
**MUGGAH CREEK INTERCEPTOR,
HERITAGE RESOURCES
IMPACT ASSESSMENT**

PROJECT NO. NSD15078



PROJECT NO. NSD15078

REPORT TO

CBCL LTD.

ON

MUGGAH CREEK INTERCEPTOR,
HERITAGE RESOURCES IMPACT ASSESSMENT

Jacques Whitford Environmental Limited

3 Spectacle Lake Drive

Dartmouth, NS B3B 1W8

Tel:(902)468-7777

Fax:(902)468-9009

June 8, 2000



TABLE OF CONTENTS

	Page No.
1.0 INTRODUCTION	1
2.0 PROPOSED PROJECT	1
3.0 STUDY AREA	1
4.0 METHODOLOGY	2
4.1 Background and Archival Research	3
4.2 Borehole Interpretation	5
4.3 Visual Reconnaissance	5
4.4 Underwater Heritage Resources	6
5.0 RESOURCE INVENTORY	6
6.0 RESOURCE EVALUATION	7
7.0 IMPACT IDENTIFICATION AND RECOMMENDATIONS	7
8.0 EVALUATION OF RESEARCH	8
9.0 REFERENCES	8
9.1 Literature Cited	8
9.2 Personal Communications	10

LIST OF FIGURES

	After Page
Figure 2.1 Piping Layout	1
Figure 4.1 Church Property Property, Sydney 1787	3
Figure 4.2 Map of Sydney River, 1788	3
Figure 4.3 Portion of Map of Sydney, 1792	3
Figure 4.4 Plan of Military Installations, Sydney, 1794	4
Figure 4.5 Map of Sydney, 1795	4



Figure 4.6	Map of Sydney and Sydney Harbour, 1849	4
Figure 4.7	Detail from A.F. Church Map, 1864	4
Figure 4.8	Map of Sydney A.F. Church, 1864	4
Figure 4.9	Map of Sydney, 1900	4
Figure 4.10	Map of Sydney, 1910	4
Figure 4.11	Natural Soil Levels, Muggah Creek Interceptor Route	5
Figure 5.1	Location of Heritage Resources	6

LIST OF PLATES

After Page

Plate 4.1	Old Steelworkers Hospital	5
Plate 4.2	Bridge Pier Along Rail Line	5
Plate 4.3	Railroad Loading Platform	5
Plate 4.4	1953 Air Photo of Sydney	6

1 INTRODUCTION

As part of the overall Sydney Harbour Clean Up program, the Cape Breton Regional Municipality has proposed to construct a sewer interceptor system in the Muggah Creek area. The proposed sewer line will run along the west side of Muggah Creek through peninsular Sydney, the oldest and most historic area of the city. To ensure that heritage issues were considered, CBCL Limited, the lead consultant for the project, contracted Jacques Whitford Environment Limited (JWEL) to undertake a Heritage Resources Impact Assessment (HRIA) of the study area.

Colin Varley, M.A., Archaeologist and Heritage Planning Consultant, Maritimes Region and Ontario with JWEL, conducted the background research and archaeological reconnaissance of the study area, and prepared the report. A Heritage Research Permit (Archaeology) was requested and granted (A2000NS13), and the field reconnaissance took place on May 26, 2000. The remainder of this report is structured according to guidelines provided by the Nova Scotia Museum (NSM).

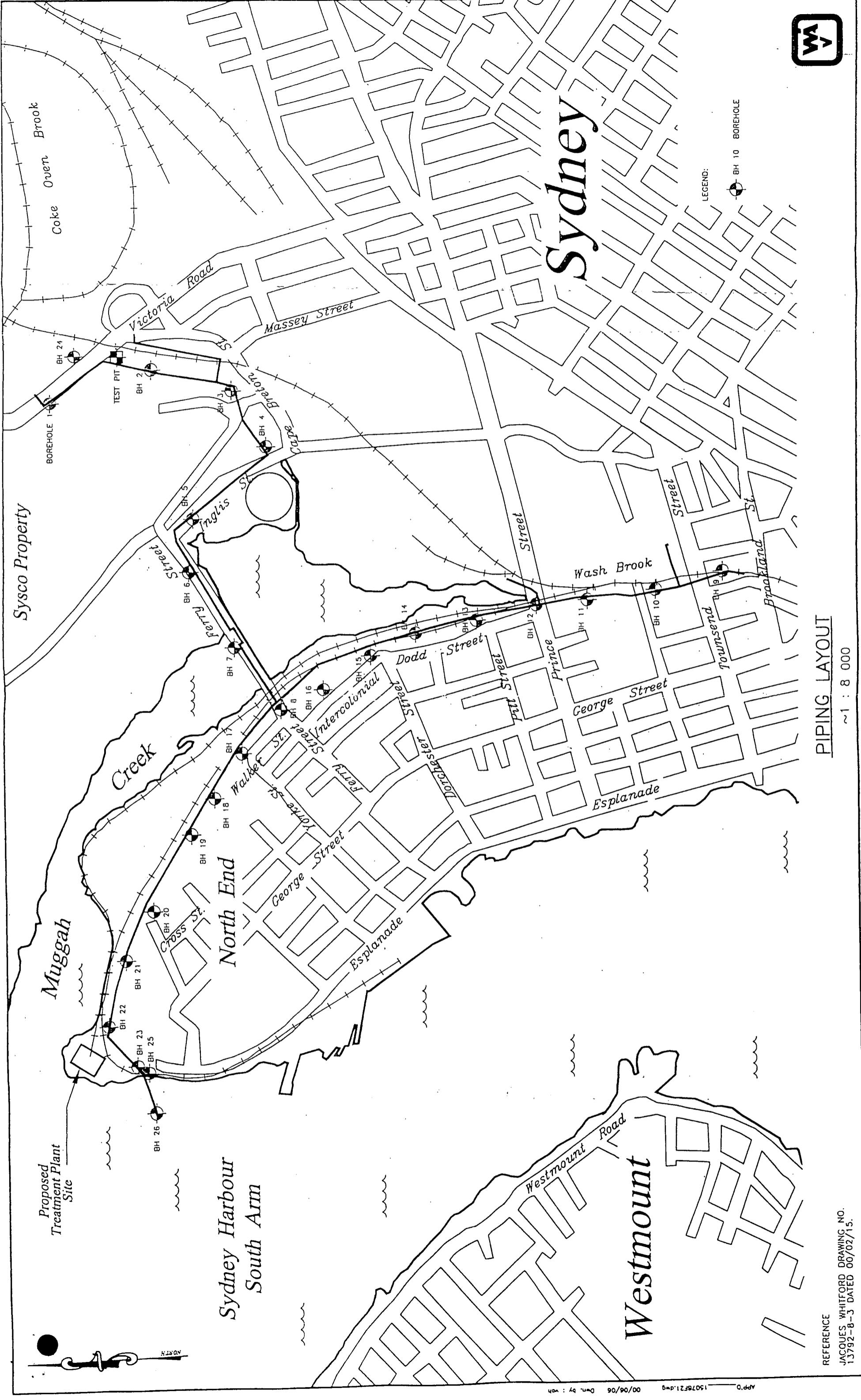
2.0 PROPOSED PROJECT

The Muggah Creek Interceptor sewer is the second phase of the Sydney Harbour Clean Up program. The primary objective of the sewer is to intercept sewer flows from a number of outfalls along Muggah Creek and direct the sewage to an outfall off of Battery Point at the north end of the peninsula. Initially the outfall will discharge raw sewage into the inner harbour. A proposed Sewage Treatment Plant (STP), to be built at Battery Point, will eventually be brought online to further reduce sewage discharge into the harbour (JWEL, 2000).

The sewer is composed of two main branches, the Muggah Creek branch and the SYSCO branch (Figure 2.1). The Muggah Creek Branch begins at Brookland Street and roughly follows the rail line along the east side of the peninsula to its outfall on the west side of Battery Point. The SYSCO branch originates at Victoria Road, follows the SYSCO boundary along Cape Breton and Inglis streets, and crosses Muggah Creek along the Ferry Street Causeway where it meets with the Muggah Creek Branch. The total length of both branches of the interceptor is approximately 4.8 km.

3.0 STUDY AREA

Peninsular Sydney is the oldest part of the modern city, and although there are no registered archaeological sites in the area, it is likely that there was prehistoric use of the peninsula by the Mi'kmaq and their ancestors, due to the high resource base that would have been present. Permanent European settlement of the area began in 1784 on the east side of Muggah Creek (MacKinnon, 1918:5), although the area had likely



PIPING LAYOUT

~1 : 8 000

REFERENCE
 JACQUES WHITFORD DRAWING NO.
 13792-B-3 DATED 00/02/15.

App'D 1507821.dwg 00/06/06 Desn. by: vbn

been utilised by the Spanish to some degree previous to the 18th century, as modern Sydney Harbour was known as Spanish Bay or Spanish River well into the 18th century (Dawson, 1988: 69-71; MacKinnon, 1918:1).

In an effort to attract Loyalist settlement after the American War of Independence Cape Breton was made a separate colony from Nova Scotia, and initial clearing and settlement of the peninsula was begun by a few hundred new settlers and government officials in 1785 (Condon, 1994:189; MacKinnon 1918: 15). The first governor of the colony, J.F.W. DesBarres, drew up official plans for the town (PANS, 1785), although only some portions of that plan were followed (Dawson, 1988:126; Hornsby 1992:25). The settlement of Sydney in the late 18th century was not particularly successful and the population of Sydney dwindled to 121 in 1785 (MacKinnon, 1918:17) and 120 by 1795 (Hornsby, 1992:25). It was only at the turn of the century that the population of Sydney, and the development of the town, took an upturn due to the influx of emigrants from the Scottish Highlands (MacKinnon, 1918: 19). In 1800 the population of Sydney was approximately 200 (Wynn, 1994: 210), and by 1840 had reached 500 (MacKinnon, 1918: 126). Until well into the 19th century the majority of the inhabitants of Sydney lived on the peninsula.

