APPENDIX

STAGE 1 ARCHAEOLOGICAL ASSESSMENT

WELLINGTON COUNTY

STAGE 1 ARCHAEOLOGICAL ASSESSMENT

BOSWORTH BRIDGE (B007028)

AUGUST 18, 2021

ORIGINAL REPORT

PIF P1105-0037-2021

JASON STEPHENSON – P1105

STAGE 1 ARCHAEOLOGICAL ASSESSMENT

BOSWORTH BRIDGE (B007028)

WELLINGTON COUNTY

LOT 2, CONCESSIONS 13 AND 14, GEOGRAPHIC TOWNSHIP OF PEEL, NOW WITHIN MAPLETON TOWNSHIP, WELLINGTON COUNTY, PROVINCE OF ONTARIO

ORIGINAL REPORT

PROJECT NO.: 20M-01326-00
DATE: AUGUST 18, 2021

WSP
582 LANCASTER STREET WEST
KITCHENER, ON
CANADA N2K 1M3

F: +1 519 743-8778
WSP.COM

August 18, 2021

Original Report

Stage 1 Archaeological Assessment

Bosworth Bridge (B007028)

Lot 2, Concessions 13 and 14, Geographic Township of Peel, now within Mapleton Township, County of Wellington, Province of Ontario.

Prepared for:

Wellington County
Administrative Centre
74 Woolwich St.
Guelph, ON N1H 3T9

582 Lancaster Street West
Kitchener, ON
Canada N2K 1M3

F: +1 519 743-8778
wsp.com

SIGNATURES AND DISCLAIMERS

PREPARED BY

Stefan Bouchard, MES
Professional Archaeologist

REVIEWED BY

Jennifer Morgan, PhD
Ontario Archaeology Lead

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EXECUTIVE SUMMARY

WSP Canada Inc. (WSP) was retained by Wellington County to complete a Stage 1 Archaeological Assessment as a requirement of the Schedule B Municipal Class Environmental Assessment (MCEA) Study for the Bosworth Bridge (B007028) in Wellington County, Ontario. The County is seeking to replace the bridge with a new structure. The Bosworth Bridge is situated along Wellington Road 7 approximately 0.8 km east of Wellington Road 11 between the communities of Rothsay and Parker within Lot 2, Concessions 13 and 14, Geographic Township of Peel, now within the Township of Mapleton, Wellington County, Ontario (Figure 1). To meet the needs of the project, the study area has been defined by a buffer of 100 m in diameter around the bridge (Figure 2).

This archaeological assessment was completed as a requirement under the *Environmental Assessment Act* (1990) and the *Planning Act* (1990). Archaeological activities were carried out in accordance with the *Standards and Guidelines for Consultant Archaeologists* (Ministry of Heritage, Sport, Tourism and Culture Industries [MHSTCI], 2011), supporting the *Ontario Heritage Act* (1990) and included a review of documents pertaining to the study area including historic maps, aerial photographs, local histories, and a property inspection. The property inspection was conducted on November 17, 2020.

Archaeological recommendations have been made based on the background historic research, property inspection, and indicators of archaeological potential as outlined in the 2011 *Standards and Guidelines for Consultant Archaeologists*. Land that cannot be visually confirmed to have been previously disturbed retains archaeological potential and required further field studies. Based on the results of this study, **a Stage 2 Archaeological Assessment is required for those areas identified as retaining archaeological potential (Figure 7).**

The following recommendations for the Stage 2 Archaeological Assessment include:

- Where ploughing is not possible, the study area must be subject to test pit survey at 5 m intervals as per Section 2.1.2 of the *Standards and Guidelines for Consultant Archaeologists* (MHSTCI, 2011). These areas include manicured lawn, overgrown shrub, and the wooded areas.
- The agricultural field must be subject to pedestrian survey at 5 m intervals as per Section 2.1.1 (*Standards and Guidelines for Consultant Archaeologists,* 2011). Prior to pedestrian survey, the field must be ploughed and weathered to allow for ideal conditions for the identification of archaeological resources. Soil visibility must be at least 80% in order for pedestrian survey to proceed.
- Areas visually confirmed to have been previously disturbed no longer retain archaeological potential and no further work is required.
- The Conestogo River is identified as a Cultural Heritage River and therefore holds potential for underwater archaeological materials. An underwater archaeological survey and visual confirmation is required should any construction works impact the water.

If archaeological materials are encountered during construction, they may constitute a new site and are therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the material must cease work immediately and a provincially licensed consultant archaeologist must assess the material's cultural heritage value or interest in accordance with Section 48 (1) of the *Ontario Heritage Act*.

PROJECT PERSONNEL

WSP

Project Manager	William Van Ruyven, P. Eng *Project Manager, Transportation – Bridge Engineering*
Technical Lead/ Project Licensee	Jason Stephenson, MES (P1105) *Professional Archaeologist*
Field Director	Lara Wood, MA (P1078) *Professional Archaeologist*
Report Preparation	Stefan Bouchard, MES (P476) *Professional Archaeologist*
Mapping/GIS	Stefan Bouchard
Report Review	Jennifer Morgan, PhD (R1176) *Ontario Archaeology Lead*

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1 PROJECT CONTEXT

1.1 OBJECTIVES

The objectives of a Stage 1 Archaeological Assessment are:

- To provide information regarding the study area's geography, history, previous archaeological fieldwork, and current land condition;
- To provide a detailed evaluation of the study area's archaeological potential; and
- To recommend appropriate strategies for Stage 2 survey when required.

A property inspection allows the archaeologist to gain first-hand knowledge of the geography, topography, and current conditions of the study area that allows for a more confident determination of archaeological potential.

1.2 DEVELOPMENT CONTEXT

WSP Canada Inc. (WSP) was retained by Wellington County to complete a Stage 1 Archaeological Assessment as a requirement of the Schedule B Municipal Class Environmental Assessment (MCEA) Study for the Bosworth Bridge (B007028) in Wellington County, Ontario. The County is seeking to replace the bridge with a new structure (Appendix A). The Bosworth Bridge is situated along Wellington Road 7 approximately 0.8 km east of Wellington Road 11 between the communities of Rothsay and Parker within Lot 2, Concessions 13 and 14, Geographic Township of Peel, now within the Township of Mapleton, Wellington County, Ontario (Figure 1). To meet the needs of the project, the study area has been defined by a buffer of 100 m in diameter around the bridge (Figure 2).

This archaeological assessment was completed as a requirement under the *Environmental Assessment Act* (1990) and the *Planning Act* (1990). Archaeological activities were carried out in accordance with the *Standards and Guidelines for Consultant Archaeologists* (Ministry of Heritage, Sport, Tourism and Culture Industries [MHSTCI], 2011), supporting the *Ontario Heritage Act* (1990) and included a review of documents pertaining to the study area including historic maps, aerial photographs, local histories, and a property inspection.

Permission to access private property was not acquired for the property inspections and, therefore, the property inspection was conducted from the publicly accessible right-of-way. The property inspection was conducted on November 17, 2020.

1.3 HISTORICAL CONTEXT

1.3.1 HISTORICAL DOCUMENTATION

The Bosworth Bridge study area is located within the limits of Treaty 29 (the Huron Tract Purchase), signed by the Crown and Anishinaabe peoples in 1827. The area spans the counties of Huron, Perth, Middlesex, and present-day Lambton County. Historically, the study area falls on Lot 2, Concessions 13 and 14, Geographic Township of Peel, now within Mapleton Township, Wellington County, Ontario.

The following sections provide a brief outline of the study area history during the Pre-Contact and Post-Contact periods to provide a generalized chronological framework in which the archaeological assessment was conducted.

1.3.2 PRE-CONTACT PERIOD

The Pre-Contact period in Ontario has been reconstructed, primarily, from the archaeological record and interpretations made by archaeologists through an examination of material culture and site settlement patterns. Technological and temporal divisions of the Pre-Contact period have been defined by archaeologists based on changes to natural, cultural, and political environments that are observable in the archaeological record. It is pertinent to state that although these divisions provide a generalized framework for understanding the broader events of the Pre-Contact period, they are not an accurate reflection of the fluidity and intricacies of cultural practices that spanned thousands of years. The following sections present a sequence of Indigenous land-use during periods defined by archaeologists from the earliest human occupation of Ontario following deglaciation to the period when Europeans began to settle the land. These periods are:

- The Paleo Period
- The Archaic Period
- The Woodland Period

PALEO PERIOD

Paleo period populations were the first to occupy what is now Southern Ontario, moving into the region following the retreat of the Laurentide Ice Sheet approximately 11,000 years before present (BP). The first Paleo period populations to occupy Southern Ontario are referred to by archaeologists as Early Paleo (Ellis & Deller, 1990).

Early Paleo period groups are identified by their distinctive projectile point types, exhibiting long grooves, or ‘flutes’, that likely functioned as a hafting mechanism (method of attaching the point to a wooden shaft). These Early Paleo group projectile point types include Gainey (ca. 10,900 BP), Barnes (ca. 10,700), and Crowfield (ca. 10,500) (Ellis & Deller, 1990). By approximately 10,400 BP, Paleo projectile points transitioned to various unfluted varieties, such as Holcombe (ca. 10,300 BP), Hi Lo (ca. 10,100 BP), and Unstemmed and Stemmed Lanceolate (ca. 10,400 to 9,500 BP). These tool types were used by Late Paleo period groups (Ellis & Deller, 1990). Both Early and Late Paleo period populations were highly mobile, participating in the hunting of large game animals. Paleo period sites often functioned as small campsites where stone tool production and maintenance occurred (Ellis & Deller, 1990).

ARCHAIC PERIOD

By approximately 8,000 BP, climatic warming supported the growth of deciduous forests in Southern Ontario. These forests introduced new flora and faunal resources, which resulted in subsistence shifts and a number of cultural adaptations. This change is reflected in the archaeological record by new tool-kits that are reflective of a shift in subsistence strategies and has been categorized as the Archaic period.

