Huronia Regional Centre – Cemetery Registry

The following steps were taken to create the registry of persons buried in the Huronia Cemetery (the "Cemetery Registry"):

(1) Identification of Potential Data Sources:

At the time of settlement, the ministry was aware of certain resources that would potentially assist in the preparation of the Cemetery Registry. For example: some stone markers in the cemetery included a resident name or a number; and certain cemetery plot maps[1] were held by the ministry in its record collection.

Consultations were undertaken by MCSS in order to identify other possible data sources. MCSS consulted with former HRC staff and the:

- Orillia Museum of Art and History
- Orillia Public Library
- Registrar of Cemeteries, Consumer Protection Branch (Ministry of Government and Consumer Services)
- Archives of Ontario
- Director of a long established funeral home in Orillia

Through its research and consultations, the ministry learned about the *Register of Deaths, Ontario Hospital School – Orillia (1876 – 1975), volume 1 and 2*[2] (the "Registers of Deaths"), which are held by the Archives of Ontario and an additional cemetery plot map[3] held at the Archives of Ontario.

The ministry also located a memorandum relating to a disinterment from the cemetery in 2011 and a memorandum (July 9, 2004) explaining the data that informed the memorial stone erected at the cemetery.

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[1] The Cemetery Plot Maps in the ministry's possession are undated, however based on the information recorded in the maps, the ministry concludes that:

(1) one plot map records burials that occurred between 1893 –1941
(2) the second records burials between 1953 –1971; and
(3) it appears that early burials were divided by gender, a practice that ended in approximately1932

[2] RG 29-25-1-7 and RG 29-25-1-9, respectively.

[3] Ontario Hospital School Orillia Cemetery Plots (193-?) RG 29-24-3-94. The ministry has reviewed this map and concluded that it records burials that occurred between 1893 – 1936.

(2) Data Used to Create the Cemetery Registry

As a result of its inquiries, three primary resources were determined to constitute the best available information and were used by the ministry to create the Cemetery Registry:

- The Registers of Deaths
- Two Cemetery Plot Maps: the Cemetery Plot Map dated 1953 – 1971, in the ministry's collection, which shows the marked burials in the newer section of the cemetery on the north-side; and the Cemetery Plot Map dated 1893 – 1941, in the ministry's collection, which contains additional information to the plot map in the Archives of Ontario's collection (and which MCSS has concluded ranges from 1893 – 1936).
- Named and numbered stones that remain in the cemetery, particularly for burials from 1941-1953.

(3) Approach to Verifying Entries on the Cemetery Registry:

The approach used to verify entries in the Cemetery Registry involved cross-referencing entries made in the Registers of Deaths, the Cemetery Plots maps, in particular the map dated 1893 – 1941, and the stones in the cemetery.

Each of the three data sources had inherent limitations. For example, the Registers of Deaths are logs of handwritten entries dating back to the late nineteenth century. Recordkeeping practices were inconsistent and, at times, the recorded information is difficult to decipher particularly the spelling of names. Moreover, it is difficult to confirm early entries if notations are unclear as some resident files have been destroyed (over 100 years old). (See below at #4 for further issues relating to the Registers of Deaths.)

The Registers of Death record:

- all of the deaths at HRC from 1876 – 1958,
- the deaths of only those individuals interred at the HRC Cemetery from 1958 – 1971, and
- the deaths of some individuals at HRC that occurred between 1971 – 75. It is important to note that there were no burials at the cemetery after 1971.

Each entry in the Registers of Death is numbered sequentially and chronologically from 1 to 4245 ("Register entry number"). These numbers correspond to the numbers recorded on Cemetery Plots maps, and the numbered stones in the cemetery for those interred in the cemetery.

The (3) Cemetery Plot maps record burial sites by row, including the name and/or the Register entry number. There are approximately 65 plots on the 1893 – 1941 map with no information recorded or the word "blank". The same "blanks" appear on the 1893 – 1936 map.

An individual's name is recorded in the Cemetery Registry where:

- an entry in the Registers of Deaths indicates the individual is buried at the HRC cemetery
- the Register entry number appears on a Cemetery Plot map, then the name corresponding to the number in the Registers of Deaths is entered

- the name appears on a Cemetery Plot map
- there is a numbered stone in the cemetery, then the name corresponding to the Register entry number in the Registers of Deaths is entered
- there is a named stone in the cemetery

If an individual's burial is recorded in more than one of the above sources, they are only listed on the Cemetery Registry once.

The plots recorded as "blank" on the Cemetery Plot maps were assumed to be empty plots and are not recorded in the Cemetery Registry. The Ministry asked the GPR consultant if GPR could confirm whether the "blank" notations on the map correspond to empty plots. The consultant advised that GPR can only detect disturbances in the soil and would not be able to determine if a grave was empty.

Huronia resident index cards were reviewed if necessary to help confirm spelling or date of death. A small number of resident files were reviewed to clarify unclear notations and confirm other assumptions. Resident files do not necessarily provide burial details; however, on occasion, notations that indicate an institutional burial have been found in resident files and have further assisted in the creation of the Registry.

(4) Verification of Early Burials:

(a) The Whitby Asylum Patients –

As noted above, deficiencies in the original documents and record keeping practices have given rise to challenges in creating the Cemetery Register.

For example, the first page of the Registers of Deaths (volume 2) is titled "Deaths of patients from Whitby Asylum temporarily in residence at Orillia from Feb 1917". This page lists the names of 24 individuals (numbered 1-24), with dates of death ranging from 1917-1919. Limited burial information is also included.

This page of the Registers of Deaths (volume 2) does not follow the format adopted in the remainder of the document: the page is informally recorded and does not include the full details otherwise recorded. Because of this informal appearance, the page was not initially included in as part of the Cemetery Registry.

The Remember Every Name Group brought the issue to the ministry's attention on February 11, 2015. Resident files for each of the 24 individuals were ordered and reviewed. Upon review of the files, 18 individuals were found to have been buried at the "institutional cemetery" (i.e., HRC cemetery). One resident file included a note that her "remains are in grave no. 9 of the plot set aside for the patients who were transferred here from Whitby" (emphasis in original).

As a result of this notation it was determined[4]:

[4] The Registry has not been updated to reflect new information relating to the burial of individuals from the Whitby Asylum, pending receipt of additional information and corrections to be provided to the ministry by the Remember Every Name Group.

- that numbers ranging from 1-20 that appear in row 24 of the Cemetery Plots map (RG 29-24-3-94) correspond to the individuals listed on the Whitby Asylum page of Registers of Deaths (volume 2) and not the individuals numbered 1-20 in the Registers of Deaths (volume 1) who died between 1876-1877 at the former HRC property near Lake Couchiching.
- the HRC Cemetery was only in operation between 1893-1971.

(b) Earliest Burial Date –

To further verify the earliest date for burials at the Huronia Cemetery, the ministry cross-referenced the Registers of Deaths (volume 1), the Cemetery Plots map (RG 29-24-3-94), the two plots maps in the ministry's possession, and the stones in the cemetery. This cross-referencing yielded a record of only two burials between 1893-1898 (i.e., row 13 of the Ontario Hospital School Orillia Cemetery Plots map (RG 29-24-3-94) marks a plot as "345" and row 18 marks a plot as "350".) These numbers correspond to deaths recorded in Registers of Deaths (volume 1) from 1893.

No other plots on the Ontario Hospital School Orillia Cemetery Plots map correspond to deaths that occurred between 1893 –1898.

To further verify the conclusions upon which the Registry is based, the ministry will continue to consider and address new information as it becomes available and amend the Registry as necessary.

Ground Penetrating Radar Survey
and
Cemetery Boundary Investigation
Infrastructure Ontario
Huronia Regional Centre (N00430) Cemetery
777 Memorial Avenue, Town of Orillia
Part Lot 12, Concession 3,
Geog. Twp. of South Orillia
Simcoe County

Submitted to

Infrastructure Ontario
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and

The Ontario Ministry of Tourism, Culture and Sport

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PIF Number: P324-0033-2014
Project Numbers: 2013-106; 2014-084

March 2015
(Original report submitted to Ministry of Tourism, Culture and Sport 02 April, 2015)

Executive Summary

A ground penetrating radar (GPR) survey and cemetery boundary investigation was carried out for the 1.7 ha[1] cemetery associated with the Huronia Regional Centre, a provincial institution in operation at the Memorial Avenue location between 1888 and 2009, providing residential services to individuals with developmental disabilities. The cemetery is located on the west side of Memorial Avenue in the Town of Orillia and houses burials of some residents who died while in the facility's care. Interments date from the early period of the institution's use to roughly 1971, when it became customary for all interments to be made in municipal cemeteries under the direction of family members. Although initially marked with a post and chain link fence, the limits of the cemetery were not known for certain, as is a typical situation for a 19th century graveyard. Therefore the purpose of this study was to conduct investigations to assist in the formal confirmation and definition of interment limits to guide long-term planning and care. The work was done as part of Infrastructure Ontario's due diligence process. Although such investigations are not regulated by the Ministry of Tourism, Culture and Sport, a report is being filed with that agency at the request of Infrastructure Ontario to allow for more formal documentation of the project.

During the GPR survey, a total of six survey grids of various sizes were established in and around the cemetery. These were arranged and oriented to encompass as much of the survey area as possible, while avoiding large obstacles that would impede the machine. The grids were erected using a Trimble Total Station and metric hand tapes. They were tied in to a datum point established beyond the southwest corner of the cemetery. The locations of all GPR survey grids, gravestones and landscape features (within and beyond the survey areas) were then recorded using our Topcon GRS-1 RTK Glonass Network Rover survey system (with sub-centimetre accuracy). This allowed the GPR survey results to be accurately overlaid on, and tied to, a high resolution aerial photograph. The existing gravestones were also inventoried to record numbers, names, dates, size and relative location, so that these could be taken into consideration during the analysis of the historical and GPR data. The Topcon survey instrument was also used to record the exact position of each stone as well as the start and end point for each well-defined row of stones.

The GPR survey was conducted using a GSSI 400 MHz antenna with SIR-3000 controller configured with a distance measuring wheel. Following a distance calibration the survey was undertaken with readings logged along traverses spaced at 25 cm running north to south. Survey string was used to maintain a consistent path of machine travel over each transect. The raw data from the GPR survey were downloaded and processed through various time windows (indicating different depths) in RADAN 6.6. Conditions along the north and west boundaries did not permit survey.

All work met provincial standards and the GPR survey was carried out using conventions suitable for archaeological applications. The survey detected anomalies to the east and south of the previous cemetery fence line that were of a size and nature that could indicate potential burials, although with varying degrees of likelihood. Various disturbances were also recognized to the southeast, including former and existing lanes and roads, as well as buried utilities. Since records are limited for some of the earlier burials within the cemetery and several marked burials

[1] There are various estimates of size for the cemetery cited in various planning documents. The two most common are 1.5 and 1.7 ha.

are quite close to the existing fence in the south, several identified GPR anomalies were recommended for further investigation.

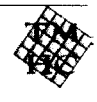
Mechanical topsoil stripping was undertaken for the three recommended areas in the southern and eastern peripheries of the cemetery, as well as along the southern and eastern boundaries. The areas subject to stripping encompassed identified GPR anomalies with potential to be burial features. The soil removal was undertaken using a backhoe with a straight-edged bucket and soil was removed in thin layers to allow the visual inspection of soil surfaces. Along the southern cemetery boundary a series of former wood fence posts were noted in the west end, while a buried culvert was noted beneath the former entrance way to the cemetery. An extensive deposit of cinder and fire-reddened soil was observed throughout the trench, with the cinder likely being placed as infill during landscaping and/or the installation of the existing fence and nearby roadway. Along the eastern cemetery boundary fairly natural soils were encountered and these were quite stoney, with notable large rocks throughout. An investigation of a GPR anomaly in south of the cemetery in the west end revealed the presence of an asphalt walkway, concrete foundation and associated services. An investigation of a GPR anomaly south of the paved turnaround revealed the presence of large rocks and an extensive deposit of cinder and demolition debris associated with the former institutional structure that once stood in this location. An investigation of GPR anomalies on the eastern periphery of the cemetery demonstrated the presence of natural soils containing concentrations of very large rocks. In sum, no grave shafts were noted in the investigation areas. The GPR signatures can be attributed to natural features (i.e., large rocks and concentrations thereof), buried built features (e.g., asphalt walkway and foundation, utilities), and the presence of an extensive fill deposit of comprised of cinder and fire-reddened soil.

The investigation areas were thoroughly examined through mechanical topsoil stripping and were found to be free of burials. Therefore, these areas are of no further concern and there are no issues with the placement of fence in any of these locales.

As topsoil stripping could not be undertaken for the northern and western boundaries, it was recommended that any ground disturbance in or adjacent to these areas be monitored by a licensed consultant archaeologist. As a matter of due diligence, it was recommended that a licensed consultant archaeologist be on site for the drilling of the post holes for the new fence to ensure their proper placement and that no incidental impacts occur to burials in close proximity to the cemetery periphery.

Monitoring of the augering of new fence post holes along the north and western cemetery boundaries was also undertaken and revealed the presence of natural soils in some areas and fill soils in others, amidst an otherwise rocky substrate. No grave shafts or human remains were identified during this work and therefore the augering did not impact any burials.

As no grave shafts or human remains finds were made throughout the cemetery boundary investigation and augering process, the fence installation area is considered free of archaeological concern and no further work is recommended. The cemetery interments appear to be confined to the area marked by the previous wood fence and its new replacement.



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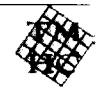

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Acknowledgements

TMHC would like to acknowledge the assistance of the following individuals:

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Ground Penetrating Radar Survey
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Simcoe County

1.0 PROJECT CONTEXT

1.1 Development Context

1.1.1 Introduction

A ground penetrating radar (GPR) survey and cemetery boundary investigation was carried out for the 1.7 ha[2] cemetery associated with the Huronia Regional Centre, a provincial institution in operation at the Memorial Avenue location between 1888 and 2009, providing residential services to individuals with a developmental disability. The cemetery is located on the west side of Memorial Avenue in the Town of Orillia and houses burials of some residents who died while in the facility's care. Interments date from the early period of the institution's use to roughly 1971, when it became customary for all interments to be made in municipal cemeteries under the direction of family members. Although previously marked with a post and chain link fence, the limits of the cemetery were not known for certain, as is a typical situation for a 19th century graveyard. Therefore the purpose of this study was to conduct investigations to assist in the formal confirmation and definition of interment limits to guide long-term planning and care. The work was done as part of Infrastructure Ontario's due diligence process. Although such investigations are not regulated by the Ministry of Tourism, Culture and Sport, a report is being filed with that agency at the request of Infrastructure Ontario to allow for more formal documentation of the project.

The fieldwork was performed under the Professional Archaeological License of Matthew Beaudoin, Ph.D. (P324) and in accordance with the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011). Permission to enter the property and commence the study was given by Abbey Flower of Infrastructure Ontario.

[2] There are various estimates of size for the cemetery cited in various planning documents. The two most common are 1.5 and 1.7 ha.

1.1.2 Purpose and Legislative Context

The Funeral, Burial and Cremation Services Act (RSO 2002) regulates the creation and operation of cemeteries in the Province of Ontario. Although the *Act* does not regulate Crown owned cemeteries, such as the HRC Cemetery, it does inform the general operating principles. From time to time, archaeologists are hired by cemetery operators and landowners to assist in the identification of grave shafts, establish cemetery boundaries or assist with burial removals and official cemetery closings. Archaeological methods are useful for carrying out this work and most licensed archaeologists have some training in the identification of human remains and grave shafts. In many instances there may be legal requirements for formally defining cemetery boundaries where these are otherwise not clear, particularly in the case of graveyards dating to the 19th century or earlier or boundary investigations may be carried out as part of archaeological assessments triggered by *Planning Act*, *Environmental Assessment Act*, *Aggregate Resources Act* or other legislative acts and processes. In other cases, boundary investigations are carried out as measures of due diligence.

Although not legally defined as such in Ontario legislation, cemeteries are often considered archaeological sites and therefore treated similarly under the *Ontario Heritage Act* (RSO 1990). The latter piece of legislation makes provisions for the protection and conservation of heritage resources in the Province of Ontario. Heritage concerns are recognized as a matter of provincial interest in Section 2.6.2 of the *Provincial Policy Statement* which states:

> *development* and *site alteration* shall not be permitted on lands containing *archaeological resources* or *areas of archaeological potential* unless *significant archaeological resources* have been *conserved* .....
>
> In the PPS the term *conserved* means:
>
> the identification, protection, management and use of *built heritage resources, cultural heritage landscapes* and *archaeological resources* in a manner that ensures their cultural heritage value or interest is retained under the *Ontario Heritage Act*. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment and/or heritage impact assessment.

In instances where the requirements of *The Funeral, Burial and Cremation Services Act* (RSO 2002) and the *Ontario Heritage Act* (RSO 1990) conflict, the former takes precedence.

For this study, a ground penetrating radar study was requested by Infrastructure Ontario to assist in the better definition of the limits of interments associated with the Huronia Regional Centre's Cemetery. Such a study is not necessarily considered a

licensable archaeological activity under the *Ontario Heritage Act* because non-archaeologist experts are capable of performing this work. However, Infrastructure Ontario requested that a formal report be prepared for consultation with the Ministry of Tourism, Culture and Sport, and therefore a Project Information Form was filed with that agency, with the fieldwork and reporting conforming to their 2011 *Standards and Guidelines for Consultant Archaeologists*. Since ground penetrating radar survey is not 100% accurate and involves some interpretation, this was followed up with "ground truthing" or the physical exploration of anomalies identified by the radar.

1.2 Archaeological Context

1.2.1 Project Lands: Overview and Physical Setting

The Huronia Regional Centre (HRC) occupies a roughly 106.8 ha site at the southwestern end of the City of Orillia (Map 1) and straddles Memorial Avenue, a main artery into the community and an historic route through Simcoe County. The parcel is bounded to the east by Shingle Bay, to the south by marshlands associated with Bluff's Creek and to the west by Highway 11B/Woodland Drive. The institutional buildings that form the main administrative portion of the complex (at one time 50 or more) are located on the east side of Memorial Avenue and rest atop a ridge that overlooks Lake Simcoe to the east. Between the buildings and the shoreline is the Trans-Canada Trail, which occupies the route of the former railway that brought visitors and residents to the facility well into the 20th century. The shoreline zones of the facility originally once had a recreational focus, incorporating a former camp operated by the Centre. The Centre covers portions of Lots 10, 11, 12, 13 and 14 of Concession 3 in the Geographic Township of South Orillia. The HRC property is owned by the Province of Ontario and the facility has historically been used for the care of individuals with a developmental disability. The larger historical landholding incorporated a parcel that is now owned by Georgian College and another housing the operations of the Ontario Provincial Police, in addition to significant natural and wetland areas.

The specific focus of this study is the Huronia Regional Centre's Cemetery in the northern portion of the historic facility property and now adjacent to the Ontario Provincial Police headquarters at 777 Memorial Avenue (Maps 1 to 4). The cemetery is accessed via a long paved laneway leading from the west side of Memorial Avenue. It was in use starting in or around 1893 and was closed in 1971. Throughout its use there were episodes of expansion and commemoration and additional long-term planning for the cemetery is currently underway.

The subject property falls within the Simcoe Lowlands physiographic region, as defined by Chapman and Putnam (1984:177-178). The Lowlands were flooded by glacial Lake Algonquin and are bordered by shore cliffs, beaches and boulder terraces. The remnant glacial beaches separate the lowlands from the Simcoe Uplands to the west (Map 5). The cemetery lies within the sand plain and its soils consist of Sargent gravelly,

sandy loam (Map 6). The latter is a well-drained gravelly soil developed from outwash material (Hoffman et al. 1962:28). The property sits at the edge of a flat terrace that overlooks Shingle Bay of Lake Simcoe to the east, with steep slopes present to the north. There are numerous shoreline marshes surrounding Shingle Bay and Lake Simcoe. Several small creeks drain eastward into the Lake from the marshes along the shoreline to the west, east and northwest of the subject property, with Bluff's Creek being the most prominent and draining the southernmost portion of the HRC property (Map 7). The natural vegetation consists of mixed deciduous and coniferous forests with cedar dominating the wetland zones (AA 2008:2).

1.2.2 Summary of Registered or Known Archaeological Sites

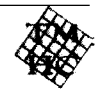
According to the Ministry of Tourism, Culture and Sport's database (information received June 11, 2014) there are no registered archaeological sites within one kilometre of the subject property. However, we do not believe this to be the case as it is known that numerous sites were identified on the property during previous archaeological assessments (e.g., AA 2008). It may be that the registration forms have not been submitted or yet entered into the Provincial database.

Based on previous archaeological studies (AA 2008; DPA 2004), archaeological sites have been documented or reported within the Huronia Regional Centre property, although not within the cemetery proper. One of these sites was reported by Andrew Hunter in 1903 in his provincial publication *Indian Village Sites in North and South Orillia*. Hunter's Site 19 (or Hunter's Landing Site) is described thusly:

> *In the central part of lot 12, concession 3. Now the grounds of the Provincial Asylum for Idiots, near Orillia Town. The position of the place is at the northwest part of Shingle Bay, where the land rises above the lake level. There was a landing here in the time of the aborigines. The late John Burkitt lived here in former years and found numerous relics, especially many pottery fragments, etc.* (Hunter 1904:122)

That site has been given the Borden designation of BdGu-37 and is now known to also include a EuroCanadian component (AA 2008). Another site described by Hunter was referred to as Hunter's South Orillia 14 Site, now registered as BdGu-38, a contact period Huron-Wendat village:

> *...on the north-west quarter of lot 10, concession 3...near a stream which flows into Shingle Bay. John Sanvidge, now of Magnetawan, lived formerly on the part of this farm on which were remains. During the time he lived here, copper kettles or pieces of them were found abundantly, also iron axes of early French make.....Large ash heaps, mixed with broken pottery, pipe heads, etc., occur here.....In the field where the village site was, a great main remains of the Indians....were scattered over the ground.* (Hunter 1904:14)



Hunter goes on to further describe the presence of a possible native cemetery nearby the village:

> *About 300 yards to the west of the village site is the cemetery, with which it was probably connected. The burial-ground consisted of single graves, situated on the Cuppage farm....Nearly all, or quite all of the graves have been rifled of their contents by curiosity-seekers.....*

A third site on the property (BdGu-39) is the Allen Site, a possible contact period Huron-Wendat cemetery (AA 2008). The 2008 survey of the Huronia Regional Centre by Archaeological Assessments Limited also resulted in the discovery of an entirely new site (BdGu-40 – Cuppage Site).

These sites are discussed in more detail below.

1.2.3 Summary of Past Archaeological Investigations Within 50 Metres

During the course of this study it was established that at least two previous archaeological assessments were undertaken for the Huronia Regional Centre property. Because the Ministry of Tourism, Culture and Sport does not maintain an accessible database of archaeological assessment areas *per se*, it is not known if these studies are the only ones carried out within 50 metres of the cemetery.

Stage 1 Assessment of the Huronia Regional Centre (Southern Portion) – D.R. Poulton & Associates Inc. 2004 (DPA 2004)

In 2004, a Stage 1 archaeological assessment was undertaken for the southern portion of the Huronia Regional Centre, incorporating the main administration area but excluding the lands to the west of Memorial Avenue which also formed part of the facility at one time (Map 8). This study was done as part of a larger Cultural Heritage Assessment for the property. The work was undertaken by D.R. Poulton & Associates Inc. on behalf of the Ontario Realty Corporation and formed part of a larger study of 15 mental health care facilities across Ontario. The D.R. Poulton & Associates background study (DPA 2004) included a review of environmental and existing conditions, historic land use, regional and local settlement, as well as known and potential archaeological concerns. A preliminary field reconnaissance was also undertaken.

The background study indicated that, while no archaeological sites had been previously registered on the property, the presence of at least one archaeological site was suspected, as derived from the notes of Andrew Hunter in 1903. This was Hunter's Site 19 described in the previous section of this report.

The Stage 1 report acknowledged and recommended the following:

1) The Huronia Regional Centre property has moderate to high inherent potential for as-yet undiscovered archaeological remains; that conclusion was based on the presence of known archaeological sites, the presence of a ridge to which many native sites and trails were oriented and given the fact that the property consisted of soils suitable for prehistoric and historic agriculture. The proximity of the historic Ridge Road (Memorial Avenue) also gave the property potential for the discovery of historic era archaeological resources;

2) that a detailed archaeological assessment be carried out on any portions of the property that should be subject to future impact or severance; and

3) that additional archival research be undertaken.

The Stage 1 report did not include a map of archaeological potential, as it was intended to be a general planning study. This assessment was summarized in a report entitled *The Stage 1 Archaeological Component of the Cultural Heritage Assessment of the Huronia Regional Centre, 700 Memorial Avenue, City of Orillia, Ontario* (D.R. Poulton & Associates; P116-012; licensee Dana Poulton, P116).

Stage 1 and 2 Assessment of the Huronia Regional Centre (Northern and Southern Portions) – Archaeological Assessments Ltd. 2008 (AA 2008)

In 2007 additional background research was undertaken in conjunction with a Stage 2 field survey of lands encompassing the northern and southern portions of the original Huronia Regional Centre property (Map 9). This work was done by Archaeological Assessments Ltd. as a follow up to the 2004 work by D.R. Poulton & Associates. The survey parcel included parts of Lots 10, 11, 12, 13 and 14 of Concession 13.

Four archaeological sites were discovered during the Stage 2 fieldwork. Three of these were those previously described by Andrew Hunter and referred to as the Hunter's Landing Site or Hunter's Site 19 (BdGu-37; Iroquoian and 19th century components), the Hunter's South Orillia 14 Site (BdGu-38; contact period Huron-Wendat village), and the Allen Site (BdGu-30), a possible contact period Huron-Wendat cemetery. The fourth site identified was a new site discovered on the property and named the Cuppage Site (BdGu-40) after a former landowner. The latter is a small native camp of undetermined age and cultural affiliation. All of these sites were recommended for Stage 3 testing. The report noted that "no soil disturbance is to be allowed in the areas where the four sites are located until these sites have been subjected to a Stage 3 assessment, and if necessary, Stage 4 mitigation, either through avoidance and long term preservation, or Stage 4 excavation" (AA 2008:20).

This work was summarized in a report entitled *Stage 1-2 Archaeological Assessment of the Huronia Regional Centre Property, Part of Lots 10 and 11, Concession 2 and Part of Lots 10, 11, 12, 13 and 14, Concession 3, South Orillia Geographic Township, City of Orillia, County of Simcoe. Ontario Realty Corporation Project No. D00430* (Archaeological Assessments Ltd. January 2008; PIF P013-324-2007; licensee not specified).

During the Stage 2 field assessment, the land surrounding the Huronia Regional Centre Cemetery were deemed disturbed or "boulder terrace" and therefore eliminated from survey.

Conservation Plan for the Huronia Regional Centre (THAL 2008)

To date no follow up assessments have been undertaken for the archaeological sites within the HRC. In 2008 Taylor Hazell Architects Ltd. prepared a conservation plan for the Centre which acknowledged the presence of archaeological resources and anticipated that the sites would be protected from future development:

> *Stage 1 and 2 Archaeological surveys have been completed and several First Nations archaeologically sensitive areas have been confirmed. All sites appear to be outside of those where development is likely to occur. Protection of these will be secured if they fall within Environmentally Sensitive Areas.*
>
> *The archaeological assessment identifies the HRC Commemorative Cemetery [as] an archaeologically sensitive site. This is recognized in the HRC conservation plan recommendation that clarification is required regarding its boundaries, stewardship, conservation and long term funding.* (THAL 2008:62)

1.2.4 Dates of Archaeological Fieldwork

A planning and preparation site visit was made on May 27, 2014 with the ground penetrating radar survey carried out on June 2 to 6, 2014 and August 5 to 8, 2014. The cemetery boundary investigation, involving mechanical topsoil stripping, was undertaken on October 20, 21 and 22, 2014. Monitoring of the installation of new fence posts to mark the perimeter of the cemetery was completed on November 4, 5, 6, and 7, 2014.

1.3 Historical Context

1.3.1 Brief History of the Grounds

The previous reports for the archaeological and cultural heritage work for the Huronia Regional Centre (AA 2008; DPA 2004; JSA et al. 2004; THAL 2008) provided a substantial amount of historical background on the creation and evolution of the facility

over time. Only a brief summary is provided here and if more detail is desired the reader is referred to the original reports. Further information on the cemetery is provided in Section 1.3.2 of this report. Herein we provide an overview of the history of the Huronia Regional Centre, from its founding in 1876 to its closure in 2009. Various sources were consulted during the compilation of this summary, including a heritage assessment by a conglomerate of firms headed by Julian Smith & Associates (2004), a conservation plan authored by Taylor Hazell Architects Ltd. (THAL 2008), resources at the Orillia Public Library and University of Western Ontario, and 20th century site plans provided by Infrastructure Ontario.

Development of the Institution

The Huronia Regional Centre and its predecessors originally served as a residential care facility for individuals with a developmental disability. The facility originally operated as the "Orillia Asylum for Idiots" (1876-1907) and later the "Orillia Hospital for Idiots" (1907-1919). In 1919 its name was changed to "Ontario Hospital, Orillia" (later to Ontario Hospital School, Orillia) and it continued under that label until 1974 at which time the modern name of "Huronia Regional Centre" was instituted (THAL 2008:19) after a change in ministerial responsibility from the Department of Health to the Ministry of Community and Social Services.

The first facility in Orillia was not located on the current site but instead occupied a former hotel building in the town, beginning in 1861. The facility was originally known as the "Branch Lunatic Asylum, Orillia" as it served as part of the "Provincial Lunatic Asylum" in Toronto. At the time of and immediately after Confederation, there was no distinction made between developmental and mental health care in Ontario, and so its earliest institutions treated a range of individuals with various disorders and difficulties. As a provincial institution, its regulation and administration fell under the authority of the Office of the Inspector of Prisons and Public Charities. Provincial facilities (including asylums, reformatories and jails) were regularly inspected and recommendations made for their improvement (JSA et al. 2004:1). In 1870, the Office's famed inspector, John Langmuir, recommended that care for the developmentally disabled be separate from that provided for the mentally ill and, six years later, his opinion materialized in the dismantling of the Orillia facility (JSA et al. 2004:1). After the opening of the London Lunatic Asylum in 1869-1870, the Orillia Branch was closed and its residents transferred there. The Orillia institution was modified and upgraded for reopening in 1876 as the Orillia Asylum for Idiots (THAL 2008:20) to serve individuals with a developmental disability. In 1877, Dr. Alexander Beaton became superintendent and immediately requested a transformation of the facility into a training school, with a farm and garden, as well as workshops to support it. In 1878 on his own initiative, Dr. Beaton began a school program (THAL 2008:20).

