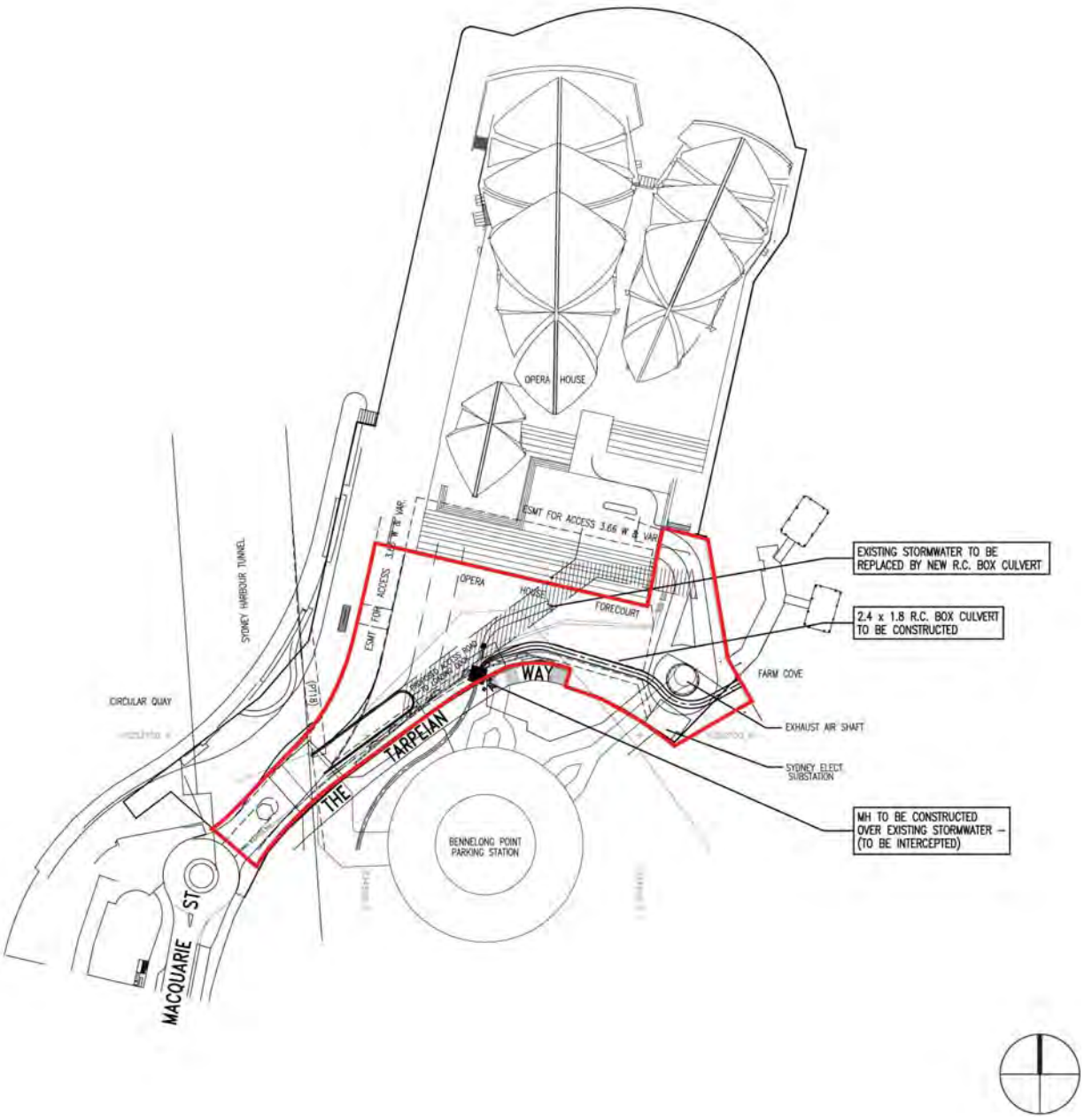

Figure 1.2 Plan of the Sydney Opera House site with the study area outlined. (Base plan courtesy of SOHT)

Endnotes

[1] Conybeare Morrison International, 2005, Royal Botanic Gardens Conservation Management Plan, prepared for Royal Botanic Gardens + Domain Trust, pp 247 - 265.

2.0 Assessment of Archaeological Potential

2.1 Historical Summary

2.1.1 Bennelong Point

Bennelong Point's history has been the subject of numerous reports and publications. This report relies largely on the historical research contained in the endorsed *Sydney Opera House—A Revised Plan for the Conservation of the Sydney Opera House and its Site* (3rd Edition) by James Semple Kerr (see Appendix B), as well as detailed analysis of historical plans of the area. The site's layered history is discussed in the Conservation Plan according to the following periods of land use:

- Phase 1: 1788–1795—The earliest period of European settlement in Sydney Cove when Bennelong Point was the location of Bennelong's brick hut and, a short while later, a salt works and windmill.
- Phase 2: 1788–1802—A period of anxiety for the early settlers when the defensive value of Bennelong Point was realised though the construction of a redoubt (1789), later falling out of use, to be replaced with a 'half moon battery' (1798).
- Phase 3: 1810–1843—Work commenced on the construction of a fort at the northern tip of the peninsula (Fort Macquarie) in 1817, while large parts of the rest of Bennelong Point and the surrounding area were reserved for parks and public space.
- Phase 4: 1817–1901—A period in which Fort Macquarie's gothic towers dominated the area, notwithstanding its flaws as a defensive facility. The fort was augmented with new gun batteries in the 1860s and at this time an esplanade was built around the fort by creating an encircling seawall and steam ferries began operating from points along the shore. In the late nineteenth century, the eastern side of Sydney Cove (the western shore of Bennelong Point) was converted to use by trading companies for major longshore wool, mail and passenger wharves. In the 1890s the western rampart of the fort was demolished to make way for facilities associated with the P&O operation that dominated the western shore.
- Phase 5: 1901–1958—The early twentieth century saw Bennelong Point accommodate a number of jetties for use by the public, serviced by a tram line to a new 'tram-car house' which came to be known as 'the shed' in spite of its Neo-Gothic design. The shed was built on the site of Fort Macquarie and was large enough to house 72 trams on twelve parallel tracks. The shed became redundant in the 1950s.
- Phase 6: 1955–present—This period saw the conception of Sydney Opera House, which was completed over the next two decades amid ongoing controversy and opened in 1973.