The Archaic period in Southern Ontario is sub-divided into the Early Archaic (ca. 10,000 to 8,000 BP), Middle Archaic (ca. 8,000 to 4,500 BP), and the Late Archaic (ca. 4,500 to 2,800 BP) periods. Generally, in North America, the Archaic period represents a transition from big game hunting to broader, more generalized subsistence strategies based on local resource availability. This period is characterized by the following traits:

- An increase in stone tool variation and reliance on local stone sources,
- The emergence of notched and stemmed projectile point types,

- A reduction in extensively flaked tools,
- The use of native copper,
- The use of bone tools for hooks, gorges, and harpoons,
- An increase in extensive trade networks, and
- The production of ground stone tools and an increase in larger, less portable tools.

The Archaic period is also marked by population growth with archaeological evidence suggesting that by the end of the Middle Archaic period (ca. 4,500 BP) populations had steadily increased in size (Ellis, et al., 1990).

Over the course of the Archaic period, populations began to rely on more localized hunting and gathering territories and were shifting to more seasonal encampments. From the spring into the fall, settlements were focused in lakeshore/riverine locations where a variety of different resources could be exploited. Settlement in the late fall and winter months moved to interior sites where the focus shifted to deer hunting and the foraging of wild plants (Ellis et al., 1990, p. 114). The steady increase in population size and the adoption of a more localized seasonal subsistence strategy led to the transition into the Woodland period.

EARLY AND MIDDLE WOODLAND PERIODS

The beginning of the Woodland period is defined by the emergence of ceramic technology. Similar to the Archaic period, the Woodland period is separated into three timeframes: the Early Woodland (ca. 2,800 to 2,000 BP), the Middle Woodland (ca. 2,000 to 1,200 BP), and the Late Woodland (ca. 1,200 to 350 BP) (Spence et al., 1990; Fox, 1990).

The Early Woodland period is represented in Southern Ontario by two cultural complexes: the Meadowood Complex (ca. 2,900 to 2,500 BP), and the Middlesex Complex (ca. 2,500 to 2,000 BP). During this period, the life ways of Early Woodland populations differed little from that of the Late Archaic with hunting and gathering representing the primary subsistence strategies. The pottery of this period is characterized by its relatively crude construction and lack of decoration. These early ceramics exhibit cord impressions, which are likely the result of the techniques used during manufacture rather than decoration (Spence et al., 1990).

The Middle Woodland period has been differentiated from the Early Woodland period by changes in lithic tool forms (e.g. projectile points, expedient tools), and the increased decorative elaboration of ceramic vessels (Spence et al., 1990). Additionally, archaeological evidence suggests the rudimentary use of maize (corn) horticulture by the end of the Middle Woodland period (Warrick, 2000).

In Southern Ontario, the Middle Woodland has been divided into three different complexes based on regional cultural traditions: the Point Peninsula Complex, the Couture Complex, and the Saugeen Complex. These groups are differentiated by sets of characteristics that are unique to regions within the province, specifically regarding ceramic decorations. Point Peninsula Complex sites have been identified in south-central and Eastern Ontario and into Southern Quebec. The northernmost borders of the Point Peninsula Complex can be found along the Mattawa and French Rivers. Saugeen Complex sites have been identified in south-central Ontario and along the eastern shores of Lake Huron. Couture Complex sites are generally located along the rivers and streams which drain into Lake St. Clair and the northwestern shore of Lake Erie. Couture Complex sites have been identified as far north as London and Thedford.

LATE WOODLAND PERIOD

There is much debate as to whether a transitional phase between the Middle and Late Woodland period is seen throughout Ontario, but it is generally agreed that the Late Woodland period of occupation begins around 1,100 BP.

The Late Woodland period in southern Ontario can be divided into three sub-phases: The early, middle, and late Late Woodland periods (Smith, 1990, p. 285).

The Pickering and Glen Meyer culture groups co-existed within southern Ontario during the early Late Woodland period (ca. 1250-700 BP). Pickering sites have been identified in the area north of Lake Ontario to Georgian Bay and Lake Nipissing (Williamson, 1990). Glen Meyer sites are generally centred around Oxford and Norfolk counties, but also includes the southeastern Huron basin and the western extent is demarcated by the Ekfrid Clay Plain southwest of London, Ontario (Noble, 1975). Villages of either tradition were generally smaller in size (~1 ha) compared to later villages, and were composed of smaller oval structures, which were later replaced by larger structures in the Late Woodland period (Williamson, 1990).

The first half of the middle Late Woodland period is represented by the Uren Phase (700-650 BP) and the second half by the Middleport Phase (650-600 BP). Uren and Middleport sites share a similar distribution pattern across much of southwestern and south-central Ontario. (Dodd et al., 1990). Significant changes in material culture and settlement-subsistence patterns are noted during this short time. Iroquois Linear, Ontario Horizontal, and Ontario Oblique pottery types are the most well-represented ceramic assemblages of the middle Late Woodland period (Dodd et al., 1990). At Middleport sites, material culture changes included an increase in the manufacture and use of clay pipes as well as bone tools and adornments (Dodd et al., 1990; Ferris & Spence, 1995). The appearance of evidence of small year-round villages, secondary ossuary burials, and what are thought to be semi-subterranean sweat lodges suggest a marked increase in sedentism in southern Ontario during the Uren and Middleport Phases (Ferris & Spence, 1995). The increasing permanency of settlements resulted in the development of small-scale cultivation and a subsequent increased reliance on staple crops such as maize, beans, and squash (Dodd et al., 1990; Warrick, 2000; Ferris & Spence, 1995).

Archaeological evidence from the middle Late Woodland sites also supports increases in population size, community organization and village fissioning, and the expansion of trade networks. The development of trade networks with northern Algonquian peoples has also been inferred from findings at Middleport sites along the northern parts of southwestern and south-central Ontario. These changes resulted in the more organized and complex social structures observed in the late Late Woodland period. Researchers have focused on geographic variation on Middleport sites as proof of the development of distinct local entities which developed into the communities known as as the Huron-Wendat, Petun, Neutral, and Erie in the late Late Woodland period (Dodd et al., 1990).

During the late Late Woodland period (1350 to 1650 A.D.), village size significantly increased as did the complexity of community and political systems. Huron-Wendat and Neutral villages sites were often fortified with palisade walls and ranged in size from a few longhouses to over 100 longhouses observed in large villages. Larger longhouses oriented differently than others in the village have been associated with primary familial groups and it has been suggested that longhouses that were located outside of palisade walls may have been for visiting groups for the purposes of trade or social gatherings. More recent research has indicated that smaller, temporary camp or cabin sites were often used seasonally for the tending of agricultural fields or as fishing camps (Ramsden, 1990). By this time, large-scale agriculture had been adopted, making year-round villages even more practical as a result of the ability to store large crop yields over winter (Ramsden, 1990, Lennox and Finlayson, 1990).

Changes in ceramic styles observed in the archaeological record of the late Late Woodland period also reflect increasing levels of inter-community relationships, integration, and trade between different groups. For example, oral histories of the Michi Saagiig (Mississauga Anishinaabeg) speak to the arrival of, and relationships with, the Huron-Wendat “corn growers” (Migizi and Kapyrka, 2015).

Sometime between 1450 to 950 BP, the Michi Saagig made Treaties with the Huron-Wendat, Petun, and Neutral to allow them to live and practice agriculture in the area (Migizi & Kapyrka, 2015). This

includes. In the fifteenth and sixteenth centuries, much of southern Ontario was occupied by the ancestors of the Neutral, who were given that name by Champlain in 1615 as they did not participate in the conflict between the Huron and the Five Nation Iroquois (Lennox & Fitzgerald, 1990, p. 405). They were known as the "Attawandaron" by the Huron, their neighbours to the north, which translated to "the people of a slightly different language."

The distribution of Prehistoric Neutral sites stretches from just past the Niagara River in the east to the Detroit River in the west, Lake Erie in the south, and London and Milton representing the northern boundaries of settlement. Despite the wide distribution, fifteenth century, Neutral settlements were primarily concentrated around the Niagara Peninsula, the Grand River, the Thames River, the shoreline of Lake Erie, and numerous creeks to the northeast (i.e. Spencer, Bronte, and Sixteen Mile Creeks) (Lennox & Fitzgerald, 1990, p. 405). By the late sixteenth and early seventeenth century, the settlement patterns of the Neutral had retracted to the east with concentrations largely centered on the Niagara Peninsula. Their eastern limit became the Buffalo River, while their western limit was the Grand River. Populations also continued in the area of the Spencer, Bronte and Sixteen Mile Creeks in what is now Milton and Oakville (Lennox & Fitzgerald, 1990, p. 411).

From the Prehistoric to the Historic period, Neutral sites are typified by their use of longhouses, similar to those of Iroquoian groups. The settlement patterns of the Neutral can be categorized into three types: large village sites, smaller hamlets or cabin sites, and special resource extraction sites. The larger villages and smaller hamlets are typically located on small creeks with sandy soils suitable for agriculture and are focused on subsistence. Palisades typically surrounded the settlements as a defensive measure. The cabin sites were occupied on a more seasonal basis and typically only had one or two longhouses. The larger villages have more evidence for trade and may have had political influence over the smaller surrounding cabin sites (Lennox & Fitzgerald, 1990, p. 441).

Early contact with European settlers at the end of the Late Woodland period resulted in extensive change to the traditional lifestyles of most populations inhabiting southern Ontario. Trade with the Europeans lead to a dependency on European goods and incited conflict between the First Nations in southern Ontario (Warrick, 2000). Contact with European explorers in the early 17th century also exposed the Neutral to diseases that resulted in the death of an estimated two thirds of the Neutral population. Subsequent attacks by the Five Nations Iroquois resulted in the broad dispersal the remaining population some of whom were adopted into the Seneca and Cayuga Nations.

It should be noted that oral history identifies southern Ontario as the ancestral homeland of the Michi Saagig, who are the descendants of the prior Paleo and Archaic populations. This oral history (see Appendix C for the complete history provided by Curve Lake First Nation) identifies the traditional territory as:

> *... from Gananoque in the east, all along the north shore of Lake Ontario, west to the north shore of Lake Erie at Long Point. The territory spreads as far north as the tributaries that flow into these lakes, from Bancroft and north of the Haliburton highlands. This also includes all the tributaries that flow from the height of land north of Toronto like the Oak Ridges Moraine, and all of the rivers that flow into Lake Ontario (the Rideau, the Salmon, the Ganaraska, the Moira, the Trent, the Don, the Rouge, the Etobicoke, the Humber, and the Credit, as well as Wilmot and 16 Mile Creeks) through Burlington Bay and the Niagara region including the Welland and Niagara Rivers, and beyond. The western side of the Michi Saagiig Nation was located around the Grand River which was used as a portage route as the Niagara portage was too dangerous.*
>
> (Migizi & Kapyrka, 2015)

The Michi Saagig had previously left the area to avoid conflict with early Europeans and other First Nations. After the dispersal of the Neutral, they moved south from the north shores of Lake Huron in the 1690s to re-occupy the land vacated by the Neutral.