Not long after the centre re-opened it began to experience serious overcrowding. A site for a new facility was sought out and a 61 ha parcel on Lake Simcoe was chosen, on the outskirts of the town of Orillia. At that time there was one standing structure on the property, a stone farmhouse built in 1844 (later referred to as "Resident House"). The property was located on the historic "road to Barrie" and along the Northern and Northwestern Railway (JSA et al. 2004:7). An additional ten acres was added to the facility property by 1905 (to reach 71 ha in size) and by 1911 additional purchased and leased lands grew the facility to 184 ha. The new lands allowed for the creation of gardens and pasture lands for the facility's farm stock and included agricultural fields used to grow crops that were much needed to support the facility (THAL 2008:21).

The late 19th century buildings were designed by Provincial Architect for Public Works, Kivas Tully and were fashioned in Queen Anne Style based on a compact, bilateral arrangement. The Main Administration Building was opened in 1891 (Image 1), with cottages for male and female residents built in 1917. Dormitories for boys and girls were erected in the 1930s and a series of repair and rebuilding episodes took place after the wartime era. A new building for ambulatory residents was erected in 1945 and ten years later six new children's dormitories were built. The facility structures also included staff residences, a residence for the site's Medical Superintendent (1919) and Nurses' Residence (1930). These residential structures were accompanied by storage buildings, a power and boiler house and others required to service the facility (THAL 2008:21). The original entrance to the facility faced east to Lake Simcoe. Visitors would arrive at the site's railway station that ran parallel to the lake and would hence witness the stunning view of the commanding facility and its ornamental gardens which covered the front lawn. The supporting farm facilities were to the west and would eventually come to include barns, cottages, a piggery, a granary, blacksmith shop, supply building, and pump house.

Under Beaton's vision, the facility offered care and instruction to individuals with a developmental disability; in the 19th century, this group of people broadly encompassed those with serious afflictions, behavioural problems, physical impairments and those who otherwise could not function independently on their own or could not otherwise be cared for by their families. From time to time, the facility also housed orphans and other indigents who had nowhere else to go. Beaton upheld the view that physical exercise, physical labour and academic instruction were key pins to assisting those residents at the institution who were capable. He was replaced in 1910 by J.P. Downey who continued Beaton's strategy, albeit with some resistance from the general public and political opposition who did not believe that it was the government's responsibility to provide care for such individuals (THAL 2008:20).

Major changes in programming and approach have taken place since the early 20th century, as political and public opinion on care for individuals with a developmental disability have changed. In 1930 the Ontario Hospital Orillia, as it became known, was formally transferred to the authority of the Department of Health and its Hospitals

Division. In 1966, another major restructuring took place, with the services the institution provided now administered by the "Mental Retardation" Services Branch. Over time, political opinion began to urge a shift from institutional care to community care, which was achieved via the transfer of some residents into special care homes and changing policies on admission. In 1974 services for individuals with a developmental disability were transferred to the Ministry of Community and Social Services and the *Developmental Services Act* was passed, permitting the formal creation of community alternatives to institutionalization (JSA et al. 2004:5).

Several of the original 19th century institutional buildings still stand whereas others have long been demolished or replaced by modern structures. Due to the facility's provincial ownership, none of the buildings are designated.

1.3.2 Huronia Regional Centre Cemetery

Existing Conditions

The cemetery rests adjacent to the Ontario Provincial Police Headquarters, on the west side of Memorial Avenue, opposite to the historical building complex associated with the Centre. The boundaries of the cemetery are marked by a fence line but were not otherwise confirmed prior to this study. The graveyard is accessed from Memorial Avenue via a narrow paved lane that terminates at the cemetery where there is a paved turnaround (Image 2). The cemetery sits on a relatively flat terrace above a steep slope to the north (Image 3). At the base of the northern slope is a wire post fence that marks the north boundary of the OPP lands, with commercial properties resting just beyond it. To the west rests a modern building and raised parking lot with a tall concrete face (Image 4). The grade slopes down significantly from this structure to the west edge of the cemetery which is otherwise covered in heavy tree and scrub growth. Northwest of the cemetery is a small metal-clad shed (Image 5). There are scattered mature trees and manicured lawn to the east and south of the cemetery (Image 6), with roadside areas also falling to the south (Image 7). Beyond the cemetery access road to the south is an area of some surface disturbance, as evident in gravelly surface soils, soil mounds in places and pavement; a main access road into the OPP property occurs further south of this (Images 8 and 9). The current road configuration minimizes the traffic alongside the cemetery and allows it to remain somewhat isolated from the main building complex.

The boundaries of the cemetery proper were marked by a fence line comprised of concrete posts and interlinking chain. The fence approached the edge of slope along the north boundary (Image 10), which is otherwise covered in tree and scrub growth, as well as long weeds. It approached a tree line and base of slope in the west (Image 11), the roadway and disturbed right-of-way in the south (Image 12) and cut through an open treed area in the east (Image 13). A large tree stump is present along the southern fence line, almost mid-way along its length (Image 12).

Within the fence line there are predominantly open spaces, except in the east end where there are scattered trees surrounding isolated monuments. The more southerly portion of the cemetery is its oldest section (Image 14). In its western end there are seven rows of tightly spaced flat stones or plaques (Image 15), each of which measures 10 by 25 cm and is stamped with an identification number (Image 16). All of the gravestones in the cemetery that mark pre-1958 burials are marked only with a registration number, as it was thought necessary at the time to protect the privacy of residents and their families (MCSS 2015). It was sometimes the case that formal named markers were placed alongside these registration plaques by family members, once the location and identity of the grave could be confirmed. The stone rows are oriented roughly north-south and therefore it is assumed that their associated graves align to the typical Christian east-west orientation; the fact that the top of the stones face west also confirms this orientation is likely. In the central and east portion of the older and more southerly section of the cemetery there are a small number of isolated grave stones but no other grave markers (Image 17).

A row of mature trees (Image 18) separates this older portion of the cemetery with a newer segment that was added in 1953 to accommodate new interments. The new section north of the trees contains ten rows of flat stones or plaques (Image 19), also oriented north-south, with the top of the stones facing west. Some of these only contain registration numbers as with the plaques in the south end of the cemetery, while others also contain names and/or dates of birth and death (Image 19). After 1958, stones were marked with the name, year of birth and date of death. East of these marked rows of graves is a square concrete slab that encases six rows of 32 (n = 192) markers (Image 21). These are also of concrete construction and are long and narrow markers with registration numbers etched on them (Image 22). These markers have been removed from their original locations in the cemetery and are the oldest that exist therein. It is speculated from hearsay accounts that these once stood in the original section of the cemetery, south of the row of mature trees, and that they were removed at some point in time from the cemetery property. A local newspaper account indicated that these stones had at one time been used to line the pathway of a nearby house and once discovered, were collected again in the 1980s and returned to the cemetery where they were placed together within the concrete slab. In the westernmost end of the new cemetery area there are no standing monuments, although several utility features and markers are present (Image 23), indicating the presence of buried services.

In the easternmost end of the cemetery, where the former gated entrance and sign were located, there is a commemorative monument within a small circular garden (Images 24 and 25). The text on the marker reads:

In Memory of Those Whose Life Journey Ended Here

This monument has been erected
in memory of those developmentally
handicapped people who lived
and died within the community of the Ontario Hospital School,
Orillia from 1887 – 1971.

More than 2,000 people were laid to rest here.

There is a small hedgerow to the west of this (Image 26), in line with several other mature trees that form a quasi-boundary between the westerly portions of the cemetery and its east end, where a formal entrance and roadway was thought to once exist. There is currently little visual and surface evidence of this roadway here. Exposed bedrock or partially exposed large stones (not grave-related) were noted here and on the east side of the eastern cemetery fence line.

In total, 748 grave stones are currently within the cemetery (Table 1). A figure of 571 was previously reported (MCSS 2012) as the number of graves marked by stones but this figure excluded the stones embedded in the concrete slab. It should be noted that, within very old, 19th century cemeteries, it is not uncommon for headstones to go missing, as they broke, deteriorated over time, or got knocked out of place during cemetery grounds keeping or maintenance. It is estimated that there are over 800 unmarked graves in the cemetery (MCSS 2015). Although the commemorative marker notes that more than 2,000 people were buried in the cemetery, there are no records to support this. The Cemetery Registry (MCSS 2014) indicates the number of individuals buried in the cemetery is approximately 1,400.

Map 10 illustrates the existing features within the cemetery on a high resolution aerial photograph.

Table 1: Summary of Gravestones within the Cemetery

Row	Section	Start Stone (South End)	End Stone (North End)	Number of Stones	Comments
1	Old (South)	3297	3101	29	not a precise sequential order
2	Old (South)	3093	2943? (hard to read)	47	not a precise sequential order
3	Old (South)	2931	2821	46	not a precise sequential order
4	Old (South)	2819	2719	48	not a precise sequential order; Walsh standing stone
5	Old (South)	2717	2583	52	not a precise sequential order; contains one larger flat stone below registration plaque for 2596 "Elizabeth M. Turcotte 1918-1939"
6	Old (South)	2584	2443	57	not a precise sequential order; contains one larger flat stone beside registration plaque 1584 "Harold Dupre Grant 1931-1939"; M. Parson named stone
7	Old (South)	2448	2372	26	gaps in middle of row; not a precise sequential order
8	New (North)	I.L. 1939	3393? Or 3383? (hard to read)	23	additional named flat stones; Ronald Kemp Lucas
9	New (North)	3338? (hard to read)	3483? (hard to read)	23	not a precise sequential order: contains one larger flat stone "Anne Florence Leslie 1936-1955"
10	New (North)	Bernice Bevan 1937-1958	3490	27	various named flat stones
11	New (North)	Joseph H. Parr 1900-1958	Bradford Taylor 1952-1961	33	named flat stones
12	New (North)	Kathleen Talbot 1922-1961	Nora May Hone 1892-1963	30	named flat stones; Currie standing stone
13	New (North)	John Eralds Cize 1953-1963	Peter Hodgson 1965-1965	28	named flat stones
14	New (North)	Lorence Marie McCready 1921-1965	Jennie McGurn 1891-1966	27	named flat stones
15	New (North)	Dorothy Carol Demara 1942-1966	Gary R. Illing 1964-1968	24	named flat stones; standing stone Fisher
16	New (North)	Donald Rutherford 1914-1969	Frieda Lusmer 1890-1969	15	named flat stones
17	New (North)	Beatrice Rannie 1881-1970	Renee Silver (32-1971	15	named flat stones
n/a	George Miller - standing stone south end				
n/a	Henderson - standing stone south end				
n/a	Mamie Blakely - standing stone south end				
n/a	J.D. O (John Doe?) - standing stone south end				
n/a	Bunn - standing stone - northeast corner				
n/a	Barker - standing stone south end				
n/a	concrete slab			192	
Total				**748**	

History

The institutional records that exist for the cemetery burials consist primarily of an inventory of deaths at the facility and associated maps indicating the relative placement of graves. Although these records are not as complete as those from modern times, they nonetheless provide essential information. As was common for 19th century institutions, most official records tend to focus more on day-to-day operations and on the treatment of the conditions that ailed the residents who were housed there. It is not uncommon for cemeteries to go entirely unrecorded in such situations or for records of death to be minimal. So, the presence of records in this instance is rare and quite helpful. However, there are no detailed descriptions on the establishment of the cemetery, its care, how the interments were made, how it was organized or when it was opened. Most formal accounts of the cemetery describe its use beginning in or around 1893 and ending in 1971, with the latter date representing the year the cemetery was closed to interments and all burials were henceforth made in municipal cemeteries of the family's request (MCSS 2012). Since the earliest records are poor or missing (as is not uncommon for 19th century documentation), the 1893 date for the initial interments has not been confirmed by TMHC independently, although this is generally around the time the new facility opened and is the first internment recorded in the Cemetery Registry, according to the Ministry of Community and Social Services (MCSS). Regardless, according to MCSS (2012), Huronia Regional Centre was the only facility of its kind to have housed its own cemetery for residents who died there.

It is known that the cemetery was established on the farm side of the institution, on the west side of Memorial Avenue. As is not atypical for these types of institutions, there were few photographs of the farm operations as most focused on the impressive buildings of the complex. One close up image of the main barns and water tower in the farm (Image 27) shows the break in slope along the north edge of the complex; the photo is taken too far west to depict the cemetery. A series of aerial photographs appearing in local newspaper articles between 1965 and 1976 provide overview shots of the institution but the cemetery is only visible as a dense cluster of trees along the north edge of the farm, west of Memorial Avenue (Images 28-32). There are otherwise no historical photographs of the cemetery that are known and could be used to assist in the identification of approximate boundaries.

At least two maps of the cemetery exist. The first is depicts the earliest section of the cemetery, which now occupies its southernmost portion inside the fence. There are two versions of this map, presumably an original (Map 11) that shows 25 rows of stones numbered sequentially from "north to south" and another that has been altered (Map 12) to show to additional rows in the "south" (west) numbered 26 and 27. The more "northerly" portion of the cemetery shown on this map contains 12 rows of interments; the first nine rows are assumed to be complete and show registration numbers. Where standing markers are present, names are listed, as with that of Clayton Barker, for example. The three more southerly rows (marked 10, 11 and 12) have some graves

without numbers. It is not known if this means that the graves are not filled or that entry numbers were just not provided. Beyond this northerly section to the south is a thoroughfare or access lane that leads to a gated entrance along the side of the cemetery. While the orientation of this map is a bit off (north is not pointing in the right direction), it is assumed that the entrance was along the south side of the former cemetery fence line. One hearsay account indicated that the historical entryway was in the vicinity of the stump now appearing along the south fence. Beyond the lane is another 13 rows of original graves (numbered 13 to 25) as well as the two rows added later (row 26 and 27). These are depicted as "occupied graves," with registration numbers associated with most stones except for some grave plots in rows 13, 14, 15, 18 and isolated occurrences in rows 23, 19 and 16 with no information; some grave spots are marked as "blank." For row 26, it is acknowledged on the map that the order of recording has been reversed (north to south), so that the most "easterly" stone on the map is actually the most "westerly" in the field. The most "southerly" portion of the cemetery is shown as open and without graves. Row 27 on this map coincides with the row designated number 5 in the current study, so we know there are at least four additional rows of interments that were made in the area beyond Row 27. In fact, the map shows a Row 28 but no interments are depicted in it as yet. Therefore, it can be assumed that the rows numbered in the field as 1 through 4 post-date 1941, the terminal date for the map; this is also supported by the fact that these rows include the graves of individuals with registration numbers that are higher than those in other rows and therefore presumably more recent in date. Also shown on this map is another entrance to the cemetery near the "south" (west) end which is labelled as "Large Gate." This would place the entrance near row 5 and row 6 recorded in the field during this study. Groundskeepers have indicated that the "Large Gate" led to an access road or path that extended around the west boundary of the cemetery and then turned to follow the north boundary before connecting to the lane leading from the former entrance in the east. This seems likely as the route also follows a line of trees in the northeast corner.

When checking the early map against the field stone data, a few observations were made. First, the row marked 27 on the map does not contain an entry for individual 2583; a stone was observed in the field at the end of this row (field recorded row 5). Second, individual 2417 marked as the most westerly interment in row 25 on the map (our row 6) has no marker on the ground. Finally, row 25 on the map depicts a number of gaps in interments (recorded as "blank"). While our field recording also noted gaps in this row they did not always correspond to the spaces shown on the map. Finally, a comparison on the stones encased in the concrete slab with the registration numbers shown on the interments on this document indicate that the displaced stones were from a variety of burial rows (map numbers 24, 23, 22, 21, 20, 19, 18, 7, 6, 5, 4, 3, and 1) located both "north" and "south" (in reality, east and west) of the lane through the middle of the cemetery. The majority of stones are from rows 18 to 20 and 4 and 5. What is made most clear through this comparison is that the encased stones do not account for all of the interments shown on the early map. It is therefore not known if the remaining graves went unmarked or if the markers have simply not been recovered. There is also a

possibility that some of the markers are now buried beneath the sod, as is common in 19th century cemeteries.

When the sequence of registration number is considered it is also notable that the earlier registrants of the facility are not well represented in the cemetery. There are no interments in the 500, 400, 200 or 100 series, with only a few in the 300 series. The small number of residents with registration numbers between 1 and 20 are individuals transferred from the then Whitby Asylum, who died and were buried between 1917 and 1919. As the earliest records have not been located, the reason for earlier registrants not being well represented cannot be confirmed. However, there are several possibilities. First, the earliest interments could represent deaths that occurred when the facility was located on its original site and not the current one. Those burials may have pre-dated the establishment of the cemetery and were made elsewhere. Second, at some point in time there may have been a change in policy that required burials during the early period to be made off site. A third possibility is that there are a number of graves dating to the earliest period of the facility that were not mapped or marked with stones.

What is clear is the temporal pattern of interments, if the registration numbers are a general proxy for relative order of death. The earliest mapped burials (generally represented by 600 and 700 series registration numbers) are clustered on either side of the lane through the centre of the cemetery. New rows were added on either side of the lane every year, so that the most recent burials are those on the outer rows (rows 1 to 3 and 22 to 25). It has been confirmed that this pattern reflected the practice of gender segregation in making interments. Most institutional spaces were also segregated by gender, with separate wards for men and women, boys and girls.

A stone for Mamie Blakley currently stands in the cemetery and is associated with row 13 adjacent to the lane, amongst graves of individuals with 600 series registration numbers. Blakley died in 1901 and this is presumably close to the date of death for the individuals buried nearby.

Map 13 shows our attempt to geo-reference the pre-1941 cemetery map on a modern high resolution aerial photograph, to help establish the limit of interments. It should be noted that there are very few precise reference points by which to assist this exercise, as the pre-1941 map records few landscape markers for tying in to modern conditions. Nonetheless, from this we can estimate that the eastern limit of interments in the old cemetery section was indeed the hedgerow at the east end of the cemetery. The original laneway through the cemetery did terminate roughly near the stump that occurs along the south fence line today and the northern limit of the original interments was roughly at the mature tree line that now bisects the cemetery from north to south.

The second map is archived as marking interments between 1953 and 1971 (Map 14), beginning with the interment related to resident 3315. It depicts the northern portion

of the cemetery. It marks 10 rows of stones, noting registration numbers, plot numbers, names and dates of birth and death. It also depicts a number of trees as well as part of what might be an access road or services in the northeast corner. Further, it illustrates the relative location of isolated graves and stones, namely that of Clayton Barker in the southwest corner and George Bunn in the south end. A review of death dates indicates that the most westerly rows were the earliest interred (1953-1954 for top row), with the most recent (1971) and last to be buried in the cemetery in the more easterly rows.

When compared to stones in the field, the map appears to be a fairly accurate reflection of the marked graves although there are a few oddities worth mention. First, for the Bunn stone the map notes "large print head stone by itself." The fact that Bunn was buried away from the rest of interments of the same year (1967) which otherwise occur in the row we have designated row 15 is a bit curious. Second, Orey Cecil Chisholm (d. 1968) is shown in an isolated burial at the end of row 15 oriented in the opposite direction to the row. However, on the ground, the stone for Chisholm is actually placed between that for Craig Fisher and Dorothy Hill, suggesting the map is likely inaccurate in its placement of his remains. Second, both Florence Marie McCready (d. 1965) and Richard Anthony McCauley are shown at the end of row 13, oriented in the opposite direction as the rest of the interments in the row. However, on the ground, the stone for Florence appears at the west end of row 14. Therefore, the irregular map reference is likely incorrect. The whereabouts of the McCauley burial is not known as there is no stone for him on the ground. Another anomaly occurs in row 9 where the order of burials adjacent to Annie Leslie (registration number 3414) is reversed on the map from the situation observed for the ground stones. Finally, two burials in row 12 are shown on the map but no stones were observed in the field.

No interments for registrants between 3297 (the last individual representing by a grave stone in the old cemetery section) and 3315 (the first individual represented by a grave stone in the new cemetery section and shown on its corresponding map) are shown on either map. When the 1952-53 record of deaths is reviewed, one burial within this sequence is missed by the gap in mapping, that being for registrant 3300. All of the other registrants in this sequence were buried in other cemeteries and not in Orillia.

It should also be noted that the resident registration numbers referred to are their death registration numbers. A review of a partial 1952 record of deaths for the facility shows a higher range of numbers (e.g., some in the 6 to 10,000 range) under the column "Register Number" which appears beside the resident name column. These registration numbers do not correspond to numbers on the cemetery map or gravestones. However, there are two other columns that track the cumulative number of deaths annually (broken down by male, female and giving a total) as well as cumulative deaths since the facility's opening (also broken down by male, female and giving a total). The sheets examined record over 3,000 deaths since the facility's opening by the year 1952. These "death registration" numbers are those that are shown on the cemetery map and stamped into the gravestones. The register notes the "1st burial in the new cemetery" as Registrant 3315

(G. Fournier d. 1953), whose grave is marked by stone 3315 in the most westerly row of the new cemetery (our row 8).

While the major change to the cemetery was the expansion in 1953, there have been other modifications of note. An overlay of a 1935 aerial photo and 1969 survey plan illustrated in the *Conservation Plan* (Image 32) indicates that the configuration of the cemetery access road has changed. The road once led straight to the facility to the west rather than terminating in a turnaround. To the south of the cemetery were the facility's blacksmith shop and a lane that provided access to cottages (ca. 1887) lining the west side of Memorial Avenue. To the southeast was the emergency hospital. This same survey shows a lane running through the east end of the cemetery and along the north boundary.

One account describes a revitalization event that took place in 1935. At this time the head gardener supervised the "lifting of stones" and the grading and top-dressing of the ground within the cemetery. This could have been one activity contributing to the movement or loss of grave markers, if there was no effort made to set them back in place. The erection of the former fence around the cemetery and its commemorative monument took place in 1990.

Few details could be found regarding burial practices and general methods of interment, although there are some general hearsay accounts. One of these is that on occasion burials were made in trenches rather than in individual grave shafts. Trench burials were not unusual in the 19th century during major epidemics or other events that led to a large number of individual deaths in a short period of time.[3] Events that could have encouraged the use of this practice certainly occurred at the facility, namely an epidemic of small pox in 1919, an outbreak of influenza in the late winter of 1920, and other waves of disease (measles, diphtheria, typhoid fever and syphilis, and scarlet fever) (Shea 1970:102). However, no notations regarding the use of trenches could be found in existing documentation and therefore it cannot be confirmed whether or not trenches were used for burial in such times. In theory, trench burials could also have been used to bury a number of individuals at once in the case that they died in winter, when immediate interment was not possible due to frozen ground conditions. Again, no notations of the use of this practice at the facility could be found, although it is not out of the range of possibility since a 1937 inspection report and related correspondence (Horne 1937) mentions the presence of a morgue in the basement of Cottage M. The morgue would have offered a space to house the deceased persons until the first opportunity for burial in the spring.

As early as 1900, the register of deaths also recorded an undertaker for each individual as well as a funeral home and place of burial, where applicable. This suggests that formal practices and procedures were in place for reporting deaths and making

[3] A good example of this practice and atypical burial methods in times of crisis can be found in the records of the 1832 cholera and typhoid epidemic in Montreal (Young 2003:10-11).

interments. From this we also learn that not all of the individuals who died in the institution were buried in its cemetery. Where other places of burial are cited it is presumed the individuals were taken away from the institution and buried in municipalities where their families resided. Many individuals are listed as attended to by the local undertaker (Doolittle amongst others) and buried in the "Inst. Cemetery" (Institutional Cemetery). These individuals have death registration numbers that match stone numbers in the cemetery. For example, G. Fournier, who passed away on January 30, 1953 and the first to be buried in the new cemetery, is shown on the record of deaths as buried in the institutional cemetery and the 3,315th death registered in the facility since it opened. On the new cemetery map, she is shown as occupying the plot associated with stone 3315 in row 8 of the new cemetery.

Overall, the maps of interments that exist for the cemetery are quite good, and show a fair degree of detail and accurately reflect the relative placement of known burials. Both maps record a total of 1,250 graves, with 1,183 accompanied by a death registration number or name, 60 shown without a label and another 7 labelled as "blank." The oldest cemetery map shows 1,003 grave sites while the more recent map shows 247. Another 170 graves are represented by the four rows of existing stones (TMHC rows 1 to 4) that do not show up on the early map. Therefore, at least 1,420 graves are accounted for through existing stones or mapping. This is close to the approximately 1,400 graves reported and seems to be a fairly accurate number based on the documents reviewed. Although the majority of the earliest deaths registered at the facility are not reflected in the cemetery maps, the general correspondence between field data, stones and registry information indicates that the estimated count of existing burials is fairly accurate and that the majority of burials at the cemetery made are fully accounted for.

The maps may also reflect the fact that different individuals were responsible for recording information over various periods of time. Correspondence in 1936 indicates that the gardener had made a new plan of the cemetery plots and oversaw grounds maintenance within the burial ground (Graham 1936). It is not known if this responsibility shifted to other facility staff later on. However, the earliest cemetery map shows different methods of recording graves (different handwriting), as well as differing spacing of graves over time. The number of individual graves per row ranges from 18 (being the most widely spaced) to 56 (being the most tightly spaced). Differences in spacing could be attributable to variation in practices of the individual grave diggers, type of burial (individual or trench) and space restrictions, amongst other factors.

Heritage Value and Conservation Efforts

As noted in the *Conservation Plan for the Huronia Regional Centre (N00430)*, the Huronia Regional Centre Cemetery is part of a larger parcel of heritage value. Map 15 illustrates the bounds of the HRC "Heritage Place". The heritage value of the HRC's historic core is attributed to both its architecture and landscape, both of which reflect

> *its history as a pioneering facility for the care of disabled individuals and represents a fully-developed, relatively intact, picturesque landscape and public work designed and constructed under the direction of Kivas Tully* (THAL 2008:2-3).

One of the issues identified for the cemetery in the conservation plan (THAL 2008:4 Issue 7) was:

> *The HRC Commemorative Cemetery property is an important commemorative and archaeological site. It is currently part of the OPP property maintained by ORC. Its boundaries require legal clarification as well as the terms by which it is conveyed to the municipality.*

Page 6 of the plan also indicates that the cemetery should be included in the landscape plan for the facility. The *Conservation Plan* noted that at the time of its preparation in 2008, the condition assessment of the cemetery was limited to visual observations of existing markers and headstones and that a restoration project for grave markers was to take place later that year. The *Plan* recommended that

> *Formal clarification of the site boundaries take place, and that a study take place with respect to the site's long term stability, including site drainage and the effect of erosion on the north bank.* (THAL 2008:61)

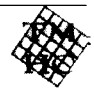
Those efforts have been ongoing and this study forms part of the conservation planning.

2.0 GROUND PENETRATING RADAR SURVEY

2.1 Field Methods

2.1.1 The Basics of Ground Penetrating Radar (GPR) Survey

Geophysical survey is a cost-effective and nondestructive method of identifying potential buried features, including archaeological features and grave shafts. There are different techniques used for geophysical survey, including ground penetrating radar (GPR), magnetometry, electrical resistance, and electromagnetic survey. All of these vary in technique and usefulness in certain contexts and are affected by a variety of factors. However, none of these involve soil disturbance, making them useful for burial ground investigations because they protect the integrity of any graves that may be present. Because of its nonintrusive nature, geophysical survey is often the first step in any cemetery investigation. In this case a GPR survey was carried out to investigate the possibility of unmarked graves outside the marked limits of the Huronia Regional Centre Cemetery.

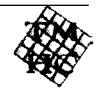


GPR functions by emitting a high frequency radio signal that is transmitted into the ground up to one thousand times per second. Reflected signals are returned to a receiver when objects or different types and densities of materials are encountered within the soil matrix. These signals are recorded by a computer, measuring the amount of time required for a single pulse to travel to and from a particular object, which indicates location and approximate depth (Global GPR Services Inc. 2010). Variations in the dielectric constant can then be mapped through increasing levels of amplitude equalization. This allows data to be represented visually at different depths over the survey areas.

The frequency of the antenna will also determine the size of the object that can be identified. Low frequency antennas (e.g. 10 MHz) transmit energy with wavelengths of many metres and though they can penetrate up to 50 metres, only very large subsurface features can be identified (Conyers 2004) making them unsuitable for archaeological use. Archaeological prospection generally employs antennas with a centre frequency ranging from 900 MHz (ca. 1 metre penetration) to 250 MHz (ca. 9 metre penetration), with antennas ranging between 250-500 MHz preferred for grave prospection. A 400 MHz system was used for this survey and is one of the most commonly used GPR systems in archaeological contexts (including cemeteries). Survey results depend on several factors, including surface conditions, soil types, moisture content of those soils, and the composition of the targets themselves. Under ideal conditions, a 400 MHz antenna can provide between two to four metres of ground penetration (Conyers 2004).

The ability of GPR to identify buried objects also depends on the degree to which the physical and chemical properties of the target objects differ from the material they are buried in. All soils and archaeological features have particular electrical and magnetic properties that will affect the velocity of a radar wave (Conyers and Goodman 1997), known as their relative dielectric permittivity (RDP). As a radar wave travels from one material to another with differing RDP, some of the radar wave is reflected back to the surface receiver. The greater the differences in the RDP of materials at their interface, the greater the recorded amplitude of the reflected wave and the more visible the object is to the GPR receiver. Therefore, the degree to which a GPR survey will be successful is site specific.

In GPR survey, the antennas are moved along the ground in parallel linear transects within a grid. Each transect records the buried subsurface layers and features as a single two dimensional profile. When a series of transects are recorded they can be stacked together and processed to produce a detailed three dimensional map of the subsurface features and stratigraphy. Sample GPR imagery for marked and unmarked cemeteries appears in Image 33.



