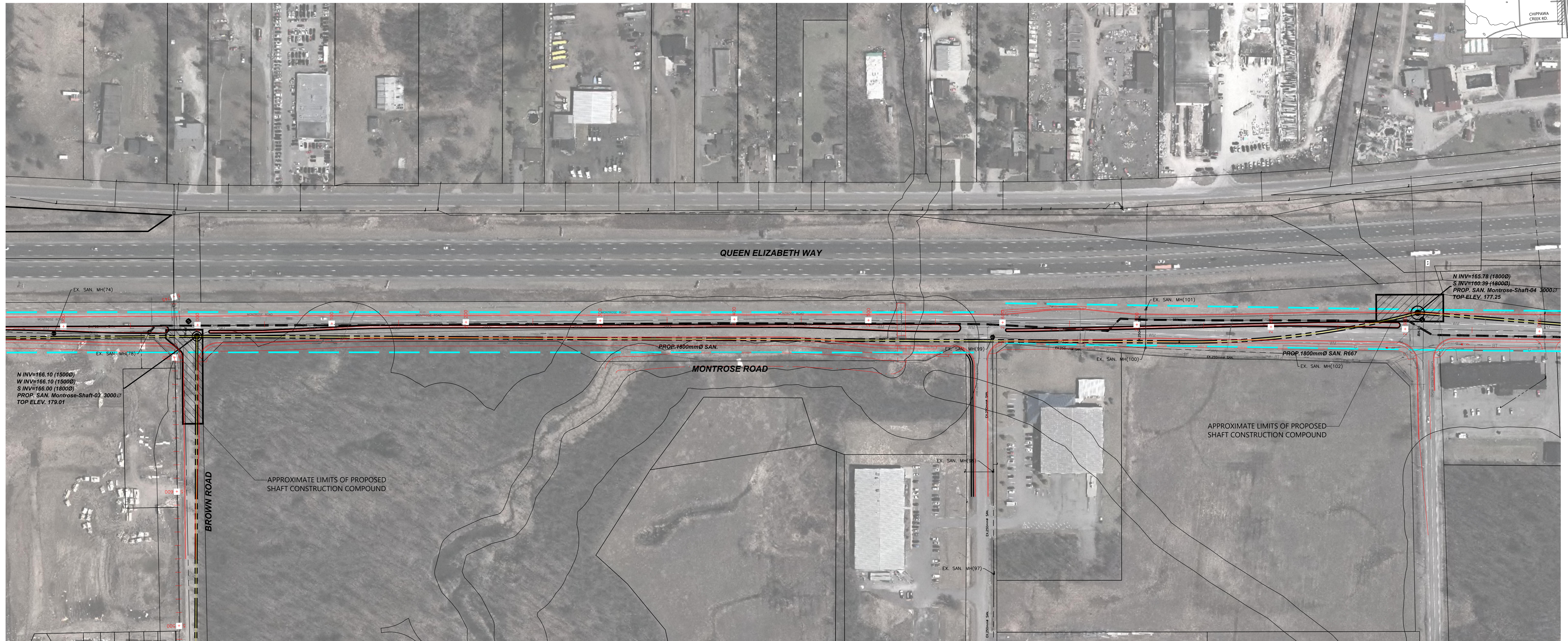
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**SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS**  
**TRUNK SANITARY SEWER**  
**CONCEPTUAL DESIGN**  
 from STA 1+500 to STA 2+050  
 NIAGARA REGION  
**PLAN & PROFILE**

CONSULTANT FILE No.	718002
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REF. No.	#
DWG No.	C3
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NO.	REVISION	DATE	INIT.
0	CONCEPTUAL DESIGN ISSUED FOR REPORTS	2021-09-24	MF