1.3.3 POST-CONTACT PERIOD

European presence in southern Ontario began as early as 1615 with French explorer Etienne Brulé, who travelled with the Huron along the major portage route known as the Toronto Carrying Place Trail. This route connected Lake Ontario with Lake Simcoe to the north by way of the Humber River and the Holland Marsh. In September of 1615, Brulé camped on the shores of Humber Bay with the Huron (Mika & Mika, 1977, p. 694; Steckley, 1987; Ramsden, 1990). In 1615-1616, Samuel de Champlain also travelled with the Huron northward to Georgian Bay.

Neutral Territory was situated between the Huron-Wendat territory to the north, and the League of the Haudenosaunee (Five Nations Iroquois) to the south. Their placement between these two conflicting groups resulted in their disbandment as a distinct nation when the Haudenosaunee began their campaign against the Huron-Wendat from 1649-1650. This disbandment was largely a product of intensification of the fur trade, resource scarcity, and European rivalries that translated to their trade partners (Lennox & Fitzgerald, 1990).

Due to increased military pressure from the French, and the Anishinaabek Nations (Ojibwa, Odawa, and Potawatomi), the Iroquois abandoned their villages along Lake Ontario. By the 1680s, the Anishinaabek had returned and re-occupied the land along Lake Ontario, as well as northward beyond the Haliburton Highlands. The Anishinaabek later participated in a significant number of treaty agreements with the British Crown, including the Huron Tract, establishing the foundation of Euro-Canadian settlement in Southern Ontario (Ferris & Spence, 1995).

WELLINGTON COUNTY

Once part of the County of Waterloo, Wellington officially became a separate county in 1854 (Unterman McPhail Associates, 2015). Wellington County is located in a central position in Ontario, and encompasses 12 townships, including the Township of Peel (Historical Atlas Publishing Co., 1906 p. 1). It was settled mainly by emigrants from the British Isles who were granted free Crown Land provided they complete settlement duties (e.g. clearing land for agriculture) prior to the issuance of a patent (Historical Atlas Publishing Co., 1906 p. 2). Improvements in living conditions were rapid as natural resources were abundant and resulted in settlers quickly establishing homes and farms. The Ontario Agricultural College was also established in the County of Wellington and, by the early 1900s, there were five schools associated with the college (Historical Atlas Publishing Co., 1906 p. 2).

PEEL TOWNSHIP

In 1784, Augustus Jones surveyed a line from what is now Burlington to what would become the town of Arthur near the headwaters of the Grand River. This line became known as the Jones' Base Line and forms part of the eastern boundary of Peel Township (Unterman McPhail Associates, 2015). Beginning in the 1820s, the Queens Bush settlement was established on unsurveyed land in Woolwich Township and the southern portion of Peel Township. The settlement was the largest concentration of black settlers, almost all being escaped slaves and immigrants from the United States (The Wellington Advisor, n.d.).

The official survey of Peel Township was conducted in 1843 by R.W. Kerr and was named after Sir Robert Peel, Prime Minister of Great Britain. Land began to be officially sold by the Crown in 1847. The earliest Euro-Canadian settlers were of German decent from the adjacent Waterloo County, as well as English and Irish immigrants. In 1870, the Wellington, Grey & Bruce Railway was constructed from Alma to Drayton, which became incorporated into the Grand Trunk Railway, and later the Canadian National Railway (Unterman McPhail Associates, 2015).

BOSWORTH

The study area falls near the historic town of Bosworth, which was first settled by John Harrington around 1850. The first post office was opened in 1854 and, by 1871, Bosworth's population had reached 150 and the town included numerous residences, two hotels, a cabinetmaker shop, shoe shop, and a general store. This early growth was a direct result of the anticipated arrival of the Wellington, Grey & Bruce Railway; however, the railway bypassed the community, which initiated an economic decline. By 1930 only a gas station and single residential building remained (Unterman McPhail Associates, 2015).

1.3.4 STUDY AREA SPECIFIC HISTORY

The road that is currently known as Wellington Road 7 was first constructed in the early 1850s as part of a private development known as the Elora and Saugeen Road. This was a toll road that was to run from Marden to Elora and eventually to Southampton (Thorning, 2015). The section intersecting the study area connected the towns of Alma and Bosworth and was initially referred to as the "Gravel Road". In 1861, the County of Wellington took over responsibility for the road and by 1864 the toll gates were removed. The road would be designated as Road 58 before the current designation of Wellington Road 7 (Unterman McPhail Associates, 2015).

The Bosworth Bridge was first constructed in 1861 when funds were raised by Wellington County to gravel the road. It is assumed that the original structure was constructed using timber. In the early 20th century, it was upgraded to a steel bridge. In 1946, a multi-year road review and renewal program was initiated by the County of Wellington. During this review, County Engineer W.H. Keith identified the Bosworth bridge as requiring replacement since it was too narrow (4.88 m or less). As a result, C.C. Parker, a consulting engineer, was contracted to prepare drawings for the new Bosworth bridge in 1948 and it was constructed by Arnott Construction of Arthur, Ontario. The new bridge was completed in 1949 and is now in need of replacement (Unterman McPhail Associates, 2015).

To better understand the historic land use of the study area, the G. Leslie and C.J. Wheelocks' 1861 *Historical County Map of Wellington County* (Figure 3), and H. Parsell & Co.'s *Illustrated Historical Atlas of the Counties of Waterloo & Wellington, Ontario, 1881* (Figure 4) were reviewed to examine whether historic features are located within or near to the study area. This analysis contributes to the determination of archaeological potential. The property information is presented in Table 1.

Table 1: Historical Land Use Summary

Lot	Concession	Leslie and Wheelock (1861)		Parsells & Co. (1881)	
		Occupants	**Features**	**Occupants**	**Features**
2	13	Kirk & Clarke M. Thomas Wm. Blackwell	Conestogo River Historic Road	C. Clarke J. Massai W. Blackwell	2 Structures Historic Road
2	14	R Powell	Conestogo River Historic Road	R. Powell	1 Structure Historic Road

Lot 2 Concession 13

The 1861 map depicts Lot 2 Concession 13 as subdivided into three sections. The study area is located on the north half of the lot. The northwest quarter of the lot is owned by Kirk and Clarke, and the northeast quarter belonged to M. Thomas. The southern half is listed to Wm. Blackwell. An Inn is noted to the west of the study area at the intersection of Wellington Road 7 and Wellington Road 11; however, no structures are noted on the lot on which the study area falls. Notable features of historic archaeological potential include historic Wellington Road 7 and the inferred crossing over the Conestogo River (Bosworth Bridge).

In 1881, the northwest quarter was owned by C. Clarke and a new owner, J. Massai, is listed on the northeast quarter. William Blackwell remained the owner of the south half. Two structures are illustrated on the Lot, one in proximity to the study area on the Massai property, and one to the south on the Blackwell property. No structures are illustrated on the Clarke property. The town of Bosworth depicted at the intersection of Wellington Road 7 and Wellington Road 11.

Lot 2 Concession 14

In 1861, the owner of Lot 2 Concession 14 is listed as R. Powell. No structures are noted; however, as with the adjacent concession, features of archaeological potential include Wellington Road 7 and Bosworth Bridge. R. Powell still owned the lot in 1881, and a structure is illustrated near the road to the east of the study area.

It should be noted that the location of features on historic maps are not entirely accurate given the mapping capabilities of that time. Figure 3 and Figure 4 depict the Conestogo River running along the western edge of the study area. This should be considered a result of artistic error rather than evidence of redirecting the river, given its size and surrounding geography. Additionally, a lack of structures on historic maps does not preclude the presence of homesteads on the property. Illustrating all homesteads on the historic atlas maps would have been beyond the intended scope of the atlas and, often, homes were only illustrated for those landowners who purchased a subscription.

Historic aerial imagery from 1954 was also reviewed (Figure 5). A structure is present along the south side of Wellington Road 7 that may represent the structure identified in the 1881 map on the J. Massai property. This structure has since been demolished. The structure to the north of the road that was identified in the 1881 map on the R. Powell property is visible in the 1954 aerial just east of the study area. A review of modern satellite imagery shows little change to the study area, but a new residential structure was constructed to the north of Wellington Road 7 and east of the Conestogo River.

1.4 ARCHAEOLOGICAL CONTEXT

1.4.1 CURRENT CONDITIONS

The study area is located along Wellington Road 7 to the east of the intersection of Wellington Road 7 and Wellington Road 11. It consists of present-day Bosworth Bridge, the Conestogo River, and a mix of manicured lawn associated with residences, overgrown shrub along the banks of the river, cleared agricultural land, and wooded areas. It is broadly situated in a rural area characterized by farmsteads and agricultural lands.

1.4.2 PHYSIOGRAPHY AND ECOLOGY

The study area lies within the Dundalk Till Plain physiographic region (Chapman & Putnam, 1984). This high tableland contains the headwaters of the Saugeen, Maitland, Nottawasaga, and Grand Rivers. This region is characterized by a network of small flat-floored valleys over the plain, which are frequently swampy containing underfit streams or no streams at all. The terrain is described as gently undulating till plain with imperfect and slow drainage despite the high elevation. Surface soils in the Dundalk Till Plain are generally loams or silt loams, which creates a water-soaked layer that dries slowly in early spring, preventing early cultivation (Chapman & Putnam, 1984). The study area, specifically, is within a spillway that runs along the Conestogo River (Figure 6). The soil is identified as Bottom Land adjacent to the river and within the floodplain. The soil adjacent to the floodplain is

identified as Huron Loam, a grey-brown podzolic clay loam with good drainage (Soil Research Institute, 1962).The Conestogo River is one of four main rivers feeding the Grand River and is part of the Grand River Watershed. The Grand River is an important watercourse with evidence of occupation of the land along sections of the river for the past 13,000 years (Warrick, 2012). As a major river feeding this system, the Conestogo River was likely used as a transportation route and area of settlement. In the Late Woodland period Princess Point groups (Fox, 1990), and the Neutral are believed to have utilized the upper Grand River valley as a hunting hinterland, with settlement clusters at various locations, such as around Kitchener (Warrick, 2012; Murphy & Ferris, 1990).

