

Appendix E

Stage I Archaeological Assessment



1.0 PROJECT REPORT COVER PAGE

Licensee Information:

Licensee:	Michael B. Henry CD BA
Archaeology Licence:	P058
Contact Information:	Lakelands District Office 380 Talbot Street, P.O. Box 29 Port McNicoll, ON L0K 1R0 Phone: (705) 534-1546 Fax: (705) 534-7855 Email: mhenry@amick.ca www.amick.ca

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Project Name:	Guelph Line (Regional Road 1) Improvements
Project Location:	Guelph Line (Regional Road 1), QEW to 100m South of McDowell Road, Including Intersecting Roadways/QEW Ramp Improvements, City of Burlington

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2.0 EXECUTIVE SUMMARY

This report describes the results of the 2012 Stage 1 Archaeological Background Study of the proposed Guelph Line (Regional Road 1) Improvements, QEW to 100m South of McDowell Road, Including Intersecting Roadways/QEW Ramp Improvements in the City of Burlington, conducted by AMICK Consultants Limited. This study was conducted under Archaeological Consulting License #P058 issued to Michael Henry by the Minister of Tourism and Culture for the Province of Ontario. This assessment was undertaken as a requirement under the Environmental Assessment Act (RSO 1990b) in order to support a Municipal Class EA. All work was conducted in conformity with Ontario Ministry of Tourism and Culture (MTC) Standards and Guidelines for Consultant Archaeologists (MTC 2011), the Ontario Heritage Act (RSO 1990a), and the Ontario Heritage Amendment Act (SO 2005).

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1 Archaeological Background Study of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological work on 12 September 2012. A detailed photoreconnaissance of the study area was conducted on 14 September 2012. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Tourism, Culture and Sport (MTCS) on behalf of the government and citizens of Ontario.

As a result of the Stage 1 Background Research, the project area potentially impacted by the proposed undertaking has been identified as an area of archaeological potential. Stage 2 assessment of the study area is recommended in the form of high intensity test pit survey at a 5m interval between transects.

As a result of the study area inspection the areas of disturbed paved roadways, steep slopes, and concrete sidewalks, were found to be areas of no archaeological potential; consequently no further archaeological assessment of these areas is required.

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4.0 PROJECT PERSONNEL

Consulting Archaeologist

Michael Henry (MTC Professional Archaeologist Licence #P058)

Project Archaeologist

Michael Henry (MTC Professional Archaeologist Licence #P058)

Project Administration

Melissa Milne

Field Assistants

Marilyn Cornies (MTC Professional Archaeologist Licence #P038)

Report Preparation

Michael Henry (MTC Professional Archaeologist Licence #P058)

Draughting

Phil Rice (MTC Avocational Archaeologist Licence #A304)

Photography

Marilyn Cornies (MTC Professional Archaeologist Licence #P038)

5.0 PROJECT BACKGROUND

5.1 DEVELOPMENT CONTEXT

This report describes the results of the 2012 Stage 1 Archaeological Background Study of the proposed Guelph Line (Regional Road 1) Improvements, QEW to 100m South of McDowell Road, Including Intersecting Roadways/QEW Ramp Improvements in the City of Burlington, conducted by AMICK Consultants Limited. This study was conducted under Archaeological Consulting License #P058 issued to Michael Henry by the Minister of Tourism and Culture for the Province of Ontario. This assessment was undertaken as a requirement under the Environmental Assessment Act (RSO 1990b) in order to support a Municipal Class EA. All work was conducted in conformity with Ontario Ministry of Tourism and Culture (MTC) Standards and Guidelines for Consultant Archaeologists (MTC 2011), the Ontario Heritage Act (RSO 1990a), and the Ontario Heritage Amendment Act (SO 2005).

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5.2 HISTORICAL CONTEXT

As part of the present study, background research was conducted in order to determine the archaeological potential of the proposed project area.

“A Stage 1 background study provides the consulting archaeologist and Ministry report reviewer with information about the known and potential cultural heritage resources within a particular study area, prior to the start of the field assessment.” (OMCzCR 1993)

The evaluation of potential is further elaborated Section 1.3 of the Standards and Guidelines for Consultant Archaeologist (2011) prepared by the Ontario Ministry of Tourism and Culture:

“The Stage 1 background study (and, where undertaken, property inspection) leads to an evaluation of the property’s archaeological potential. If the evaluation indicates that there is archaeological potential anywhere on the property, the next step is a Stage 2 assessment.” (MTC 2011: 17)

Features or characteristics that indicate archaeological potential where found anywhere on the property include:

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“ - 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 (lakes, rivers, streams, creeks)
 - secondary water sources (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)
 - 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. 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)
 - 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. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks.
- 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 that is a federal, provincial or municipal historic landmark or site
- property that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations”

(MTC 2011: 17-18)

The evaluation of potential does not indicate that sites are present within areas affected by proposed development. Evaluation of potential considers the possibility for as yet undocumented sites to be found in areas that have not been subject to systematic archaeological investigation in the past. Potential for archaeological resources is used to determine if physical assessment of a property or portions of a property is required.

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“Archaeological resources not previously documented may also be present in the affected area. If the alternative areas being considered, or the preferred alternative selected, exhibit either high or medium potential for the discovery of archaeological remains an archaeological assessment will be required.”

(MCC & MOE 1992: 6-7)

“The Stage 1 background study (and, where undertaken, property inspection) leads to an evaluation of the property’s archaeological potential. If the evaluation indicates that there is archaeological potential anywhere on the property, the next step is a Stage 2 assessment.”