During the 20th century, however, the extensive development of the steel industry in Sydney, and the subsequent growth of the population, has resulted in a much changed physical environment. Much of Muggah Creek has been filled in as a result of industry in the city. This is made evident from the results of the geotechnical borehole examination of the sewer route, which indicated anywhere from 0.6 to 5.8 m of fill on land, and the creation of the Ferry Street Causeway, which has required filling to a depth of nearly 4 m below sea level (JWA, 1999). Clearly this recent alteration to the peninsula masks a great deal of the historic landscape, and has necessitated that the HRIA for this project be based primarily on historic mapping interpretation and a reconnaissance of the route to determine the potential for heritage resources to remain intact below the surface of modern Sydney.

4.0 METHODOLOGY

The assessment of the heritage potential of the study area was based primarily on background and archival research, particularly on historic mapping of Sydney, and to a lesser degree on the visual reconnaissance carried out on May 26, 2000. Given the amount of fill and/or pavement along the sewer route it was not possible to excavate any subsurface archaeological test pits. In the case of potential underwater heritage resources in the area of the sewer outfall and the potential dispersion zone, JWEL contacted an experienced local diver who has conducted dives in the study area for both professional and avocational interests.

4.1 Background and Archival Research

The presence of prehistoric archaeological sites within the study area was checked by examining the Maritime Archaeological Resource Inventory forms at the NSM. There is one historic archaeological site (CaCb 5) documented for peninsular Sydney, at Victoria Park. No other unregistered archaeological materials from the area are known to museum staff (D. Christianson, pers. comm.).

A number of historic maps were located at the Public Archives of Nova Scotia (PANS) and at the Beaton Institute (BI). Other relevant maps were noted in a report on work previously carried out at Victoria Park, south and west of the study area (WGA, 1995). These maps provide glimpses of the development of Sydney over a 123 year period, from 1787 to 1910.

The earliest map or plan that clearly identifies features of heritage interest within the study area is a 1787 plan of church property made by William Cox (Figure 4.1)(BI, 1787). Most interesting on this map is the area at the top of the map which shows an area laid out for a “Burying Ground”. This area appears to be along the east side of the peninsula, within the study area. However, this area is identified in a map the following year (Figure 4.2)(BI, 1788) as being “Swampy, Sunken Land”, and there is no indication that a formal cemetery has been established in the area. Moreover, in subsequent maps of the area, neither the cemetery or the church, as its plot is laid out in the 1787 map, were ever brought to fruition. It is likely that this plan, like that originally drawn up by DesBarres in 1785, was a planning exercise based more on an ideal potential plan rather than impending development. Intriguingly, the plan is countersigned by Alexander Haire, Chief Surveyor, in Sydney on October 15, 1792, suggesting that the plan was still being considered.

The 1788 map (Figure 4.2) shows that the entire east side of the peninsula was a low, wet area, and unsuitable for use at that time. It also clearly shows that the entire north end of the peninsula was reserved for military development, although specific installations were not identified. Also notable is the large pond and extensive marshy area south of the pond at the north end. Further, the shading of the map on the larger plan of the Sydney River suggests that the area of Muggah Creek was marshy, unsuitable either for navigation or for habitation or farming.

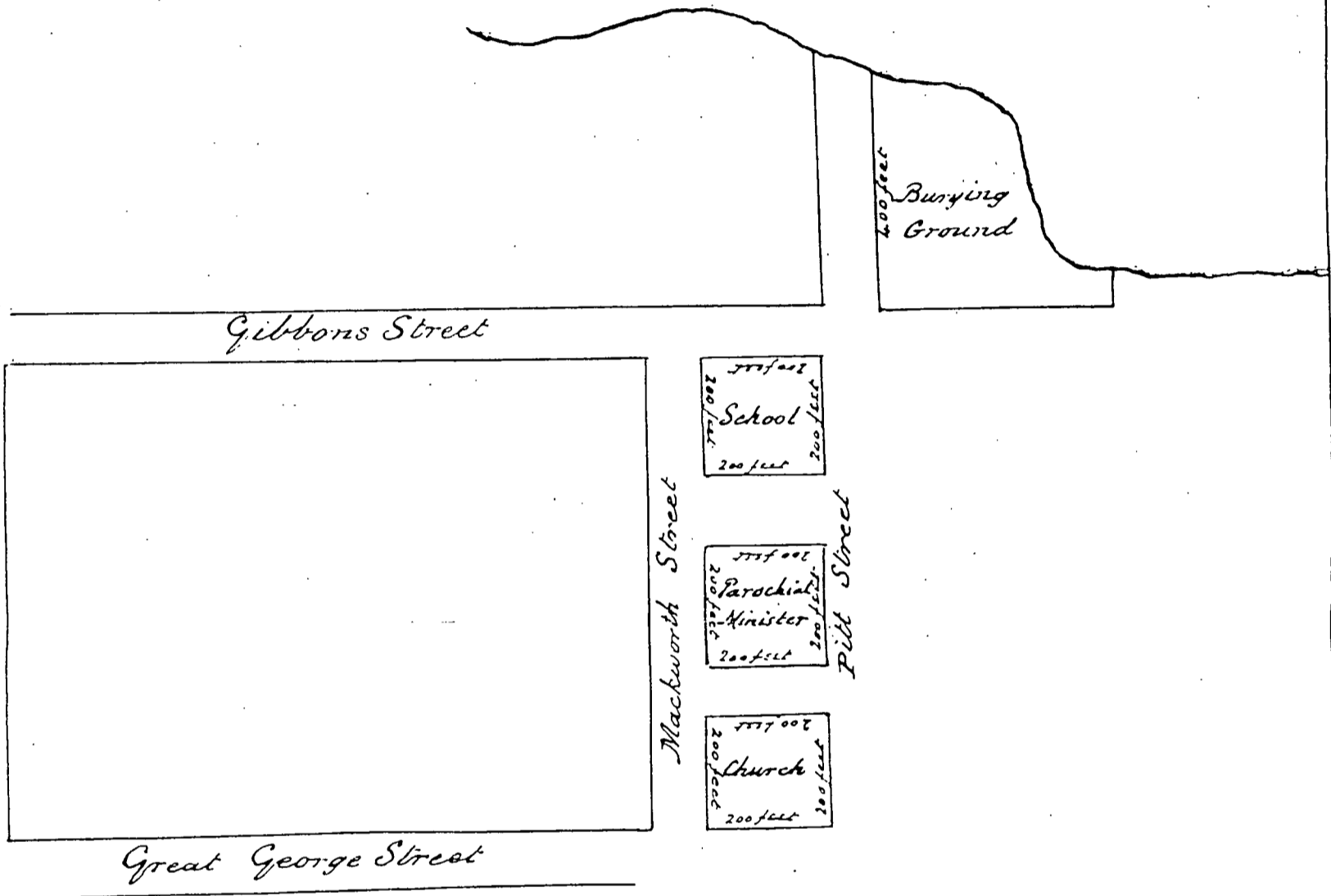
A map dated 1792 of the Spanish River (Sydney Harbour) shows a series of surveyed properties and presumably the locations of buildings along the east shore of Muggah Creek (Figure 4.3)(BI, 1792). In fact, it would appear that three buildings in the southernmost lot would be located near the study area, although at the scale of the map precise location of these buildings is not feasible. Nonetheless, even if there were buildings in this location they would lie outside of the actual route or their remains destroyed by subsequent industrial development.



165

Col. Cor. C. 13.
Vol. 67. p. 573

Endorsed
In Lieu: Gov. Macarthur's No. 12.
of 6th Oct. 1792.
12



I do hereby Certify that the above Plot. is a true Copy of an Official
Return made by Alex: Haire, Chief Surveyor, dated Sydney
8th of Jan: 1787.

Willm: Cox Actg
Surveyor Gen:
of Lands.
(Signed) Alex: Haire. Chief Surveyor.
Sydney 8. January 1787.

