



April 2010



STAGE 3 ARCHAEOLOGICAL ASSESSMENT

NextEra Adelaide Wind Farm Various Lots, Concession 1 to 5 N.E.R. and 1 to 4 S.E.R., Geo. Township of Adelaide Middlesex County, Ontario

Submitted to:

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REPORT

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Executive Summary

An archaeological assessment (Stages 1 and 2) study was previously conducted on behalf of Air Energy TCI Inc. and NextEra Energy Canada, ULC for a parcel of approximately 8275 hectares in the Township of Adelaide-Metcalfe, Middlesex County, Ontario. The parcel consists of Lots 7 to 19, Concession 1 North of Egremont Road; part of Lot 6 and Lots 7 to 19, Concession 2 North of Egremont Road; Lots 7 to 12, Concessions 3 to 4 North of Egremont Road; part of Lot 7 and Lots 8 to 10, Concession 5 North of Egremont Road; Lots 1 to 19, Concessions 1 to 2 South of Egremont Road; Lots 1 to 18, Concession 3 South of Egremont Road; and Lots 13 to 17, Concession 4 South of Egremont Road. This area will eventually be the site of 40 wind turbines comprising the Adelaide Wind Farm.

The Stage 1 and 2 assessments were undertaken in order to meet the requirements of an environmental assessment conducted under the Renewable Energy Approval (REA) process, as outlined in Ontario Regulation 359/09 section 22(3), on behalf of Air Energy TCI Inc. and NextEra Energy Canada, ULC. The Stage 2 assessment resulted in the documentation of 13 archaeological locations. Nine of these locations consist of pre-contact Aboriginal sites and four locations are historic Euro-Canadian sites. Three of the pre-contact Aboriginal sites and three of the Euro-Canadian sites were judged to require Stage 3 assessment.

The Stage 3 excavations of the following sites resulted in the following recommendations:

- Loc 2 (AfHk-29) and Location 3 (AgHk-66) yielded no additional pre-contact Aboriginal material remains and therefore their cultural heritage value or interest was deemed to be low and also sufficiently documented. **Stage 4 archaeological mitigation of these sites is not recommended.**
- Location 5 (AgHk-67), Location 9 (AfHk-30) and Location 11 (AgHk-68) yielded mid-to-late 19th and 20th century material culture, but the nature of the assemblages – high percentages of breakable domestic items (glass and ceramic) and low percentages of personal and structural items – indicate that these sites are isolated mid-to-late 19th century domestic middens and therefore the cultural heritage value or interest of these sites was deemed to be low and also sufficiently documented. **Stage 4 archaeological mitigation of these sites is not recommended.**
- Location 7 (AgHj-5) yielded pre-contact Aboriginal material remains including a complete biface, 85 fragments of chipping detritus, a utilized flake and faunal remains. Given the number of artifacts recovered, the cultural heritage value or interest of the site was deemed to be high. **Stage 4 archaeological mitigation of this site is recommended.** Until the Stage 4 archaeological assessment has been conducted, the site area will be surrounded by snow fence at a 20 metre buffer extending past the limits of the site as delineated by the Stage 3 test units excavated. Until this site has been excavated, all staff related to the Next Era Adelaide Wind Farm project will be instructed to avoid the site area as buffered and marked out. The Stage 4 assessment should consist of the block excavation in one-metre units of the area of greatest artifact densities, followed by shovel shining the site area in order to uncover all subsurface posts or cultural features.

This assessment was undertaken in order to meet the requirements of an environmental assessment conducted under the Renewable Energy Approval (REA) process, as outlined in Ontario Regulation 359/09 section 22(3).



STAGE 3 ARCHAEOLOGICAL ASSESSMENT NEXTERA ADELAIDE WIND FARM

The Ontario Ministry of Tourism and Culture is asked to review the results presented and to accept this report into the Provincial Register of archaeological reports. **A partial clearance for the NextEra Adelaide Wind Farm study area is being requested, except for Location 7 (AgHj-5).** Additional archaeological assessment is still required at Location 7 (AgHj-5), hence the archaeological site recommended for further archaeological fieldwork remains subject to Section 48(1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed, except by a person holding an archaeological licence.

The Executive Summary highlights key points from the report only; for complete information and findings, as well as the limitations, the reader should examine the complete report.



