Highway 5 / Grindstone Creek Bridge Utility Relocation Class EA & Conceptual Design,
City of Hamilton (Waterdown), Ontario
(Part Lots 6 & 7, Concession 3, geographic East Flamborough Township, Wentworth County, Hamilton-Wentworth R.M.)

Stage 1 Archaeological Background Study
Final Report

FOR:
Class EA

Water & Wastewater Planning
Intrastructure Planning & Systems Design Section
Hamilton Water Division, Public Works Dept.
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October 28, 2015

MTCS Archaeological File #.: **P042-0438-2015**
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HIGHWAY 5 GRINDSTONE CREEK BRIDGE UTILITY RELOCATION CLASS EA AND CONCEPTUAL DESIGN HAMILTON (WATERDOWN), ONTARIO

STAGE 1 ARCHAEOLOGICAL BACKGROUND STUDY Final Report

EXECUTIVE SUMMARY

Historic Horizon Inc. (HHI) was retained by the City of Hamilton to undertake Stage 1: Archaeological Background Research for the Grindstone Creek Bridge Utility Relocation project. The Study Area is approximately 300 metres by 390 metres in the community of Waterdown, centred on the Dundas Street (Highway 5) bridge over Grindstone Creek. It includes Part of Lots 6 and 7, Concession 3, in the geographic Township of East Flamborough, County of Wentworth, Town of Waterdown, now the City of Hamilton, Regional Municipality of Hamilton-Wentworth (***Figures 1-2***). The bridge allows Highway 5 to cross both Grindstone Creek and a C.P.R. railway line. The areas affected by the planning for utility relocation concern the bridge itself, the land beneath it, and all lands within about 150m of the bridge that may be impacted by trenching to re-locate services.

The following Stage 1 report has been prepared by Historic Horizon Inc. for review by the Ministry of Tourism, Culture and Sport (MTCS) and the City of Hamilton. This report documents the findings and recommendations of the Stage 1 background study. The Stage 1 archaeological assessment has been carried out as part of the requirements for a Class EA for the bridge work. A site examination was carried out on August 13 and 24, 2015. The ravine landscape and urban lands around the bridge were examined and photographed (***Appendix B***).

The study area is within the historic urban core of the town of Waterdown, on parts of Lots 6 & 7, Concession 3, East Flamborough Twp. Initially agricultural settlement, urbanization began quickly in the early 19th Century, as Grindstone Creek was utilized to power a number of early mills and industries. A number of 19th century buildings remain in the study area, and a portion of the community of Waterdown, west of the creek, has been incorporated into a Heritage Conservation District. Archaeological potential in the area is related to its proximity to Grindstone Creek and the Niagara Escarpment, and its location in an early industrial settlement along an early roadway.

As a result, this report recommends the following:

1. The study area is deemed to have intermittent archaeological potential in part of the creek ravine, around remaining 19th century buildings and under older parking areas. These areas are identified in ***Figure 17*** in green shading. Stage 2 archaeological assessment is recommended for these portions of the study area prior to any subsurface impacts.

2. The Union Cemetery lies within the study area. No construction activity must be allowed to

impact any portion of the cemetery.

All work was carried out under the project management of Heather Henderson and the field direction of Jacqueline Fisher under Ministry of Tourism, Culture and Sport professional archaeological licence project number P042-0438-2015, issued to Jacqueline Fisher under the Ontario Heritage Act (RSO 2005), and in accordance with the Ministry's *2011 Standards & Guidelines for Consultant Archaeologists*. Documentation related to the archaeological background study will be curated by Historic Horizon Inc. until such a time that arrangements for ultimate transfer to the Crown in right of Ontario, or other public institution, can be made to the satisfaction of the Ministry of Tourism, Culture and Sport.

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Supplementary (no publication without permission from Flamborough Archives)

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Project Personnel

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HIGHWAY 5 GRINDSTONE CREEK BRIDGE UTILITY RELOCATION CLASS EA AND CONCEPTUAL DESIGN HAMILTON (WATERDOWN), ONTARIO

STAGE 1 ARCHAEOLOGICAL BACKGROUND STUDY Final Report

1.0 PROJECT CONTEXT

The following is a Stage 1 report prepared for review by the Ontario Ministry of Tourism, Culture and Sport (MTCS). Archaeological consultants, licensed by MTCS, are required to follow the *Standards and Guidelines for Consulting Archaeologists* (MTCS 2011) during land use planning as part of the evaluation of cultural heritage resources. This includes reporting all findings to MTCS. There are four stages for archaeological work – Stages 1 to 4.

Stage 1 *Background research and Property Inspection.* The purpose of the Stage 1 archaeological assessment is two-fold. Firstly, it is to determine the potential for the presence of as yet undocumented archaeological heritage resources, and secondly, to determine whether known cultural heritage resources are extant on the subject land(s).

Stage 2 *Field work.* Stage 2 is the actual field examination of areas with archaeological potential, and involves either surface survey of ploughed fields or subsurface testing in areas that are undisturbed or cannot be cultivated.

Stage 3 *Testing.* The purpose of the Stage 3 is to ascertain the limits of sites found during Stage 2, and cultural affiliation (if possible), and to evaluate its significance. If the site in question is determined to be archaeologically significant, then appropriate mitigation measures will be recommended.

Stage 4 *Mitigation.* Stage 4 involves the mitigation of the development impacts to the archaeological site through either site excavation or avoidance (preservation).

Stage 1 determines the amount of Stage 2 work required. Stage 2 determines if Stage 3 is warranted, and Stage 3, in turn, determines if the archaeological resources have cultural heritage value or significance and warrant a full excavation (Stage 4) or if the site may be preserved.

The Stage 1 Archaeological Background Research was conducted under the provincial archaeological license number P042, pertaining to PIF # P042-0438-2015.

1.1 Development Context

Historic Horizon Inc. (HHI) was retained by the Water Division of the Public Works Department on behalf of the City of Hamilton to conduct the Stage 1: Archaeological Background Study to assist with providing options for the proposed relocation of utilities beneath the Grindstone Creek Bridge in Waterdown, Ontario. This is a component of the Class EA being done as part of planning for rehabilitation of the bridge. The Study Area lies within part of Lots 6 and 7, Concession 3, in the geographic Township of East Flamborough, County of Wentworth, Town of Waterdown, now the City of Hamilton, Regional Municipality of Hamilton-Wentworth (***Figures 1,2***).

1.2 Archaeological Context

The Study Area is located in Waterdown, in the south-central portion of original farm Lots 6 and 7, Concession 3 of East Flamborough Township (***Figures 2,7,8***). Its dimensions are approximately 390 metres along Dundas St. E (170m north and south from the centre of the bridge) and 300 metres perpendicular to the same street centred on the bridge (150m east and west). The Area consists mainly of 19th-20th century urban development (Waterdown) around Grindstone Creek. The creek provided a focus for Euro-Canadian settlement and small industry in the early 19th century, and also would have provided incentive for pre-contact Aboriginal habitation.

The Study Area, centred upon the three-lane paved bridge, forms the crossing of Dundas St. (Highway 5) over the ravine containing Grindstone Creek and the C.P.R. rail line. The bridge has concrete sidewalks along both edges, and a railing protecting the edges. Trees flank both ends of the bridge, following the natural dip in the land on either side of the bridge sloping down to the level of Grindstone Creek and the railway (***Photos 3 7,8***).The study area is approximately bounded on the north by Margaret St. and George St., on the east just west of Griffin St., on the south by Franklin St. while the west has no easily identifiable road or property markings and is arbitrary just for the purpose of this study (***Figures 1,2,12***).

1.2.1 Physiographic Region

There are two major physiographic features in the Waterdown area, the Niagara Escarpment and the Grindstone Creek watershed (see **Section 1.2.3**). The Niagara Escarpment, a large exposed bedrock ridge, stretching from the Niagara River west to Dundas, and then northward to Tobermory and Manitoulin Island (Kor 1992:3). It is an erosional feature, modified by glacial and postglacial fluvial activities, defining re-entrant and outlier valleys (Kor 1992:5). The escarpment provides a distinctive set of various microclimates. The creek and railway run through a narrow valley that cuts through the escarpment which is located just to the south, and the Study Area is listed as being within a section of “Escarpment Natural Area” (Niagara Escarpment Commission).

1.2.2 Soils and Bedrock Geology

The underlying bedrock generally determines the surface topography in Ontario and is at or near the surface along this stretch of the Niagara Escarpment (Heagy 1995: 1-14,16). Waterdown is located approximately where two types of bedrock meet - the Guelph Formation runs northward, while the Lockport-Amabel Formation is to the south. The Upper Ordovician Queenston Formation and the Silurian Lockport-Amabel Formation can be seen at many of the waterfalls over the escarpment (Chapman and Putnam 1984:2 and Heagy 1995:1-16). Limestone, dolostone and shale have been extensively quarried along the escarpment from Georgetown to Queenston (Chapman and Putnam 1984: 120).

For Hamilton-Wentworth as a whole, approximately 35 soil types have been identified (Bunting 1987:52) The five major soil types are: the Luvisols (well drained clayey soils); Gleysols (wet, compact clay soils); organic soils such as much or peat; Brunisols (mostly sandy); and Regosols (soils that have been little-developed) (Bunting 1987:52, 54). Specific to the Study Area is the Brunisolic Grey-Brown Luvisols, more specifically the Grimsby sandy loam (Presant & Wicklund 1965: soil map. See ***Figure 3***).

1.2.3 Water Sources and Vegetation

Wetlands and watersheds provided Aboriginal inhabitants with rich environments for the gathering/hunting of flora and fauna as well as access to water for drinking, early agriculture, and travel routes. The Grindstone Creek watershed is located at the western end of Lake Ontario. Several unnamed tributaries flow into the creek. There are also a number of wetland areas located

within the former glacial spillway channels among the Waterdown Moraines that are drained by the Grindstone Creek system. The main creek channel arises south of Carlisle, running through the village and descends the escarpment just below Waterdown, as a series of cascades through a pre-glacial notch in the caprock of the bedrock. It was this notch that the CPR railroad and the road system utilized to gain access to the top of the escarpment (Heagy 1995:GR-1). The creek was named after the grindstones that were quarried from its banks. The quarries were owned by a Mr. Allan, in approximately 1814 (WEFHS 1981:3).

The majority of the Municipality of Hamilton-Wentworth would once have been forested. The forest growth changed over the millennia, primarily from spruce during the period of Lake Iroquois, through to pine, and then to pine and deciduous mixed forests (Karrow and Warner 1990:34). Today, Hamilton is within the northern boundary of the Carolinian forest, which includes tree species such as maples, beech and oak. These species are present in the cliff face and rim forests of the escarpment, the upland woods containing Sugar Maples, Staghorn Sumac, Trembling Aspen, American Beech, and Black Cherry while the rim contains Red Oak-Sugar Maple Woods including American Beech, Black Cherry and White Oak (Heagy 1993:303). Nut-bearing trees were an important nutrient source for Aboriginals and early Euro-Canadian settlers. The land surveyor, Abraham Iredell, noted in 1790 that “the whole area appears to have been covered by oak and pine plain with occurences of swamp in low areas and great stands of pine on well drained ridges” (in Donkin 1969:29).

1.2.4 Lithic Sources

Sources of siliceous stone, specifically chert, for making tools were often focal areas for pre-contact Aboriginal peoples. The local primary source of lithic raw material in the vicinity of the property is the Goat Island Formation (Ancaster chert) found along the escarpment from Stoney Creek through to Clappison’s Corners (Eley and von Bitter 1989:4). Ancaster chert is part of the Lockport Formation of Middle Silurian Age, and in the Niagara Peninsula is subdivided into the Gasport, Goat Island and Eramosa members (Eley and von Bitter 1989:20). The chert of the Goat Island member is located along the top of the Escarpment, and is between 7-10 cm thick, and its colour (fresh) is a medium grey that is usually mottled with darker inclusions of carbonate and lighter grains of quartz (Eley and von Bitter 1989:20). A typical characteristic of this chert is extensive rusty staining caused by the presence of iron oxide. The patina of Ancaster chert is a white to light grey with a dull, vitreous lustre. The fracture patterns of the chert are conchoidal to splintery. Fossils present include sponges, graptolites, echinoderms, brachiopods, and bryozoan fragments, but no corals (Eley and von Bitter 1989).

The next nearest primary source, and by far the most predominate chert type on most southwest to central Ontario sites, is Onondaga Formation chert found along the northeast shore of Lake Erie (Eley and von Bitter 1989:4).

