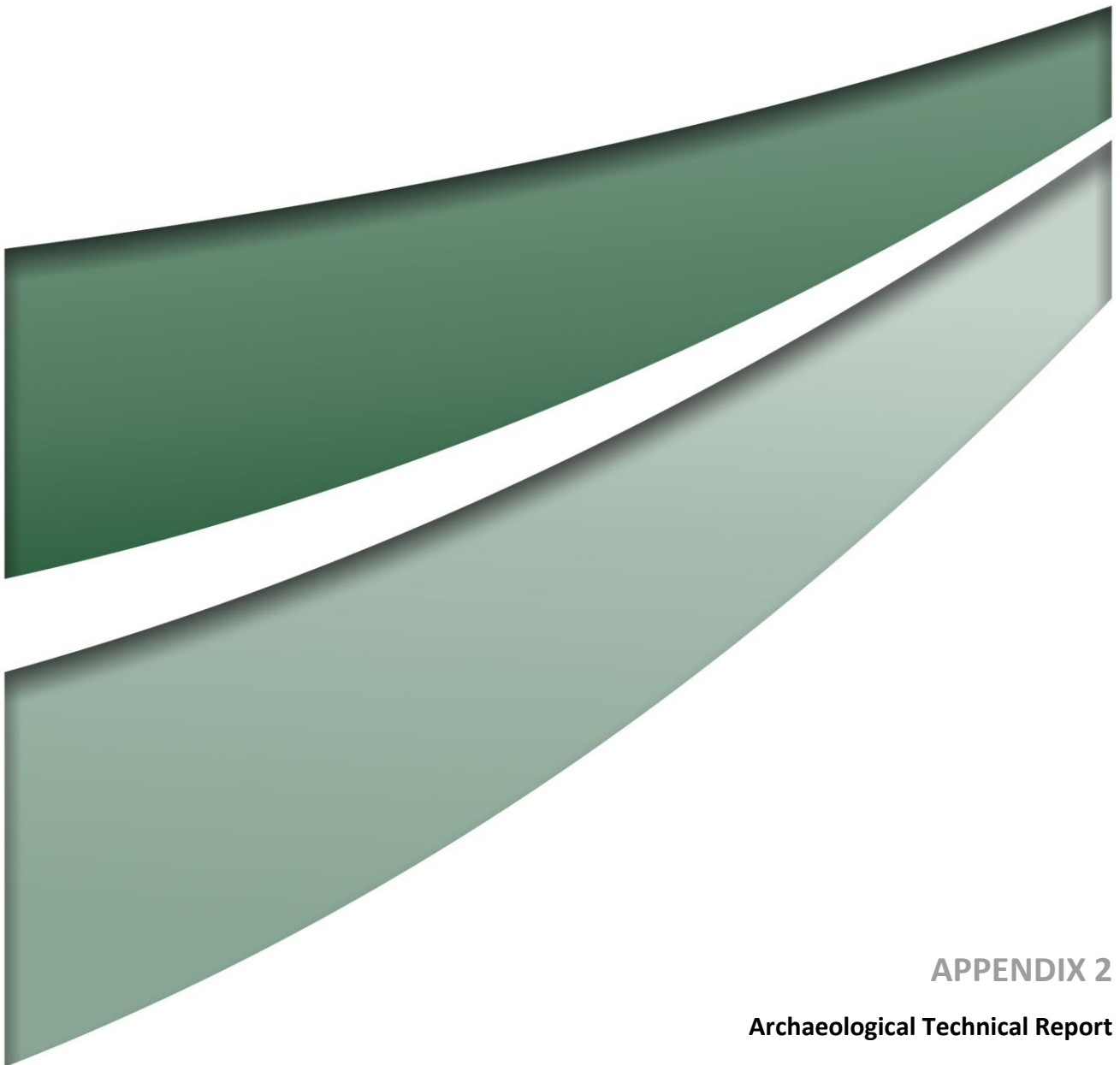




APPENDIX 2

Archaeological Technical Report



ARCHAEOLOGICAL TECHNICAL REPORT

New Maitland Hospital, Metford, NSW

FINAL

March 2018

ARCHAEOLOGICAL TECHNICAL REPORT

New Maitland Hospital, Metford, NSW

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Health Infrastructure NSW

Project Director: Nicola Roche
Project Manager: Joshua Madden
Report No. 4049/R02/Final
Date: March 2018



Newcastle

75 York Street
Teralba NSW 2284

Ph. 02 4950 5322

www.umwelt.com.au



Quality
ISO 9001

This report was prepared using
Umwelt's ISO 9001 certified
Quality Management System.

Disclaimer

This document has been prepared for the sole use of the authorised recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that for which it was supplied by Umwelt (Australia) Pty Ltd (Umwelt). No other party should rely on this document without the prior written consent of Umwelt.

Umwelt undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document. Umwelt assumes no liability to a third party for any inaccuracies in or omissions to that information. Where this document indicates that information has been provided by third parties, Umwelt has made no independent verification of this information except as expressly stated.

©Umwelt (Australia) Pty Ltd

Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
Final	Nicola Roche	28 March 2018	Nicola Roche	28 March 2018

Table of Contents

1.0	Introduction	1
1.1	Preamble	1
1.2	Project Area	1
1.3	Project Background	1
1.4	Previous Aboriginal Cultural Heritage Assessment	3
1.5	Purpose of the Archaeological Technical Report	3
1.6	Project Team	3
1.7	Consultation	3
1.8	Report Structure	4
2.0	Statutory Context	6
2.1	Environmental Planning and Assessment Act 1979	6
2.2	National Parks and Wildlife Act 1974	6
2.3	Heritage Act 1977	7
3.0	Environmental Context	8
3.1	Topography and Soils	8
3.2	Resource Availability	8
3.3	Past Land Use and Disturbance	9
3.4	Summary	10
4.0	Aboriginal Archaeological Context	11
4.1	Aboriginal Heritage Information Management System	11
4.1.1	Previous Archaeological Investigations in the Local Area	12
4.2	Summary	14
4.3	Predictive model	14
5.0	Archaeological Survey	17
5.1	Methods	17
5.1.1	Survey Coverage	18
5.1.2	Assessment of Archaeological Potential	18
5.2	Results	19
5.2.1	Survey Units	26
5.3	Discussion and Assessment of Potential	26
6.0	Scientific Value Significance Assessment	29
6.1	Archaeological Significance Assessment	29
6.1.1	Assessment of Archaeological Significance	30
7.0	Impact Assessment	31
7.1	Ecologically Sustainable Development	31

7.2	Summary of Proposed Works	31
7.3	Impact Assessment	32
8.0	Summary	33
9.0	Recommendations	34
10.0	References	35

Figures

Figure 1.1	Project Area	5
Figure 4.1	AHIMS Search Results	16
Figure 5.1	Survey Units	27
Figure 5.2	Landforms	28

Plates

Plate 5.1	View south overlooking portion of project area stripped of topsoil	19
Plate 5.2	View of clay and gravel stockpile along truck access way	20
Plate 5.3	view of mounded bundwall	21
Plate 5.4	View of bund wall with new vegetation growth	21
Plate 5.5	Showing cut and soil and boulder dumps	22
Plate 5.6	View along western boundary of thick regrowth vegetation	23
Plate 5.7	View of sub-surface utility and associated cuts	24
Plate 5.8	Artefact location	25
Plate 5.9	Current condition of artefact location	25

Tables

Table 1.1	Report Structure	4
Table 5.1	On-site meeting and site visit attendees	17
Table 5.2	Survey Coverage of the Project area	26
Table 5.3	Landform Summary of the Project area	26
Table 6.1	Archaeological significance assessment	30

Appendices

Appendix 1	Proposed Upgrade Plans
Appendix 2	AHIMS Results

1.0 Introduction

1.1 Preamble

Health Infrastructure NSW (HI) is seeking approvals for the proposed construction of the New Maitland Hospital (NMH) at Metford, NSW (**Figure 1.1**). AECOM, the appointed project manager of the environmental assessment on behalf of Health Infrastructure NSW, has commissioned Umwelt (Australia) Pty Ltd (Umwelt) to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the proposed works. This archaeological technical report (ATR) is undertaken to inform the ACHAR of the archaeological significance of the project area.

The outcomes of this ATR are provided, in summary, in the Aboriginal Cultural Heritage Assessment Report. The recommendations of the ATR are consistent with that provided in **Section 6** of the ACHAR (Umwelt 2017). This ATR should be read in conjunction with the *Aboriginal Cultural Heritage Assessment Report: New Maitland Hospital Metford, NSW*, Umwelt 2017 to which this ATR is appended.

This report has been prepared in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*, the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (The Code of Practice), and the *Aboriginal cultural heritage consultation requirements for proponents 2010*.

1.2 Project Area

The proposed works area (project area) is located on Lot 7314 in DP 1162607 and Part Lot 401 DP 755237, as shown in **Figure 1.1**. The project area is in the south-western portion of the “Metford Triangle” located on the eastern side of Metford Road near East Maitland (Figure 1.1) and is located within the Maitland City Council Local Government Area (LGA) and the suburb of Metford. The Metford Triangle comprises the old brickworks and quarry formally leased and operated by CSR. The triangle consists of four separate lots - Lot 7314 in DP 1162607, Part Lot 3 in DP 1091727 and Lots 266 and 401 in DP 755237.

The project area for this Archaeological Technical Report (ATR) is limited to Lot 7314 and Part Lot 401. The land within the Metford Triangle is mostly Crown Land and is zoned as RU2 Rural Landscape in the Maitland Local Environment Plan (LEP) 2011. The land proposed for the NMH (Lot 7314) is owned by the NSW Health Administration Corporation.

1.3 Project Background

HI is seeking approval for the NMH through a Staged Infrastructure Application in accordance with section 115ZD of the EP&A Act.

Two stages of the development are proposed.

- Stage 1: Concept design for the proposed development, site clearance and preparatory works.
- Stage 2: Detailed design, construction and operation of the hospital.

This ATR only addresses Stage 1 of the Proposal.

Stage 1 includes:

- Concept design of NMH and
- Site clearance and preparatory works generally comprising:
 - Site office and construction compound, including connection of compound to services
 - Connection of temporary and permanent services for the new facility (water, sewer, power, gas)
 - Removal of existing temporary fencing and installation of construction fencing and signage
 - General clearance of site vegetation within the footprint of hospital construction works including tree stumps, but with retention of the majority of native vegetation around the site's perimeter in areas less impacted by historical mining activities. Asset Protection Zones (APZs) would be established for bushfire protection
 - Chipping of cleared vegetation (excluding weed species) to use on site for ground stabilisation/erosion control in the period prior to commencement of Stage 2
 - Offsite disposal of surplus cleared vegetation and weeds to green waste recycling facility or another beneficial reuse
 - Bulk earthworks to establish the required site levels and create a stable landform in preparation for hospital construction.
 - Associated in-ground infrastructure and works may include formation of building foundations, drainage works and excavation of sub-level structures
 - Site stabilisation (such as establishment of erosion and sediment controls) in preparation for Stage 2
 - Site management
 - Construction of internal un-sealed road ways for use during construction and in preparation for final road formation in Stage 2
 - Construction of a hard, un-sealed sub-base for temporary construction parking spaces and in preparation for final carpark formation in Stage 2.

Stage 2 (Hospital Delivery) would include detailed design, construction and operation of the hospital. Stage 2 would include:

- Detailed design of NMH
- Construction of NMH
- Utility and services connection / amplifications works
- Internal roadways and car parking for staff, patients and visitors
- External site works such as landscaping, pathways, etc and
- Hospital commissioning and operation.

A separate EIS will be prepared to assess impacts associated with Stage 2 which will be the subject of a separate planning approval application. Similarly enabling works for the hospital, including upgrades to existing drainage and the construction of a roundabout at the Metford Road/ Fields end Street intersection are being delivered outside of the SSI declared boundaries and covered in a separate Review of Environmental Factors (REF) which includes consideration of Aboriginal cultural heritage.

