

THE STAGE 2 ARCHAEOLOGICAL ASSESSMENT OF
THE ARGYLE STREET BRIDGE,
CALEDONIA, TOWN OF HALDIMAND

Submitted To:

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PROJECT PERSONNEL

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EXECUTIVE SUMMARY

The study area encompasses the footprint of the existing Argyle Street Bridge in Caledonia as well as 50 metres of river bank on either side of the abutments on both north and south ends of the bridge. No archaeological remains were encountered; however, levels of fill and the existing roadway and bridge made much of the river bank inaccessible and may be covering intact soil profiles. Monitoring of excavations during construction is recommended.

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1.0 INTRODUCTION

This report discusses the rationale, methods and results of the Stage 2 archaeological assessment as part of the detail design and highway engineering for the rehabilitation of the Argyle Street bridge structure over the Grand River (Figure 1). The study area encompasses the footprint of the existing bridge as well as 50 metres of river bank on either side of the abutments on both north and south ends of the bridge. The project was conducted on behalf of Paul Draycott at Morrison Hershfield Limited, who arranged for access to the subject property and gave permission to remove potential artifacts.

All assessment activities were performed under the professional archaeological license, P035, issued to Andrew Murray of A. M. Archaeological Associates by the Province of Ontario under Part VI of the *Ontario Heritage Act, section 48(1)*. All archaeological assessment activities were conducted according to the *Archaeological Assessment Technical Guidelines* (1993) but also conform to the working draft of the *Standards and Guidelines for Consultant Archaeologists* (August 2006). The field assessment was conducted on May 28, 2007 under clear skies with hot temperatures.

2.0 LOCATION AND ENVIRONMENT

The Argyle Street Bridge (formerly Highway 6) is located in the town of Caledonia approximately 46 km from the mouth of the Grand River at Lake Erie (Figure 1). The existing bridge was constructed in 1927. It is a two lane, nine span structure carrying the north-south directions of Argyle Street pedestrian and road traffic over the Grand River. Each span of the existing structure is about 22 metres long, for a total length of approximately 198 metres. A geotechnical study described the subsoils at the abutments and approaches as generally consisting of variable thicknesses of pavements, fill and topsoil materials to between the elevation 186 and 189 metres (Golder 2004). These deposits are underlain by generally thin deposits of sand and gravel, sandy silt, silt, clayey silt and sand over the bedrock.

