

Stage 3 Archaeological Assessment of the Albertson Lime Kiln, BbGd-59

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PIF#:	P206-0100-2014
Development Name:	Elginburg Quarry Expansion
Development Project Designation #:	N/A
Property Location:	Lot 13, Concession 5, Kingston Township (now within the City of Kingston), Frontenac County, Ontario
Date:	17, November, 2014
Report type:	Original

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Executive Summary

In April of 2014, Ground Truth Archaeology carried out a Stage 3 archaeological assessment of a lime kiln (BbGd-59) located on a parcel of land near Elginburg, north of Kingston, that is slated for expansion of an adjoining quarry (Figure 4). The site was found during a Stage 2 assessment the previous year near the top of a slope directly south of the quarry expansion and outside of the quarry license area. The Stage 2 assessment recommended the BbGd-59 site to have cultural heritage value as a relatively rare rural industrial archaeological site and require Stage 4 mitigation.

Consequently, eleven 1m x 1m units were excavated around the lime kiln on a ten metre interval grid in an attempt to gather an artifact sample dating to the period of use of the structure and define the site's limits. Unfortunately no artifacts other than a few pieces of charcoal were recovered during the excavations. The interior of the kiln was not excavated as this was deemed a feature and beyond the scope of the Stage 3 assessment. A date of the last half of the nineteenth century has been tentatively assigned to the kiln based on its similarity to other kilns of this date in eastern Ontario.

Lime kilns were once an integral part of the cultural landscape in Eastern Ontario, making use of the shallow underlying limestone bedrock to create a multifunctional product. Lime kilns in eastern Ontario were often crudely constructed, built for a temporary but specific purpose and then abandoned. Few have been archaeologically excavated. As the lime kiln at BbGd-59 is relatively well constructed and well preserved, it should continue to be preserved as an example of a vanishing aspect of 19th century rural Ontario life.

As a result of the Stage 3 archaeological assessment Ground Truth Archaeology makes the following recommendations in regards to BbGd-59:

- The lime kiln site at BbGd-59 should be considered to have cultural heritage value and is recommended for Stage 4 mitigation.
- Avoidance and protection of the site is the preferred option for mitigation.
- If protection and avoidance are not viable for BbGd-59 then the site or portions of the site will require Stage 4 mitigation through excavation and documentation in order to allow whatever subsurface impact that is anticipated by development to proceed.
- If avoidance and protection is chosen as the option for dealing with the archaeological site or portions of the site, it will be necessary to put in place a long term protection strategy for the site. There are two general approaches to this, either to protect the site and its 10m buffer alone or to put in place a broader protected area within which the site and its 10m buffer is contained. In the case of the "site only" approach it would be necessary to accurately survey the site limits, including a 10m buffer zone, and have this put on the registered plan (Figure 16) for the property as a separate part(s) with an associated proscriptive zoning and a restrictive covenant placed on title. This is the option chosen by the proponent for long term site protection

- In the case of avoidance and protection the local approval authority (City of Kingston) should acknowledge their concurrence with the avoidance and protection measures and commit to the application of the proscriptive zoning.
- All on-site construction crews, engineers, architects or others must be issued “no-go” instructions regarding the archaeological site and the proponent must prepare a letter acknowledging the site and committing to its long term protection.
- The location of the area to be avoided must be shown on all contract drawings when applicable, including explicit instructions or labelling to avoid the site. Construction phase fencing should be erected around the buffer zone if construction in the vicinity of the site is necessary.
- If construction is to occur in close proximity to the buffer zone this must be inspected and monitored by a professional archaeologist and a report submitted to the Ministry of Tourism, Culture and Sport documenting the effectiveness of the avoidance strategy in ensuring that the area to be avoided remains intact.

Project Personnel

Licensee:	Nick Gromoff (P206)
Project Manager:	Nick Gromoff (P206)
Field Director:	Helen Sheldon (P191)
Cartography:	Helen Sheldon
Report Writing:	Helen Sheldon
Artifact Analysis:	Helen Sheldon
Field Technicians:	Peter Cassidy, Colin Smith, John Smith

Project Context

Development Context

In March of 2014 Ground Truth Archaeology was retained by The Cruickshank Group, Kingston, Ontario to undertake a Stage 3 archaeological assessment of a nineteenth century archaeological site (BbGd-59) located on an approximately 38 hectare parcel of land backing onto the K&P Trail just west of the village of Elginburg. The site is located within Lot 13, Concession 5 in Kingston Township, now within the City of Kingston (Figure 4). An existing Aggregate Extraction Facility is owned and operated by The Cruickshank Group on Lot 14 directly east of the subject property and fronting onto Unity Road to the north. It is the intention of The Cruickshank Group to prepare for the future expansion of the existing Aggregate Extraction property on Unity Road.

An archaeological assessment was required by the Ministry of Natural Resources for expansion of the quarry and by the City of Kingston as part of the Official Plan amendment and rezoning process. The Stage 1 archaeological assessment of the property, conducted by Ground Truth Archaeology in 2010 under PIF P246-040-2010, recommended a Stage 2 assessment of the entire property. The Stage 2 archaeological assessment, conducted in November 2013 resulted in the discovery of BbGd-59 and a Stage 3 assessment was recommended in order to determine the extent of the site and obtain further information regarding function and date of the site.

The current archaeological assessment was conducted for an application for quarry extension (Figure 4). The legislation triggering the assessment is the Aggregate Resource Act and the Planning Act. The Ministry of Natural Resources and the City of Kingston are the approval authorities for this application. Permission to access the property, conduct archaeological fieldwork and remove artifacts was given by Ken Bangma of the Cruickshank Group prior to the start of archaeological fieldwork.

Historical Context

The following is taken from the 2010 Stage 1 report (Berry 2010):

Lot 13 within Concession 5 was split along its eastern and western halves, with the east half first granted by the Crown to John Cummings *et al*, in 1802 (OLR). The west half was granted at the same date to Colonel Neil McLean. These men were Loyalists, and would have viewed these properties, by the Crown following the American Revolution, as capital, rather than as working farms.

In 1812, John Cumming and Peter Smith transferred title to the east half of Lot 13 to Peter Smith. The west half was mortgaged by John McLean in 1834 (OLR). In 1838, the Smiths sold the east half to William Dames, who sold it to William Albertson in 1840 (OLR). William Albertson was of Loyalist stock, on all sides. He was born in Kingston Township in 1806, and died there in 1881. His wife Ann Maria Loney was also from Kingston Township. They had many children, mostly girls, and in 1851 were living on Lot 13, in a one storey log house. A labourer, Charles Murray, his wife and daughter were living in a shanty nearby. It seems most likely that the Albertson house of 1851 was in the same location as the one shown on Walling's map of 1860, since the family was enumerated near the Switzers and Gibsons and Jacksons of Jackson's Mill. All of these families' properties lay on or near the fourth concession line. In 1860, Walling's map showed Lot 13 in the possession of W. Albertson (Figure 2).

The Historical Atlas, nearly two decades later, shows W. Albertson owning the east half of Lot 13 (Figure 3). There was a house located at the south end of the property, between the creek to the south, and the railway line to the north. The west half of Lot 13 was owned by Timothy Donovan, who lived on Lot 14 (Figure 3). Donovan purchased the land in 1840 from John McLean (OLR). After the death of William Albertson, his wife, Maria, gave the property to her son, John in 1882. Both halves of the lot remained in the possession of the original settlers until after 1900 (OLR).

In summary, the study area was settled fairly late by local standards, and does not appear to have had any other use than agricultural during the historic period. An aerial photograph dating to 1953 (Figure 5) shows the predominantly agricultural nature of the area at that date, with not nearly as much tree cover as exists today (Figure 7).

Currently the study area contains no buildings and is primarily forested. A few largely grassed areas exist within the interior, surrounded by second growth forest consisting of scattered hardwoods, junipers and numerous thick stands of prickly ash. A significant ridge runs along the south end of the property, at the north edge of the K&P Trail that follows the former line of the Kingston and Pembroke Railway.

Archaeological Context

The site is located near Elginburg on the west side of an active aggregate extraction site owned and operated by The Cruickshank Group. It consists of a relatively intact lime kiln located on a slope near the top of a significant ridge that runs along the south the south end of the Cruickshank property. The site is overgrown with semi mature hardwoods, cedars and saplings and a sprinkling of prickly ash and poison ivy. The nearest water is a small creek located approximately 150 metres to the southeast.

Consultation with the Ministry of Culture, Tourism and Sport's Archaeological Sites Database during the Stage 1 assessment found that there are no registered sites within the subject property and no registered sites within one kilometre of the property (Berry 2010). During the Stage 2 assessment a total of four archaeological sites were identified. One was a precontact isolated find (BbGd-61); and the other three were interpreted as nineteenth century light industrial sites (BbGd-59, BbGd-60 and BbGd-62).

The soil on the site is classified as Farmington loam (F1), a well-drained calcareous stony loam till, generally favourable for farming (Canada Dept. of Agriculture 1965) (Figure 9). Although the soil is suitable, the depth of it is not conducive to good farming conditions. With shallow bedrock, the soil is classed as 6R –Class 6 being soils that are only capable of producing perennial forage crops (such as pasture) and cannot be improved primarily because the terrain is unsuitable for farm machinery; and subclass R being soils where solid bedrock is less than one metre below the surface Canada Dept. of Agriculture 1967) (Figure 10).

The parcel of land located immediately to the north of the study area was assessed for archaeological resources in 2009 by Ground Truth Archaeology under PIF P206-048-2008 (Gromoff 2009). The study area was found to have low to no potential for the presence of archaeological resources and no further work was recommended. The Stage 1 archaeological assessment of the area including BbGd-59 was conducted in 2010 by Ground Truth Archaeology under PIF P246-040-2010 (Berry 2010), with archaeological potential identified as significant and a Stage 2 assessment recommended (Figure 8). The Stage 2 assessment occurred in November, 2013 by Ground Truth Archaeology and resulted in the discovery and registration of four archaeological sites – BbGd-59, BbGd-60, BbGd-61 and BbGd-62, under PIF P191-0085-2013 (Sheldon 2014).

The Stage 3 archaeological assessment of BbGd-59 occurred on April 23, 24 and 25, 2014.