2.1.2 Bennelong Stormwater Channel

The history of the Bennelong stormwater channel, based on information contained in the Sydney Water Section 170 listing for this heritage item (see Appendix G), can be summarised as follows:

- The Bennelong Stormwater Channel was one of five combined sewers built in Sydney around 1857 in order to dispose of the city's stormwater and sewage into Sydney Harbour. The

portion of the channel that extended along Bennelong Point serviced the CBD area and was completed in 1856.

- Sewage pumping stations were introduced around 1900 to divert sewage from the combined sewer into the Bondi Ocean Outfall Sewer (BOOS). The volume of sewage in the combined sewer gradually diminished until the Bennelong channel was used predominantly for stormwater.
- The original channel was of brick oviform construction, with some sections tunnelled in sandstone along Tarpeian Way.
- Modifications were made to the channel in the 1960s–1970s for the construction of Sydney Opera House and during the late 1980s for the construction of the Bennelong Point Parking Station.

2.2 Site Formation and Disturbance

The potential for relics to survive at the site depends on the nature of activities undertaken there over the years (the phases of development). Some activities have the potential to disturb or destroy relics, while others (such as the introduction or removal of fill deposits) can enhance or reduce the chances of archaeological relics surviving.

On the basis of the many activities that have taken place on the site in the twentieth century, the New South Wales State Heritage Register citation notes that 'it is unlikely that much archaeological potential is retained in relation to its historical associations …'. However, excavations beneath Sydney Opera House in the early 1990s and minor excavations for a lift well in 2004 exposed wall footings of a previous structure(s) at a relatively shallow depth, suggesting that levels of disturbance in parts of the site might be lower than expected.

Major episodes (or areas) of modification or potential disturbance are discussed below.

2.2.1 Bennelong Point

Land Reclamation

Bennelong Point was used throughout the nineteenth and twentieth centuries for a variety of purposes, including reclamation of the shorelines and modification of the landform that changed the shape and character of the area throughout its history.

By 1829, parts of the shoreline of Bennelong Point had been modified and reclaimed. This process continued over the next century, with various phases of seawall and wharf construction.

The shoreline along the southeastern section of the peninsula was the first section of shoreline to be reclaimed (by 1829) and a boat slip had been created in this area by 1845.

In 1861, an esplanade was created around Fort Macquarie by erecting an encircling seawall and filling the area formerly covered by high tides.

The western shore was used from the 1860s (but mainly from the 1880s) for wharves, jetties and wharf buildings. In the late nineteenth century, earlier wharf buildings were demolished and then replaced with larger wharf facilities by P&O. The expanded P&O facilities were demolished as part of the Sydney Opera House development.

The present shorelines of Bennelong Point, which are contained by seawalls, represent entirely reclaimed land.

Episodes of reclamation of the shorelines of Bennelong Point throughout the nineteenth and twentieth centuries would have been unlikely to have caused any major disturbance to archaeologically sensitive deposits and in some cases may have sealed historical ground levels, original shorelines and remains of other features beneath introduced fill deposits, thereby providing some protection for the survival of such remains.

Modification to Ground Levels

The physical development of Bennelong Point over the nineteenth and twentieth centuries has also affected the ground levels of the peninsula.

A photograph taken in the late 1850s shows the top of the Bennelong stormwater channel exposed along the western side of Fort Macquarie (see Figure 2.13). The top of the channel protrudes just above the surrounding ground surface in this image, which gives an indication of the mid nineteenth-century ground levels in relation to the channel. It is understood that this section of the channel was decommissioned as part of the Sydney Opera House construction. The extent of impact of the construction of the 1901 tram-car house on the original channel is unknown. On the basis of this 1850s photograph, it is understood that this section of channel is located approximately two metres below the current ground (forecourt) surface, which suggests that this area may have been built up by approximately two metres since this time.

The most significant modification to ground levels across Bennelong Point were most likely in association with construction of the tram house and associated track infrastructure in the early twentieth century, as well as the construction of Sydney Opera House in the 1960s–1970s.

Modifications to ground levels throughout the history of Bennelong Point, particularly within the forecourt area, have largely involved the introduction of fill deposits and reclamation of shorelines. On this basis, these episodes of modification would have been unlikely to have caused any major disturbance to archaeologically sensitive deposits and in some cases may have sealed historical ground levels and remains of other features beneath introduced fill deposits, thereby providing some protection for the survival of such remains.

Sydney Opera House Construction

Construction of Sydney Opera House in the 1960s–1970s had a dramatic impact on the physical form of Bennelong Point, including:

- modification of the shape of Bennelong Point with the construction (and some replacement) of seawalls around the entire shoreline;
- regularisation of ground levels through the introduction of fill deposits to create a level forecourt and broadwalk platforms;
- excavation for the construction of basement levels and other structural elements of Sydney Opera House itself; and
- construction of other infrastructure associated with Sydney Opera House and its operation.

No underground (basement) or other structural elements associated with the Sydney Opera House structure itself extend to within the forecourt area.

However, the construction of Sydney Opera House is likely to have had only a relatively minor impact on any archaeologically sensitive deposits within the forecourt area.

Photographs taken in the 1960s–1970s, which show the construction of Sydney Opera House in progress, do not indicate any specific episodes or areas of major disturbance or excavation within the forecourt area (see Figures 2.14–2.16).

