

Stage 3 Archaeological Assessment of the Donovan Lime Kiln (BbGd-62)

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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

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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 nineteenth century archaeological site (BbGd-62) believed to be a small lime kiln, located on a parcel of land near Elginburg, north of Kingston, that is slated for expansion of an adjoining quarry (Figure 4). The Stage 2 assessment recommended the BbGd-62 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 on a ten metre interval grid around the lime kiln in an attempt to gather an artifact sample dating to the period of use of the structure and define its spatial limits. Artifacts were concentrated around the feature itself, with very little horizontal spread and consisted primarily of nails and clinker, with no domestic items. 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 range of the last half of the nineteenth century and possibly into the early twentieth century has been tentatively assigned to the kiln based on the artifact sample.

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-62 is a relatively rare example of light industrial activity in nineteenth century rural Ontario it is considered to have cultural heritage value and should be preserved

As a result of the Stage 3 archaeological assessment Ground Truth Archaeology makes the following recommendations in regards to BbGd-62:

- The Donovan Lime Kiln (BbGd-62) 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-62 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:	Nick Gromoff
Field Technicians:	Peter Cassidy, Nathan Laanstra, Colin Smith, John Smith, Peter 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-62) 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 1). 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-62 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 6). 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 (Walling 1860) (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 (Meacham 1878). 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.

Currently the site lies at the top of a significant ridge that slopes sharply down to the K&P Trail on the south that follows the line of the former Kingston and Pembroke Railway. The site lies within a stand of mature hardwoods including maples, elm and ironwood, with some prickly ash undergrowth.

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 probable lime kiln located on the edge of a significant ridge that runs along the south the south end of the Cruickshank property. The site is located within open hardwood woodland with a slight undergrowth of prickly ash. The nearest water is a small creek, located approximately 375 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) located within a rural industrial landscape associated with the adjacent Kingston and Pembroke Railway line.

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 10). 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 11).

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-60 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 9). 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-62 occurred on April 18, 21 and 23, 2014.

Maps

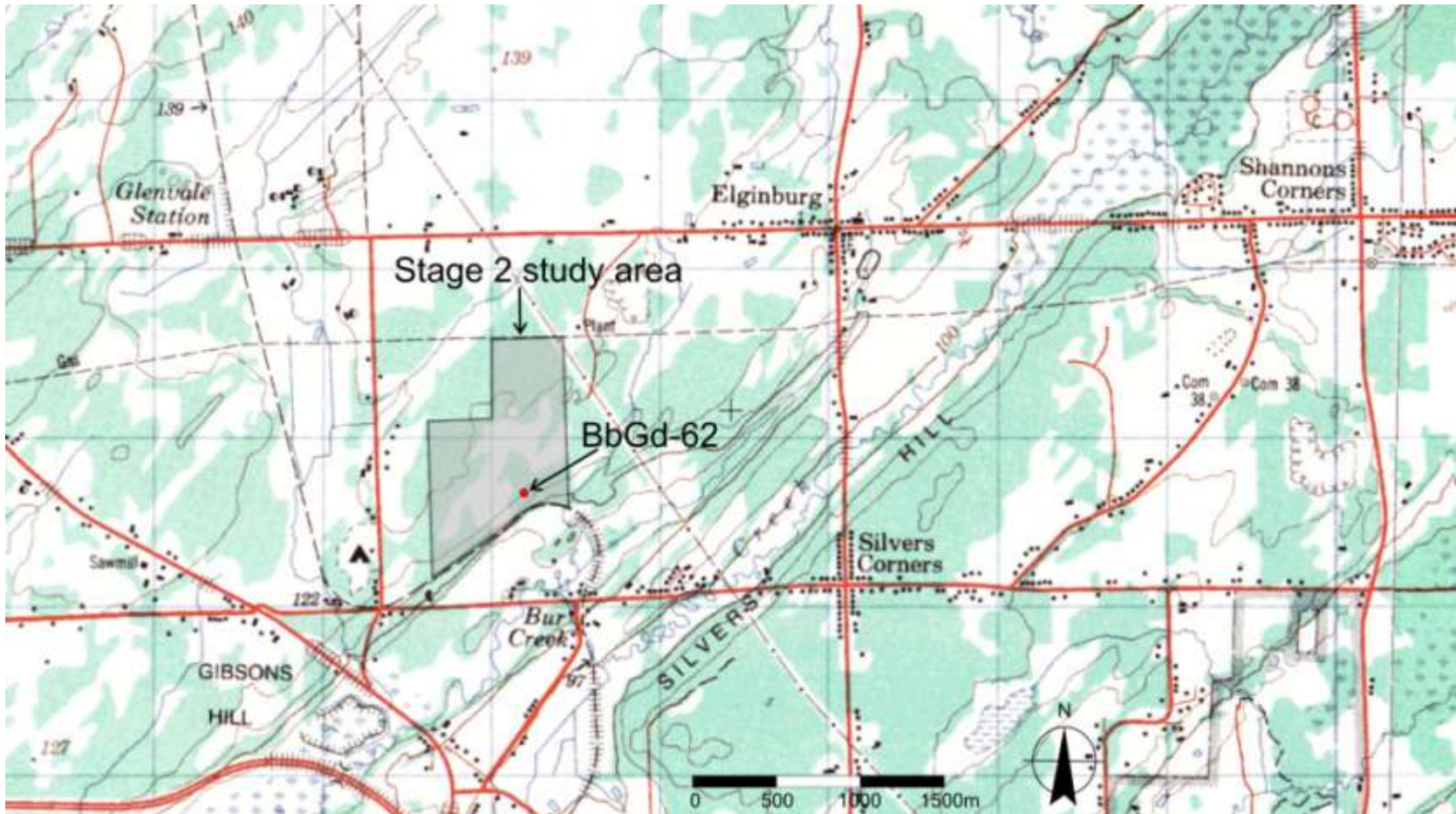


Figure 1: Site shown on the 1:50,000 NTS map (31C/7)