1.2.5 Archaeological Sites

A search of the Ontario Sites Database (OSD) for registered archaeological sites within a one kilometre radius of the centre (ie the bridge on Dundas Street East) of the Study Area was requested from MTCS. A total of 42 sites or findspots have been identified: most are Aboriginal of various cultural affiliations, with only two having a Euro-Canadian component. The sites are summarized in ***Table 1.***

Table 1
Summary of Registered Archaeological Sites within 1km of Study Area

Borden #	Cultural Affiliation – time period	Site Type
AhGx-612	Aboriginal - undetermined	lithic scatter
AhGx-613	Aboriginal - undetermined	lithic scatter
AiGx-316	Aboriginal - Early Woodland	findspot
AiGx-318	Aboriginal - Early Archaic	findspot
AiGx-319	Aboriginal - undetermined	lithic scatter
AiGx-321	Aboriginal - Late Archaic	findspot
AiGx-322	Aboriginal - Early Archaic	lithic scatter
AiGx-331	Aboriginal - Middle & Late Archaic	lithic scatter
AiGx-332	Aboriginal - Early Archaic	findspot
AiGx-333	Aboriginal - Middle Archaic	lithic scatter
AiGx-334	Aboriginal - Middle Archaic	findspot
AiGx-335	Aboriginal - Early Archaic	findspot
AiGx-352	Aboriginal - Early Middle Archaic	findspot
AiGx-79	Aboriginal -Archaic or Middle to Late Woodland	campsite
AiGx-83	Aboriginal - Middle Archaic	campsite
AiGx-84	Aboriginal - Middle Archaic	campsite
AiGx-85	Aboriginal - Pre-Contact Euro-Canadian – 19th C.	findspot
AiGx-92	Aboriginal - Early-Late Archaic	campsite
AiGx-94	Aboriginal - Archaic	undetermined
AiGx-166	Aboriginal - Pre-Contact	findspot
AiGx-301	Aboriginal - Late Archaic	lithic scatter
AiGx-302	Aboriginal - Pre-Contact	lithic scatter
AiGx-303	Aboriginal - Pre-Contact	lithic scatter
AiGx-306	Aboriginal - Early Woodland Euro-Canadian – 19th C.	lithic scatter homestead

Borden #	Cultural Affiliation – time period	Site Type
AiGx-307	Aboriginal - Late Archaic	findspot
AiGx-308	Aboriginal - Middle Archaic	lithic scatter
AiGx-309	Aboriginal - Early Archaic	findspot
AiGx-313	Aboriginal - Early Archaic	lithic scatter
AiGx-314	Aboriginal - Pre-Contact	findspot
AiGx-315	Aboriginal - Pre-Contact	findspot
AiGx-323	Aboriginal - Early Archaic	findspot
AiGx-324	Aboriginal - Middle Archaic	findspot
AiGx-325	Aboriginal - Middle Archaic, Iroquoian	findspot
AiGx-326	Aboriginal - Pre-Contact	lithic scatter
AiGx-327	Aboriginal - Early Archaic	lithic scatter
AiGx-328	Aboriginal - Early-Middle Archaic	lithic scatter
AiGx-329	Aboriginal - Pre-Contact	lithic scatter
AiGx-330	Aboriginal - Early Archaic	lithic scatter
AiGx-336	Aboriginal - Pre-Contact	lithic scatter
AiGx-341	Aboriginal - Early Archaic	findspot
AiGx-342	Aboriginal - Late Iroquoian	lithic scatter
AiGx-351	Aboriginal - Pre-Contact	lithic scatter

The data provided by MTCS indicates that the area has been intensely inhabited by First Nations' peoples for millennia beginning at least by the Early Archaic period.

Seventeen (40.5%) of the registered locations were findspots, indicating that these were isolated archaeological finds that required no further archaeological work. These findspots however, are important if they consist of datable diagnostic tools, as they provide an indication of the cultures that inhabited the area in the past. The most recent findspot was Late Woodland Iroquoian, while most consisted of projectile points ranging from the Early Archaic (~7,500 B.C.) to the Late Archaic (~2,500 - 1,000 B.C.). The registered sites (campsites) also reflect these time frames, indicating that the landscape was excellent for foragers – providing water, varied resources such as nuts, deer, small animals, and various types of plants (food, medicine). There were only two registered locations listed as Euro-Canadian – one identified as a homestead overlying an Early Woodland lithic scatter; the other listed as a findspot along with an Aboriginal Pre-Contact artifact.

Local history indicates that the Grindstone Creek ravine created a gap in the escarpment used as a trail access by First Nations from Hamilton Bay on a route known as Snake Road (WEFHS 1967:41)

1.2.6 Previous Archaeological Work

There is one identified archaeological project previously undertaken within the Study Area's limits, and another that is within 150 metres.

1) Archaeological Services Inc.(ASI) 2010. *Stage 1 & 2 Archaeological Resource Assessment of the Proposed Severence of 353 Dundas Street East, Part of Lot 6, Concession 3, Geographic Township of Flamborough East, County of Wentworth, Town of Waterdown, Now the City of Hamilton*. P049-531-2010.

The assessed property is located on the northeast side of William Street, within the current Study Area. The property was divided into two sections – Part 1 was shovel tested; Part 2 was deemed disturbed through visual observation. The shovel testing of Part 1 resulted in the recovery of 335 historical artifacts from fill contexts, and no buried topsoil stratum was preserved. The material recovered consisted of 20th century debris as well as 19th century artifacts. While the property exhibited various strata, there was no archaeologicalintegrity to the area with various modern fills overlay subsoil. Twentieth century material was observed in some of the lowest fill layers. Therefore, both parts of the property were recommended for no further archaeological work.

2) Jacques Whitford (JW) 2008. *Final Report. Stage 1 Archaeological Assessment, Proposed Waterdown Road Corridor Option, City of Hamilton, Ontario*. Project No. 1037892.

This project is within 150 metres of the limit of the Study Area and is a Stage 1 archaeological research study that was undertaken by Jacques Whitford for the "undeveloped lands between Dundas Street and Mountain Brow Road, west of Waterdown Road and lands along both sides of Waterdown Road between Mountain Brow Road and Highway 403, in the City of Hamilton and in the City of Burlington, Ontario" (JW 2008:i). Based on the background information of sites' locations, physiographic features, and historic archival work, It was determined that the Project Area had elevated potential for both Aboriginal and historic period archaeological resources, and depending upon the final design, Stage 2 assessment may be required.

1.3 Historical Context

A variety of resources were reviewed as part of the Stage 1 background study. An analysis of historic maps was conducted to examine topography and land use history, in an attempt to determine the types and locations of former buildings and water courses (creek and millraces). Archival sources were accessed at Archives of Ontario, Hamilton Public Library (Flamborough Archives and Special Collections) and the Lloyd Reed Map Collection at McMaster University.

1.3.1 Regional History

The area that would become Ontario around the northern shores of Lakes Ontario and Erie was relatively undisturbed by significant European settlement until around the time of the American Revolution. Previously, French colonists had generally restricted settlement to the St. Lawrence and Richelieu river valleys, and few of their established trading outposts in the interior included additional settlement (Surtees 1994:92). After the British defeat of the French in 1760 (French and Indian War), policies changed. The Royal Proclamation of 1763 established the procedures for land surrenders from Aboriginal Peoples over the next two centuries. The proclamation stated that only the Crown could purchase lands in the "Indian Territory", the mechanism for this was through formal and public councils between the Crown and the Aboriginal People whose lands were involved in the

negotiations (Surtees 1994:93). Once the land was acquired by treaty, then the Crown could redistribute it either by sale or land grant.

The first land surrender in the region by the Mississaugas was signed on May 9th, 1781 (Niagara Purchase) where a tract of land approximately six kilometres wide on the west side of the Niagara River, from Lake Erie to Lake Ontario was sold (Smith 1987:25). In 1805/06, negotiations for the Mississauga Tract between York (Toronto) and the Head of the Lake showed that the Mississauga were no longer blindly accepting the British terms. Instead of surrendering the whole of the tract, the Mississauga spokesman, Golden Eagle, insisted that "they would sell only the coastal portion of the tract, retaining for themselves the interior section as well as small reserves and the fisheries at the mouths of Twelve Mile (Bronte) and Sixteen Mile (Oakville) creeks and along the Credit River. The government accepted these conditions" (Smith 1987:32).

The township surveys in this area began between 1788 and 1793. Flamborough Twp. became part of the Home District. In 1816, the Gore District was formed including parts of both the Home and Niagara Districts. The Gore District was abolished in 1849 by an Act of Parliament, and East Flamborough (split from West Flamborough in 1851) eventually became part of Wentworth County. The village of Waterdown began to form in the 1820s and 1830s, and was incorporated by 1878. In 1974, Waterdown was amalgamated with East and West Flamborough and Beverly Township to form the Town of Flamborough, in the Regional Municipality of Hamilton-Wentworth. One final shuffle occurred in 2001, when Waterdown became a part of the new City of Hamilton, made up of six municipalities including: Hamilton, Dundas, Ancaster, Flamborough, Glanbrook and Stoney Creek.

The Township of East Flamborough is bounded on the northeast by Nasagawaya and Nelson Townships, the County of Halton, Burlington Bay to the south, by the Township of Flamborough West to the southwest, and by the Township of Puslinch (County of Wellington) to the northwest. The township was first settled by Euro-Canadians after 1796, by the families of George Chisholm, David Henry, John Fonger, and William and John Applegarth (WEFHS 1981:3).

When Flamborough Township was initially surveyed, it was divided into lots and concessions. East Flamborough consisted of 14 concessions with 13, 200 acre lots each. The Study Area in Waterdown is located on parts of Lots 6 and 7, Concession 3 (*Illustrated Historical Atlas of Wentworth County*, 1875; ***Figure 7***). By the 1830s, the lands comprising the Village of Waterdown had been divided into standard town blocks and lots. Much of this village layout was initiated by Ebenezer Griffin, who came to the area in the early 1820s. The blocks and lots of the Study Area are based on the 1903 map of the *Village of Waterdown, East Flamborough Township (**Figure 10**).*

1.3.2 Lots 6 & 7, Concession 3

The Study Area comprises a portion of Lots 6 and 7, Concession 3 of East Flamborough Township. Mill Street forms the dividing line between the two farm Lots, with Lot 7 to the west and Lot 6 to the east, encompassing the creek ravine, the Dundas St. bridge and most of the mill sites.

The area was noted by Augustus Jones in 1793 while surveying the Governor's Road (Dundas Street), and the first of the Crown grants (Lot 7, Concession 3) in what would later become the village of Waterdown was patented in 1796 by Alexander McDonnell, soldier from the Butler's Rangers. He also received 600 additional acres was awarded that initial land grant, but when he did not develop it, the land was re-granted in 1805 to Alexander Brown, a retired official of the North West Fur Company (WEFHS 1991:18; W&EF 1967:41; Abstracts to Deeds Lot 7, Conc.3). Brown's home and mill were located outside the Study Area.

In 1820, Brown began selling parcels of his land in the Waterdown area. The first transaction was to James Grierson who purchased 42 acres from Brown; the land included the creek and a stone quarry, suggesting that industrial activity was already in progress in the area (Donkin 1969:34). In 1821, Ebenezer C. Griffin, a miller who came to the area from Smithville, purchased the remaining 155 acres of Lot 7 (Abstracts to Deeds). The land he had purchased included "the lower portion of Grindstone Creek, the Great Falls, and one quarter mile stretch of River Valley, sufficiently flat and extensive to accommodate his two mills and their raceways" (Donkin 1969:34). On this land he established both a saw and a grist mill on the creek, as well as his farm. He also established a woollen mill. While Griffin was a miller by trade, he also had a large vision for the land surrounding the creek, and was preparing to create a town. By 1831 he had drawn up a plan for the village (Lots 6 and 7 – see ***Figure 6*** 1854 map), and his first lot sold was on the southwest corner of Mill Street and Dundas Road. E.C. Griffin continued to sell small plots of land along Dundas Street, intending to build the area into a community.

In 1837, E.C. Griffin acquired the Crown Patent for all 200 acres of Lot 6, the land that included the Creek ravine (Donkin 1969:36). This is a late date for a Patent in this township, indicating that Lot 6 had been a Reserve lot. It is marked as such on Thomas Parke's E & W Flamborough Survey Plan (map #7947, Lloyd Reed Map Coll'n, Mcmaster University). It is possible that Alexander Brown had a crown lease on Lot 6, that was transferred to Griffin in the 1820s, allowing him to begin to control industrial development in the Creek ravine.

He then expanded his village layout. Griffin was a shrewd businessman and when he took over the lot from Brown he negotiated restrictive deeds for water use for the various small industries that had already been established but did not have any covenants concerning resources (Donkin 1969:37-38). For his land transactions in the creek valley, he incorporated wording to ration water usage, and to maintain his monopoly on the textile mill trade. He also had restrictions placed on roads, as well as the further land use even when the parcels were sold off, ie. no woollen manufacturing without his expressed agreement (Donkin 1969:39).

1.3.3 The Village of Waterdown

Ebenezer Griffin and his family largely are credited with the establishment of the village of Waterdown, as noted above. In addition to clearing and farming their property, they opened a saw mill, a flour mill, and a very early woollen mill, and established a toll road with hotel connecting Hamilton to Carlisle (W&EF 1967:41). The Study Area is located within Griffin's original lands.

By 1841, much of the village land had sold and contained 48 households of approximately 165 people (W&EF 1967:42). Smith noted in 1846 that Waterdown had 200 inhabitants, a Methodist church, a post office, two grist mills, two saw mills, a carding and cloth mill, two stores, a tannery, two taverns, a saddler, a scythe factory, a cooper, a tailor, a shoemaker and a blacksmith (Smith 1846: 205). By 1867, the number of households had grown to 100 with approximately 600 inhabitants. At that time, Grindstone Creek provided water power for a number of industries in the village, adding another flour mill, a chair factory and a wood turning factory. The four storey high flour mills constructed of stone in 1860, were owned by W.P. Howland. The mills and grain warehouse were a large operation and contained four run of grindstone and could manufacture 150 barrels of flour a day. In association with this operation, there was also a stave factory (WEFHS HH Paper No.3, 1981:3). John Creen's flour operation was slightly smaller with three run of stone and could produce 50 barrels of flour a day. J.W. Lottridge operated the Ceres Mill produced approximately 150 barrels a week. The rake factory was established in 1843 and was a thriving business, owned by Read Baker (WEFHS HH Paper No. 3, 1981:4).