(MTC 2011: 17)

In addition, the collected data is also used to determine if any archaeological resources had been formerly documented within or in close proximity to the study area and if these same resources might be subject to impacts from the proposed undertaking. This data was also collected in order to establish the significance of any resources that might be encountered during the conduct of the present study. The requisite archaeological sites data was collected from the Programs and Services Branch, Culture Programs Unit, MTCS and the corporate research library of AMICK Consultants Limited

5.2.1 CURRENT CONDITIONS

The present use of the study area is as an existing urban road network with associated road allowances containing sidewalks, curbs, artificial contours, and services. A plan of the study area is included within this report as Figure 3. The following description of the project is taken from the Regional Municipality of Halton Request for Proposal (P-511-12):

“Halton Region requires a Class Environmental Assessment (Class EA) Study to satisfactorily complete all Class EA requirements for the anticipated road improvements in the study area. The need for this Environmental Assessment and any resulting road improvements has been identified as a result of expected near future capacity deficiencies related to the development of properties owned by Sun Life Financial in the vicinity of the study corridor.

“At this time, the Region anticipates that the required road improvements for Guelph Line in the study area could include all or a combination of the following:

- 1) Widening the northbound (NB) and southbound (SB) approaches of Guelph Line at Harvester Road/Queensway Dr. to accommodate separate SB double left turn lanes on Guelph Line;*
- 2) Widening the westbound (WB) approach of Harvester Road and the Eastbound (EB) approach of Queensway Drive at Guelph Line to accommodate an additional WB thru lane and a separate WB right turn lane;*
- 3) Widening the Guelph Line NB and SB approaches at the South Service Road (SSR) to accommodate a SB left turn lane to the SSR;*

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- 4) SSR geometry modifications at Guelph Line;
- 5) QEW W-N/S, QEW N-E and QEW S-E Ramp geometry modifications; and
- 6) Traffic signal modifications associated with all or part of the above."

(R.M. of Halton 2012: 12)

5.2.2 GENERAL HISTORICAL OUTLINE

The County of Halton was named after Major William Mathew Halton, who was the Secretary to the Upper Canada provincial Lieutenant-Governor Sir Francis Gore in 1805. United Empire Loyalists were the first settlers in the area and arrived in the early 1780s. The United Empire Loyalists chose to settle in the southern part of the county and immigrants from the British Isles settled the northern part. The area was officially designated a county in 1816 and was originally part of Gore District and consisted of 4 townships; Esquesing, Nassageweya, Nelson and Trafalgar Township. The Township of Esquesing was open for settlement in 1819. ("Halton County, Ontario").

An overview of the history of the community of Burlington is quoted from John Lawrence Reynolds' article entitled "Nowhere Else But Here" – A Very Brief History of Burlington included in A New Approach to Conserving Burlington's Heritage (Heritage Burlington 2012: 12-14):

"Joseph Brant, Chief of the Six Nations peoples and a man who counted King George IV among his admirers, was more than culturally aware and politically astute. He was also, in the opinion of many residents of Burlington, exceptionally perceptive.

"As a reward for his loyalty to the British Crown during the upheavals of the American Revolution, Chief Brant was awarded a substantial grant of land. He claimed 1400 hectares (3450 acres) bordering Lake Ontario, stretching from the middle of the Beach Strip separating the lake from Burlington Bay all the way to what is now Spencer Smith Park at the base of Brant Street.

"It was an excellent choice. Along with access to the lake and its year-round moderating effects on the climate, the land included some of the richest agricultural soil in this part of Canada. In fact, over the 200+ years since, the sandy earth's productivity shaped the farming community that grew into the modern city of Burlington.

"When the oak and maple forests were cut and much of the timber shipped to Britain as lumber to build sailing ships, the land was planted with wheat and oats. Later, when grain production moved west to Canada's prairies, local farmers shifted to fruit and vegetable production. Soon apple orchards began dotting the land bordering Brant Street, now Burlington's main thoroughfare. To the west, in Aldershot, the soil was especially favourable for growing melons. Through the late 19th Century, the label "Aldershot melons" was as familiar and highly regarded as "PEI potatoes" and "B.C. apples" are today.

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“Before the land could be cleared and made agriculturally productive, of course, it needed the spirit and determination of settlers, many drawn to the area by the same qualities that attracted Chief Joseph Brant.

“Thanks to generous incentives it didn't take much money to become a land-owner, but it took a lot of energy and dedication. Early settlers could claim ownership to 100 acres of land if they agreed to “clear and fence five acres, build a dwelling house 16 feet by 20 feet, and construct one-half of a road in front of each lot,” all within two years. This, of course, would be achieved only with the brute strength of horses, oxen and the settlers’ own muscle, an intimidating goal.

“But it worked. After the first settlers established productive farms, others came to provide necessary services. When a man named Alex Brown built a wharf bearing his name on the shores of Burlington Bay, ships began arriving to convey those rich and sweet Aldershot melons to York (now Toronto), Montreal, and beyond. And when mills to grind grain and cattle feedstock sprouted on the banks of nearby creeks and rivers, new communities sprang up around them. These villages, with names like Dakota, Tansley, Zimmerman and Lowville, were vibrant and lively. Sadly, with the decline of the mills and the drift to urbanization, they and a dozen others faded away, leaving only roadside historical plaques to mark their existence.

“The settlement adjacent to Joseph Brant’s homestead, however, survived, and through the balance of the 19th and into the 20th centuries it prospered. In 1873, its 800 or so residents petitioned to have their community incorporated as a village, changing its original name of Wellington Square to Burlington.