Ecologically, the study area lies in the Mixedwood Plains Ecozone, within the Lake Simcoe-Rideau Ecoregion (Ecoregion 6E) (Crins, et al., 2009). The climate of the ecoregion is mild and moist, with a mean annual temperature range of 4.9 to 7.8 degrees Celsius. The land cover is/was predominantly cropland, pasture and abandoned fields. Forested areas include deciduous, coniferous and mixed forest types of the Great Lakes-St. Lawrence Forest Region. The deciduous trees characterizing this region include sugar maple, beech, red maple, yellow birch, basswood, white ash, large-toothed aspen, red and burr oak, white eastern hemlock, eastern white pine, white spruce and balsam fir are among the coniferous species (Rowe, 1972). Characteristic mammals, birds, reptiles and fish include white-tailed deer, striped skunk, wood ducks, field sparrow, bullfrog, snapping turtle, white sucker, small mouth bass and pearl dace (Crins, et al., 2009).

1.4.3 PREVIOUS ARCHAEOLOGICAL ASSESSMENTS

A search of the MHSTCI's *Ontario Public Register of Archaeological Reports* on January 6, 2021 indicates that no archaeological assessments have been conducted on or within 50 m of the study area.

1.4.4 REGISTERED ARCHAEOLOGICAL SITES

A search of the MHSTCI's *Ontario Archaeological Sites Database* indicates that there are no registered/known archaeological sites within 1 km of the study area. This finding does not preclude the presence of archaeological sites within the study area or surrounding lands, but may simply be a reflection of the lack of archaeological studies in the area.

1.4.5 MARINE ARCHAEOLOGICAL POTENTIAL

The *Criteria for Evaluating Marine Archaeological Potential* were reviewed to determine if a marine archaeological assessment was required for the section of the Conestogo River within the study area. The checklist asks a series of questions and if any answers are 'yes' then a marine archaeological assessment is required. Screening question 7 asks whether the project area has been recognized for its cultural heritage value. The Grand River and its major tributaries – the Conestogo, Eramosa, Nith and Speed rivers – were designated as a Canadian Heritage River in 1994. Therefore, the study area is considered to hold marine archaeological potential.

1.4.6 LISTED AND DESIGNATED HERITAGE PROPERTIES

The Bosworth Bridge is identified as having cultural heritage value or interest (CHVI) under Ontario Regulation 9/06. This CHVI is based on is design/physical values, historical/associative values, and contextual values (Unterman McPhail Associates, 2015). A Heritage Impact Assessment is being completed by WSP for the bridge as part of the overall project. In addition, the Conestogo River was designated as a Canadian Heritage River in 1994.

2 FIELD METHODS

2.1 PROPERTY INSPECTION

A property inspection was completed to gain first-hand knowledge of the study area's geography, topography, and current condition, and to evaluate the potential for the presence of archaeological resources. The property inspection was completed on November 17, 2020 and involved spot checking the general area from the publicly accessible right-of-way. The weather at the time of the inspection was overcast with intermittent flurries; however, these conditions did not impede the ability to identify and evaluate any additional features of archaeological potential. All referenced images are located on Figure 7.

The property inspection did not identify any additional features of archaeological potential other than those identified through the background study, including the historic roadway, river, and floodplain (Image 2). The land surrounding the bridge consisted of rural farmsteads and grassy/forested areas (Image 4).

Archaeological potential was removed from certain sections of the study area because of previous disturbance from road construction. The disturbed areas include the roadway and adjacent ditches and utilities (Image 6), as well as residential driveways. The roadway has been artificially built up from the low floodplain and river valley, particularly where it approaches the bridge (Image 7-8). The remainder of the study area retains archaeological potential.

2.2 INVENTORY OF DOCUMENTATION RECORDS

The following represents all the documentation taken in the field relating to this project and is being retained by WSP Canada Inc.:

- 2 pages of field notes
- 31 digital photographs in JPG format
- GPS readings recorded during the property inspection

3 ANALYSIS AND CONCLUSIONS

3.1 ARCHAEOLOGICAL POTENTIAL

A number of factors are employed in determining archaeological potential. Features indicating archaeological potential can be found in **Appendix B.**

Criteria for Pre-Contact archaeological potential is focused on physiographic variables that include distance from the nearest source of water, the nature of the nearest source/body of water, distinguishing features in the landscape (e.g. ridges, knolls, eskers, wetlands), the types of soils found within the area of assessment and resource availability. Also considered in determining archaeological potential are known archaeological sites within or near the study area. Historic research provides the basis for determining historic archaeological potential. Historical maps, historic aerial imagery, and a property inspection of the project area assist in determining historic archaeological potential. Additionally, the proximity to historic transportation corridors such as roads, rail and water courses also affect the historic archaeological potential.

The background research identified archaeological potential for the study area based on the presence of the Conestogo River and associated floodplain/river valley. This archaeological potential is most applicable to Pre-Contact period, but also presents early historic archaeological potential. Late Historic archaeological potential is mainly derived from the historic road, the Elora Saugeen Road (now Wellington Road 7), which the Bosworth Bridge carries over the river. Although no historic structures appeared to be within the study area based on the historic maps, aerial imagery from 1954 places a structure partially within the study area at the southeast end. This structure is no longer present and the lands now appear to be fallow.

The land comprising the study area is not recently ploughed agricultural land. Therefore, a test pit survey will be the appropriate methodology for the Stage 2 Archaeological Assessment (Figure 7). Since a floodplain is present within the study area, deep test pits should be conducted to properly determine the presence of archaeological material that may be deeply buried below fluvial deposits.

3.2 CONCLUSION

The entire study area has archaeological potential based on the presence of the Conestogo River and associated valley/floodplain, the historic road, and nearby historic structure. However, archaeological potential is removed from the land disturbed by the construction of Wellington Road 7, which includes the paved roadway and adjacent ditches, as well as disturbance from rural property driveways. Based on the current conditions of the study area, a test pit survey is the appropriate field methodology for the Stage 2 Archaeological Assessment. Deep test pits should be excavated within the floodplain to clearly demonstrate the presence or absence of paleosols or deeply buried archaeological resources.

4 RECOMMENDATIONS

Archaeological activities were carried out in accordance with the *Standards and Guidelines for Consultant Archaeologists* (MHSTCI, 2011). This study involved a review of documents pertaining to the study area including historic maps, historic aerial imagery, local histories, archaeological literature, and a property inspection. The property inspection was conducted on November 17, 2020.

Archaeological recommendations have been made based on the background historic research, property inspection, and indicators of archaeological potential as outlined in the 2011 *Standards and Guidelines for Consultant Archaeologists*. Land that cannot be visually confirmed to have been previously disturbed retains archaeological potential and required further field studies. Based on the results of this study, **a Stage 2 Archaeological Assessment is required for those areas identified as retaining archaeological potential (Figure 7).**

The following recommendations for the Stage 2 Archaeological Assessment include:

- Where ploughing is not possible, the study area must be subject to test pit survey at 5 m intervals as per Section 2.1.2 of the *Standards and Guidelines for Consultant Archaeologists* (MHSTCI, 2011). These areas include manicured lawn, overgrown shrub, and the wooded areas.
- The agricultural field must be subject to pedestrian survey at 5 m intervals as per Section 2.1.1 (*Standards and Guidelines for Consultant Archaeologists,* 2011). Prior to pedestrian survey, the field must be ploughed and weathered to allow for ideal conditions for the identification of archaeological resources. Soil visibility must be at least 80% in order for pedestrian survey to proceed.
- Areas visually confirmed to have been previously disturbed no longer retain archaeological potential and no further work is required.
- The Conestogo River is identified as a Cultural Heritage River and therefore holds potential for underwater archaeological materials. An underwater archaeological survey and visual confirmation is required should any construction works impact the water.

If archaeological materials are encountered during construction, they may constitute a new site and are therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the material must cease work immediately and a provincially licensed consultant archaeologist must assess the material's cultural heritage value or interest in accordance with Section 48 (1) of the *Ontario Heritage Act*.

5 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the Standards and Guidelines for Consultant Archaeologists (2011a) 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 Heritage, Sport, Tourism and Culture Industries, a letter will be issued by the Ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

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

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

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

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7 IMAGES

Image 1: Wellington Road 7 (former Elora and Saugeen Road). Facing northwest.

Image 2: The Conestogo River and floodplain. Facing southwest.

Image 3: The Conestogo Rive and wooded area. Facing southeast.

Image 4: Overgrown shrub within the floodplain. Facing north.

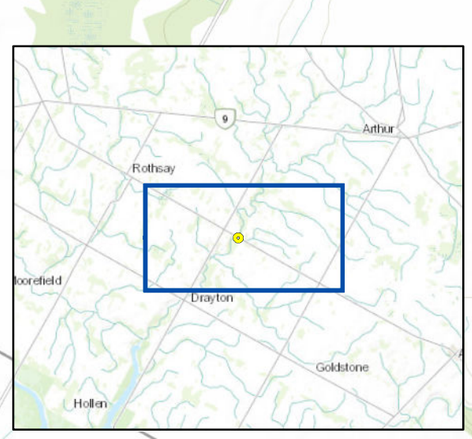
Image 5: Typical road right-of-way disturbance (note build up to bridge on the left). Facing northwest.

Image 6: Typical road right-of-way disturbance, adjacent ditches, and utilities. Facing southeast.

Image 7: Typical road right-of-way build up at Bosworth Bridge. Facing northwest.

Image 8: Typical road right-of-way build up at Bosworth Bridge. Facing west.

