

ARCHEOWORKS INC.

**Stage 2 Archaeological Assessment (AA):
Proposed Solar Projects
within Part of Lots 23; 23; 15, Concession 6; 7; 8
Municipality of Strathroy-Caradoc
County of Middlesex
Ontario**

**Project #: 044-SB767-12
Licencee (#): Jessica Marr (P334)
PIF#: P334-218-2012**

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Executive Summary

Archeoworks Inc. was retained by *exp Services Inc.* to conduct a Stage 2 archaeological assessment (AA) of the Four Solar Projects, part of the Strathroy Renewable Energy Environmental Assessment (EA), located in Strathroy, Ontario. The project includes a total of four solar installation projects, identified as L.P. #1, L.P. #5, L.P. #6 and L.P. #7.

The Stage 1 archaeological assessment, conducted by *Archaeological Services Inc.* in 2012, identified potential for the recovery of historic Euro-Canadian and Aboriginal archaeological remains within undisturbed portions of the study area due to the presence physical and historical features within or in close proximity of the study area. As all four proposed L.P. locations exhibited archaeological potential, *ASI* recommended that a Stage 2 AA be undertaken, consisting of pedestrian survey of all ploughable lands, and test pit survey for the remaining lands.

Stage 2 archaeological assessment involved subjecting the entirety of the four subject areas, all consisting of agricultural field, to pedestrian survey. Archaeological resources were encountered during pedestrian survey, identified as P1, P2 and P3. Due the isolated and non-diagnostic nature of the finds, however, no further work is recommended. The entire subject area can, therefore, be considered free from any further archaeological concern.

The above recommendation is subject to MTCS approval. No excavation activities shall take place within the study area prior to the MTCS (Heritage Operations Unit) confirming in writing that all archaeological licensing and technical review requirements have been satisfied.

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1.0 PROJECT CONTEXT

1.1 Development Context

Archeoworks Inc. was retained by *exp Services Inc* to conduct a Stage 2 archaeological assessment (AA) of the Four Solar Projects, part of the Strathroy Renewable Energy Environmental Assessment (EA), located in Strathroy, Ontario. The project includes four solar installation projects, with the locations as follows:

- L.P. #1: 9307 Union Drive, Strathroy, Ontario
- L.P. #5 and #6: 8338 Scotchmere Drive, Strathroy, Ontario
- L.P. #7: 9274 Union Drive, Strathroy, Ontario

The Stage 2 assessment, reported herein, was conducted under the project direction of Ms. Jessica Marr, in accordance with the *Ontario Heritage Act* (1990) and under the *Environmental Protection Act* (2011), under the archaeological consulting licence number P334. Permission to investigate the study area and to collect any encountered archaeological material was granted on June 5th, 2011.

1.2 Historical Context

1.2.1 Stage 1 AA Summary

The pre-survey research, outlined in the “*Stage 1 Archaeological Assessment: Background Study and Property Inspection, Four Solar Projects in Strathroy, Renewable Energy Environmental Assessment, Former Township of Cadadoc [sic], Middlesex County Strathroy, Ontario*” (Archaeological Services, Inc., 2012) report, identified the potential for the recovery of historic Euro-Canadian and Aboriginal archaeological resources within undisturbed portions of the study area. The background research included a review of the *Ministry of Tourism, Culture and Sport’s* archaeological site database, which revealed that three archaeological sites had been registered within a one-kilometre radius of the original study area (*see Table 1*), thus indicating a potential for encountering archaeological resources. The Stage 1 AA established archaeological potential for the location and recovery of Aboriginal material within the study area limits due to the presence of Gold Creek, and pockets of well-drained sandy soil. The determination of historic potential was based on a review of the 1878 *Illustrated Historical Atlas of the County of Middlesex*, which revealed that a number of historical farmsteads and orchards are located in proximity to the study area(s) (*see Map 2*). In addition, the historically surveyed roadways Scotchmere Drive and Union Drive lie immediately adjacent to the study area, adding archaeological potential to lands within 100 metres of its right-of-way. With the study area in close proximity to historic structures as depicted in historical maps, and being located in close proximity to historic transportation routes and a water source, potential for locating historic Euro-Canadian and Aboriginal archaeological resources within undisturbed locations of the study area limits was established.

1.2.2 Pre-Contact Period

The region where the study area is situated was first inhabited after the final retreat of the North American Laurentide ice sheet 14,000 years ago. Massive quantities of meltwater flooded southern Ontario forming postglacial lakes, such as Lake Maumee in the Lake Erie basin. By 13,000 years ago, ice blocked the eastward drainage of the Erie basin, raising water levels in the Erie and southern Huron basins to form Lake Whittlesey, as drainage commenced westward across Michigan and land west of the Niagara Escarpment remained ice free (Karrow & Warner, 1990:11). In the wake of retreating ice, massive drainage rivers developed and formed extensive deltas producing the Caradoc sand plains along the Thames River watershed (Karrow and Warner, 1990:13). By 12,000 years ago, spruce forests were developing and large animals began to occupy the area north of Lake Erie and west of present-day Waterloo. Small groups of early Paleo-Indian began to occupy the area, likely following migrating herds throughout the river valleys and shorelines as most known Paleo-Indian sites occur around glacial features and shorelines of glacial lakes (Burse et al., 2012a). As a result of following migratory animals, artifactual remains of Paleo-Indian bands include a variety of chert types indicative of the great distances traveled on their seasonal rounds and large trade networks.

As isostatic rebound continued, it gradually manipulated glacial river outlets draining the Lake Huron and Erie Basins to form Lake Stanley and Early Lake Erie, respectively, and opening up large tracts for flora and fauna. Early and Middle Archaic natives likely began to adapt to the pine and deciduous forest environment heavily inundated with streams, rivers and large fresh water lakes, although little is known of this period, as a result of poor typological visibility (Wright, 1995:95). By 4,000 years ago, lake levels had settled to present-day levels and Late Archaic natives began to exploit the seasonally abundant resources, hunt elk and moose in small bands during summer months, and return to their family groups by the winter (Burse et al., 2012b). House structures were moveable and the size of these small villages gradually grew as population numbers increased. The artifact assemblage from this period contains ground stones tools, stone tools of local chert types that would have required better technical skills to produce and the presence of native copper for utilitarian tools. Many elaborate late Archaic sites occur west of the Niagara Escarpment and primarily along river mouths as they empty into the Upper Great Lakes (Wright, 1995:223).

