

**HIGHWAY 101 DIGBY TO MARSHALLTOWN CORRIDOR
ENVIRONMENTAL ASSESSMENT REGISTRATION**

APPENDICES
February 2017

APPENDIX D

MI'KMAQ ECOLOGICAL KNOWLEDGE STUDY (MMDI 2016)

Mi'kmaq Ecological Knowledge Study

Highway 101 Twinning Exit 26 to Marshalltown

Prepared for NS Transportation and Infrastructure Renewal

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1.0 INTRODUCTION

1.1 Mainland Mi'kmaq Development Inc.

The Confederacy of Mainland Mi'kmaq (CMM) Environmental Services is a program operated by the Lands, Environment, and Natural Resources, that provides fee for service in environmental consulting; this division is currently known as Mainland Mi'kmaq Developments Incorporated (MMDI). The CMM provides advisory services to seven Mi'kmaq communities in the province of Nova Scotia: Paqtnkek Mi'kmaw Nation, Annapolis Valley First Nation, Bear River First Nation, Glooscap First Nation, Millbrook First Nation, Pictou Landing and Sipekne'katik First Nation.

The MMDI had been successful in the contract to complete a second Mi'kmaq Ecological Knowledge Study (MEKS) for the Hwy 101 Exit 26 to Marshalltown, as part of the original report 2005 Digby to Weymouth MEKS, for NS Transportation and Infrastructure Renewal.

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1.2 Project Description

The Mainland Mi'kmaq Development Inc. has been selected to complete a second MEKS for a portion of the original MEKS Digby to Weymouth 2005, Hwy 101 Exit 26 to Marshalltown MEKS. The project site is located in Digby County, NS, approximately 15kms west of Bear River First Nation.

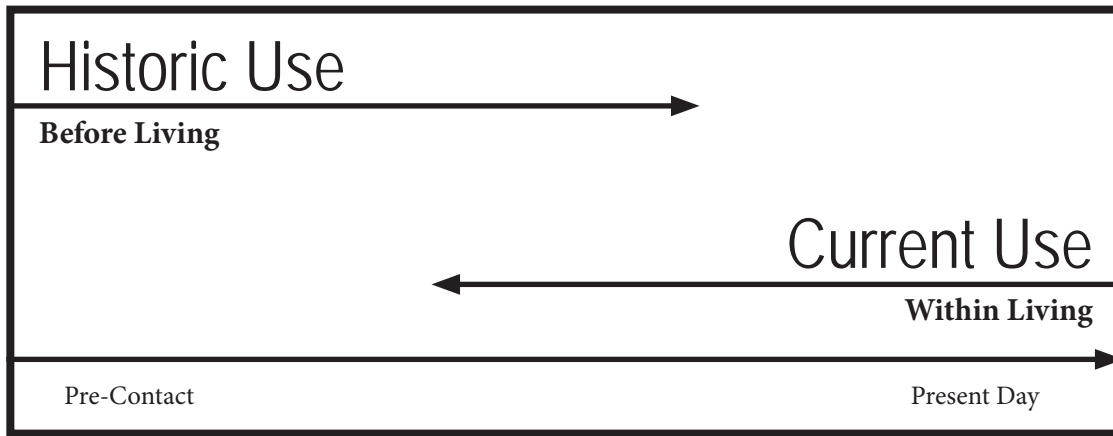
2.0 DEFINITION OF TERMS

Living Memory is the memory of living Mi'kmaw. The period of time included in living memory varies from knowledge holder to knowledge holder. Living memory often extends to the parent and grandparent of the knowledge holder and can be estimated at three to four generations.

Current Mi'kmaq Land and Resource Use occurred within living memory or is occurring at the present day (Figure 1)

Historic Mi'kmaq Land and Resource Use occurred before living memory (Figure 1)

Figure 1: Historic and Current Use Timeline



Mi'kmaw Ecological Knowledge (MEKS) is the collective body of knowledge which Mi'kmaq possess based on their intimate relationship with their natural surroundings, which involves exploitation, conservation and spiritual ideologies, and has been passed on from generation to generation, “*kisaku kinutemuatel mijuijij*”, elder to child.

Mi'kmaq Land and Resource Use Sites are locations where Mi'kmaq land and resource use activities have taken place or are taking place at present day. These sites may or may not display physical evidence of Mi'kmaq use.

Mi'kmaq/Mi'kmaw: *Mi'kmaq* means the Family and is an undeclined form. The variant form, *Mi'kmaw*, plays two grammatical roles: 1) it is the singular of Mi'kmaq and 2) it is an adjective in circumstances where it precedes a noun.

Mi'kma'ki is the Mi'kmaw homeland (Atlantic Provinces and Gaspé Peninsula)

Specific Land Claim arises when a First Nation alleges that the federal government has not honoured its treaties, agreements or legal responsibilities. According to federal policy, a valid specific claim exists when a First Nation can prove the government has an “outstanding lawful obligation”. The Mi'kmaq are currently pursuing several specific land claims in Nova Scotia.

Comprehensive Claim is based on underlying Aboriginal Title to traditional territory that has not been dealt with by treaty or other means. Aboriginal Title to lands exists as a legal right derived from First Nations historical occupation and possession of their tribal lands. The process of negotiating the settlement of comprehensive claims, which is known as modern-day treaty making, clarifies access and ownership to land and resources. Currently, the Mi'kmaq has a comprehensive claim to all lands within the province of Nova Scotia including all inland and adjacent waters.

3.0 PURPOSE AND SCOPE OF THE MI'KMAQ ECOLOGICAL KNOWLEDGE STUDY

3.1 Purpose of the Mi'kmaq Ecological Knowledge Study

The purpose of the Mi'kmaq Ecological Knowledge Study is to support the integration of Mi'kmaq knowledge of use and occupation of Mi'kma'ki into development decisions via the environmental assessment process.

3.2 Scope of the Mi'kmaq Ecological Knowledge Study

The MEKS includes:

- 1) a study of historic and current Mi'kmaq land and resource use;
- 2) an evaluation of the potential impacts of the Project on Mi'kmaq use and occupation and constitutionally based rights;
- 3) an evaluation of the significance of the potential impacts of the Project on Mi'kmaq use and occupation; and
- 4) Recommendations to proponents and regulators that may include recommendations for mitigation measures, further study, or consultation with Mi'kmaq.

3.3 Not included in the scope of the Mi'kmaq Ecological Knowledge Study

3.3.1 *Section 35 Consultation*

This study is not consultation for justification of the infringement of constitutionally protected aboriginal and treaty rights. If the project involves possible infringements of Mi'kmaq constitutional rights, the MEKS recommends further action.

3.3.2 *Archaeological Screening and Resource Impact Assessment*

The study is not an Archaeological Screening or Archaeological Resource Impact Assessment. Results presented in the study can inform and be informed by archaeological screenings and assessments.

3.3.3 *Notification of Mi'kmaw individuals or communities of the Project*

The study is not intended to inform or notify Mi'kmaw individuals or communities of the Project, solicit the opinions or concerns of Mi'kmaw individuals or communities on the Project, or promote the Project to Mi'kmaw individuals or communities.

4.0 METHODOLOGY

4.1 Historic Mi'kmaq Land and Resource Use

Historic Mi'kmaq land and resource use occurred before living memory. The study of historic land and resource use paints a broad portrait of Mi'kmaq use and occupation of Mi'kma'ki in centuries past.

4.1.1 *Study Area*

This study encompasses the area surrounding Seely Brook located in Marshalltown Digby County, Nova Scotia. The study area is located about 15 kms west of Mi'kmaw community Bear River IR #6. The scope of research has been included to show Mi'kmaq use and occupation within Digby County.

4.1.2 *Methods*

Research was completed from within The Confederacy of Mainland Mi'kmaq research department library as well as external sources from the Nova Scotia Public Archives, Nova Scotia Museum, Cape Breton University's Mi'kmaq Resource Centre and the Colchester library. Secondary sources include Crown Land index sheets, church records, cemetery record, maps and published papers and books on Nova Scotia History.

4.1.3 *Limitations*

Recorded documents are the primary source of information for the study of historic Mi'kmaq land and resource use. There are no recorded documents in the pre-contact period and recorded documents in the post-contact period are not comprehensive. Furthermore, existing documentation has largely been written by people of a different culture. This means that information may either not be completely accurate or may be incomplete.

4.2 Current Mi'kmaq Land and Resource Use

Current Mi'kmaq land and resource use occurred within living memory or is presently occurring. The MEKS includes a study of:

- 1) Current Mi'kmaq land and resource use sites
- 2) Species of Significance to Mi'kmaq

3) Mi'kmaw Communities

4.2.1 *Study Areas*

The study areas are described in Figure 2.

4.2.1.1 Current Mi'kmaq Land and Resource Use Sites

The study area for current Mi'kmaq land and resource use sites is the proposed area of development – five-kilometer radius surrounding proposed project site.

4.2.1.2 Species of Significance to Mi'kmaq

Study areas are marked on Figure 2.

4.2.1.3 Mi'kmaw Communities

The study area for Mi'kmaw communities is a 5 km radius surrounding the proposed development area.

4.2.2 *Methods*

4.2.2.1 Current Mi'kmaq Land and Resource Use Sites

Mi'kmaq knowledge on current land and resource sites will be gathered through a review of information collected through oral interviews with Mi'kmaw knowledge holders.

All individuals, whom will be interviewed, will sign consent forms. Knowledge will be gathered in accordance within the spirit of the *Mi'kmaq Ecological Knowledge Protocol*.

Knowledge collected is reported in a general format only. No names or specific locations are published. Collected knowledge will be digitized and compiled to allow for an analysis of potential impacts of the project on current Mi'kmaq land and resource use.

4.2.2.2 Species of Significance to Mi'kmaq

A system of stratified random sampling was employed to identify flora species present in the study areas of significance to Mi'kmaq. Plants were surveyed in the spring and fall of 2016. Information collected is reported in a general format only. The names of the species are not recorded.

4.2.2.3 Mi'kmaw Communities

A review of outstanding specific land claims within the study area was undertaken by CMM. There are no known specific land claims identified within the project area, however, the record of outstanding specific land claims in no way infers that specific land claims may not arise in the future.

4.2.3 *Limitations*

While every attempt was made to document all available Mi'kmaw knowledge, the knowledge gathering process may not have captured some available Mi'kmaw knowledge. It is also recognized that over generations of cultural and political suppression, much Mi'kmaq knowledge has been irretrievably lost.

5.0 RESULTS

Results of the study are divided into two categories:

- 1) Historic land and resource use, that is, use that occurred before living memory, and
- 2) Current land and resource use, or use that occurred within living memory or is occurring at the present day.

Land and resource use may be for hunting, burial/birth, ceremonial, gathering, or habitation purposes.

5.1 Historic Mi'kmaq Land and Resource Use

The project is located within the Mi'kmaq District *Kespukwitk*, the “lands end”¹ (or ‘end of flow’). The *Kespukwitk* district covers the modern areas west of the La Have River to Yarmouth, including Cape Sable and southwestern Nova Scotia.² Hoffman identified two summer villages in *Kespukwitk*. One village, *Teopsgig* was at the mouth of the Annapolis River,³ and the other village, *Gtjisipog* was at the mouth of the Sissibou or Weymouth River, Digby County.⁴

John Reid wrote that people had been in the Maritime Provinces “continuously for more than 10,000 years and the direct ancestors of the Micmac and Maliseet-Passamaquoddy Indian peoples had been established since about 1000 BC. Since then their culture had altered and evolved. Among the periods of most significant change was the century following the first European contacts in or about the year 1500.”⁵

In Digby County, Mi'kmaq settlements could be found throughout the area. The Mi'kmaq travelled “to and from the Eastern Seaboard to seaside encampments in Digby County.”⁶

The Mi'kmaq of Nova Scotia sustained themselves through hunting and fishing activities. Speck, observed that the country had been “subdivided into more or less well recognized districts in which certain individual proprietries or families enjoyed the inherited privilege of hunting.”⁷ Typically, during the winter months families would travel to the interior “where game is found more readily, and where the lakes afford a supply of fish which are no longer to be caught on the sea-coast.”⁸

Speck, also writes that, “These bands and their gathering places at the present time have grown into the local groups which are found all through the province on small reservations. It may be added that Bear River seems to have been a kind of capital village for the bands in the southwestern part of the province, and Shubenacadie another for the central part.”⁹ It was the “Shubenacadie water way system and its connecting rivers and lakes linked all seven Districts together.”¹⁰

Darlene A. Ricker, in her book, *L'sitkuk - The Story of the Bear River Mi'kmaq Community*, introduces the Mi'kmaq community at Bear River as follows:

L'sitkuk is part of the Mi'kmaq Nation. The people I refer to as *L'sitkuk* or Bear River Mi'kmaq have lived and travelled in what is known as Digby and Annapolis counties and beyond for thousands of years. In times past this part of the province and lands south and west were known to the Mi'kmaq as *Kespukwitk*, one of the seven social-political districts of Mi'kmaq territory, of *Mi'kma'kik*. The leader or chief led within a certain geographical area.

The traditional economy of *L'sitkuk* was based on hunting, fishing and gathering. The People travelled a great deal in search of game. In their eyes there was no wilderness because everywhere was home. They were well-known for their artwork: embroidering porcupine quills on birchbark, leatherwork, and basketry.

¹ Bernard G Hoffman, *The Historical Ethnography of the Micmacs of the Sixteenth and Seventeenth Centuries* (Ph D Thesis, University of California, 1955) [unpublished] at 534 [Hoffman, *Historical Ethnography of the Micmacs*].

² Ta'n Weji-sqalia'tiek, *Cultural Landscapes*, online: http://mik-mawplacenames.ca/?page_id=57

³ Hoffman, *Historical Ethnography of the Micmacs*, *supra* note 1 at 130-132.

⁴ *Ibid.*

⁵ John Reid, *Six Crucial Decades: Time of Change in the History of the Maritimes*, 1987 at 3.

⁶ Admiral Digby Museum, *History*, online: http://admiraldigby-museum.ca/?page_id=106.

⁷ Frank G. Speck, *Beothuk and Micmac* (New York: Museum of the American Indian Heye Foundation, 1922) at 93 [Speck, *Beothuk and Micmac*].

⁸ Captain W. Moorsom, *Letters from Nova Scotia: Comprising Sketches of a Young Country* (London: Henry Colburn & Richard Bentley, 1830) at 115.

⁹ *Ibid.*

¹⁰ Michael McDonald, “Sipekne' katik Title Claim: Dispelling the Misconceptions and Myths, A Mi'kmaw perspective” on line at: <http://sipeknekatik.ca/wp-content/uploads/2016/03/SIP-EKNEKATIK-TITLE-CLAIM-PAPER.pdf>.

This work is carried on today in the community's craftspeople and woodworkers. The community has also built a strong tradition as hunting and fishing guides for non-native sports. Traditional values still practiced today including respecting elders, sharing, and striving to live happy and peaceful lives. The People love their children very much.

The disruptive effects of European settlers, missionaries and fur traders profoundly affected the People. Settlers and fur traders took up land and helped to deplete fish and game so necessary for the People to survive. The Mi'kmaq in general, and *L'istkuk* in particular, were among the first North Americans to have continuous contact with Europeans. They were the first to be exposed to European disease, technology and Christianity. The descendents of these who survived developed a great resilience while still maintaining a distinct profound identity.¹¹

By the turn of the nineteenth century the compounding stresses of over hunting due to the fur trade, increased waves of settlers and the Indian Wars initiated by Cornwallis had dramatically reduced the Mi'kmaq population. Daniel Paul writes, "*the Mi'kmaq were beggars in their own homeland. With the arrival of hordes of new settlers, their traditional sources of food had all but disappeared.*"¹²

Traditionally, the Mi'kmaw *Kespukwitk* exploited the resources of their territory by living a migratory hunter-gather life-style, moving around the region according to seasonal patterns. They lived in small kin groups. During the fall and winter the families would disperse and "*to hunt big game, such as moose, deer, caribou, and bear. Smaller animals, such as beaver, some bird species, and rabbit were also taken. In the spring, these kin groups clustered in larger bands and settled mainly along the coasts...In the summer, shellfish (clam, mussel, and scallop) and several fish species (cod, salmon, trout, eel, herring, and bass) were harvested. Lobsters were caught at low tide by means of fish spears. Seal, walrus, and porpoise were also taken. Many types of nuts, berries, and other plants were harvested, among which were the wild potato, wild carrot, blueberries, cranberries, huckleberries, and sugar maples.*"¹³

Grand Chief Membertou's son, Louis has been recorded as hunting deer,¹⁴ and elk.¹⁵ The Mi'kmaq have been recorded as early as 1612 to 1614 as harvesting numerous resources along the edges of the Annapolis River and French Bay (Bay of Fundy). The Mi'kmaq would gather acorn and the Chiquebi root, or groundnut, the Mi'kmaw potato.¹⁶ Also in this area about 20 km from Port Royal the Mi'kmaq would set up a camp and harvest Eperlan (a little fish like sardines) in the spring season.¹⁷

Marc Lescarbot recorded that the Mi'kmaq of *Kespukwitk* would also harvest sturgeon and salmon from the Dauphin River at Port Royal.¹⁸ He also recorded that "*Our savages also plant great store of tobacco, a thing most precious with them, and universally among all those nations.*"¹⁹

The Mi'kmaq were said to "*know the haunt of each, and the time of their return, go an wait for them in true devotion to bid them welcome. The smelt is the first fish of all to*

¹¹D. A. Ricker, *L'istkuk - The Story of Bear River Mi'kmaq Community* (Lockeport, Nova Scotia: Roseway Publishing, 1997) at v-vi [Ricker, *L'istkuk - The Story of Bear River*].

¹²Daniel Paul, *We Were Not the Savages*, 3d ed (Halifax: Fernwood Publishing, 2006) at 192 [Paul, *We Were Not the Savages*].

¹³Simone Poliandri, *Mi'kmaw Lobster Fishing in St. Mary's Bay, Nova Scotia: A Traditional Activity?*, 2001, Department of Anthropology, Brown University MA Degree, at 9.

¹⁴Reuben Gold Thwaites, ed, *The Jesuit Relations and Allied Documents: Travels and Explorations of the Jesuit Missionaries in New France 1610—1791*, vol 2, (Cleveland: The Burrows Brothers Publishing Co, 1896) at 147 [Thwaites, *The Jesuit Relations and Allied Documents*].

¹⁵The "Canadian Elk" or moose (the latter an Indian name).

¹⁶Thwaites, *The Jesuit Relations and Allied Documents*, *supra* note 14 at 243.

¹⁷*Ibid.*

¹⁸Marc Lescarbot, *The History of New France*, vol 3, book 6, (1914) at 236.

¹⁹*Ibid* at 252.

present himself in the spring; and to seek examples no further than at our Port Royal, there are certain brooks there arrive such schools of these smelts, that for the space of five or six weeks one might take enough of them to feed a whole city.”²⁰

While travelling Nova Scotia, Speck observed that the, “Micmacs, through their political resources, Grand Tribal Council and local Band Council allotted hunting, fishing and berry gathering areas to heads of family units in each Band.”²¹ The Hunting and Fishing areas in the King’s County area were as follows:

Table 1: Band Council Allotted Hunting, Fishing and Berry Gathering Areas in Kespukwitk

Name of Mi’kmaq Proprietor	District
Jim Meuse (Sa’ya “chief” of his band) ²²	West branch of Bear River to Lake Jolly
John Siah (Sa’ya) ²³	Mulgrave Lake neighbourhood
Ben Pictou ²⁴	Around Sporting Lake, southwest of Bear River
John Barriyo ²⁵	Long Tusket and Fourth Lake
Louis Luxey (La’ksi) ²⁶	Ponhook Lake (divided among his sons)
Jim Meuse ²⁷	Fifth lake and part of Weymouth river

5.1.1 Chronology of Historical Events

In 1606, Marc Lescarbot first mentions having encounters with Grand Chief Membertou.²⁸ “Membertou was the District Chief of Kespukwitk and had been appointed by his peers from the six other Mi’kmaq Districts as the Grand Chief.”²⁹ In 1607, Lescarbot recorded that Grand Chief Membertou had about four hundred Mi’kmaq in his band.³⁰

On June 24, 1610, Grand Chief Membertou was baptized as Henry, after the late King Henry IV.³¹ Along with Membertou, one hundred and forty Mi’kmaq were baptized.³² Grand Chief Membertou passed away in 1612 at Saint Mary’s Bay, Digby County.³³

Hoffman, writing that shortly after the establishment of the Port Royal colony, Lescarbot, noted: “another [chief] living at St. Mary’s Bay, more than twelve leagues away, feeling ill, sent to tell the said patriarch that he was ill, and desired to be baptized for fear of dying without becoming a Christian.”³⁴

Between 1668 and 1688, Dierville writes that the Indians in the neighbourhood of Port Royal are the Mi’kmaq and that the Mi’kmaq can be found along the St. John River where trout and salmon are abundant.³⁵

In 1711, Governor [Vaudreuil] issued orders “to keep the Indians loyal to France and to use them against the English. Both the French and Indians were told to harass the English as much as possible in the neighbourhood of Port Royal.”³⁶

In 1744 war broke out between Britain and France.³⁷

²⁰Ibid at 236.

²¹The Union of Nova Scotia Indians, *Crown Land Rights and Hunting and Fishing Rights of Micmac Indians in Nova Scotia* (Revised Edition, 1976) at 16 [UNSI, *Crown Land Rights and Hunting and Fishing Rights of Micmac*].

²²Ibid at 15.

²³Ibid.

²⁴Ibid.

²⁵Ibid.

²⁶Speck, *Beothuk and Micmac*, supra note 7 at 101.

²⁷Ibid.

²⁸Ruth Holmes Whitehead, *The Old Man Told Us: Excerpts from Micmac History 1500-1950* (Halifax: Nimbus Publishing Ltd, 1991) at 25-26 [Whitehead, *The Old Man Told Us*].

²⁹Daniel Paul, *We Were Not the Savages*, 3d ed (Halifax: Fernwood Publishing, 2006) at 31 [Paul, *We Were Not the Savages*].

³⁰Whitehead, *The Old Man Told Us*, supra note 29 at 29.

³¹Paul, *We Were Not the Savages*, supra note 12 at 30.

³²J. H Kennedy, *Jesuit and Savage in New France* (USA Library of Congress, Acorn Books, 1971) at 3.

³³Whitehead, *The Old Man Told Us*, supra note 29 at 39-40.

³⁴Hoffman, *Historical Ethnography of the Micmacs*, supra note 1 at 531-532.

³⁵Sieur DeDierville, *Relation of the Voyage to Port Royal in Acadia or New France*, ed John Clarence Webster (1933) at 184.

³⁶John Clarence Webster, *Acadia at the End of the Seventeenth Century: Letters, Journals and Memoirs of Joselth Robineau DeVilledon, Commandant in*

October 1, 1749, the British colonial government declared war on the Mi'kmaq. Orders were given to the commanding officers at Annapolis Royal, Minas, and all others within the Province, "to annoy, distress & destroy the Indians every where--."³⁸ Ten Guineas was promised for every Mi'kmaq killed or taken prisoner. Orders were also given to raise two more companies, one under Major Gilman, to be like Gorham's Rangers, and one under Wm. Champlain.³⁹

In 1750 the Lords of Trade wrote Cornwallis suggesting, "gentler methods and offers of Peace and Friendship should be tendered to the Indians."⁴⁰ Unfortunately, this caution from the Lords of Trade arrived too late as Cornwallis had already implemented the Provincial Proclamation on Indian Scalps and "Captain Gorham's Rangers were already hunting down Micmacs in the backwoods of Nova Scotia."⁴¹

In September of 1752, Major Jean Baptiste Cope, "Chief of the Schubenacadie Mi'kmaq – whose territory comprised an area that today covers approximately Cumberland, Colchester, Guysborough, Hants, Halifax and parts of Antigonish, Pictou, Kings and Lunenburg counties – approached the British ... with a proposal that peace be with his District."⁴² At his meeting with the Council, Cope proposed the "the Indians should be paid for land the English had settled upon in this country."⁴³

On November 24, 1752, "Chief Cope returned to Halifax with the approval of his followers to sign a formal treaty."⁴⁴ The treaty was sealed with the Great Seal of Nova Scotia and renewed the treaty of 1725.

By 1753 the Peace and Friendship Treaty of 1752 was broken. "Governor Hopson noted in a letter to the Lords of Trade that two sailors had arrived at Halifax in early April 1753, carrying six Indian (Shubenacadie) scalps."⁴⁵

Despite the Treaties, the English genocide campaign against the Mi'kmaq was pursued relentlessly. In 1756, the English renewed their bounty offer. Volunteer companies as well as individual Englishmen continued to hunt and kill Mi'kmaq people wherever they found them. In "Geography & History of the County of Digby", by author Isaiah W. Wilson, records an attack on a Mi'kmaq encampment at the north side of the Racquette near Digby by British troops from Annapolis in 1759.⁴⁶

*The savages thus surprised, being destitute of any effective weapons of defence, fled in disorder before the disciplined pursuers, who followed the skulking tribe along the shore to Rogers Point so called in consequence, near the light house. Here, most of them were slain, some being shot on the shore, which others plunged into the waters and drowned.*⁴⁷

Acadia, 1690-1700, (The New Brunswick Museum: St. John's, 1935) at 195.

³⁷Stephen E Patterson, "1744-1763: Colonial Wars and Aboriginal Peoples" in Phillip A Buckner & John G Reid, eds, *The Atlantic Region to Confederation: A History* (Toronto: University of Toronto Press and Acadiensis Press, 1994) 125 at 132 [Patterson, "Colonial Wars and Aboriginal Peoples"].

³⁸Minutes of H.M.'s Council (transcripts), PANS RG1, vol 209, pp 22-23, reel 15310.

³⁹Minutes of H.M.'s Council (transcripts), PANS RG1, vol 209, pp 22-23, reel 15310.

⁴⁰Donald M Julien, "Historical Perspectives", *The Confederacy of Mainland Micmacs* at 10 [Julien, "Historical Perspectives"].

⁴¹*Ibid.*

⁴²Paul, *We Were Not the Savages*, *supra* note 12 at 125.

⁴³Julien, "Historical Perspectives," *supra* note 40 at 10.

⁴⁴*Ibid.*

⁴⁵*Ibid* at 11.

⁴⁶Admiral Digby Museum, *History*, online: http://admiraldigby-museum.ca/?page_id=106.

⁴⁷Isaiah Wilson, *Geography and History of Digby County*, (Holloway Bros, 1900).

In 1783 the British colonial government implemented a land policy that offered the Mi'kmaq "temporary grants of occupation to them [for] some of their own land."⁴⁸ Several licences were issued to those Indians that promised to settle on the lands granted.⁴⁹

On February 2, 1786, Philip Bernard was granted 300 Acres of land at St. Mary's Bay.⁵⁰

In March 1801, the government changed their land policy to that of the reserve system due to white settlers encroaching on lands granted to the Indians.⁵¹

The reserve at Bear River (what is now know as Bear River Reserve #6) came into existence in 1801, when the colonial government of Nova Scotia embarked on a process to set aside lands in different counties for the Mi'kmaq. Through this process, 1000 Acres was set-aside for the Mi'kmaq in the County of Annapolis.⁵² An Order in Council confirmed the grant in 1822. The Order set out 1000 acres laid out for the Indians at Bear River and the additional 600 acres requested at the forks of the river.⁵³

November 27, 1815, a Petition read in Council, from Annapolis on behalf of "Pierre Richard and Indian praying for a grant of land..."⁵⁴

By November 1827, the Mi'kmaq had already begun to move onto their new settlement lands.⁵⁵ In addition to the reserve at Bear River, a few families from the Bear River community lived at a site in Annapolis County called Lequille (also known as General's Bridge).⁵⁶

October 22, 1828, it was recorded that a Mi'kmaq "settlement [was] forming between the forks of Bear River under the guidance of Andrew Meuse."⁵⁷

Throughout the 1800s, the Mi'kmaq "suffered from disease and from the threat of starvation".⁵⁸ Many infectious diseases, such as smallpox, whooping cough, measles⁵⁹ and tuberculosis⁶⁰ were contracted from Europeans. "The Indian Statistics collected in 1838 exhibit the number of the Micmac for the western district of Nova Scotia, which includes Annapolis, Digby, Yarmouth, Shelburn, Queens, and Lunenburg Counties as 415 Mi'kmaq Souls".⁶¹ This situation not only continued, but also worsened by 1846 "the natives at Digby were reported dying for want of food and sustenance."

December 14, 1829, P. Wiswall, recorded that donations where given to the Mi'kmaq led by Andrew Meuse. The donations were given to the below listed Mi'kmaq:

- ~ Newel Toney
- ~ Joseph Muse
- ~ Malti Pictou
- ~ Stephen (Nackward?)
- ~ Francis Muse
- ~ Peter Toney
- ~ Joseph Gload
- ~ James Gload

⁴⁸Paul, *We Were Not the Savages*, supra note 12 at 186.

⁴⁹Gary P Gould and Alan J Semple, *Our Land: The Maritimes: The Basis of the Indian Claim in the Maritime Provinces of Canada* (Fredericton: Saint Anne's Point Press, 1980) at 40 [Gould and Semple, *Our Land*].

⁵⁰Minutes of H.M.'s Council (transcripts), PANS RG1, vol 213, pp 79-80, reel 15312.

⁵¹Gould and Semple, *Our Land* at 43.

⁵²RG 1, vol. 430, PANS No 54 and 53.

⁵³National Archives of Canada, RG10, vol 459, reel 13,329 at 190-191 [NAC].

⁵⁴MG 15, vol, reel 15108.

⁵⁵NSARM MG 1, vol. 979, file8, no.9.

⁵⁶Ricker, *L'sitkuk - The Story of Bear River*, supra note 11 at 60

⁵⁷MG 15, vol 17, no 34.

⁵⁸Paul, *We Were Not the Savages*, supra note 12 at 200.

⁵⁹*Ibid* at 199.

⁶⁰*Ibid* at 200.

⁶¹*Ibid* at 206-07.

- ~ Stephen Muse
- ~ Daniel Toney
- ~ Andrew Muse
- ~ John Pictou
- ~ Francis (Nackward?).⁶²

August 9, 1831, Wiswall reporting to Rupert D. George on the Mi'kmaq in Bear River stated that the Mi'kmaq were doing well growing potatoes and grain, and that they ceased to be beggars.⁶³

February 3, 1832, Paul Toney complains to Harris that Israel Rice and Thomas Rice are cutting and removing more timber from the reserve while the Mi'kmaq are away. The Mi'kmaq sought immediate remedy before all the timber is taken from the reserve land.⁶⁴

In 1842 at Bear River, Indian Agent Joseph Howe documented a Mi'kmaq man cutting and tanning a moose hide, a woman frying dough, nuts and making pumpkin pies, and a second woman "*working quill boxes*."⁶⁵

May 20, 1848, Plan of lands for Indians near Clemens south boundary (Annapolis Co.). Shows lands of Francis Glode, Jack Glode, Peter Paul, Jasper Williams(?), Charles Glode, William Davis(?). Signed by John Spry Morris, Seurveyor General.⁶⁶

On July 15, 1858, Hon. C. Sapper report the Mi'kmaq at Bear River and Shubenacadie are doing well. The people are very independent.⁶⁷

In 1861, Francis Glode petitioned to request permission to transfer his licence of his lands (that he had lived on since 1831) to Joseph Peter, his nephew, who has family of boys, and who will assist petitioner in maintain self and property.⁶⁸

On March 16, 1861, Robert Leslie receives a statement from Captain Charnely that he hopes can help Francis Glode in getting his wish to have land in fee simple. Leslie also reports in his letter that, malignant fever broke out at Bear River, which "*had the same mortality as cholers. White farmers were so scared of the disease that they would not buy wears from the Indians and would not let them near their houses. Consequently famine and starvation threatened the community*."⁶⁹ Leslie went on to say that in his report to the Lt. Governor he told of his first visit to Bear River where in one camp he found a young woman, with her brother and children lying dead beside her. He reported that Francis Glode was busy digging graves for those who had died. Gloade had spent all of the £10 or £12 he had saved procuring food for the ill.⁷⁰

On March 27, 1861, in a report on the application of Francis Glode to relieve his lands of the usual restrictions on Indian lands, Fairbanks believes Glod may have wanted to sell the lot and live off the proceeds, being an old man. Fairbanks saw this as a case deserving favourable considerations.⁷¹

⁶²RG 1, vol 430, NSARM, no 169½.
⁶³RG 1, vol 430, doc 180, NSARM.
⁶⁴MG 15, vol 17, doc 42, NSARM.
⁶⁵Whitehead, *The Old Man Told Us*, *supra* note 28 at 221.
⁶⁶NAC, RG10, vol 459, reel 13,329 at 154.
⁶⁷RG 1, vol 431, doc 97, NSARM.
⁶⁸NAC, RG10, vol 461, reel 13,330 at 631-632.
⁶⁹NAC, RG10, vol 461, reel 13,330 at 638-641.
⁷⁰*Ibid.*
⁷¹NAC, RG10, vol 461, reel 13,330 at 634-635.

On May 18, 1864, William Parker send a letter to Fairbanks regarding the property line between Parker's property and the Indian Reserve, of Bear River. Parker's land was mistakenly included in the Reserve and he claimed the Mi'kmaq sold all the timber off the land. Parker wanted to exchange his land for another piece.⁷²

On July 5, 1864, in a letter Frederick Kempton requested to purchase or lease Reserve land on the west branch of the Bear River or the lake at the head of the stream.⁷³

In a letter dated May 8, 1866, John Leslie, writing on behalf of John Peter stated that John Peter wanted to purchase the grant of 200 acres of land that was given to Francis Glaud [Gould] who has been residing in New Brunswick for many years.⁷⁴

On December 31, 1866, Samuel Fairbanks in an Indian Affairs Report estimated the number of acres for Indians in Annapolis as 1400 acres.⁷⁵

A Return of Seed Distribution, signed by E. E. Rice on June 12, 1869, identified that seeds were distributed in Bear River to: Susan Glode (widow), John Bareow(?), (name?), Mary Muese (widow), Mary Nockwood (widow), Mary Ann Jeremy (widow), John Pictou, James Labradore.⁷⁶

In a letter dated July 10, 1869, Edward. E. Rice informs Fairbanks that he attended the Bear River reserve to find that most of the Mi'kmaq had gone porpoise hunting, "*That being their general business in the summer.*" Those that were left behind were not able to seed for themselves. Rice also suggested that he save any unspent money for the Indians of Bear River for the winter months, because in the summer the Mi'kmaq can look after themselves.⁷⁷

Over the winter months of 1870, Indian Agent, S. Fairbanks received receipts for blankets that were given to the Mi'kmaq in: Clare (16 blankets⁷⁸ in January, another 16 blankets⁷⁹ given in February), Annapolis (20 blankets⁸⁰ at the brining of January, another 20 blankets at the end of the month)⁸¹ and Bear River (16 blankets⁸² at the beginning of February, another 20 blankets given at the end of the month).⁸³

James Meuse was identified on a receipt dated March 11, 1870, as the present Chief of the Indians in the Western part of Nova Scotia. James Meuse received funds for travelling from Bear River to Halifax on Indian Affairs business.⁸⁴

The accounts of John Harlow, Indian Agent at Bear River in 1871 includes receipts for payments made for supplies and such for Mi'kmaq. Given names on some of the receipts: Jas. Labrador, Joseph Salome, Solomon Sire, John Peters, Jas. Lewy (also Louis), S. Comeau, Jos. Muse, Jas. Muse, Molly Muse (widow), J. Paul, John Pigto, A. Labrador, A. Labrador, Widow Michelle and daughter, Harriet Pigto (widow), John Jeremy, Old Peter Bober and wife, Old Molly Knockwood, Francis Charles, F. Paul, Noel Paul and P. Michael, Widow Barreo, J. Glode.⁸⁵

In May of 1871, Dr. C. H. Morse, practicing in the Weymouth area, wrote to Indian

⁷²NAC, RG10, vol 459, reel 13,329 at 175-176.
⁷³NAC, RG10, vol 461, reel 13,330 at 4-8.
⁷⁴NAC, RG10, vol 459, reel 13,329 at 172-173.
⁷⁵PANS Micro N933, reel #15, JLANS, Appendix 6, p1-4.
⁷⁶NAC, RG10, vol 459, reel 13,329 at 362-363.
⁷⁷NAC, RG10, vol 459, reel 13,329 at 365-366.
⁷⁸NAC, RG10, vol 459, reel 13,329 at 540-543.
⁷⁹NAC, RG10, vol 459, reel 13,329 at 540-541.
⁸⁰NAC, RG10, vol 459, reel 13,329 at 540-543.
⁸¹NAC, RG10, vol 459, reel 13,329 at 542-543.
⁸²NAC, RG10, vol 459, reel 13,329 at 512-513.
⁸³NAC, RG10, vol 459, reel 13,329 at 506-507.
⁸⁴NAC, RG10, vol 459, reel 13,329 at 606-607.
⁸⁵NAC, RG10, vol 459, reel 13,329 at 473-497.

Agent Fairbanks stating that he had been treating an Indian, John German, who was very sick with inflammation of the lungs and that he required his payment for services.⁸⁶

On November 18, 1871, John Harlow, gave a report on expenditures and conduct of Indian Affairs in his District. Harlow identified that he wanted to purchase a pair of oxen for the Mi'kmaq as it would, in his opinion, be cheaper and more cost effective to have oxen belonging to the Mi'kmaq than have to hire out teams from local farmers at higher prices. Harlow also reported, the Mi'kmaq seem to be willing to plant crops as the [Lumber/Lumberman?] have about destroyed their [the Mi'kmaq] chances for hunting as a business and that Old Molly Muse, widow of Old Governor J Muse wants a cow.⁸⁷

The Mi'kmaq have been reported as being very capable mapmakers, utilizing birch-bark for charting travel routes and hunting territories. In 1885, Speck, recorded Miss Massey of Philadelphia, who stated that “*she knew of a case at Digby, Nova Scotia, where a chief who was then about sixty years of age exhibited a birch-bark map of his hunting territory during a trial in court to prove his inherited claim to the same.*”⁸⁸

In 1888, The Mi'kmaq of Bear River submitted a Petition to the Minister of the Interior, Department of Indian Affairs, Ottawa about their concerns of overpayment to Doctors, funeral expenses, and the need for more seed provisions. There were 110 signatures to the Petition.⁸⁹

On May 11, 1888, F. McDonald, Indian Agent for Bear River reported that during his visit to Bear River “*most of the Indians, indeed all that can ride a log on the streams are gone stream driving and will not be home till the Middle of May, which would make it very late for planting this spring.*”⁹⁰

In a letter dated August 8, 1888, George Wells, Indian Agent responded to a letter of March 27th, were the Mi'kmaq request to make coffins.⁹¹

In 1899, Chief James Meuse contacted the Asst. Secretary, Department of Indian Affairs to get advise on a matter regarding the Bear River Electric Light, Heat and Power Company Ltd. Chief Meuse stated that the power company had lands that diverged from the original site line to a position half on and half off reserve land, without payment or benefit to the reserve.⁹²

5.1.2 Post Contact

Population and Census Information

A census completed in the late 1600s, indicated the number of Indians in Acadia (Nova Scotia) as follows:

⁸⁶NAC, RG10, vol 459, reel 13,329 at 126-128.

⁸⁷NAC, RG10, vol 459, reel 13,329 at 571-573.

⁸⁸Speck, *Beothuk and Micmac*, *supra* note 7 at 98.

⁸⁹RG 10, vol 2076, File 10,987.

⁹⁰Indian Affairs, RG 10, vol 2241, file 46,538.

⁹¹Indian Affairs, File 274/30-6-6.

⁹²*Ibid.*

Table 2: 1600s Census of Indians in Acadia (Nova Scotia)⁹³

Location	Indian Men	Indian Women	Children
Port Royal	6	6	14
Le Cap 3	2	5	
Les Mines	15	15	20
Chicnitou	4	5	12

The following table shows the number of wigwams located in the country of Acadia (Nova Scotia) recorded by Gargas in 1687-8.⁹⁴

Table 3: 1687-8 Recorded Numbers of Wigwams in Acadia (Nova Scotia)

Location	Wigwams
Port Royal	4
Le Cap 3	1
Les Mines	15

Table 4: 1708 Census Excerpts: Micmac at Port Royal⁹⁵

Paul Cope; 45 years	Jacques Nemecharet; 25 years
Cecille; 35 years	Elisabet; 16 years
Jean-Baptiste; 10 years	Ambroise Canibechiche; 23 years
Thereza; 8 years	Catherine; 17 years
Marie; 5 years	Claude; 1 year
Margueritte; 1 year	Estienne Janneperis; 68 years
Grand Claude; 68 years	Anne, his wife; 50 years
Marie; 55 years	Jean-Baptiste, his son; 23 years
Claude; 21 years	Guillaume; 19 years
Joseph; 17 years	François; 3 years
Martin; 15 years	Anne; 35 years
François; 5 years	Margueritte; 16 years
Marie Catherine; 19 years	Marie; 13 year
René, son of Grand Claude; 23 years	François; Jeanperis; 27 years
Marie; 17 years	Angès, his daughter; 23 years
Cecille; 1 year	Marie; 1 year

In 1832, it was recorded that there were 74 Mi'kmaq living at the Bear River reserve.⁹⁶

Population figures for the Mi'kmaq were stable through the early part of the nineteenth century. During the later part of the century, diseases (such as small pox and tuberculosis) and poverty, affected the Mi'kmaq populations throughout Nova Scotia.⁹⁷

⁹³Garas, "A Comparison of the Censuses of Acadie in the Years, 1671, 1686, 1687-8, 1693", in *Acadiensia Nova: 1598-1779*, ed William Inglis Morse, vol 1 (Bernard Quaritch Ltd., 1935) at 148-149.

⁹⁴*Ibid* at 140.

⁹⁵Whitehead, *The Old Man Told Us*, *supra* note 28 at 78-79.

⁹⁶Ricker, *Isitkuk - The Story of Bear River*, *supra* note 11 at 59.

⁹⁷*Ibid* at 60, 61 and 65.

In 1862, Indian Affairs recorded the number of Mi'kmaq in Annapolis County at 94; and the number of Mi'kmaq in Digby County at 128.⁹⁸

The following table shows the names and ages of Mi'kmaq recorded on the 1871 Census of the sub-districts Digby, Head of Saint Mary's Bay, and St. Mary's Bay in Digby County.

Table 5: Mi'kmaq Recorded in the 1871 Census in the sub-districts St. Mary's Bay, Digby and Head of Saint Mary's Bay⁹⁹

St. Mary's Bay	
None found	
Digby	
Stephen Knockwood; 34 years; Hunter ¹⁰⁰	Joseph Pinalle; 60 years; Hunter ¹⁰¹
Molly Knockwood; 14 years ¹⁰²	Hannah Pinalle; 65 years ¹⁰³
Mary A. Michael; 13 years ¹⁰⁴	Hannah Pinalle; 20 years ¹⁰⁵
Louis Toney; 9 years ¹⁰⁶	Joseph Pinalle; 18 years ¹⁰⁷
Rachel Toney; 7 years ¹⁰⁸	James Pinalle; 13 years ¹⁰⁹
Abraham Gload; 51 years ¹¹⁰	Joseph Blin; 40 years; Physician ¹¹¹
Nellie Gload; 32 years ¹¹²	Mary Blin; 45 years ¹¹³
Mary Michael; 11 years ¹¹⁴	Joseph Blin; 17 years ¹¹⁵
Abraham J. Gload; 19 years ¹¹⁶	Stephen Blin; 15 years ¹¹⁷
Nastassie Gload; 26 years ¹¹⁸	Peter Blin; 10 years ¹¹⁹
John B. Gload; 4 years ¹²⁰	John Blin; 7 years ¹²¹
James Toney; 33 years ¹²²	Joseph Pinalle; 60 years; Hunter ¹²³

⁹⁸Journals of House of Assembly, NS, Appendix No. 30, Indian Affairs, PANS.

⁹⁹Canada, Library and Archives Canada, "Search Results: Census of Canada, 1871", online: <http://www.bac-lac.gc.ca/eng/census/1871/Pages/results.aspx?k=Kings%20AND%20cnsProvinceCode%3A%22NS%22&start1=1>.

