



VIRTUS HERITAGE



STONE CREEK BATTERY ENERGY STORAGE SYSTEM (BESS)

Narrabri, NSW

Historical Archaeological Assessment

V3 Final | August 2025

Prepared by Antonella Skepasianos (MRes), Virtus Heritage

Prepared for SLR Consulting Australia Pty Ltd on behalf of Enervest Operations Pty Ltd

PO Box 101, Pottsville NSW 2489

(02) 6676 4354

info@virtusheritage.com.au

[ABN 56 159 910 228](#)

VIRTUSERITAGE.COM.AU

Document controls

Client:	SLR Consulting Australia Pty Ltd
Proponent:	Enervest Operations Pty Ltd
Local Government Area:	Narrabri
Local Aboriginal Land Council (LALC):	Narrabri Local Aboriginal Land Council

Version History

Version	Date	Prepared by	Reviewed by	Comments
1	29 July 2025	Antonella Skepasianos	MacLaren North	Draft for client comment
2	14 August 2025	Antonella Skepasianos Julian Travaglia	Julian Travaglia	Final for client review
3	22 August 2025	Kate Morris	SLR consulting Enervest Operations	Final

Acknowledgement of Country

Virtus Heritage acknowledges the Traditional Custodians of the land on which this project was undertaken and pays respect to Elders past, present and emerging.

Content Warning

Aboriginal and Torres Strait Islander people are warned that this publication may contain names and images of deceased people, descriptions of traumatic historic events and parts of Country that have been impacted by development.

Disclaimer and cultural restrictions

This Report (including any enclosures and attachments) has been prepared by Virtus Heritage for the exclusive use and benefit of SLR Consulting Australia Pty Ltd on behalf of Enervest Operations Pty Ltd for their use regarding the Project and solely for the purpose for which it is provided. Unless we provide express prior written consent, no part of this report should be reproduced, distributed or communicated to any third party. We do not accept any liability if this report is used for an alternative purpose from which it is intended, nor to any third party in respect of this report.

Information contained in the Report is current as at the date of the Report and may not reflect any event or circumstances which occur after the date of the Report.

All queries related to the content, or to any use of this report must be addressed to Dr Mary-Jean Sutton.

Executive Summary

Virtus Heritage Pty Limited (hereafter 'Virtus Heritage') was engaged by SLR Consulting Australia Pty Ltd (SLR) on behalf of Enervest Operations Pty Ltd, to prepare this European heritage and archaeology constraints assessment for the proposed State Significant Development Stoney Creek Battery Energy Storage System (BESS) located at 41 Stoney Creek Road, Narrabri NSW. This assessment was triggered due to Secretary's Environmental Assessment Requirements (SSD75680468). The aim of this assessment is to identify heritage constraints and provides recommendations to ensure compliance with relevant heritage legislation and planning controls.

HISTORICAL AND ENVIRONMENTAL CONTEXT

European exploration of the Namoi catchment began in the early nineteenth century, with expeditions by Oxley, Cunningham, and Mitchell laying the groundwork for colonial incursion. Pastoral expansion followed rapidly, and by the 1830s, squatting runs were established across the region, including the Narrabri Run (later formalised as Killarney Run) which encompassed the current project area.

The project area is situated on flat alluvial terrain, approximately 1 km northeast of the Narrabri township. The landscape is dissected by a combination of natural and artificial waterways. Horsearm Creek, a second-order tributary of Narrabri Creek, flows along the southern edge of the project area, while Mulgate Creek lies to the north. A constructed drainage line bisects the project area, redirecting runoff into an artificial dam located near the northern boundary. The ecological context includes a mix of native riparian vegetation and heavily modified farmland.

Though the area has undergone significant disturbance through cropping, earthworks, and irrigation, these waterways in proximity to the project area would historically have offered reliable resources and favourable conditions for both Aboriginal and post-contact use.

PROJECT AREA INSPECTION

An inspection of the project area was conducted on 24 June 2025 to assess heritage constraints and archaeological potential. The inspection confirmed that the project area has undergone extensive ground disturbance, with no visible historical archaeological features, structures, or relics identified. Ground surface visibility on the northern side of Stoney Creek Road, across the ploughed paddock, was generally very good (75%) due to a low crop and the width of the ploughs. Ground surface visibility on the southern side of Stoney Creek Road, around the substation, was much lower due to ground cover and modified surfaces (<5%).

The most significant sightline within the project area is toward the Narrabri Cemetery (LEP I018) and it is intercepted by a row of trees.

CONSTRAINTS

The inspection and historical research indicate that the project area has undergone significant modification due to agricultural activities, infrastructure development, and roadway development.

One historical green glass bottle base was identified during surface inspection, likely displaced by historical or recent land use. No other features or subsurface structural remains were observed. The bottle glass which also has possible edge flaking is located outside the project area and is addressed further in the ACHA (Virtus 2025) developed for the project.

Key findings of this assessment are as follows:

- The project area forms part of the historic Killarney squatting run, with mapped improvements (a hut, garden, and well) located immediately south of the project area, indicating the potential for low-level historical activity.

- While the project area may contain minor archaeological resources such as postholes or shallow artefact scatters, no intact deposits or structural remains were identified.
- Despite the project area's proximity to the Narrabri Cemetery, there is no historical or physical evidence to suggest the presence of unmarked or fugitive graves within the project area. The project area was historically used for rural purposes and is not associated with burial activity.
- The bottle base (outside project area) lacks clear contextual integrity and is not currently associated with subsurface archaeological features. As such, it is not assessed to meet the definition of a relic under the *NSW Heritage Act 1977* based on current evidence. The bottle glass base has possible negative flake scars indicating use by Aboriginal people and is addressed further in the Aboriginal Cultural Heritage Assessment (ACHA, Virtus: 2025) developed for this project.
- The archaeological potential of the project area is considered low, and the likelihood of encountering significant or research-valuable historical archaeological material is minimal.

MANAGEMENT AND RECOMMENDATIONS

While no historical heritage impacts are expected as a result of the proposed works, it is recommended that the following safeguards be implemented in the event of any unexpected historical archaeological material or human remains being encountered during construction:

1. Works may proceed with caution
2. Unexpected finds procedure
3. Unexpected Human Remains Procedure

Contents

1.	Introduction	6
1.1	Overview	6
1.2	Project background	6
1.3	Project boundary terms and definitions	6
1.4	Report assessment methods	9
1.4.1.	<i>Heritage management guidelines</i>	<i>9</i>
1.4.2.	<i>The significance framework</i>	<i>9</i>
1.4.3.	<i>Research sources</i>	<i>10</i>
1.5	Authorship	10
2.	Statutory framework	11
2.1	Legislation	11
2.1.1.	<i>NSW Heritage Act 1977</i>	<i>11</i>
2.1.2.	<i>NSW Environmental Planning and Assessment Act 1979</i>	<i>12</i>
2.1.3.	<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>	<i>12</i>
2.1.4.	<i>State Significant Development</i>	<i>13</i>
2.2	Heritage listings	13
3.	Existing environment	17
3.1	Introduction	17
3.2	Landscape overview	17
4.	Historical summary	18
4.1	Key findings	18
4.2	Historical context	18
4.2.1.	<i>Pre-European Contact</i>	<i>18</i>
4.2.2.	<i>European exploration</i>	<i>19</i>
4.2.3.	<i>Pastoralism and early settlement</i>	<i>20</i>
4.2.4.	<i>History of the project area</i>	<i>24</i>
4.2.5.	<i>Land disturbance</i>	<i>28</i>
5.	Archaeological sensitivity	39
5.1	Squatting and pastoralism	39
5.2	Previous disturbance and land use	39
5.3	Previous archaeological assessments	40
5.4	Archaeological potential	41
5.5	Predictive model	41
6.	Project area inspection and results	43

6.1	Project Area Inspection results.....	43
6.1.1	Lot 156 DP 754944 (northern paddock).....	43
6.1.2	Lot 1 DP 502189 (Narrabri Substation).....	44
7.	Significance assessment	46
7.1	The significance framework.....	46
7.2	Assessment of heritage significance.....	46
7.3	Statement of archaeological significance.....	47
7.4	Summary	48
8.	Assessment of the project.....	49
8.1	Proposed works.....	49
8.2	Key constraints & Management.....	50
9.	Conclusions and recommendations	51
9.1	Recommendations.....	51
10.	References.....	53

Tables

Table 1.1	NSW heritage assessment criteria	9
Table 2.1	Heritage register search.....	14
Table 4.1	Historical aerials of the project area.....	30
Table 5.1	Previous archaeological research.....	40
Table 5.2	Potential historical sites in the project area	41
Table 7.1	NSW heritage assessment criteria	46
Table 7.2	Assessment of significance for the project area.....	46

Figures

Figure 1.1	Project area and locality.....	8
Figure 2.1	Heritage register search results.....	16

Plates

Plate 4.1	Detail of the AIATSIS Map of Indigenous Australia showing language groups in and in the vicinity of the project area.....	19
Plate 4.2	Lithograph titled 'Nundawar (sic) Range', New South Wales by Sir Thomas Mitchell, c1838.....	20
Plate 4.3	Killarney Run, n.d.	22

Plate 4.4 Killarney Run, n.d.....	23
Plate 4.5 Troop train at Narrabri Railway Station, 1914.	24
Plate 4.6 Parish of Narrabri, 1881.....	25
Plate 4.7 Parish of Narrabri, 1886.	25
Plate 4.8 Portiom 130, Parish of Narrabri, 1870. Crown plan 106–1774 excerpt.	27
Plate 4.9 Portion 156, Parish of Narrabri, 1871. Crown plan 148–1774 excerpt.....	28
Plate 4.10 1964 aerial imagery.....	30
Plate 4.11 1972 aerial imagery.....	31
Plate 4.12 1989 aerial imagery.....	32
Plate 4.13 1994 aerial imagery.....	33
Plate 4.14 1996 aerial imagery.....	34
Plate 4.15 1998 aerial imagery.....	35
Plate 4.16 2004 aerial imagery.....	36
Plate 4.17 2013 aerial imagery.....	37
Plate 4.18 2025 aerial imagery.....	38
Plate 6.1 View south-east across the northern portion of the project area showing pedestrian transects across the cultivated paddock.....	43
Plate 6.2 Good visibility on the northern side of Stoney Creek Road.....	43
Plate 6.3 River cobble within project area, easement disturbances visible.....	44
<i>Plate 6.4 Undiagnostic green glass bottle base recovered outside the project area from a disturbed, ploughed paddock. The fragment exhibits possible evidence of edge flaking.....</i>	<i>44</i>
Plate 6.5 Substation on the southern side of Stoney Creek Road, view south.....	45
Plate 6.6 Ground surface exposure with high visibility on southern side of Stoney Creek Road.....	45
Plate 6.7 Heavily modified ground surface adjacent to the Narrabri Substation, showing compacted reddish-brown fill material and imported gravel, view north.....	45
<i>Plate 6.8 View north along the perimeter of the Narrabri Substation, showing a graded easement and shallow drainage channel adjacent to the secure compound.....</i>	<i>45</i>

1. Introduction

1.1 OVERVIEW

Virtus Heritage Pty Limited (hereafter 'Virtus Heritage') was engaged by SLR Consulting Australia Pty Ltd (SLR) on behalf of Enervest Operations Pty Ltd, to prepare an Historical Heritage Assessment (HHA) for the proposed State Significant Development (SSD) Stoney Creek Battery Energy Storage System (BESS) located at 41 Stoney Creek Road, Narrabri NSW (referred to hereafter as 'the project area'). The purpose of this investigation was to fulfill the Secretary's Environmental Assessment Requirements (SEARS; SSD75680468) and provide a detailed analysis of the known and potential historical archaeological resources within the project area. To achieve this, background historical research and a physical evaluation, including a project area inspection, were undertaken to establish the project area's history and assess the likelihood of surviving archaeological evidence. This assessment also considers the potential impacts of the proposed development and provides recommendations for the management of any identified archaeological resources based on their assessed significance.

This HAA focuses on the potential presence of historical 'relics' as defined under the NSW *Heritage Act 1977* (Heritage Act). It does not consider Aboriginal cultural heritage, which is addressed in a separate Aboriginal Cultural Heritage Assessment (ACHA; Virtus Heritage 2025), or built and landscape heritage values, which are assessed in the separate Statement of Heritage Impact (SoHI, Virtus Heritage 2025).

