

**HALIFAX ARMOURY RESTORATION  
ARCHAEOLOGICAL MONITORING  
HALIFAX REGIONAL MUNICIPALITY**

**FINAL REPORT**

Submitted to:  
**Defence Constuction Canada**  
and  
**Nova Scotia's Heritage Division**

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March 2012



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**HALIFAX ARMOURY RESTORATION  
ARCHAEOLOGICAL MONITORING  
HALIFAX REGIONAL MUNICIPALITY**

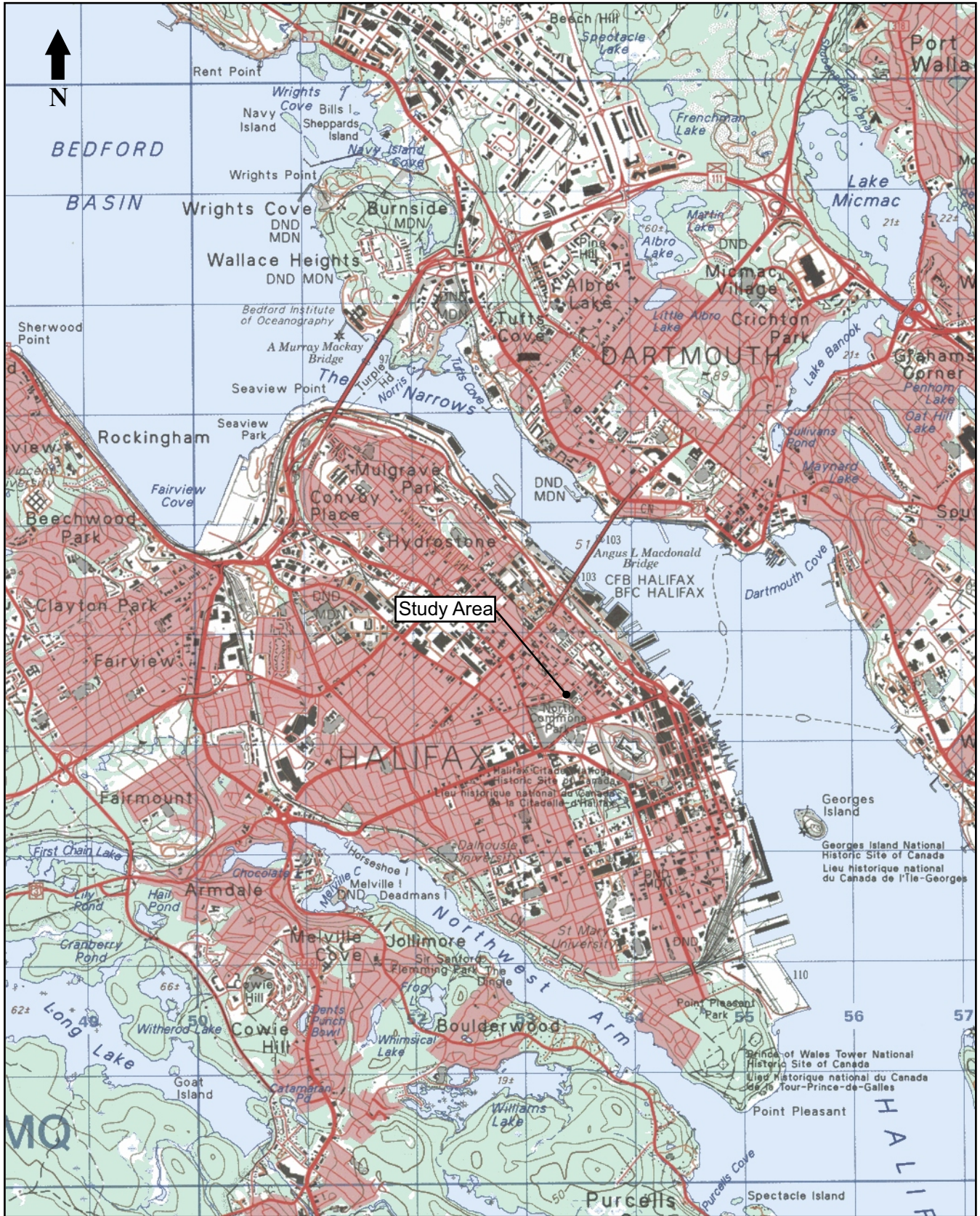
**1.0 INTRODUCTION**

The Halifax Armoury is a masonry building constructed for the Canadian Department of Militia and Defence, now the Department of National Defence (DND), in the late nineteenth century. The building, now a National Historic Site, is still owned and operated by DND. Currently, the exterior masonry, windows, roof and other portions of the structure require repair and restoration. To facilitate restoration of the building's foundation, a trench was to be mechanically excavated immediately adjacent to, and surrounding, the entire structure. Since the trench was to be excavated within a National Historic Site, specifications for the project required that a qualified archaeologist monitor the excavation and address any archaeological resources encountered during the course of the excavation. As a consequence of these archaeological requirements, Cultural Resource Management (CRM) Group was retained through Dillon Consulting Limited to undertake archaeological monitoring during all mechanical excavations.