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APPENDIX A

Stage 3 Artifact Catalogue

APPENDIX B

Aboriginal Engagement



Acknowledgments

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1.0 INTRODUCTION

An archaeological assessment (Stages 1 and 2) study was previously conducted on behalf of Air Energy TCI Inc. and NextEra Energy Canada, ULC for a parcel of approximately 8275 hectares in the Township of Adelaide-Metcalf, Middlesex County, Ontario. The parcel consists of Lots 7 to 19, Concession 1 North of Egremont Road; part of Lot 6 and Lots 7 to 19, Concession 2 North of Egremont Road; Lots 7 to 12, Concessions 3 to 4 North of Egremont Road; part of Lot 7 and Lots 8 to 10, Concession 5 North of Egremont Road; Lots 1 to 19, Concessions 1 to 2 South of Egremont Road; Lots 1 to 18, Concession 3 South of Egremont Road; and Lots 13 to 17, Concession 4 South of Egremont Road. This area will eventually be the site of 40 wind turbines comprising the Adelaide Wind Farm.

The Stage 1 and 2 assessments were undertaken in order to meet the requirements of an environmental assessment conducted under the Renewable Energy Approval (REA) process, as outlined in Ontario Regulation 359/09 section 22(3), on behalf of Air Energy TCI Inc. and NextEra Energy Canada, ULC. The Stage 2 assessment resulted in the documentation of 13 archaeological locations. Nine of these locations consist of pre-contact Aboriginal sites and four locations are historic Euro-Canadian sites. Three of the pre-contact Aboriginal sites and three of the Euro-Canadian sites were judged to require Stage 3 assessment.

This report details the results of the Stage 3 investigations of these sites. This assessment was also undertaken in order to meet the requirements of an environmental assessment conducted under the Renewable Energy Approval (REA) process, as outlined in Ontario Regulation 359/09 section 22(3), on behalf of Air Energy TCI Inc. and NextEra Energy Canada, ULC.

The Stage 3 field assessment was conducted on November 16th, 2009; December 5th, 2009; and between March 24th, 2010 and March 29th, 2010 under archaeological consulting licence P084, issued to Adam Hossack, B.A., by the Ontario Ministry of Tourism and Culture. The Stage 3 excavations of the sites resulted in the following recommendations:

