



## Sydney Yard Access Bridge: Sydney Yard Excavation Works Archaeological Method Statement

<b>Project:</b> Sydney Metro – Chatswood to Sydenham	<b>Date:</b> 8 September 2017 updated 25 October 2017
<b>Project site:</b> Sydney Yard Excavation Works, Sydney Yard Access Bridge	<b>Author:</b> Dr Iain Stuart (Excavation Director - Historical), Dr Sandra Wallace (Excavation Director – Aboriginal), Shona Lindsay (Heritage Consultant)
<b>Contractor:</b> Laing O'Rourke	

### Background

This Archaeological Method Statement (AMS) outlines the archaeological approach and methodology to mitigate construction impacts to potential non-Aboriginal (historic) and Aboriginal archaeological deposits within the Sydney Yard at the location of excavation works required for the installation of the Sydney Yard Access Bridge (SYAB). Where required this AMS should be updated to account for revised impacts, or in response to unexpected finds. This AMS does not include management for other areas of the Central Station project site.

The methodology has been informed by, and is in accordance with, the following documents:

- Artefact Heritage 2016a. Sydney Metro Chatswood to Sydenham Non-Aboriginal Archaeological Research Design (ARD)
- Artefact Heritage 2016b. Sydney Metro Chatswood to Sydenham Aboriginal Cultural Heritage Assessment Report (CHAR)
- Laing O'Rourke 2017. Sydney Metro City and Southwest Sydney Yard Access Bridge Project, Construction Heritage Management Plan (CHMP)
- Transport for NSW 2016a. Salvage and Storage Strategy of the Sydney Metro Integrated Management System.
- Transport for NSW 2016b. Sydney Metro Chatswood to Sydenham Unexpected Finds Policy
- Transport for NSW 2016c. Sydney Metro Chatswood to Sydenham Exhumation Policy

Condition E17 of the Minister's Conditions of Approval for the Sydney Metro Chatswood to Sydenham project states that an AMS must be prepared in consultation with the Heritage Council of NSW prior to the commencement of archaeological investigation. This AMS is provided to satisfy condition E17 and will be provided to the NSW Heritage Division as a delegate of the Heritage Council for consultation. Advice from the NSW Heritage Division was received on 10 October 2017.

There is generally a nil-low potential for archaeological resources within the areas of proposed excavation works. The excavation works for the RE wall footings, stormwater drainage and connection including GPT, CSR routes, and bridge landing slab are located within the southern

section of CS4 which was assessed as having some potential to contain State and locally significant remains associated with the first and second railway stations (Figure 1). Archaeological management as per the ARD is to prepare an AMS and conduct archaeological investigation where required (for example test excavation or monitoring) for works that have the potential to impact on significant archaeological remains. This AMS fulfils the requirement for CS4 in relation to excavation works.

### Proposed Works

Excavation works would occur in the Sydney Yard area for the following items (Figure 2-3):

- RE wall footings - 0.5m deep
- Stormwater drainage and connection including GPT – 6-7m deep
- Electrical pits – 1 m deep
- Light pole removal in two locations
- Bridge landing slab - 0.5m deep

Other combined services will be in existing conduits and would not require excavation to install.

Excavation for Abutment B & Pier 2 (as identified in Figure 2) was conducted under a previous AMS prepared for pile capping works (Artefact July 2017).

Minor excavation associated with the proposed works would be undertaken in accordance with this AMS.

Figure 1: Archaeological management plan for Central Railway Station (Source: Artefact 2016: 333)