“Where did that name come from? No one seems to know for certain. Since before the War of 1812, the western tip of Lake Ontario had been known as Burlington Bay, and the low promontory overlooking the bay had been labelled Burlington Heights, their designations just as obscure and mysterious. Obviously these sites influenced the new name of the village, but beyond that, all is speculation.

“The name and its source were secondary to the community’s location and the optimistic attitude of its citizens. They ensured its growth and success, and through the balance of the century Burlington served as the hub of local agricultural activity and its associated industries.

“Lake Ontario continued to play a key role in the town’s development. Even after the provincial government began constructing roads along the lakeshore, the lake remained a primary route for commerce. Through the late 1800s, tall-masted sailing ships could be found anchored at piers along the shoreline, from Aldershot to Port Nelson at the foot of Guelph Line. Hefty stevedores handled cargo, lugging machinery and supplies off the ships and hauling locally-grown fruits and vegetables onto them.

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“The picture remained peaceful and bucolic for decades, changing only to accommodate the arrival of railways, motor cars, electric power, and other modern advances. Until the 1950s Burlington remained something of an island of peace and prosperity, separate from the heavy industrialization of neighbouring Hamilton and the solemn legislative focus of Toronto.

“In the years after World War Two, however, both cities began expanding their suburban limits, transforming Burlington’s orchards and farmlands into some of the most valuable residential acreage in the province. The Queen Elizabeth Way made access to Toronto relatively easy in modern automobiles, supplemented by the launch of GO rail service in the 1980s, and the opening of the Burlington Skyway in 1959 made Hamilton similarly accessible.

“Citizens of both metropolitan areas recognized many of the qualities that had appealed to Chief Brant all those years earlier: Burlington is a great place to live, work, and enjoy life. Lake Ontario, the Niagara Escarpment, and the proximity to both major urban attractions and pastoral open country all contribute to a lifestyle that many Canadians admire and perhaps envy from time to time.

“Like other North American communities, Burlington faces a wide range of challenges to be met and addressed in the future. Based on the history of its people and the constant appeal of its location, most of its citizens feel confident that the challenges will be met and solved.

“Because they honestly prefer to be ‘nowhere else but here’.”

Figure 2 illustrates the location of the study area and environs as of 1877. Guelph Line forms the division line between Lot 15 to the west and Lot 16 to the east on Concession 3 of Nelson Township. The portion of the study area to the west of Guelph Line in Lot 15 is shown to belong to J. C. Aikman; one structure and an orchard are shown to be within this portion of the study area. This large field stone residence is still standing at 2477 Glenwood School Drive. This structure is known historically as “Locust Lodge”. It was built in 1838 and is designated under the Ontario Heritage Act (By-Law 85-1993) and is listed in the Directory of Heritage Properties in Burlington maintained by Heritage Burlington.

“Locust Lodge, built circa 1838 by James Willson, is one of the oldest farm houses in Burlington. Constructed of local limestone, the parging in an ashlar pattern of its coursed rubble walls is a distinguishing feature which indicates the unusual prosperity of the farm's early owners. The symmetrical three-bay Georgian front facade is virtually intact.”

(Directory of Heritage Properties in Burlington)

On the east side of Guelph Line within Lot 16 the property is shown to be in possession of Peter Fisher. This portion of the study area contains a schoolhouse situated at the intersection of Guelph Line with the former rural road where the QEW is now. Accordingly,

it has been determined that there is potential for archaeological deposits related to early Euro-Canadian settlement within the study area.

5.2.3 SUMMARY OF HISTORICAL CONTEXT

The brief overview of documentary evidence readily available indicates that the study area is situated within an area that was close to the historic transportation routes and in an area well populated during the nineteenth century and as such has potential for sites relating to early Euro-Canadian settlement in the region. Background research indicates the property has potential for significant archaeological resources of Native origins based on proximity to potable sources of water in the past.

5.3 ARCHAEOLOGICAL CONTEXT

TABLE 1 CULTURAL CHRONOLOGY FOR SOUTH-CENTRAL ONTARIO

Period		Group	Date Range	Traits
Palaeo-Indian		Fluted Point	9500-8500 B.C.	Big game hunters.
		Hi-Lo	8500-7500 B.C.	Small nomadic groups.
Archaic	Early		8000-6000 B.C	Hunter-gatherers.
	Middle	Laurentian	6000-200 B.C.	Territorial divisions arise.
	Late	Lamoka	2500-1700 B.C.	Ground stone tools appear.
		Broadpoint	1800-1400 B.C.	
		Crawford Knoll	1500-500 B.C.	
		Glacial Kame	c.a. 1000 B.C.	Elaborate burial practices.
Woodland	Early	Meadowood	1000-400 B.C.	Introduction of pottery.
		Red Ochre	1000-500 B.C.	
	Middle	Point Peninsula	400 B.C.-500 A.D.	Long distance trade.
		Princess Point	500-800 A.D.	Horticulture.
	Late	Pickering	800-1300 A.D.	Villages and agriculture.
		Uren	1300-1350 A.D.	Larger villages.
		Middleport	1300-1400 A.D.	
		Huron	1400-1650 A.D.	Warfare
Historic	Early	Odawa, Ojibwa	1700-1875 A.D.	Social displacement.
	Late	Euro-Canadian	1785 A.D.+	European settlement.