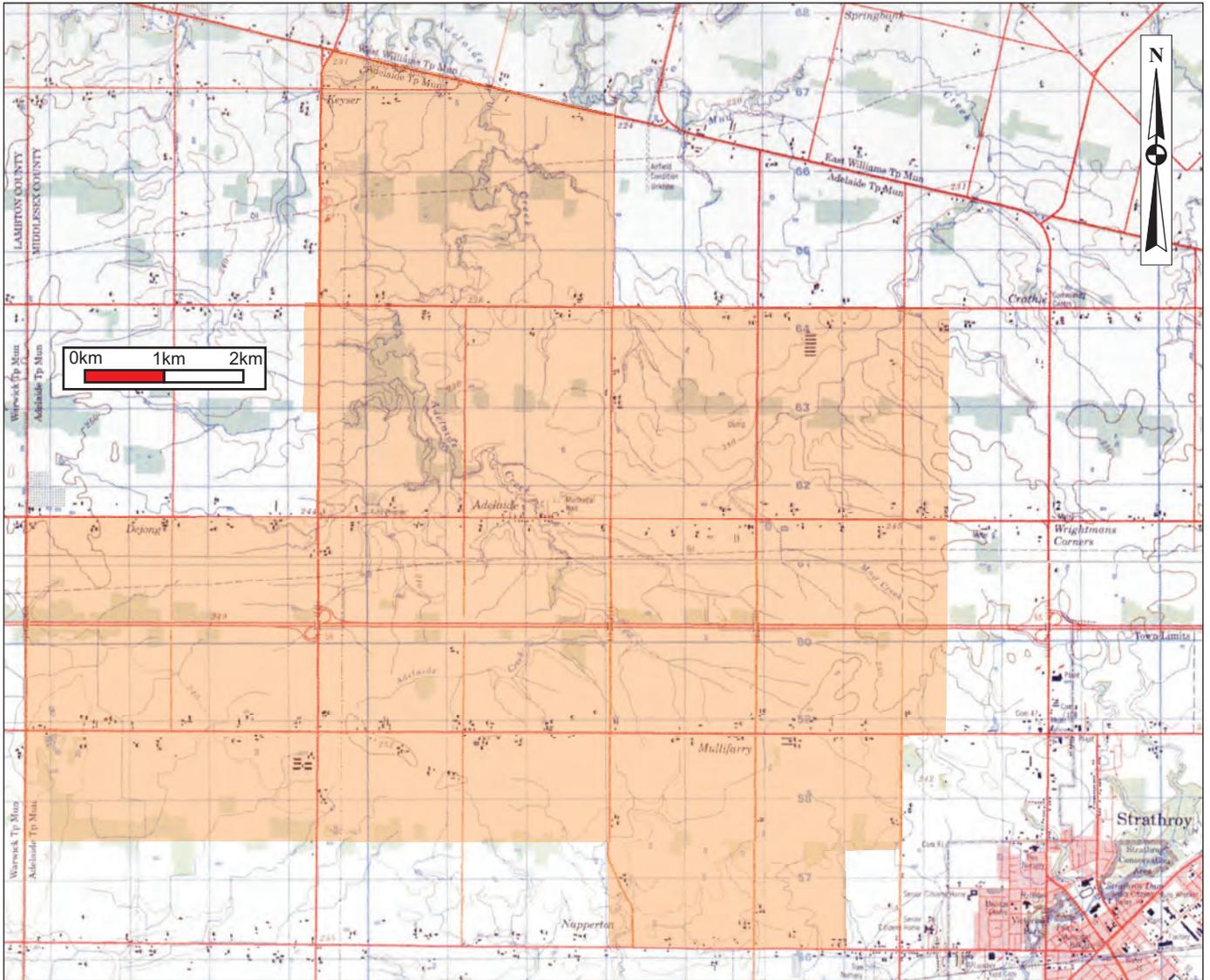
- Loc 2 (AfHk-29) and Location 3 (AgHk-66) yielded no additional pre-contact Aboriginal material remains and therefore their cultural heritage value or interest was deemed to be low and also sufficiently documented. **Stage 4 archaeological mitigation of these sites is not recommended.**
- Location 5 (AgHk-67), Location 9 (AfHk-30) and Location 11 (AgHk-68) yielded mid-to-late 19th and 20th century material culture, but the nature of the assemblages – high percentages of breakable domestic items (glass and ceramic) and low percentages of personal and structural items – indicate that these sites are isolated mid-to-late 19th century domestic middens and therefore the cultural heritage value or interest of these sites was deemed to be low and also sufficiently documented. **Stage 4 archaeological mitigation of these sites is not recommended.**
- Location 7 (AgHj-5) yielded pre-contact Aboriginal material remains including a complete biface, 85 fragments of chipping detritus, a utilized flake and faunal remains. Given the number of artifacts recovered, the cultural heritage value or interest of the site was deemed to be high. **Stage 4 archaeological mitigation of this site is recommended.** Until the Stage 4 archaeological assessment has been conducted, the site area will be surrounded by snow fence at a 20 metre buffer extending past the limits of the site as delineated by the Stage 3 test units excavated. Until this site has been excavated, all staff



STAGE 3 ARCHAEOLOGICAL ASSESSMENT NEXTERA ADELAIDE WIND FARM

related to the Next Era Adelaide Wind Farm project will be instructed to avoid the site area as buffered and marked out. The Stage 4 assessment should consist of the block excavation in one-metre units of the area of greatest artifact densities, followed by shovel shining the site area in order to uncover all subsurface posts or cultural features.

This assessment was undertaken in order to meet the requirements of an environmental assessment conducted under the Renewable Energy Approval (REA) process, as outlined in Ontario Regulation 359/09 section 22(3). The Ontario Ministry of Tourism and Culture is asked to review the results presented and to accept this report into the Provincial Register of archaeological reports. **A partial clearance for the NextEra Adelaide Wind Farm study area is being requested, except for Location 7 (AgHj-5).** Additional archaeological assessment is still required at Location 7 (AgHj-5), hence the archaeological site recommended for further archaeological fieldwork remains subject to Section 48(1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed, except by a person holding an archaeological licence.