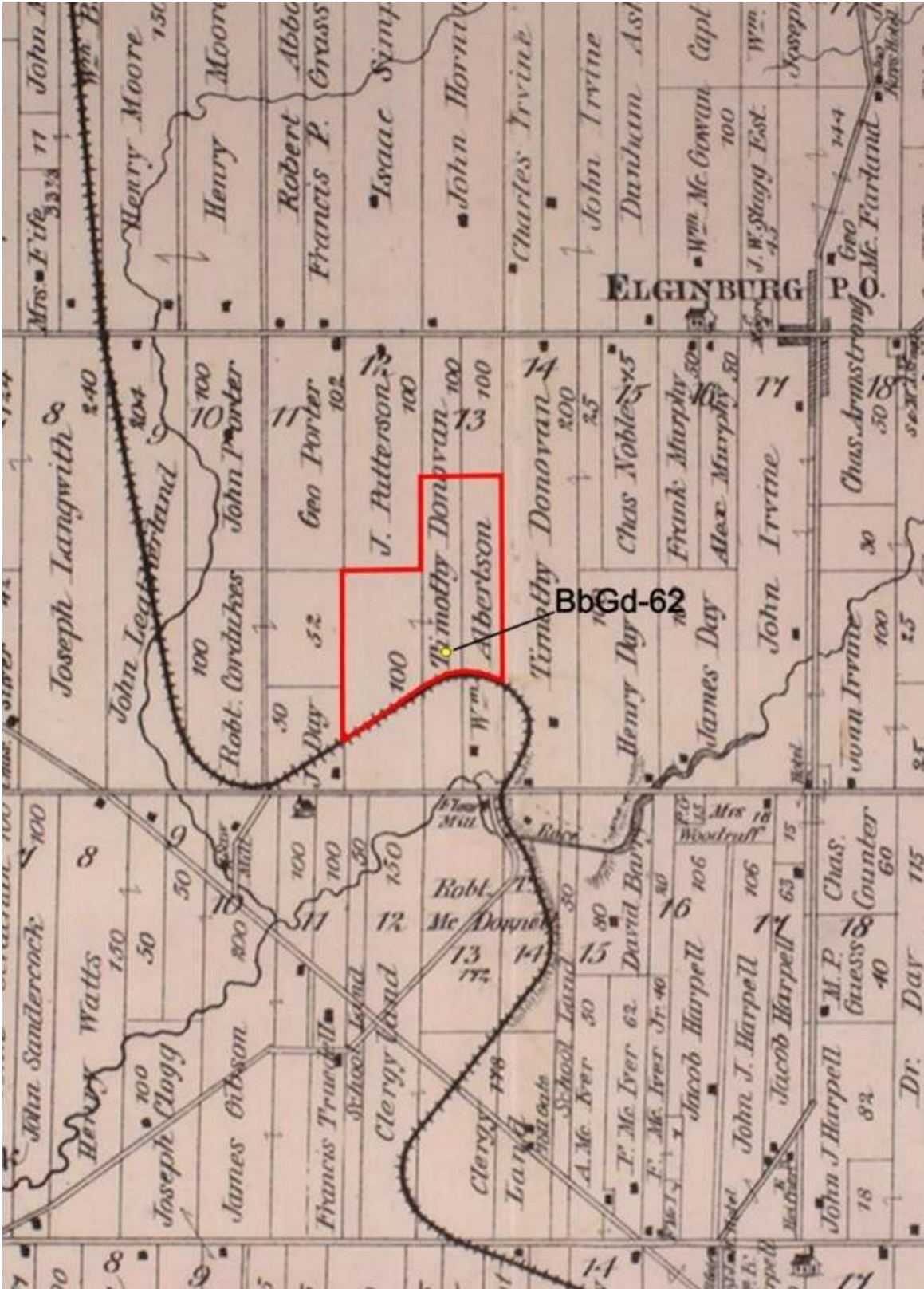


Figure 3: Site on the 1878 Meacham map

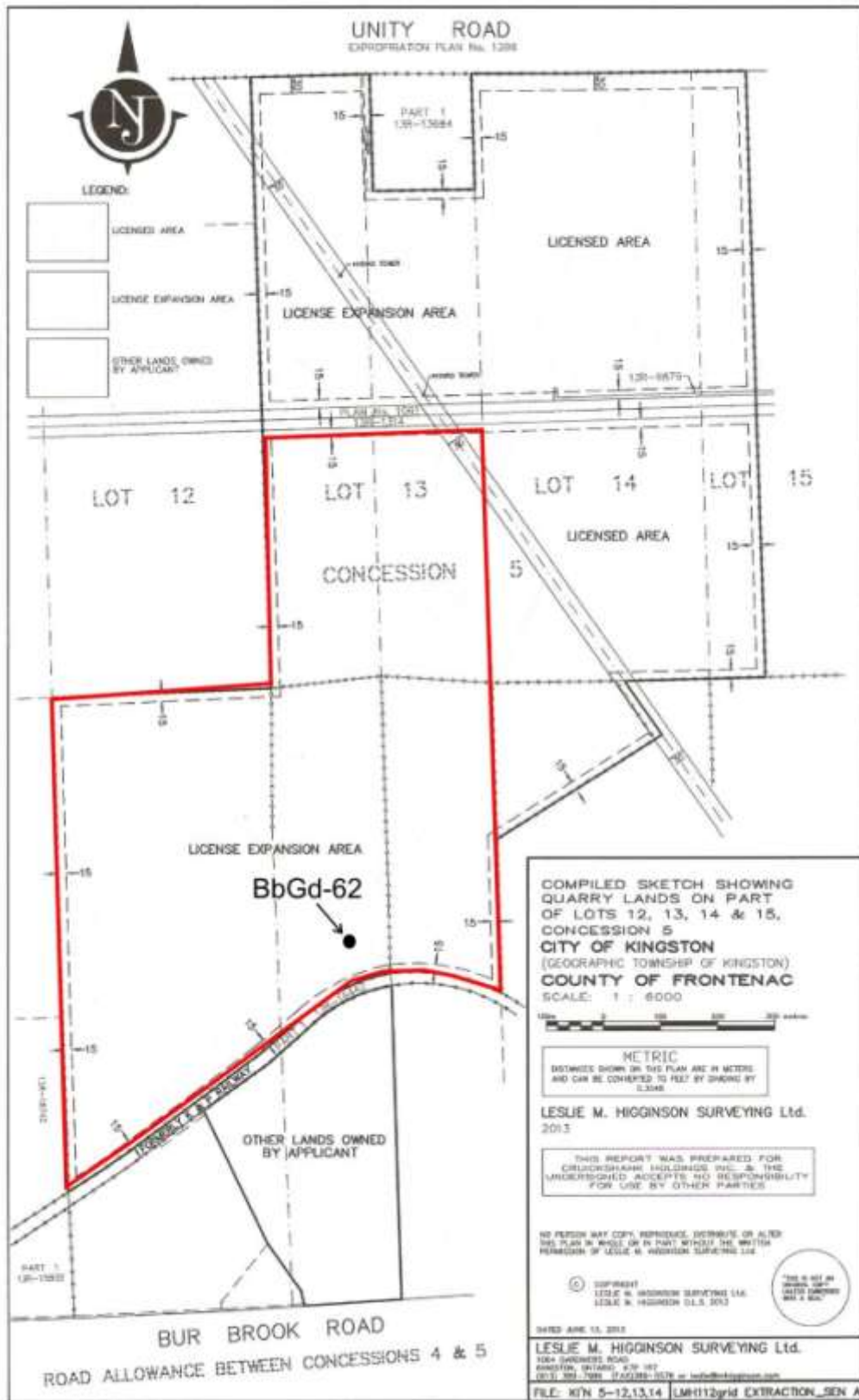


Figure 4: Site on the development plan

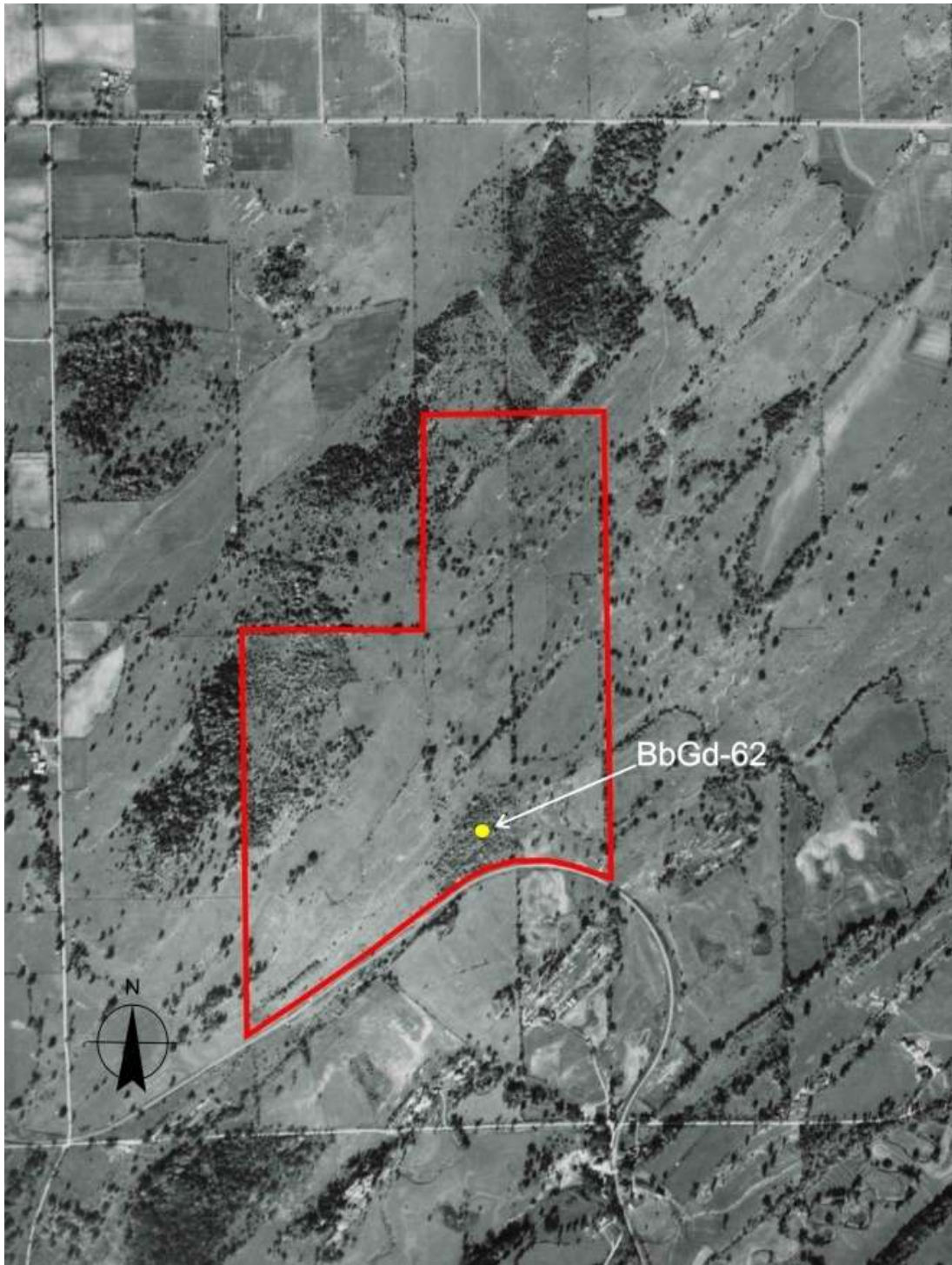