Maps

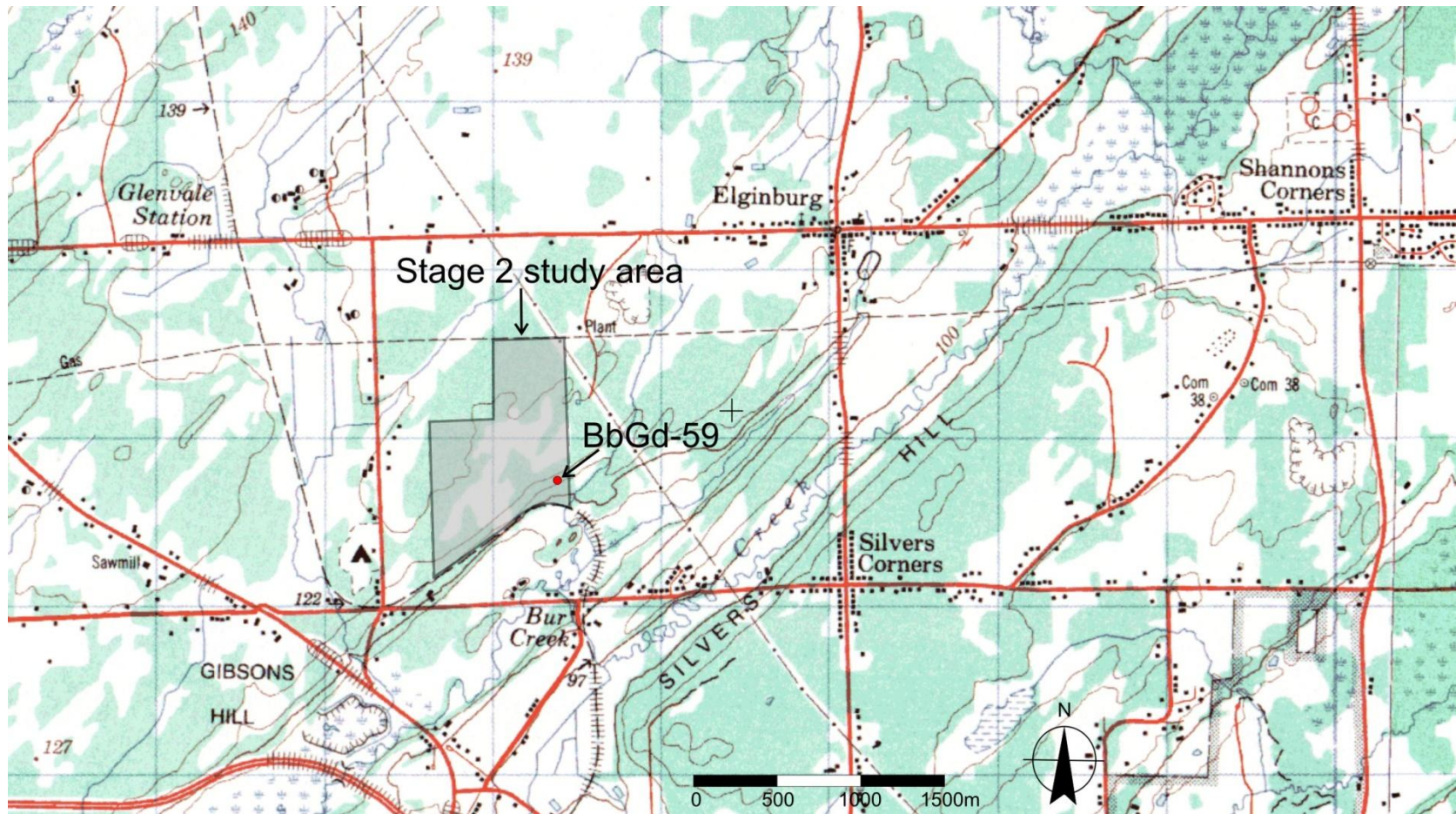


Figure 1: Site shown on the 1:50,000 NTS map (31C/7)