LEGEND

 Study Area

REFERENCE

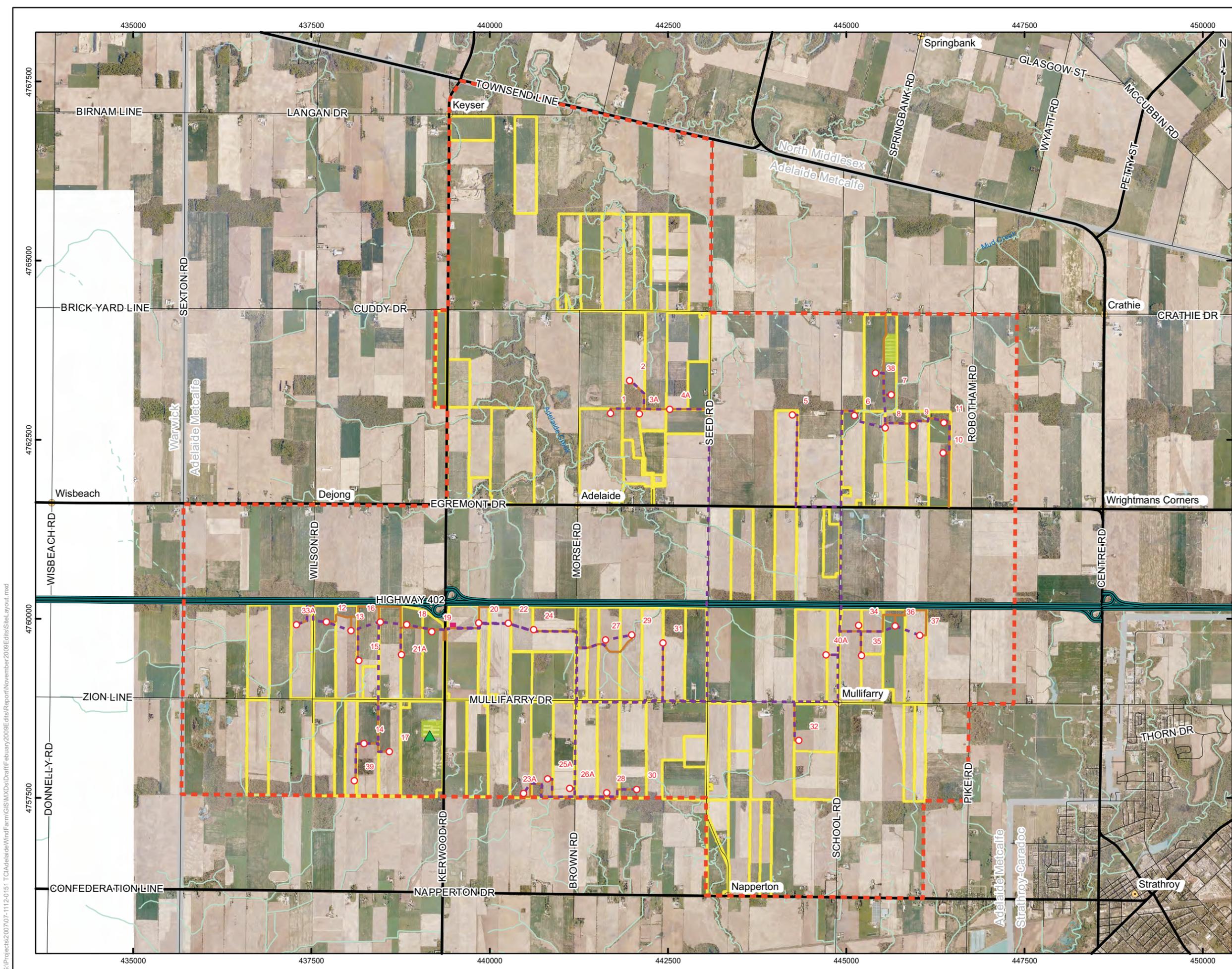
- DRAWING BASED ON
 Government of Canada
 1994a *Topographic Map Sheet 40 I/13: Strathroy* (Edition 6).
 Surveys and Mapping Branch, Department of Energy,
 Mines and Resources, Ottawa.
 1994b *Topographic Map Sheet 40 P/4: Parkhill* (Edition 7).
 Surveys and Mapping Branch, Department of Energy,
 Mines and Resources, Ottawa.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ
 IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT		Stage 3 Archaeological Assessment NextEra Adelaide Wind Farm Township of Adelaide, Middlesex County, ON			
TITLE					
Location of Study Area					
	PROJECT No.	10-1151-0038-40000	FILE No.	1011510038-40000-R01001	
	CADD	JM	Apr. 7/09	SCALE	AS SHOWN REV.
	CHECK			FIGURE 1	