Figure 5: Site on a 1953 aerial photograph

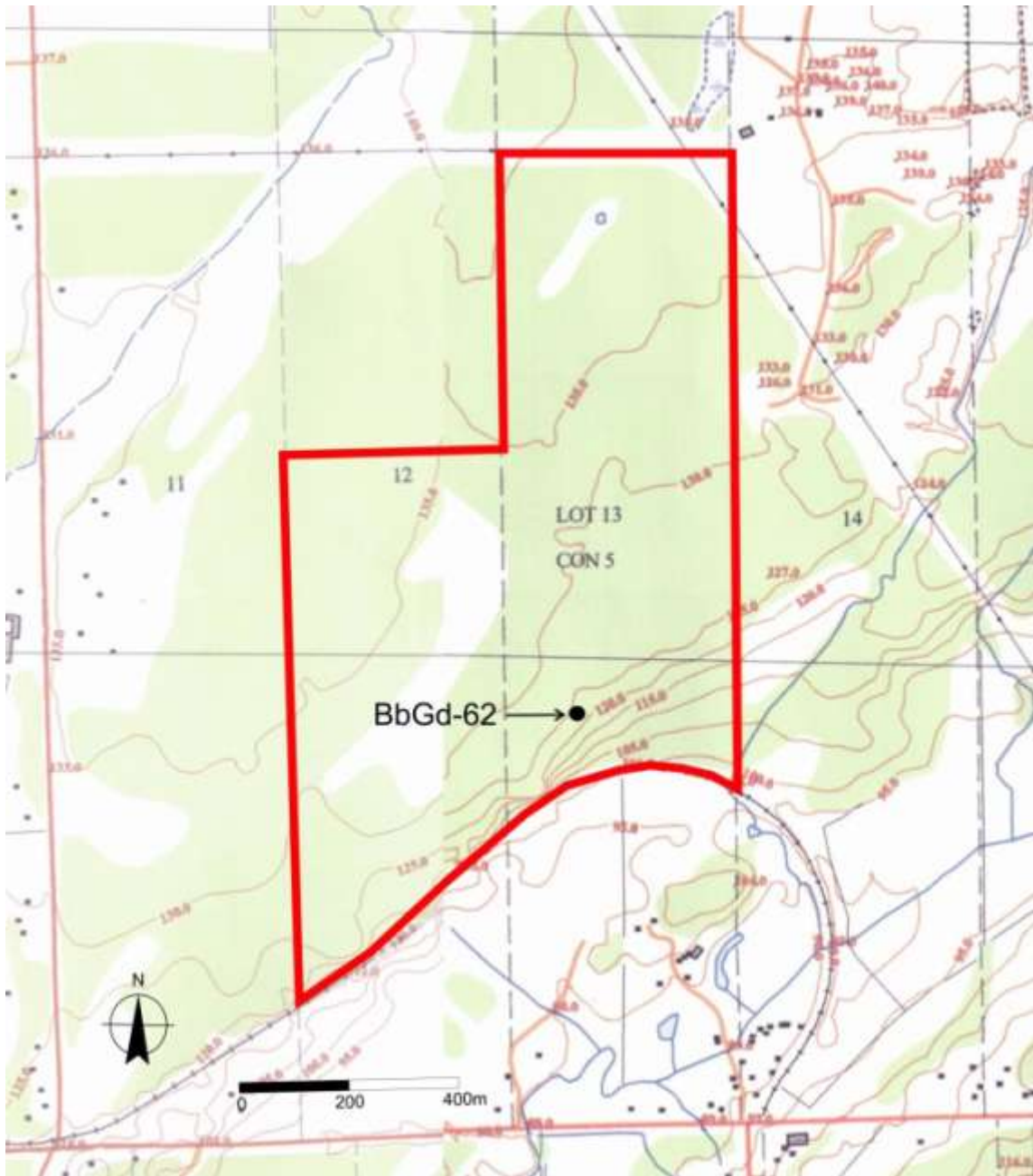


Figure 6: Site on the 1:10,000 Ontario Base Map

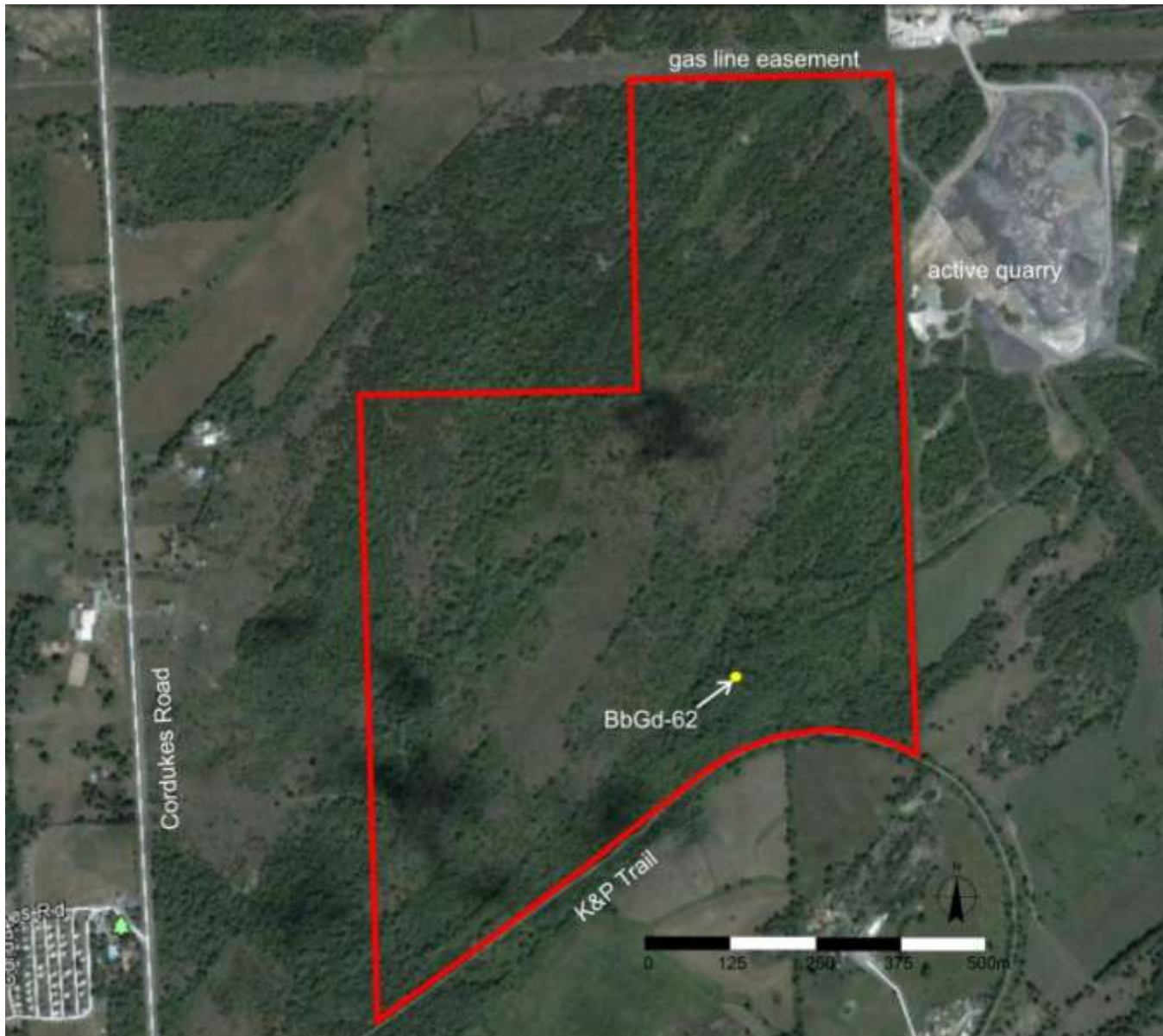


Figure 7: BbGd-62 on a recent aerial view (base Google Earth)