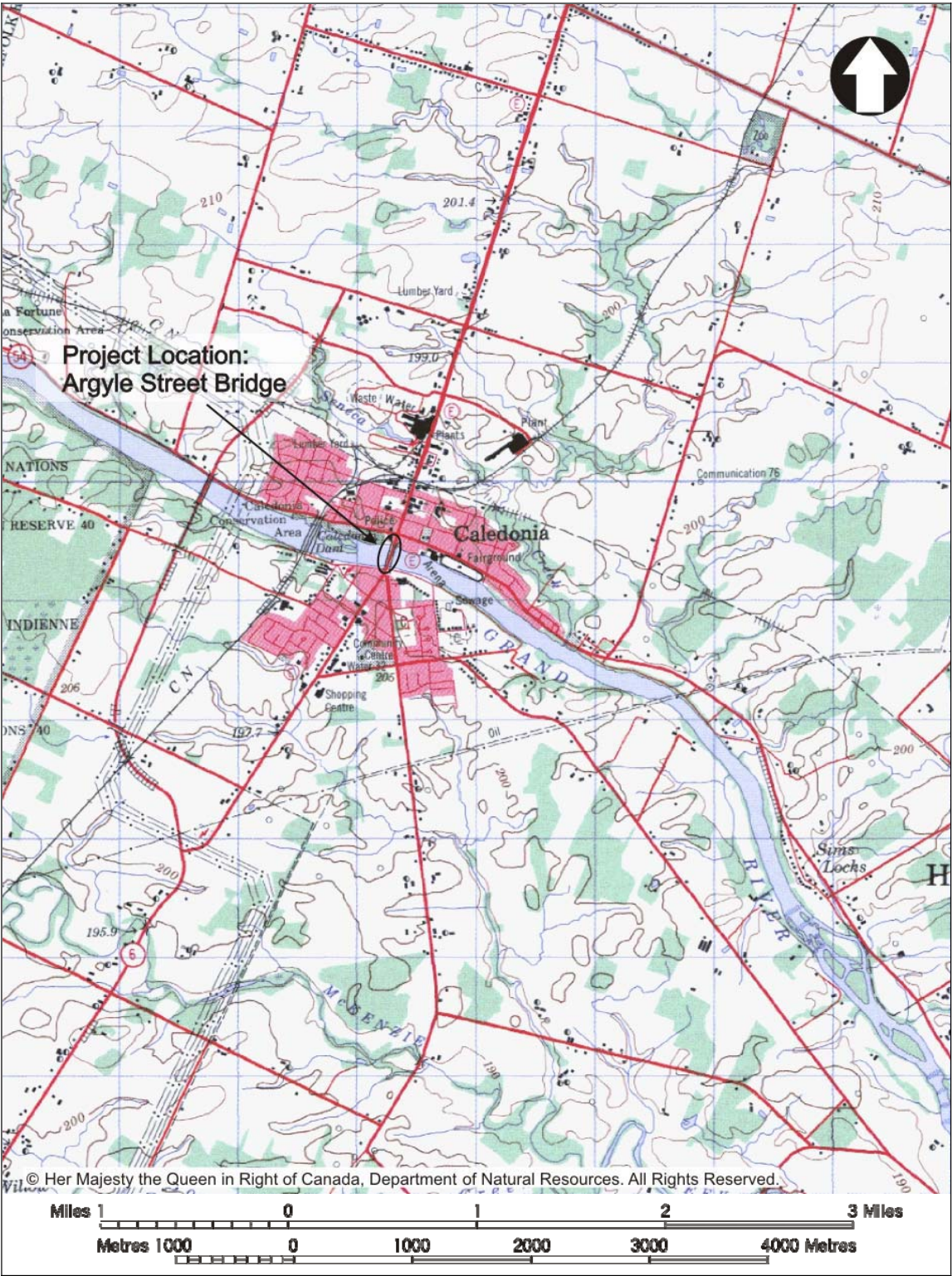


Figure 1: Argyle Street Bridge location on NTS map (30M/12).

The Grand River forms one of the largest drainage basins in southern Ontario (Chapman and Putnam 1984). The Haldimand clay plain covers the lower portion of the Grand River watershed, south from the Norfolk sand plain right down to Lake Erie. Extensively forested areas on the Six Nations and New Credit Indian Reserves provide core interior habitat for wildlife. During the historic period, deforestation and drainage of wetlands allowed surplus flows previously retained in woody swamps to lead to periodic flooding and scouring of the river bed and banks (Boyd et al 1999).

3.0 BACKGROUND RESEARCH

3.1 Built Heritage

A heritage bridge study was completed by Archaeological Services Inc. that determined that the bridge is of provincial, national and international heritage significance (2005). The bridge is the fourth in a series of bridges that have crossed the Grand River at this location. The first two bridges were destroyed by flooding caused by ice floes and ice dams. The third bridge collapsed under the weight of a truck carrying a load of stone. The report found a reference to the bridge construction in the December 20, 1927 edition of *The Canadian Engineer* describing the bridge as resting “on two abutments and eight piers, the foundations of which were excavated from four to five feet below the bed of the river, where good foundations were obtained”.

3.2 Archaeological

A Stage 1 archaeological assessment was conducted by Archaeological Services Inc. (2003). The report concluded that extensive and intensive disturbances within the bridge footprint despite had removed any archaeological potential that may have existed. The report found that had the disturbances not been so substantial that bridge location would have had high potential for archaeological remains of both pre-contact and historic nature.

4.0 FIELD METHODOLOGY

First, a visual assessment was conducted of the areas along the river bank 50 m either side of the existing bridge to determine which locations might have remaining archaeological potential (Figure 2). The ASI report’s physical description of the disturbances as extending “beyond the typically disturbed right-of-way area throughout the study area” was determined to be accurate for both the north and south banks (Figures 3 and 4). Additionally, both banks were found to have been “extensively altered by large-scale filling and regrading” (ASI 2003). This concurs with evidence from the geotechnical report showing up to 3.5 metres of fill on both banks (Golder 2004). In consideration of the geotechnical report which described a 30-cm layer of black clay topsoil at a depth of 2.59 metres on the west side of the north approach (Borehole 3), four shovel test pits were excavated along the north bank to attempt to determine if this layer was accessible by manual means. This borehole was located on the southbound lane at the north approach approximately 30 metres back from the edge of the river. The soil from the test pits was screened through 6mm mesh. Test pits were subsequently backfilled with the original matrix.

5.0 RESULTS

The three shovel test pits were excavated along the north river bank on the west side of the bridge (Figure 5). The soil encountered was a mix of dark brown silt and crushed gravel with chunks of concrete and asphalt (Figure 6). The test pits were excavated to a depth of 25 to 30 cm before large pieces of concrete and asphalt prevented further excavation. These large chunks are interpreted as part of the large-scale filling that has occurred to help control erosion from ice jams and flooding. Although the soil matrix was interpreted as part of the fill, it was screened and inspected for artifacts in case material from lower levels had been incorporated. A single shovel test pit was attempted on the east side of the bridge below the Toll Keeper’s house but the large chunks of concrete and asphalt were impenetrable. Although no intact original topsoil was encountered, no evidence was found that would preclude the possibility of such a layer partially present beneath the fill. No archaeological remains were encountered.