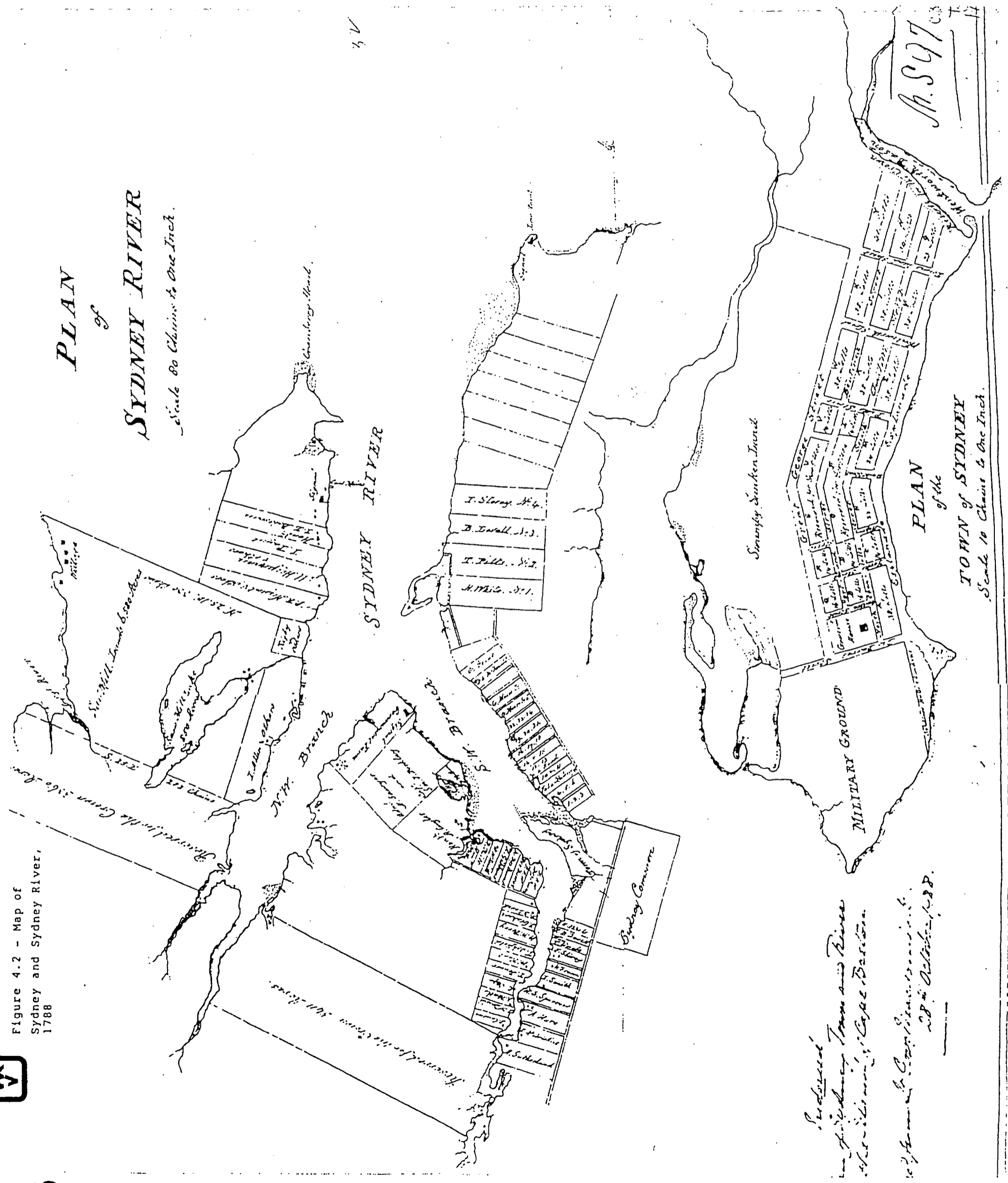
Sydney 15th Oct: 1792.

M. S. 100





Figure 4.2 - Map of Sydney and Sydney River, 1788



PLAN

of SYDNEY RIVER

Scale 10 Chains to One Inch.

SYDNEY RIVER

PLAN

of the TOWN of SYDNEY

Scale 10 Chains to One Inch.

MILITARY GROUND

Sandy Bay Head

Sandy Bay

I. Storey St. 4.
B. Inall St. 3.
T. Falls St. 2.
H. Mill St. 1.

A.S.97

Endorsed
In Decr: Gov: Micromiches No 12
of 6. 14 Decr: 1792
(6.)

C. B. Col. Cor. p. 551
Vol. 67.

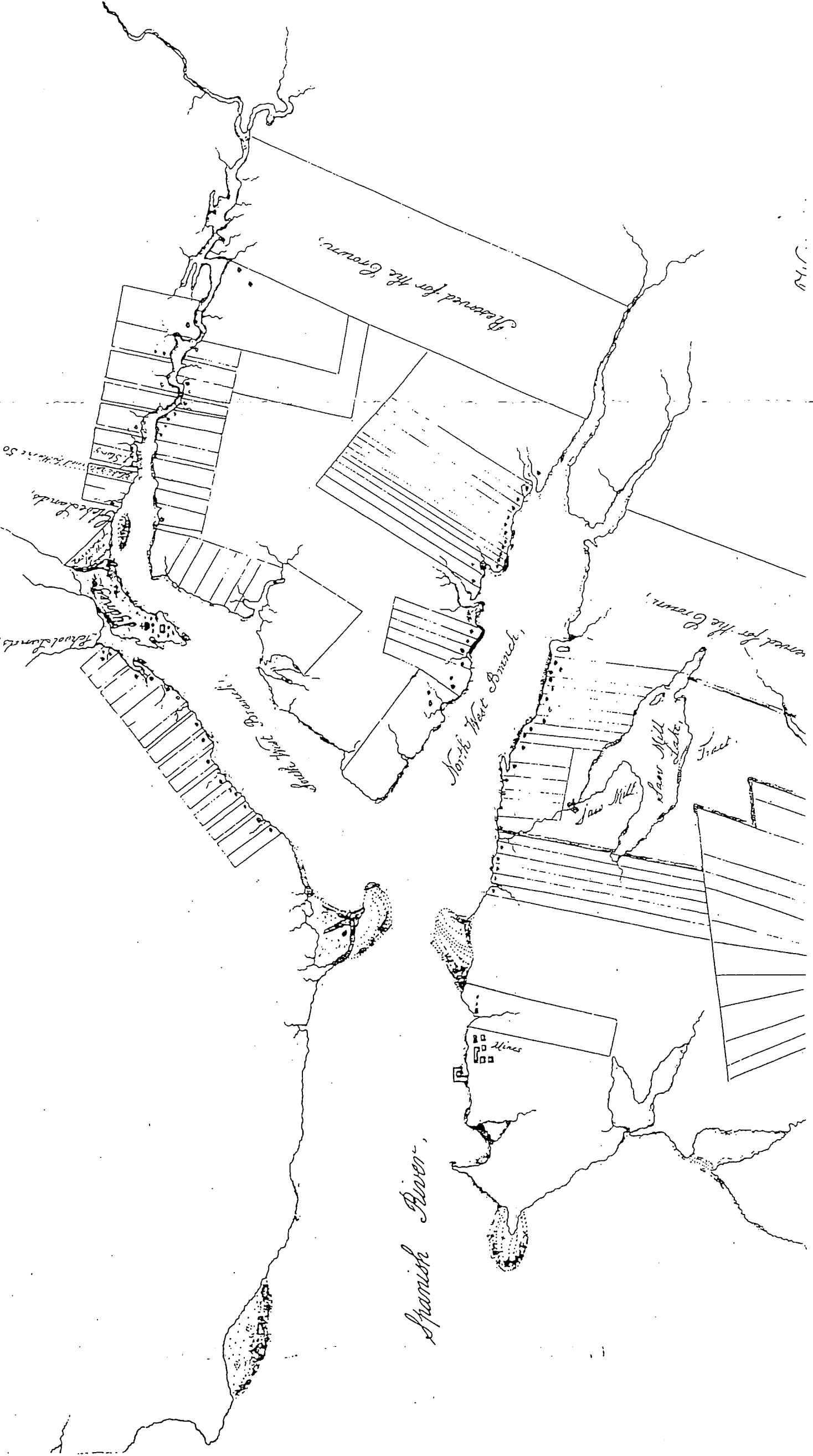


Figure 4.3 - Portion
of Map of Sydney, 1792



As a result of a declaration of war with France in 1793, then Lieutenant-Governor William Macarneck attempted to reinforce the meager defenses of Sydney, and a single gun was installed that year (Moogk, 1985: 132). This development is reflected in a 1794 map (BI, 1794) which shows the defense works in place at Sydney (Figure 4.4). A "Salute Battery" and "Fort Ogilvie", as well as a number of other military buildings, are identified on the west side of the point. All of these installations appear to be well outside of the study area. However, it is interesting to note the extent of the pond and marsh on the east side of the peninsula, through which the sewer is proposed to run.

A much more detailed map from 1795 (Figure 4.5)(BI, 1795) shows a number of interesting features. Near Ferry Street is an isolated building (number 20 in the key) inhabited by a single individual on what must have been a very poor piece of land. Further up the peninsula at the northwest corner of the pond is noted a "Military burying Ground", a site further attested to on an 1838 map of Sydney (WGA, 1995). West of this a "Sod Battery for 4 Guns" (the "Salute Battery" from the previous map), a "Prison", and another "Sod Battery for 6 Guns" (or "Fort Ogilvie" from the previous map) are noted. The burying ground and building # 20 in particular seem to lie very close to the route of the sewer, although both may have been disturbed by railway line development. The sod batteries and prison appear to be well off of the sewer route, south of Park Road (WGA, 1995:4-54).

By 1849 there were significantly more inhabitants and houses in Sydney, although the town remained west of George Street, with essentially no development on the east side (Figure 4.6)(BI, 1849). A house still remained on the east side where building # 20 was identified, although there is no indication of Ferry Street on this map, nor of the military cemetery near the pond.

Fifteen years later, when Ambrose Church (PANS, 1864) published his map of Cape Breton County (Figure 4.7) and the Town of Sydney (Figure 4.8), Ferry Street is again depicted on the map, and C. Muggah is noted as having possession of the Ferry Street house. Also new to Sydney is the Marine Hospital near Sand Pond in the north end, and the Cape Breton Companies rail line which ran from Clyde Mines and Glace Bay to the coal shipping pier in Sydney (Figure 4.8). A number of homes are identified along the Victoria Road (Figure 4.7), although none appear to be within the study area.

By the turn of the 20th century significant filling and development of the east side of the peninsula had taken place (Figure 4.9)(BI, 1900), as well as on the east side of Muggah Creek, including the Ferry Street Causeway, where the Dominion Coal and Steel Company had begun operations in 1898 (Johnston, 1985: 90) and new rail lines had been added in the 1870's (Millward, 1985: 195), one of which ran up to the west side of Battery Point, past the still extant Marine Hospital, but potentially across the old military cemetery. An updated and larger scale version of that map (Figure 4.10)(BI, 1910) shows clearly the Intercolonial Railway (I.C.R.) station along Dodd Street, as well as a building on the east side of the Ferry Street causeway, used as a hospital for injured steelworkers. The Marine Hospital was still operational. It is clear that much of the original face of Sydney, and the peninsula, had changed relatively quickly.