The archaeological monitoring was undertaken by CRM Group Archaeological Steve Garcin with technical supervision provided by W. Bruce Stewart. The monitoring project was conducted according to the terms of Heritage Research Permit A2011NS23 (Category 'C'), issued to Stewart by the Heritage Division. Since a significant portion of the perimeter trench was to be excavated on municipal rather than federal lands, a provincial heritage research permit was required. This report describes the study, presents its results and offers resource management recommendations.

## **2.0 STUDY AREA**

The Halifax Armoury property is located in central Halifax and occupies a small city block situated immediately northeast of the Halifax Common (*Figure 1*). The property is bounded on the north by Cunard Street, on the east by Maynard Street, on the south by Armoury Place and on the west by North Park Street (*Figure 2*). The Armoury itself, an imposing structure of sandstone and granite, occupies most of the property. The refurbishment activities involved the mechanical excavation of a trench surrounding the entire structure in order to provide access to the foundation of the building (*Figure 3*).



	<p><i>Approximate Study Area</i></p>	<p><b>Figure 1</b></p>
	<p>HALIFAX ARMOURY RESTORATION ARCHAEOLOGICAL MONITORING HALIFAX REGIONAL MUNICIPALITY</p>	<p>March 2012</p>
		<p>Scale 1:50 000</p>