1.2 PROJECT BACKGROUND

The project area is located at 41 Stoney Creek Road, Narrabri, within the Narrabri Shire Local Government Area (LGA), New South Wales. It comprises Lot 156 DP754944 with associated infrastructure extending into Lot 1 DP502189 (Narrabri Substation) and the adjoining Stoney Creek Road Reserve (Insert amended [figure Figure 1.1](#)). The project area is situated north-east of the Narrabri township on land historically and currently used for cotton cultivation and is bounded by Old Cemetery Road to the west and Stoney Creek Road to the south and east. The LEP listed Narrabri Cemetery (I018) is immediately west of the project area.

The proposal involves the construction and operation of a Battery Energy Storage System (BESS) with a capacity of approximately 125 MW / 1,000 MWh. Associated works include hardstand areas, access roads, and a 132 kV utility line connection to the Narrabri Substation. The BESS footprint includes two adjoining rectangular pads (approximately 100 m x 85 m and 170 m x 180 m) located in the south-eastern portion of Lot 156.

The project area is currently cleared, is relatively flat and has undergone extensive agricultural modification, including irrigation infrastructure and ploughing. An artificial drainage channel runs adjacent the project area, and a large dam is located to the north.

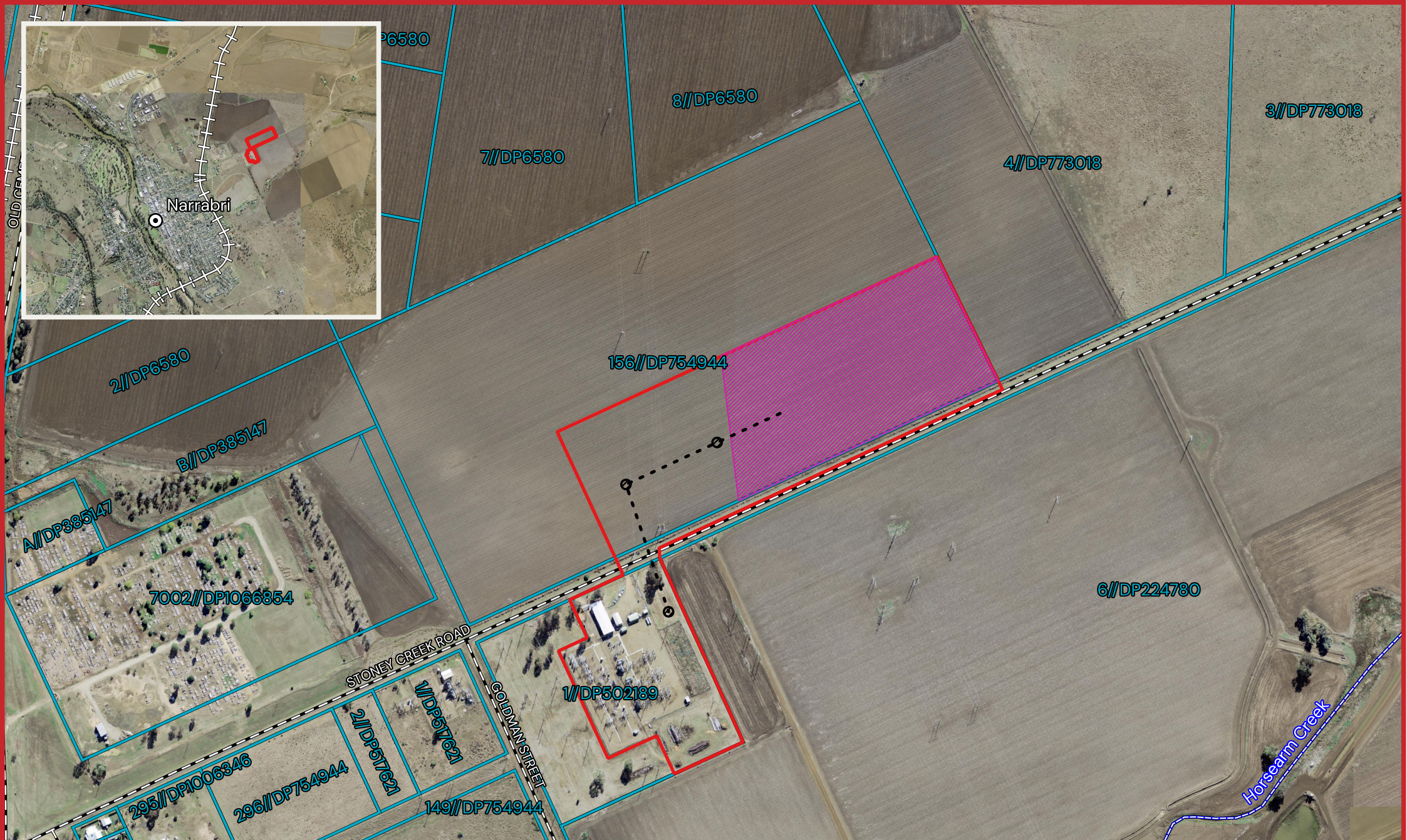
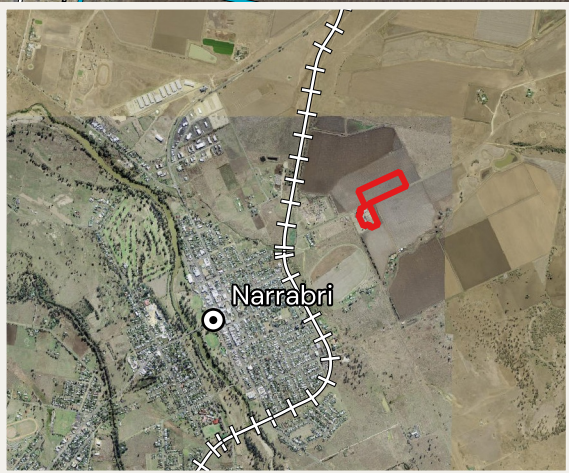
1.3 PROJECT BOUNDARY TERMS AND DEFINITIONS

The purpose of these definitions is to establish clear expectations for how each term is used throughout this report:

- **Project area:** The project area refers to the maximum extent of land subject to proposed development activities associated with the Battery Energy Storage System (BESS) project. This includes Lot 156 DP754944, the adjoining substation lot (Lot 1 DP502189), and portions of Stoney Creek Road Reserve. The project area includes all zones of potential ground disturbance, access tracks, hardstand areas, utility connections, and laydown zones.



- **BESS footprint:** The BESS footprint is a subset of the project area and refers specifically to the proposed development envelope for the BESS infrastructure. This is located in the eastern portion of the project area and is the area anticipated to be subject to the most intensive disturbance.
- **Study area:** For this assessment, the study area is defined as a 2 km buffer from the outer boundary of the project area. This broader area provides historical context and supports the identification and review of nearby heritage items, land use history, and landscape modifications that may inform the archaeological potential of the project area.



**VIRTUS
HERITAGE**

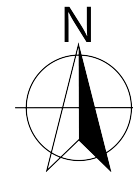
606: 41 Stoney Creek Road BESS Narrabri, NSW Figure 1.1. Project Area and Locality

Author: Antonella Skepasianos / Liam Clerke
Date: 15/08/2025
Scale: 1:5000 @ A4
Datum: GDA2020 / MGA zone 55
Source: NSW Spatial Services

Maps and figures contained within this document may be based on third party data, may not be to scale and are intended for use as a guide only. Virtus Heritage does not warrant the accuracy of such maps or figures.

Legend

- | | | |
|--|---|---|
|  Project Area |  Roads |  Cities and Towns |
|  BESS Footprint |  Railway |  Proposed Transmission Line |
|  Lot |  Named Watercourse |  Proposed Transmission Tower |



1.4 REPORT ASSESSMENT METHODS

1.4.1. Heritage management guidelines

This HAA has been conducted in accordance with applicable government heritage, guidelines, policies and assessment criteria. The report and associated project area inspection were guided by principles outlined in *The Australian International Council on Monuments and Sites, Charter for Places of Cultural Significance* (also known as the *Burra Charter*, Australia ICOMOS 2013) and informed by methodologies from the New South Wales (NSW) *Heritage Manual* (Heritage Office 1996 with regular additions).

The *Burra Charter* (ICOMOS (Australia) 2013) provides best practice standards for custodians involved in advising on or managing places of cultural significance. Cultural significance is broadly defined by the Charter as encompassing aesthetic, historical, scientific, social, and spiritual values relevant across generations (Australia ICOMOS 2013, Article 1.2). The Charter advocates for conservation actions tailored specifically to the identified significance, recommending minimal intervention to ensure heritage values are preserved effectively.

Structured into five key sections: definitions, conservation principles, processes, conservation practices, and implementation. The *Burra Charter* outlines a structured approach to heritage management. Its key principles include:

- Conservation is based on the identified significance
- A cautious and minimal intervention approach, undertaking only necessary changes
- Maintenance is a fundamental conservation measure.

The full text of the *Burra Charter* is accessible online at the ICOMOS Australia website:

<http://icomos.org/australia>.

1.4.2. The significance framework

In NSW, historical heritage value relates to buildings, places, archaeological sites and landscapes that were developed or altered during the post-contact historical period and are not associated primarily with traditional Aboriginal use. The assessment of heritage significance in NSW follows principles established by The *Burra Charter* (Australia ICOMOS 2013) and these principles are further detailed in *Assessing Heritage Significance* in the NSW Heritage Manual (Department of Planning and Environment (NSW) 2023). The heritage manual outlines seven specifies seven criteria for evaluating heritage significance at both local and state levels. These criteria are outlined in Table 1.1 below.

Table 1.1 NSW heritage assessment criteria

Criterion	Explanation
a)	An item is important in the course or pattern of NSW's (or the local area's) cultural or natural history (Historical Significance).
b)	An item has strong or special association with the life or works of a person, or group of persons of importance in NSW's (or the local area's) cultural or natural history (Associative Significance).
c)	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area) (Aesthetic Significance).
d)	An item has a strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons (Social Significance).

e)	An item has the potential to yield information that will contribute to an understanding of NSW's (or the local area's) cultural or natural history (Research Significance).
f)	An item possesses uncommon, rare or endangered aspects of NSW's (or the local area's) cultural or natural history (Rarity).
g)	An item is important in demonstrating the principal characteristics of a class of NSW's (or the local area's) cultural or natural places or environments (Representativeness).

Source: *Assessing Heritage Significance* (DPE 2023a, p.21).

1.4.3. Research sources

Research for this report was conducted using primary sources such as maps, plans and gazettes etc, which were accessed through online portals such as:

- Land and Property Information (LPI)
- Historical Land Records Viewer (HLRV)
- National Library of Australia: Trove Online
- Historical aerial photographs (NSW Historical Imagery)
- State Library of NSW (Mitchell Wing).

1.5 AUTHORSHIP

The report was prepared by Antonella Skepasianos (Senior Archaeologist, Virtus Heritage). Project management and fieldwork was undertaken by Julian Travaglia (Principal Archaeologist, Virtus Heritage) The figures were created by Antonella Skepasianos. Quality assurance was provided by Dr MacLaren North (Director, Asteria Advisory P/L). Project information and description of works was provided by Richard Simmons (SLR Consulting) in October 2024.

2. Statutory framework

2.1 LEGISLATION

In NSW, heritage protection and management for historical archaeological sites, buildings, relics, and culturally significant landscapes are governed primarily by the NSW *Heritage Act 1977* (Heritage Act), and the *Environmental Planning and Assessment Act 1979* (EP&A Act). These acts establish the framework for identifying, assessing, and conserving heritage places and objects of local or State significance, as well as managing heritage impacts from development projects. Additionally, heritage protection can be further reinforced under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), especially for sites with nationally significant heritage values or actions involving Commonwealth land or agencies.

2.1.1. *NSW Heritage Act 1977*

The Heritage Act provides a legislative framework to promote and protect heritage places, items, and relics throughout NSW. Administered by the Heritage Council of NSW, the Act supports the identification, conservation, and appropriate management of heritage assets.

i. State Heritage Register

Under the Act, heritage items of exceptional importance to the State are listed on the State Heritage Register (SHR). Inclusion on the SHR means that these heritage items cannot be damaged, altered or developed without approval from the Heritage Council of NSW, under Section 59 of the Act.

ii. Archaeology and relics

The Heritage Act also provides protection to archaeological 'relics', regardless of their listing status. It applies to all NSW land that is not listed on the SHR. Section 4(1) of the Heritage Act (as amended 2009) defines 'relic' as follows:

A "relic" means any deposit, artefact, object or material evidence that:

- (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and
- (b) is of State or local heritage significance.