1.4 Previous Aboriginal Cultural Heritage Assessment

The current project area was originally part of a larger area subject to a Preliminary Aboriginal Cultural Heritage Assessment (Umwelt 2014) for the same proposed hospital. The previous assessment found that the majority of the current project area had been subject to significant disturbances as a result of historical land use, predominantly the former CSR (PGH Brickworks) operations.

Despite the level of disturbances which included vast portions of topsoil removal, the archaeological survey undertaken for the preliminary assessment identified one previously unrecorded Aboriginal cultural heritage site – an isolated find. The preliminary assessment concluded that further Aboriginal cultural heritage material/sites may be present across portions of the preliminary project assessment area including areas of the current project area. The assessment recommended further archaeological assessment during later stages of investigation (Umwelt 2014).

1.5 Purpose of the Archaeological Technical Report

The purpose of the ATR is to:

- understand the archaeological potential of the proposal area
- understand the relationship of the proposal area with the wider cultural and archaeological landscape
- prepare an archaeological significance assessment
- assess the potential archaeological impacts of the proposal
- aim to minimise the identified archaeological impacts of the proposal and
- develop appropriate management and mitigation measures to minimise any identified archaeological impacts of the proposed works.

1.6 Project Team

This report was prepared by Senior Archaeologist Joshua Madden and reviewed by Manager Cultural Heritage Nicola Roche both of Umwelt. Technical assistance was provided by Umwelt Senior Draftsperson Michael Ong.

1.7 Consultation

Umwelt have undertaken consultation in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010*. The purpose of consultation is to assess the cultural significance of Aboriginal objects, places and landscapes. Further, consultation is undertaken in order to develop and implement appropriate management and mitigation outcomes in consultation with the local Aboriginal community. **Section 3.0** of the Aboriginal Cultural Heritage Assessment Report (ACHAR), to which this report is appended, documents all consultation in relation to the proposal.

1.8 Report Structure

Table 1.1 below outlines the structure of this ATR.

Table 1.1 Report Structure

Report Section	Section outcomes
Section 1.0	Provides a summary of the project.
Section 2.0	Outlines the relevant legislation and statutory context followed for this assessment.
Section 3.0	Summarises the environmental background of the project area.
Section 4.0	Summarises the Aboriginal archaeological context of the project area and the wider region.
Section 5.0	Summarises the results of the archaeological survey of the project area.
Section 6.0	Provides an assessment of the archaeological significance of the project area.
Section 7.0	Assesses the potential impact to the proposed works to Aboriginal cultural heritage material and objects.
Section 8.0	Provides a summary of the assessment outcomes.
Section 9.0	Outlines a series of archaeological recommendations for the project area.
Section 10.0	Lists the references used for the ATR.
Appendix 1	Is the proposed re-development plans.
Appendix 2	The AHIMS results.

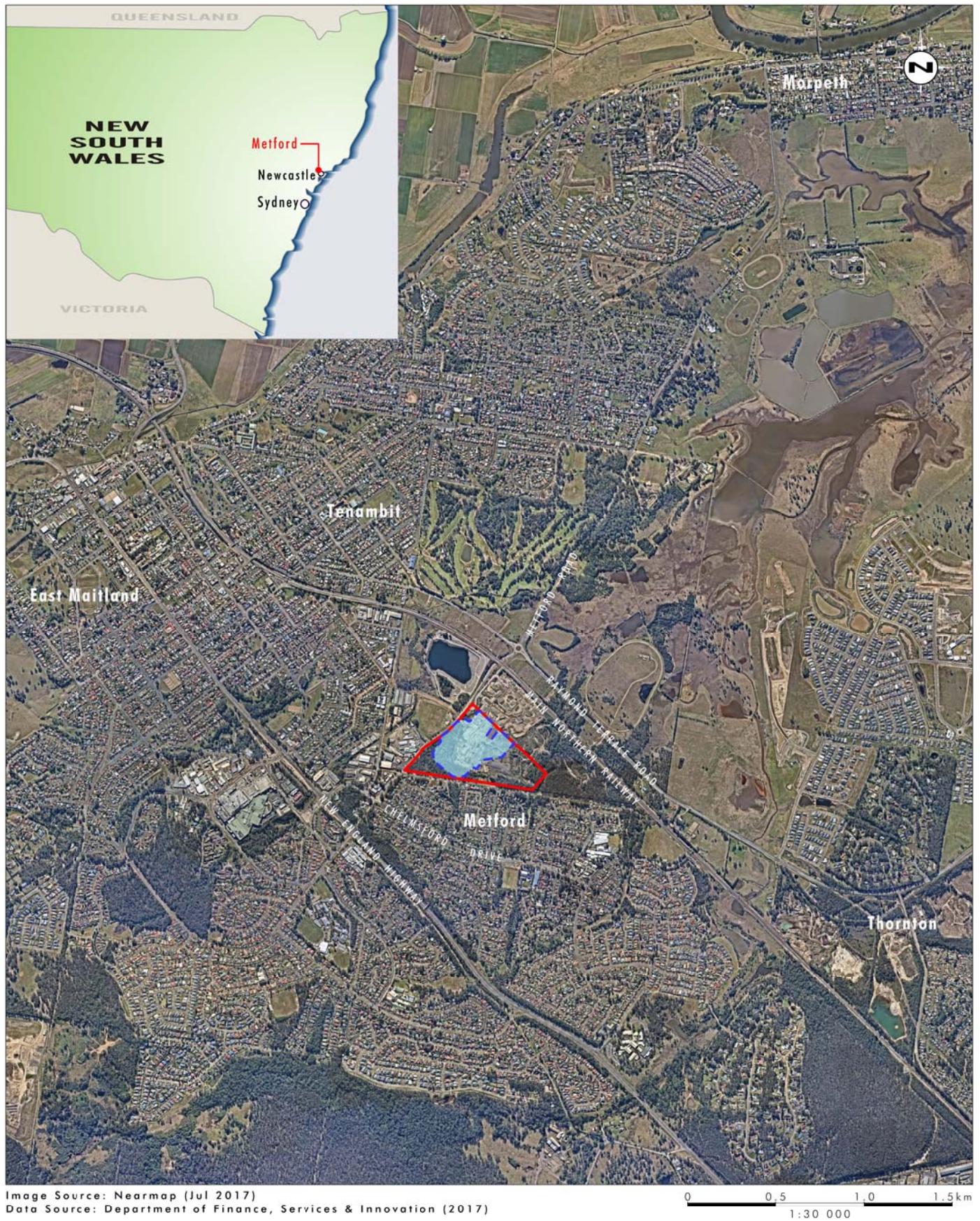


Image Source: Nearmap (Jul 2017)
Data Source: Department of Finance, Services & Innovation (2017)

Legend

- Project Area
- Proposed Hospital Area of Influence

FIGURE 1.1

Project Area

2.0 Statutory Context

The following section provides an overview of the legislative frameworks relating to the protection and management of Aboriginal archaeology within the Project area. The management and conservation of Aboriginal cultural heritage is subject to a range of statutory provisions under the NSW state government legislation. In NSW archaeological remains and heritage items are afforded statutory protection under the following Acts:

- the *Environmental Planning and Assessment Act 1979* (the EPA Act).
- the *National Parks and Wildlife Act 1974* (the NPW Act)
- the *Heritage Act 1977* (NSW) (the Heritage Act).

2.1 Environmental Planning and Assessment Act 1979

The project is being submitted as part of a Part 5.1 State Significant Infrastructure project. The following outlines the heritage approval requirements in relation to SSI approval relevant to this project.

The EP&A Act is the main system of land use planning and development regulation legislation in NSW. The EP&A Act requires that consideration be given to the environmental impact during the planning process including the potential impact on Aboriginal cultural heritage. As such, the EP&A Act provides protection for Aboriginal objects or places.

The project requires approval from the NSW Minister for Planning under Part 5.1 of the EP&A Act. In accordance with Section 115ZG of the EP&A Act, it is not necessary to obtain an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the NPW Act (refer to **Section 2.2**) in relation to activities approved under Part 5.1 of the EP&A Act. However, approval from the Minister for Planning and Environment is required and an EIS must be submitted. An EIS must address the impact of the project on heritage items, through the framework of existing heritage legislation including the Heritage Act, and the local LEPs and DCPs.

Projects approved under Part 5.1 of the EP&A Act are subject to conditions of approval issued by the Department of Planning and Environment (DPE) and (where relevant) Aboriginal cultural heritage is addressed by appropriate conditions.

This ATR has also been undertaken with reference to the Maitland City Council LGA LEP conditions in accordance with Part 5.1 of the EP&A act for SSI projects.

2.2 National Parks and Wildlife Act 1974

The Office of Environment and Heritage (OEH, formerly the Department of Environment, Climate Change and Water - DECCW) is primarily responsible for regulating the management of Aboriginal cultural heritage in New South Wales under the *National Parks and Wildlife Act 1974* (the NPW Act). The NPW Act is accompanied by the *National Parks and Wildlife Regulation 2009* (the Regulation), the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a) and other industry-specific codes and guides.

The NPW Act defines an Aboriginal object as:

..any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales.

Under Section 84 of the NPW Act, an Aboriginal Place must be declared by the Minister as a place that, in the opinion of the Minister, is or was of special significance with respect to Aboriginal culture.

In accordance with Section 86(1) of the NPW Act, it is an offence to harm or desecrate a known Aboriginal object, whilst it is also an offence to harm an Aboriginal object under Section 86(2). Similarly, Section 86(4) states that a person must not harm or desecrate an Aboriginal place. Harm under the NPW Act is defined as any act that; destroys defaces or damages the object, moves the object from the land on which it has been situated, causes or permits the object to be harmed.

Section 87(1) of the NPW Act specifies a series of defences to prosecution under Section 86(1) and Section 86(2) if the proponent can demonstrate 1) due diligence was exercised to reasonably determine that the activity or omission would not result in harm to an Aboriginal object or if the activity or omission constituting the offence is a low impact act or omission and 2) if the harm or desecration of an Aboriginal object was authorised by an Aboriginal Heritage Impact Permit (AHIP) and the activities were carried out in accordance with that AHIP.

It is noted that this project has been assessed as a 'State Significant Infrastructure' (SSI) under Part 5.1 of the *Environmental Planning and Assessment Act 1979*. Therefore, the need for an Aboriginal Heritage Impact Permit (AHIP) under s.90 of the NPW Act does not apply.

2.3 Heritage Act 1977

The *Heritage Act 1977* provides protection for environmental heritage within NSW. The Act provides protection of historic places, structures, relics, moveable objects and landscapes of significance. The Act also affords protection to Aboriginal places of State heritage significance included on the State Heritage Register (SHR) or subject to an Interim Heritage Order. A separate assessment has been prepared in accordance with the requirements of this Act (Umwelt 2017).

3.0 Environmental Context

The decisions that people make regarding such things as where they live, the range of resources they use and other aspects of daily life may be influenced by the environment in which they live. The preservation and visibility of sites is also affected by environmental factors such as vegetation cover, past land-use and disturbance. A review of the environmental context of the project area is therefore integral to considerations of site visibility, preservation and occurrence within the project area.

The following environmental context utilises and builds on the Preliminary Aboriginal Archaeological Assessment (Umwelt, 2014) for the project area. Additional research has been undertaken where required, in order to supplement the existing data and provide greater depth of historic and archaeological understanding.