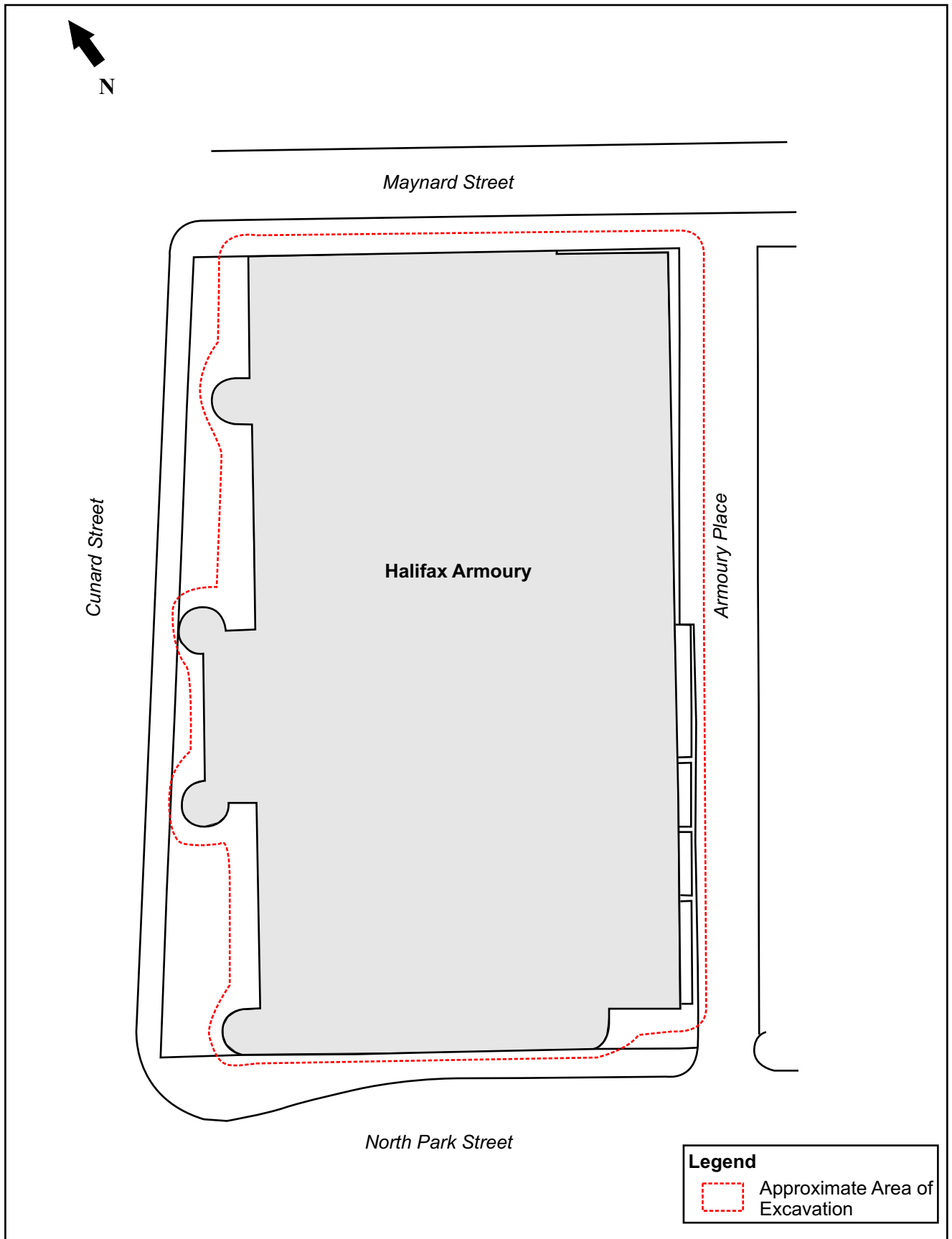
*Study Area*

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*Figure 2*

March 2012

Scale 1:2200



**Legend**  
 [Red dashed line] Approximate Area of Excavation

	<i>Detailed Study Area</i>		<i>Figure 3</i>
	HALIFAX ARMOURY RESTORATION ARCHAEOLOGICAL MONITORING HALIFAX REGIONAL MUNICIPALITY		March 2012
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### 3.0 Methodology

In accordance with project specifications, CRM Group was retained in order to undertake archaeological monitoring of excavations associated with the program of exterior maintenance at the Halifax Armoury National Historic Site. CRM Group developed a work plan consisting of the following components: the review of relevant historic documentation to identify potential areas of archaeological sensitivity; archaeological monitoring during mechanical excavation; and, the preparation of a report summarizing the results of the background research and archaeological monitoring.

#### 3.1 Background Review

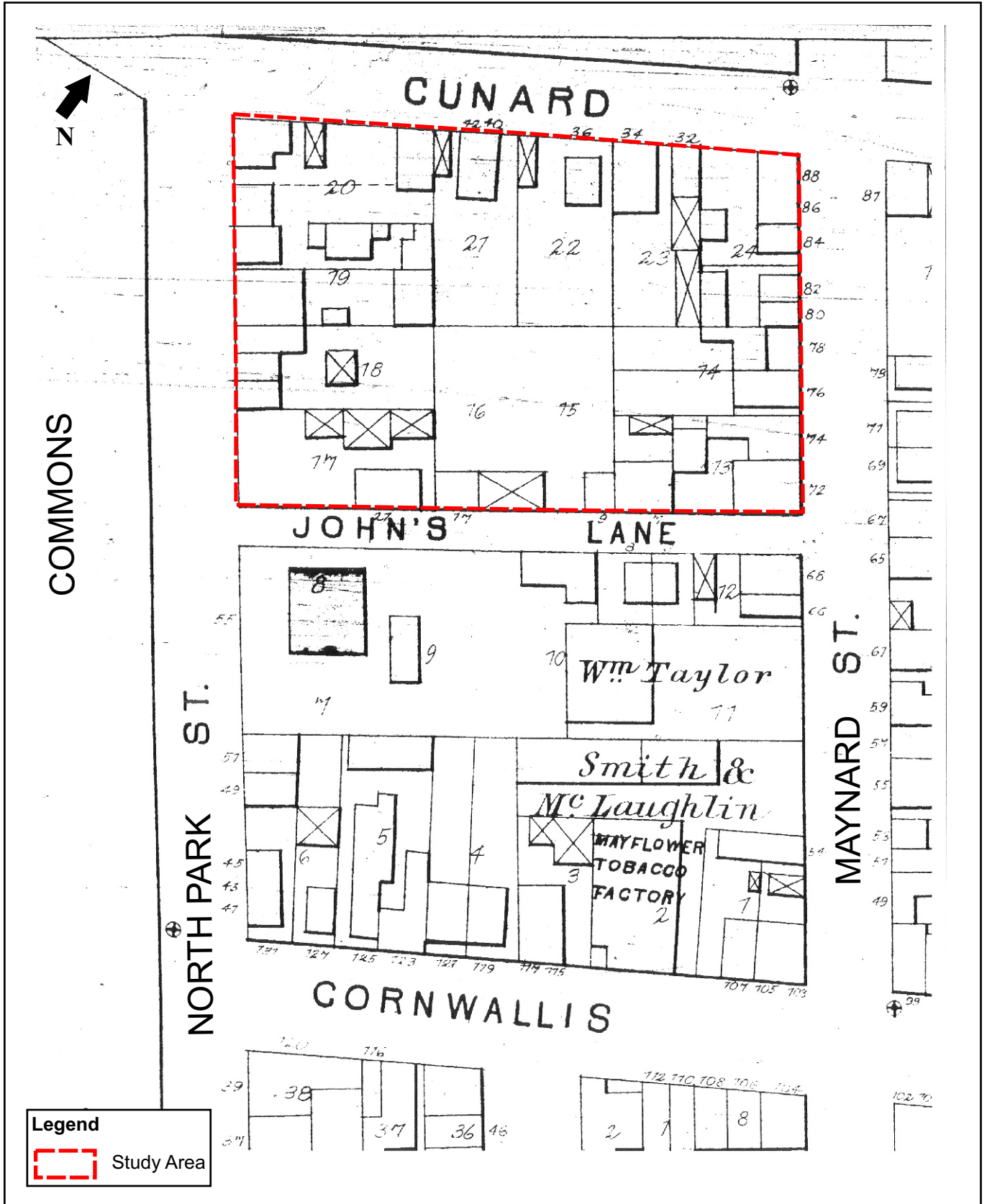
The following discussion is based on background research previously compiled by CRM Group for Heritage Research Permits A2009NS93 and A2010NS43 and details the cultural setting of the study area. The cursory background study was intended to provide a framework for the evaluation of archaeological potential and the initial interpretation of any resources encountered during the archaeological monitoring.