Section 139(1) of the Heritage Act states that:

A person must not disturb or excavate any land knowingly or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, damaged or destroyed unless the disturbance or excavation is carried out in accordance with an excavation permit.

Under Section 146 of the Act, individuals must notify the Heritage Council of NSW within a reasonable timeframe if an unanticipated relic is discovered. Any suspected relic cannot be removed without obtaining the necessary approval. The Act distinguishes between 'works,' which encompass historical infrastructure, and archaeological 'relics.' While 'works' may be buried and possess archaeological characteristics, their exposure does not require reporting under the Heritage Act unless they are determined to hold demonstrable heritage significance.

iii. State Government Heritage and Conservation (s170) Registers

Under Section 170 of the Heritage Act, NSW State government agencies are required to maintain a Heritage and Conservation Register. This section ensures that government agencies actively manage listed heritage items and notify the Heritage Council of NSW prior to changes such as removal, transfer, or demolition.

2.1.2. *NSW Environmental Planning and Assessment Act 1979*

The EP&A Act provides the primary legislative framework for planning and assessing environmental impacts, including heritage considerations, within the development process in NSW. This Act ensures environmental and heritage impacts are evaluated and appropriately managed through local planning instruments, such as Local Environmental Plans (LEPs) and Development Control Plans (DCPs). Development applications (DAs) or environmental assessments under Division 5.1 of the Act are required to demonstrate that heritage impacts have been appropriately addressed.

i. *Narrabri Local Environmental Plan 2012*

Part 5, Section 5.10 of the *Narrabri Local Environmental Plan 2012 (NLEP 2012)* addresses the conservation of heritage significance within the Narrabri Shire LGA. The objectives of the NLEP 2012 in relation to heritage are:

- a) to conserve the environmental heritage of Narrabri,
- b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views
- c) to conserve archaeological sites
- d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

To achieve these objectives, development consent is required to demolish, move, alter, disturb or excavate a heritage item, an Aboriginal object or a building, work, relic or tree within a heritage conservation area. Schedule 5 of the *NLEP 2012* provides a list of heritage items, conservation areas and archaeological sites within the Narrabri Shire LGA.

2.1.3. *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*

At the Commonwealth level, the EPBC Act offers protection for natural, Indigenous, and historic heritage values. This Act mandates assessments for actions impacting places listed on the:

- World Heritage List (WHL) – places inscribed on the United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage List.
- National Heritage List (NHL) – nationally significant heritage places.
- Commonwealth Heritage List (CHL) – heritage items owned or managed by the Commonwealth or its agencies.

Under the EPBC Act, any activity on Commonwealth land (Section 26) or action performed by a Commonwealth agency (Section 28) must undergo an assessment to evaluate potential environmental impacts. These impacts may involve heritage places listed on formal registers (WHL, NHL, CHL, or state-based registers) or heritage values identified independently by Commonwealth agencies.

Furthermore, the Act mandates assessment of actions that could significantly affect Matters of National Environmental Significance (MNES), including heritage sites listed on the WHL or NHL. Actions considered likely to have a significant impact on MNES are classified as 'controlled actions' and require approval from the Commonwealth Minister for the Environment. Projects that may significantly impact MNES must be

referred to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) for a determination on whether the project qualifies as a controlled action and thus necessitates further assessment and approval under the EPBC Act.

This project will not impact any properties listed on the WHL, NHL, or CHL, and therefore no further consideration of the EPBC Act is required.

2.1.4. State Significant Development

The Narrabri Battery Energy Storage System (BESS) project is categorised as State Significant Development (SSD; SSD75680468) under Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). SSD projects are assessed by the Department of Planning, Housing and Infrastructure (DPHI) and must obtain development consent from either the Minister for Planning or the Independent Planning Commission (or their delegate) before proceeding.

This historical heritage assessment has been prepared to accompany the State Significant Development Application (SSDA), in accordance with the requirements of the EP&A Act and the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation).

The planning framework is further supported by State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs), which guide land use and environmental assessment across NSW. State Environmental Planning Policy (Planning Systems) 2021

Clause 2.6 of the State Environmental Planning Policy (Planning Systems) 2021 outlines criteria for classifying development as SSD. Under this clause, development is declared to be SSD if:

- a) it is not permitted without development consent under Part 4 of the EP&A Act; and
- b) it is listed in Schedule 1 or Schedule 2 of the SEPP.

The proposed BESS is a form of electricity generating and storage infrastructure, identified in Schedule 1 of the SEPP as SSD. The proposal is therefore assessed as SSD in accordance with Division 4.7 of the EP&A Act.

2.2 HERITAGE LISTINGS

Note: Virtus Heritage takes no responsibility for errors or omissions in published heritage registers. All information is assumed to be accurate as provided by Heritage NSW.

The following heritage registers were searched on the 20 April 2025:

- World Heritage List (WHL)
- National Heritage List (NHL)
- Commonwealth Heritage list (CHL)
- State Heritage Inventory (SHI) Sections 1–3, which includes:
 - State Heritage Register (SHR)
 - Aboriginal Places
 - Heritage and Conservation Register (s170 register)
 - Schedule 5 of the Narrabri Local Environmental Plan 2012 (NLEP 2023)
- The Register of the National Estate (RNE), which is now lacks statutory force and is static but provides useful information.

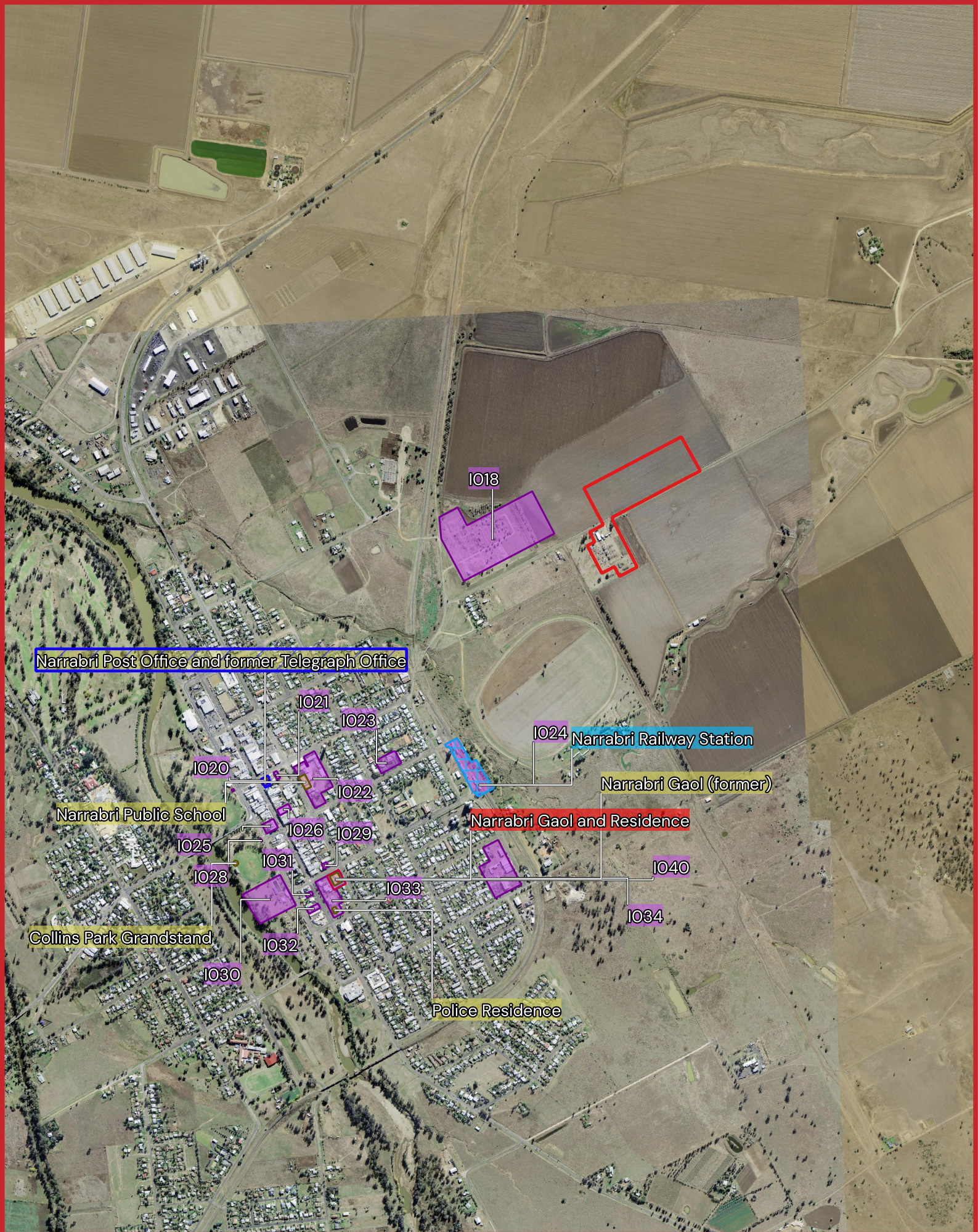
A review of the heritage register search results identified twenty-one (21) unique heritage-listed places within a 2 km radius of the project area. These include one item listed on the State Heritage Register (Narrabri Gaol and Residence), one item on the Commonwealth Heritage List (Narrabri Post Office and former Telegraph Office), and a number of places included in the now-defunct Register of the National Estate. At a state level, Narrabri Railway Station is listed on the Section 170 Heritage and Conservation Register. At the local level, the Narrabri Local Environmental Plan 2012 includes a range of civic, commercial, and municipal heritage items such as the Courthouse Group, Club House Hotel, Narrabri Fire Station, and St Cyprian's Anglican Church. The closest heritage item to the project area is the locally listed Cemetery (I018), located approximately 140 m west. These listings reflect the civic, social, and pastoral development of Narrabri during the nineteenth and early twentieth centuries and are predominantly clustered to the west and south-west of the project area.

The results of the heritage register searches are summarised in Table 2.1, with their spatial relevance shown in Figure 2.1

Table 2.1 Heritage register search

Jurisdiction	Heritage Register	Place ID #	Listing	Proximity to project area
Federal	World Heritage List	-	-	-
	National Heritage Register	-	-	-
	Commonwealth Heritage Register	105495	Narrabri Post Office and former Telegraph Office	~1.6 km west
	Register of the National Estate (non-statutory)	101343	Collins Park Grandstand	~1.7 km west
		440	Narrabri Public School	~1.4 km west
		441	Narrabri Gaol (former)	~1.6 km south-west
		442	Police Residence	~1.7 km south-west
		443	Narrabri Post Office and former Telegraph Office	~1.5 km west
State	State Heritage Register	00344	Narrabri Gaol and Residence	~1.6 km south-west
	S170 Register	4801198	Narrabri Railway Station	~0.9 km south-west
	Aboriginal Places	-	-	-
Local	Narrabri Local Environmental Plan 2012	I018	Cemetery	~0.14 km west
		I019	Memorial Clock	~1.7 km west
		I020	Narrabri Post Office	~1.6 km west
		I021	Narrabri Fire Station	~1.6 km west
		I022	Narrabri Public School	~1.4 km west
		I023	St Cyprians Anglican Church	~1.1 km south-west
		I024	Narrabri Railway Station	~0.9 km south-west
		I025	Club House Hotel	~1.6 km west

	I026	Bank of NSW	~1.6 km west
	I027	Collins Park-Ticket Box	~1.7 km south-west
	I028	Collins Park-Cade Memorial Gates	~1.7 km south-west
	I029	Gallipoli House	~1.6 km south-west
	I030	Memorial Pool	~1.8 km south-west
	I031	Lodge Namoi	~1.7 km south-west
	I032	Faulkners Cordial Factory, ice works and cold store	~1.7 km south-west
	I033	Courthouse Group	~1.7 km south-west
	I034	Narrabri Field Service Centre, Country Energy	~1.1 km south-west
	I040	Narrabri Gaol and Residence	~1.6 km south-west



Narrabri Post Office and former Telegraph Office

Narrabri Public School

Collins Park Grandstand

Police Residence

Narrabri Railway Station

Narrabri Gaol (former)

Narrabri Gaol and Residence

606: 41 Stoney Creek Road BESS
Narrabri, NSW
Figure 2.1. Heritage Register Search Results

Author: Liam Clerke
Date: 15/08/2025
Scale: 1:18713 @ A4
Datum: GDA94 / MGA zone 56
Source: NSW Spatial Services

Legend



Project Area



Local Environmental Plan



Register of the National Estate



State Heritage Register Curtilage



Commonwealth Heritage List



Section 170 Items

3. Existing environment

3.1 INTRODUCTION

Understanding the environmental context is essential for assessing the archaeological potential of a landscape, including the likelihood of uncovering artefacts, their spatial distribution, and their preservation conditions.