¹⁰⁰*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00490.pdf

¹⁰¹*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf

¹⁰²*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00490.pdf

¹⁰³*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf

¹⁰⁴*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00490.pdf

¹⁰⁵*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf

¹⁰⁶*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00475.pdf

¹⁰⁷*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf

¹⁰⁸*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00475.pdf

¹⁰⁹*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf

¹¹⁰*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00475.pdf

¹¹¹*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf

¹¹²*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00475.pdf

¹¹³*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf

¹¹⁴*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00475.pdf

¹¹⁵*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf

¹¹⁶*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00475.pdf

¹¹⁷*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf

¹¹⁸*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00475.pdf

¹¹⁹*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf

¹²⁰*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00475.pdf

¹²¹*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf

¹²²*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00474.pdf

¹²³*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf

Mary Ann Toney; 42 years ¹²⁴	Hannah Pinalle; 65 years ¹²⁵
Joseph Toney; 15 years ¹²⁶	Hannah Pinalle; 20 years ¹²⁷
Lynn Toney; 12 years ¹²⁸	Joseph Pinalle; 18 years ¹²⁹
Head of St Mary's Bay	
Gabriel Muise; 50 years ¹³⁰	Alexander Muise; 23 years ¹³¹
Harriett Broadus; 32 years ¹³²	

The following table shows the names and ages of the Mi'kmaq recorded on the 1881 Census of the sub-districts Digby and Marshall (Town) in the county of Digby.

Table 6: Mi'kmaq Recorded on the 1881 Census of the sub-districts Digby and Marshall (Town)

Digby	
None found	
Marshall (Town)	
James Gorman; 46 years; Hunter ¹³³	Stephen Gorman; 12 years ¹³⁴
Mary Gorman; 42 years ¹³⁵	Nelly Pictou; 70 Years ¹³⁶

The following table is a summary of the Mi'kmaq population information in Digby County as reported in the Department of Indian Affairs Annual Reports.

¹²⁴*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00474.pdf.

¹²⁵*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf.

¹²⁶*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00474.pdf.

¹²⁷*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf.

¹²⁸*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00474.pdf.

¹²⁹*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396664_00495.pdf.

¹³⁰*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396665_00120.pdf.

¹³¹*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396665_00120.pdf.

¹³²*Ibid* online: http://data2.collectionscanada.ca/1871/pdf/4396665_00120.pdf.

¹³³Canada, Library and Archives Canada, "Search Results: Census of Canada, 1881", online: <http://data2.collectionscanada.gc.ca/e/e325/e008120396.pdf>.

¹³⁴*Ibid* online: <http://data2.collectionscanada.gc.ca/e/e325/e008120396.pdf>.

¹³⁵*Ibid* online: <http://data2.collectionscanada.gc.ca/e/e325/e008120396.pdf>.

¹³⁶*Ibid* online: <http://data2.collectionscanada.gc.ca/e/e325/e008120396.pdf>.

Table 7: Digby County Mi'kmaq Population Information from The Department Of Indian Affairs Annual Reports

Year of Report	Mi'kmaq Population of Digby County	Other Notes
1874 ¹³⁷	290	Agent M. Harlow Combined population of Mi'kmaq in Annapolis and Digby. Reported the land acreage of the Indian Reserves in the Annapolis County County: Annapolis and Digby Bear River 1,600 Annapolis Cegumcega Lake, ten lots 400 Annapolis New Liverpool Road 1,000 Indians, Annapolis County near Bear River
1878 ¹³⁸	360	Agent M. Harlow Combined population of Mi'kmaq in Annapolis, Digby, Yarmouth and Slerburn. 42 students registered to attend the school in Bear River
1879 ¹³⁹	360	Agent M. Harlow No Report. Combined population of Mi'kmaq in Annapolis, Digby, Yarmouth and Slerburn.
1880 ¹⁴⁰	362	Agent M. Harlow Combined population of Mi'kmaq in Annapolis, Digby, Yarmouth and Slerburn. In the western counties of the Province, the Mi'kmaq continue to obtain their livelihood from fishing, porpoise shooting, and selling Mi'kmaq handicraft.
1881 ¹⁴¹	362	Agent M. Harlow No Report. Combined population of Mi'kmaq in Annapolis, Digby, Yarmouth and Slerburn. The Mi'kmaq of Annapolis and Digby were settled on reserves.
1882 ¹⁴²	362	Agent M. Harlow Combined population of Mi'kmaq in Annapolis, Digby, Yarmouth and Slerburn.
1883 ¹⁴³	324	Agent F. McDormand Combined population of Mi'kmaq in Annapolis, Digby, Yarmouth and Slerburn. The population of Bear River was 219. Many Mi'kmaq are migratory; a few farm, but their principal occupation consists of manufacturing axe handles and tubs. The Mi'kmaq hunt porpoise and derive considerable revenue from the sale of the oil.
1884 ¹⁴⁴	333	Agent F. McDormand Combined population of Mi'kmaq in Annapolis, Digby, Yarmouth and Slerburn. The Mi'kmaq at Bear River engage extensively in porpoise hunting and fishing, preferring those modes for obtaining subsistence for their families to tilling the soil, though a few of them do cultivate land.

¹³⁷Canada, Library and Archives, *Indian Affairs Annual Reports, 1864-1990*, online: <http://central.bac-lac.gc.ca/.item/?id=1874-IAAR-RAAI&op=pdf&app=indianaffairs>.

¹³⁸*Ibid* online: <http://central.bac-lac.gc.ca/.item/?id=1878-IAAR-RAAI&op=pdf&app=indianaffairs>.

¹³⁹*Ibid* online: <http://central.bac-lac.gc.ca/.item/?id=1879-IAAR-RAAI&op=pdf&app=indianaffairs>.

¹⁴⁰*Ibid* online: <http://central.bac-lac.gc.ca/.item/?id=1880-IAAR-RAAI&op=pdf&app=indianaffairs>.

¹⁴¹*Ibid* online: <http://central.bac-lac.gc.ca/.item/?id=1881-IAAR-RAAI&op=pdf&app=indianaffairs>.

¹⁴²*Ibid* online: <http://central.bac-lac.gc.ca/.item/?id=1882-IAAR-RAAI&op=pdf&app=indianaffairs>.

¹⁴³*Ibid* online: <http://central.bac-lac.gc.ca/.item/?id=1883-IAAR-RAAI&op=pdf&app=indianaffairs>.

¹⁴⁴*Ibid* online: <http://central.bac-lac.gc.ca/.item/?id=1884-IAAR-RAAI&op=pdf&app=indianaffairs>.

Year of Report	Mi'kmaq Population of Digby County	Other Notes
1885 ¹⁴⁵	337	Agent F. McDormand Combined population of Mi'kmaq in Annapolis, Digby, Yarmouth and Slerburn. The sanitary condition of the reserve at Bear River was not as good as usual.
1886 ¹⁴⁶	335	Agent F. McDormand Combined population of Mi'kmaq in Annapolis, Digby, Yarmouth and Slerburn. A good deal of sickness prevailed, which was fatal in several cases. The Bear River Mi'kmaq engage extensively in fishing, porpoise hunting, trapping furs, and other industries common to the Mi'kmaq.
1887 ¹⁴⁷	346	Agent F. McDormand Combined population of Mi'kmaq in Annapolis, Digby, Yarmouth and Slerburn.
1888 ¹⁴⁸	344	Agent F. McDormand Combined population of Mi'kmaq in Annapolis, Digby, Yarmouth and Slerburn. Sickness killed 14 people at Bear River leaving the population at 157. The Mi'kmaq continued to follow their usual practices of porpoise hunting, fishing, cooperage, manufacturing Mi'kmaq wares and agriculture to a limited extent.
1889 ¹⁴⁹	295	Agent F. McDormand Combined population of Mi'kmaq in Annapolis, Digby, Yarmouth and Slerburn.
1890 ¹⁵⁰	150	Agent F. McDormand
1891 ¹⁵¹	154	Agent F. McDormand
1892 ¹⁵²	159	Agent F. McDormand
1893 ¹⁵³	185	Agent F. McDormand
1894 ¹⁵⁴	183	Agent F. McDormand
1895 ¹⁵⁵	180	Agent F. McDormand
1896 ¹⁵⁶	190	Agent F. McDormand The Mi'kmaq are reported as being in much better circumstances than they were a few years ago.

¹⁴⁵*Ibid* online: <http://central.bac-lac.gc.ca/.item/?id=1885-IAAR-RAAI&op=pdf&app=indianaffairs>.

¹⁴⁶*Ibid* online: <http://www.bac-lac.gc.ca/eng/discover/aboriginal-heritage/first-nations/indian-affairs-annual-reports/Pages/item.aspx?IdNumber=4964>.

¹⁴⁷*Ibid* online: <http://www.bac-lac.gc.ca/eng/discover/aboriginal-heritage/first-nations/indian-affairs-annual-reports/Pages/item.aspx?IdNumber=5743>.

¹⁴⁸*Ibid* online: <http://www.bac-lac.gc.ca/eng/discover/aboriginal-heritage/first-nations/indian-affairs-annual-reports/Pages/item.aspx?IdNumber=6423>.

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¹⁵⁰*Ibid* online: <http://www.bac-lac.gc.ca/eng/discover/aboriginal-heritage/first-nations/indian-affairs-annual-reports/Pages/item.aspx?IdNumber=7565>.

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¹⁵⁵*Ibid* online: <http://www.bac-lac.gc.ca/eng/discover/aboriginal-heritage/first-nations/indian-affairs-annual-reports/Pages/item.aspx?IdNumber=10305>.

¹⁵⁶*Ibid* online: <http://www.bac-lac.gc.ca/eng/discover/aboriginal-heritage/first-nations/indian-affairs-annual-reports/Pages/item.aspx?IdNumber=10997>.

Year of Report	Mi'kmaq Population of Digby County	Other Notes
1897 ¹⁵⁷	112	Agent F. McDormand Report identified 1,600 acres of reserve lands and No. 6 Bear River (Indian Hills) in Digby and Annapolis County
1898 ¹⁵⁸	Bear River - 110 St. Bernard - 30 French Farm - 15 Little River - 5	Agent F. McDormand The Mi'kmaq in Digby are located chiefly on the reserve at Bear River. There are six families living at St. Bernard, and a few others at Little River. The reserve contains sixteen hundred acres: forty under cultivation, two hundred used as pasture, and thirteen hundred and sixty uncultivated.
1899 ¹⁵⁹	Bear River - 88 St. Bernard - 20 French Farm - 15 Little River - 5	Agent F. McDormand
1900 ¹⁶⁰	Bear River - 96 St. Bernard - 30	Agent F. McDormand
1901 ¹⁶¹	Bear River - 101 Weymouth - 26	Agent F. McDormand

¹⁵⁷Ibid online: <http://www.bac-lac.gc.ca/eng/discover/aboriginal-heritage/first-nations/indian-affairs-annual-reports/Pages/item.aspx?IdNumber=11564>.

¹⁵⁸Ibid online: <http://www.bac-lac.gc.ca/eng/discover/aboriginal-heritage/first-nations/indian-affairs-annual-reports/Pages/item.aspx?IdNumber=12435>.

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¹⁶⁰Ibid online: <http://www.bac-lac.gc.ca/eng/discover/aboriginal-heritage/first-nations/indian-affairs-annual-reports/Pages/item.aspx?IdNumber=14230>.

¹⁶¹Ibid online: <http://www.bac-lac.gc.ca/eng/discover/aboriginal-heritage/first-nations/indian-affairs-annual-reports/Pages/item.aspx?IdNumber=15124>.

5.1.3 Archaeology

The Confederacy of Mainland Mi'kmaq records did not contain any archaeological sites within the study area. The adjoining areas have had some activity recorded in the Maritime Archaeological Resource Inventory. The information collected from that research has shown that Mi'kmaq presence occurred all around the study area.

5.2 Current Mi'kmaq Land and Resource Use

The study of current Mi'kmaq land and resource use is comprised of a study of current Mi'kmaq land and resource use sites, species of significance to Mi'kmaq, and Mi'kmaq communities.

5.2.1 Current Mi'kmaq Land and Resource Use Sites

Current Mi'kmaq land and resource use activities are divided into five categories:

- 1) Kill/hunting
- 2) Burial/birth
- 3) Ceremonial
- 4) Gathering food/ medicinal
- 5) Occupation/habitation

Table 1 provides a description of activities undertaken at the sites.

Table 1: Description of Activities Undertaken in Current Mi'kmaq Land and Resource Use Sites

TYPE OF SITE	DESCRIPTION OF ACTIVITIES IN STUDY AREA
HUNTING/KILL	Smelt, Rabbit, Trout
BURIAL/BIRTH	
CEREMONIAL	
GATHERING	Quills, Specialty Wood
HABITATION	

***Significant current harvesting and fishing areas located along the Joggins coastline.**

5.2.2 Species of Significance to Mi'kmaq present in study area

Species of significance to Mi'kmaq in the study area are divided into three categories:

- 1) Medicinal
- 2) Food/Beverage
- 3) Craft/Art

The following table describes the number of plants of significance present in the study areas during the fall and spring surveys.

Table 2: Number of Species of Significance to Mi'kmaq Present in the Study Areas Spring & Fall 2016

TYPE OF USE	NUMBER OF SPECIES PRESENT SPRING & FALL 2016
MEDICINAL	31
FOOD/BEVERAGE	12
CRAFT/ART	9

5.2.3 Mi'kmaw Communities

There is one Mi'kmaq First Nation nearest the project site, *L'sitkuk* (Bear River) First Nation. The registered population of *L'sitkuk* as of October 2016 was 336 persons; with 110 living on reserve and 226 band members living off reserve.¹⁶² *L'sitkuk* First Nation is comprised of three parcels. Bear River #IR6 is the main land base where the majority of the population live. Parcel #IR6 is 633.80 hectares and located 17.7 kilometers southeast of the Digby township.¹⁶³ The satellite community of Bear River #IR6A, known as Lequille, consists of 31.20 hectares. The other parcel, #IR6B, known as Graywood, is 24.30 hectares. Both are located in the Annapolis Valley.¹⁶⁴

Table 8: Mi'kmaw Place Names

Place	Mi'kmaw Place Name	Meaning (if given)
Lands		
Annapolis Royal	Tewopskik ¹⁶⁵	
Port Royal Area	Nme'juaqnek ¹⁶⁶	“the place of bountiful fish”
Moose River	Tia'mui-sipu ¹⁶⁷	“Moose River”
Cornwallis	Apji'jkmuju'e'katik ¹⁶⁸	“place of the ducks”
Deep Brook	Kesaqi'pukwek ¹⁶⁹	“deep brook”
Bear River First Nation	L'sitkuk ¹⁷⁰	“Following along by high rocks” and the idea of “water cuts through”
Digby Town	Weskewinaq ¹⁷¹	“cheerful place”
Waterford	Peska'qatik ¹⁷²	“the skinning place”
Annapolis	Gespogoitg	
Digby Neck	We'kwayik or Wsituaqnek ¹⁷³	“at the end (of land)” or “place of the ear”

¹⁶²Indigenous and Northern Affairs Canada, *Registered Population*, online: http://fnppn.aadnc-aandc.gc.ca/fnp/Main/Search/FNReg-Population.aspx?BAND_NUMBER=21&lang=eng [INAC].

¹⁶³INAC, *Reserves/Settlements/Village Detail*, online: http://fnppn.aadnc-aandc.gc.ca/fnp/Main/Search/FNReserves.aspx?BAND_NUMBER=21&lang=eng.

¹⁶⁴INAC, *Reserves/Settlements/Village Detail*, online: http://fnppn.aadnc-aandc.gc.ca/fnp/Main/Search/FNReserves.aspx?BAND_NUMBER=21&lang=eng.

¹⁶⁵Ta'n Weji-sqalia'tiek, *Mi'kmaw Place Names*, online: <http://sparc.smu.ca/mpnmap/> [Ta'n Weji-sqalia'tiek, *Mi'kmaw Place Names*].

¹⁶⁶*Ibid.*

¹⁶⁷*Ibid.*

¹⁶⁸*Ibid.*

¹⁶⁹*Ibid.*

¹⁷⁰Ricker, *L'sitkuk - The Story of Bear*, *supra* note 11 at v-vi.

¹⁷¹Ta'n Weji-sqalia'tiek, *Mi'kmaw Place Names*, *supra* note 165 online <http://sparc.smu.ca/mpnmap/>

¹⁷²*Ibid.*

¹⁷³*Ibid.*

Place	Mi'kmaw Place Name	Meaning (if given)
Head of St. Mary's	Wágweik	"running out to an end"
St. Bernard	Plna'le'katik ¹⁷⁴	"place of the Bernard's"
Waters		
Bear River	L'sitkuk ¹⁷⁵	"cutting through high rocks"
Digby Gut:	Tuitnuk ¹⁷⁶	"at the outflow"
Mouth of Sissiboo or Weymouth River	Gtjisipog ¹⁷⁷	
Sissiboo River	Kji-sipuk ¹⁷⁸	"at the great or big river"
Mouth of the Annapolis River	Teoopsgig ¹⁷⁹	
Annapolis River	Táoópskek	"it flows between rocks"
Petite Passage	Tewitke'jk ¹⁸⁰	"at the small outflow"
St. Mary's Bay	We'kwayik ¹⁸¹	"at the end (of the bay)"

¹⁷⁴*Ibid.*

¹⁷⁵*Ibid.*

¹⁷⁶*Ibid.*

¹⁷⁷Hoffman, *Historical Ethnography of the Micmacs*, *supra* note 1 at 130-132.

¹⁷⁸Ta'n Weji-sqalia'tiek, *Mi'kmaw Place Names*, *supra* note 165 online <http://sparc.smu.ca/mpnmap/>

¹⁷⁹Hoffman, *Historical Ethnography of the Micmacs*, *supra* note 1 at 130-132.

¹⁸⁰Ta'n Weji-sqalia'tiek, *Mi'kmaw Place Names*, *supra* note 165 online <http://sparc.smu.ca/mpnmap/>

¹⁸¹*Ibid.*

6.0 POTENTIAL PROJECT IMPACTS ON MI'KMAQ LAND AND RESOURCE USE

The following table presents potential project impacts on historic and current Mi'kmaq land and resource use.

Table 3: Potential Project Impacts on Mi'kmaq Land and Resource Use

POTENTIAL IMPACTS ON MI'KMAQ LAND AND RESOURCE USE	
6.01	The historic review of Mi'kmaq use and occupation documents historic Mi'kmaq use and occupation in the study area, and potentially the project area. A potential impact of the project is the disturbance of archaeological resources.
6.02	Several species of significance to Mi'kmaq have been identified in the study area. Permanent loss of some species is an impact of the project.

7.0 SIGNIFICANCE OF POTENTIAL PROJECT IMPACTS ON MI'KMAQ LAND AND RESOURCE USE

The concept of significance in the Mi'kmaq Ecological Knowledge Study is distinct from the concept of significance under the *Canadian Environmental Assessment Act* or the *Nova Scotia Environmental Assessment Regulations*. Significance to Mi'kmaq is evaluated only in accordance with the criteria listed below. The MEKS evaluation of the significance of the potential project impacts on Mi'kmaq should be used by regulators to inform their determination of the significance of the environmental effects of the Project.

7.1 Significance Criteria

The following criteria are used to analyze the significance of the potential project impacts on Mi'kmaq use:

- 1) Uniqueness of land or resource
- 2) Culture or spiritual meaning of land or resource
- 3) Nature of Mi'kmaq use of land or resource
- 4) Mi'kmaq constitutionally protected rights in relation to land or resource.

7.2 Evaluation of Significance

Table 4: Significance of Potential Project Impacts on Mi'kmaq Land and Resource Use

POTENTIAL IMPACT		EVALUATION OF SIGNIFICANCE	
6.01	The historic review of Mi'kmaq use and occupation documents Mi'kmaq use and occupation in the study area, and potentially the project area. A potential impact of the project is the disturbance of archaeological resources.	7.2.01	Mi'kmaq archaeological resources are extremely important to Mi'kmaq as a method of determining Mi'kmaq use and occupation of Mi'kma'ki and as an enduring record of the Mi'kmaq nation and culture across the centuries. Archaeological resources are irreplaceable. Any disturbance of Mi'kmaq archaeological resources is significant.
6.02	Several species of significance to Mi'kmaq have been identified in the study areas. Permanent loss of some specimens is an impact of the Project.	7.2.02	The plant species of significance to Mi'kmaq identified within the study area exists within the surrounding area. The destruction of some specimens within the study areas does not pose a threat to Mi'kmaq use of the species. The impact of the permanent loss of some specimens of plant species of significance to Mi'kmaq is evaluated as not likely significant.

8.0 CONCLUSIONS AND RECOMMENDATIONS

- 8.01 In the event that Mi'kmaw archaeological deposits are encountered during construction or operation of the Project, all work should be halted and immediate contact should be made with Laura Bennett, Special Places Coordinator, at the Nova Scotia Museum and, Kwilmu'kw Maw-klusagn Negotiation Office (KM-KNO).
- 8.02 There is no land claims registered with the Specific Claims branch of Indian and Northern Affairs Canada in Ottawa for any of the Mi'kmaq communities in Nova Scotia within the Project area. However, that does not suggest that any other Mi'kmaw claimants for this area may not submit land claims in the future.

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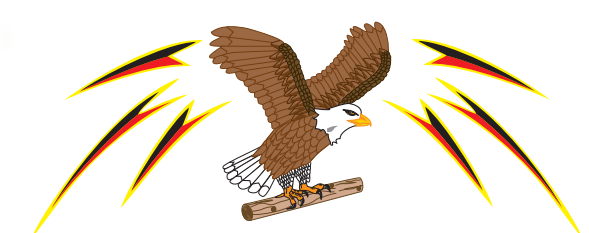
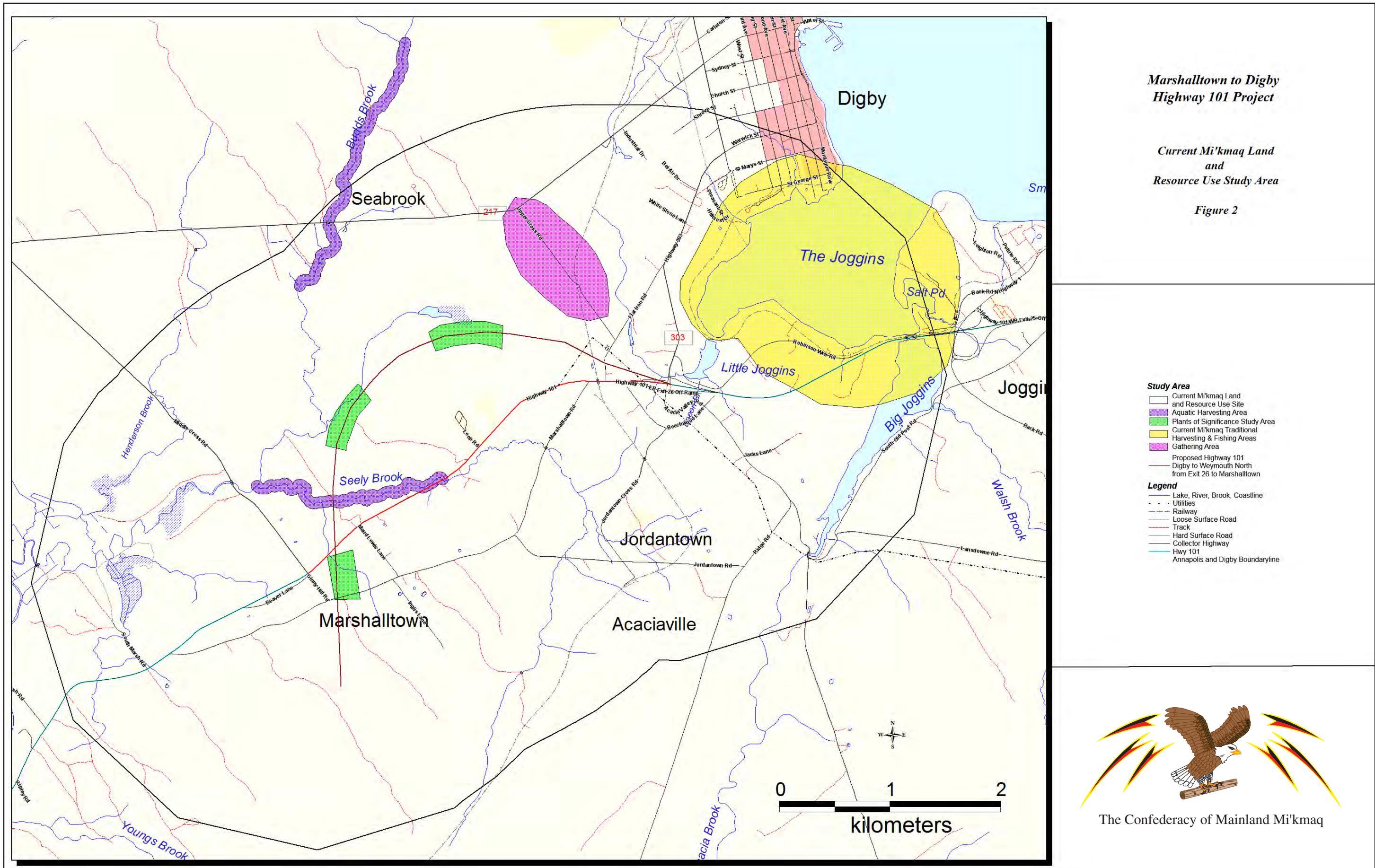
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Figure 2: Map of Current Mi'kmaq Land and Resource Use Study Area



The Confederacy of Mainland Mi'kmaq

**HIGHWAY 101 DIGBY TO MARSHALLTOWN CORRIDOR
ENVIRONMENTAL ASSESSMENT REGISTRATION**

APPENDICES
February 2017

APPENDIX E

**ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT:
MARSHALLTOWN HIGHWAY 101
REALIGNMENT (DAVIS MACINTYRE & ASSOCIATES LIMITED
2016)**



Marshalltown Highway 101 Realignment

Archaeological Resource Impact Assessment

A2016NS091 December 2016

Davis MacIntyre & Associates Ltd.
109 John Stewart Drive Dartmouth, NS B2W 4J7

MARSHALLTOWN HIGHWAY 101 REALIGNMENT:
ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT

Heritage Research Permit A2016NS091
Category C

Davis MacIntyre & Associates Limited
Project No.: 16-007.2CBH

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Cover: A stone wall found near the south extent of the study area.

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EXECUTIVE SUMMARY

In October 2016, Davis MacIntyre & Associates Limited was contracted by CBCL Limited on behalf of Nova Scotia Transportation and Infrastructure Renewal to conduct an archaeological resource impact assessment of the Highway 101 realignment between Digby and Marshalltown, creating an additional section of approximately 3.5km of controlled-access highway and avoiding two unmarked cemeteries (see also HRP# A2016NS012). The remainder of the proposed realignment was assessed in 2001 by Colin Varney (HRP# A2001NS43).

The archaeological assessment identified five areas of elevated archaeological potential that were subjected to archaeological testing. All of these areas were negative for archaeological material. At the three terrace sites, there was no indication of First Nations activity. In the case of the rectangular depression, the reason for assigning it as having elevated potential appears to have in fact been the results of modern infilling. Although the stone dam and earthen mound identified on Seely Brook may represent the remnants of a nineteenth or early twentieth century mill, there is no evidence of significant archaeological deposits existing or surviving in relation to the mill, and as such, no further mitigation at that site is currently proposed.

The historic background study and field reconnaissance have indicated that the study corridor was subject to moderate levels of historic activity including possible First Nations use for resources and a portage route. However, archaeological testing has shown that significant archaeological deposits are unlikely to exist within the proposed impact zone north of the existing Highway 101.

Some evidence of field clearing, overgrown pasture, and stone property walls were also observed within the impact zone north of Highway 101, but in all cases these did not appear to be associated with significant archaeological features such as building foundations, and therefore testing or mitigation is not currently proposed in these areas. These findings are however indicative of historic activity in the area and should the highway be realigned again, a reassessment is recommended to ensure that more significant features are not impacted.

A small cellar feature on the northwest side of Marshalltown Road has been identified, located just outside the proposed toe-of-slope. The position of this feature will allow for easy avoidance during future construction by flagging the area with a recommended buffer of approximately 10m from the exposed stone of the cellar.

A probable house foundation deep in the woods south of the Marshalltown Road was also identified during the reconnaissance, but was not subjected to archaeological testing or mitigation at this time as it is located significantly south of the existing Highway 101 and will not be impacted in the currently proposed phase of the highway alignment, which will terminate where the realignment re-joins the existing highway in

Marshalltown to the north of this site.

In the event that archaeological resources are encountered in the future and an archaeologist is not already present, it is required that any ground-disturbing activity be halted immediately and the Coordinator of Special Places (902-424-6475) be contacted immediately regarding a suitable method of mitigation.

1.0 INTRODUCTION

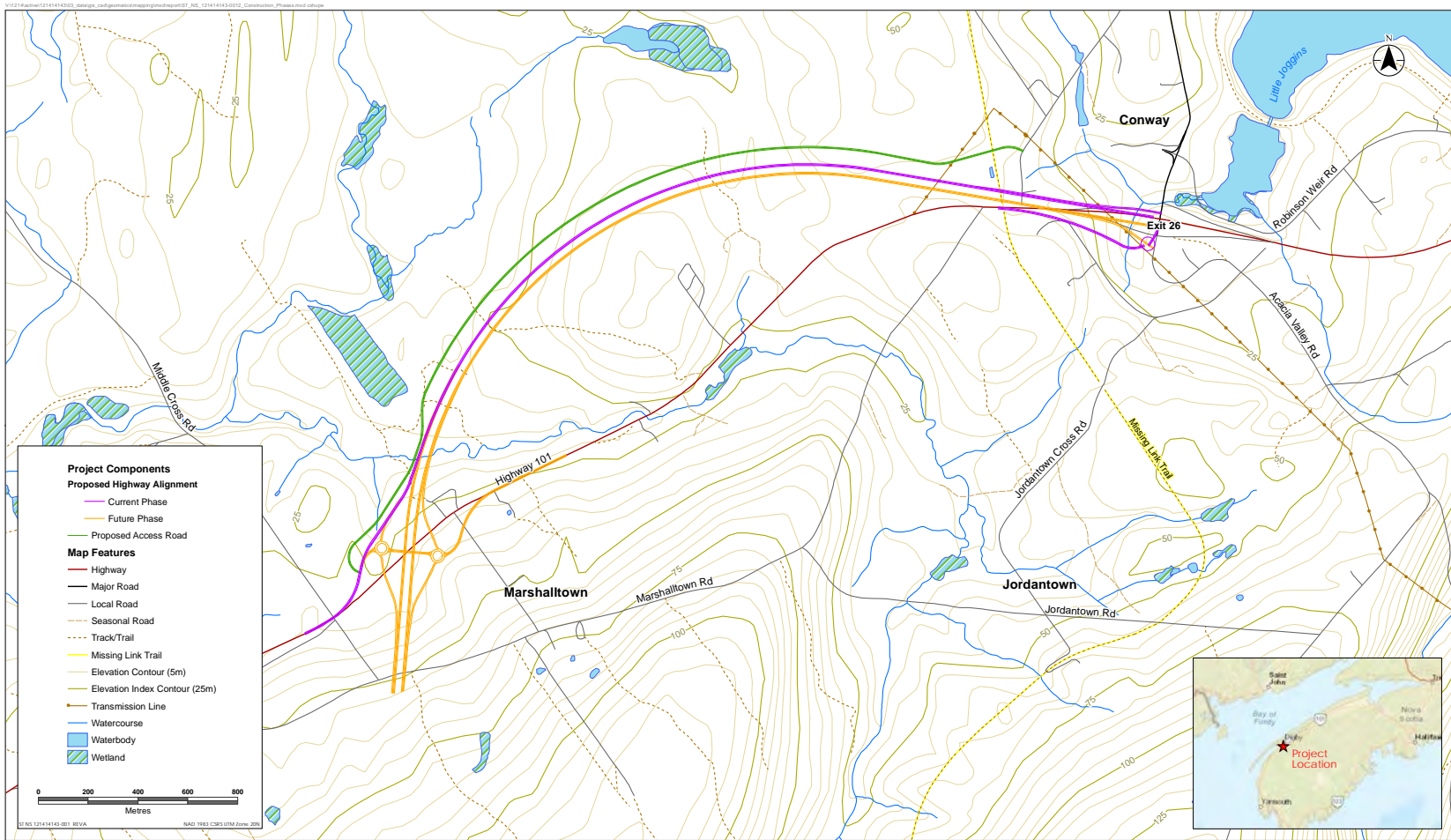
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This assessment was conducted under Category C (Archaeological Resource Impact Assessment) Heritage Research Permit A2016NS091 issued by the Department of Communities, Culture and Heritage. This report conforms to the standards required by the Culture and Heritage Development Division under the Special Places Protection Act (*R.S., c. 438, s. 1*).

2.0 STUDY AREA

Nova Scotia Transportation and Infrastructure Renewal (NSTIR) is in the planning process for a new Highway 101 alignment between Digby and Marshalltown. The proposed alignment will pass in proximity to the historic Poor Farm or Alms House in Marshalltown (Figure 2-1). Since initial investigation of possible burials in 2003 and additional investigations in 2016, a new highway alignment has been developed that is intended to avoid disturbance of the two known cemeteries on the former Alms House property. The new alignment includes at least two phases, the priority phase being either a two-lane or twinned alignment from the Conway/Digby exit to a location in Marshalltown where it will eventually cross the existing Highway 101 and proceed southward. The upcoming phase of highway construction, however, includes only the section as far as the crossing at Marshalltown, though this assessment has included the southward extension in order to predict any future archaeological concerns when the next phase of construction approaches.

Marshalltown is located in the Valley region of the Triassic Lowlands (Natural Theme Region #610). The Annapolis Valley extends from the eastern edge of St. Mary's Bay in the west to the mouth of the Cornwallis River in the east. The palaeo-geology here was comprised mainly of sandstones and basalts. The sandstones were gradually carved out of the basalt as a result of river action and glacial scouring. Rivers flowed at right angles across the valley rising on South Mountain and flowing north across the present valley and North Mountain before emptying into a river that flowed down the Bay of Fundy. As the ice retreated after the last glaciation, sea levels rose and the land rebounded. In the Bay of Fundy area, sea levels encroached inland.



Proposed Highway Alignment - Both Current and Future Phases



HIGHWAY 101 DIGBY TO MARSHALLTOWN ENVIRONMENTAL ASSESSMENT

Figure XX

Figure 2-1: A map showing the currently proposed and future proposed phases of the highway realignment, courtesy Stantec/NSTIR. Note that the diamond interchange may be subject to change before the twinning phase of the realignment is carried out.

The average elevation above present sea level in the Bay area is 15 to 30 centimetres and raised beaches and terraces can be seen in Digby County at the mouths of rivers and around the lower part of the Annapolis Basin. Rising sea levels over the past 4,000 years have resulted in flooding of the Annapolis Basin and the sea broke through the gap at the north end of Digby Gut.

The Valley is drained by two major rivers (the Annapolis and the Cornwallis) that are separated by a secondary watershed divide. Many first- and second-order streams drain off the North and South Mountains to feed both rivers. In the lower reaches of each river system are several tertiary watershed divides. Both rivers are tidal and tidal flats and muddy banks can be seen during low tide.

Soils in this region have developed on parent material from various exposed geological strata. The uppermost layers are fine grained Triassic shale on which well-drained soils have developed. This is underlain by coarser sandstones from which sandy loams have been derived. The lower most strata are fine-grained conglomerates from which a well-drained loamy sand has developed. Alluvial deposits have developed beside streams and rivers.

The Valley is an obvious agricultural region although earlier extensive clearing in the eighteenth and nineteenth centuries has reverted to areas of forest growth. Apple orchards were originally located on the fertile valley slopes and remnants can still be seen throughout the region. Sugar Maple, American Beech, Red Spruce and Eastern Hemlock are common in these reclaimed areas. Oldfields have been regenerated with White Spruce except in wetter areas where alder and Black Spruce are more common. Salt marshes, mud flats and dykelands provide good coast habitat for marine and avian species. Raccoons, Red Fox, woodchuck and skunk are common in agricultural areas. Muskrat and mink are also common. Pheasant, snipe, woodcock, hawks, crows and Bald Eagles abound in this region. Dykelands provide good habitat for Gray Partridge and Short-eared Owl. The Annapolis Basin provides an important migration habitat for waterfowl in spring and fall and a moderate number of ducks remain in the winter months. High numbers of shorebirds can be seen at the head of St. Mary's Bay, particularly in August. American Shad and Atlantic Salmon pass through this area to spawn in freshwater further upstream. Striped bass are also present but do not manage to spawn upstream.¹

¹ Davis and Browne 1996:159-161.

3.0 METHODOLOGY

A historic background study was conducted by Davis MacIntyre & Associates Limited in October 2016. Historical maps and manuscripts and published literature were consulted at the Nova Scotia Archives as well as online. The Maritime Archaeological Resource Inventory, a database of known archaeological resources in the Maritime region, was searched to understand prior archaeological research and known archaeological resources neighbouring the study area. A review of previous archaeological assessments was also conducted. Finally, a field reconnaissance and archaeological testing were conducted in order to more effectively predict the presence of buried archaeological resources within the impact zone.

3.1 Maritime Archaeological Resource Inventory

The Maritime Archaeological Resource Inventory, a database of known archaeological sites in the Maritime Provinces, was consulted in October 2016. There are seven known archaeological sites in the Digby-Marshalltown area.

Shell middens related to Precontact activity are known along Bear River to the northeast, chiefly associated with the Ceramic (*Kejikawek L'nu'k*) Period (BdDk-01, BdDk-03, BdDk-04, BdDk-06). Another shell midden was reported at Smith's Cove in 1890, but could not be relocated in the twentieth century (BdDk-02). A general site number has been assigned for isolated Precontact finds reported in the area from Joggins Bridge to Bear River (BdDk-07).

Finally, a historic midden incorporating shell, bone, and nineteenth century ceramic, was identified near the Little Joggins (BdDk-08).

3.2 Historical Background

3.2.1 The Precontact Period

Nova Scotia has been home to the Mi'kmaq and their ancestors for at least 11,500 years. A legacy of experience built over millennia shaped cultural beliefs and practices, creating an intimate relationship between populations and the land itself. The complexity of this history, culturally and ecologically, is still being explored.

The earliest period is *Sa'qewe'l L'nu'k* (the Ancient People) or the Paleo-Indian period (11,500 – 9,000BP). The changing ecology following deglaciation allowed the entrance of large herds of migratory caribou into Nova Scotia, followed by Paleoindian groups from

the south. Currently, the Debert/Belmont Sites provide the only significant evidence of Paleo-Indian settlement in the province. Commonly believed to be big-game hunters, research is now aimed at exploring the diverse subsistence patterns that may have supported populations, and what adaptations were made when the environment shifted once again in the early Holocene.

Succeeding the *Sa'qewe'l L'nu'k* is the *Mu Awsami Kejihaw'k L'nu'k* (the Not so Recent People) or the Archaic Period (9,000-3,000 BP). This time saw a reorientation to a more maritime subsistence, with settlement pivoting more towards coastal areas, lakes and bountiful riverine resources. Remnants of these sites along the coast have largely been engulfed by rising seas or battered by wind and wave, though interior sites are increasingly being discovered. Ground stone tools, specialized for wood-working, appear at this time and may have been used to create dug-out canoes. Numerous traditions and distinct technologies have been documented throughout Maine and the Atlantic provinces. A growing catalogue of exotic cultural components demonstrates that groups within Nova Scotia were engaged in spheres of interaction spanning hundreds of kilometers. Unfortunately, a lack of formally excavated sites within Nova Scotia still obscures the degree to which these traditions were present.

By the *Kejihawek L'nu'k* (the Recent People) or Woodland/Ceramic period (3,000-500 BP), the Mi'kmaq were a maritime people. Known Woodland/Ceramic sites concentrate along coasts shorelines, and navigable watercourses. Migration of ideas and people introduced new worldviews and technologies from groups originating in places like northern New England and the Great Lakes area, to local populations, including the earliest ceramic forms. Harvesting of marine molluscs and shellfish appears in this period, and substantial shell-middens have gifted archaeologists with well-preserved records of these past lives. Fish weirs populating the province's rivers and streams speak to the importance of migrating fish species to Mi'kmaq life. Terrestrial hunting and foraging was practiced with varying degrees of intensity depending on seasonality and region. A generally stable cultural form is believed to have developed by 2,000 BP, forming the way of life first encountered by Europeans arriving on our shores.

Mi'kmaw life was substantially altered in the *Kiskukew'k L'nu'k* (Today's People) or Contact Period (500 BP- Present). Trade and European settlement introduced change and upheaval to the traditional way of First Nation life. Mobile hunting and gathering still defined Mi'kmaw life, with identity residing within family households. Trading posts and fishing villages became intersections of European and Mi'kmaq interaction, affecting traditional seasonal rounds and access to land. The hunting of fur-bearing mammals intensified to satisfy the mutual exchange of skins for European goods. It is not accurate, however, to say that Mi'kmaq *adopted* European goods and culture, but rather *adapted* it. The Mi'kmaq remained an influential social and political force well into the 18th century, forming a triadic narrative of contention with the English and French. However, disease, conflict, and alienation from the land wreaked a ruinous

effect on the Mi'kmaq by the 19th century, pushing people to the margins of colonial society.

Mi'kmaq Period	Archaeological Period	Years
Sa'qewe'l L'nu'k (the Ancient People)	Paleo-Indian	11,500 – 9,000 BP
Mu Awsami Kejihaw'k L'nu'k (the Not so Recent People)	Archaic	9,000 – 3,000 BP
Kejihawek L'nu'k (the Recent People)	Woodland/Ceramic Period	3,000 – 500 BP
Kiskukewe'k L'nu'k (Today's People)	Contact	500 BP – present

Table 1: Mi'kmaq/Archaeological Cultural Periods

The Mi'kmaq inhabited the territory known as *Mi'kma'ki* or *Megumaage*, which included all of Nova Scotia including Cape Breton, Prince Edward Island, New Brunswick (north of the Saint John River), the Gaspé region of Quebec, part of Maine and southwestern Newfoundland (Figure 3-1).² The Digby county area has a traditional Mi'kmaq name of *Weskewinaq*. The literal translation is “cheerful place”.³ A 1744 map of the Digby area indicates that the Joggins was the entrance to a portage route across Digby Neck to St. Mary's Bay (Figure 3-2).



Figure 3-1: Map of the Mi'kmaq districts.⁴

² Confederacy of Mainland Mi'kmaq, 2007:11.

³ Ta'n Weji-sqalia'tiek: Mi'kmaw Place Names Digital Atlas URL.

⁴ Based upon Confederacy of Mainland Mi'kmaq 2007:11.

Kwilmu'kw Maw-klusuaq Negotiations Office (KMKNO) was contacted on October 24th with a request for any information in their available files and databases related to Mi'kmaw traditional use or occupation in the Marshalltown area. In their response, they indicated that four Mi'kmaq were shown in the 1881 census of Marshalltown, while 26 were shown in the town of Digby in the 1871 census. In the mid-eighteenth through mid-twentieth century, Mi'kmaw families were known to be camping at the Raquette, a beach and cove near the modern Digby Pines resort. A 1759 attack by Rogers Rangers killed most of the Mi'kmaw inhabitants of Green Point, at the edge of the Raquette in the modern town of Digby.



Figure 3-2: Detail of Jaques Nicolas Bellin's Map from 1744 depicting the cove at the Joggins as the beginning of a portage route (blue).

3.2.2 European Settlement

In 1765 a patent for the plantation of Conway, extending from modern day Digby to Weymouth, was created by the British.⁵ The township of Conway received its name from Sir Henry Seymour Conway, a British General during the Seven Years War.^{6,7} In 1784, Loyalists pushed for a renaming of the township to Digby, and a grant was given the following year for the township of present day Conway.⁸ Different names have been given to Conway since its establishment in 1785. The township had previously been known as Brinley Town and Westville but was officially renamed as Conway in 1918.⁹

Marshalltown and Conway were both historically settled by Loyalists after the American Revolutionary War, and Conway notably had a large population of Black Loyalists. This large population of Black Loyalists gave way to a portion of Conway being named Negrotown. The boundaries of Negrotown extend on the grant map to the edge of Acacia Valley Road north of exit 26 on Highway 101 (Figure 3-3). Upon being offered free passage back to Sierra Leone, West Africa, or a grant of land in Nova Scotia, some Black Loyalists chose the granted land in Conway and eventually resettled in Jordantown. Most of the inhabitants of Brinley Town, however, relocated to Sierra Leone in January of 1792.¹⁰

⁵ Wilson 1900: 34-35.