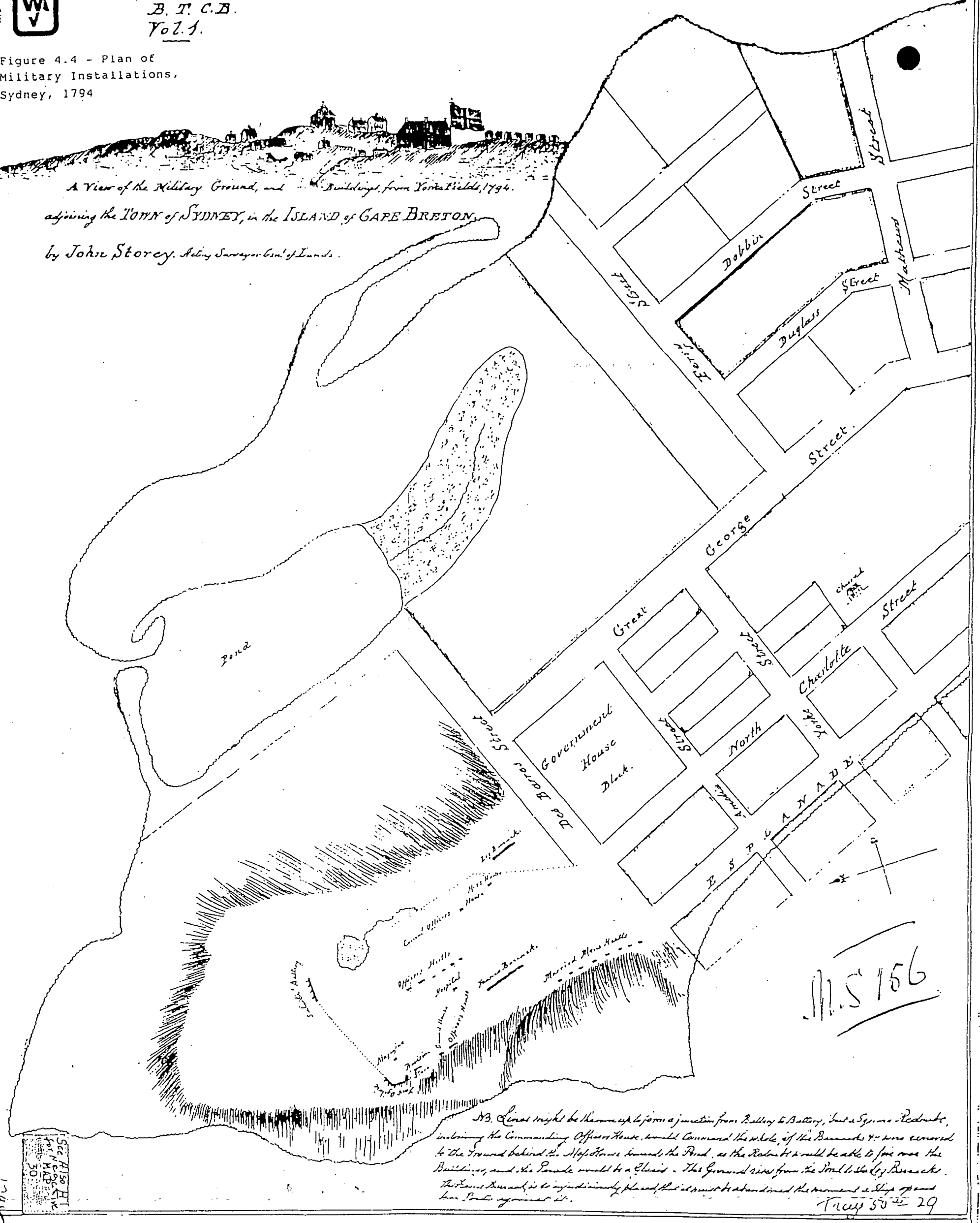




Figure 4.4 - Plan of
Military Installations,
Sydney, 1794



A View of the Military Ground, and Buildings, from York's Field, 1794.
adjoining the TOWN of SYDNEY, in the ISLAND of CAPE BRETON,
by John Storey, Acting Surveyor Genl of Islands.



M.S. 156

MS. Lines might be thrown up to form a junction from Battery to Battery, but a Square Pedestal, including the Commanding Officers House, would command the whole, if the Barracks &c. were removed to the ground behind the Magazine toward the Pond, as the Pedestal could be able to fire over the Buildings, and the Parade would be a Cheis. The Ground view from the Pond to the Barracks. This House should be judiciously placed that it must be abandoned the moment a Ship of war has been captured at.

Tracy 50th 29

See also H.T. for H.A.D. 30

Col. Cor. C.B.
Vol. 70. p. 497.

Endorsed - Map of the Town of Sydney
In Mr. Miller's of the 10th of July 1795

Almsly presented to his Grace the Duke of Portland, His Majesty's Principal Secretary of State for the Home Department, by his Grace's most obedient and humble servant, James Miller

Sydney July 10th 1795

Plan of Sydney the Capital of the Island of Cape Breton

List of the present Inhabitants of the Town.

No.	Name	Rank	Profession
1	Mr. James Bannister	Major	Commandant
2	Mr. James Bannister	Major	Commandant
3	Mr. James Bannister	Major	Commandant
4	Mr. James Bannister	Major	Commandant
5	Mr. James Bannister	Major	Commandant
6	Mr. James Bannister	Major	Commandant
7	Mr. James Bannister	Major	Commandant
8	Mr. James Bannister	Major	Commandant
9	Mr. James Bannister	Major	Commandant
10	Mr. James Bannister	Major	Commandant
11	Mr. James Bannister	Major	Commandant
12	Mr. James Bannister	Major	Commandant
13	Mr. James Bannister	Major	Commandant
14	Mr. James Bannister	Major	Commandant
15	Mr. James Bannister	Major	Commandant
16	Mr. James Bannister	Major	Commandant
17	Mr. James Bannister	Major	Commandant
18	Mr. James Bannister	Major	Commandant
19	Mr. James Bannister	Major	Commandant
20	Mr. James Bannister	Major	Commandant
21	Mr. James Bannister	Major	Commandant
22	Mr. James Bannister	Major	Commandant
23	Mr. James Bannister	Major	Commandant
24	Mr. James Bannister	Major	Commandant
25	Mr. James Bannister	Major	Commandant
26	Mr. James Bannister	Major	Commandant
27	Mr. James Bannister	Major	Commandant
28	Mr. James Bannister	Major	Commandant
29	Mr. James Bannister	Major	Commandant
30	Mr. James Bannister	Major	Commandant

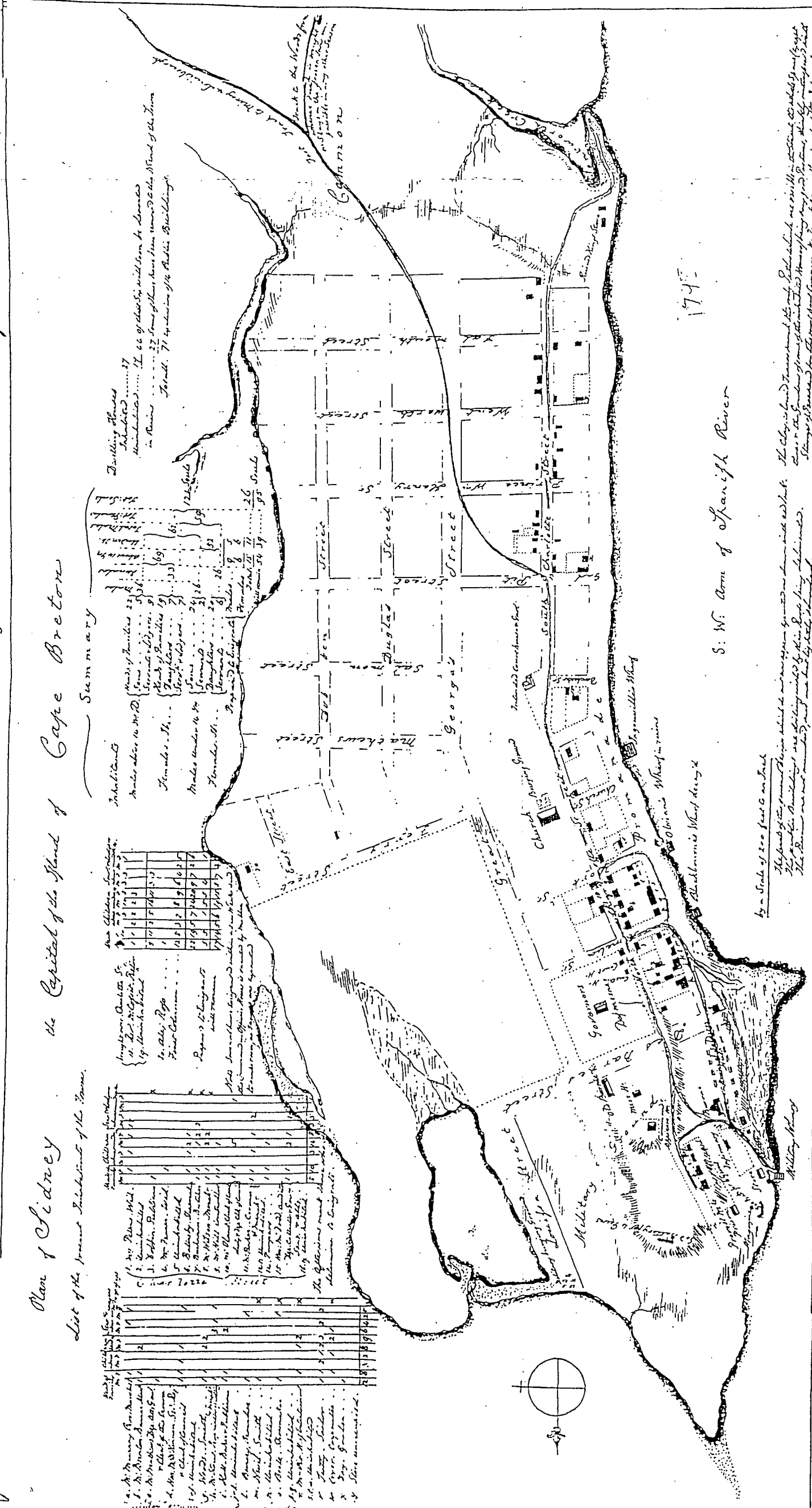
No.	Name	Rank	Profession
1	Mr. James Bannister	Major	Commandant
2	Mr. James Bannister	Major	Commandant
3	Mr. James Bannister	Major	Commandant
4	Mr. James Bannister	Major	Commandant
5	Mr. James Bannister	Major	Commandant
6	Mr. James Bannister	Major	Commandant
7	Mr. James Bannister	Major	Commandant
8	Mr. James Bannister	Major	Commandant
9	Mr. James Bannister	Major	Commandant
10	Mr. James Bannister	Major	Commandant
11	Mr. James Bannister	Major	Commandant
12	Mr. James Bannister	Major	Commandant
13	Mr. James Bannister	Major	Commandant
14	Mr. James Bannister	Major	Commandant
15	Mr. James Bannister	Major	Commandant
16	Mr. James Bannister	Major	Commandant
17	Mr. James Bannister	Major	Commandant
18	Mr. James Bannister	Major	Commandant
19	Mr. James Bannister	Major	Commandant
20	Mr. James Bannister	Major	Commandant
21	Mr. James Bannister	Major	Commandant
22	Mr. James Bannister	Major	Commandant
23	Mr. James Bannister	Major	Commandant
24	Mr. James Bannister	Major	Commandant
25	Mr. James Bannister	Major	Commandant
26	Mr. James Bannister	Major	Commandant
27	Mr. James Bannister	Major	Commandant
28	Mr. James Bannister	Major	Commandant
29	Mr. James Bannister	Major	Commandant
30	Mr. James Bannister	Major	Commandant