**NOTES/LEGEND**

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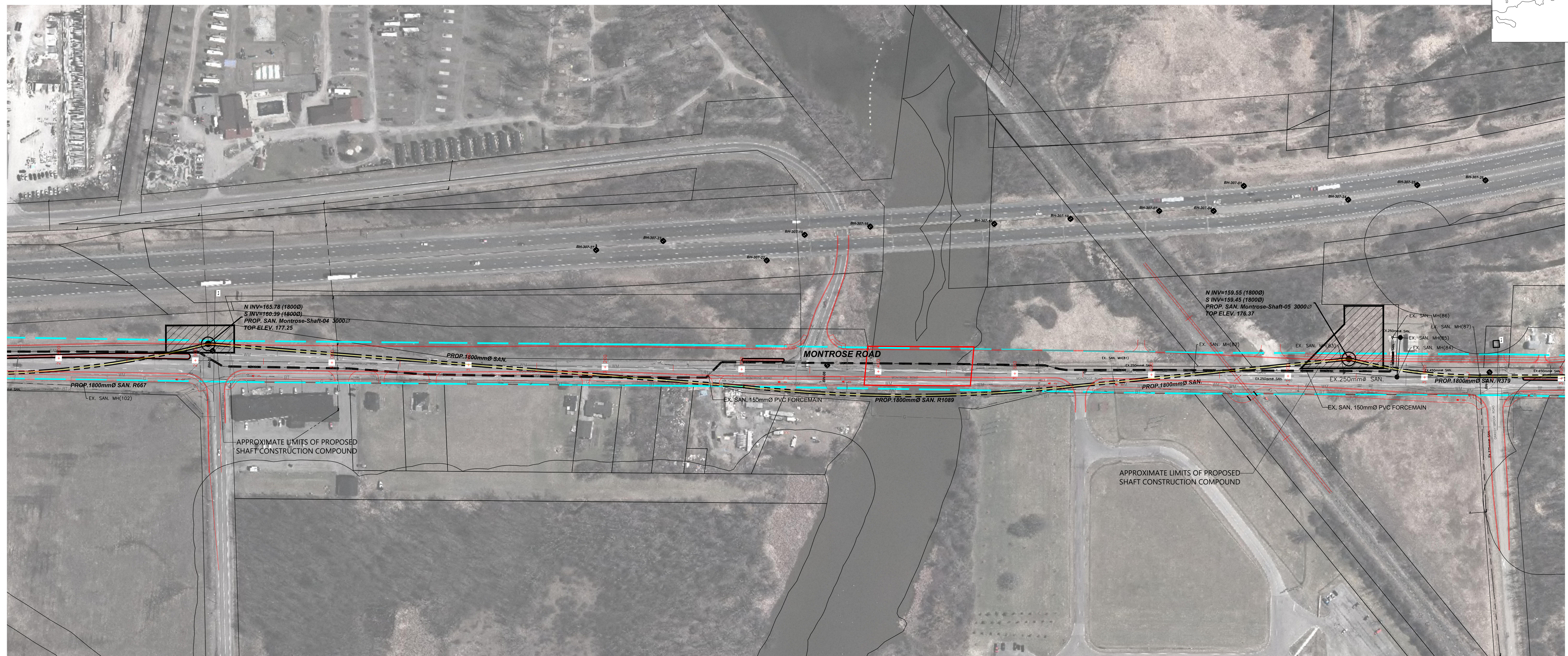
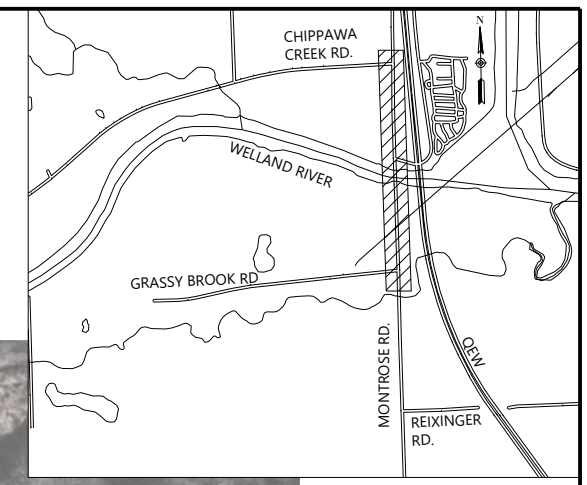
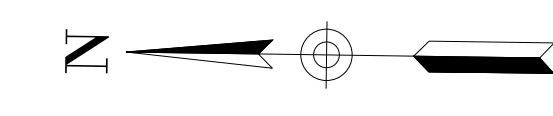
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**SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS**  
**TRUNK SANITARY SEWER**  
**CONCEPTUAL DESIGN**  
 from STA 1+900 to STA 3+000  
 NIAGARA REGION  
**PLAN & PROFILE**

CONSULTANT FILE No.	718002
DATE	2021-09-24
SCALE	Hor : 1:1500 m Ver : 1:375 m
REF. No.	#
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**NOTES/LEGEND**

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**SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS**