The Halifax Armoury building is located in Halifax's North End. Although, the northern limit of the original settlement was located in the vicinity of the existing Cogswell Interchange, the north suburbs were laid out shortly after Halifax was founded in 1749 (Erickson 2004: viii). Settlement of the north suburbs began in the mid-eighteenth century as Foreign Protestants occupied areas along Brunswick Street and Gottingen Street, east of the study area. Further waves of settlers arrived in Halifax during and immediately following the American Revolution and the War of 1812. By the mid-nineteenth century, the north suburbs were densely populated and developed (Erickson 2004: xii).

The earliest available map that depicts the study area in detail is the A.F. Church map of 1865. Although the study area is shown to have structures lining all four streets that define the block, the illustration is neither sufficiently detailed nor adequately scaled to determine the nature of the buildings or their precise locations (Church 1865). A more detailed insurance map from 1878 identifies not only the street frontage structures, but outbuildings as well (Hopkins 1878). The 1878 map shows the city block as divided into a number of lots, most of which are extensively developed. None of the structures are identified by name (**Figure 4**). As commercial buildings tend to be identified on insurance mapping, it is assumed that the unidentified buildings represent domestic residences. In 1894, the Canadian Department of Militia and Defence expropriated the entire city block for the purpose of constructing a new militia headquarters and drill hall (Erickson 2004: 48).

Drill halls, or armouries, assumed their present role during the 1860s, partially in response to threats posed by the Fenian Raids. The threat of invasion, coupled with Great Britain's desire to shift some of the responsibilities of defence to the colonies, led to the creation of volunteer colonial militias. Drill, an important component to the training of soldiers (volunteer or otherwise), required a large space. As a result, a network of drill halls and armouries began to expand across the country (Wright 1997: 47).





Hopkins 1878 Map

Figure 4

HALIFAX ARMOURY RESTORATION  
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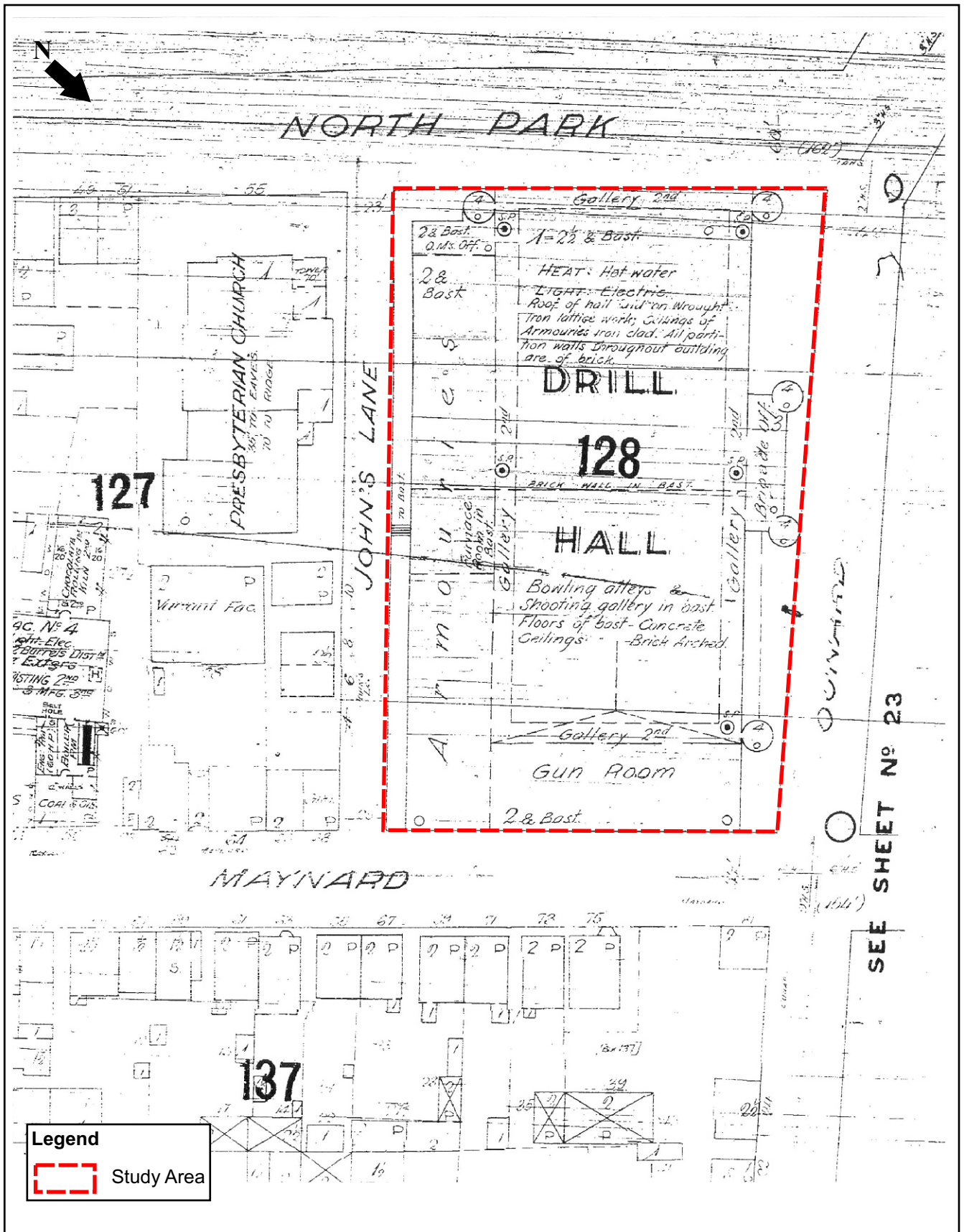
In 1881, Adolphe Caron was appointed minister of the Department of Militia and Defence. He quickly prepared a report on the condition of militia structures in Canada, noting that of the 127 buildings owned by the department, only four were constructed of stone and/or brick, and that the remaining 123, constructed of wood, were dilapidated (Wright 1997: 47). Caron called for new facilities to be built across the country. At the time, construction of drill halls and armouries was the responsibility of the Department of Public Works, however Caron argued for, and received, control of this area of construction in 1884 (Wright 1997: 49). Over the next ten years, a large number of armouries and drill halls were constructed under the direction of the Department of Militia and Defence.