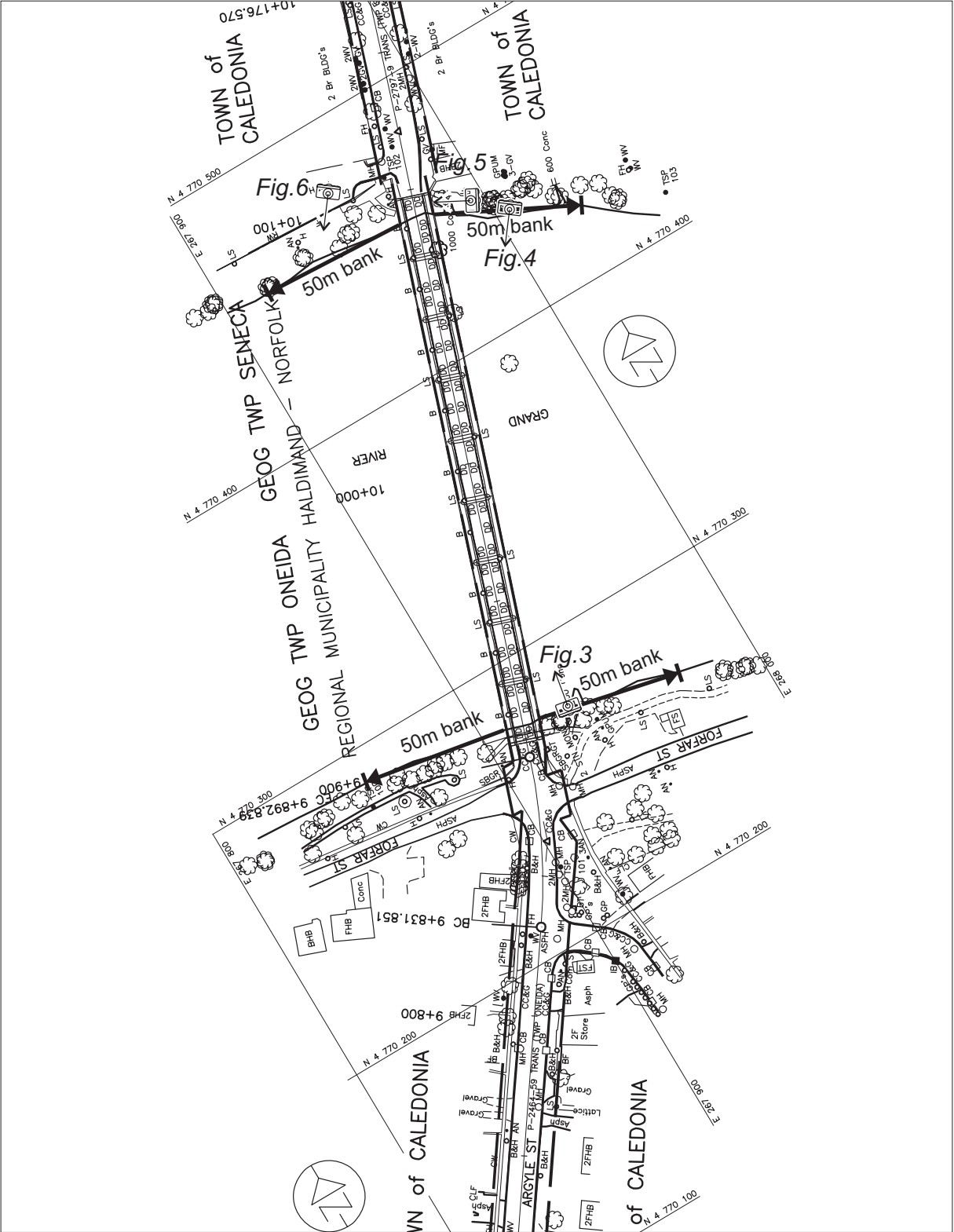


Figure 2: Existing bridge plan with archaeological assessment coverage and photo locations.

6.0 RECOMMENDATIONS

On the basis of the above information, the following recommendations can be made:

1. There may be potential for archaeological remains in the black clay topsoil beneath layers of fill at the north approach of the existing bridge, therefore, a licensed archaeologist should be present to monitor of any construction excavation that may be impact this layer.
2. If additional areas beyond the footprint of the bridge are required for the construction of temporary interchanges, parking lots, staging areas, storage areas, access roads, etc., it is recommended that these lands be subject to archaeological assessment prior to disturbance.
3. This report is filed with the Minister of Culture in compliance with sec. 65 (1) of the Ontario Heritage Act. The ministry reviews reports to ensure that the licensee has met the terms and conditions of the licence and archaeological resources have been identified and documented according to the standards and guidelines set by the ministry, ensuring the conservation, protection and preservation of the heritage of Ontario. It is recommended that development not proceed before receiving confirmation that the Ministry of Culture has entered the report into the provincial register of reports.
4. Should previously unknown or unassessed deeply buried archaeological resources be uncovered during development, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.
5. Any person discovering human remains must immediately notify the police or coroner and the Registrar of Cemeteries, Ministry of Government Services.

Contacts:

Heritage and Operations Unit, Ministry of Culture: (416) 314-7148

Registrar of Cemeteries, Cemeteries Regulation Unit, Ministry of Government Services:

Michael D’Mello (416) 326-8404 or (416)-326-8393

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Figure 3: View looking south bank of Grand River with inset showing some of the bank disturbances.



Figure 4: View looking at north bank of Grand River at Toll Keeper's house.



Figure 5: North end of bridge looking west at abutment, steps and riverbank.



Figure 6: Test pit and screens showing quantity of gravel fill.