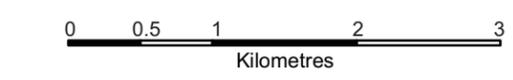
LEGEND

- Turbine Layout 38
- ▲ Permanent MET Mast
- - - Collector Cable
- Access Road
- Substation
- ▭ Site Study Area
- Expressway
- Major Road
- Local Road
- Watercourse, Permanent
- - - Watercourse, Intermittent
- Proposed Laydown / Staging Area
- ▭ Optioned Lots
- ▭ Municipal Boundary
- Waterbody, Permanent
- Wetland, Permanent



REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
 Produced by Golder Associates Ltd under licence from Ontario Ministry of Natural Resources, © Queens Printer 2009
 Air Photo - Spring 2006 First Base Solutions.
 Datum: NAD 83 Projection: UTM Zone 17N



PROJECT		Stage 3 Archaeological Assessment NextEra Adelaide Wind Farm Geo. Twp. of Adelaide, Middlesex County, Ontario	
TITLE		Turbine and Related Infrastructure Layout	
	PROJECT NO.	10-1151-0038	SCALE AS SHOWN
	DESIGN	PP 5 Mar 2009	REV. 0
	CHECK	PP 16 Nov 2009	
	REVIEW		

FIGURE 2

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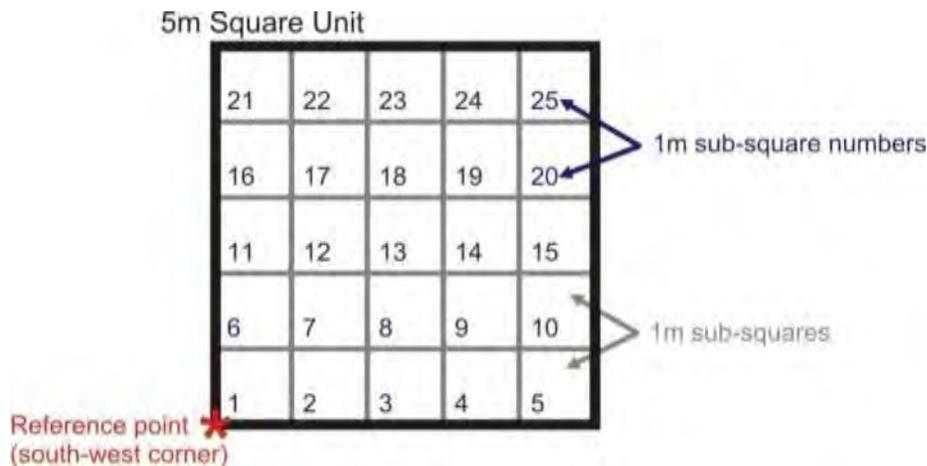


2.0 STUDY METHODS

2.1 Stage 3 Assessment of Significance and Information Potential

The Stage 3 assessment involved the controlled collection and mapping of the surface artifact distribution as well as the hand excavation of a series of one-metre units strategically located to test the nature and density of the artifact distribution at each site (Plates 1 through 6). Datum stakes from the Stage 2 assessment were relocated and a permanent datum was placed on the site, oriented on magnetic north. The five metre units in the grid are referred to by the intersection coordinates of their southwest corner. Each five metre square was divided into 25 one-metre units, with sub-square number one located in the southwest corner of the five metre unit, number five in the southeast corner, number six located immediately north of number one, and so on (Figure 3).

Figure 3: Excavation Unit Identification Key



Each one-metre test unit was excavated to subsoil, with all soil screened through six millimetre hardware cloth to facilitate the recovery of small artifacts. The subsoil surface of each unit was shovel shined and examined for any evidence of subsoil cultural features prior to backfilling. All excavated artifacts were retained for laboratory analysis and description. All maps of the Stage 3 excavations are located within the section discussing the relevant location in Section 3.0. The maps illustrate the Stage 3 test units excavated and the Stage 3 surface collection finds.