**TRUNK SANITARY SEWER**

**CONCEPTUAL DESIGN**

from STA 2+890 to STA 3+910

NIAGARA REGION

**PLAN & PROFILE**

CONSULTANT FILE No. 718002

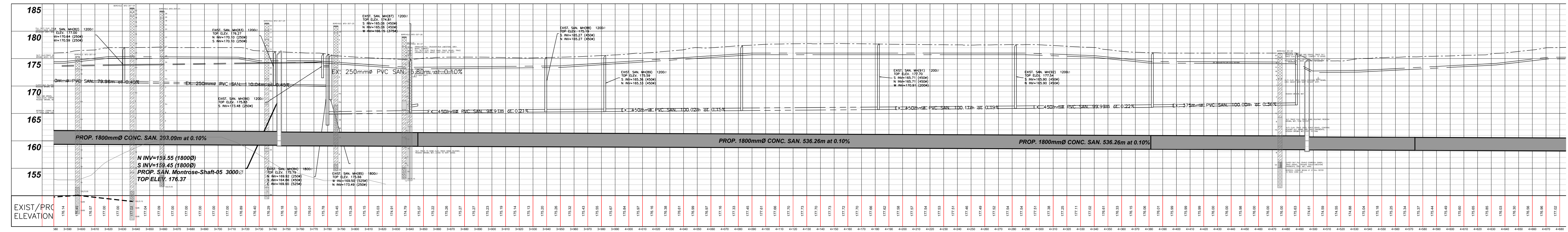
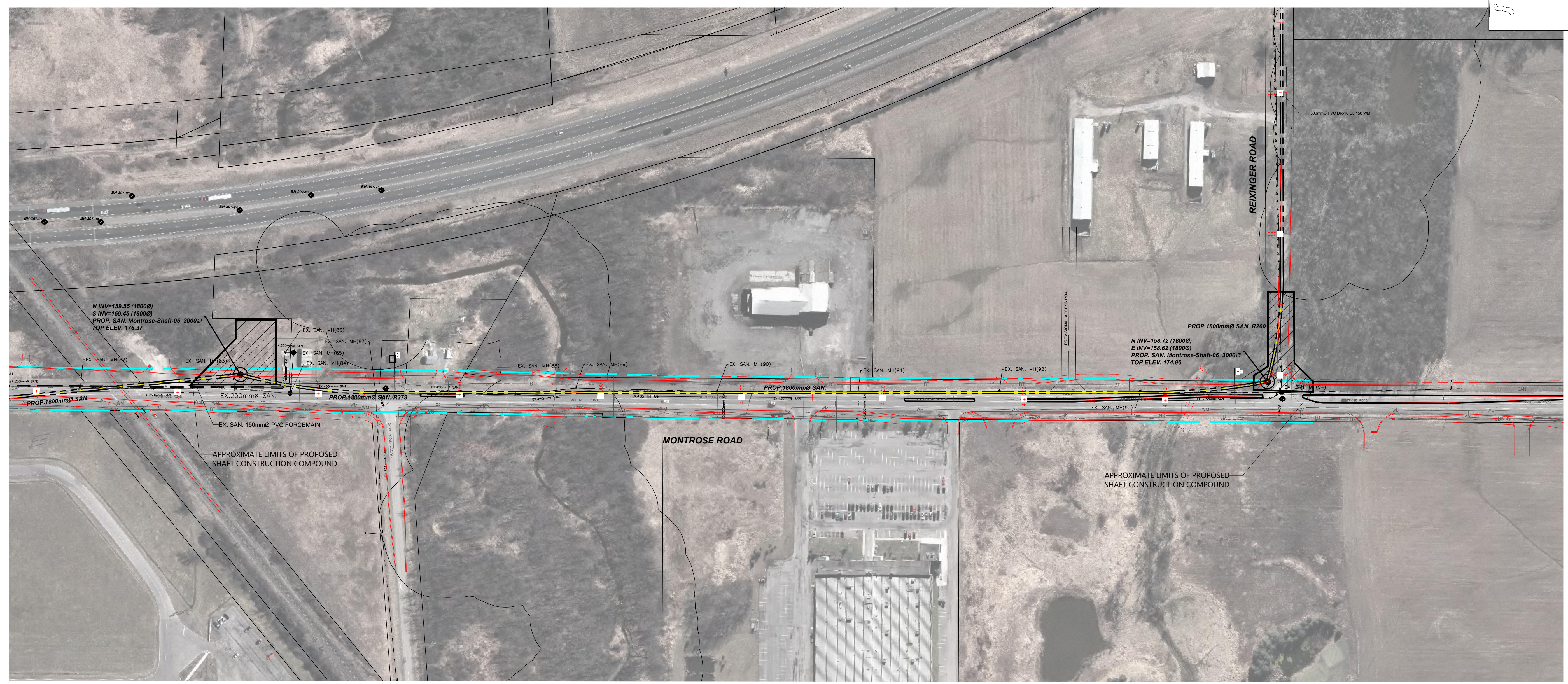
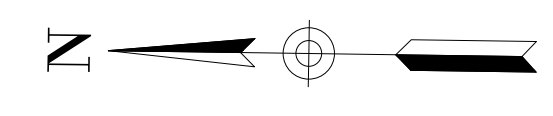
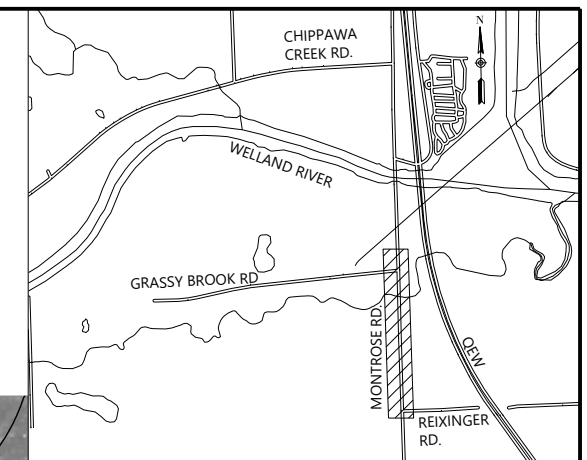
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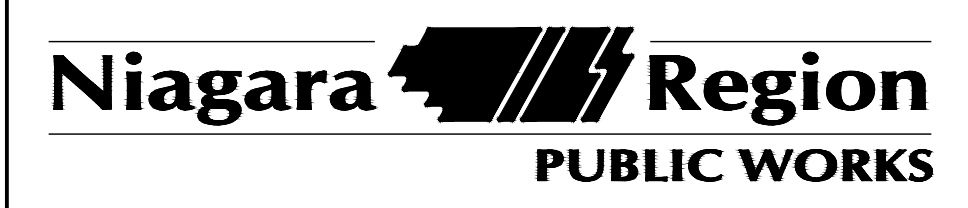
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0	CONCEPTUAL DESIGN ISSUED FOR REPORTS	2021-09-24	MF

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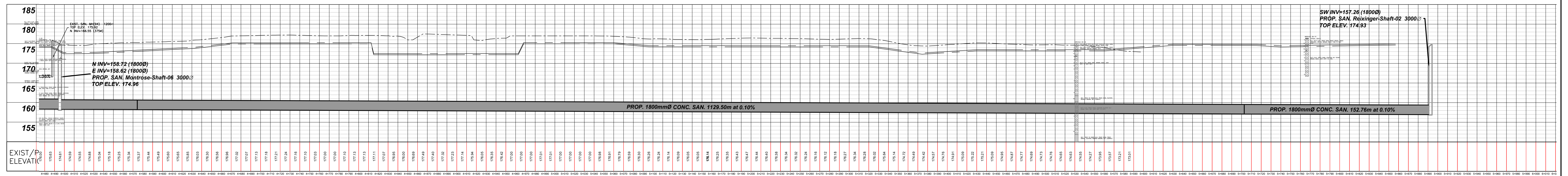
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DESIGN	MF
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APPROVED BY	--



**SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS**  
**TRUNK SANITARY SEWER**  
**CONCEPTUAL DESIGN**  
**from STA 3+590 to STA 4+680**  
 NIAGARA REGION  
**PLAN & PROFILE**

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SCALE	Hor : 1:1500 m Ver : 1:375 m
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NO.	REVISION	DATE	INIT.
0	CONCEPTUAL DESIGN ISSUED FOR REPORTS	2021-09-24	MF