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The Archaeological Sites Database administered by the Ministry of Tourism, Culture and Sport (MTCS) indicates that there are three (3) previously documented sites within 1 kilometre of the study area. However, it must be noted that this is based on the assumption of the accuracy of information compiled from numerous researchers using different methodologies over many years. AMICK Consultants Limited assumes no responsibility for the accuracy of site descriptions, interpretations such as cultural affiliation, or location information derived from the Archaeological Sites Database administered by MTCS. In addition, it must also be noted that a lack of formerly documented sites does not indicate that there are no sites present as the documentation of any archaeological site is contingent upon prior research having been conducted within the study area.

Background research shows that 1 previous study has taken place within 50m of the study area. No archaeological resources were newly identified through this study. For further information see:

Archeoworks (2009). *Stage 1 Archaeological Assessment of: Proposed Improvements to the Queen Elizabeth Way From 250 meters West of Brant Street to 250 meters East of Burloak Drive, City of Burlington. Regional Municipality of Halton, Ontario.*
Newmarket: On File With the Ministry of Tourism, Culture and Sport.

5.3.1 FIRST NATIONS OCCUPATION

A summary of registered and/or known archaeological sites within a 1-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by MTCS. As a result it was determined that three (3) archaeological sites relating directly to First Nations habitation/activity had been formally documented within the immediate vicinity of the study area. These sites are briefly described below:

TABLE 2 FIRST NATIONS SITES WITHIN 1KM

Site Name	Borden #	Site Type	Cultural Affiliation
Fisher	AiGw-79	Campsite	Archaic
Old Fisher	AiGw-80	Campsite	Archaic
Cockshutt	AiGw-81	Campsite	Archaic, Woodland

The distance to water criteria used to establish potential for archaeological sites suggests potential for First Nations occupation and land use in the area in the past. This consideration also establishes archaeological potential within the study area.

5.3.2 EURO-CANADIAN SETTLEMENT

A summary of registered and/or known archaeological sites within a 1-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by MTCS. As a result it was determined that no (0) archaeological sites relating directly to Euro-

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Canadian habitation/activity had been formally documented within the immediate vicinity of the study area.

5.3.3 LOCATION AND CURRENT CONDITIONS

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- 2) Widening the westbound (WB) approach of Harvester Road and the Eastbound (EB) approach of Queensway Drive at Guelph Line to accommodate an additional WB thru lane and a separate WB right turn lane;*
- 3) Widening the Guelph Line NB and SB approaches at the South Service Road (SSR) to accommodate a SB left turn lane to the SSR;*
- 4) SSR geometry modifications at Guelph Line;*
- 5) QEW W-N/S, QEW N-E and QEW S-E Ramp geometry modifications; and*
- 6) Traffic signal modifications associated with all or part of the above.”*

(R.M. of Halton 2012: 12)

5.3.4 PHYSIOGRAPHIC REGION

The study area is located in the Iroquois Plain which is located on the lowland bordering Lake Ontario. This area used to be under Lake Iroquois and the old shore lines can easily be identified based on unique features such as cliffs, beaches, bars and boulder pavements. Due to the fact that this physiographic region was under a lake, the conditions of the soil and landscape vary greatly from land smoothed by wave action to cliffs. Soil types range from a sandy base to a clay base, with poor drainage in some areas. The Iroquois Plains consists of the area from the Niagara River to the Trent River and around the western end of Lake Ontario. (Chapman and Putnam, 1984: 190-196).

5.3.5 SURFACE WATER

Sources of potable water, access to waterborne transportation routes, and resources associated with watersheds are each considered, both individually and collectively to be the highest criteria for determination of the potential of any location to support extended human activity, land use, or occupation. Accordingly, proximity to water is regarded as the primary indicator of archaeological site potential. The Standards and Guidelines for Consultant Archaeologists stipulates that undisturbed lands within 300 metres of a water source are considered to have archaeological potential (MTC 2011: 21).

An unnamed stream course, shown on the Illustrated Historical Atlas of the County of Halton, Ont. (Walker & Miles 1877) was once located along the east edge of the study area flowing north to south.

5.3.6 CURRENT PROPERTY CONDITIONS CONTEXT

Current characteristics encountered within an archaeological research study area determine if physical assessment of specific portions of the study area will be necessary and in what manner a Stage 2 Property Assessment should be conducted, if necessary. Conventional assessment methodologies include pedestrian survey on ploughable lands and test pit methodology within areas that cannot be ploughed. For the purpose of determining where physical assessment is necessary and feasible, general categories of current landscape conditions have been established as archaeological conventions. These include:

5.3.6.1 BUILDINGS AND STRUCTURAL FOOTPRINTS

A building, in archaeological terms, is a structure that exists currently or has existed in the past in a given location. The footprint of a building is the area of the building formed by the perimeter of the foundation. Although the interior area of building foundations would often be subject to physical assessment when the foundation may represent a potentially significant historic archaeological site, the footprints of existing structures are not typically assessed. Existing structures commonly encountered during archaeological assessments are often residential-associated buildings (houses, garages, sheds), and/or component buildings of farm complexes (barns, silos, greenhouses). In many cases, even though the disturbance to the

land may be relatively shallow and archaeological resources may be situated below the disturbed layer (e.g. a concrete garage pad), there is no practical means of assessing the area beneath the disturbed layer. However, if there were evidence to suggest that there are likely archaeological resources situated beneath the disturbance, alternative methodologies may be recommended to study such areas.

The study area contains no buildings or structural footprints.