No.	Name	Rank	Profession
1	Mr. James Bannister	Major	Commandant
2	Mr. James Bannister	Major	Commandant
3	Mr. James Bannister	Major	Commandant
4	Mr. James Bannister	Major	Commandant
5	Mr. James Bannister	Major	Commandant
6	Mr. James Bannister	Major	Commandant
7	Mr. James Bannister	Major	Commandant
8	Mr. James Bannister	Major	Commandant
9	Mr. James Bannister	Major	Commandant
10	Mr. James Bannister	Major	Commandant
11	Mr. James Bannister	Major	Commandant
12	Mr. James Bannister	Major	Commandant
13	Mr. James Bannister	Major	Commandant
14	Mr. James Bannister	Major	Commandant
15	Mr. James Bannister	Major	Commandant
16	Mr. James Bannister	Major	Commandant
17	Mr. James Bannister	Major	Commandant
18	Mr. James Bannister	Major	Commandant
19	Mr. James Bannister	Major	Commandant
20	Mr. James Bannister	Major	Commandant
21	Mr. James Bannister	Major	Commandant
22	Mr. James Bannister	Major	Commandant
23	Mr. James Bannister	Major	Commandant
24	Mr. James Bannister	Major	Commandant
25	Mr. James Bannister	Major	Commandant
26	Mr. James Bannister	Major	Commandant
27	Mr. James Bannister	Major	Commandant
28	Mr. James Bannister	Major	Commandant
29	Mr. James Bannister	Major	Commandant
30	Mr. James Bannister	Major	Commandant

No.	Name	Rank	Profession
1	Mr. James Bannister	Major	Commandant
2	Mr. James Bannister	Major	Commandant
3	Mr. James Bannister	Major	Commandant
4	Mr. James Bannister	Major	Commandant
5	Mr. James Bannister	Major	Commandant
6	Mr. James Bannister	Major	Commandant
7	Mr. James Bannister	Major	Commandant
8	Mr. James Bannister	Major	Commandant
9	Mr. James Bannister	Major	Commandant
10	Mr. James Bannister	Major	Commandant
11	Mr. James Bannister	Major	Commandant
12	Mr. James Bannister	Major	Commandant
13	Mr. James Bannister	Major	Commandant
14	Mr. James Bannister	Major	Commandant
15	Mr. James Bannister	Major	Commandant
16	Mr. James Bannister	Major	Commandant
17	Mr. James Bannister	Major	Commandant
18	Mr. James Bannister	Major	Commandant
19	Mr. James Bannister	Major	Commandant
20	Mr. James Bannister	Major	Commandant
21	Mr. James Bannister	Major	Commandant
22	Mr. James Bannister	Major	Commandant
23	Mr. James Bannister	Major	Commandant
24	Mr. James Bannister	Major	Commandant
25	Mr. James Bannister	Major	Commandant
26	Mr. James Bannister	Major	Commandant
27	Mr. James Bannister	Major	Commandant
28	Mr. James Bannister	Major	Commandant
29	Mr. James Bannister	Major	Commandant
30	Mr. James Bannister	Major	Commandant

Summary

Inhabitants
 Numbers above the 1000
 Numbers below the 1000
 Total 71



S. W. Arm of Stanish River

Scale of 200 feet to an Inch

The City of Sydney is situated on a narrow peninsula, and is bounded by the sea on the north and east, and by the Stanish River on the south and west. The town is built on a steep hill, and the buildings are of a very solid and substantial nature. The streets are all of a uniform width, and are laid out in a regular and systematic manner. The harbor is of a very good anchorage, and is well protected from the winds. The water is clear and deep, and is suitable for the largest ships.