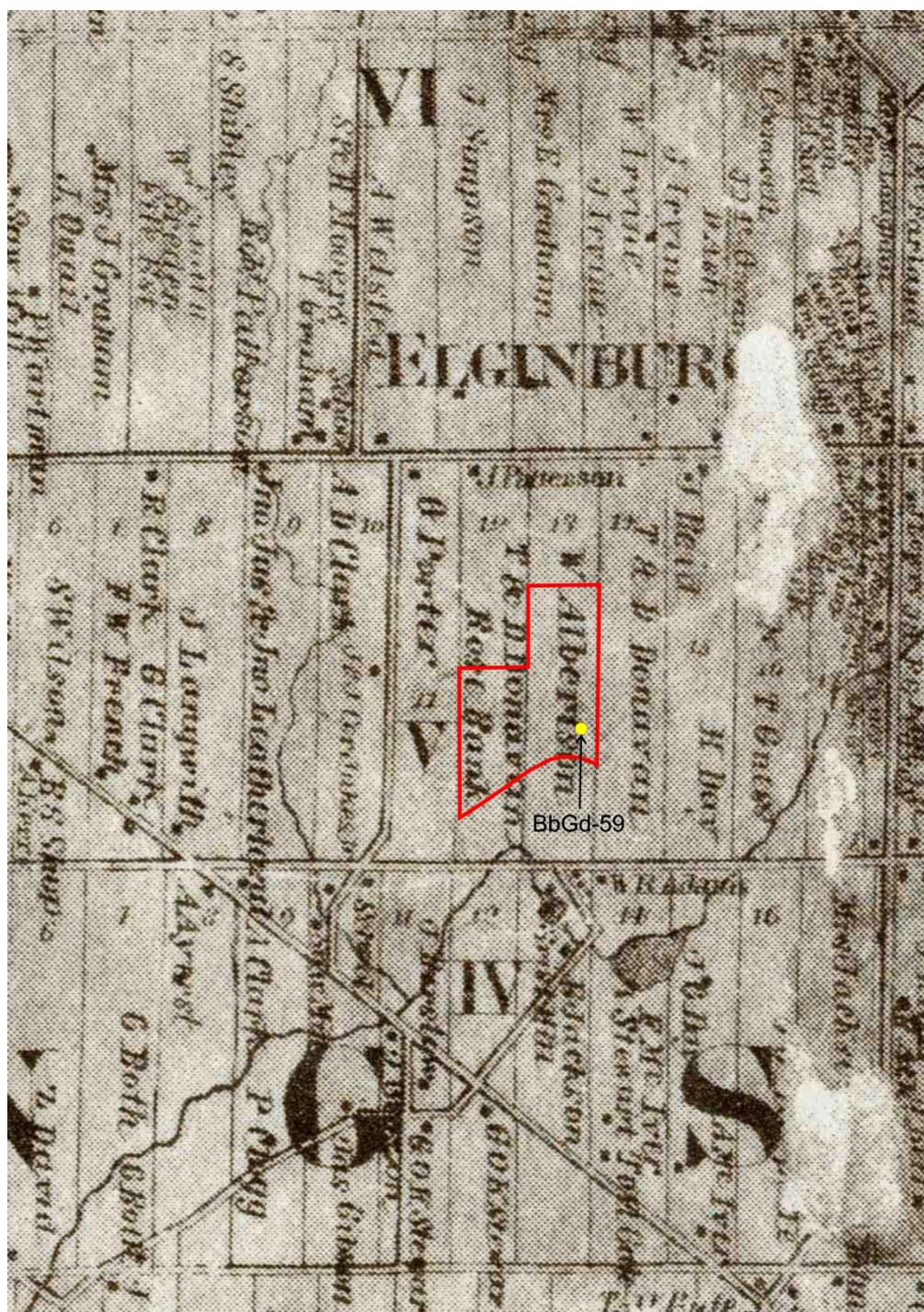


Figure 2: Site on the 1860 Walling map

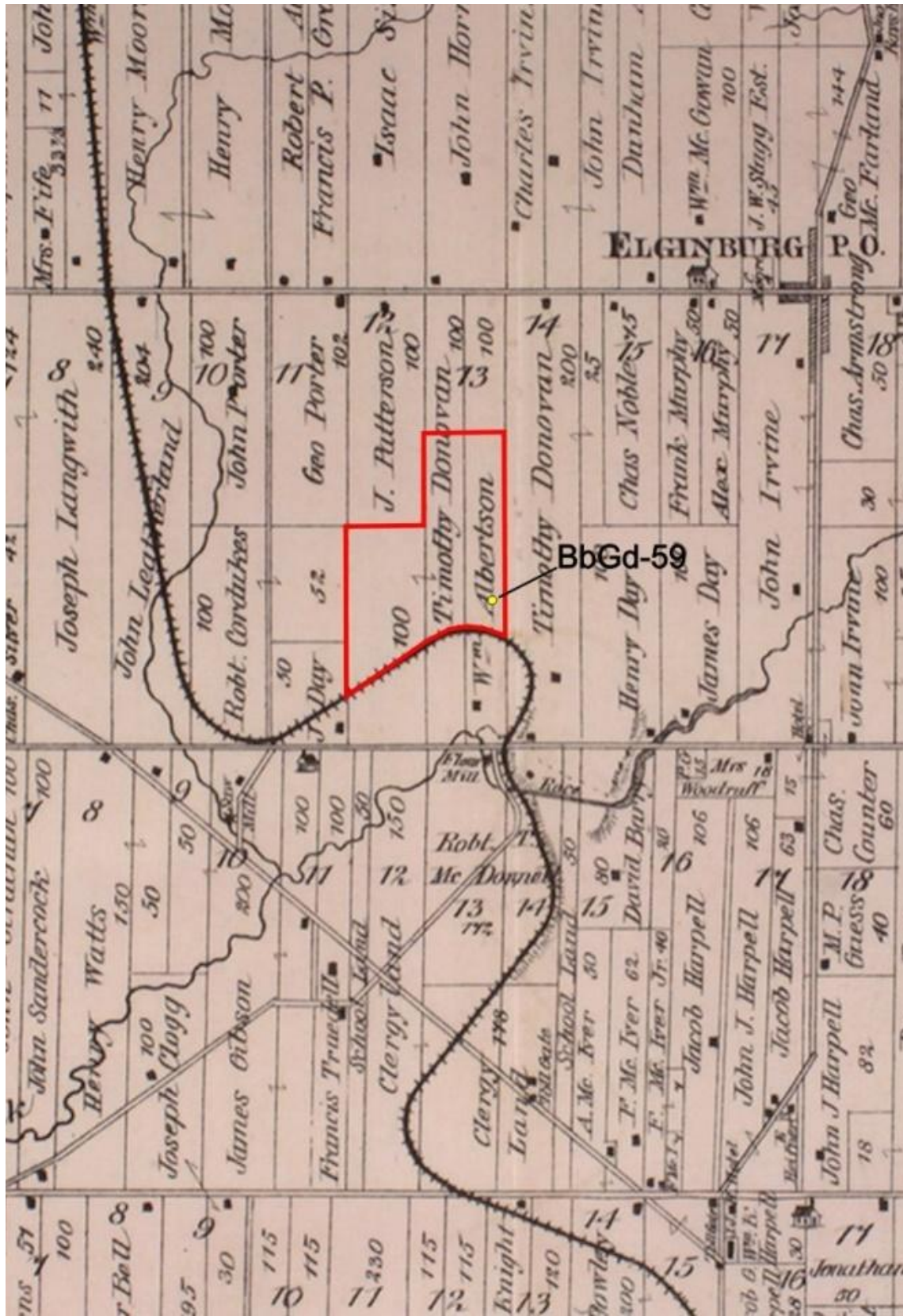


Figure 3: Site on the 1878 Meacham map

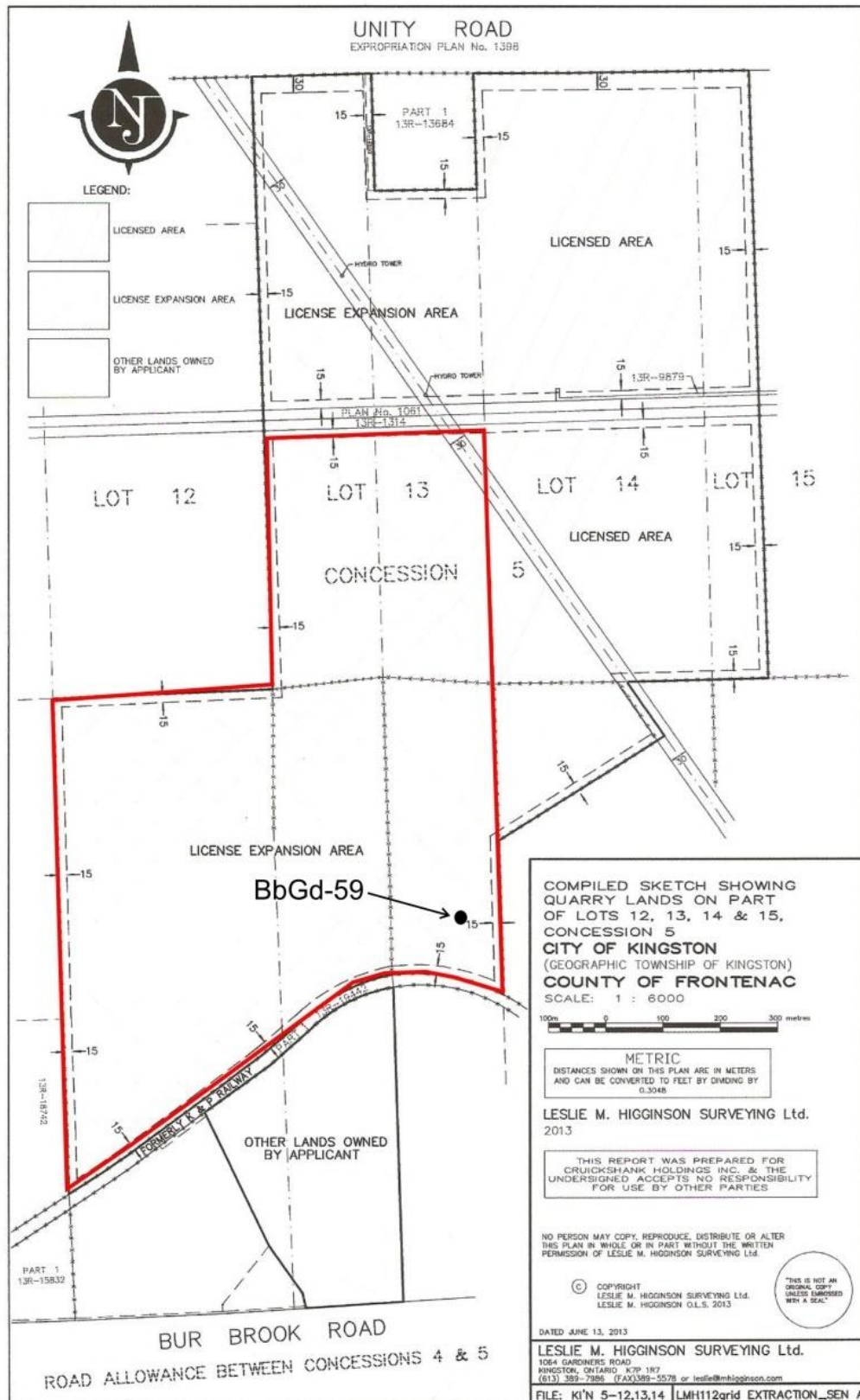


Figure 4: Site on the development plan

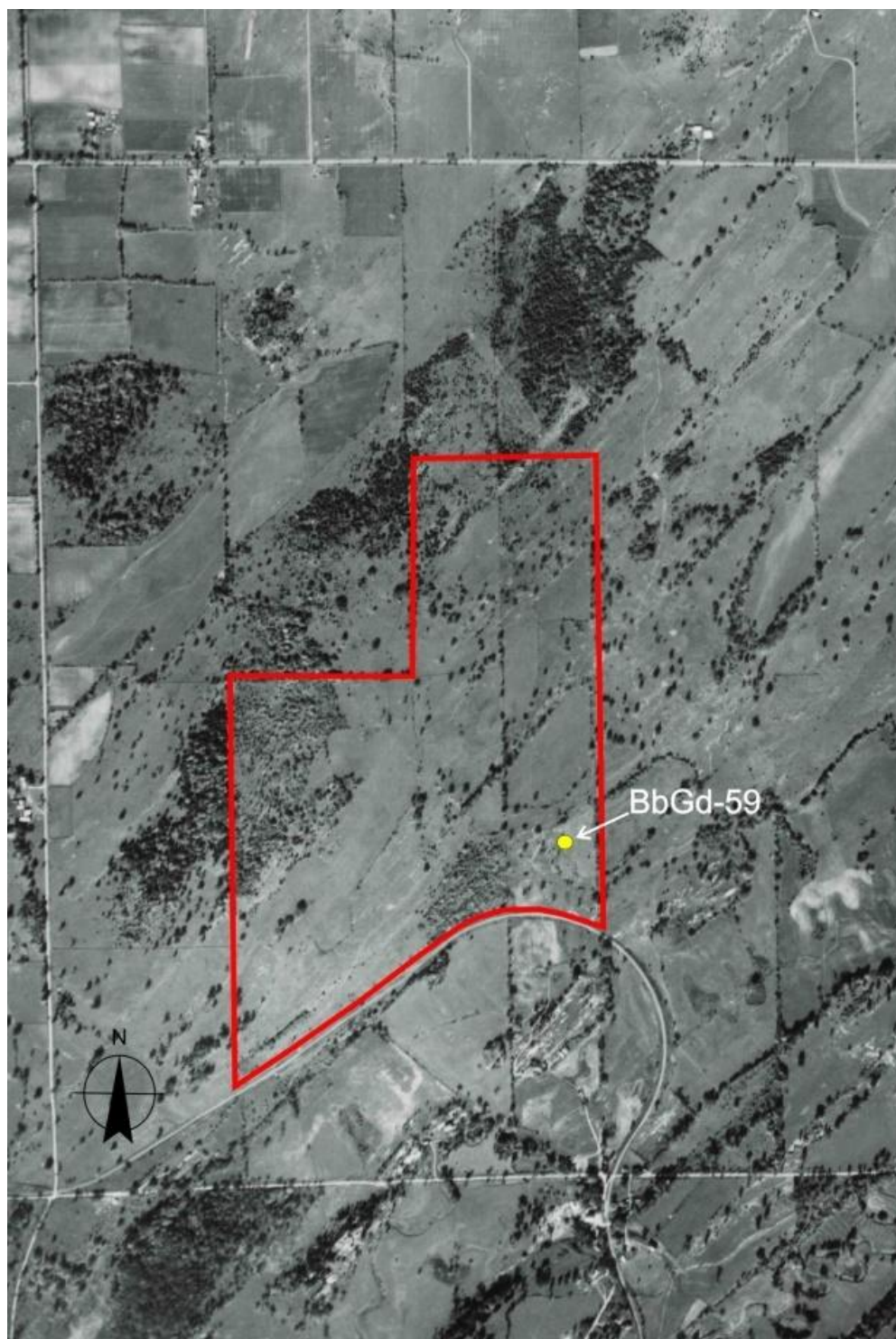


Figure 5: Site on a 1953 aerial photograph

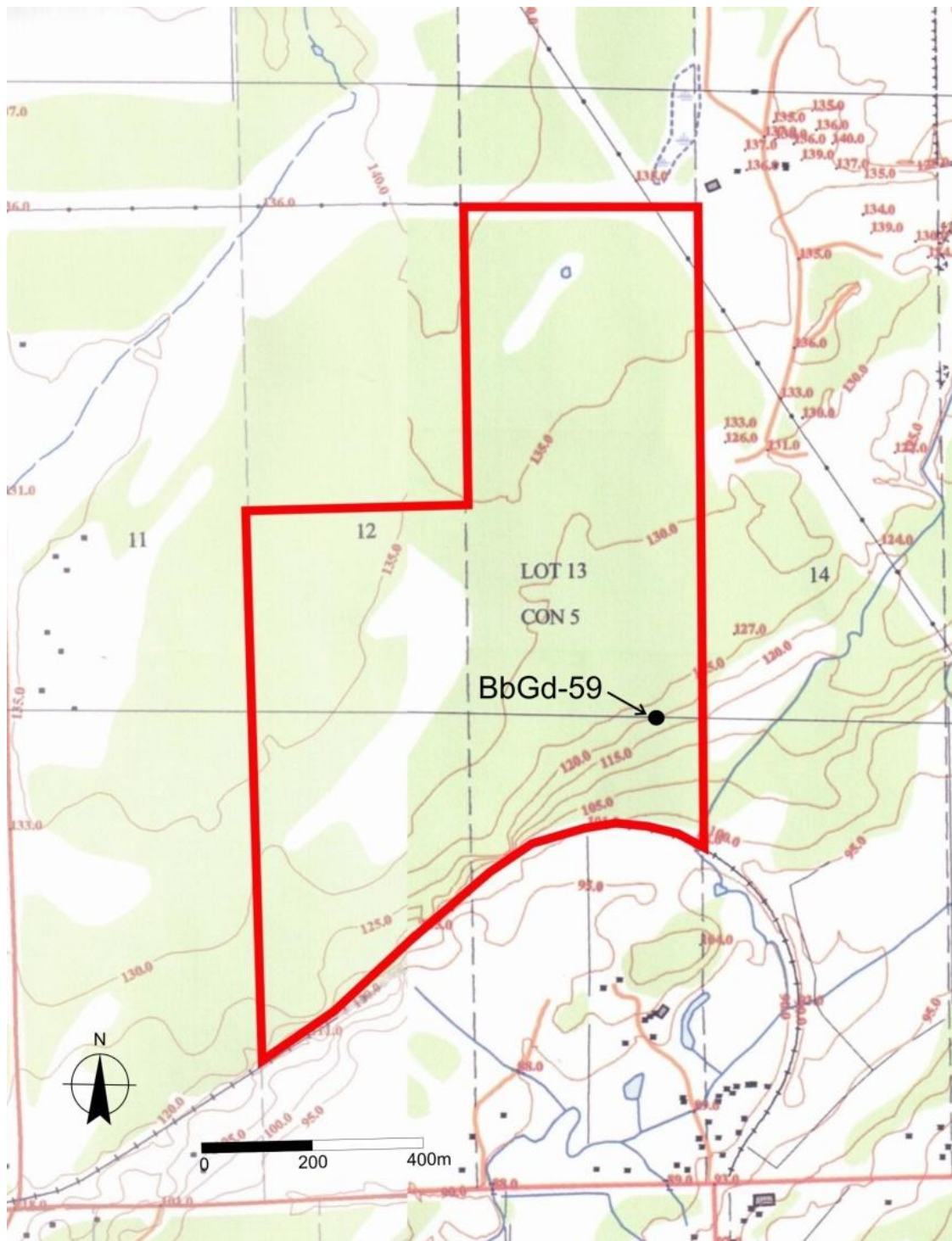