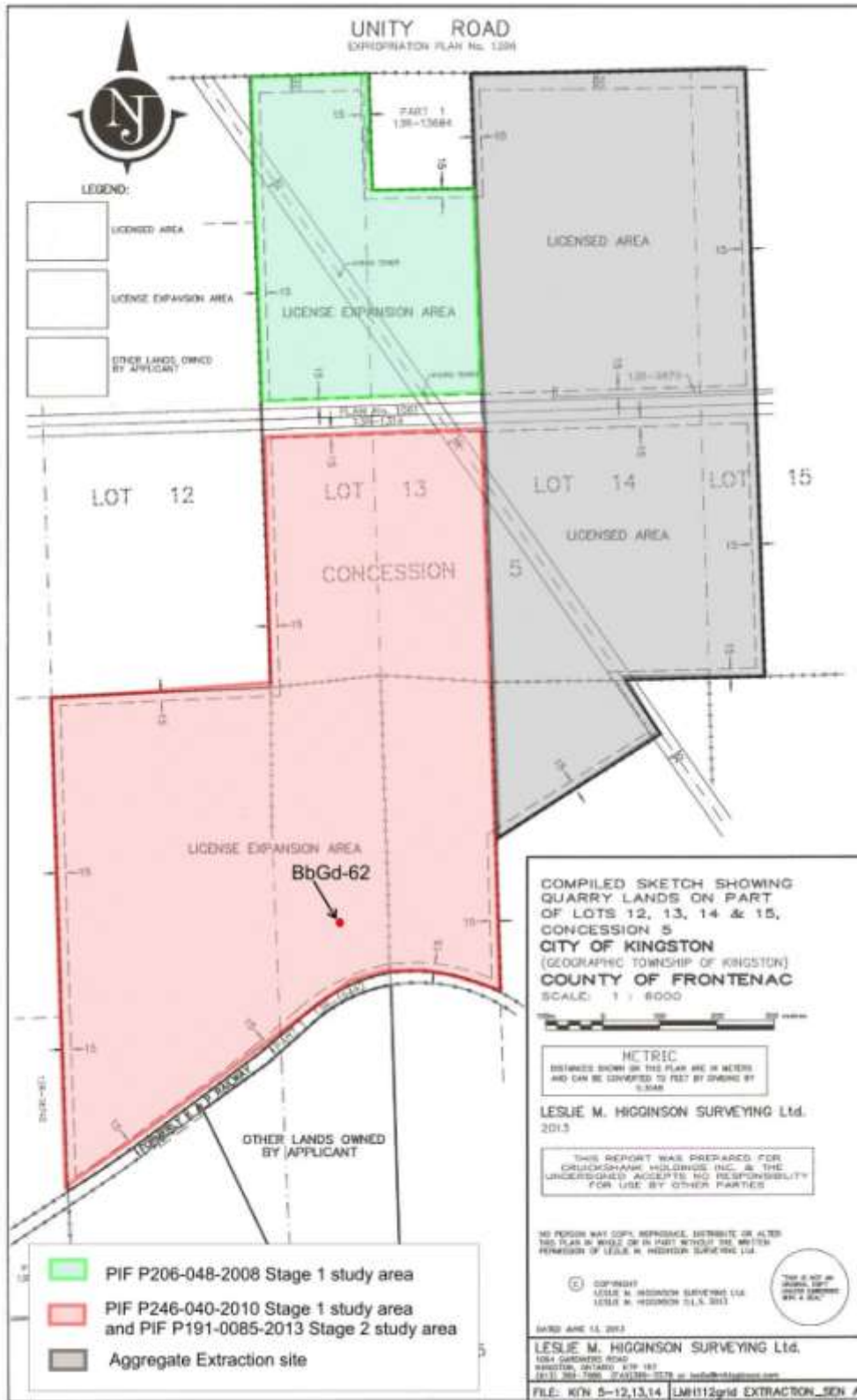


Figure 8: Previous archaeological assessments

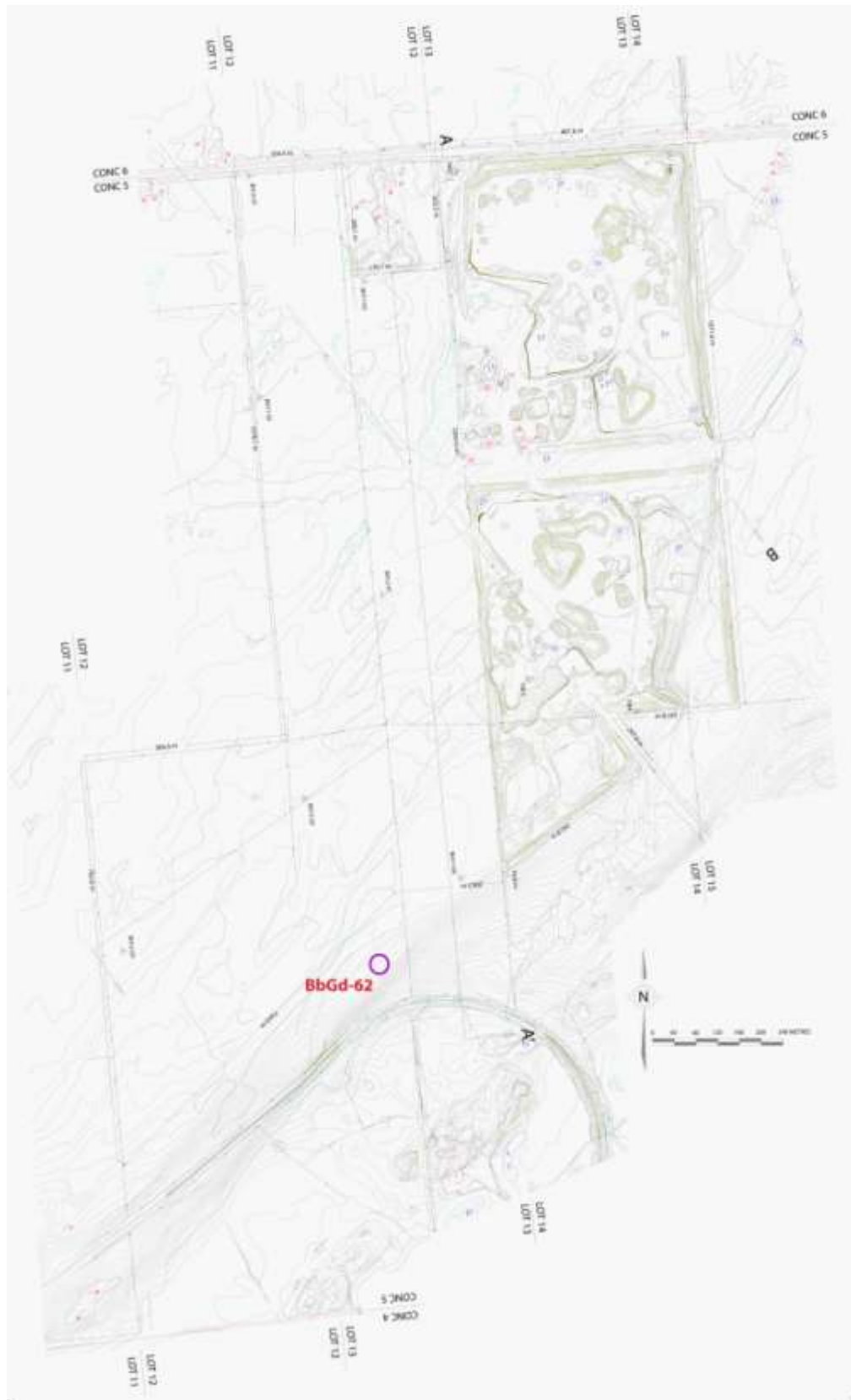


Figure 9: BbGd-62 Stage 3 with 10m buffer on the topographic survey (base map Cruickshank 2014)

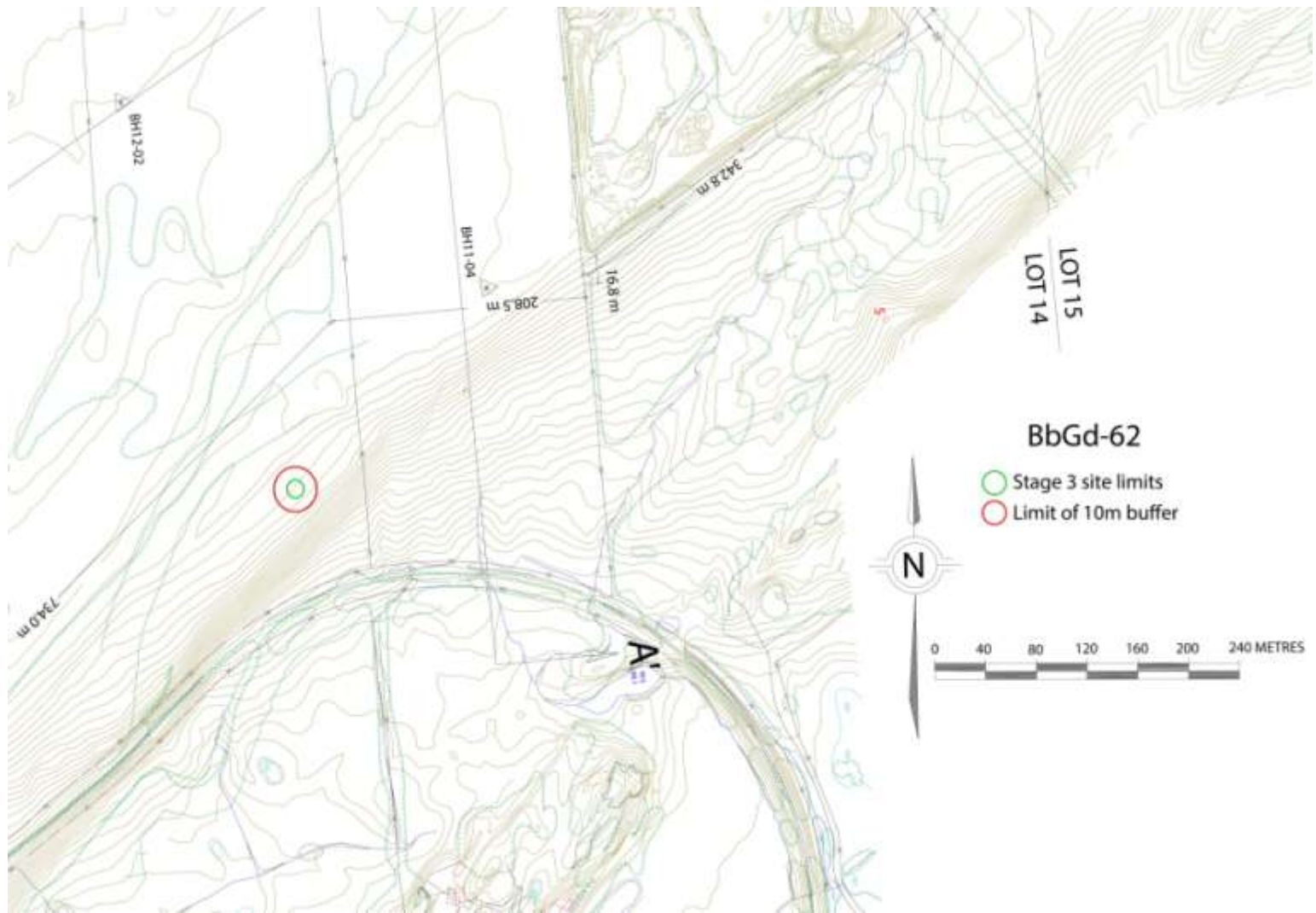


Figure 10: Closeup of Stage 3 site limits and 10m buffer on topographic survey (base map Cruickshank 2014)