Approximately 3,000 years ago, the Woodland period began, divided into the Early (ca. 800 B.C to 0 A.D.), Middle (ca. 200 B.C. to ca. 900 A.D.) and Late (ca. 500 A.D. to 1800 A.D.) periods, and recognized by the introduction of pottery and the increasing reliance on domesticated plants while utilizing a larger variety of foodstuff. Nuclear families began to congregate near the mouths of rivers to fish, trade, and engage in social and spiritual events, establishing early village life. Furthermore, grave goods gradually became more exotic and frequent, indicative of growing complexity and trade networks amongst groups along the Great Lakes.

Beginning in 900 A.D until the late 13th century, the Ontario Iroquoian Tradition began covering most of western and central Ontario. Semi-permanent villages developed as horticulture began to take on a more central importance in subsistence patterns.

Significant village growth allowed for the emergence of tribes and regional clusters of tribal groups, like the Huron, Petun, Neutral and Ontario Iroquois throughout Ontario (Bursey et al., 2012c). It was during the Ontario Iroquoian period that village sizes were at their largest and eventually reached their “classic” appearance, typically consisting of longhouses, sometimes surrounded by defensive stockades, overlooking cultivated fields and clustered around waterways, like the Thames River and the Sydenham River, optimizing the economic and trading capabilities. Each tribe had distinctive traits but shared in a general pattern of life associated primarily with horticultural subsistence. Intertribal trade consisted of small luxury items that could be carried overland (Triggers, 1994: pp.42-45).

1.2.3 Contact Period

Previous background research outlined in the “*Stage 1 Archaeological Assessment: Background Study and Property Inspection: Four Solar Projects in Strathroy Renewable Energy Environmental Assessments Former Township of Caradoc, Middlesex County, Strathroy, Ontario*” by *Archaeological Services Inc.* indicated that the lands between Lake Erie and Lake Huron were highly contested during the contact period of southwestern Ontario (Johnston, 2004:9). An early Jesuit map entitled *Nouvelle France* depicts this area as a border zone between peoples of difference cultures and languages. The introduction of European trade goods, weapons, missionaries, and diseases served to exacerbate previous tensions between Aboriginal groups (Johnston, 2004:9). One result of this was that the between 1648 and 1650 Iroquois from New York State conducted a series of attacks on Neutral and Huron-Wendat groups in Southern and Southwestern Ontario. These attacks weakened the Huron-Wendat and the Neutral and caused them to disperse to other locations in Ontario (Goodspeed & Goodspeed, 1889:16).

The Iroquoian dominance of the region did not go unchallenged, and by 1653 the Jesuits reported that several nations, including the Anishnaabeg (Chippewa or Ojibway, Mississauga, Ottawa, Pottawatomi) and the Neutral had united against the Iroquois (Warren, 1885:97). As a result there were many battles in the area between Lake Erie and Georgian Bay. Burial mounds during this period reflect the territorial disputes between the Iroquois and other Aboriginal groups.

Peace was achieved between the Iroquois and the Anishnaabeg Nations in August of 1701, when representatives of more than twenty Anishnaabeg Nations assembled in Montreal to participate in peace negotiations (Johnston, 2004:10). During these negotiations captives were exchanged and the Iroquois and Anishnaabeg agreed to live together in peace. Peace between these nations was confirmed again at council held at Lake Superior when the Iroquois delivered a wampum belt to the Anishnaabeg Nations (Johnston, 2004).

By 1718 several well-established villages were documented in the vicinity of Detroit. In addition to the Huron-Wendat, Potawatami, and Ottawa villages, a known village of Mississauga and Chippewa was located on the shore of Lake Huron, north of the Thames River (Johnston, 2004:12). Despite the disruptions in settlements due to disease and warfare, the area between Lake Erie and Lake Huron had been restored to peace by the turn of the 18th century (Warren, 1885:79). The Anishnaabeg were early and consistent

allies of the French and were one of the first Aboriginal groups to receive firearms. With the aid of guns they were able to drive the Sioux into the Great Plains and the Sauk, Mesquaki, and Kickapoo groups southward towards northern Wisconsin (Waldman, 2006:67). In the mid-1700s the Anishnaabeg fought the British in the French and Indian wars and in Pontiac's Rebellion. Later, during the American Revolution, the Anishnaabeg became allies of the British against the American rebels. They also fought against the Americans again in the Indian wars for the Old Northwest and in the War of 1812 (Waldman, 2006:67).

1.2.4 Settlement History

After the American War of Independence in the late 1700s and the War of 1812, a large number of European and American immigrants began to move into Middlesex County, putting greater demand on the quantity of available lands of settlement within Upper Canada. By 1818, John Askin, the superintendent of Indian Affairs at Amherstburg, met with the chiefs of the Ojibwa bands advising them that the King wished to purchase land on the Thames River and on Lake Huron just north of Sable River (Surtees, 1994:117). It was not until 1822 that the Long Woods Purchase was finalized as the chiefs of the Ojibway agreed to cede a tract of land, covering 553,190 acres, for an annuity of 600 pounds in currency (Natural Resources Canada, 2003).

Outlined in the *“Stage 1 Archaeological Assessment: Background Study and Property Inspection: Four Solar Projects in Strathroy Renewable Energy Environmental Assessments Former Township of Caradoc, Middlesex County, Strathroy, Ontario”* (ASI, 2012) Middlesex County was first settled in 1793 after Lieutenant Simcoe passed through the area on his way to visit Detroit (H.R. Page & Co., 1878). Simcoe was struck by the landscape and decided that the future capital of Upper Canada should be constructed along the Thames River. His plans did not materialize but London, located at the forks of the Thames River, did become a significant city in southern Ontario (Mika & Mika, 1981:663). Much of Middlesex County is comprised of rich agricultural lands, which are drained by the Thames River and its tributaries.

Caradoc Township was named in 1820 after a revered King of Wales, who was killed in a battle between the Welsh and the Saxons in the year 1795 (Rayburn, 1997:56). The township was surveyed in 1822 by Colonel Burwell (H.R. Page & Co., 1878). Immediately after the survey settlers began to settle the township including Donald McGugan, who settled on Concession 7, Lot 23 in 1828. His descendants, including his son Malcolm, continued to live and farm the property throughout the nineteenth century. It should be noted that L.P. #7 is located on the property of Donald McGugan and his son Malcolm is listed as the property owner.