Figure 6: Site on the 1:10,000 Ontario Base Map

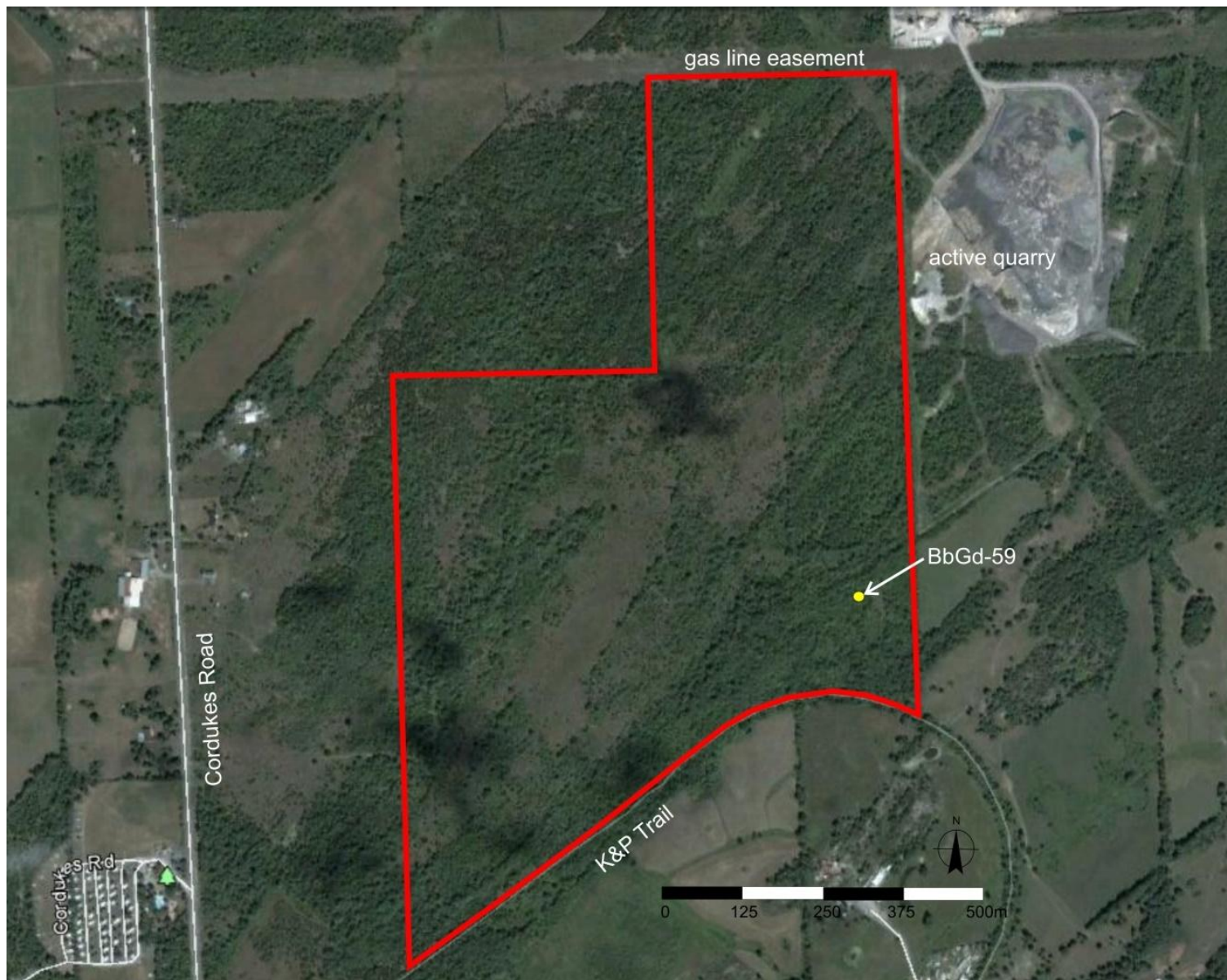


Figure 7: BbGd-59 on a recent aerial view (base Google Earth)

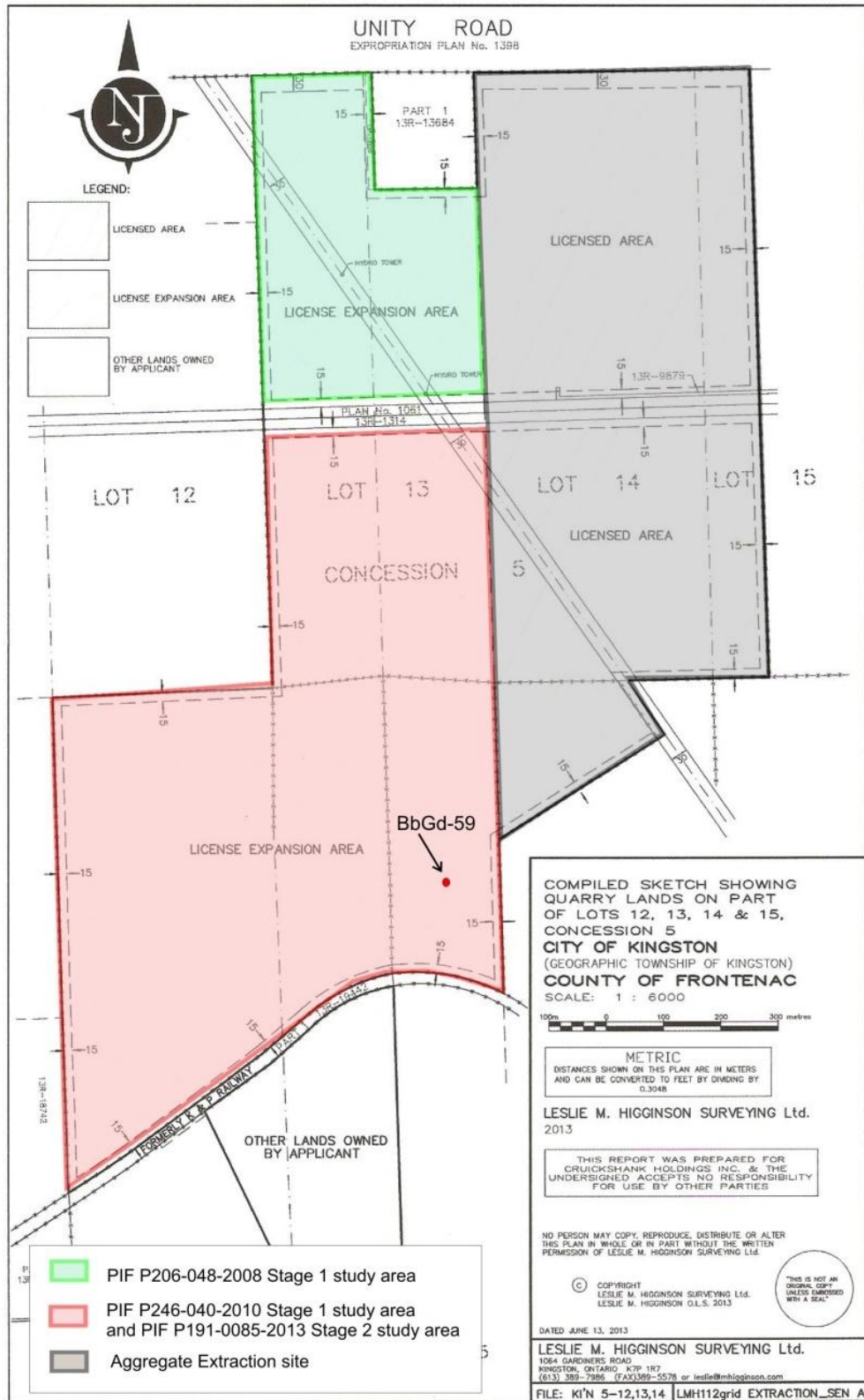


Figure 8: Previous archaeological assessments

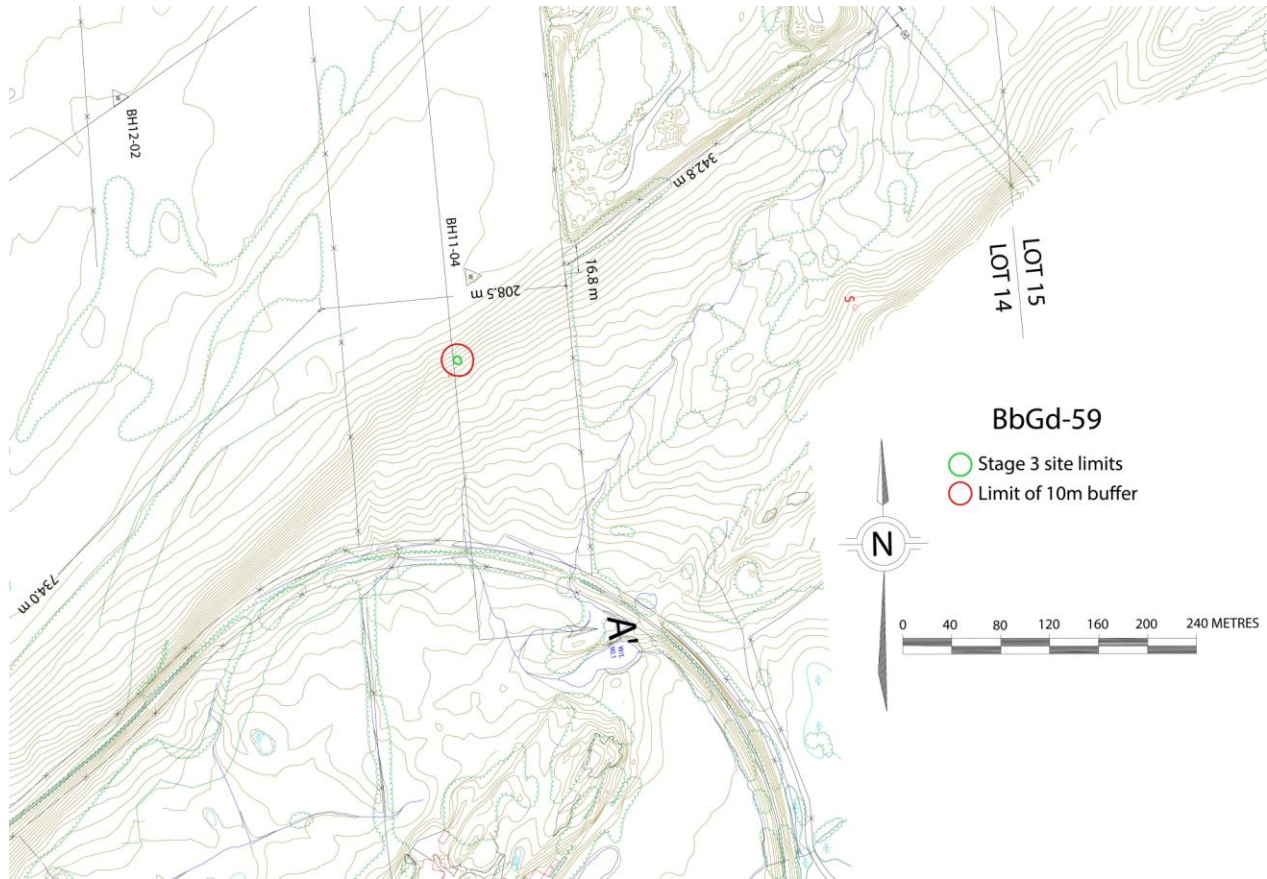


Figure 10: Closeup of Stage 3 site limits and 10m buffer on topographic survey (base map Cruickshank 2014)