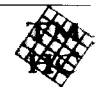
2.1.2 Goals and Survey Area

The GPR survey was undertaken as the starting point in an investigation of the limits of the cemetery. As noted previously in this report, many of the graves within the cemetery are not currently marked by stones. However, the majority of mapped graves did appear to be contained within the fence line; just not all are marked with stones and therefore their exact placement cannot be known. Because of this and the fact that the cemetery has undergone some restoration and caretaking work in the past, it was not known if there was a possibility for graves to be present immediately alongside the fenced boundary. It is quite commonly the case that the limits of 19th century cemeteries are poorly marked, so boundary investigations are often carried out as a matter of due diligence and to avoid incidental impacts to interments that could occur during future site servicing, landscaping and construction. As plans were in place to erect a new fence around the cemetery, this study was undertaken to ensure: 1) that the fence was properly placed to surround all interments; and 2) that the installation of the fence would not impact existing burials that might be close to the previously defined perimeter.

Infrastructure Ontario identified the need to first investigate the peripheries of the cemetery through ground penetrating radar. Based on field conditions it was established that survey could be undertaken along the southern and eastern property boundaries where there were open and accessible areas that would permit the movement of the GPR equipment. Conditions were not suitable for GPR along the cemetery's north and west boundaries (Images 3 and 11), where there were physical obstacles that both prevented the use of the radar machine and made the presence of graves quite unlikely. To the north of the cemetery the grade slopes significantly downward to the fenced facility property boundary and there is only a narrow strip between the cemetery fence and slope, which is too narrow to access and heavily treed in some places. Further, the existing stones do not approach the slope, nor does the post-1953 cemetery map suggest there were interments made immediately adjacent to it. In fact, a 1969 survey of the cemetery (Image 32) indicates that a laneway ran along the inside of the northern fence line. Therefore, it seems unlikely that burials would be found along the north end of the cemetery.[4] On the west end there is the relatively modern building and elevated parking garage. Between this and the west edge of the cemetery is a fill slope and tree line; therefore, the west boundary was not accessible for survey. There are no mapped or marked interments in close proximity to this boundary and it was thought that a former access lane passed adjacent to it, inside the cemetery. Therefore, it seems unlikely that burials would be found along the west end of the cemetery (see Footnote 3).

Given these conditions, our survey areas targeted the south and east perimeter of the Huronia Regional Centre Cemetery (Map 16). The survey areas to the south of the cemetery consisted of mown lawns and vacant areas, the roadway and its environs (Images 7-9, 12). In the east, the survey areas generally consisted of mown grass lawns

[4] As indicated in Section 4.0 of this report, no indication of burials was identified during the excavation of post holes for the new fence. Fill soils were also observed along the north and west boundary.



with scattered mature trees (Image 6). Three survey areas or reference grids were also established within the cemetery so that data collected along the periphery could be compared with "typical" signatures observed within the cemetery. It was also thought important to compare what was observed on either side of the cemetery fence in places to establish if signatures observed outside the cemetery were the continuation of burials rows within it. In general, there were few survey obstacles within our survey areas, however, some bushes and shrubs, mature trees, standing stones and ground hog holes were present and/or avoided if they impeded the movement of the machine. No grave markers are present in the surveyed areas except for seven rows of flat grave markers at the west end of the cemetery.

2.1.3 Site Set Up and Survey Grids

A total of six survey grids of various sizes (Tables 2 and 3) were established in and around the cemetery (Map 16). Grids were arranged and oriented to encompass as much of the survey area as possible, while avoiding large obstacles that would impede the machine. In some cases sub-grids were established to sample large areas or to avoid trees and bushes. Grid 1, within the cemetery, consisted of three sub-grids: 1) within the marked rows at the west end (Grid 1W; Image 34); 2) one in an unmarked area in the south-central portion of the cemetery (Grid 1C; Image 35); and 3) one in the east end of the cemetery (Grid 1E; Image 36) where the pre-1941 cemetery map places the actual eastern limit of internments. Grid 2 is located east and outside of the cemetery's eastern fence line, while Grid 3 was established in an open area east of Grid 2 past a row of mature trees (Image 6). Three grids were also established in areas south of the cemetery's southern fence line. Grid 4 is located immediately adjacent to the fence (Image 7), while Grid 5 extends south from the southwest limit of the cemetery to the paved access road that leads to the Ontario Provincial Police Headquarters. Grid 5 contains three sub-grids, with Grid 5-1 placed on flat ground adjacent to the cemetery fence line (Image 2); Grids 5-2 and 5-3 were placed on slightly sloping ground beyond the paved road and contain disturbances (shallow drainage ditch, paved walkway, beaten path and groundhog holes) (Images 2, 8, 37). A build-up of soil near the east end of Grid 4 suggests a road or lane was present at one time and simply grown over (Image 26).

Grid 6 consisted of twelve sub-grids; smaller survey sections were established to avoid large, mature trees and sections of bush (Image 38 and 39). This grid is located on the south side of a paved laneway that connects the cemetery to Memorial Avenue. The west half of this area appears disturbed by a former laneway and turnaround. Several groundhog holes were observed in the northwest section and east end of Grid 6. A former, build-up walkway was present in Grid 6-10 (Image 40).

To begin our work we used our Trimble Total Station and two metric hand tapes to establish survey areas and erect grids (Image 41). The grids were tied in to a datum point established beyond the southwest corner of the cemetery. The location of all GPR survey grids, gravestones and landscape features (within and beyond the survey areas)

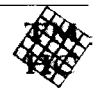
were then recorded using our Topcon GRS-1 RTK Glonass Network Rover survey system (with sub-centimetre accuracy; Image 15). This allowed the GPR survey results to be accurately overlaid on and tied to a high resolution aerial photograph and landscape maps (Map 17).

Table 2: Dimensions of Survey Grids

Grid No.	Sub-Grid ID	Size N-S (m)	Size E-W (m)
1	1W	31	20
	1C	31	10
	1E	31	20
2	n/a	34	4.5
3	n/a	15	15
4	n/a	6	65.5
5	5-1	7	22
	5-2	18	19
	5-3	13.5	16.5
6	6-1	21	15.75
	6-2	16	1.75
	6-3	21	17
	6-4	17	8
	6-5	21	3.5
	6-6	21	4
	6-7	12	2
	6-8	21	5.5
	6-9	12	6
	6-10	21	8.75
	6-11	10	5.75
	6-12	21	2

Table 3: GPS Coordinates (NAD 83)

Point	Zone	UTM	Elevation	Accuracy
WAAS-enabled Handheld Unit - Garmin				
Datum 1 – Near SW Corner of Cemetery	17T	0624810 E 4938012 N	242.1 m asl	+/- 4.9 m
Top Con RTK-1 GRS Network Rover				
Datum 1 – Near SW Corner of Cemetery	17T	0624811 E 4938007 N	243.0 m asl	+/- 1 m
Cemetery Gate – SE Corner	17T	0624883E 4938055 N	n/a	+/- 1 m
Cemetery Gate – SE Corner	17T	0624880 E 4938052 N	n/a	+/- 1 m



The survey was conducted using a GSSI 400 MHz antenna with SIR-3000 controller configured with a distance measuring wheel. Following a distance calibration (Image 42), the survey was undertaken with readings logged along traverses spaced at 25 cm running north to south. Survey string was used to maintain a consistent path of machine travel over each transect (Image 43). The survey was undertaken during sunny, warm and overcast weather; it was suspended on several days due to thunderstorms and re-commenced when weather and ground conditions were suitable.

The raw data from the GPR survey were downloaded and processed through various time windows (indicating different depths) in RADAN 6.6. Instrument returns are initially recorded by their strength and the amount of time elapsed between return transmission and receipt by the antenna. The first step in processing the data is to establish "time zero" which determines the true location of the ground surface. This is important for determining the approximate depths of anomalies identified during the survey. By increasing amplitude equalization values, variance in the dielectric constant (the ratio of permittivity of an object or substance to the permittivity of the surrounding material which expresses the degree of electric flux) can be depicted visually in gray-scale and colour-differentiated mapping, indicating the potential presence of archaeological features (including burials). Older burials and those of infants may demonstrate less variance in the dielectric constant from the raw data than more recent ones and those of adults.

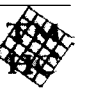
The existing gravestones were also inventoried to record numbers, names, dates, size and relative location, so that these could be taken into consideration during the analysis of the historical and GPR data. The Topcon survey instrument was also used to record the exact position of each stone as well as the start and end point for each well-defined row of stones.

2.2 Record of Finds

No artifacts were collected as only a GPR survey was undertaken. Table 4 lists the documentary records generated during this project.

Table 4: Documentary Records for GPR Survey

- Project field notes and field maps, May 27, June 2, 3, 4, 5, 6 and August 5, 6, 7, 8, 2014
- Photos – May 27 (IMG_0649-1114; P1050901-19), June 2-6 (P1060038-158; P1060159-161; P1060162-171; P1060172-201; P106202-207); August 5-8 (P1030864-P106011-12; P1030867-911)
- Records on file at Timmins Martelle Heritage Consultants Inc., 1600 Attawandaron Road, London, ON N6G 3M6



2.3 Analysis and Conclusions

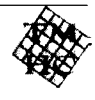
The results of the ground penetrating radar survey, based on the analysis of the raw data, are summarized below, organized by survey grid. These results and data are shown in Images 44 to 60. A composite map of the GPR results was also prepared and overlaid on a high resolution aerial photograph (Map 17). Given the generalized nature of the proponent map no attempt was made to use it to overlay the GPR results. The survey identified several rows of burials within the cemetery. Beyond the fence line, a handful of anomalies were detected that had varying degrees of likelihood for being grave features and could not otherwise be ruled out or associated with other known forms of ground disturbance. All areas surveyed south of the cemetery's southern fence line contained several disturbances associated with former walkways and laneways, ground hog burrows, as well as utilities. Some disturbance was detected within and to the east of the cemetery.

It should be noted that all depths presented in this report are approximations as the dielectric constant of the soil in the cemetery is not known and consequently the precise depth cannot be calculated. Depths in this report are based on a process function in RADAN 6.6 that estimates the velocity of the soil based on the shape of hyperbolic reflectors observed in the data. This allows depth to be estimated to some degree of accuracy.

2.3.1 Grid 1

Grid 1 was located within the fenced cemetery. Three sub-grids were surveyed within this area including Grid 1W, Grid 1C and Grid 1E. Grid 1W was established within the seven marked rows at the west end of the cemetery to get a sense of what the graves looked like in association with a marked row. The data depicts nine linear features (Image 44) of which seven are associated with the existing rows of stones and are likely burials, one is located further east of the marked rows (also likely burials) and another to the west, which is either an unmarked row of stones or a disturbance associated with the former laneway that was thought to pass along the west boundary (Image 45). It is estimated that the observed grave features are between 40 to 160 cm below surface, although the latter depth is extreme, as most burial features are found between 20 cm and 1.2 metres below grade. The burials are very closely spaced (as also noted in the cemetery maps) and it is therefore difficult to nearly impossible to observe or define the outlines of individual shafts. At between 0 and 35 cm below the surface another, well defined feature appeared in the southwest corner of the cemetery and is likely associated with the former laneway. No related disturbance was detected near TMHC stone rows 5 and 6, where the pre-1941 cemetery map shows the gate.

Grid 1C is located in the central portion of the south half of the cemetery. There are no rows of headstones in this area. The majority of grave features observed, most also tightly spaced, were identified in the north half of the grid at roughly 100 to 150 cm



below surface (Image 46). Additional grave features were observed in the centre and northeast corner of the survey grid. In the latter area, some well-defined anomalies likely represent the outlines of individual graves, with clear separation between them. The data suggests there are at least six rows of grave features present within Grid 1C. These rows are visible despite a lack of monuments on the surface and some of their original markers are likely within the concrete encasement in the northeast corner of the cemetery. The GPR did not detect any clear burials in the southwest portion of the grid, although the pre-1941 cemetery map suggests some should be present in this area.

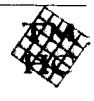
Grid 1E was placed near the east end of the cemetery. As in Grid 1C, there are no rows of headstones in this area, however the GPR detected at least nine rows of grave features starting at roughly 80 cm below surface (Image 47). These burials are also tightly spaced and span nearly the entire length of the grid. At roughly 0 to 30 cm below surface there is evidence of a possible laneway and walkway cutting across the grid north to south at its approximate centre (Image 48). This does not match any mapped location of a walkway. Although cemetery maps roughly place the eastern limit of the old cemetery interments in this area, the limit could not be confirmed because the GPR grid did not extend far enough east due to the presence of obstacles that prohibited machine movement. One row of burials was detected along the east edge of this grid and comes close to the hedge row. It could represent the very last row of burials at this end of the cemetery.

2.3.2 Grid 2

Grid 2 was placed east and outside of the cemetery's eastern fence line. The data clearly depicts a former laneway near the ground surface at the survey grid's north boundary and unknown disturbance near its south boundary (Image 49). This feature is depicted on the 1969 survey plan of the cemetery (Image 32). Two linear features were depicted at approximately 146 cm below the surface (Image 50). These cannot be associated with other forms of disturbance and could potentially be burials. In both rows, individual "shafts," if they are present, cannot be recognized.

2.3.3 Grid 3

Grid 3 was placed in an open area east of Grid 2 past a row of mature trees. The data depicts at least four narrow linear anomalies detected at approximately 120 cm below the surface (Image 51). Again, these cannot be associated with other forms of ground disturbance as this area is relatively undisturbed. Therefore, there was a possibility that they could represent burials that fall outside of the marked cemetery limits. Background noise observed in the northeast portion of the grid made it difficult to confidently confirm the presence or absence of potential burial anomalies. The southern portion of the grid is clear of anomalies.



2.3.4 Grid 4

Grid 4 is located south and outside of the cemetery's southern fence line. The data depicts strong reflections from the ground surface to roughly 60 cm below it associated with possible landscaping activities and the construction of the paved laneway located immediately south of the survey grid (Image 52 and 53). A former driveway was also observed near the existing cemetery gates (near the ground surface) at the east end of Grid 4 with what appears to be a buried culvert. The latter can be observed at 95 cm below surface (Image 54). The driveway likely connects with the laneway detected in Grid 2. All the above disturbance signatures make it difficult to observe clear patterns in the data or determine if there are potential grave shafts present. Nevertheless five rectangular anomalies were identified and these roughly align to the grave rows located in the adjacent cemetery rows within the fence. These were detected at roughly 95 cm below surface (Image 54) and since these align with known cemetery rows inside the fence, these had a higher likelihood of being burials than the anomalies described previously within Grid 2 and Grid 3. Similar linear anomalies were also observed opposite the tree stump along the south cemetery fence line, where the historic gated entrance to the early cemetery is shown on the pre-1941 map.

2.3.5 Grid 5

Grid 5 extends south from the southwest limit of the cemetery to a paved road that leads to the Ontario Provincial Police Headquarters and contains three sub-grids. Grid 5-1 is on flat ground while lands contained within Grids 5-2 and 5-3 slopes south to north. The survey grid contains several visible disturbances which include a shallow drainage ditch, section of paved walkway, a beaten path and groundhog burrows that can be observed starting at the existing grade to roughly 30 cm below surface (Image 55). Two utility lines were observed in the southeast corner of Grid 5-3 at 50 cm below surface (Images 56). Also observed at this depth was a rectangular feature that extends beyond the southwest corner of Grid 5-1. The data depicts another rectangular feature at roughly 85 cm below surface (Image 57). Both these anomalies cannot be confidently associated with other known disturbances and the possibility that these could be burials could not be entirely ruled out. Their distance away from the known interments within the fence lowers the probability that they are burials. It is also known that a blacksmith shop stood nearby in 1969, as shown on the site plan overlay in Image 32. Therefore, the anomalies could be modern or historic features associated with this and other institutional operations.

2.3.6 Grid 6

Grid 6 is located on the south side of the cemetery laneway that leads to Memorial Avenue. It includes twelve small sub-grids, placed strategically to avoid large obstacles (e.g., mature trees and bush) that impeded the GPR survey. No anomalies were identified within Grid 6 that could be designated potential burial features, based on form and depth.

Instead the data depicts several disturbances of various sorts. At roughly 0 to 30 cm below surface a walkway was observed in the east end of Grid 6 along with several groundhog burrows (Image 58). Burrows were also detected in the west half of Grid 6, alongside a large anomaly that is interpreted as disturbance from a former laneway and turnaround. Another laneway was observed at 35 cm below surface and it appears to connect to a driveway detected in Grid 4 (Image 59). Finally at approximately 110 cm below surface the data depicts a buried culvert and associated spillway in the approximate centre of the grid (Image 60).

In sum, the GPR survey identified several known grave features within the east, central and west sections of the Huronia Regional Centre Cemetery at approximately 40 to 160 cm below the surface. Grave features were tightly spaced in rows. In Grid 1W many grave features were found associated with existing markers. Survey grids located east of the cemetery's eastern fence line including Grids 2 and 3 also contain multiple rows of rectangular features that could potentially be grave shafts, although the likelihood is lessened due to their location away from the last row of known interments. Grid 4, which was erected on the south side of the cemetery's southern fence line, displayed a number of anomalies with the highest likelihood of representing grave shafts, as the features generally aligned with existing stone and burial rows inside the fence. In all three grids grave features were observed at 90 to 150 cm below surface. Two anomalies in Grid 5 (50-95 cm below the surface) could also be burials, although their location far away from the marked cemetery and within an area of a former institutional building, reduces the likelihood that they are such. No anomalies in Grid 6 were interpreted as potential burials.

2.4 Recommendations

All work met provincial standards and the GPR survey was carried out using conventions suitable for archaeological applications. The survey detected existing and known burials within the cemetery and a number of anomalies outside of it that had varying degrees of likelihood for being potential grave shafts. The potential for burial features beyond the marked fence line was a good possibility given that some of the existing markers are immediately adjacent to the fence line, many existing graves are unmarked and the location of some early period burials cannot be confirmed.

With respect to the findings of the GPR study, the following recommendations were made:

- Ground penetrating radar is considered an "exploratory" activity. As ground conditions, moisture and the nature of the features it is meant to detect can affect the results of any radar survey, it is not considered a definitive technique for detecting subsurface features. In other words, it is not considered to be 100% accurate for detecting burials. As such, GPR should always be followed up with other forms of investigation, if determining the nature of its detected features is

considered absolutely necessary. "Ground truthing" through the mechanical excavation of overlying soil strata may be the only way to positively confirm the presence or absence of burial features. This can be accomplished through the use of an excavator or gradall with a flat edged bucket and the removal of thin layers of soil until the outline of grave shafts is visually detectable on the interface, seen primarily through differences in soil colour.

• *North Boundary* – the north boundary of the cemetery could not be surveyed due to the presence of a steep slope. While the exact placement of the most northerly interments is not known, there are no mapped burials in close proximity to this fence line, nor along the anticipated new fence location just beyond it. The presence of the slope adjacent to the cemetery fence and the presence of the property limit just beyond that make it unlikely that there are full interments beyond the original marked cemetery limit. In addition, a former laneway once ran along the inside of the fence line marking this boundary. While further confirmation of cemetery boundaries on this edge could be assisted by mechanical topsoil removal, this cannot be undertaken here due to the narrowness of the work area, its inaccessibility by machine, and the potential for slope collapse following extensive soil disturbance. Instead and given this, as a measure of due diligence it was recommended that any ground alterations along the north cemetery boundary, including the installation of new fence posts, be monitored by a licensed archaeologist to ensure there are no incidental impacts to any graves that might be present.

• *West Boundary* - the west boundary of the cemetery could not be surveyed due to the presence of a steep slope. While the exact limit of the most westerly interments cannot be established, there are no mapped burials that immediately abut the fence line or along the anticipated new fence location beyond it. Nonetheless, he GPR survey identified linear anomalies close to it that could relate to unmarked rows of burials or a former laneway. The presence of the slope and modern building adjacent to the cemetery fence makes it unlikely that there are full interments beyond the marked cemetery limit. However, as a measure of due diligence, it was recommended that any ground alterations along the west cemetery boundary, including the installation of new fence posts, be monitored by a licensed archaeologist to ensure there are no incidental impacts to any graves that might be present. Again, mechanical topsoil removal cannot be undertaken along this edge of the cemetery due to a lack of access, the presence of trees and a narrow work area.

• *East Boundary* – east and outside of the marked cemetery limits the GPR survey detected buried features that have some likelihood for being grave shafts. Further investigation of this area should be undertaken to absolutely confirm the nature of the anomalies and establish whether burials are present. This should involve the removal of topsoil from the area using a machine equipped with a straight-edged bucket. Topsoil should be removed down to subsoil in thin layers and the surface of

the interface should be examined for the presence of grave shafts, using typical archaeological techniques, including shovel-shining.

• *South Boundary* – a small number of buried anomalies were detected by the GPR survey immediately beyond the south cemetery fence line and west and south of the existing laneway turnaround. These could relate to grave shafts, especially those immediately adjacent to the fence as they align to known burial rows within the cemetery. It was recommended that mechanical topsoil stripping also be undertaken for the entirely length of this cemetery boundary, to confirm the nature of the anomalies. The same techniques should be used as described for the work proposed for the east boundary and its peripheral areas.

3.0 CEMETERY BOUNDARY INVESTIGATION

As part of the ongoing commemoration efforts, the installation of a new fence was proposed. Given this, it was imperative that the anomalies identified in the ground penetrating radar survey be subject to further investigation to ensure that the new fence would entirely surround all known burials and would not be placed in a location that would impact any graves. It was anticipated that the new fence would be placed as close to the existing one as possible, although outside of the cemetery. Therefore, in the fall of 2014, Timmins Martelle Heritage Consultants Inc. was hired to undertake a cemetery boundary investigation along the east and south edges of the cemetery and the "ground truthing" of the GPR anomalies that were peripheral to these areas.

3.1 Field Methods

The cemetery boundary investigation was undertaken on October 20, 21 and 22, 2014. It was cold on the first two days and warm and sunny on the last. Work was suspended in the afternoon of October 20, 2014 due to rain. There were no conditions that prohibited the recognition and recovery of archaeological resources.

As part of the GPR investigation, the existing features within the cemetery had been mapped using a Topcon RTK-1 Glonass Network Rover, a high precision survey instrument and a datum had been established to the southwest of the cemetery for mapping purposes. The GPR grids were tied to these existing features and datum and re-identified in the field based on these landmarks. A series of elevation points was also taken with the same instrument, in order to document differences in elevation along the south boundary of the cemetery (Image 61). Mechanical topsoil stripping was undertaken for the following areas, which represent all of the areas of concern established by the GPR survey (Map 19):

1) The South Cemetery Boundary – GPR Grid 4 (Image 61)
2) The East Cemetery Boundary – GPR Grid 2 (Image 62)
3) GPR Grid 5 – Westernmost Anomaly Near Datum, South of Cemetery (Image 63)
4) GPR Grid 5 – Anomaly South of Paved Laneway Turnaround, South of Cemetery (Image 64)
5) North End of GPR Grid 3 – East of Cemetery (Image 65)

The topsoil was removed from each investigation area using a backhoe with a straight-edged ditching bucket. Soil was removed in thin layers, so that the surface of each layer could be visually examined for the presence of potential grave shafts. When subsoil and C Horizon surfaces were encountered, these were carefully examined and cleaned by hand (i.e., shovel shining; Image 66) where depth of excavation permitted such and did not restrict entry due to health and safety concerns. In general, excavation continued beyond the edges of any documented GPR anomalies or to the point where the features detected by the radar could be confidently ascertained and ruled out as potential graves.

The extent of topsoil stripping and any features of interest were mapped using a Topcon high precision survey instrument. Soil profiles and any features of interest were also recorded and photo-documented. In general, the soils in the investigation areas consisted of dark brown sandy loam (stoney), over stoney or cinder-rich fills soils, and either a stoney sandy loam B horizon or light grey/yellow/brown C horizon fine sand. The observed B and C horizon soils contained a high quantity of cobbles and large rocks, some of which were at least a metre in maximum length. A more detailed description of soil horizons in each of the individual investigation areas is presented in Section 3.2 below.

Once the investigation was complete, the investigation areas were backfilled by machine as best as possible and the anticipated new fence line was staked in by the project management team.

3.2 Record of Finds

3.2.1 The South Cemetery Boundary – GPR Grid 4 (Map 20)

A trench was excavated along the existing southern fence line of the cemetery (Image 67). Excavation extended from a point roughly 30 cm from the existing fence, south roughly to the edge of the paved laneway. As it was requested that no pavement or infrastructure be damaged, excavation did not extend further south and into the road. In the east end, the excavation trench measured between 4 and 5 metres in width (Image 66), while further west it was narrowed to roughly 2 metres wide to avoid the roadway (Image 67). At the extreme west end, the trench was extended to the south to connect to the area opened up to investigate an anomaly in GPR Grid 5, near the mapping datum. This trench covered the entire length of the southern boundary (roughly 93 metres).

The GPR survey identified anomalies mid-way along the boundary, near the fence and a former entrance, the location of the latter being roughly marked by a stump within the cemetery. It also identified a series of anomalies in the east end, near the existing entrance and gate for the cemetery. The excavated trench extended beyond the limits of these anomalies. The laneway and an associated buried culvert were also picked up by the radar survey at the entrance.

Excavations in the east end of the trench confirmed the presence of the buried culvert (Images 66 and 68), which was lined on both sides by a deposit of black cinder and fire reddened, metallic soil. Near the central portion of the trench, opposite the tree stump marking the general area of the former central entrance, a former fence post was encountered within the fill (Image 69). This consisted of a cut metal post embedded in a concrete foundation. This post may have been associated with an early fence that surrounded the cemetery or with its former entranceway gate. Further to the west, a series of post moulds were encountered, spaced roughly one metre apart (Images 70 to 72). These were round, measured roughly 35 cm in diameter and contained wood post remnants (~ 12 cm in diameter). These were profiled and found to be basin shaped and roughly 40 cm deep. The trench fill in this general area also contained a quantity of metal wire fencing (Image 73). Therefore, these posts may represent a former cemetery fence, a former farm fence or a former entranceway to the cemetery. In the extreme west end of the trench the fill included random cedar planks and additional pieces of wood. Some of these were lying flat and were further investigated, although they were determined to not be *in situ* (Image 74). A number of pieces of saw cut mammal bone were also found with the cedar planking. The bone was inspected by TMHC's expert in the identification of human remains and established to be animal. TMHC's animal remains expert also examined the bone fragments and determined that they were from a cow. Saw cuts are evidence of butchering. Saw cut bones are commonly found in 19th and 20th century institutional and domestic refuse deposits. In this case, these were found in an area that also generated barbed wire fencing from the former farm, as well as fence post remains and deposits of cinder from the facility furnace. None of this material identified was associated with an intact archaeological deposit.

The soils within the south trench consisted of the following layers (Images 75 and 76):

L1 – brown sandy loam topsoil (~ 10cm thick) (0-14 cm below current grade)
L2 – grey-brown loam fill (~ 30 cm thick) (14-44 cm)
L3 – cinder and debris layer (57-70 cm thick) (44-114 cm), with sporadic lenses of fire reddened and metallic industrial soil within this (~ 10 cm thick)
L4 – light brown sandy loam subsoil with large cobbles and stones (114 cm+)

The excavated trench varied in depth from roughly one metre to 1.18 metres below grade. The cinder layer was found throughout the length of the trench, although it tapered off slightly in the west end and was significantly thicker in the east end, particularly around

the documented GPR anomalies and existing entrance. The subsoil had a very clean surface throughout the trench and no grave shafts or other features were identified. The extensive cinder deposit, which contained lenses of metallic and fire reddened soil, brick and other demolition and industrial fill debris, is likely what was detected by the radar survey. The cinder-rich material is a by-product of the furnaces used to heat the facility. It was not uncommon at 19th and 20th century institutions for this waste material to be used for building pathways and for general infilling and landscaping. That the cinder layer was intentionally placed as fill is evident in the difference in elevation between the main portion of the cemetery and the fence line and areas further south. The southern fenced boundary is associated with a narrow ridge of soil which sites higher than the cemetery (Images 77 and 78). This may have been placed at the time the existing fence was installed or during grading undertaken to facilitate the construction of the paved laneway to the south. Elevation points taken with the Topcon survey unit demonstrated a difference in the range of 40 to 70 cm between the flat, central portion of the cemetery and the fence line. Large stones (some between 50 and 75 cm in maximum length) were encountered throughout the fill soils and at subsoil. These were heavily concentrated in the east end of the trench (Image 79), and may have also contributed to a GPR anomaly.

3.2.2 The East Cemetery Boundary – GPR Grid 2 (Map 21)

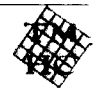
A trench was excavated along the existing eastern fence line of the cemetery (Image 80). Excavation extended from a point roughly 30 cm from the existing fence east for a width of between 4 and 5 metres. At the extreme south end, the trench was extended to connect with that excavated along the south boundary. This trench covered the major portion of the east boundary (roughly 40 metres).

The GPR survey identified potential anomalies along the majority of the boundary, as well as a buried feature at the north end that was suggested to be a former laneway.

Excavation at the north end of the trench revealed the presence of a spatially discrete cinder deposit immediately beneath the sod layer (Image 81). This deposit of cinder was roughly 3 metres in maximum width and extended some 30 cm below the sod (Image 82). This material is likely what was detected by the radar survey in this area. Apart from the cinder deposit, no other features of note were observed in the east boundary trench.

The soil strata along the majority of the east boundary were observed to be the following:

L1 – dark brown sandy loam topsoil with roots (~ 40 cm thick) (0-40 cm)
L2 – brown sandy loam subsoil with cobbles and rock (~ 20 cm thick) (40-60 cm)
L3 – light grey/brown/yellow loose, clean sand (C Horizon) with cobbles and rock (60 cm+).



In the north end, as noted previously, the topsoil was shallower (15 cm) above the 30 cm thick cinder deposit. In the south end, cinder and debris-rich soils were encountered similar to those observed along the south cemetery boundary (Image 83). Trench depth measured between roughly 70 cm and 110 cm. Throughout the B and C horizon soils in the east trench, concentrations of large rocks were noted. Some of the rocks were between 75 cm and one metre in maximum length and were difficult to remove by machine (Image 84).

No potential grave shafts were observed on either the subsoil or C horizon surface in this trench.

3.2.3 GPR Grid 5 – Westernmost Anomaly Near Datum, South of Cemetery (Map 22)

A roughly six metre wide (north-south) by 9 metre long (east-west) area was stripped of topsoil, south of the cemetery and southern boundary trench and adjacent to the mapping datum (Image 85). The GPR survey had identified a roughly rectangular anomaly along the western boundary of the survey grid, east of the datum point.