Weather and visibility conditions are discussed for each location individually below. Permission to enter the property and remove artifacts was given by Mark Gallagher of Air Energy TCI Inc. and Thomas Bird of NextEra Energy Canada, ULC. All recovered artifacts will be housed at Golder’s London office until their transfer to the Ontario Ministry of Tourism and Culture collections facility located at 900 Highbury Avenue, London.



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Plate 1: Stage 3 Excavation at Location 2 (AfHk-29)



Plate 2: Stage 3 Excavation at Location 3 (AgHk-66)





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Plate 3: Stage 3 Excavation at Location 5 (AgHk-67)



Plate 4: Stage 3 Excavation at Location 7 (AgHj-5)





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Plate 5: Stage 3 Excavation at Location 9 (AfHk-30)



Plate 6: Stage 3 Excavation at Location 11 (AgHk-68)





3.0 STAGE 3 EXCAVATION RESULTS

Stage 3 excavations were conducted using the methods outlined in Section 2.1 of this report. Figures 4a and 4b show the location of each archaeological site subject to Stage 3 excavation and excavation maps for each site are included below. Figure 5 positions each historic Euro-Canadian archaeological site on the relevant portion of the historic map of the Township of Adelaide in the 1878 *Illustrated Historical Atlas of the County of Middlesex* (H.R. Page and Company 1878). When artifacts are illustrated they are shown at actual size. Appendix A provides the complete catalogue listing of all Stage 3 artifacts recovered. Two First Nations monitors were also employed during the assessment and this Aboriginal engagement is summarized in Appendix B.

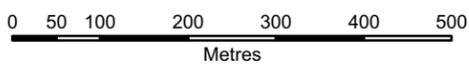
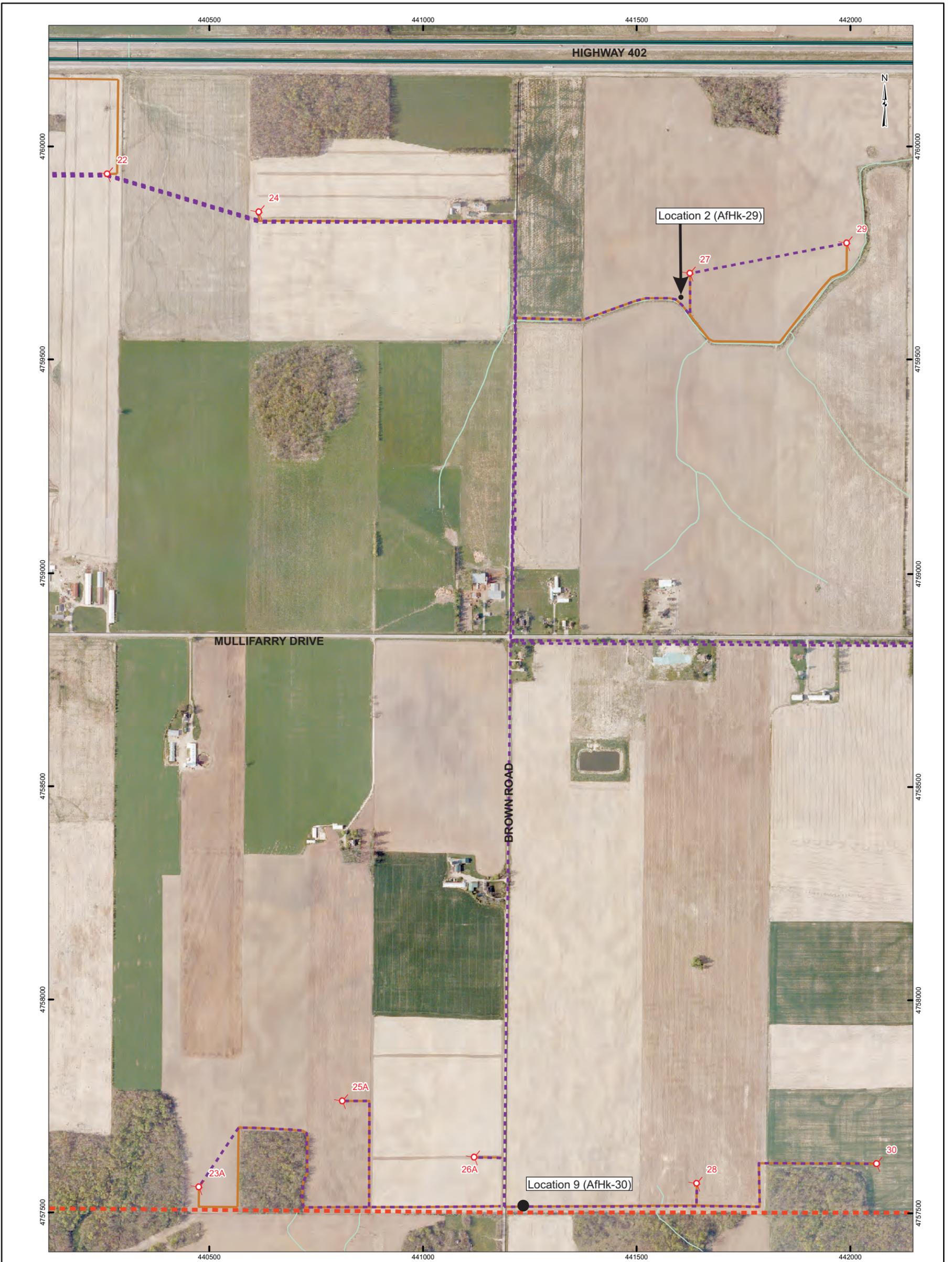
3.1 Location 2 (AfHk-29)