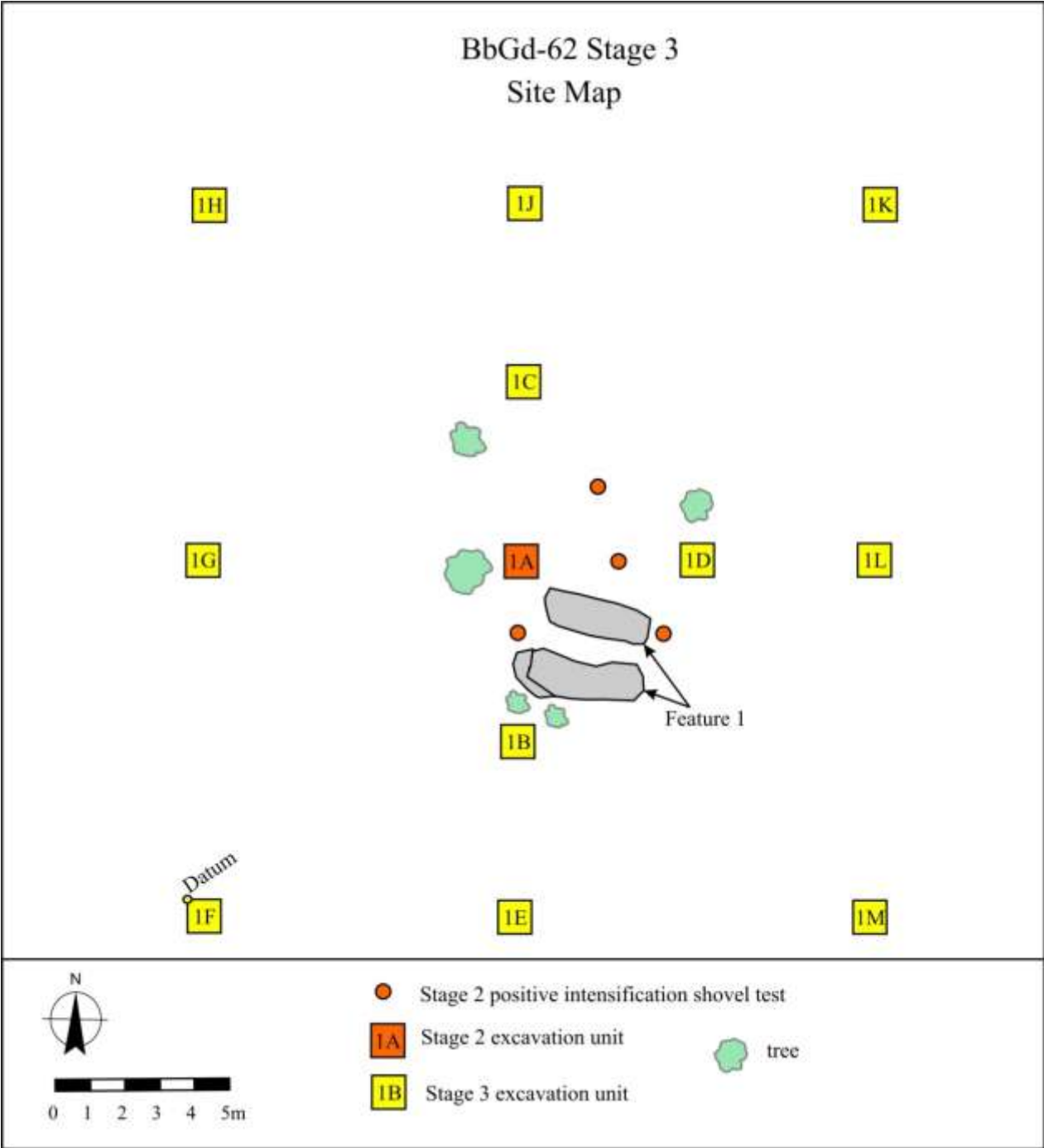


Figure 11: BbGd-62 Stage 3 Site Map

BbGd-62 Stage 3
Feature 1 Plan view at surface

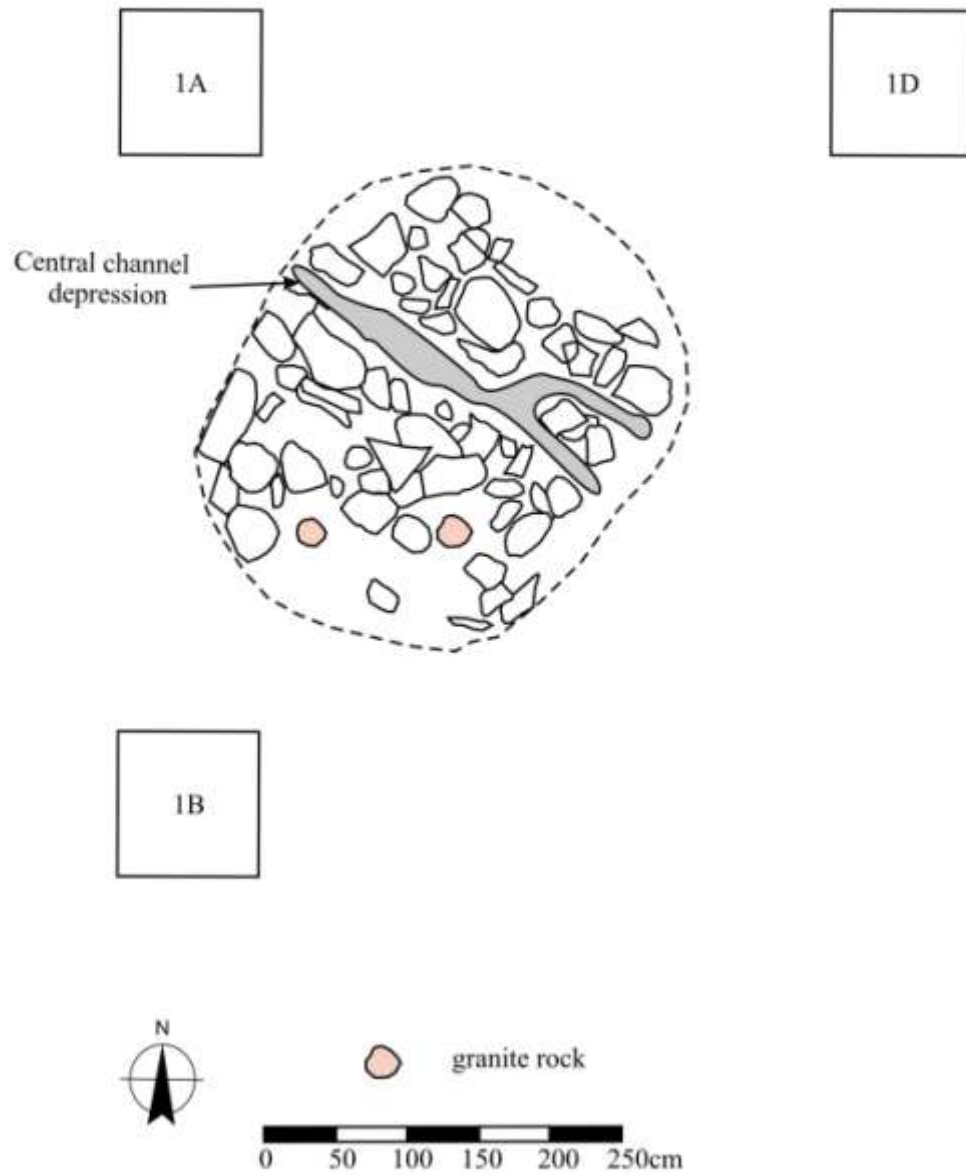


Figure 12: Plan view of Feature 1, BbGd-62

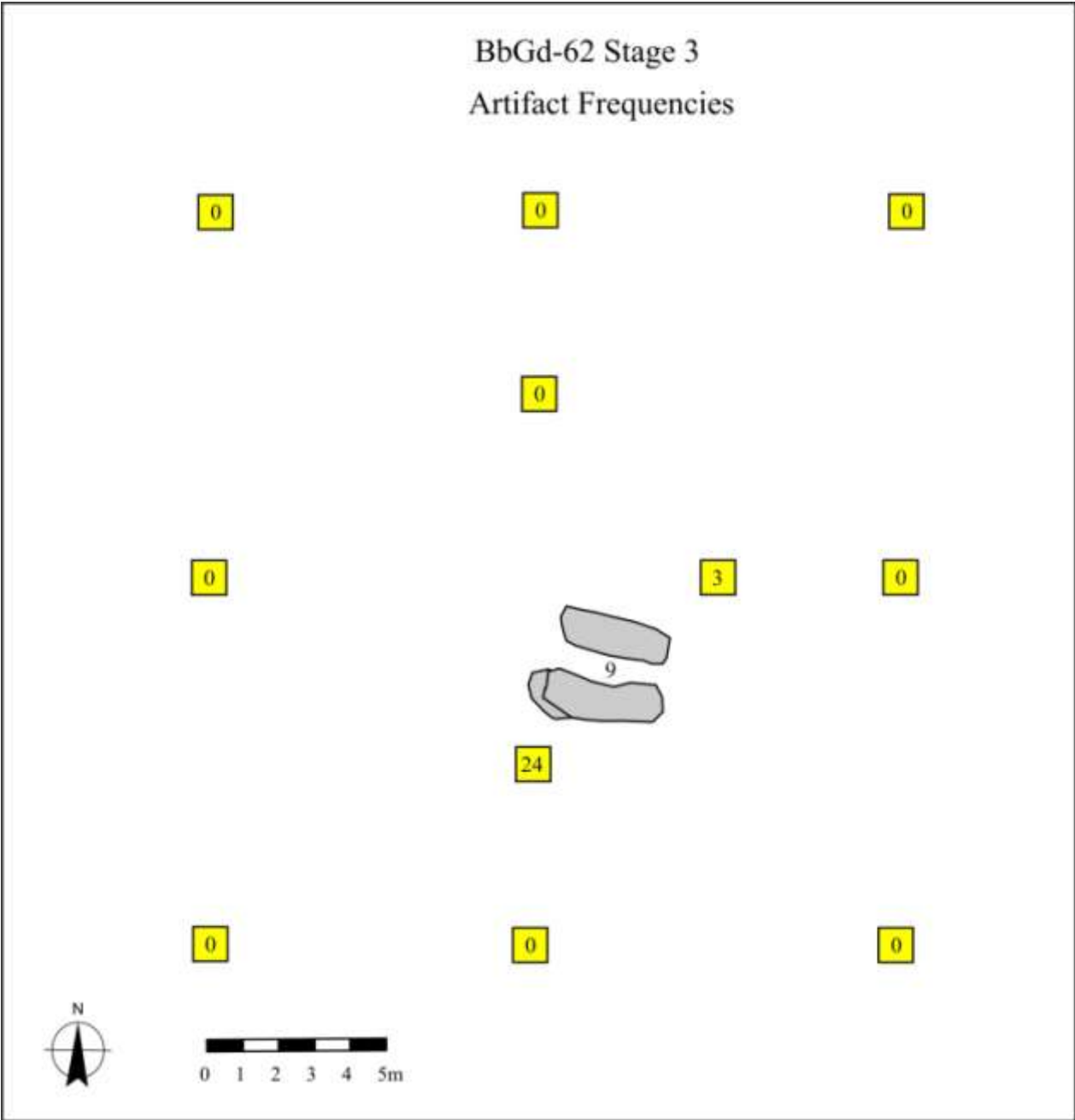