5.3.6.2 DISTURBANCE

Areas that have been subjected to extensive and deep land alteration that has severely damaged the integrity of archaeological resources are known as land disturbances. Examples of land disturbances are areas of “past quarrying, major landscaping, recent built and industrial uses, sewage and infrastructure development, etc.” (MCL 2005: 15), as well as driveways made of either gravel or concrete, in-ground pools, and wells or cisterns. Utility lines are conduits that provide services such as water, natural gas, hydro, communications, sewage, and others. Areas containing below ground utilities are considered areas of disturbance, and are excluded from Stage 2 Physical Assessment. Disturbed areas are excluded from Stage 2 Physical Assessment due to no or low archaeological potential or because they are not assessable using conventional methodology.

The present use of the study area is as an existing urban paved road network with associated road allowances containing asphalt driveways into private properties, concrete sidewalks and curbs. While such areas may not entirely remove archaeological potential and archaeological resources may be capped beneath such landscape features, there is no practical means of assessing any such areas.

5.3.6.3 LOW-LYING AND WET AREAS

Landscape features that are covered by permanently wet areas, such as marshes, swamps, or bodies of water like streams or lakes, are known as low-lying and wet areas. Low-lying and wet areas are excluded from Stage 2 Physical Assessment due to inaccessibility.

The study area does not contain low-lying and wet areas.

5.3.6.4 STEEP SLOPE

Landscape which slopes at a greater than ($>$) 20 degree change in elevation, is known as steep slope. Areas of steep slope are considered uninhabitable, and are excluded from Stage 2 Physical Assessment.

The study area does contain areas of steep slope. Slope areas are associated with the embankments supporting the Guelph Line overpass of the QEW as well as the ramps associated with the QEW, Queensway Drive and South Service Road. In addition to being

areas of steep slope, these areas are also composed entirely of artificial landforms and have no archaeological potential.

5.3.6.5 WOODED AREAS

Areas of the property that cannot be ploughed, such as natural forest or woodlot, are known as wooded areas. These wooded areas qualify for Stage 2 Physical Assessment, and are required to be assessed using test pit survey methodology.

The study area contains no wooded area.

5.3.6.6 PLOUGHABLE AGRICULTURAL LANDS

Areas of current or former agricultural lands that have been ploughed in the past are considered ploughable agricultural lands. Ploughing these lands regularly moves the soil around, which brings covered artifacts to the surface, easily identifiable during visual inspection. Furthermore, by allowing the ploughed area to weather sufficiently through rainfall washing soil off any artifacts, the visibility of artifacts at the surface of recently worked field areas increases significantly. Pedestrian survey of ploughed agricultural lands is the preferred method of physical assessment because of the greater potential for finding evidence of archaeological resources if present.

The study area contains no ploughable lands.

5.3.6.7 LAWN, PASTURE, MEADOW

Landscape features consisting of former agricultural land covered in low growth, such as lawns, pastures, meadows, shrubbery, and immature trees. These are areas that may be considered too small to warrant ploughing, (i.e. less than one hectare in area), such as yard areas surrounding existing structures, and land-locked open areas that are technically workable by a plough but inaccessible to agricultural machinery. These areas may also include open area within urban contexts that do not allow agricultural tillage within municipal or city limits or the use of urban roadways by agricultural machinery. These areas are required to be assessed using test pit survey methodology.

Portions of the study area which can be subject to physical assessment consist of those portions of the various road allowances adjacent to the existing paved roadways and sidewalks that are and maintained as grass covered areas. These areas are narrow, linear corridors and contain numerous obstructions to ploughing such as trees, shrubs, signage, below ground services, etc.

5.3.7 SUMMARY

Background research indicates the vicinity of the study area has potential for archaeological resources of Native origins based on proximity to a source of potable water in the past. Background research also suggests potential for archaeological resources of Euro-Canadian origins based on proximity to a historic roadway.

Archaeological potential does not indicate that there are necessarily sites present, but that environmental and historical factors suggest that there may be as yet undocumented archaeological sites within lands that have not been subject to systematic archaeological research in the past.

6.0 PROPERTY INSPECTION

A property inspection or field reconnaissance is not required as part of a Stage 1 Background Study unless there is reason to believe that portions of the study area may be excluded from physical assessment on the basis of the conditions of the property or portions thereof.

This report confirms that the entirety of the study area was subject to visual inspection, and that the fieldwork was conducted according to the archaeological fieldwork standards and guidelines, including weather and lighting conditions. The property reconnaissance was completed in ideal conditions under partially sunny skies on 14 September 2012. The temperature at the time of the reconnaissance was 20°C under partially sunny skies. The locations from which photographs were taken and the directions toward which the camera was aimed for each photograph are illustrated in Figures 3 & 4 of this report. Upon completion of the field reconnaissance of the study area, it was determined that the grass covered areas potentially impacted by the proposed undertaking, except those areas of steep slope, would require Stage 2 archaeological assessment.

6.1 PHOTO RECONNAISSANCE

A detailed examination and photo documentation was carried out on the study area in order to document the existing conditions of the study area to facilitate Stage 2 assessment. All areas of the study area were visually inspected and photographed. The locations from which photographs were taken and the directions toward which the camera was aimed for each photograph are illustrated in Figures 3 & 4 of this report.

6.2 FIELD WORK WEATHER CONDITIONS

This report confirms that the entirety of the study area was subject to visual inspection, and that the fieldwork was conducted according to the archaeological fieldwork standards and guidelines, including weather and lighting conditions. The property reconnaissance was completed in ideal conditions under overcast skies on 14 September 2012. The temperature at the time of the reconnaissance was 20°C under partially sunny skies. Weather conditions were appropriate for the conduct of archaeological fieldwork.