Figure 4.5 - Map of Sydney, 1795

C3347

MS. 164



Figure 4.6
Map of Sydney and
Sydney Harbour, 1849



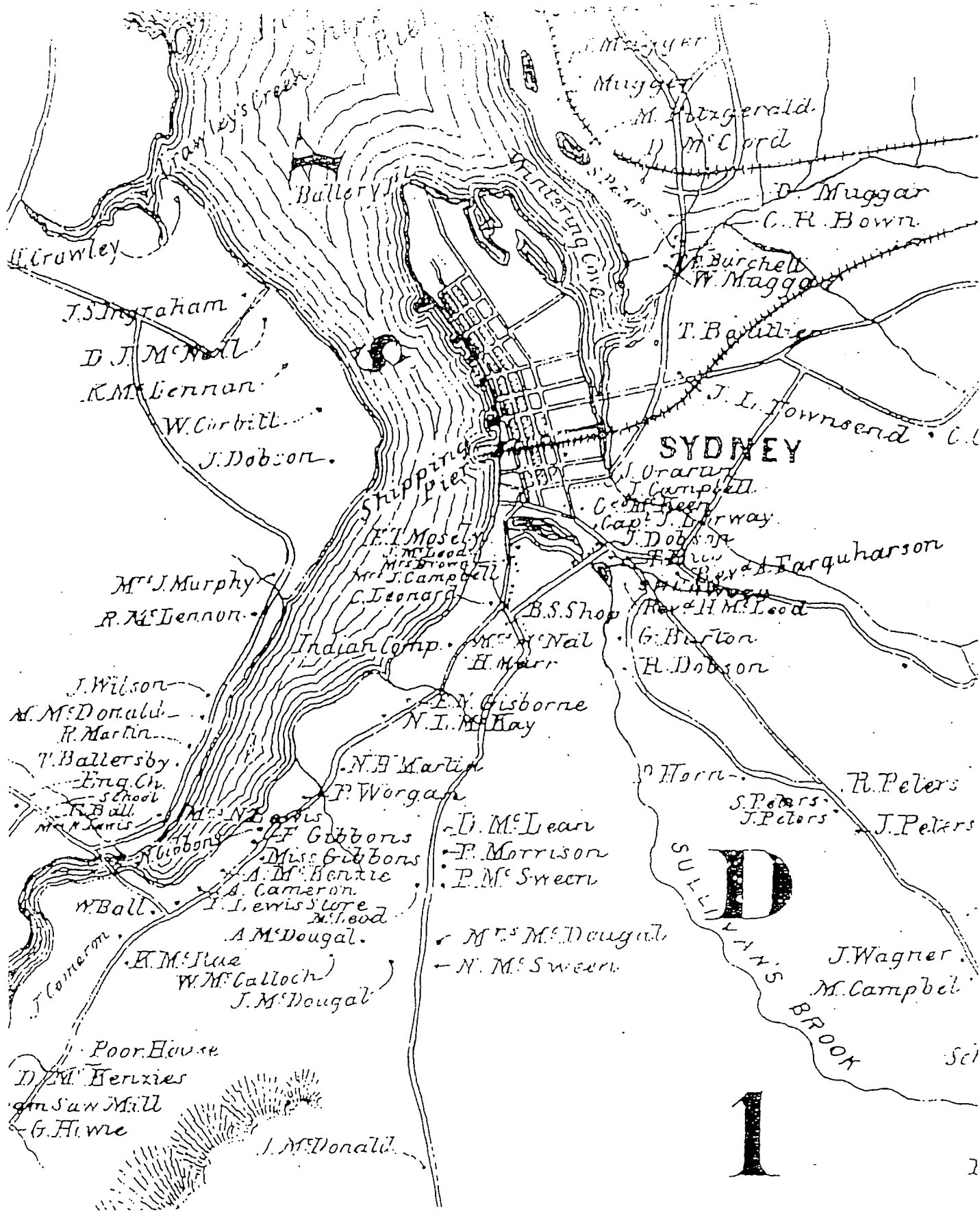


Figure 4.7
Detail from A.F. Church Map, 1864

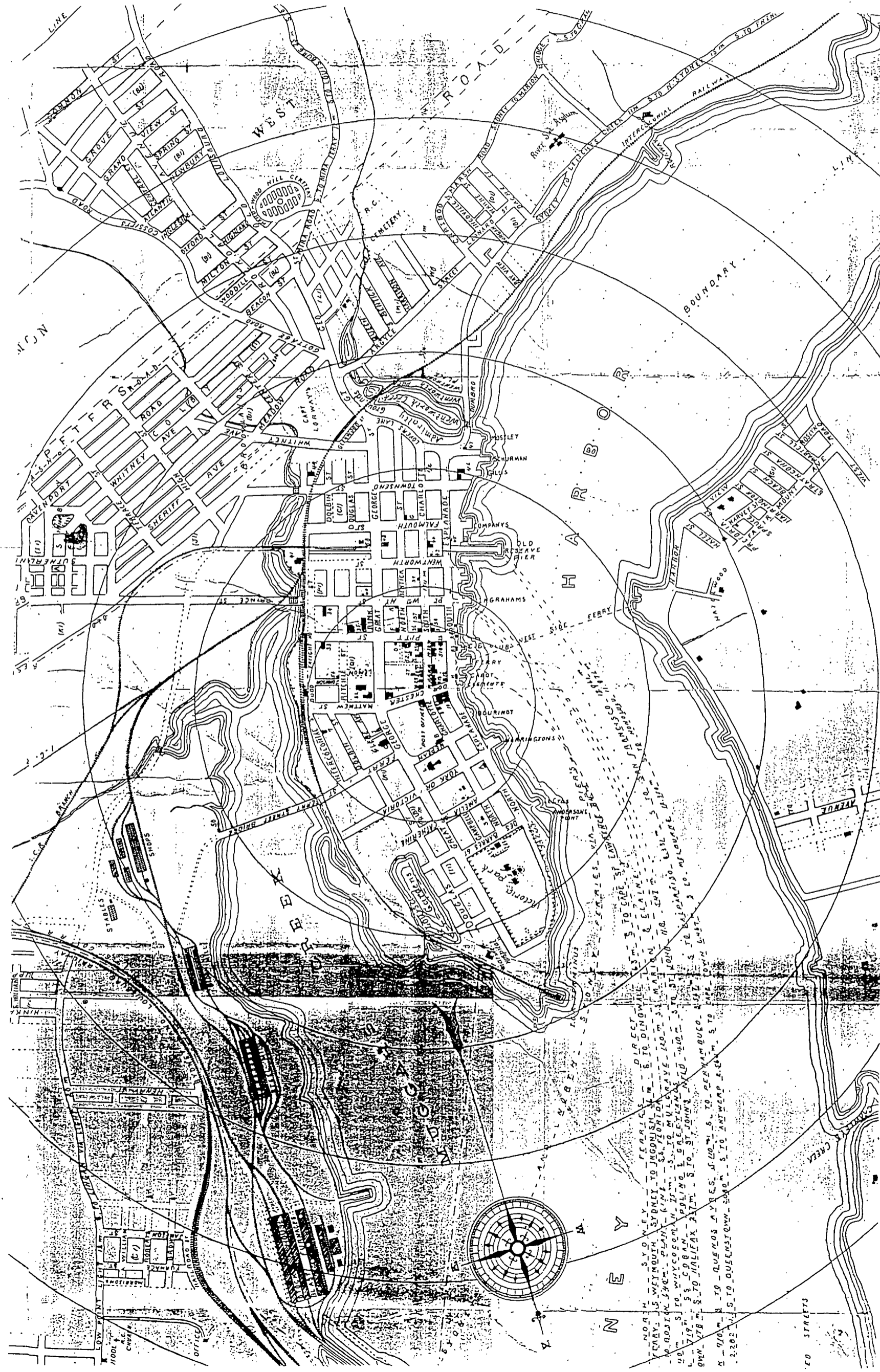




Figure 4.8
 Map of Sydney
 A.F. Church, 1864



Figure 4.9
Map of Sydney, 1900



4.2 Borehole Interpretation

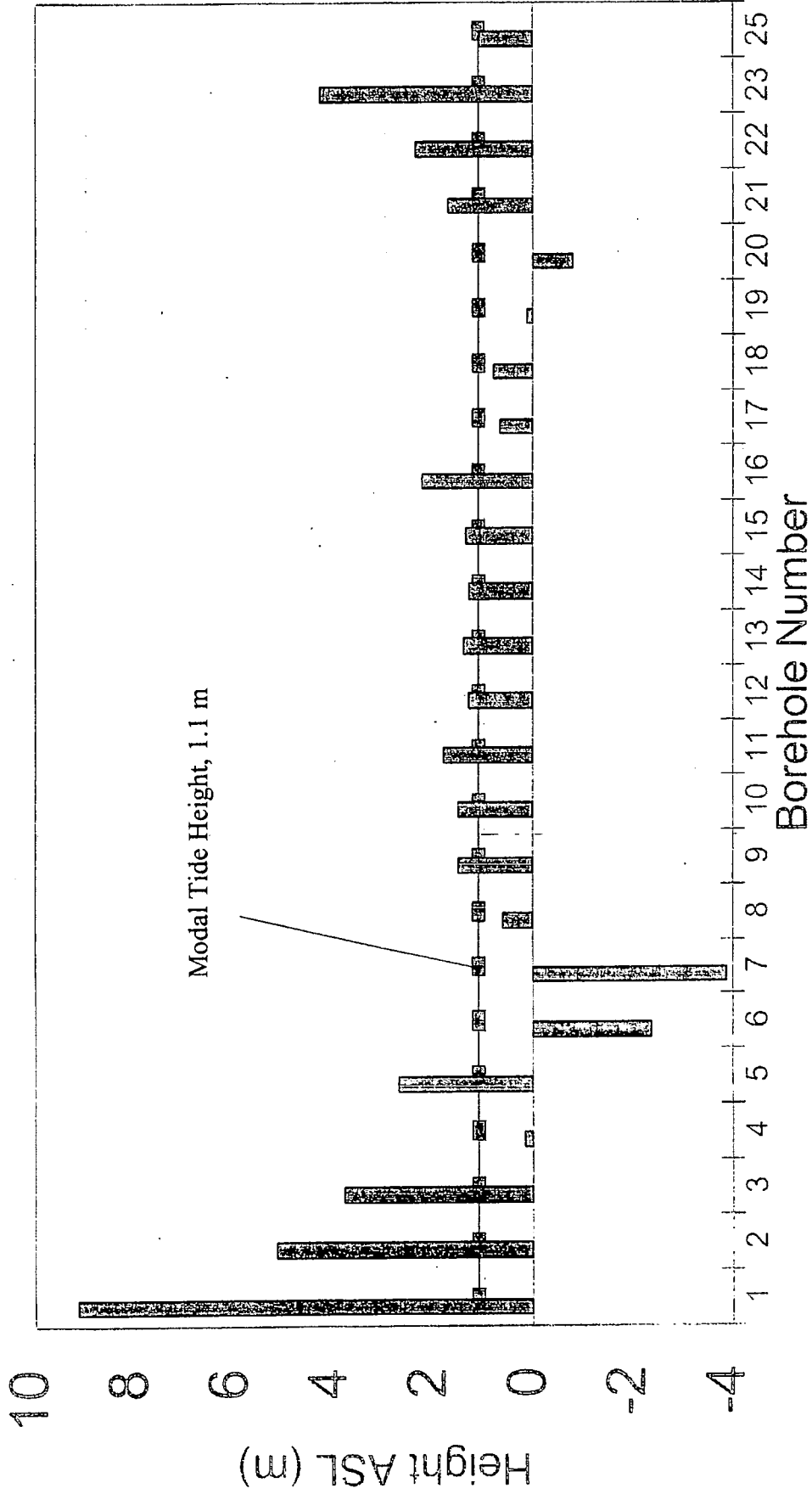
A geotechnical borehole investigation was made of the sewer route by Jacques Whitford and Associates (JWA) between December 1998 and February 1999 in order to determine the nature of subsurface soil, bedrock and groundwater conditions (JWA, 1999). The borehole logs from this study also indicate the fill and natural soil layers along the route. This information was used in the HRIA to determine those areas where natural soil conditions were favourable to prehistoric and historic land use.

In a number of areas along the route it was evident that natural soil was located either below sea level, or was extremely low and probably wet. Using recent tide tables (DFO, 1999) it was determined that the modal high tide level for the year was 1.1 m, although there were a number of days when high tide was above this level. By charting natural soil level and a modal tidal height of 1.1 m (Figure 4.11) we can demonstrate that much of the route would be either inundated on a daily occurrence, or would have been poorly drained and unsuitable for habitation. Not surprisingly, a number of the boreholes where poorly drained or inundated soils would have occurred are located in the area shown as "Swampy Sunken Land" on the 1788 map (Figure 4.2), or in the area of the pond and marsh at the northern part of the peninsula. Except for Boreholes 1-3 and 5 on the SYSCO branch, and Boreholes 21-23 at Battery Point, the bulk of the route was, in its natural condition unsuited for habitation. This interpretation largely rules out the likelihood of significant prehistoric archaeological resources in those areas. Evidence from the later 19th century maps (Figures 4.6-4.8) show that even well into the 1800's use of the lower east side of the peninsula was minimal, and that heritage resources dating prior to the late 19th century are unlikely to occur in that area.

4.3 Visual Reconnaissance

The visual reconnaissance of the sewer route was conducted on May 26, 2000. The SYSCO branch of the sewer will lay almost entirely within land which is currently paved. The only exception to this is the small eastern branch from Victoria Road which runs alongside the railway line and Coke Oven Brook. While no boreholes were drilled along this small section we assume that the degree of disturbance and level of fill in this area is similar to that found nearby. Since steel production has been ongoing at this location since 1899 (MacKinnon, 1918:129) it could be argued that some of the steel works, as well as the ground around them, could contain material of industrial heritage value. However, the sewer route appears to be sufficiently distant from the buildings that no disturbance of heritage features would be a concern. On the south corner of the intersection of Inglis and Ferry Streets the building used as the former steelworkers hospital still stands, although it is not currently in use (Plate 4.1).