3.1 Topography and Soils

The project area is underlain by the Permian Tomago Coal Measures and is composed of shale, mudstone, coal, tuff and clays (W Chesnut and V Gobert, 1976). The local landforms are composed of undulating low hills and rises with slope gradients between 3 and 15 per cent with local relief to 50 metres. Due to the prior industrial use of the project area, the northern and central portions of the project area have been modified to the extent that it is not possible to identify the original landforms. However, landforms in the remainder of the project area are consistent with the broader landscape with gently inclined slopes trending north-east towards a low-lying area of wetlands centred on Four Mile Creek. A minor drainage line (within the most eastern portion of the project area) runs approximately south to north across the eastern boundary of the project area. This ephemeral drainage line is likely to be a minor tributary feeding to Four Mile Swamp.

The project area is primarily located within the residual Beresfield soil landscape (Matthei 1995). The Beresfield soils are moderately deep (<120 centimetres) and are composed of moderately well to imperfectly drained brownish black sandy/silty loam (A₁ horizon) which overlies a dull yellowish brown sandy/clay loam (A₂ horizon), which in turn overlies a yellow orange to yellow grey mottled clay (B horizon). The portion of the project area that has been subject to high levels of historic and modern disturbances is identified as a disturbed soil landscape.

3.2 Resource Availability

A minor drainage line that flows into Four Mile Creek wetland is located directly east of the project area but within the wider 'Metford Triangle'. Three Mile Gully is to the east of the project area and flows toward Four Mile Creek wetland. Two Mile Creek (another tributary of Four Mile Creek) flows approximately 300 metres west of the project area. The project area is also approximately 4 kilometres north-west of the western extent of the Woodberry Swamp system that extended from the Hunter River to the area around Thornton.

Woodberry Swamp and Four Mile Creek swamp are now freshwater systems. However; approximately 18,000 years ago, increases in sea levels resulted in flooding of the mouth of the Hunter River, creating an increasingly saline environment within the river and its tributaries (such as Four Mile Creek) and inundating low-lying areas such as Woodberry Swamp and Hexham Swamp which in turn formed estuarine swamps (Roy *et al* 1995). By 4000 to 3000 years ago the mouth of the Hunter River began to silt up, impeding the flow of salt water into the Hunter River, so that watercourses and swamp formations connected to the Hunter River gradually changed from an estuarine to freshwater context. (Roy *et al* 1995). As either an estuarine or freshwater context, the wetlands and creeks in the area would have provided a very broad

range of plants and animals utilised by Aboriginal people, including small and large mammals, a broad variety of birds, reptiles, fish and shellfish. These rich resources would have been targeted by Aboriginal people within the local area. However, whilst these rich resources were available within the local area, the drainage line along the eastern boundary appears to be relatively minor and is unlikely to have provided comparable resources.

When considering resources available to Aboriginal people, it is also relevant to consider the ranges of stone raw materials present within the local area. Locations of, access to and type of raw material played a significant role in the way in which Aboriginal people obtained and used stone for artefact manufacture. Previous studies in the Beresfield-Thornton areas (bordering Woodbury Swamp) have identified three possible sources of silcrete, a raw material commonly used by Aboriginal people in the manufacture of flaked stone artefacts. These include:

- fluvial silcrete cobbles and pebbles associated with the Hunter River
- a previously reported potential silcrete quarry on a drainage line associated with Woodbury Swamp at Thornton and
- naturally occurring decomposed gravels within the soil profile (refer to Umwelt 2006).

Other stone resources utilised within the region is tuff which often occurs in indurated rhyolitic form as cobbles in the Hunter River (Umwelt 2014).

3.3 Past Land Use and Disturbance

As discussed in **Section 3.1**, the project area has been subject to significant modification as a result of its ongoing use for quarrying purposes. This has included long-term use of the project area as clay quarry for brick and tile manufacturing.

Prior to 1870 and within the Metford area, a small yard specialising in hand-moulded bricks was operated by Messrs Smith and Dawson. This yard, being just five acres in size, was located in the bush close to Newcastle Road; the original yard was located on the western side of Metford Road, and outside of the current subject site. However, by 1882 Frank Turton, who was managing brick works in the Newcastle area for Turton and Sons purchased the five acre yard from Messrs Smith and Dawson for the sum of £178. Over time, Turton's East Maitland (Metford) brickworks expanded; a number of additional buildings were constructed within the original yard on the western side of Metford Road, and by c. 1939 the original brickworks had been extended to the eastern side of Metford Road and within/immediately adjacent to the current subject site.

As a result of these activities, a large proportion of the project area has been subject to significant disturbance, which remains clear and observable in terms of the removal of vegetation, excavation of the existing soil profile and establishment of a variety of infrastructure including vehicle access tracks, the construction of various buildings associated with the production of clay products such as bricks and tiles and the removal and stripping of all topsoils. The very high level of disturbance across much of the project area has significantly reduced the potential for Aboriginal objects to remain present and intact in these areas.

3.4 Summary

The project area is in a locality that contains relatively rich swamp resources and it is probable that suitable raw materials for the manufacture of stone artefacts were accessible from the local area. However, the project area itself appears to have limited water resources and it is likely that the areas bordering nearby swamps would have been more attractive to Aboriginal people. In addition, the very high level of disturbance within much of the project area may have removed or impacted on Aboriginal objects that may have been present within the areas of disturbance.

4.0 Aboriginal Archaeological Context

This section provides a background to the known archaeological context of the local area. The purpose of the archaeological context is to provide a synthesis of all available archaeological information that has implications specific to the proposal area. It informs archaeological predictions for the proposal area and the assessment of archaeological significance.

4.1 Aboriginal Heritage Information Management System

A search of the OEH administered Aboriginal Heritage Information Management System (AHIMS) was undertaken on 19 May 2017 (Client Service ID: 282168). The search identified four previously recorded Aboriginal sites within the following search boundary: GDA; Zone 56 Latitude -32.7638 Longitude 151.5996 to Latitude -32.7534 longitude 151.6162. **Figure 4.1** indicates the location of the AHIMS sites in relation to the project area.

Tenambit 1 (AHIMS no. 38-4-0362)

Tenambit 1, located approximately 800 metres north of the current project area, was recorded in 1995 as an isolated broken flake. The broken flake was identified on the boundary of a rising main within a highly disturbed context adjacent to a creek line and swamp. Although still identified as a valid site the site card indicates that test excavations were recommended for the site and associated PAD.

Tenambit 3 (AHIMS no. 38-4-0364)

Tenambit 3, located approximately 1 kilometre north of the current project area, was recorded in 1995 as an isolated mudstone flake. The isolated find was found within close proximity to a creek line and a swamp within a disturbed context. Like Tenambit 1, Tenambit 3 is showing as a valid site on the AHIMS database despite test excavations recommended for the site and associated PAD.

Metford Road PAD (AHIMS no. 38-4-0688)

The Metford Road PAD was recorded at the intersection of Metford Road and Raymond Terrace Road, approximately 500 metres north of the project area. The PAD was subject to archaeological excavations in 2006.

The excavations recovered nine unretouched silcrete flakes, two silcrete retouched flakes and two silcrete cores. Artefacts were recovered in association with a range of introduced inorganic and organic materials (HLA, 2006). Although identified as located within likely fill deposits, the integrity of the deposits was not resolved in information provided on the site card and associated report. Like Tenambit 1 and 3 the site is identified as valid on the AHIMS database however, based on the report and site card, this site has been destroyed.

NMH1 (38-4-1684)

One archaeological site (referred to as NMH 1) was identified within the project area, as shown in **Figure 5.1**. The site was identified at MGA coordinates E369170 N6374453 in an exposure measuring approximately one metre by three metres within which visibility was approximately 40 per cent. The exposure was the result of erosion of an area from which soil had been removed. NMH 1 consisted of a single fragment of heat shattered silcrete present in conjunction with small ironstone gravel but no other silcrete gravels, indicating that it is not a natural occurrence. There is potential for additional artefacts to be present within the same context however based on the predictive model, it is likely that these would consist of a low density scatter only.

4.1.1 Previous Archaeological Investigations in the Local Area

A review of available previous archaeological assessments has been undertaken in order to understand the archaeological landscape of the project area. The literature review has been divided into key reports completed within close proximity.

Resource Planning Pty Limited. 1994. Archaeological survey of Lot 1742, D.P. 634868 Parish of Alnwick Thornton NSW.

An assessment for proposed clay extraction works was undertaken within an area approximately 2.5 kilometres south-east of the project area. The archaeological survey for this assessment identified one isolated find (broken flake of Nobbys tuff) located on a vehicle track that was collected during survey and an artefact scatter containing 25 to 30 artefacts (flaked pieces, flakes and cores) of silcrete and chert on the bank of a creek. Both sites were located outside the area proposed for impact and thus no further management requirements were specified in the assessment.

Kuskie, P.J. for South-East Archaeology Pty Ltd. 1994a. An Archaeological Assessment of a Land Rezoning Proposal at Lot 1 DP 559519, Thornton, NSW. Report to Gutteridge Haskins & Davey Pty Ltd

Kuskie, P.J. for South-East Archaeology Pty Ltd. 1995a. Further Archaeological Investigations of Lot 1 DP 559519, Thornton, NSW. Report to Gutteridge Haskins & Davey Pty Ltd

Kuskie (1994a and 1995a) assessed a proposed 228 hectare subdivision located adjacent to Woodberry Swamp at Thornton (approximately 4 kilometres south-east of the project area). Nine artefact scatters and one isolated find were recorded during the survey however it was noted that visibility was extremely poor. On this basis, it was recommended that a program of subsurface investigation in form of grader scrape transects should be undertaken. Grader scrapes were completed over a relatively large surface area (11,716m²) and resulted in the recovery of 1234 artefacts from 12 artefact scatters. Silcrete was the dominant raw material, with large proportions of flakes and broken flakes but some evidence for microblade production and heat treatment of silcrete. It was also noted that a localised source of silcrete gravel was utilised, potentially explaining the high representation of silcrete artefacts. It was noted that artefact densities were highest on landforms in proximity to the wetlands, presumably due to the ready accessibility of resources in this area.

HLA Envirosiences Pty Limited. 1995. An archaeological survey of the Thornton Industrial Area.

HLA (1995) completed an assessment of the Thornton Industrial Area, which is located approximately 2 kilometres south-west of project area. The assessment area was approximately 250 hectares in area of which just under 60 hectares were excluded from archaeological survey due to level of disturbance resulting from the establishment and use of a brickworks and rail line.

One site was identified during the survey was described as an extensive deposit of silcrete angular fragments within which the 'absence of artefacts with clear bulbs of percussion and flake scars makes it difficult to determine whether such a site contains humanly flaked stone.' Given the presence of naturally occurring silcrete gravels within the Thornton area, it is possible that this site may in part result from fracturing of silcrete gravels rather than specific activities undertaken by Aboriginal people.

Kuskie, P.J. for South-East Archaeology Pty Ltd. 2004. An Aboriginal Heritage Assessment of 'Investigation Area C' at Thornton North, Lower Hunter Valley, New South Wales. Report to Beechwood Homes and CPG Estates.

Kuskie, P.J. for South-East Archaeology Pty Ltd. 2006. Sub-Surface Archaeological Investigation of Part Lot 12 DP 603612, Raymond Terrace Road, Thornton North, Lower Hunter Valley, New South Wales, In Relation To A Proposed Residential Development. Report to Beechwood Homes.

Kuskie, P.J. for South-East Archaeology Pty Ltd. 2008. Clarendon Residential Group – Archaeological Test Excavations at Thornton North – Summary. Report to Clarendon Residential Group.

A detailed assessment was undertaken for an area referred to as 'Thornton North Area C' as part of a proposed residential subdivision project. The area subject to assessment consisted of 133 hectares located approximately 1.5 kilometres north-east of the project area. Landforms within the assessed area comprised tributaries of Four Mile Creek, spur crests and simple slopes, including those bordering the main channel of Four Mile Creek and adjoining the Four Mile Creek wetland. Seven artefact scatters containing a total of 71 artefacts were identified during the survey. The artefacts were predominantly manufactured from silcrete, with a smaller number of tuff artefacts and very limited amounts of other raw materials. Flakes and broken flakes were the most common artefacts however some microliths were present within the assemblage including Bondi points and geometric microliths. On basis of evidence from recorded sites and low visibility across the assessed area, Kuskie (2004) recommended that a program of test excavations be completed within the area.