⁶ Fergusson 1967:145.

⁷ Hill 1901:5.

⁸ Hill 1901:5.

⁹ Hill 1901:5.

¹⁰ Fergusson 1967:145.



Figure 3-3: A Google Earth overlay of the development area (red) on the NS Crown Land Grant Index. The limits of Negrotown are shown in yellow.

In 1794 Marshalltown was named after Alexander Marshall who settled in 1790. Prior to this, Marshalltown had been called Whatmanville after a loyalist Phillip Whatman. Whatman kept a house of entertainment for travellers and received payment from the Crown. Although Whatman appears on the Crown Land Grant Index, Marshall does not, suggesting he was not among the original grantees.¹¹ The only reference of a Marshall in this region is one James Marshall.

American inventor Thomas Edison’s great grandfather, John Edison, was a Loyalist who came to Digby County in 1784.¹² John Edison purchased a piece of land in 1792 along Saint Mary’s Bay Road from Patrick Haggerty¹³ who was granted Lot 5¹⁴ (Figure 3-4) along Saint Mary’s Bay Road, which will be bisected by the proposed realignment. John Edison sold 20 acres of this land to his son Moses Edison in 1805. The land being described in the deed as costing 60 pounds for 20 acres located on the “North side of St.

¹¹ Hill 1901:7.

¹² National Park Service URL.

¹³ NS Registry of Deeds 1792.

¹⁴ Dept. of Lands and Forests 1939.

Mary’s Road heading from Digby to the head of St. Mary’s Bay” and “between lots 4 and 6 to the East.”¹⁵



Figure 3-4: A Google Earth overlay showing Patrick Haggerty’s grant – sold to John Edison – in green.

John Edison was the father of both Samuel Sr. and Moses Edison, Samuel being the grandfather of inventor Thomas Edison. Samuel and Moses both owned land for a short time in lot 20 from Charles Colburn on February 8th, 1805. Each of the brothers bought half of the lot for 40 pounds, Samuel receiving the “Northeasternmost” part of the lot and Moses receiving the “Southwesternmost” part of the lot.¹⁶ Most of the Edison family relocated West in 1815 due to scarcity of resources in Nova Scotia¹⁷

Ambrose Church’s 1870 map of Digby County helps to illustrate that by the late nineteenth century, small communities and clusters of homes had formed along the old

¹⁵ NS Registry of Deeds 1805a.

¹⁶ NS Registry of Deeds 1805b.

¹⁷ Wilson 1900:152.

St. Mary's Bay Road (now Highway 101), but less activity was found in the back lands beyond the road (Figure 3-5).



Figure 3-5: Ambrose Church's 1870 map shows a few houses in proximity to the study area (yellow) towards the northwestern extent near Conway as well as to the south in Marshalltown.

Marshalltown is known in popular culture as the area of residence for early twentieth century Nova Scotian folk artist Maud Lewis. Lewis lived with her husband Everett in small house on what is now Maud Lewis Lane, between the old Saint Mary's Bay Road (now Highway 101) and Marshalltown road.

3.3 Previous Archaeological Assessment

An archaeological survey of a previously proposed highway realignment was conducted by archaeologist Colin Varney in 2001 (HRP#A2001NS43). Rather than conduct a full reconnaissance of the study corridor, the 2001 methodology was to identify areas of heritage potential, and to conduct a reconnaissance at these areas as well as at all

stream crossings, which often exhibit elevated potential for First Nations activity. During the assessment, no areas of elevated archaeological potential were identified north of the existing Highway 101, and only two stone walls south of Marshalltown Road within the proposed RoW, along with a section of overgrown oldfield. Visibility was very poor within the previous RoW and as such the archaeological team was unable to confirm if historic cellars or foundations existed within the study area.¹⁸

3.4 Field Reconnaissance

A field reconnaissance of the full 3.5km section of realigned highway corridor was conducted in November 2016 by Laura de Boer, Vanessa McKillop, and co-op student Irene Hart. The reconnaissance was aided by two GPR units programmed with the proposed highway centrelines and, north of the existing Highway 101, the proposed toe-of-slope lines for the fully twinned highway. The width of the RoW, which included a service road north of Highway 101, was sufficient that the team covered the area in two passes, resulting in a total of six transects to cover the approximately 80m width. Findings are illustrated on Figures 3-6 through 3-12.

At the north-eastern end of the new alignment, a realigned off ramp and roundabout are positioned over existing modern residential land and a small patch of low, wet spruce forest. Moving northwest, the proposed highway will cross an elevated railbed now being used as an ATV trail, after which the RoW diverges from the existing highway and passes through a low, wet forest of alder and scrub birch and poplar (Plate 1).

A single stone pile and a stone wall were observed in this area (Plate 2), suggesting there was an attempt to clear the land for agriculture, though the topography was not notably smooth as if used for pasture or fields. Modern signs of cultural activity were also present, including an area of dumped twentieth century cans (Plate 3), an abandoned school bus behind an existing house, and an area of abandoned cars farther behind the house. A modern logging operation, most likely producing containers of cut and split firewood (Plates 4 and 5), is also located in this area. The surrounding forest has been recently logged, with minimal regrowth of thorns and scrubby hardwood (Plate 6).

Beyond the logged block of land, the RoW transitions into a moderately mature spruce forest, undulating and relatively well-drained. There were no indications of previous agricultural activity or of logging within the past several decades. Moving westward, the forest gradually becomes more mixed with young to moderately mature hardwood and spruce. An ATV trail with an abandoned tractor was observed, as well as an abandoned hunting blind on the property that once belonged to Patrick Haggerty and later John

¹⁸ Jacques Whitford Environment Limited 2003:8-9.
Davis MacIntyre & Associates Limited

Edison. This land may have been used to harvest lumber historically, but there are no signs of it being cleared for a field or pasture.

Just beyond the edge of the Haggerty property, the RoW is intersected by a modern transmission line and a well-built sandy woods road (Plate 7). Another abandoned hunting blind (Plate 8) and an old campfire site beside an ATV trail are located some 400m southwest of this transmission line.

It is only within the final 800m before the realignment crosses the existing Highway 101 that frequent signs of historic pasture and agriculture are found. Three barbed wire fences were noted in mature mixed-wood forests, all consistent with the northwest-southeast angle of the original property grants. The middle of the three fences forms the northeast boundary of an area of smooth, flat, forested ground indicative of overgrown pasture or oldfield. The land grant map indicates that this was the southwestern half of Peter Depeu's 188-acre grant (Lot 8). No stone walls, stone piles, or foundation features were noted in proximity to the alignment.

Approaching Seely Brook, the terrain of the alignment drops notably, forming two small terraces approximately 2m and 1m high respectively, overlooking the brook's floodplain under the proposed eastbound lane (once the highway is twinned), and dropping in a more gentle and undulating manner into wet terrain under the northern lane that is proposed in the 2017 phase of construction.

Between the new alignment and the existing farm road to the west of this section, a low and overgrown berm or rough roadbed runs parallel to Seely Brook on the north side. Low, wet ground covered in alders is found on either side of the berm.

At the eastern edge of the proposed crossing of Seely Brook, the remains of a small stone dam was observed on either bank (Plates 9 and 10), with an earthen mound approximately 3m x 4m in area and 1m high on the southeastern bank. This is consistent with a small historic mill deriving waterpower from the dammed brook. The formation of the bank upstream of this was somewhat suggestive of a mill raceway on the southeast side (Plate 11), but not clearly enough to be conclusive. The position of the possible raceway in relation to the dam (immediately above rather than beside or below) is also somewhat unusual. A Rockinghamware teapot spout (post-c.1850) was observed in the river gravel downstream of this area (Plate 12).

On the south side of Seely Brook, the bank forms a high, relatively smooth terrace approximately 2m above the normal water level (Plate 13). The terrace is covered in mature spruce, and is not smooth enough to have been oldfield. It is bounded to the east by a small seasonal streambed, and to the west by a historic property boundary formed by a ditch, a low stone wall, and barbed wire (Plate 14). The eastern side of this boundary, located on the former Alms House property, is somewhat terrace-like but is

covered in alders and seems more poorly drained, despite showing signs of smoother terrain consistent with oldfield.

Beyond the terrace, the realignment continues southward over a low, wet field, passing just west of the location of the southern Alms House Cemetery. Based upon overlays with historic aerial photographs, the future eastbound lane (once the highway is twinned) will pass over part of the former Alms House foundation, now covered in Japanese knotweed (Plate 15). The Alms House, which burned down in 1994 and was subsequently levelled, is unlikely to have formed a significant archaeological resource below ground that has remained intact. The institution was in operation from c.1892 to 1963.

The alignment also passes over a section of concrete foundations and posts related to the 1968 construction of barracks for strawberry farm labourers immediately north of the existing Highway (Plate 16) (see also HRP#A2016NS012 and #A2001NS43). Although the barracks were completed, they were never fully occupied (if they were occupied at all) due to a shortage of workers, and were subsequently either torn down or relocated after the berry farm went out of business.

The upcoming realignment phase proposes to re-join the existing Highway 101 southwest of the barracks. The future twinning, however, may require a larger area for a diamond interchange and two roundabouts. The full area proposed for redevelopment was surveyed in an effort to predict future archaeological concerns in the area.

Signs of twentieth century activity are prevalent beside the 101, including a gravel pad where a building once stood, a small rectangular depression, and a twentieth century garbage dump (Plate 17). At the southwestern extents of the realignment before crossing the existing highway, an abandoned well and possible barn foundation (Plate 18) were observed, most likely associated with a standing but likely abandoned two-room house (Plate 19).

Crossing to the southeast side of Highway 101, the future impact zone again shows frequent signs of twentieth century activity, including a large, deep ditch in a young mixed wood forest (Plate 20), a northwest-southeast barbed wire fence consistent with the angle of the original land grants, and a twentieth century garbage dump near the existing road. An abandoned house with modern detritus in its backyard is also found bordering the existing highway (Plate 21). The house appears to have been fed by a concrete crock-lined well located deeper into the woods to the south (Plate 22), as a plastic pipe runs from inside the well in a northward direction towards the house. An abandoned and overgrown orchard to the southwest may also have been associated with the house and property, though a rough hunting blind in an apple tree overlooking more twentieth century garbage may have been established after the house was abandoned (Plate 23). Finally, a stone wall that may have formed the back of this property was located to the south of most of these features (Plate 24).

Moving farther south, the terrain becomes more densely overgrown in scrubby undergrowth, with very rocky soil exposed in most areas. Another abandoned hunting blind was encountered in this rough terrain, on a rock outcropping overlooking a lower portion of the forest.

Just as the alignment emerges from the forest to cross Marshalltown Road, a probable historic stone-lined cellar was encountered, less than 10m east of (outside) the proposed toe-of-slope. The foundation is approximately 3m x 4m in size and is heavily overgrown (Plate 25).

South of Marshalltown Road, the alignment passes through a short section of mature mixed-wood forest dominated by spruce. Two historic stone walls were encountered (Plate 26), but the surrounding terrain was not indicative of oldfield and no foundations or other associated historic features were encountered.

South of this area, the alignment encounters a large swath of clear-cut land regrowing in birch saplings and grasses with some thorns and young spruce. A small camper-trailer is positioned at the end of a rough ATV trail along the cut block's southwestern edge, possibly serving as a hunting blind or cabin (Plate 27). There were no signs of recent activity but the camper was in good condition and did not appear fully abandoned.

Beyond the cut block, mature mixed-wood forest dominated by spruce is found again. A scatter of apples along the alignment suggested an active hunting blind was nearby, but it could not be located during the reconnaissance. Approximately 60m south, a rough hunting blind consisting of stacked stones forming a ledge and chair overlooking lower ground was encountered.

Adjacent to the hunting blind, a rectangular stone foundation was encountered, approximately 4m x 5m in size and with no visible cellar beneath it (Plate 28). The ground surrounding it was rough, but as the team moved farther south they encountered a possible overgrown road, and two barbed wire fences, with forested oldfield between them.

South of the barbed wire, a small wetland forms the northern boundary of a very young mixed-wood forest regenerating after clearcutting. This area is bisected by a fairly well-maintained gravel logging road.

Near the southern edge of the regenerating forest, the team began to encounter stone piles and the ground gradually became smoother, suggesting oldfield once again. Past the edge of the cutting, the more mature spruce forest makes the smooth topography more clear. In total, four stone piles and one section of northwest-southeast stone wall (Plates 29 and 30) were encountered, but an associated foundation or cellar could not be located. The last of the stone piles was located at the edge of a slight drop into low,

wet ground with alder and other scrub hardwoods, which continued with only slight variations for the final 250m of the alignment. After this point, the proposed alignment merges with the section assessed in 2001.

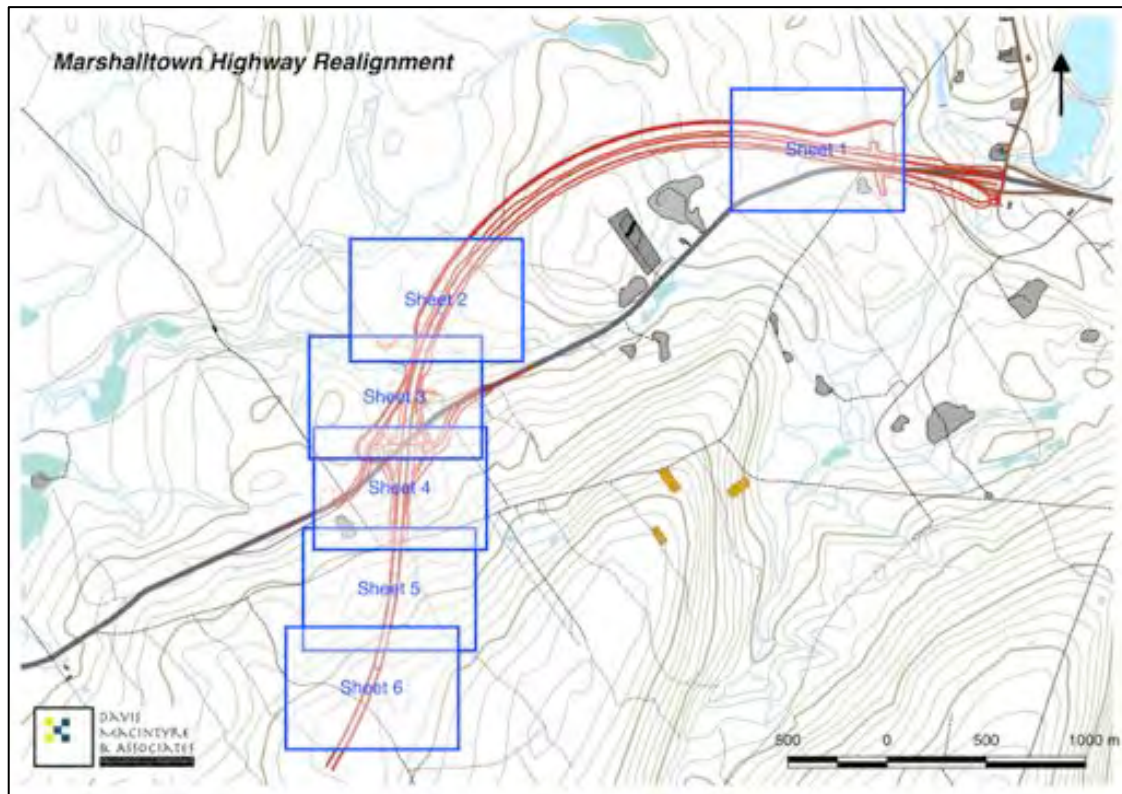


Figure 3-6: An index sheet to the maps illustrating archaeological findings along the study corridor.

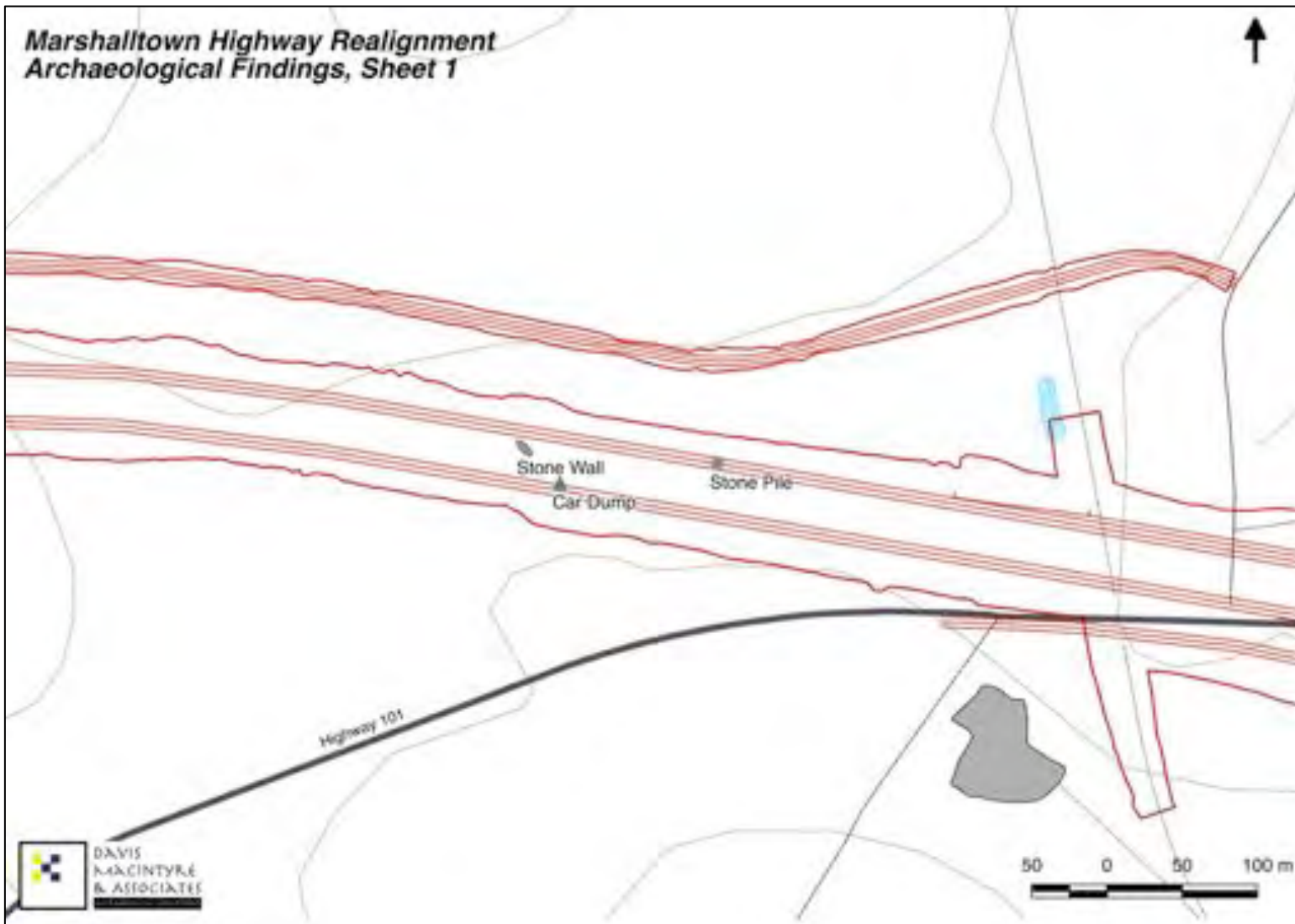


Figure 3-7: Archaeological findings, Sheet 1.



Figure 3-8: Archaeological findings, Sheet 2.

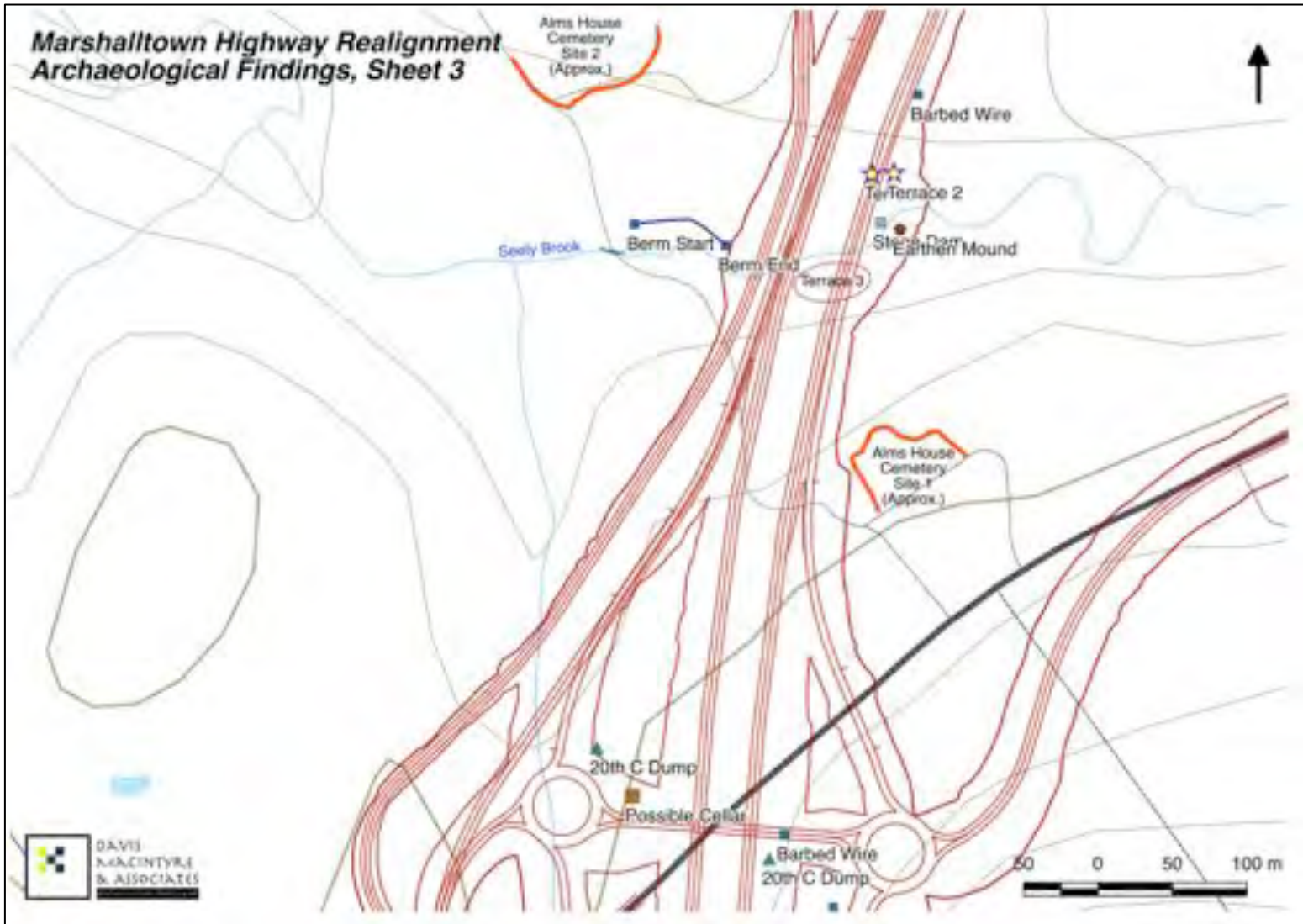


Figure 3-9: Archaeological findings, Sheet 3.

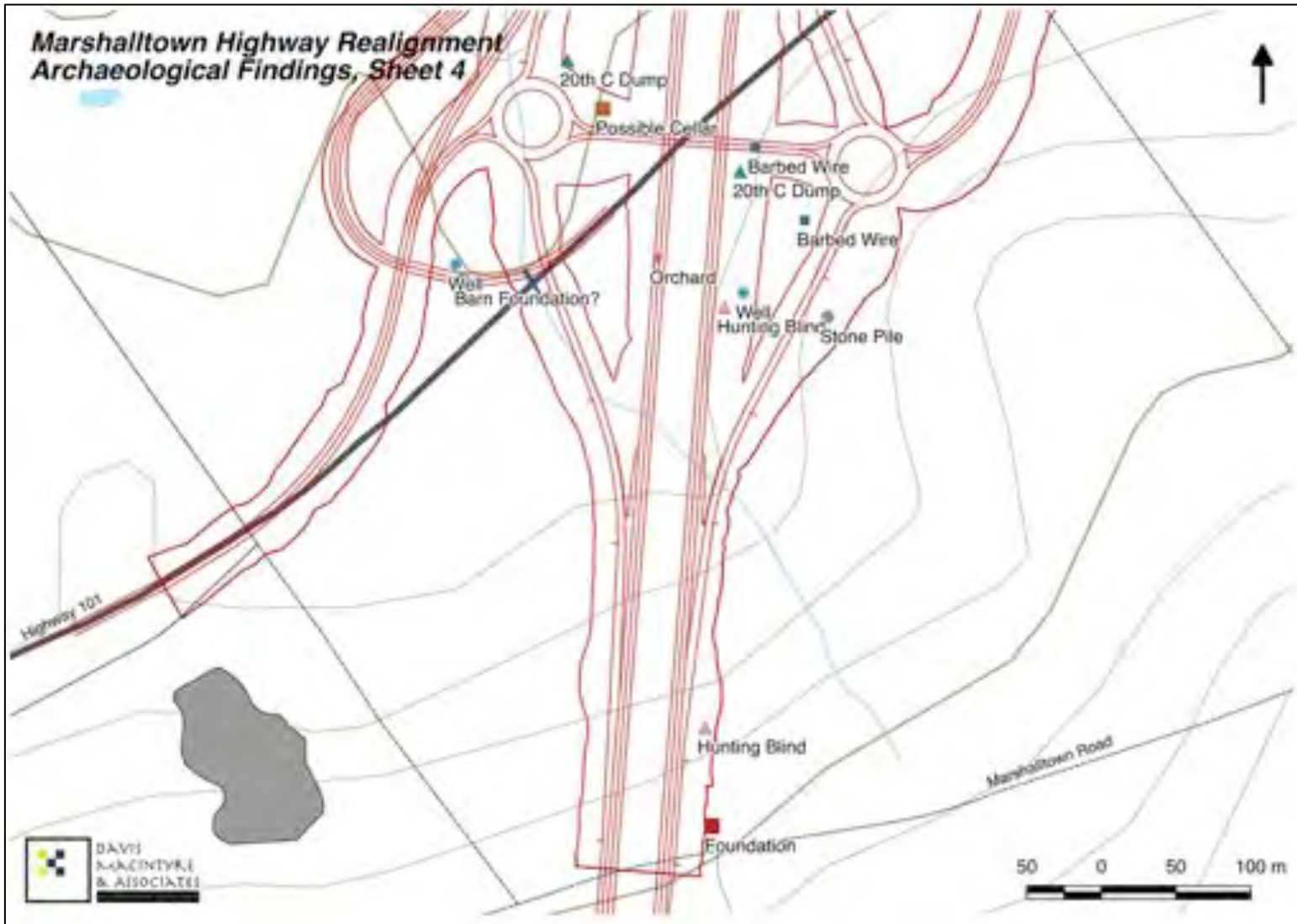


Figure 3-10: Archaeological findings, Sheet 4.

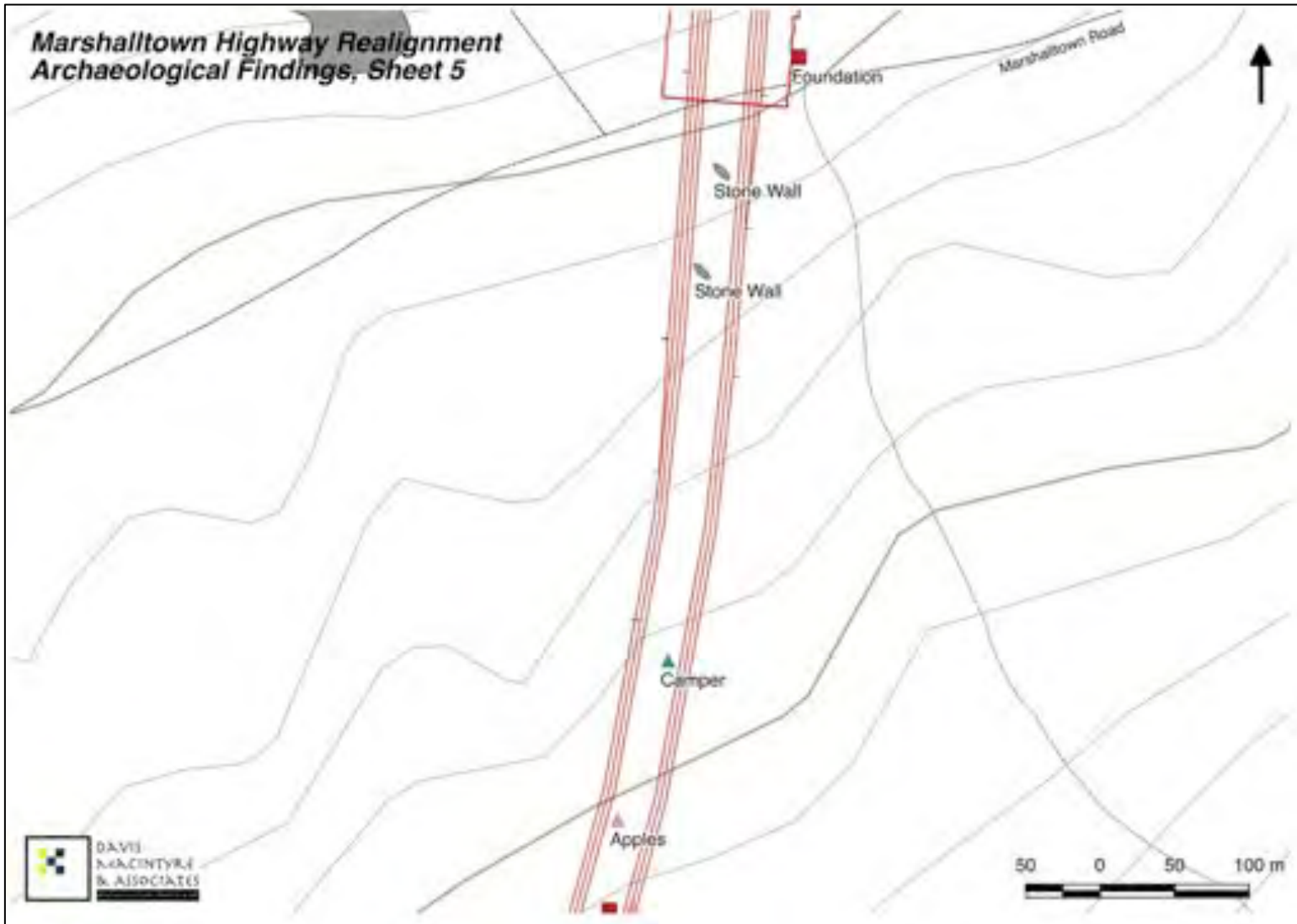


Figure 3-11: Archaeological findings, Sheet 5.

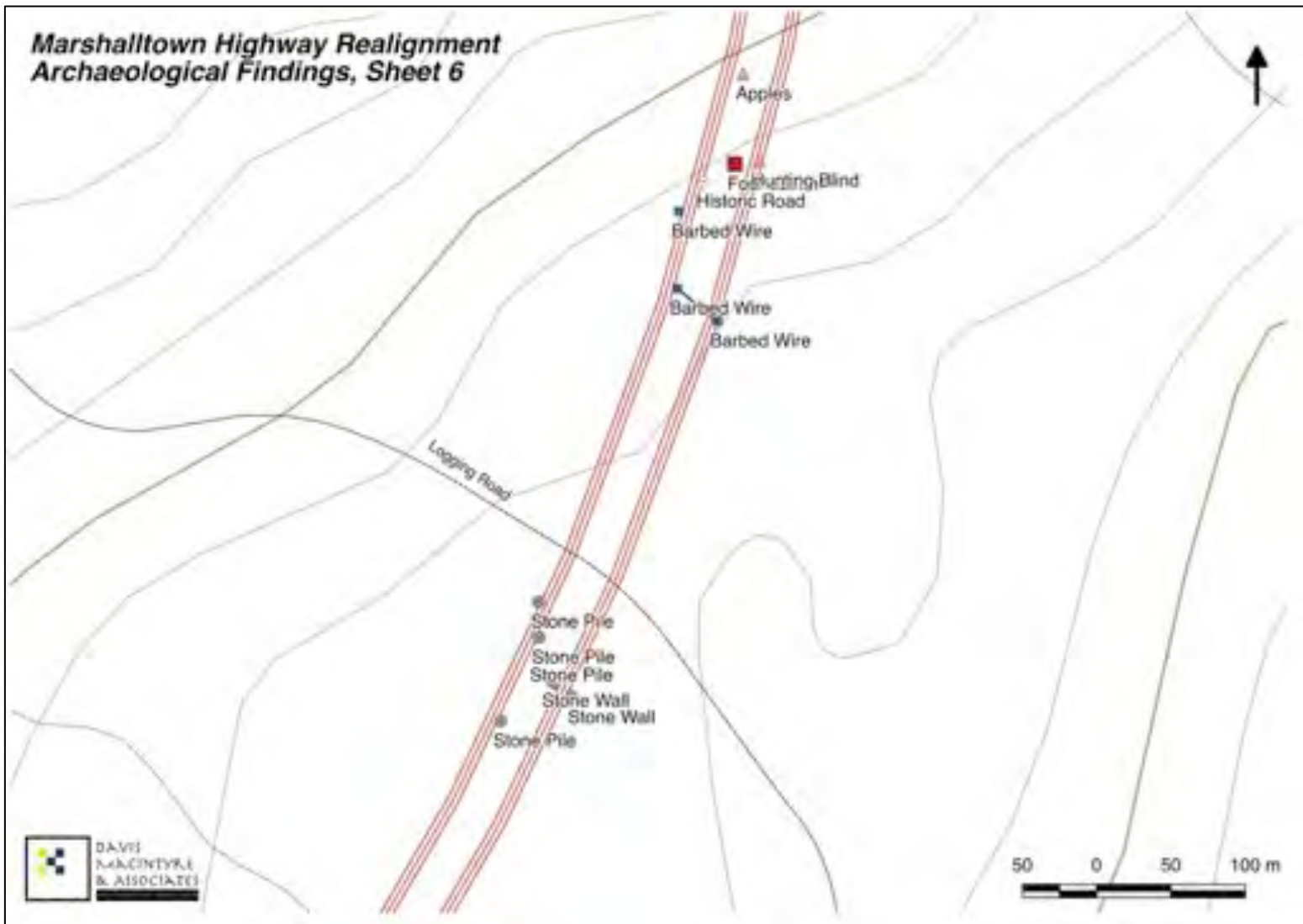


Figure 3-12: Archaeological findings, Sheet 6.

3.5 Archaeological Testing

Following the field reconnaissance, archaeological testing was undertaken by Laura de Boer, Vanessa McKillop, Andrea Richardson, and co-op student Irene Hart at five of the sites identified as having elevated archaeological potential. These five sites were selected as they were located in the closest proximity to the first phase of highway construction – the northern or westbound lane of the future twinning. All test units were 40cm x 40cm in size. Approximate test unit locations are shown in Figures 3-12 and 3-13.

The first testing site was the large terrace along the southern bank of the proposed crossing of Seely Brook. While the brook itself is not navigable, it represented a possible source of food and resources for First Nations groups, and the terrace would have provided a hospitable encampment site. Test units were placed in three rows along this terrace, which was 40m in length (excluding the more poorly-drained area to the west) (Plate 31). Units were placed on a 10m grid spacing in accordance with testing for moderate potential areas, with several slight offsets due to trees or other obstacles.

Depths of the units before reaching rock, the water table, or culturally sterile soil and hardpan ranged from 30cm to 71cm below the surface (Plate 32). In most units, the forest loam and root layer was underlain by grey-brown silty sand or grey-orange silty clay loam, eventually bottoming on orange or mottled orange and grey hardpan (Plate 33). In one of the units closest to the seasonal stream to the east, the water table was encountered at a depth of 50cm, before hardpan could be encountered.

All 13 units excavated on this terrace were negative for artifactual material, and in fact lacked any signs of cultural activity, whether resulting in archaeological site formation or not.

The second and third sites subjected to archaeological testing were the two small terraces on the north side of Seely Brook. On each terrace, two test units were excavated 5m apart on lines roughly parallel to Seely Brook (Plate 34).

On the western terrace (Terrace 1), the eastern-most unit reached culturally sterile orange-brown silty sand at a depth of 55cm. Overlying strata included red-brown and grey-brown silty sand and mid-brown silty loam under the forest root layer. In contrast the western unit on Terrace 1 included a thin sod, a pebbly brown sandy soil, and a highly compacted probable hardpan, grey and gravelly (Plate 35). Alternately, this last layer may represent an abandoned rough roadbed or small laydown of some sort, the purpose of which is no longer clear in the overgrown forest.

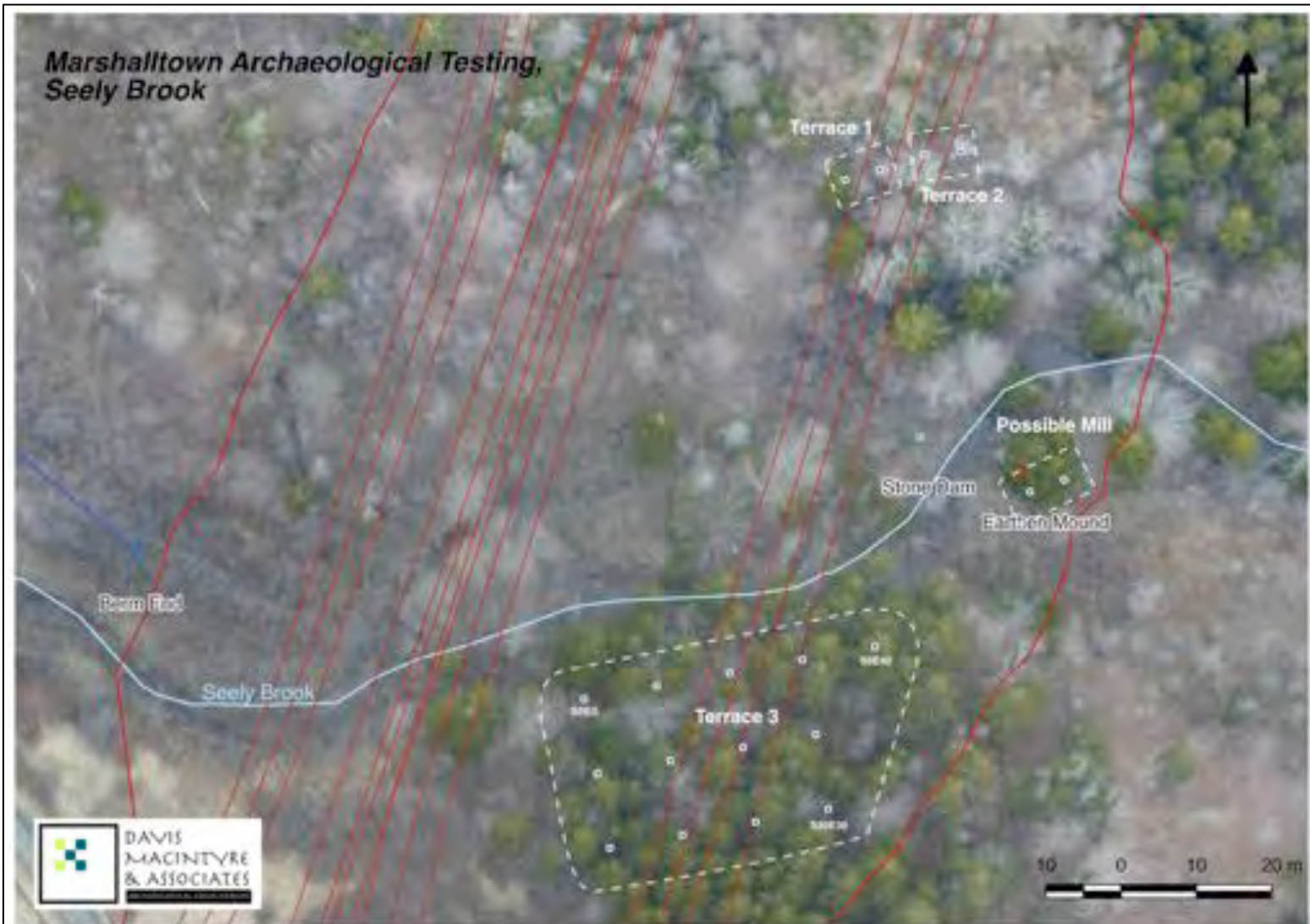


Figure 3-13: A map showing test unit locations at four sites surrounding Seely Brook.



Figure 3-14: A map showing test units at the rectangular depression near Highway 101 and its surrounds.

On the eastern small terrace (Terrace 2), the eastern unit was very deeply stratified, with an apparently buried sod at a depth of 86cm (Lot 6 of 9 identified lots) (Plate 36). The soils varied from silty sands above the buried sod to sandy clay below it, strongly suggesting a man-made infilling event in the past. Excavation of the unit was halted at 123cm, at which point it became unsafe to continue excavating. Only 5m west, the other unit placed on the terrace encountered hardpan at a depth of merely 35cm, overlain by silty loam and gravelly clay loam.

All four units excavated on these two terraces were negative for artifactual material. The infilled material on part of Terrace 2 and the shallow compacted material on Terrace 1 are both suggestive of cultural activity in the past, possibly related to attempts to improve the landscape for fields, but no cultural or artifactual material was encountered and the landscape no longer shows clear signs of what this activity may have fully entailed. Regardless, there is no evidence of First Nations activity or encampment, which was the purpose of initiating the testing at this location.

Two test units were also excavated at the suspected site of the mill on Seely Brook. The units were placed 5m apart adjacent to the earthen mound on the southeast bank, which is in turn adjacent to the stone dam (Plate 37). It was suspected that, like many historic mills, this site may have been used for only a short period of time, and as many mills were constructed on blocks or stilts beside a watercourse, following abandonment many such industrial sites are swept away in spring flooding, leaving little if any archaeological signs of their presence. It is possible that the mill may have been the one illustrated on Ambrose Church's nineteenth century map of the county (refer back to section 3-2).

Both excavated units were comprised chiefly of river-washed gravelly sand, and hardpan was encountered at depths of 40 to 50cm below the surface (Plate 38). No artifacts or signs of archaeological material were encountered in either unit, and unfortunately it appears likely that if this site was a mill, there is minimal if any artifactual material remaining at the site. As such, it is not possible to confirm the presence of the mill or to assign a date range to the site.

Finally, five test units were excavated surrounding and within the small rectangular depression adjacent to the existing Highway 101 (Plate 39). Beneath the grassy sod, all five units revealed a very thick deposit of light brown and grey brown sand. In one unit, a layer of compacted crusher dust and gravel was encountered between sand deposits (Plate 40), and in another, a layer of landscaping fabric covered the entire bottom of the unit (Plate 41). Unit 5, placed in the middle of the feature, yielded a 92cm-thick layer of light brown sand overlaying a probable buried sod, with blackened organic material and spruce needles. At 120cm, which was reached by auger, the unit bottomed on a layer of decomposing wood.

No artifactual material was encountered, and the presence of the sand, gravel, landscape fabric, and buried sod make it clear that the rectangular feature is modern in origin, rather than a possible historic cellar.

4.0 RESULTS AND DISCUSSION

The archaeological assessment identified five areas of elevated archaeological potential that were subjected to archaeological testing. All of these areas were negative for archaeological material. At the three terrace sites, there was no indication of First Nations activity. In the case of the rectangular depression, the reason for assigning it as having elevated potential appears to have in fact been the results of modern infilling. At the probable mill site, no artifacts were recovered to confirm the presence or date range of the mill.

Table 2: Index of noted cultural features and sites, listed from the east (Conway) to the Southwest (Marshalltown).