**NOTES/LEGEND**

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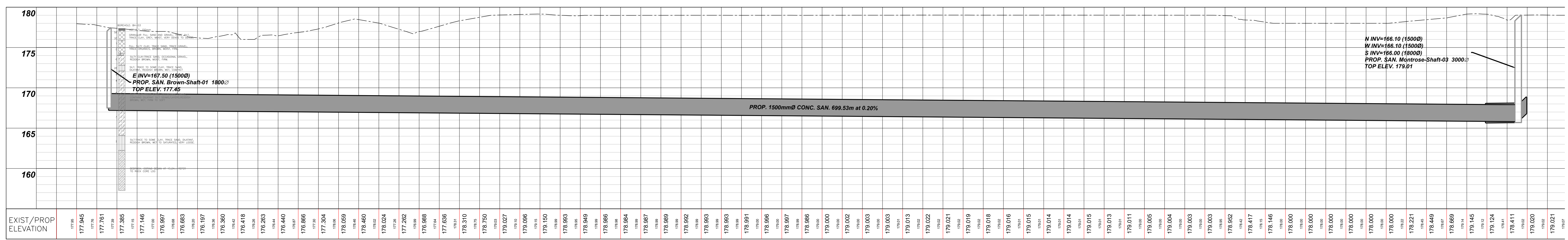
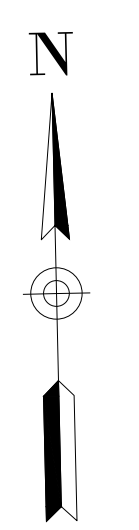
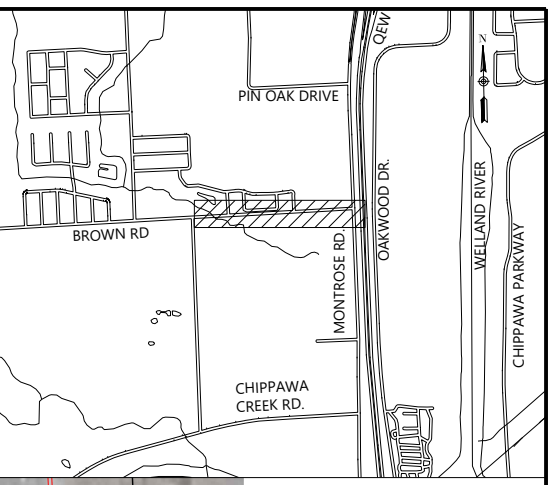
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DRAFTING DR  
 DESIGN MF  
 CHECKED BY --  
 APPROVED BY --



**SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS**  
**TRUNK SANITARY SEWER**  
**CONCEPTUAL DESIGN**  
 from STA 4+450 to STA 5+570  
 NIAGARA REGION  
**PLAN & PROFILE**

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DATE 2021-09-24	
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REF. No. #	
DWG No. C7	



NO.	REVISION	DATE	INIT.
0	CONCEPTUAL DESIGN ISSUED FOR REPORTS	2021-09-24	MF

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DRAFTING	DR
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**SOUTH NIAGARA FALLS WASTEWATER SOLUTIONS**  
**TRUNK SANITARY SEWER**  
**CONCEPTUAL DESIGN**  
 from STA 5+000 to STA 5+730  
 NIAGARA REGION  
**PLAN & PROFILE**

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DATE	2021-09-24
SCALE	Hor : 1:1000 m Ver : 1:250 m
REF. No.	#
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REV.	0

# Appendix D: Historic Aerials



Aerial Photograph  
Dated: 1934  
Stage 1 AA SNFWWTP Phase 1 Lands  
Plate: B1



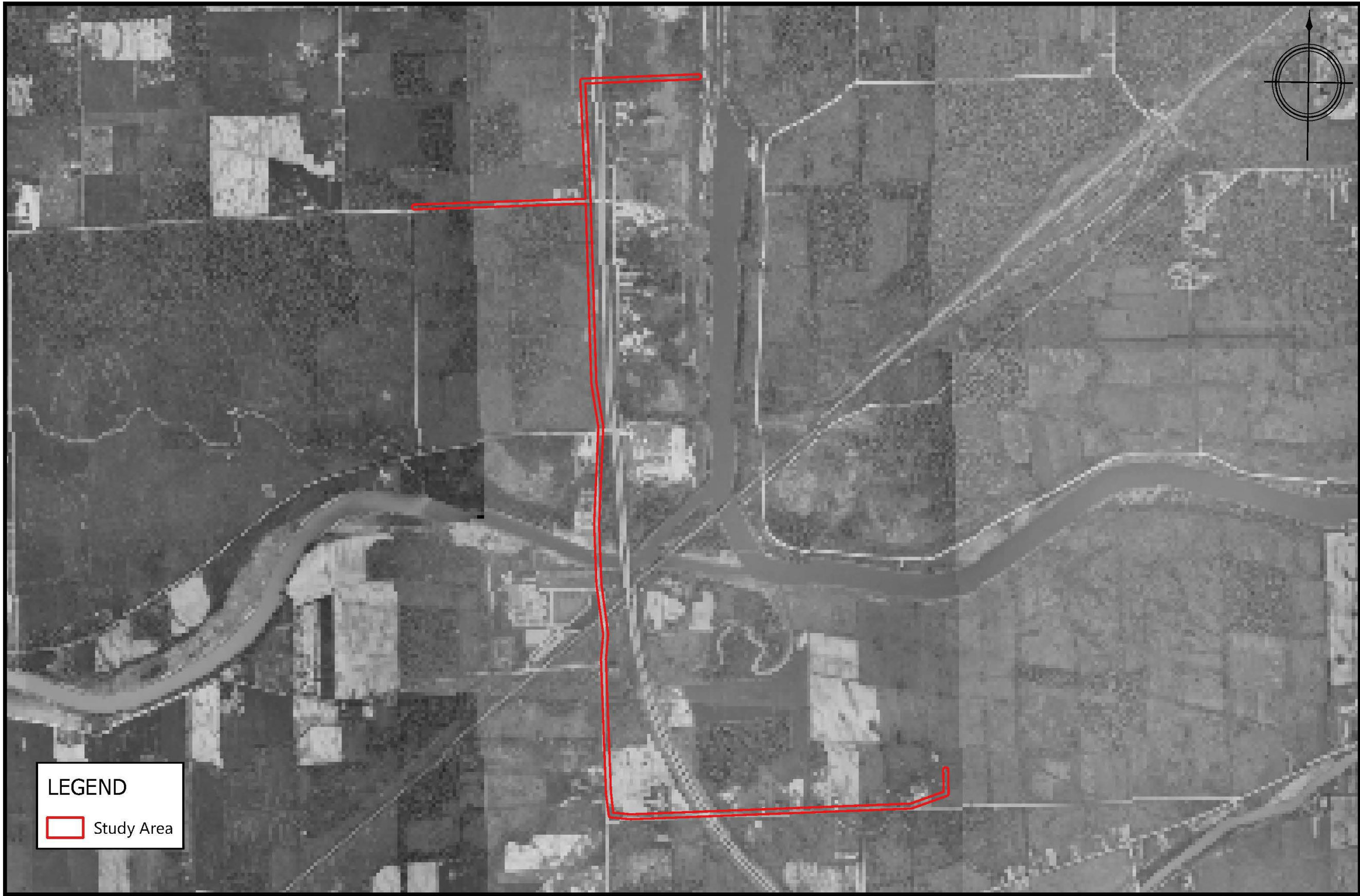
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Dated: 1954/55  
Stage 1 AA SNFWWTP Phase 1 Lands  
Plate: B2