In accordance with these recommendations, an AHIP (AHIP #2113) was obtained to allow test excavation within a 90 hectare portion of the assessed area (which contains two separate subdivisions). Test excavations were undertaken in 9 areas, with 22, 0.5 metre by 0.5 metre test pits excavated in each area (total area of excavation per test area was 5.5m²). A total of 262 artefacts were recovered and consisted predominantly of silcrete (over 70 per cent of assemblage) followed by tuff (over 25 per cent) and relatively small quantities of rhyolite, quartz and other volcanic. The artefacts were mostly flakes and broken flakes, with low proportions of backed artefacts, backing flakes, bipolar artefacts, cores and other retouched artefacts.

Based on the results of the test excavations, Kuskie (2006) concluded that access to wetland/Hunter estuary resources was a key factor in the selection of camping locations by Aboriginal people, with greater evidence of Aboriginal use of the area within 300 metres of wetlands, with slopes bordering drainage depressions containing sites with the highest densities of artefacts. In addition, it was only sites in these locations that contained evidence for 'microlith and microblade manufacture'. Kuskie (2006) stated that 'the overall spatial distribution and nature of evidence in Lot 12 is a very low density distribution of artefacts consistent with background discard, interspersed by a low number of discrete activity areas in which more focused activity has occurred, typically in relation to the production of microblades and microliths' (Kuskie 2006). This was interpreted as evidence that the majority of evidence related to transitional use of the landscape as opposed to major camping activities.

Additional test excavations were undertaken in the remaining portion of the originally assessed area under AHIP #2468 (Kuskie 2008). Using a similar methodology to that described above, a total of 33m² were excavated across six test areas, resulting in the recovery of 707 artefacts. The proportions of artefact raw materials and types were comparable to those described above. It was again identified that artefact densities were highest on landforms that provided access to wetland/Hunter River estuary resources, with areas over 300 metres from the wetlands containing low densities of artefacts that did not include any identifiable activity areas whereas those landforms within 300 metres of the wetlands contained low to moderate densities of artefacts within which it was possible to identify some specific activity areas relating to the production or discard of backed artefacts and/or 'non-microlith tools'.

Umwelt (Australia) Pty Limited. 2014. Aboriginal Cultural Heritage and Archaeological Assessment, Proposed New Maitland Hospital Precinct, Metford, NSW. Report to Health Infrastructure.

As part of an earlier assessment undertaken for the proposed NMH, Umwelt undertook a preliminary Aboriginal Cultural Heritage Assessment (Umwelt, 2014) across a wider study area, including the current project area. The preliminary assessment involved a site inspection which identified an isolated artefact within a heavily disturbed context. At the stage of the preliminary assessment impacts across the current project area was limited to the central and northern portions. The assessment highlighted the need for further assessment only if the concept designs were altered to involve direct impacts to the identified AHIMS site.

4.2 Summary

The AHIMS search and previous assessment undertaken as part of the preliminary assessment in 2014 confirmed that one isolated find is located within the current project area. The AHIMS search also identified four previously recorded Aboriginal cultural heritage sites within one kilometre of the project area. The review of available contextual information has found that sites are not common across the area and those that are located in close proximity to the project area are generally isolated finds and small artefact scatters. The AHIMS search data and previous archaeological assessments indicate that the local region was likely utilised by past Aboriginal peoples however, more intense utilisation of the region is archaeologically evident closer to freshwater resources and the Woodberry and Four Mile Creek swamps.

4.3 Predictive model

The purpose of a predictive model is to provide an indication of the potential archaeological resource based on the local archaeological context and environmental context. The predictive model is necessary to appropriately formulate field methodologies as well as providing information for the assessment of archaeological significance.

The project area has been subject to high levels of disturbances consisting primarily of the mining of primary resources for brick and tile manufacture and coal. Disturbance levels affect the likelihood of recovering evidence of Aboriginal habitation with higher degrees of disturbance often indicative of lower potential for recovering archaeological material.

In relation to the slope and drainage landforms, whilst the project area is situated in a relatively resource-rich area, these landforms do not provide immediate access to wetland resources, which are located over 300 metres from the project area. The extensive archaeological investigations undertaken within and within the immediate vicinity of the project area indicate that any archaeological sites that may be present within the project area are likely to consist of relatively low density artefact scatters or isolated artefacts that reflect transitional use of the landscape rather than targeted occupation, which appears to have been confined to landscapes with direct access to wetland resources.

The following predictive statements have been prepared with consideration to; the environmental context, previous archaeological investigations, the AHIMS search information and the historic and modern land use disturbances:

- Within the modified portion of the project area, it appears that historical land use has resulted in the wholesale removal of topsoil and any artefacts that it may have contained. There is consequently very low likelihood that Aboriginal objects will remain extant in the modified landforms.

- Due to the high levels of disturbance within the remainder of the project area it is likely that any Aboriginal objects that may remain are unlikely to be in their original depositional context and that sub-surface deposits will lack integrity.
- If present, Aboriginal cultural heritage archaeological sites are likely to be open camp sites and expressed as either isolated stone artefacts and/or small stone artefact scatters.
- Due to land use disturbances, scarred trees are unlikely to occur within the project area.

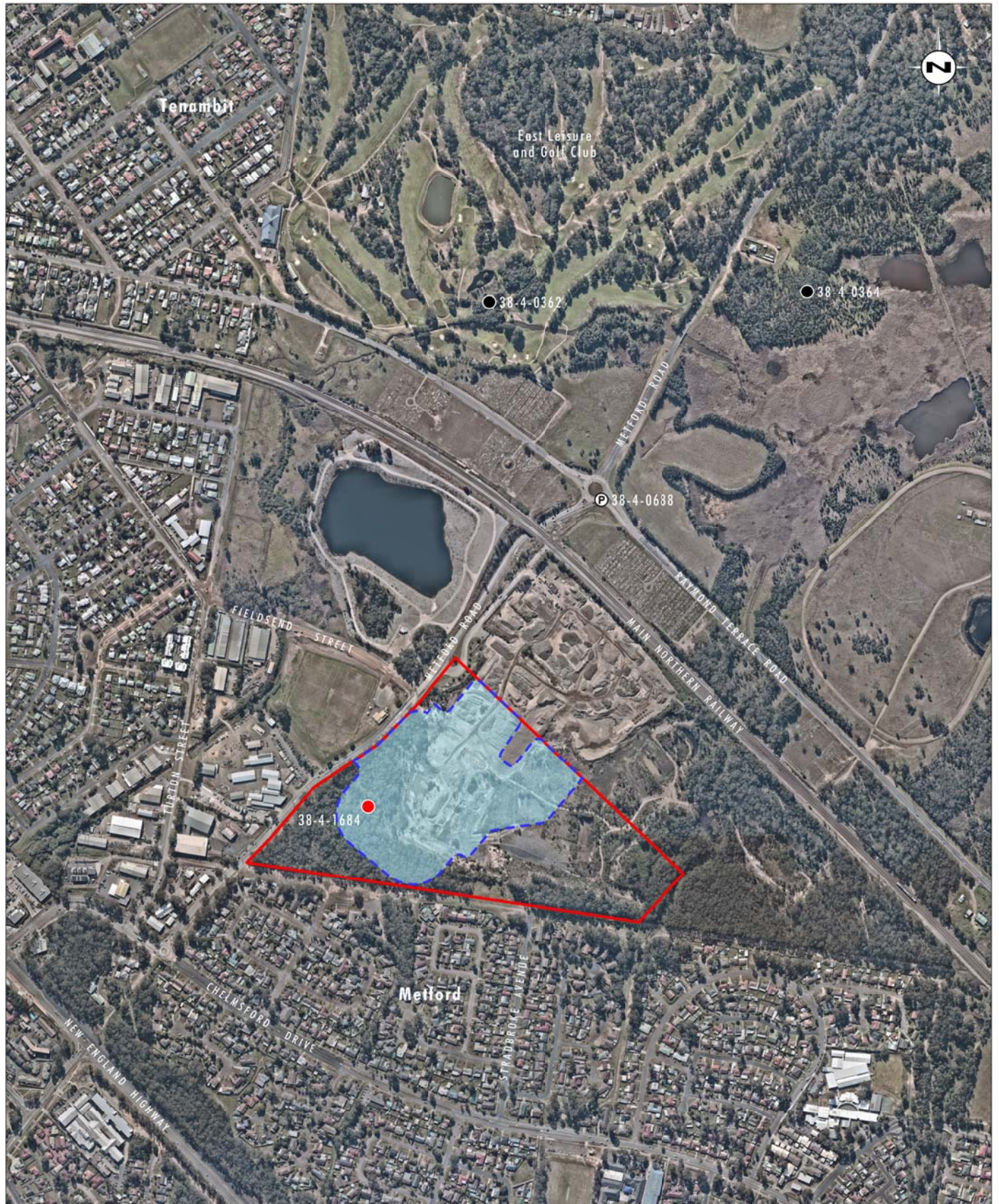


Image Source: Nearmap (Jul 2017)
Data Source: Department of Finance, Services & Innovation (2017)

0 100 250 500m
1:10 000

Legend

- ▭ Project Area
- ▭ Proposed Hospital Area of Influence
- Artefact Scatter
- Isolated Find
- P PAD

FIGURE 4.1

AHIMS Search Results

5.0 Archaeological Survey

In accordance with the Code of Practice, the aims of an archaeological survey are twofold. The first aim of an archaeological survey is to record all material traces and evidence of Aboriginal land use that are visible on the ground surface or as landscape features. The second aim is to assess and identify areas that may have subsurface traces of past Aboriginal peoples.

5.1 Methods

On Friday 25 August 2017 the archaeological survey of the project area was undertaken by representatives of the RAPs and Umwelt (**Table 5.1**). Umwelt and the RAPs representatives used a number of methods ensuring the accurate recording of all survey units.

The archaeological survey was undertaken across the entire project area in transects focusing on those portions of the project area that had not been stripped of all topsoil (**Figure 5.1**). The survey transects were undertaken with individuals spaced two to five metres apart (where feasible due to dense foliage) and included all landforms within the areas not stripped of tops soil within the project area. All landforms and landscape features were recorded using a non-differential GPS and with reference to topographic information. Ground surface visibility, exposure and the level of ground disturbance across the project area was recorded with representative photographs of each survey unit.

Sample survey was undertaken in a number of locations across the project area including, those areas that had been subject to top soil stripping and where the introduced plant species such as lantana, hampered access.

Table 5.1 On-site meeting and site visit attendees

Organisation	Name
Umwelt	Nicola Roche
Umwelt	Joshua Madden
A.G.A	Ashley Sampson
Cacatua	George Sampson
Cacatua	Greg Sampson
Divine Diggers	Ron Perkins
Lower Hunter Aboriginal Incorporated	Dave Allen
Lower Hunter Wonnaruah Tribal Consultancy Pty Ltd	Tom Miller
Murra Bidgee Mullangari Aboriginal Corporation	Joshua White
Mindaribba Local Aboriginal Land Council	Steve Campbell
Wallagan Cultural Services	Donna Swan

During the archaeological survey, Umwelt assessed the archaeological potential of the landforms based on the predictive model. In addition, all cultural information obtained prior to and at the time of the survey was also considered.