Other businesses were established in Waterdown, and in 1867 there were a total of six churches, a school, and the town hall, built in 1857 (WEFHS 1981:4). On June 5th, 1878 By-law No. 276 was passed that incorporated the village and elections could be held (W&EF 1967:42).

South of the Study Area, at the point where Mill Street winds southeastwards and crosses Grindstone Creek, was an area the locals termed Smokey Hollow, due to the industry that built up around the waterway in the nineteenth century. Seventeen buildings were included in this large milling complex: at times housing a pot ash factory, a tannery, a rake factory, one of Upper Canada's first woollen mills, flour mills, saw mills, and lumber mills. The power supplied by the now-insignificant Grindstone Creek was the principle reason for so many successful industries in the town; the water also served, and was diverted, to wash materials. Each of the mills/factories was purportedly built of wood and at least two storeys tall to accommodate water-driven machinery (W&EF 1967:49).

It is interesting to note that by the time the Canadian Pacific Railroad was built through Waterdown, starting in 1911, most of the industry in Waterdown's Smokey Hollow had been obliterated by fire or was no longer in production as businesses from nearby Hamilton proved to be too much competition (W&EF 1967:49). Grindstone Creek itself was re-routed (by hand) to run through the west side of the valley (WEFHS 1991:5) — a consideration worth noting when reading older maps of the village and the creek – and rail brought students, produce, and freight in and out of Waterdown. Passenger travel declined steadily with the introduction of private automobiles, and by 1955 the C.P.R. lines through town were used for shipping freight only (WEFHS 1991:5-6).

The Study Area includes the immediate surroundings of the bridge, spanning Grindstone Creek and its parallel C.P.R. rail line, and approximately 150 metres NW to SE, and 195 metre SW to NE distance out from the bridge.

1.3.4 Historical Usage – Lots 6 and 7, Concession 3

A number of sources, including historic maps, were consulted to determine the historical usage of the Study Area. ***Table 2*** provides a summary of the visual records consulted for the project. A selection of these have been included in the report.

Table 2
Summary of Historical Visual Records Examined

Title	Date	Comments
Flamborough – Township survey map (surveyor Augustus Jones)	1791	-major physiographic features drawn -Hamilton Harbour listed as Lake Geneva -various water courses shown -North shore labeled and lands to its north indicated as "land claimed by the Mississagas"
Flamborough East & West (patent plan)	1797	-Lots and concessions drawn with names of land owners indicated -Lots 6 & 7, Concession 3 indicated as both being owned by Alex. McDonnell & another name (illegible)
Philip John Bainbrigge (engineer)	1839	-map shows a general overview of the area between Toronto and Hamilton with water courses, shorelines and distances between settlements pencilled in -notes on the map indicate that Waterdown could billet 200

Title	Date	Comments
		men and 35 horses; road conditions also noted "Dundas street passes thro a high level country for 35 miles, well cleared [and] thickly inhabited by a superior class of settlers, the road is very good but is crossed by 2 ravines 100ft. deep (at 28 & 32 miles) where it is steep". These ravines are at 16 Mile Creek, and 12 Mile Creek, respectively. The ravine at Waterdown was not mentioned, but drawn on the map.
Map 7 (Donkin, M. K.) *Occupations in the Business District, circa 1838*: (secondary source - 1969) (**Figure 4**)	pre-1838	-map is centred on Dundas St. East showing section of village from Snake Road to Grindstone Creek -Dundas St. is an important thoroughfare as there are three inns shown; other types of businesses include a merchant, shoe makes, weaver/tailor, cabinet maker, and the house of E.C. Griffin is shown on the north side of Griffin Street. -two dams shown to the south of Dundas St. E.
Map 6 (Donkin, M. K.) *Grindstone Creek Valley Showing Mill property*: (secondary source - 1969) (**Figure 5**)	1841	-East branch of Grindstone Creek named Spring Creek -identifies locations of various mills (lumber, grist, flour) on the creek, with numerous mill races & dams constructed -shows woollen and rake factories, tannery
Map of The Village of Waterdown, County of Wentworth, C.W. Drawn by H. Winter **(Figure 6)**	1854	- plan of Waterdown showing the town lots, and streets, with a focus on Grindstone Creek and its various mill races and sluice ways, mill ponds and mill structures (drawn but not labeled); two structures (one likely the saw mill) are indicated on the west bank and between the watercourses north of the bridge and on the edge of the Study Area - the Cemetery property in the north corner of the Study Area is labeled - the Dundas Street bridge is depicted - within the Study Area there are two unlabelled industrial buildings (mills?) within the creek valley immediately either side of the bridge on 'islands' between the creek and the mill races. There are also associated sluice ways, dams and ponds within the Study Area both north & south of the bridge
County of Wellington, Canada West Robert Surtees	1859	-Lots and Concessions shown with land owners' names -not much detail shown in developed village of Waterdown, except village is expanding north/south around Waterdown Rd (which is shown as straight)
Illustrated Historical Atlas of Wentworth Co., H.R. Page Village of Waterdown, Flamboro East Township, (***Figure 8***)	1875	-Layout of Waterdown with town lots labeled and some buildings -Grindstone Creek is shown as a watercourse with three small islands - two to the north; one to the south of the Dundas St. bridge

Title	Date	Comments
		-a structure is shown on the immediate island to the north of the bridge; there appears to be another structure on the island to the south of the bridge -George Rymal's grist mill and Sealey's saw mill are labeled in creek ravine -a saw mill is shown on town lot 2 to the immediate east of Board St, adjacent to Union cemetery -Union cemetery does not continue to Margaret St., as there are house lots shown
Plan of the Village of Waterdown, County of Wentworth, Ontario. J. W. Tyrell (***Figure 9***)	1897	- depicts town lots and streets and Grindstone Creek - [Slater Saw Mill?, as per FIP 1939] industrial structure is depicted on the mill race at the end of a private lane on the northern edge of the Study Area - dam and mill pond are still present north of the bridge - the dam may be on the edge of the Study Area with the pond outside it - structure indicated **on** a mill race/tail race at the end of Board Street, east side of the Creek and north of the bridge (mill or factory?) - both Board Street and Spring Street (north and south of bridge on east side of valley) are closed - the former mill pond to the south is now divided into three stream courses; - the Town Hall is indicated on Town Lot 26, Block XVI, west of Mill Street; this structure is still extant
Photograph (Wray & Green 1994: 13)	*ca* 1900	- looking northwesterly across the valley from the intersection of Board St and Dundas St - Vance house & barn visible on the east side of the valley; the Slater Saw Mill and the Waterdown Evaporator and Jam Factory are visible on the west side of the valley bank; - the top of slope on the west bank, north of the bridge and south of the Mill, is primarily fenced and undeveloped back yards
Imperial Atlas of Wentworth Co., J.W. Tyrell (***Figure 10***)	1903	-Waterdown village layout is expanded, lots shown -Creek to the north of bridge shown as three separate watercourses that merge into one -no islands present to north and south of bridge, and no structures in the immediate vicinity of bridge; creek much narrower than in 1875 depiction -Union cemetery has expanded slightly into Town lot 8 of Block XIII, but still not abutting Margaret St. -two structures shown north of bridge, one at the north end of Board St. (listed as closed). Creek is dammed just to the north of these two structures

Title	Date	Comments
		-Water St also listed as closed -Mills still shown to the south in Smokey Hollow -no railroad depicted beside Grindstone Creek
Photograph (Wray and Green 1994: 16)	*ca* 1906	- view southeasterly across the valley showing the Dundas Street bridge - small wooden hut is present just north of the bridge piers on the east side of the valley bottom - Eager's house [photograph label] is visible on the corner of Reynold's Street and Dundas Street
*National Topographic Map Hamilton-Burlington, 30M5 (**Figure 11a**)*	1909	-two wooden structures shown at north end of Board Street -large wood structure shown to the north of the Dundas St. E., on and over the creek (mill) -many stone structures shown on Mill St., north of Dundas St. E -Grindstone Creek shown as forked - west crosses Dundas St. E, & the east branch runs parallel to road on its south side, joining the west to the south of the road
Photograph 1078 - Flamborough Archives (***Image 2***)	Pre-1911	-photograph taken from north looking south towards bridge; from a high elevation -bridge appears to be a Through Truss construction on tall masonry piers -Grindstone Creek visible and crew is in process of relocating it prior to railway construction -future station (Vance house) present on the extreme left of photograph & roofline of lower structure shown to the north of station house -small one storey wooden building on slope of east bank
Photograph 94 - Flamborough Archives (***Image 3***)	1911	-photograph taken probably west end of Dundas St. Bridge, looking north -future station (white framed house on stone foundation) shown, west and south facades visible -construction crew shown working on rail tracks -re-located creek in the extreme lower left corner -Union cemetery just visible in upper background -structure (wood barn) shown on eastern slope to the north of the future station
Photograph 95 - Flamborough Archives (***Image 4***)	Ca. 1911	-photograph taken near Reid's Turning Mill with Dundas St. bridge in extreme background. Building complex on slope. -work crew shown working on laying of track -ravine landscape is fully cleared of trees

Title	Date	Comments
Photograph (Wray and Green 1994: 14) **(*Image 6*, FA#169)**	*ca* 1912	- view looking northwards from between the railway tracks and the Creek, to underneath the bridge - the Waterdown South Station, formerly the Vance house, is visible on the east side, north of the bridge, with another structure on the valley floor behind it - there is a structure on the west side bank, north of bridge - telegraph/phone poles run along the west (creek) side of the valley floor; - view is in winter and shows a gentle grade to the west bank with a steeper grade on the east
Photograph 253 - Flamborough Archives (***Image 7***)	Post 1912	-photograph taken from the bridge on Dundas St. East, looking north -a few trees are starting to grow in the ravine landscape -wood barn to the north of station shown, located on flat section of ground; foundation not visible -station present with small structure on platform along side the tracks -stairs coming down the hill from Board St. to give pedestrian access to station and platform -creek still quite wide; telegraph/phone posts on west side of creek -a culvert appears to run under tracks just to south of small platform structure -barn with lean-tos on top of western bank, just to the north of where the station is situated -factory (mill?) stack present in background
Photograph 1075 - Flamborough Archives	n.d.	-photograph taken from height of land (east bank, near barn?), looking south down to station and platform -very much like #1078 (Image 2), but after railway has been constructed (ie post 1912) -trees more mature behind small white house on the west side of the creek -shows station, a passenger train unloading, telegraph poles on west side of creek - bridge in background -small structure still on platform, and it appears that there is another one further south along the line -potential structures on the other side of bridge on flat area around the rail line -station's north side shown; vertical boards on second storey with window; ground floor has door and one window

Title	Date	Comments
National Topographic Map Hamilton-Burlington, 30M5 ***(Figure 11b)***	1938	-rail line shown -east branch of Grindstone Creek not shown
Fire Insurance Plan -Waterdown (***Figure 12***) (Underwriters)	1939	-a frame structure (Station) is shown on the northwest side of Board St. at its dead end -C.P.R. rails shown situated to the east of Grindstone Creek -no other structures are present to the north or south of the bridge on Dundas St. E. -Union Cemetery has expanded eastward to George St. (currently Margaret St.), with the exception of the northernmost residential lot which has structures
Aerial Photograph of Flamborough, Photo 37, National Air Photo Library (***Figure 13***)	1950	-the Station is still present with at least two outbuildings, and to its north, between the railway tracks and the cemetery tree line, another larger structure is visible -photo not very clear. Mill Street continues to have what appear to be many original buildings, but subdivision and structures to east of bridge cluster near Dundas St.
National Topographic Map Hamilton-Burlington, 30M5 ***(Figure 14a)***	1952	-three structures shown on the east side of rail line to the north of the Dundas St. E. Bridge -no structures shown to the south of bridge along rail line -two large structures shown on west bank, further north along rail, -east branch of creek still not depicted
Photograph (Wray and Green 1994: 17) (FA#475) ***(Image 8)***	*ca* 1965	- photograph of road work by Gaffney Construction Company on the Dundas Street bridge, view looking easterly (?) - they appear to be doubling the bridge with the addition to the southern side
*Topographic Map of Ontario, Hamilton-Burlington, 30M*5, 1:50 000 (***Figure 14b***)	1968	-three structures still shown along the east side of rail line (station burnt down in 1966) -cemetery has expanded to Margaret St. -village area for most part shaded in to depict urban areas, though a few individual structures are shown
Aerial Photography (Google Earth)	fall 2014	-trees not in leaf, area immediately adjacent to railway tracks, SW of Board St. does not show any imprint of foundations from Station or other structure visible in the 1950s aerial photograph
Aerial Photography (Google Earth)	2015	-Margaret St. Park with play structure adjacent to Union Cemetery; occupies Town Lot 5, Block XIII -section in the northwest section of Study Area completely in-filled with residences

Based on the maps and photographs viewed, the Village of Waterdown had a booming industrial presence in the early to mid 19th century, mostly centred around mills and small factories adjacent to the creek. This emphasis on milling declined as the creek levels fell around the turn of the century. The core of the old section of the village along Mill and Dundas Streets still contains a number of stone structures, and some of this area is designated as the Mill Street Heritage Conservation District (Galvin 2012).