The Town of Strathroy is in close proximity to the study area, located 2.5 km northeast of L.P. #5 and #6. Strathroy is one of two incorporated towns in Middlesex County. Strathroy is located close to the Sydenham River and grew around a sawmill built by John Buchanan in 1836 (Ontario Heritage Trust, 2012). Strathroy was incorporated as a village soon after the arrival of the Great Western Railway in 1856 and was official granted town status in 1870.

The Township of Caradoc contains reservations for two Aboriginal groups, the Chippewa of the Thames and the Muncee First Nations. The Chippewas of the Thames are descended from a part of the Ojibway Nation that migrated from the Nipissing/Lake Superior Region into Southwestern Ontario at the beginning of the 18th century (Goodspeed & Goodspeed, 1889:19; Indian Claim Commission, 2005). The land of the Chippewas of the Thames First Nation is located on the west bank of the Thames River, and was reserved from the area ceded to the Crown in 1819. In 1834, part of the reserve was surrendered for sale by the Crown. The money collected from the subsequent land sales was to be held in trust by the Crown on behalf of and for the benefit of the First Nation. In 1851, the Chippewas possessed 9,000 acres of land in the Township of Caradoc. The Muncee First Nation originated from New York State and fought for the British during the War of 1812 (Goodspeed & Goodspeed, 1889:19). Following the war, they reached a temporary agreement with the Chippewa of the Thames to share their land. The Canadian Government purchased the land from the Chippewas during the 1880s so that the Munces could have a permanent settlement in the Township of Caradoc.

1.2.5 Past Land Use of Study Area

To further assess the study area's potential for the recovery of historic pre-1900 remains, the 1878 *Illustrated Historical Atlas of the County of Middlesex* was reviewed in order to gain an understanding of the land-use history.

The study area of LP #1 is located within the southern portion of Lot 23, Concession 6, LP #7 is located within the northern half of Lot 23 Concession 7, and LP #5 and #6 are located in Lot 15, Concession 6, in the former Township of Caradoc, in the County of Middlesex.

A review of the 1878 *Illustrated Atlas* revealed the study area for LP# 1 as falling within the agriculturally cultivated landscape of Malcolm McGugan's property and LP #7 is located within Duncan McKellar's property (*see Map 2*). LP #7 is immediately adjacent to the historical residence depicted in the atlas. Additionally, Gold Creek flows east of the study areas for LP #1 and #7.

The study area for LP #5 and #6 (*see Map 3*), are within Hugh and Alex Graham's property and appear to be within the agriculturally cultivated landscape. An unnamed creek within the Sydenham Headwaters runs south of the study area.

1.3 Archaeological Context

1.3.1 Registered Archaeological Sites

In order that an inventory of archaeological resources could be compiled for this study corridor, the *Ontario Archaeological Sites Database* (OASD) maintained by the *Ministry of Tourism, Culture and Sport* (MTCS) was consulted. Every archaeological site is registered according to the Borden System, which is a numbering system used throughout Canada to track archaeological sites and their artifacts. The study area is located within Borden block AfHj.

According to the MTCS archaeological site database, three archaeological sites have been registered within or in close proximity to the study area (*see Table 1*) (MTSC, 2012, as cited in ASI, 2012).

Table 1: Sites Within Two Kilometres of the Original Study Area

Borden #	Name	Cultural Affiliation	Type
AfHj-90	Culloden Acres	Early Paleo-Indian, Early-Late Archaic, Euro-Canadian	Game Processing
AfHj-101	Samplonious	Paleo-Indian, Early-Late Archaic, Early Woodland, Small Point	Lithic Scatter
AfHj-104	Caradoc	Paleo-Indian	Sacred

1.3.2 Current Land Conditions and Uses

The study area consists of four solar projects, grouped together in three separate locations. All of the proposed L.P. locations are situated within a largely rural setting, with the study area consisting of agricultural field, all east of the community of Strathroy, in the Municipality of Strathroy-Caradoc (*see Map 1*). The study area lies within the Caradoc Sand Plains physiographic region of Ontario (Chapman & Putnam, 1984). The topography within the study area can be described as generally level, except near Mount Brydges where sandy ridges appear. The soils in the study area include Huron Clay (L.P. #1 and L.P. #7), Berrien sandy loam and Fox fine sandy loam (L.P. #5 and L.P. #6), and Tuscola silt loam (L.P. #7) (Experimental Farms Service, 1931).

1.3.3 Dates of Fieldwork

The Stage 2 archaeological assessment of the study area, illustrated in *Maps 4-7*, was undertaken on July 20th and 27th, 2012. The weather during the Stage 2 investigations ranged from sunny and clear to overcast, with temperatures averaging 19.4°C and 22.3°C. The weather and lighting conditions during the Stage 2 investigation permitted good visibility of all parts of the study area and were conducive to the identification and recovery of archaeological resources.

2.0 FIELD METHODS

This field assessment was conducted in compliance with the *2011 Standards and Guidelines for Consultant Archaeologists* ('*2011 S&G*'), published by the MTCS. Photographic images of the study area are presented within *Appendix B*. Location and orientation information associated with all photographs taken in the field is provided within *Maps 4-7*.

The entire subject area was subjected to pedestrian survey. This form of survey method involves systematically walking ploughed areas within the property, and mapping and collecting artifacts found on the ground surface. The lands were recently ploughed and subjected to the appropriate weathering requirements according to *Section 2.1.1, Section 3* of the *2011 S&G*. Ploughing was conducted deep enough to provide total topsoil exposure, but not deeper than previous ploughing. Greater than 80% of the ploughed

ground surface was visible at the time of survey and the ploughed fields were tested at survey transects of five metres (*see Images 1-9*).