5.1.1 Survey Coverage

In accordance with the Code of Practice, the survey coverage description includes landform units, the total area surveyed within a landform unit and the quantification of the level of ground surface visibility and exposure. Ground surface visibility is defined as ‘the amount of bare ground (or visibility) on the exposures which might reveal artefacts or other archaeological materials’ (DECCW 2010c). Exposure is defined as ‘the percentage of land for which erosion and exposure was sufficient to reveal archaeological material on the surface of the ground’ (DECCW 2010c). As such exposure refers to the potential for an area to reveal subsurface artefacts or deposits rather than the mere observation of the amount of bare ground. The results of this assessment are found in **Table 5.2** and **Table 5.3**.

The calculation of effective survey coverage is undertaken in order to designate the proportion of the project area in which it is possible to accurately assess the presence or absence of archaeological material. Survey coverage is calculated by multiplying the total survey area by the percentage of ground surface visibility and exposure within the survey unit. The survey coverage is then expressed as a percentage for the whole survey unit.

5.1.2 Assessment of Archaeological Potential

Umwelt has assessed the subsurface archaeological potential of the proposal area as per the definitions provided below. The assessment of archaeological potential refers to the potential for Aboriginal cultural heritage material to occur sub-surface within a specific location. Umwelt has provided a further description of the level of disturbances across the project area (**Figure 5.2**), the potential condition or intactness of deposit for consideration when assessing the archaeological significance of an area. Further detail of relating to the level of disturbances and the related archaeological potential is provided below.

The following terms will be employed to classify the archaeological potential of specific locations:

- **no archaeological potential:** areas where the natural soil profile has been removed through geomorphic processes or human action, thereby removing any archaeological resource of the location
- **low archaeological potential:** landscape areas that may have been utilised by Aboriginal people in the past, but at a lower intensity than all surrounding landforms. The density of artefacts deposited within these areas would therefore be low. This category also includes landscape areas of low integrity, where geomorphic processes or human action may have redistributed artefacts from their deposited locations, resulting in site disturbance or destruction
- **moderate archaeological potential:** landscape areas that are predicted to have been utilised by Aboriginal people in the past, but not intensively or repeatedly. There is therefore potential for artefactual deposition, but at a lower frequency and density than in areas of high archaeological potential. Integrity in these areas may be variable, but the majority of open camp sites are expected to be of low to moderate integrity only, with geomorphic processes not acting to bury deposits *in situ*
- **high archaeological potential:** landscape areas predicted to have been intensively or repeatedly utilised by Aboriginal people in the past, such as creek confluences or elevated terraces above major watercourses. Integrity in these areas may be variable, but the majority of open camp sites are expected to be of low to moderate integrity only, with geomorphic processes not acting to bury deposits *in situ*

- **very high archaeological potential:** landscape areas predicted to have been more intensively or repeatedly utilised than all surrounding landforms by Aboriginal people in the past, such as major creek confluences or lagoons. Integrity in these areas may be variable, but these landforms may include areas of high terrain integrity, where geomorphic processes may have acted to bury deposits *in situ*. Sites may therefore be of very high archaeological research potential.

5.2 Results

Survey Unit 1

Survey Unit 1 (SU1) included the disturbed quarry landscape that had been completely stripped of all topsoil. SU1 was characterised by numerous gravel and/or clay soil dumps, truck access ways and quarry cuttings.

Surface visibility across SU1 was high, up to 90 per cent and the level of exposure was very high as a result of topsoil removal (**Plate 5.1 – Plate 5.2**). The archaeological survey did not identify any Aboriginal cultural heritage material and found that there is no archaeological potential within SU1 due to the removal of topsoil and any archaeological deposits that may have been present.



Plate 5.1 View south overlooking portion of project area stripped of topsoil

© Umwelt, 2017



Plate 5.2 View of clay and gravel stockpile along truck access way

© Umwelt, 2017

Survey Unit 2

Survey Unit 2 (SU2) included the disturbed and vegetated quarry bund. Disturbances across SU2 included the dumping of graded topsoil and gravel material to form a bund wall around the edge of the quarry (**Plate 5.3** and **Plate 5.4**)

Surface visibility across SU2 was low, below 10 per cent with soil exposure identified as approximately 20 per cent. The archaeological survey did not identify any Aboriginal cultural heritage material and found that there is nil to low archaeological potential within SU2.



Plate 5.3 view of mounded bundwall

© Umwelt, 2017



Plate 5.4 View of bund wall with new vegetation growth

© Umwelt, 2017

Survey Unit 3

Survey Unit 3 (SU3) included a gentle slope landform that had been subject to high levels of disturbance. Disturbance across SU3 included partial topsoil removal, the dumping of fill including soil, gravels and brick and minor soil excavations throughout. SU3 was characterised by dense vegetation which was dominated by lantana and Eucalypts.

Surface visibility across SU3 was limited due to extensive ground and vegetation cover with the eastern most portion of SU3 subject to a sample survey due to the presence of dense lantana. Surface visibility across SU3 was below 10 per cent with soil exposure identified as approximately 20 per cent (**Plate 5.5** to **Plate 5.7**). The archaeological survey did not identify any Aboriginal cultural heritage material, previously recorded or not and found that there is only low archaeological potential within SU3.

The isolated artefact (AHIMS number 38-4-1684) was not re-identified during the archaeological survey. The isolated artefact was originally located along an area of exposure along an eroded soil profile. The current survey found that the original location of the artefact had been subject to high levels of erosion (**Figure 5.8** to **Figure 5.9**). As such, it has been determined that 38-4-1684 was not re-identified due to the high level of erosion and that the isolated artefact is likely to have moved due to natural post depositional processes.



Plate 5.5 Showing cut and soil and boulder dumps

© Umwelt, 2017



Plate 5.6 View along western boundary of thick regrowth vegetation

© Umwelt, 2017



Plate 5.7 View of sub-surface utility and associated cuts

© Umwelt, 2017



Plate 5.8 Artefact location

© Umwelt, 2014



Plate 5.9 Current condition of artefact location

© Umwelt, 2017

5.2.1 Survey Units

Table 5.2 Survey Coverage of the Project area

Survey unit	Landform	Survey unit (m ²)	Visibility (%)	Exposure (%)	Effective survey coverage (m ²)	Effective coverage (%)
1	Disturbed	110,700	90	100	99,630	90
2	Quarry bank/wall	5,525	10	20	110.5	2
3	Gentle slope	76,790	10	20	307.16	0.4

Table 5.3 Landform Summary of the Project area

Landform	Landform area	Area effectively surveyed (m ²)	Per cent of landform surveyed	Number of sites	Number of artefacts or features
Disturbed	110,700	99,630	90	-	-
Quarry bank/wall	5,525	110.5	2	-	-
Gentle slope	76,790	307.16	0.4	1	0

5.3 Discussion and Assessment of Potential

The archaeological survey of the project area found that the area had been subject to high levels of historic and modern disturbances. Much of the project area had been completely stripped of topsoil as part of the former quarry works with soil grading and dumps evident across the remaining portion of the project area. Visibility during the survey was low due to the thick vegetation and foliage that hampered access.

Due to the level of erosion, the previously recorded site was not relocated. Further, the archaeological survey did not identify any Aboriginal cultural heritage material and/or objects. The survey found that there is nil to low archaeological potential across Survey Units 1 and 2 due to the lack of topsoil and the identified level of disturbances. It has also been found that there is low archaeological potential across Survey Unit 3.

The outcome of this archaeological survey is comparable to the archaeological investigation undertaken as part of the preliminary assessment (Umwelt 2014). The archaeological survey of the project area did not identify the previously recorded Aboriginal archaeological site and did not identify any further sites and/or areas of archaeological potential.

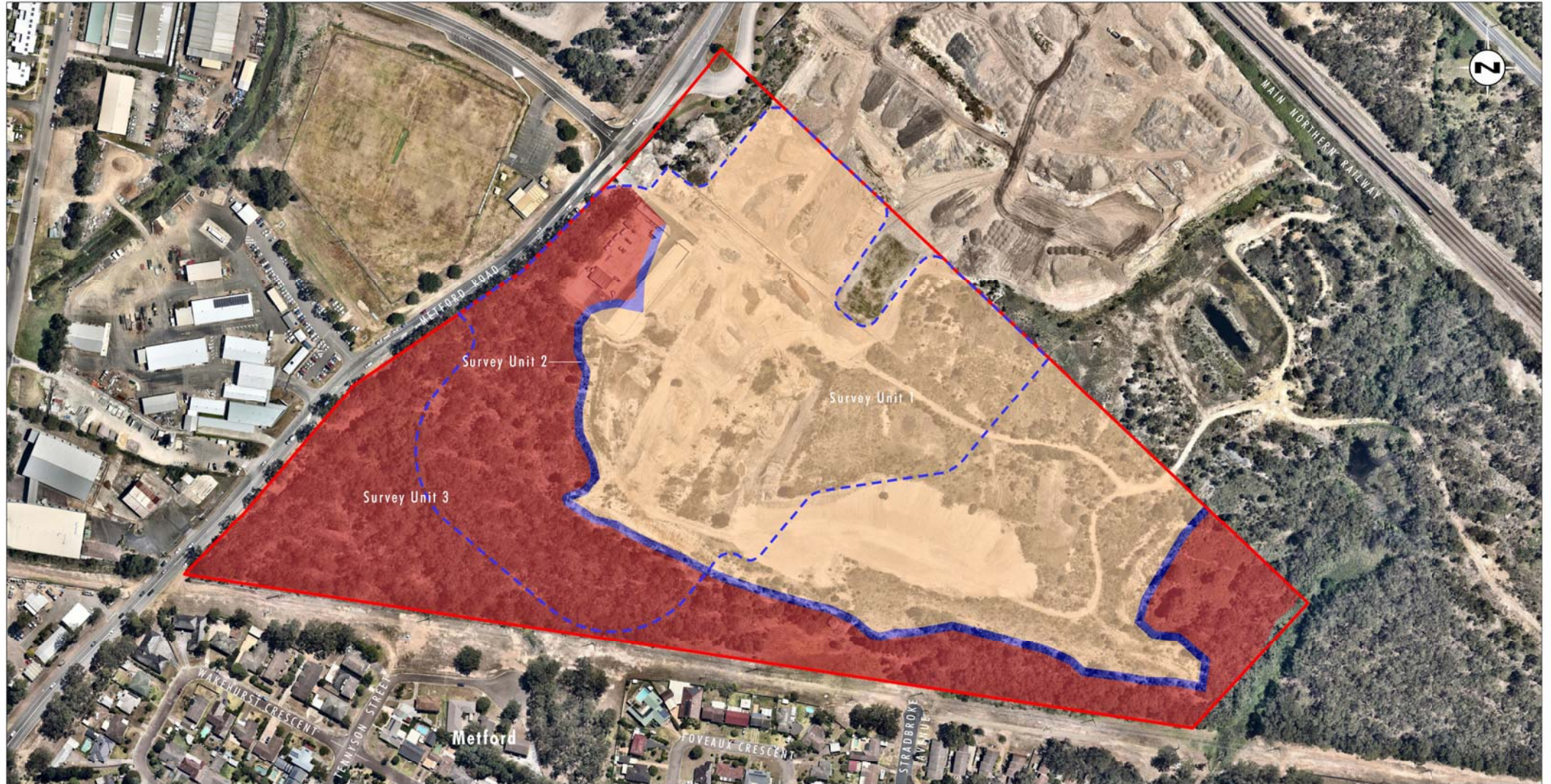


Image Source: Nearmap (Dec 2017)
Data Source: Department of Finance, Services & Innovation (2017)

0 50 100 200m
1:4 000

Legend

- Project Area
- Proposed Hospital Area of Influence
- Survey Unit 1 (102 579 Sq. m)
- Survey Unit 2 (5 525 Sq. m)
- Survey Unit 3 (76 638 Sq. m)