Feature	Coordinates (UTM NAD83)	Archaeological Significance
20th C Can Dump	20 T 279213 4942036	Low
Stone Pile 1	20 T 279163 4942088	Low, but indicates historic activity nearby
Abandoned School Bus	20 T 279098 4942056	Low
Car Dump	20 T 279058 4942075	Low
Stone Wall 1	20 T 279034 4942098	Low, but indicates historic activity nearby
Logging Operation	20 T 278968 4942124	Low
Hunting Blind 1	20 T 277857 4942016	Low
Hunting Blind 2	20 T 277419 4941574	Low
Campfire	20 T 277398 4941491	Low
Barbed Wire Fence 1	20 T 277288 4941397	Low
Barbed Wire Fence 2	20 T 277198 4941276 to 20 T 277237 4941241	Low (Overgrown pasture to southwest)
Barbed Wire Fence 3	20 T 277173 4941091	Low
Seely Brook Terrace 1	20 T 277142 4941038	Elevated Potential – Testing Results Negative – Low Significance
Seely Brook Terrace 2	20 T 277157 4941038	Elevated Potential – Testing Results Negative – Low Significance
Seely Brook Terrace 3	20 T 277083 4940953 to 20 T 277143 4940972	Elevated Potential – Testing Results Negative – Low Significance
Berm or Roadbed	20 T 276982 4941004 to 20 T 277043 4940990	Low

Gravel Pad	20 T 277022 4940660	Low
20 th C Dump 1	20 T 276957 4940652	Low
Rectangular Depression	20 T 276981 4940619	Elevated Potential – Testing Results indicate modern – Low Significance
Abandoned Well 1	20 T 276882 4940515	Low – Poses Safety Hazard
Probable Barn Foundation	20 T 276886 4940505	Low
Deep Ditch	20 T 277193 4940634	Low
Barbed Wire Fence 4	20 T 277083 4940593 to 20 T 277116 4940544	Low
20 th C Dump 2	20 T 277073 4940577	Low
Overgrown Orchard	20 T 277017 4940519	Low, but indicates historic activity nearby
Abandoned Well 2	20 T 277075 4940496	Low – Poses Safety Hazard
Hunting Blind 3	20 T 277062 4940486	Low
Stone Wall 2	20 T 277131 4940480	Low, but indicates historic activity nearby
Hunting Blind 4	20 T 277049 4940204	Low
Probable Historic Cellar	20 T 277054 4940138	Unknown without archaeological testing
Stone Wall 3	20 T 277002 4940061	Low, but indicates historic activity nearby
Stone Wall 4	20 T 276989 4939994	Low, but indicates historic activity nearby
Camper Trailer	20 T 276966 4939733	Low
Apples (Hunting Blind Nearby)	20 T 276932 4939626	Low
Hunting Blind 5	20 T 276942 4939567	Low
Probable Historic Foundation	20 T 276926 4939565	Unknown without archaeological testing
Probable Overgrown Road	20 T 276905 4939553	Low, but indicates historic activity nearby
Barbed Wire Fence 5	20 T 276889 4939533	Low (Overgrown pasture to south)
Barbed Wire Fence 6	20 T 276888 4939481 to 20 T 276915 4939459	Low (Overgrown pasture to north)
Stone Pile 2	20 T 276794 4939270	Low, but indicates historic activity nearby
Stone Pile 3	20 T 276795 4939246	Low, but indicates historic activity nearby
Stone Pile 4	20 T 276793 4939234	Low, but indicates historic activity nearby
Stone Pile 5	20 T 276769 4939190	Low, but indicates historic activity nearby
Stone Wall 5	20 T 276802 4939217 to 20 T 276819 4939206	Low, but indicates historic activity nearby

Please note that there were two abandoned wells encountered during the reconnaissance. Workers operating in the area of the proposed interchange in the future should be aware that neither of the two wells have been properly covered, but rather are simply capped by rotting pieces of plywood.

5.0 RECOMMENDATIONS AND CONCLUSIONS

The historic background study and field reconnaissance have indicated that the study corridor was subject to moderate levels of historic activity including possible First Nations use for resources and a portage route. However, archaeological testing has shown that significant archaeological deposits are unlikely to exist within the proposed impact zone north of the existing Highway 101. Although the stone dam and earthen mound identified on Seely Brook may represent the remnants of a nineteenth or early twentieth century mill, there is no evidence of significant archaeological deposits existing or surviving in relation to the mill, and as such, no further mitigation at that site is currently proposed.

Some evidence of field clearing, overgrown pasture, and stone property walls were also observed within the impact zone north of Highway 101, but in all cases these did not appear to be associated with significant archaeological features such as building foundations, and therefore testing or mitigation is not currently proposed in these areas. These findings are however indicative of historic activity in the area and should the highway be realigned again, a reassessment is recommended to ensure that more significant features are not impacted.

Four other historic feature locations have been identified south of the existing Highway 101, but testing at these locations has not been conducted or proposed prior to the upcoming phase of highway construction (undivided highway).

The first is the small cellar feature on the northwest side of Marshalltown Road, located just outside the proposed toe-of-slope. The position of this feature will allow for easy avoidance during future construction by flagging the area with a recommended buffer of approximately 10m from the exposed stone of the cellar.

The second location is at the western end of the proposed Marshalltown interchange, where a probable barn foundation has been identified beside a standing (abandoned) house. The small house appears to be of early twentieth century origin, and it is believed that an associated barn would not represent a significant archaeological resource. No mitigation is currently recommended.

The third site is an area of stone piles and stone walls related to a historic homestead far south of Marshalltown Road. The foundations of associated house(s) and

outbuildings at this location could not be located within or in close proximity to the impact area, and it is currently assumed that if these foundations have survived (the area is bordered by heavy clearcutting and regrowth), they are not apparent within the impact zone. The stone piles within the impact zone vary in size, but given the site's significant distance (near the southwest extent of the study area) from historic Black settlements such as Jordantown and Conway, it does not appear likely that the mounds are related to any spiritual practices within the eighteenth and nineteenth century African-Canadian community. Ambrose Church's historic map suggests this area belonged to the "Como" (Comeau) family, presumably of Acadian descent.

Finally, a probable house foundation deep in the woods south of the Marshalltown Road was also identified during the reconnaissance, but was not subjected to archaeological testing or mitigation at this time as it is located significantly south of the existing Highway 101 and will not be impacted in the currently proposed phase of the highway alignment, which will terminate where the realignment re-joins the existing highway in Marshalltown to the north of this site.

In summary, no further active mitigation is recommended for the proposed 2017 phase of the highway realignment. If at a future date the highway realignment is extended south past the existing highway as has been proposed, archaeological testing at the probable historic stone foundation is required prior to any clearing or grubbing of the RoW. Additionally, the historic cellar beside Marshalltown Road must be flagged prior to clearing and grubbing.

In the event that archaeological resources are encountered in the future and an archaeologist is not already present, it is required that any ground-disturbing activity be halted immediately and the Coordinator of Special Places (902-424-6475) be contacted immediately regarding a suitable method of mitigation.

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PLATES



Plate 1: A low, wet forest of poplar and scrub birch near the northeastern end of the proposed highway realignment. Looking west.



Plate 2: A rough stone wall suggests a property division, but no evidence of oldfield was present. Looking southeast.



Plate 3: An abandoned school bus in a low, wet area behind (north of) a modern house. Looking southwest.



Plate 4: A temporary logging operation within the proposed RoW, looking west.



Plate 5: Crates of cut wood, presumably to be sold as firewood. Looking east.



Plate 6: A recently logged area west of the logging operation, looking west.



Plate 7: A new woods road near the transmission line, looking north.



Plate 8: A collapsed and abandoned hunting blind, looking west.



Plate 9: The southeast bank of Seely Brook showing the remains of a stone dam and earthen mound, likely related to a historic mill. Looking southeast.



Plate 10: The two remaining edges of a stone dam across Seely Brook, looking south.



Plate 11: A possible mill raceway or other mill-related landscaping (right side) along with the earthen mound beside the dam (left, distance). Photo taken during later testing phase when some snow was on the ground. Looking southwest.



Plate 12: A Rockinghamware teapot spout observed on the bank of Seely Brook.



Plate 13: The edge of a long, broad terrace on the south side of Seely Brook, looking west.



Plate 14: The boundary between the spruce-covered terrace and the Alms House property on the south side of Seely Brook, looking southeast.



Plate 15: The site of the Alms House, looking northwest. Please note that this photo was taken during geophysical surveys in April 2016, before the knotweed regenerated for the year.



Plate 16: A concrete foundation remaining from the 1968 barracks complex, looking north. Please note that this photo was taken during geophysical survey work in April 2016, prior to undergrowth regeneration in the spring.



Plate 17: A twentieth century dump of bottles and cans at the edge of a low, wet area near the existing 101, looking south.



Plate 18: A grass-covered rectangular foundation beside the existing 101 likely represents an early twentieth century barn, looking southeast.



Plate 19: A small two-room house and associated outhouse beside the probable barn foundation, looking west.



Plate 20: A deep ditch observed south of the existing Highway 101.



Plate 21: An abandoned house bordering the existing Highway 101, viewed from behind (looking northwest).



Plate 22: A concrete crotch well presumed to have fed the abandoned house to the north. Looking northeast.



Plate 23: A hunting blind, possibly abandoned, south of the abandoned house. Looking southwest.



Plate 24: An overgrown stone wall at the rear of the abandoned house property, looking southwest along the wall.



Plate 25: A rough stone-lined cellar beside Marshalltown Road (visible in the background). Looking southeast.



Plate 26: The larger of two stone walls encountered immediately south of Marshalltown Road. Looking southwest.



Plate 27: A camper-trailer at the edge of a cut block. Regrowth is found to the left (northeast) with more mature forest to the right (southwest). Looking southeast.



Plate 28: A rough stone foundation with no cellar, looking southeast towards a possible overgrown road (background).



Plate 29: A section of stone wall near the south extents of the study area, looking southeast along the wall.



Plate 30: The tallest section of the wall, looking west.



Plate 31: The northern-most of three rows of test units on the large terrace. The south edge of Seely Brook is located just outside the photograph frame to the left (north).



Plate 32: Unit 20S 20E showing mottled orange hardpan at the bottom. North is to the right.



Plate 33: The south profile of Unit OS OE, showing sod, fine grey silty sand with cobbles, and orange-brown silty clay overlying mottled orange hardpan.



Plate 34: The two backfilled units of Terrace 1, looking east to Terrace 2.



Plate 35: A compacted grey-brown gravelly soil encountered in Unit 2 of Terrace 1. North is to the top.



Plate 36: Unit 1 on Terrace 2, excavated to a depth of 123cm. The upper 86cm likely consist of fill. North is to the top.



Plate 37: Units 1 and 2 at the probable mill site, looking east from Unit 1 towards 2. The earthen mound is on the left side of the image, and the stone dam is out of frame on the left (northwest).



Plate 38: The south profile of Unit 1 at the probable mill site, showing river-washed gravel and sand over grey-brown and mottled orange hardpan.



Plate 39: Four units in progress surrounding the rectangular depression, looking southeast towards Highway 101.



Plate 40: The northwest profile of Unit 2 at the rectangular depression, showing sand overlying a band of crusher dust (dark belt) with more sand below. This unit was choked out by rock at 72cm below the surface.



Plate 41: Unit 4 at the rectangular depression, showing landscape fabric (likely over rocks) at the bottom of the 42cm unit.

APPENDIX A: HERITAGE RESEARCH PERMIT



Heritage Research Permit (Archaeology)

Office Use Only
Permit Number:

A2016NS091

Special Places Protection Act 1989

(Original becomes Permit when approved by
Commissioner, Culture and Heritage)

(Where not filled will be made publicly available. Please choose your project name accordingly)

Surname **de Boer**

First Name **Laura**

Project Name

Highway 101 Realignment, Marshalltown

Name of Organization **Davis MacIntyre & Associates Ltd.**

Representing (if applicable)

NSTIR / CBCL Ltd.

Permit Start Date **26 October 2016**

Permit End Date **20 December 2016**

General Location

Marshalltown, Digby County

Specific Location: (Use Barcode number and UTM designations where appropriate and as described separately in accordance with the attached Project Description. Please refer to the appropriate Archaeological Heritage Research Permit Guidelines for the appropriate Project Description format)

From the current Digby/Conway exit to a reconnect slightly past Marshalltown

Permit Category

Please choose one

Category A – Archaeological Reconnaissance

Category B – Archaeological Research

Category C – Archaeological Resource Impact Assessment

I certify that I am familiar with the provisions of the Special Places Protection Act of Nova Scotia and that I have read, understand and will abide by the terms and conditions listed in the Heritage Research Permit Guidelines for the above noted category.

Signature of applicant

Date **12 October 2016**

Approved by
Executive Director

Date **12 Oct 2016**

APPENDIX B: SHOVEL TEST FORMS

Permit # _____

Shovel Test Record

reviewed
correlated
entered

Loc: Marshalltown Sully Brook S

Date: 6/16/15

Excavator(s): ✓ 27 M

Use Net: ✓ (25)

Blade Excav (DBS): 30 cm

Surface Elev (m ASL): _____

GPS lat:

Presence/Absence or N & depth (DBS)

poorly sorted sand

sh

Artifacts

laminated sand

legally

C artifacts

pebbles

other

Soil Samples

Use an Equipment

Stratigraphic Descriptions



40

① 1-4 - Humus - DRK BROWN LEAF

LITERAL PITS

② 4-18cm - RED GRAY FINE SIFTY

SAND. MOD. MED. COMPACTION. GRAY

③ 18-25cm - RED ORANGE BROWN

FINE SIFTY SAND. INCREASING COMPACTION

④ 25-30cm - ORANGE BROWN

CLAY PAN

FAULT @ 18cm PAN

Findings: _____

Photographs: 407 140 F

Photo ID# _____

Permit # _____
 Site: Marshalltown Silty Brook S

Reviewed
 Correlated
 Entered

Date: 6 Dec 2016 Excavator: I Hart Job No: 101 DS

Base Elev (DBS): 352.2' Surface Elev (m ASL): _____ GPS vst:

Presence/Absence or N & depth (DBS): N

poorly sorted sand fine siltstone
 rounded sand siltstone C samples
 pebbles other soil samples



Stratigraphic Descriptions
 (use only when further details are needed)

40
 +0

1) Sand
 2) Grey silty sand
 3) Orange-brown clay loam
 4) Orange-grey hardpan

Field notes _____
 Photographs 6416, 6417 Photo ID # _____

Permit # _____

Shovel Test Record

Reviewed	<input type="checkbox"/>
Correlated	<input type="checkbox"/>
Entered	<input type="checkbox"/>

Site: Marshalltown Siley Brook S

Date: 6 Dec 2016 Excavator(s): L de Boer

Unit No.: 20E 05

Blade Elev (DBS): 36cm Surface Elev (ms ASL): _____

GPS ref:

Presence/Absence or N & depth (DBS) N

poorly sorted sand:

fr:

Artifacts:

laminated sand:

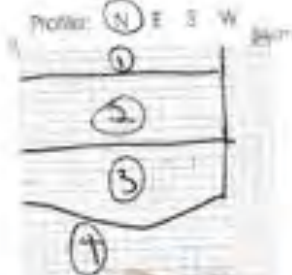
ryolith:

"C" samples:

pottery:

other:

Soil Science:



Stratigraphic Descriptions

- ① Dark organic soil + roots
- ② Grey-orange silty clay loam
- ③ Brown-orange silty sandy clay
- ④ Orange hardpan

Photographs: 6412 + 13

Photo ID # _____

Form # _____

Shovel Test Record

reviewed
correlated
entered

Site Marshalltown Silty Banks

Date: 4/22/15

Excavator(s) SP

Unit Test 20 10 15 25

Base Elev (DRS) 51mBS

Surface Elev (m ASL) _____

GPS ref

Presence/Absence or N & depth (DRS)

poorly sorted sand

cl

Atterberg

laminated sand

logprob

"C" samples

pebbles

other

Soil Samples

use grid reference

Stratigraphic Descriptions

Color - (DRS) Depth - (DRS) Contact



① Humus - leaf litter, decaying organic

② A - dk gray brown silty sand

③ H grayish brown sand

④ - coarse sand & gravel cobbles to 5cm, H grayish brown

Photos: _____

Photographs 6403-6405

Photo ID # _____

Scale 1:10'

Form # _____

Shovel Test Record

reviewed
corrected
entered

Site: Marshalltown SH-11 60045

Date: 12/1/16 Excavator(s): Vandy

Unit No: 40E C5

Base Elev (DBF): 35.0m Surface Elev (m AGL): _____

GPS set:

Presence/Absence or N & depth (DBF)

poorly sorted sand <input type="checkbox"/>	fr. <input type="checkbox"/>	Artifacts <input type="checkbox"/>
laminated sand <input type="checkbox"/>	tegeth. <input type="checkbox"/>	TC samples <input type="checkbox"/>
pebbles <input type="checkbox"/>	other <input type="checkbox"/>	Soil Samples <input type="checkbox"/>



unit & elev

4E
4C

Stratigraphic Descriptions

DBF - DBF - SURFACE ELEVATION - CODE

- ① 0-17 m - unconsolidated yellowish brown silty clay
 - ② 17-22 m - Med grey fine silty sand few pebbles
 - ③ 22 m - 35 cm - Med grey brown fine silty sand w/ pebbles
 - ④ 35 - 42 m - Orange brown mottled with grey brown pebbles increasing compaction
 - ⑤ Hard pan orange
- Ends @ Hard pan

Remarks: _____

Photographs 6422 - 1A27 Photo ID # _____

1/16/16

Scale 1:10

Copyright © 2008

Form # _____

Shovel Test Record

reviewed	<input type="checkbox"/>
corrected	<input type="checkbox"/>
entered	<input type="checkbox"/>

Site: Marshalltown Shelby Blvd 5

Date: 6/12/16 Excavator: JFK Unit Ref: SP 10-5

Blade Excv (DBS): 72cm BS Surface Elev (m-ASL): _____ GPS ref:

Presence/Absence or N & depth (DBS)

poorly sorted sand <input type="checkbox"/>	grit <input type="checkbox"/>	lithology <input type="checkbox"/>
sorted sand <input type="checkbox"/>	logarithm <input type="checkbox"/>	C horizon <input type="checkbox"/>
pebbles <input type="checkbox"/>	other <input type="checkbox"/>	Soil Samples <input type="checkbox"/>



Soil Profile: 10
 Stratigraphic Descriptions
Soil Profile - Shelby Blvd 5, Marshalltown

- ① Humus - dk brown decaying organic in soil
- ② A - dk gray brown loose in roots
- ③ medium grayish brown silty clay
- ④ lt gray silty clay some pebbles
- ⑤ B^c - orange compacted silty sand w some pebbles, hard pan

Footnote: _____

Photographs: 6518-6521 Photo ID # _____

Scale 1:10

Sheet # _____

Shovel Test Record

reviewed	<input type="checkbox"/>
corrected	<input type="checkbox"/>
entered	<input type="checkbox"/>

Site: Marshalltown Lady Creek 3

Date: 10/2/16 Excavator(s): AR Unit No: 105 103

Soils Excy (DBS): 42005 Surface Elev (m-ASL): _____ GPS yrd

Presence/Absence or N & depth (DBS)

pricky surface level <input type="checkbox"/>	sh <input type="checkbox"/>	fracture <input type="checkbox"/>
unfilled void <input type="checkbox"/>	log <input type="checkbox"/>	C-samples <input type="checkbox"/>
porosity <input type="checkbox"/>	other <input type="checkbox"/>	Soil Samples <input type="checkbox"/>



Soils in 3' increments
30
60

Stratigraphic Descriptions

- ① Humus - decaying organic, roots, dk gray brown, leaves
- ② A - dk gray brown silty clay w roots, organics
- ③ medium grayish brown silty clay
- ④ gray silty clay w pellets & ripples
- ⑤ orange compressed silty sand w pellets, hard part (B)

Fednotes: _____

Photographs: 10/2/16-10/2/16

Photo ID # _____

Scale 1:10

continued on sheet # _____

Form # _____

Shovel Test Record

revised
correlated
entered

Site: Marshalltown Silty Brook S

Date: 6/26/2016 Excavator: J. DeBoer

Line Ref: 105 20WE

Depth from (DBS): 46cm

Surface Elev (m ASL): _____

GPS ref:

Presence/Absence or N & depth (DBS) N

boxy surface sand

fill

attach

laminated sand

tearout

C-laminar

patented

lithar

Soil Sample

weight (grams) _____

Stratigraphic Descriptions

Profile: N E S W

40
40



- ① Sod / root mat
- ② Orange-brown river-washed gravel & sand
- ③ Grey-brown river-washed gravel & sand
- ④ Thin lens - dark sandy material, appears inorganic
- ⑤ Hardpan, grey-brown

Fieldbook # _____

Photographs 6424825

Photo ID # _____

Permit # _____

Shovel Test Record

revised
corrected
entered

Site: Delwood (Tom) Sandy Branch

Date: 5/12/16

Excavator(s): J. H.

Unit No: 103 SOE

Base Elev (DBS): 71.0m

Surface Elev (m ASL): _____

GPS id:

Presence/Absence of N & depth (DBS)

poorly sorted soil:

or:

Artifacts:

laminated soil:

rough:

C samples:

ponded:

other:

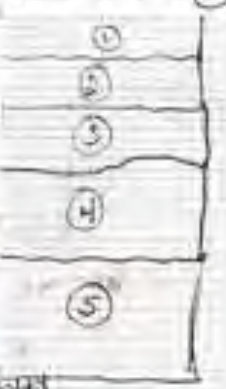
Soil Samples:

all at 8 inches

Stratigraphic Descriptions

CODE: 0001 0002 0003 0004 0005

Profile: N E S W



(8cm)
 ① 2nd layer Dark Brown leaf litter, thick (18cm)
 ② grey sandy silty layer below root (50cm) bright grey to white compact chunky soil
 (40-44cm) - Dark brown with orange inclusions, slightly pebbly, wet, sandy
 (71cm) wet, sandy silty layer light brown-grey with iron pockets - Ends at sandy layer (very fine)
 ⑤ Auger to 80cm kept twisting on bedrock or rocky layer below water was pooling at bottom

Fieldnotes: _____

Photographs 6491-6135

Photo ID: _____

Form # _____

Shovel Test Record

reviewed	<input type="checkbox"/>
corrected	<input type="checkbox"/>
entered	<input type="checkbox"/>

Site: Marshalltown Green Park S

Date: 6/12/16 Excavator(s): YMG Unit Ref: CE 205

Base Elev (DBS): 322cm Surface Elev (m ASL): _____ GPS ref:

Presence/Absence or N & depth (DBS)

poorly sorted sand <input type="checkbox"/>	sh <input type="checkbox"/>	artifacts <input type="checkbox"/>
rounded sand <input type="checkbox"/>	vegetation <input type="checkbox"/>	C samples <input type="checkbox"/>
pebbles <input type="checkbox"/>	other <input type="checkbox"/>	Soil Samples <input type="checkbox"/>



Use only if necessary

Stratigraphic Descriptions

① 2' deep - Hardpan in ground level
 2-2.5' hardpan

② 6-20cm - Med Grey Brown
Fine sandy sand, few pebbles

③ 20-30cm Med Grey Brown
Med with orange brown pebbles

④ 50-3L Hard Pan Orange
Brown Med with black area
Med Brown

Ends @ Hard Pan

Foldouts: _____

Photographs: 1429-6931 Photo ID # _____

Form # _____

Shovel Test Record

reviewed	<input type="checkbox"/>
corrected	<input type="checkbox"/>
entered	<input type="checkbox"/>

Site: Marshalltown Silty Brook S

Date: 6 Dec 2016 Excavator: V/M

Site Ref: 10E 205

Bore Entry (DBS): 42 Surface Elev (m ASL): _____

GPS ref:

Presence/Absence of N & depth (DBS)

poorly sorted sand <input type="checkbox"/>	silts <input type="checkbox"/>	artifacts <input type="checkbox"/>
laminated sand <input type="checkbox"/>	irregular <input type="checkbox"/>	TC samples <input type="checkbox"/>
pebbles <input type="checkbox"/>	other <input type="checkbox"/>	Soil Samples <input type="checkbox"/>

at top of stream

Stratigraphic Descriptions

1002 - 1000 1000 1000 1000 1000



40

70

- ① Soil
- ② Med brown silty sand
- ③ Degraded hardpan, med orange-brown
- ④ Orange-brown hardpan

Technician: _____

Photographs: 6442-45

Photo ID # _____

collected by _____

Form # _____

Shovel Test Record

reviewed
corrected
entered

Site: Marshalltown Seelye Brank S

Date: 6 Dec 2016 Excavator(s): L de Barr

Unit No: 205 20E

Base Elev (DBS): 50 cm

Surface Elev (m.ASL): _____

GPS loc:

Presence/Absence or N & depth (DBS)

poorly sorted sand:

sl:

Artifacts:

laminated sand:

regolith:

C samples:

pebbles:

other:

Soil Samples:

By: 2016-12-06

Stratigraphic Descriptions



40

40

- ① Very thick peaty sod
- ② Grey-brown gravelly clay-loam
- ③ Orange-brown hardpan

~~X~~ 4:30 pm, light fading - some photos with flash

Fieldnote: _____

Photographs:

6456-4
(Flash/no flash)

Photo ID # _____

Permit # _____

Shovel Test Record

reviewed	<input type="checkbox"/>
approved	<input type="checkbox"/>
entered	<input type="checkbox"/>

Site: Marshalltown Kelly Brook J.

Date: 06/12/16 Excavator: JE UTM Ref: 30E 205

Base Elev (DBS): 472m Surface Elev (MASL): _____ GPS id:

Presence/Absence of M & depth (DBS) _____

poorly sorted sand	<input type="checkbox"/>	sh.	<input type="checkbox"/>	Artifact	<input type="checkbox"/>
laminated sand	<input type="checkbox"/>	regolith	<input type="checkbox"/>	C sample	<input type="checkbox"/>
pebbles	<input type="checkbox"/>	other	<input type="checkbox"/>	Soil samples	<input type="checkbox"/>

UTM coordinates

70
40

Stratigraphic Descriptions

Color, Moisture, Odor, Texture, Rooting



- ① 0-2cm - Humus - dk grayish brown decaying organic, roots, leaves
- ② A - 12-15cm - dk grayish brown silty loam, organics, roots
- ③ medium grayish brown silty clay with pebbles (14-20cm DBS)
- ④ 20-31cm - Ae¹ - lt gray silty clay w/ pebbles & cobbles
- ⑤ 31-43cm - B - earthy brown silty clay w/ pebbles
- ⑥ compacted sandy clay w/ pebbles, hard pan (43-47cm DBS)

Footholds: _____

Photographs: 6436-6437 Photo ID # _____

Form # _____

Shovel Test Record

Reviewed
Correlated
Entered

Site: Marshalltown Sedgy Brook Terrace #1

Date: 7 Dec 2006 Excavator(s): VM & AR

Unit for: #1 (East)

Base Elev (DBS): 60

Surface Elev (M ASL): _____

GM use:

Presence/Absence or N & depth (DBS): N

poorly sorted sand

gravel

Artifacts

drainage sand

regolith

Climax

patina

other

soil samplers

Use pit & shovel

Stratigraphic Descriptions

color, texture, other physical features



40
40

- ① Sod
- ② Mid-brown sandy loam
- ③ Silty loam, ^{mid} grey-brown
- ④ Silty sand, red-brown mottled with leached light grey
- ⑤ sterile - orange-brown silty sand

Remarks:

Photographer: 6463064

Photo ID # _____

Form # _____

Shovel Test Record

reviewed
correlated
entered

Site: Marshalltown Selby Brook Terrace #1

Date: 7 Dec

Excavator(s): AR/IH

Unit No: #2 (West)

Base Elev (DBS): 222m

Surface Elev (m ASL): _____

GPS ref:

Presence/Absence in N & depth (DBS)

poorly sorted sand

silts

claystone

laminated sand

logans

1C samples

pebbles

other

Soil Samples

see also 6461-62



Stratigraphic Descriptions

40

40

- ① Soil
- ② Pebbly ^{and} brown sandy soil
- ③ Compacted - probable hardpan. Lt. brown to grey gravelly compacted

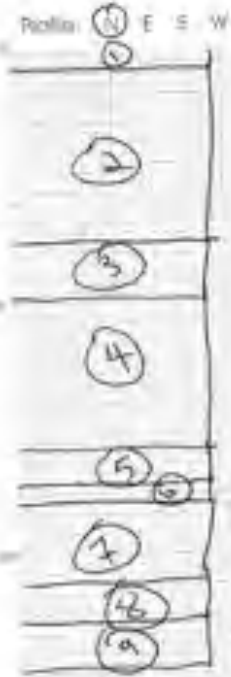
Field notes: _____

Photographs: 6461 + 62

Photo ID # _____

Scale: 1:10

Permit # _____
Shovel Test Record
 Site: Marshalltown Terraces, Stee, Brook N
 Date: 7 Dec 2016 Excavator: AK Unit Ref: Terrace 2, #1 (East)
 Basin Elev. (DRS) _____ Surface Elev. (m ASL) _____ GPS on
 Presence/Absence of N & depth (DRS) N
 Silty loam High Wet
 Silty sand High Silty
 Peat Other Soil Sample

Profile: N E S W


Stratigraphic Descriptions
 40
 40
 ① Sod
 ② Light red-brown silty sand
 ③ Grey silty sand
 ④ Orange silty sand
 ⑤ Greenish brown silty sand
 ⑥ Bulked sod, dark grey-brown loam
 ⑦ Orange-brown sandy clay
 ⑧ Light grey sandy clay
 ⑨ Reddish-brown sandy clay
 Cobbles through out

Footnote: _____
 Photographs: 6457 & 58 Photo ID# _____
 Scale 1:40

Permit # _____

Shovel Test Record

revised
correlated
entered

Site: Marshalltown Seely Brook Area 2

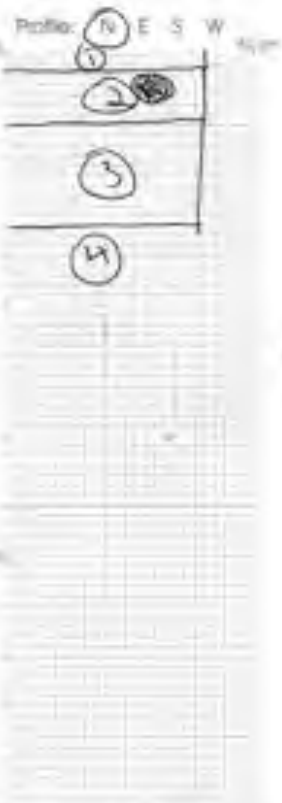
Date: 7 Dec 2016 Excavator(s) VM Unit-Set # 2 (West)

Base Elev (DBS) 35cm Surface Elev (MASL) _____ GPS ref.

Presence/Absence or N & depth (DBS) N

poorly sorted sand: <input type="checkbox"/>	fr: <input type="checkbox"/>	Artifacts: <input type="checkbox"/>
laminated sand: <input type="checkbox"/>	logolith: <input type="checkbox"/>	C. gravel: <input type="checkbox"/>
pebbles: <input type="checkbox"/>	other: <input type="checkbox"/>	Soil Samples: <input type="checkbox"/>

Unit grid reference



Stratigraphic Descriptions

color, texture, structure, position, relation

70
70

- ① Sod
- ② Orange-brown silty loam
- ③ Grey-brown gravelly clay loam
- ④ Hardpan, grey-brown with orange pockets

Fedtrack

Photographs 6459+60

Photo ID # _____

Permit # _____

Shovel Test Record

reviewed
correlated
entered

Site: Marshalltown - Mill

Date: 7 Dec 2016 Excavator(s): L de Boer

Unit Ref: Unit 31

Base Elev (DBS): 41.0m Surface Elev (m ASL): _____

GPS ref:

Presence/Absence or N & depth (DBS) N

poxy sorted sand: <input type="checkbox"/>	sh: <input type="checkbox"/>	Artifacts: <input type="checkbox"/>
laminated sand: <input type="checkbox"/>	vegetat: <input type="checkbox"/>	°C samples: <input type="checkbox"/>
pebbles: <input type="checkbox"/>	lithic: <input type="checkbox"/>	Soil Samples: <input type="checkbox"/>

see also drawings

Stratigraphic Descriptions



Scale 1:10

- 70
40
- ① Sand
 - ② River-washed gravel, grey-brown
 - ③ River-washed sand with few stones, grey-brown
 - ④ River-washed gravel, grey-brown with packets of orange
 - ⑤ Hardpan, grey-brown with packets of orange

Remarks: _____

Photographs C446 & 647 Photo 13# _____

continued on reverse

Form # _____

Shovel Test Record

Reviewed	<input type="checkbox"/>
Correlated	<input type="checkbox"/>
Entered	<input type="checkbox"/>

Site: Marshalltown Mill Site

Date: 7 Dec 2016 Excavator(s): C Hart

Unit No: ~~10~~ 7

Base Elev (DBS): 50cm Surface Elev (m ASL): _____

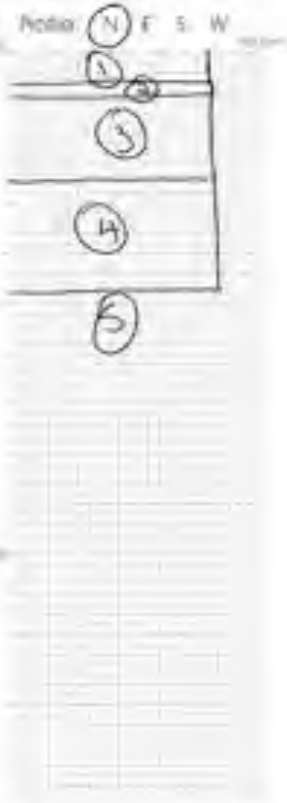
GPS ref:

Presence/Absence or N & depth (DBS): N

blocky sorted sand <input type="checkbox"/>	flint <input type="checkbox"/>	artifacts <input type="checkbox"/>
laminated sand <input type="checkbox"/>	ngolith <input type="checkbox"/>	C-softness <input type="checkbox"/>
gravel <input type="checkbox"/>	chert <input type="checkbox"/>	Soil-Somerset <input type="checkbox"/>

pit # & meters

Stratigraphic Descriptions



40
40

- ① Sod
- ② Light brown-grey rocky soil
- ③ Sandy silty orange-brown with rocks
- ④ Wet brown gravelly sand with larger rocks, some black inclusions - possible charcoal
- ⑤ Hardpan - brown with some orange
Water pooling at bottom

Facies: _____

Photographs 6454 & 56

Photo ID: _____

Entered by: _____

Point # _____

Shovel Test Record

reviewed
correlated
entered

Site: Marshalltown possible cedar

Date: 7 Dec 2016 Excavator(s): VM Unit No.: 1

Base Elev (DBS): 63 cm Surface Elev (m ASL): _____ GPS cell:

Presence/Absence or N & depth (DBS) N

poorly sorted sand <input type="checkbox"/>	silts <input type="checkbox"/>	artifacts <input type="checkbox"/>
aminated sand <input type="checkbox"/>	ryolith <input type="checkbox"/>	"C" lithology <input type="checkbox"/>
pebbles <input type="checkbox"/>	other <input type="checkbox"/>	Soil Sampler <input type="checkbox"/>

all post numbers

Stratigraphic Descriptions



70
 40

- ① 0-7cm Sand
 - ② 7-34cm - MED BROWN SAND,
FEW COBBLES, PEBBLES.
 - ③ 34-51cm - MED GREY BROWN
SAND. COBBLES.
 - ④ 51-55 - COMPACT MED GREY
SAND.
 - ⑤ 55-63cm - COMPACT MED GREY
SAND LARGE COBBLES.
- FINDS @ LARGE COBBLES

Features: _____

Photographs 471-6473

Photo ID# _____

Form # _____

Shovel Test Record

revised	<input type="checkbox"/>
corrected	<input type="checkbox"/>
entered	<input type="checkbox"/>

Site: Marshalltown Possible Cellar

Date: 7 Dec 2016 Excavator(s): LJ

Useful Dist: 2

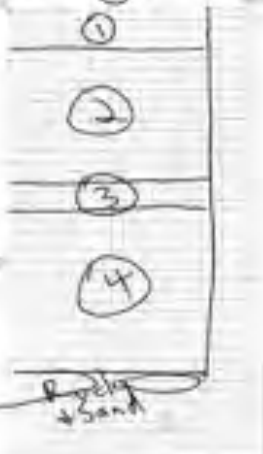
Base Excv (DBS): 72cm Surface Elev (m AGL): _____

GPS ut:

Presence/Absence N & depth (DBS) N

poorly sorted sand: <input checked="" type="checkbox"/>	fine: <input type="checkbox"/>	Artifacts: <input type="checkbox"/>
laminated sand: <input type="checkbox"/>	ripple: <input type="checkbox"/>	C samples: <input type="checkbox"/>
pebbles: <input type="checkbox"/>	other: <input type="checkbox"/>	Soil Samples: <input type="checkbox"/>

Profile: NW
NE E S W



grid reference
 40
40

Stratigraphic Descriptions

- ① sod
- ② Sand with some clay, light brown
- ③ Gravel & crusher dust
- ④ Tan sand, some rock

Operator: _____

Photographs: 6469 & 70

Photo ID # _____

Scale 1:10

Form # _____

Shovel Test Record

Site: Marshalltown Possible Cellar

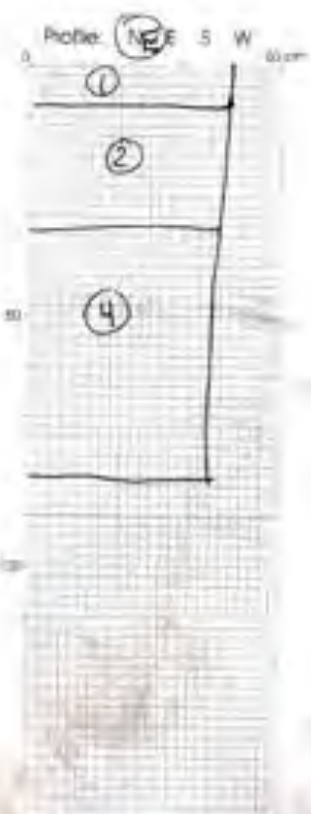
reviewed	<input type="checkbox"/>
correlated	<input type="checkbox"/>
entered	<input type="checkbox"/>

Date: 7 Dec 2016 Excavator(s): I H Unit Ref: 3

Base Elev. (DBS): 82.0m Surface Elev. (m ASL): _____ GPS est.

Presence/Absence or N & depth (DBS)

finely sorted sand <input checked="" type="checkbox"/>	h- <input type="checkbox"/>	Artifacts <input type="checkbox"/>
laminated sand <input type="checkbox"/>	fragments <input type="checkbox"/>	"C" samples <input type="checkbox"/>
pebbles <input type="checkbox"/>	other <input type="checkbox"/>	Soil Samples <input type="checkbox"/>



40
40

Stratigraphic Descriptions
color - from labels - dates - volume

- ① 0m-10cm, sub layer orange brown clayey soil
 - ② 10-33, GREY BROWN SILTY SAND WITH ORANGE INCLUSIONS
 - ③ 33-34 SOUTH PROFILE POCKET OF HARD PAN.
 - ④ 33-62m LIGHT GREY BROWN SILTY SAND WITH PEBBLES
- ENDS @ COMPACTED SAND AND COBBLES

Scale 1/20

Rednotes _____

Photographs 6476-6477 Photo ID# _____

Form # _____

Shovel Test Record

reviewed	<input type="checkbox"/>
corrected	<input type="checkbox"/>
entered	<input type="checkbox"/>

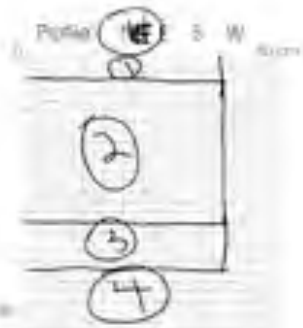
Site: Marshalltown Possible Cellar

Date: 7 Dec 2016 Excavator(s): AR Unit No.: 4

Board Foot (DBS): 42 Surface Elevation (m ASL): _____ GPS ref.

Presence/Absence or N & Graph (DBS) N

loamy sand	<input type="checkbox"/>	gravel	<input type="checkbox"/>	silts	<input type="checkbox"/>
clayey sand	<input type="checkbox"/>	pebbles	<input type="checkbox"/>	clay	<input type="checkbox"/>
peat	<input type="checkbox"/>	other	<input type="checkbox"/>	soil texture	<input type="checkbox"/>



at or below _____

40

40

Stratigraphic Descriptions

- ① Sod
- ② Med brown sand
- ③ Gravelly sand, med brown
- ④ Landscape fabric

Footcandle _____

Photographs 6474-75 Photo ID # _____

Shovel Test Record

Site: Marshalltown Possible Collier

Date: 30 Dec 2016 Excavator(s): AR Unit Ref: 5

Rock Type (DBS): 72cm Surface Elev (m ASL): _____ GPS ref:

Presence/Absence: or N & depth (DBS): N

poorly sorted sand

sorted sand

clayey

Artifacts

Clayzine

Soil Samples



Stratigraphic Descriptions

40

40

① Sod

② Light Brown sand

③ Buried organic/sod, dark brown, spruce needles (augered)

Photographs: 6478 & 79 Photo ID # _____

**HIGHWAY 101 DIGBY TO MARSHALLTOWN CORRIDOR
ENVIRONMENTAL ASSESSMENT REGISTRATION**

APPENDICES
February 2017

APPENDIX F

**LETTER FROM NOVA SCOTIA COMMUNITIES, CULTURE
HERITAGE AND ARCHAEOLOGICAL RESOURCE IMPACT
ASSESSMENT: MARSHALLTOWN ALMS HOUSE CEMETERIES
(DAVIS MACINTYRE & ASSOCIATES LIMITED 2016)**



Communities,
Culture & Heritage

1741 Brunswick Street
Halifax, Nova Scotia
B3J 2R5

Tel: (902) 424-6475
Fax: (902) 424-0710

January 12, 2017

Laura de Boer
Davis, MacIntyre and Associates
109 John Stewart Drive
Dartmouth, NS B2W 4J7

Dear Ms. de Boer:

**RE: Heritage Research Permit Report
A2016NS012 Marshalltown Cemeteries**

We have received and reviewed your report on work conducted under the terms of Heritage Research Permit A2016NS012 for an archaeological resource impact assessment for the Marshalltown Cemeteries project in Digby County.

The report details the archaeological resource impact assessment of two cemetery locations in Marshalltown, Digby County by Davis MacIntyre & Associates in February 2016. The assessment included background and historical research, a review of oral tradition and previous archaeological work, a review of Indigenous land use, field reconnaissance and geophysical survey (EM38B and GPR). The overall goal was to determine locations of human interments/burials as well as delineate the boundaries of the cemetery areas prior to proposed Highway 101 development.

The layered approach to the archaeological assessment detailed in the report suggests that though distribution and density is not known, there is likely a minimum of 55 burials between the two cemetery site areas. Some assessment investigations, particularly the geophysical surveys, were inconclusive. The reporter suggests several options for further research however, in the absence of planned ground disturbance related to near-future construction in close proximity to either cemetery area, none are considered compulsory recommendations by Davis MacIntyre & Associates (See Section 5.0 in report for a full summary).

Based on the assessment, the reporter recommends that further mitigation of either cemetery will not be a requirement so long as both cemeteries are outside the proposed toe-of-slope and outside the range of any laydown areas of the Highway 101 alignment plan and future twinning. Heavy equipment, including tree or bush-clearing equipment, should not be permitted to drive over either site if there is a chance that wheels of the vehicles will churn up the soil and potentially disturb shallow graves or previously disturbed bone. A buffer zone of about 10 meters around the projected boundary area is recommended. No part of the landscape should be permanently enclosed as a cemetery at this stage. If ground disturbing activity is planned near either cemetery area, it may be necessary to contract an archaeologist to monitor grubbing, etc. during road construction and to remain on call should suspected human remains be encountered. Finally, in the event that burials or other archaeological resources are encountered in the future and an archaeologist is not already present, it is required that all activity stop and the Coordinator of Special Places be contacted.

CCH staff agrees with the recommendations and finds the report acceptable as submitted. Please do not hesitate to contact me should you have any questions or concerns.