2.4 Activities within Study Area by Project

The results of the field assessment are discussed below in detail according to project numbers as indicated on base maps provided by *exp Services Inc.*

2.4.1 L.P. #1 (see Map 3)

The first attempt to conduct visual assessments of the L.P. #1 study area was conducted on July 20th, 2012. The ploughing had been conducted prior to this date, but the lack of rain prohibited the assessment until this date. Field conditions and were found to be not acceptable according to the *2011 S&G*. The chaff from the fields (both planted in winter wheat and tilled specifically for the archaeological assessment) was too dense, reducing visibility to at best 60 to 70%, but mostly 50%. New growth had started, but this was not too disruptive, as it was the chaff that greatly reduced the visibility. The landowner immediately re-ploughed and disked the study area.

The L.P. #1 was again visited one week after the initial property assessment, on July 27th, after heavy rain had passed through the area, just prior to this day. The field had been ploughed and disked, and the visibility was 80%. The field had been weathered adequately, and rocks on the surface were free of dirt and highly visible. The assessment was conducted at 5 metre intervals, and all finds were marked with forestry flags, and intensified at a shoulder-to-shoulder width.

The study area on this property was gently undulating to level. The soil was a sandy loam. There was a low ridge just to the east of the study area, and its slight slope continued into the southeastern corner of the study area, with a slight dip in the centre. The first findspot (SF1) was found on the western side of the gentle slope of this ridge, while SP2 was found along the southern edge of the study area, on the ridge's south slope. Intensification was carried out for both findspots, and nothing else was found.

2.4.2 L.P. #5 and #6 (see Maps 4 and 5)

The L.P. #5 and #6 study area was also visited on July 20th, 2012, and it was found that no ploughing had been conducted at this locations. The field was in mature corn. The route for the power hook-up started to be assessed as per MTCS's *2011 S&G, Section 2.1.1, Guideline 2*. This guideline states:

When appropriate based on crop conditions, (e.g. corn fields where herbicides have prevented weed growth between the rows...), survey transects at intervals of less than 5 m may be used to achieve the minimum 80% visibility (MTSC, 2011:30).

Each row was walked in a bent position, below most of the corn leaves, and initially three small pieces of debitage were located, identified as SF1-SF3. Intensification around these finds proved extremely difficult, and due to the patches of weeds and the over-hanging

corn leaves and stalks, it was decided that conditions did not permit the continuation of the assessment.

The L.P. #5 and #6 study area was again visited one week after the initial property assessment, on July 27th, after heavy bands of rain had passed through the area, just prior to this day. The field had been ploughed and disked, and the visibility was 80%. The field had been weathered adequately, and rocks on the surface were free of dirt and highly visible. The assessment was conducted at 5 metre intervals, and all finds were marked with forestry flags, and intensified at a shoulder-to-shoulder width. The L.P. #6 study area was fairly flat with little topographic relief, while the L.P. #5 sloped upward to the south, to southwest. The soil in these locations is a sandy loam. No further archaeological resources were encountered.

2.4.3 L.P. #7 (see Map 6)

The first attempt to conduct visual assessments of the L.P. #7 study area was conducted on July 20th, 2012. The ploughing had been conducted prior to this date, but the lack of rain prohibited the assessment until this date. Field conditions and were found to be not acceptable according to the 2011 S&G. The chaff from the fields (both planted in winter wheat and tilled specifically for the archaeological assessment) was too dense, reducing visibility to at best 60 to 70%, but mostly 50%. New growth had started, but this was not too disruptive, as it was the chaff that greatly reduced the visibility. The landowner immediately re-ploughed and disked the study area.

The L.P. #7 was again visited one week after the initial property assessment, on July 27th, after heavy rain had passed through the area, just prior to this day. The field had been ploughed and disked, and the visibility was 80%. The field had been weathered adequately, and rocks on the surface were free of dirt and highly visible. The assessment was conducted at 5 metre intervals, and all finds were marked with forestry flags, and intensified at a shoulder-to-shoulder width.

The study area for this property is flat in the south, and slopes down to the north. The soil in this area was far different than the location to the south of Union Road (L.P. #1), and is a heavy clay. One findspot was encountered, situated on the slope, near the base of slope. The area around the findspot was intensified, but nothing further was found.

3.0 RECORD OF FINDS

A catalogue of the artifacts encountered during Stage 2 AA is provided within *Appendix D*. Despite careful scrutiny, no additional archaeological resources were encountered during the Stage 2 survey of the remainder of the study area. An inventory of the documented record generated in the field can be found within *Appendix E*. All artifacts were stored within a single standard bankers box (L: 39.8 cm x W: 31.0 cm x H: 25.7 cm), identified as Box: 2012 – ML – 02.

3.1 Detailed Site Information

More detailed information about the find spots, henceforth identified as P1-P3, is listed below.

3.1.1 L.P. #1 Find spots – P1

Borden Number	None
Site Name	P1
Description of Location	Approximately 240 metres southeast of Union Drive, and 755 metres southwest of Amiens Road.
Size of Site	Large (approximately 30 metres between SF1/SF2 and SF3)
GPS Device	Magellan Explorist 100
Universal Transverse Mercator (UTM) grid zone	17T
Recorded GPS Coordinate(s)	SF1: 458215 4756907 SF2: 458261 4756871
Datum	NAD 1983 CSRS
Method of Correction	None
Accuracy	3m WAAS

3.1.2 L.P. #5 and #6 find spots – P2

Borden Number	None
Site Name	P2
Description of Location	Approximately 30 metres northwest of Scotchmere Drive, and 900 metres southwest of McEvoy Road.
Size of Site	Large (approximately 60 metres between SF1 and SF2)
GPS Device	Magellan Explorist 100
Universal Transverse Mercator (UTM) grid zone	17T

Recorded GPS Coordinate(s)	SF1: 453492 4754600 SF2: 453492 4754599 SF3: 453466 4754621
Datum	NAD 1983 CSRS
Method of Correction	None
Accuracy	6-7m WAAS

3.1.3 L.P. #7 Find spots – P3

Borden Number	AfHj-143
Site Name	P3
Description of Location	Approximately 150 metres northwest of Union Drive, and 900 metres southwest of Amiens Road.
Size of Site	Small (less than 10m by 10m)
GPS Device	Magellan Explorist 100
Universal Transverse Mercator (UTM) grid zone	17T
Recorded GPS Coordinate(s)	SF1: 457835 4757096
Datum	NAD 1983 CSRS
Method of Correction	None
Accuracy	2m WAAS

4.0 ANALYSIS AND CONCLUSIONS

4.1.1 L.P. #1 Find spots – P1

SF1 is a utilized flake with general use-wear, while SF2 is a flake fragment. Both are made from Onondaga chert, and neither show exposure to heat.