In 1891, the responsibility for construction of drill halls and armouries was transferred back to the Department of Public Works. The next few years saw only three armouries constructed, however, two of them, one in Toronto and one in Halifax, had a profound impact on future drill hall designs in Canada (Wright 1997: 49). The Toronto and Halifax armouries were substantially larger than earlier drill halls and were the first to employ a modern metal truss system that permitted far greater spans than had been previously possible. They also signaled a transition in the role of armouries. They were no longer simply places to store weapons and provide a sheltered parade square, but became important military and social institutions within their respective communities (Wright 1997: 49).

Construction of the Halifax Armoury began in 1895 and resulted in the demolition of all existing buildings within the block (as identified on **Figure 4**). Designed by Thomas Fuller, Chief Architect of the Department of Public Works, the building was completed and officially opened in 1899 (**Figure 5**). Fuller was trained in England and spent much of his time designing public and institutional buildings in Britain and the Caribbean. He arrived in Canada in 1857 and joined a Toronto-based firm, where he was commissioned to design the Parliament Buildings in Ottawa. The original buildings were completed in 1866, however only the library and departmental blocks survived a fire in 1916 (Thomas 1978). Following a brief period in the northeastern United States, Fuller was appointed Chief Architect of the Department of Public Works in 1881 and during his tenure was responsible for approximately 140 federal structures (Thomas 1978).

The Armoury was built in a castellated architectural style. The style is often regarded as a 'Richardsonian interpretation of French Romanesque' (HSMBC 1996: 2). The wide open interior space was made possible by the innovative use of full length, triangular steel, Fink trusses to support the roof. At its opening, it was one of the largest, unobstructed enclosed spaces in the world (HSMBC 1996). Another notable feature of the Halifax Armoury was the use of electricity to light the considerable interior. As a measure of its size, the building featured not only the drill space, but also lecture rooms, a library, an interior rifle range, a billiard room for officers and a bowling alley for soldiers (HSMBC 1996). Once completed, it was a building that the young Canadian military could be proud of when dealing with their Imperial colleagues (**Plate 2**).

During the Second Boer War, the Halifax Armoury was used as headquarters for the South Africa volunteers who, along with their horses, were stationed at the exhibition buildings on



 <p><b>CRM Group</b> Cultural Resource Management Group Ltd.</p>	Goald 1899 Map	Figure 5
	<p>HALIFAX ARMOURY RESTORATION ARCHAEOLOGICAL MONITORING HALIFAX REGIONAL MUNICIPALITY</p>	

Windsor Street (Raddall 1993). The Armoury also became a focus for Canadian troops departing for the two world wars. The large interior space has also hosted numerous community events over the years. The Halifax Armoury, which is still owned and operated by DND, was classified as a Federal Heritage Building in 1991 and designated a National Historic Site in 1996.