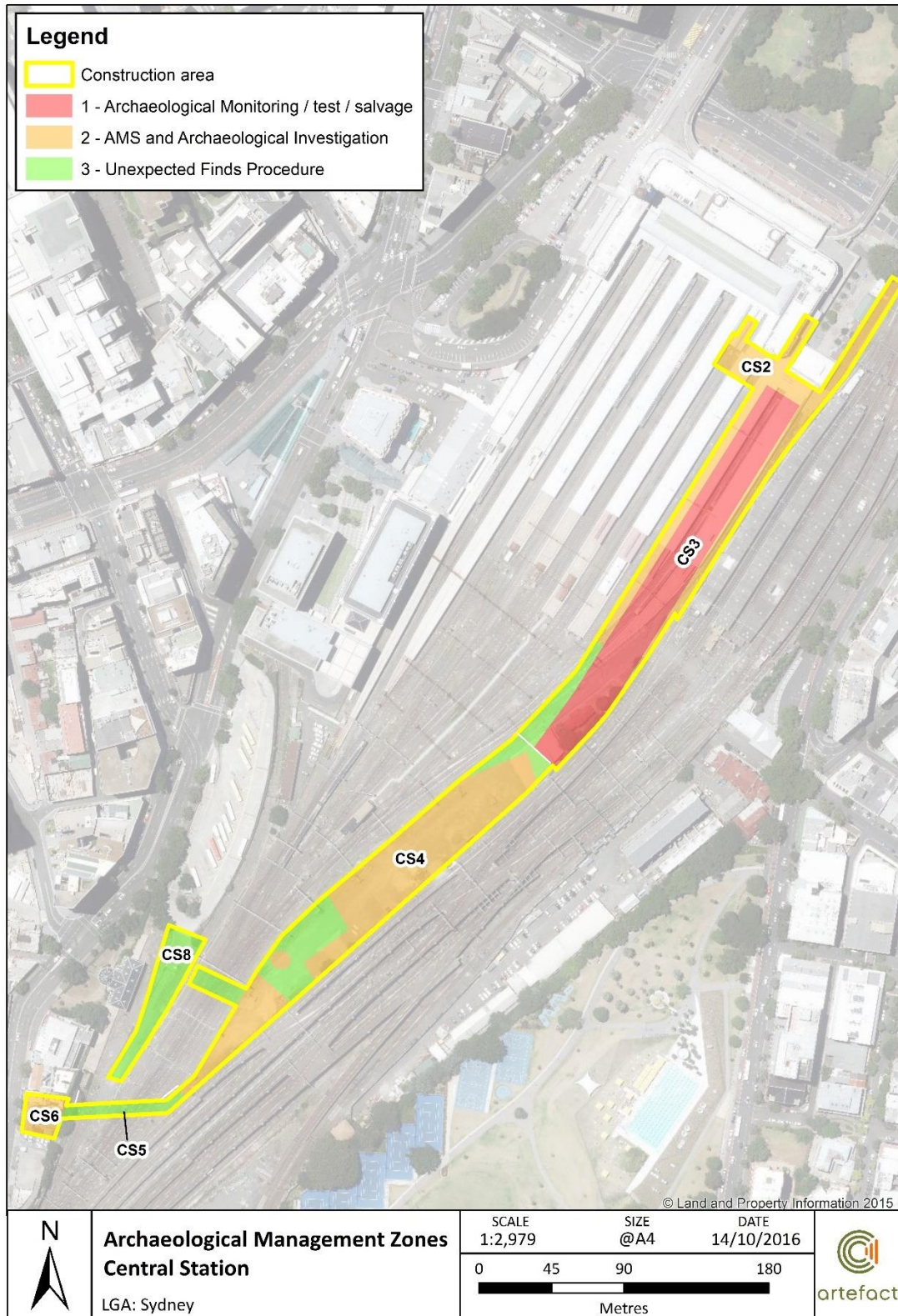


Figure 2: Excavation locations in relation to SYAB project (provided by LoR)