The MTCS's *2011 Standards and Guidelines for Consultant Archaeologists* set the following standards to determine whether artifacts, groups of artifacts, or archaeological sites require Stage 3 assessment (*Section 2.2, Standard 1-a, 2011 S&G*):

- 1a. Pre-contact diagnostic artifacts or a concentration of artifacts (or both):
 - i. Within a 10 m by 10 m pedestrian survey area:

- (2) In areas east of north of the Niagara Escarpment, at least five non-diagnostic artifacts.

Given that the finds consist of two non-diagnostic lithic flakes that can neither be associated with any specific period, nor made of exotic chert, the finds do not represent a significant archaeological resource.

4.1.2 L.P. #5 and #6 Find spots – P2

SF1 is a flake fragment made on an unidentified chert type (too small to identify); SF2 is a trimming flake, also too small to identify the material; and SF3 is a trimming flake made on Kettle Point chert. As per *Section 2.2, Standard 1-a*, of the 2011 S&G, as listed above, with three non-diagnostic lithic flakes that can neither be associated with any specific period, nor considered to be made of exotic chert, the finds do not represent a significant archaeological resource

4.1.3 L.P. #7 Findspot – P3

SF1 in this location is a finely made, heavily tanged projectile point, made from a homogeneous grey chert. One blade edge has been impacted and broken off, and the base has a lateral snap fracture. It could be a Middle Archaic point, but it is difficult to determine due to its incompleteness.

The MTCS's 2011 *Standards and Guidelines for Consultant Archaeologists* set the following standards to determine whether artifacts, groups of artifacts, or archaeological sites require Stage 3 assessment (*Section 2.2, Standard 1-b, 2011 S&G*):

- 1b. Single examples of artifacts of special interest
 - i. Aboriginal ceramics
 - ii. Exotic or period-specific cherts
 - iii. An isolated Paleo-Indian or Early Archaic diagnostic artifact

Given the find yielded an isolated possible Middle Archaic artifact, not considered to be made of exotic chert, the site does not represent a significant archaeological resource.

5.0 RECOMMENDATIONS

During the Stage 2 AA of the 4 proposed solar project locations, in the Municipality of Strathroy-Caradoc, archaeological resources were encountered. As a result, it is recommended that:

1. **P1-P3:** Due to the isolated and non-diagnostic nature of the finds, the artifacts are considered to have low cultural heritage value and do not represent significant archaeological finds. No further work is recommended.

The above recommendation is subject to MTCS approval. No excavation activities shall take place within the study area prior to the MTCS (Heritage Operations Unit) confirming in writing that all archaeological licensing and technical review requirements have been satisfied.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

1. This report is submitted to the MTCS 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 the *Ministry of Tourism, Culture and Sport*, 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.
2. 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 Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.
3. 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*.
4. 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*.
5. 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.

7.0 BIBLIOGRAPHY AND SOURCES

Archaeological Services, Inc.

2012 *Stage 1 Archaeological Assessment: Background Study and Property Inspection, Four Solar Projects in Strathroy, Renewable Energy Environmental Assessment, Former Township of Cadadoc [sic], Middlesex County Strathroy, Ontario.* MTCS PIF #P057-689-2012.

Burse, J. Daechsel, H., Hinshelwood, A., and Murphy, C.

2012a *The Archaeology of Ontario – First People of Ontario: The Paleo-Indians.* Retrieved from <http://www.ontarioarchaeology.on.ca/summary/paleo.htm>, July 3, 2012.

2012b *The Archaeology of Ontario – The Archaic Period.* Retrieved from <http://www.ontarioarchaeology.on.ca/summary/archaic.htm>, July 3, 2012.

2012c *The Archaeology of Ontario – The Woodland Period.* Retrieved from <http://www.ontarioarchaeology.on.ca/summary/earlyw.htm>, July 3, 2012.

Chapman, L.J. and Putnam, D.F.

1984 *The Physiography of Southern Ontario.* Ontario Geological Survey, Special Volume 2. Government of Ontario: Toronto.

Energy, Mines and Resources Canada

1994 *National Topographic Survey of Canada, Series A 751, Map 40 I/3, 6th ed.* Ottawa.

Experimental Farms Service

1931 *Soil Survey of County of Middlesex, Province of Ontario, Soil Survey Report No.6.* Experimental Farm Service, Dominion Department of Agriculture. Ottawa, Ontario.

Goodspeed, W.A. and Goodspeed, C.L.

1889 *History of the County of Middlesex, Canada: From the Earliest time to the Present.* London, Ontario: W. Free Press Printing Company.

H.R. Page & Co.

1878 *Illustrated Historical Atlas of the County of Middlesex, Ontario.* Toronto, Ontario.

Indian Claims Commission

2005 *Report on the Mediation of the Chippewas of the Thames First Nation, Clench Defalcation Negotiations*. Retrieved from <http://publications.gc.ca/collections/Collection/RC31-29-2005E.pdf>, February 8, 2012.

Jackson, L.J.

2000 Glacial Lake Levels and Eastern Great Lakes Paleo-Indians. *GeoArchaeology: An International Journal*, 15(5), 415-400. Retrieved from <http://labs.eeb.utoronto.ca/mcandrews/PDFs/049%5B1%5D.pdf>, June 1, 2012.

Johnston, D.

2004 *Connecting People to Place: Great Lakes Aboriginal in Cultural Context*. Unpublished paper prepared for the Ipperwash Commission of Inquiry. Retrieved from http://www.attorneygeneral.jus.gov.on.ca/inquiries/ipperwash/transcripts/pdf/P1_Tab_1.pdf, February 8, 2012.

Karrow, P.F. and B.G. Warner

1990 "The Geological and Biological Environment for Human Occupation in Southern Ontario" in *The Archaeology of Southern Ontario to A.D. 1650*. Ellis, C.J. and Ferris, N., Eds. London, Ontario: Occasional Publication of the London Chapter, OAS, pp. 5-35.

Natural Resources Canada

2003 *Map of the Area of the 28 November 1822 Treaty [Long Woods Purchase]*. Retrieved from http://atlas.nrcan.gc.ca/site/english/maps/historical/indiantreaties/historical_treaties/p23.gif/image_view, July 24, 2012.