File Name (A4): R02/4049_012.dgn
20180223 11:37

FIGURE 5.1

Survey Units

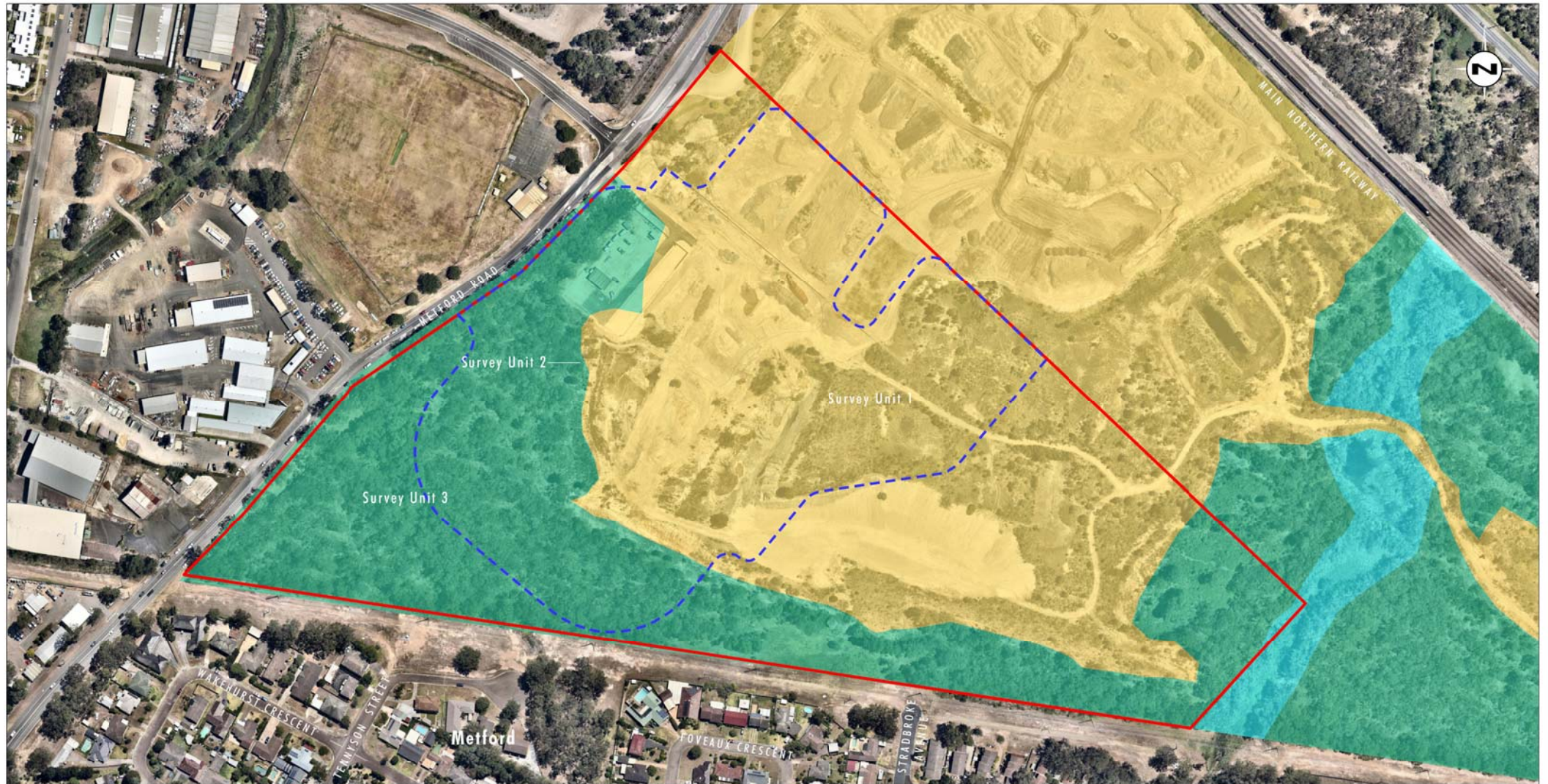


Image Source: Nearmap (Dec 2017)
Data Source: Department of Finance, Services & Innovation (2017)

Legend

- Project Area
- - - Proposed Hospital Area of Influence
- Disturbed and Stripped of Top Soil
- Disturbed Simple Slope
- Ephemeral Drainage Line

File Name (A4): R02/4049_013.dgn
20180223 11:38

FIGURE 5.2

Landforms

6.0 Scientific Value Significance Assessment

In accordance with the Code of Practice and the *Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance* (Australia ICOMOS 2013) (the Burra Charter), this section assesses the archaeological significance of the proposal area only. The ACHAR, to which this report is appended, addresses the cultural significance of the project area.

The Burra Charter defines cultural significance as the sum of the qualities or values that a place embodies. The Burra Charter identifies the values – aesthetic, historic, archaeological, social or cultural and spiritual – that contribute to cultural significance.

- **Aesthetic** value refers to the sensory and perceptual experience of a place. It may consider form, scale, texture and material of the fabric or landscape and may also include smell and sounds associated with the place (OEH 2011:9).
- **Historic** value encompasses all aspects of history and as such is often underlying other values. A place may have historic value because it has influenced, or been influenced by, an historic event, phase, movement or activity, person or group of people.
- **Archaeological** value refers to the potential physical remains and the ability of those remains to provide an understanding about an aspect of the past.
- **Social** or **cultural** value refers to the spiritual, traditional, historical and contemporary associations and attachments of a place (OEH 2011:8). It is noted that a consensus as to the cultural value of an object or place is not always possible as people experience places and events differently.
- **Spiritual** value refers to the intangible values embodied in a place, which give it importance in the spiritual identity.

6.1 Archaeological Significance Assessment

Archaeological significance is determined by the assessment against a number of archaeological criteria as set out by the OEH in *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (2010) (The Code). The assessment of the Aboriginal archaeological significance is used to develop a series of cultural heritage management and impact mitigation strategies. The archaeological significance of the project area has been assessed in accordance with the legislative framework set out in The Code which is summarised below in **Table 6.1**.

Table 6.1 Archaeological significance assessment

Criteria	Description
Rarity	This criterion examines the frequency of the identified site type in the local or regional landscape.
Representativeness	All sites are representative of a site type, however, some sites may be in better condition, or demonstrate more clearly a particular site type. Representativeness is based on the understanding of extant sites in the local or regional landscape and the purpose of this criterion is to ensure a representative sample of sites area conserved for future generations.
Integrity	This refers to site intactness. A site with contextual integrity can provide information relating to chronology, social systems, tool technology, site formation processes, habitation, frequency of use as well as other occupation indicators. Moderate to high levels of disturbance will generally result in low integrity.
Connectedness	Relates to inter-site relationships that are whether a site can be linked to an archaeological complex, or where sequence of activities can be discerned. For example, a quarry (stone extractions site), may be linked to an adjacent heat treatment pit and knapping floor, these site thus could be linked as part of a stone tool production sequence.
Complexity	Refers to the contents of the site, such as the variety and nature of features and/or of artefacts present. For example, rock art sites with many motifs may be ranked highly in terms of complexity, or artefact scatters with a wide variety of raw materials and/or or tool types may be more complex than surrounding sites.
Research Potential	This criteria is used to identify whether a site has the potential to contribute new information with which to better understand how Aboriginal people lived within the local area or region.

6.1.1 Assessment of Archaeological Significance

The project area contains an isolated find (AHIMS number 38-4-1684) which does not meet any of the above criteria as outlined in The Code. As such, the previously recorded site has been identified as having low archaeological significance within the local and regional contexts.

As previously discussed, the project area has been subject to high levels of disturbance which include mass soil stripping. As such, the project area has been identified as having nil to low archaeologically potential. Due to the lack of landform and soil landscape integrity, the nil to low archaeological potential and the low archaeological significance of the isolated find, the project area has been assessed as having low archaeological significance.

7.0 Impact Assessment

The purpose of this section is to identify whether there is risk of harm to Aboriginal site or areas of archaeological potential from the project. Protection of Aboriginal cultural heritage and areas of archaeological sensitivity is the preferred heritage outcome.

7.1 Ecologically Sustainable Development

When assessing potential harm, the NPW Act requires consideration of the principles of ecologically sustainable development (ESD). The principles of ESD include the precautionary principle and the principle of intergenerational equity. These are outlined below.

Intergenerational Equity

Intergenerational equity is the principle “*whereby the present generation should ensure the health, diversity and productivity of the environment for the benefit of future generations*” (DECCW 2009:29). As such, consideration of intergenerational equity requires an understanding of the cultural and archaeological landscape and requires consideration of the cumulative impacts to the Aboriginal cultural heritage landscape. In this case, if few Aboriginal objects and places remain in the wider area – perhaps due to previous archaeological investigations as part of developments – there are, as a consequence, fewer opportunities for the future generations to enjoy those cultural heritage sites and places. Where there is uncertainty regarding impacts the precautionary principle should be followed (DECC, 2009).

Precautionary Principle

The precautionary principle states that if there is risk of serious or irreversible harm, lack of certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation (DECCW 2009:26). The precautionary principle requires “*careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment*” (DECCW 2009). It is important to consider the precautionary principle when:

- The proposal involves a risk of serious or irreversible damage to an Aboriginal object or place, or to the value of that object and/or place; and/or
- There is uncertainty about cultural or archaeological value, including in relation to the condition, rarity or representativeness of an Aboriginal object or place (DECCW 2009:26).

7.2 Summary of Proposed Works

As previously discussed in **Section 1.3**, this assessment has been undertaken to assess the impact of the proposed Stage 1 works would have on the Aboriginal archaeology across the project area. The proposed Stage 1 works would include the below site clearance works:

- vegetation clearance within the footprint of hospital construction works
- bulk earthworks
- in-ground infrastructure and works (may include formation of building foundations, drainage works and excavation of sub-level structures)
- Site stabilisation (such as establishment of erosion and sediment controls) in preparation for Stage 2

- Construction of internal un-sealed road ways for use during construction and in preparation for final road formation in Stage 2
- Construction of a hard, un-sealed sub-base for temporary construction parking spaces and in preparation for final carpark formation in Stage 2.

7.3 Impact Assessment

The proposed Stage 1 works will impact upon one previously recorded site, AHIMS number 38-4-1684 which is located within the central western portion of the project area. Although the isolated find was not relocated during the archaeological survey, the site is located within the proposed Stage 1 works footprint. As such, this assessment has found that the proposed works would totally destroy the existing site causing a total loss of value.

The archaeological survey did not identify any further archaeological sites and/or objects or areas of archaeological potential and identified that the majority of the Stage 1 works footprint has no archaeological potential, with low archaeological potential in the remaining portion. On this basis, there is a low likelihood of impacts to Aboriginal archaeology.

8.0 Summary

As part of this assessment an AHIMS search was undertaken and identified one isolated find within the project area and three open camp sites and one PAD within approximately one kilometre of the project area. A review of available contextual information found that open camp sites are reasonably common across the area and those that are located in close proximity to the project area are generally isolated finds and small artefact scatters. The results of previous archaeological investigations in the region indicate that the local region was likely utilised by past Aboriginal peoples. Greater utilisation, expressed as larger and/or more complex archaeological sites, is primarily identified closer to major freshwater sources such as the Four Mile Creek Swamp and Woodberry Swamp, located approximately four kilometres from the project area.

As part of this assessment an archaeological survey of the project area was undertaken. The survey found that the project area had been subject to high levels of historic and modern disturbances including bulk topsoil stripping and removal. The archaeological survey did not re-identify the previously recorded isolated find (AHIMS number 38-4-1684) and did not identify any Aboriginal cultural heritage material and/or objects or areas of archaeological potential. The project area has been assessed as having low archaeological potential and low archaeological significance.

This assessment has found that the previously recorded site, 38-4-1684 located within the central west portion of the project area, has low archaeological significance within the local and regional context. However, the assessment has found that the proposed works would have a direct impact to the site and the project area.