Environmental factors have historically influenced how people engaged with and utilised the landscape. For Aboriginal communities, access to key resources such as water, flora, fauna, and stone for toolmaking played a critical role in determining locations for habitation, seasonal movement, and ceremonial activities.

Similarly, early European settlers sought landscapes with abundant water sources, fertile soils, and gently sloping or level terrain suitable for agriculture and livestock grazing, and use of other resources such as coastal environments. However, their land use practices resulted in more visible and long-lasting modifications to the environment.

By examining these environmental factors, archaeologists can better predict where archaeological sites are likely to be found. Additionally, both natural processes, such as erosion and sedimentation, and human activities, such as land clearing and construction, impact how archaeological materials are preserved and distributed in the landscape over time.

3.2 LANDSCAPE OVERVIEW

The project area is situated in the Liverpool Plains subregion of the Brigalow Belt South Bioregion, in the township of Narrabri, north-western New South Wales. It forms part of the broader Murray–Darling catchment and is characterised by a landscape shaped by volcanic, fluvial, and alluvial processes. Extensive agricultural use has significantly modified the natural terrain.

Geologically, the project area sits within one of NSW's largest basalt provinces, the Liverpool Range, which originated from extensive lava flows between 32–40 million years ago. These flows emerged from multiple fissures rather than a single volcanic vent, creating a landscape now dominated by Quaternary alluvial fans and colluvial slopes. These sediments have formed expansive clay plains across the Liverpool Plains, underlain by Triassic and Jurassic quartz sandstones, shales, and occasional basalt intrusions. Soil profiles within the wider area vary with position: stony, sandy soils dominate ridge tops, clayey subsoils occur downslope, and deeper cracking clays are present in valley floors—conditions that influence both vegetation and the preservation of subsurface materials.

The project area is situated on flat alluvial terrain, approximately 1 km northeast of the Narrabri township, with local elevations typically ranging between 300–350 m above sea level. The landscape is dissected by a combination of natural and artificial waterways. Horsearm Creek, a second-order tributary of Narrabri Creek, flows along the southern edge of the project area, while Mulgate Creek lies approximately 800 m to the north. A constructed drainage line is adjacent the project area redirecting runoff into an artificial dam located near the northern boundary. These hydrological features form part of the broader Namoi River system, with the Namoi River itself situated approximately 2.5 km to the south.

The ecological context includes a mix of native riparian vegetation and heavily modified farmland. Native flora in the surrounding region includes river red gums, poplar box, ironbark, and brigalow, especially along creeks and low-lying flats. Grasses and shrubs adapted to clay-rich soils dominate the open plains. These ecological communities support a broad range of fauna, including amphibians, reptiles, birds, and mammals, many of which are associated with riparian corridors. Though the area has undergone significant disturbance through cropping, earthworks, and irrigation, these waterways would historically have offered reliable resources and favourable conditions for both Aboriginal and post-contact use.

4. Historical summary

4.1 KEY FINDINGS

The project area lies within the traditional lands of the Kamilaroi people, whose enduring connection to Country is reflected in the region's place names, watercourses, and ecological knowledge systems. Prior to European settlement, the landscape supported a rich cultural economy based on seasonal foraging, grain harvesting, and ceremony, particularly along river systems such as the Namoi and its tributaries.

European exploration of the Namoi catchment began in the early nineteenth century, with expeditions by Oxley, Cunningham, and Mitchell laying the groundwork for colonial incursion. Pastoral expansion followed rapidly, and by the 1830s, squatting runs were established across the region, including the Narrabry Run (later formalised as Killarney Run) which encompassed the current project area.

Throughout the second half of the nineteenth century, land reform legislation facilitated the subdivision of large pastoral estates into smaller freehold holdings. Parish and Crown plans confirm that the project area was incorporated into Portion 130 (held by George Bell) and Portion 156 (granted to Edward Guest), forming part of this transition. A well, hut, and garden were recorded just beyond the project area on Crown Plan CP106, indicating low-intensity pastoral activity along the banks of Horse Arm Creek.

By the late nineteenth century, Killarney Run had become one of the most developed and valuable pastoral properties in the Narrabri district, with large-scale shearing operations and extensive water infrastructure. Despite broader urban growth following the arrival of the railway and the town's proclamation in 1859, the project area remained rural in character and appears to have been used consistently for agricultural purposes.

Historical aerial imagery from 1964 onward shows a continuation of farming activity across the northern portion of the project area and the development of the Narrabri Substation at its southern extent. This pattern of use has remained consistent to the present day, with no permanent residential structures or intensive urban development observed. Land disturbance is therefore considered moderate to high, reflecting a stable history of cropping, paddock management, and energy infrastructure installation.

Today, the project area retains a rural and infrastructural character. Its history reflects the broader narrative of nineteenth-century pastoral expansion, gradual land tenure reform, and modern agricultural and utility-based land use in the Narrabri district.

4.2 HISTORICAL CONTEXT

4.2.1 Pre-European Contact

The Narrabri region lies within the traditional lands of the Kamilaroi people (also referred to as Gamilaraay, Gomeroi, or Gamilaroi), one of the largest Aboriginal language groups in New South Wales (OzArk 2020; Tindale 1974). Their Country extends from the Upper Hunter Valley through the Brigalow Belt to southern Queensland, with the Great Dividing Range forming the eastern boundary (OzArk 2020: 15) (Plate 4.1).

Kamilaroi Country includes a diverse landscape of grasslands, alluvial plains, and river systems, particularly the Namoi River and its tributaries, which supported a thriving and sustainable way of life. The Kamilaroi economy combined foraging, hunting, and the harvesting of native grains. Archaeological and ethnographic sources confirm the widespread use of grinding stones and seed cakes made from *Panicum* species, and it is likely that native foods such as yams (*gubiyaay*), melons (*Cucumis trigona*), and bush oranges (*bambul*) were cultivated or collected across the plains (OzArk 2020: 15–16; O'Rourke 1997: 151–153).

Kamilaroi social organisation followed a four-section kinship system, which governed marriage and social responsibilities and was linked to totemic affiliations such as eagle (*gubadhin*) and crow (*dhillbay*). Ceremonial life was highly developed, with bora grounds used for initiation, including those known at Wee

Waa (OzArk 2020: 16–17). Spiritual beliefs centred around ancestral beings including Garriya the Rainbow Serpent and the One-Legged Teacher of Men, who presided over waterholes and initiation sites respectively.

Place names in the region reflect Kamilaroi linguistic heritage. *Narrabri* is derived from *nharibaraay*, with interpretations ranging from “place of knotty trees” to “place of forked waters” or “place of camps,” while *Boggabri* (*bagaaybaraay*) means “place of creeks” (OzArk 2020: 16). These names indicate a deep cultural and linguistic connection to the landscape that persists today.

The Kamilaroi maintained strong cultural and spiritual connections to their land, and their knowledge systems were intricately tied to seasonal cycles, ecology, and kinship. Despite severe disruptions following colonisation, Kamilaroi descendants continue to live in the Narrabri region and maintain cultural responsibilities and connections to Country.

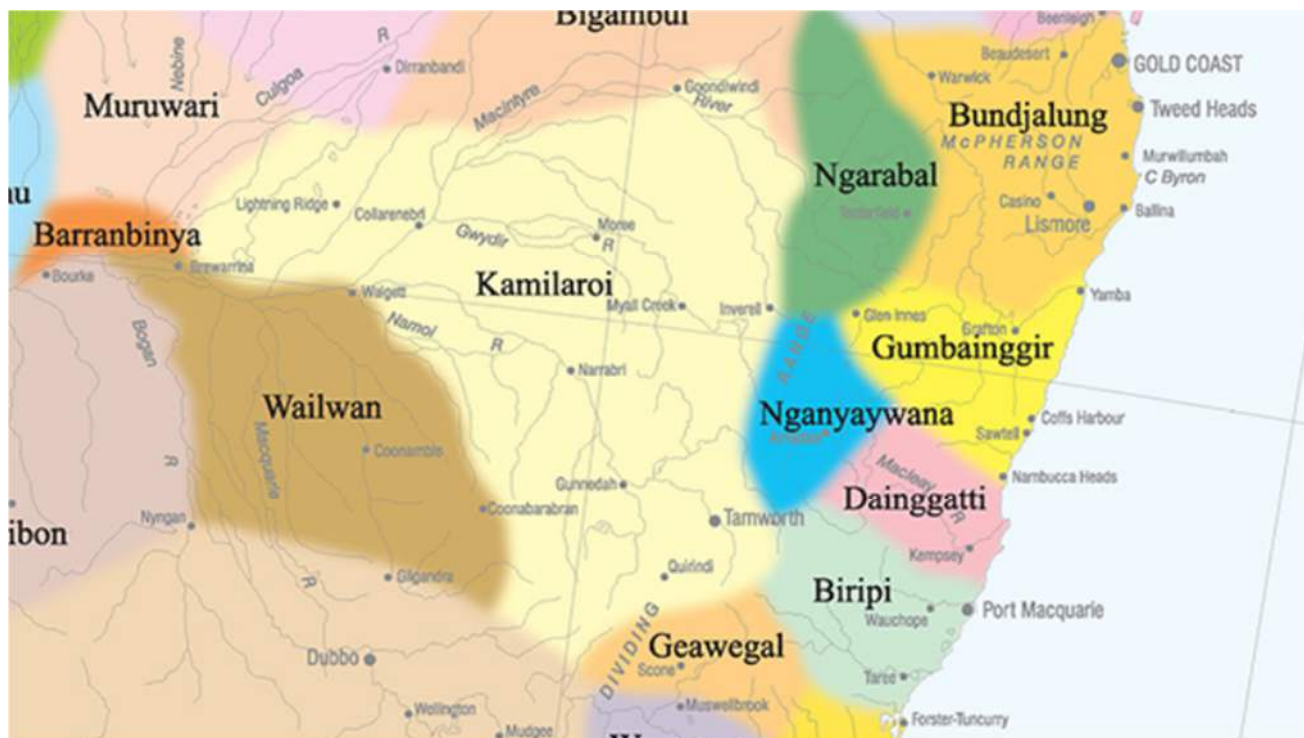


Plate 4.1 Detail of the AIATSIS Map of Indigenous Australia showing language groups in and in the vicinity of the project area.¹

4.2.2. European exploration

European exploration into the Namoi River region, which includes present-day Narrabri, commenced with Surveyor General John Oxley's 1818 expedition. Oxley was returning from the Macquarie River when he diverted eastward through the Pilliga Scrub, aiming to reach the Nandewar Range. While camped near the current Narrabri area, he described the country as "poor, and covered with acacia trees and small eucalypti," with the land to the north and east *"as bad as can be imagined... a dry morass, with higher land, free from floods, but overrun with brushes"* (Oxley 1820: 99). Over the following days, Oxley's party attempted to keep pace with boats travelling downriver but was impeded by extensive flooding across the plains. He observed that *"the waters which had overflowed the banks were spreading over the plains... with a rapidity which precluded any hope of making the river again"* (Oxley 1820: 98). His later descriptions characterised the area as "melancholy and dreary" and warned that it would remain *"wet and marshy, if not impracticable"* (Oxley 1820: 103). Although he was prevented from reaching the distant Nandewar Ranges due to flooding, he

¹ AIATSIS 1996

recorded observations of open woodlands shaped by Aboriginal land management, including the use of fire, and noted that he was being closely watched by Aboriginal groups in the area (Oxley 1820; OzArk 2020: 18).

In 1825, botanist Allan Cunningham traversed the Boggabri Plains as part of his exploration of the Liverpool Plains and the north-western interior. Cunningham confirmed the agricultural potential of the area and located Pandora's Pass, which provided a key route through the Warrumbungle Range to the north-west. His reports helped establish the region's value for future settlement (Parry 2019; Schwager 2018). Between 1826 and 1831, escaped convict George "the Barber" Clarke lived with a Kamilaroi group in the Boggabri district. Clarke was reportedly adopted into the community, took part in ceremonies, and lived near what is now Barber's Lagoon below Barber's Pinnacle. His accounts of a large inland river, which he called the Kindur, attracted government interest. Although the river did not exist, his stories prompted further exploration of the region (OzArk: 18; Rolls, 1981).