Topsoil stripping revealed the presence of a thin layer of dark brown and stoney sandy loam topsoil over rocky fill and cinder layers (Image 86), which rested above a light brown and stoney sandy loam subsoil (Image 87). Within the fill and cinder soils, standard building debris was noted (i.e., bricks, rock, glass, plastic) as well as fragments of electrical conduit (Image 88). Roughly 10 cm below the sod surface, fragments of asphalt were also noted. At a depth of 50 cm below the surface a long slab of intact asphalt was identified (Image 89). This rested on top of a thin layer (~ 5 cm) of manufactured gravel (Image 91) and an extensive and deep deposit of cinder fill which contained small fragments of brick and debris. The asphalt is likely a former walkway and was found to lead to a concentration of mixed concrete and rock that likely forms part of a foundation of a 20th century institutional outbuilding.

The generalized soil sequence in this investigation area was as follows:

L1 – dark brown sandy loam topsoil and sod (~ 10 cm thick) (0-10 cm)
L2 – grey-brown, rocky fill with higher clay content (~ 40 cm thick) (10-50 cm)
L3 – asphalt layer (~ 5 cm thick) (50-55 cm)
L4 – manufactured gravel base for asphalt (~ 5 cm thick) (55-60 cm)
L5 – cinder/clinker fill (~ 40-50 cm thick) (100-110 cm)
L6 – stoney light brown sandy loam subsoil

No potential grave shafts were noted in this investigation area, which extended beyond the limits of the GPR grid and mapped anomaly. It was undoubtedly the asphalt slab that was detected by the radar survey, although the cinder deposit could have also contributed to the GPR signature.

3.2.4 GPR Grid 5 – Anomaly South of Paved Laneway Turnaround, South of Cemetery (Map 23)

An area measuring 6 metres (north-south) by 5 metres (east-west) was excavated above a GPR anomaly identified south of the paved laneway turnaround. There is a line of trees immediately to the east of this area and the GPR survey also detected buried utilities in this general area.

The topsoil was removed in thin layers. Beneath the sod was dark brown sandy loam topsoil (~30 cm) followed by a layer of stoney grey-brown fill with a higher clay content (~ 25 cm) (Image 92). The same fill soils were identified elsewhere. At roughly 55 cm below the surface, a white plastic conduit (roughly 8 cm in diameter) was identified running in a northeast-southwest direction through the extreme southeast corner of the investigation area (Image 93). This service line was not identified during the pre-construction utility locates that were done for the work area and is likely an abandoned line that once serviced buildings in this area.

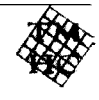
Excavation ceased around the conduit, in order to preserve it, but continued in the remaining portion of the investigation area. Below the grey-brown fill layer was an extensive deposit of cinder and demolition debris (rocks, brick, plastic, wire, etc.). This was square to rectangular on the surface (Image 93) and basin shaped in profile (Image 94). The deposit extended quite deep, down to a C horizon consisting of light grey-brown fine sand observed at 1.4 metres below the surface. Both the C horizon and cinder deposit contained an extensive quantity of cobbles and very large rocks, some of which were heavily concentrated in certain areas. No grave shafts were noted and the GPR anomaly likely relates to the cinder and debris deposit or the rock concentrations that were also observed. The standard soil profile in this area consisted of the following:

L1 – dark brown stoney sandy loam topsoil (~ 30 cm thick) (0-30 cm)
L2 – grey-brown clay loam stoney fill (~ 25 cm thick) (30-55 cm)
L3 – cinder-rich deposit of demolition fill and large rocks (~ 85 cm thick) (55-140 cm)
L4 – light grey-brown fine sand (C Horizon) with large cobbles (140-165cm at extent of excavation)

3.2.5 North End of GPR Grid 3 – East of Cemetery (Map 21)

This investigation area occurs in a treed area that does not appear to have witnessed former land alteration. GPR Grid 3 was placed east of a row of tall, mature trees and a series of potential anomalies were identified in the north end of that grid.

The soil within the investigation area was removed in thin layers, revealing a relatively pristine soil profile consisting of a thin layer of rooty dark brown sandy loam topsoil (slightly stoney), over an intermediate B horizon of lighter brown stoney sandy loam over a C horizon of fine, light grey-brown sand (Image 95). The B and C horizons



contained an extensive quantity of large rocks, similar to that observed for the east boundary trench. At a depth of over one metre, very large rocks (Image 96) occurred in a significant concentration and these are what were likely detected in the radar survey. Some of the rocks were as long as one metre. The surfaces of both the B and C horizons were examined for potential grave shafts but none were identified. The standard soil profile for this investigation area was as follows:

L1 – fluffy dark brown sandy loam with roots and some stones (~ 30 cm thick) (0-30 cm)
L2 – stoney light brown sandy loam (B Horizon) (80 cm thick) (30-110 cm)
L3 – stoney light grey-brown fine sand (excavated 30 cm) (110-140 cm)

3.2.6 Documentary Records

Table 5 lists the documentary records generated during this portion of the project.

Table 5: Documentary Records for Mechanical Topsoil Stripping

- Project field notes, field maps and survey notes, October 20, 21 and 22, 2014
- Photos – October 20, 2014 (P106022-263; P1040020-24; IMG_5613-20), October 21, 2014 (P1060264-75; P1040025-53), October 22, 2014 (P1060276-327; P1040054-75)
- Records on file at Timmins Martelle Heritage Consultants Inc., 1600 Attawandaron Road, London, ON N6G 3M6

3.3 Analysis and Conclusions

Topsoil was removed from above each of the GPR anomalies that had potential to represent grave shafts, as well as along the entire southern and eastern boundaries of the cemetery. The GPR signatures that produced anomalies with potential to be grave shafts were determined to be generated by natural occurrences (i.e., concentrations of very large rocks), buried built features (e.g., walkway and concrete foundation), or deposits of cinder fill and fire reddened soil. No grave shafts were noted in any of the investigation areas. Given this, it has been established that no interments are present south or east of the marked cemetery boundaries.

The northern and western boundaries of the cemetery could not be investigated by topsoil stripping due to the presence of trees and, in the case of the north boundary, a steep slope. The western boundary, at the south end, is associated with the same fill mound that was identified along the south boundary. If this fill mound is also associated with cinder-rich soil it may also explain some of the GPR signature observed in the southwest corner of the cemetery (inside the fence).

3.4 Recommendations

The investigation areas were thoroughly examined through mechanical topsoil stripping and were found to be free of burials. Therefore, these areas are of no further concern and there are no issues with the placement of fence in any of these locales.

As topsoil stripping could not be undertaken for the northern and western boundaries, it was recommended that any ground disturbance in or adjacent to these areas be monitored by a licensed consultant archaeologist. As a matter of due diligence, it was recommended that a licensed consultant archaeologist be on site for the drilling of the post holes for the new fence to ensure their proper placement and that no incidental impacts occur to burials in close proximity to the cemetery periphery.

4.0 MONITORING OF FENCE POST INSTALLATION

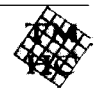
4.1 Field Methods

The monitoring of the drilling of fence post holes was undertaken on November 4, 5, 6 and 7, 2014 (Map 24). The weather was cool and overcast during the work, with a light snow occurring over one evening. The snow quickly melted and did not impede the drilling or monitoring work as the ground was not at all frozen.

The new fence is to be of metal construction, with posts fastened to cement foundations that are to be placed deep into the ground. The location of the fence is to be as close to the existing fence as possible, with the new posts placed just outside of the existing ones.

The post holes were drilled using a skid steer equipped with an auger (Image 97). All equipment travel took place on the perimeter of the cemetery (outside former fence line) (Image 98). Once drilling was completed, the holes were inspected by Janet Gardner, TMHC's licensed archaeologist and human remains specialist. Following this, geotubes were placed within the holes to allow the pouring of a concrete foundation for the posts (Image 99).

The soil within the excavated holes was generally of the same nature as that observed in the excavated trenches. Dark brown sandy loam topsoil was found above a stoney B horizon (Image 100), or in some cases, a clinker-rich fill layer or stoney fill layer (Image 101). The eastern portion of the north boundary was found to contain an extensively layer of fill (1-1.5 m in depth) which was likely used to help reinforce the slope in this area and may have been supplemented by soils brought in for the former laneway. Cinder-fill soils were also observed in the southern end of the west boundary, consistent with the previous observations during topsoil removal south of the cemetery. More natural soil horizons were noted in the north end of the west boundary.



The process of post hole augering was hindered by the presence of large rocks below the surface and the general stoney nature of the substrate (Image 102). In a few places, the auger could not penetrate through the rock and a mini-excavator was used to complete the process.

Image 103 shows the location of auger holes along the west boundary.

4.2 Record of Finds

No graves or human remains were exposed or identified during the post hole monitoring. Table 6 provides an inventory of documentary records generated during the monitoring work.

Table 6: Documentary Records for Post Hole Monitoring

- Project field notes, November 4, 5, 6, and 7, 2014
- Photos – IMG_5704-5739
- Records on file at Timmins Martelle Heritage Consultants Inc., 1600 Attawandaron Road, London, ON N6G 3M6

4.3 Analysis and Conclusions

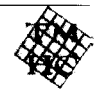
As no grave shafts or human remains finds were made during the post hole augering process, the fence location is considered free of concern.

4.4 Recommendations

As no grave shafts or human remains finds were made throughout the cemetery boundary investigation and augering process, the fence installation area is considered free of archaeological concern and no further work is recommended. The cemetery interments appear to be confined to the area marked by the previous wood fence and its new replacement.

5.0 SUMMARY

A ground penetrating radar survey was undertaken within and just outside of the cemetery at the Huronia Regional Centre in an effort to evaluate potential for unmarked graves beyond the previously defined limits. This revealed the presence of tightly packed rows of interments within the cemetery proper and several anomalies on the periphery to the south and east, with varying degrees of probability for representing unmarked burials. This was followed up by mechanical topsoil stripping of several anomalies south and east of the cemetery, as well as along the entire southern and eastern boundaries. No grave shafts were identified during this work and the radar anomalies were found to be derived



from natural causes (i.e., deposits of large rocks), buried built features (an asphalt walkway and concrete foundation), and extensive deposits of cinder-rich and fire-reddened soils used for infilling and landscaping. The investigation areas are considered free of archaeological concern and no further work is necessary. Due to the fact that the western and northern boundaries could not be studied because of the presence of a steep slope and tree cover, monitoring of hole drilling for the new fence posts was undertaken. This did not identify any graves or human remains and the new fence location is considered free of archaeological concern. No further archaeological work is recommended.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Ministry of Tourism, Culture and Sport 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, 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.

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.*

Should previously undocumented (i.e., unknown or deeply buried) 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.* Further, 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.

The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify the police or coroner and the

Registrar of Cemeteries at the Ministry of Small Business and Consumer Services. The Registrar of Cemeteries, Cemeteries Regulation Unit can be reached at (416)326-8404 or (416)326-8393.

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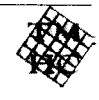

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8.0 IMAGES

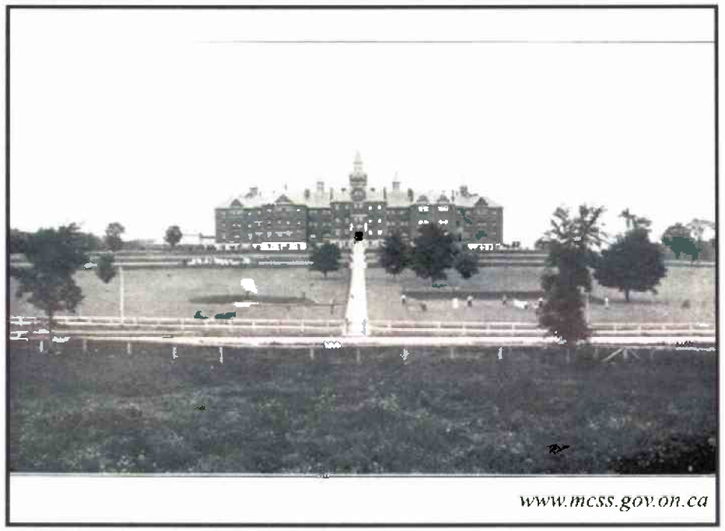


Image 1: 1911 Photo of the Main Building in the Original Hospital Complex

Image 2: Paved Road and Turnaround Providing Access to Cemetery from Memorial Avenue (looking east)

Image 3: Steep Slope at North End of Cemetery (right) with Chain Link Fence (left) Marking Institutional Property Boundary (looking northeast)

Image 4: Building and Raised Concrete Parking Lot West of Cemetery (looking northwest)

Image 5: Shed to Northwest of Cemetery (looking west)

Image 6: Open Treed Area East of Cemetery (looking northeast)

Image 7: Roadside Area Along South Boundary of the Cemetery (looking west)

Image 8: Area of Surface Disturbance South of Cemetery Road (looking northeast)

Image 9: OPP Headquarters Access Road South of Cemetery Road (looking east)

Image 10: North Boundary of Cemetery (looking east)
* note - a service laneway once existed to the right of the fence

Image 11: Treed and Sloped West Boundary of Cemetery (looking north)

Image 12: South Fenced Boundary with Gate (foreground) in East End and Stump Near Centre (looking west)

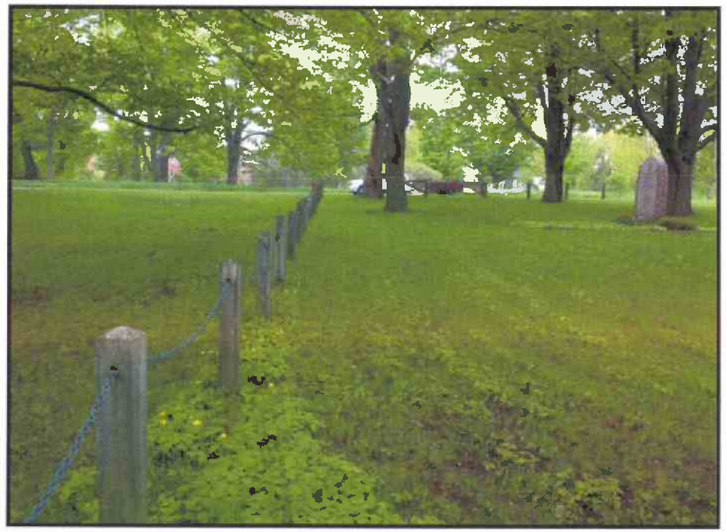


Image 13: East Fence Line of Cemetery (looking southeast)

Image 14: Older Southern Portion of the Cemetery (looking east)

Image 15: North-South Oriented Rows of Stones in Southwest Portion of Cemetery (looking north)

Image 16: Example of a Flat Marker with Stamped Registration Number (looking down and to the west)

Image 17: Overview of Southeast Portion of Cemetery Showing Isolated Standing Gravestones (looking west)

Image 18: Row of Trees Separating Southern (left; older) and Northern (right; younger) Cemetery Sections (looking west)

Image 19: North-South Oriented Rows of Flat Stones in North Portion of Cemetery (looking northeast)

Image 20: Sample Post-1958 Flat Stone with Name and Years of Birth and Death (looking down and west)

Image 21: Concrete Slab Encasing Old, Displaced Grave Markers in Northeast Portion of Cemetery (looking west)

Image 22: Displaced Grave Markers Encased in Concrete Slab (looking east)

Image 23: Buried Utilities in Northwest Corner of Cemetery (looking northwest)

Image 24: West Face of Commemorative Stone in Circular Garden within East End of Cemetery (looking east)

Image 25: Commemorative Stone – East Face (looking west)

Image 26: Hedge Row, Commemorative Stone Area and Former Lane (looking north)

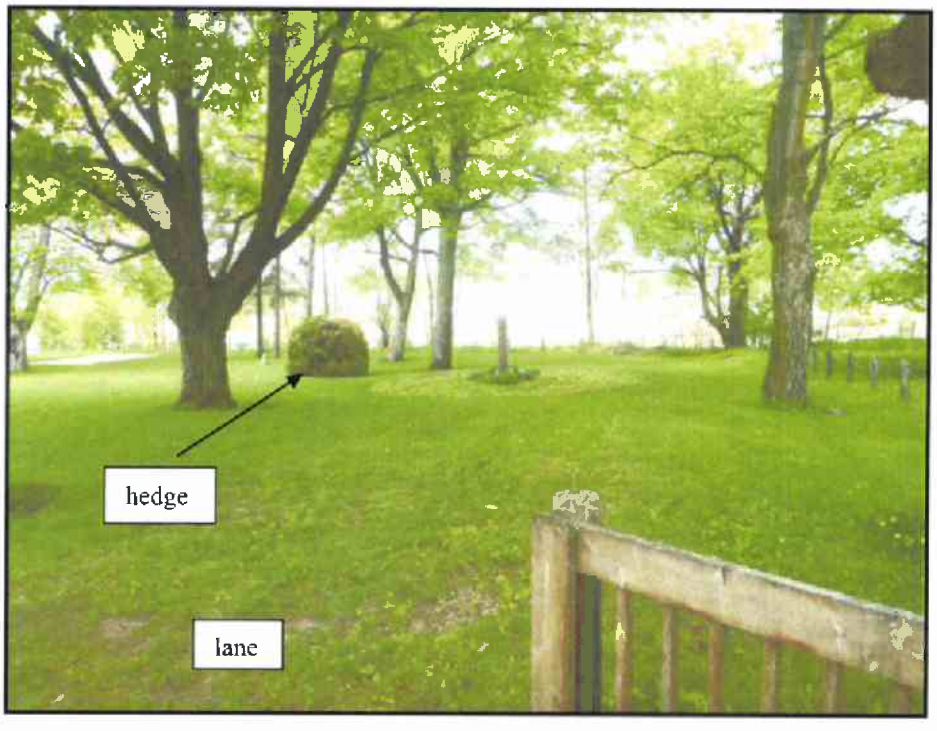


Image 27: 1957 Photograph of Institution Farm on West Side of Memorial Avenue
(Orillia Public Library)

Image 28: 1965 Aerial Overview of the Facility *(Orillia Public Library)*

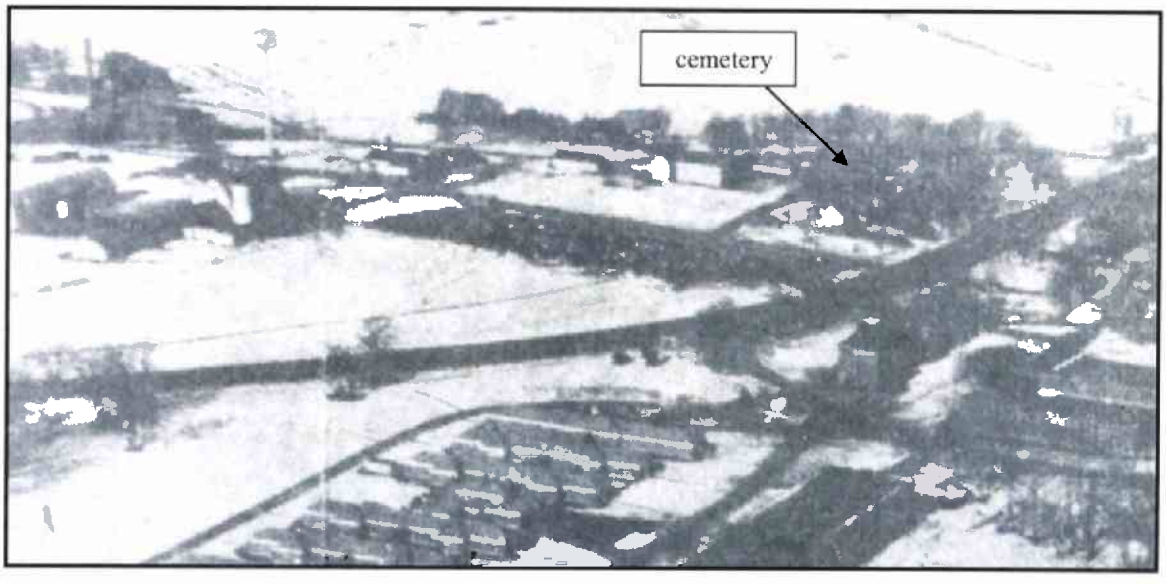


Image 29: 1967 Aerial Overview of the Facility *(Orillia Public Library)*

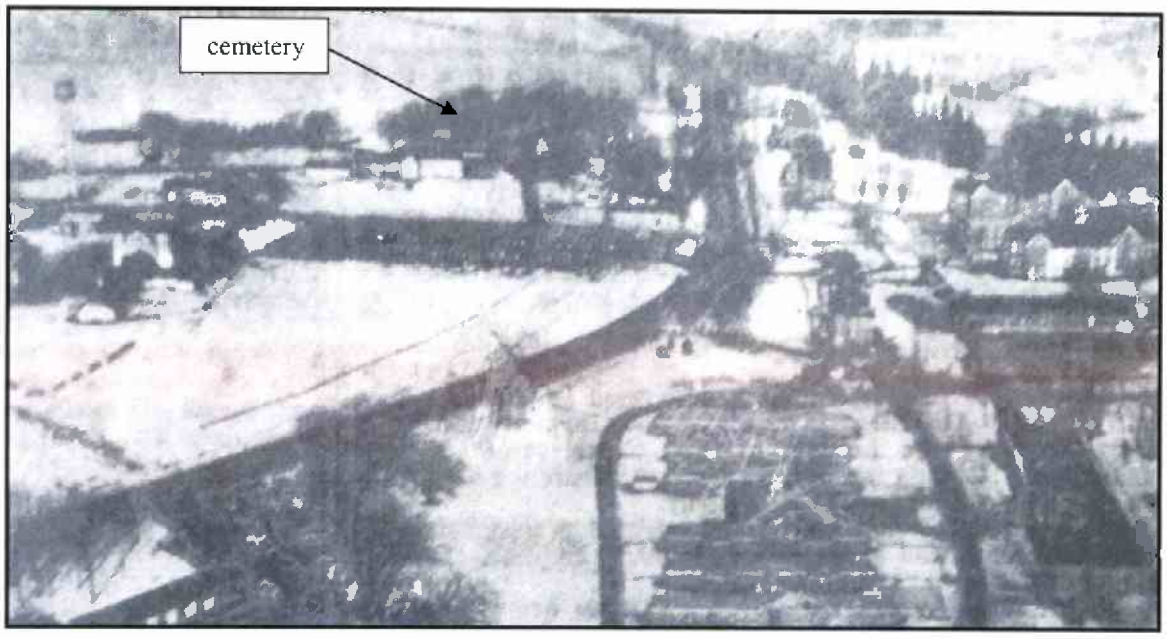


Image 30: 1973 Aerial Overview of the Facility *(Orillia Public Library)*

Image 31: 1976 Aerial Overview of the Facility *(Orillia Public Library)*

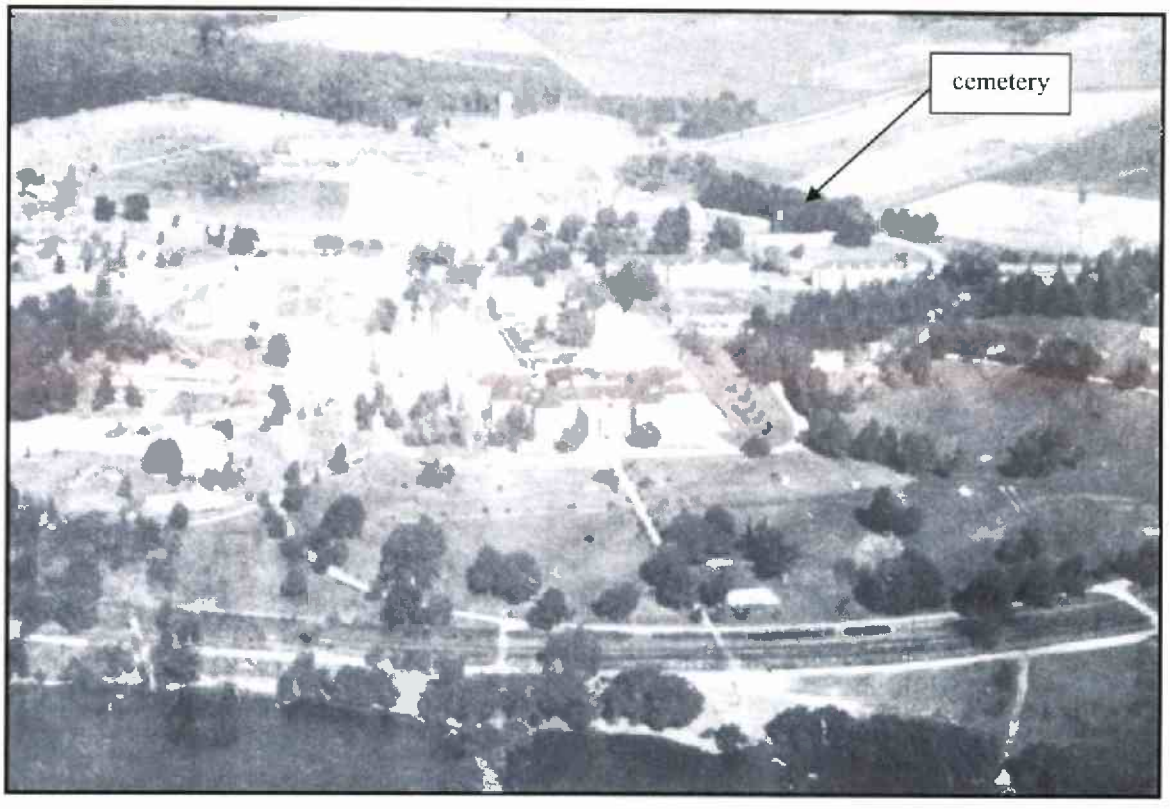


Image 32: Detail of 1969 Site Plan Showing Cemetery (from THAL 2008)

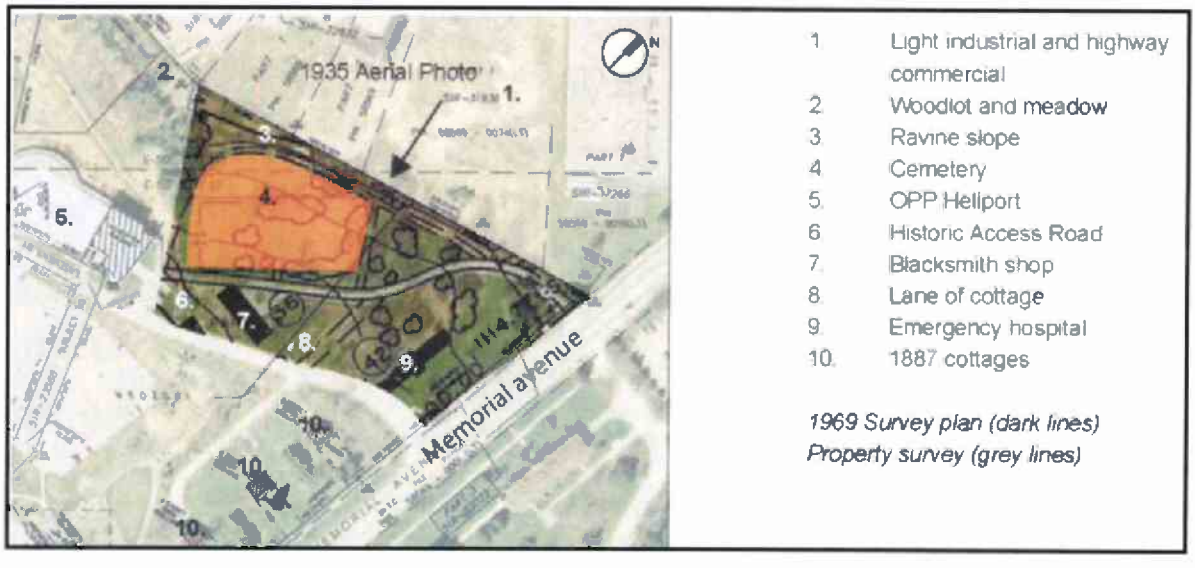
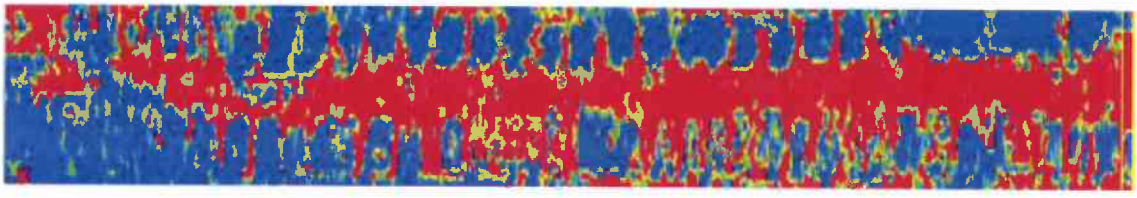


Image 33: Sample Images Showing GPR Data From Cemeteries

a) **well-marked active cemetery** (identity withheld for privacy) (TMHC collected data)

- two rows are shown, one at top of image and one at bottom; grave shafts appear as distinct rectangular to ovoid features in blue



a) **poorly-marked cemetery area with less regular grave placement** (identity withheld for privacy) (TMHC collected data)

- multiple rows are shown, one at top of image and one at bottom; grave shafts appear as distinct rectangular to ovoid features in white and light grey

Image 34: View of Grid 1W (looking north)

Image 35: View of Grid 1C (in foreground; looking southwest)

Image 36: View of Grid 1E (looking northwest)

Image 37: View of Shallow Drainage Ditch with Grid 5-2 in Foreground and Grid 5-3 in Background (looking northeast)

Image 38: View from West End of Grid 6 (looking northeast)

Image 39: View from Centre of Grid 6 (looking east)

Image 40: View of Former Walkway Near East End of Grid 6 (looking south)

Image 41: Grid Setup Using Trimble Total Station (looking west)

Image 42: Distance Calibration Grid for GPR Unit (looking west)

Image 43: GPR Transect in Progress (looking south)

Image 44: Grid 1W GPR Results
(transparency showing data from 25 to 180 cm below surface)