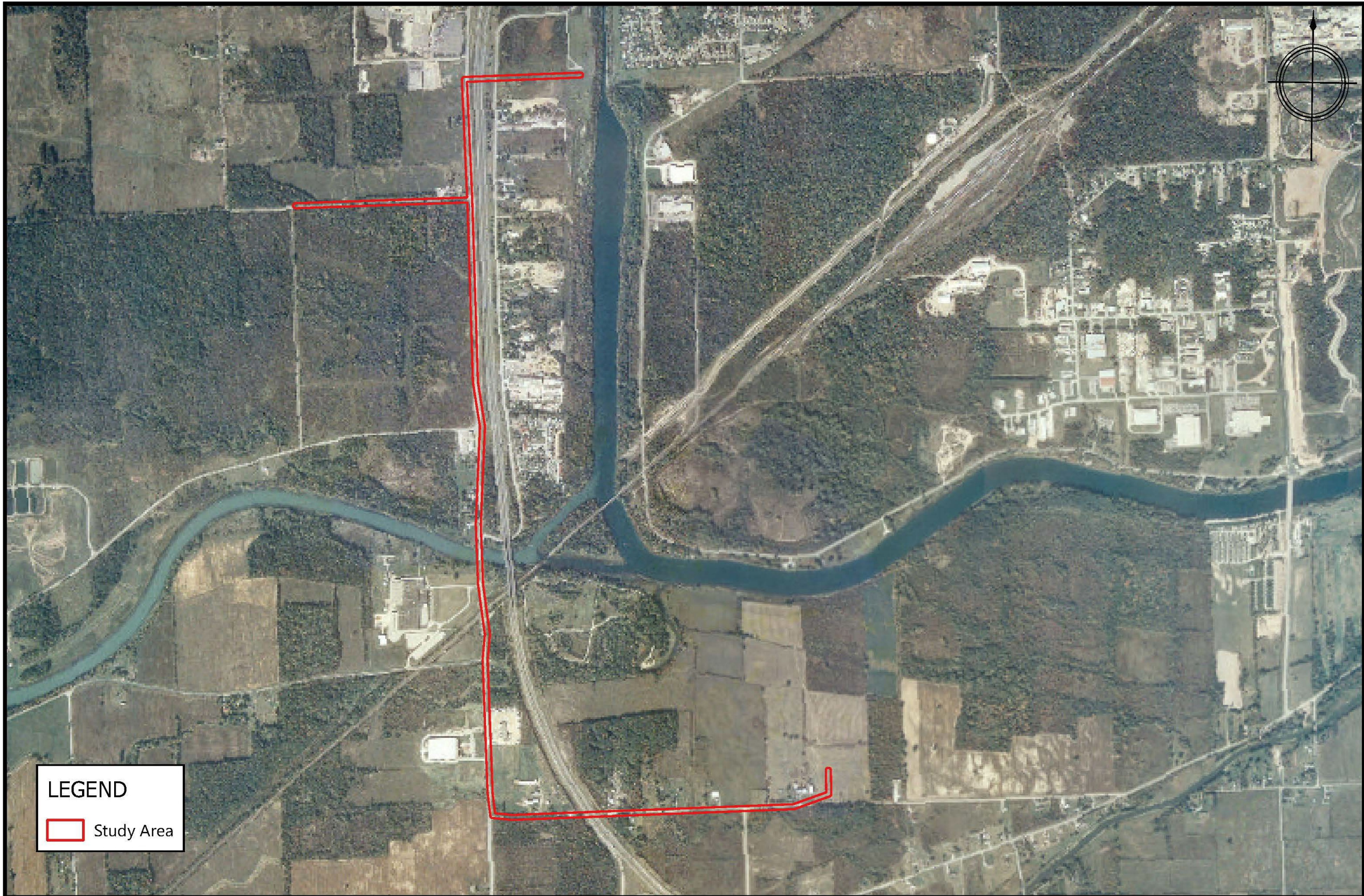
Aerial Photograph  
Dated: 1965  
Stage 1 AA SNFWWTP Phase 1 Lands  
Plate: B3





Aerial Photograph  
Dated: 1968  
Stage 1 AA SNFWWTP Phase 1 Lands  
Plate: B4





LEGEND  
Study Area

Aerial Photograph  
Dated: 1995  
Stage 1 AA SNFWWTP Phase 1 Lands  
Plate: B5



# Appendix E: Photographs



**PHOTOGRAPH 1**  
View facing northwest toward 6811 Reixinger Road. Also visible is the deep roadside ditching.



**PHOTOGRAPH 2**  
View facing northwest toward 6811 Reixinger Road. Also visible is the deep roadside ditching.



**PHOTOGRAPH 3**

View of 6811 Reixinger Road facing northeast towards rear agricultural fields. Also visible is the deep roadside ditching.