9.0 Recommendations

The following recommendations have been developed in light of the archaeological context of the region, the potential impacts of the proposed project and current cultural heritage legislation.

- Should the project be approved, HI, in consultation with the registered Aboriginal parties, should develop an Aboriginal Cultural Heritage Management Plan for the project that is prepared with reference to the below requirements and includes provision for the long-term management of Aboriginal objects that may be salvaged from the project area.
- HI should advise relevant employees and contractors that it is an offence under Section 86 of the NPW Act to harm or desecrate an Aboriginal object.
- Prior to the commencement of Stage 1 works, surface collection should be conducted at site AHIMS# 38-4-1684. The surface collection of 38-4-1684 would involve revisiting the site location to see if the potential post depositional location of the artefact can be identified. If identified, a hand held differential GPS would be used to record the location of the isolated find. A photographic record of the area the location of the isolated find, if present, would also be undertaken and the artefact would be collected and recorded in accordance with OEH requirements. Once the site has been salvaged and the isolated find has been analysed HI should submit an Aboriginal Site Impact Recording Form (ASIR Form) in accordance with the OEH requirements.
- Should potential Aboriginal objects (other than that discussed in this assessment) be identified, works would cease within 10 metres of the potential object and the area would be cordoned off for 10 metres from the object/s. The object/s should be assessed by an appropriately qualified person to determine whether it is an Aboriginal object. If it is not an Aboriginal object, works may proceed. If it is an Aboriginal object (excluding skeletal remains), it should be subject to surface collection as described above.
- Should suspected human skeletal material be identified at any time during the project works within the immediate vicinity of the skeletal material should cease and the area would be cordoned off for 10 metres from all edges of the skeletal material. The skeletal material should be inspected to determine whether it is human or animal. If necessary, advice would be sought from a forensic specialist. If the skeletal material is human, the NSW Police and OEH would be contacted. No excavation will proceed until an appropriate course of action has been determined in consultation with NSW Police, OEH and the Aboriginal parties. If the skeletal material is not human, works may proceed.

10.0 References

Chesnut W. and Gobert V. 1976. Geological Survey of NSW. Department of Mines

Department of Climate Change and Water. 2009. Operational Policy: Protecting Aboriginal Cultural Heritage in NSW.

Department of Climate Change and Water. 2010a. Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.

Department of Climate Change and Water 2010b. Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (DECCW 2010).

Department of Climate Change and Water 2010c. Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales.

HLA Envirosiences Pty Limited. 1995. An archaeological survey of the Thornton Industrial Area.

Kuskie, P.J. for South-East Archaeology Pty Ltd. 1994a. An Archaeological Assessment of a Land Rezoning Proposal at Lot 1 DP 559519, Thornton, NSW. Report to Gutteridge Haskins & Davey Pty Ltd.

Kuskie, P.J. for South-East Archaeology Pty Ltd. 1995a. Further Archaeological Investigations of Lot 1 DP 559519, Thornton, NSW. Report to Gutteridge Haskins & Davey Pty Ltd.

Kuskie, P.J. for South-East Archaeology Pty Ltd. 2004. An Aboriginal Heritage Assessment of 'Investigation Area C' at Thornton North, Lower Hunter Valley, New South Wales. Report to Beechwood Homes and CPG Estates.

Kuskie, P.J. for South-East Archaeology Pty Ltd. 2006. Sub-Surface Archaeological Investigation of Part Lot 12 DP 603612, Raymond Terrace Road, Thornton North, Lower Hunter Valley, New South Wales, In Relation To A Proposed Residential Development. Report to Beechwood Homes.

Kuskie, P.J. for South-East Archaeology Pty Ltd. 2008. Clarendon Residential Group – Archaeological Test Excavations at Thornton North – Summary. Report to Clarendon Residential Group.

Matthei, L.E. 1995. Soil Landscapes of the Newcastle 1:100,000 Sheet Report, Department of Land and Water Conservation, Sydney.

National Parks and Wildlife Act (1974).

National Parks and Wildlife Regulation 2009.

Office of Environment and Heritage. 2011. Guide to investigating, assessing, and reporting on Aboriginal Cultural Heritage in NSW.

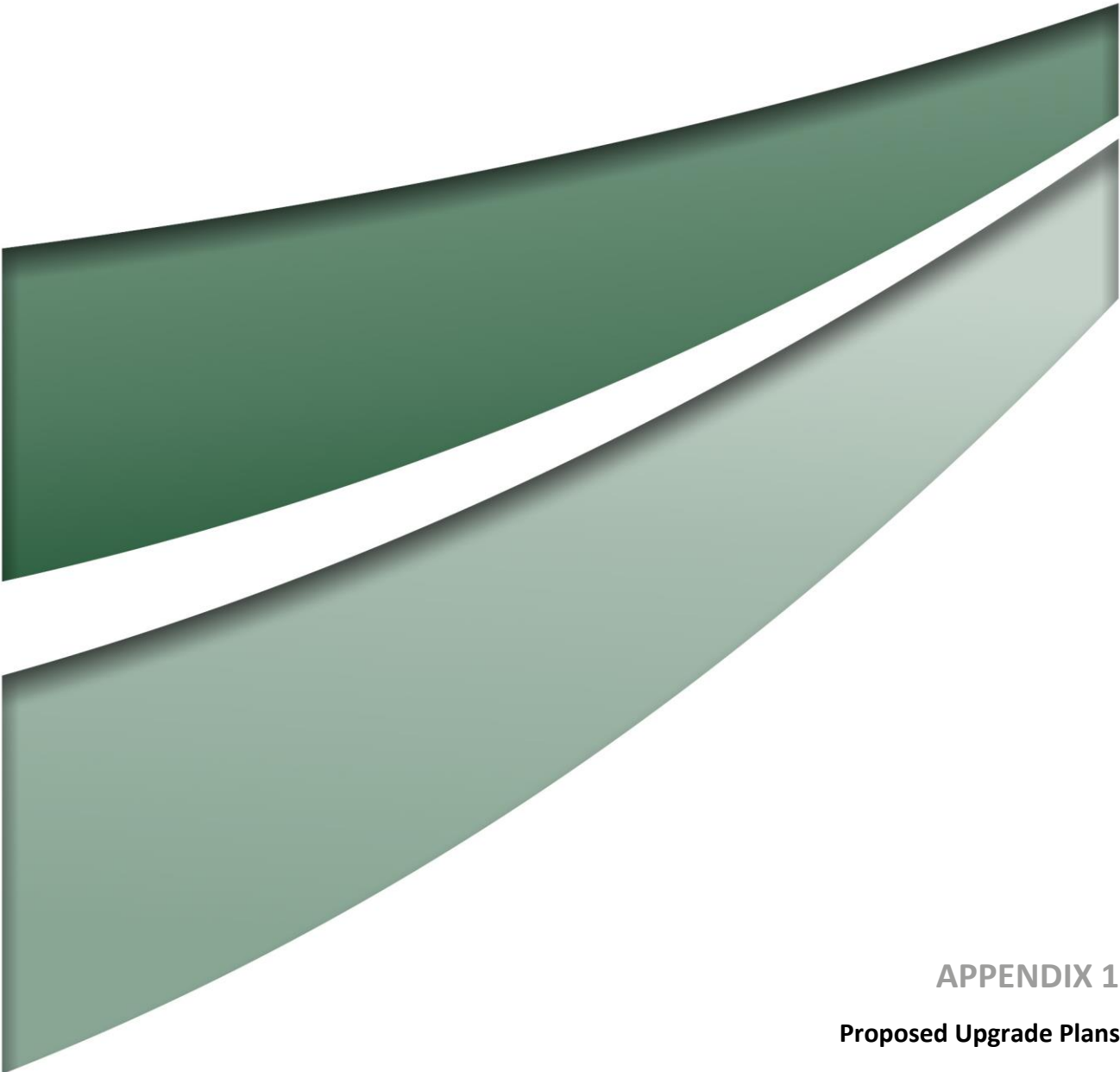
Resource Planning Pty Limited. 1994. Archaeological survey of Lot 1742, D.P. 634868 Parish of Alnwick Thornton NSW. Report to PGH Clay Bricks and Pavers Pty Ltd.

Roy, P S, Hudson, J P and Boyd, R L 1995. Quaternary geology of the Hunter delta - An estuarine valley-fill case study. In Sloan, S W and Allman, M A (eds.) Conference on Engineering Geology of the Newcastle-Gosford Region. Australian Geomechanics Society, Sydney.

Umwelt (Australia) Pty Limited. 2006. Additional Information to Accompany a Department of Environment and Conservation Section 90 Consent Application for the Weakleys Drive Interchange, Beresfield – Thornton area, NSW. Report for Roads and Traffic Authority.

Umwelt (Australia) Pty Limited. 2014. Aboriginal Cultural Heritage and Archaeological Assessment, Proposed New Maitland Hospital Precinct, Metford, NSW. Report to Health Infrastructure.

Umwelt (Australia) Pty Limited. 2017. Aboriginal Cultural Heritage Assessment Report, Proposed New Maitland Hospital Precinct, Metford, NSW. Report to Health Infrastructure.



APPENDIX 1

Proposed Upgrade Plans



NOTES

1. THIS DRAWING IS ISSUED UPON THE CONDITION IT IS NOT COPIED, REPRODUCED, RETAINED OR DISCLOSED TO ANY UNAUTHORIZED PERSON, EITHER WHOLLY OR IN PART WITHOUT PRIOR CONSENT IN WRITING OF FITZPATRICK PARTNERS.
2. DRAWINGS SHOW DESIGN INTENT ONLY. SHOP DRAWINGS ARE TO BE PROVIDED FOR APPROVAL PRIOR TO CONSTRUCTION OR MANUFACTURE.
3. DO NOT SCALE DRAWINGS. CHECK DIMENSIONS BEFORE COMMENCING WORK.
4. INCONSISTENCIES ARE TO BE REPORTED TO RESOURCES IN PROJECT.
5. NUMBERS FOLLOWING AN ABBREVIATION DENOTE A PARTICULAR TYPE OF ITEM. FOR EXPLANATION OF ITEM TYPES REFER TO SPECIFICATION AND FINISHES SCHEDULE.

CLIENT

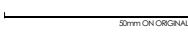


PROJECT NO.
21701



PROJECT NORTH

SCALE @ A3
NTS



PRINT DATE
16/02/2018

DRAWING
CONTEXT PLAN



NOTES

1. THIS DRAWING IS ISSUED UPON THE CONDITION IT IS NOT COPIED, REPRODUCED, RETAINED OR DISCLOSED TO ANY UNAUTHORIZED PERSON, EITHER WHOLLY OR IN PART WITHOUT PRIOR CONSENT IN WRITING OF fitzpatrick+partners.
2. DRAWINGS SHOW DESIGN INTENT ONLY. SHOP DRAWINGS ARE TO BE PROVIDED FOR APPROVAL PRIOR TO CONSTRUCTION OR MANUFACTURE.
3. DO NOT SCALE DRAWINGS. CHECK DIMENSIONS BEFORE COMMENCING WORK.
4. INCONSISTENCIES ARE TO BE REPORTED TO RESOURCES & PARTNERS.
5. NUMBERS FOLLOWING AN ABBREVIATION DENOTE A PARTICULAR TYPE OF ITEM. FOR EXPLANATION OF ITEM TYPES REFER TO SPECIFICATION AND FINISH SCHEDULE.