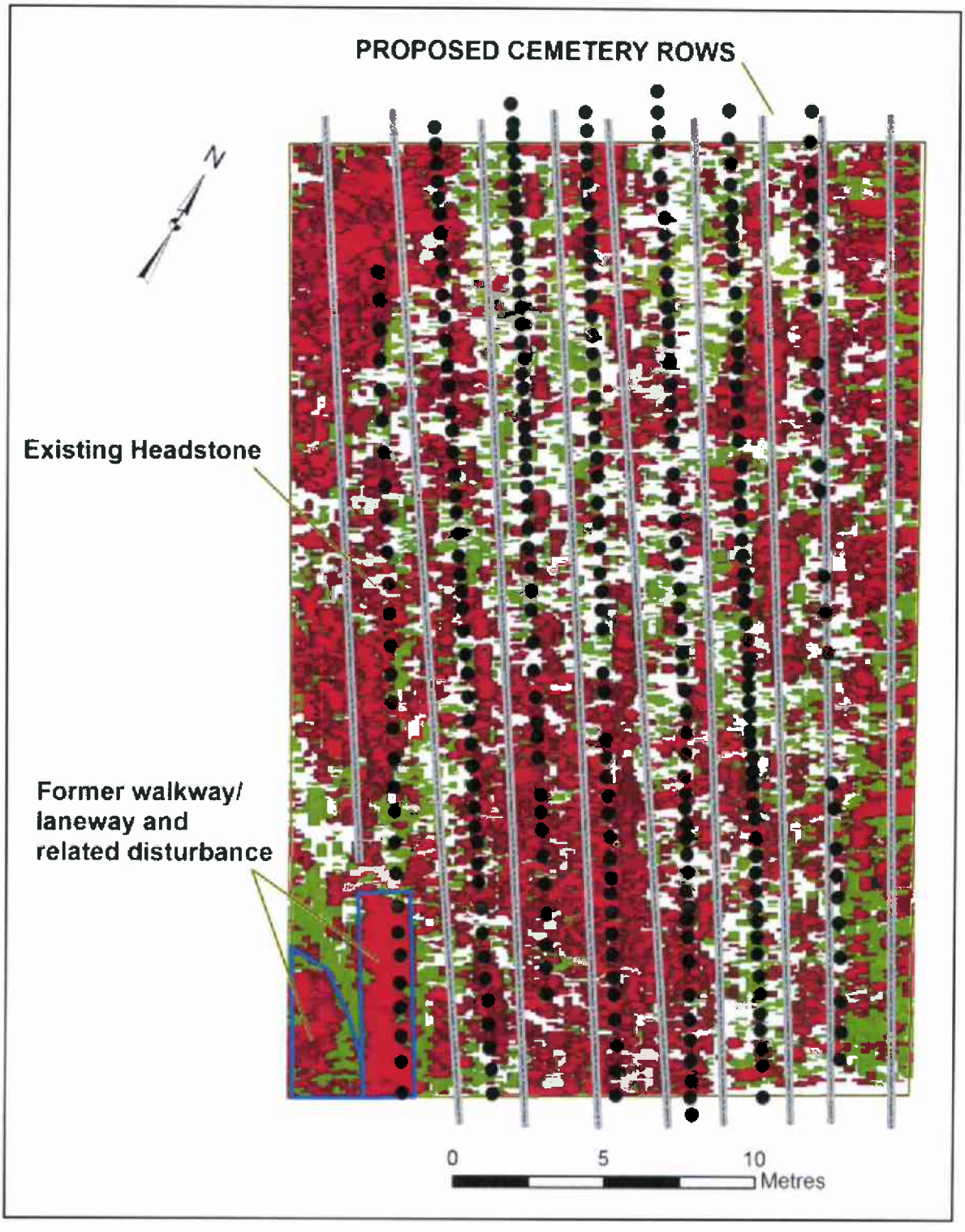


Image 45: Grid 1W GPR Results (17 nS; roughly 86 cm below surface)

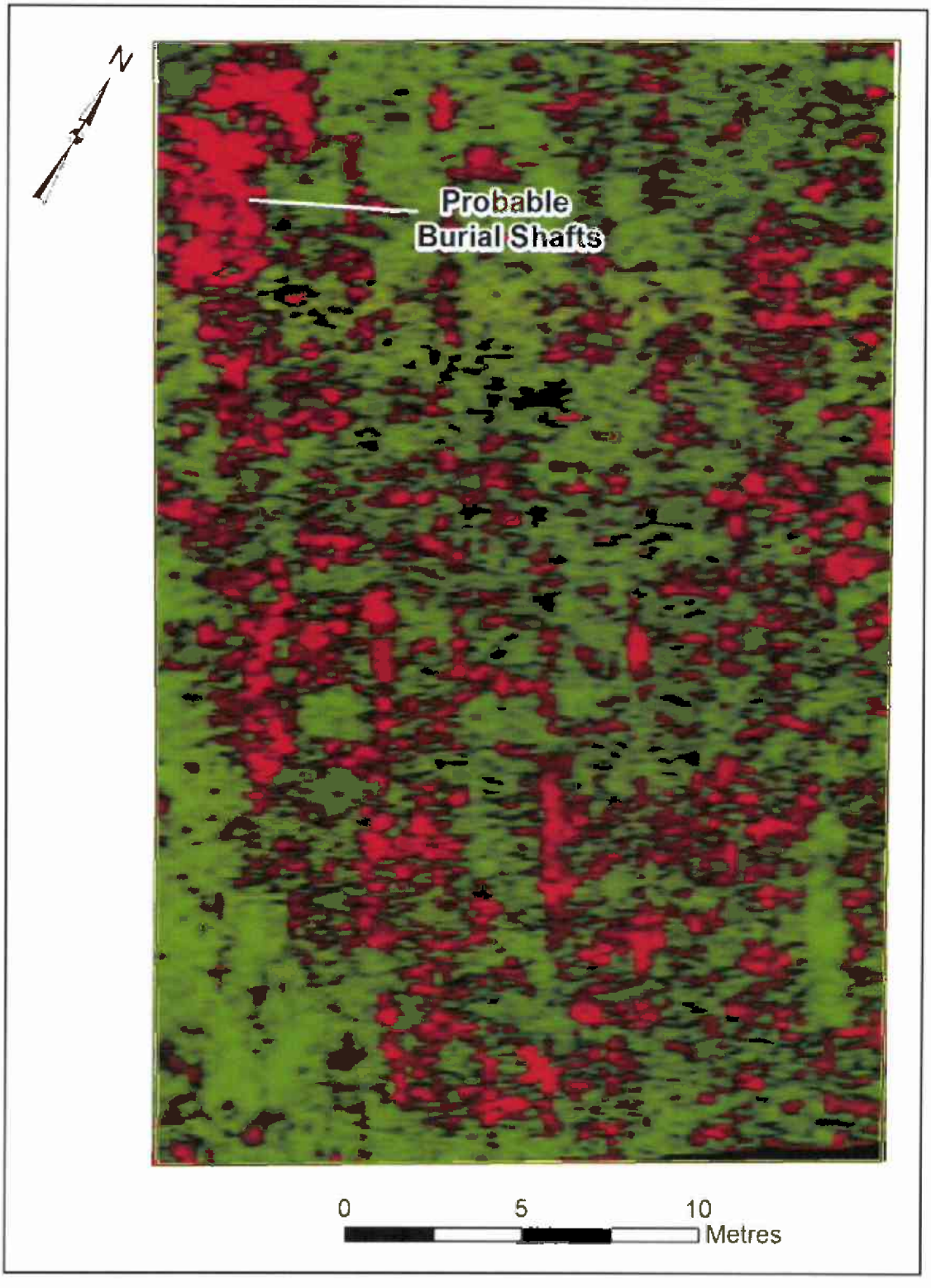


Image 46: Grid 1C GPR Results
(transparency showing data from 70 to 175 cm below surface)

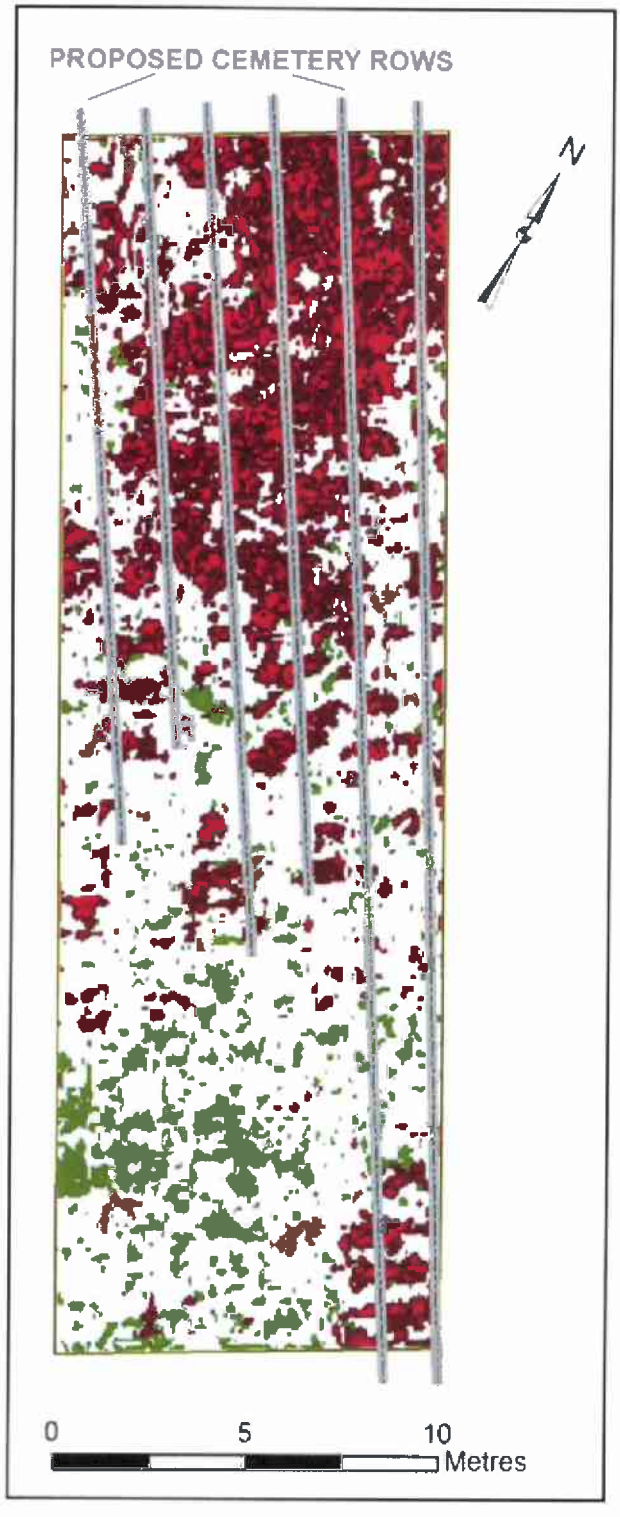


Image 47: Grid 1E GPR Results
(transparency showing data from 85 to 185 cm below surface)

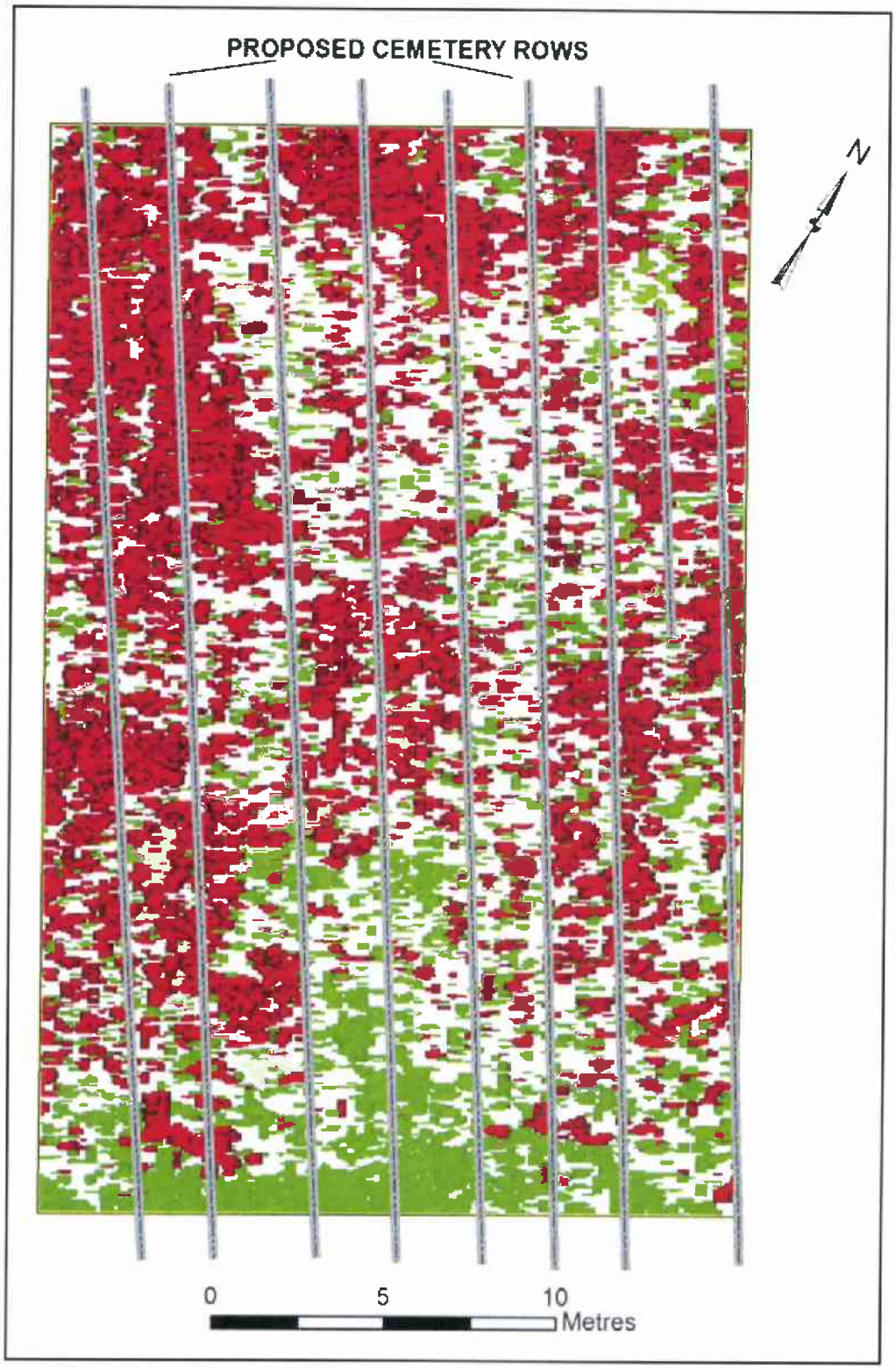


Image 48: Grid 1E GPR Results (6 nS; roughly 30 cm below surface)

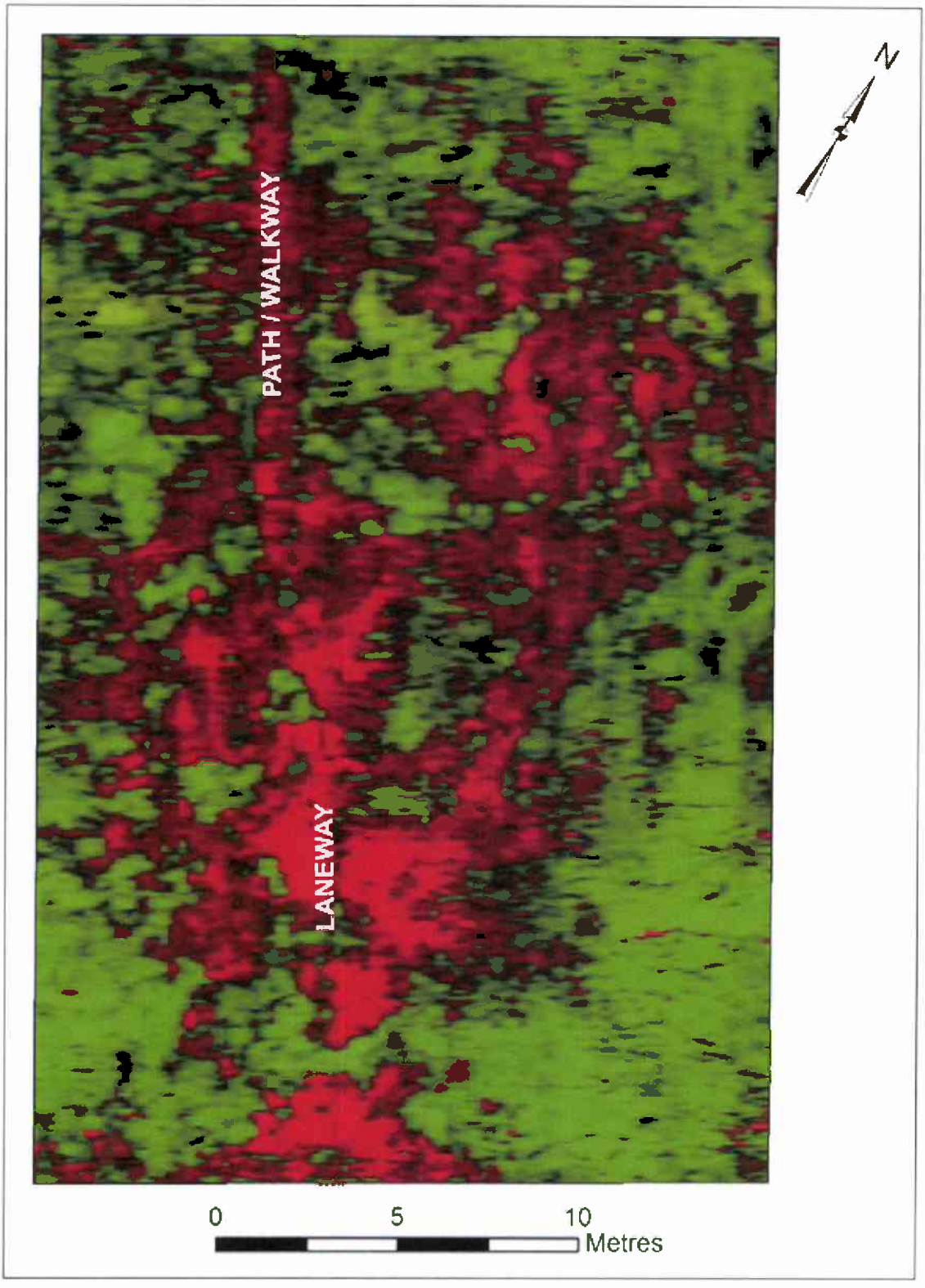


Image 49: Grid 2 GPR Results (near the surface)

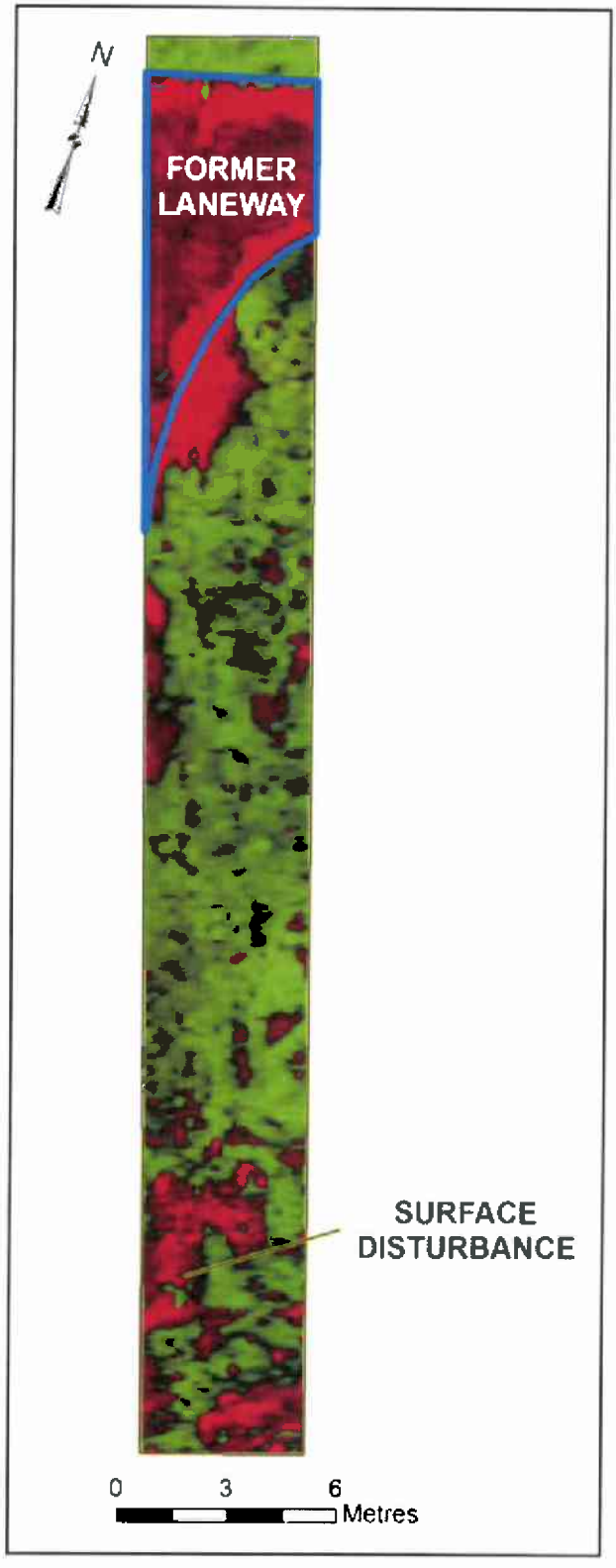


Image 50: Grid 2 GPR Results (31 nS; roughly 146 cm below surface)

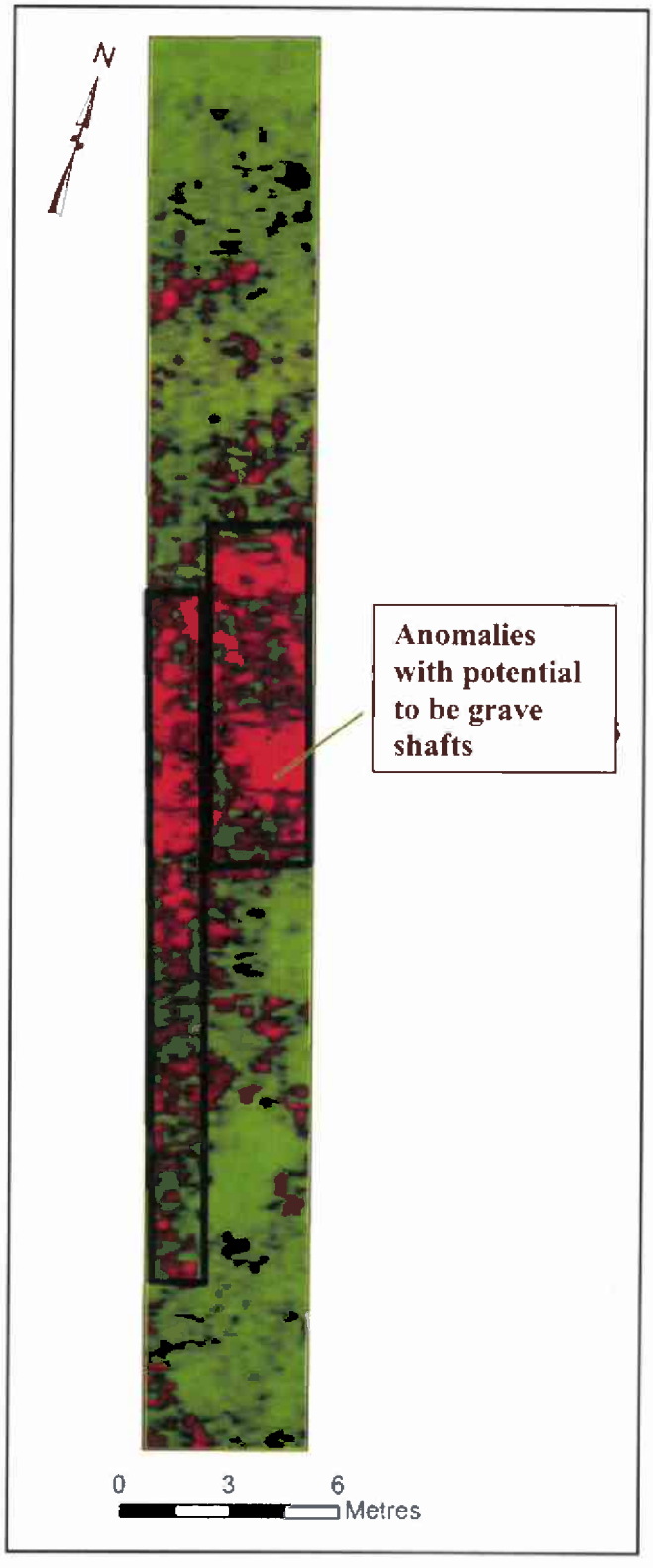


Image 51: Grid 3 GPR Results (26 nS; roughly 120 cm below surface)

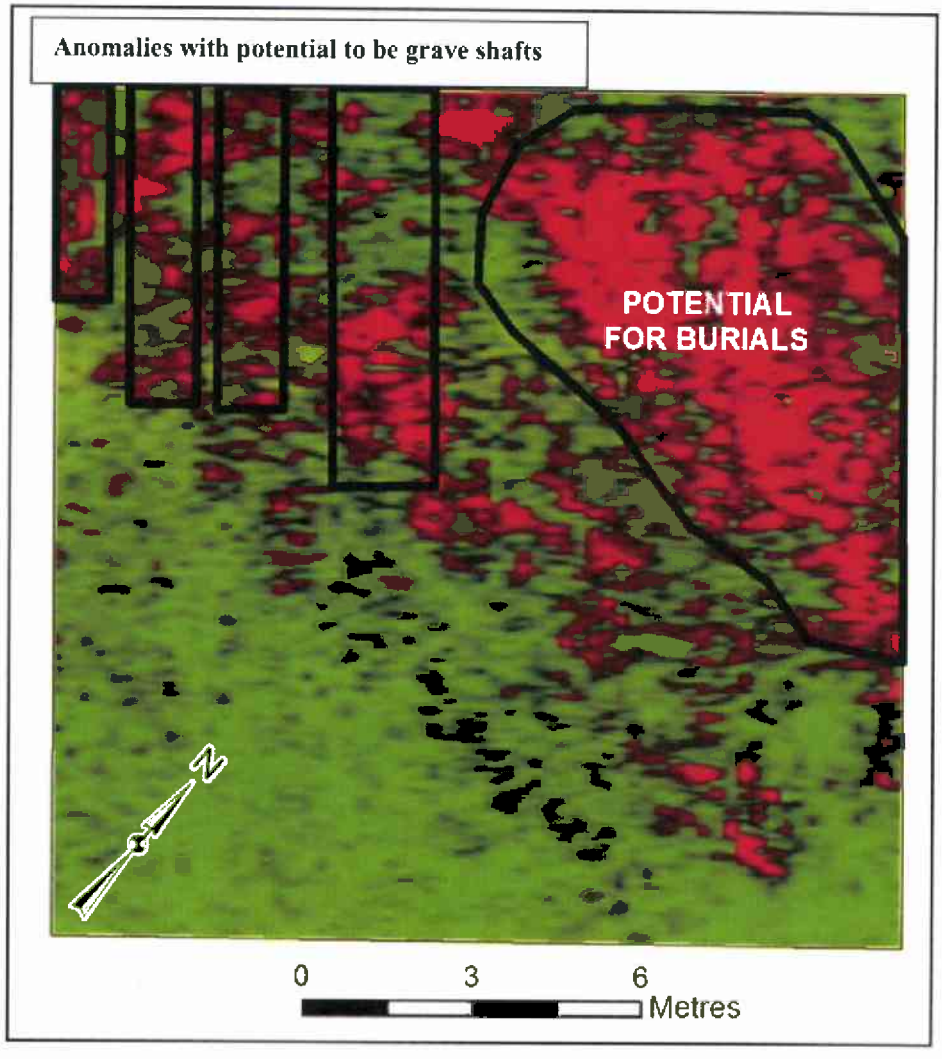


Image 52: Grid 4 GPR Results (near the surface)

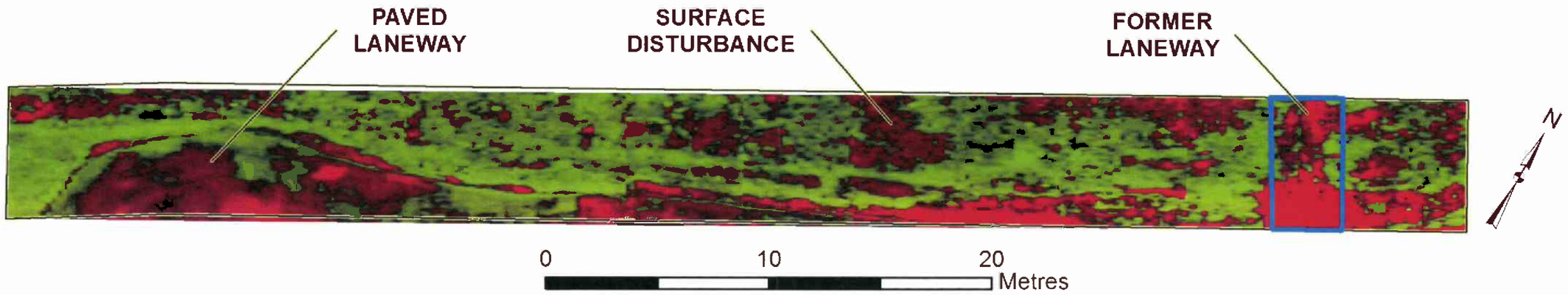


Image 53: Grid 4 GPR Results (8 nS; roughly 36 cm below surface)

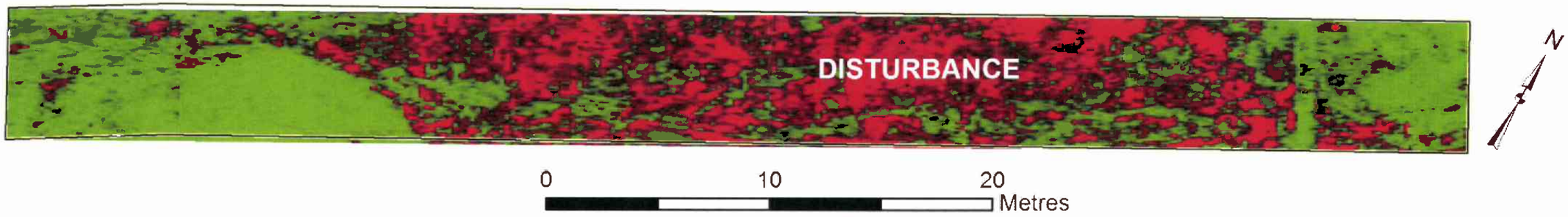


Image 54: Grid 4 GPR Results (22 nS; roughly 95 cm below surface)