8 FIGURES



LEGEND

Study Area

TITLE: FIGURE 1: PROJECT LOCATION

PROJECT: BOSWORTH BRIDGE (B007028)

0 500 1,000 m

N

SCALE:	PROJECT NO:	DATE:
1:25,000	20M-01326-00	JANUARY 2021
DRAWN BY:	CLIENT:	
SRB	WELLINGTON COUNTY	

CREDITS:

Document Path: F:\GIS Datasets - Backend\20M-01326-00 Bosworth Bridge\XXX-XXX-XX Template\MapDocuments\Figure1_Project_Location.mxd

Service Layer Credit Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

wsp

LEGEND

Study Area

TITLE: FIGURE 2: STUDY AREA

SCALE:	PROJECT NO:	DATE:
1:2,000	20M-01326-00	JANUARY 2021
DRAWN BY:	CLIENT:	
SRB	WELLINGTON COUNTY	

PROJECT: BOSWORTH BRIDGE (B007028)

0 40 80 m

N

CREDITS: LAND INFORMATION ONTARIO

Document Path: F:\GIS Datasets - Backend\20M-01326-00 Bosworth Bridge\XXX-XXX-XX Template\MapDocuments\Figure2_Study_Area.mxd

Service Layer Credit

LEGEND

Study Area

TITLE: FIGURE 3: HISTORICAL MAPPING (1861)

SCALE: 1:10,000 | PROJECT NO: 20M-01326-00 | DATE: JANUARY 2021

DRAWN BY: SRB | CLIENT: WELLINGTON COUNTY

PROJECT: BOSWORTH BRIDGE (B007028)

CREDITS: C. LESLIE & C.J. WHEELOCK'S 1861 HISTORICAL COUNTY MAP OF WELLINGTON COUNTY

0 200 400 m

N

Document Path: F:\GIS Datasets - Backend\20M-01326-00 Bosworth Bridge\XXX-XXX-XX Template\MapDocuments\Figure3_Historic_Mapping_1861.mxd

Service Layer Credit

LEGEND

Study Area

TITLE: FIGURE 4: HISTORICAL MAPPING (1881)

SCALE: 1:10,000

PROJECT NO: 20M-01326-00

DATE: JANUARY 2021

DRAWN BY: SRB

CLIENT: WELLINGTON COUNTY

PROJECT: BOSWORTH BRIDGE (B007028)

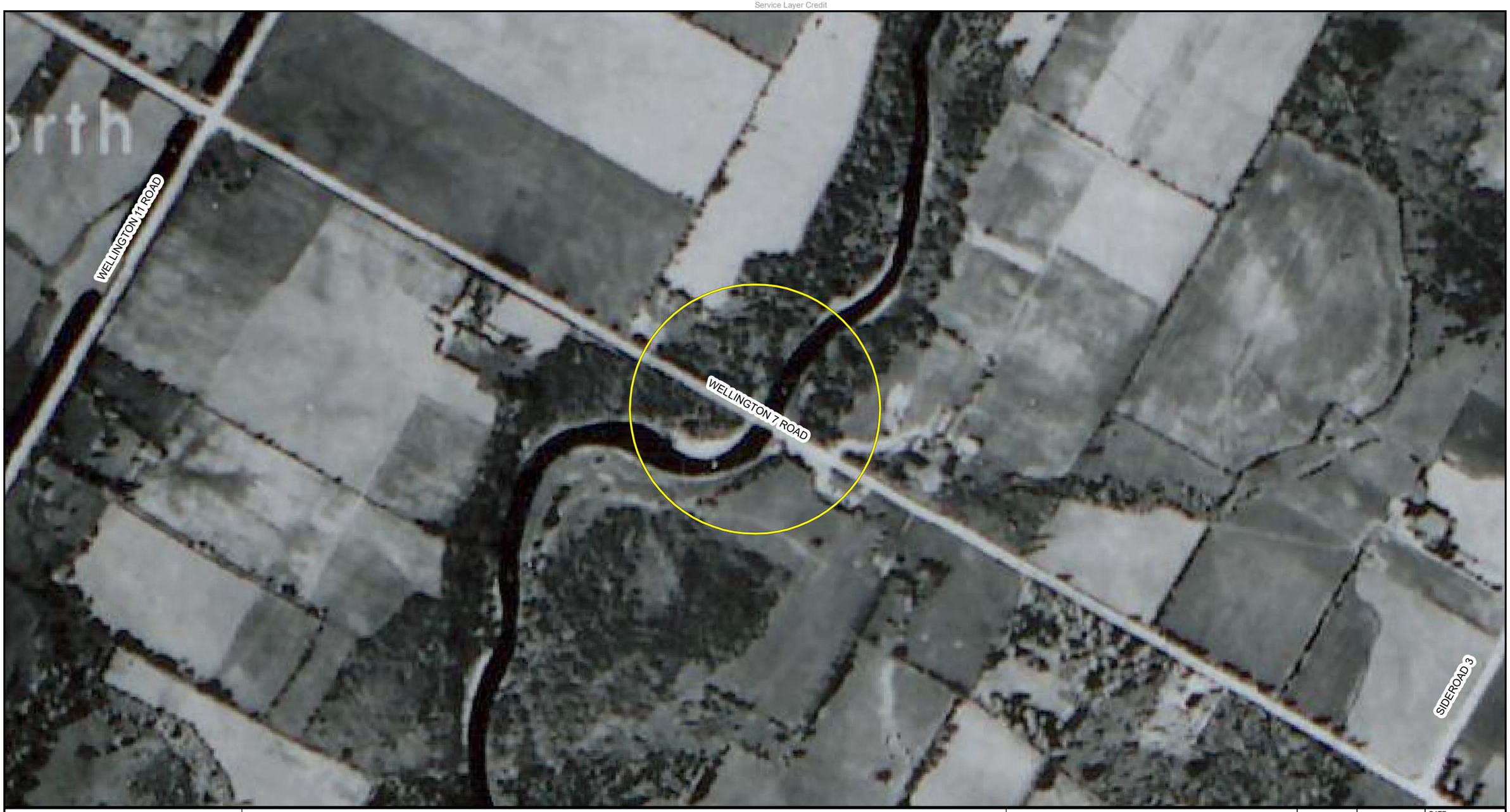
0 200 400 m

N

CREDITS: H. PARSELL & CO.'S ILLUSTRATED HISTORICAL ATLAS OF THE COUNTIES OF WATERLOO AND WELLINGTON, ONTARIO, 1881

Document Path: F:\GIS Datasets - Backend\20M-01326-00 Bosworth Bridge\XXX-XXX-XX Template\MapDocuments\Figure4_Historic_Mapping_1881.mxd

Service Layer Credit



wsp

LEGEND

Study Area

TITLE: FIGURE 5: AERIAL IMAGERY (1954)

SCALE:	PROJECT NO:	DATE:
1:5,000	20M-01326-00	JANUARY 2021
DRAWN BY: SRB	CLIENT: WELLINGTON COUNTY	

PROJECT: BOSWORTH BRIDGE (B007028)

0 120 240 m

N

CREDITS: 1954 AERIAL IMAGERY (437_803)

Document Path: F:\GIS Datasets - Backend\20M-01326-00 Bosworth Bridge\XXX-XXX-XX Template\MapDocuments\Figure5_Aerial_Imagery_1954.mxd

LEGEND

Study Area

PHYSIOGRAPHIC LANDFORM

DESCRIPTION

Till Plains (Drumlinized)

Spillways

TITLE: FIGURE 6: PHYSIOGRAPHIC LANDFORMS

SCALE: 1:10,000

PROJECT NO: 20M-01326-00

DATE: JANUARY 2021

DRAWN BY: SRB

CLIENT: WELLINGTON COUNTY

PROJECT: BOSWORTH BRIDGE (B007028)

0 200 400 m

N

CREDITS: PHYSIOGRAPHY OF SOUTHERN ONTARIO (CHAPMAN & PUTNAM, 2007)

Document Path: F:\GIS Datasets - Backend\20M-01326-00 Bosworth Bridge\XXX-XXX-XX Template\MapDocuments\Figure6_Physiography.mxd

Service Layer Credit Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

wsp

LEGEND

- Study Area
- Test Pit Survey at 5 m Intervals - Further Work Required
- Underwater Archaeological Potential - Further Work Required
- Disturbed - No Further Work Required
- Photograph Location

TITLE: FIGURE 7: ASSESSMENT RESULTS

PROJECT: BOSWORTH BRIDGE (B007028)

0 40 80 m

N

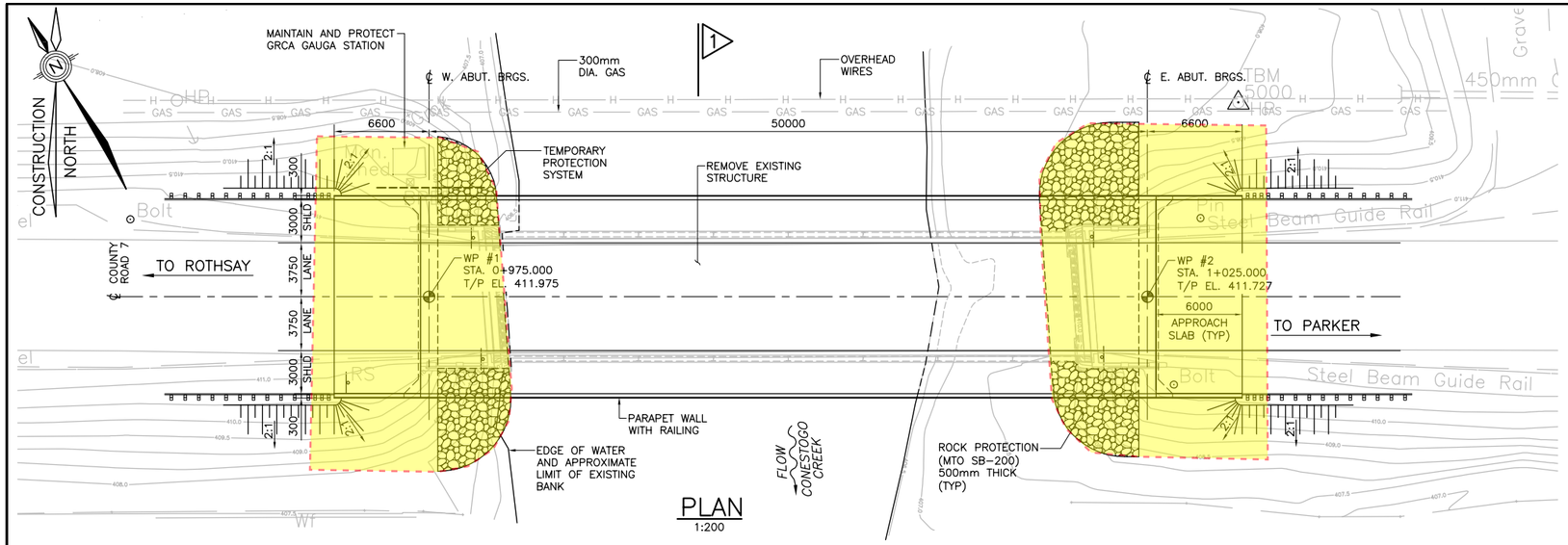
SCALE:	PROJECT NO:	DATE:
1:2,000	20M-01326-00	JANUARY 2021
DRAWN BY:	CLIENT:	
SRB	WELLINGTON COUNTY	