Evidence of the tram tracks has been exposed at relatively shallow levels on Bennelong Point, indicating that excavation work associated with the construction of Sydney Opera House had only a limited impact on these relics in at least some places.

Underground Services

The forecourt area contains a number of underground services, including conduits, access pits and other infrastructure associated with electricity, water, telecommunications and sewerage. An indicative service layout is shown in Figure 4.2. Many of these services would be located within introduced fill deposits, though some elements are likely to have extended below historical ground levels. However, the impact of these services on archaeologically sensitive deposits is likely to be relatively minor and localised.

Other Areas of Disturbance

Ventilation shafts and tunnels associated with the Bennelong Point Parking Station also extend within the forecourt area. A pedestrian tunnel also provides a direct link between the lower forecourt and the parking station. The construction of this infrastructure in the 1980s would have resulted in localised but major disturbance of any archaeological remains within these areas.

2.2.2 Bennelong Stormwater Channel

Construction of the Bennelong Stormwater Channel in 1856 would have required localised excavation along the route of the channel which would have removed or disturbed any deposits or features associated with the early development of Bennelong Point that may have been present along this alignment.

The Bennelong Stormwater Channel was modified in association with the construction of Sydney Opera House in the 1960s–1970s. The channel originally discharged adjacent to Fort Macquarie and was diverted. Some original fabric would have been removed at this time, though it is likely that some sections of the decommissioned oviform channel remain in place. Part of the channel was also relocated in the 1980s in association with the construction of the Bennelong Point Parking Station.

On the basis of information compiled for this project, it is understood that a section of the original brick oviform channel extends immediately north of the Tarpeian Way cliff face for approximately 20 metres. The original channel was diverted at this point in the 1960s–1970s as part of the Sydney Opera House construction works. It is understood that the 1960s–1970s diversion was constructed as a concrete box culvert.

The diversion of the channel in the 1960s–1970s and 1980s would have also resulted in localised disturbance along the diversion route, which would have removed or disturbed any deposits or features that were present along this alignment.

2.2.3 Eastern Seawall

The existing seawalls around Bennelong Point were regularised and largely rebuilt in association with the construction of Sydney Opera House in the 1960s–1970s (see Figure 2.11). It is not clear how much, if any, of the fabric of the original seawall survives behind the outer face of the suspended seawall.

The section of the seawall immediately north of the Man O' War Jetty was constructed when the boat slip in this area was demolished and the area was reclaimed in association with the construction of Sydney Opera House. This section of wall therefore would date to the 1960s–1970s (see Figure 2.11). The section of wall immediately to the south of the Man O' War Jetty may also have been rebuilt during this period; however, without further evidence it has been assumed that this section of wall was built in the 1860s.

2.3 Archaeological Potential

2.3.1 Aboriginal Archaeological Potential

A search of the Aboriginal Heritage Information Management System (AHIMS), the database of recorded Aboriginal sites maintained by the Department of Environment, Climate Change and Water (DECCW), identified one registered site within the study area (Site No. 45-6-1615). This site is described in the NPWS site card as a midden, from which 'shells … were used by the early settlers in lime-burning, to provide building mortar'. The registered coordinates for the site indicate that it was located near the base of the Tarpeian Wall, though the actual location of the site is uncertain. However, the site card records the site's condition as 'destroyed' and it is clear that it had been destroyed some time before its inclusion in the database in 1983.

There is some potential for parts of the study area to contain relatively intact natural soil deposits that may contain evidence of Aboriginal use or occupation of Bennelong Point, either prior to the arrival of Europeans in 1788 or during the early years of the colony. Much of the study area appears not to have been subject to major disturbance that would have definitely removed any potential deposits associated with this phase of the site's history. However, while this area has remained largely undeveloped throughout its history relative to the rest of Bennelong Point, it has been subject to land modification and extensive use for pedestrian and vehicle traffic, including trams, which would have had some impact on the survival of any evidence of Aboriginal use or occupation of the area. On that basis, the study area is considered to have low potential to contain any Aboriginal archaeological evidence.

The study area also includes some areas of reclaimed land. These areas would have no potential for in-situ Aboriginal archaeological objects features to be present. There is some potential for introduced fill deposits across the site to contain unstratified objects, but the likelihood of such evidence is impossible to determine.

During the course of this study, consultation was undertaken with Allen Madden of the Metropolitan Local Aboriginal Land Council (MLALC), in order to inform MLALC of the proposed works to the site and to invite comment. This consultation was undertaken on Wednesday 15 April 2009 with Laura Farquharson, Consultant from Godden Mackay Logan. There were no issues raised by MLALC

about the proposed works during this meeting. There was also no suggestion made that the study area has any special associations with MLALC. On this basis, further assessment of the site's Aboriginal cultural values, beyond its archaeological potential, has not been undertaken.

2.3.2 Historical Archaeological Potential

A number of historical plans that document the physical development of Bennelong Point throughout the nineteenth and twentieth centuries have been analysed in detail to determine how the study area was used during this time in order to assess the nature and extent of physical evidence of these uses that may have survived at the site. A selection of these plans is included as Figures 2.1 to 2.11, with the study area boundary indicated on each plan. These plans have all been overlaid with modern plans so as to determine which areas and historical features were located within the study area and therefore would be relevant to this assessment.

On the basis of the documented historical development of Bennelong Point and episodes of modification and disturbance that have occurred throughout its history, the historical archaeological potential of the forecourt area is outlined in the table below.

The table has been structured as follows: 'Phase' denotes the phase of historical development as identified by JS Kerr in the Conservation Plan; 'Site Features' indicates features (or activities) shown on historical plans or that may be present as a result of usual site formation processes (eg accumulation of deposits); 'Date' indicates either the date range of the historical phase that the features or activities are related to, or a particular period of time when that feature or activity was known to be present or occur; 'Potential Remains' describes the types of evidence associated with the feature or activity that may survive at the site; and 'Likelihood of Survival' indicates the likelihood that the potential remains would survive intact and/or in situ.