Figure 13: BbGd-62 Stage 3 Artifact Frequencies

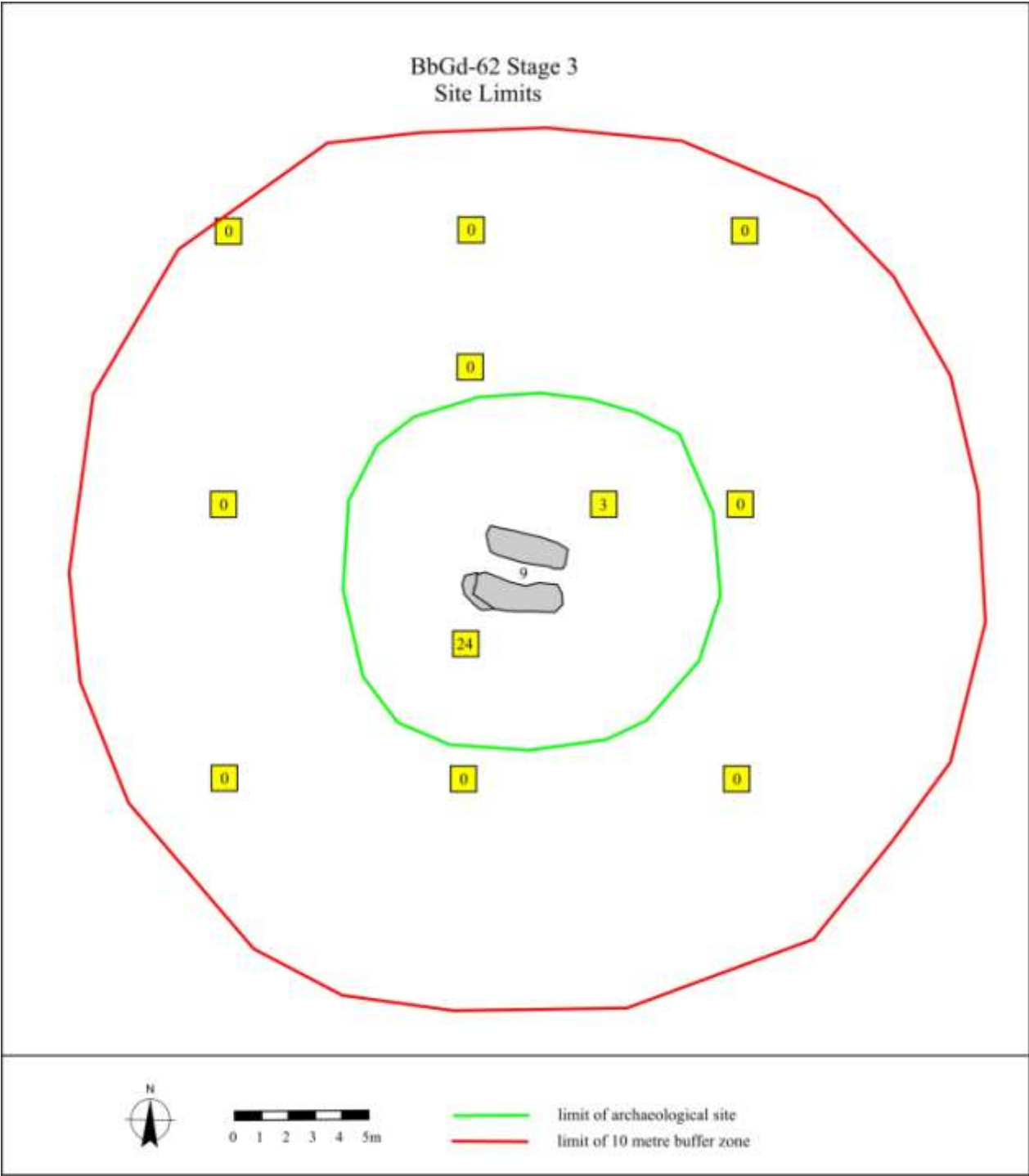


Figure 14: BbGd-62 site limits

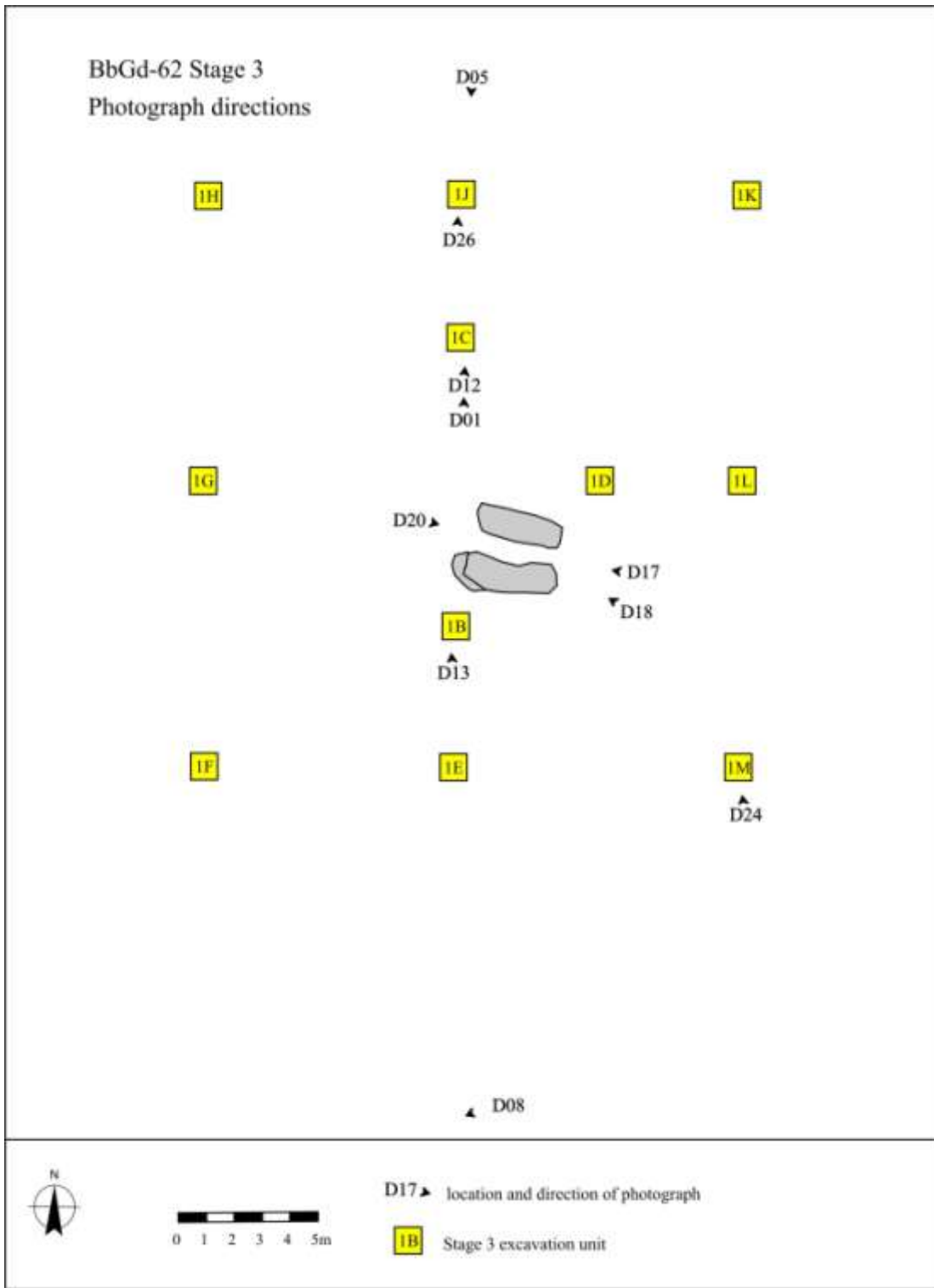


Figure 15: BbGd-62 photograph directions (by photograph catalogue number)