CREDITS:

Document Path: F:\GIS Datasets - Backend\20M-01326-00 Bosworth Bridge\XXX-XXX-XX Template\MapDocuments\Figure7_Results_new.mxd

APPENDIX

A DEVELOPMENT PLAN



PLAN
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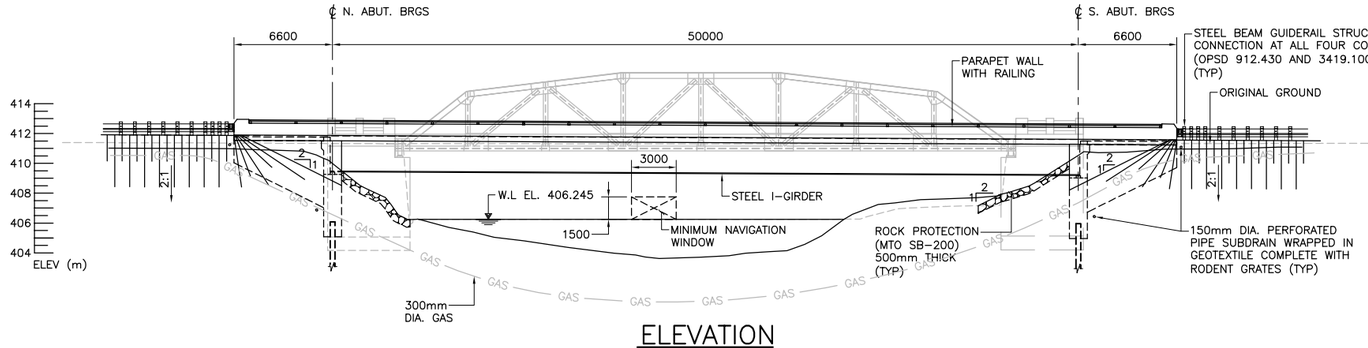

ELEVATION
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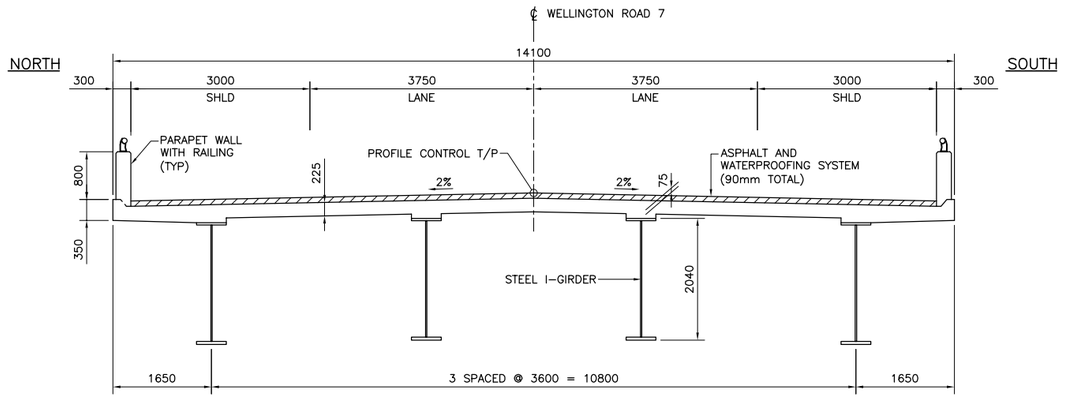
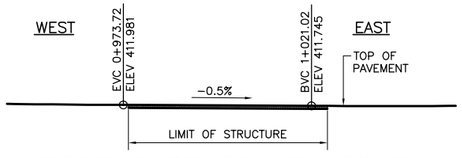


1 TYPICAL PROPOSED SECTION
1:50



PROFILE OF COUNTY RD 7
N.T.S.

WORKING POINT DATA				
LOCATION	STATION (m)	NORTHING (m)	EASTING (m)	ELEVATION (m)
WP #1	0+975.000	4847869.0899	529177.2803	411.975
WP #2	1+025.000	4847844.4685	529220.798	411.727

GENERAL NOTES:

DESIGN CODE:

CANADIAN HIGHWAY BRIDGE DESIGN CODE, CHBDC 2019 CAN/CSA S6-19
LIVE LOAD: CL-625-ONT

CLASS OF CONCRETE:

CLASS C-1 PER CSA 23.1

PRECAST GIRDERS	50MPa
ALL CONCRETE UNLESS OTHERWISE NOTED	30MPa

CLEAR COVER TO REINFORCING STEEL:

DECK	
TOP	70 ± 20 mm
BOTTOM	40 ± 10 mm
REMAINDER, UNLESS OTHERWISE NOTED	70 ± 20 mm

REINFORCING STEEL:

1. REINFORCING STEEL SHALL BE GRADE 400W.
2. UNLESS SHOWN OTHERWISE, TENSION LAP SPLICES FOR REINFORCING STEEL BARS SHALL BE CLASS B.
3. STAINLESS REINFORCING STEEL SHALL BE TYPE 316LN OR DUPLEX 2205 AND HAVE A MINIMUM YIELD STRENGTH OF 500MPa, UNLESS OTHERWISE SPECIFIED.
4. BAR MARKS WITH PREFIX 'S' DENOTE STAINLESS STEEL BARS.
5. GLASS FIBRE REINFORCED POLYMER REINFORCING BARS SHALL BE GRADE I, GRADE II OR GRADE III AS SPECIFIED IN THE CONTRACT DRAWINGS. THE NOMINAL DIAMETER, TENSILE MODULUS OF ELASTICITY AND GUARANTEED MINIMUM TENSILE STRENGTH SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.
6. BAR MARKS WITH THE PREFIX G DENOTE GRADE IIII GLASS FIBRE REINFORCED POLYMER BARS (E=60GPa).
7. BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STIRRUPS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL STANDARD DRAWING SS12-1, UNLESS INDICATED OTHERWISE.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL ESTABLISH THE BEARING SEAT ELEVATIONS BY DEDUCTING THE ACTUAL BEARING THICKNESSES FROM THE TOP OF BEARING ELEVATIONS. IF THE ACTUAL BEARING THICKNESSES ARE DIFFERENT FROM THOSE GIVEN IN THE DRAWINGS, THE CONTRACTOR SHALL ADJUST THE REINFORCING STEEL TO SUIT.
2. BACKFILL SHALL NOT BE PLACED BEHIND THE ABUTMENTS UNTIL THE DECK SLAB IS IN PLACE AND HAS REACHED 70% OF ITS DESIGN STRENGTH.
3. BACKFILL SHALL BE PLACED SIMULTANEOUSLY BEHIND BOTH ABUTMENTS KEEPING THE HEIGHT OF THE BACKFILL APPROXIMATELY THE SAME. AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 500 mm.
4. CONSTRUCT ABUTMENTS AND WINGWALLS TO THE BEARING SEAT ELEVATIONS. THE CONTRACTOR SHALL SUPPLY TEMPORARY LATERAL BRACING FOR THE ABUTMENTS. FORMWORK AND LATERAL BRACING SHALL NOT BE REMOVED UNTIL CONCRETE HAS REACHED 70% OF ITS SPECIFIED 28-DAY STRENGTH.
5. SUBDRAINS SHALL BE EXTENDED TO THE LIMIT OF GRADING FROM SLOPE TO SLOPE AND INSTALLED COMPLETE WITH RODENT GRATING (TYPICAL).
6. ROCK PROTECTION (MTO SB-200) TO BE PLACED TO A MINIMUM DEPTH OF 500mm AS SHOWN. SB-200 LAYER TO BE TOP DRESSED WITH A 100mm THICK LAYER OF TABLE A SUBSTRATE.

LIST OF DRAWINGS:

1. GENERAL ARRANGEMENT

LIST OF ABBREVIATIONS:

T/P – DENOTES TOP OF PAVEMENT
WL – DENOTES WATER LEVEL
WP – DENOTES WORKING POINT

APPLICABLE STANDARD DRAWINGS:

OPSD – 0219.130	HEAVY-DUTY SILT FENCE BARRIER
OPSD – 0219.180	STRAW BALE FLOW CHECK DAM
OPSD – 0219.240	DEWATERING TRAP
OPSD – 0219.260	TURBIDITY CURTAIN
OPSD – 0219.261	TURBIDITY CURTAIN, SEAM DETAIL
OPSD – 0912.430	GUIDE RAIL SYSTEM, STEEL BEAM STRUCTURE CONNECTION
OPSD – 3101.150	WALLS, ABUTMENT, BACKFILL MINIMUM GRANULAR REQUIREMENT
OPSD – 3102.100	WALLS, ABUTMENT, BACKFILL DRAIN
OPSD – 3190.100	WALLS, RETAINING AND ABUTMENT WALL DRAIN
OPSD – 3370.100	DECK, WATERPROOFING HOT APPLIED ASPHALT MEMBRANE WITH PROTECTION BOARD
OPSD – 3390.100	DECK DRIP CHANNEL
OPSD – 3419.100	BARRIERS AND RAILINGS STEEL GUIDE RAIL AND CHANNEL ANCHORAGE
OPSD – 3950.100	CONCRETE EXPANSION AND CONSTRUCTION JOINT ON STRUCTURE

METRIC
ALL DIMENSIONS SHOWN HERE ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

NO.	DESCRIPTION REVISIONS	DATE	INITIAL

wsp

SCALE	AS SHOWN	DESIGNED	SH
DATE	JANUARY, 2021	CHECKED	CM
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COUNTY OF WELLINGTON

REPLACEMENT OF BOSWORTH BRIDGE STRUCTURE NO.