Phase	Site Features	Date	Potential Remains	Likelihood of Survival
—	Aboriginal evidence (The only recorded site in this area was 'destroyed' prior to 1983)	Pre 1788–1802	Deposits and features associated with Aboriginal use or activities in this area (eg middens, artefact scatters, isolated artefacts).	Very Low
1–2	There is no specific development or land use activity recorded within the study area during this period.	1788–1802	Deposits associated with the original shorelines (eastern and western sides of Bennelong Point) and original land form. Evidence associated with incidental activities in this area, such as artefact scatters/rubbish dumps.	Low–Moderate
1–5	Rubbish dumps into water—later reclaimed land.	1788–1960s	Concentrations of artefacts within areas of reclaimed land beneath introduced fill deposits.	Moderate–High
3	Rectangular structure shown on plan adjacent to eastern shoreline (form/function unknown).	By 1829	Structural remains.	Low
3–4	Fort Macquarie (the southeastern section of the battery extends within the study area).	1817–1901	Stone foundations associated with the southeastern section of the battery.	Moderate–High

Phase	Site Features	Date	Potential Remains	Likelihood of Survival
3–4	Fort Macquarie.	1817–1901	Structural remains associated with internal and/or external features or additions of this section of Fort Macquarie.	Low–Moderate
3–4	Fort Macquarie.	1817–1901	Deposits associated with occupation/use of Fort Macquarie (internal and external).	Low
3–4	Fort Macquarie.	1817–1901	Roadways or pathways around Fort Macquarie.	Low
4–5	Boat harbour/slip in southeastern section of Bennelong Point.	By 1845 to 1960s	Remains of stone seawalls defining boat harbour; stone steps on external face of seawall; stone boat ramp.	Moderate–High
4–5	Infrastructure associated with boat harbour/slip.	By 1845 to 1960s	Structural remains (stone, brick or timber) associated with sheds, offices, stores and waiting rooms adjacent to boat harbour/slip.	Low–Moderate
4–5	Wharf infrastructure—western shoreline.	By 1860s to 1960s (rebuilt/ upgraded 1889)	Stone seawall, piers, structural remains and remains of other wharf infrastructure (Messagenes Maritimes Co).	Low–Moderate
5	Tram-car house–associated infrastructure.	1901–1950s	Tram tracks, roads, footpaths extending from and adjacent to the tram-car house. (The tram-car house itself was located wholly outside the study area.)	Moderate–High
4–6	Bennelong stormwater channel.	From 1857	Oviform channel. Concrete diversions.	Known feature
4–6	Seawall along eastern shore of Bennelong Point.	1860s–1960s/70s	Stone seawall. (The section of seawall that would be affected by the proposed works has been assumed to date to the 1860s.)	Known feature
6	Evidence associated with the construction of Sydney Opera House.	post-1963	Any such evidence would generally not be considered as 'relics' under the Heritage Act.	N/A

2.4 Summary of Archaeological Potential

Analysis of historical information and other evidence related to the development and modification of Bennelong Point throughout its history indicates that the forecourt area of Sydney Opera House (the study area of this report) has remained relatively undisturbed. However, this area has also remained largely undeveloped relative to other parts of Bennelong Point. As a result, the study area is unlikely to contain substantial structural remains associated with the major phases of redevelopment (Fort Macquarie and the tram-car house) other than part of the southeastern section of Fort Macquarie. However, owing to the relatively limited amount of disturbance to the area throughout its history, it is likely that some minor infrastructure associated with these historical phases may survive intact (eg pathways, roadways, tram tracks).

The extent of physical modification of Bennelong Point through various phases of land reclamation may also have enabled evidence associated with the earliest phases of the site's history to survive

beneath introduced fill deposits. In most cases, this evidence would not be directly associated with known features or activities at the site, but instead would be related to incidental site use.

The solid and utilitarian construction of the former boat harbour/slipway on the eastern side of Bennelong Point would most likely have determined its at least partial survival beneath the forecourt and behind the current alignment of the seawall. The former seawall alignments and boat slip are unlikely to have been removed in association with the construction of Sydney Opera House; instead they are likely to have been covered by introduced fill deposits when this area was reclaimed. The survival of remains of associated infrastructure, such as former buildings around the boat harbour, is less likely.

The likelihood of survival of these remains (ie their archaeological potential) is distinct from the heritage significance or value of these remains. The significance of these potential remains is assessed in Section 3.0.