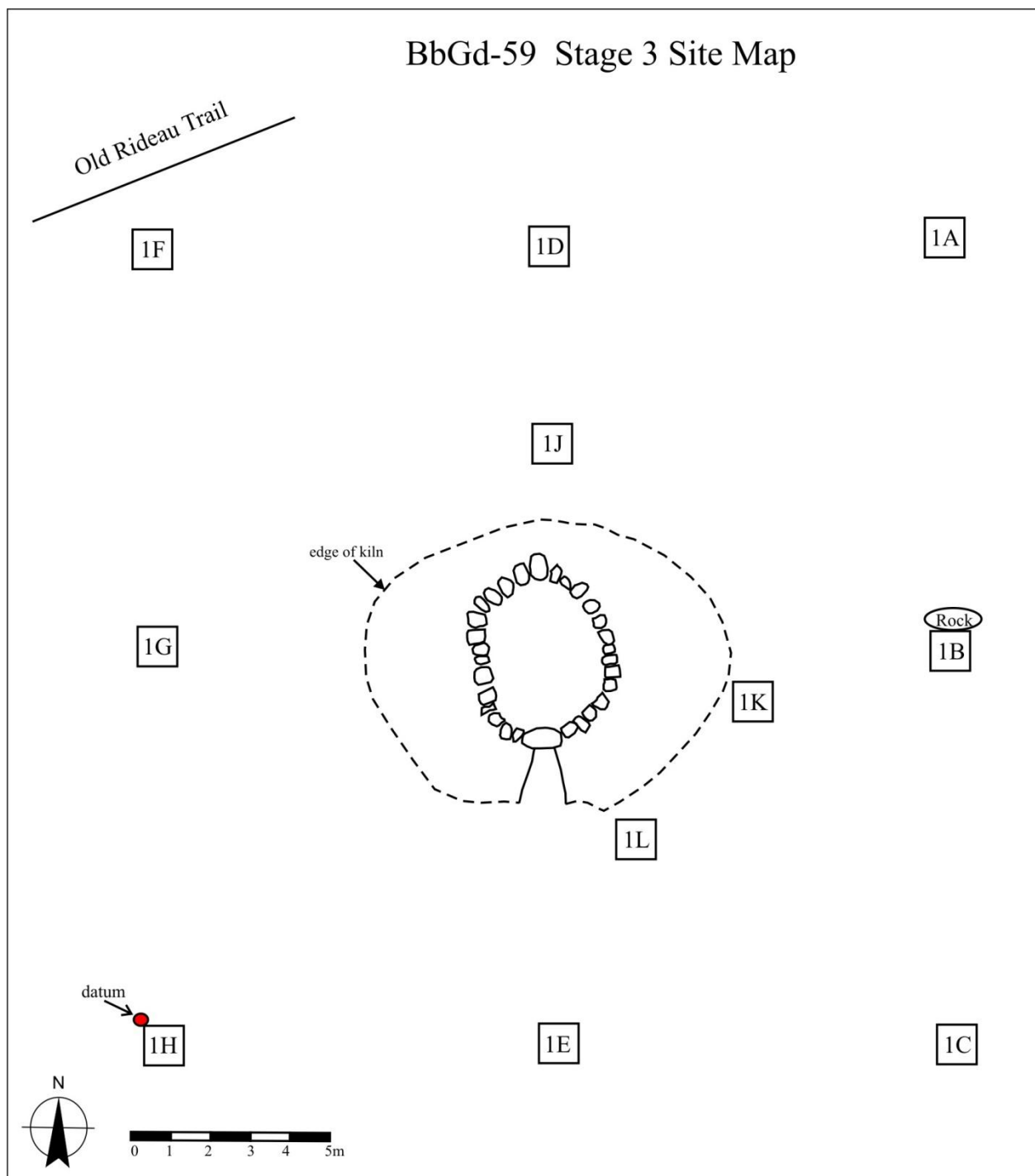


Figure 11: Stage 3 site map, BbGd-59

BbGd-59
Lime Kiln Plan View

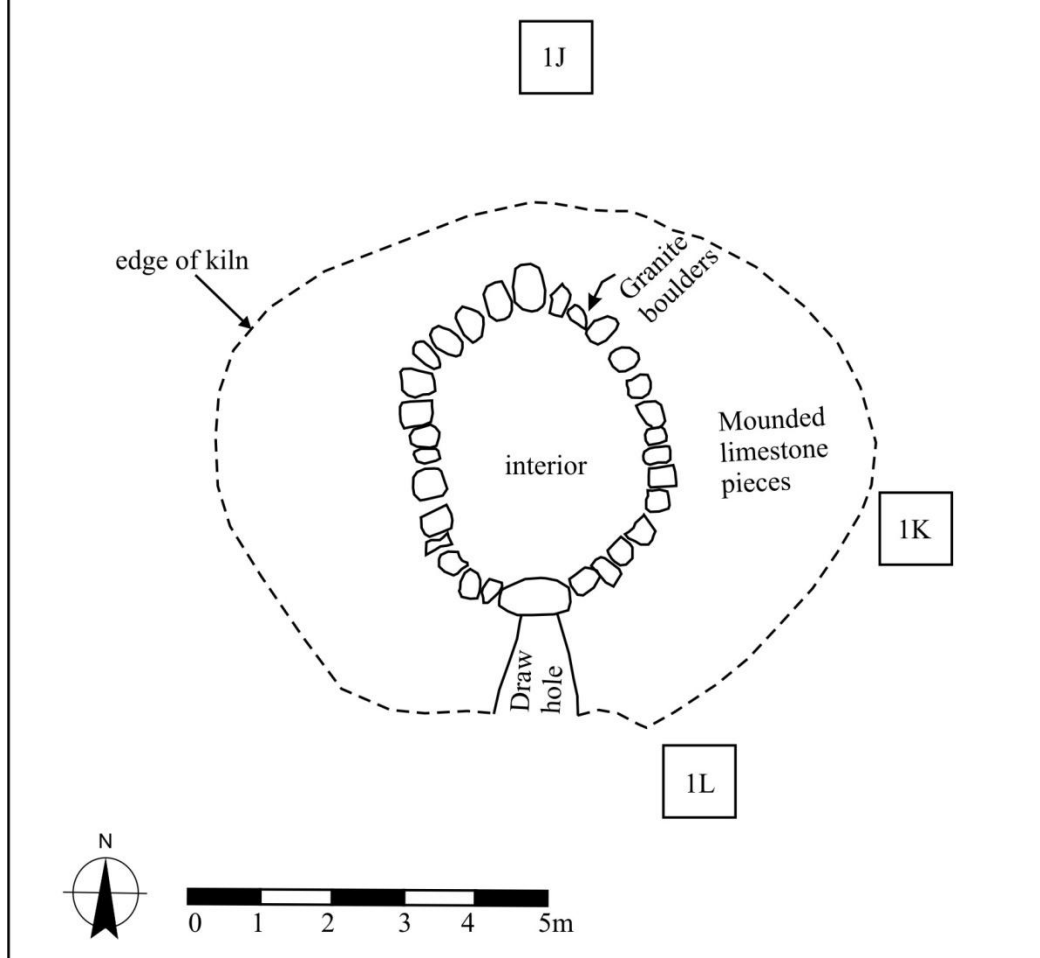


Figure 12: Plan view of kiln

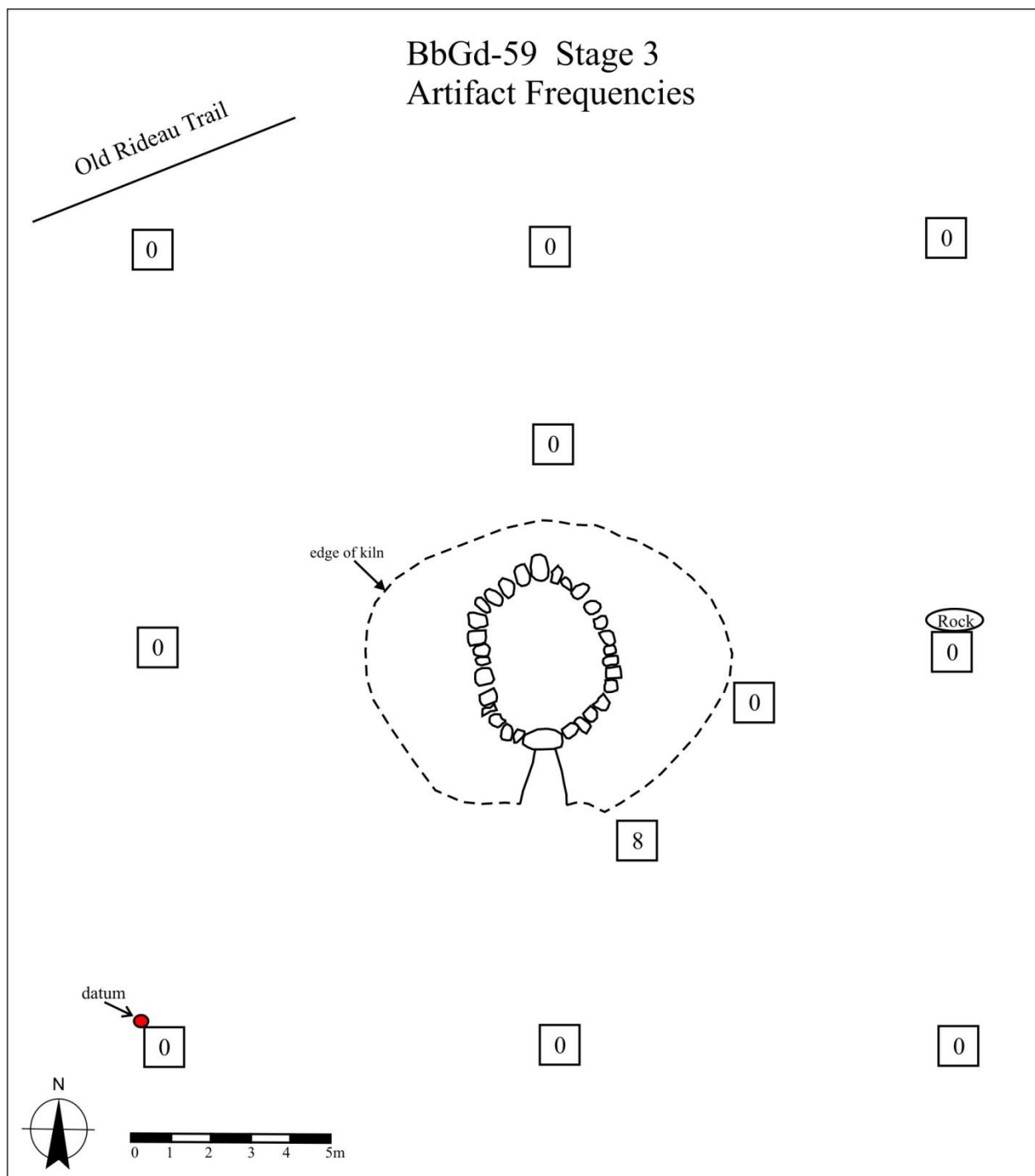


Figure 13: Stage 3 artifact frequencies, BbGd-59

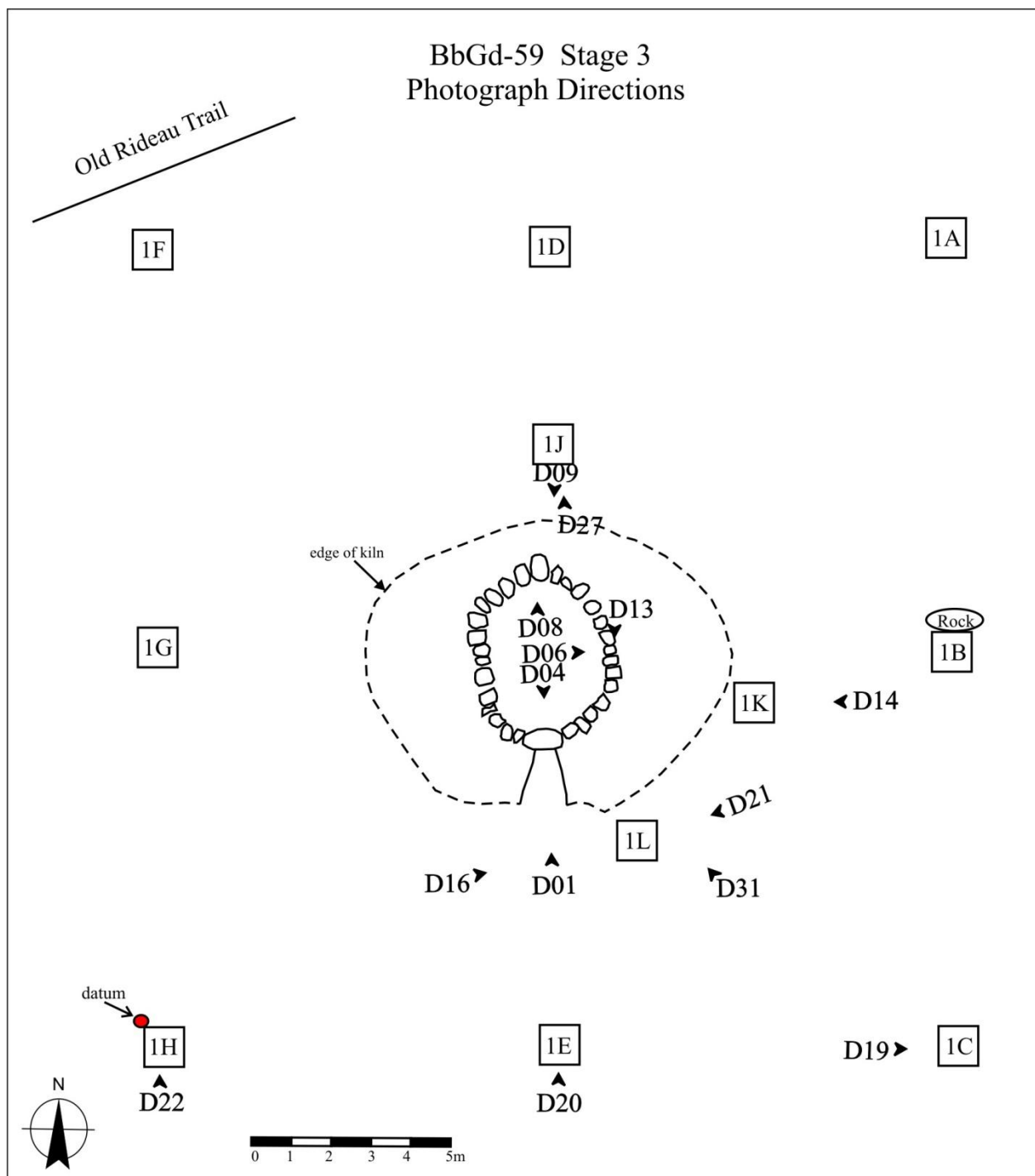


Figure 14: Photograph directions (by photograph catalogue number)

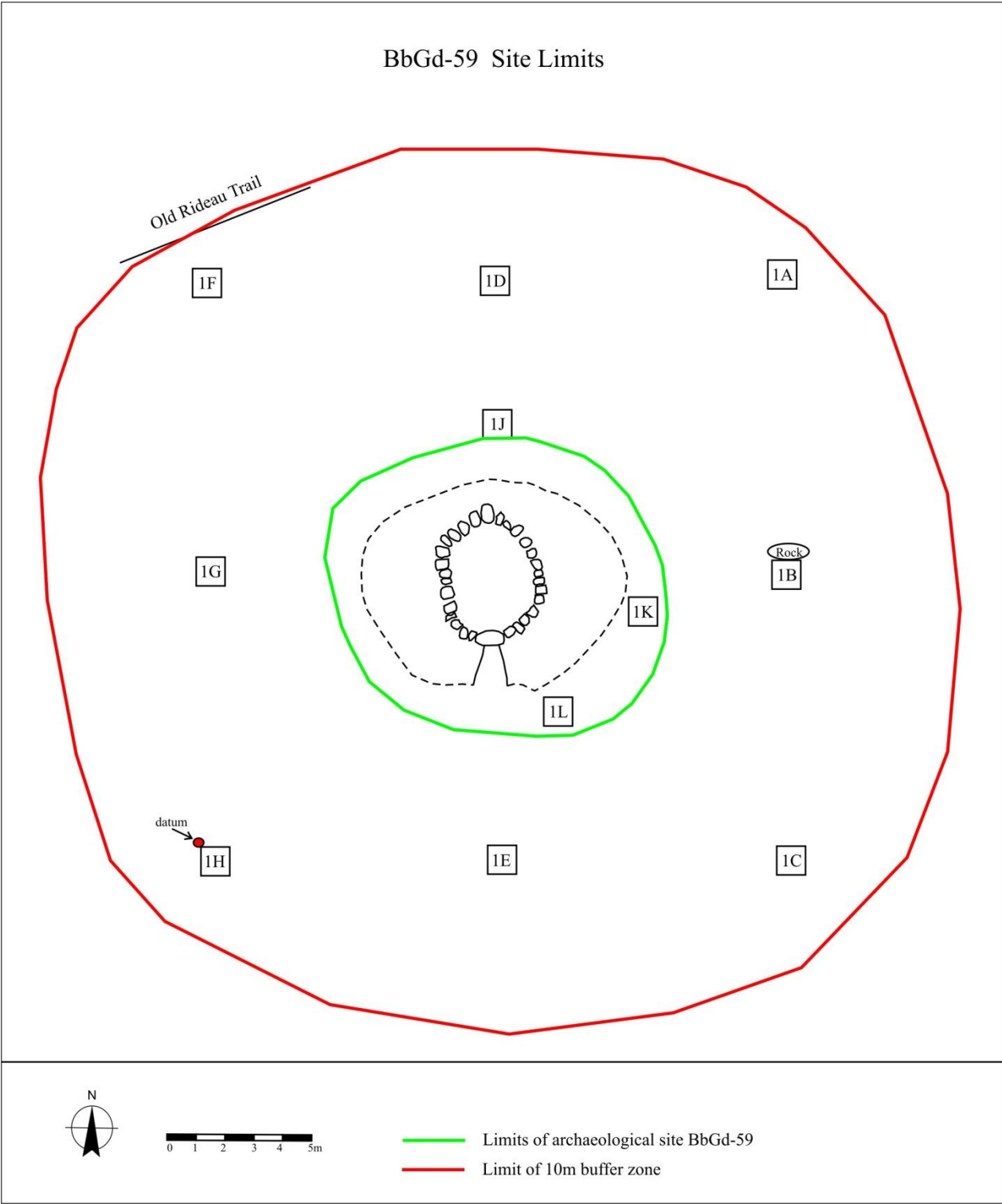


Figure 15: Limits of archaeological site BbGd-59

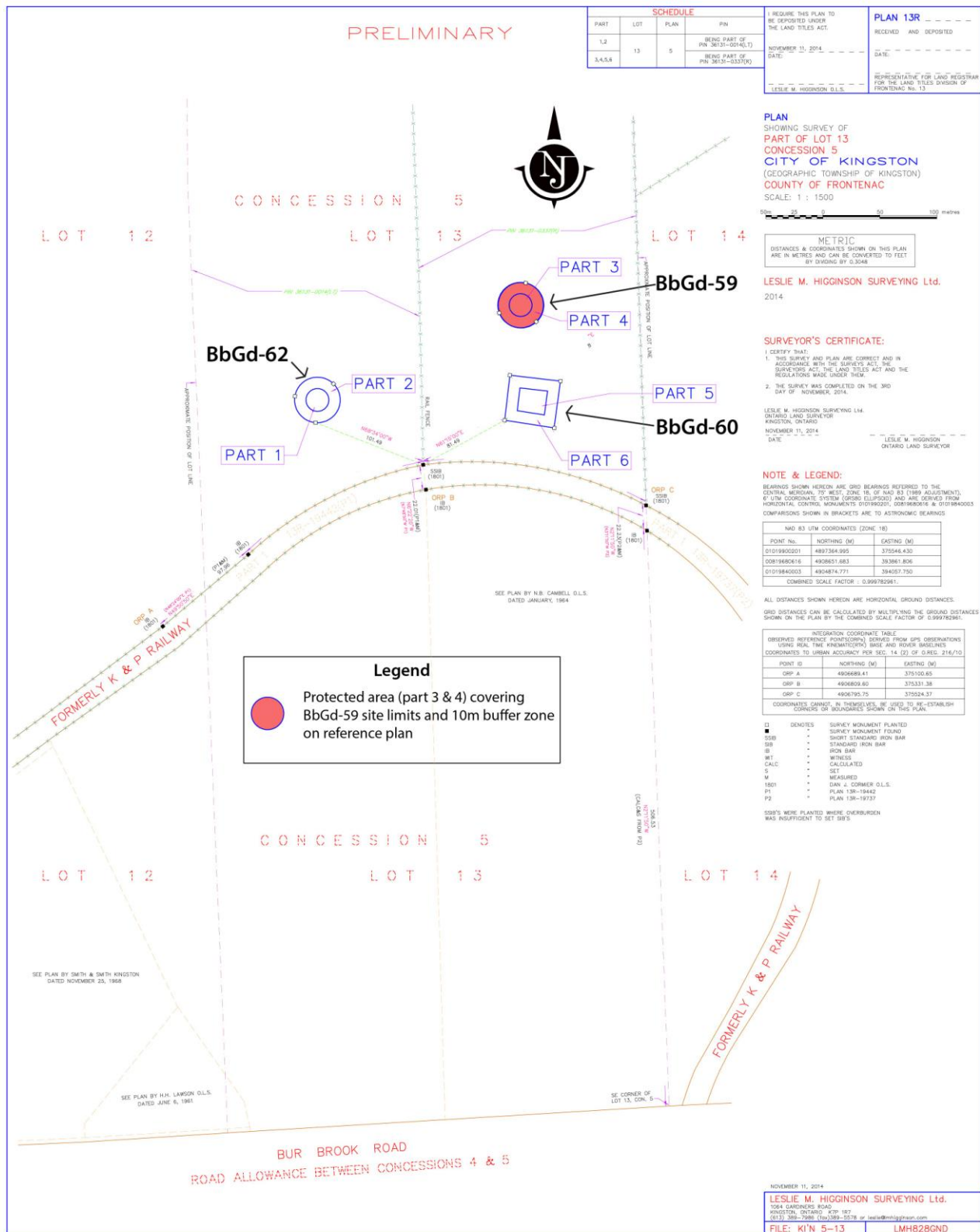


Figure 16: Reference plan showing parts put in place for site protection

Field Methods

A relatively intact lime kiln was discovered during the Stage 2 assessment of the Cruickshank property in 2013. The find was registered as an archaeological site with the Ministry of Tourism, Culture and Sport and assigned the Borden Number BbGd-59. No artifacts were found in association with the lime kiln during the Stage 2 assessment as the surrounding terrain is very rocky with little soil conducive to positive test pit locations.