GENERAL ARRANGMENT

PROJECT NO.

DRAWING NO.

CAD FILE LOCATION AND NAME: S:\2020\20M-01326-00\300\S20M-01326-00-300-0010GA.dwg
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DATE PLOTTED: 1/27/2021 12:55:13 PM BY: RAPISTAR

APPENDIX

B

FEATURES OF ARCHAEOLOGICAL POTENTIAL

APPENDIX

FEATURES INDICATING ARCHAEOLOGICAL POTENTIAL

The following are features or characteristics that indicate archaeological potential:

- Previously identified archaeological sites.
- Water sources:
  - Primary water sources (lakes, rivers, streams, creeks).
  - Secondary water sources (intermittent streams and creeks, springs, marshes, swamps).
  - Features indicating past water sources (e.g. glacial lake shorelines, relic river or stream channels, shorelines of drained lakes or marshes, cobble beaches).
  - 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, plateaux).
- Pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground.
- Distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases.
- 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).
- 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 early cemeteries.
- Early historical transportation routes (e.g. trails, passes, roads, railways, portage routes).
- Property listed on a municipal register or designated under the Ontario Heritage Act or that is federal, provincial or municipal historic landmark or site.
- Property that local histories or informants have identified with possible archaeological sites, historic events, activities, or occupations

Source

Ontario Ministry of Tourism, Culture and Sport

2011 Standards and Guidelines for Consultant Archaeologists

Section 1.3

APPENDIX

C MICHI SAAGIG HISTORIES

Michi Saagiig Historical/Background context:

The traditional homelands of the Michi Saagiig (Mississauga Anishinaabeg) encompass a vast area of what is now known as southern Ontario. The Michi Saagiig are known as "the people of the big river mouths" and were also known as the "Salmon People" who occupied and fished the north shore of Lake Ontario where the various tributaries emptied into the lake. Their territories extended north into and beyond the Kawarthas as winter hunting grounds on which they would break off into smaller social groups for the season, hunting and trapping on these lands, then returning to the lakeshore in spring for the summer months.

The Michi Saagiig were a highly mobile people, travelling vast distances to procure subsistence for their people. They were also known as the "Peacekeepers" among Indigenous nations. The Michi Saagiig homelands were located directly between two very powerful Confederacies: The Three Fires Confederacy to the north and the Haudenosaunee Confederacy to the south. The Michi Saagiig were the negotiators, the messengers, the diplomats, and they successfully mediated peace throughout this area of Ontario for countless generations.

Michi Saagiig oral histories speak to their people being in this area of Ontario for thousands of years. These stories recount the "Old Ones" who spoke an ancient Algonquian dialect. The histories explain that the current Ojibwa phonology is the 5th transformation of this language, demonstrating a linguistic connection that spans back into deep time. The Michi Saagiig of today are the descendants of the ancient peoples who lived in Ontario during the Archaic and Paleo-Indian periods. They are the original inhabitants of southern Ontario, and they are still here today.

The traditional territories of the Michi Saagiig span from Gananoque in the east, all along the north shore of Lake Ontario, west to the north shore of Lake Erie at Long Point. The territory spreads as far north as the tributaries that flow into these lakes, from Bancroft and north of the Haliburton highlands. This also includes all the tributaries that flow from the height of land north of Toronto like the Oak Ridges Moraine, and all of the rivers that flow into Lake Ontario (the Rideau, the Salmon, the Ganaraska, the Moira, the Trent, the Don, the Rouge, the Etobicoke, the Humber, and the Credit, as well as Wilmot and 16 Mile Creeks) through Burlington Bay and the Niagara region including the Welland and Niagara Rivers, and beyond. The western side of the Michi Saagiig Nation was located around the Grand River which was used as a portage route as the Niagara portage was too dangerous. The Michi Saagiig would portage from present-day Burlington to the Grand River and travel south to the open water on Lake Erie.

Michi Saagiig oral histories also speak to the occurrence of people coming into their territories sometime between 500-1000 A.D. seeking to establish villages and a corn growing economy – these newcomers included peoples that would later be known as the Huron-Wendat, Neutral, Petun/Tobacco Nations. The Michi Saagiig made Treaties with these newcomers and granted them permission to stay with the understanding that they were visitors in these lands. Wampum was made to record these contracts, ceremonies would have bound each nation to their respective responsibilities within the political relationship, and these contracts would have been renewed annually (see Gitiga Migizi and Kapyrka 2015). These visitors were extremely successful as their corn economy grew as well as their populations. However, it was understood by all nations involved that this area of Ontario were the homeland territories of the Michi Saagiig.

The Odawa Nation worked with the Michi Saagiig to meet with the Huron-Wendat, the Petun, and Neutral Nations to continue the amicable political and economic relationship that existed – a symbiotic relationship that was mainly policed and enforced by the Odawa people.

Problems arose for the Michi Saagiig in the 1600s when the European way of life was introduced into southern Ontario. Also, around the same time, the Haudenosaunee were given firearms by the colonial governments in New York and Albany which ultimately made an expansion possible for them into Michi Saagiig territories. There began skirmishes with the various nations living in Ontario at the time. The Haudenosaunee engaged in fighting with the Huron-Wendat and between that and the onslaught of European diseases, the Iroquoian speaking peoples in Ontario were decimated.

The onset of colonial settlement and missionary involvement severely disrupted the original relationships between these Indigenous nations. Disease and warfare had a devastating impact upon the Indigenous peoples of Ontario, especially the large sedentary villages, which mostly included Iroquoian speaking peoples. The Michi Saagiig were largely able to avoid the devastation caused by these processes by retreating to their wintering grounds to the north, essentially waiting for the smoke to clear.

Michi Saagiig Elder Gitiga Migizi (2017) recounts:
"We weren't affected as much as the larger villages because we learned to paddle away for several years until everything settled down. And we came back and tried to bury the bones of the Huron but it was overwhelming, it was all over, there were bones all over – that is our story.

There is a misnomer here, that this area of Ontario is not our traditional territory and that we came in here after the Huron-Wendat left or were defeated, but that is not true. That is a big misconception of our history that needs to be corrected. We are the traditional people, we are the ones that signed treaties with the Crown. We are recognized as the ones who signed these treaties and we are the ones to be dealt with officially in any matters concerning territory in southern Ontario.

We had peacemakers go to the Haudenosaunee and live amongst them in order to change their ways. We had also diplomatically dealt with some of the strong chiefs to the north and tried to make peace as much as possible. So we are very important in terms of keeping the balance of relationships in harmony.

Some of the old leaders recognized that it became increasingly difficult to keep the peace after the Europeans introduced guns. But we still continued to meet, and we still continued to have some wampum, which doesn't mean we negated our territory or gave up our territory – we did not do that. We still consider ourselves a sovereign nation despite legal challenges against that. We still view ourselves as a nation and the government must negotiate from that basis."

Often times, southern Ontario is described as being "vacant" after the dispersal of the Huron-Wendat peoples in 1649 (who fled east to Quebec and south to the United States). This is misleading as these territories remained the homelands of the Michi Saagiig Nation.

The Michi Saagiig participated in eighteen treaties from 1781 to 1923 to allow the growing number of European settlers to establish in Ontario. Pressures from increased settlement forced the Michi Saagiig to slowly move into small family groups around the present day communities: Curve Lake First Nation, Hiawatha First Nation, Alderville First Nation, Scugog Island First Nation, New Credit First Nation, and Mississauga First Nation.

The Michi Saagiig have been in Ontario for thousands of years, and they remain here to this day.

This historical context was prepared by Gitiga Migizi, a respected Elder and Knowledge Keeper of the Michi Saagiig Nation.

Publication reference:

Gitiga Migizi and Julie Kapyrka

2015 Before, During, and After: Mississauga Presence in the Kawarthas. In *Peterborough Archaeology,* Dirk Verhulst, editor, pp.127-136. Peterborough, Ontario: Peterborough Chapter of the Ontario Archaeological Society.

Remembering Original Relationships: Mississauga and Wendat

By Julie Kapyrka

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I work closely with a respected and renowned historian, Knowledge Keeper, and Elder of the Michi Saagiig (Mississauga). We spend time recording and transcribing the stories and teachings he was told by his elders – some of whom were born in the 1880s – who were taught and told these stories by their elders, and so on. This has been one of the greatest privileges of my life. There is a depth and breadth of primary source history within knowledges that are shared through the recounting and reciting of teachings and stories that have been passed on through hundreds of generations. There is a wealth of information about the past that is present in people, within the histories they hold of their families, clans, and nations. This type of oral history can effectively add another piece to the ever mysterious puzzle of reconstructing the past in Ontario. When added to archaeological evidence, historical accounts, and interpretive narratives, oral histories offer another perspective that enhances and enriches understandings of the past.

The current interpretive narrative in Ontario archaeology is very exclusive; it has created divisions, boundaries, and walls, and in effect promotes isolationism. For example, the common practice of labelling and assigning ethnicity to archaeological sites based on ceramic typologies and/or other kinds of artifacts. This practice is problematic and there exists a healthy debate in the literature as to whether this is in fact even possible. Jordan and Shennan (2003:71) argue that: "We simply cannot assume that the distribution and long-term reproduction of very similar artefact types/traditions indicates any corresponding association with particular language groups whether at the language, stock or superstock level of taxonomic classification." In their study, Jordan and Shennan (2003) employ a long-term and regional framework to analyse the transmission of languages and craft traditions amongst Californian Indigenous groups. What they found was: 1) "that there is no close relationship—bar a loosely defined and nonexclusive sub-regional one—between language, material culture and any form of ethnic identity; and 2) 'archaeological cultures', even as invented units, do appear to be much larger than the distinct socio-linguistic communities who reproduce these broader 'communities of culture' at a much more extensive scale" (2003:72).