CLIENT



PROJECT NO.
21701



SCALE @ A3
NTS

30mm ON ORIGINAL

PRINT DATE
16/02/2018

DRAWING
SITE PLAN



— SITE BOUNDARY
 - - - PROJECT INFLUENCE AREA
 OPEN SPACE

fitzpatrick+partners

© Copyright -year
 p. + 61 (0)2 8274 8200 w. www.fitzpatrickpartners.com
 G. LEVEL 6, 156 CLARENCE ST., SYDNEY 2000, AUSTRALIA

NOTES

1. THIS DRAWING IS ISSUED UPON THE CONDITION IT IS NOT COPIED, REPRODUCED, RETAINED OR DISCLOSED TO ANY UNAUTHORIZED PERSON, EITHER WHOLLY OR IN PART WITHOUT PRIOR CONSENT IN WRITING OF fitzpatrick+partners.
2. DRAWINGS SHOW DESIGN INTENT ONLY. SHOP DRAWINGS ARE TO BE PROVIDED FOR APPROVAL PRIOR TO CONSTRUCTION OR MANUFACTURE.
3. DO NOT SCALE DRAWINGS. CHECK DIMENSIONS BEFORE COMMENCING WORK.
4. INCONSISTENCIES ARE TO BE REPORTED TO fitzpatrick+partners.
5. NUMBERS FOLLOWING AN ABBREVIATION DENOTE A PARTICULAR TYPE OF ITEM. FOR EXPLANATION OF ITEM TYPES REFER TO SPECIFICATION AND FINISH SCHEDULE.

CLIENT
 NSW GOVERNMENT Health Infrastructure

PROJECT NO.
 21701

PROJECT NORTH

SCALE @ A3
 1:2000

PRINT DATE
 16/02/2018

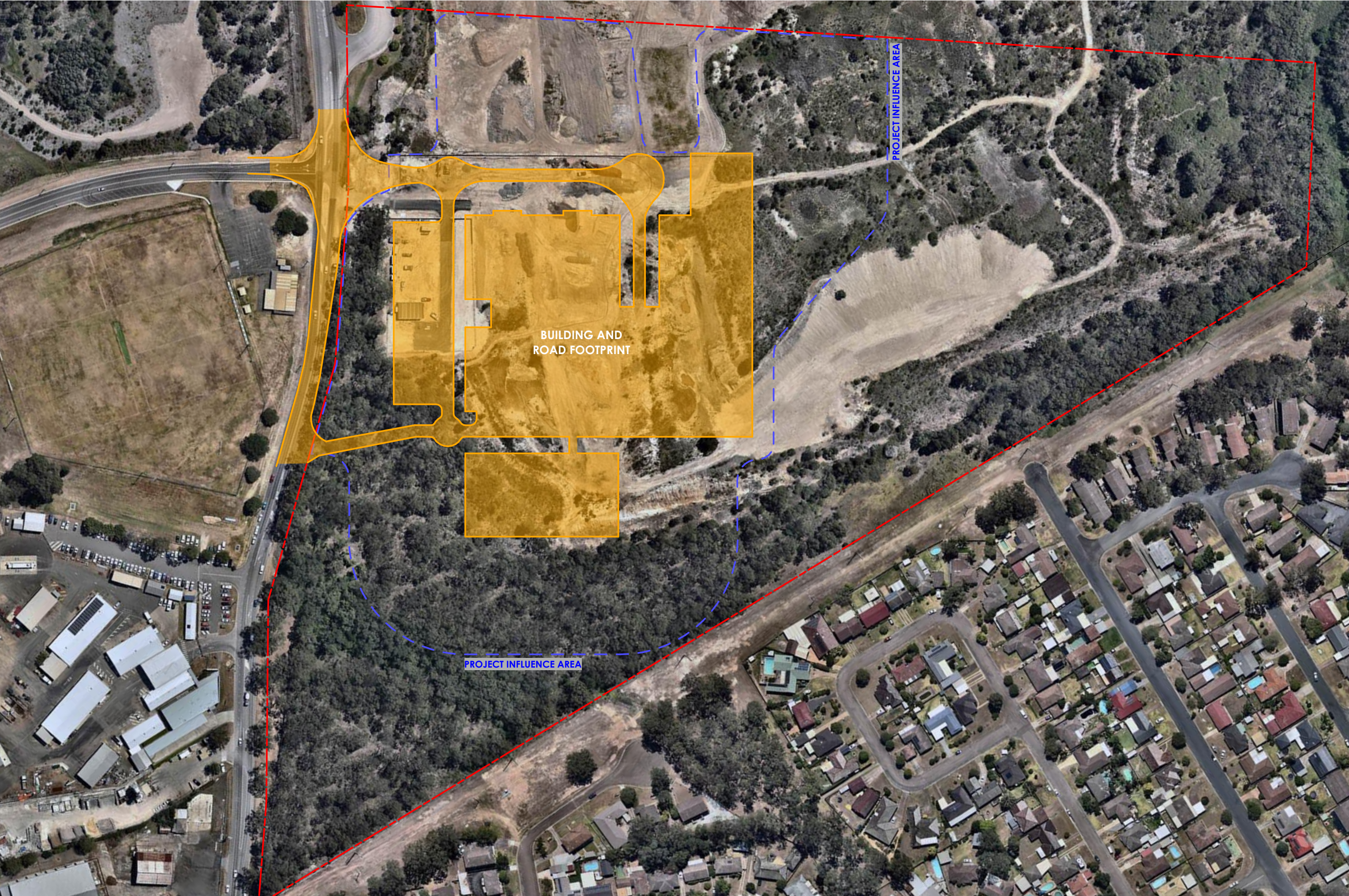
DRAWING
 MASTERPLAN

EIS SUBMISSION

MAITLAND HOSPITAL

DRAWING NO.
 DA07

ISSUE
 6

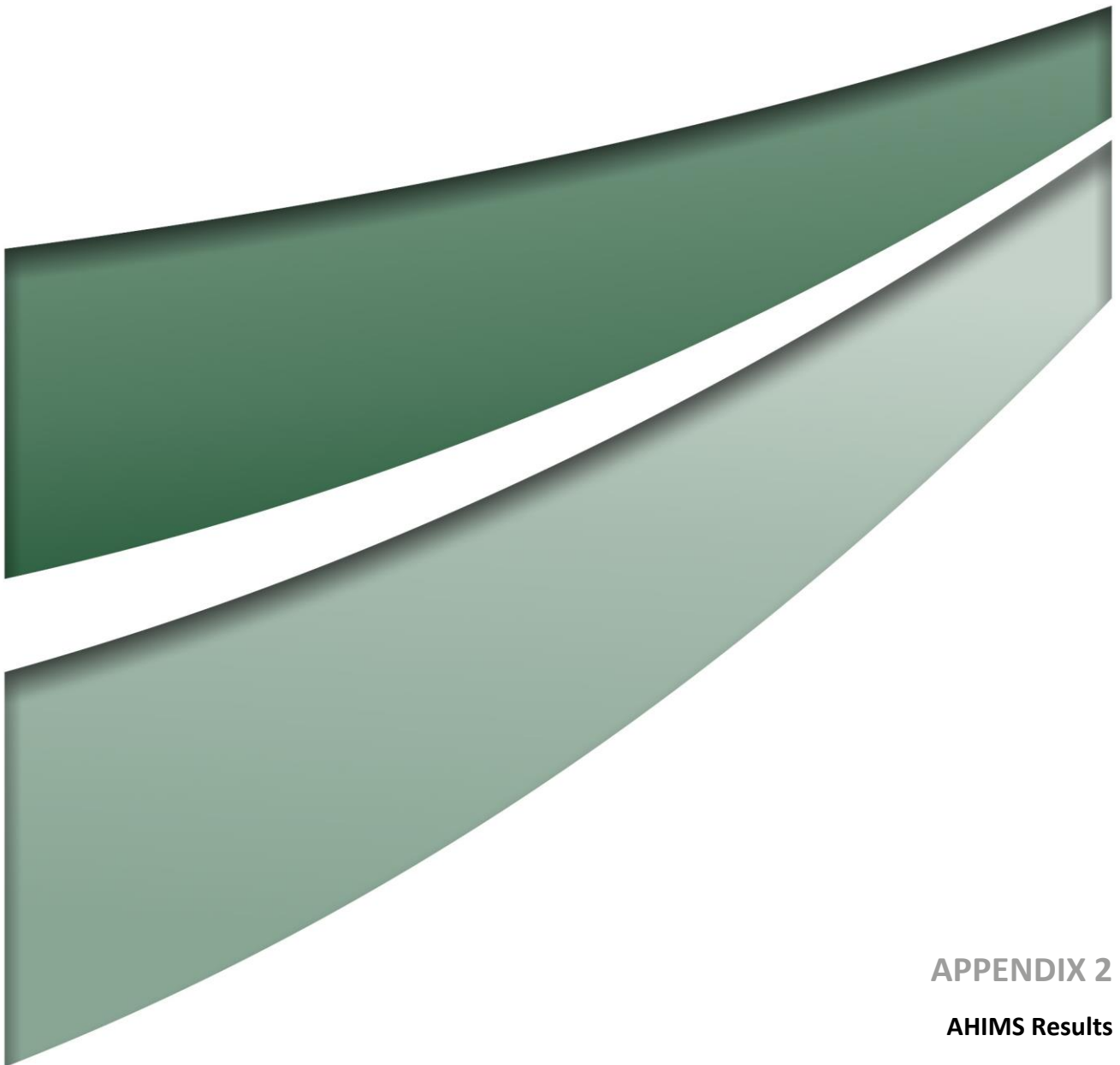




NOTES

1. THIS DRAWING IS ISSUED UPON THE CONDITION IT IS NOT COPIED, REPRODUCED, RETAINED OR DISCLOSED TO ANY UNAUTHORIZED PERSON, EITHER WHOLLY OR IN PART WITHOUT PRIOR CONSENT IN WRITING OF fitzpatrick+partners.
2. DRAWINGS SHOW DESIGN INTENT ONLY. SHOP DRAWINGS ARE TO BE PROVIDED FOR APPROVAL PRIOR TO CONSTRUCTION OR MANUFACTURE.
3. DO NOT SCALE DRAWINGS. CHECK DIMENSIONS BEFORE COMMENCING WORK.
4. INCONSISTENCIES ARE TO BE REPORTED TO fitzpatrick+partners.
5. NUMBERS FOLLOWING AN ABBREVIATION DENOTE A PARTICULAR TYPE OF ITEM. FOR EXPLANATION OF ITEM TYPES REFER TO SPECIFICATION AND FINISHES SCHEDULE.

CLIENT



APPENDIX 2

AHIMS Results

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 4049

Client Service ID : 282168

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
38-4-0364	Tenambit 3; <u>Contact</u>	AGD	56	369880	6375220	Open site	Valid	Artefact : - <u>Permits</u>	Isolated Find	
38-4-0688	Metford Road PAD <u>Contact</u>	AGD	56	369498	6374833	Open site	Valid	Potential Archaeological Deposit (PAD) : 1 <u>Permits</u>	1679,1971,2004	
38-4-0362	Tenambit; <u>Contact</u>	AGD	56	369290	6375200	Open site	Valid	Artefact : - <u>Permits</u>	Isolated Find	
38-4-1684	NMH1 <u>Contact</u>	GDA	56	369170	6374453	Open site	Valid	Artefact : - <u>Permits</u>		

Report generated by AHIMS Web Service on 19/05/2017 for Joshua Madden for the following area at Lat, Long From : -32.7638, 151.5996 - Lat, Long To : -32.7534, 151.6162 with a Buffer of 200 meters. Additional Info : Archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 4

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

**Newcastle**

75 York Street
Teralba NSW 2284

Ph. 02 4950 5322

Perth

PO Box 783
West Perth WA 6872
First Floor
7 Havelock Street
West Perth WA 6005

Ph. 1300 793 267

Canberra

PO Box 6135
56 Bluebell Street
O'Connor ACT 2602

Ph. 02 6262 9484

Sydney

50 York Street
Sydney NSW 2000

Ph. 1300 793 267

Brisbane

Level 11
500 Queen Street
Brisbane QLD 4000

Ph. 1300 793 267

www.umwelt.com.au