Sincerely,

Sean Weseloh McKeane
Coordinator, Special Places

cc: Jason Bernier, CBCL Limited



Marshalltown Alms House Cemeteries

Archaeological Resource Impact Assessment

A2016NS012 October 2016

Davis MacIntyre & Associates Ltd.
109 John Stewart Drive Dartmouth, NS B2W 4J7

MARSHALLTOWN ALMS HOUSE CEMETERIES:
ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT

Heritage Research Permit A2016NS012
Category C

Davis MacIntyre & Associates Limited
Project No.: 16-007.1CBH

Principal Investigator: Laura de Boer
Report Compiled by: Laura de Boer,
Raymond Jahncke, and Christopher Barnes

Submitted to:

CBCL Limited
1489 Hollis Street PO Box 606
Halifax, NS B3J 2R7

-and-

Coordinator, Special Places
Communities, Culture and Heritage
1741 Brunswick Street, 3rd Floor
Halifax, NS B3J 2R5

Cover: The geophysical surveys in progress at Cemetery 1, looking north.

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EXECUTIVE SUMMARY

In February 2016, Davis MacIntyre & Associates Limited was contracted by CBCL Limited on behalf of Nova Scotia Transportation and Infrastructure Renewal to conduct an archaeological resource impact assessment of two cemetery locations in Marshalltown, Digby County, previously identified through oral history. The assessment included a historic background study and field reconnaissance as well as a geophysical (magnetometry) survey of both areas, and a ground-penetrating radar (GPR) study of the southern area. The purpose of the magnetometry survey was to test the reliability of the technology by comparing the geophysical signatures of the more firmly identified burials (through oral history) near the former farmhouse (Cemetery 1) with the second known burial area to the north (Cemetery 2). The purpose of the GPR survey was to attempt to identify specific burials within the southern cemetery area where the magnetometry survey had not been initially successful.

A brief background study has shown that the treatment of the dead during burial varied widely across the history of the Poor Farm, ranging from bare-minimum effort in the home's early years to a more socially acceptable level of care after the Second World War. Cemetery 2 was disturbed, perhaps extensively, in 1968 during conversion of the closed Poor Farm into a strawberry farm.

A review of surface topography suggests both of these locations are suitable for burial, and that below the projected edges of the cemeteries the ground is rough and wet and would likely have been considered a nuisance to dig through, given that standing water would have been encountered at a very shallow depth throughout most of the year.

The geophysical surveys have been shown to be strongly suggestive but ultimately inconclusive in identifying grave shafts and burials at the southern cemetery location, as even if all anomalies identified are later confirmed to be graves, a very large portion of known burials on site are still unaccounted for. Given the inconclusiveness of the geophysical surveys on their own, several options for further research can be considered, though in the absence of planned ground disturbance related to near-future construction in close proximity to either area, none are considered compulsory recommendations by DM&A.

Under ordinary circumstances, it would be possible to mechanically remove the upper sod layer from a known but unmarked cemetery in order to seek out grave shafts without disturbing the human remains. This however has already been attempted in 2003 at Cemetery 1, again with inconclusive results. It is also highly inadvisable to attempt such mechanical investigation at Cemetery 2, where there may be few or no grave shafts intact, and human remains could have been scattered and brought even closer to the surface by the 1960s activity.

While it is likely that this investigation has reached a point of “diminishing returns,” it is possible that a higher level of certainty could be achieved by both testing several anomalies in the previously surveyed area of Site 1 and by undertaking an additional EM38B survey on the low, wet field below (north of) Site 1 where the future twinned portion of highway is proposed to run. The presence or absence of comparable anomalies in this low, wet ground could help to provide an increased level of certainty as to the limits of the burial area.

One or more of the anomalies at the Cemetery 1 location could be subjected to excavation within 1mx1m or preferably 2mx2m units excavated by professional archaeologists. This process would attempt to identify the source of the anomaly. If human remains are encountered, they could be recorded in situ and reburied if CCH provides approval for this methodology, and if they are features unrelated to burial, they would allow the research team to rule them out as possible burial signatures.

At Cemetery Site 2, a similar test unit could be placed over the single anomaly identified, and this could also help to identify whether or not human bone has been densely scattered in the topsoil of the area following previous ground disturbance. Obviously sub-surface investigations at a previously disturbed cemetery site are not to be taken lightly. Prior to applying for a permit, consultation with the Coordinator of Special Places and with the Curator of Archaeology at the Nova Scotia Museum would be necessary in order to determine what action to take if human remains are encountered. If sub-surface investigations proceed, continuing efforts to keep the local community engaged and informed would be prudent.

Initiating any of the further measures outlined above may provide more answers, but this is not a certainty. The only thing that appears reasonably clear based on topography and oral history is that the current Highway 101 alignment is unlikely to pass through areas that were known through oral history as burial sites and are most suitable for burial in proximity to the Alms House site and property. There has been no evidence encountered during this assessment that indicates burials would have extended into the area currently shown within the toe-of-slope of the proposed alignment.

In consideration of the upcoming environmental assessment phase of the Highway 101 alignment planning, further mitigation of either cemetery will not be a requirement so long as both cemeteries are outside the proposed toe-of-slope and outside the range of any laydown areas. The 2017 portion of the new section of the highway consists of the northern/western two lanes only – the realignment plans allow for twinning, but it will not be twinned in the upcoming phase of construction. It is possible, therefore, that efforts to more clearly define the cemetery boundary could be revisited in the future, if or when the highway is scheduled to be twinned and therefore will run more closely to the projected border of the southern cemetery.

Heavy equipment including tree- or brush-clearing equipment should not be permitted to drive over either site if there is a chance that the wheels of the vehicles will churn up the soil, potentially disturbing shallow graves or previously disturbed bone. A buffer zone of approximately ten meters around the projected boundary area is recommended, with the understanding that this buffer may be somewhat arbitrary due to the lack of a clearly delineated site – the buffer may be too large, but this is preferable to it being too small.

If ground-disturbing activity is expected to take place in close proximity to either cemetery, it may be necessary to contract a qualified archaeologist to monitor grubbing or other ground-disturbing activity during road construction, and to remain on call should suspected human remains be encountered. DM&A has previously prepared a management plan for similar situations within the province, directing on-site personnel on what steps are appropriate when suspected human remains are encountered. The basic measures are included as Appendix C. If desired, DM&A is able to provide orientation and basic training for construction crew members to familiarize them with the appearance of human burials and with the protocols involved in the unexpected discovery of human remains.

Commemoration of the final resting place of many of the inmates is clearly a priority for the modern communities of Marshalltown and Digby. While DM&A strongly supports efforts to place a sign or other commemorative material on the sites, we wish to advise against the placement of any kind of fence structure, which in the absence of a clear delineation currently may create boundaries that in future decades are misunderstood to be firm borders. If desired, a stand-alone gate could potentially be placed to represent an entryway into the burial grounds, but no part of the landscape should be enclosed at this stage.

Finally, it cannot be emphasized strongly enough that in the event that burials or other archaeological resources are encountered in the future and an archaeologist is not already present, it is absolutely required that any ground-disturbing activity be halted immediately and the Coordinator of Special Places (902-424-6475) be contacted immediately regarding a suitable method of mitigation.

1.0 INTRODUCTION

In February 2016, Davis MacIntyre & Associates Limited was contracted by CBCL Limited on behalf of Nova Scotia Transportation and Infrastructure Renewal to conduct an archaeological resource impact assessment of two cemetery locations in Marshalltown, Digby County, identified through oral history. The assessment included a historic background study and field reconnaissance as well as a geophysical (magnetometry) survey of both areas. The purpose of the magnetometry survey was to test the reliability of the method for locating burials at this site, by comparing the geophysical signatures of the known burials near the former farmhouse (Cemetery 1) with the second known burial area to the north (Cemetery 2). Additionally, a ground-penetrating radar (GPR) survey was undertaken at Cemetery 1. The technology was not used at Cemetery 2, where reported previous disturbance is suspected to have erased evidence of grave shafts and intact burials. Previous archaeological investigation reports (2001, 2003) were reviewed prior to commencement of fieldwork.

This assessment was conducted under Category C (Archaeological Resource Impact Assessment) Heritage Research Permit A2016NS012 issued by the Department of Communities, Culture and Heritage. This report conforms to the standards required by the Culture and Heritage Development Division under the Special Places Protection Act (*R.S., c. 438, s. 1*).

2.0 STUDY AREA

Nova Scotia Transportation and Infrastructure Renewal (NSTIR) is in the planning process for a new Highway 101 alignment between Digby and Marshalltown. The proposed alignment will pass in proximity to the historic Poor Farm or Alms House in Marshalltown (Figure 2-1). Since initial investigation of possible burials in 2003, a new highway alignment has been developed that is intended to avoid disturbance of the two known cemeteries on the former Alms House property (Figures 2-2 and 2-3).

Marshalltown is located in the Valley region of the Triassic Lowlands (Natural Theme Region #610). The Annapolis Valley extends from the eastern edge of St. Mary's Bay in the west to the mouth of the Cornwallis River in the east. The palaeo-geology here was comprised mainly of sandstones and basalts. The sandstones were gradually carved out of the basalt as a result of river action and glacial scouring. Rivers flowed at right angles across the valley rising on South Mountain and flowing north across the present valley and North Mountain before emptying into a river that flowed down the Bay of Fundy. As the ice retreated after the last glaciation, sea levels rose and the land rebounded. In the Bay of Fundy area, sea levels encroached inland. The average elevation above present sea level in the Bay area is 15 to 30 centimetres and raised beaches and terraces can be seen in Digby County at the mouths of rivers and around the lower part of the Annapolis

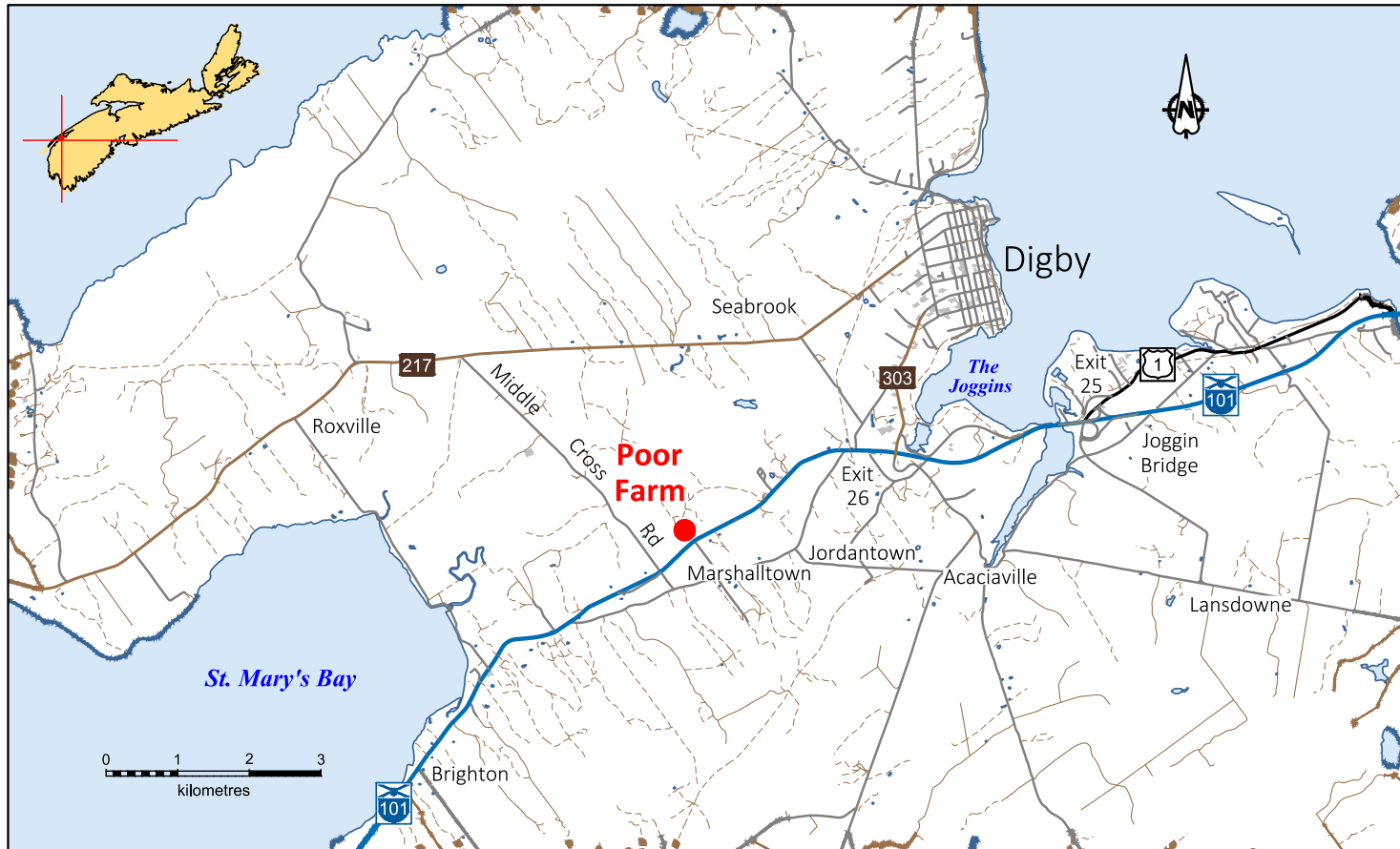
Basin. Rising sea levels over the past 4,000 years have resulted in flooding of the Annapolis Basin and the sea broke through the gap at the north end of Digby Gut.

The Valley is drained by two major rivers (the Annapolis and the Cornwallis) that are separated by a secondary watershed divide. Many first- and second-order streams drain off the North and South Mountains to feed both rivers. In the lower reaches of each river system are several tertiary watershed divides. Both rivers are tidal and tidal flats and muddy banks can be seen during low tide.

Soils in this region have developed on parent material from various exposed geological strata. The uppermost layers are fine grained Triassic shale on which well-drained soils have developed. This is underlain by coarser sandstones from which sandy loams have been derived. The lower most strata are fine-grained conglomerates from which a well-drained loamy sand has developed. Alluvial deposits have developed beside streams and rivers.

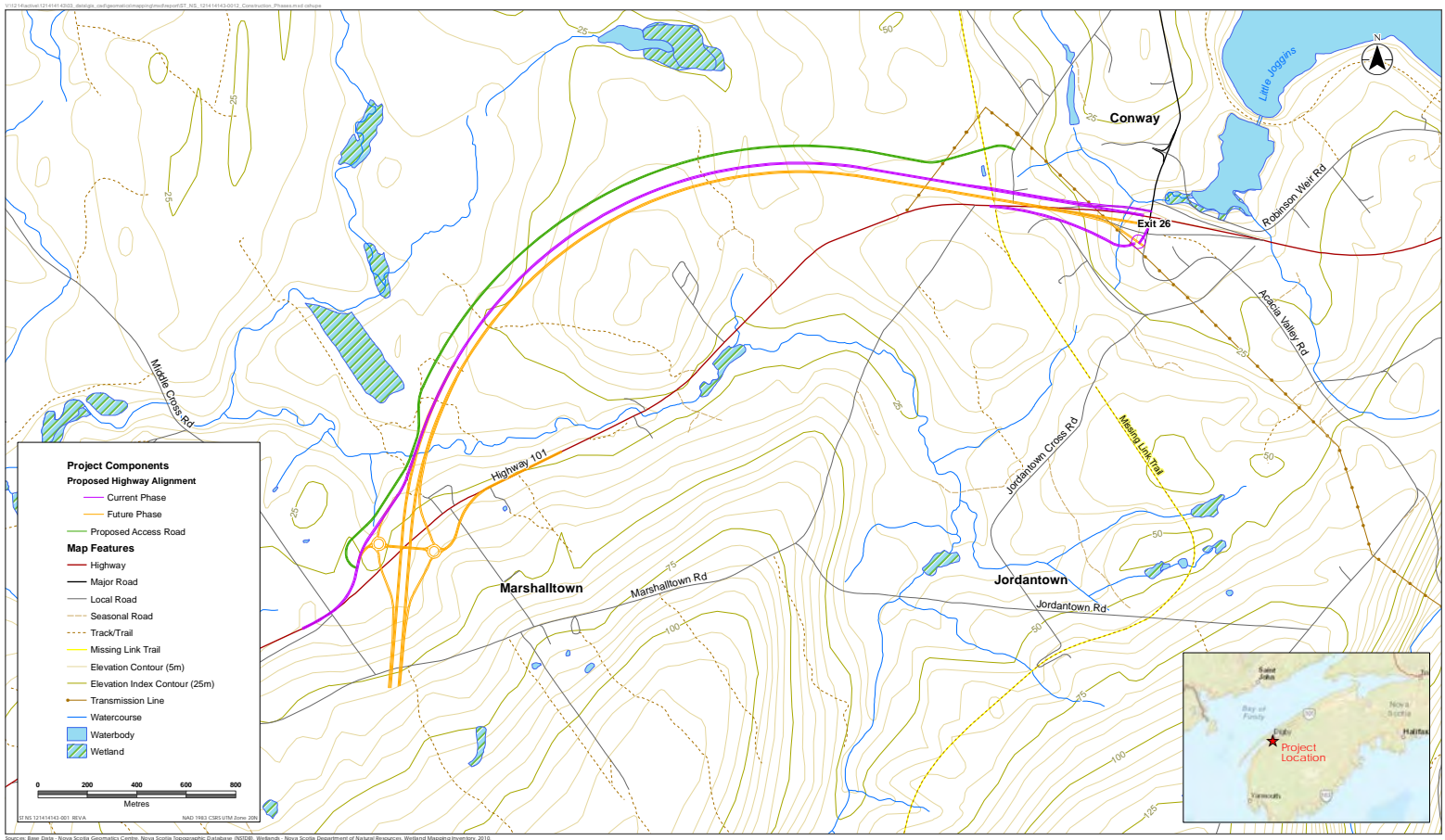
The Valley is an obvious agricultural region although earlier extensive clearing in the eighteenth and nineteenth centuries has reverted to areas of forest growth. Apple orchards were originally located on the fertile valley slopes and remnants can still be seen throughout the region. Sugar Maple, American Beech, Red Spruce and Eastern Hemlock are common in these reclaimed areas. Oldfields have been regenerated with White Spruce except in wetter areas where alder and Black Spruce are more common. Salt marshes, mud flats and dykelands provide good coast habitat for marine and avian species. Raccoons, Red Fox, woodchuck and skunk are common in agricultural areas. Muskrat and mink are also common. Pheasant, snipe, woodcock, hawks, crows and Bald Eagles abound in this region. Dykelands provide good habitat for Gray Partridge and Short-eared Owl. The Annapolis Basin provides an important migration habitat for waterfowl in spring and fall and a moderate number of ducks remain in the winter months. High numbers of shorebirds can be seen at the head of St. Mary's Bay, particularly in August. American Shad and Atlantic Salmon pass through this area to spawn in freshwater further upstream. Striped bass are also present but do not manage to spawn upstream.¹

¹ Davis and Browne 1996:159-161.



	<p>Figure 1</p> <p>Poor Farm Location</p>	Scale: see bar scale	Date: December, 2015
		Produced by: HP and D	File name: Poor Farm Location

Figure 2-1: The location of the Poor Farm of Alms House, courtesy NSTIR.



Proposed Highway Alignment - Both Current and Future Phases

Figure XX

Figure 2-2: A map of the currently proposed highway realignment. The upcoming construction phase is shown in magenta, with the orange twinning and interchange to be undertaken at a future date. Courtesy NSTIR/Stantec.

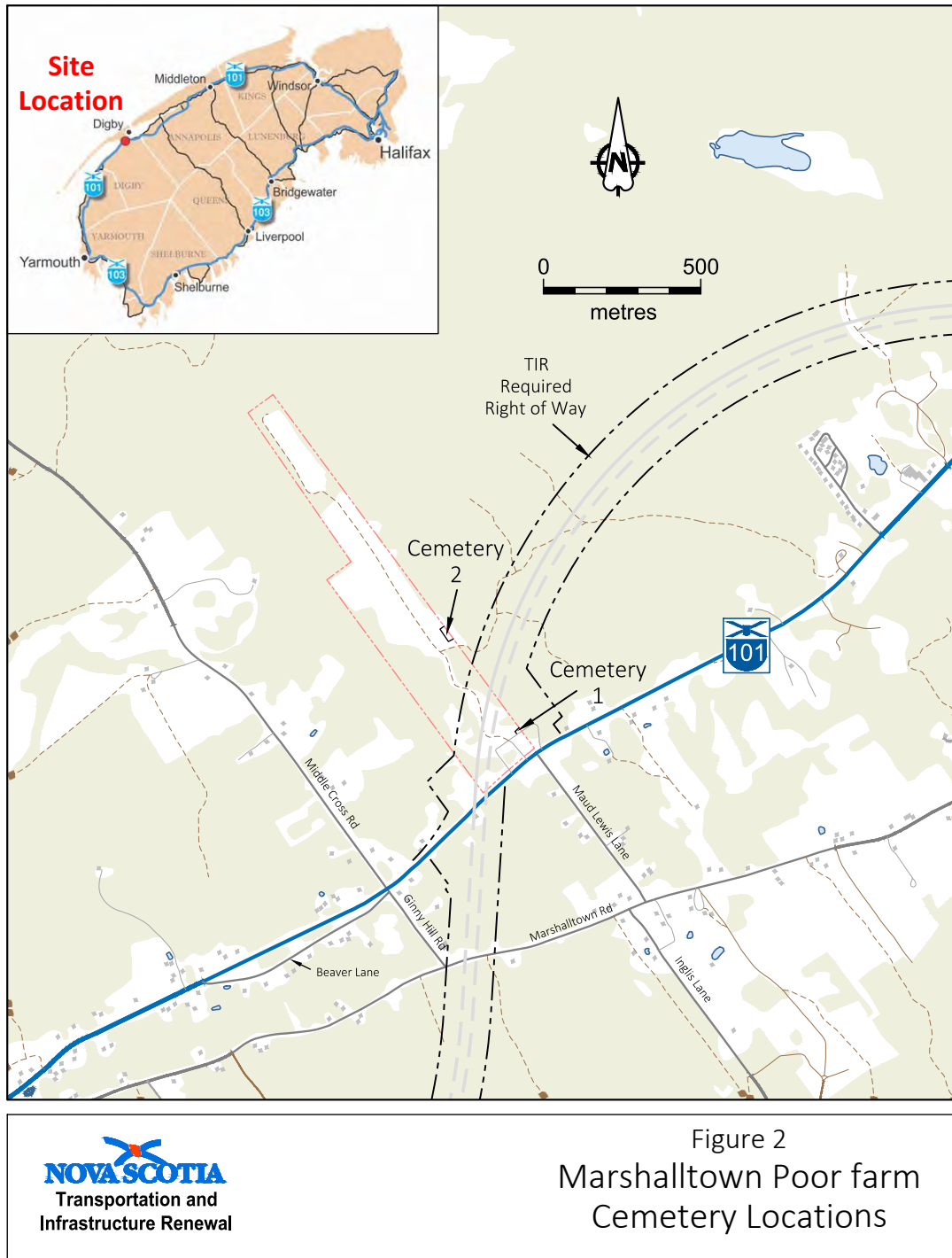


Figure 2-3: The location of the cemeteries in relation to the proposed highway alignment, courtesy NSTIR.

3.0 METHODOLOGY

A historic background study was conducted by Davis MacIntyre & Associates Limited in February and March 2016. Historical maps and manuscripts and published literature were consulted at the Nova Scotia Archives as well as online. The Maritime Archaeological Resource Inventory, a database of known archaeological resources in the Maritime region, was searched to understand prior archaeological research and known archaeological resources neighbouring the study area. A review of previous archaeological assessments was also conducted. Finally, a field reconnaissance and geophysical survey was conducted in order to further evaluate the potential for burials and the validity of the EM38B for distinguishing burials at the two locations, followed by a GPR survey of the southern cemetery in an effort to provide additional clarity.

3.1 Maritime Archaeological Resource Inventory

The Maritime Archaeological Resource Inventory, a database of known archaeological sites in the Maritime Provinces, was consulted in March 2016. There are seven known archaeological sites in the Digby-Marshalltown area.

Shell middens related to Precontact activity are known along Bear River to the northeast, chiefly associated with the Ceramic (*Kejikawek L'nu'k*) Period (BdDk-01, BdDk-03, BdDk-04, BdDk-06). Another shell midden was reported at Smith's Cove in 1890, but could not be relocated in the twentieth century (BdDk-02). A general site number has been assigned for isolated Precontact finds reported in the area from Joggins Bridge to Bear River (BdDk-07).

Finally, a historic midden incorporating shell, bone, and nineteenth century ceramic, was identified near the Little Joggins (BdDk-08).

3.2 Historical Background

3.2.1 The Precontact Period

Nova Scotia has been home to the Mi'kmaq and their ancestors for at least 11,500 years. A legacy of experience built over millennia shaped cultural beliefs and practices, creating an intimate relationship between populations and the land itself. The complexity of this history, culturally and ecologically, is still being explored.

The earliest period is *Sa'qewe'l L'nu'k* (the Ancient People) or the Paleo-Indian period (11,500 – 9,000BP). The changing ecology following deglaciation allowed the entrance of large herds of migratory caribou into Nova Scotia, followed by Paleoindian groups from

the south. Currently, the Debert/Belmont Sites provide the only significant evidence of Paleo-Indian settlement in the province. Commonly believed to be big-game hunters, research is now aimed at exploring the diverse subsistence patterns that may have supported populations, and what adaptations were made when the environment shifted once again in the early Holocene.

Succeeding the *Sa'qewe'l L'nu'k* is the *Mu Awsami Kejihaw'k L'nu'k* (the Not so Recent People) or the Archaic Period (9,000-3,000 BP). This time saw a reorientation to a more maritime subsistence, with settlement pivoting more towards coastal areas, lakes and bountiful riverine resources. Remnants of these sites along the coast have largely been engulfed by rising seas or battered by wind and wave, though interior sites are increasingly being discovered. Ground stone tools, specialized for wood-working, appear at this time and may have been used to create dug-out canoes. Numerous traditions and distinct technologies have been documented throughout Maine and the Atlantic provinces. A growing catalogue of exotic cultural components demonstrates that groups within Nova Scotia were engaged in spheres of interaction spanning hundreds of kilometers. Unfortunately, a lack of formally excavated sites within Nova Scotia still obscures the degree to which these traditions were present.

By the *Kejihawek L'nu'k* (the Recent People) or Woodland/Ceramic period (3,000-500 BP), the Mi'kmaq were a maritime people. Known Woodland/Ceramic sites concentrate along coasts shorelines, and navigable watercourses. Migration of ideas and people introduced new worldviews and technologies from groups originating in places like northern New England and the Great Lakes area, to local populations, including the earliest ceramic forms. Harvesting of marine molluscs and shellfish appears in this period, and substantial shell-middens have gifted archaeologists with well-preserved records of these past lives. Fish weirs populating the province's rivers and streams speak to the importance of migrating fish species to Mi'kmaq life. Terrestrial hunting and foraging was practiced with varying degrees of intensity depending on seasonality and region. A generally stable cultural form is believed to have developed by 2,000 BP, forming the way of life first encountered by Europeans arriving on our shores.

Mi'kmaw life was substantially altered in the *Kiskukew'k L'nu'k* (Today's People) or Contact Period (500 BP- Present). Trade and European settlement introduced change and upheaval to the traditional way of First Nation life. Mobile hunting and gathering still defined Mi'kmaw life, with identity residing within family households. Trading posts and fishing villages became intersections of European and Mi'kmaq interaction, affecting traditional seasonal rounds and access to land. The hunting of fur-bearing mammals intensified to satisfy the mutual exchange of skins for European goods. It is not accurate, however, to say that Mi'kmaq *adopted* European goods and culture, but rather *adapted* it. The Mi'kmaq remained an influential social and political force well into the 18th century, forming a triadic narrative of contention with the English and French. However, disease, conflict, and alienation from the land wreaked a ruinous

effect on the Mi'kmaq by the 19th century, pushing people to the margins of colonial society.

Mi'kmaq Period	Archaeological Period	Years
Sa'qewe'l L'nu'k (the Ancient People)	Paleo-Indian	11,500 – 9,000 BP
Mu Awsami Kejihaw'k L'nu'k (the Not so Recent People)	Archaic	9,000 – 3,000 BP
Kejihawek L'nu'k (the Recent People)	Woodland/Ceramic Period	3,000 – 500 BP
Kiskukewe'k L'nu'k (Today's People)	Contact	500 BP – present

Table 1: Mi'kmaq/Archaeological Cultural Periods

The Mi'kmaq inhabited the territory known as *Mi'kma'ki* or *Megumaage*, which included all of Nova Scotia including Cape Breton, Prince Edward Island, New Brunswick (north of the Saint John River), the Gaspé region of Quebec, part of Maine and southwestern Newfoundland (Figure 3-1).²



Figure 3-1: Map of the Mi'kmaq districts.³

² Confederacy of Mainland Mi'kmaq, 2007:11.

³ Based upon Confederacy of Mainland Mi'kmaq 2007:11.

3.2.2 European Settlement

There is evidence of a poor house in Digby County prior to 1879, but its location is not currently known and it may have been little more than a normal house converted to house the poor.⁴ Records survive for the process of building a “poor house and farm” in Marshalltown, however, in 1891 after an 1888 Digby Municipal Council resolution was made. The institution opened to receive inmates in 1892.⁵

Reportedly, records at the Admiral Digby Museum indicate that this Poor House burned and a new one was completed in 1903 at the current location with the older one located on the other side of the highway, but the primary source for this information has not been confirmed within the timespan of this assessment. If the provided date on an online photograph of the Alms House is correct (1891) (Figure 3-2), it suggests that the 1903 date is incorrect and it may have been the earlier poor house at an unknown location that burned.



Figure 3-2: A photograph of the Digby Poor House or Alms House dated 1891.⁶

While there are records and accounts of daily life at the poor farm, it is the particular focus of this study to investigate the burial grounds on the site, and as such particular focus will be given to references to death and burial practices.

⁴ Senior Scribes of Nova Scotia 1996:100.

⁵ Senior Scribes of Nova Scotia 1996:107.

⁶ Admiral Digby Museum, http://www.virtualmuseum.ca/sgc-cms/histoires_de_chez_nous-community_memories/pm_v2.php?id=story_line&lg=English&fl=0&ex=00000443&sl=8537&pos=1 .

Several accounts of conditions at the Alms House survive, and these vary widely in tone. Taken together, it appears that conditions were extremely bad for inmates in the institution's early years, and around the time of the Second World War conditions became somewhat more benign under the leadership of different caretakers.

An extremely negative account of the early Alms House includes the following passages that are relevant to the treatment of the dead:

These people were subject to beatings quite frequent[ly]. In case of death, many were buried on the place. They had graveyards there. The people staying there looked after the dead and built their own coffins in the basement. They would put a person in a rough box right off the bed, take him down in the field and bury him just like an animal.

There was a man from the North Range area who had died at the Poor Farm. He was sent down to the Catholic Church in Plympton to be buried.

The priest had to view the remains – that was part of his job. When he opened the rough box, the man in question was in the rough box without a stitch of clothes on, just lying on an old blanket that wasn't fit to take to the dump.

There was another man at the Poor Farm from the Doucetteville area. He was elderly and quite ill at the time. A priest from Plympton went to the Poor Farm to give the man his last rites. On arriving at the farm, the priest and altar boy were turned away by the Keeper and not allowed to go in.

The priest got in touch with the man who had charge of the doings at the Poor Farm. He made sure the priest and altar boy were allowed to go in.

They got to the man's room and found him lying face down on a sheet with no clothes on and a very large gash behind his right ear. It had been made with a blunt instrument. This was way back before Alton [Halton] Hayden took over.

[...] If a young lady [who was pregnant and unmarried] was taken there and had a long list of mentally ill in her family, she was made to do extra duties hoping she would have a miscarriage. After she had the baby, nothing was done to keep the babies alive and they were generally thrown in the furnace.⁷

⁷ Robicheau 1985.

This grim account contrasts sharply with an account provided by Olive Hayden, wife of the caretaker Halton Hayden from 1939 to approximately 1943, who recalled the inmates as “like one big happy family.” Few inmates died during her time there, but she recalled caskets being stored in the basement with some cloth in them, “nothing fancy.”⁸ Mrs. Hayden did not know if the caskets had been made at the House or had been provided by the Municipality. When a rare death occurred, Mrs. Hayden had the shared responsibility of preparing the body for burial, including laying out the individual, dressing her or him, and putting pennies over the eyes to keep them closed. From there, they “took them back and buried them. That was our duty. The burial grounds have not been kept up. I think Mr. Thomas put a fence around them but I don’t think it’s there now.”⁹ Though she did not recall any burial services, her brother Lawrence Trimper indicated that a Church of England minister said prayers at each burial. Despite Mrs. Hayden’s positive memories, she and her husband chose to give up the job after a few years because it “bothered their nerves”; “[w]e thought we would leave before it got too bad. We never had a vacation while we were there.”¹⁰ Oral accounts do not favour Mr. Hayden as a good caretaker, and accusations have been made as to his inappropriate conduct being the cause for his leaving the institution.¹¹

An account of the Alms House’s changing conditions was provided by Earle Thomas, the son and grandson of the institution’s last two caretaker couples. There was reportedly a “marked difference in the poor farm” that he attributed to “a general change in society’s attitude towards the poor and disabled, a change which has led to many of the social programs in effect today.”¹² Thomas commented, “In those [earlier] days a person who was down and out was considered nothing. [...] From the time that I was a little boy to 1945, I don’t believe it was very good. [...] I am quite sure that in those days they had good food and clothing, but that is about all.”¹³ The inmates who died and were buried on site were “put into caskets, ‘if you want to call them that’ and deposited in unmarked graves. On this [one] occasion a woman had come to the farm, and some of the men went to the back field to dig up a grave. Thomas can’t remember for sure whether or not she came in an automobile or not, but assumes she came to identify a body, for perhaps it was one of her relatives. They opened the casket and left it on the barn floor. ‘I sneaked in. The casket was open. I remember this body, a male, had all turned black except the feet. It was buried in a shroud like an onion sack, which was decomposed enough so you could see right through it. The body was put back in the grave and that was it. [...] My grandfather caught me and told me in no uncertain terms what he’d do if he caught me again.’”¹⁴ Thomas’ parents took over the management of the farm in 1941 or 1942. Four separate wards were in place at the time: one for the “insane” and

⁸ Norwood 1985.

⁹ Norwood 1985.

¹⁰ Norwood 1985.

¹¹ Personal communications, Harold Simms and Vincent Giles, November 2016.

¹² The Digby Mirror 1983.

¹³ The Digby Mirror 1983.

¹⁴ The Digby Mirror 1983.

one for the “sane” of each gender. The inmates worked the farm to help make the institution more self-sufficient. Christmas parties and church services were held, and the Earle’s parents were called “Mom” and “Dad” by the inmates, who were taken on trips into town when they were able, though there were two or four cells for violent or out-of-control inmates as well. Shortly before the closure of the House, the farm’s very large barn burned down, which contributed to the decision to close the institution.¹⁵

Harold Ritchie, another grandson of Guy Thomas and his wife who took over as caretakers from the Haydens in the early 1940s, made it clear that no babies were left untended and no inmates made their own caskets during his grandparents’ time there, but were instead given caskets and rough boxes by the Municipality, and funerals were attended by a priest or a minister.¹⁶

Posts or stakes were reportedly used to mark at least some of the graves, and aside from a mother and child buried together, it seems that most if not all burials were single inhumations rather than grouped or mass graves. The burials were unorganized in terms of positioning, and some were placed in old boxes or wrapped in sheets.¹⁷

The Alms House facility closed in 1963, a remarkably late date in comparison with other poor houses across the province. The closure was due to the need for upgrades estimated at \$50,000.¹⁸ Remaining inmates were sent to “Homes for the Disabled” in Yarmouth and Kings Counties.¹⁹

In 1968, the site of the former Alms House was suddenly brought back to the forefront of local news when Beaverbrook Farms began to clear land (Figures 3-3 and 3-4) and build barracks for migrant workers (Figure 3-5) to pick strawberries. Much of the land had overgrown in heavy brush, and a bulldozer was brought in to clear the fields of this growth.²⁰

Although there is no mention of it in published sources, many local residents have heard oral accounts of human remains being disturbed during this bulldozing activity. One local resident indicated that Harold Simms had hired on a worker around that time who had left his employment at Beaverbrook Farms when he and his coworkers had encountered bone – including an identifiably human skull – and had been told to say nothing about it.²¹ Reportedly, this same oral history source also indicated that the bone and scraps of fabric exposed at this time were gathered together and placed in a mass

¹⁵ The Digby Mirror 1983.

¹⁶ Ritchie 1985.

¹⁷ Vincent Giles, personal communication March 2016.

¹⁸ The Chronicle Herald Friday, 1 February 1963, reproduced in The Digby Courier 13 March 1985.

¹⁹ Senior Scribes of Nova Scotia 1996:108, 110.

²⁰ The Vanguard 1968.

²¹ Vince Giles, personal communication March 2016.

grave at an unknown location, presumably within or adjacent to the cemetery area,²² or possibly at the far northern end of the existing field,²³ though it must be noted that travelling nearly half a kilometer to rebury the material rather than placing it at the edge of the field seems impractical when efforts were being made to cover the remains quickly. Harold Simms himself denies that human remains were encountered, indicating instead that he suspects graves were encountered during efforts years later to extract gravel fill from the cemetery area by one of the subsequent land owners. A low pit beside the existing access road reportedly includes soft spots consistent with graves when Mr. Simms drove his truck over them while trying to use the slope to load material onto his truck bed.²⁴ This does place the graves quite deep in relation to the current soil level (1.5m to 2m in depth), but the modern soil level could be higher than it was during the burial phase due to subsequent bulldozing.

Beaverbrook Farms was short-lived and quickly went out of business when not enough workers could be found to pick the strawberries.



Figure 3-3: A 1968 image of a bulldozer clearing brush on the former Alms House property.²⁵

²² Susan Beard, Admiral Digby Museum, personal communication March 2016.

²³ Vince Giles, personal communication November 2016.

²⁴ Harold Simms, personal communication November 2016.

²⁵ The Vanguard 1968.



Figure 3-4: A second 1968 image of a bulldozer clearing brush and levelling soil on the former Alms House property.²⁶



Figure 3-5: A 1968 image showing the new barracks buildings as well as the former Alms House (far right).²⁷ Based upon descriptions, Cemetery Site 1 is located just off the edge of the photo to the right.

The locations of two known Alms House cemeteries on the property are not marked on any historic map. Even historic photographs do not clearly show delineated areas, though a 1945 aerial photograph seems to suggest an area of the northern field that

²⁶ The Vanguard 1968.

²⁷ The Vanguard 1968.

was either not ploughed or not harvested in the vicinity of Cemetery Site 2 (Figure 3-6). Similar shading extends onto the adjacent property, and it is not unreasonable to suggest that the informal cemetery could have spanned two properties, though this cannot be treated as proof of such. Later photographs do not show this same area of avoidance, even though the first (1955) was taken while the Alms House was still active (Figures 3-7 through 3-9).



Figure 3-6: A 1945 aerial photograph showing the approximate cemetery locations in blue. Note the difference in soil or vegetation visible at Cemetery Site 2 (top).²⁸

²⁸ National Air Photo Library 1945.
Davis MacIntyre & Associates Limited



Figure 3-7: A 1955 aerial photograph showing the approximate cemetery locations in blue..²⁹

²⁹ National Air Photo Library 1955.
Davis MacIntyre & Associates Limited



Figure 3-8: A 1978 aerial photograph showing the approximate cemetery locations in blue. Note the cleared area to the southwest of the Alms House, where the Beaverbank Farms barracks would have been situated.³⁰

³⁰ National Air Photo Library 1978.
Davis MacIntyre & Associates Limited



Figure 3-9: A modern (c.2015) photograph of the study area showing the approximate cemetery locations in blue. Image courtesy Bing Maps.

In 2003, the cemetery locations were indicated to Digby Municipality Program Development Coordinator (Heritage) Robert Hersey by Harold Ritchie during a site visit. The first site, presumed to be the older of the two by previous researchers and according to Harold Simms' oral history, is located closest to the highway and is immediately beside (east of) the former location of the Alms House itself. The house stood, presumably empty, until 1994 when it burned on April 18th of that year.³¹ The second cemetery is farther to the north, accessed by a curving road that crosses over a stream and opens into a hay field before curving sharply right (northeast, then east). Though at the beginning of this project the northern cemetery was indicated as a long rectangle against the northeast edge of the property, site visits by two local contacts (Harold Simms, who recalls some wooden crosses here as a child, and Vincent Giles, who has previously collected other oral history from eye-witnesses) points to a more square shape running between the access road and the property line, as shown on the aerial photos above.³²

Research in 2003 found that a total of 175 people died at the Poor Farm between 1897 and 1958 (there were no deaths between 1958 and the closure in 1963). Of these, 91 were recorded as being buried at the farm when no relatives claimed their remains for burial elsewhere, and 84 reportedly had no place of burial recorded. A sudden spike in deaths in 1921 (12 deaths) has been postulated as the year that it was deemed necessary to begin burials in a new, less crowded location (the second cemetery to the north).³³

It has alternately been speculated that the general poor – including non-residents of the Alms House, individuals from mixed racial backgrounds, and so on – were buried in a separate location from the “insane” inmates, who had also been separated from the other inmates in life. Some burials even reportedly occurred at night, though it is not clear why this occurred.³⁴

Modern community interest in the poor farm and its cemeteries remains strong, including an active Facebook group and community group. Research conducted by several members of the online group has helped to confirm the burial of many inmates on the poor farm property based upon death certificates, including some individuals not on the original list of deaths available from the Admiral Digby Museum as compiled by Sheryl Stanton. The numbers of burials continue to grow as research proceeds. Currently, research conducted by Faye Lent in association with Brenda Small indicates a minimum of 98 burials (after removing apparent duplicate records) are confirmed on site, with the rest either confirmed buried elsewhere or their place of burial remains

³¹ The Digby Courier 1994.

³² Harold Simms and Vincent Giles, personal communications November 2016.

³³ Giddens 2003:3.

³⁴ Vince Giles, personal communication March 2016.

unknown. The earliest confirmed burial in these records occurred in 1897.³⁵ A maximum number of burials is not known.

Ms. Lent's list was doubly verified by Laura de Boer using online death records available from Nova Scotia Historical Vital Statistics (see Table 2 below). Total numbers of burials are somewhat complicated by a lack of specificity in the records, as well as the absence of death records in Nova Scotia between 1878 and 1907. In total from the combined data of the Admiral Digby Museum and Ms. Lent, there are only 28 records that specifically state burial at the Alms House or Poor Farm. An additional 43 are very likely buried on site, as they list "Marshalltown" as the place of burial and the undertaker is listed as the current Keeper or Supervisor of the Alms House (chronologically: Arthur Marshall, William H. Thomas, E. Balsler, Halton E. Hayden, and Guy Thomas). Nine more burials indicate only "Marshalltown," and an additional six have no place of burial indicated. Four more individuals could not be located online for verification, one seems to have been incorrectly listed as on-site (burial occurred at an Episcopal Cemetery in Marshalltown), and the final seven individuals have no notations on their death certificates connecting them to the Alms House. Therefore, it is possible but not confirmed that most of these individuals were buried on-site.

There are an additional 80 individuals that Ms. Lent and Ms. Small are investigating based upon Ms. Stanton's list provided by the Admiral Digby Museum, but no death records have been found for any of them. These include two unnamed individuals: one man and one "coloured baby." All of the above totals exclude individuals who died at the Alms House but are confirmed as buried off-site.

What is additionally troubling regarding the possible number of burials at the Alms House is that Ms. Lent and Ms. Small have indicated that they are finding records of burials at the Alms House of individuals not residing at the poor farm, which suggests to them that the cemetery was used as a general burying ground for the poor from across the municipality. It will be exceedingly difficult if not impossible, therefore, to estimate a maximum number of individuals buried on-site, but it seems entirely possible that it could exceed even the 175 estimated in 2003.

³⁵ Margaret Faye, personal communication March 2016, in collaboration with Brenda Small.

Table 2: A verified list of burials at the site of the Alms House based upon previous research by Sheryl Stanton, Faye Lent, and Brenda Small.