The Stage 3 assessment at the site consisted of the excavation of 1m² units on a 10m grid centred over the lime kiln in order to determine the nature and limits of the site. A 10m grid was chosen for the Stage 3 assessment as Stage 4 mitigation for the site had already been determined after the Stage 2 and the preferred mitigation was avoidance and protection (Sheldon 2014). The Stage 3 assessment was conducted in order to determine the limits of the site.

At the beginning of the Stage 3 assessment, a 10m grid was established with a baseline running north-south through the centre of the lime kiln with a total station. A permanent datum was established at the southeast edge of the site, at the northwest corner of unit 1H. Units were laid out at 10m intervals, surrounding the lime kiln, and the locations of the baseline, datum and units were plotted onto a site map.

For ease of reference the units were referred to by a number-letter designation similar to that used by Parks Canada where each unit is identified by an operation and a suboperation number. The Stage 3 excavations began with Operation 1, with the units labelled 1A and then sequentially through the alphabet. The Stage 3 units were labelled 1A through 1L. The Parks Canada model was also used for the designation of lots – where a lot designation is given to each natural or artificial stratum and also to each feature within a unit, thus 1A2 refers to unit 1A, lot 2. Lots were designated sequentially for each unit. The artifacts recovered during the Stage 3 assessment are listed in the artifact catalogue at the end of this report.

The Stage 3 archaeological assessment of BbGd-59 consisted of the excavation of 8 1m² units on a ten metre grid centred over the lime kiln. An additional 3 units were excavated in areas of interest, for a total of 11 units. Only one unit had to be offset from the grid, unit 1B which was offset 50 cm to the south in order to avoid a large rock. Unit 1G on the west side of the site consisted entirely of moss on bedrock, and could not be moved in order to find soil to excavate as the entire surrounding area was perceived to hold no soil (Figure 11).

In each excavation unit the undisturbed deposits were removed by trowel and shovel and the excavation extended to bedrock or sterile subsoil. The units were examined for evidence of fill, stratigraphy and cultural features and the exposed surface of the subsoil was examined for the presence of features. Soil profiles were photographed and drawn to scale for each unit (except for unit 1G which contained no soil). All soils from the Stage 3 excavation units were screened through 6mm steel mesh screens. When subsoil was encountered the excavations extended 5cm into the subsoil.

All artifacts and associated documentation arising from the Stage 3 fieldwork will be held by Ground Truth Archaeology in Quinte West, Ontario until a suitable repository is established.

During the Stage 3 assessment the weather was suitable for the recovery and recording of archaeological materials with no precipitation and a high temperature of 10°C on April 23rd and 9° C on both April 24th and 25th, 2014.

Record of Finds

Field note inventory: Author/recorder: Helen Sheldon

Field notes: 2060100NB1-2

Field drawings: 206076FD01

Field recording forms: 2060100FRF01-11

Photographs: 2060100D01-38

The site is dominated by a well preserved intact lime kiln set into the slope of a hill. The kiln has interior dimensions of 3.7 metres north-south by 2.6 metres east-west and ranges in depth from 80cm to 1.3m in the interior. A draw hole exists at the south end, with three ferrous bars supporting the stones over the hole. The interior of the kiln is lined with granite boulders, ranging up to five courses high, with evidence of heating on the lower courses in the form of pink and/or blackened exteriors. Broken limestone pieces form a mound around the granite, comprising the bulk of the kiln, giving a total area of 9 x 7 metres for the footprint of the lime kiln.

The kiln is set on a relatively steep slope, with the north end of the kiln flush with the natural topography and the draw hole at the south end being slightly elevated. The surrounding terrain is very rocky, with bedrock being shallow and often at the surface. The soils in the excavation units generally consisted of 10-20 cm of dark brown silty clay over either limestone bedrock or a yellow brown clay subsoil. Units 1K and 1L near the kiln also contained a layer of small pieces of fractured limestone (1-2 cm) that probably resulted from construction and use of the kiln.

No features other than the lime kiln itself were identified during the Stage 3 assessment.

Images



Plate 1: South wall of lime kiln, with draw hole (2060100D01)



Plate 2: Interior of south wall of kiln, with draw hole (2060100D04)



Plate 3: Interior east wall of kiln (2060100D06)



Plate 4: Interior north wall of kiln (2060100D08)



Plate 5: Overview of lime kiln, looking south (2060100D09)



Plate 6: Detail of granite cobbles lining kiln (2060100D13)



Plate 7: Excavating around the kiln (2060100D14)



Plate 8: Excavating on the southeast side of the kiln (2060100D16)



Plate 9: Close of unit 1C (2060100D19)



Plate 10: Close of unit 1E (2060100D20)



Plate 11: Excavating unit 1L (2060100D21)



Plate 12: Close of unit 1H (2060100D22)



Plate 13: Close of unit 1J (2060100D27)



Plate 14: Unit 1L at edge of lime kiln mound (2060100D31)

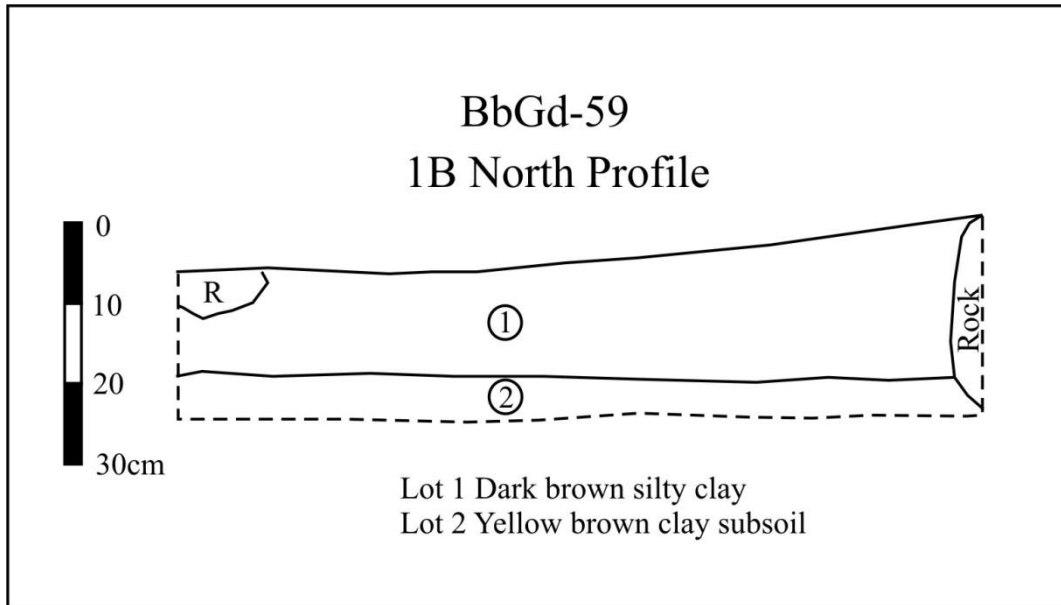


Figure 17: North profile of unit 1D

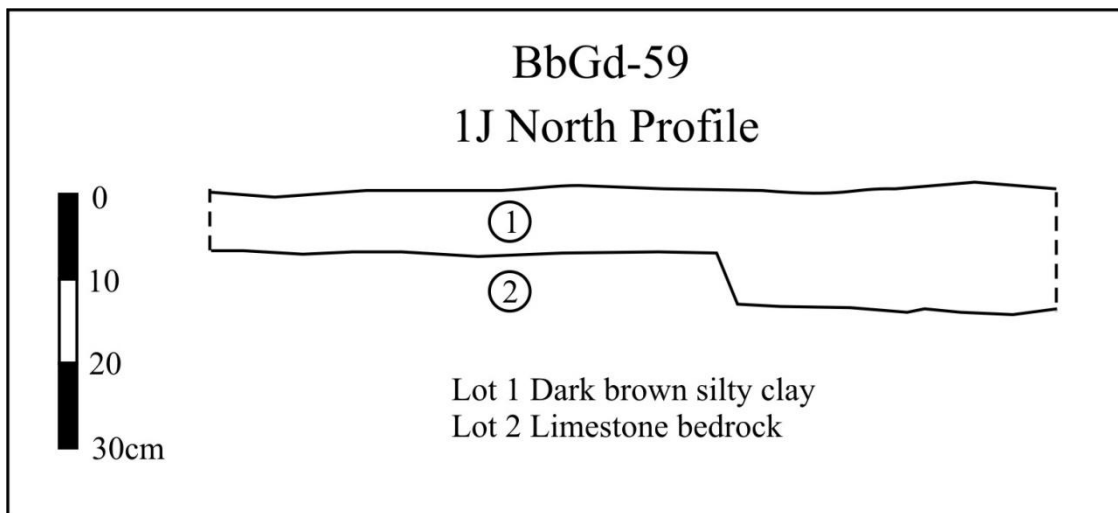


Figure 18: North profile of unit 1M

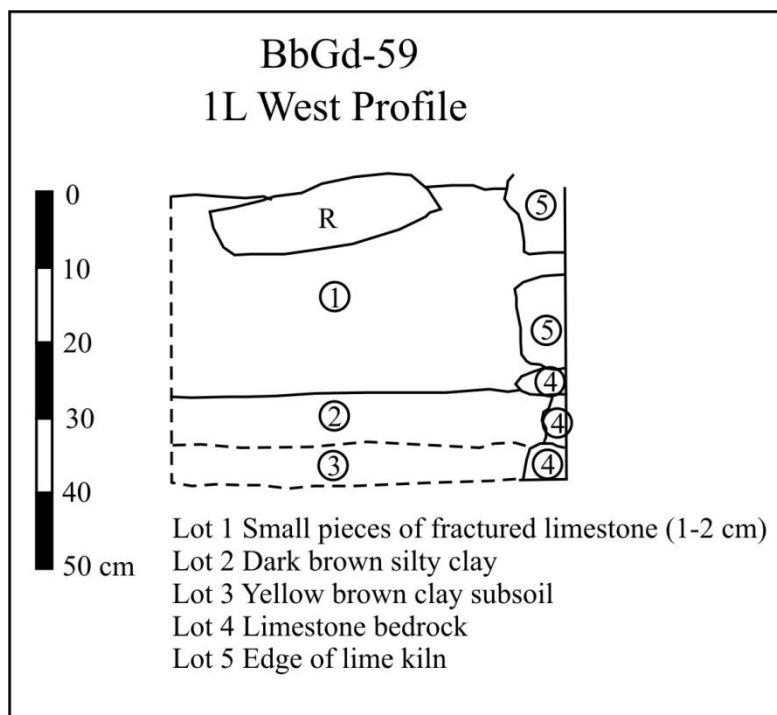


Plate 15: Charcoal from unit 1L

Artifact Analysis

The only artifacts recovered from around the exterior of the lime kiln were eight pieces of charcoal from unit 1L on the east exterior side of the draw hole (Plate 15). These could be remnants of the wood that was used to fire the kiln. The absence of the domestic items usually found on late 19th century sites such as ceramics and bottle glass can be attributed to the industrial nature of the site, where it appears that meals were not taken on site, or at least were not brought to the site in ceramic/glass containers.