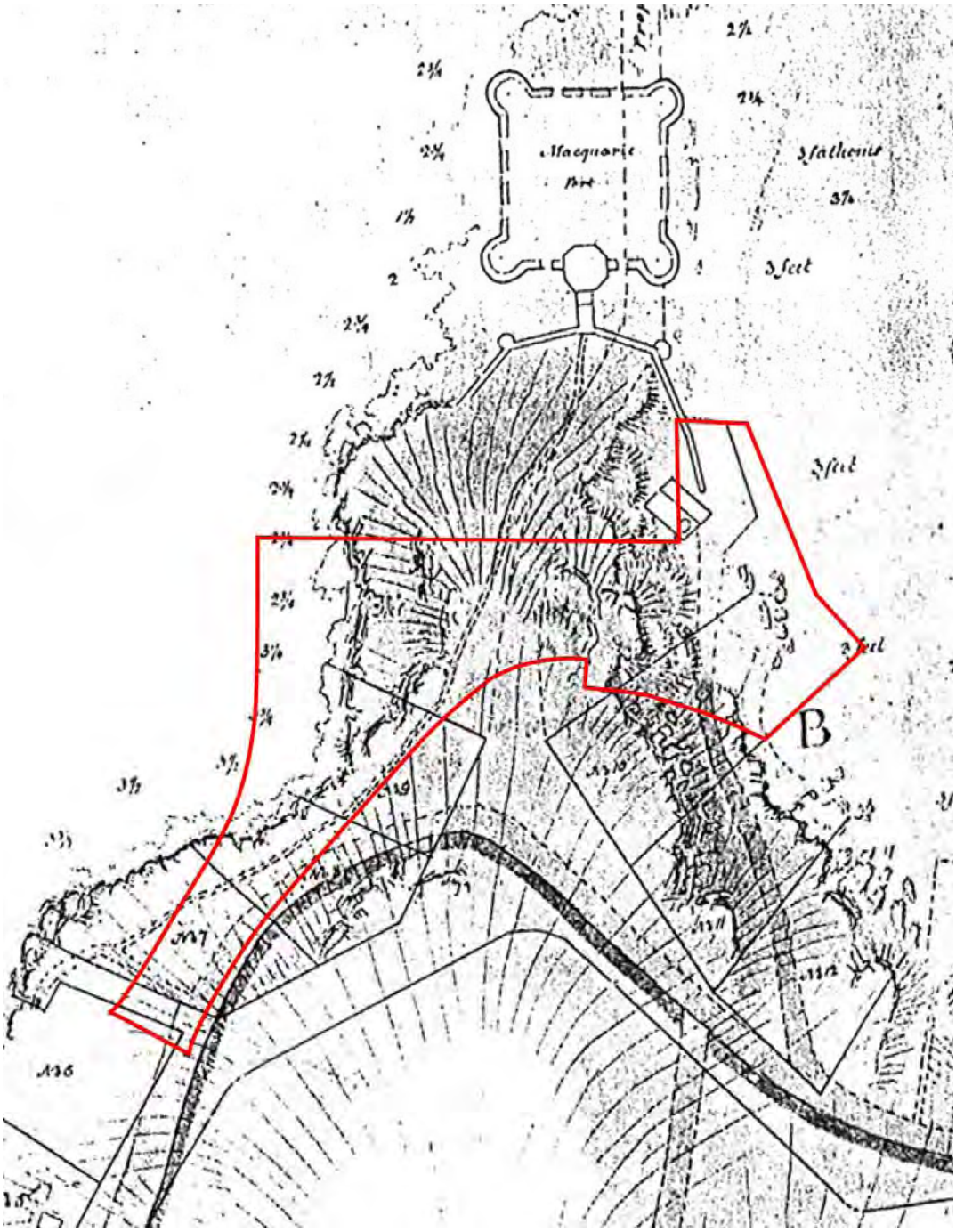

Figure 2.1 Extract of 1829 plan showing the Sydney Domain between Sydney Cove and Farm Cove. Note the southeastern extension of Fort Macquarie, as well as a rectangular structure near the eastern shoreline. The study area is outlined. (Source: SRNSW, AO Map SZ454 [SG Map S.627], Surveyor: White and Larmer)