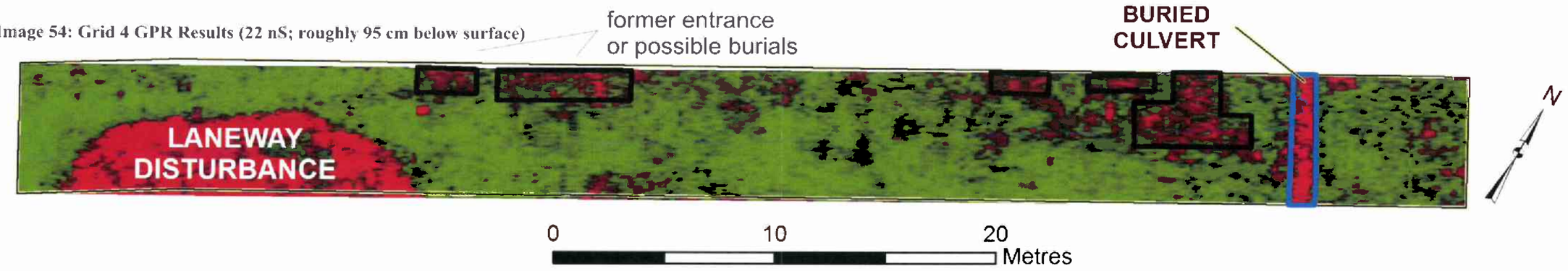


Image 55: Grid 5 GPR Results (6 nS; roughly 28 cm below surface)

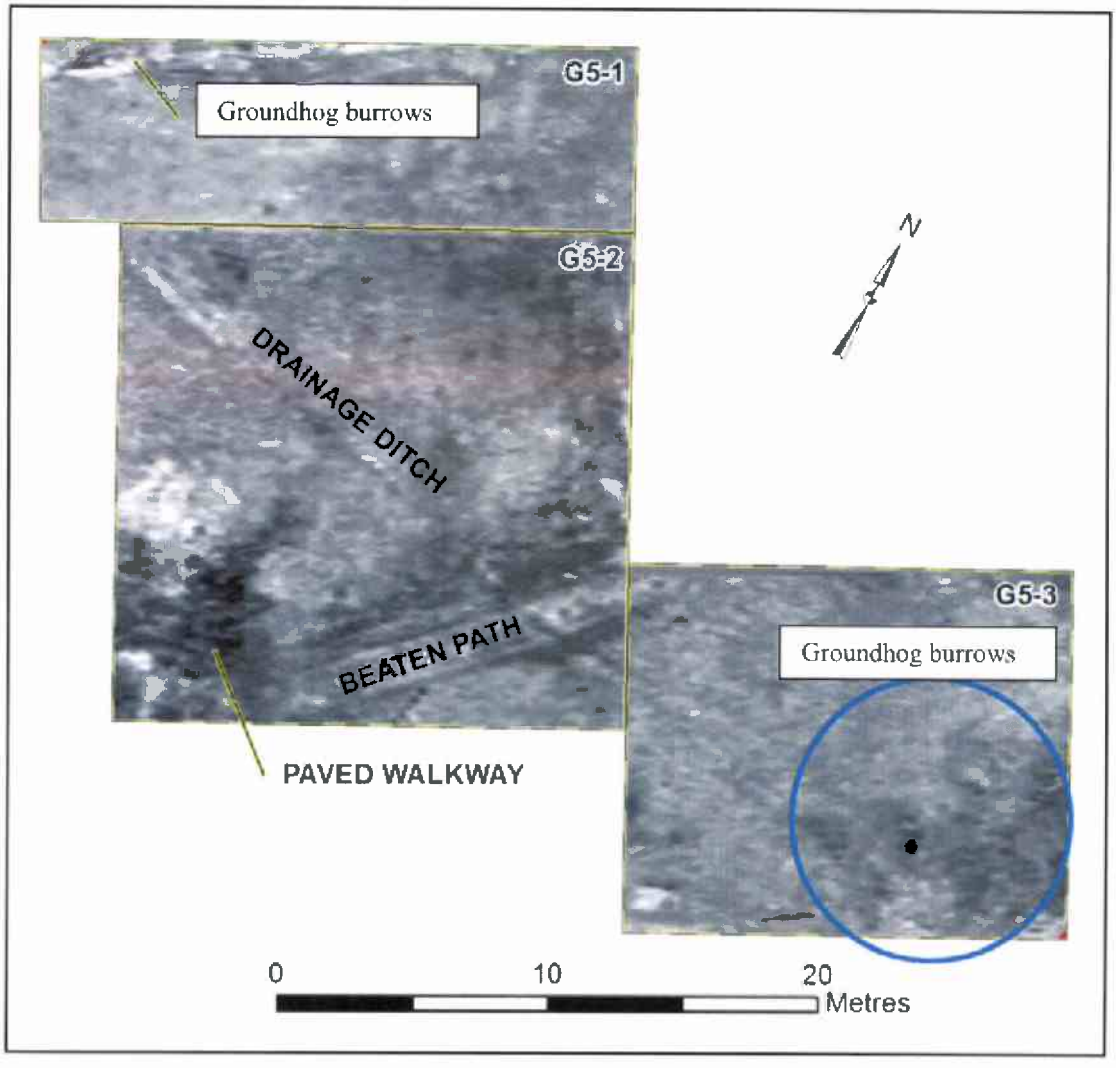


Image 56: Grid 5 GPR Results (10 nS; roughly 50 cm below surface)

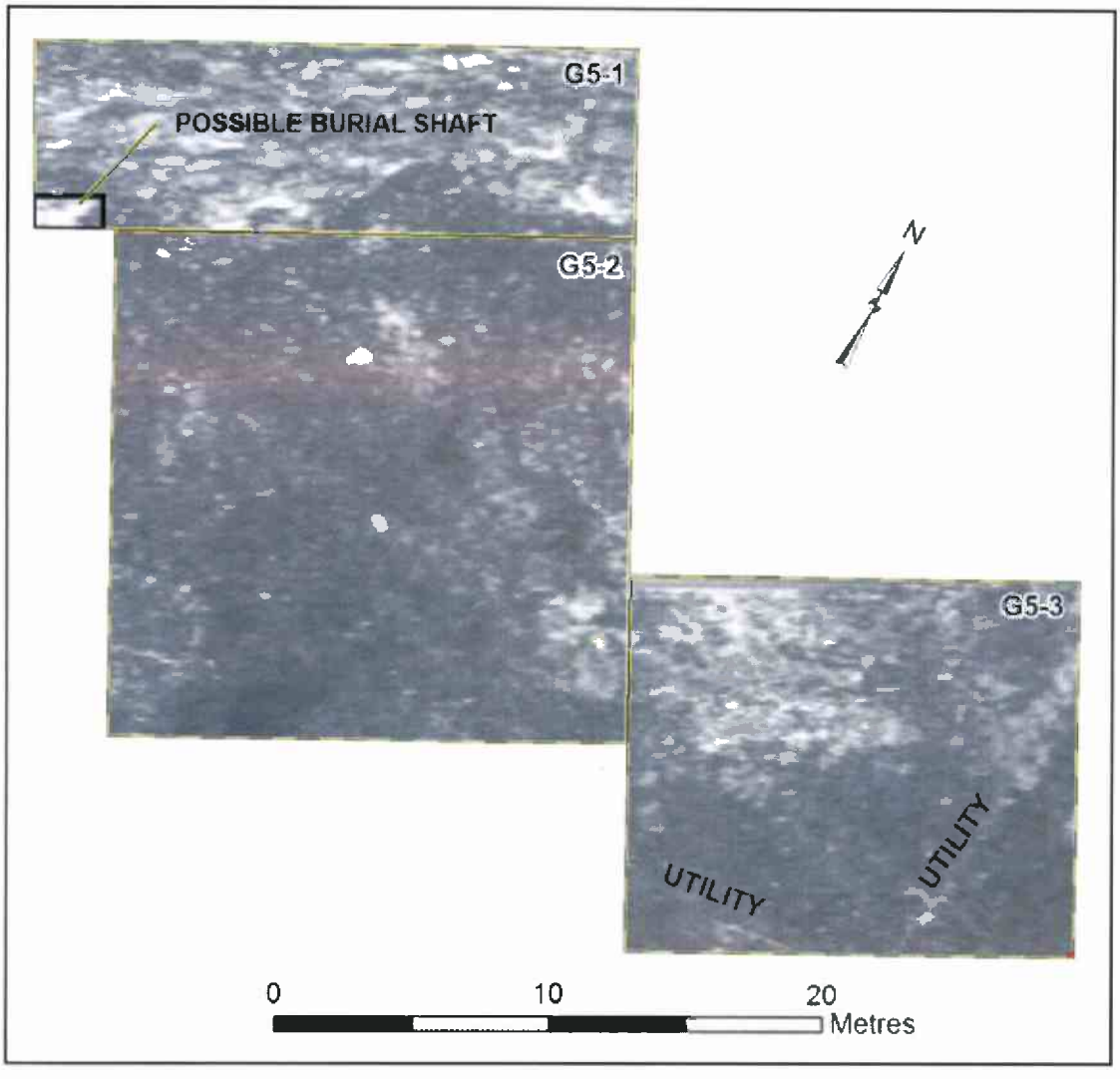


Image 57: Grid 5 GPR Results (17 nS; roughly 85 cm below surface)

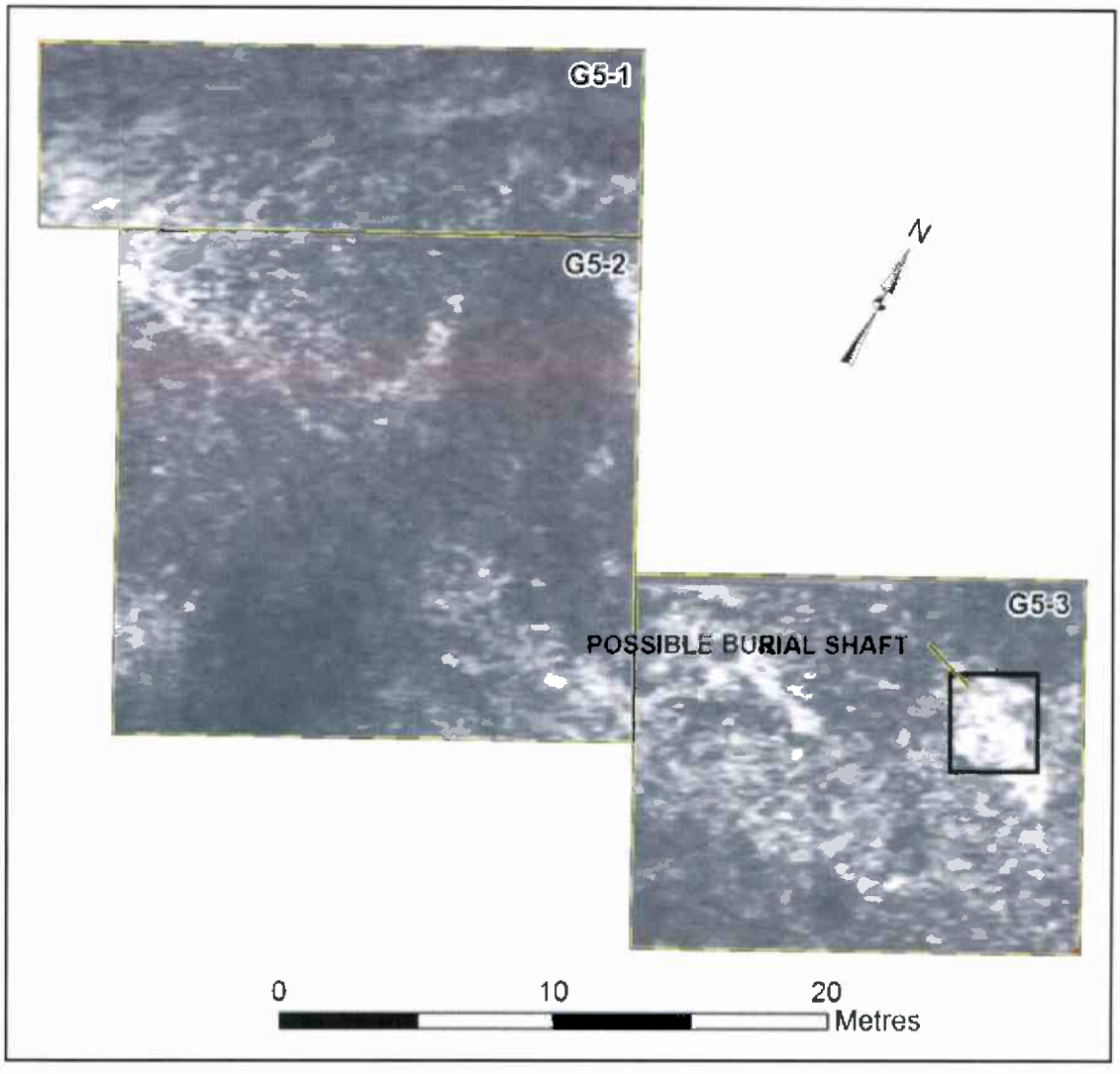


Image 58: Grid 6 GPR Results (5 nS; roughly 28 cm below surface)

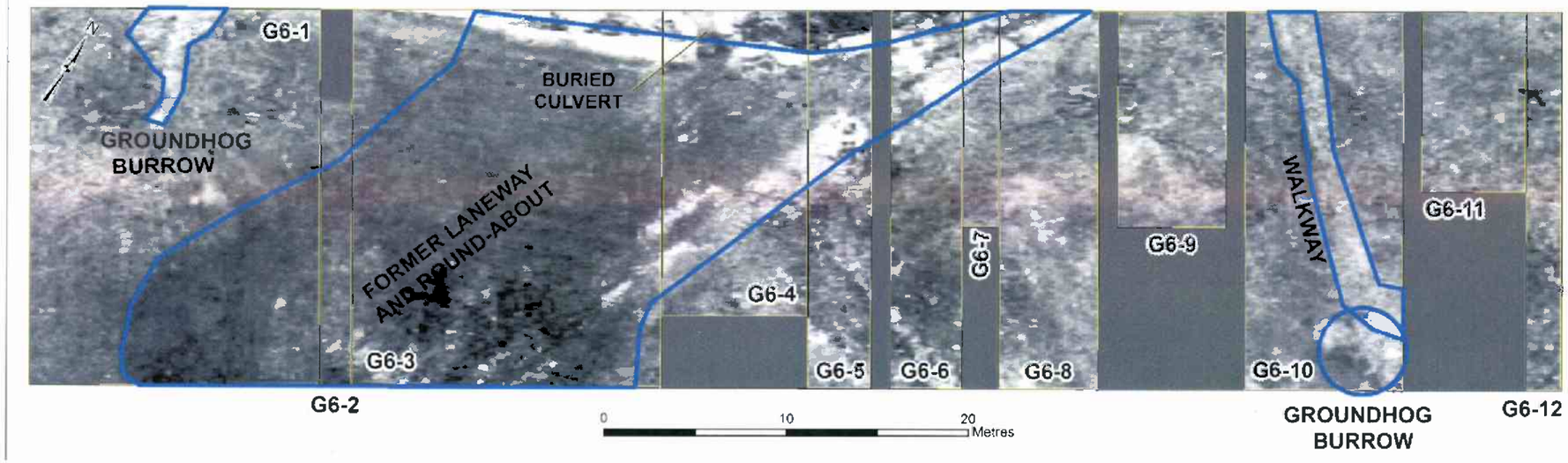


Image 59: Grid 6 GPR Results (7 nS; roughly 35 cm below surface)

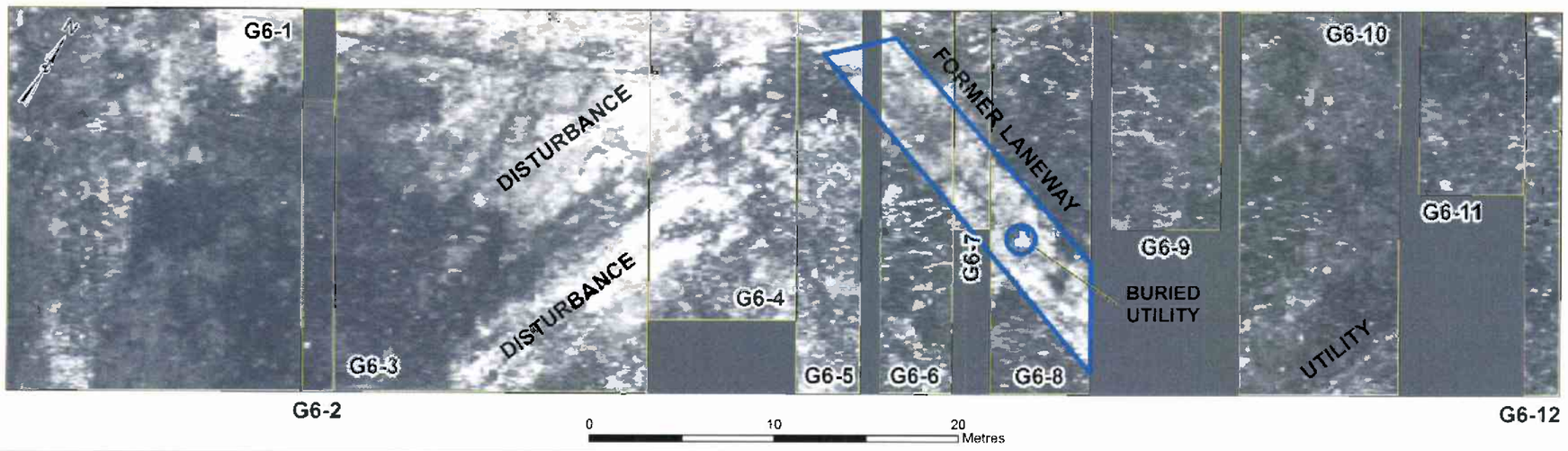


Image 60: Grid 6 GPR Results (20 nS; roughly 110 cm below surface)

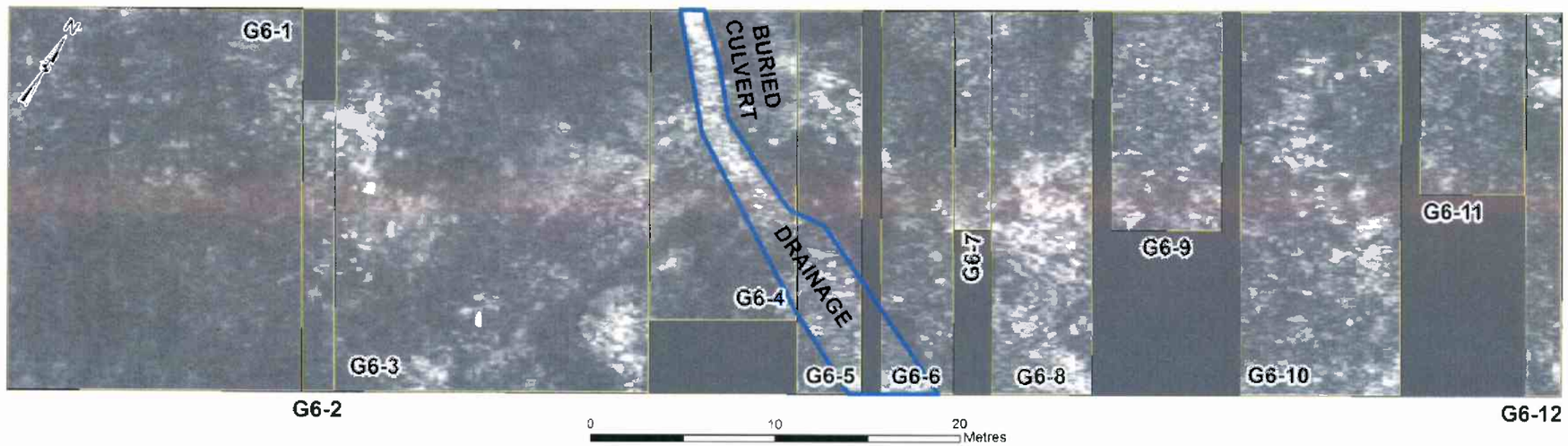


Image 61: Topsoil Stripping of South Cemetery Boundary and Recording Elevation Points with Topcon (looking west)

Image 62: Topsoil Stripping Along East Boundary in Progress (looking south)

Image 63: Topsoil Stripping of GPR Anomaly on West Side of Grid 5 (looking east)
* note stake represents mapping datum

Image 64: Topsoil Stripping of GPR Anomaly in Grid 5, South of Paved Laneway and Turnaround (looking north)

Image 65: Topsoil Stripping of GPR Anomalies in Grid 3 East of Cemetery (looking southeast)

Image 66: Shovel Shining of Exposed Surface (looking northeast)

Image 67: South Trench Excavation (looking west)

Image 68: Buried Culvert Beneath Existing Entrance Near Gate Along South Boundary (looking north)

Image 69: Former Fence Post and Foundation From Fill in South Boundary Trench (looking north)

Image 70: Remnant Wood Post Identified in South Boundary Trench (looking north)

Image 71: Profile of Remnant Wood Post in South Boundary Trench (looking north)

Image 72: Post Mould with Remnant Wood Post in South Boundary Trench (looking north)

Image 73: Wire Fencing in Fill from South Boundary Trench - West End

Image 74: Cedar Planks and Saw Cut Animal Bone in Fill From West End of South Boundary Trench (looking north)

Image 75: Soil Profile in South Boundary Trench (looking north)

Image 76: Close Up of Cinder and Fire-Reddened Metallic Soil in South Boundary Trench (looking north)

Image 77: View of Soil Mound Along South Fence (looking east)

Image 78: Close Up View of Low Fill Mound Along South Fence (looking east)

Image 79: Rock Concentration in South Boundary Trench

Image 80: Overview of East Boundary Trench (looking northwest)

Image 81: Spatially Discrete Cinder Layer (Former Laneway) Observed at North End of East Boundary Trench (looking west)

Image 82: Soil Profile at North End of East Boundary Trench Showing Cinder Layer (looking north)

Image 83: Surface of Cinder Layer at South End of East Boundary Trench (looking west)

Image 84: Example of Large Rock Removed From East Boundary Trench (looking northwest during backfilling)

Image 85: Overview of Grid 5 Western Anomaly Investigation Area (looking west) * note stake marks mapping datum

Image 86: Surface of Cinder Layer Exposed in Grid 5 Western Anomaly Investigation Area (looking east)

Image 87: Close Up of Clean Subsoil in Grid 5 Western Anomaly Investigation Area (looking north)

Image 88: Electrical Conduit Associated with Asphalt in Grid 5 Western Anomaly Investigation Area (looking southwest)

Image 89: Exposing Asphalt Walkway in Grid 5 Western Anomaly Investigation Area (looking east)

Image 90: Asphalt Walkway Resting on Gravel and Cinder Layers in Grid 5 Western Anomaly Investigation Area (looking southwest)

Image 91: Close Up of Asphalt Walkway With Gravel Base and Cinder Beneath - Grid 5 Anomaly Near Datum (looking southwest)

Image 92: Grid 5 South of Turnaround - Grey Fill Layer Beneath Topsoil (looking northwest)

Image 93: Surface of Cinder Layer - Grid 5 South of Turnaround (looking east)

Image 94: Profile of Deep Cinder and Demolition Layer - Grid 5 South of Turnaround (looking west)

Image 95: Sample Profile of Grid 3 Investigation Area East of Cemetery (looking northwest)

Image 96: Large Rocks Removed from Grid 3 Investigation Area (looking southeast)

Image 97: Post Hole Augering for New Fence (looking north)

Image 98: New Post Holes on North End of Cemetery (looking west)

Image 99: Geotube Installation for Post Foundations - North Boundary (looking east)

Image 100: Natural Soils Drawn Up by Auger - West Boundary

Image 101: Black Cinder-rich Soils Drawn Up by Auger - South Portion of West Boundary

Image 102: Rocky Soils Drawn Up by Auger

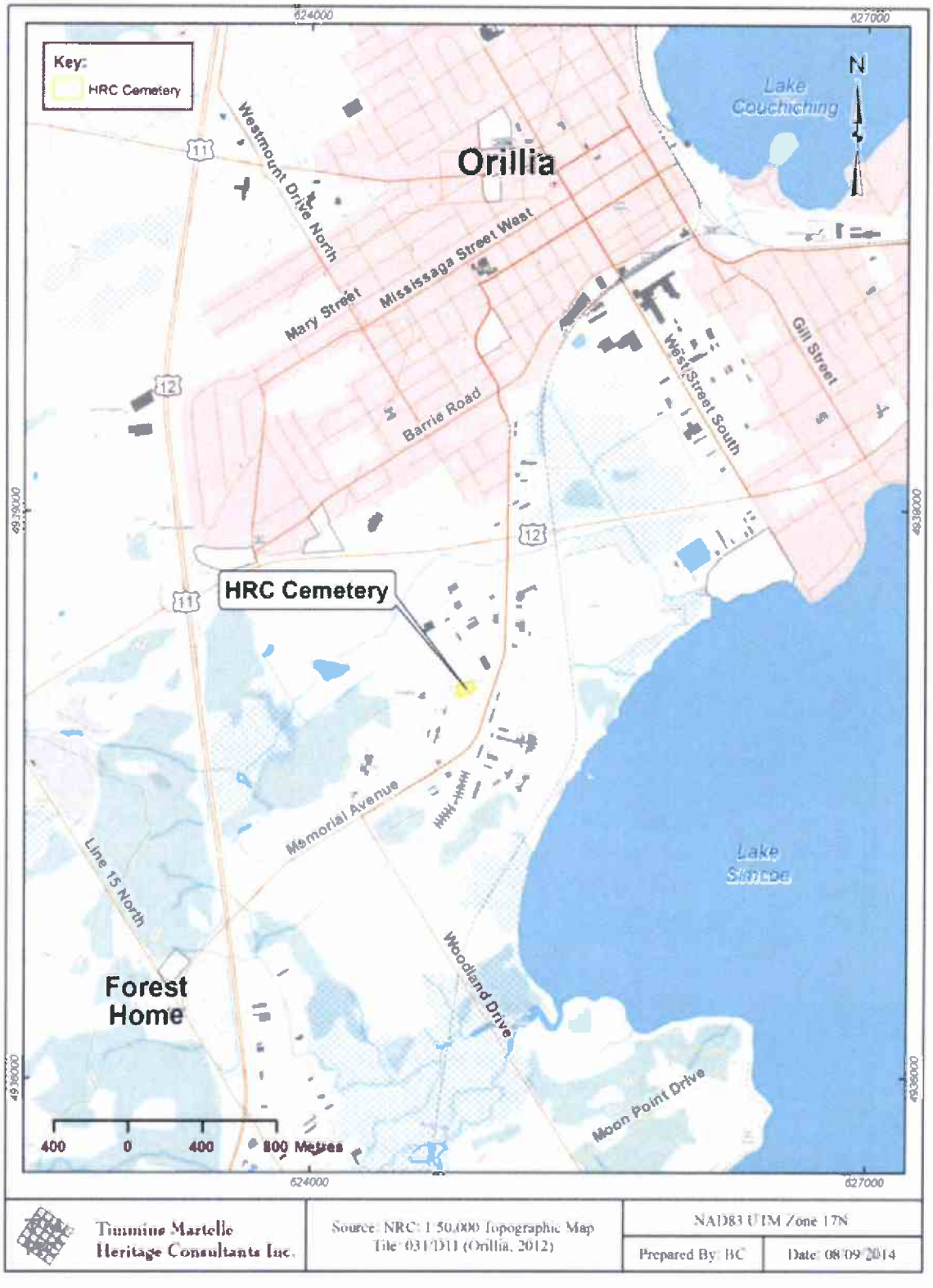
Image 103: Auger Holes Along West Boundary (looking east)

9.0 MAPS

Map 1: The Huronia Regional Centre and Related Former Institutional Lands
(from THAL 2008)

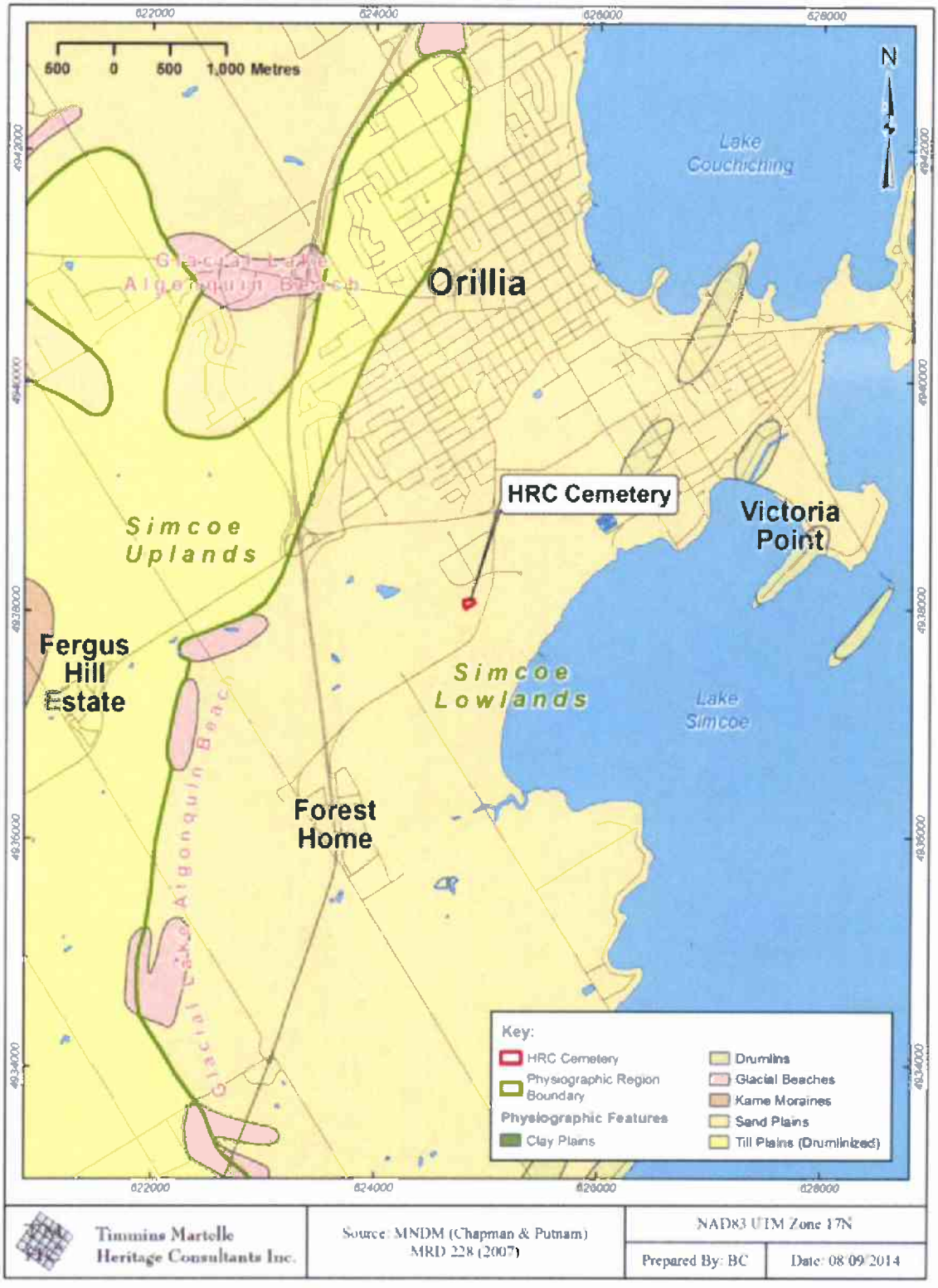
Map 2: Proponent Map of Cemetery

* note the fence line is not accurate on this map; refer to Map 10 of this report for an accurate rendering