The Stage 2 investigation of Location 2 (AfHk-29) found that the site consisted of a 15 metre by 15 metre scatter of pre-contact Aboriginal material. The site produced two chert flakes (one Kettle Point and one Onondaga) and one projectile point manufactured from Kettle Point chert. The projectile point was temporally diagnostic and dated to the Middle Woodland period (*circa* 400 B.C. to 500 A.D.).

Due to the fact that Location 2 (AfHk-29) was a spatially discrete area producing pre-contact Aboriginal cultural material, some dating to the Middle Woodland, it was recommended that this site be subject to a Stage 3 archaeological investigation to further evaluate its cultural heritage value or interest.

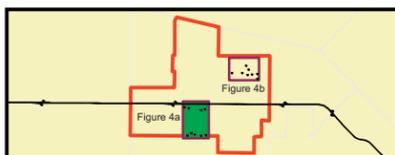
The Stage 3 assessment of Location 2 (AfHk-29) was conducted on December 5th, 2009. The site was relocated using flags left indicating the Stage 2 finds, as well as GPS co-ordinates. The weather was sunny and cold. Visibility was excellent and at no time were conditions detrimental to the recovery of archaeological remains. Twelve one-metre square units were strategically placed around higher artifact concentrations as determined by the Stage 2 archaeological assessment of Location 2 (AfHk-29). The one-metre square units ranged from 20 to 27 centimetres deep. No artifacts were recovered during the Stage 3 surface collection or unit excavation. Figure 6 illustrates the previous Stage 2 surface collection as well as the location and rate of artifact return for each one-metre unit excavated.

As no cultural material was recovered during the Stage 3 excavations, the cultural heritage value or interest of the site was judged to be low. The cultural heritage value or interest of this site has been sufficiently documented and no further archaeological assessment is recommended.



LEGEND

- Turbine Layout 38
- Access Road
- Collector Cable
- Site Study Area
- Expressway
- Major Road
- Local Road
- Watercourse, Permanent
- Waterbody, Permanent
- Archaeological Location, Stage 3 Fieldwork Conducted and No Further Archaeological Work Recommended



REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
 Produced by Golder Associates Ltd under licence from Ontario Ministry of Natural Resources, © Queens Printer 2009
 Air Photo - Spring 2006 First Base Solutions.
 Datum: NAD 83 Projection: UTM Zone 17N

PROJECT		STAGE 3 ARCHAEOLOGICAL ASSESSMENT NEXTERA ADELAIDE WIND FARM GEO. TWP. OF ADELAIDE, MIDDLESEX COUNTY, ONTARIO	
TITLE		LOCATION OF SITES SUBJECT TO STAGE 3 ARCHAEOLOGICAL ASSESSMENT	
PROJECT NO. 07-1112-0151		SCALE AS SHOWN	REV. 0
DESIGN	PP	05 Mar. 2008	
GIS	PP	16 Nov. 2009	
CHECK			
REVIEW			

FIGURE 4A