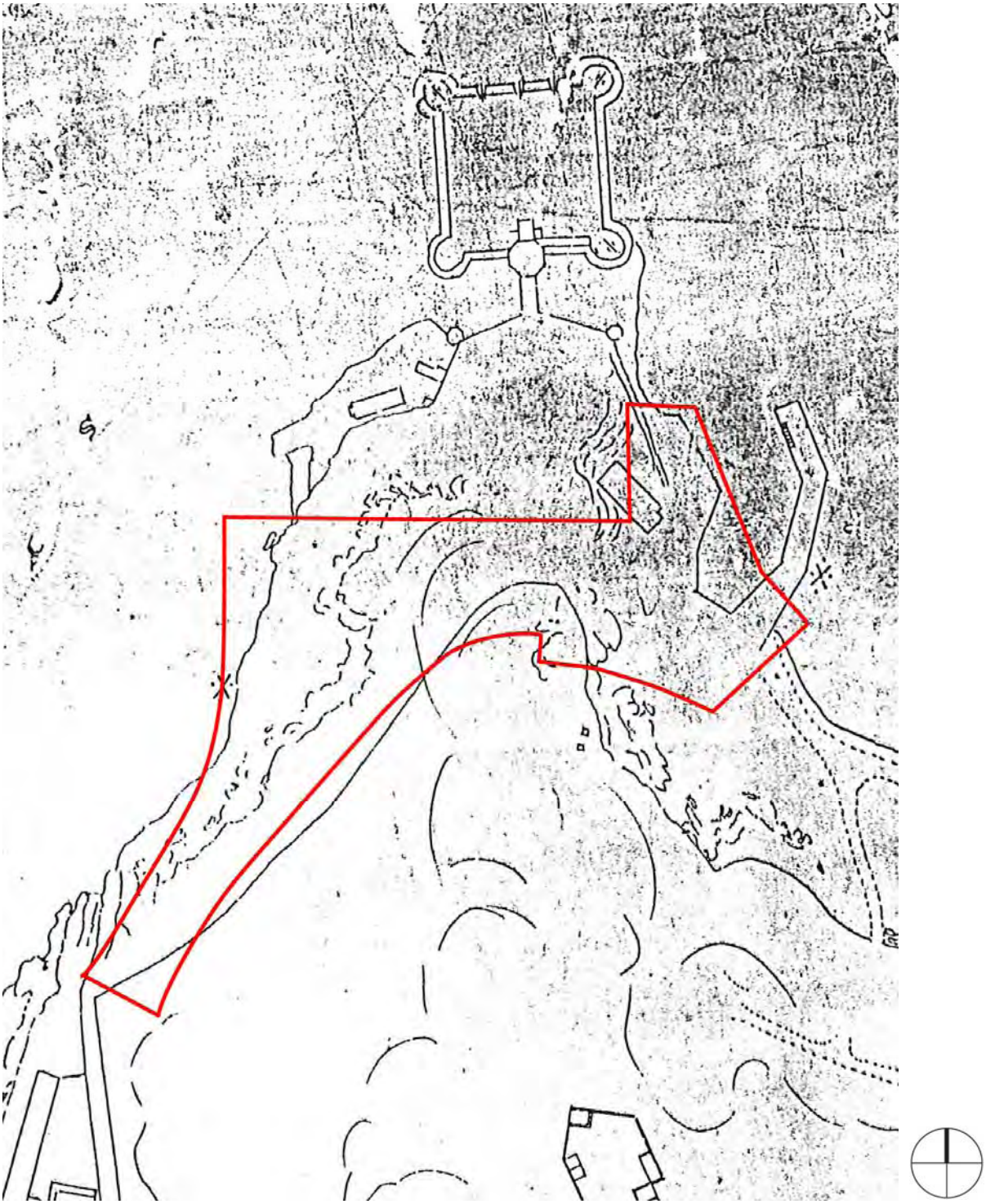

Figure 2.2 Extract of 1845 plan of Bennelong Point. Note the southeastern extension of Fort Macquarie, as well as a rectangular structure near the eastern shoreline. The boat harbour/slip on the eastern shore had been constructed by this time. The study area is outlined. (Source: SR Item Map No. 5628)

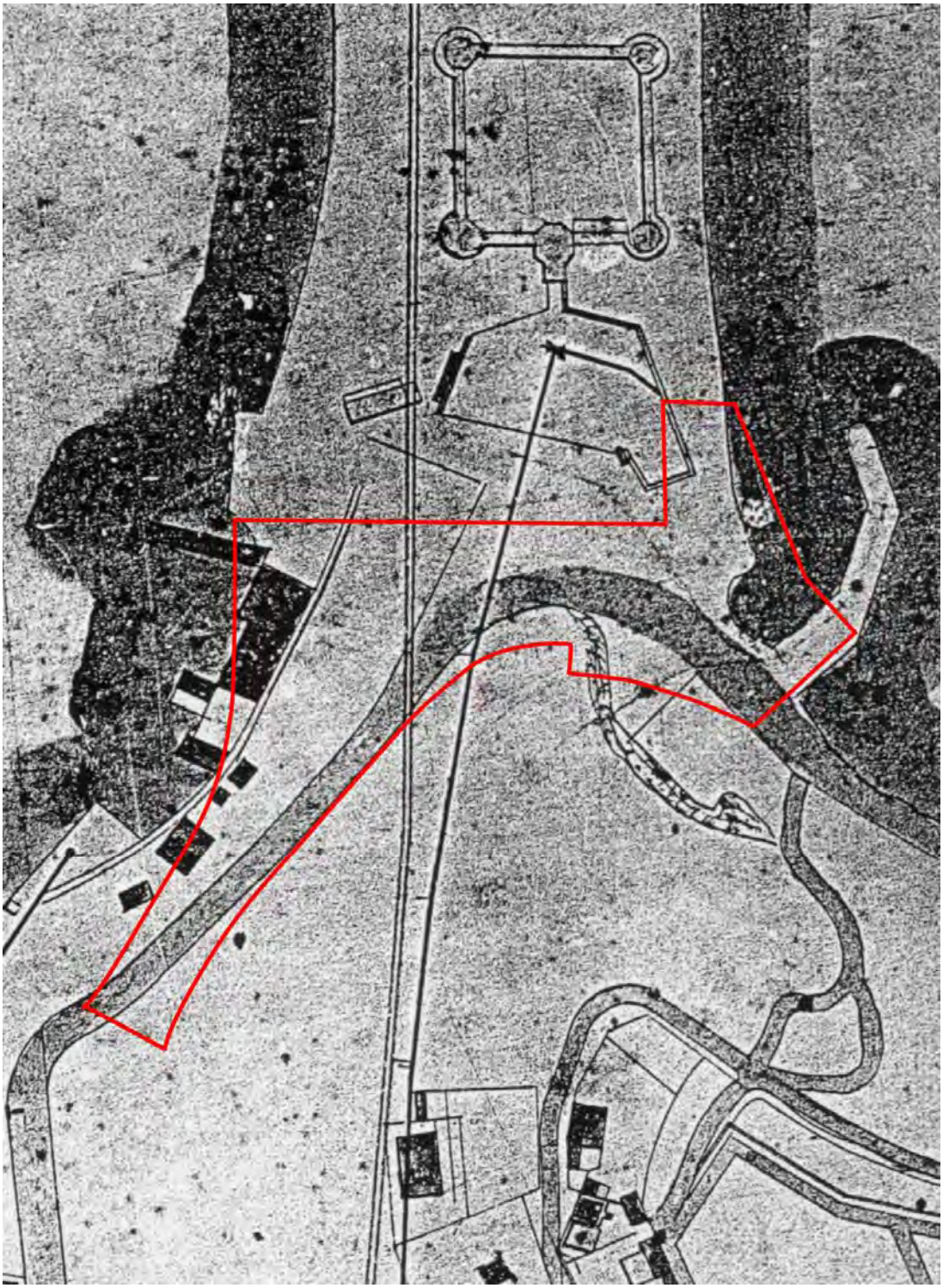

Figure 2.3 Extract of the 1865 Trigonometrical Survey of Sydney showing Bennelong Point. Note the southeastern extension of Fort Macquarie, the boat harbour/slip on the eastern shore and wharf facilities along the western shore. The rectangular structure near the eastern shoreline shown on earlier plans had been demolished by this time. The study area is outlined. (Source: SRNSW, NRS 9929)