Ontario Ministry of Tourism & Culture

2011 *Standards and Guidelines for Consulting Archaeologists*. Toronto.

Ontario Heritage Trust

2012 *The Founding of Strathroy, Plaque Information*. Retrieved from <http://www.heritagetrust.on.ca/Resources---Learning/Online-Plaque-Guide/Plaque-Information.aspx?searchtext=988>, February 8, 2012.

Rayburn, A.

1997 *Place Names of Ontario*. Toronto: University of Toronto Press.

Surtees, R.J.

1994 Land Cessions, 1763-1830. In *Aboriginal Ontario: Historical Perspectives on the First Nations*. Rogers, E.S., Ed. Toronto, Ontario: Dundurn Press Limited, pp. 92-121.

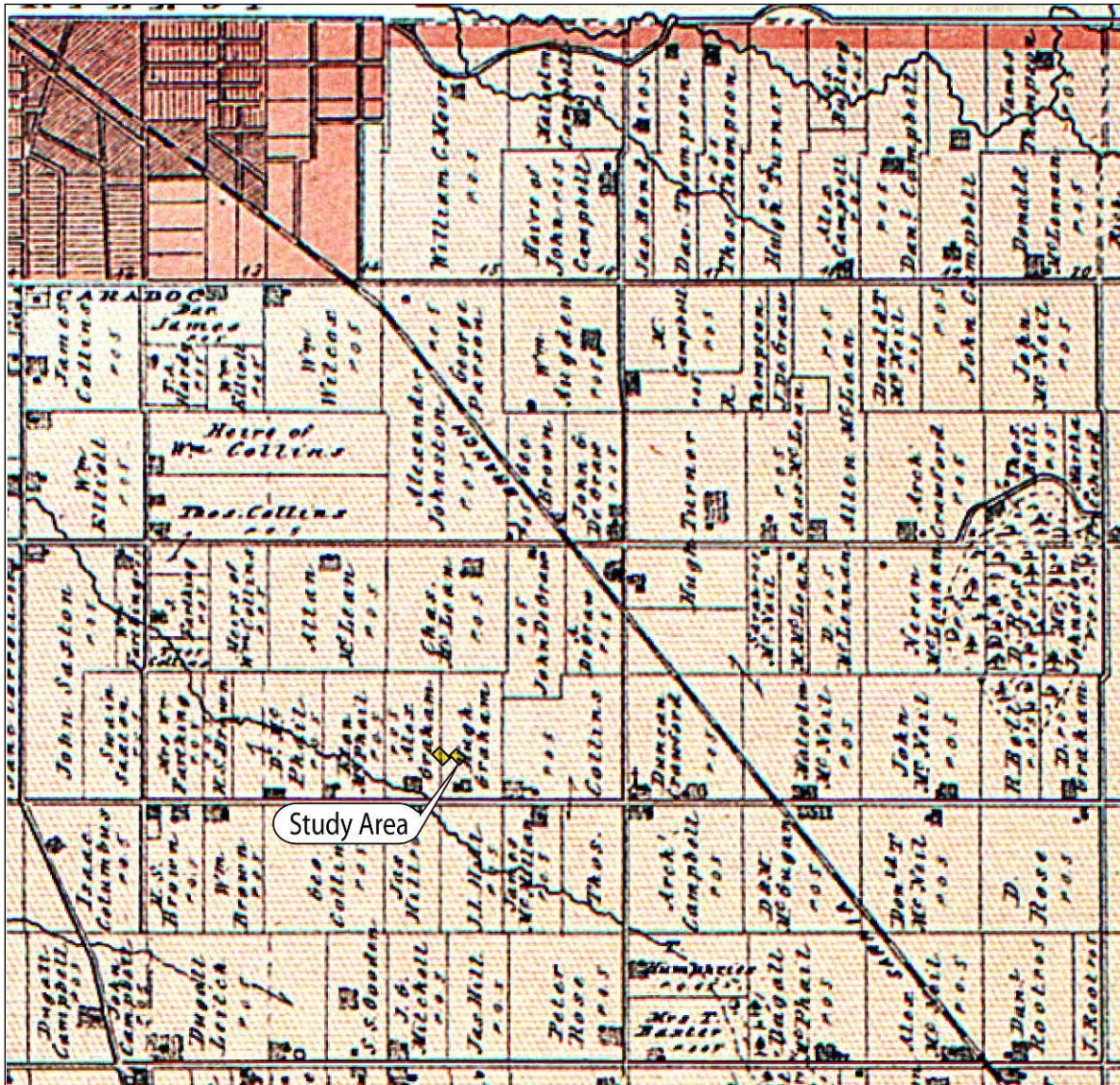
- Trigger, B.G.
1994 *The Original Iroquoians: Huron, Petun and Neutral. In Aboriginal Ontario: Historical Perspectives on the First Nations.* Rogers, E.S., Ed. Toronto, Ontario: Dundurn Press Limited, pp 41-63.
- Waldman, C.
2006 *Encyclopaedia of Native American Tribes, Third Edition.* New York: Checkmark Books.
- Warren, W.W.
1885 *History of the Ojibway People.* Canada: Minnesota Historical Society.
- Wright, J.V.
1995 *A History of the Native People of Canada: Volume I (10,000- 1000 B.C.).* Hull, Quebec: Canadian Museum of Civilization.

APPENDIX A: MAPS



Map 1: National Topographical System Map (1994) identifying the locations of the Stage 2 AA.

Stage 2 AA: Proposed Solar Projects within Part of Lots 23; 23; 15, Concession 6; 7; 8, Municipality of Strathroy-Caradoc, County of Middlesex, Ontario



Map 3: Study area of L.P. #5 and #6 within the 1878 Illustrated Historical Atlas of the County of Middlesex, Ontario.

Map 4-7: Stage 2 AA.

APPENDIX B: IMAGES



Image 1: Looking at excellent ground conditions at L.P. #1 location.



Image 2: Looking at pedestrian survey at L.P. #1 location.



Image 3: Looking at corn field at L.P. #5.



Image 4: Looking at corn field at L.P. #5.



Image 5: Looking at excellent ground conditions at L.P. # 6 location.