Mapping indicates that the Study Area has had an established bridge over Grindstone Creek by at least 1854 (most likely much earlier) (***Figure 6***). The current bridge is listed in Hamilton's Heritage Bridge structure report as having been built in 1966. The same source mentions that the earliest record of a structure here dates a small truss over the ravine in 1880 (City of Hamilton 2002:110).

Railway routing took advantage of the creek's natural path through and down the escarpment. The railway itself has caused a number of disturbances within the Study Area. In 1910, the South Ontario Pacific Railway received permission to construct the railway between Guelph Junction and Hamilton, a distance of 19 miles, and it was constructed in 1911 to 1912, becoming operational on July 1st, 1912 (WEFH 2015). John Reid's dam and pond were dismantled and a number of roads (road between Lots 4 & 5; Leather St.; and Hill St.) were closed because of the rail way (WEFH 2015).

The rail station (Waterdown South), was located at what had been a private residence of John and Ada Vance, at the north end of Board Street, on the east bank of the ravine. This house was in operation as the station from the opening of the rail way until 1950, when the passenger trains no longer stopped there. It was closed as of 1962, and was used as a lodging facility for the construction crew working on the re-construction of the Dundas St. bridge in the mid-1960s. When this work was completed, the town council had ordered the building demolished, but it was destroyed by an act of arson on June 23rd, 1966 (WEFH 2015).

The Union Cemetery in the Vinegar Hill area of the village may have been first used in the 1830s, based on the dates of the earliest monuments. 'Union' refers to both the Presbyterian and Methodist congregations. The land, on Lot 6, was patented E. Griffin by 1837 (Abstracts to Deeds), who donated a portion to be used as a cemetery. As this date is very late for a patent, and suggests the lot was a reserve, it's likely he was leasing it for some time before. When the property was transferred to the Waterdown Cemetery Co. in 1877, it was called the Waterdown Burying Ground (WEFH website, The Cemeteries of Waterdown). In 1977 it was managed by the Cemetery Board of the City of Waterdown, and 800 monuments were transcribed by the local genealogical society (OGS 1977).

1.3.5 Historic Plaques

Only one historic plaque is located within the Study Area. Number 317 Dundas Street East, the Waterdown Memorial Hall constructed in 1922, is a designated building under the Ontario Heritage Act (City of Hamilton 2007: 9).

In addition, a large portion of the Study Area west of the Grindstone Creek valley is within the Mill Street Heritage Conservation District of Waterdown, which was designated under the Ontario Heritage Act in 1996, and protected by the Town of Flamborough By-law 96-34 (Galvin 2012: 9).

2.0 SITE INSPECTION – Findings

Site inspections were carried out under the direction of Jacqueline Fisher on August 13th and 24th, 2015, under clear skies. The purpose of the site examination was to confirm the presence or absence of certain historic structures, identify general areas where potential has been removed due to modern activities, and to photographically document the general Study Area setting (***Appendix B, Photos 1-15***).

The Study Area contains lands at two general elevations. The upper area consists of urban streets, including the bridge over Grindstone Creek (***Photos 3-6,15***), commercial, institutional and residential properties, and the Union Cemetery (***Photos 12-14***). A portion of the Study Area lies within the historic village centre and there are a number of 19th century structures still extant (***Photos 5,7-11***). The only designated structure, the Memorial Hall, was constructed in 1922. Late 20th to 21st century development is intermittent through the area with remnants of the 19th century village still extant (***Photos 3,4,6***).

The lower area consists of the Grindstone Creek ravine, which contains the channelized creek and the railway tracks (***Photos 1-2***). Although the ravine once held many small industrial structures (mills, dams, millraces), there were no extant structures observed within the ravine itself. A closer inspection of the ground surfaces in the sides of the ravine, with the permission of the Railway, may yield some structural evidence.

3.0 ARCHAEOLOGICAL POTENTIAL AND SITE INTEGRITY

3.1 Map and Image Analysis

As described above, a number of historic maps and images have been examined for evidence of former land use, structures, and watercourse changes over time. These are summarized in ***Tables 2 and 3***. The study area outline has been placed on several selected 19th to 20th century maps to assist with analysis of the archaeological potential of the study area (see ***Appendix A***). The best available landmarks have been used to match an existing town map to overlays of several of the historic images (***Figure 16***). The maps were rotated and stretched in both east-west and north-south directions to provide the best fit, although this was not always successful. It must be noted that scaling problems are commonly found on historic maps and estimated locations of early buildings may be inaccurate.

Table 3 below discusses both extant and former structures that may have retained Euro-Canadian archaeological potential. This table is not inclusive of all historic structures in the village. Several others still exist within the entire Study Area. Any 19th to early 20th century structures may retain archaeological resources in the lands around them.

Table 3
Summary of Selected Historic Structures within the Study Area

Type of Structure	Visual Source	Location	Extant	Comments
Cemetery	1854, Winter's Village map	north of Dundas St. and east of	yes	has expanded east to Margaret St.

Type of Structure	Visual Source	Location	Extant	Comments
		railway track		***Cannot be disturbed.***
Town Hall	1877 Historic Atlas ; 1897 Tyrell, Village Plan (building dates to 1860s)	NW corner of Study Area, west side of Mill Street	yes	Currently the town library. Note that on the 1897 map, the hall is shown in the western end of the lot, farther from Mill St.
George Rymal's Grist Mill	1875 Historical Atlas; may be on 1854 Winter map	north of bridge, west side of creek	no	possibly no integrity due to railroad and flooding
Wesleyan Methodist Church	1875 Historical Atlas: 1854 Winter map	west side Mill St., north of Dundas St.	yes	Now used as a Nursery School
North American Hotel/ American House	1875 Historical Atlas	SW corner of Mill & Dundas Streets	yes	Once used as a school; built 1824
Saw mill	1875 Historical Atlas	east side of northern end of Board Road	no	exact location unknown; may have been impacted by houses
Structure	1875 Historical Atlas	on island north of bridge	no	impacted by railroad; extent of disturbance unknown
Structure	1875 Historical Atlas	on island south of bridge	no	impacted by railroad; extent of disturbance unknown
Saw Mill, Sealey's (1854) Slater's (1939)	1875 Historical Atlas; 1903 Atlas	N edge of Study Area at end of private lane, on mill race	no	land where it was located is now a modern townhouse complex. Likely impacted.
Structure east of Sealey's Saw Mill	1854, Winter's Village Map 1875 Historical Atlas	in valley bottom at N edge, or just beyond the Study Area	no	impacted by railroad; extent of disturbance unknown
Large Structure (Mill)	1897 Tyrell Village Plan; 1903 Atlas	at the north end of Board St., west side	no	impacted by railroad; extent of disturbance unknown

Type of Structure	Visual Source	Location	Extant	Comments
Memorial Hall	1922 (plaque)	north side of Dundas St. E, just west of Mill Street	yes	currently landscaping activities occurring at front & east side- no integrity in these locations

The earliest primary image to show structures near the study area is the 1854 Winter map (***Figure 6***). It indicates a bridge on Dundas St. and several industrial buildings in the creek valley. Several man-made sluice ways are depicted. For her thesis, Donkin recreated two maps of the earlier layout of Waterdown (Donkin 1969, Maps 7, 8; **Figures 4,5**). The 1830s drawing shows several commercial properties along Dundas and Griffin/Water Streets. Her 1841 drawing attempts to depict the layout of industries and mill races in the Grindstone Creek ravine, showing that the centre of Waterdown was a busy industrial settlement. Several of these appear to correlate with the 1854 Winter map.

The 1875 Historical Atlas of Wentworth County indicates the town lot plan of Waterdown (***Figure 8***). In addition to showing a similar set of mills in the creek valley, the cemetery, town hall and American Inn are depicted. By 1897, the Tyrell map indicates that some of the creek side mills are gone (***Figure 9***), and by 1903, there are fewer still (***Figure 10***).

Government topographic maps, beginning in 1909 suggest that further urban development in Waterdown did not expand significantly until the 1960s (***Figures 11, 14***).

Figure 16 presents a summary of known historic structures in the Study Area, as depicted on the known historic maps. The various map contents were overlaid on the modern map of Waterdown in order to inform the evaluation of archaeological potential in regard to former and extant historic structures. It is not assumed that the historic maps are entirely accurate or complete. Other structures may have been present in the Study Area.

3.2 Evaluation of Archaeological Potential

Criteria for archaeological potential are based upon the presence of a range of geographic and historical features that influenced past settlement. Criteria may include the nearby existence of known registered archaeological sites, early Euro-Canadian settlements (historically mapped or existing buildings/structures, transportation corridors), distance to a water source, and distance to a landscape feature (height of land (escarpment), waterfall etc.). These criteria and zone sizes have been determined by industry standards, the Provincial *Standards and Guidelines for Consultant Archaeologists* (MTCS, 2011).

Information about the archaeological potential of the Study Area has been gathered from various sources. The archaeological potential for pre-contact/historic Aboriginal settlement has been assessed using the data collected from the Ontario Sites Database (OSD), and from environmental data collected from geological, soils, NTS topographic and Ontario maps. The historic Euro-Canadian site potential has been assessed using data from the OSD system, from historic maps and photographs, and from secondary historic sources.

3.2.1 Environmental Factors

The situation of the Study Area adjacent to the Niagara Escarpment and straddling Grindstone Creek, provided an ideal habitation location for both Aboriginal peoples and the early Euro-Canadian settlers. This is supported by the plethora of registered sites, particularly of Aboriginal origin, within a kilometre of the Study Area (see **Section 1.2.5**). The entirety of the Study Area is within 250 metres to a potable water source, the soils are sandy loams, and the local geology provided both chert sources for Aboriginal tool production and limestone for quarrying. Based on environmental criteria, there is potential within undisturbed portions of the Study Area for the discovery of archaeological resources, particularly of Aboriginal cultural origin.

3.2.2 Cultural Factors

Areas of early Euro-Canadian settlement (cabins, farmsteads, churches, schools, early communities, commercial or industrial complexes) are considered features of archaeological potential, and known locations of such sites may immediately be determined to have cultural heritage value. Transportation routes such as settlement roads or early railways often focus habitation sites. Potential for historic Euro-Canadian archaeological material is also based on environmental factors. The background research confirmed that various sections of the Study Area have potential for Euro-Canadian material associated with the early development of Waterdown. The primary cultural factors are its location within the older section of Waterdown, and its association with the original settlement road network represented by Dundas Street/Highway 5.

A 100m buffer zone of proximity to a former 19th century historic structure is also a standard for determining archaeological potential. Within the Grindstone Creek valley, the immediate area around the Dundas St. East bridge contained a number of 19th century structures – probable mills on the islands to the north and south of the bridge, the Vances' house and a barn, and at least one other structure on the east bank of the ravine in the latter part of the 19th century. Buffer zones around the large number of former structures fill the entire valley, where site integrity has not been removed. Industrial and commercial sites are of particular cultural heritage value as these business and production sites with older technologies have not generally been well studied in Ontario.

As one progresses further out from the bridge into the town, there are a number of heritage homes in the area with deep residential lots and treed front lawns. These may retain potential in the undisturbed portions of their yards.

The potential for historic Euro-Canadian archaeological sites has been reduced in some areas depending on the level of 20th to 21st century disturbance.

See ***Figure 16*** for a summary of known historic structures in the Study Area, as depicted on the known historic maps.

3.2.3 Archaeological Heritage Value or Significance

All sites of Aboriginal cultural original may be considered to be significant until they have been proved otherwise during further Stages of archaeological work. The presence of an extremely large number of them in archaeologically assessed areas within 1 km of the study area indicates high potential for Aboriginal resources in areas nearby that have not yet been studied.

For 19th Century Euro-Canadian sites, the determination of archaeological heritage value or significance can be based on criteria outlined in the *Standards and Guidelines for Consultant Archaeologists (S&GCA:* MTCS 2011). The *Standards* outline a number of accepted criteria for determining the heritage value of Euro-Canadian sites. Relevant criteria include:

a) *Post contact sites pre-dating 1830.* There may be sites of this time period within the study area, as the farm Lots were taken up in the 1790s, and settlement tends to focus on water courses.

b) *Domestic sites with most of the occupation prior to 1870*. There are sites of this period in the study area, associated with the early village of Waterdown.

c) *Mid to late 19th Century sites where documentation indicates cultural heritage value or interest*. All of the mills and industries fit into this category and their former locations and associated structures must be considered to have high archaeological potential. Also indicated are locations and zones around the train station, cemetery, town hall, Methodist church, American Hotel and any other 19th Century structures within the study area.

To be considered archaeologically significant, sites must be either rare, of scientific value, of historic or culture history value, or be well preserved with a large portion of original deposits *in situ* (i.e.: have integrity) (*S&GCA*: MTCS 2011,Table 3.2). The study area appears to have intermittent potential for original soil deposits. The upper elevation of the Study Area retains archaeological potential in all areas that have not been extensively disturbed in modern times. The valley sides retain potential for historic industrial sites associated with the 19th century mills. The valley floor has been severely impacted during the 19th and early 20th century by flooding, dredging and rail construction, and therefore most of its potential has been probably been removed, but will need confirmation through Stage 2 Archaeological Assessment.