Excavation within the interior of the kiln could yield more artifacts, yet the exploration of the interior of such a large feature was considered better suited for a Stage 4 excavation and beyond the scope of the current Stage 3 assessment particularly as it might weaken the integrity of the structure.

Packed artifact inventory: 1 bag labelled BbGd-59 in a banker's box labelled BbGd-59

Analysis and Conclusions

The lime kiln at BbGd-59 is a flare kiln typical of those built in the mid to late nineteenth century in rural Ontario. It is similar in size and shape to other kilns identified in eastern Ontario, that have been dated by artifact association to the last half of the 19th century (Adams 2002, Sheldon 2011). Flare kilns are described in Lindsay (1975) as a cheap and relatively effective method of producing limited quantities of lime. Flare kilns were usually circular, often were built into the side of a hill, usually were fuelled with wood and burned for several days. Typical small flare kilns of the 19th century were similar in size to the BbGd-59 kiln (Williams 1989).

Excavation of the interior of the kiln should expose a small ledge running around the base upon which a metal or wooden support would have been placed to support a load of limestone. A fire would have been lit under the limestone and allowed to burn fiercely for 24 to 36 hours. The lime would have been removed several days later after cooling and the ashes raked out the drawhole (Williams 1989). The lime was used for a number of purposes including producing mortar, plaster and whitewash and, especially in agricultural areas, for improving the soils.

Lime kilns were once an integral part of the cultural landscape in Eastern Ontario, making use of the shallow underlying limestone bedrock to create a multifunctional product. The BbGd-59 lime kiln probably was operated by the Albertsons, the landowners of the east half of Lot 13 from 1840 until after 1900; first William until 1881 and then his son John. Some of the lime may have been sold to augment income, especially in the winter months, but most probably went to enriching the fields and pasture land of the farmstead.

Lime kilns in Eastern Ontario were often crudely constructed, built for a temporary but specific purpose and then abandoned. Few have been archaeologically excavated. As the lime kiln at BbGd-59 is relatively well constructed and well preserved, it should continue to be preserved if possible as an example of a vanishing aspect of 19th century rural Ontario life.

Recommendations

As a result of the Stage 3 archaeological assessment Ground Truth Archaeology makes the following recommendations in regards to BbGd-59:

- The lime kiln site at BbGd-59 should be considered to have cultural heritage value and is recommended for Stage 4 mitigation.
- Avoidance and protection of the site is the preferred option for mitigation.
- If protection and avoidance are not viable for BbGd-59 then the site or portions of the site will require Stage 4 mitigation through excavation and documentation in order to allow whatever subsurface impact that is anticipated by development to proceed.
- If avoidance and protection is chosen as the option for dealing with the archaeological site or portions of the site, it will be necessary to put in place a long term protection strategy for the site. There are two general approaches to this, either to protect the site and its 10m buffer alone or to put in place a broader protected area within which the site and its 10m buffer is contained. In the case of the "site only" approach it would be necessary to accurately survey the site limits, including a 10m buffer zone, and have this put on the registered plan (Figure 16) for the property as a separate part(s) with an associated proscriptive zoning and a restrictive covenant placed on title. This is the option chosen by the proponent for long term site protection
- In the case of avoidance and protection the local approval authority (City of Kingston) should acknowledge their concurrence with the avoidance and protection measures and commit to the application of the proscriptive zoning.
- All on-site construction crews, engineers, architects or others must be issued “no-go” instructions regarding the archaeological site and the proponent must prepare a letter acknowledging the site and committing to its long term protection.
- The location of the area to be avoided must be shown on all contract drawings when applicable, including explicit instructions or labelling to avoid the site. Construction phase fencing should be erected around the buffer zone if construction in the vicinity of the site is necessary.
- If construction is to occur in close proximity to the buffer zone this must be inspected and monitored by a professional archaeologist and a report submitted to the Ministry of Tourism, Culture and Sport documenting the effectiveness of the avoidance strategy in ensuring that the area to be avoided remains intact.

In addition, the following two standard clauses apply:

- Should deeply buried archaeological remains be found on the property during development activities, the Ministry of Tourism, Culture and Sport (416-314-7148) should be notified immediately.
- In the event that human remains are encountered during development, the proponent should immediately contact local law enforcement, then Michael D'Mello, Cemeteries Regulation Unit, Ministry of Small Business and Consumer Services, 416-326-8404, and the Ministry of Tourism, Culture and Sport.

Advice on Compliance with Legislation

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 that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism 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.

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

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

The *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.

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.

References

Maps

National Topographic Series – 1:50,000 map (31 C/7)

1:10, 000 Ontario Base Map - OBM # 1018 3750 49050/1018 37000 49050

Google Earth imagery date July 29, 2005, accessed November 13, 2013

Air Photography

1953 Provincial Series 4414-29-38. Queen's University Air Photograph Collection

Archival Map References

Walling, H.F.

1860 Kingston inset from the map of the united counties of Frontenac, Lennox and Addington, Canada West, from actual Surveys under the Direction of H. F. Walling. Putnam & Walling Publishers. Queen's University Library Map Collection.

Meacham, J.H.

1878 Illustrated Historical Atlas of the Counties of Frontenac, Lennox and Addington, Ontario, Belleville. J.H. Meacham. Reprinted by Mika Silk Screening Limited. 1971.

Canada Department of Agriculture

1965 Soil Map of Frontenac County, Ontario, South Sheet. Soil Survey Report No. 39. Soil Research Institute, Research Branch. Ottawa.

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1967 Soil Capability Map of Frontenac County, Ontario, South Sheet. Soil Research Institute, Research Branch. Ottawa.

Primary Historic Documents

Ontario Land Registry (OLR) Records Kingston Township, Frontenac County

Other

Adams, Nicholas R.

2002 An Archaeological Investigation of a Lime Kiln, East Half Lot 3, Concession 4, West Carleton Township(formerly Fitzroy TWP) Highway 417 Alignment, Carleton County. Consultant report, Adams Heritage.

Berry, Michael

2010 Stage 1 Archaeological Assessment, Part of Lots 12 &13, Concession 5, Kingston Township, Frontenac County, City of Kingston. Consultant report, Ground Truth Archaeology.

Gromoff, Nick

2009 Stage 1 Archaeological Assessment for the Cruickshank Re-zoning, Part of Lot 13, Concession V, Kingston Township, Frontenac County, City of Kingston. Consultant report, Ground Truth Archaeology.

Lindsay, Charles S.

1975 Lime Preparation at 18th-Century Louisbourg. In *Canadian Historic Sites: Occasional Papers in Archaeology and History* No. 12. National Historic Parks and Sites Branch, Parks Canada, Indian and Northern Affairs, Ottawa.

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2011 Standards and Guidelines for Consultant Archaeologists. Ministry of Tourism and Culture: Toronto.

Sheldon, Helen

2014 Stage 2 Archaeological Assessment of the Elginburg Quarry Expansion, Frontenac County, Ontario. Consultant report, Ground Truth Archaeology.

2011 Stage 3 Archaeological Assessment of the Sorbara Site (BaGg-20). Consultant report, Ground Truth Archaeology.

Williams, Richard

1989 *Limekilns and Limeburning*. Shire Publications: Aylesbury, UK.

Appendix A: Photograph Catalogue

Photo #	Description	Direction	Date
20600100D01	south side of lime kiln	N	April 23, 2014
20600100D02	south side of lime kiln draw hole	N	April 23, 2014
20600100D03	south side of lime kiln draw hole	NW	April 23, 2014
20600100D04	interior of draw hole	S	April 23, 2014
20600100D05	interior of draw hole	S	April 23, 2014
20600100D06	interior of east wall of lime kiln	E	April 23, 2014
20600100D07	interior of east wall of lime kiln	E	April 23, 2014
20600100D08	interior of north wall of lime kiln	N	April 23, 2014
20600100D09	overview of kiln	S	April 23, 2014
20600100D10	interior of kiln from above	S	April 23, 2014
20600100D11	overview of kiln	S	April 23, 2014
20600100D12	detail of granite cobbles lining kiln	W	April 23, 2014
20600100D13	detail of granite cobbles lining kiln	S	April 23, 2014
20600100D14	excavating around the kiln	W	April 24, 2014
20600100D15	excavating around the kiln	SW	April 24, 2014
20600100D16	excavating around the kiln	NE	April 24, 2014
20600100D17	close of unit 1A	N	April 25, 2014
20600100D18	close of unit 1B	N	April 25, 2014
20600100D19	close of unit 1C	E	April 25, 2014
20600100D20	close of unit 1E	N	April 25, 2014
20600100D21	excavating around the kiln	W	April 25, 2014
20600100D22	close of unit 1H	N	April 25, 2014
20600100D23	close of unit 1G	N	April 25, 2014
20600100D24	close of unit 1G showing rocky terrain	N	April 25, 2014
20600100D25	close of unit 1F	N	April 25, 2014
20600100D26	close of unit 1D	N	April 25, 2014
20600100D27	close of unit 1J	N	April 25, 2014
20600100D28	close of unit 1K	N	April 25, 2014
20600100D29	close of unit 1K showing proximity to lime kiln	NW	April 25, 2014
20600100D30	close of unit 1L	N	April 25, 2014
20600100D31	close of unit 1L showing proximity to lime kiln	NW	April 25, 2014
20600100D32	view of lime kiln from Rideau Trail	SE	April 25, 2014
20600100D33	view of lime kiln from Rideau Trail	S	April 25, 2014
20600100D34	overview of kiln	S	April 25, 2014
20600100D35	overview of kiln	SE	April 25, 2014
20600100D36	overview of kiln	N	April 25, 2014
20600100D37	overview of kiln	NW	April 25, 2014
20600100D38	overview of kiln	NW	April 25, 2014

Appendix B: Artifact Catalogue BbGd-59

Stage 3

Borden #	Lot #	Artifact #	Material	Class	Type	Variety	Item	Portion	Count	Notes
BbGd-59	1L2	AR001	floral	wood	unid	unid	charcoal	fragment	8	

Appendix C: Profiles