In 1831, Major Thomas Mitchell led an expedition north from the Hunter Valley, partly to verify Clarke's claims. On 2 January 1832, Mitchell sketched the Nandewar Range from a ridge near Little Mountain east of present-day Narrabri, before continuing north to trace the Gwydir River (Plate 4.2). His work established a more complete understanding of the region's topography and contributed to its suitability for European occupation (Parry 2019; Schwager 2018).



Plate 4.2 Lithograph titled 'Nundawar (sic) Range', New South Wales by Sir Thomas Mitchell, c1838.²

4.2.3. Pastoralism and early settlement

Following Mitchell's expedition, European pastoral occupation expanded rapidly across the region. From the 1820s, pastoral expansion across New South Wales was increasingly characterised by a practice known as squatting—the unauthorised occupation of Crown land for grazing and livestock production. Initially viewed by the colonial government as illegal encroachment, this form of occupation occurred beyond the formally

² Antique Print & Map Room

surveyed and sanctioned “limits of location,” a boundary first declared by Governor Darling in 1826 to define the extent of regulated settlement. These limits were later extended to encompass the Nineteen Counties, a zone roughly 400 km from Sydney, beyond which Crown oversight was limited (Museums of History NSW, 2022).

As demand for new grazing land grew, particularly in fertile regions such as the Liverpool Plains and Namoi River catchment, squatters began moving into these areas ahead of official surveys. By the 1830s, the colonial administration had largely abandoned efforts to suppress the movement and instead adopted a policy of regulation. Under the pastoral licensing system introduced in 1836, squatters could legally occupy land outside the settled districts, provided they paid an annual fee of £10 and used the land for pastoral purposes (State Library of NSW, 2023).

It was under this framework that large-scale squatting spread into the north-western slopes and plains, including the area now known as Narrabri. The black soil plains, permanent watercourses, and proximity to the Nandewar Range made the area attractive for pastoral settlement. In 1834, Patrick Quinn and Alfred Doyle established the Nurrabry Run, one of the earliest recorded squatting runs in the district. The run occupied land along the Namoi River and its associated waterways and formed part of a broader wave of squatting expansion across the region during the 1830s (Schwager 2018).

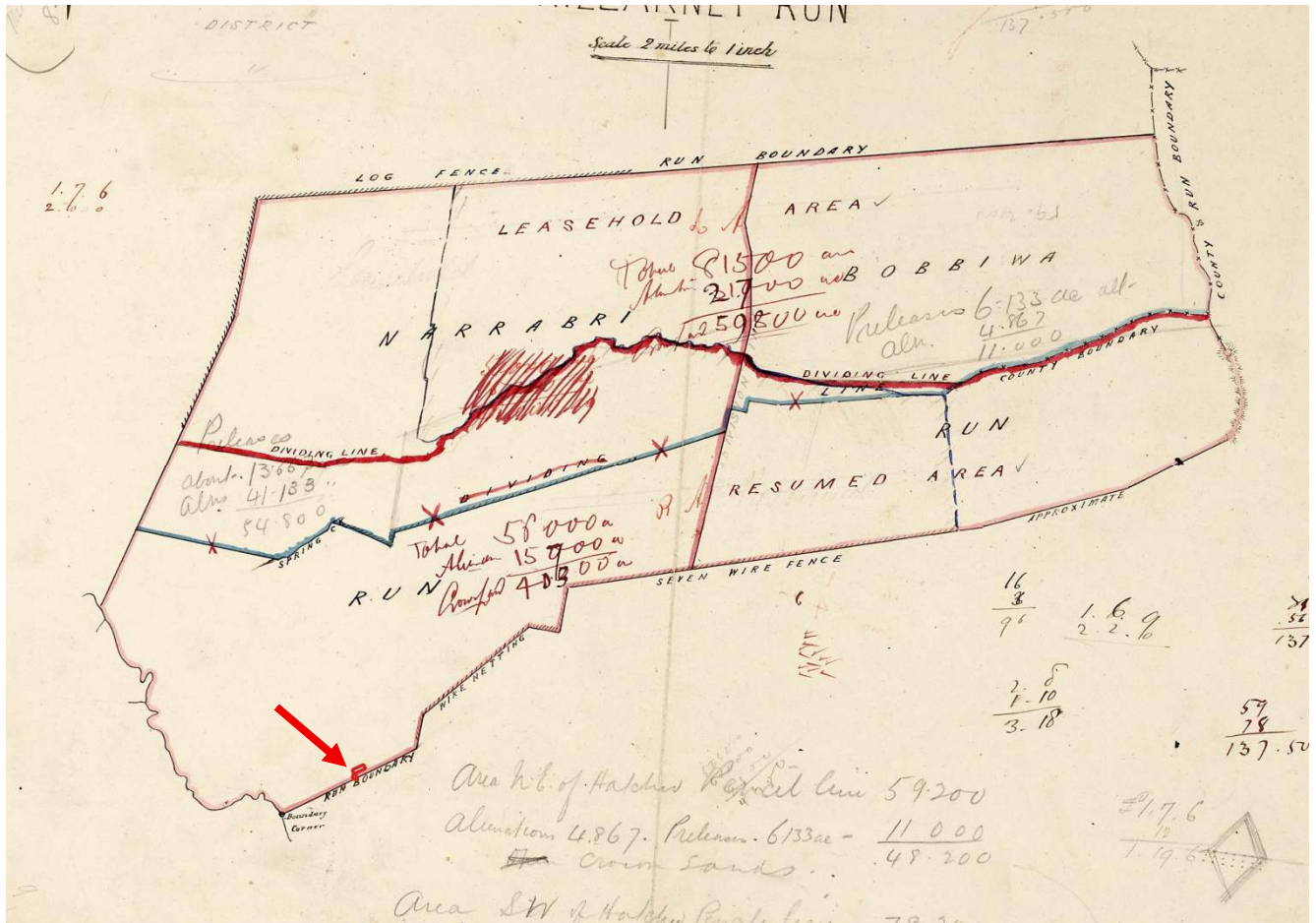
Other large squatting runs had already been established across the Liverpool Plains by this time, including those that would later give rise to townships such as Quirindi, Wallabadah, Walhallow, and Weia Weia Creek. These early runs were typically worked by convicts and labourers, often brought or sent ahead by the squatters to clear land, tend livestock, and erect rudimentary dwellings (Parry 2019; Schwager 2018). Their occupation of Gamilaroi Country contributed to a period of intense frontier conflict throughout the 1830s and 1840s, ultimately leading to the violent dispossession of the Kamilaroi people (Parry 2019). The legacy of this process remains embedded in the regional landscape, with many modern town names reflecting the pastoral estates from which they originated.

In 1847, the legal status of squatting runs was further formalised through an Order in Council, which enabled pastoralists to lease Crown land on eight- or fourteen-year terms. These leases came with rights to pre-emptive purchase and allowed squatters to claim compensation for improvements such as fencing or homestead construction. Although the Crown retained a right of resumption, the Order effectively gave squatters long-term tenure, laying the groundwork for a landholding model unique to the Australian colonies known as the pastoral lease (Stuart 1999: 2; Babie 2016: 184).

Following this change, Nurrabry Run was renamed Killarney Run and remained under the Doyle family's ownership for several decades. By the 1870s, the run had developed into a substantial pastoral estate. It extended over 200 square miles, fronting both the Namoi River and Namoi Creek, and was stocked with over 5,000 cattle and 13,000 sheep. More than £10,000 had been invested in improvements, including dams, outstations, fencing, and other pastoral infrastructure (Empire 1874). These enhancements, combined with its proximity to the Nandewar Range and reliable watercourses, made Killarney one of the more valuable and established runs in the region.

In 1881, Killarney was purchased by prominent pastoralist William Frederick Buchanan, who significantly expanded the station's operations. By the 1890s, the run had grown to encompass over 100,000 acres of leasehold and resumed land, extending into the Nandewar Ranges. Under Buchanan's management, the property was extensively subdivided into named divisions, each equipped with its own paddocks, ringbarked pastures, and tanks. Substantial investments followed, including the construction of one of the largest woolsheds in New South Wales, fitted with 60 Wolseley shearing machines powered by a 20-horsepower Marshall engine, as well as a steam-driven wool scour (ATCJ 1901). The value of the estate exceeded £100,000 by the early twentieth century, and Killarney remained one of the most intensively developed pastoral holdings in the Narrabri district well into the 1930s (TNWC 1933).

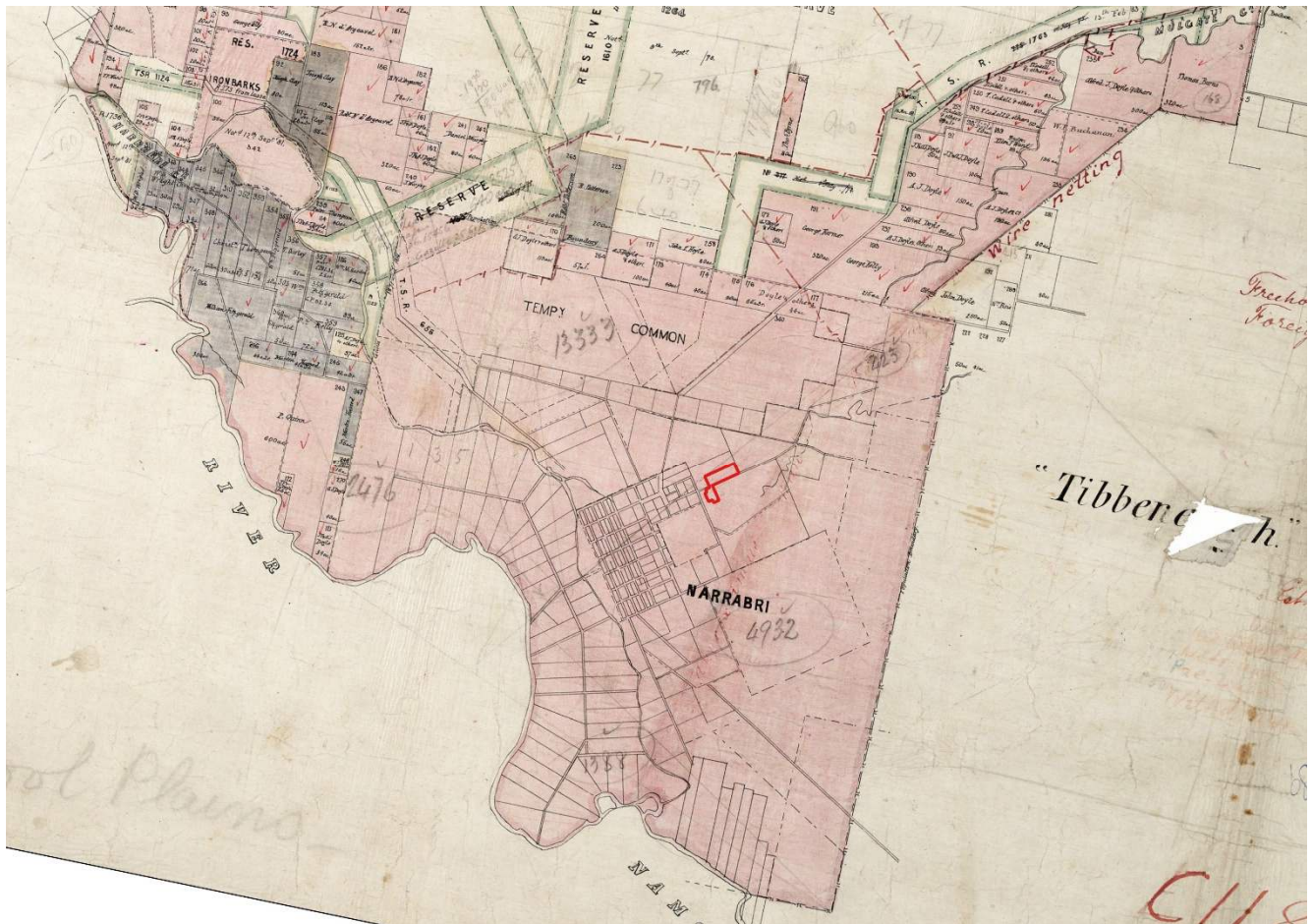
The current project area lies within the historical bounds of Killarney Run (Plate 4.3). These lands formed part of the original Narrabry Run and reflect the broader pastoral transformation of the region during the nineteenth century.