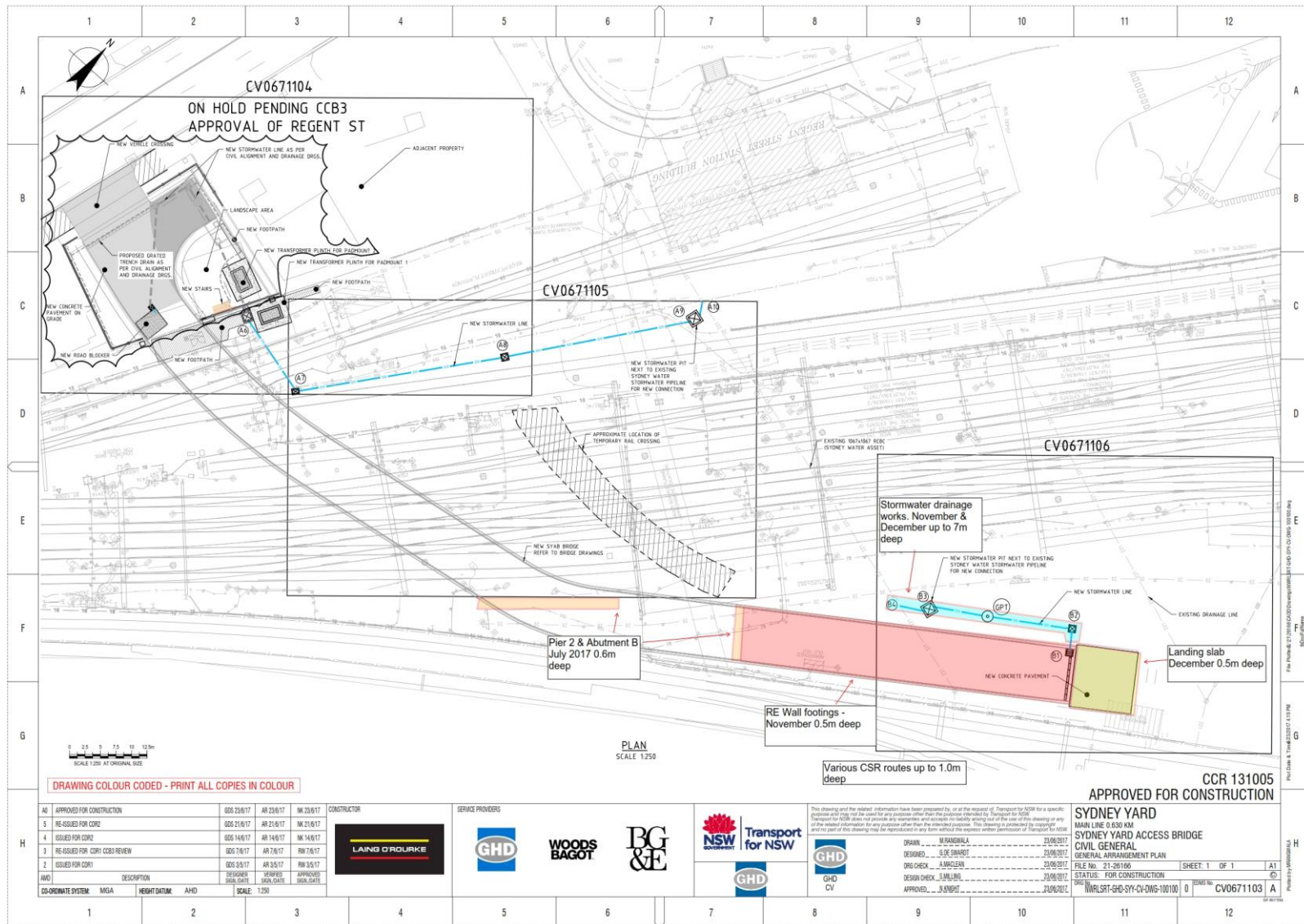
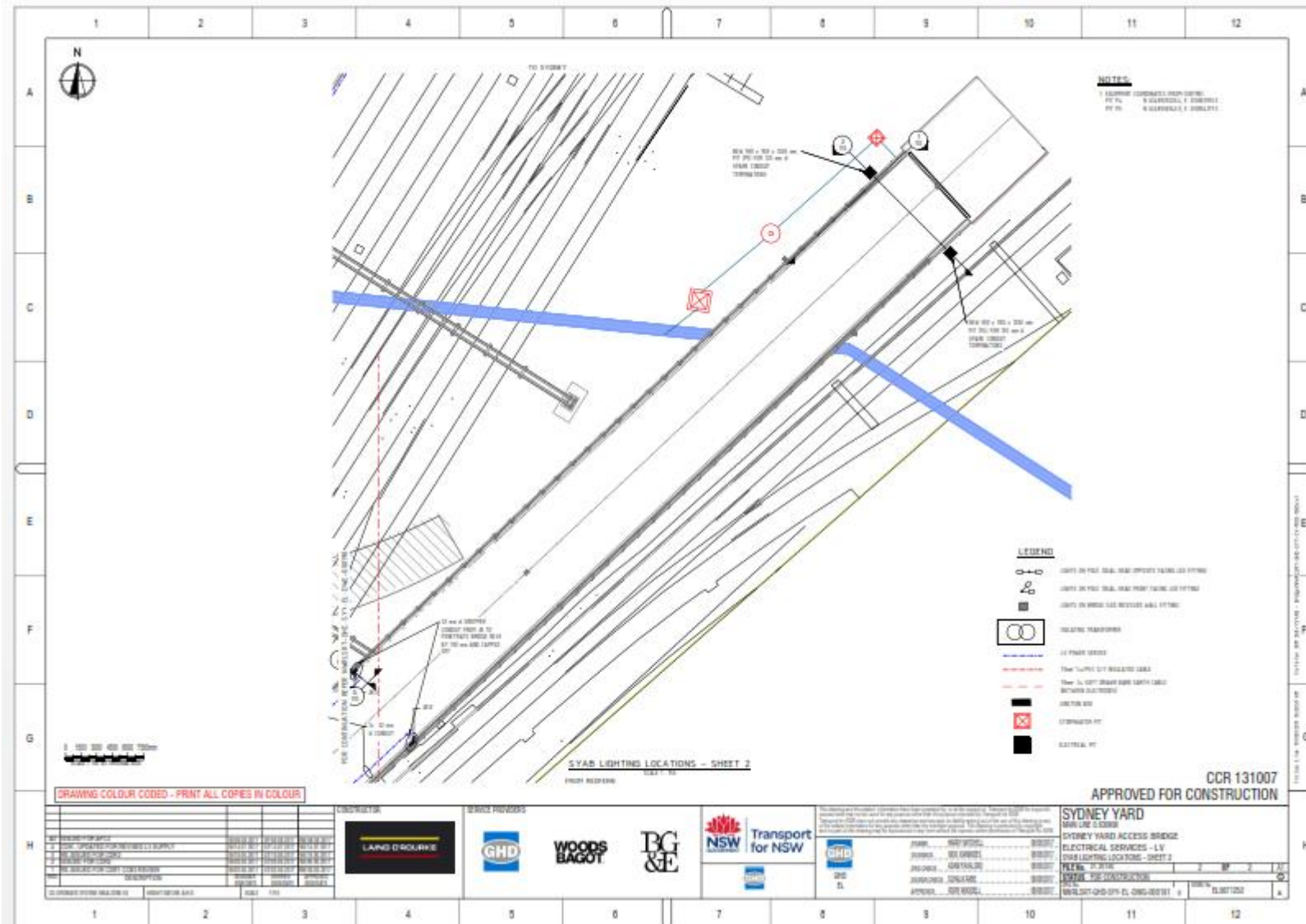


Figure 3: Excavation locations in relation to SYAB project (provided by LoR)



## Non-Aboriginal Archaeological Resources

Prior to the development of the first Sydney Station in 1855, the study area was located on a sandy open area of common ground known as the Cleveland Paddocks. These paddocks were owned by the government and used ostensibly for public recreation and pasturage. The ongoing development of the Sydney Central Railway Station in this area has removed any archaeological potential for remains related to this phase of European occupation. A complete history and discussion of the archaeological potential of the area has been provided in the Sydney Metro Chatswood to Sydenham Non-Aboriginal Archaeological Research Design (ARD) (Artefact 2016) and the following discussion provides a summary of the archaeological significance and potential of the study area.