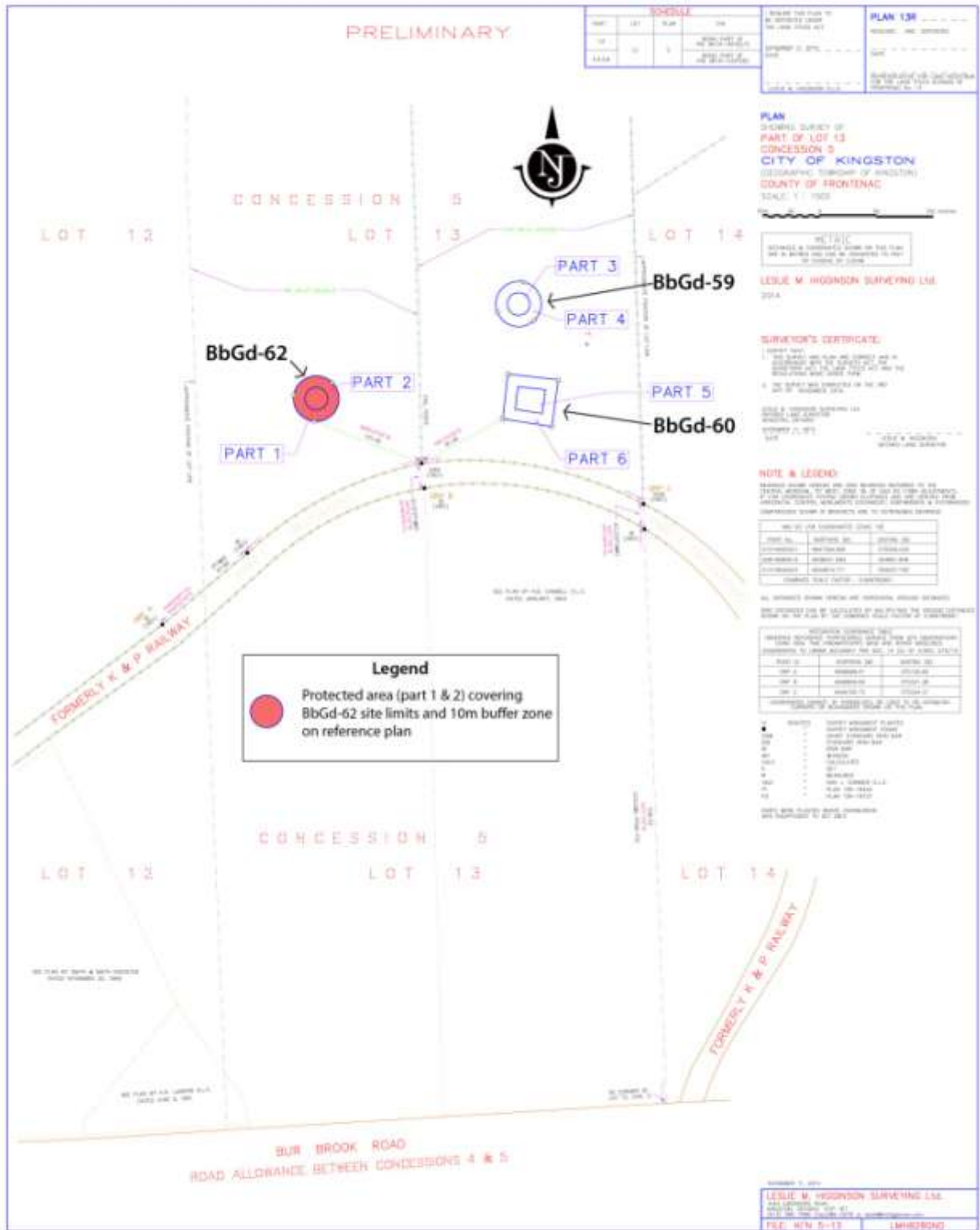


Figure 16: Reference plan with parts put in place for site protection

Field Methods

Following the Stage 2 report recommendations the Stage 3 assessment of BbGd-62 consisted of the excavation of 1m² units on a 10m grid centred over the positive Stage 2 test pit TS2 (expanded to a 1m x 1m unit 1A during the Stage 2) in order to determine the nature and limits of the site. Prior to the initiation of the Stage 3 assessment the proponent had chosen avoidance and protection as the Stage 4 mitigation approach.

At the beginning of the Stage 3 assessment, a 10m grid was established with a baseline running north-south through the presumed centre of the site with a total station. A permanent datum was established at the southeast edge of the site, at the northwest corner of unit 1F. Units were laid out at 10m intervals and the locations of the baseline, datum and units were plotted onto a site map. Given the small size of the site as indicated by the Stage 2 with only one testpit (TS2) with a high artifact count, units were excavated outwards in all directions from the location of TS2 (1A) until zero artifact counts were obtained in order to define the limits of the site.

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 2 unit was labelled 1A, with the Stage 3 units labelled 1B through 1M. 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-62 consisted of the excavation of eight 1m² units on a ten metre grid centred over the lime kiln. An additional three units were excavated in areas of interest, for a total of 11 units. Rather unusually for a rocky and forested location, none of the units had to be offset from the grid in order to accommodate natural features. A ten metre interval grid was used as the cultural heritage value of the site had already been determined during the Stage 2 assessment (Sheldon 2014).

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. 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 9°, 16° and 10° C on the three days of fieldwork.

Record of Finds

Field note inventory: Author/recorder: Helen Sheldon

Field notes: 2060102NB1-2

Field drawings: 2060102FD01

Field recording forms: 2060102FRF01-11

Photographs: 2060102D01-27

Packed artifact collection: 1 bag labelled BbGd-62 Stage 3 in box GTAB-02

The site was initially identified through a Stage 2 test pit in which a quantity of cut and wire nails were recovered in an otherwise pristine woodland setting. A more thorough examination of the area during the Stage 3 assessment identified a limestone feature located southeast of the original stage 2 test pit that is now thought to be a small lime kiln (feature 1).

The feature consists of a roughly circular slight mound composed primarily of pieces of tabular limestone with the occasional granite cobble, measuring approximately 5 x 5 metres in total area. Clinker, derived from burning coal was evident on the surface, located within a very back loam with pieces of charcoal and burnt wood and some cut and wire nails. A central channel depression within the feature contained fragments of burnt and/or heated limestone and some pieces of clinker. The feature was not excavated as this was deemed to be beyond the scope of the Stage 3 assessment. Rather the surface of the feature was cleared of vegetation and leaf and twig debris, photographed and drawn to scale. A few artifacts were recovered from the feature during the cleaning process and are catalogued in the artifact catalogue as originating from F01. Feature 1 was the only feature identified during the Stage 3 assessment.

The stratigraphy in the excavation units on the exterior of the feature generally consisted of 7 – 20 cm of a dark brown silty clay (lot 1) over an orange brown sandy clay subsoil (lot 2). Subsoil at the northern extreme of the site was more of a yellow brown clay (units 1J and 1K).

Images



Plate 1: Excavating unit 1C (2060102D01)



Plate 2: Overview of Stage 3 excavations at BbGd-62 (2060102D05)



Plate 3: Ridge south of the site, Bur Creek in the distance (2060102D08)



Plate 4: Close of unit 1C (2060102D12)



Plate 5: Close of unit 1B (2060102D13)



Plate 6: Surface of Feature 1, looking west (2060102D17)



Plate 7: Surface of Feature 1, looking northwest (2060102D18)



Plate 8: Surface of Feature 1, looking southeast (2060102D20)



Plate 9: Close of unit 1M (2060102D24)



Plate 10: Close of unit 1J (2060102D26)