**PLATE 1:** View of the Halifax Armoury, *Circa 1900*; facing east.

### **3.2 Archaeological Monitoring**

The goal of the archaeological monitoring was to document any archaeological resources identified during the course of mechanical excavation. Archaeological monitoring consisted of visual inspection of ground disturbance (trenching/excavation), as well as visual inspection of any exposed backdirt. Due to the nature of the trenching, monitoring focused on the inspection of the trench as excavation occurred. In the event that a particularly sensitive or significant deposit was encountered during trenching, CRM Group archaeologists were authorized to halt mechanical excavation in order to sufficiently document the resource.

The results of the archaeological monitoring were documented in field notes, site plans and with photographs.

### **3.3 Previous Monitoring**

Prior to the work described in this report, mechanical excavation and associated archaeological monitoring was conducted on two separate occasions (2009 and 2010) in preparation for the restoration work on the Armoury building. The archaeological work that took place in 2009 consisted of the monitoring of two mechanically excavated test pits on either side of the northwest corner of the building in order to assess the condition of the building's foundation. No intact features were encountered during the excavation and a total of 88 artifacts were recovered. The assemblage was comprised of ceramic, glass, and faunal materials and is representative of a late nineteenth century domestic context (Kelman 2009).

Following the 2009 archaeological monitoring, an additional eight mechanical test pits were excavated in 2010 around the perimeter of the building to assess existing soil conditions. No intact features were encountered and a total of 33 artifacts were recovered during the excavation of the test pits. The artifact assemblage was comprised primarily of ceramics with some smoking related objects as well. As was the case during the 2009 monitoring, the artifacts were consistent with a late nineteenth century context. (Beanlands 2010).

## 4.0 Results

Archaeological monitoring of the Halifax Armoury commenced on March 30, 2011 with the initiation of mechanical excavation around the foundation of the building. Due to safety concerns, only a certain amount of excavated trench could be opened at one time. Therefore, the excavation and monitoring occurred in stages over a period of approximately eight months.

Visual inspection of the excavation process aimed to identify any archaeological resources, such as significant artifacts or intact structural features that may have been present. Whenever possible, visual inspection of the excavated backdirt was also conducted. However, due to space limitations within the narrow study area, the backdirt was often bailed directly into a waiting truck and hauled off site making visual assessment impossible.

No intact structural features were observed during the archaeological monitoring and a total of 212 artifacts were recovered. The artifact assemblage is comprised of 149 ceramic, 39 glass, 14 smoking related, nine metallic, and one faunal artifact. The artifact assemblage is indicative of a nineteenth century domestic context and may be associated with the structures that were in the vicinity prior to the Armoury's construction, as indicated on the 1878 insurance map (**Figure 4**).

The ceramic assemblage covers a wide range of types and styles including coarse red earthenware, ironstones, porcelain, fragments of stoneware jugs, yellowware, and refined white earthenware (**Plate 2**). By far, the dominant ceramic type collected was refined white earthenware, which was present in various styles of decoration such as banded, flow blue, hand-painted, shell edged, sponged and transfer printed. These ceramic types were available for most of the nineteenth and into the twentieth century (Miller 2000; Burke 2001).

The 39 glass artifacts were comprised of fragments and complete bottle specimens of various colours (clear, blue-green, dark green, and amber), window pane glass, and a glass insulator. The bottles ranged in styles from a small moulded bottle (a milk jug) to a more modern Pepsi bottle. Of the complete bottles, two exhibited embossed writing on the sides. The first reads, "JOHN NASH & CO. HALIFAX N.S." which was active between 1856-1885, while the second bottle reads "W.H. DONOVAN HALIFAX", which dates to approximately 1895-1914 (Vinneau 1969:36).

Of the 14 smoking related artifacts, there were six pipe bowls and 8 pipe stems (**Plates 3 & 4**). Of the recovered pipe bowls, three exhibit some form of decoration. Two of the pipe bowls are plain TD tobacco pipes (**Plate 3b & c**), which remained popular into the late nineteenth century (Kenyon 2008). The remaining pipe bowl exhibits etching and the words "Home Rule" on the bowl (**Plates 3a & 4**). These pipes are related to the "Home Rule" movement, which was



**PLATE 2:** Select ceramic artifacts collected during archaeological monitoring.



**PLATE 3:** Select smoking-related artifacts collected during archaeological monitoring.



**PLATE 4:** Detailed view of the “Home Rule” decorated pipe bowl.

established in Ireland in support of an Irish home government and arose in protest to British rule. Numerous styles of “Home Rule” pipes were manufactured and the movement itself enjoyed popularity from the late nineteenth into the twentieth Century (Alexander 1986: 69-75; Sudbury 1980: 26-27).

The metallic artifact assemblage was comprised of a variety of iron objects (cut nail, spikes, hinge, wingnut and wrench) as well as a copper piece in the shape of the number “62”. These numbers are likely related to the 62 Regiment of Foot, which was in Canada following the Crimean War and remained until 1865. However, this predates the construction of the Armoury by three decades so it is unknown how they came to be associated with the building. The most significant metal artifacts uncovered at the Armoury were four nine inch rifled muzzle-loading guns intentionally buried along the north side of the Armoury. See discussion in Section 4.5.