The first Sydney Station was constructed within the study area in 1855. The railway station was constructed on predominantly open ground in the Government Paddocks, where the upper course of Blackwattle Creek was located. This creek was converted to a sewerage and stormwater drain underneath the rail corridor towards the south part of the station in the 1850s and discharged into an open culvert which drained water and refuse down the cut of the Darling Harbour goods line. By the 1870s the whole drainage line was covered and connected with the extension of the Sydney sewerage network, becoming part of the Prince Alfred Sewer, which drained into Blackwattle Bay. The sewer was originally a series of brick drains and stone culverts, however continual renovation of the sewer main occurred during the progressive phases of expansion of the railway station. Portions of the sewer which maintain their original late nineteenth century fabric are predominately located outside the Central station area to the east and west. The sewer is located to the north of the proposed works within CS 4.

Plans from 1865 indicate that an early carriage workshop was constructed to the south of the excavation works, and a small wooden building in the vicinity of the proposed RE wall footings and stormwater drainage works (Figure 5). The area in which this wooden shed was constructed has been heavily modified over time, with substantial earthworks and later structures constructed in the same area. The archaeological potential for remains related to this early wooden shed would be considered Nil to Low as any remains would be insubstantial (postholes) which are likely to have been impacted by subsequent modification. However, remains relating to the first Sydney Central Station may be considered to be of State heritage significance depending on intactness.

With the growth of the NSW rail network throughout the 1850s and 1870s, Sydney Central Railway Station was substantially enlarged in 1874. The metal-roofed workshop located to the south of the study area was eventually replaced with a more substantial locomotive workshop by 1884. Maps from 1895 show that parts of the locomotive workshop are within the southern part of the study area (Figure 6). Subsequent earthworks and rail construction, in particular the construction of the suburban line flyover in the 1920s, have largely removed any material evidence of this structure. Archaeological remains relating to the second Sydney Central Station may be considered of State or local heritage significance depending on nature and intactness, but would have a Nil to Low potential to remain intact within the study area.

The third, and current, Sydney Central Station was completed in 1906. The third station involved the construction of a new rail terminus and concourse to the north of Devonshire Street. The construction of the Sydney CBD underground railway network from the 1920s and the electrification of the rail network also involved the construction of a large multi-track series of fly-overs directly to the east of the study area. The construction of this fly-over has largely removed archaeological remains from earlier phases of the station in this area. Aerial photographs from 1949 show that the nineteenth century structures within the study area had been entirely removed (Figure 7). By this time, the study area contained a series of stabling sidings to access maintenance facilities at the Eastern Carriage Shed. With the demolition of the Eastern Carriage Shed in the late twentieth century, the former rail lines through the study area were removed and the Sydney Yard has been

used as a maintenance and laydown area since that time. There would be a moderate - high potential for the identification of archaeological remains related to former rail track and ancillary support structures (overhead wiring footings, disused signalling equipment) of the third (current) Sydney Central Station within the study area, however these remains would not meet the threshold for local heritage significance.

Excavation works within Sydney Yard have the potential to impact archaeological remains related to the first and second Sydney Stations. However, the potential for locating intact and legible remains relating to these resources would be considered Nil to Low, due to the extensive history of earthworks and redevelopment within the Sydney Yard area.