3.3 Archaeological Integrity

Integrity refers to the amount of soil disturbance that has occurred since an archaeological site may have been created in the past. Features of archaeological potential for a property are mitigated by the integrity of original deposits and the extent of later disturbance. Potential may exist on a property due to proximity to a former water course and the existence of buildings dating to the early 19th century. Extensive, deep disturbance at a later date removes older soil layers and former structures, and eliminates the original context of previous cultural deposits.

For the Study Area, ***Figure 17*** illustrates areas of assumed archaeological potential, and areas with obvious loss of original site integrity. Within the village, lots that have seen 20th/21st century development will have had much of their potential removed. However, parking lots built prior to the 1960s sometimes have had original deposits buried and preserved intact by pavement. Later parking areas have been removed from potential, where deep excavation would have occurred for aggregate installation below pavement.

The valley floor has seen considerable alteration and disturbance since the Euro-Canadian influence began, including re-routing of the creek bed, adding and removing dams, mill races, tail races, sluices and flumes, and the construction of cart tracks and the railway track. Intermittent flooding of the valley will also have removed archaeological resources, although sometimes, flood borne silts bury and protect early sites. The Aboriginal archaeological potential of the valley floor has most likely been removed.

The locations of several former mills/industries along the slopes of the valley may retain some remnants of their footings/millraces. The presence of the 'stone wall' remnant observed on the slope suggests this may be possible.

4.0 SUMMARY AND CONCLUSIONS

Historical and archaeological data accessed for this Stage 1 report indicate that a portion of the lands in the Study Area around the Dundas St. bridge in Waterdown can be deemed to contain archaeological potential. A general estimate of the distribution of areas that may retain archaeological integrity is presented in ***Figure 17.*** This map may serve as a general guide for the selection of a corridor for re-routing the services that currently cross under the Dundas Street bridge. Green areas with potential would have to be confirmed by Stage 2 archaeological field assessment prior to any construction impacts.

No sites previously registered with the Archaeological Database of the Ontario Ministry of Tourism, Culture and Sport lie within or directly adjacent to the Study Area, although many such sites are present within 1 km.

5.0 RECOMMENDATIONS

The following recommendations are made regarding archaeological resources for the Study Area.

1. The study area is deemed to have intermittent archaeological potential in part of the creek ravine, around remaining 19th century buildings and under older parking areas. These areas are identified in ***Figure 17*** in green shading. Stage 2 archaeological assessment is recommended for these portions of the study area prior to any subsurface impacts.

2. The Union Cemetery lies within the study area. No construction activity must be allowed to impact any portion of the cemetery.

Please note that the above recommendation is subject to review and approval by the Ministry of Tourism, Culture and Sport, and the City of Hamilton, Director of Planning (Cultural Heritage). Until any recommendations are approved, no soil disturbance or construction activity should be initiated.

6.0 Advisory Statements on Compliance with Legislation

The Ontario Ministry of Tourism, Culture and Sport (MTCS) requires that the following statements be included in every archaeological report (*Standards and Guidelines for Consultant Archaeologists, 2011*).

a. This report is filed with the Minister of Tourism, Culture & Sport as a condition of licensing in accordance with Part VI of the Ontario Heritage Act R.S.O. 1990, c0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal

have been addressed to the satisfaction of MTC, a letter will be issued by the ministry stating that there are not 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.

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 Sect. 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 (416-326-8404).

7.0 REFERENCES

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Note: Figures contain Source references for their maps and images.

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#1078 – towards bridge, looking at creek, facing south, pre-1911
#1075 – Waterdown Station South, train, and bridge in photograph, 1920s-40s?
#475 – construction of bridge on Dundas St. E., 1965
#294 – Board St. & Eager houe from Reid's Planing Mill & Workshop, ca 1905
#235 – rail station at north end of Board St., looking north, 1920s
#171 – Grindstone Creek valley from Slater's lumber yard, ca 1905-1910
#169 – view of creek valley post-railway construction
#99 – shows path below railway station, and other buildings
#95 – railway track construction, looking south, bridge in background, ca 1911
#94 – rail station, construction of tracks, with cemetery in background, ca 1911
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1950 Air Photo of Flamborough Area, Photo 37, National Air Photo Library.

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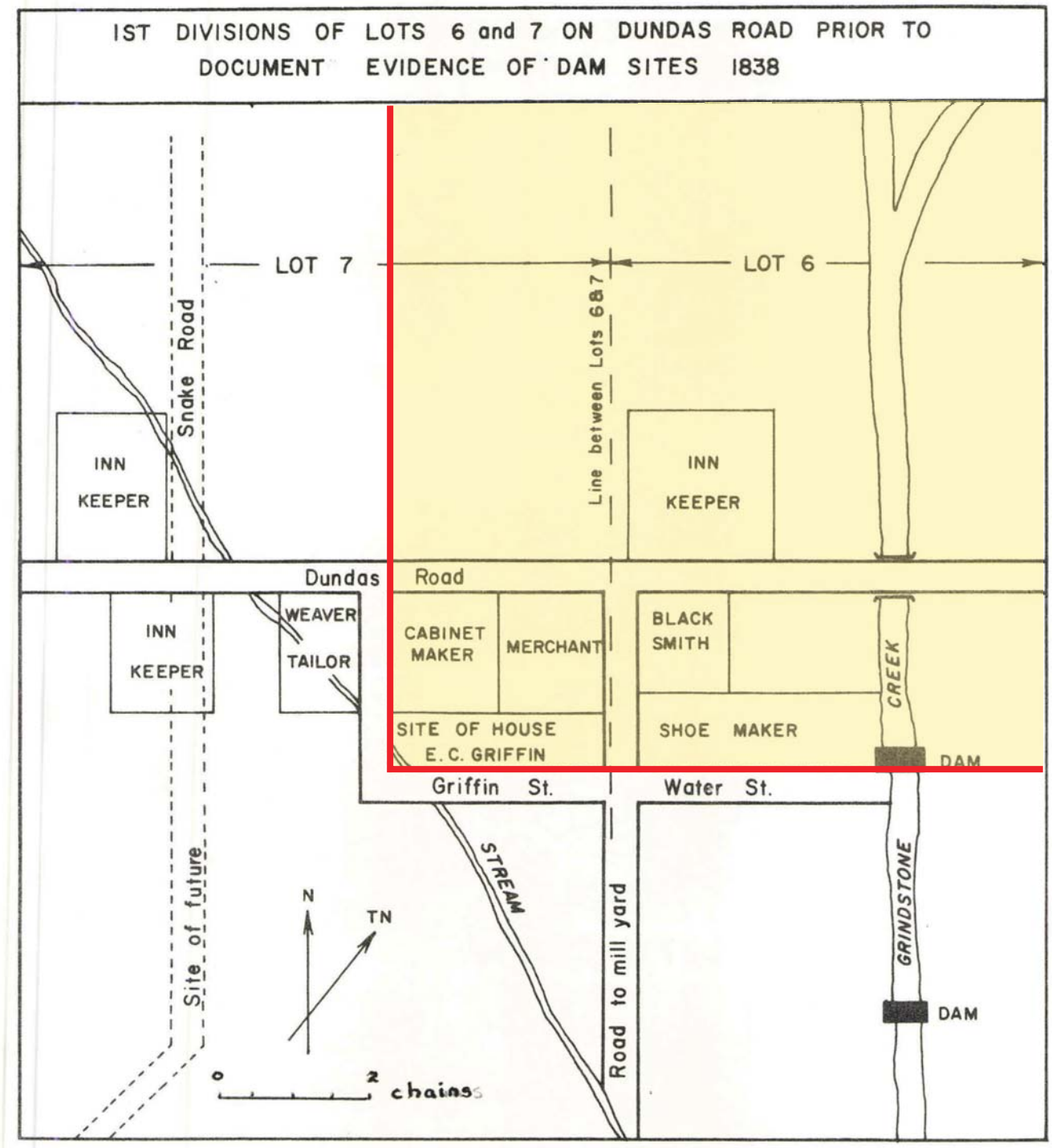
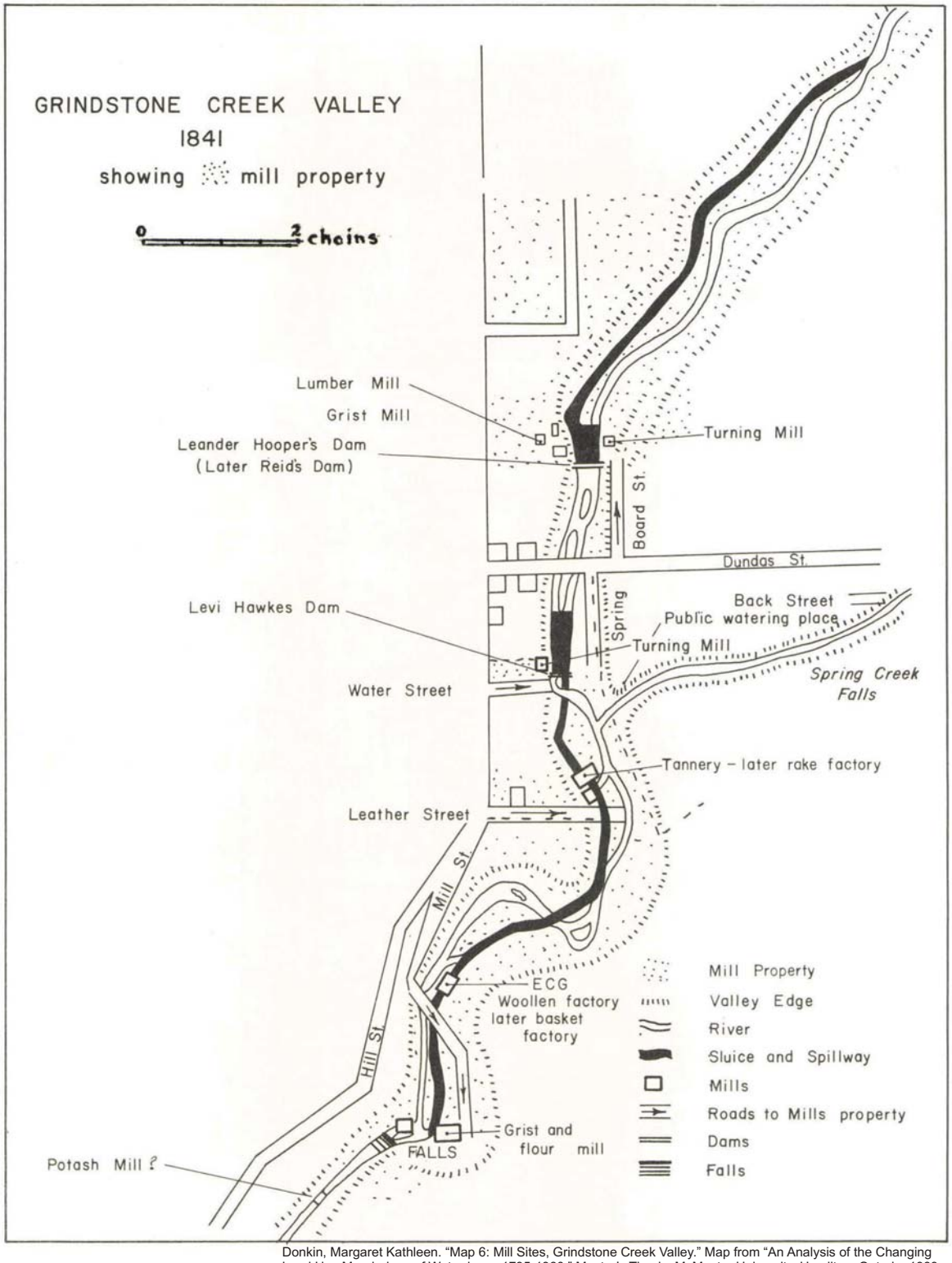
APPENDIX A:

FIGURES



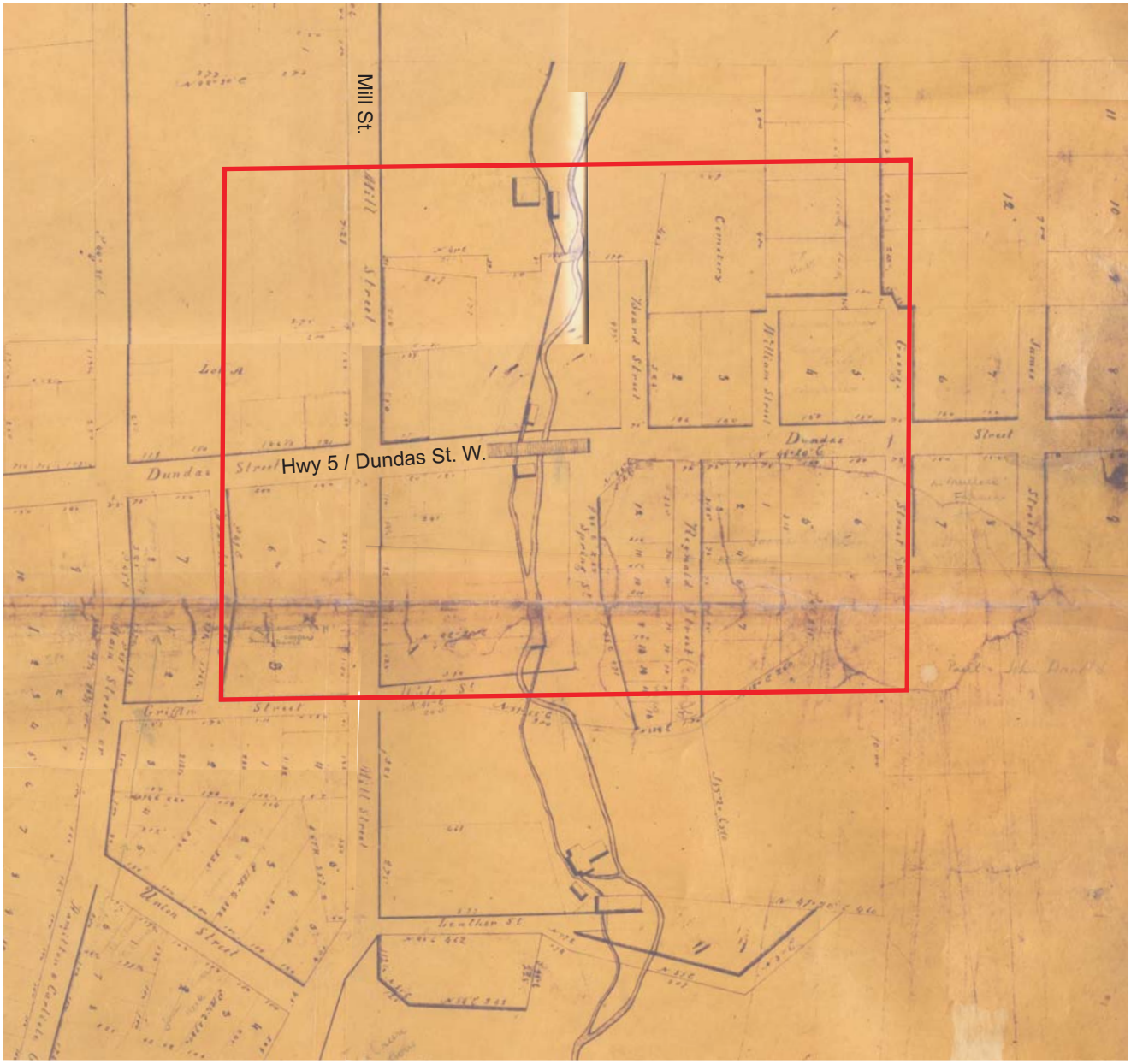
Donkin, Margaret Kathleen. "Map 7: Occupations in Business District, Circa 1838." Map from "An Analysis of the Changing Land Use Morphology of Waterdown, 1795-1960." Master's Thesis, McMaster University, Hamilton, Ontario, 1969.

HISTORIC HORIZON Date: 27/08/15 Designer: EG	KEY Study Area	HIGHWAY 5 GRINDSTONE CREEK BRIDGE UTILITY RELOCATION CLASS EA AND CONCEPTUAL DESIGN Stage 1: Archaeological Assessment City of Hamilton, Ontario **Figure 4: Sketch of the Original Layout of the Village of Waterdown, c. 1830s**



Donkin, Margaret Kathleen. "Map 6: Mill Sites, Grindstone Creek Valley." Map from "An Analysis of the Changing Land Use Morphology of Waterdown, 1795-1960." Master's Thesis, McMaster University, Hamilton, Ontario, 1969.

HISTORIC HORIZON Date: 27/08/15 Designer: EG		HIGHWAY 5 GRINDSTONE CREEK BRIDGE UTILITY RELOCATION CLASS EA AND CONCEPTUAL DESIGN Stage 1: Archaeological Assessment City of Hamilton, Ontario **Figure 5: 1841 Mill Sites, Grindstone Creek Valley**



H. Winter. Map of the Village of Waterdown, County of Wentworth, C.W. (Canada West). 1854. Retrieved from the Lloyd Reeds Map Collection, McMaster University, Hamilton, Ontario.

HISTORIC HORIZON

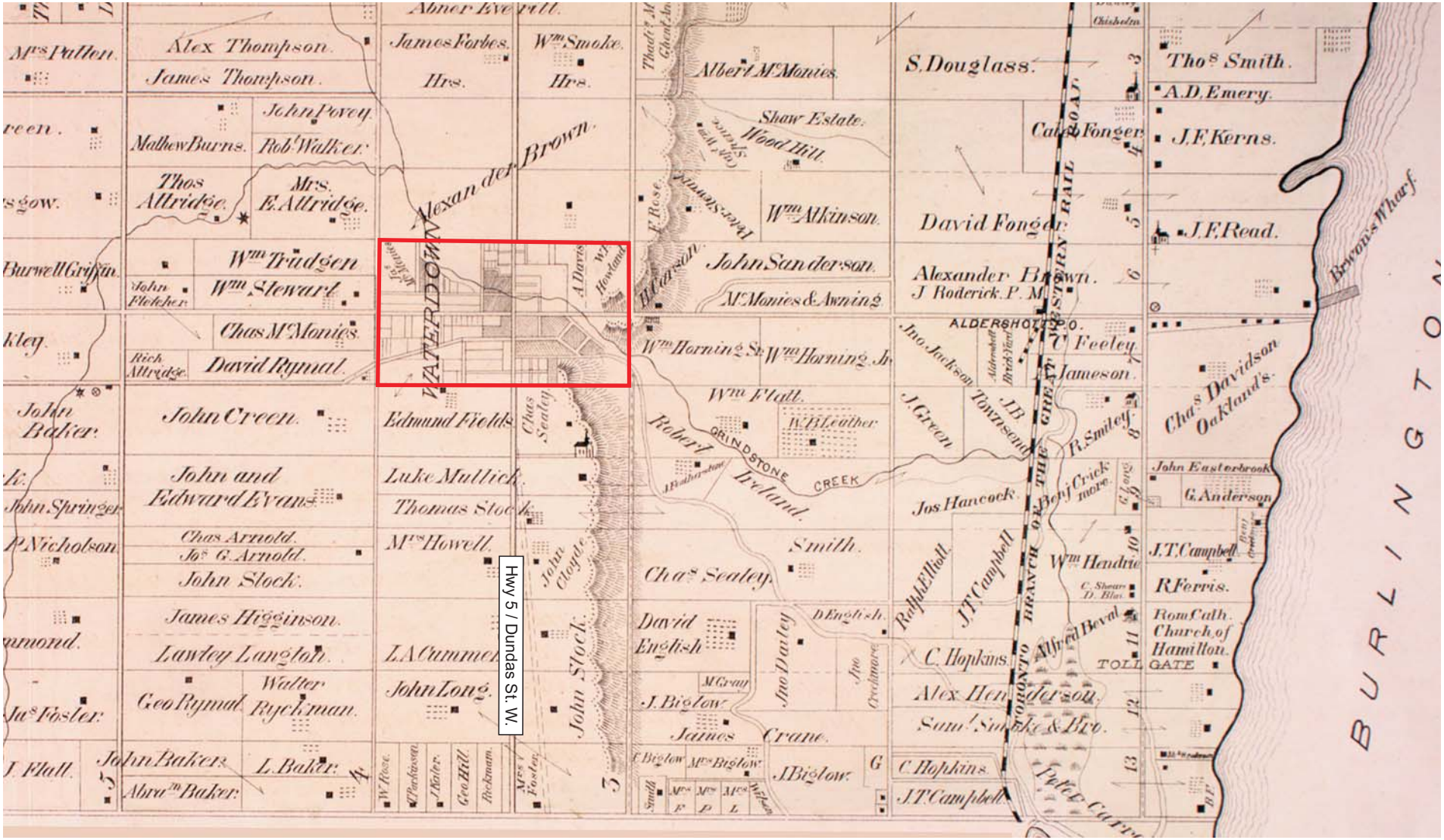
Date: 27/08/15
Designer: EG

KEY
Study Area

Scale
(Approximate)
0 100m

HIGHWAY 5 GRINDSTONE CREEK BRIDGE UTILITY RELOCATION CLASS EA AND CONCEPTUAL DESIGN
Stage 1: Archaeological Assessment
City of Hamilton, Ontario

Figure 6: H. Winter's Map of the Village of Waterdown, County of Wentworth, C.W., c. 1854



Portion of Flamboro East Township, Wentworth County, Illustrated Historical Atlas of the County of Wentworth. H. R. Page, Toronto, 1875.