Last Name	First Name	Date of Death
Confirmed Buried on Site		
Abbott	Henry	February 16, 1915
Abbott	Joseph	November 3, 1914
Ackers	Mary Elizabeth	January 31, 1914
Brimner (Brimmer)	John	September 27, 1911
Comeau	Euphemia	October 17, 1916
Comeau	Heliare	December 18, 1909
Crabb	James	November 9, 1917
Doggett	Annie	April 16, 1918
Ford	James	August 25, 1916
Gillis	Oliver	July 3, 1910
Grimes	Emmeline	June 4, 1909
Langford	Colin	March 30, 1928
Lewis	Etta	May 9, 1946
Lewis	Jessie	August 16, 1954
Lewis	Harry	June 1, 1912
McCallum	David	September 23, 1921
McCallum	Delia	October 4, 1913
McKinnon	John	October 21, 1917
Melanson	Mary	February 1, 1914
Morehouse	Cassie	November 16, 1936
Pettos	Charles	February 7, 1932
Saunders	Charles	May 27, 1909
Small	Thomas	October 22, 1917
Smith	Charles	July 16, 1911
Sweeney	Unis Maria	April 6, 1911
Thomas	Mrs. Sarah	June 8, 1924
Tidd	Washington	May 7, 1911
Welch	Caroline	December 1, 1913
Burial in Marshalltown - Undertaker's Name Suggests Alms House Burial		
Armstrong	James	January 9, 1924
Comeau	Almira (Alvina)	April 17, 1924
Comeau	Ann	July 9, 1930
Cosby	Bert	May 21, 1933
Dugeau	Joseph	March 15, 1920
Doran	Edward	December 27, 1920
Duthridge (Dutcheridge)	Sarah	July 13, 1932

Falls	Mary	December 17, 1930
Ford	Tressie	June 6, 1938
Gower	Harry	June 1, 1930
Grant	Mable	March 12, 1934
Grant	Charles	March 17, 1940
Grimes	Susan Jane	January 21, 1925
Hatt	Ingram	October 4, 1933
Hatt	Sadie	September 17, 1930
Higgins	George	September 29, 1935
Higgins	Millian (Millen)	March 8, 1940
Hooper	Ralph	October 9, 1923
Hurlburt	Jennie E. (Mrs. Daniel)	January 28, 1929
Hurlburt	Daniel	March 6, 1931
Lewis	Maynard	June 19, 1923
Lewis	Charles	November 30, 1933
MacKinnon	Maisie	June 2, 1942
Marshall	Milledge	February 13, 1924
Middleton	Walter	October 2, 1936
Miller	James	December 28, 1924
Morehouse	Maude	April 3, 1949
Morehouse	John	July 25, 1924
Perry	Keta Elizabeth	June 22, 1938
Ring	Aubrey	January 19, 1949
Ryan	Samuel	May 7, 1920
Ryan	Thomas	December 19, 1923
Saulnier	Louis John	May 7, 1927
Skillon	Baby	October 15, 1929
Smith	Benjamin	April 24, 1921
Snell	William	May 25, 1940
Stanton	Lindsay Victor	June 16, 1948
Taylor	James	December 6, 1935
Thurber	Burl	September 5, 1937
Wear	Olivia	March 21, 1921
Willet	Agnes	July 25, 1938
Winslow	Albert	December 14, 1921
Young	Silas Bertram	September 13, 1952
Burial in Marshalltown (Alms House Not Specified as Place of Burial, Undertaker was not Alms House Keeper)		
Amero	Henry	December 14, 1918
Comeau	Eugene (woman)	November 27, 1931
Dukeshire	Maria	April 6, 1911

McAuley	Charles	June 27, 1931
McKinnon	Ada	July 19, 1931
McKinnon	William	December 15, 1918
Melanson	Gladys	December 15, 1918
Oliver	John (Jhon Mark) (<i>sic</i>)	April 8, 1940
Payson	Mrs. Charles	January 18, 1920
Burial Location Not Listed		
Hatfield	Carrie	October 21, 1939
Godfrey	Richard	September 9, 1918
Nedeau	George Alcide	October 3, 1953
Sweeney	Ruben	December 17, 1918
Swift	Nelson	April 7, 1917
Wright	Mildred Road	June 13, 1943
Could Not Verify Online		
Beaman	Joseph	February 23, 1897
McCauley	Charles	September 21, 1924
Melanson	Daley	December 3, 1954
Saulnier	John	May 7, 1927
Connection to Alms House Unclear on Death Certificate		
Abbott	Howard Thomas	February 28, 1949
Abbott	Thomas Herman	February 8, 1948
Benson	Henry	March 25, 1919
Grimes	James	July 5, 1927
Melanson	Cyril	August 2, 1909
Rice	John	April 7, 1917
Titus	Robert James	November 1, 1949
Buried Elsewhere (List had indicated "Confirmed on site")		
Small	Margaret	July 10, 1916

3.3 Previous Archaeological Research

The location of the Digby County Poor House was first identified as an archaeological concern during a survey of the proposed Highway 101 corridor in 2001.³⁶ When the issue of unmarked burials was subsequently raised, additional archaeological investigations were undertaken in 2003 in an attempt to further identify and delineate these cemeteries. In addition to background research, a 2m x 15m trench was established at the site of Cemetery 1, which had been situated approximately 35m east of the Alms House building. Sod was cut and removed by hand, and the soil beneath was

³⁶ Jacques Whitford Environment Limited 2001.
Davis MacIntyre & Associates Limited

levelled using hand-held hoes. The presence of a soil stain consistent with a grave and a concentration of rocks nearby prompted further investigations to be recommended.³⁷

Additional excavations later in 2003 were conducted to expand the previously exposed area, involving mechanical sod stripping followed by excavation by hand. Two concentrations of rocks and nine soil features (concentrations of fine alluvial gravel) were identified, the former of which could have been markers for infant graves, or simply support for markers or fence posts, while the latter was suggestive of the digging and backfilling of full graves (Figure 3-10). The nine features were widely varied in size and orientation. Three fence posts were also revealed to the west of the study area, perhaps defining the western edge of the cemetery. It was revealed to the archaeological team that the dirt road that currently runs immediately south of the indicated cemetery area is relatively new, suggesting that the cemetery may extend father south under the road and beyond.³⁸

At the time of the 2003 archaeological investigations, the second cemetery to the north was not threatened by the Highway 101 alignment and as such was not subjected to any archaeological investigations.

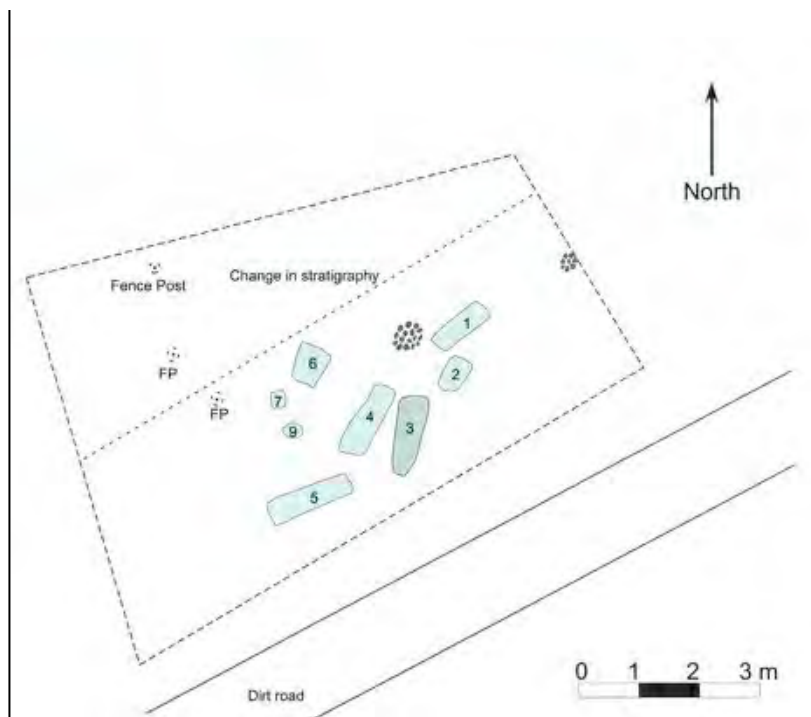


Figure 3-10: A plan drawing of the anomalies encountered in 2003 (after Federico 2003).

³⁷ Giddens 2003.

³⁸ Federico 2003.

3.4 Conductivity/Susceptibility (Magnetometry) Geophysical Survey

The Geonics Limited EM38B, the unit that was used to conduct the geophysical survey, is used to map terrain conductivity and magnetic susceptibility, including groundwater contamination and soil salinity, but also for the identification of buried archaeological materials and features. It provides data from effective depth ranges of 1.5 m for conductivity and 0.75 m for magnetic susceptibility when positioned in the vertical dipole orientation. It can be used to map anomalous materials with varying electrical or magnetic characteristics. The results of the survey are two map images displaying colour gradients where the subsurface is dissimilar to the surrounding ground—the first image displays electrical anomalies, the second magnetic susceptibility anomalies.

A geophysical survey was conducted by Raymond Jahncke and Laura de Boer in late February 2016. Upon arrival on site it was immediately noted that the sod that was mechanically removed and piled to the north, west, and east during the 2003 excavation was never replaced, and after clearing some dead branches from the surface it was clear that the subsoil was still exposed in some areas (Plate 1). A grid measuring 21m (east-west) by 12m (north-south) was established to encompass this area as well as some of the surrounding landscape (Plate 2).

The site of Cemetery 2 comprises the southern extents of an active hay field, with some remaining strawberry plants still growing in scattered patches. Based upon very approximate estimates of the cemetery's area from oral history, a grid 50m long (north-south) and 11m wide (east-west) was established along the field's eastern edge, bordering a modern drainage ditch and a thin line of trees (Plate 3). A mound of earth was observed to the west of the study area, most likely related to the 1968 bulldozing (Plate 4).

Corners of the grid were marked and recorded with the assistance of NSTIR surveyor Benjamin Whitmore, and the data was later utilized to reference the geophysical data into existing map coordinates (ATS77).

Transects were marked with rope along the longer axis of both sites at 50 cm apart. Flags were set at five metre intervals to assist in recording the position of the equipment during walk-over recording. The EM-38B was set to collect information at ten readings per second. It was calibrated at the beginning of data collection for both cemetery sites. The data was uploaded from the data logger to the computer and processed in DAT38BW software by Geonics.

The processing by Raymond Jahncke included resampling to convert from an interval scale to metres. The flagged five metre intervals were recorded in the data file and used to adjust the readings. Two spikes (anomalous readings) were removed from the data (one from each site) before exporting from DAT38BW to a text file containing x, y coordinates measured in metres relative to the starting corner (0, 0). A point file was

created in ArcMap and adjusted to UTM zone 20N NAD83 CSRS using coordinates collected by the survey grade GPS. The points were used as input to the interpolation (Kriging) to create a continuous raster grid. The grids were symbolized using a colour ramp that would highlight trends in the data and anomalous readings that could indicate a feature of interest. This process is outlined in the EM38B manual.

In December 2016, the data collected in March was re-processed by Duncan McNeill, retired Geonics Limited president and who is at the forefront of applying the EM38B to archaeological surveys. Mr. McNeill found that he could significantly improve the results of the survey at Cemetery 1 by using his improved method of zeroing the data, and he has indicated that the very high contrast shown in this study area is among the best he has seen in burial contexts; the surrounding soil matrix (a very rocky, gravelly till) producing very little response in the susceptibility survey while the anomalies themselves (possibly the alluvial gravel seen during the 2003 excavations) produce a very high response.

In contrast, zeroing the data in Cemetery 2 and further opening the sensitivity by a factor of x2.4 did not produce any anomalies consistent with graves. This could indicate either the absence of graves in the area or, perhaps more likely, that the heavy disturbance of the area in 1968 and subsequent ploughing has mingled and obliterated the distinct signatures caused by graves, or grave shafts, or both.

Both sites are shown on the following pages in the initial interpretation and in the modified interpretation produced by Mr. McNeill. Observing the interpolated information on the raster grid should be interpreted with the distribution of the data points in mind. For example, an abrupt change in data along one transect may cause the interpolation to expand to the edge of the adjacent transects, but it is possible that the feature is quite small. Features that cross two or more lines are more likely of a larger size.

The conductivity data may detect differences caused by disturbed soils within the graveshaft, so the pattern seen in the interpolated grid can, in theory, indicate individual graveshafts. The graveshaft can appear as either high-resistance or low-resistance anomalies. A bias depending on direction is possibly an indicator of disturbed soils.³⁹

Magnetic susceptibility is affected by igneous rock and ferrous metal that can obscure subtle patterns. However, some materials associated with burials are highly ferrous, such as steel or iron from the caskets, buried grave markers or monuments. Magnetic susceptibility can detect subtle anomalies such as disturbed or compacted soils.

³⁹ Dalan and Bevan 2002.

Specifically, when other magnetic material is absent, a magnetic low can result from replacement of topsoil.⁴⁰

Cemetery Site 1 shows moderate variability in both the conductivity and magnetic susceptibility without a distinct pattern in initial interpretations (Figure 3-11) but it appears to form a much sharper set of anomalies consistent with East-West graves following Mr. McNeill's adjustments to the data (Figure 3-12). Some metallic signatures are also present in the re-worked conductivity data (Figure 3-13).

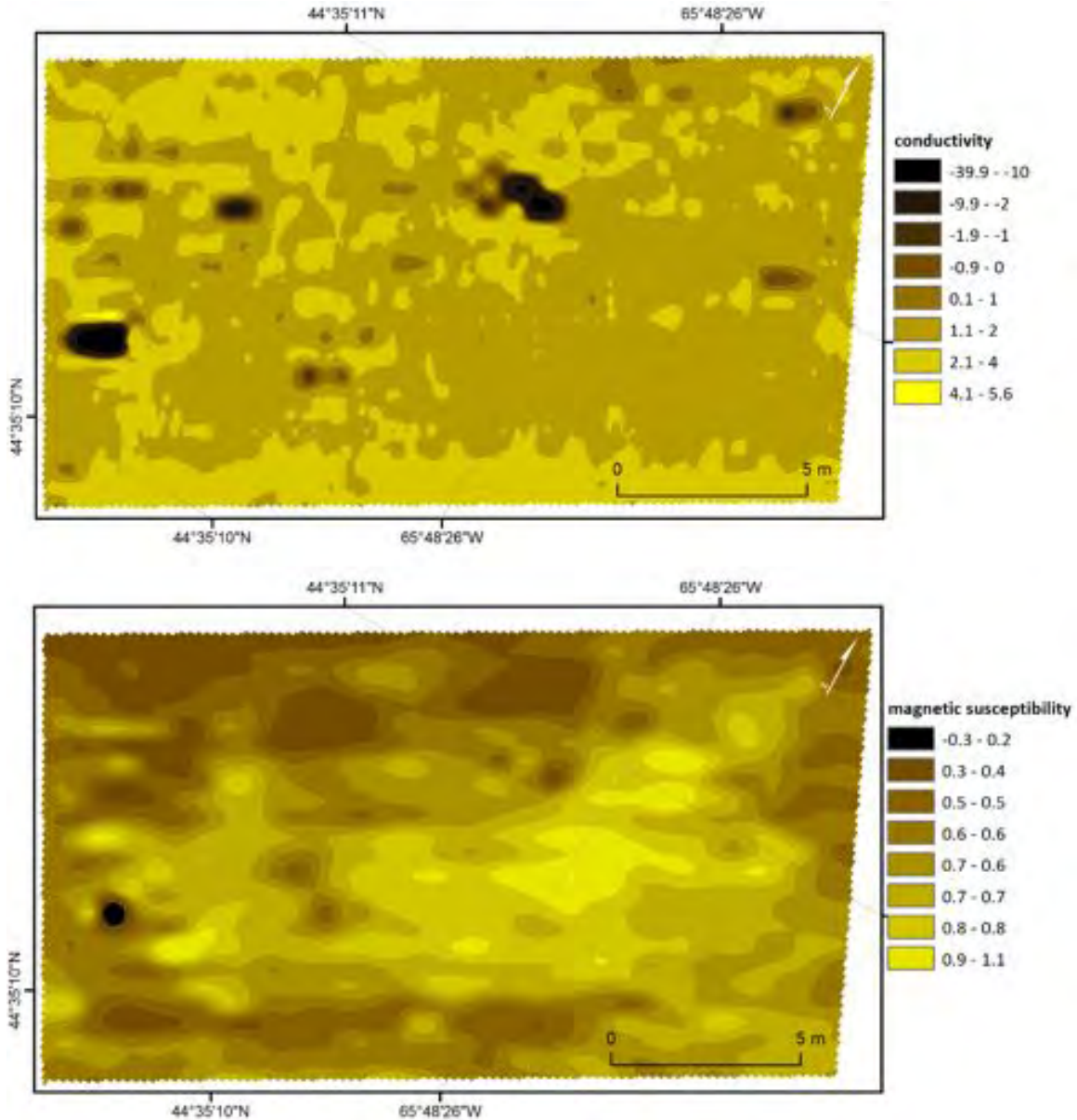


Figure 3-11: Conductivity and susceptibility at Cemetery 1.

⁴⁰ Jones 2008.

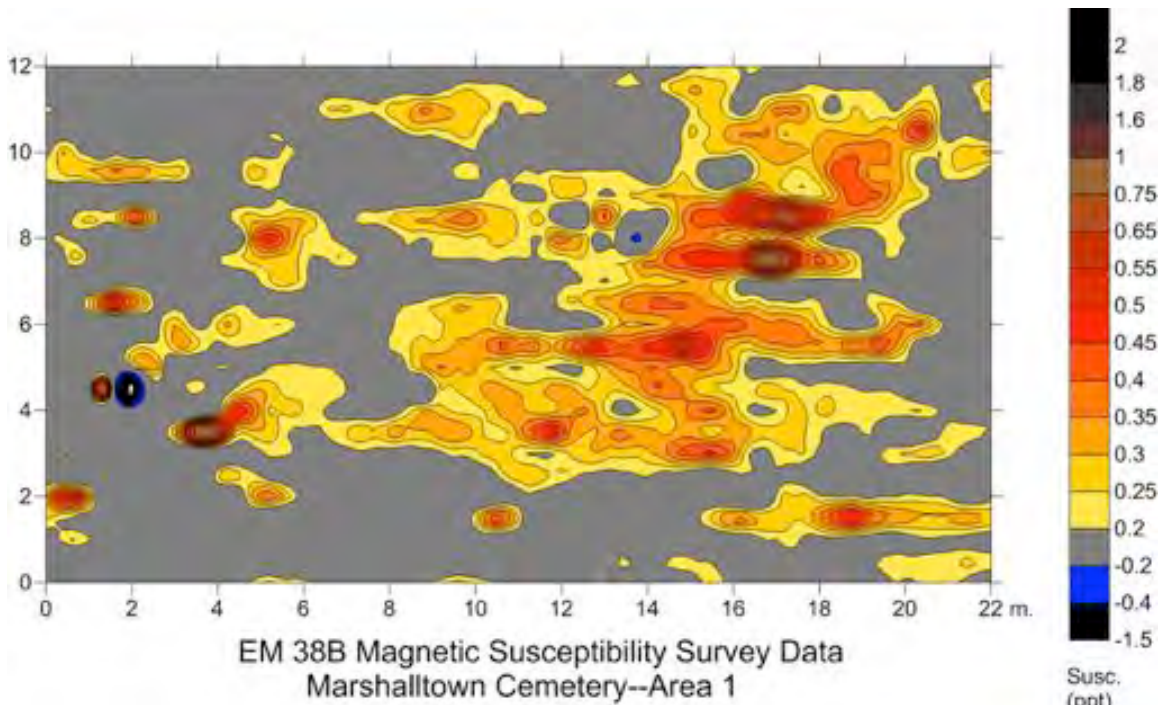


Figure 3-12: Magnetic susceptibility at Cemetery 1 as processed by Duncan McNeill. Most if not all of the anomalies showing orange-red are suspected graves.

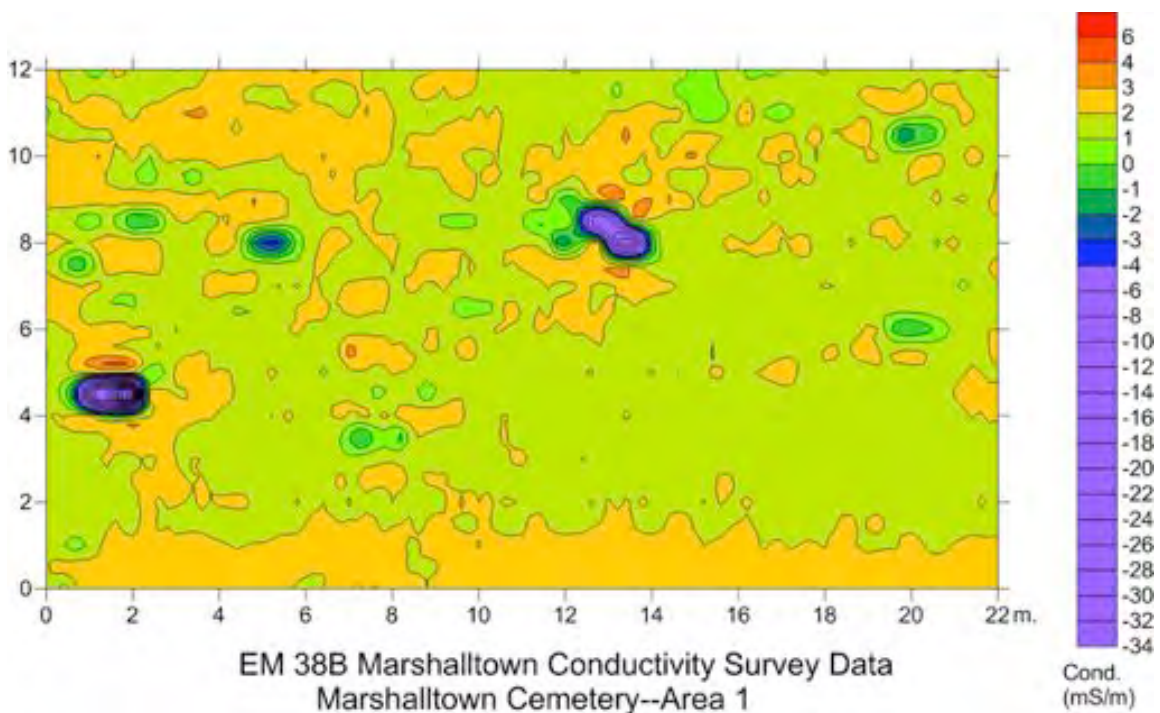


Figure 3-13: Conductivity at Cemetery 1 as processed by Duncan McNeill. Metallic responses are represented by any signature below 0 (mid-green to purple).

In initial interpretations, Cemetery Site 2 shows a general trend of lower conductivity and lower magnetic susceptibility towards the ditch on the eastern side (Figure 3-14). There appears to be one location where conductivity is particularly lower than the surrounding area, and this is echoed in the higher range of magnetic susceptibility (Figure 3-14, blue). Another, smaller anomaly is also present (Figure 3-14, green). By modifying how the data has been zeroed, Mr. McNeill's reading of the site shows that aside from this same anomaly, Site 2 has none of the characteristic high contrasts of Site 1 (Figure 3-15).

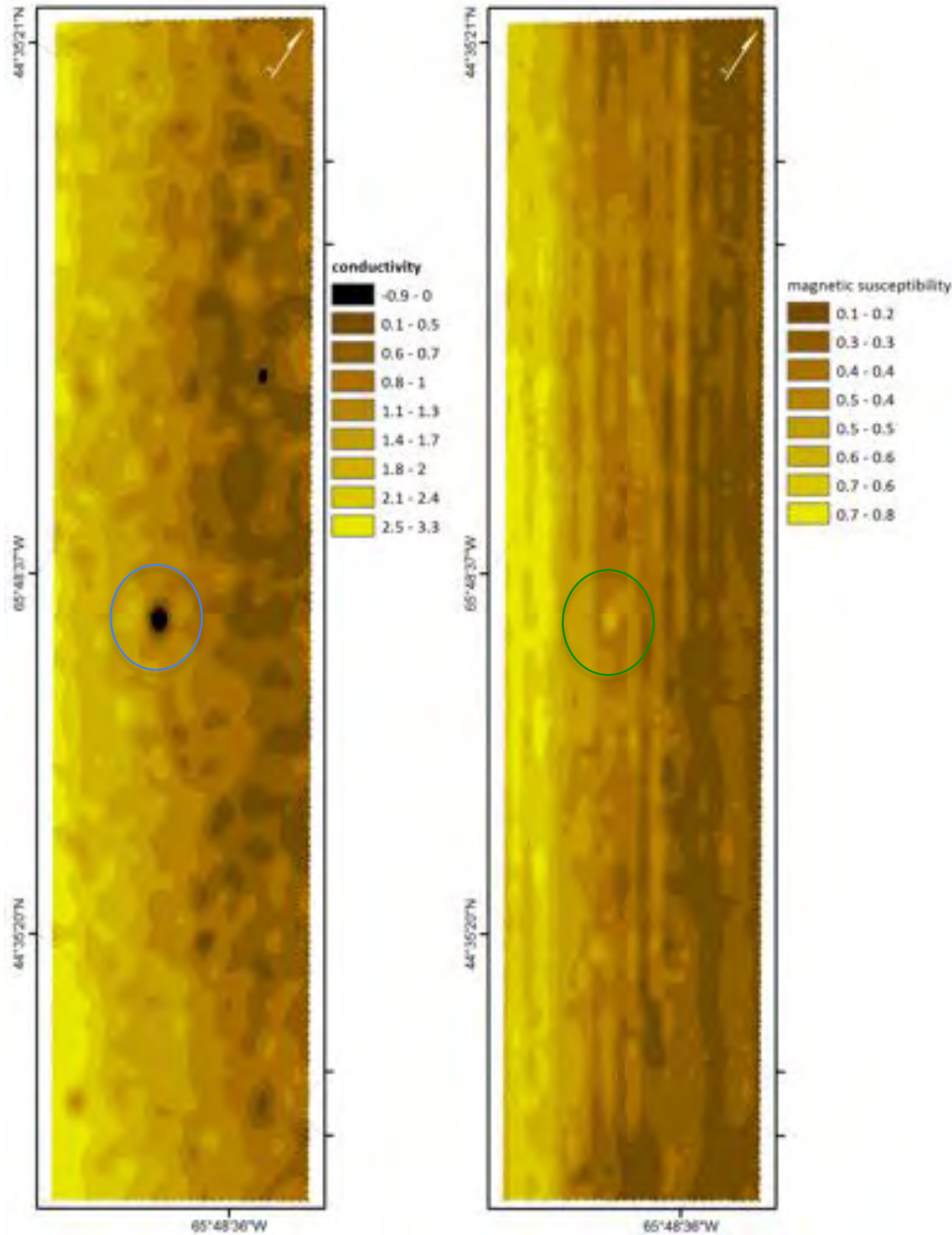


Figure 3-14: Conductivity and magnetic susceptibility at Cemetery 2. The sole notable anomaly is shown in blue (conductivity) and green (susceptibility).

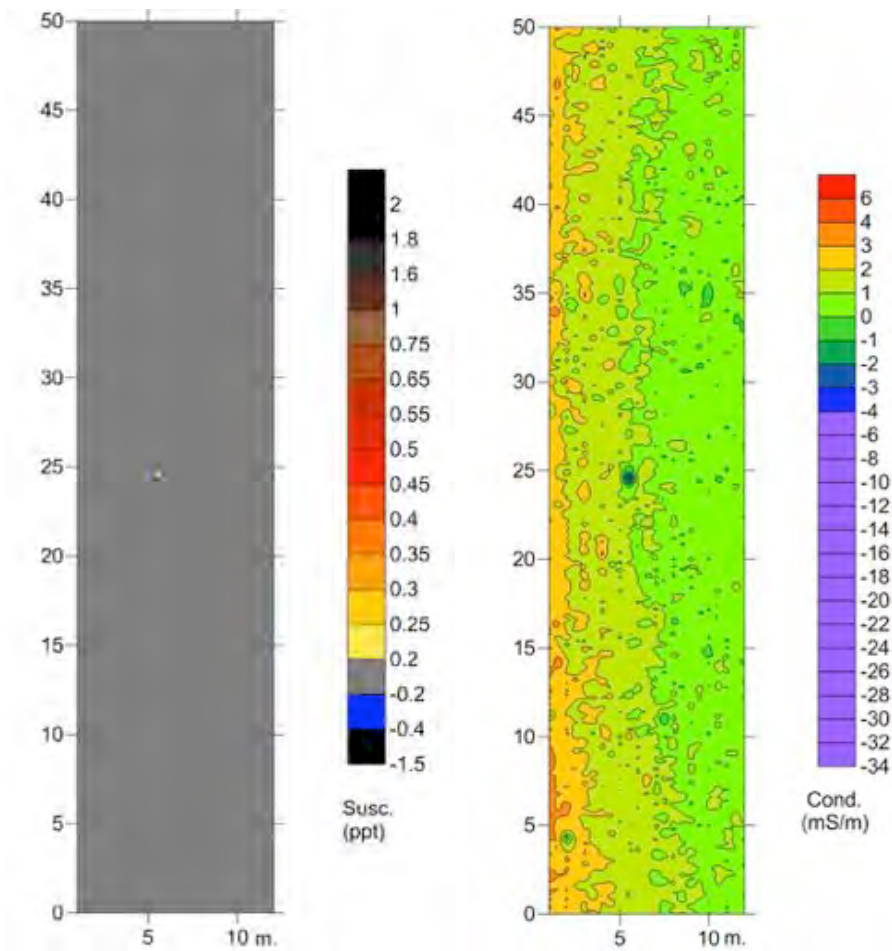


Figure 3-15: Susceptibility (left) and conductivity (right) at Cemetery 2 as interpreted by Duncan McNeill, showing very little variation in the readings and nothing consistent with intact graves or grave shafts.

3.5 Ground-Penetrating Radar Survey

Upon initially concluding that the EM38B survey had not produced results that were highly suggestive of multiple graves within either study area (though anomalies had been identified for possible future investigation), NSTIR requested further investigation of the site by means of Ground-Penetrating Radar (GPR). A GPR survey was conducted in August 2016 by Christopher Barnes, assisted by Laura de Boer.

This technology was used successfully in 2007 to identify Poor Farm graves in Cole Harbour, which represents a similar site history to the Marshelltown Alms House. At Cole Harbour, burial of the poor took place in the late nineteenth and early twentieth century, likely with few if any grave goods, in relatively shallow graves. In this instance, anomalies encountered by the GPR unit were initially thought to be too close to the

surface to represent graves, but subsequent excavation by a Saint Mary's University field school revealed that a fully excavated grave was located at a depth of 78cm to 127cm, while other graves not fully excavated showed signs of the same shallow burial practices.

The data recovered from the Cole Harbour site showed large hyperbolic diffraction "tails" corresponding in some cases with point-source reflectors such as stones, but in many cases with material remains within the grave shaft, including coffin wood. Coffin nails and hardware were also recovered.⁴¹ In many cases vertical stacks of point-source reflectors were observed at the edges of the graves. These may correspond to either stones that were placed at the edges of the grave shaft, or in some cases, the lack of large stones within the material used to fill the grave. Other indicators of graves that have been observed in GPR data include interruptions in the soil strata due to mixing of soil materials from excavation and infilling activities.

The GPR survey at Marshalltown was conducted in three blocks of data collection at Cemetery Site 1, intended to span the northeastern boundary between the cemetery and the Alms House site to the west and open field to the northwest, as well as the area investigated in 2003 through sod removal and shallow excavation. Some brush and tree clearing was necessary prior to the survey (Plate 5), as the GPR unit is dragged in a small toboggan over the study area (Plates 6 and 7). This was particularly true in proximity to the former Alms House foundation, where Japanese knotweed is growing abundantly (Plate 8). Corners of the grids were marked and recorded with the assistance of NSTIR surveyor Benjamin Whitmore, and the data was later utilized to reference the geophysical data into existing map coordinates (ATS77) (Figure 3-16).

Cemetery Site 2 was not investigated in this manner, as extensive disturbance of the area in the late 1960s has likely disturbed any graves in a manner that would cause them to no longer create clear signatures within the GPR data.

The data collected from the survey is unfortunately not producing the clear hyperbolic signatures that were found to indicate graves in a comparable situation at Cole Harbour. While a difference in soil type and moisture content may be a factor, it was hoped that similar anomalies would be encountered at Marshalltown. While some anomalies have been encountered, they are less suggestive of burials than was hoped at the outset of this phase of the project.

⁴¹ MacLeod Leslie 2008:20-21.



Figure 3-16: The approximate locations of the three GPR areas at Cemetery Site 1.

Area A

Some regions of interest were identified in Area A where groups of anomalous reflections were observed within adjacent lines of GPR data.

Two horizons that run approximately parallel to ground surface can be observed over a distance from approximately 12 to 20 m along the survey area in lines 1 to 13, at an estimated depth of approximately 1.2 to 1.3 m and 1.6 to 1.7 m, suggesting an interlayer of approximately 300 to 400 mm in thickness. These horizons appear to rise to a peak at a distance of 17 m in lines 14 to 21 (Figure 3-17). This horizon may likely be a rock shelf or soil layer that exists at that depth. At times other horizons and point reflectors appear above these layers, and may arise from buried objects such as stones, debris, or tree roots, or could also be single features related to potential graves and grave goods.

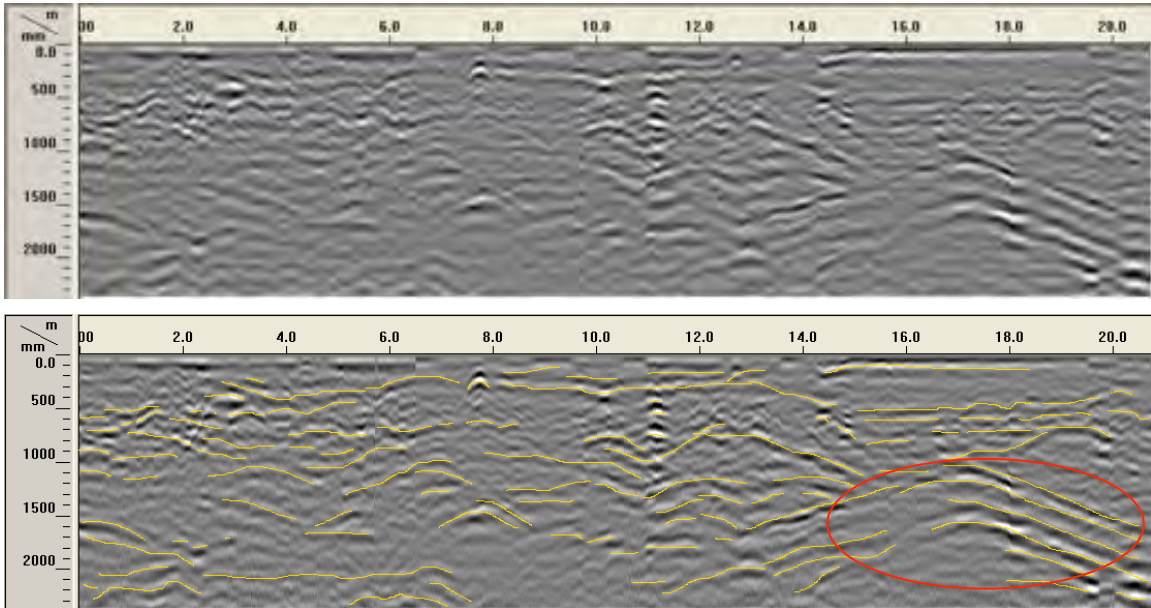


Figure 3-17: Line 16 of Area 1, unaltered (top) and showing mark-up for discussion (bottom). The two horizons rising to a peak are shown in red.

A relatively strong reflector ranging in estimated depth from 1.3 m to 0.5 m in lines 1 to 4 can be observed at a distance of 7 to 9 m (Figure 3-18).

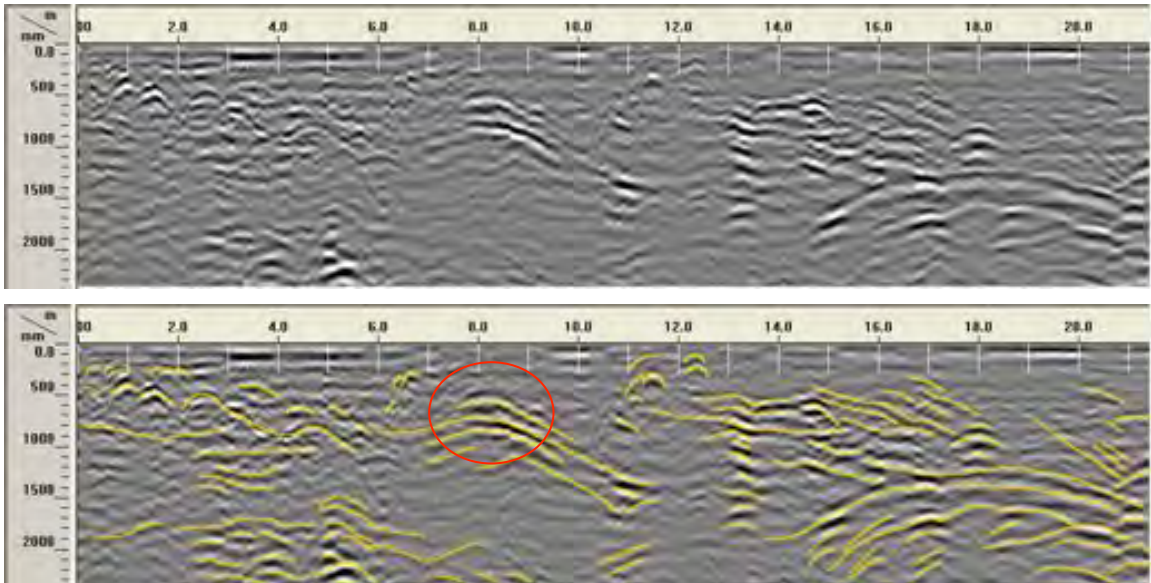


Figure 3-18: Line 4 unaltered (top) and marked-up (bottom) showing a strong point reflector between 7m and 9m (red).

Numerous small point reflectors may be observed within the upper 1.0 m at distances from 0 to 12 m in lines 1 to 13. These are probably due to small tree roots, but do include some relatively stronger reflections listed in Table 3 below.

Table 3 – Point reflectors of interest in southeast region of Area A.

GPR Line	Distance (m)	Estimated Depth (m)
1	1.0, 1.8, 2.5, 4.3	0.30, 0.35, 0.40, 0.75
2	0.7, 1.5, 1.6,	0.35, 0.40, 0.35
4	1.0, 1.5, 2.6, 3.1, 8.2	0.40, 0.50, 0.50, 0.60, 0.60
5	0.9, 2.7	0.25, 0.50
6	0.8-1.2	0.25-0.40
7	2.0, 3.5, 4.5-5.3	0.50, 0.50, 0.70-0.50
8	2.0, 2.4, 3.8-5.4	0.50, 0.85, 0.60-0.40
9	1.0, 5.4,	0.35, 0.70
12	0.5, 9.5	0.40, 0.70

Some downward sloping layers can be observed in lines 1 to 8, beginning at approximately 9 to 10 m at a depth of 0.50 m, and running to a depth of approximately 1.30 m at a distance of 17 to 18 m.

One particular recurring reflection can be observed at a distance of 18.0 to 18.5 m and an estimated depth of 0.80 m in lines 1 to 11, inclusive.

Area B

Two main features of interest were observed in Area B. The first is a horizon located at depth of approximately 1.6 to 2.5 m that occurs from distances of 0.0 to 2.5 m in lines 22 to 27, inclusive (the full width of the area). It would appear that this horizon may be related to the horizon that was observed from 12 to 20 m in Area A at a depth of approximately 1.7 m. Observing this feature in both survey areas suggests possible continuity between them, and supports the possibility that this may relate to a rock or soil layer that exists at that depth.

The second feature of interest in Area B is a relatively strong reflection that occurs at an approximate depth of 0.50 to 0.70 m at distances of 17.5 to 22.0 m in all data files (22 to 27) (Figure 3-19). A vertical stack of point reflectors, which is similar to those observed at the limits of graves detected at the Cole Harbour poor farm site, can be observed below this layer at a distance of 18.8 to 19.5 m and at 20.7 m in line 23. However, a similar vertical stack of reflectors was not observed in lines 22 or 24, although the linear horizon at 0.5 to 0.7 m depth and additional reflections can be observed below it at approximately 1.0 and 1.3 m. Various other weaker single point reflectors can be seen at depths of 1.3 to 2.0 m between distances of 13 to 17 m in line 23. Line 25 exhibits the same linear horizon at 0.5 to 0.7 m depth from 18.0 to 22.5 m, as well as vertical stacks of reflectors 18.5 m and 21.7 m. Lines 26 and 27 indicate multiple horizons at depths of 0.6-0.7 m, 0.9-1.0 m, 1.2-1.3m, and onward from distances of 17.0 to over 22.0 m.

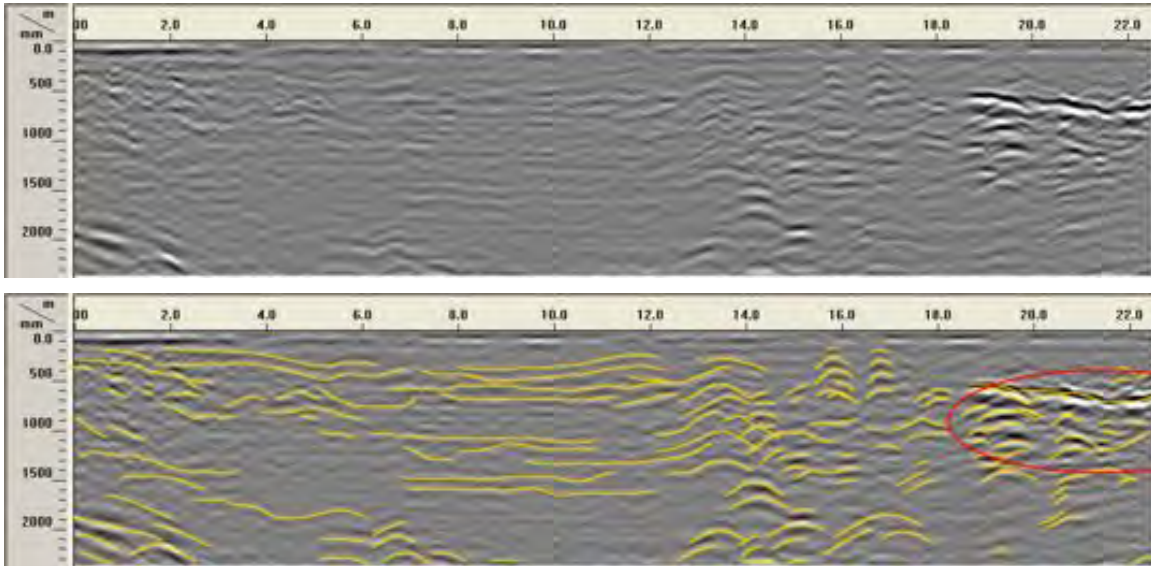


Figure 3-19: Line 23 of Area B, showing the unaltered data (top) and marked-up version (bottom). A strong reflection underlain by a vertical stack of point reflectors is shown in red.

Area C

Area C was located over an area previously investigated using the EM-38 meter and shallow excavation. The GPR data in line 28 shows a shallow surface soil layer that varies from 0.50 m to 0.25 m over the first 2.0 m of distance. This corresponds to a slight decrease in elevation over this distance, and tends to indicate a relatively flat subsurface horizon. This horizon remains relatively stable in depth at approximately 0.25 m until a distance of 10.0 m, after which it gradually decreases to a depth of 0.5 m at a distance of 13.0 m, then appears to decrease to approximately 1.3 m at a distance of 15.0 m and tends to 1.5 m at the 18.0 m limit of the data. A second horizon can be observed in line 28 that runs from a depth of 1.5-1.6 m from distances of 0.0 to 3.5 m, then decreases to 2.0 at a distance of 6.0 m, and appears to gradually decrease to slightly deeper than the 2.5 m limit of the data at a distance of 18.0 m. The data between these two boundary horizons contains many small steeply sloping reflectors and thin layers that are sometimes relatively strong in amplitude, such as those observed over the full depth of the data at a distance of 5.5 m in line 29. Noteworthy groupings of intense reflections occurs throughout the depth of the GPR data at a distance of 4.5 to 6.5 m in line 29 (Figure 3-20), 3.4 m to 5.4 m in line 30, and 3.0 to 4.8 m in line 31. Some upward sloping horizons occurring above relatively horizontal horizons, and the abundance of strong reflectors above the flat horizon at a depth of 2.2 to 2.3 m, might suggest that this area could have been infilled.