Figure 4: 1844 Trigonometric plan of Sydney with excavation works indicated

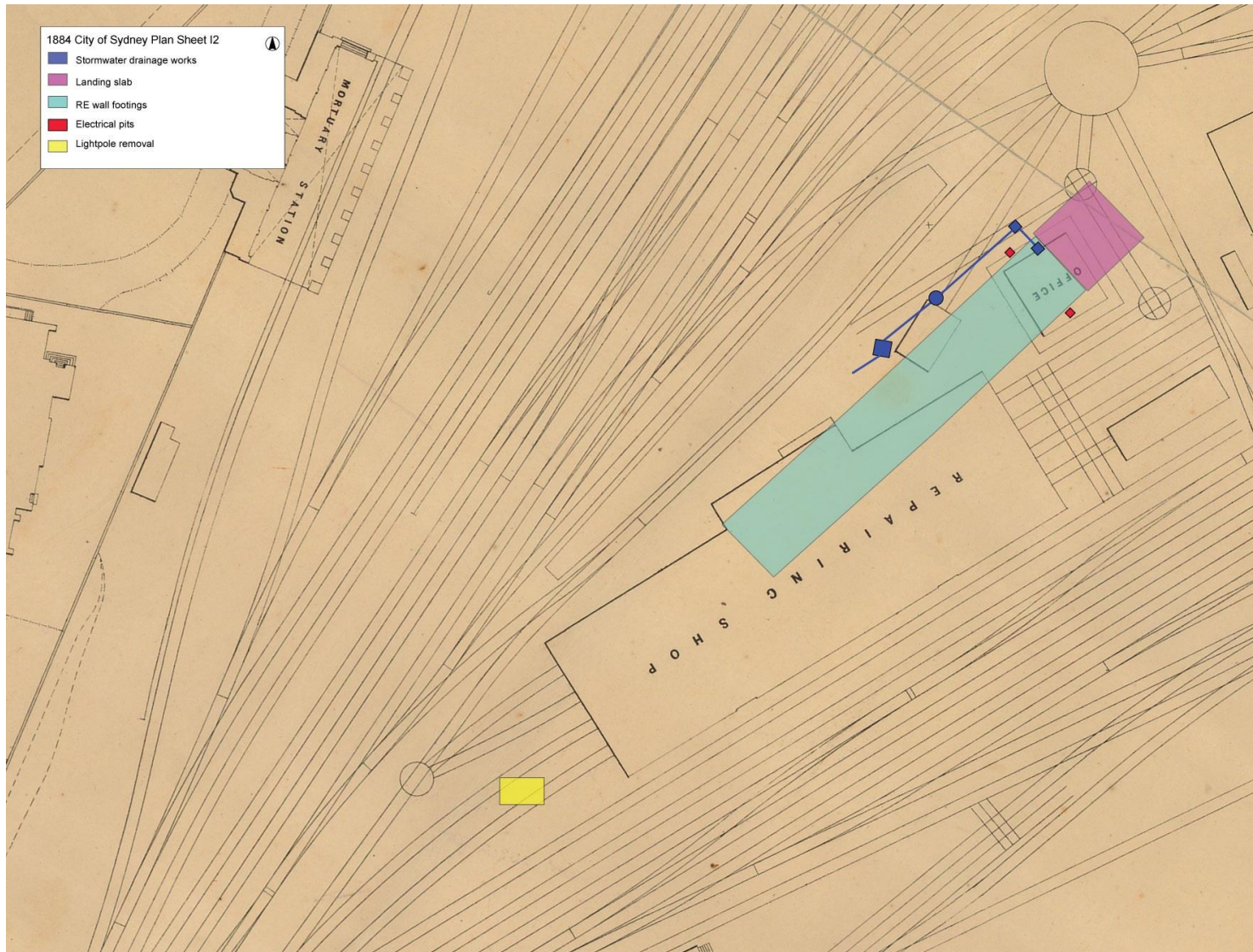




Figure 5: 1865 Trigonometric plan of Sydney with excavation works indicated