HISTORIC HORIZON

Date: 27/08/15
Designer: EG

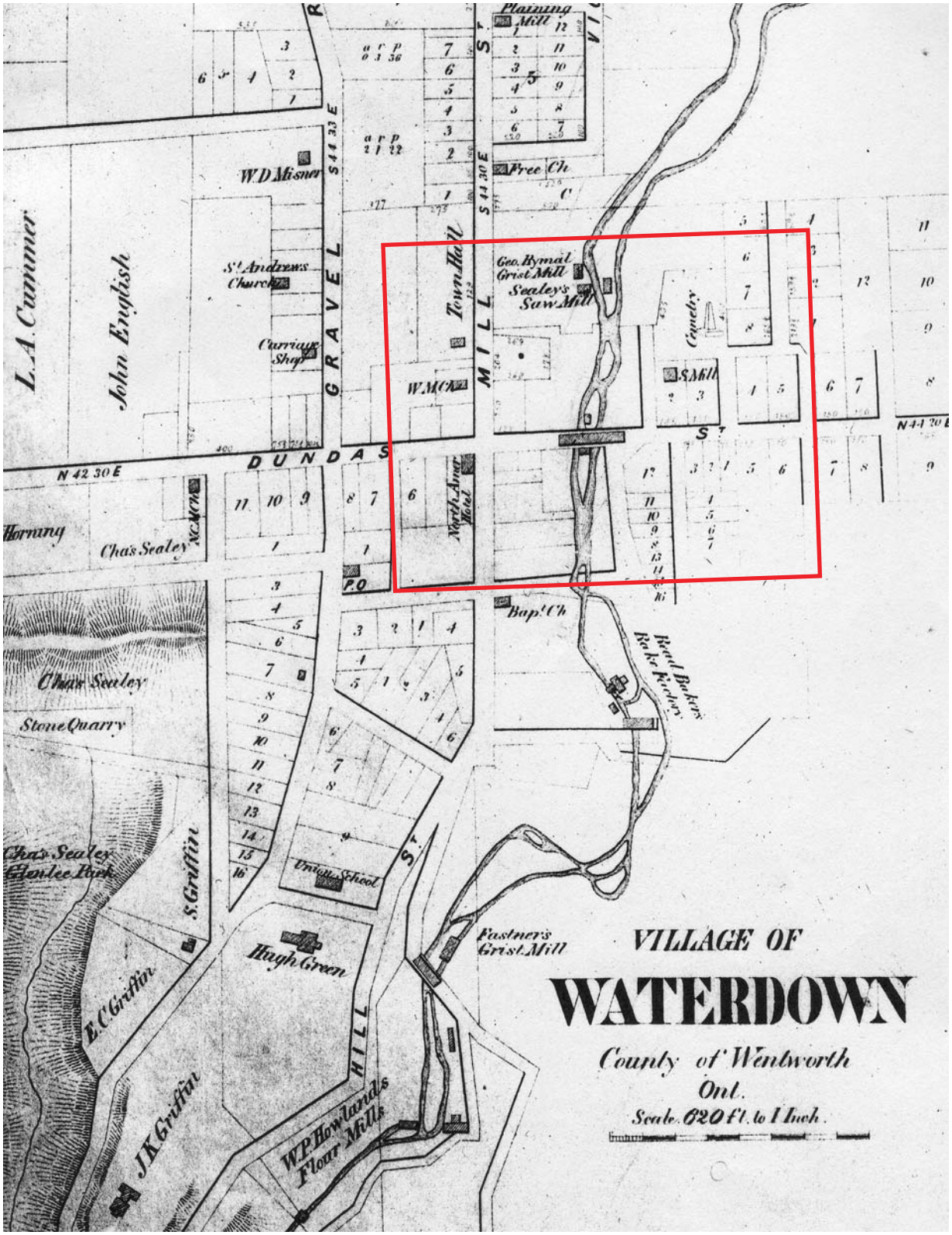
KEY

Lots 6 and 7, Concession 3

Scale
(Approximate)
0 1Km

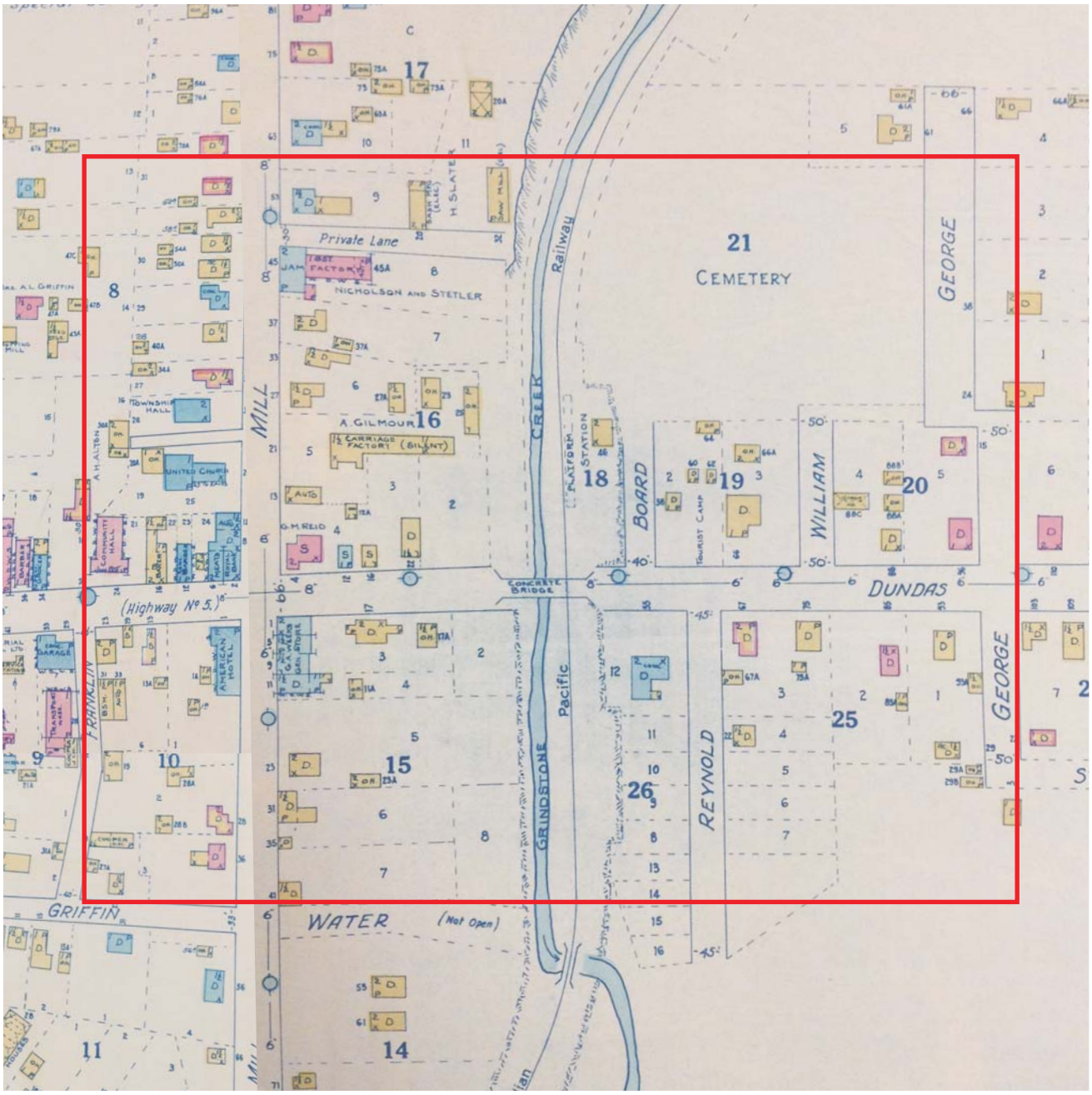
HIGHWAY 5 GRINDSTONE CREEK BRIDGE UTILITY RELOCATION CLASS EA AND CONCEPTUAL DESIGN
Stage 1: Archaeological Assessment
City of Hamilton, Ontario

Figure 7: Portion of the Township of Flamboro East - 1875 Illustrated Historical Atlas of the County of Wentworth



Village of Waterdown, Flamboro East Township, Wentworth County, Illustrated Historical Atlas of the County of Wentworth. H. R. Page, Toronto, 1875.

HISTORIC HORIZON Date: 27/08/15 Designer: EG	KEY Study Area	HIGHWAY 5 GRINDSTONE CREEK BRIDGE UTILITY RELOCATION CLASS EA AND CONCEPTUAL DESIGN Stage 1: Archaeological Assessment City of Hamilton, Ontario **Figure 8: Plan of the Village of Waterdown, 1875 Historical Atlas**



Insurance Plan of the Village of Waterdown, Ont., 1939. Page 2 & 3. Archives of Ontario, Toronto, Ont.

HISTORIC HORIZON Date: 27/08/15 Designer: EG	KEY Study Area Scale (Approximate) 0 100m	HIGHWAY 5 GRINDSTONE CREEK BRIDGE UTILITY RELOCATION CLASS EA AND CONCEPTUAL DESIGN Stage 1: Archaeological Assessment City of Hamilton, Ontario **Figure12: Portion of the 1939 Insurance Plan of the Village of Waterdown, Ont.**

Air Photo of Flamborough Area, Photo 37, National Air Photo Library, 1950.
Retrieved from Lloyd Reeds Map Collection, McMaster University, Hamilton, ON.

HISTORIC HORIZON

Date: 27/08/15
Designer: EG

KEY
Approximate Location of Study Area

Scale
(Approximate)
0 100m

HIGHWAY 5 GRINDSTONE CREEK BRIDGE UTILITY RELOCATION CLASS EA AND CONCEPTUAL DESIGN
Stage 1: Archaeological Assessment
City of Hamilton, Ontario

Figure 13: 1950 Air Photo of the Study Area

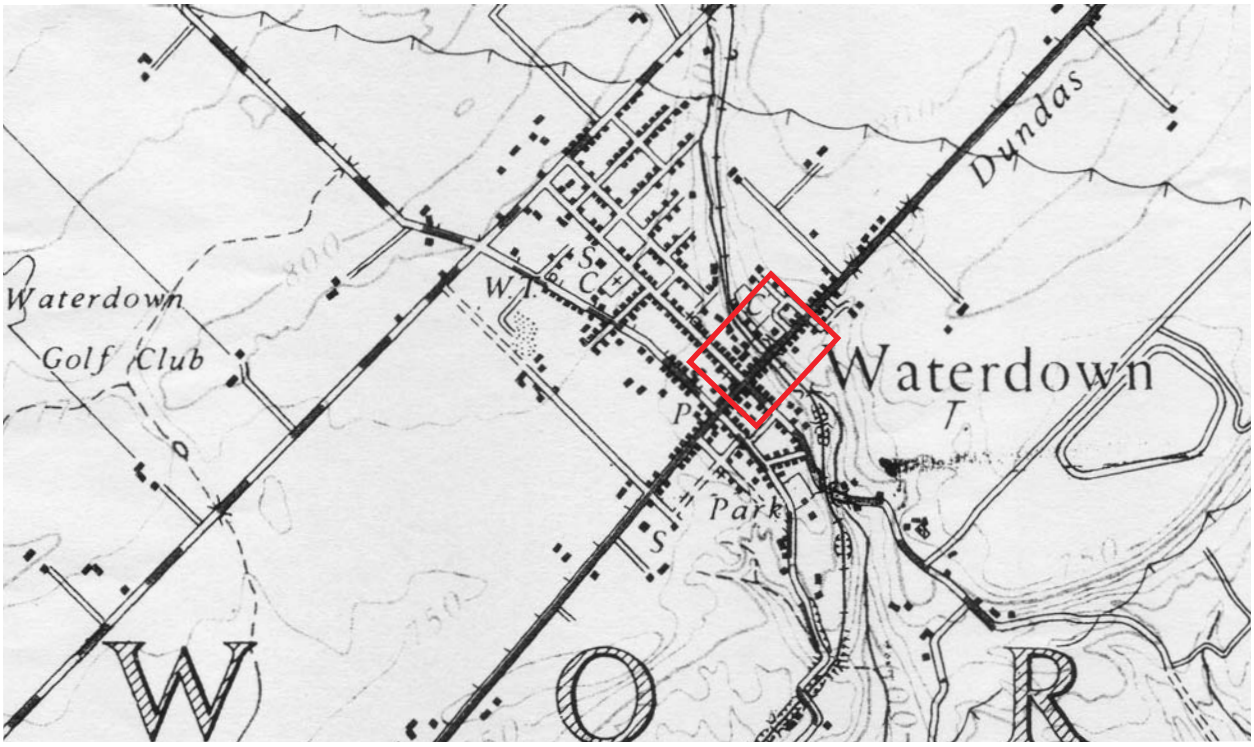


Figure 14a: NTS 30 M/5, 1952

National Topographic System (NTS), 30 M/5, 1952.

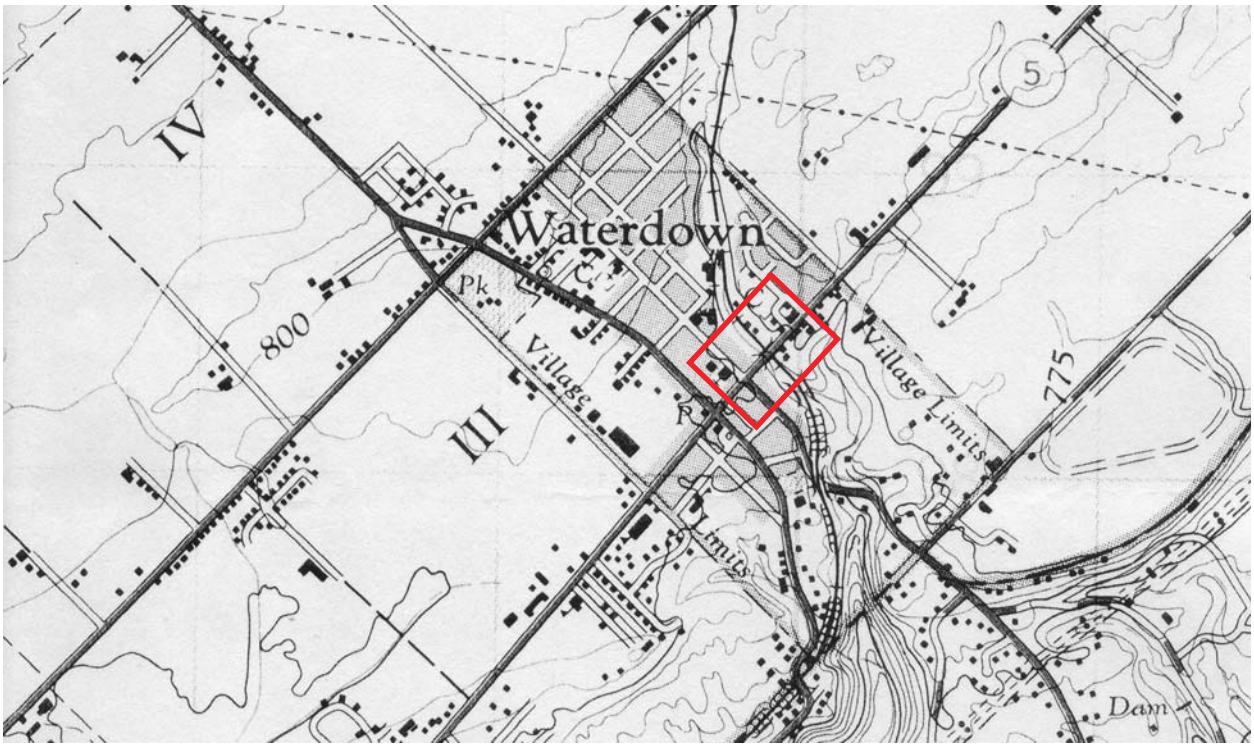
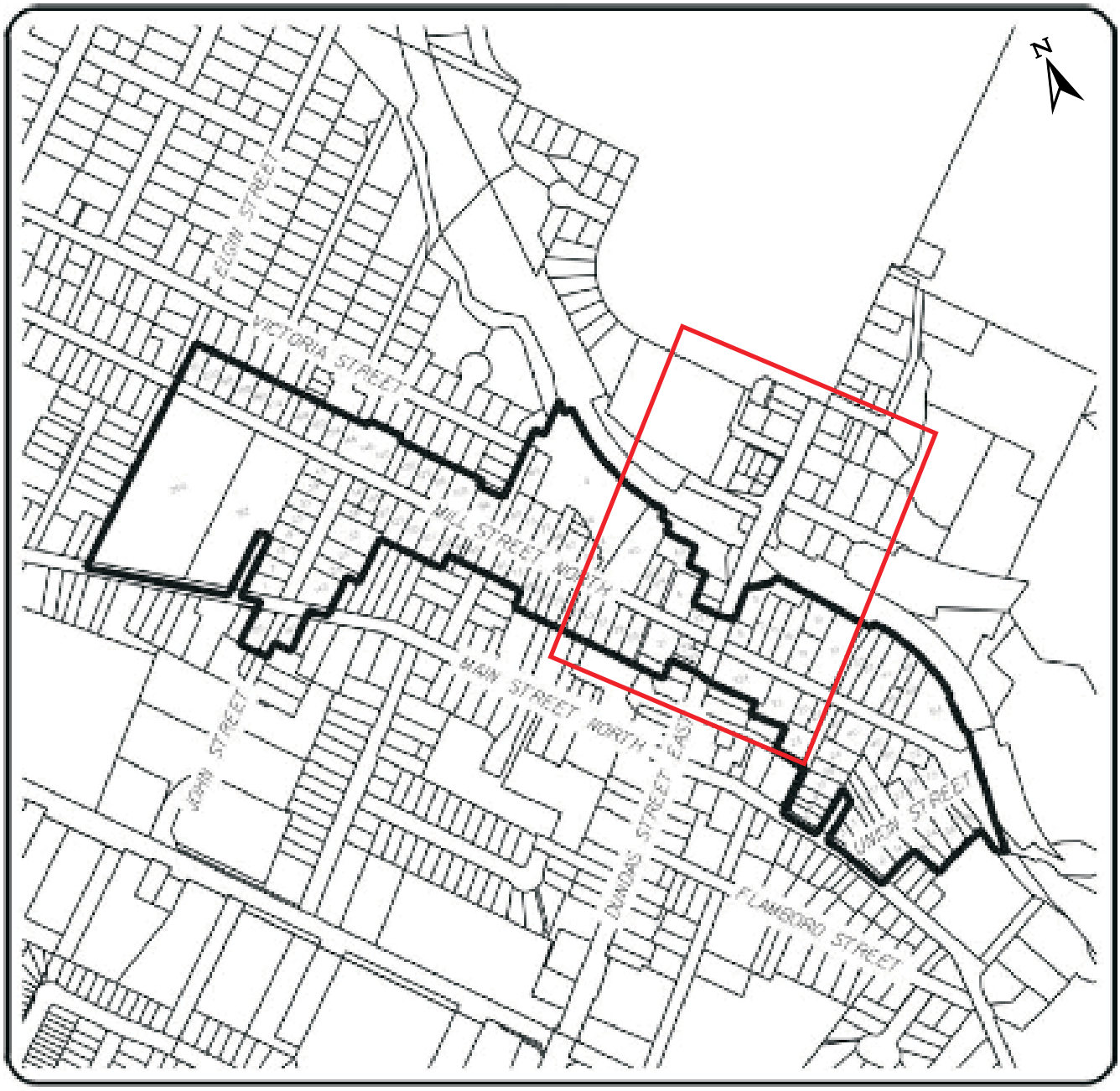