Figure 4.11 - Natural Soil Levels,
Muggah Creek Interceptor Route



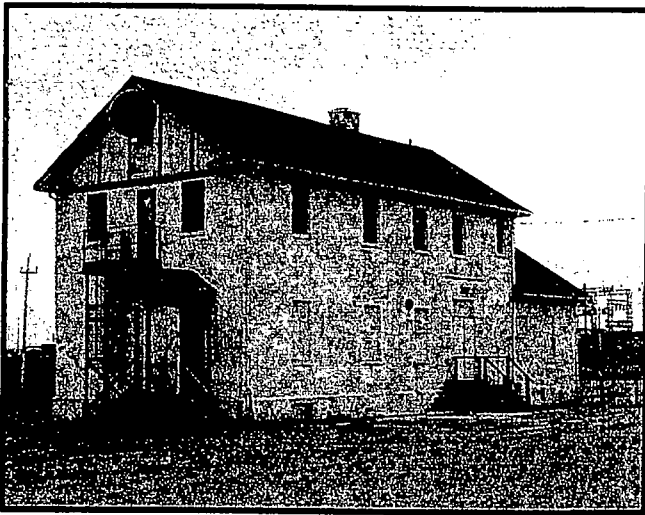


Plate 4.1 Old Steelworkers Hospital,
Corner of Ferry Street and Inglis Street

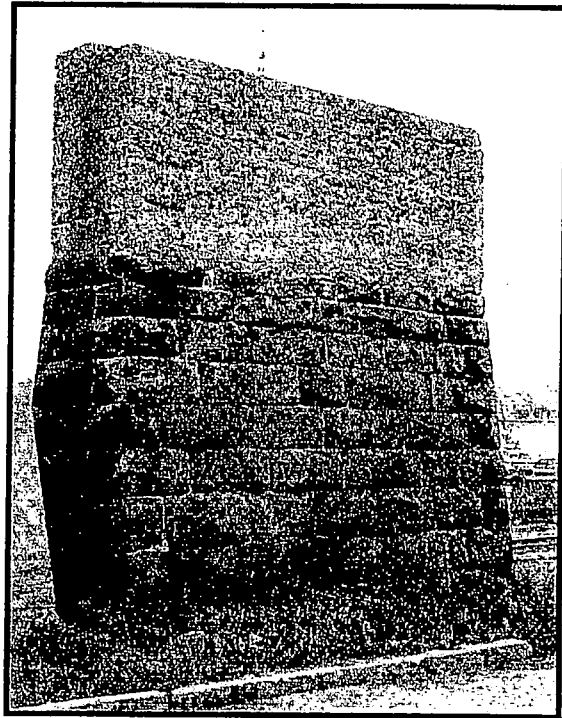


Plate 4.2 Bridge Pier Along Rail Line,
South of Prince Street

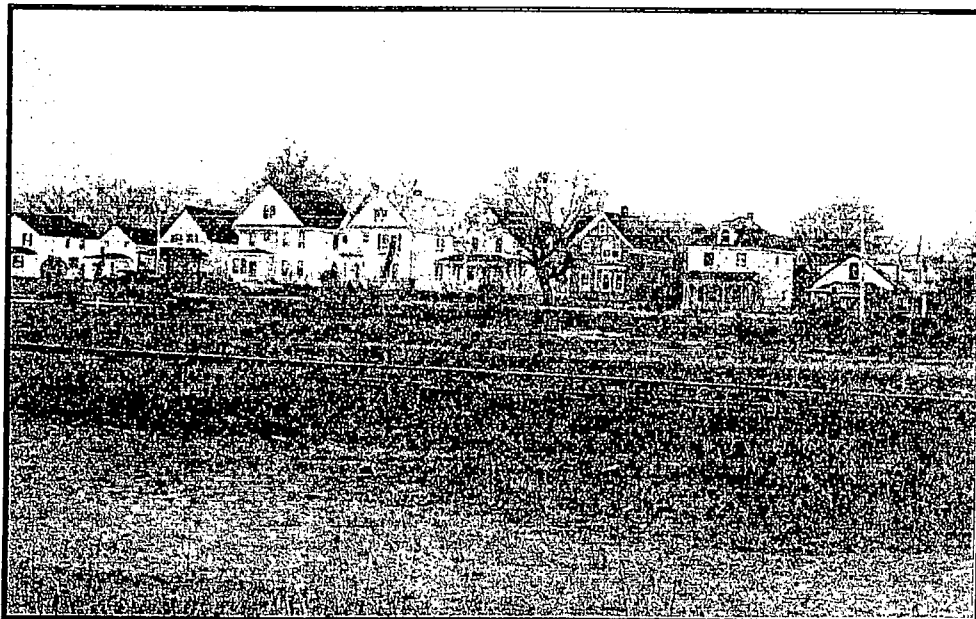


Plate 4.3 Railroad Loading Platform (Visible Below Houses),
Corner of Intercolonial Street and Ferry Street



The Muggah Creek branch of the sewer from Brookland Street to Prince Street has undergone extensive reworking of the original grade, and is for the most part paved, except for the area of the railway line. Near where Borehole 11 was located there is what appears to be an old bridge pier associated with the railway line (Plate 4.2). Presumably the pier dates to the late 19th or early 20th century, based on the in-service date of this line (Millward, 1985:196).

From Prince Street to just south of the SYSCO branch junction the sewer line is proposed to run directly in one of the railway line beds. From the area of Borehole 16 through to the end of the beginning of the outfall at Battery Point the sewer is proposed to run just west of the railway line. Along the east side of Intercolonial Street and west of the proposed sewer there is a loading platform (Plate 4.3), which has become overgrown with disuse. This loading platform appears to be in roughly the same location as the building # 20 as indicated on the 1795 map (Figure 4.4). No other heritage resources were noted along the length of the line, although it appears that the area of the former Marine Hospital has been graded recently. The building is still visible in a 1953 air photo (see Plate 4.4); however, there are presently no above grade foundations or other evidence.

Overall, it was clear that the proposed sewer route runs through areas of extensive fill and/or heavy disturbance. However, since some of that fill and industrial development can be dated to the 19th and early 20th centuries, there is potential for industrial heritage features to be present along the route.

4.4 Underwater Heritage Resources

Although there are historic shipwrecks identified in Sydney Harbour (Barron, 1988a, 1988b; K. Jardine, pers. comm.; Zinck 1975, 1977), and there was a significant amount of ship traffic along the west side of peninsular Sydney, there are no known shipwrecks in the area of the proposed sewer outfall on the west side of Battery Point (K. Jardine, pers. comm.). Video footage of an underwater survey for the Muggah Creek project revealed no other heritage resources in this area of the harbour (K. Jardine, pers. comm.).

5.0 RESOURCE INVENTORY

Given the amount of fill and historic and modern development in the area we were not able to assess the potential for prehistoric archaeological sites through test pit survey. From interpretation of historic mapping and geotechnical borehole logs it is clear that the bulk of the proposed Muggah Creek branch runs along land which was unsuitable for habitation given that it was either swampy and/or likely subject to tidal inundation (Figure 5.1). It is likely that the Battery Point area has elevated potential for prehistoric archaeological sites. The proposed SYSCO branch has clearly been subject to extensive development and grade modification, and the potential for prehistoric sites in this area is likely severely compromised.

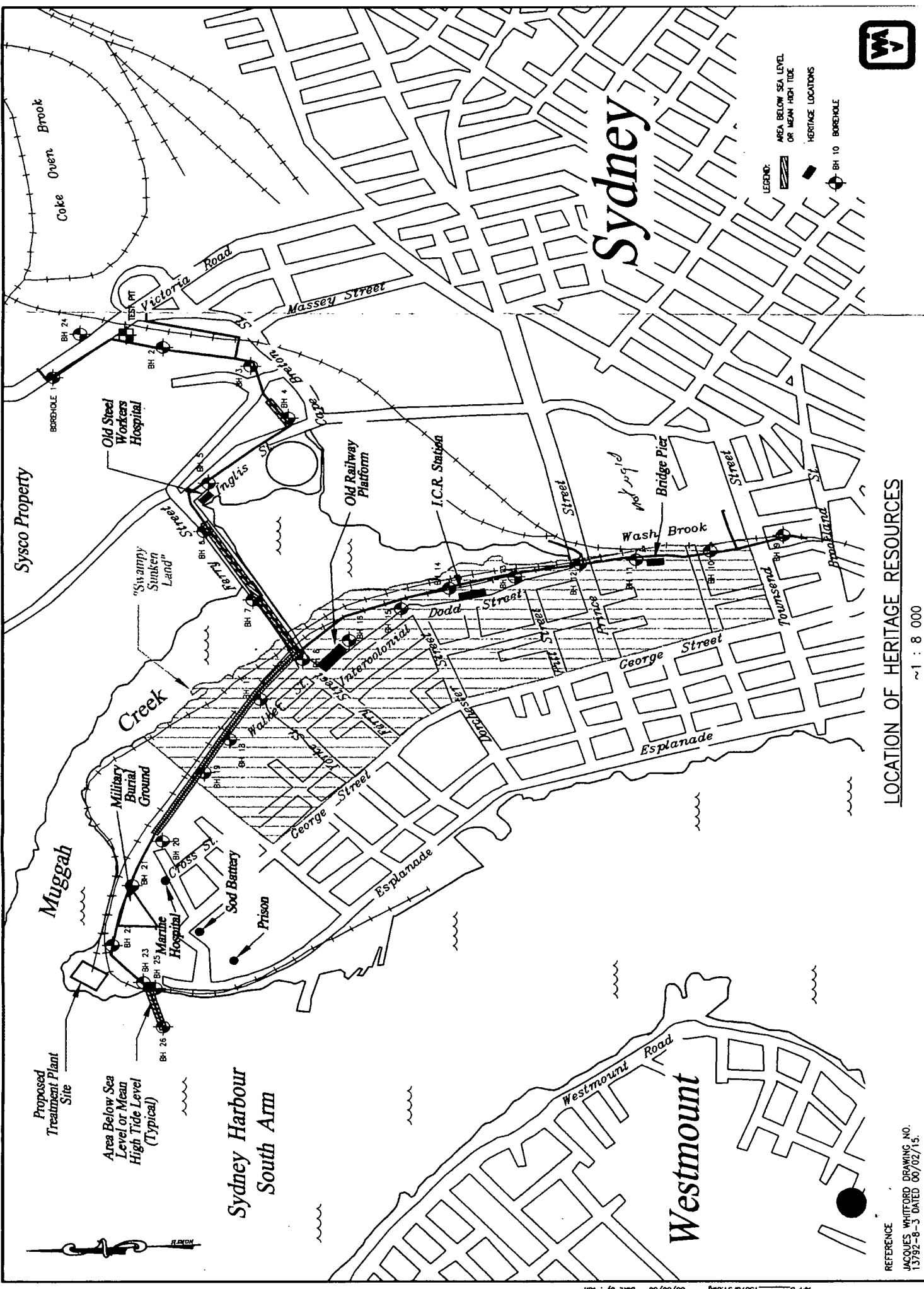


FIGURE 5.