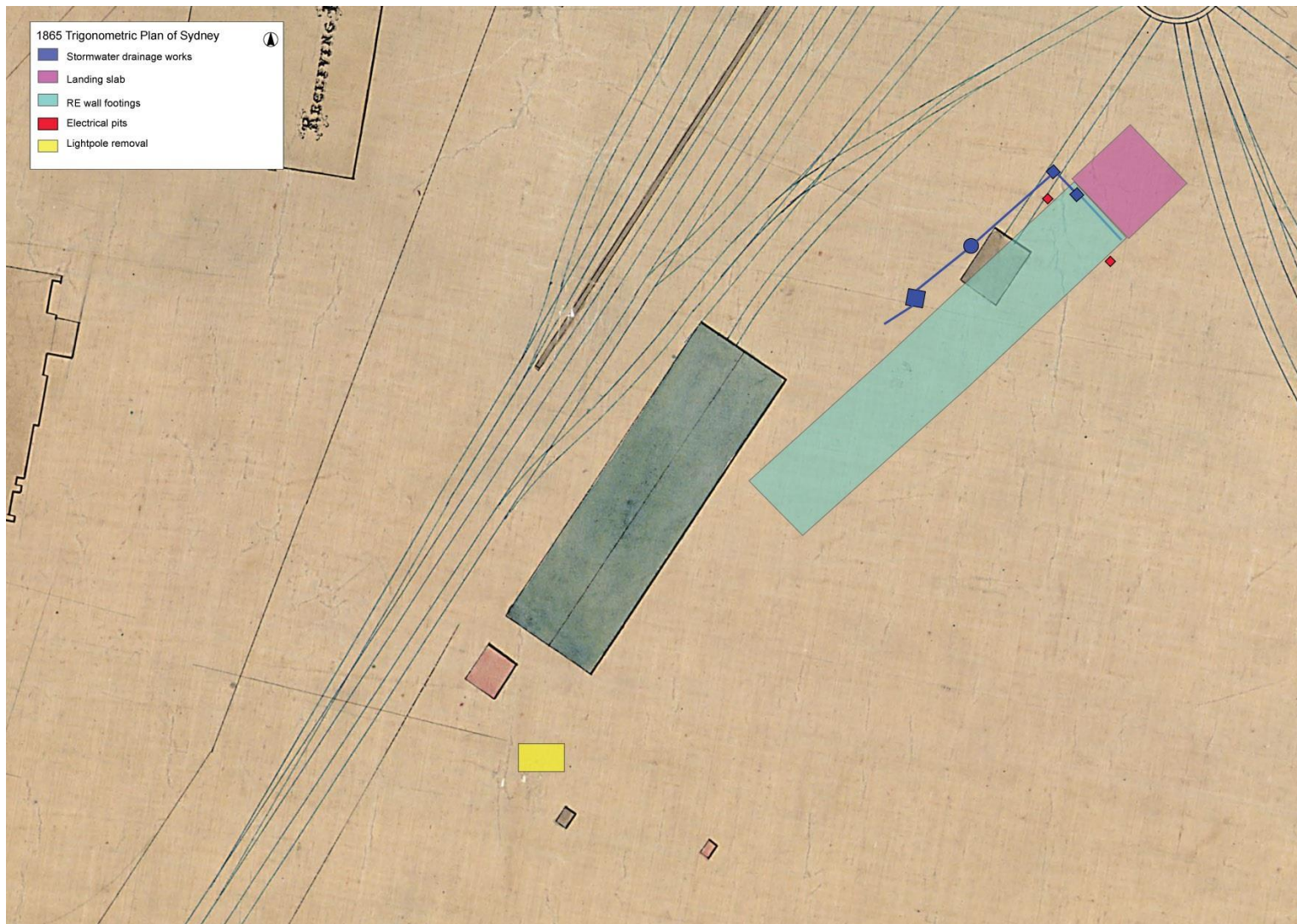


Figure 6: Aerial with 1865 and 1895 Central Station buildings, and excavation works indicated

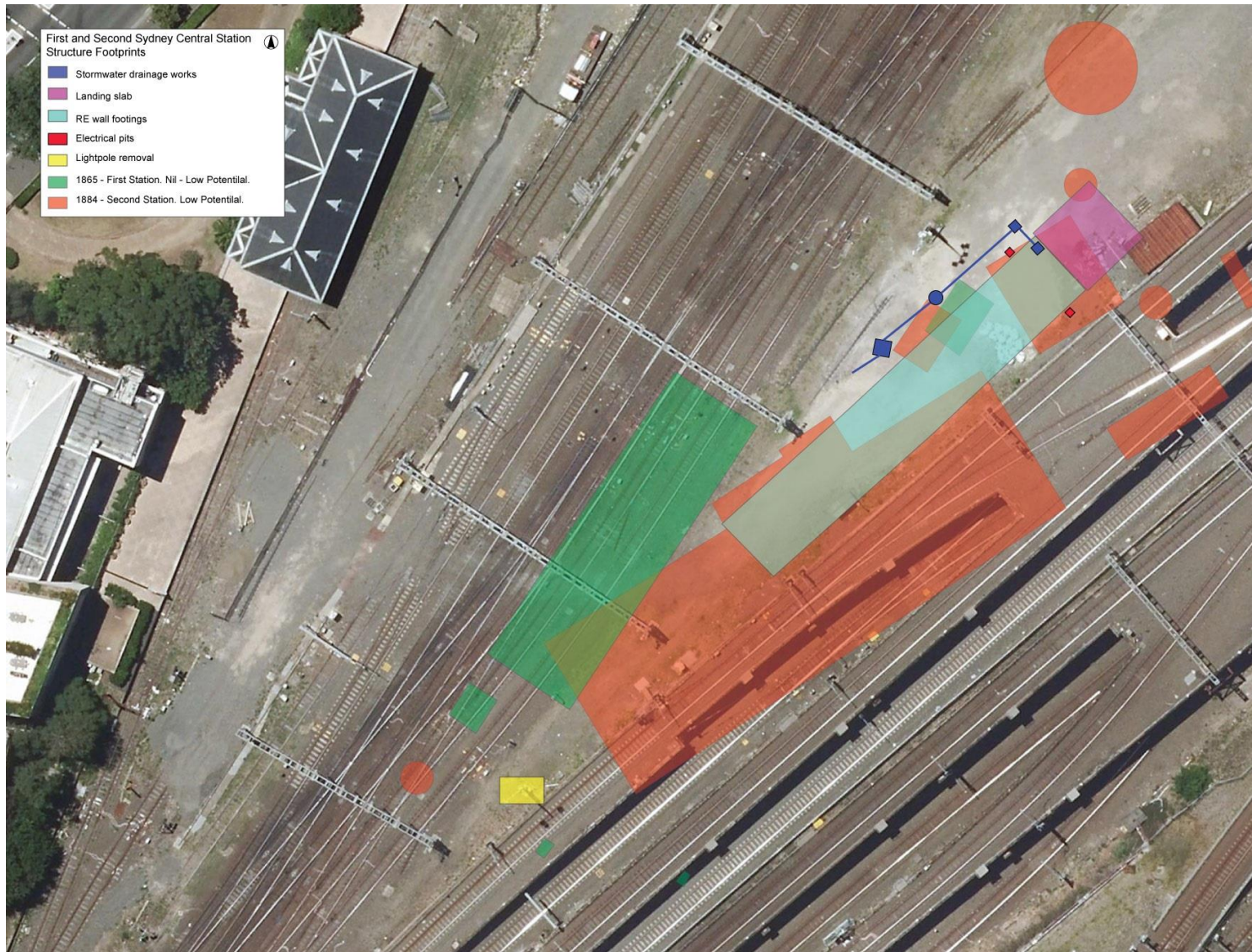
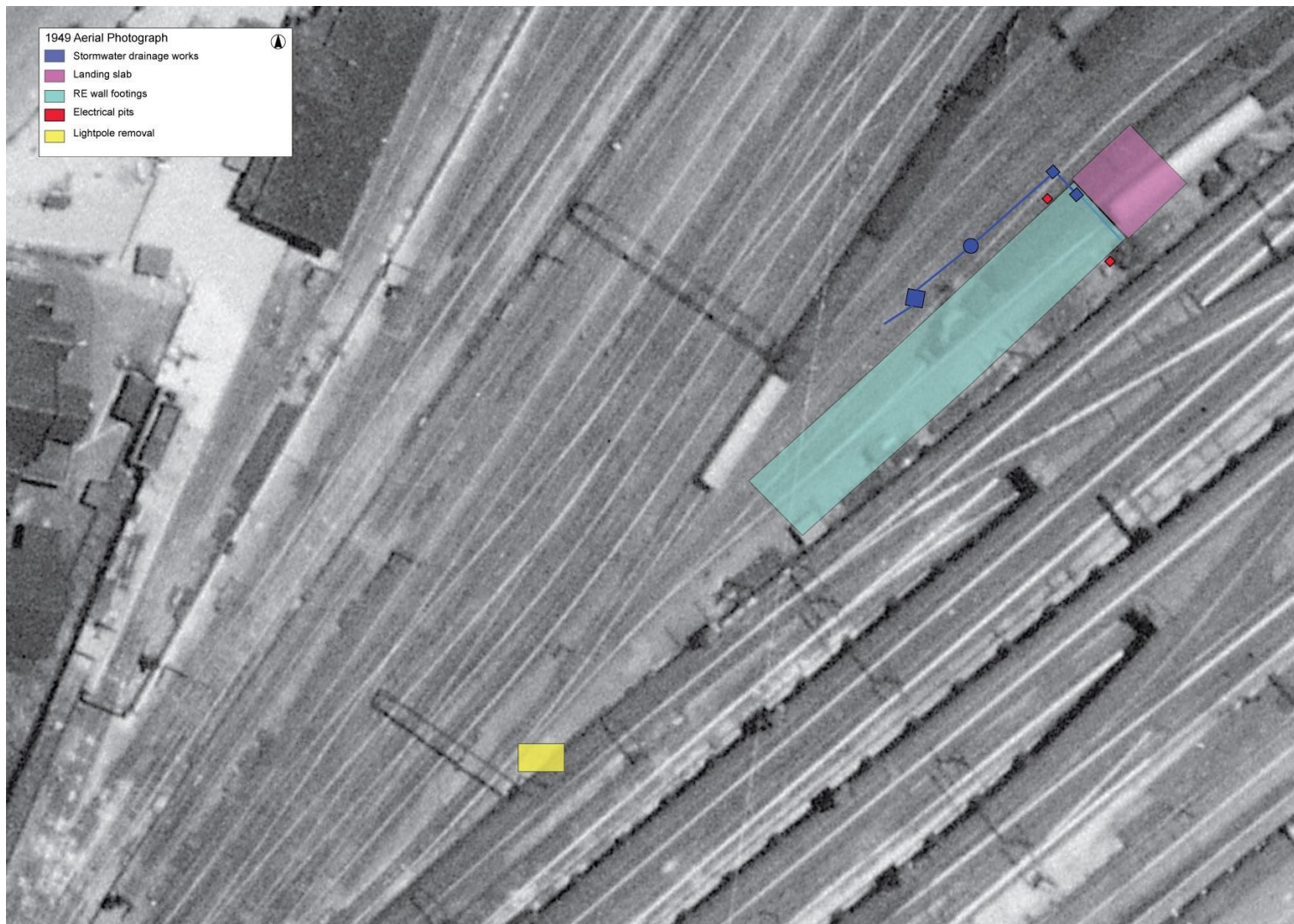