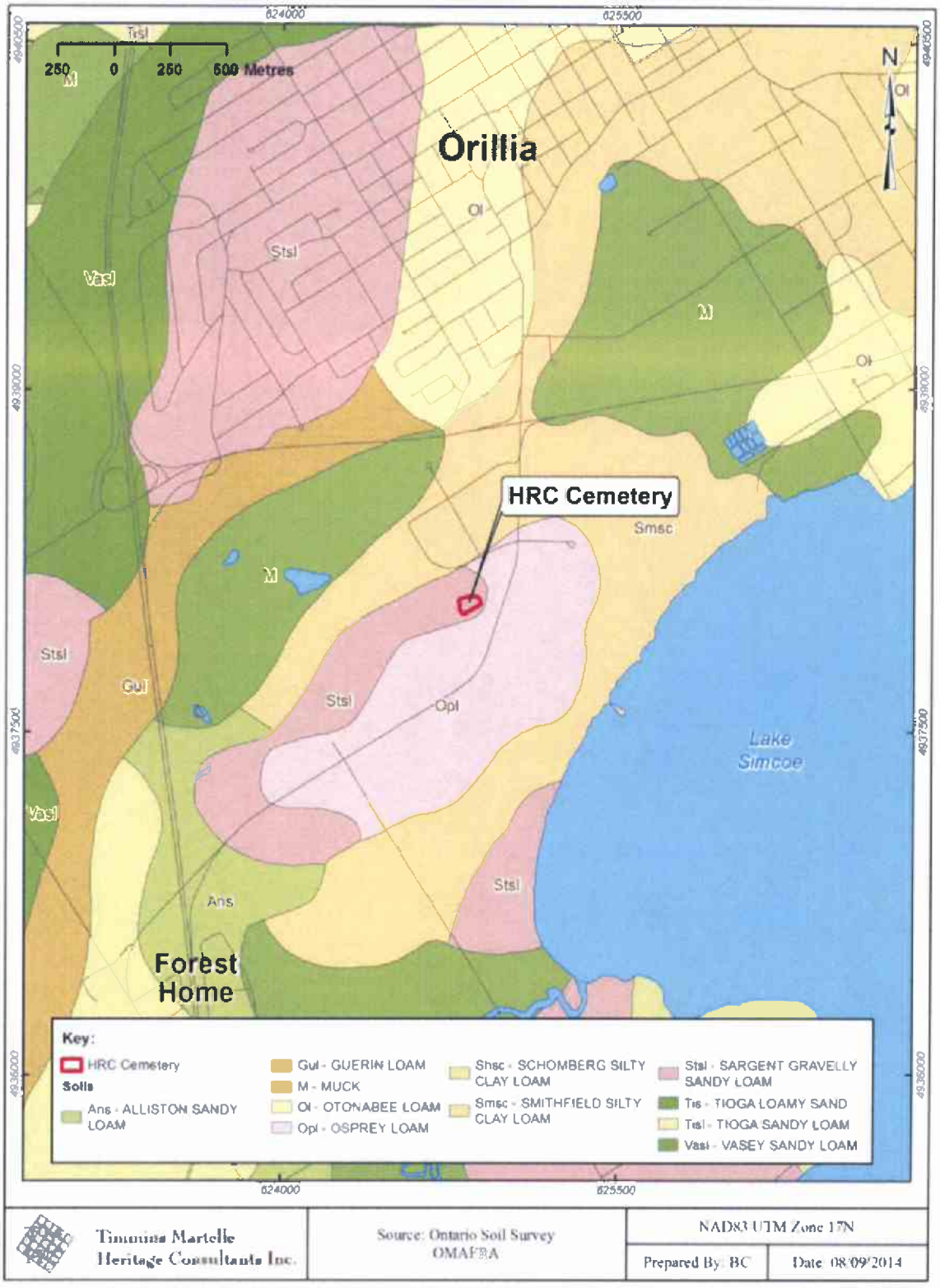


Map 3: Location of the HRC Cemetery in Orillia, ON

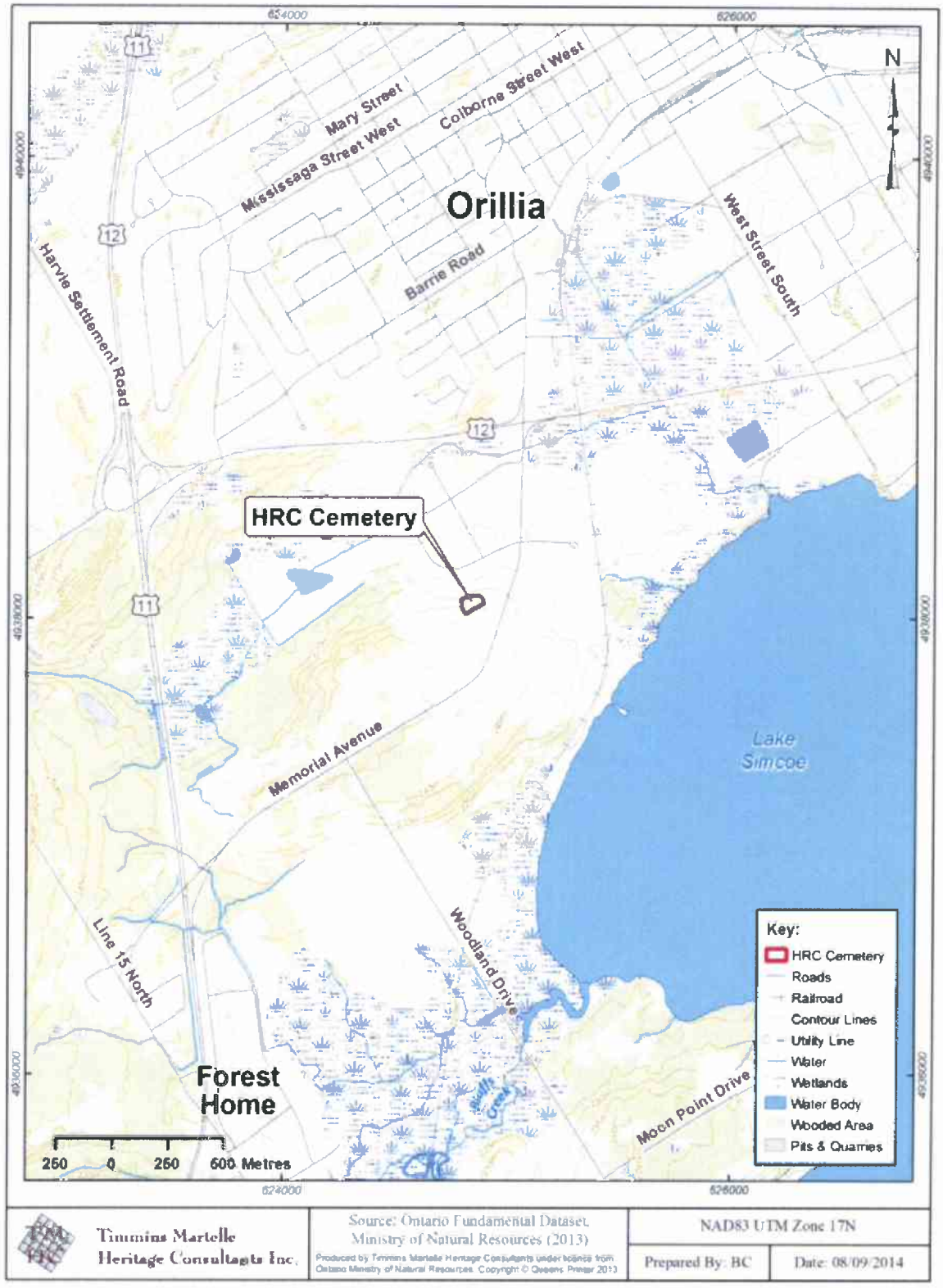
Map 4: Aerial Photograph Showing the Location of the HRC Cemetery in Orillia, ON



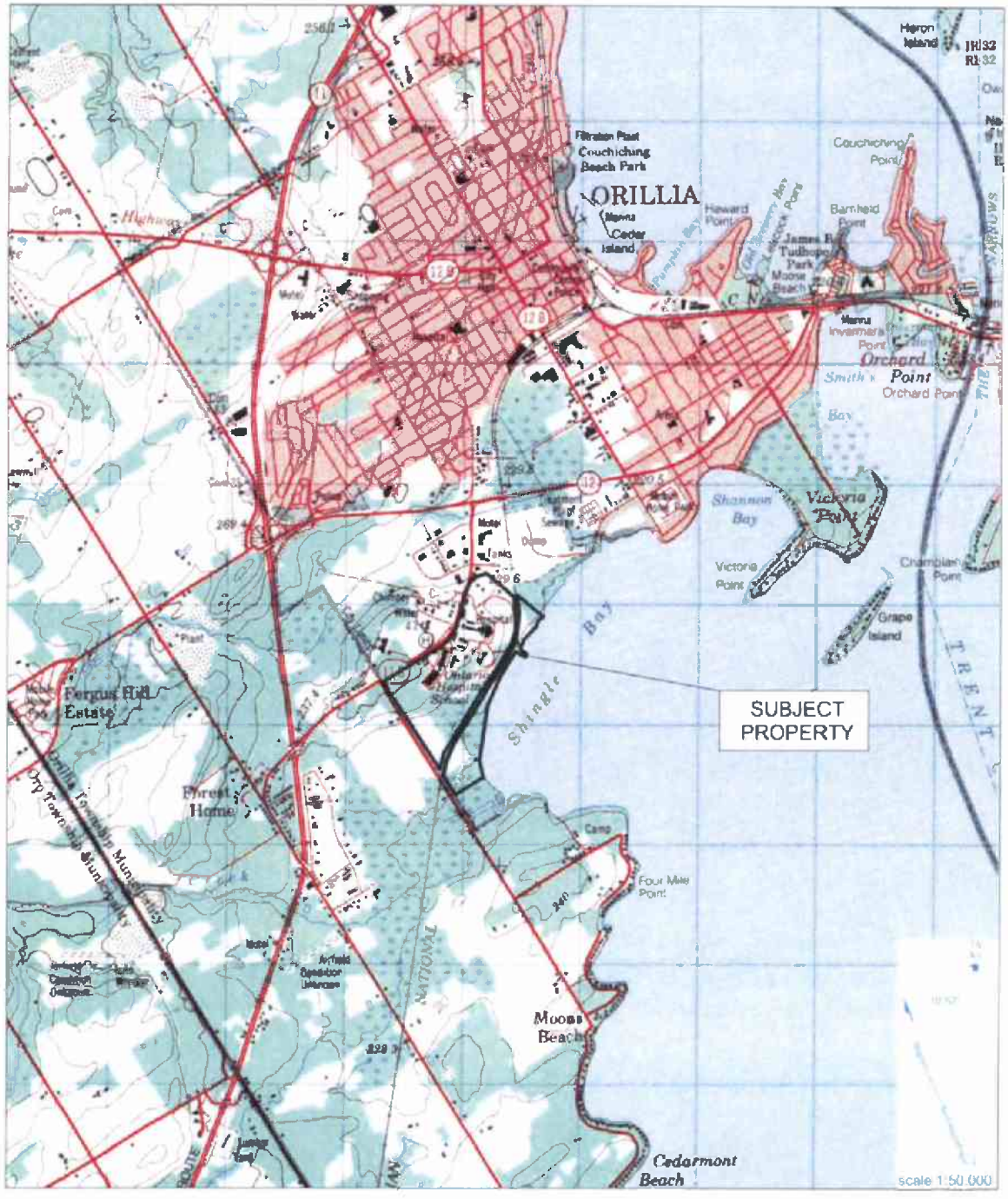
Map 5: Physiography Within the Vicinity of the HRC Cemetery



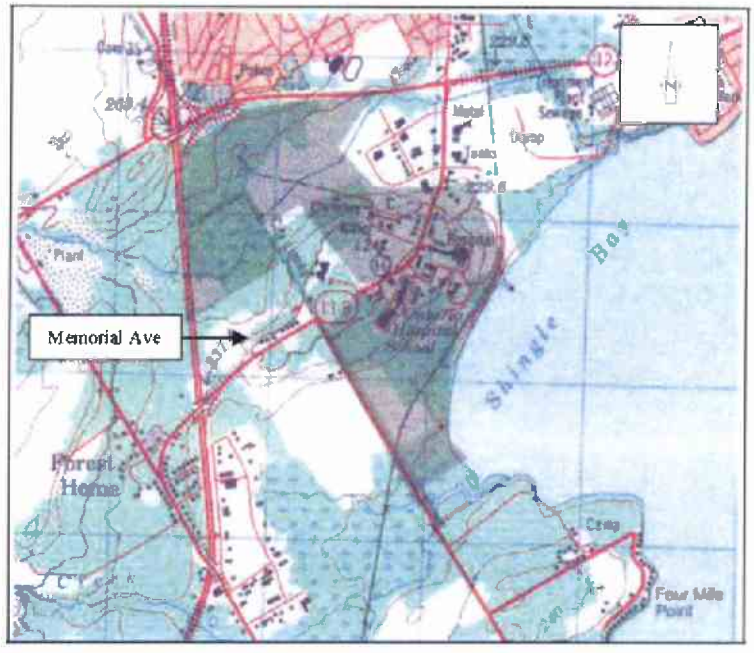
Map 6: Soils Within the Vicinity of the Subject Property

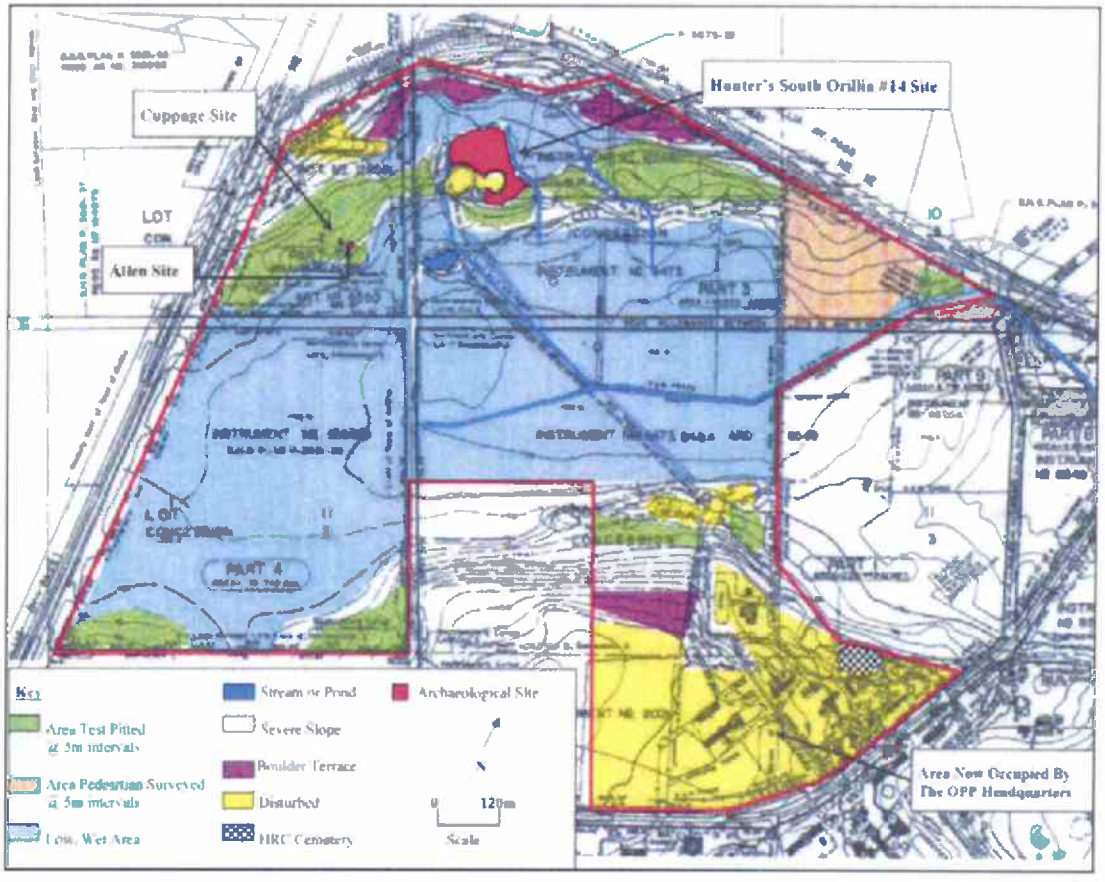


Map 7: Drainage Within the Vicinity of the HRC Cemetery

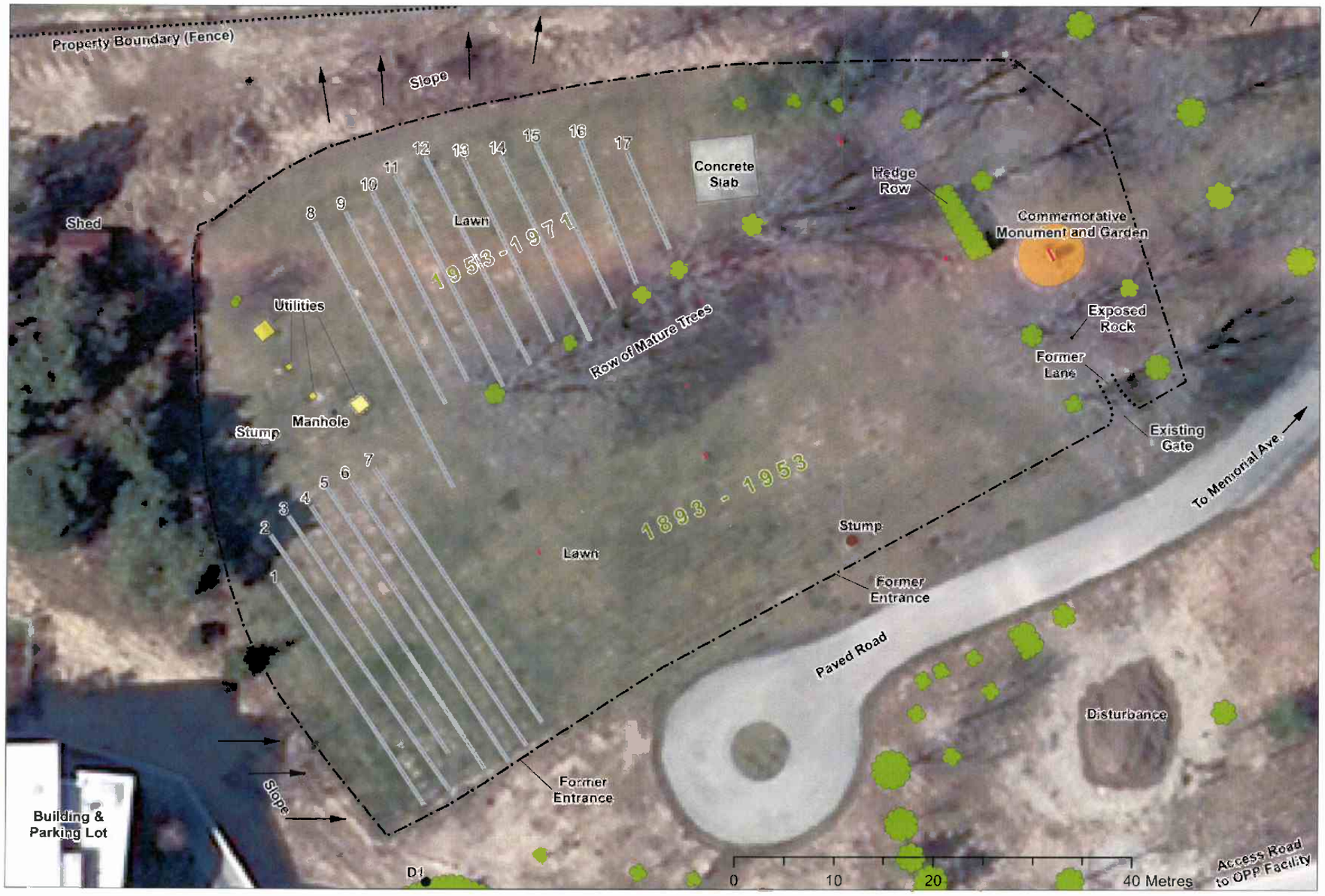


Map 8: D.R. Poulton (2014) Stage 1 Archaeological Assessment Area





Map 9: Archaeological Assessments Ltd. (2008) Stage 1 & 2 Assessment Area (top) and Stage 2 Methodologies for Areas Near Cemetery



Timmins Martelle Heritage Consultants Inc.

Key:

- D1 Datum
- 2 TMHC Row Number
- Row of Flat Grave Markers
- Cemetery Fence
- Standing Monument
- Tree / Hedge

N

Source: MNR - First Base Solution (2008)	
Coordinate System: NAD83 UTM Zone 17N	
Date: 24/03/2015	Prepared By: BC

Map 10: Huronia Regional Centre Commemorative Cemetery - Existing Features

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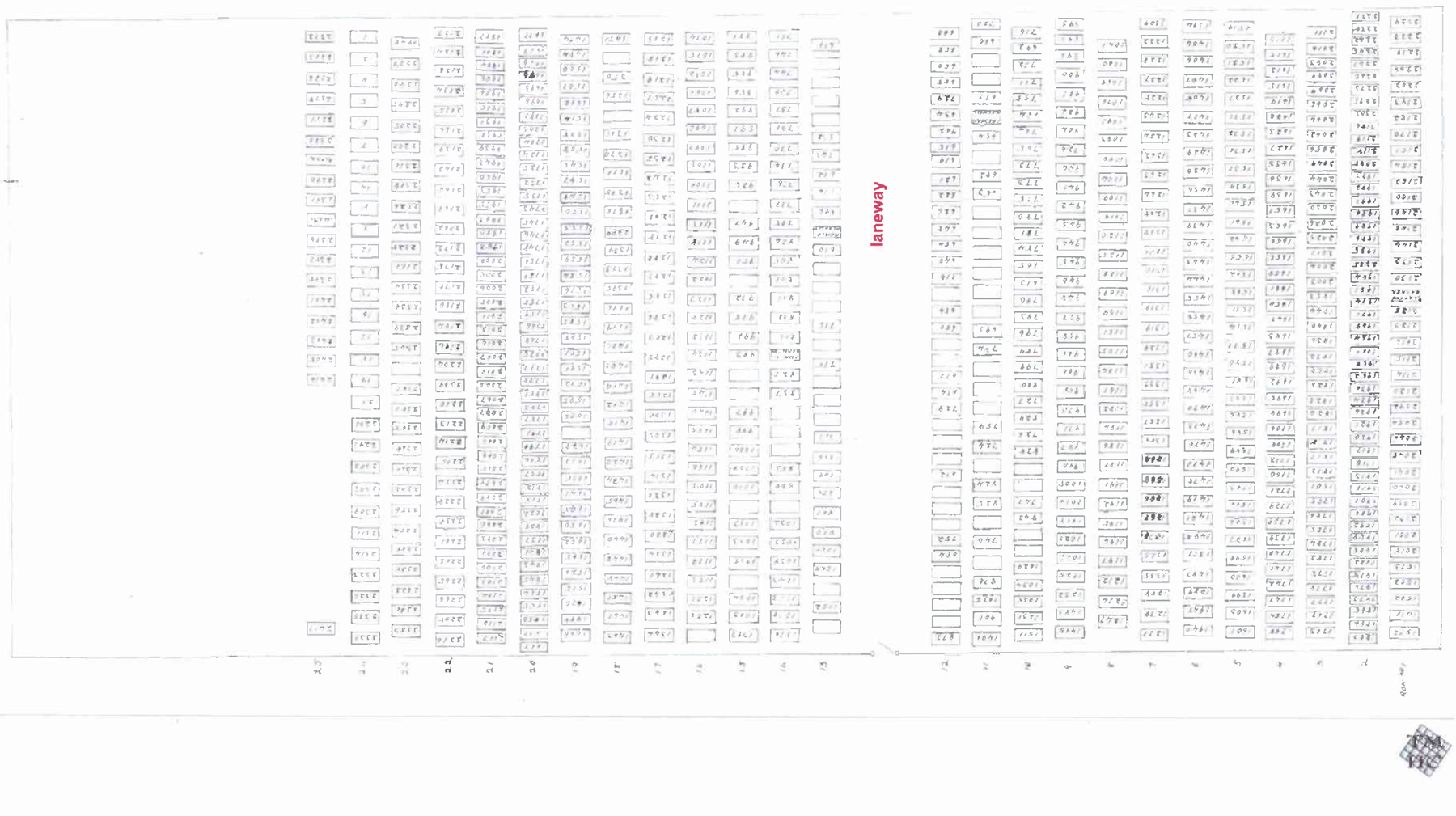
Map 11:

Early Map of HRC Cemetery
(ca. 1893 to 1936)

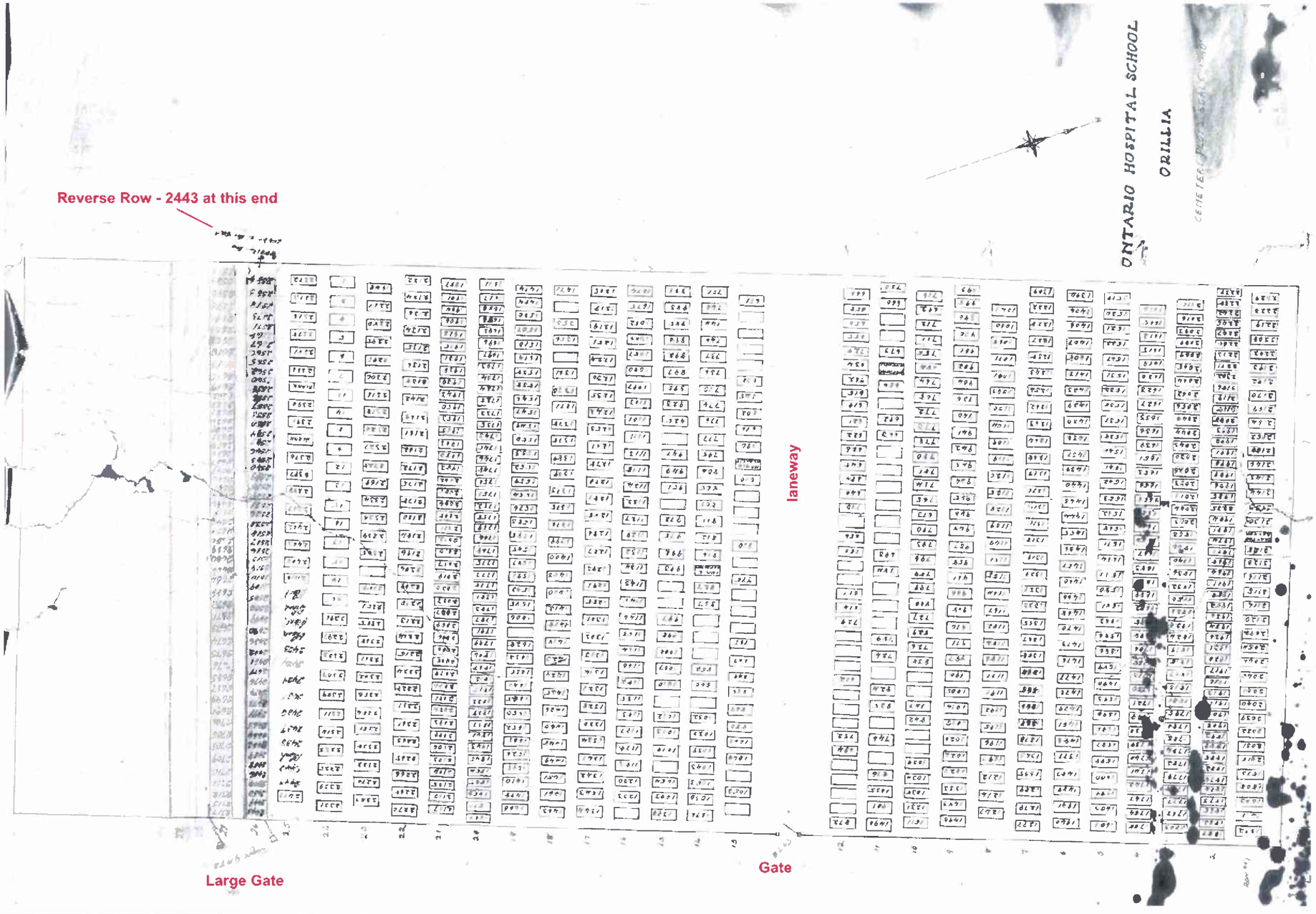
courtesy of Infrastructure Ontario



Map 12:

Amended Early Map of HRC Cemetery (ca. 1893 to 1941)

courtesy of Infrastructure Ontario



Timmins Martelle Heritage Consultants Inc.