The project area is indicated by the red arrow

Plate 4.3 Killarney Run, n.d.

By 1848, A township at Narrabri was formally proposed within the Killarney Run (Plate 4.4) and gazetted in January 1858. The town was proclaimed in January 1859, and "the site for a town to be called 'Narrabri', on the Creek of that name," was officially declared (Narrabri Shire Council, n.d.). Land sales began in October 1860. By 1862, Narrabri had a police station, post office, stores, and two public houses. Civic infrastructure continued to grow with the construction of a courthouse in 1865, a coach service in the same year, and a public school by 1868 (Narrabri Shire Council, n.d.).



The project area is outlined in red.

Plate 4.4 Killarney Run, n.d

The arrival of the railway at Narrabri West in 1882 marked a turning point in the region's development (Plate 4.5). The Mungindi Line, a branch of the North Western Line from Gunnedah, extended through Boggabri to reach Narrabri (South Junction) on 1 October 1882 (NSW Net, 2011; SHI: S170). This development was the product of broader shifts in rail policy during the 1870s. Originally, the Trunk Railways Policy, announced in 1873 by Minister for Public Works John Sutherland, prioritised completion of main trunk lines before branch lines. However, lobbying by pastoral interests, notably Thomas G. Dangar (MP for Gwydir), led to a political overturning of the policy in 1877. Parliament subsequently approved a diversionary branch line to Gunnedah ahead of Tamworth, allowing the north-western interior to capitalise on rail-based trade (McKillop, 2009, pp. 19, 41). These inland railways were instrumental in reducing the cost and difficulty of transporting goods, opening up regional economies to long-term settlement and agricultural production. As in other inland centres, the arrival of rail access played a crucial role in transforming Narrabri into a major rural service centre.

Narrabri was proclaimed a municipality in 1883, and by the end of the decade, it had become a key administrative and agricultural hub supported by closer settlement initiatives (OzArk Environment & Heritage, 2020, p. 22).



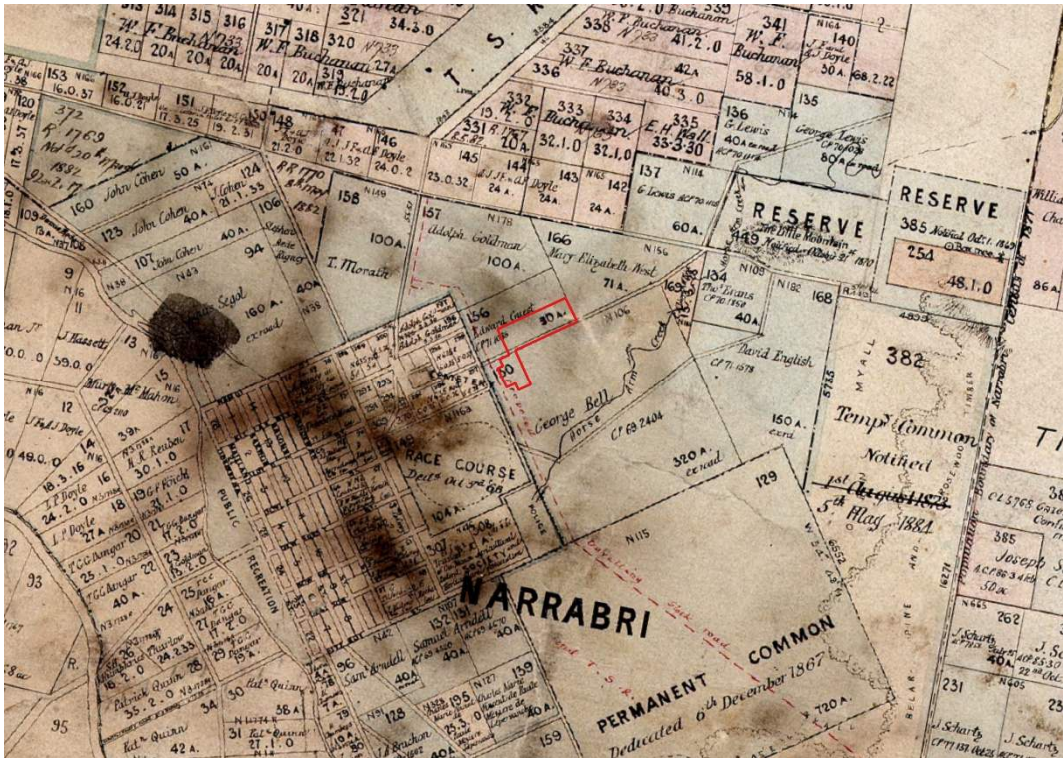
Plate 4.5 Troop train at Narrabri Railway Station, 1914.³

4.2.4. History of the project area

The current project area lies within the historical boundaries of Killarney Run, formerly part of the Narrabri squatting run later formalised as a pastoral lease during the nineteenth century. As part of the broader transition from leasehold to freehold tenure following land reform legislation of the 1860s and 1870s, the area was subdivided and surveyed into individually titled land parcels.

Parish plans from the late nineteenth century show that the project area straddled two portions: Portion 130 (Plate 4.8), a 320-acre allotment held by George Bell, and Portion 156 (Plate 4.9), a 30-acre grant to Edward Guest. These portions formed part of the Killarney Run estate as it was broken up into smaller freehold holdings.

³ Bonzle Collections – Railways



The project area is outlined in red.

Plate 4.6 Parish of Narrabri, 1881.⁴



The project area is outlined in red.

Plate 4.7 Parish of Narrabri, 1886.⁵

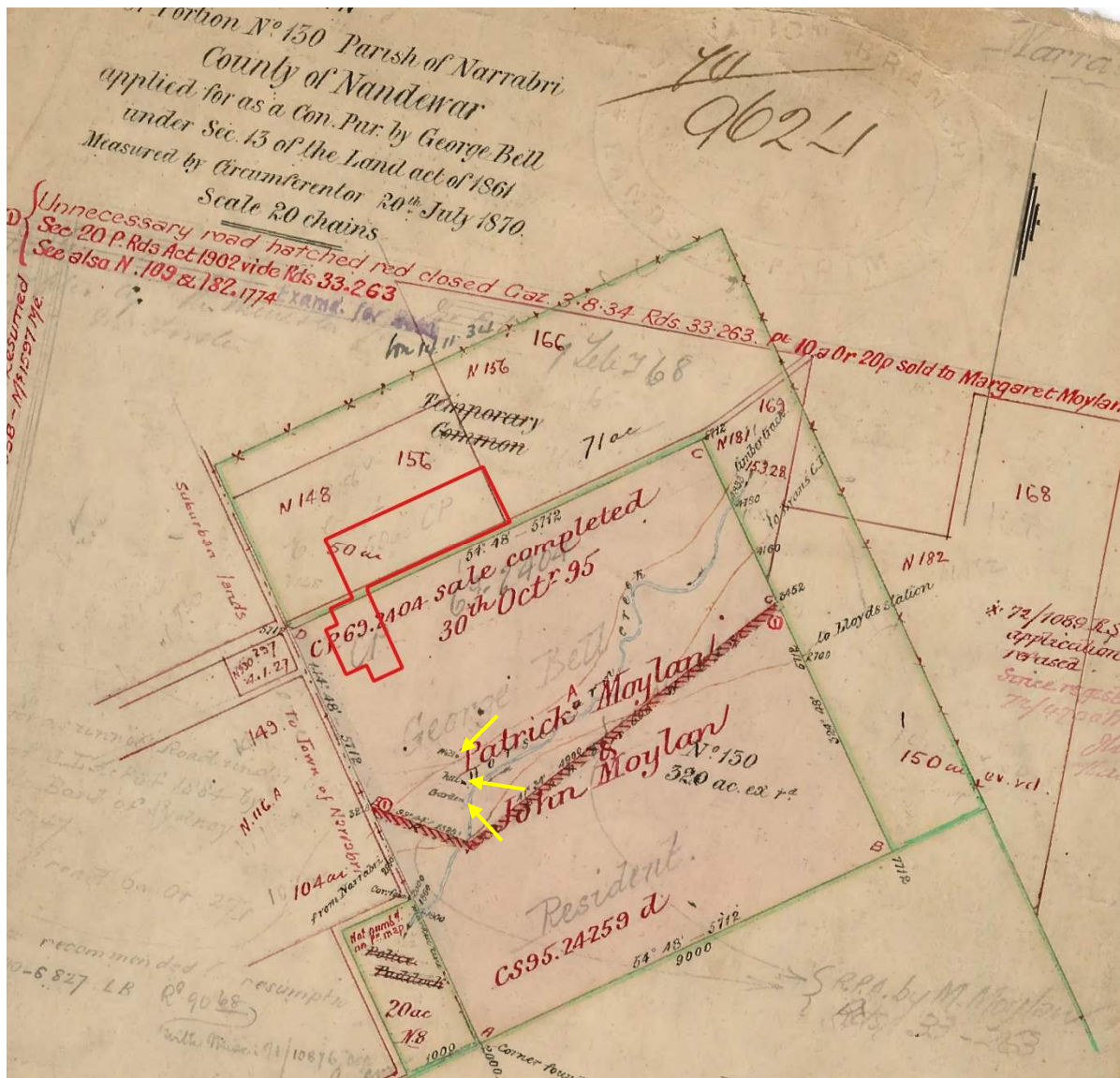
⁴ HLRV

⁵ HLRV

No structures or improvements are shown in the project area itself on either the parish plans or associated Crown Plans. However, Crown Plan CP106 (Portion 130) (Plate 4.8) records a well, hut, and garden located just outside the project area on the northern banks of Horse Arm Creek, indicating low-intensity pastoral activity in the vicinity during the late nineteenth century. The same Crown Plan notes that Portion 130, initially held by George Bell, was later associated with Patrick Moylan and John Moylan, suggesting a transfer of ownership. Crown Plan CP108, covering Portion 156 (Plate 4.9), includes a similar annotation referencing Margaret Everingham as a subsequent landholder following the original grant to Edward Guest. These changes reflect the gradual alienation of former leasehold land into smaller freehold titles, in keeping with the region's broader shift toward individually owned rural holdings after the 1860s.

Within Portion 130, Horse Arm Creek flows south-west to north-east and traverses the southern extent of the project area. A faint linear feature, likely representing an early stock route or unformed track, is visible to the south of the creek. Its inclusion on the Crown Plan aligns with the informal movement networks typical of pastoral holdings during this period.