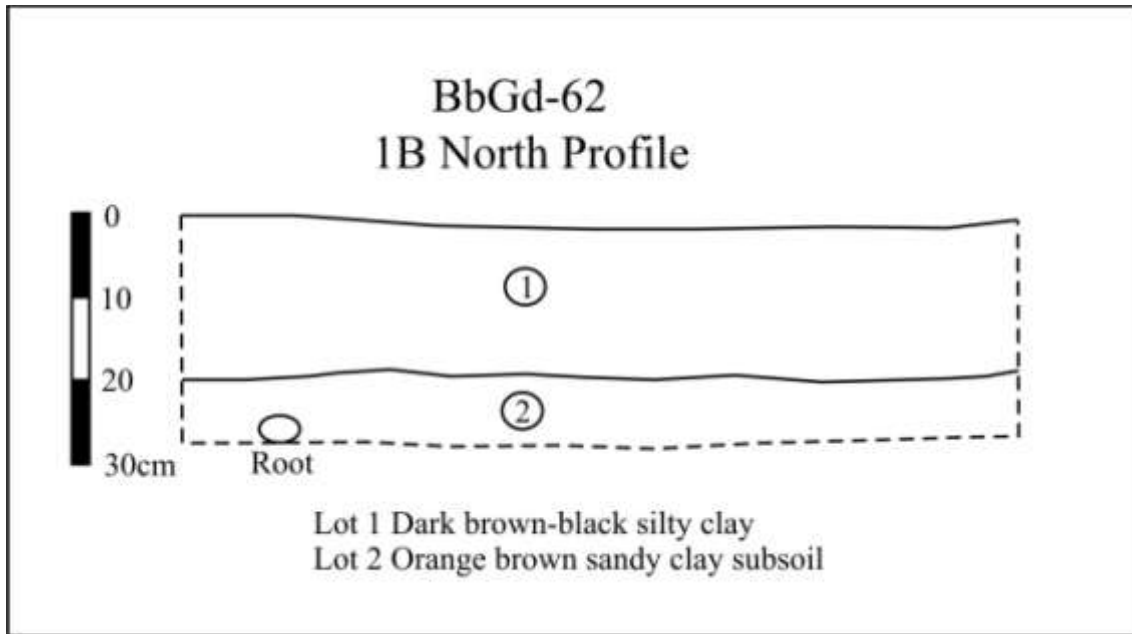


Figure 17: North profile of unit 1B

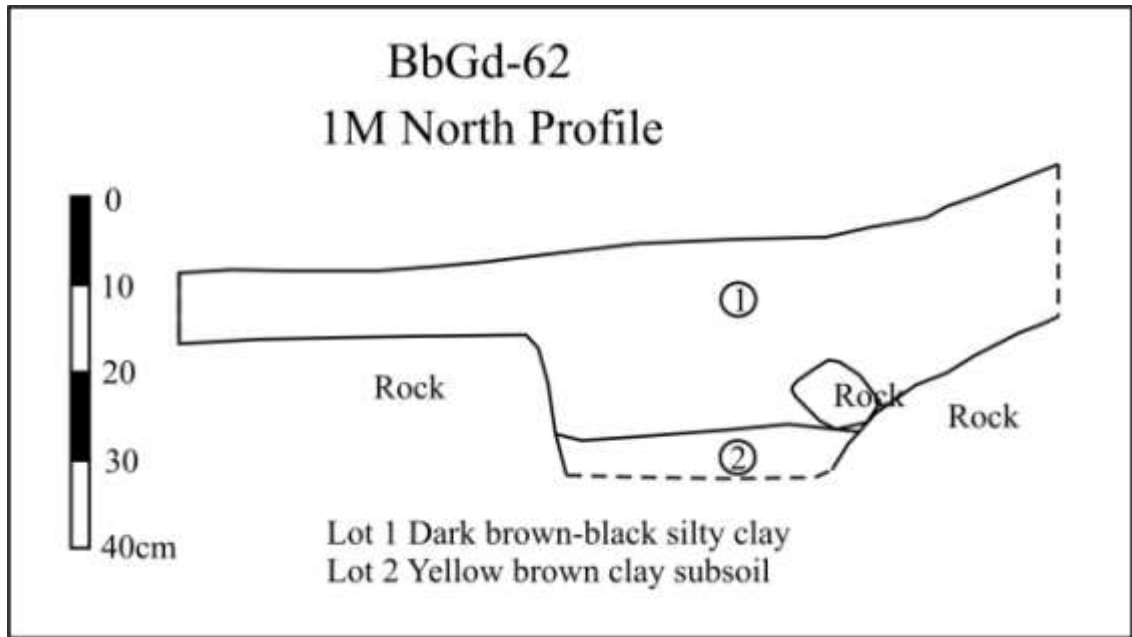


Figure 18: North profile of unit 1M



Plate 11: Nails from the surface of Feature 1



Plate 12: Machine cut nails from 1B1



Plate 13: Clinker from 1B1

Analysis

BbGd-62 Stage 3 Artifact Analysis

A total of 36 artifacts were recovered during the Stage 3 assessment of BbGd-62. Most of these were clinker (59%, n=21) derived from the burning of coal. Almost all of the clinker (n=20) came from unit 1B. One piece of clinker and a piece of coal came from within the rock pile (Feature 1) that is interpreted as a collapsed lime kiln. The rest of the assemblage was ferrous nails (39%, n=14) either of the cut (n=11) or wire (n=3) type. A similar assemblage was noted during the Stage 2 in and around unit 1A though a broader range of metal fasteners was catalogued. Unit 1A and 1B are certainly the core of the site in terms of artifact deposition.

Artifact Class	Artifact Type	# by class	# by type	% of total
Architectural		14		39%
	cut nails		11	
	wire nails		3	
Misc. stone		22		61%
	coal		1	
	clinker		21	
Total		36		100%

Table 1: BbGd-62 Stage 3 artifact assemblage

The nails may indicate that a structure of some sort was adjacent to the lime kiln, probably a small shed. Certainly the clinker was deposited when the kiln was cleaned out and the nails, which were found in association with the clinker, are also at least partially from the burning of used lumber in the kiln. No artifacts indicating a domestic nature to the site were recovered. If food, beverages and tobacco were consumed at the site no or few associated artifacts were deposited.

The combined assemblage from both the Stage 2 and 3 assessments of the BbGd-62 site is consistent with an industrial site particularly one requiring the significant heat for processing. In conjunction with the stone feature the most likely explanation is that a small lime kiln was present at the site. It is difficult to date the site but based on the presence of both cut and wire nails it most likely operated during the last half of the 19th century and possibly into the early 20th century.

Conclusions

The small mounded limestone rubble feature located within the site is probably a small lime kiln. Lime kilns were an integral part of the rural Ontario landscape in the nineteenth century as farmers used them to supplement income during the winter months and also to create lime suitable for improving their fields.

The lime kiln at BbGd-62 appears to be a very simple type of kiln commonly known as a clamp kiln. Clamp kilns consisted of a shallow bowl scooped out of the earth into which limestone was laid on a bed of wood. “Further layers of limestone with wood or coal were added, then the whole was covered with turves to ensure slow burning, leaving a flue for lighting and a vent hole in the top” (Williams 1989:13).

This small lime kiln probably was operated by the Donovan family who owned the east half of Lot 13 from 1840 until into the twentieth century. The artifactual evidence is consistent with the decades of Donovan ownership (see above). Lime kilns, although once common in the eastern Ontario landscape, have rarely been archaeologically recorded. As a relatively rare example of a vanished aspect of nineteenth century rural Ontario life, the Donovan lime kiln is considered to have cultural heritage value.

Recommendations

As a result of the Stage 3 archaeological assessment Ground Truth Archaeology makes the following recommendations in regards to BbGd-62:

- The Donovan Lime Kiln (BbGd-62) 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-62 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.

Canada Department of Agriculture

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.

Ministry of Tourism and Culture (MTC)

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
20600102D01	excavating unit 1C	N	April 18, 2014
20600102D02	excavating unit 1B	S	April 18, 2014
20600102D03	Stage 3 excavations	NE	April 18, 2014
20600102D04	supervising	W	April 18, 2014
20600102D05	Stage 3 excavations	S	April 18, 2014
20600102D06	Stage 3 excavations	SE	April 18, 2014
20600102D07	overview of site	N	April 18, 2014
20600102D08	ridge south of site	SW	April 18, 2014
20600102D09	ridge south of site	SE	April 18, 2014
20600102D10	ridge south of site	W	April 18, 2014
20600102D11	ridge south of site	E	April 18, 2014
20600102D12	close of unit 1C	N	April 18, 2014
20600102D13	close of unit 1B	N	April 21, 2014
20600102D14	close of unit 1D	N	April 21, 2014
20600102D15	close of unit 1E	N	April 21, 2014
20600102D16	close of unit 1F	N	April 21, 2014
20600102D17	surface of Feature 1	W	April 21, 2014
20600102D18	surface of Feature 1	W	April 21, 2014
20600102D19	surface of Feature 1	SW	April 21, 2014
20600102D20	surface of Feature 1	SE	April 21, 2014
20600102D21	surface of Feature 1	N	April 21, 2014
20600102D22	close of unit 1L	N	April 21, 2014
20600102D23	close of unit 1G	N	April 23, 2014
20600102D24	close of unit 1M	N	April 23, 2014
20600102D25	close of unit 1K	N	April 23, 2014
20600102D26	close of unit 1J	N	April 23, 2014
20600102D27	close of unit 1J	N	April 23, 2014

Appendix B: Artifact Catalogue BbGd-62

Stage 3 (Artifacts located in box GTAB-02)

Lot #	Artifact #	Material	Class	Type	Variety	Item	Portion	#	Notes
1B1	AR-01	metal	iron	machine made: cut	framing	nail	partial	1	
1B1	AR-01	metal	iron	machine made: cut	trim	nail	partial	1	
1B1	AR-01	metal	iron	machine made: cut	trim	nail	complete	1	
1B1	AR-02	stone	coal	anthracite		coal	fragment	1	
1B1	AR-03	stone	coal			clinker	fragment	20	possibly includes ferrous bloom
1D1	AR-01	metal	iron	machine made: cut	trim	nail	complete	1	
1D1	AR-01	metal	iron	machine made: cut	trim	nail	partial	1	
1D1	AR-01	metal	iron	machine made: cut	lathe	nail	complete	1	
F01	AR-01	metal	iron	machine made: cut	lathe	nail	partial	1	
F01	AR-01	metal	iron	machine made: cut	trim	nail	partial	4	
F01	AR-02	stone	clinker			clinker	fragment	1	
F01	AR-03	metal	iron	machine made: wire	trim	nail	complete	3	

Appendix C: Profiles