**PLATE 5:** Metallic numbers collected during archaeological monitoring.

#### **4.1 North Side – Cunard St.**

Monitoring of the excavation around the foundation of the building started at the northeast corner, at Cunard and Maynard streets, between the corner of the building and the first turret. The trench was excavated until the base of the foundation was reached and continued westward along the north wall. The soil profile consisted of approximately 20 centimetres of topsoil (light brown sandy silt) over varying depths of pink sandy clay and light grey sandy clay. Beneath this was a deposit of dark brown mixed fill. The fill was present to the base of the excavation, which extended to a maximum depth of approximately 4 metres. Bedrock was encountered along the outer edge and at the base of the trench. It appears that the bedrock was blasted/excavated away to create a large trench during the original construction of the building.

The soil profile was fairly consistent throughout the northern portion of the building consisting mainly of brown mixed fill with angular fragments of ironstone. In certain areas light grey clay fill was encountered. This fill, apparently deposited recently in association with repair work conducted on the downspouts and indicated that the area has been previously disturbed.

The lack of a noticeable builders' trench in this area indicates that the excavation is located entirely within the original builders' trench for the construction of the Armoury. No intact features were observed during the monitoring on the north side of the structure. In total, 134 ceramic, one faunal, 31 glass, 9 metallic, and 14 smoking related artifacts were recovered during the monitoring of the north side of the building. As mentioned previously, the assemblage suggests a mid-to-late nineteenth century domestic context and may relate to the structures that were present before the construction of the Armoury. Some of the artifacts present may also be related to the construction of the Armoury itself, having been discarded by construction workers.



**PLATE 6:** Initiation of excavation at the northeast corner of the Armoury. Facing east.



**PLATE 7:** Excavation adjacent to retaining wall along north side of building. Facing east.

## 4.2 East Side – Maynard St.

Monitoring of the excavation along the east side of the building commenced on April 14, 2011. The excavation started at the northeast corner at Cunard and Maynard streets and continued southward along the east edge of the building.

Removal of the sidewalk revealed an underlying deposit of loose, brown mixed fill. The fill deposit was present throughout the trench to a depth of approximately 2 metres at which point bedrock was encountered. It appears as though, during the original construction of the building, a small trench had been carved into the bedrock along the east side of the building to act as a builders trench. A clay drainage pipe was exposed at the bottom of the trench along the base of the building.

As no visible builders' trench was observed in the overlying soil deposit, it would appear that the excavation was contained entirely within a large builders' trench for the original construction of the Armoury. No intact features were observed as the entire area appeared to have been disturbed during the construction of the building. A single glass bottle, with "JOHN NASH & CO. HALIFAX N.S." embossed on the side, was recovered during monitoring of the excavation along the eastern side of the armoury building. As mentioned above, the "JOHN NASH & CO. HALIFAX N.S." bottles were produced between 1856 and 1885.



**PLATE 8:** Removal of sidewalk along east side of building. Facing south.



**PLATE 9:** Excavation of trench adjacent to bedrock ledge along east side of building. Facing north.

#### **4.3 South Side – Armoury Pl.**

Monitoring of the excavation on the south side of the building commenced on August 18, 2011. The excavation started at the southeast corner at Maynard Street and Armoury Place and continued to the west along the edge of the building and on either side of the retaining wall at the southwest corner. Beneath the thin topsoil layer (approximately 30-40 cm) was a mass of mixed fill similar to that seen on the east side of the building. The brown mixed fill contained angular fragments of ironstone and was observed up to a depth of approximately 3.5 metres.

Bedrock was encountered along the outer edge of the trench and at its base. It appears that the bedrock was blasted/excavated away during the original construction of the building. No recognizable builders' trench was observed as the building appears to be located in a large trench that was carved into the underlying bedrock. A clay drainage pipe was exposed at the base of the trench running the full length of the building.

No intact features were observed during the monitoring on the north side of the building. In total, 11 ceramic and 6 glass artifacts (including a complete blue-green bottle with "W.H. DONOVAN HALIFAX" embossed on the side) were collected from the monitoring on the south side of the building. As mentioned above, these bottles were produced between 1895-1914.



**PLATE 10:** Removal of topsoil along south side of building. Facing west.



**PLATE 11:** Excavation of trench adjacent to bedrock ledge along south side of building. Facing west.

#### 4.4 West Side – North Park St.

Monitoring of the excavation on the west side of the building commenced on October 21, 2011. The excavation started at the southwest corner at Armoury Place and North Park Street and continued to the north along the edge of the building. The narrow trench was located immediately adjacent to the building and measured approximately one metre wide. The sidewalk was removed to reveal approximately 15 cm of crushed gravel overlying mixed brown fill to a depth of approximately 1.5 metres below the surface at which point the base of the foundation was encountered.

No intact features were observed during the monitoring on the west side of the Armoury. In total, four ceramic fragments (three ironstone and one vitrified) and one complete blue-green bottle were recovered during trenching at the northwest corner of the building.