6.3 ARCHAEOLOGICAL FIELDWORK DOCUMENTATION

The documentation produced during the field investigation conducted in support of this report includes: one sketch map, one page of photo log, one page of field notes, and 23 digital photographs.

7.0 ANALYSIS AND CONCLUSIONS

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1 Archaeological Background Study of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological work on 12 September 2011. A detailed photoreconnaissance of the study area was conducted on 14 September 2012. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Tourism, Culture and Sport (MTC) on behalf of the government and citizens of Ontario.

Section 7.7.3 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 132) outlines the requirements of the Analysis and Conclusions component of a Stage 1 Background Study.

- 1) *“Identify and describe areas of archaeological potential within the project area.*
- 2) *Identify and describe areas that have been subject to extensive and deep land alterations. Describe the nature of alterations (e.g., development or other activity) that have severely damaged the integrity of archaeological resources and have removed archaeological potential.”*

7.1 CHARACTERISTICS INDICATING ARCHAEOLOGICAL POTENTIAL

Section 1.3.1 of the Standards and Guidelines for Consultant Archaeologists specifies the property characteristics that indicate archaeological potential (MTC 2011: 17-18). Factors that indicate archaeological potential are features of the local landscape and environment that may have attracted people to either occupy the land or to conduct activities within the study area. One or more of these characteristics found to apply to a study area would necessitate a Stage 2 Property Assessment to determine if archaeological resources are present. These characteristics are listed below together with considerations derived from the conduct of this study.

- 1) *Previously Identified Archaeological Sites*
Previously documented archaeological sites related to First Nations activity and occupations have been documented in the vicinity of the study area.
- 2) *Water Sources*

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Primary water sources are describes as including lakes, rivers streams and creeks. Close proximity to primary water sources (300 metres) indicates that people had access to readily available sources of potable water and routes of waterborne trade and communication should the study area have been used or occupied in the past.

There are no identified primary water sources within 300 metres of the study area.

Secondary water sources are described as including intermittent streams and creeks, springs, marshes, and swamps. Close proximity (300 metres) to secondary water sources indicates that people had access to readily available sources of potable water, at least on a seasonal basis, and in some cases seasonal access to routes of waterborne trade and communication should the study area have been used or occupied in the past.

There is one identified secondary water sources within 300 metres of the study area.

3) Features Indicating Past Water Sources

Features indicating past water resources are described as including glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, and cobble beaches. Close proximity (300 metres) to features indicating past water sources indicates that people had access to readily available sources of potable water, at least on a seasonal basis, and in some cases seasonal access to routes of waterborne trade and communication should the study area have been used or occupied in the past.

The secondary water source noted above is documented on historic mapping.

4) Accessible or Inaccessible Shoreline

This form of landscape feature would include high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.

There are no shorelines within 300 metres of the study area.

5) Elevated Topography

Features of elevated topography that indicate archaeological potential include eskers, drumlins, large knolls, and plateaux.

There are no identified features of elevated topography within the study area.

6) Pockets of Well-drained Sandy Soil

Pockets of sandy soil are considered to be especially important near areas of heavy soil or rocky ground.

The soil throughout the study area is dark brown sand.

7) *Distinctive Land Formations*

These are landscape features 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.

There are no identified distinctive land formations within the study area.

8) *Resource Areas*

Resource areas that indicate archaeological potential include food or medicinal plants (e.g., migratory routes, spawning areas, and prairie), scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert) and resources of importance to early Euro-Canadian industry (e.g., logging, prospecting, and mining).

There are no identified resource areas within the study area.

9) *Areas of Early Euro-Canadian Settlement*

These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, and farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks.

The study area is situated within an area settled in 1806.

10) *Early Historical Transportation Routes*

This includes evidence of trails, passes, roads, railways, portage routes.

The study area is situated adjacent to early settlement roads that appears on the Historic Atlas Map of 1877.

11) *Heritage Property*

Property listed on a municipal register or designated under the *Ontario Heritage Act* or is a federal, provincial or municipal historic landmark or site.

“Locust Lodge” situated at 2477 Glenwood School Drive is situated within the study area. This structure was built in 1838 and is designated under the Ontario Heritage Act and is listed in the Directory of Heritage Properties in Burlington maintained by Heritage Burlington.

12) *Documented Historical or Archaeological Sites*

This includes property that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations. These are properties which have not necessarily been formally recognized or for which there is additional

evidence identifying possible archaeological resources associated with historic properties in addition to the rationale for formal recognition.

There are no documented heritage features, or historic sites, or archaeological sites within the study area in addition to those previously addressed under the above headings.

7.2 CHARACTERISTICS INDICATING REMOVAL OF ARCHAEOLOGICAL POTENTIAL

Section 1.3.2 of the Standards and Guidelines for Consultant Archaeologists specifies the property characteristics which indicate no archaeological potential or for which archaeological potential has been removed (MTC 2011: 18-19). These characteristics are listed below together with considerations derived from the conduct of this study.

The introduction of Section 1.3.2 (MTC 2011: 18) notes that *“Archaeological potential can be determined not to be present for either the entire property or a part(s) of it when the area under consideration has been subject 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:”*

1) Quarrying

There is no evidence to suggest that quarrying operations were ever carried out within the study area.