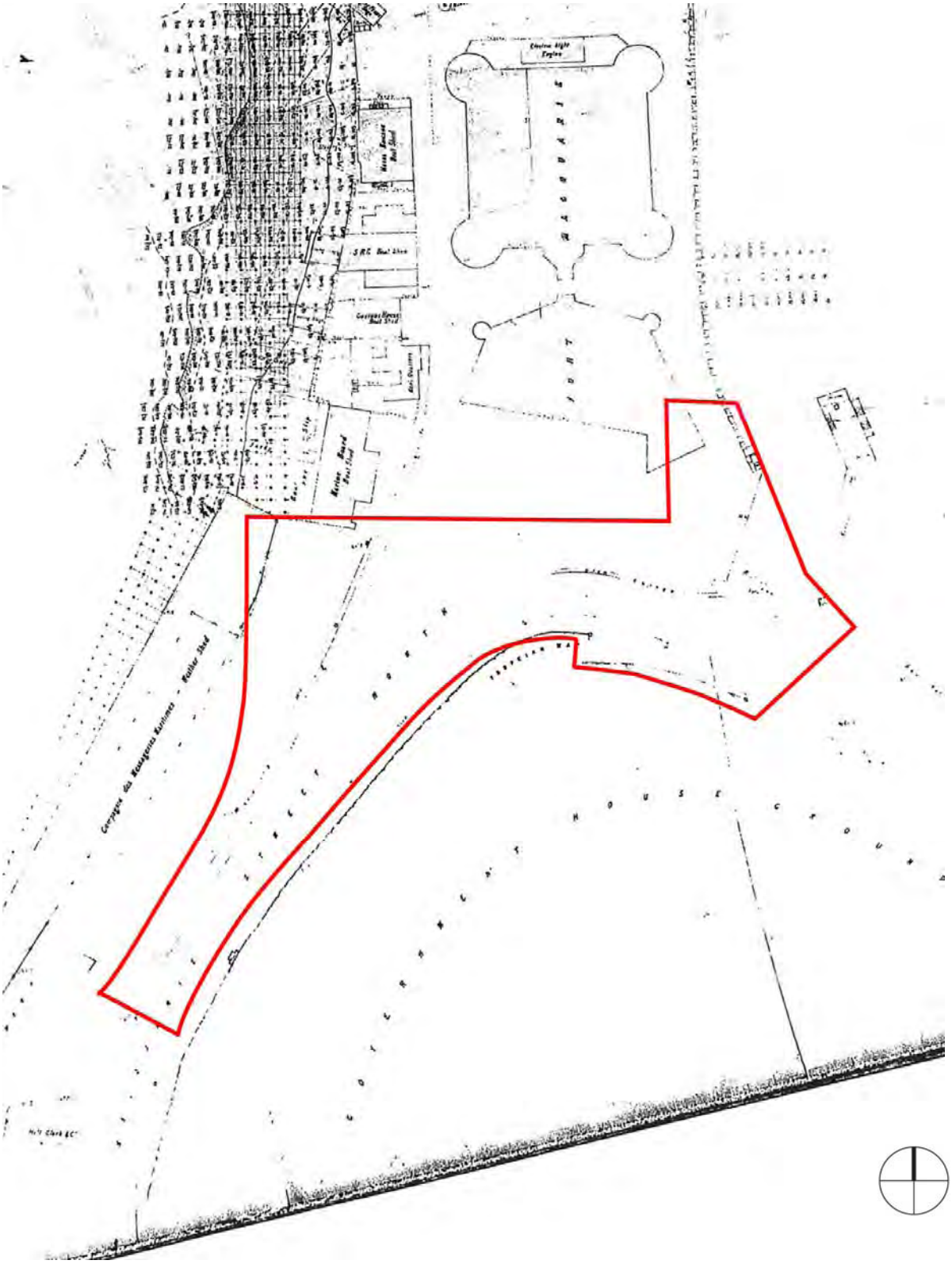

Figure 2.4 Extract of c1887 plan of Bennelong Point showing the southeastern extension of Fort Macquarie, the boat harbour and wharf facilities along the western shore. The study area is outlined. (Source: SRNSW, AO Map No. 608)