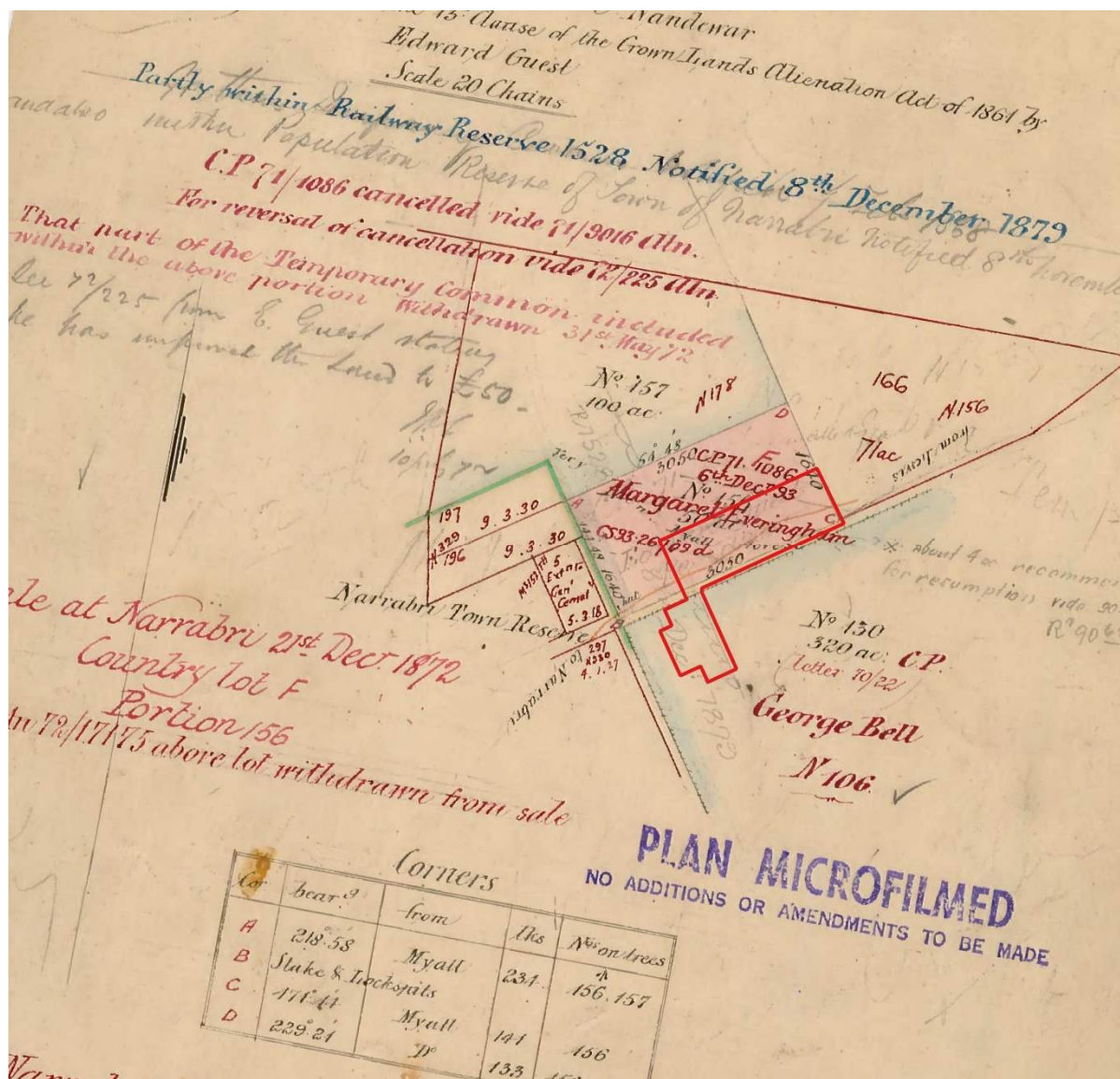
Immediately west of the project area lies the Narrabri General Cemetery (LEP Item I018), which was in use by 1881 according to annotations on the parish plan. This cemetery is the closest heritage-listed item to the project area. The Narrabri Racecourse is also shown further southwest, reflecting the expanding civic infrastructure associated with Narrabri's growth following its proclamation as a township in 1859. Ultimately, the project area appears to have been historically used for low-intensity pastoral purposes, likely grazing, with limited built infrastructure and minimal permanent settlement.



The project area is outlined in red. The yellow arrows indicate the location of mapped historical features.

Plate 4.8 Portion 130, Parish of Narrabri, 1870. Crown plan 106-1774 excerpt.⁶

⁶ Hazlett Information Services



The project area is outlined in red.

Plate 4.9 Portion 156, Parish of Narrabri, 1871. Crown plan 148-1774 excerpt.⁷

4.2.5. Land disturbance

A review of the available historical aerial imagery (Table 4.1) indicates that the project area has undergone moderate to high land disturbance, primarily from agricultural use and the progressive development of energy infrastructure.

In the 1964 aerial, the project area is largely cleared and appears to have been used for agricultural purposes such as dryland cropping or grazing. At the southern extent of the project area, where the boundary protrudes, a cleared pad and early built features indicate that construction of the Narrabri Substation was already underway. This infrastructure was progressively developed over the following decades and has remained a permanent feature of the project area since that time.

⁷ Hazlett Information Services

The remainder of the project area, particularly the northern paddock, has been subject to ongoing agricultural use across the entire aerial sequence. Cultivation patterns, including ploughing, fallow phases, and crop rotation, are visible throughout, indicating consistent mechanised farming. In 1994, the northern field was temporarily divided into two distinct paddocks—likely reflecting differing crop cycles or irrigation regimes—before reverting to a single field by 1996. No permanent residential or service structures were observed in the cultivated portions of the project area at any time.

Horse Arm Creek traverses the southern extent of the project area and has remained a stable landscape feature. On the northern bank of the creek (just outside the project area) a small structure visible in the 1964 aerial gradually developed into a more substantial agricultural complex. This location aligns closely with mapped features on Crown Plan CP106, which shows a well, hut, and garden in the same vicinity, suggesting long-term continuity of low-intensity rural use in the immediate surrounds.

Overall, land disturbance across the project area is considered moderate to high. While the southern portion has been modified by substation construction and operation, the northern portion has experienced repeated surface disturbance associated with cropping but no evidence of deep excavation or urban development. The area has retained a consistent rural character, with land use centred on energy infrastructure and agricultural production.

Table 4.1 Historical aerals of the project area

Aerial photograph (project area outlined in red)



Description

Plate 4.10 1964 aerial imagery⁸

Project area

- The project area appears to be largely undeveloped and cleared, with visible plough lines or furrows suggesting agricultural use (likely grazing or dryland cropping).
- At the southern extent where the boundary protrudes, the early stages of development for the Narrabri Substation are visible, including a cleared pad and emerging built features.
- No other structures are apparent in the remainder of the project area.

Surrounding area

- The Narrabri Old General Cemetery (LEP I018) is visible to the west of the project area.
- The Narrabri Jockey Club is visible to the south-west of the project area.
- Horse Arm Creek flows from the south-west to the north-east, skirting just beyond the southern boundary of the project area. A structure likely a small homestead is situated on the northern banks of this creek.
- The general landscape remains rural in character, with large paddocks, minimal tree cover, and no substantial urban development evident. Some residential/agricultural dwellings are located to the west of Old Cemetery Road alongside cultivated fields.

⁸ NSW Historical Imagery Viewer (Image Title: 1226_2N_150)



Plate 4.11 1972 aerial imagery⁹

Project area

- The Narrabri Substation appears more fully developed compared to 1964, with additional infrastructure and internal access clearly defined in the southern portion of the project area
- The northern portion of the project area shows linear ploughing, indicating that this section was actively under mechanised cultivation, likely cropping.
- No buildings or residential structures are visible in the project area.

Surrounding area:

- The previously observed cluster of residences and cultivated lots west of Old Cemetery Road appear more consolidated, suggesting growth of a rural-residential enclave or intensification of small-scale agriculture.
- The broader area continues to be defined by a rural/agricultural setting, with increasing evidence of mechanised farming.

⁹ NSW Historical Imagery Viewer (Image Title: 2105_2N_019)



Plate 4.12 1989 aerial imagery¹⁰

Project area:

- The Narrabri Substation remains established in the southern extent of the project area, showing no significant structural expansion compared to 1972.
- The northern portion of the project area appears fallow or ploughed, but there are no visible planted rows, suggesting the area was either in a resting phase of crop rotation or lightly grazed.

Surrounding area:

- The single homestead along the northern banks of Horse Arm Creek has expanded to a more established agricultural complex. Otherwise the surrounding area is mostly consistent with previous aerial imagery.

¹⁰ NSW Historical Imagery Viewer (Image Title: 3662_05_309)



Plate 4.13 1994 aerial imagery¹¹

Project area:

- The Narrabri Substation remains prominent in the southern portion of the project area, with what appears to be expanded infrastructure.
- The northern extent of the project area, previously appearing as a single cultivation zone, now shows a distinct division into two paddocks. This likely reflects different crop types, planting schedules, or irrigation regimes.

Surrounding area:

- Horse Arm Creek remains a distinct feature. The complex to the north increased agricultural activity, including potential irrigation infrastructure or drainage alignments along the creek.
- The area retains its rural and agricultural character, with noticeable intensification of cropping in both the project area and adjacent holdings.
- The combination of infrastructure development (substation expansion) and intensified land use suggests a transition to higher-value agricultural and energy-related use in the surrounding precinct.

¹¹ NSW Historical Imagery Viewer (Image Title:4221_05_190)



Plate 4.14 1996 aerial imagery¹²

Project area:

- The project area is actively used for agriculture and electricity infrastructure, in line with historical land use patterns but with increasing levels of infrastructure formalisation.
- The paddock occupying the majority of the project area has reverted to a single continuous cultivation zone.

Surrounding area

- The broader area presents as intensively farmed agricultural land, with clear evidence of mechanised cropping, drainage control, and continued use of existing infrastructure.

¹² NSW Historical Imagery Viewer (Image Title: 4321_02_035)



Plate 4.15 1998 aerial imagery¹³

Project area:

- Consistent with previous aerial imagery.

Surrounding area:

- Surrounding rural character, field layouts, and adjacent infrastructure (cemetery, racecourse, and farmsteads) all appear unchanged from previous aerial imagery.

¹³ NSW Historical Imagery Viewer (Image Title: 4662_05_008)



Plate 4.16 2004 aerial imagery¹⁴

Project area:

- The project area remains largely under cultivation, with the northern portion appearing as a single, well-defined paddock. The land surface suggests recent or ongoing agricultural activity (e.g. ploughing or fallow preparation).
- The Narrabri Substation continues to occupy the southern extent of the project area, with no major structural changes visible.

Surrounding area:

- Consistent with previous aerial imagery.

¹⁴ NSW Historical Imagery Viewer (Image Title: 4870_01_163)



Plate 4.17 2013 aerial imagery¹⁵

Project area:

- The project area remains consistent with prior imagery, with no visible changes to the Narrabri Substation or surrounding infrastructure.
- The paddocks in the project area display uniform linear patterns consistent with mechanised ploughing or sowing, indicating ongoing agricultural use.

Surrounding area:

- Surrounding areas also continue to exhibit intensive agricultural activity, with visible irrigation patterns, cultivation lines, and clearly demarcated field boundaries.

¹⁵ SixMaps



Plate 4.18 2025 aerial imagery¹⁶

Project area:

- Consistent with previous aerial imagery.

Surrounding area:

- Consistent with previous aerial imagery.

¹⁶ Google Maps

5. Archaeological sensitivity

This section outlines the potential historical archaeological sensitivity of the project area, drawing on findings from the historical context (Chapter 4). It considers how phases of occupation, beginning with early squatting and subsequent historical land use, may be represented archaeologically. The extent and nature of past ground disturbance have also been factored into the assessment of potential. Previous archaeological assessments in the region have also been reviewed to gain a broader understanding of the historical archaeological context within the Narrabri area. A predictive model has been developed to assess the likelihood of encountering historical archaeological remains in the project area, as discussed further in Section.

5.1 SQUATTING AND PASTORALISM

The project area lies within the boundaries of the former Killarney Run, originally part of the wider Narrabri squatting district established in the 1830s. As with many early squatting runs, initial occupation likely involved rudimentary structures such as slab huts or temporary shelters erected near reliable water sources—particularly along Horse Arm Creek, which traverses the southern part of the project area. Crown plans from the 1870s record a hut, well, and garden just outside the current project boundary, suggesting that outstation-style activity occurred nearby and could feasibly have extended into the project area.

In the early squatting period, land tenure was uncertain, and improvements were minimal. Squatters were unlikely to invest heavily in fencing or permanent infrastructure until after formal pastoral leases were introduced in the mid-nineteenth century (Pickard 2008). Labourers and shepherds often used temporary or movable facilities to manage stock, relying on natural barriers and daily movement rather than fixed yards or buildings (Roberts 1970). By the 1870s, land reforms and closer settlement policies had encouraged subdivision of the larger runs into smaller freehold portions, including Portions 130 and 156 which intersect the project area. However, no structures are shown in the project area itself on historic parish or crown plans, and aerial imagery confirms that the land remained used primarily for agriculture without permanent built development.

While the proximity of recorded improvements on neighbouring land suggests some low-level pastoral activity may have taken place in the project area during the squatting and leasehold phases, there is no direct evidence of permanent structures or domestic occupation. As such, evidence of squatting is not anticipated in the project area. However, without specific evidence or documentation, it remains speculative.

5.2 PREVIOUS DISTURBANCE AND LAND USE

The project area has experienced long-term land use dominated by agriculture and infrastructure development. The northern portion of the project area has been under near-continuous cultivation since at least the 1960s, with aerial imagery showing ploughing, fallow periods, and crop rotation over multiple decades. These agricultural activities would have caused repeated surface disturbance, likely displacing or truncating any shallow archaeological material.

The southern portion of the project area, where the Narrabri Substation is located, has undergone more intensive disturbance due to clearing, excavation, and construction beginning in the mid-1960s. This area is considered to have the lowest archaeological preservation potential due to significant ground modification associated with energy infrastructure.

Importantly, while ploughing and mechanised cropping may have disturbed surface deposits, features located at greater depths such as wells, rubbish pits, or buried footings could remain partially intact, particularly in areas that were not subjected to deep excavation. However, no visible indicators of such features have been identified in aerial or historical records.