**PLATE 12:** Excavated trench along west side of building. Facing south.

#### 4.5 Cannons - RMLs

During the excavation on the north side of the Armoury, a large metallic object was encountered. As excavation continued around the object, it was revealed that this object was a large military gun. Further excavation revealed a total of four guns lying end to end on their sides. All four of the guns are nine inch rifled muzzle-loaders (RML) each measuring approximately 3.9 metres in length and weighing up to 15 tons each (*PLATE 13*).

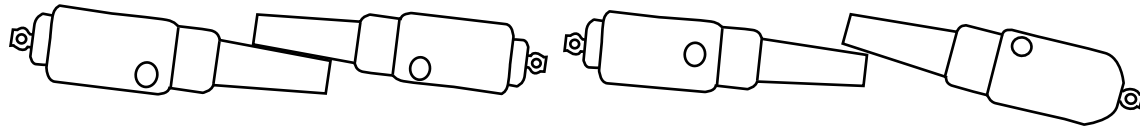


**PLATE 13: Four RMLs being exposed during archaeological monitoring.**

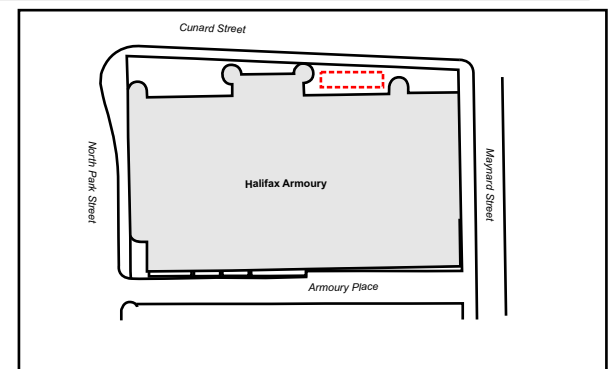
Nine inch rifled muzzle-loading guns were installed in Canadian fortifications as early as the 1860s and, by the 1880s, a total of 38 nine inch guns were located throughout the eight forts defending Halifax Harbour (Canadian Military History Gateway 2011). These guns fired a rifled projectile weighing up to 116 kg at an effective range of 2000 yards (1829 metres). Lugs, located on the side of the projectile, fit into the rifled grooves causing the shell to spiral when it was fired. This spiraling of the shell meant that it would fire straighter, thus increasing the accuracy of the guns. These shells were designed in order to punch through the heavy armour of the new



Cunard Street



Halifax Armoury



*Position of Cannons*  
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*Figure 6*  
March 2012  
Scale 1:100

ironclad warships of the time. The cartridge, loaded with 23 kg of gun powder, could penetrate 9 inches of armour.

The guns were mounted and could be rotated 360 degrees, shifted side-to-side, and could also be raised and lowered in order to adjust the angle of the shot. For efficient firing of the guns, it took 11 men to operate with an effective firing rate of one shell every two and a half minutes (Johnston 1981:38).

Two styles of gun are represented with one gun exhibiting a rounded butt-end while the other three guns have more of a stepped end. The gun with the rounded end (*Figure 6*) appears to be a Mark III, which was produced in 1866-67. This design, called the modified “Fraser” design, eliminated the Armstrong forged breech piece intending to reduce the costs of building the Armstrong design. The other three guns appear to be a Mark IV design introduced in 1869 (Anonymous 1877:93; 277-280). Similar examples of both styles of gun are currently on display at the Halifax Citadel and York Redoubt National Historic Sites (*Plate 14*).



**PLATE 14:** Nine inch RML on display at York Redoubt National Historic Site.

Following an 1879 incident where a RML exploded killing most of the men operating it, a push for the return of breach-loading guns spelled the end of the RML era (Johnston 1981:39). In the case of these four RML guns, perhaps the open trench at the site of the Armoury construction provided a convenient location for their disposal. As each of the four RMLs were laying on their side, it appeared as though the four guns had simply been wheeled up alongside the open excavation and rolled into it.

Exposure of the guns created a safety issue at the site. Removal of the surrounding fill resulted in the possibility that the guns could roll out of position. Initially it was proposed that the guns be secured in the trench and the area backfilled. However, interest in the guns was such that on April 27, 2011 the guns were removed by crane, placed on the back of flat bed trucks and transported off-site for storage and eventual display.



**PLATE 14:** Removal of RMLs from the Armoury site.

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

The archaeological monitoring program at the Halifax Armoury National Historic Site consisted of a cursory review of relevant historic information and on-site archaeological monitoring during mechanical excavation activities.

Based on the results, CRM Group offers the following management recommendations for the overall project:

1. It is recommended that the mechanical excavation carried out at the Halifax Armoury National Historic Site in 2011 be cleared as there are no outstanding archaeological concerns.
2. It is recommended that future maintenance work at the Halifax Armoury National Historic Site that requires any ground disturbance be monitored by a qualified archaeologist.

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