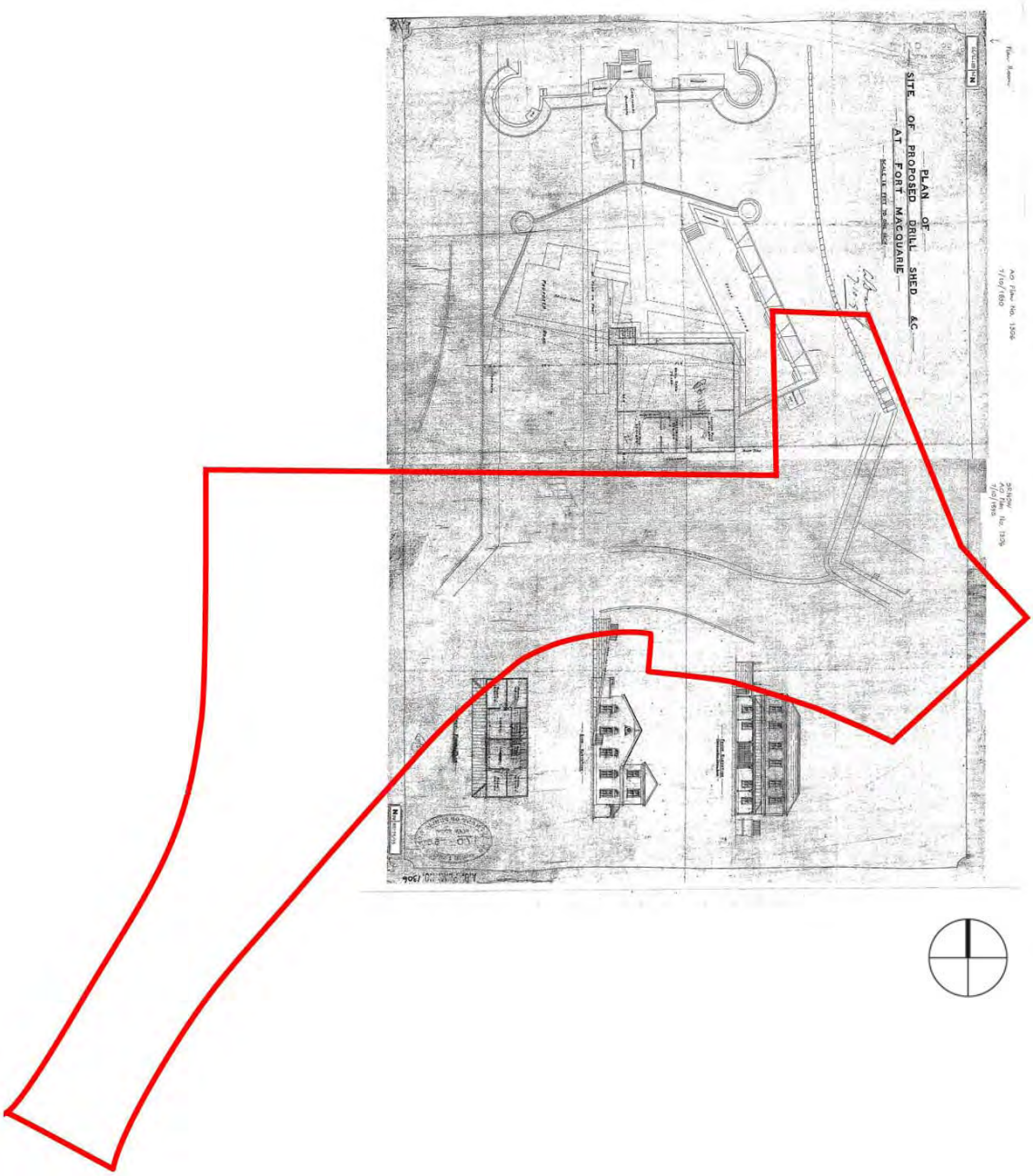

Figure 2.5 1890 'Plan of the Site of Proposed Drill Shed &c at Fort Macquarie', showing detail of the southern extension of Fort Macquarie. The study area is outlined. (Source: SRNSW, AO Plan No. 1306)

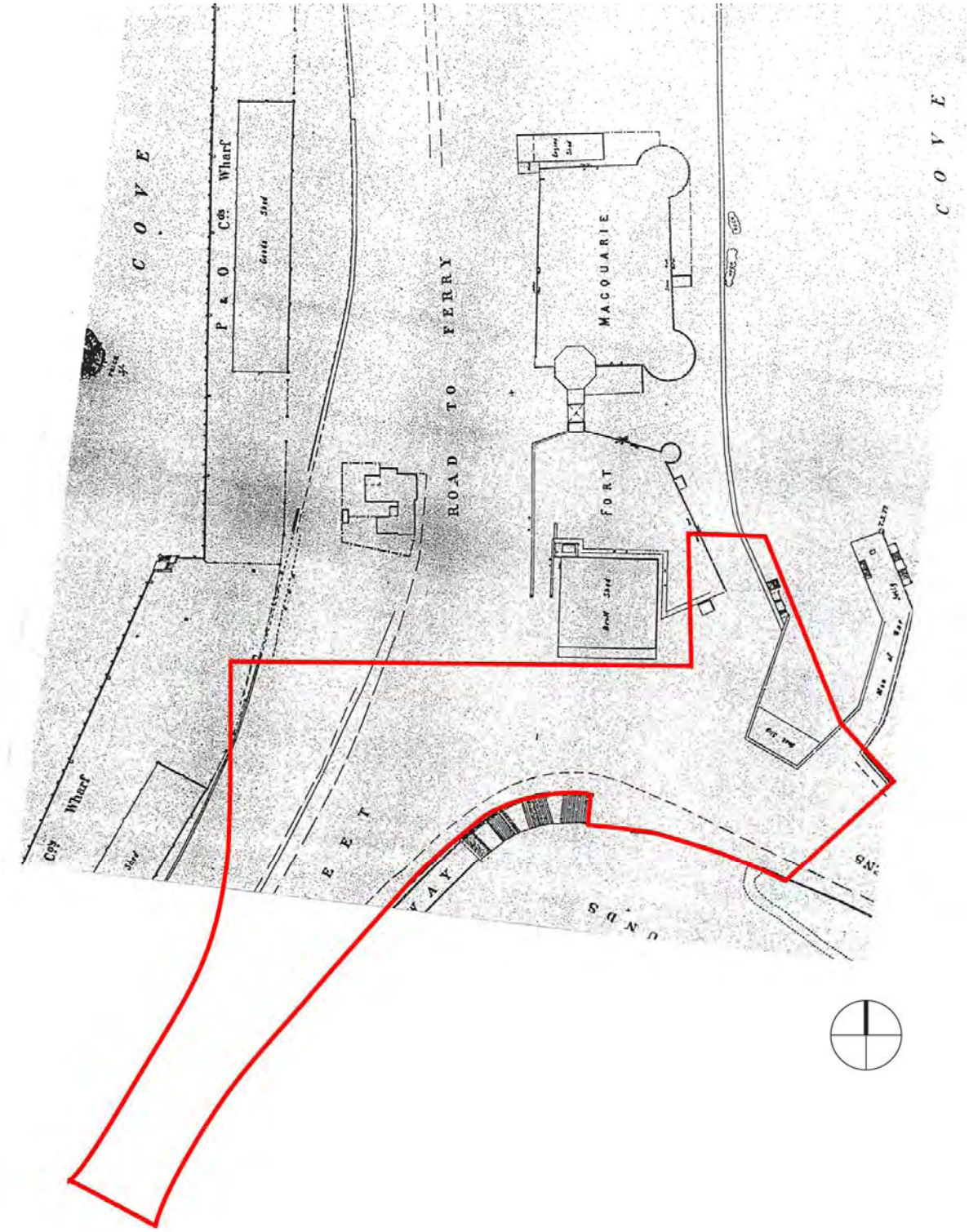

Figure 2.6 1894 plan of Fort Macquarie and Bennelong Point showing the southeastern extension of Fort Macquarie, the boat harbour and wharf facilities along the western shore. The study area is outlined. (Source: Metropolitan Detail Survey M Ser 4 811.17/1 Sydney Sheet P4; Australian Archives (NSW) B1905/10192)