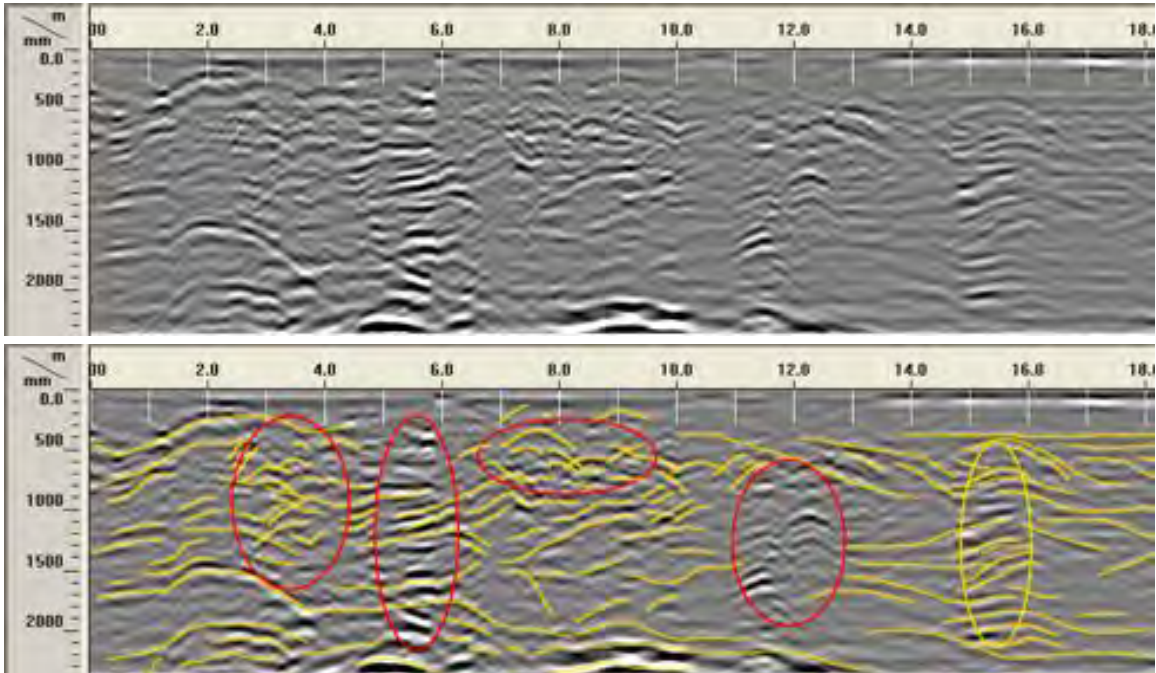


Figure 3-20: Line 29, showing the original data (top) and marked-up data showing anomalies (bottom).

In summary, findings from the GPR survey are generally not consistent with confirmed burials on a comparable site. However, there are anomalous points and areas that could relate to ground disturbance, infilling, buried metal objects, or other unusual conditions that could merit subsurface testing to investigate the cause. This is particularly in relation to establishing the nature of previous disturbance at the site, relating to the fire that consumed the Alms House as well as any previous heavy landscaping that has occurred here.

4.0 RESULTS AND DISCUSSION

Both in our original and reworked interpretations of the data, the EM38B survey of the cemetery sites shows a distinct contrast between the two locations. At Cemetery Site 1, a notable amount of strongly contrasting anomalies can be observed, particularly in Duncan McNeill’s reworked interpretation of the data. While initial interpretations were not strongly suggestive of burials, Mr. McNeill’s processing of the data has led him to conclude that these signatures point strongly to graves. Cemetery Site 2, however, shows only one strongly contrasting anomaly, and this does not appear to be consistent with a burial. This is unsurprising given the extensive disturbance that has reportedly occurred at this location; if burials did exist here, they have been so thoroughly disturbed, scatted, and in effect “diluted” that they no longer register in a geophysical survey.

Frustratingly, comparison between the features identified in the 2003 investigation and the anomalies identified in the initial interpretation of the 2016 geophysical survey did not appear to correspond; the clustering of the soil features was very tight based upon the scale of the provided plan, and much closer to the dirt road than most of the geophysical anomalies. However, Mr. McNeill's subsequent interpretation of the data more closely resembles the tight cluster of anomalies seen in 2003.

In summation, the results of the geophysical survey are more highly suggestive of graves than was initially thought at Cemetery Site 1, but not at all suggestive of intact graves at Site 2. The results support what has been suspected based upon other available history on the site: that Cemetery 1 may represent more intact features with a certain level of subsequent disturbance relating to the Alms House fire, while the integrity of Cemetery 2 may have been heavily compromised by bulldozing and other agricultural activity in the late 1960s.

The circumstances of burial further complicate efforts to identify the unmarked cemeteries. Burials may not be aligned east-west, and they may not be very deep below ground or depth may vary considerably depending upon the grave. Excavations at the Cole Harbour Poor Farm in 2007 (as observed in person by the author) yielded the tops of graves as shallow as 40cm below the surface, well within the plough zone if large modern ploughs were used at Marshalltown. Grave goods are likely minimal, and in some cases burial may have occurred without any kind of coffin or casket. This hypothesis may be supported by the contrast between conductivity and susceptibility results at Site 1, where not all susceptibility anomalies exhibit corresponding metallic anomalies in the conductivity data.

The corresponding GPR data at Site 1 is suggestive but somewhat less consistent with burials as compared to a similar site in Cole Harbour. However, anomalies have been identified that could be subjected to subsurface testing in an effort to further ground-truth the results, if desired.

What remains obvious is this: documentary records show that a probable minimum of 55 burials and likely many more should be present between these two cemetery areas, though distribution and density is not known. The geophysical surveys, even when combined with the 2003 investigations and assuming that all anomalies and features represent burials, seem likely to account for no more than 20 to 30 burials, a small fraction of the total. However, the possibility remains that the area covered during the 2016 geophysical surveys did not encompass the entire cemetery as data provided on cemetery size was based entirely on oral history.

Both the EM38B and the GPR do, however, appear to show fewer suggestive anomalies to the northwest of the investigated area of Site 1, suggesting that the graves are less

frequent closer to the projected “edge” of the cemetery, where the natural slope of the ground drops towards a poorly-drained, rough area.

A field reconnaissance has shown that much of the landscape, and in fact for much of the year all of the landscape, between Site 1 and Site 2 is low, wet, and rough (Figure 4-1). The north and northwest edge of Site 1 has been projected at the base of a gentle slope which faces Seeley Brook, where the dry and smooth topography that continues downwards from the modern road transitions abruptly into wet, undulating ground grown up in alders and grasses. The ground opens up again into a field some 20m farther to the north, but again this field is much more wet and undulating than the area indicated as Cemetery Site 1.

At Cemetery Site 2, a similar topographic southern boundary is formed by a sharp drop from the treed edge of the current field down into wet, undulating forest which further transitions into wet alder swamp bordering Seeley Brook.

While it is difficult to state with absolute certainty that burials have not occurred beyond these two projected boundaries, oral history has shown no indication that burial occurred in these areas, and site topography would make burial in these areas inappropriate in a purely practical sense, as digging graves here would be a wet, muddy, and difficult affair for the grave diggers, who by many accounts did not put great effort into the act of burial.

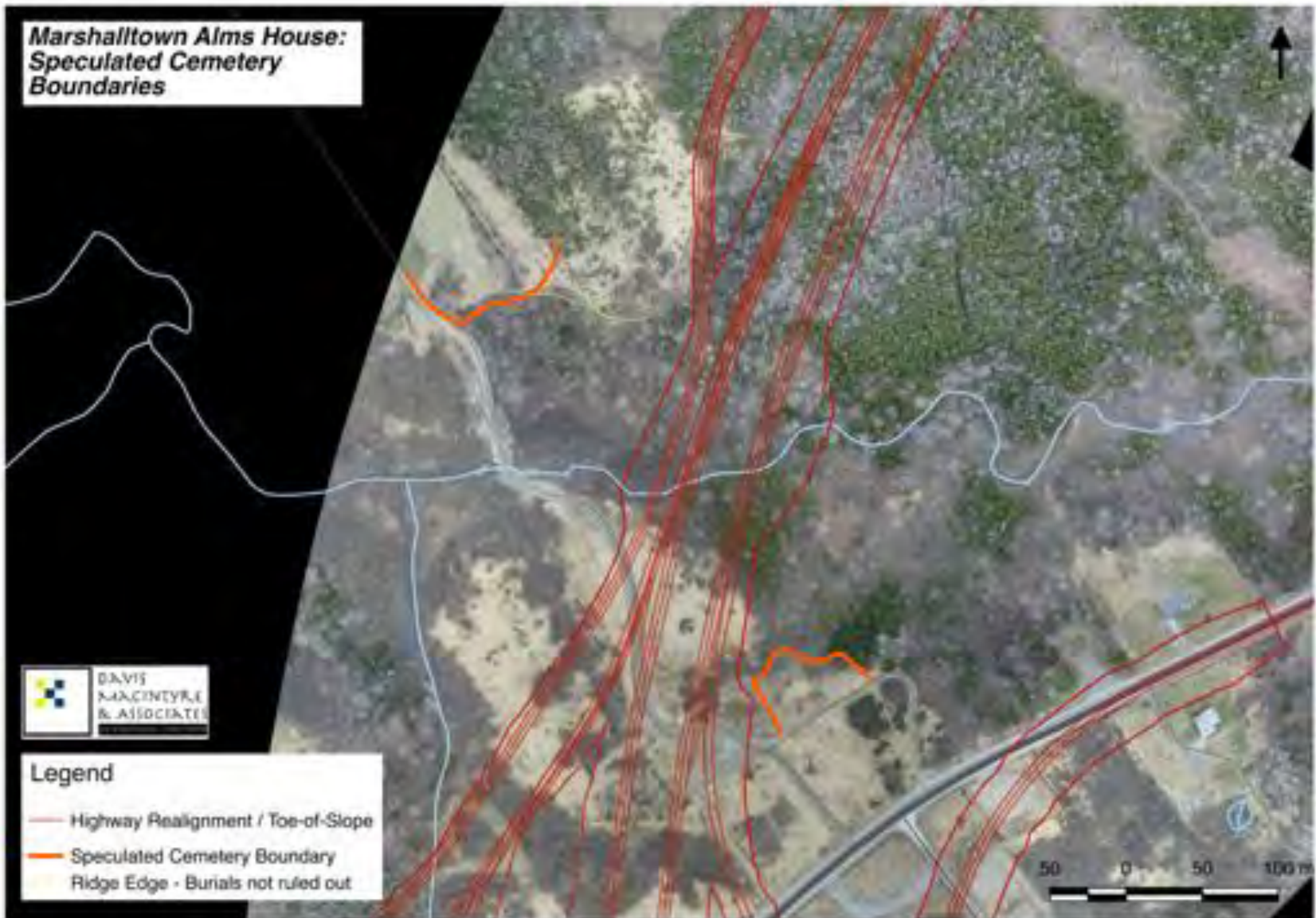


Figure 4-1: Projected cemetery boundaries based upon oral history and site topography.

5.0 RECOMMENDATIONS AND CONCLUSIONS

The geophysical surveys have been shown to be strongly suggestive but ultimately inconclusive in identifying grave shafts and burials at the southern cemetery location, as even if all anomalies identified are later confirmed to be graves, a very large portion of known burials on site are still unaccounted for. Given the inconclusiveness of the geophysical surveys on their own, several options for further research can be considered, though in the absence of planned ground disturbance related to near-future construction in close proximity to either area, none are considered compulsory recommendations by DM&A.

Under ordinary circumstances, it would be possible to mechanically remove the upper sod layer from a known but unmarked cemetery in order to seek out grave shafts without disturbing the human remains. This however has already been attempted in 2003 at Cemetery 1, again with inconclusive results. It is also highly inadvisable to attempt such mechanical investigation at Cemetery 2, where there may be few or no grave shafts intact, and human remains could have been scattered and brought even closer to the surface by the 1960s activity.

While it is likely that this investigation has reached a point of “diminishing returns,” it is possible that a higher level of certainty could be achieved by both testing several anomalies in the previously surveyed area of Site 1 and by undertaking an additional EM38B survey on the low, wet field below (north of) Site 1 where the future twinned portion of highway is proposed to run. The presence or absence of comparable anomalies in this low, wet ground could help to provide an increased level of certainty as to the limits of the burial area.

One or more of the anomalies at the Cemetery 1 location could be subjected to excavation within 1mx1m or preferably 2mx2m units excavated by professional archaeologists. This process would attempt to identify the source of the anomaly. If human remains are encountered, they could be recorded in situ and reburied if CCH provides approval for this methodology, and if they are features unrelated to burial, they would allow the research team to rule them out as possible burial signatures.

At Cemetery Site 2, a similar test unit could be placed over the single anomaly identified, and this could also help to identify whether or not human bone has been densely scattered in the topsoil of the area following previous ground disturbance. Obviously sub-surface investigations at a previously disturbed cemetery site are not to be taken lightly. Prior to applying for a permit, consultation with the Coordinator of Special Places and with the Curator of Archaeology at the Nova Scotia Museum would be necessary in order to determine what action to take if human remains are encountered. If sub-surface investigations proceed, continuing efforts to keep the local community engaged and informed would be prudent.

Initiating any of the further measures outlined above may provide more answers, but this is not a certainty. The only thing that appears reasonably clear based on topography and oral history is that the current Highway 101 alignment is unlikely to pass through areas that were known through oral history as burial sites and are most suitable for burial in proximity to the Alms House site and property. There has been no evidence encountered during this assessment that indicates burials would have extended into the area currently shown within the toe-of-slope of the proposed alignment.

In consideration of the upcoming environmental assessment phase of the Highway 101 alignment planning, further mitigation of either cemetery will not be a requirement so long as both cemeteries are outside the proposed toe-of-slope and outside the range of any laydown areas. The 2017 portion of the new section of the highway consists of the northern/western two lanes only – the realignment plans allow for twinning, but it will not be twinned in the upcoming phase of construction. It is possible, therefore, that efforts to more clearly define the cemetery boundary could be revisited in the future, if or when the highway is scheduled to be twinned and therefore will run more closely to the projected border of the southern cemetery.

Heavy equipment including tree- or brush-clearing equipment should not be permitted to drive over either site if there is a chance that the wheels of the vehicles will churn up the soil, potentially disturbing shallow graves or previously disturbed bone. A buffer zone of approximately ten meters around the projected boundary area is recommended, with the understanding that this buffer may be somewhat arbitrary due to the lack of a clearly delineated site – the buffer may be too large, but this is preferable to it being too small.

If ground-disturbing activity is expected to take place in close proximity to either cemetery, it may be necessary to contract a qualified archaeologist to monitor grubbing or other ground-disturbing activity during road construction, and to remain on call should suspected human remains be encountered. DM&A has previously prepared a management plan for similar situations within the province, directing on-site personnel on what steps are appropriate when suspected human remains are encountered. The basic measures are included as Appendix C. If desired, DM&A is able to provide orientation and basic training for construction crew members to familiarize them with the appearance of human burials and with the protocols involved in the unexpected discovery of human remains.

Commemoration of the final resting place of many of the inmates is clearly a priority for the modern communities of Marshalltown and Digby. While DM&A strongly supports efforts to place a sign or other commemorative material on the sites, we wish to advise against the placement of any kind of fence structure, which in the absence of a clear delineation currently may create boundaries that in future decades are misunderstood to be firm borders. If desired, a stand-alone gate could potentially be placed to

represent an entryway into the burial grounds, but no part of the landscape should be enclosed at this stage.

Finally, it cannot be emphasized strongly enough that in the event that burials or other archaeological resources are encountered in the future and an archaeologist is not already present, it is absolutely required that any ground-disturbing activity be halted immediately and the Coordinator of Special Places (902-424-6475) be contacted immediately regarding a suitable method of mitigation.

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National Air Photo Library. 1955. Flight Line #A14654, Photo #14. Scan courtesy NSTIR.

National Air Photo Library. 1978. Flight Line #7800, Photo #150. Scan courtesy NSTIR.

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PLATES



Plate 1: The site of Cemetery 1 showing signs of the 2003 excavation. Looking north.



Plate 2: Raymond Jahncke operates the EM-38B at the site of Cemetery 1, looking north.



Plate 3: Raymond Jahncke operates the EM-38B at Cemetery 2, looking northwest. The line of trees and 1960's ditch are located to the right edge of the photo.



Plate 4: The ongoing survey at Cemetery 2, looking southeast. Note the presence of an earthen mound to the right (west) likely resulted from the 1960's bulldozing.



Plate 5: The Area A portion of the GPR survey, after clearing activity, looking south.



Plate 6: The GPR unit in its toboggan, ready for use.



Plate 7: The GPR unit in use, being dragged over Line 1. Looking north.



Plate 8: Area C (foreground, exposed soil) and Area B (background) prior to clearing, showing a large rosebush and abundant Japanese knotweed.

APPENDIX A: HERITAGE RESEARCH PERMIT



Heritage Research Permit (Archaeology)

Special Places Protection Act 1989

(Original becomes Permit when approved by
Communities, Culture and Heritage)

Office Use Only
Permit Number:

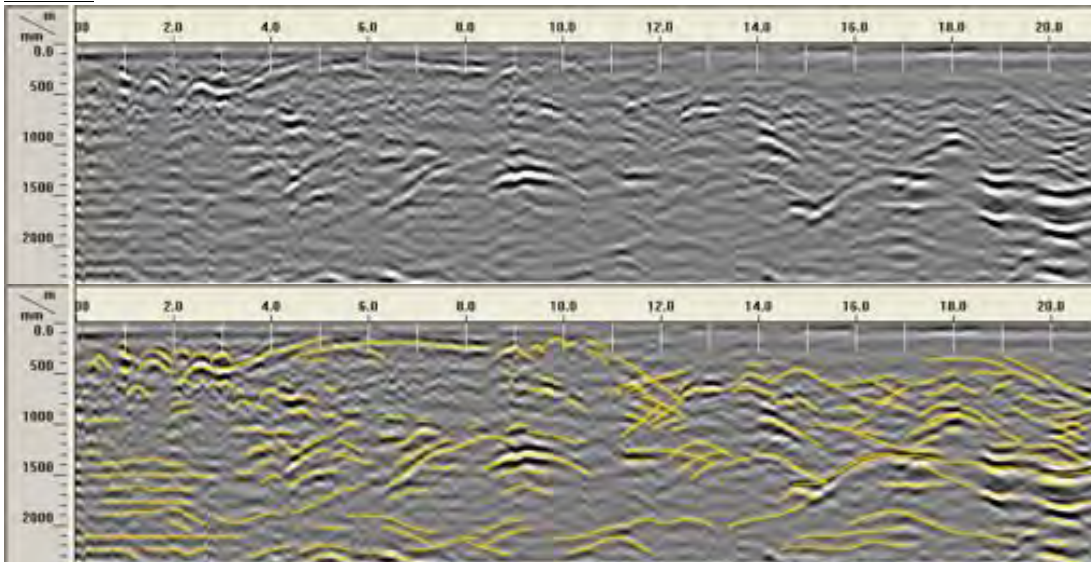
A2016/5012

Greyed out fields will be made publicly available. Please choose your project name accordingly.

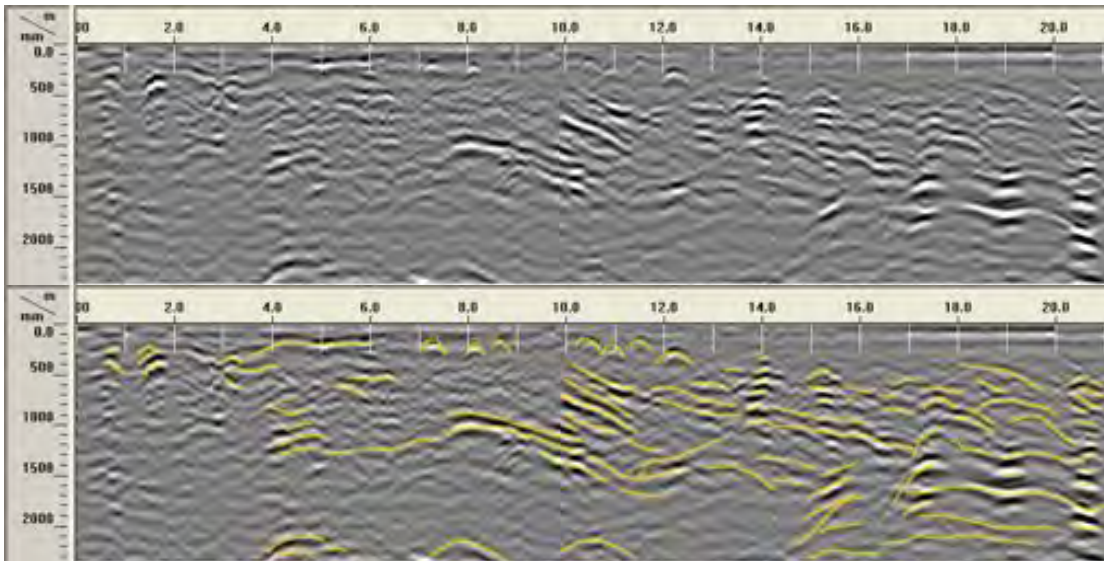
Surname	de Boer	First Name	Laura
Project Name	Marshalltown Poor House Cemeteries		
Name of Organization	Davis MacIntyre & Associates Limited		
Representing (if applicable)			
Permit Start Date	22 February 2016	Permit End Date	31 May 2016
General Location:	Marshalltown, Digby County		
Specific Location: (cite Borden numbers and UTM designations where appropriate and as described separately in accordance with the attached Project Description. Please refer to the appropriate Archaeological Heritage Research Permit Guidelines for the appropriate Project Description format)	Cemetery 1: 20T 277168.00 m E 4940813.00 m N Cemetery 2: 20T 276939.00 m E 4941097.00 m N (WGS84)		
Permit Category: Please choose one	<input type="checkbox"/> Category A - Archaeological Reconnaissance <input type="checkbox"/> Category B - Archaeological Research <input checked="" type="checkbox"/> Category C - Archaeological Resource Impact Assessment		
	<input checked="" type="checkbox"/> I certify that I am familiar with the provisions of the Special Places Protection Act of Nova Scotia and that I have read, understand and will abide by the terms and conditions listed in the Heritage Research Permit Guidelines for the above noted category.		
Signature of applicant		Date	15 February 2016
Approved by Executive Director		Date	F 22-16.