Key:

- Cemetery Fence
- Row of Flat Grave Markers

Source: MNR - First Base Solution (2008)	
Coordinate System: NAD83 UTM Zone 17N	
Date: 05/01/2015	Prepared By: BC

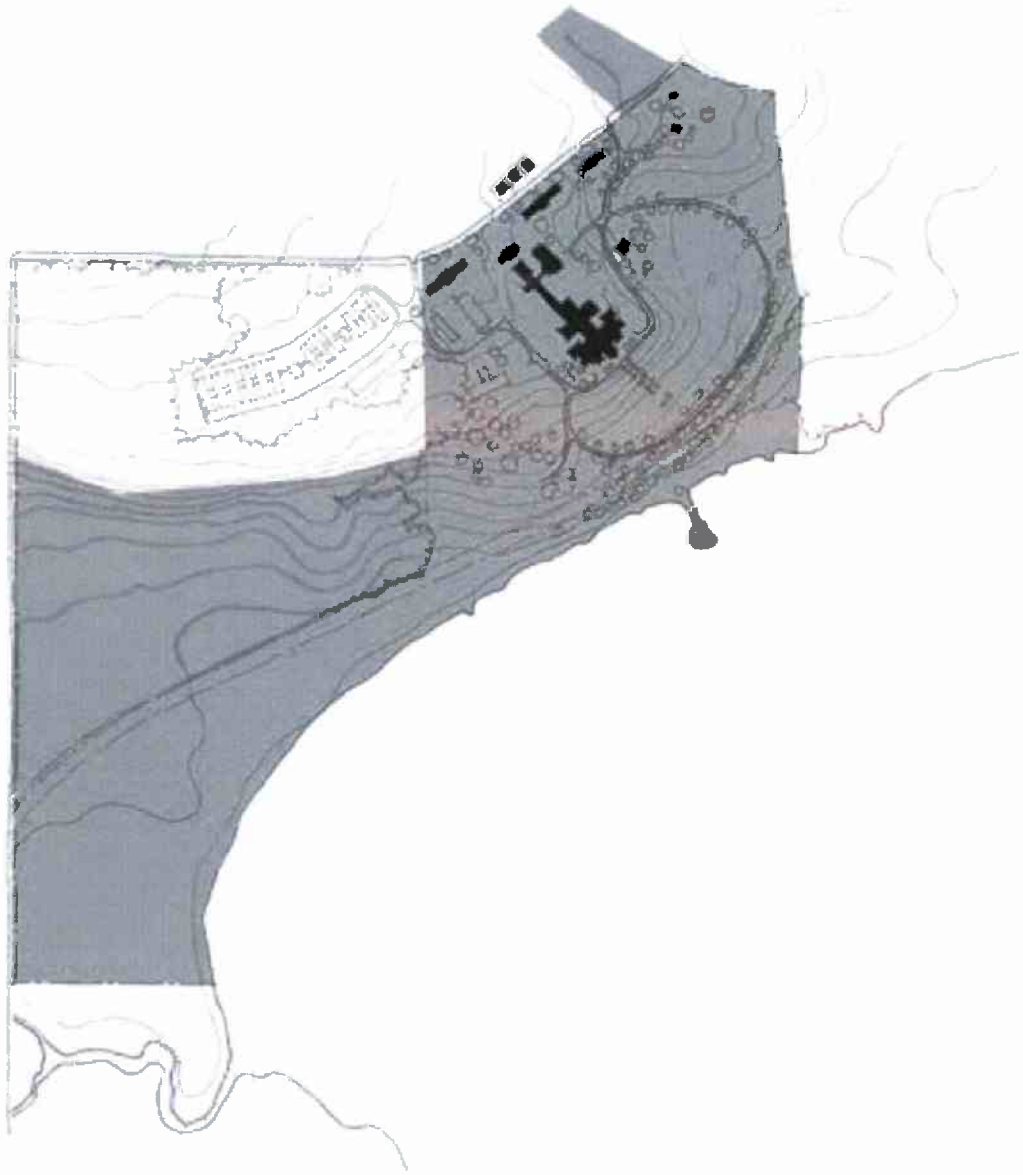
Map 13: Overlay of the Map Showing the Original Cemetery Interments on a Modern Aerial Photograph of Existing Conditions

Z:\Desktop Mapping\Projects\2013-106 IO Huronia Regional Centre Cemetery GPR\Maps\GPR\Original\Interments.mxd

Map 14:

Map of HRC Cemetery Expansion Area (ca. 1953-1971)

courtesy of Infrastructure Ontario



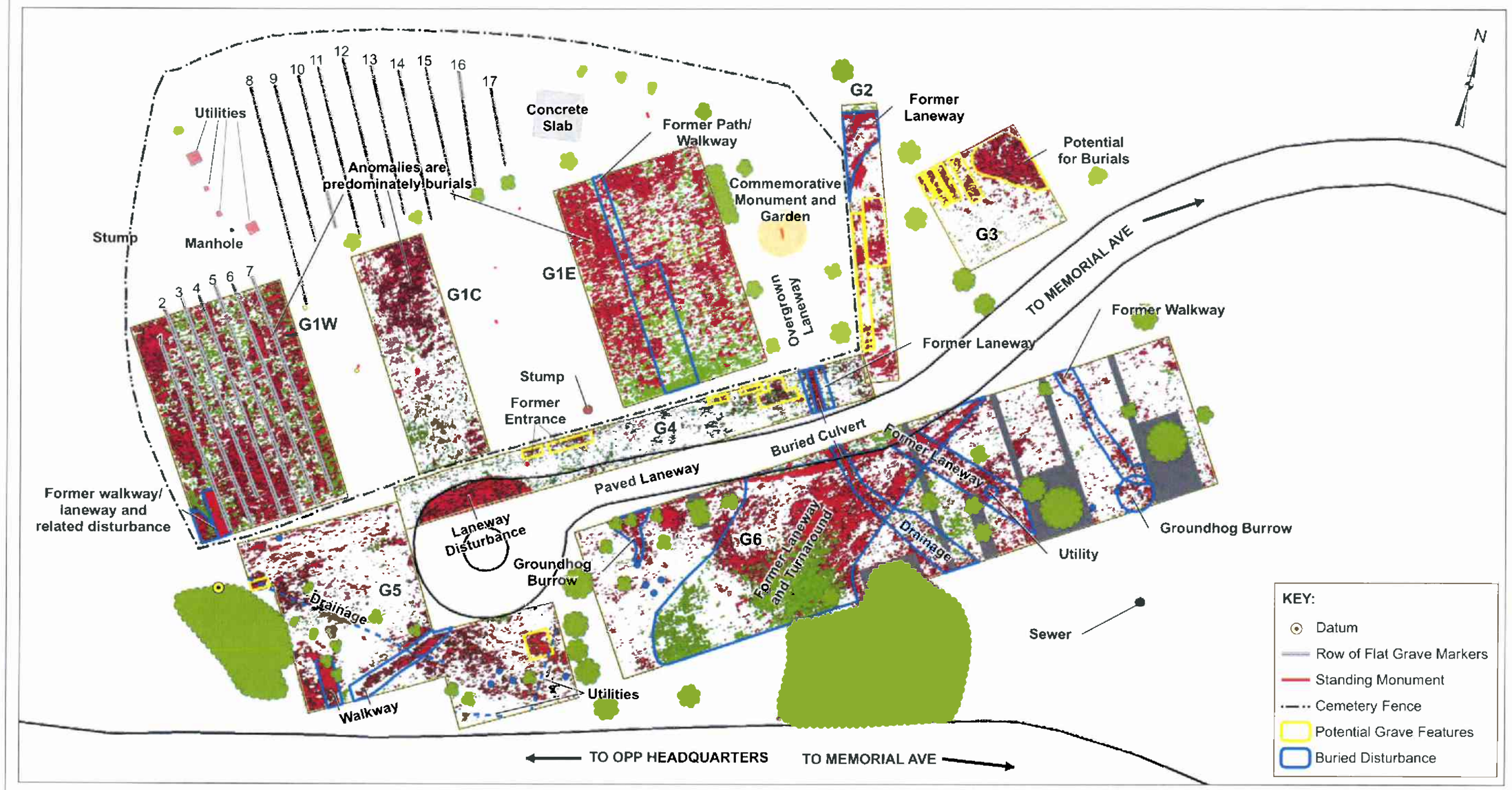
Dark grey zone indicates natural and cultural landscape of provincial significance.

Significant buildings within the designated cultural landscape (listed clockwise starting at the far left) – Cottage O OPP B14650; Cottage D B44 B14661; Cottage R B45 B14662; Resident House B14687; Kivas Tully House B14686; Medical Superintendent's House B14651; Cottage C (Courthouse) B14660; Main Administration Building with adjoining wings B14648, B214-4/5, B17495, B21406, B17496, and B17497

Map 15: Area of Heritage Interest from Huronia Regional Centre's Conservation Plan (THAL 2008)

Map 16: GPR Grid Locations

Z:\Desktop Mapping\Projects\2013-105 IO Huronia Regional Centre Cemetery GPR\Maps\GPR\Map_1_GPR_Grid_Locations.mxd



Map 17: Composite Map Showing Results of GPR Survey

Z:\Desktop Mapping\Projects\2013-106 IC Huronia Regional Centre Cemetery GPR\Maps\GPR\Map_2_GPR_Composite.mxd

Timmins Martelle Heritage Consultants Inc.

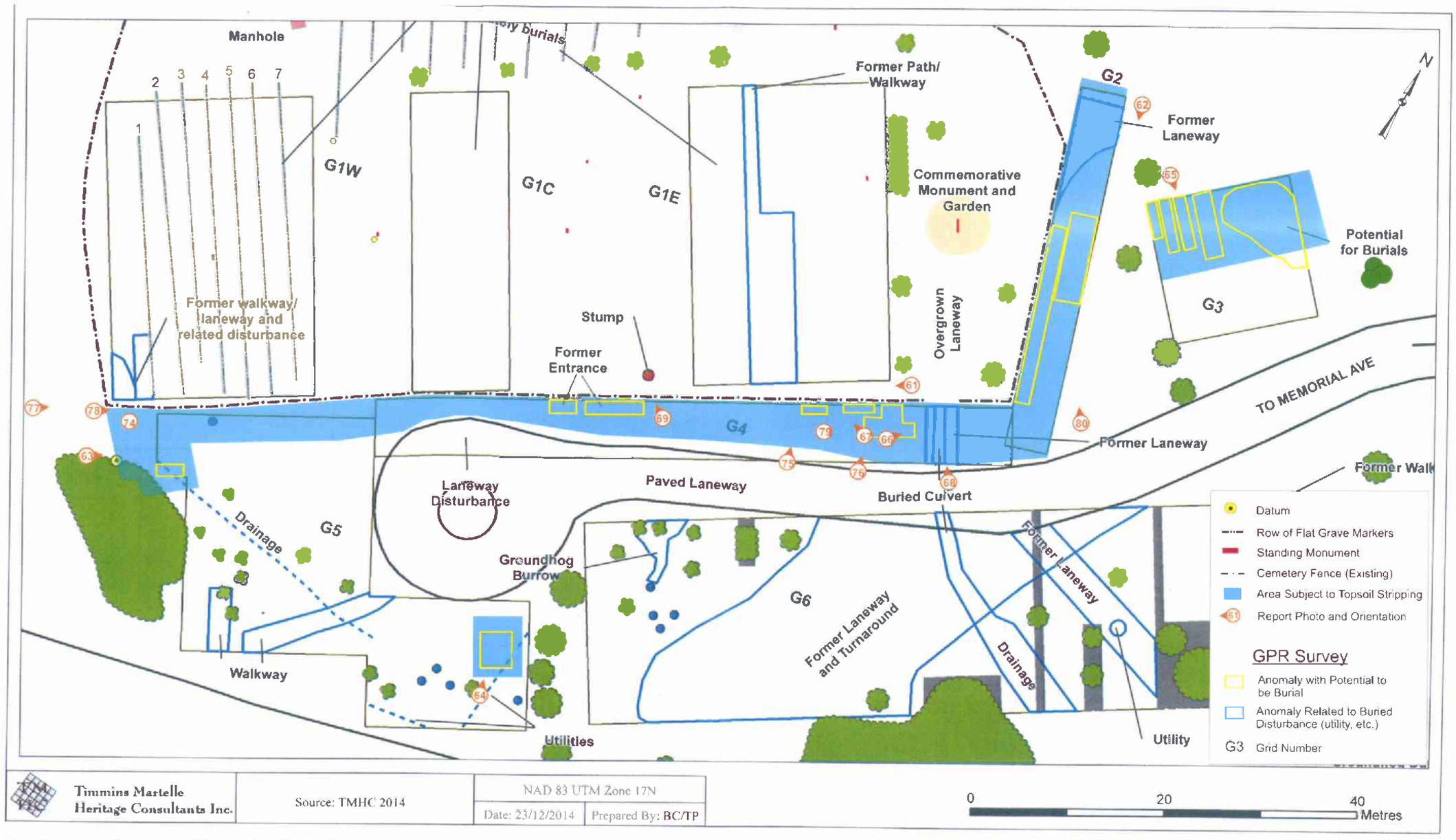
Key:

- Report Photo/Image Location & Orientation
- 2 TMHC Row Number
- Row of Flat Grave Markers
- Cemetery Fence
- Standing Monument
- Tree / Hedge

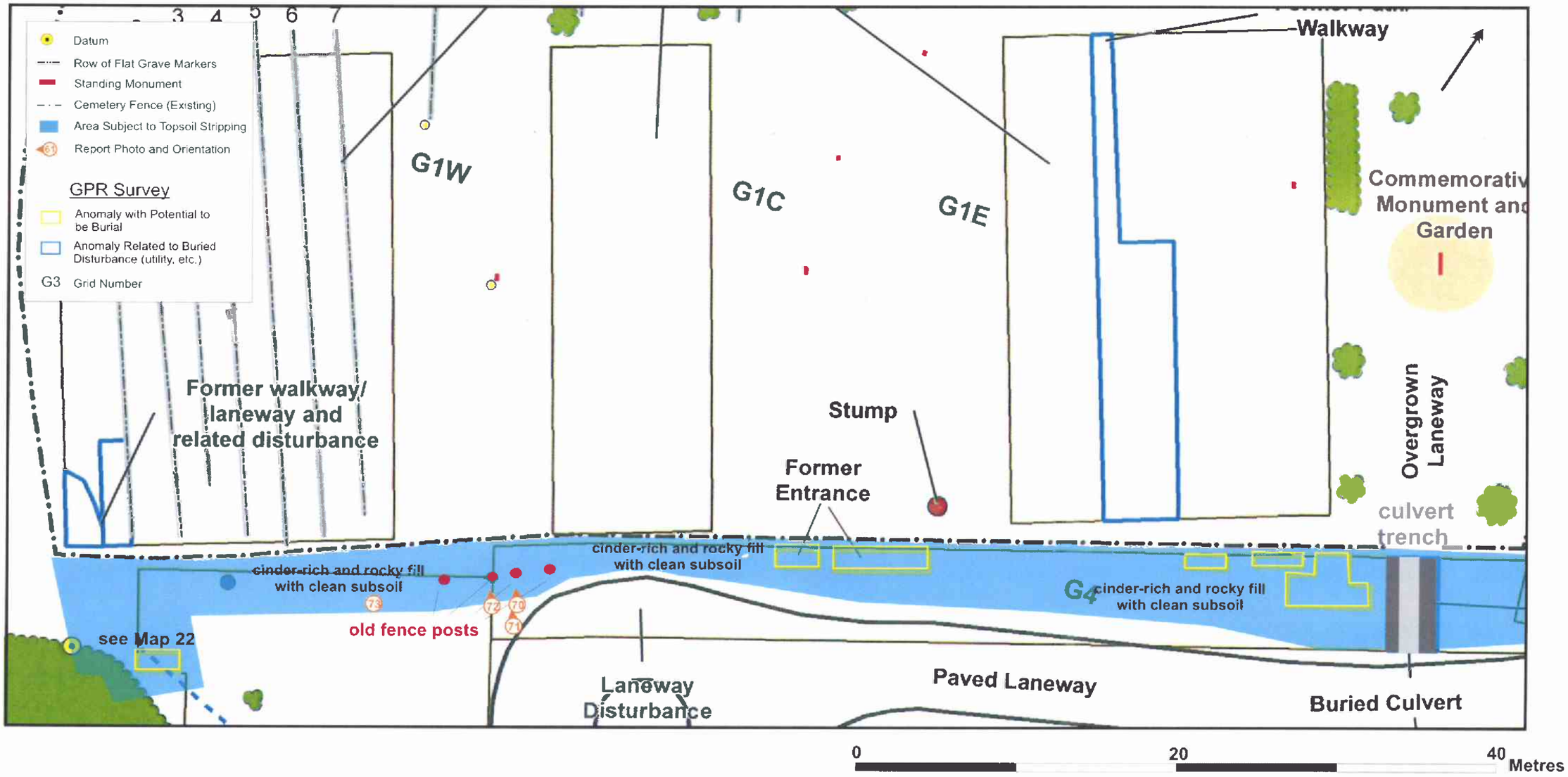
Source: MNR - First Base Solution (2008)	
Coordinate System: NAD83 UTM Zone 17N	
Date: 24/03/2015	Prepared By: BC

Map 18: Location and Orientation of Photographs

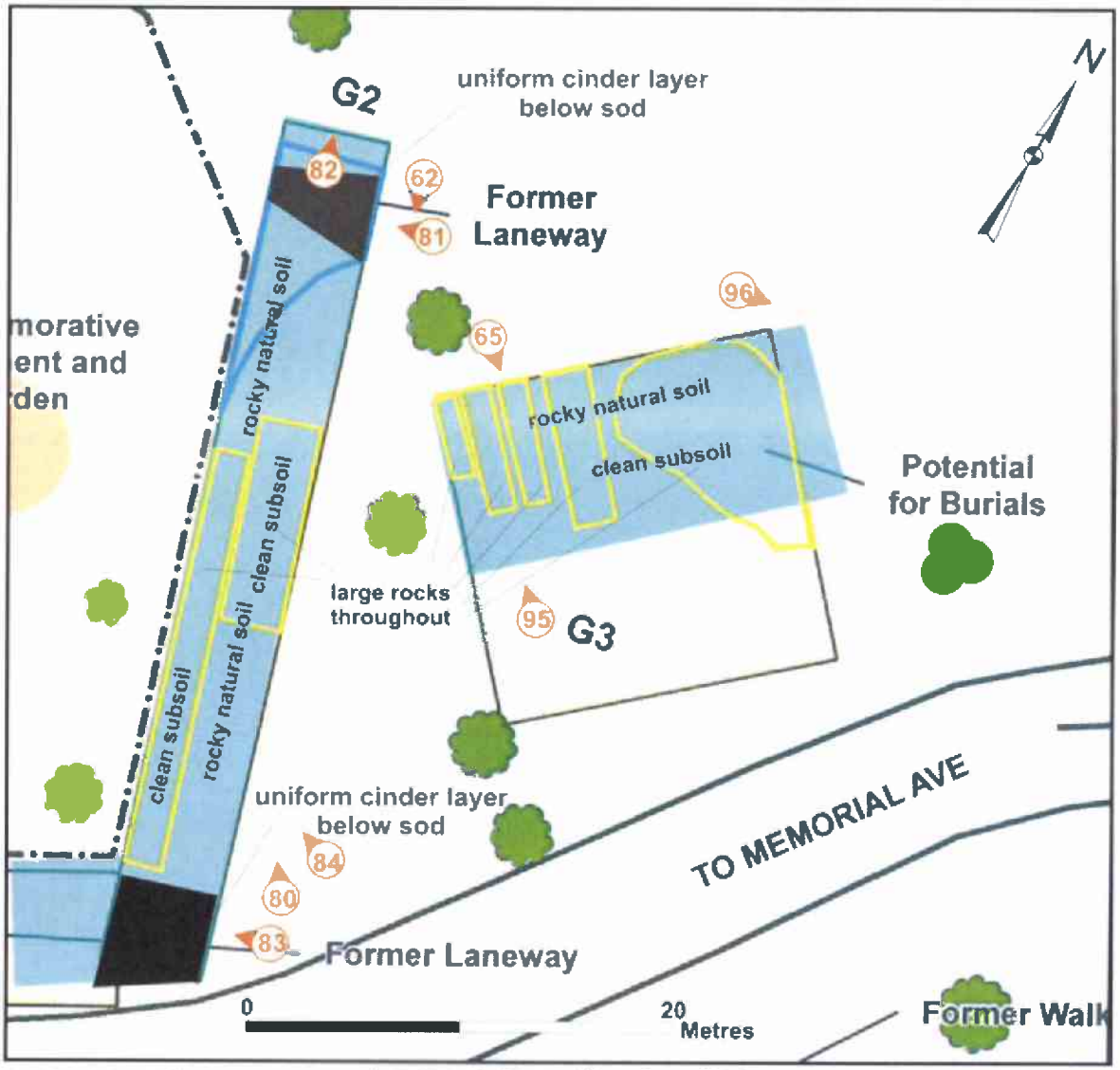
Z:\Desktop Mapping\Projects\2013-106 IO Huronia Regional Centre Cemetery GPR\Maps\GPR\GPR_PhotoLocations.mxd



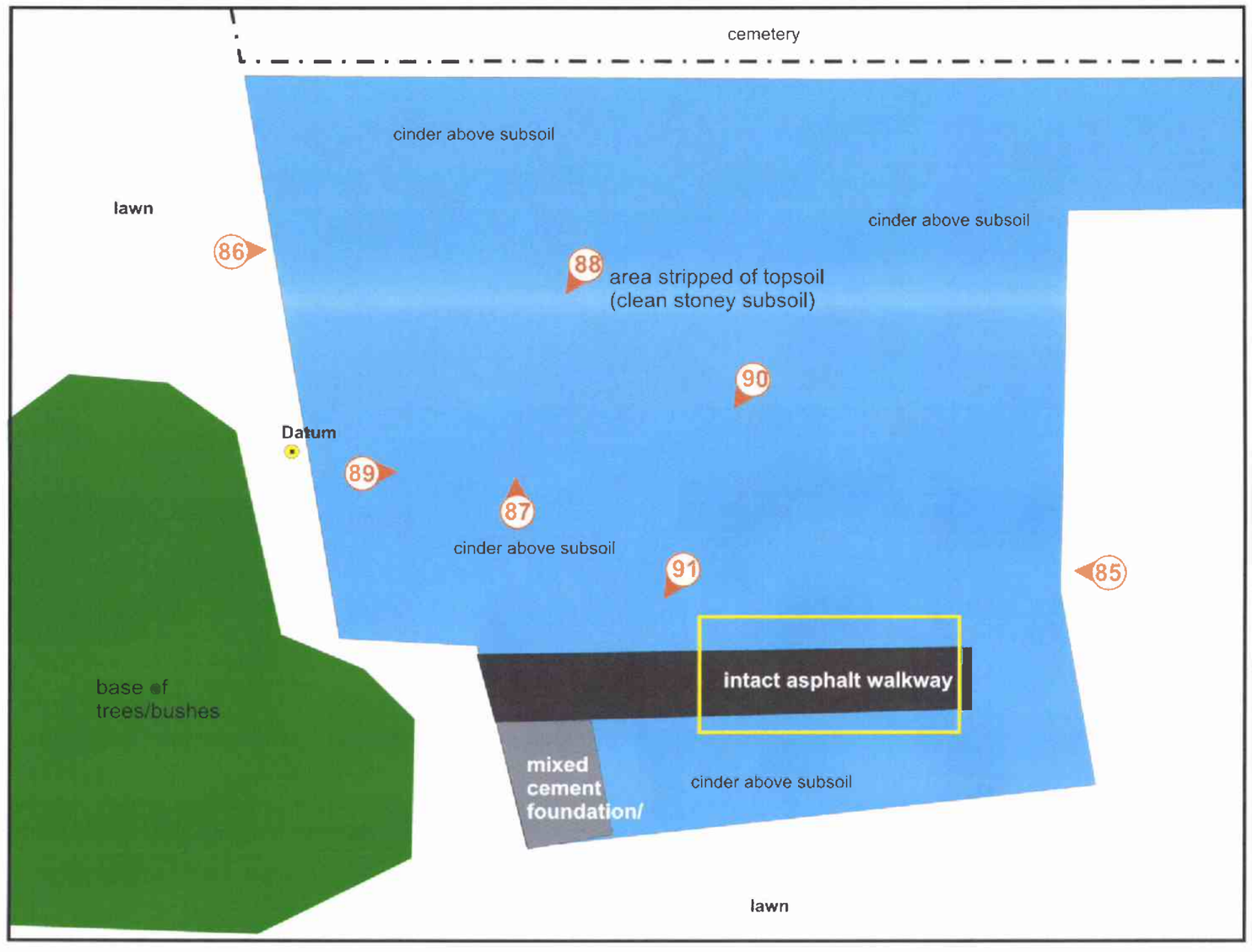
Map 19: Areas Subject to Mechanical Topsoil Stripping

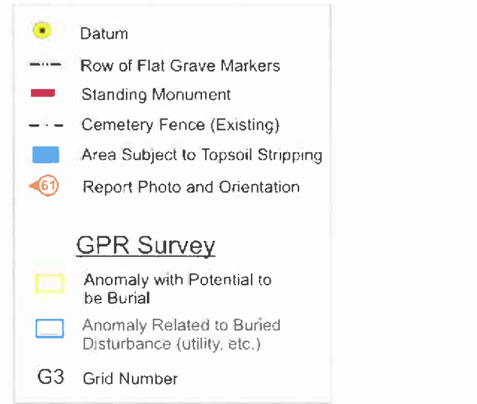


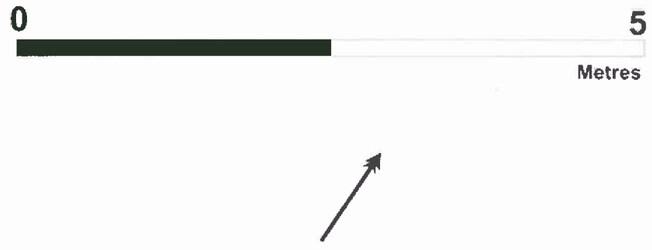
Map 20: South Boundary - Results of Mechanical Topsoil Stripping



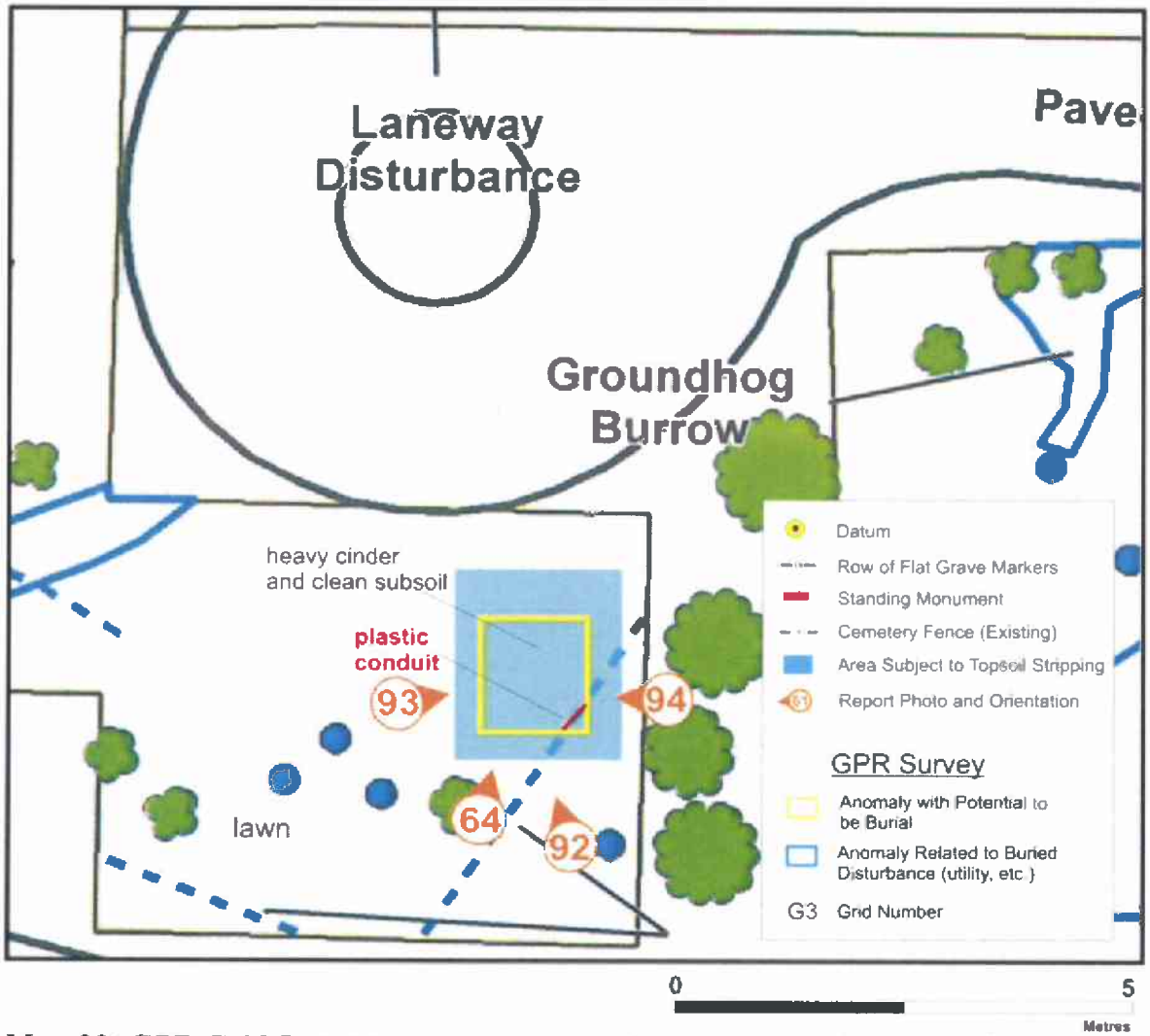
Map 21: East Boundary and GPR Grid 3 – Results of Mechanical Topsoil Stripping







Map 22: Grid 5 Anomaly Near Datum Southeast of Cemetery - Results of Topsoil Stripping



Map 23: GPR Grid 5 Anomaly South of Paved Turnaround – Result of Mechanical Topsoil Stripping

Timmins Martelle Heritage Consultants Inc.

Key:

- D1 Datum
- 2 TMHC Row Number
- Row of Flat Grave Markers
- Cemetery Fence
- Standing Monument
- Tree / Hedge

N

- Boundary cleared during topsoil stripping
- Boundary post digging monitored
- 98 Report photo and orientation

Source: MNR - First Base Solution (2008)	
Coordinate System: NAD83 UTM Zone 17N	
Date: 24/03/2015	Prepared By: BC

Map 24: Areas Monitored During Fence Post Hole Augering