LOCATION OF HERITAGE RESOURCES

~1 : 8 000

REFERENCE:
 JACQUES WHITFORD DRAWING NO.
 13792-8-3 DATED 00/02/15.



Plate 4-4- 1953 Air Photo of Sydney,
Showing Location of Marine Hospital

From historical mapping interpretation we have identified three areas of elevated historic heritage potential: the I.C.R. Station along Dodd Street; the Marine Hospital and Old Military Burying Ground on the east side of Battery Point; and, the Sod Battery on the west side of Battery Point (Figure 5.1). From the visual reconnaissance JWEL has identified three extant heritage features: the Steelworkers Hospital; the bridge pier; and, the railway loading platform (Figure 5.1 and Plates 4.2-4.4).

6.0 RESOURCE EVALUATION

The most significant potential heritage resource identified in this study is the Old Military Burying Ground and the Marine Hospital area at Battery Point. The potential for human burials to be located in this area is high, and if extant would be very significant. Also of importance in this area is the elevated potential for prehistoric resources, given the excellent vantage point and resource base of the Battery Point area. Of somewhat lesser importance is potential heritage features associated with the late 18th century sod battery at the north end of the peninsula. We would evaluate these three potential concerns as highly significant.

The remaining resources (I.C.R. station, Steelworkers Hospital, bridge pier, and loading platform) would be rated as moderately significant due to their later date (late 19th/early 20th century) and/or the fact that they are still present.

7.0 IMPACT IDENTIFICATION AND RECOMMENDATIONS

Any work associated with the construction of the proposed sewer which occurs below grade has the potential to impact on heritage features, particularly those which may be under modern fill. In the case of the Muggah Creek Interceptor project, however, there are three areas in particular which we recommend will require further archaeological work. The most important recommendation is that prior to construction a program of archaeological investigation be undertaken. In order to facilitate this work the trench width, plus a 2 m buffer zone on either side, should be cleared of fill down to original grade from midway between Borehole 20 and 21 and up to and including Borehole 23. This archaeological investigation would consist primarily of a visual inspection of the trench area to identify potential grave shafts or other sensitive features, and the excavation of standard archaeological test pits to locate any unrecorded prehistoric sites or historic features.

During construction activities we also recommend that an archaeological monitor be on site during trenching at the following locations: the area previously described (Boreholes 20-23); the area around the I.C.R. station along Dodd Street; the area around the loading platform, also thought to be the location of an earlier home; and, the area at the intersection of Inglis and Ferry streets (between Boreholes 5 and 6), near the Steelworkers hospital. At any of these locations there may be significant below grade features associated with the identified above grade heritage features. We also recommend that the bridge pier be avoided during construction activities. The current proposed site limits are 2 m from the pier, with the trench another 7 m

from edge of the work zone, and as such should be well out of the project area. Should changes occur in the plan that bring the site limits closer to the pier, archaeological monitoring is recommended.

8.0 EVALUATION OF RESEARCH

Although all of the study area has been subject to at least some degree of modification, either historically or more recently, the use of historical mapping and geotechnical borehole logs has allowed JWEL to determine areas of elevated heritage potential which will require further work. Of late, JWEL heritage staff have found that in situations similar to the Muggah Creek Interceptor project, the use of borehole log interpretation allows for a much more refined delineation of potential heritage areas, which in turn allows for a more focused use of finite human and financial resources. It also allows for a more informed evaluation of areas which would otherwise might be thought to have little or no heritage potential.

Through this combination of various information sets JWEL is satisfied that those areas with elevated heritage potential have been identified, and that if the recommendations outlined in this report are followed, no significant impacts on heritage resources will occur.

9.0 REFERENCES

9.1 Literature Cited

Barron, David N., 1988a. *Atlantic Diver Guide: Volume 1, Newfoundland and St. Pierre, Plus Atlantic Shipwreck List, 1565 to 1883*. St. John's: Atlantic Diver.

Barron, David N., 1988b. *Atlantic Diver Guide: Volume 2, Nova Scotia, Plus Atlantic Shipwreck List, 1884-1910*. St. John's: Atlantic Diver.

BI, (Beaton Institute)

- 1787 Plan of Church Property. Drawn by William Cox, Acting Surveyor General of Lands.
- 1788 Plan of Sydney Harbour, and Plan of the Town of Sydney.
- 1792 A Plan of the Two Branches of Spanish River, with the Town of Sydney, and Settlement Adjacent. Drawn by William Cox, Acting Surveyor General of Lands.
- 1794 A View of the Military Ground, and Buildings from Yorke Fields, 1794, adjoining the Town of Sydney, in the Island of Cape Breton. Drawn by John Storey, Acting Surveyor of Lands.
- 1795 Map of the Town of Sidney. Drawn by James Miller.
- 1849 Sydney Harbour. Surveyed by Captain H.W. Bayfield.
- 1900 Plan of Sydney, C.B., From Latest Surveys and Other Sources. Produced by Albert Almon.
- 1910 Plan of the City of Sydney. McAlpine Publishing Company Ltd.

- Cond ● Ann Gorman, 1994. 1783-1800: Loyalist Arrival, Acadian Return, Imperial Reform. In **The Atlantic Region to Confederation: A History**, P.A. Buckner and J.G. Reid (eds.). Toronto: University of Toronto Press, pp. 184-209.
- Dawson, Joan, 1988. **The Mapmaker's Eye: Nova Scotia Through Early Maps**. Halifax: Nova Scotia Museum and NS Department of Education.
- DFO (Department of Fisheries and Oceans), 1999. **Canadian Tide and Current Tables, 1999: Volume 1, Atlantic Coast and Bay of Fundy**. Ottawa: Canadian Hydrographic Service.
- Hornsby, Stephen J., 1992. **Nineteenth Century Cape Breton: A Historical Geography**. Montreal and Kingston: McGill-Queen's University Press.
- Johnston, A.J.B., 1985. A Vanished Era: The Petersfield Estate of J.S. McLennan, 1900-1942. In **Cape Breton at 200: Historical Essays in Honour of the Island's Bicentennial 1785-1985**, K. Donovan (ed.). Sydney: University College of Cape Breton, pp. 85-106.
- JWA (Jacques Whitford and Associates), 1999. **Geotechnical/Environmental Investigations, Muggah Creek Collector Sewer, Cape Breton Regional Municipality, Nova Scotia**. Report prepared for CBCL Limited, Sydney, Nova Scotia.
- JWEL (Jacques Whitford Environment Limited), 2000. **Muggah Creek Collector Sewer, Materials Handling Plan, Cape Breton Regional Municipality**. Report prepared for CBCL Limited, Sydney, Nova Scotia.
- MacKinnon, J.G., 1918. **Old Sydney: Sketches of the Town and its People in Days Gone By**. Sydney: D. MacKinnon. (Reprinted by Mika Publishing, Belleville, Ontario, 1973).
- MARI (Maritime Archaeological Resource Inventory), 2000. Records on file with the Nova Scotia Museum, Halifax, Nova Scotia.
- Millward, Hugh, 1985. Mine Locations and the Sequence of Coal Exploitation on the Sydney Coalfield, 1720-1980. In **Cape Breton at 200: Historical Essays in Honour of the Island's Bicentennial 1785-1985**, K. Donovan (ed.). Sydney: University College of Cape Breton, pp.183-202.
- Moogk, Peter, 1985. From Fortress Louisbourg to Fortress Sydney: Artillery and Gunners on Cape Breton, 1743-1980. In **Cape Breton at 200: Historical Essays in Honour of the Island's Bicentennial 1785-1985**, K. Donovan (ed.). Sydney: University College of Cape Breton, pp.127-182.

1785 J.F.W. DesBarres. A Plan of the Town of Sydney. PANS V7/239-1785.

1864 A.F. Church. A Topographical Map of the County of Cape Breton, Nova Scotia, and Sydney Town (Inset).

WGA (Washburn and Gillis Associates), 1995. **Initial Environmental Evaluation of Victoria Park Construction and Post Construction Activities.** Report prepared for Department of National Defense, Ottawa.

Wynn, Graeme, 1994. 1800-1810: Turning the Century. In **The Atlantic Region to Confederation: A History**, P.A. Buckner and J.G. Reid (eds.). Toronto: University of Toronto Press, pp.210-233.

Zinck, Jack, 1975. **Shipwrecks of Nova Scotia: Volume 1.** Hantsport, N.S.: Lancelot Press.

Zinck, Jack, 1977. **Shipwrecks of Nova Scotia: Volume 2.** Hantsport, N.S.: Lancelot Press.

9.2 Personal Communications

Christianson, David, Curator of Archaeology, Nova Scotia Museum, Halifax, Nova Scotia, May, 2000.

Jardine, Ken, Professional Diver, Sydney, Nova Scotia, May and June, 2000.