APPENDIX B:
COMPLETE GPR IMAGE COLLECTION

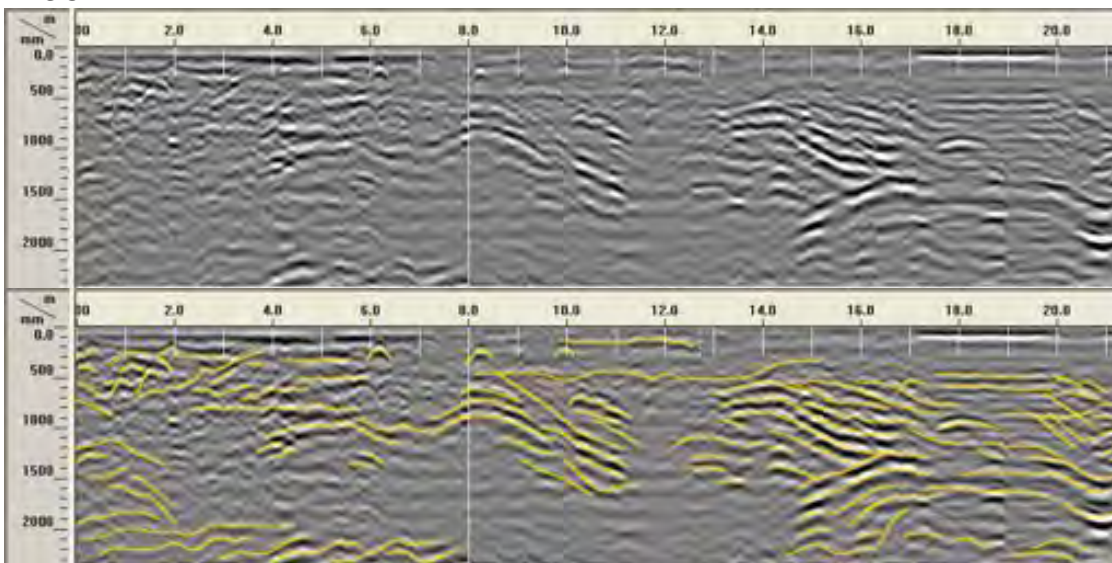
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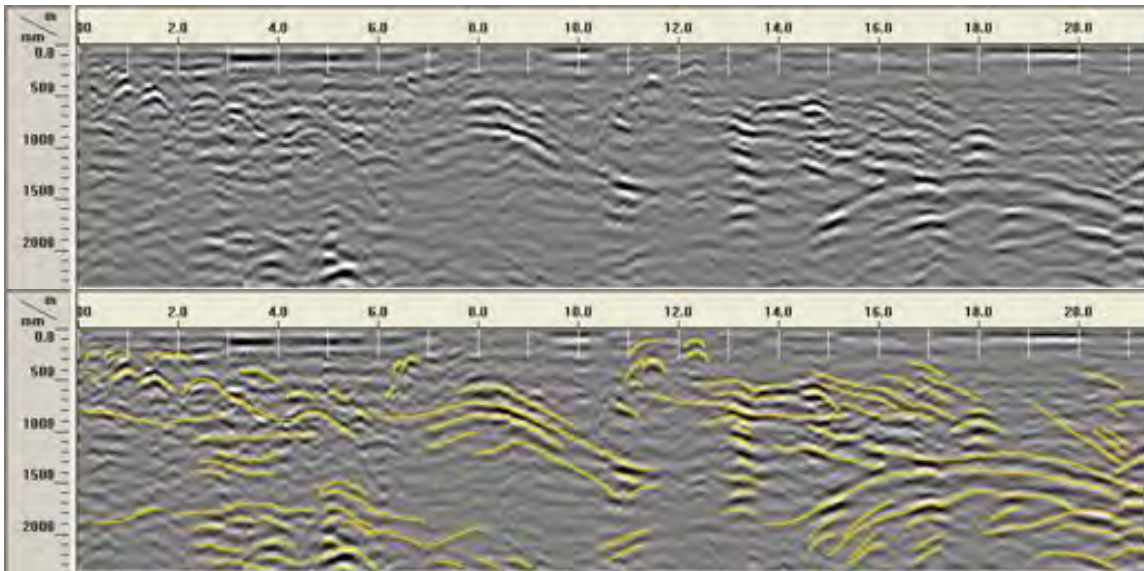
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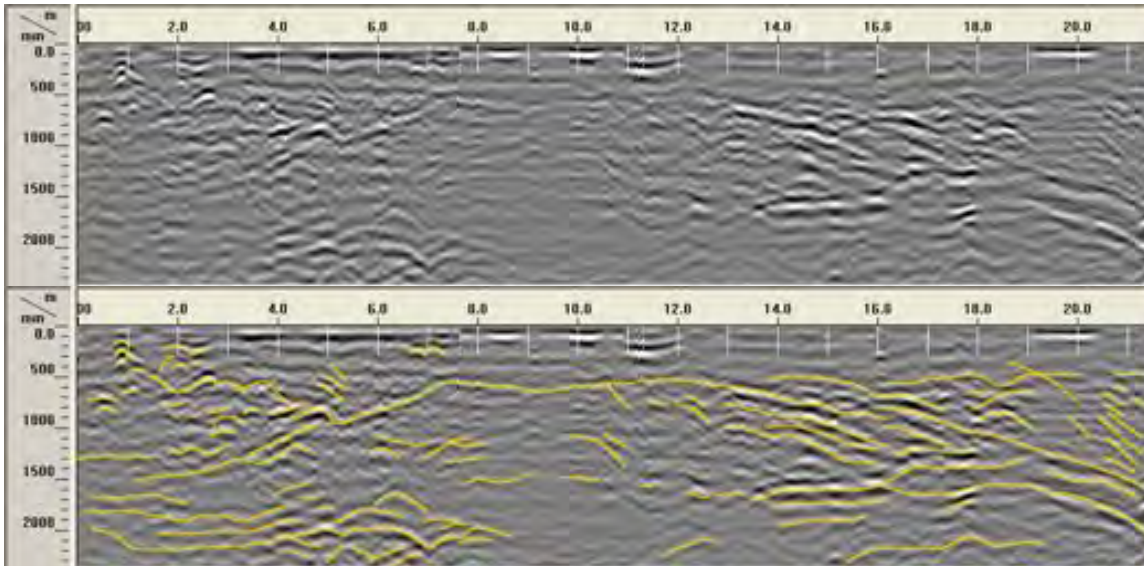
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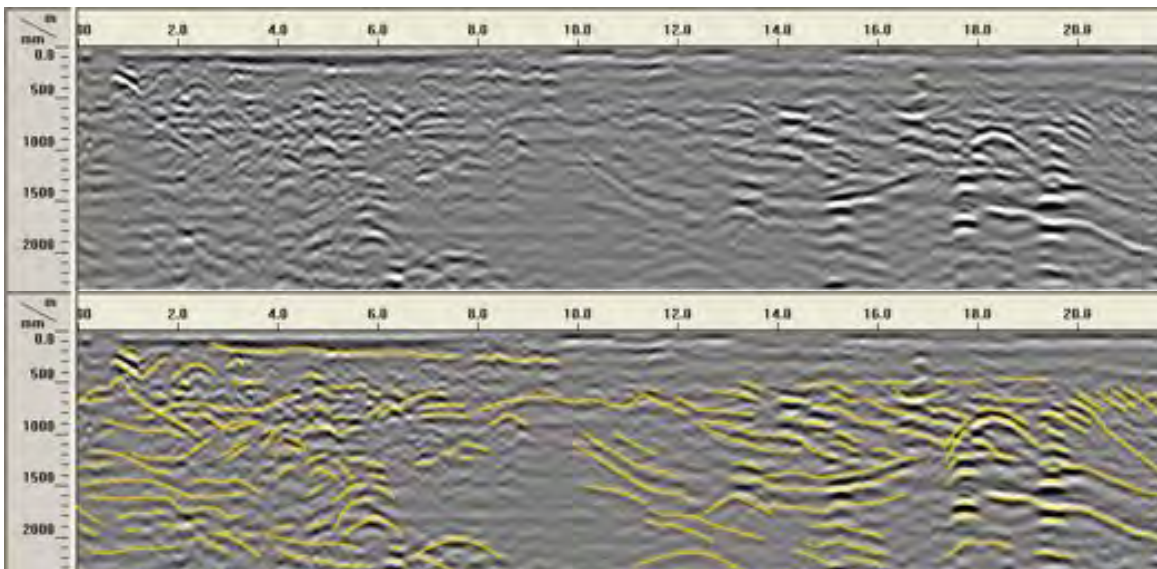
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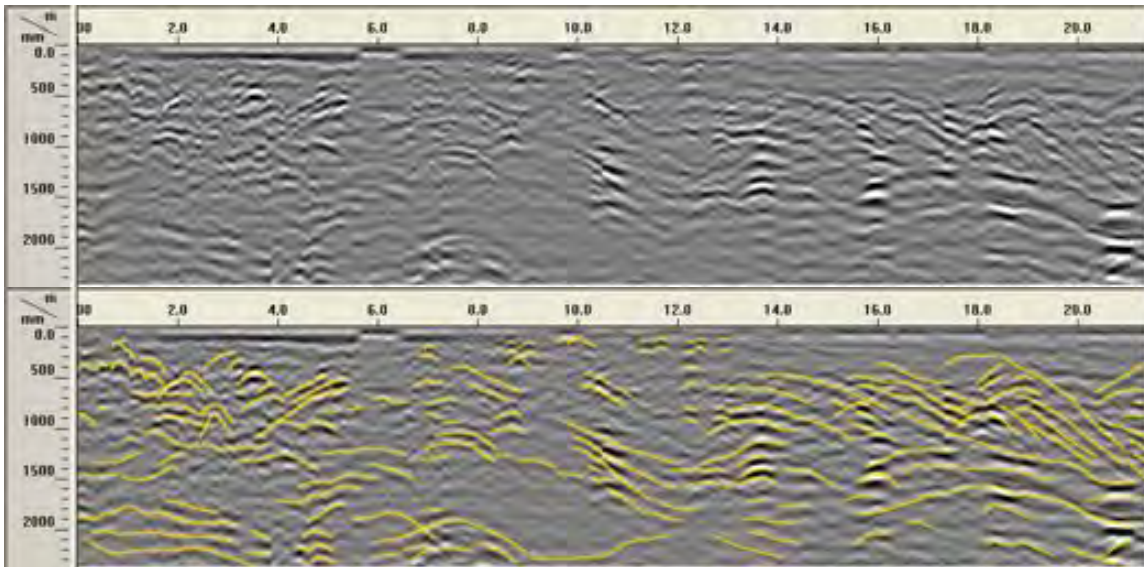
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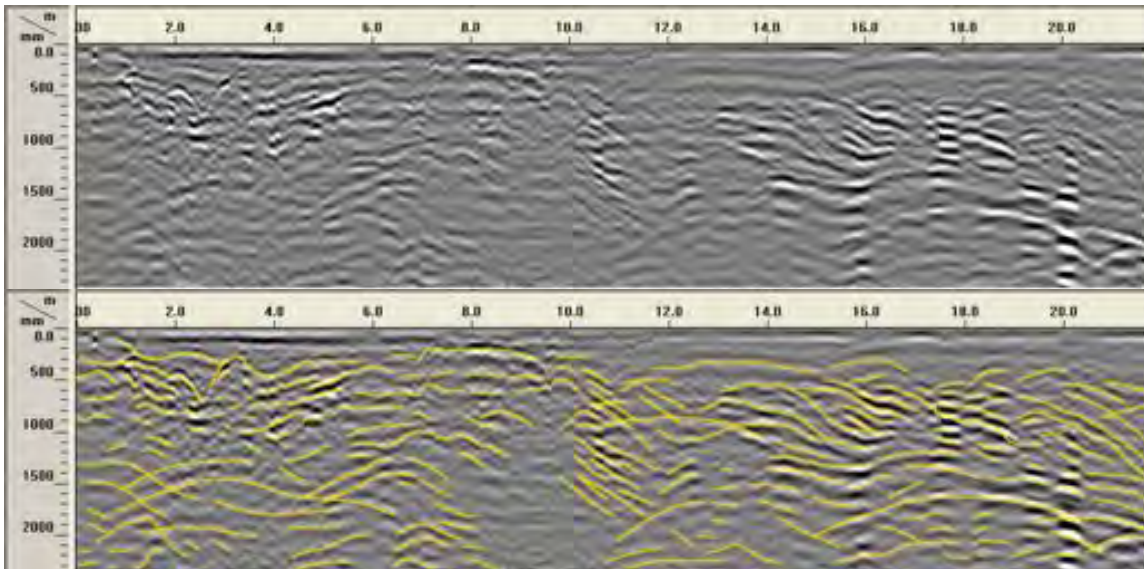
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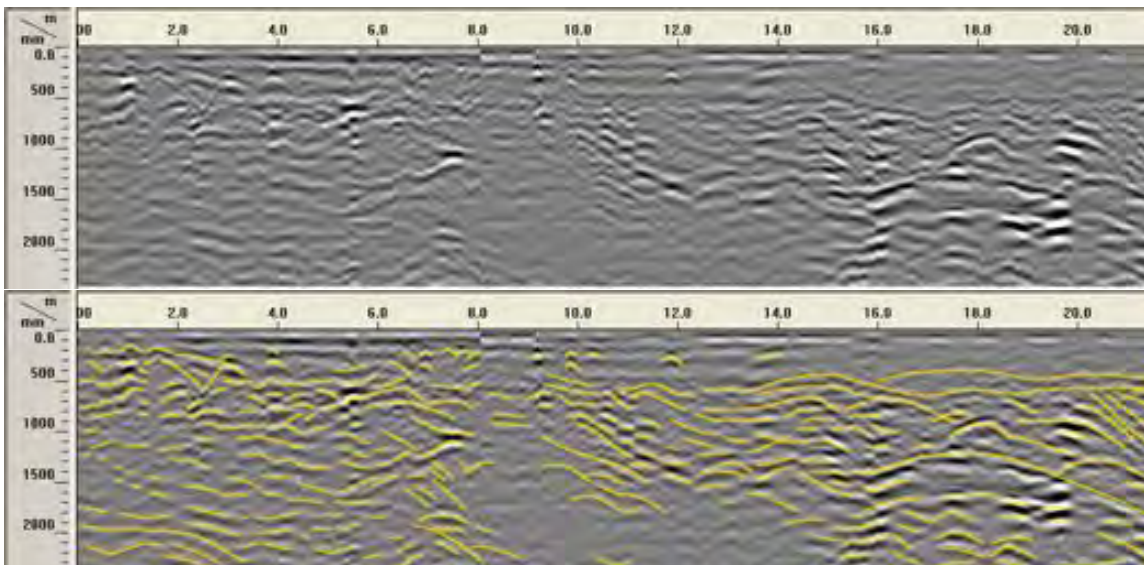
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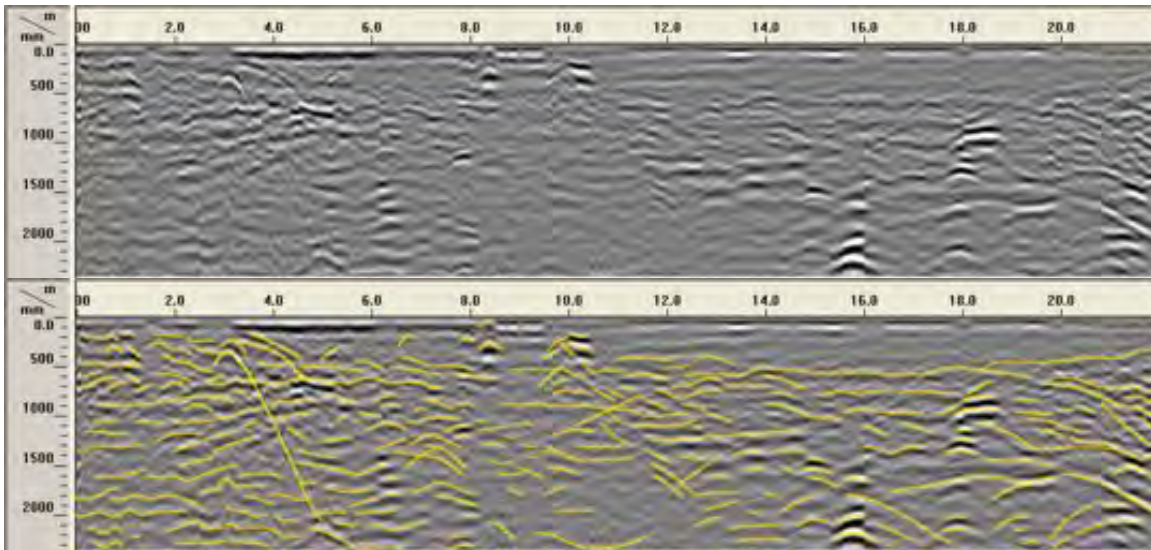
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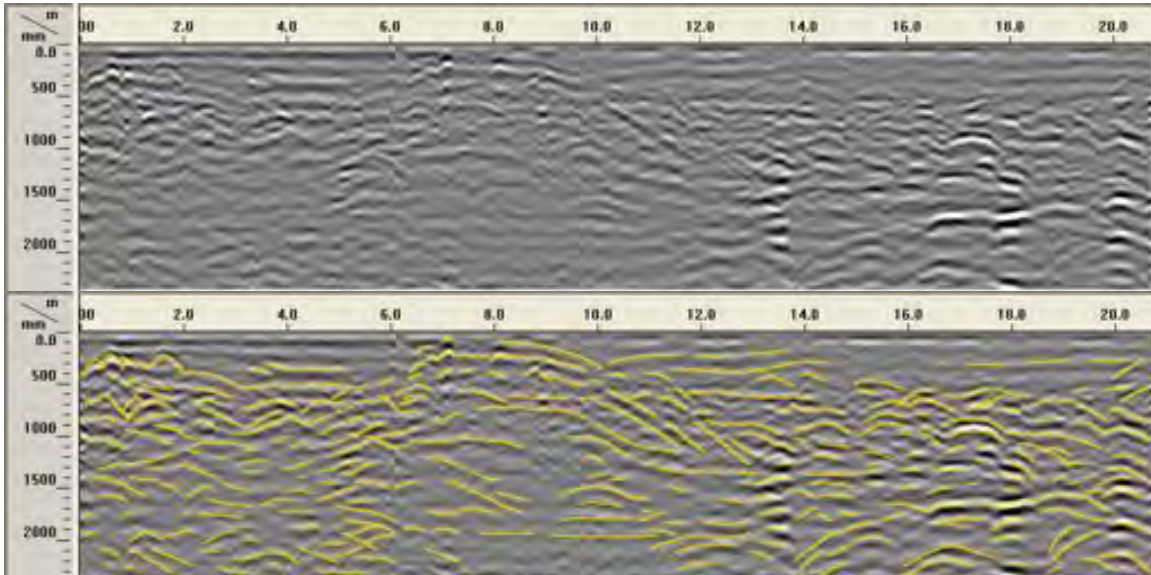
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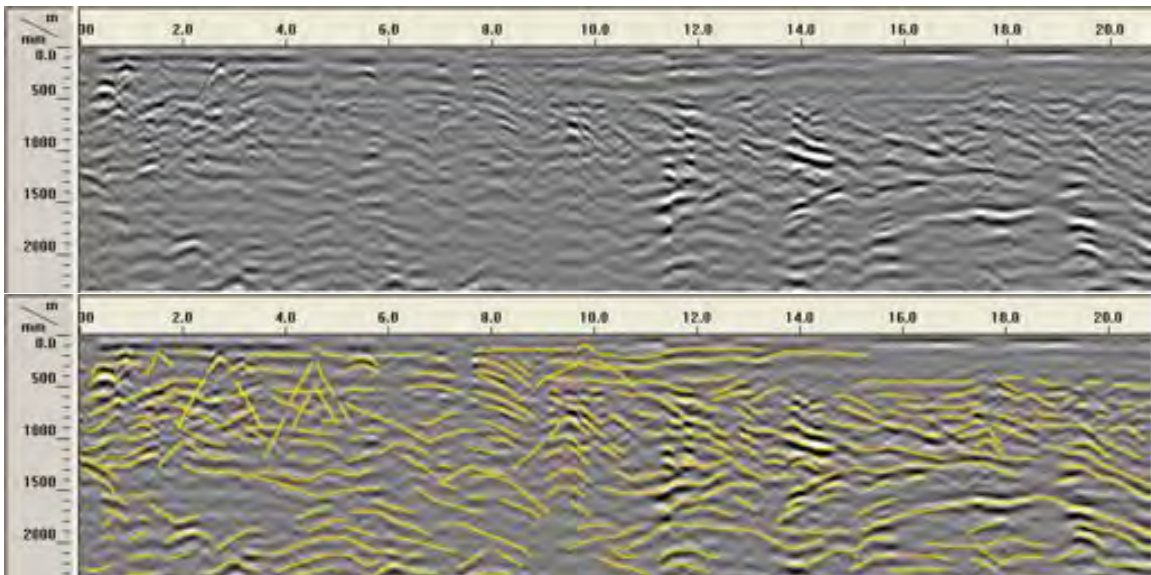
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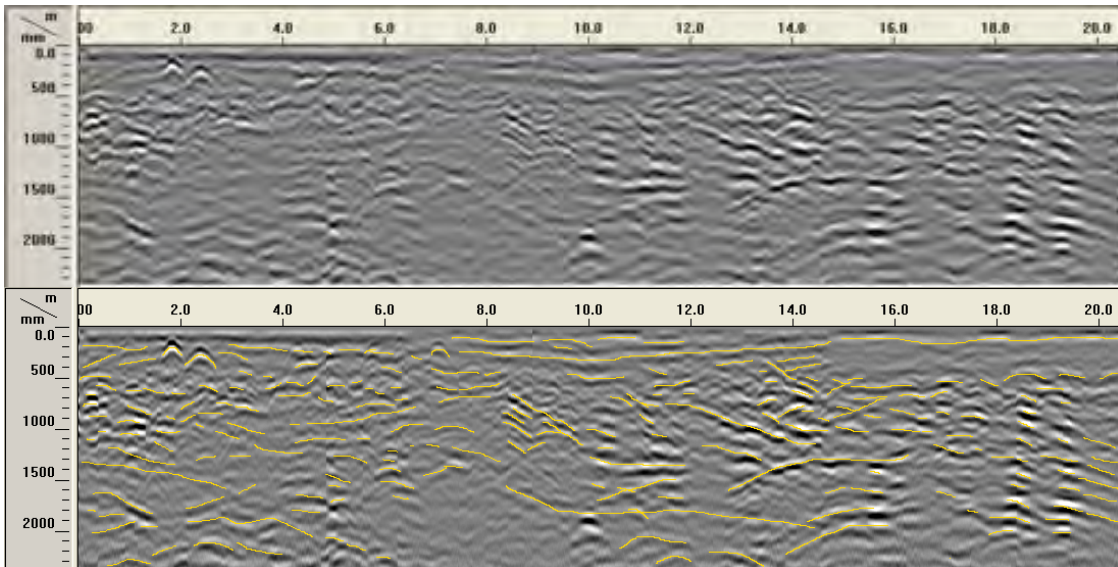
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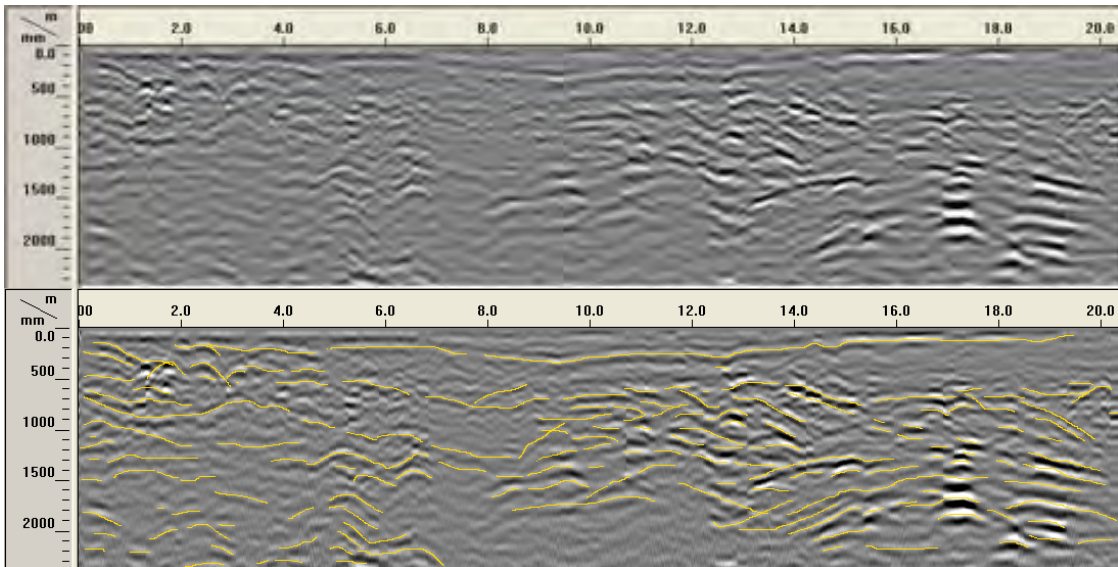
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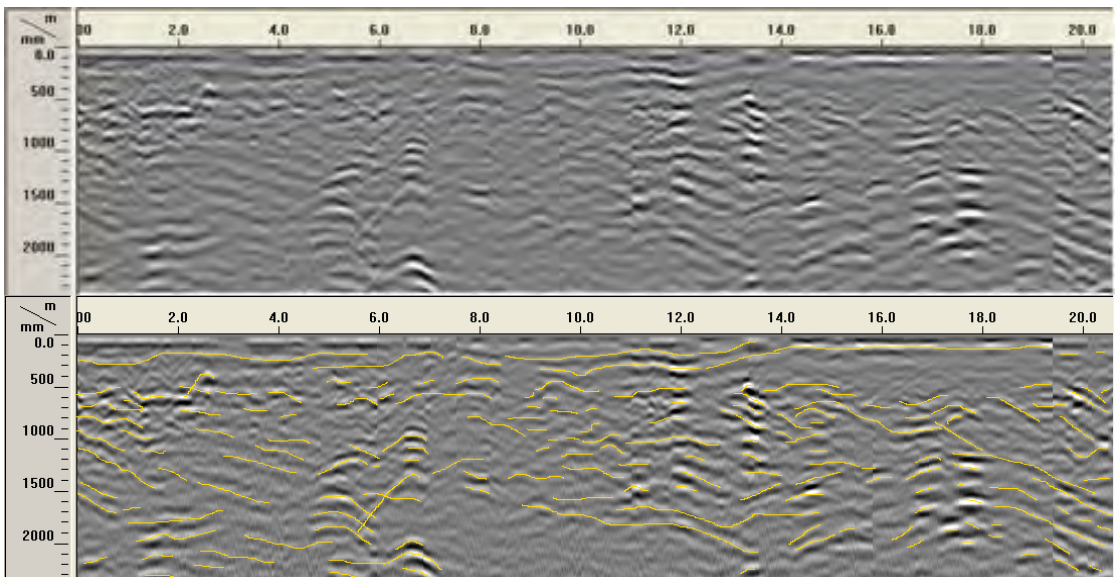
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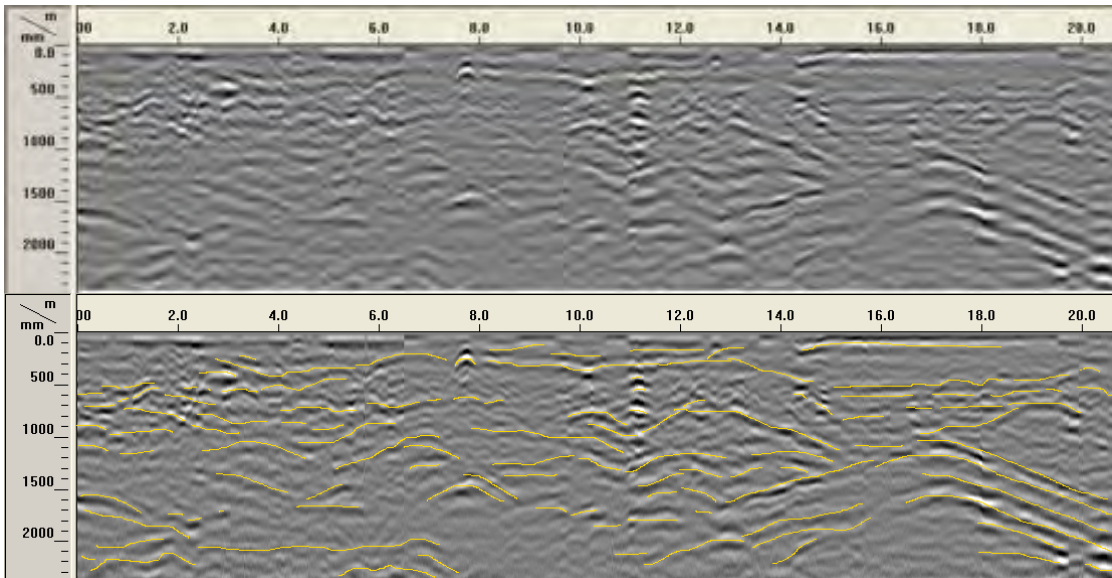
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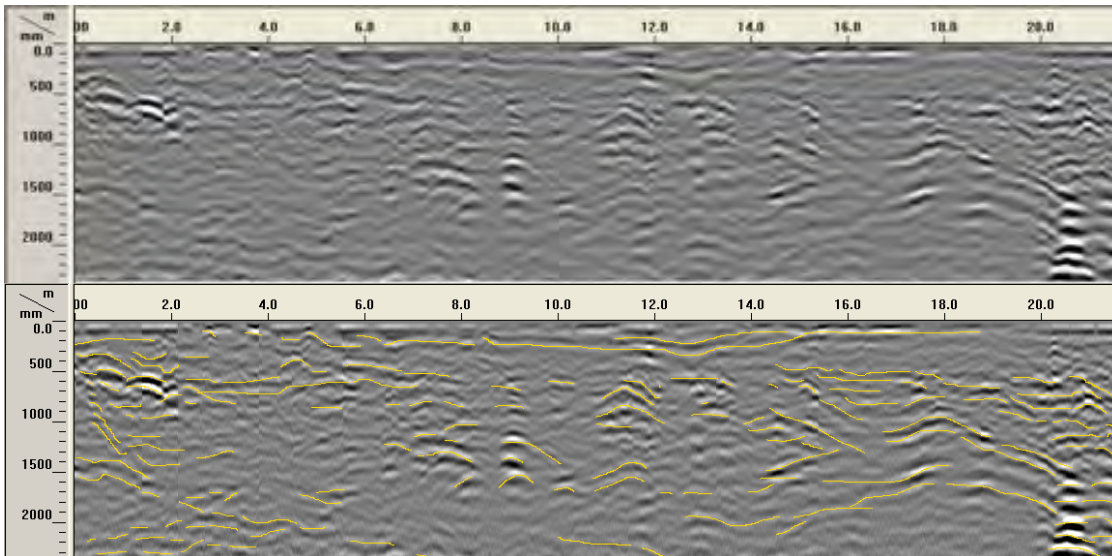
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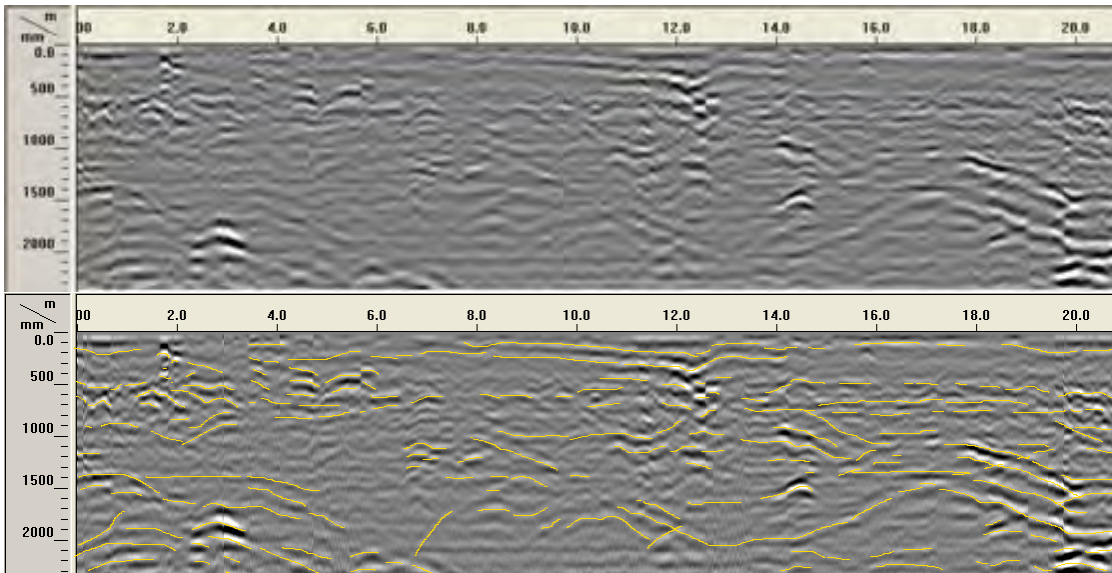
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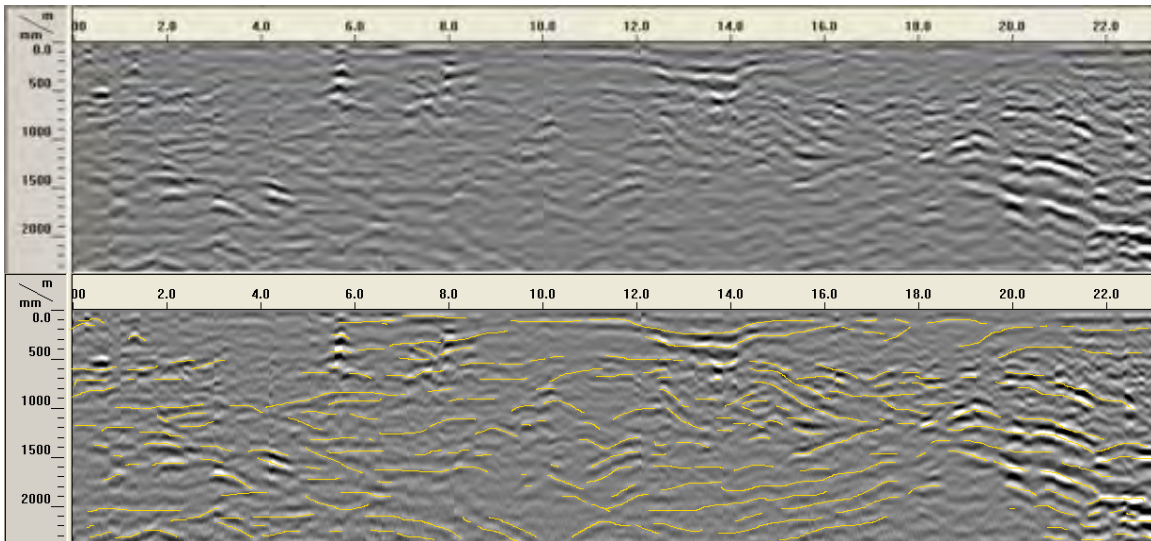
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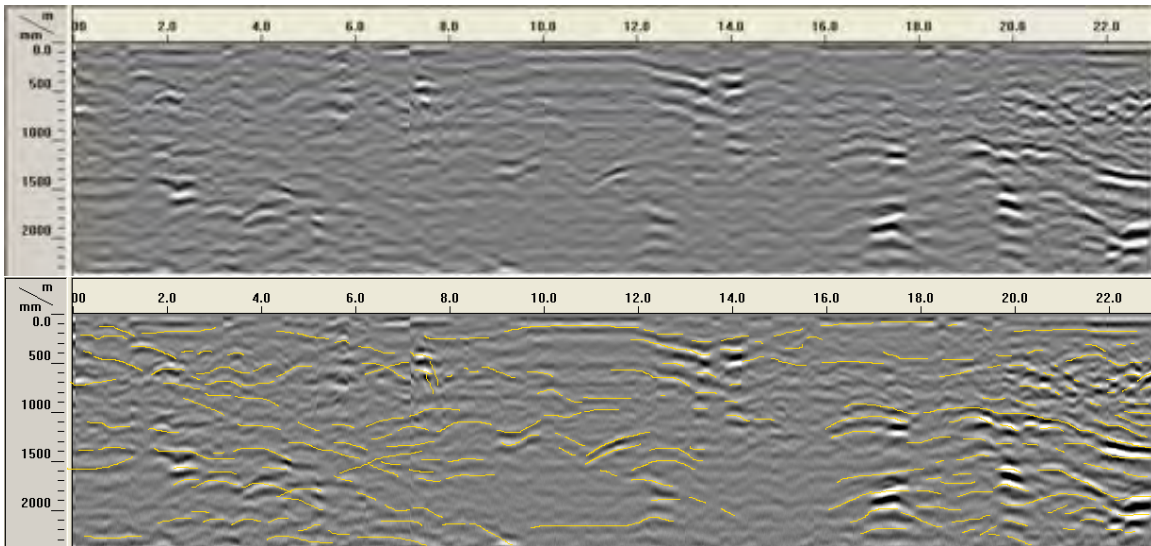
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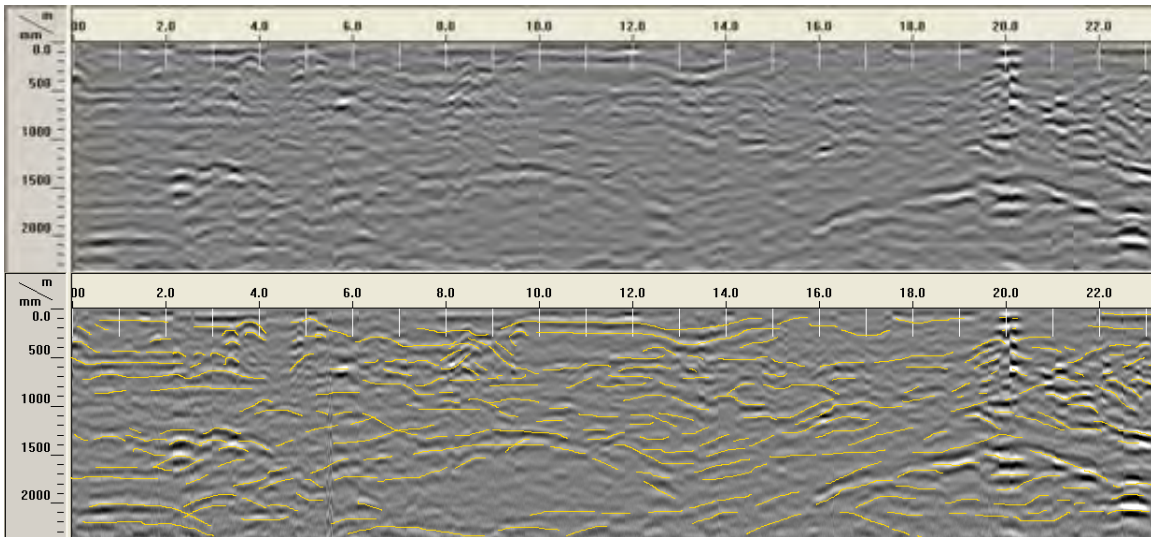
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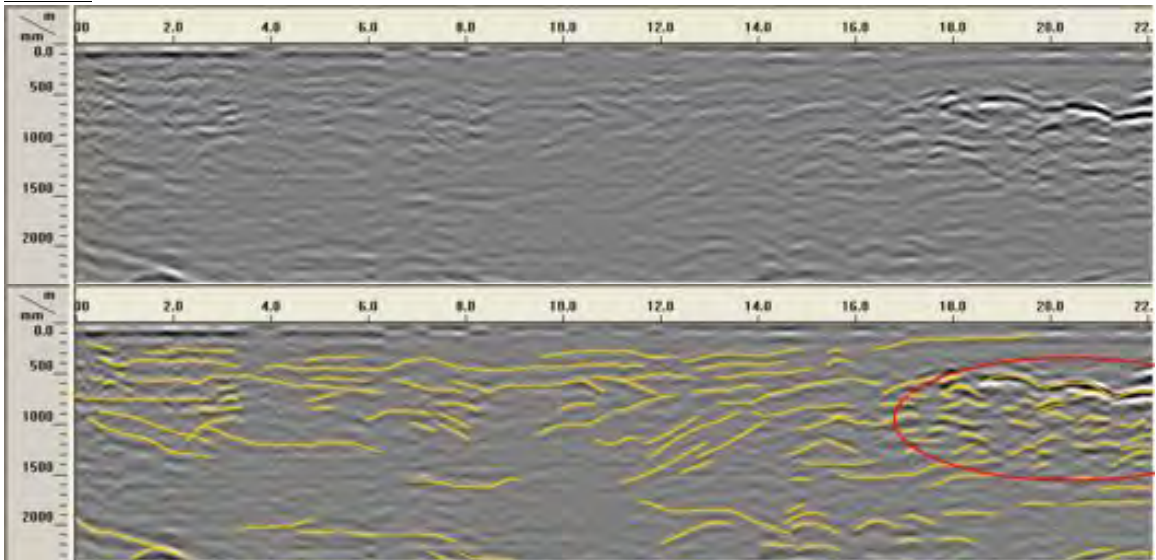
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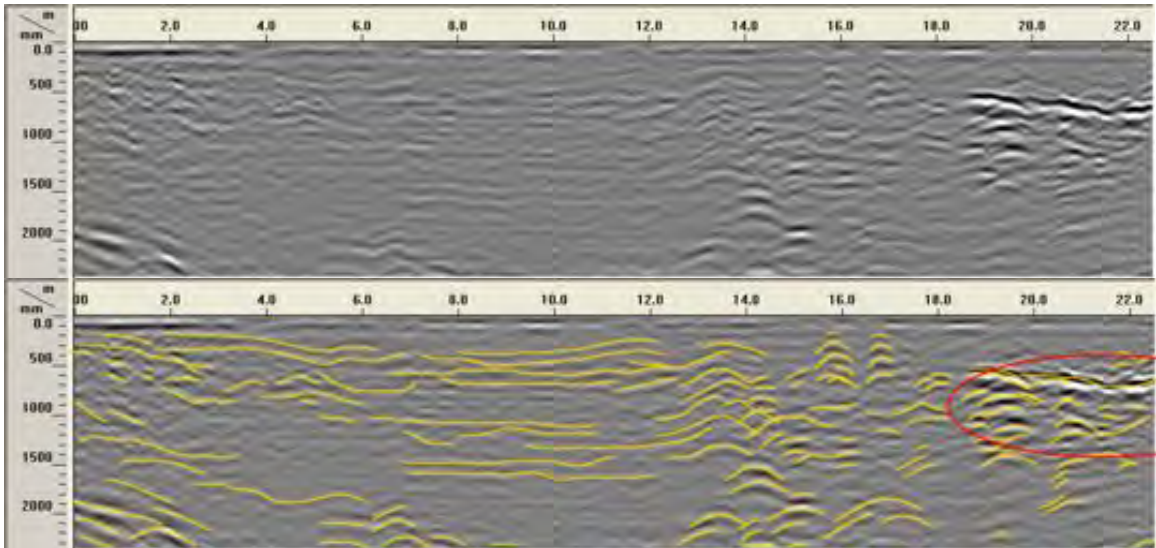
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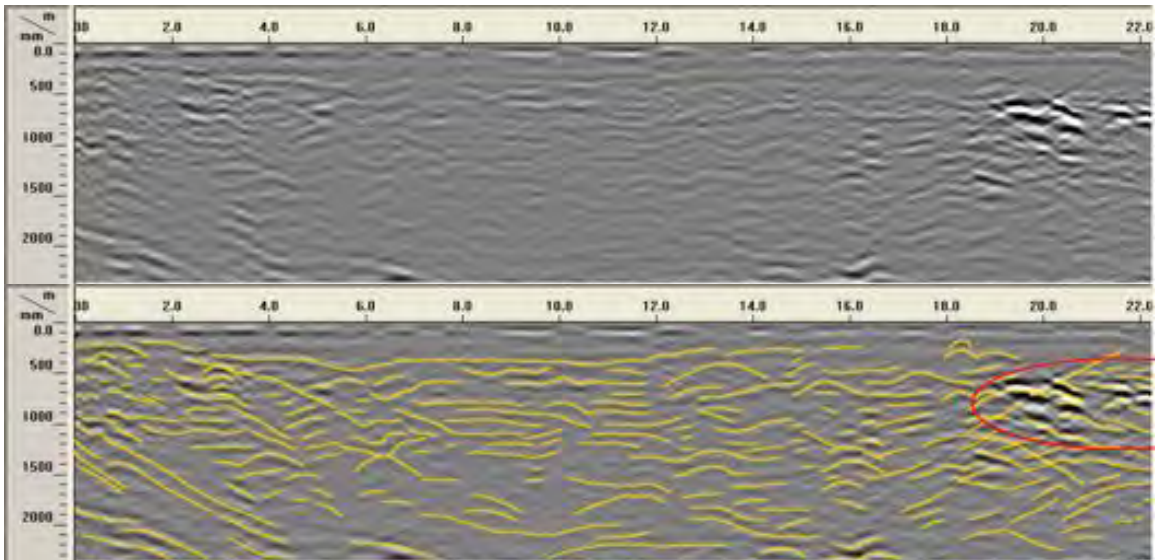
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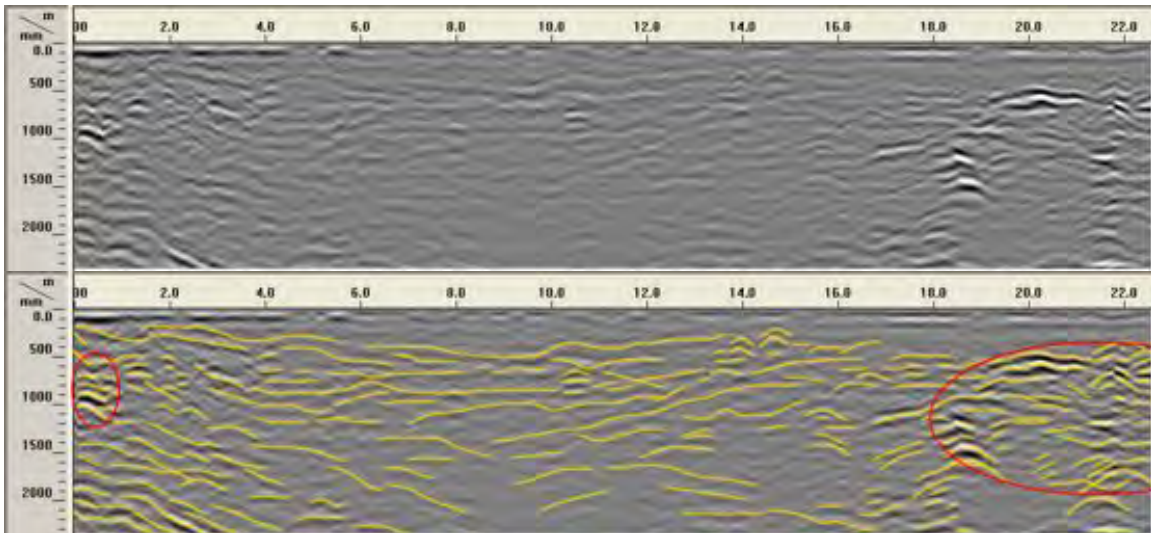
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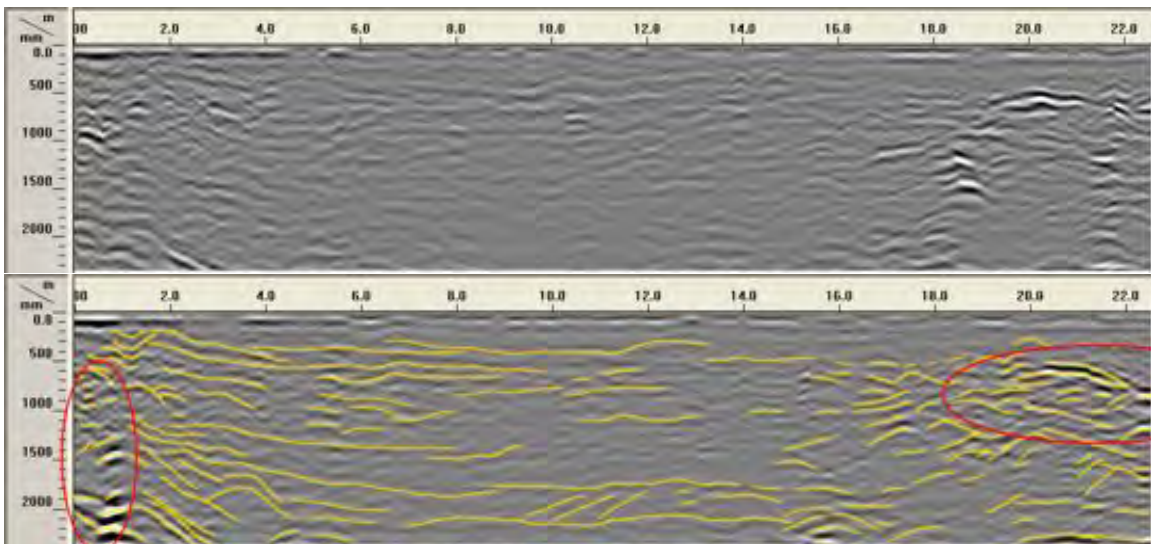
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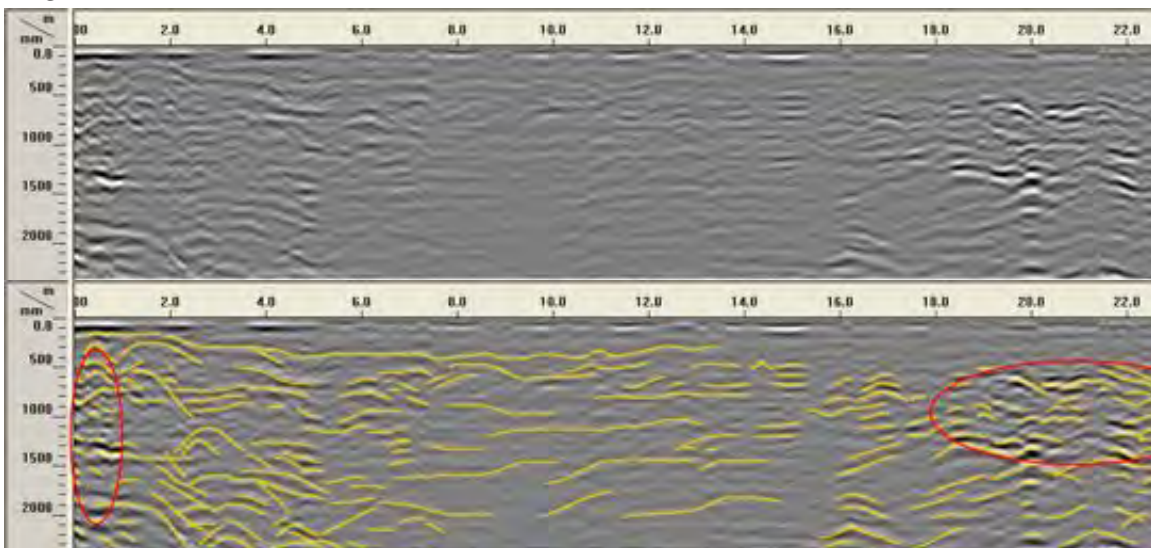
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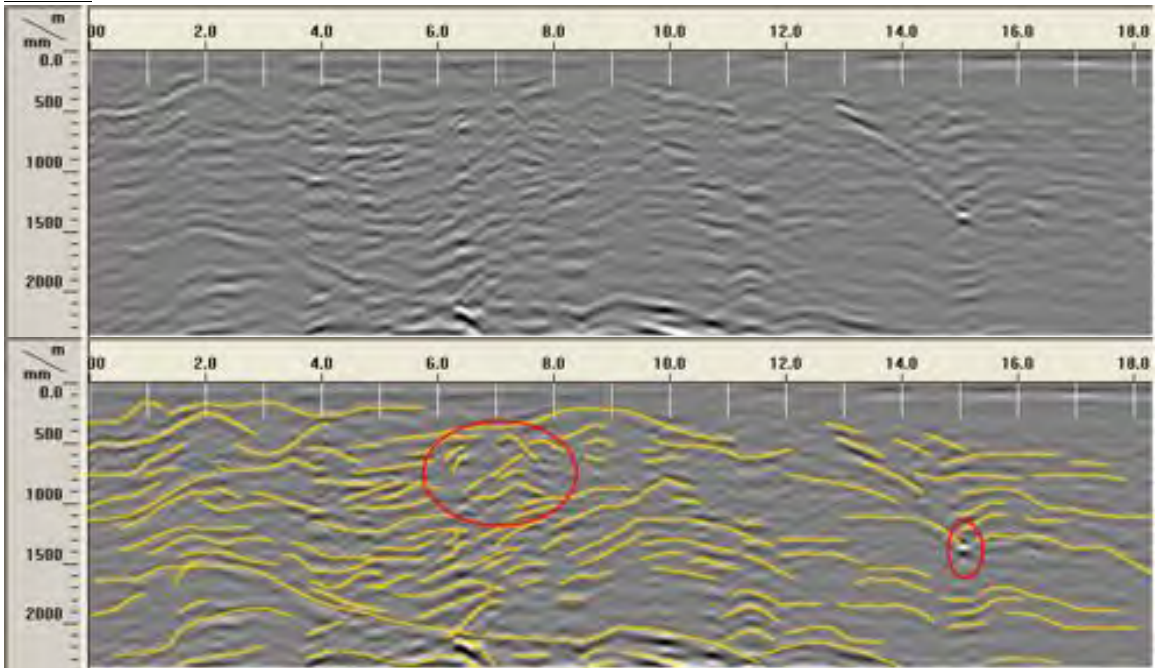
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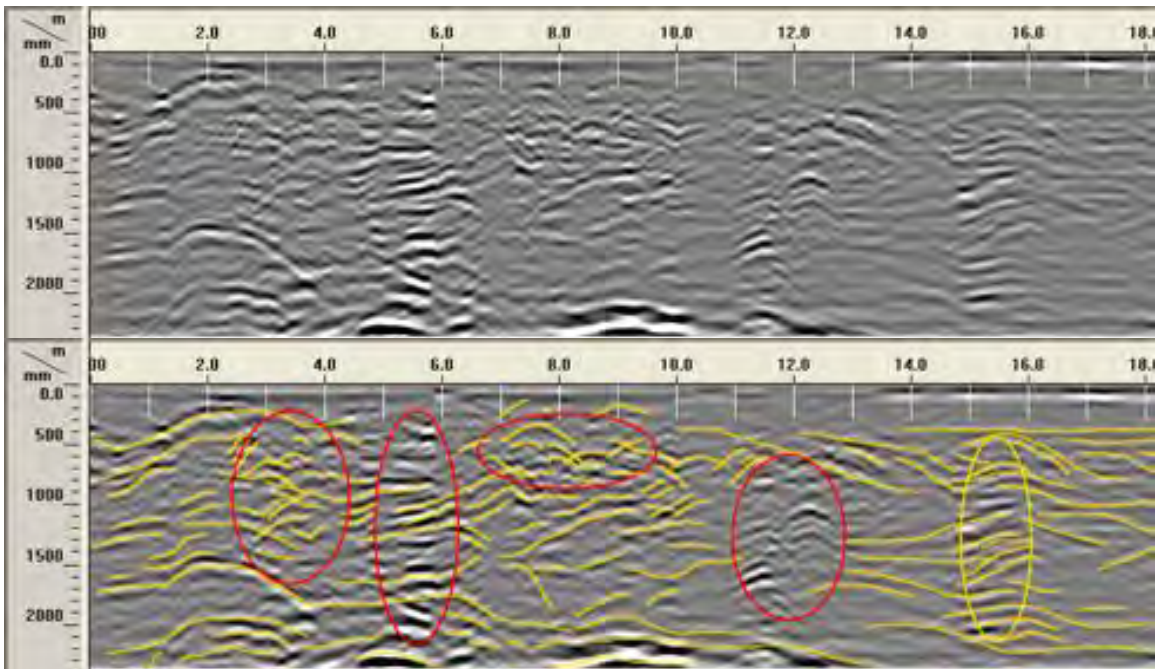
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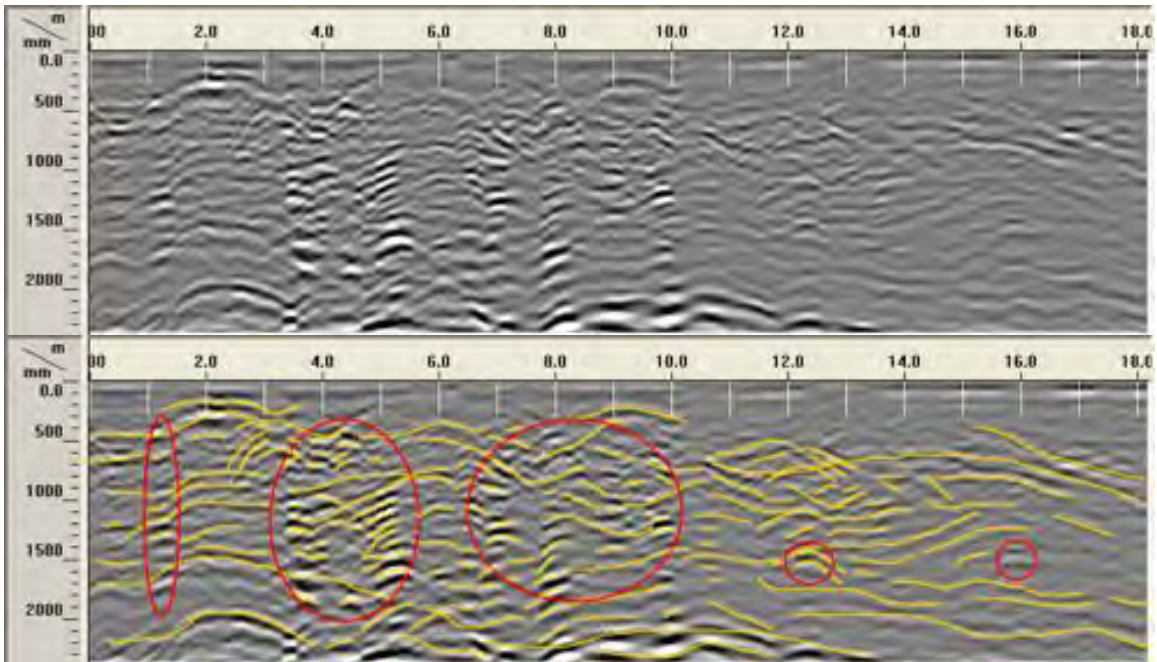
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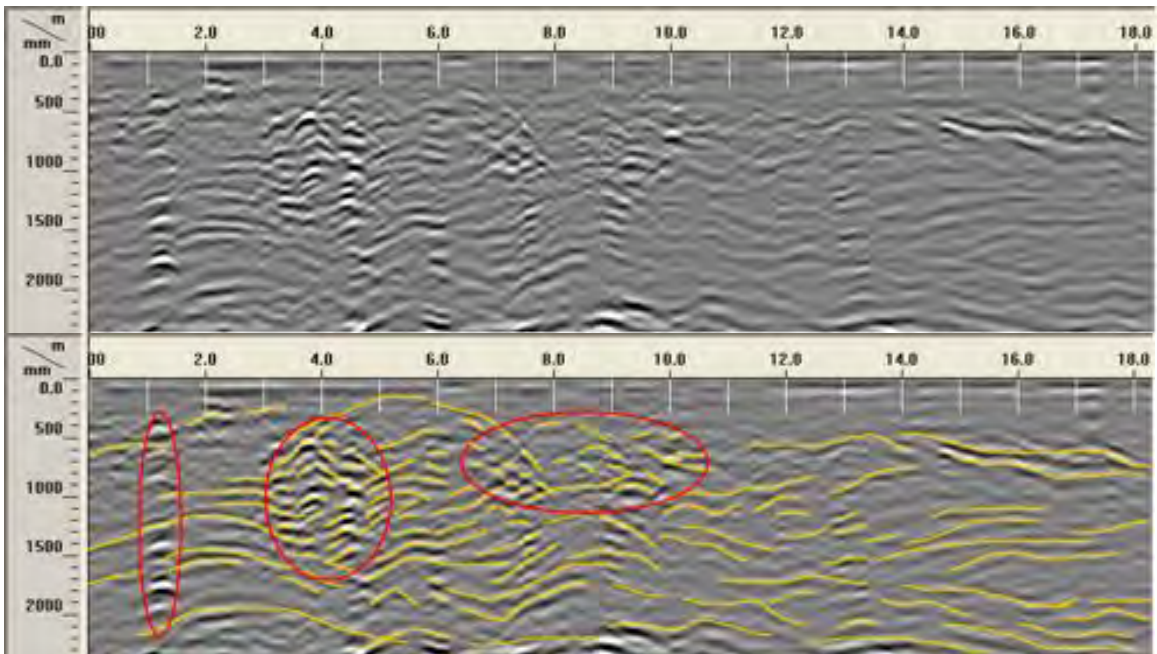
Line 29



Line 30



Line 31



**APPENDIX C: PROTOCOLS REGARDING THE
ACCIDENTAL DISCOVERY OF HUMAN REMAINS**

In the event that human remains or suspected human remains are discovered in working areas the contractor must:

- Immediately stop construction and notify the Project Archaeologist and Site Supervisor;
- Cover exposed bone with plastic sheeting, blanket or some other clean cover;
- Do not cover any finds with fill;
- Ensure that site security is immediately established to carry through until the nature of remains and/or location are determined.

The Project Archaeologist will then notify the appropriate people (these may include the local detachment of RCMP and the Office of the Medical Examiner, CCH, and representatives of KMKNO). If the remains are confirmed to be of an archaeological nature then negotiations will follow to determine how the remains will be handled.

Note that if remains are discovered during construction excavations, in the box of a truck or in an excavation bucket for example, then the excavated material must be carefully placed on the ground, in a secure area for inspection by the Project Archaeologist. If the detected material is determined or suspected to be human remains, the entire contents of the bucket must be sifted through 1/4 inch mesh, as per standard archaeological practice. Further excavation at the site of discovery must cease immediately until the Project Archaeologist can determine if additional remains exist at the site.

Discovery of Human Remains that are of Modern Origin

If the remains are human, and are determined to be of recent origin, the RCMP and Office of the Medical Examiner will assume responsibility for the remains.

Guidelines for the Archaeological Handling and Treatment of Human Remains

Onsite management strategies for the discovery of human remains will require consultation with CCH and other representatives (Mi'kmaq, Afro-Canadian community, etc), as appropriate. One of the following two strategies may be followed:

- The remains are to be left undisturbed in their original location where possible. If additional remains are suspected to be present, a program of delineation is required through archaeological techniques if the project is expected to further impact on the area. Once delineated, an impact-exclusion zone can be established and partial project redesign may be necessary.
- If the remains must be removed or have been disturbed, salvage or emergency excavation to remove the remains for reburial by the local community or First Nations (depending upon the origin of the remains) may be required.

The following is a list of guidelines that must be adhered to by all archaeologists responsible for the management, handling, and treatment of human remains, whether they are of Euro-Canadian or First Nations origin:

- Any natural elements of the human body including bones (whether partial or complete), teeth (partial or complete), hair, and nails are to be treated as human remains;
- Rubber, latex, or cotton gloves must be worn when handling human remains, including at initial discovery in the soil or screen;
- Remains or suspected remains must be packaged in acid-free paper and placed in a secure container with full provenience noted.
- Once the remains or suspected remains have been removed from the site (if necessary) they are to be carefully stored in a locked laboratory or office until plans for reburial or storage can be made.

It is important to note that human remains are not accepted for curation by the Nova Scotia Museum as they do not constitute archaeological or artifactual remains.

Human Remains Discovered that are not of Modern Origin and First Nation

In the case of First Nations human remains, bodies may have been cremated and consequently, skeletal material is typically more fragmented and modified by the burning process. These *cremains* may be more difficult to identify by the untrained eye. First Nations burials may also be identifiable by the presence of red ochre, a naturally-occurring mineral pigment that was often used in First Nations ritual burial practices. The following are a list of guidelines that must be adhered to by all archaeologists responsible for the management, handling, and treatment of human remains if they are suspected to be of First Nations origin:

- Representatives of KMKNO are to be contacted to arrange for a culturally-appropriate container as well as traditional medicines and herbs to be supplied for the storage of the remains. In the interim, the remains must be stored in the same manner as those not suspected to be of First Nations origin.
- Representatives of KMKNO are to be contacted immediately to perform the necessary ceremonial rites (i.e. smudging of the site, the remains, the container for the remains and the person responsible for care of the remains, and ensure a culturally appropriate delegate to care for the remains; as well as any other ceremonial rites First Nations representatives may deem appropriate).
- Immediate and continual consultation with KMKNO will be established regarding their treatment, handling, storage, and ultimate destination which may differ from the measures applied to non-First Nations individuals' remains.
- Any testing of the material, where the remains are determined or suspected to be of First Nations' individuals' origin must be planned with the support and approval of the appropriate First Nation representative, such as KMKNO on behalf of the Mi'kmaq of Nova Scotia.