2) Major Landscaping Involving Grading Below Topsoil

Unless there is evidence to suggest the presence of buried archaeological deposits, such deeply disturbed areas are considered to have lost their archaeological potential. Properties that do not have a long history of Euro-Canadian occupation can have archaeological potential removed through extensive landscape alterations that penetrate below the topsoil layer. This is because most archaeological sites originate at grade with relatively shallow associated excavations into the soil. First Nations sites and early historic sites are vulnerable to extensive damage and complete removal due to landscape modification activities. In urban contexts where a lengthy history of occupation has occurred, properties may have deeply buried archaeological deposits covered over and sealed through redevelopment activities that do not include the deep excavation of the entire property for subsequent uses. Buildings are often erected directly over older foundations preserving archaeological deposits associated with the earlier occupation.

Major landscaping operations involving grading below topsoil were likely carried out within the study area in select areas. The construction of the QEW, Queensway Drive, South Service Road, Harvester Road, Glenwood School Drive and Guelph Line undoubtedly involved some degree of grading activity below topsoil. However, these road surfaces are also capped with aggregate and asphalt and therefore cannot be assessed. The degree of grading and depth of disturbance within the road

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allowances adjacent these existing roads that are presently covered with grass is unknown.

3) *Building Footprints*

Typically, the construction of buildings involves the deep excavation of foundations, footings and cellars that often obliterate archaeological deposits situated close to the surface.

There are no buildings within the study area.

4) *Sewage and Infrastructure Development*

Installation of sewer lines and other below ground services associated with infrastructure development often involves deep excavation that can remove archaeological potential.

There are below ground services within the study area.

“Activities such as agricultural cultivation, gardening, minor grading and landscaping do not necessarily affect archaeological potential.”

(MTC 2011: 18)

“Archaeological potential is not removed where there is documented potential for deeply buried intact archaeological resources beneath land alterations, or where it cannot be clearly demonstrated through background research and property inspection that there has been complete and intensive disturbance of an area. Where complete disturbance cannot be demonstrated in Stage 1, it will be necessary to undertake Stage 2 assessment.”

(MTC 2011: 18)

Table 3 below summarizes the evaluation criteria of the Ministry of Tourism and Culture together with the results of the Stage 1 Background Study for the proposed undertaking. Based on the criteria, the study area is deemed to have archaeological potential on the basis of proximity to water, proximity of registered archaeological sites, the location of historic buildings within the study area according to historic mapping, the presence of a designated building under the Ontario Heritage Act (RSO 1990), the presence of sandy soils and the location of early historic settlement roads adjacent to the study area.

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TABLE 3 EVALUATION OF ARCHAEOLOGICAL POTENTIAL

FEATURE OF ARCHAEOLOGICAL POTENTIAL		YES	NO	N/A	COMMENT
1	Known archaeological sites within 300m	Y			If Yes, potential determined
PHYSICAL FEATURES					
2	Is there water on or near the property?	Y			If Yes, what kind of water?
2a	Primary water source within 300 m. (lakeshore, river, large creek, etc.)		N		If Yes, potential determined
2b	Secondary water source within 300 m. (stream, spring, marsh, swamp, etc.)	Y			If Yes, potential determined
2c	Past water source within 300 m. (beach ridge, river bed, relic creek, etc.)	Y			If Yes, potential determined
2d	Accessible or Inaccessible shoreline within 300 m. (high bluffs, marsh, swamp, sand bar, etc.)		N		If Yes, potential determined
3	Elevated topography (knolls, drumlins, eskers, plateaus, etc.)		N		If Yes, and Yes for any of 4-9, potential determined
4	Pockets of sandy soil in a clay or rocky area	Y			If Yes and Yes for any of 3, 5-9, potential determined
5	Distinctive land formations (mounds, caverns, waterfalls, peninsulas, etc.)		N		If Yes and Yes for any of 3-4, 6-9, potential determined
HISTORIC/PREHISTORIC USE FEATURES					
6	Associated with food or scarce resource harvest areas (traditional fishing locations, agricultural/berry extraction areas, etc.)		N		If Yes, and Yes for any of 3-5, 7-9, potential determined.
7	Early Euro-Canadian settlement area within 300 m.	Y			If Yes, and Yes for any of 3-6, 8-9, potential determined
8	Historic Transportation route within 100 m. (historic road, trail, portage, rail corridors, etc.)	Y			If Yes, and Yes for any 3-7 or 9, potential determined
9	Contains property designated and/or listed under the Ontario Heritage Act (municipal heritage committee, municipal register, etc.)	Y			If Yes and, Yes to any of 3-8, potential determined
APPLICATION-SPECIFIC INFORMATION					
10	Local knowledge (local heritage organizations, First Nations, etc.)		N		If Yes, potential determined
11	Recent disturbance not including agricultural cultivation (post-1960-confirmed extensive and intensive including industrial sites, aggregate areas, etc.)		N		If Yes, no potential or low potential in affected part (s) of the study area.

If **YES** to any of 1, 2a-c, or 10 Archaeological Potential is **confirmed**

If **YES** to 2 or more of 3-9, Archaeological Potential is **confirmed**

If **YES** to 11 or No to 1-10 Low Archaeological Potential is **confirmed** for at least a portion of the study area.

7.3 STAGE 1 RESULTS

As a result of the Stage 1 Background Study it was determined that the study area has archaeological potential on the basis of proximity to water, the proximity of registered archaeological sites, the location of historic buildings within the study area according to historic mapping, the presence of a designated building under the Ontario Heritage Act (RSO 1990), the presence of sandy soils and the location of early historic settlement roads adjacent to the study area.

8.0 RECOMMENDATIONS

8.1 STAGE 1 RECOMMENDATIONS

Under Section 7.7.4 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 133) the recommendations to be made as a result of a Stage 1 Background Study are described.