Image 6: Looking at pedestrian survey at L.P. #5 and L.P. #6 locations.



Image 7: Looking at excellent ground conditions at L.P. # 5 location.



Image 8: Looking at excellent ground conditions at L.P. # 7 location.



Image 9: Looking at excellent ground conditions at L.P. # 5 location.

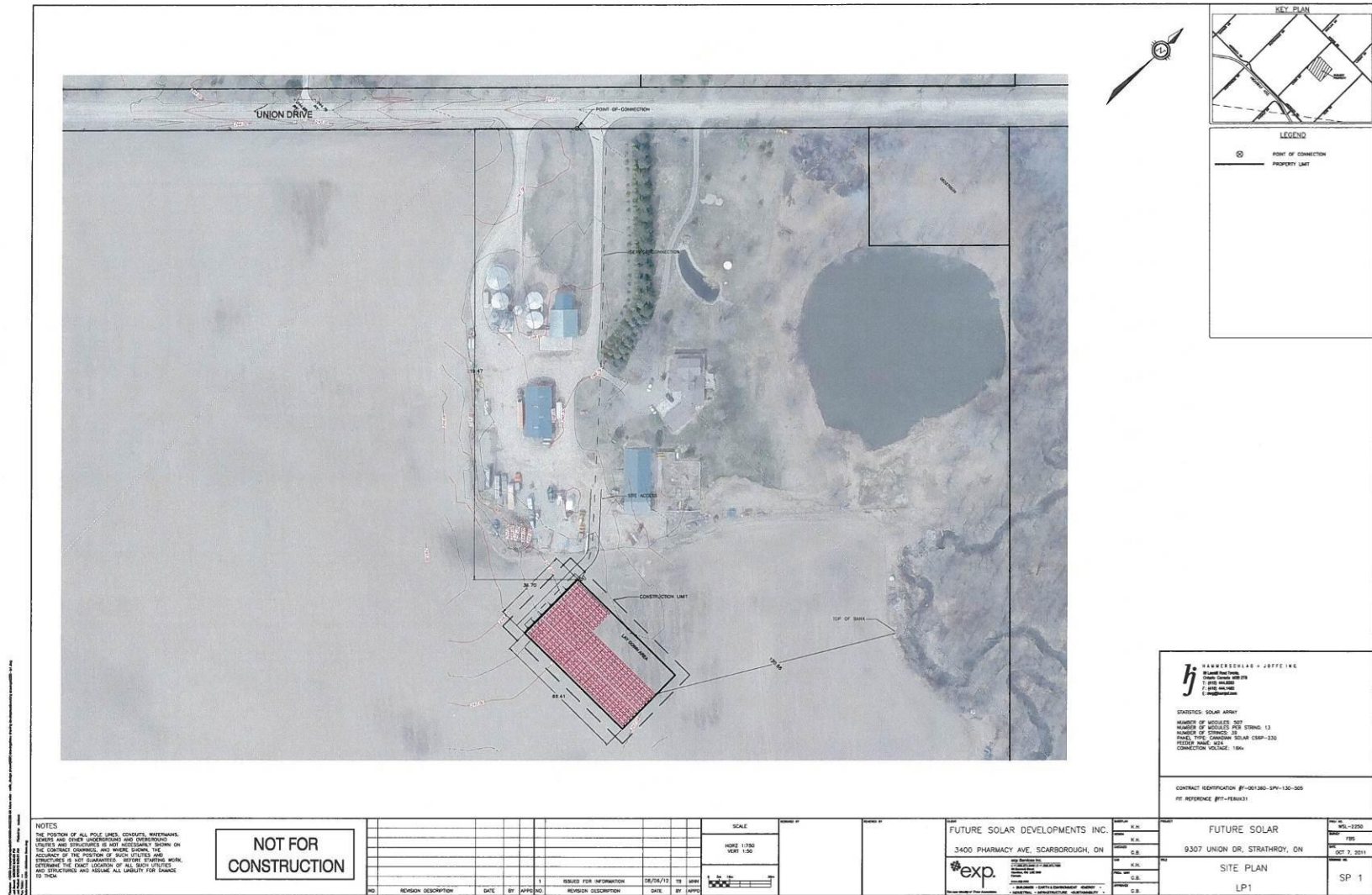


Image 10: Artifacts collected during Stage 2 AA.



Image 11: Artifacts collected during Stage 2 AA.

APPENDIX C: DRAFT PLANS



NOTES
 THE POSITION OF ALL POLE LINES, CONDUITS, WATERWAYS, SEWERS AND OTHER UNDERGROUND AND SURFACE UTILITIES AND STRUCTURES IS AS NEARLY AS FEASIBLE TO THE CENTER OF THE LINE AND WHERE SHOWN THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