Figure 14b: NTS 30 M/5, 1968

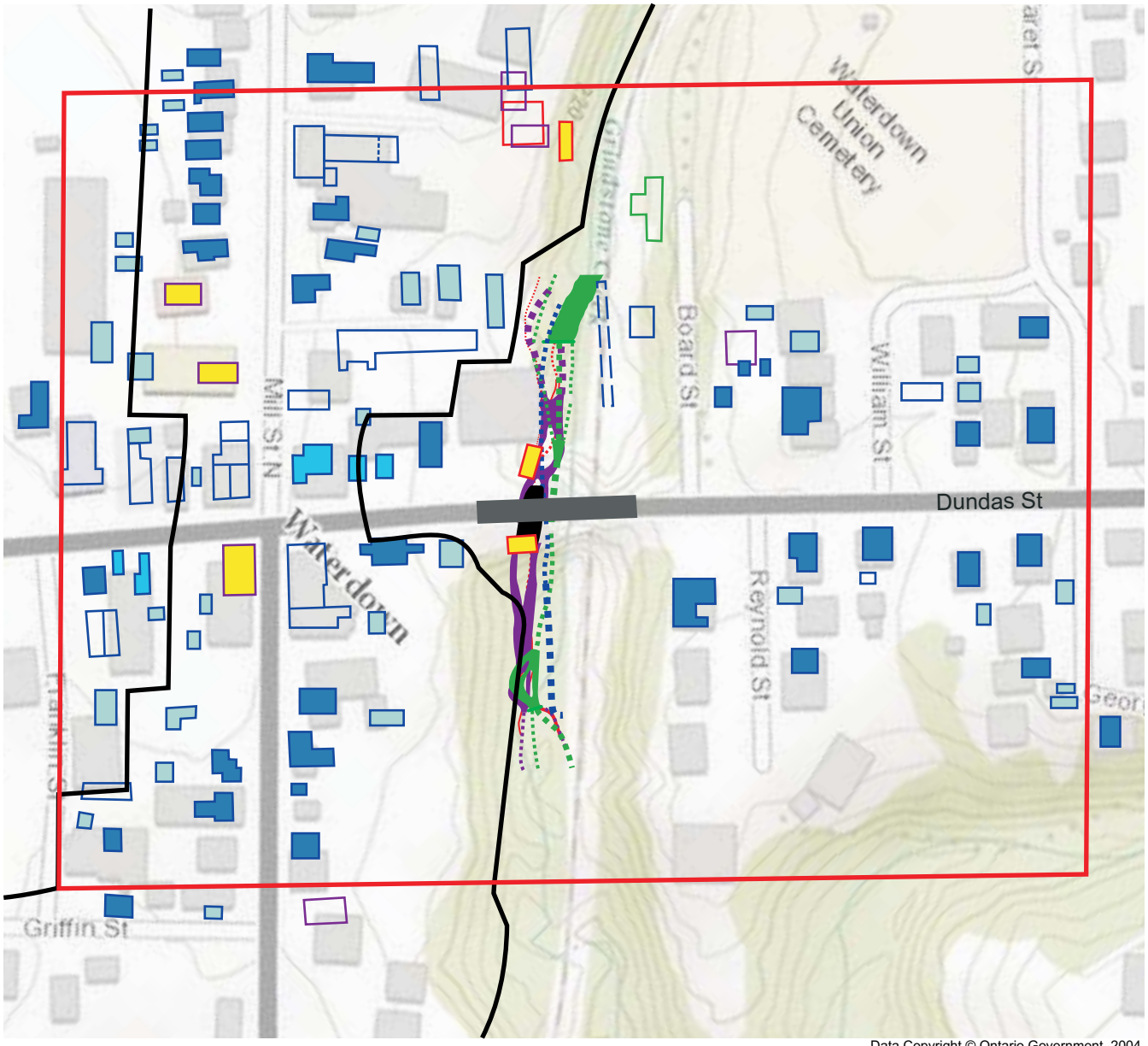
National Topographic System (NTS), 30 M/5, 1968.

HISTORIC HORIZON Date: 27/08/15 Designer: EG	KEY Approximate Location of the Study Area N Scale 0 500m	HIGHWAY 5 GRINDSTONE CREEK BRIDGE UTILITY RELOCATION CLASS EA AND CONCEPTUAL DESIGN Stage 1: Archaeological Assessment City of Hamilton, Ontario **Figure 14: 1952 and 1968 NTS Maps of the Study Area**



Heritage Resources Centre, University of Waterloo."Figure 2: Map of Mill Street Heritage Conservation District." Figure from "Heritage Conservation District Study, Mill Street Heritage Conservation District, City of Hamilton." December 2012.

HISTORIC HORIZON Date: 27/08/15 Designer: EG	KEY Heritage Conservation District Approximate Location of Study Area Scale 0 200m	HIGHWAY 5 GRINDSTONE CREEK BRIDGE UTILITY RELOCATION CLASS EA AND CONCEPTUAL DESIGN Stage 1: Archaeological Assessment City of Hamilton, Ontario **Figure 15: Mill Street Heritage Conservation District**



Data Copyright © Ontario Government. 2004.
Retrieved from www.geographynetwork.com

KEY

- Study Area
- Mill Street Heritage Conservation District outline
- Bridge (Approximate location based on historic maps)
- Approximate Location of Multiple 19th c. Structures (Based on Woods 2010)

Watercourses (All locations are approximate)

- 1854 Watercourses
- 1875 Watercourses
- 1903 Watercourses
- 1903 Dammed ponds
- 1939 Watercourses

Buildings (All locations are approximate)

- Existing Building
- Building on Multiple Maps
- 1854 H. Winter Map of Waterdown
- 1875 Historical Atlas of Waterdown
- 1903 Imperial Atlas of Waterdown
- 1939 Fire Insurance Plan
  - Dwelling
  - Outhouse
  - Store

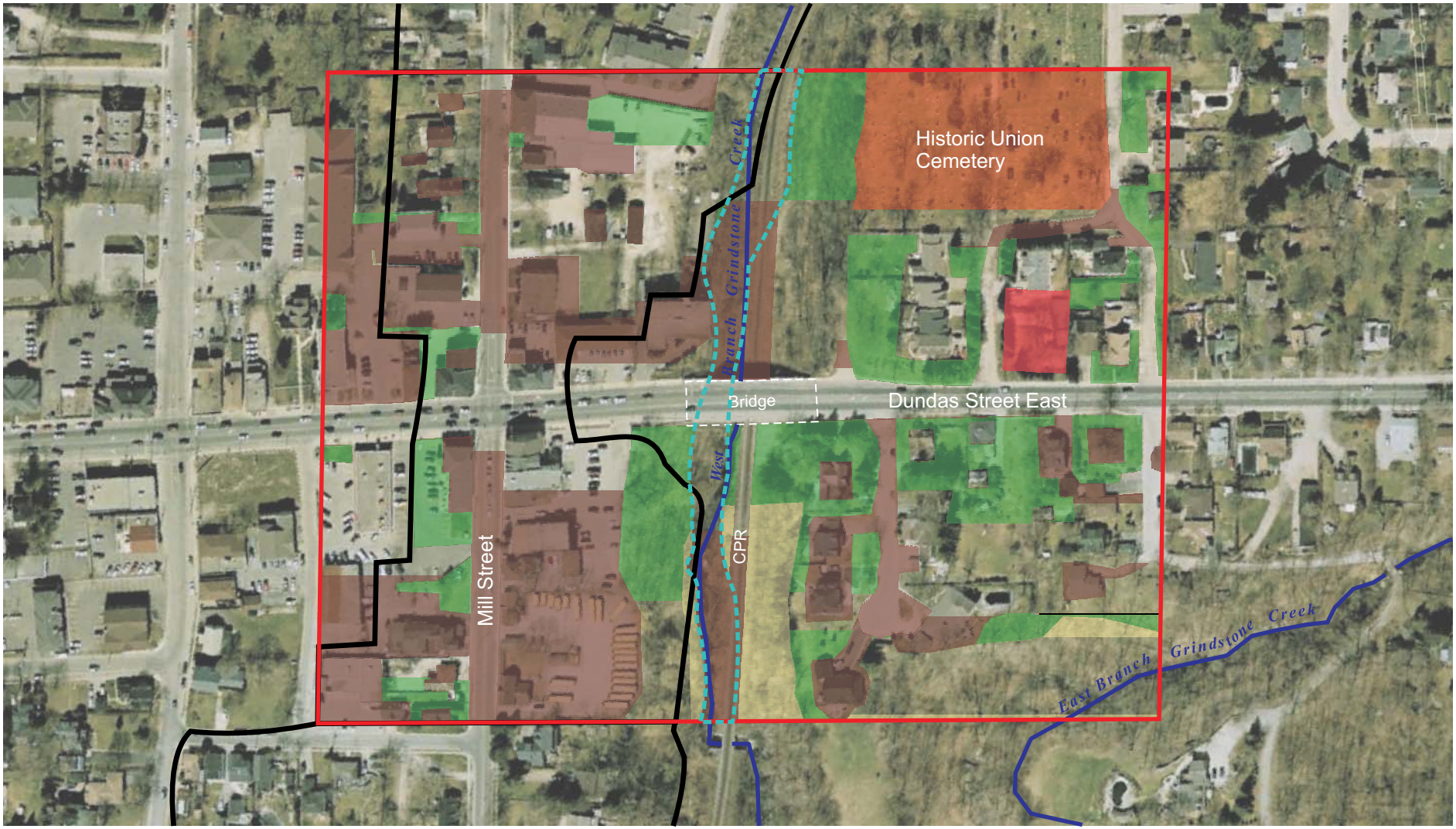
HISTORIC HORIZON

Date: 11/09/15
Designer: EG

Scale
0 100m

HIGHWAY 5 GRINDSTONE CREEK BRIDGE UTILITY RELOCATION CLASS EA AND CONCEPTUAL DESIGN
Stage 1: Archaeological Assessment
City of Hamilton, Ontario

Figure 16: Summary of Historic Structures Based on overlay of Maps from 1854, 1875, 1903 and 1939



Note: All areas of potential are approximate and may be altered at a later date.

Google Earth Imagery, 29 August 2006.

HISTORIC HORIZON

Date: 11/09/15
Designer: EG

KEY

- Study Area
- Mill Street Heritage Conservation District
- Approximate Limit of Historic Watercourses
- Previously Assessed & Cleared (ASI, 2010)
- Archaeological Potential
- Archaeological Potential Removed
- Archaeological Potential Removed - Slope
- Cemetery - No Access Allowed

Scale

0 100m

HIGHWAY 5 GRINDSTONE CREEK BRIDGE UTILITY RELOCATION CLASS EA AND CONCEPTUAL DESIGN
Stage 1: Archaeological Assessment
City of Hamilton, Ontario

Figure 17: Stage 1 Archaeological Potential

APPENDIX B:

SITE INSPECTION PHOTOGRAPHS

Photo 1 : View from the Dundas St. bridge, looking north up the railway line. Creek on left.

Photo 2 : View from Dundas St. bridge, looking south down the railway line. Creek on right.

Photo 3 : Looking west along Dundas from the Bridge to corner of Mill Street

Photo 4 : Looking east along Dundas toward “Vinegar Hill” area of town.

Photo 5 : Looking west at north intersection of Dundas & Mill St. N.

Photo 6 : Looking west along Dundas from Bridge at recently constructed commercial plaza by retirement residence.

Image 7: Looking N into the creek and railway ravine from Dundas St. Bridge after 1912. (FA # 253)

Image 8: Looking E across Dundas St. bridge under construction 1966. (FA #475)