- 1) *Make recommendations regarding the potential for the property, as follows:*
 - a. *if some or all of the property has archaeological potential, identify areas recommended for further assessment (Stage 2) and areas not recommended for further assessment. Any exemptions from further assessment must be consistent with the archaeological fieldwork standards and guidelines.*
 - b. *if no part of the property has archaeological potential, recommend that the property does not require further archaeological assessment.*
- 2) *Recommend appropriate Stage 2 assessment strategies.*

The study area has been identified as an area of archaeological potential.

As a result of the Stage 1 Background Research, the project area potentially impacted by the proposed undertaking has been identified as an area of archaeological potential. Stage 2 assessment of the study area is recommended in the form of high intensity test pit survey at a 5m interval between transects.

9.0 ADVICE ON COMPLIANCE WITH LEGISLATION

While not part of the archaeological record, this report must include the following standard advisory statements for the benefit of the proponent and the approval authority in the land use planning and development process:

- a. This report is submitted to the Minister of Tourism and Culture 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 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 and Culture, 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 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 archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.*
- d. The Cemeteries Act, R.S.O. 1990, c. C.4 and the Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.*
- 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 licence.*

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11.0 MAPS



Figure 1 Location of the Study Area
(Google Maps 2012)

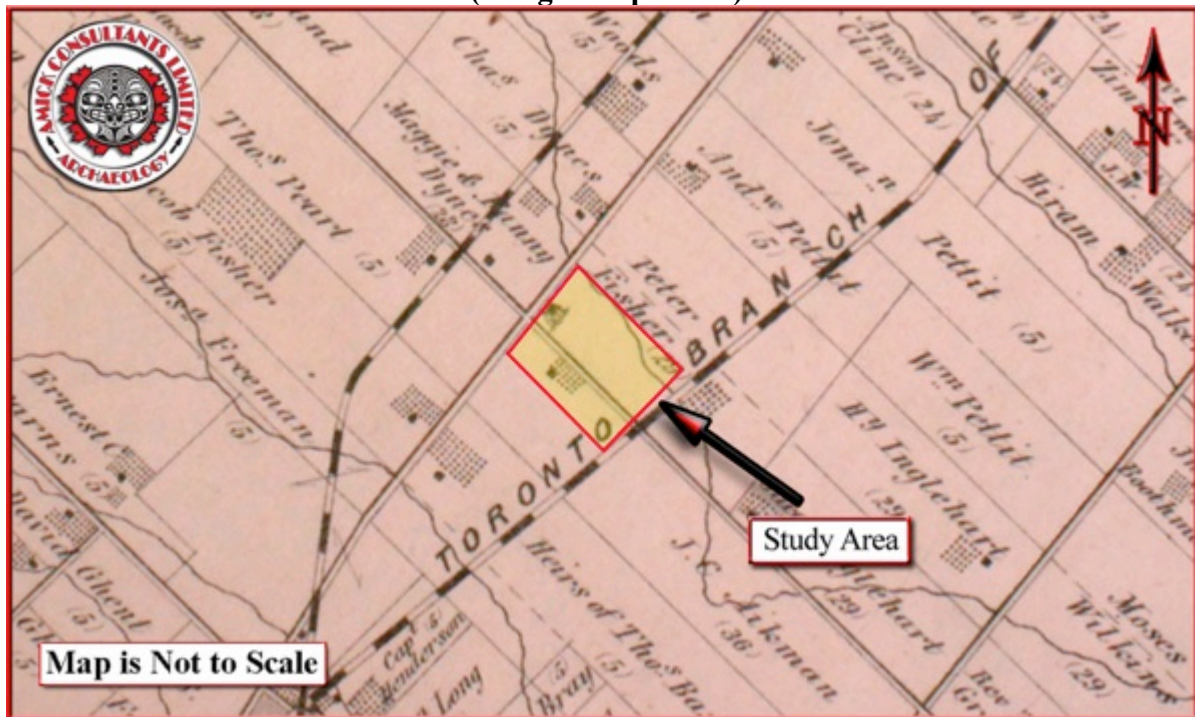


Figure 2 Historic Atlas Map for Township of Nelson
(Walker & Miles 1877)

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Figure 3 Aerial Image of the Study Area (Google Maps 2012)

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Figure 4 Plan of the Study Area (City of Burlington 2012)

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12.0 IMAGES

	
<p>Plate 1 View South along East side of Guelph Line</p>	<p>Plate 2 View North along East side of Guelph Line</p>
	
<p>Plate 3 View South along East side of Guelph Line from Harvester Road</p>	<p>Plate 4 View East along South side of Harvester Road from Guelph Line</p>
	
<p>Plate 5 View East along North side of Harvester Road from Guelph Line</p>	<p>Plate 6 View North along East side of Guelph Line from Harvester Road</p>

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Plate 7 View South to South Service Road at the East Side of Guelph Line



Plate 8 East Ramp to Eastbound QEW from East side of Guelph Line



Plate 9 West Ramp to Eastbound QEW on West side of Guelph Line



Plate 10 QEW Eastbound Off-ramp at the West Side of Guelph Line



Plate 11 View South on West Side of Guelph Line from QEW Off-ramp



Plate 12 View North on West Side of Guelph Line from Queensway Drive

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**Plate 13 West along the North side of
Queensway Drive from Guelph Line**



**Plate 14 View of “Locust Lodge” from
the South**



**Plate 15 East along Queensway Drive
from Glenwood School Drive**



**Plate 16 West along Queensway Drive
from Guelph Line**



**Plate 17 View South, West Side of
Guelph Line from Queensway Drive**



**Plate 18 View South on West Side of
Guelph Line**