**PHOTOGRAPH 4**

View of Dell Road and Reixinger Road intersection facing northeast. Also visible is the deep roadside ditching.



**PHOTOGRAPH 5**  
View of Reixinger Road facing southwest. Also visible is the deep roadside ditching.



**PHOTOGRAPH 6**  
View of Reixinger Road facing southwest.



**PHOTOGRAPH 7**  
View facing south-southwest of the QEW from Reixinger Road.



**PHOTOGRAPH 8**  
View of Reixinger Road facing northeast. Also visible is the wide roadside ditching.



**PHOTOGRAPH 9**  
View of Dell Cemetery facing northeast from Reixinger Road. Also visible is the wide roadside ditching.



**PHOTOGRAPH 10**  
View of Dell Cemetery facing northeast from Reixinger Road.





PHOTOGRAPH 11  
View facing southwest of  
Reixinger Road.



PHOTOGRAPH 12  
View of the QEW from  
Reixinger Road facing  
southwest.



PHOTOGRAPH 13  
View facing west of the  
single lane portion of  
Reixinger Road.



PHOTOGRAPH 14  
View facing east of the  
intersection of Reixinger  
Road and Montrose Road.



**PHOTOGRAPH 15**  
View facing northwest of Montrose Road from Reixinger Road. Note the minimal roadside ditching.



**PHOTOGRAPH 16**  
View of Montrose Road facing northeast.



**PHOTOGRAPH 17**

View of Montrose Road facing northwest. Note the shallow roadside ditching on the west side of the right-of-way.



**PHOTOGRAPH 18**

View facing northeast of the Montrose Road and Grassy Brook Road intersection.



PHOTOGRAPH 19  
View of Montrose Road  
facing southeast.



PHOTOGRAPH 20  
View facing north  
northwest of the Montrose  
Road and Grassy Brook  
Road intersection.



**PHOTOGRAPH 21**  
View facing south  
southeast of Montrose  
Road.



**PHOTOGRAPH 22**  
View facing northeast  
toward Montrose Bridge of  
Montrose Road.



**PHOTOGRAPH 23**  
View facing north-northwest of Montrose Road.



**PHOTOGRAPH 24**  
View facing south-southwest of the Montrose Road and Oakwood Drive intersection.



**PHOTOGRAPH 25**

View facing northeast of the Montrose Road and Chippawa Creek Road intersection.



**PHOTOGRAPH 26**

View facing north-northeast of Montrose Road.





**PHOTOGRAPH 27**  
View facing south-southeast of Montrose Road.



**PHOTOGRAPH 28**  
View facing northeast of the Montrose Road and Blackburn Parkway intersection.



PHOTOGRAPH 29

View facing south-southeast of Montrose Road from Blackburn Parkway.



PHOTOGRAPH 30

View facing north-northeast towards Brown Road of the Brown Road and Heartland Forest Road intersection. Note deep ditching on the east and west sides of the right-of-way.



**PHOTOGRAPH 31**  
View facing northeast of Brown Road from the Heartland Forest Road intersection.



**PHOTOGRAPH 32**  
View facing northeast of Brown Road. Deep ditching is visible on the southern side of the right-of-way.