NOT FOR CONSTRUCTION

NO.	REVISION DESCRIPTION	DATE	BY	APPROV.
1	ISSUED FOR INFORMATION	08/04/12	TS	APPC

SCALE
 HORIZ 1:750
 VERT 1:50

PROJECT NO.	
DATE	

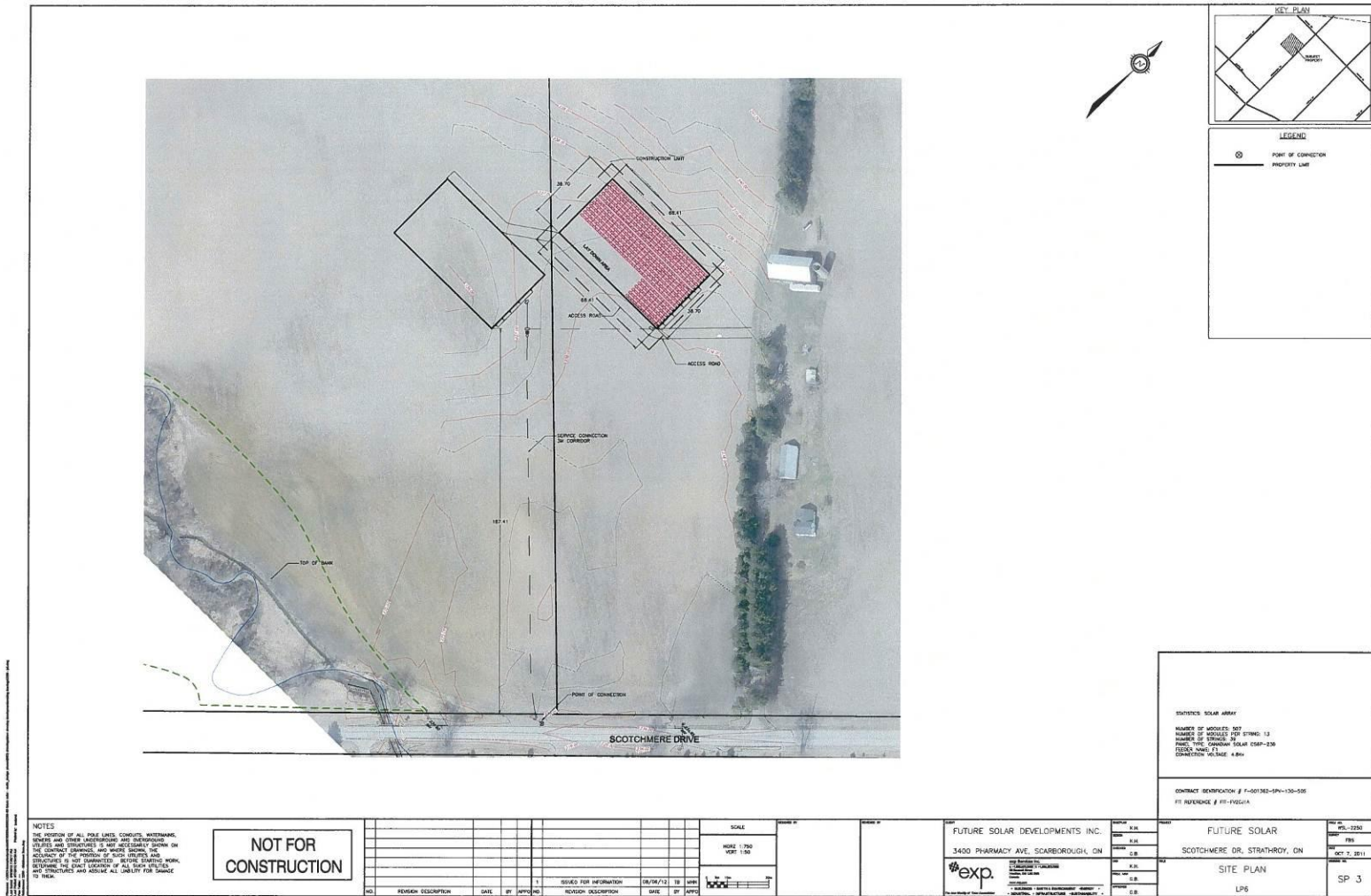
FUTURE SOLAR DEVELOPMENTS INC.
 3400 PHARMACY AVE. SCARBOROUGH, ON

h HANWICKS & JOFFE INC.
 1000 SHEPPARD AVE. E. UNIT 101
 SCARBOROUGH, ONTARIO M1B 4Y7
 (416) 291-1111
 www.hanwicks.com

STATISTICS SOLAR ARRAY
 NUMBER OF MODULES 200
 NUMBER OF MODULES PER STRING 13
 NUMBER OF STRINGS 15
 PANEL TYPE: CANTON SOLAR CSP-230
 PILEUP AREA: 403
 CONNECTION VOLTAGE: 150v

CONTRACT IDENTIFICATION #F-001380-SPV-130-005
 P# REFERENCE #P1-FER0031

PROJECT	FUTURE SOLAR	DATE	08/07/2011
CLIENT	9307 UNION DR, STRATHROY, ON	SCALE	NEL-2320
TYPE	SITE PLAN	DATE	FBS
REVISION	LP1	DATE	08/07/2011
		DATE	
		DATE	
		DATE	
		DATE	
		DATE	
		DATE	
		DATE	
		DATE	





APPENDIX D: ARTIFACT CATALOGUE

Location	#	Artifact Type	Artifact Subtype	Material	Heat	Comments
L.P. #5 and #6	SF1	Debitage	Fragment	Unk	1	Mostly platform; too small to identify.
L.P. #5 and #6	SF2	Debitage	Trimming	Unk	0	Possibly Dundee; too small to identify.
L.P. #5 and #6	SF3	Debitage	Trimming	KP	0	
L.P. #1	SF1	Utilized flake	General	On	0	Worked edge on ventral right.
L.P. #1	SF2	Debitage	Fragment	On	0	
L.P. #7	SF1	Biface	Projectile point	Unk	0	Un-typed; homogeneous grey material; base & edge broken.

KEY:

Material Unk = Unknown Heat 0 = No surficial colour change
 KP = Kettle Point chert 1 = Surficial colour change
 On = Onondaga chert

APPENDIX D: INVENTORY OF DOCUMENTARY AND MATERIAL RECORD

Project Information:			
Project Number:		044-SB767-12	
Licensee:		Jessica Marr	
MTC PIF:		P334-218-2012	
Document/ Material		Location	Comments
1.	Written Field Notes, Annotated Field Maps	Archeoworks Inc., 16715-12 Yonge Street, Suite 1029, Newmarket, ON, Canada, L3X 1X4	Stored on Archeoworks network servers
2.	Field (Digital)	Archeoworks Inc., 16715-12 Yonge Street, Suite 1029, Newmarket, ON, Canada, L3X 1X4	Stored on Archeoworks network servers
3.	Research/Analysis/Reporting Material	Archeoworks Inc., 16715-12 Yonge Street, Suite 1029, Newmarket, ON, Canada, L3X 1X4	Stored on Archeoworks network servers
4.	Artifact(s)	Archeoworks Inc., 16715-12 Yonge Street, Suite 1029, Newmarket, ON, Canada, L3X 1X4	See report and accompanying artifact catalogue(s) for details. Collection may be transferred to one of Archeoworks' secure, off-site storage facilities if deemed necessary.

Under Section 6 of Regulation 881 of the *Ontario Heritage Act*, *Archeoworks Inc.* will, “keep in safekeeping all objects of archaeological significance that are found under the authority of the licence and all field records that are made in the course of the work authorized by the licence, except where the objects and records are donated to Her Majesty the Queen in right of Ontario or are directed to be deposited in a public institution under subsection 66 (1) of the Act.”