Similarly, Hart and Engelbrecht (2012:335) analysed "Iroquoian" pottery rims and collars and argue that: "Ethnic identity and the archaeological record are governed by different processes and cannot be uncritically equated." These authors postulate that although ethnic labels are commonly applied to ceramic typologies, closer examination exposes the problematic nature of this practice – as Iroquoian style pottery is found, for example, on sites in traditional Algonquian territories in eastern New York and Ontario (2012:335).

Hart and Engelbrecht (2012) point out that "historical Iroquoian ethnic groups are clearly not distinguishable on the basis of this analysis. Rather, prehistoric potters within different historical geographic ethnic territories shared at least some collar/wedge decorative motifs"

(345). Hart and Engelbrecht surmise that "this in turn suggests that the projection of historical northern Iroquoian ethnicity into the more distant past is questionable; the historical ethnic landscape evolved from less regionally structured landscapes" (2012:345).

Assigning ethnicity to an archaeological site is undeniably a colonial style of looking at, interpreting and ultimately controlling the past. There currently exists no mechanism to vet or evaluate the practice in hundreds of Ontario archaeological reports where individual archaeologists assign ethnicity, whether or not these designations are correct or provable. As the authors above point out, trying to do so can be unwarranted and erroneous. This is a very dangerous situation for the material cultural heritage of Indigenous Peoples, ancestral sites, sacred landscapes, and burials.

Many sites that have been labelled as belonging to one particular nation of people are not always agreed upon collectively by archaeologists who themselves have identified features that speak to the indication and presence of other peoples and nations (see Fox and Garrad 2004). Some archaeologists have in fact retracted their original theoretical positions regarding certain sites and are now revisiting their own original interpretations (i.e. OAS 2016 Symposium saw many archaeologists seriously reconsidering their own postulations from the 1990 publication *Archaeology of Southern Ontario to A.D. 1650*). It is puzzling that MacNeish's (1952) study of Iroquoian pottery types, and J.V Wright's (1966) Ontario Iroquois Tradition are still widely accepted as interpretive templates for ceramics and time horizons and continue to encourage assumptions of ethnic affinity. These studies need to be updated as their very lexicon prompts ethnic misnomers. Reliance on such works, although ground breaking in their time, is no longer adequate to describe the social interaction and relationships between Indigenous nations hundreds of years ago. For example, the current archaeological lexicon and typological structures still speak to the 'Early, Middle and Late Ontario Iroquois Tradition,' even in light of the archaeological evidence of diverse other nations that existed and interacted upon this land. This type of wording is also not useful when describing what are, in some cases, sites that were inhabited by Anishinaabek Peoples or a mixture of Anishinaabek and other peoples. The Late Ontario Iroquois Tradition as laid out by Wright (1966) includes an interpretation of the interaction of 'Pickering' and 'Glen Meyer' "peoples" in remarkably precise time periods and the data on which this is based consists of no more than three late Pickering sites (Whallon 1968), hardly quantifiable within scientific terms.

Personally, I don't think many archaeologists would disagree that MacNeish's and Wright's works, although valuable in terms of the history of archaeological thought, are becoming more and more obsolete as archaeological information increases and theory evolves. They were never meant to be immutable definitive studies but rather working interpretations of data available at that time.

We can no longer solely rely on just archaeological theory and method to interpret the past. Archaeologists must incorporate other lines of evidence as well as other ontological perspectives into the interpretive framework that is Ontario archaeology. New questions, developed from expanded contexts must be posed.

What does archaeology tell us about relationships between the peoples that lived in pre-contact Ontario when interpreted alongside oral histories and tradition? If we put the two together and work within the "space between" (Kapyrka 2016), what can be remembered through the stories and what can be deciphered from the ground makes a powerful connection between the past and the present and a more complete framework from which to interpret history – it provides a more inclusive baseline as a starting point. If we enter into that "space between" the two knowledge traditions and acknowledge the theory inherent in both approaches we are provided with a larger, richer picture of what the past may have been like. What this kind of interpretative methodology does is add an ontological perspective from the descendants of those who created the archaeological record – an aspect that Western science has been slow to explore. Ultimately it is about remembering the original relationships present in Ontario before the European invasion.

To remind us of the way things used to be (or may have been) I refer to the understandings of two respected Knowledge Keepers: Georges Sioui, Huron-Wendat, and Gitiga Migizi, Mississauga Anishinaabe. Georges Sioui, is a Huron-Wendat academic and Coordinator of the Aboriginal Studies Program and Associate Professor Emeritus, Department of Classics and Religious Studies at the University of Ottawa. He was also the president of the Institute of Indigenous Governance in Vancouver, British Columbia. Gitiga Migizi is a Mississauga Anishinaabe historian and Knowledge Keeper from Curve Lake First Nation. He was raised by his grandparents and spent most of his childhood on the land with the "Old Ones." He is Director of Studies for the Indigenous Studies PhD program at Trent University and a ceremonial leader for his community.

In his text *Huron-Wendat: The Heritage of the Circle* (1999), Georges Sioui speaks to the strong relationship that developed between the Wendats and the "Algonkians". He states that the Wendats "would find spiritual regeneration and equilibrium through close union with peoples possessing a distinctly different civilization. This type of relation is epitomized by the Wendats' partnership with the Algonkians" (1999:63). Sioui refers to a "fusion of ideologies" being at the core of the strength and uniqueness of Indigenous cultures in pre-contact times (63).

Quoting Bruce Trigger (1990:5), Sioui provides insight into the demographics of ancient Ontario: "There is archaeological evidence of contacts between the Wendat country and the north beginning in early times [possibly around A.D 1000; Trigger 1987: 112-3], and it appears that a symbiotic relationship had developed between the inhabitants of these two regions" (1999:63).

Mississauga Anishinaabe Elder Gitiga Migizi's oral accounts substantiate Sioui's and Trigger's versions of this symbiosis between the Mississauga and the Wendat: "Prior to European settlement of the Kawarthas, there already existed treaty agreements made between my people, the original inhabitants of this area, and outsiders seeking to settle within Mississauga homelands" (Gitiga Migizi and Kapyrka 2015:133). Gitiga Migizi explains that his Elders told him of a people long ago that came into southern Ontario and that "there would have been a Wampum made to address the understanding that the Mississauga had with the Huron when

they came to ask to grow corn in our homelands" (Gitiga Migizi and Kapyrka 2015:134). The Mississauga were known as the peace keepers, the negotiators, and the messengers; they were positioned on the land between two great confederacies: the Three Fires Confederacy to the north and the Haudenosaunee Confederacy to the south and they maintained peaceful relations between many powerful nations (Gitiga Migizi, personal communication). The Mississauga not only accommodated and allowed the Huron-Wendat to settle in their homelands but also facilitated the European settlement of the Kawarthas – as was their responsibility to maintain the balance of peace between nations through their expert skills of diplomacy.

It appears from the accounts of Georges Sioui, Gitiga Migizi, and Bruce Trigger, that the Huron-Wendat had entered into a very close and politically important relationship with certain Anishinaabeg nations. This relationship was so close that it extended past the living realm even into death:

> In 1615, Champlain apparently witnessed a Feast of the Dead. In his Voyages he describes the special council, the preparations for the feast, and finally the feast itself, fully grasping its profound social significance. Through feasts, dances, and "the ceremonies that take place," he noted, the Wendats "form new friendship(s), saying that the bones of their relations and friends are to be put all together, making it a symbol that just as these are collected into one place, so also should they be united in friendships and harmony as relatives and friends, without being able to be sundered" (Champlain 1922-36: 4: 331-2 in Sioui 1999:147).

This tells us that ossuaries, although often attributed to only the Huron-Wendat, contained the burials of many different nations of people, and no doubt included Anishinaabeg bodies. Ossuaries can be considered shared ancestral burial grounds of multiple Indigenous peoples. They are indeed evidence of the original pre-contact relationships between nations.

The original relationship between the Huron-Wendat and the Mississauga Anishinaabeg is also represented by the location and boundaries of what became known as Wendake. Trigger points out that this interdependence, as well as the friendly relations that consequently prevailed between them explains why the Wendats chose to settle in the southeast corner of Georgian Bay; Wendat country was located on the very edge of the Canadian Shield and at the south end of the only along-shore canoe trail leading to the north (Trigger 1990:5 quoted in Sioui 1999:65).

Eventually Wendake evolved to become its own unique space upon the land, a new place of sorts, and this is evident in the language translation of the word: "The most likely meanings for the word wendake are "the island apart," "the separate country," "the peninsula country," "the country with a separate language" (Sioui 1999:90). This speaks to a very specific area upon the Ontario landscape, delineated by boundaries. Interestingly, the actual size of Wendake is much smaller than what seems to be the present perception among Ontario archaeologists. Huron-Wendat scholar Georges Sioui elaborates:

> The country of Wendake was not large. Its twenty to twenty-five Wendat towns, villages, and hamlets were concentrated in a territory measuring about fifty-six kilometres from east to west and thirty-two kilometres from north to south, covering about 544 square kilometres, bordered by Matchedash Bay in the north, Nottawasaga Bay in the west, and Lake Simcoe in the east. On its southern border, the alluvial basin of the Nottawasaga River at that time formed a large swampy zone cutting Wendake off from the territory further south and reinforcing its island nature (1999:90).

This not only paints a much different picture of the territorial limits of Wendake than the current zeitgeist surrounding the presence and location of the Huron-Wendat in Ontario, but it also highlights the importance of integrating Indigenous oral histories and Indigenous languages into archaeological interpretations of the past.

The social and political landscape in pre-contact Ontario was much more complex and integrated than is currently understood. Current archaeological interpretations are grounded in a Euro-centric ontological and epistemological framework. As the discussion in this paper has revealed this is highly problematic and can result in a "lost in translation" scenario in which understandings of the relationships between various Indigenous nations in Ontario's past are skewed by virtue of an exclusive methodology. Hart and Engelbrecht (2012), and Jordan and Shennan (2003) have demonstrated that the designation of ethnicity to sites by archaeologists is clearly flawed. This has huge implications in today's business of archaeology and even bigger implications for Indigenous communities who are in the process of rebuilding and reclaiming their cultural legacies in the lands we now call Ontario. Archaeologists would do well to acknowledge and apply Indigenous oral histories and teachings to the extrapolation of the past in this province. Only then may we arrive at a deeper more enriched understanding of the original relationships between the First Peoples of Ontario.

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