**PHOTOGRAPH 33**  
View of Brown Road facing southwest. A concrete pathway is next to the subdivision.



**PHOTOGRAPH 34**  
View facing southeast of Brown Road. A concrete pathway is next to the subdivision.



**PHOTOGRAPH 35**  
View facing northwest of  
Brown Road.



**PHOTOGRAPH 36**  
View facing northeast of  
the Brown Road and  
Montrose Road  
intersection.



**PHOTOGRAPH 37**  
View of Brown Road and  
Montrose Road  
intersection facing north  
northeast.



**PHOTOGRAPH 38**  
View of Montrose Road  
from Brown Road facing  
south southeast.



**PHOTOGRAPH 39**  
View facing southeast towards the QEW of the Montrose Road and Canadian Drive intersection.



**PHOTOGRAPH 40**  
View facing south southeast of Montrose Road and associated open field.



**PHOTOGRAPH 41**  
View facing south of the concrete land running north-south towards the Study Area.



**PHOTOGRAPH 42**  
View facing southwest towards the Study Area of a fallow fields.





**PHOTOGRAPH 43**  
View facing south-southwest towards the Study Area of the fallow fields.



**PHOTOGRAPH 44**  
View of overgrown field and steeply sloping topography south of Oakwood Drive.

# Appendix F: Excerpts from the MCFN Treaties Booklet

# Mississaugas of the Credit Treaties



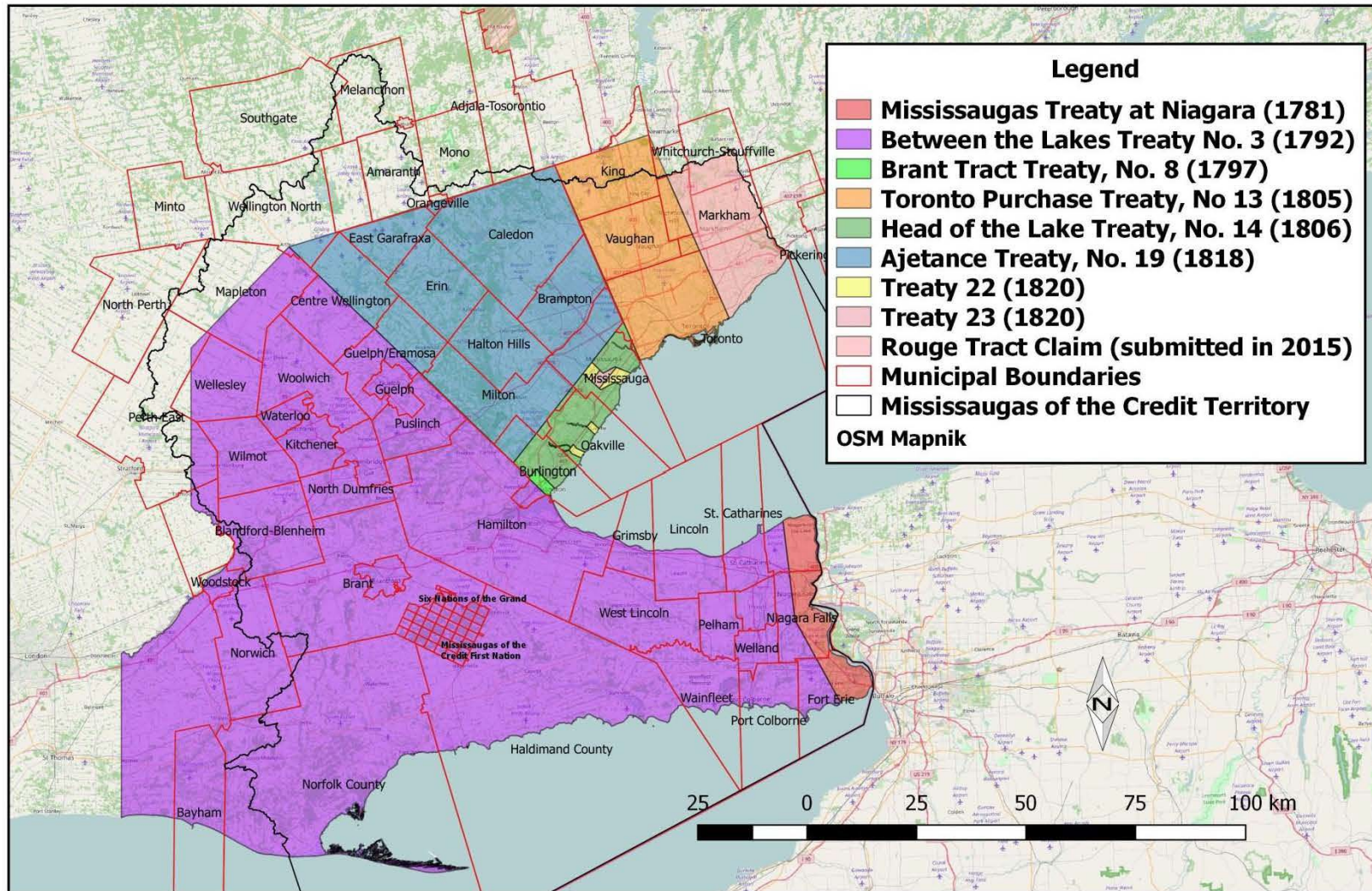
Prior to European contact, the ancestors of the Mississaugas of the New Credit First Nation occupied the lands north of Lake Superior and the area around Georgian Bay. The Mississaugas lived lightly on the lands they occupied and purposefully moved about the landscape harvesting resources as they became available.

## **Mississauga Territory**

The ancestors of the Mississaugas of the Credit migrated into Southern Ontario by means of military conquest. After the Iroquois had expelled the Huron from Southern Ontario in 1649-50, they continued their attacks northward into the territories occupied by the Mississaugas and their allies. By the end of the 17<sup>th</sup> century, the Mississaugas and their allies had succeeded in driving the Iroquois back into their homelands south of Lake Ontario. At the conclusion of the conflict, many Mississaugas settled at the eastern end of Lake Ontario; other Mississaugas settled at the western end of the lake with their primary location at the mouth of the Credit River.

The Mississaugas of the Credit occupied, controlled and exercised stewardship over approximately 3.9 million acres of lands, waters, and resources in Southern Ontario. Their territory extended from the Rouge River Valley westward across to the headwaters of the Thames River, down to Long Point on Lake Erie and then followed the shoreline of Lake Erie, the Niagara River, and Lake Ontario until arriving back at the Rouge River Valley.

From the time of the conquest of New France in 1760, the British Crown recognized the inherent rights of First Nations and their ownership of the lands they occupied. The Royal Proclamation of 1763 confirmed First Nations' sovereignty over their lands and prevented anyone, other than the Crown, from purchasing that land. The Crown, needing First Nations' land for military purposes or for settlement, would first have to purchase it from its Indigenous occupants.



**Municipal Boundaries Related to the Between the Lakes Treaty, No. 3 (1792)**



## Between the Lakes Treaty, No.3 (1792)



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 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.

# Appendix G: Assessor Qualifications

## Assessor Qualifications

### **Heidy Schopf, MES, CAHP – Built Heritage and Cultural Heritage Landscape Team Lead**

Heidy Schopf the Built and Landscape Heritage Team Lead at Wood. She has over ten years' experience in Cultural Resource Management. She is a professional member of the **Canadian Association of Heritage Professionals (CAHP)** and is MTO RAQs certified in archaeology/heritage. She has worked on a wide variety of projects throughout Ontario, including: cultural heritage resources assessments, heritage impact assessments, documentation reports, cultural heritage evaluations, strategic conservation plans, heritage conservation district studies and plans and AAs. Ms. Schopf has extensive experience applying local, Provincial, and Federal heritage guidelines and regulations to evaluate protected and potential cultural heritage properties. She is skilled at carrying out impact assessments and developing mitigation measures to conserve the heritage attributes of properties where changes are proposed.