Figure 7: 1949 aerial with excavation works indicated



## Work Stage Specific Archaeological Methodology

The AMS archaeological methodology meets the requirements of Chapter 12 of the project ARD which discusses details of archaeological methodologies. These requirements are not reproduced in detail, but where relevant are discussed below.

The Archaeological Method section of the ARD in relation to Central Station notes that ground disturbance and excavation works would be required.

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*Ground disturbance and excavation work in Sites CS 4 with potential to impact significant archaeological remains (rail-related 1850s-1900s) would require archaeological mitigation. This would be monitoring or test/salvage depending on extent of work and level of potential impact, for example, archaeological test/salvage in the northern part of Site CS 4 subject to bulk excavation for the station utilities structure.*

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In summary, the archaeological mitigation for CS 4 would include preparation of an AMS, test/salvage of the northern part of CS 4, and monitoring / salvage if required of the remaining CS 4.

The proposed excavation within Sydney Yards for the construction of the Sydney Yard Access Bridge would be located in the southern section of CS 4 and the works would be monitored by an archaeologist. Test excavations would not be required. Monitoring would initially ground truth assessed disturbance. If, as predicted, disturbance is high, the excavation could revert back to unexpected finds. This would be at the discretion of the archaeologist on site and to be confirmed by the Excavation Director.

### Monitoring

Archaeological monitoring is where an archaeologist is in attendance and supervising construction excavation work with potential to expose or impact archaeological remains. Monitoring is generally undertaken where there is lower potential for significant archaeological remains and/or where minor excavation work is in an area of archaeological sensitivity.

If archaeological remains are identified during archaeological monitoring, they would be recorded and assessed to determine if further investigation is required. Localised stoppages in the construction work would be required to facilitate this process. Works would not recommence until the monitoring archaeologist has completed the recording and is satisfied that further investigation is not required.

### Salvage of identified remains

If significant archaeological remains are identified, then further investigation such as salvage would be required prior to construction impacts.

Archaeological excavation would involve the use of a machine excavator (5 to 7 tonne) with a 1.2 to 1.6 metre flat bucket to remove fills or overburden. Once introduced fills have been removed, any archaeological remains located within the excavation area would be cleaned by hand to allow archaeologists to understand the nature of the potential archaeological resource. Archaeological deposits would be recorded by context (see below for archaeological recording strategy).

## Excavation recording

A record of archaeological investigation would be made in accordance with the methodology outlined in the ARD. The recording methodology includes the following:

- A site datum would be established
- Survey and scaled plans of the open area, trench locations and any significant archaeological features uncovered in the test and salvage program. The plans would include elevations recorded with a dumpy level
- Scaled section drawings where appropriate
- Digital photography, in RAW format, using photographic scales and photo boards where appropriate. A photographic record of all phases of the work on site would be undertaken
- A standard context recording system will be employed: The locations, dimensions and characteristics of all archaeological features and deposits will be recorded on a sequentially numbered context register. This documentation will be supplemented by preparation of a Harris matrix showing the stratigraphic relationships between features and deposits
- Should a large amount of archaeological resources be identified during open area excavation, the site would be digitally surveyed and recorded
- Artefact collection by context. Large or redundant artefactual materials from individual contexts would be sample collected. Hazardous material would not be collected.

## Curation of archaeological material

Storage and curation strategies have been adapted from the Salvage and Storage Strategy of the Sydney Metro Integrated Management System (Transport for NSW 2016a: 5 – 6).

Collection of artefacts would be in the context of the ARD, which state that “retrieval of artefacts would focus on those whose analysis would contribute to research agendas, or would be representative of the site” (Artefact 2016a:315).

Following excavation, all collected artefactual material would be stored by Artefact Heritage in order to conduct post-excavation material analysis. Once post-excavation analysis and salvage excavation reporting has been completed, ongoing curation and long-term care of the collection would be at the discretion of Transport for NSW. Archaeological materials may be incorporated into interpretative or public display depending on the nature of recovered finds.

Large archaeological items, or items that require special care (i.e. material that is in danger of deterioration post-excavation), would be stored in appropriate facilities co-ordinated with and managed by Transport for NSW under the projects salvage strategy.

## Human Remains

Discovery of suspected human remains would be managed under the project Unexpected Finds Policy and the Exhumation Policy (Transport for NSW 2016b; Transport for NSW 2016c).

## Public Engagement

If substantial intact remains are located opportunities for public engagement such as public viewing and public interpretation would be considered.

## Reporting

If archaeological remains were identified and assessed during the program of works a results memo would be provided.

If salvage was required an archaeological excavation report would be prepared following the completion of the program of archaeological works. This report would comprehensively describe and interpret the findings of the excavation program within the context of the research design. It would include photographs and plans of the site and contexts. Recovered artefacts would be catalogued, assessed and analysed by material specialists as required, depending on the nature of the finds. These records and analyses would be developed in response to research questions provided in the ARD for the project (Artefact 2016a: 261 – 263).

## Human Remains

Discovery of suspected human remains would be managed under the project Unexpected Finds Policy and the Exhumation Policy (Transport for NSW 2016b; Transport for NSW 2016c).

## Aboriginal archaeological heritage strategy

The Sydney Yard excavation works are within Method Area 2 as outlined in the Aboriginal Cultural Heritage Assessment Report (CHAR) (Artefact Heritage 2016b). In accordance with the provisions for MA2 Aboriginal archaeological test/salvage excavation would be undertaken where intact natural soil profiles with the potential to contain significant deposits, or Aboriginal objects, are located during historical archaeological excavations. The Aboriginal archaeological team would be notified by the Excavation Director and a qualified archaeologist experienced in Aboriginal archaeology would assess the find. If the find was found to trigger archaeological management under the CHAR, the registered Aboriginal Parties and Office of Environment and Heritage (OEH) would be notified in accordance with the Unexpected Finds Procedure.

If Aboriginal objects or areas of intact soil profile were to be identified this AMS would be updated to outline an appropriate methodology for the works in accordance with the CHAR. Any excavation and analysis would be undertaken in accordance with the project CHAR.

## Team and timing

### Archaeological team

The archaeological team would comprise:

- Primary Excavation Director – Iain Stuart (JCIS Consultants/ Artefact Heritage)
- Secondary Excavation Director – Jenny Winnett (Senior Heritage Consultant, Artefact Heritage)
- Supervising Archaeologist – Shona Lindsay (Heritage Consultant, Artefact Heritage)
- Excavation Director (Aboriginal) – Sandra Wallace (Principal, Artefact Heritage)

The Excavation Directors meet the requirements of the ARD, CHAR and Condition E18.

### Excavation timing

The Excavation Director would be on call during the excavation works to oversee responses to unexpected finds as required.

The excavation works would be monitored by an archaeologist as required under the direction of the Excavation Director.