### **Henry Cary, Ph.D., CAHP, RPA – Senior Staff Archaeologist**

–Dr. Henry Cary has over 20 years of public and private-sector experience directing archaeological and cultural heritage projects in urban, rural, Arctic and Sub-Arctic environments in Canada as well as the Republic of South Africa, Italy, and France. His career has included positions as project archaeologist and cultural resource management specialist for Parks Canada's Fort Henry National Historic Site Conservation Program and Western Arctic Field Unit, Heritage Manager for the Town of Lunenburg UNESCO World Heritage Site, and senior-level archaeologist and cultural heritage specialist for CH2M and Golder Associates. He currently holds a **Professional Archaeology Licence (P327)** issued by the Ontario MTCS, is MTO RAQs certified in Archaeology/Heritage and is a member of the Canadian Association of Heritage Professionals (CAHP) and Register of Professional Archaeologists (RPA). His education includes a B.A. in Prehistoric Archaeology and Anthropology from Wilfrid Laurier University, a MA in Historical Archaeology from Memorial University, and a Ph.D. in War Studies from the Royal Military College of Canada. Currently, Henry also holds academic positions as Adjunct Professor of Anthropology at Saint Mary's University and lecturer in Visual & Material Culture at Mount Allison University.

### **Alejandra Cooney, B.Sc., Field Archaeologist (R1188)**

- Ms. Cooney holds a B.Sc. Degree in Anthropology and Biology from Trent University and has an Environmental Technician Diploma from Mohawk College. Ms. Cooney has been working in the field of archaeological consulting since 2013. She holds an **Applied Research License (R1188)** in archaeology from the Ontario MTCS. Ms. Cooney has conducted Stage 1 to 4 archaeological assessments in of environmental assessments, hydro line corridors, municipal roadways, residential and infrastructure development. Through her experience, she has gained expertise in archaeological projects in remote locations. A number of projects that Ms. Cooney has been involved in, have included Indigenous Engagement. Ms. Cooney's education and relevant work experience have provided her with knowledge of high precision GPS technologies, such as SX Blue, Top Con Hi SR and FC5000 global positioning systems, used to record architectural and natural

features/ landscapes, cultural material, topographical anomalies and site boundaries. Ms. Cooney is a member of the Ontario Archaeological Society.

**Chelsea Dickinson, BA - Cultural Heritage Specialist | Research Archaeologist**

Ms. Dickinson holds an Honours B.A. Degree in Near Eastern and Classical Archaeology from Wilfrid Laurier University, and a Post-Graduate Certificate in Geographical Information Systems from Fanshawe College. She has been working in the field of cultural resource management since 2015 and holds an **Applied Research license (License R1194)** in Archaeology from the Ontario Ministry of Tourism, Culture and Sport. Ms. Dickinson has worked on a wide variety of projects throughout Ontario, including: Cultural Heritage Assessments Reports (CHARs), Cultural Heritage Reports (CHRs under TPAP), Heritage Impact Assessments (HIAs), Cultural Heritage Evaluation Reports (CHERs) using Ontario Regulation 9/06 and 10/06, Strategic Conservation Plans (SCP), and AAs (Stage 1-4) throughout Ontario. Ms. Dickinson has been the prime/co-author on a multitude of archaeological (i.e., Stage 1-4) and cultural heritage assessment reports (i.e., CHAR, CHER, HIA, CHDR), specializing in historical background research across Ontario. Ms. Dickinson has had the privilege of working alongside a multitude of First Nation community members while conducting AAs in both Northern and Southern Ontario. In addition, she has experience using ArcGIS/Collector and high precision GPS technologies, specifically Top Con Hi SR and FC5000 positioning systems, used to map in architectural features, diagnostic artifacts, as well as topographical anomalies and site boundaries.



# Appendix H: Limitations

## Limitations

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:
  - a. The Standard Terms and Conditions which form a part of our Professional Services Contract;
  - b. The Scope of Services;
  - c. Time and Budgetary limitations as described in our Contract; and,
  - d. The Limitations stated herein.
2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.
3. The conclusions presented in this report were based, in part, on visual observations of the Study Area. Our conclusions cannot and are not extended to include those portions of the Study Area which were not reasonably available, in Wood Environment & Infrastructure's opinion, for direct observation.
4. The potential for archaeological resources, and any actual archaeological resources encountered, at the Study Area were assessed, within the limitations set out above, having due regard for applicable heritage regulations as of the date of the inspection.
5. Services including a background study and fieldwork were performed. Wood Environment & Infrastructure's work, including archival studies and fieldwork, were completed in a professional manner and in accordance with the Ministry of Tourism, Culture and Sport' guidelines. It is possible that unforeseen and undiscovered archaeological resources may be present at the Study Area.
6. The utilization of Wood Environment & Infrastructure's services during the implementation of any further archaeological work recommended will allow Wood Environment & Infrastructure to observe compliance with the conclusions and recommendations contained in the report. Wood Environment & Infrastructure's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.
7. This report is for the sole use of the parties to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or in part, or any reliance thereon, or decisions made based on any information of conclusions in the report, is the sole responsibility of such third party. Wood Environment & Infrastructure accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.
8. This report is not to be given over to any third-party other than a governmental entity, for any purpose whatsoever without the written permission of Wood Environment & Infrastructure, which shall not be unreasonably withheld.