5.3 PREVIOUS ARCHAEOLOGICAL ASSESSMENTS

A review of the NSW Heritage Online Library and other publicly available sources was undertaken to obtain copies of previous historical heritage assessments and archaeological investigations within the locality of the project area. This section outlines relevant studies undertaken in the surrounding Narrabri region that assist in understanding the historical archaeological context. These reports contribute to developing a predictive model for historical archaeology by providing insights into site types, land use patterns, and potential archaeological visibility within the local landscape.

Table 5.1 Previous archaeological research

Author, date	Findings and relevance to the project area
Rhett Partridge & Partners, 1986	Narrabri Gaol Conservation Plan This CMP focused on the heritage management and architectural assessment of the former Narrabri Gaol, a State-listed heritage item located within the urban centre of Narrabri. The report details the history of the gaol from its establishment in the late 19th century, including its role in local law enforcement and its subsequent decommissioning. While archaeological excavation was not undertaken, the plan acknowledges the potential for subsurface remains associated with gaol infrastructure (e.g. outbuildings, service yards, drainage). The historical context includes reference to Narrabri's early township formation, civic development, and law and order infrastructure, but does not discuss pastoral or squatting-period land use. The report reinforces the survival potential of historical fabric from the late 1800s in the Narrabri urban area. Though focused on civic infrastructure, it supports the broader understanding that historical remains, particularly structural and functional features, may survive under relatively undisturbed portions of land. This underscores the archaeological potential within developed portions of Narrabri, though the relevance to the rural project area is limited.
THG, 2014	Heritage Impact Assessment: Narrabri Public School Redevelopment This assessment undertaken by The Heritage Group (THG) focused on impacts to identified heritage items within the Narrabri Public School grounds, including Narrabri Public School (SHI #1015), which is listed as a heritage item of local significance in the Narrabri LEP. The school occupies land within the original Narrabri town reserve, and development of the site commenced in the 1860s. While no archaeological testing was undertaken, the report acknowledges potential for archaeological remains associated with the early phases of Narrabri's township development, including footings, postholes, or artefact scatters linked to now-demolished structures or early use of the site. However, given the substantial and ongoing redevelopment of the school, any such remains were considered likely to be disturbed. No reference was made to pastoral or squatting-related features. Nonetheless, the report reinforces the presence of archaeological potential within the Narrabri township area, particularly for nineteenth-century structures or civic infrastructure. Although the assessment was focused on the urban centre rather than the rural project area, it affirms that historical archaeological deposits related to nineteenth-century settlement and use may survive in parts of Narrabri not subject to extensive ground disturbance.
OzArk, 2018	Newell Highway Heavy Duty Pavements Upgrade: Narrabri to Moree—Aboriginal and Historic Archaeological Survey report This assessment was undertaken to support the upgrade of approximately 39 km of the Newell Highway between Narrabri and Moree. The study area lies to the north of the current Narrabri project area but remains within the broader Namoi catchment and regional context. The historical component of the assessment focused on identifying features associated with nineteenth- and early twentieth-century infrastructure, including stock routes, bridges, culverts,

	road alignments, and historical land use. It found limited evidence for intact historical archaeological deposits, noting that much of the land had been subject to disturbance from modern road works and cultivation. No evidence of squatter-era infrastructure or early pastoral activity was identified within the road corridor. The report concluded that the archaeological potential for historical sites was generally low across the study area due to extensive modification. However, it reinforced the importance of watercourses and road alignments as potential indicators of past activity. While the report focuses on a linear road corridor north of the current project area, it provides useful comparative data on the extent of land disturbance and the limited survival of early historical remains in cultivated or infrastructure-modified landscapes
--	---

5.4 ARCHAEOLOGICAL POTENTIAL

Given the project area's consistent rural use since the nineteenth century, there is some, albeit limited potential for historical archaeological material to survive, particularly in association with pastoral infrastructure or low-level occupation. While no buildings or permanent features are recorded within the project boundary itself, the proximity of mapped features such as a hut, garden, and well just south of Horse Arm Creek suggests that minor ancillary activity (e.g. outstations, temporary yards, or rubbish disposal areas) may have occurred nearby.

If present, archaeological evidence would likely consist of fragmentary and shallow features such as postholes, fence lines, or artefact scatters related to informal rural occupation. These could offer insight into the material footprint of pastoralism in the Narrabri district, particularly regarding land use on the fringes of more intensively developed squatting runs. However, the absence of mapped structures, combined with the consistent agricultural cultivation seen across aerial imagery, indicates a limited likelihood of intact or substantial deposits in the project area.

Overall, the archaeological potential of the project area is considered *low*. Any surviving features are expected to be sparse, low in structural complexity, and potentially confined to the southern portion of the project area, where pastoral activity may have concentrated near the watercourse.

5.5 PREDICTIVE MODEL

A predictive model for the potential presence of historical archaeological features has been developed based on available documentary sources, Crown and parish plans, aerial imagery, and an understanding of colonial land use patterns in the Narrabri region. This model (Table 5.2) aims to guide expectations regarding possible site types and their likelihood of survival in the project area.

Table 5.2 *Potential historical sites in the project area*

Site type	Description	Potential
Artefact scatters	Predominant indicators of historical sites in the region. Can be present across various landforms, even in disturbed contexts. Typically associated with former structures such as homesteads, outbuildings, or wells, and may include surface artefacts like glass, ceramic fragments, or building material. Could occur in association with informal outstation activity, particularly near Horse Arm Creek.	Low to Moderate
Outstations or small huts	A hut is mapped ~330 m south of the project area, near Horse Arm Creek. While no built structures are mapped within the project area itself, the proximity of this feature suggests the possibility of outstation-style use extending into the project area. Such huts were often rudimentary slab or bark	Low

	dwelling associated with early squatting or pastoral activity and typically located near water sources.	
Wells or water infrastructure	A well is mapped near Horse Arm Creek ~270 m south of the project area. This location reflects the historical preference for establishing water infrastructure close to permanent water sources. Although no wells are mapped within the project area itself, similar features may exist near creek line or low-lying areas.	Low
Pastoral landscape infrastructure	Traces of long-term pastoral use such as historic fence lines, laneways, or paddock boundaries may survive within the project area, though many of these features are likely to have been replaced or modified as agricultural practices evolved. Infrastructure like wells, tracks, and dams may also persist where they remained functional or were adapted for continued use	Low to Moderate
Stockyards or sheds	While stockyards from the squatting era and later pastoral use sometimes survive in areas with minimal modern development, there is no evidence of such infrastructure within the project area in either the aerial imagery or historical documentation. As such, the presence of historic stockyards is considered unlikely	Low
Historically modified trees	Given the extensive clearing, cultivation, and long-term agricultural use of the project area, the likelihood of historically modified trees, such as survey marker trees, is very low. While some isolated vegetation remains along Horse Arm Creek, the project area has been substantially cleared, reducing the potential for preserved culturally modified or marked trees.	Nil to Low

6. Project area inspection and results

An inspection of the project area was conducted on 24 June 2025 by Julian Travaglia (Senior Archaeologist, BA Hons) and Kate Morris (Archaeologist, BA/BSc Hons), with support from representatives of Enervest. The purpose of the inspection was to assess the historical archaeological potential of the project area, including the two main lots, by identifying any visible artefacts or features and evaluating the extent of previous ground disturbance across the project area.

- **Lot 156 DP 754944**, a cultivated paddock on the northern side of Stoney Creek Road
- **Lot 1 DP 502189**, the existing Narrabri Substation site on the southern side of Stoney Creek Road

The project area lies on a flat, low-lying alluvial plain historically cleared for agriculture, with a well-documented history of cropping and pastoral use. No built heritage structures are present within the subject lots. Survey methodology included pedestrian transects across accessible areas, inspection of soil exposures, and observation of surface features and materials.

6.1 PROJECT AREA INSPECTION RESULTS

6.1.1. Lot 156 DP 754944 (northern paddock)

The northern portion of the project area comprises an open, actively cultivated paddock, situated on an alluvial plain (Plate 6.3). At the time of inspection, ground surface visibility (GSV) was high (~75%) due to recent ploughing and sparse vegetation cover, providing favourable conditions for artefact detection (Plate 6.1). The exposed soils consisted of moist, silty clays (Plate 6.2). One item of potential historical interest was identified: a fragment of thick moulded green glass, consistent with the base of a bottle, recovered from disturbed topsoil. However, this fragment is located outside the project area. The fragment exhibited possible edge flaking, was not associated with any visible structural remains or deposit and is considered to have been displaced by agricultural activity (Plate 6.4). The bottle base displayed edge flaking that may indicate possible post-use modification by Aboriginal people and is addressed further in the Aboriginal Cultural Heritage Assessment (ACHA, Virtus: 2025) developed for the project. No other cultural material was identified, and no in situ historical features were observed across the lot. The broader landform has been subject to prolonged cultivation and surface modification, resulting in low archaeological potential for undisturbed or stratified historical deposits.



Plate 6.1 View south-east across the northern portion of the project area showing pedestrian transects across the cultivated paddock.



Plate 6.2 Good visibility on the northern side of Stoney Creek Road



Plate 6.3 River cobble within project area, easement disturbances visible



Plate 6.4 Undiagnostic green glass bottle base recovered outside the project area from a disturbed, ploughed paddock. The fragment exhibits possible evidence of edge flaking.

6.1.2. Lot 1 DP 502189 (Narrabri Substation)

The southern portion of the project area encompasses the Narrabri Substation and associated easements, located adjacent to Stoney Creek Road (Plate 6.5). This area is dominated by modern infrastructure, including the substation compound, secure perimeter fencing, and overhead and underground service alignments.

GSV was noticeably limited compared to the northern end of the project area (<5%) due to the prevalence of hardstand surfaces (asphalt and gravel), introduced vegetation, and recent ground disturbance. However, several small exposures, primarily the result of ant activity and shallow erosion, provided insight into subsurface conditions. These exposures revealed compacted reddish-brown and blackish clay soils with frequent ironstone and shale inclusions, consistent with fill or construction-related materials (Plate 6.6).

Extensive ground modification was visible around the edges of the substation, including a compacted pad of imported reddish gravel material adjoining a shallow drainage swale and batter slope (Plate 6.7). This area is likely associated with utility access or stormwater infrastructure and has been extensively reworked.

Further along the substation perimeter, a graded corridor with a formalised drainage channel was observed (Plate 6.8). This feature extends between the secure fence line and adjacent vegetation, suggesting deliberate reshaping of the landscape to accommodate runoff and infrastructure servicing needs.

No surface artefacts, structural features, or historical remains were identified during the inspection. The high degree of modern disturbance, combined with clear evidence of fill placement, utility trenching, and compaction, indicates that this area possesses negligible potential for intact historical archaeological deposits.



Plate 6.5 Substation on the southern side of Stoney Creek Road, view south



Plate 6.6 Ground surface exposure with high visibility on southern side of Stoney Creek Road



Plate 6.7 Heavily modified ground surface adjacent to the Narrabri Substation, showing compacted reddish-brown fill material and imported gravel, view north



Plate 6.8 View north along the perimeter of the Narrabri Substation, showing a graded easement and shallow drainage channel adjacent to the secure compound.

7. Significance assessment

7.1 THE SIGNIFICANCE FRAMEWORK

In NSW, historical value is attributed to places, buildings, archaeological sites, and landscapes that were modified during the Australian historical period for non-Aboriginal use. Heritage significance is assessed in accordance with the *Burra Charter* (Australia ICOMOS, 2013) and the NSW Department of Planning and Environment's *Assessing Heritage Significance* (2023).

Seven criteria are used to assess whether a place or item meets the threshold for local or state heritage significance, as shown in Table 7.1.

Table 7.1 NSW heritage assessment criteria

Criterion	Explanation
a)	An item is important in the course or pattern of NSW's (or the local area's) cultural or natural history (Historical Significance).
b)	An item has strong or special association with the life or works of a person, or group of persons of importance in NSW's (or the local area's) cultural or natural history (Associative Significance).
c)	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area) (Aesthetic Significance).
d)	An item has a strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons (Social Significance).
e)	An item has the potential to yield information that will contribute to an understanding of NSW's (or the local area's) cultural or natural history (Research Significance).
f)	An item possesses uncommon, rare or endangered aspects of NSW's (or the local area's) cultural or natural history (Rarity).
g)	An item is important in demonstrating the principal characteristics of a class of NSW's (or the local area's) cultural or natural places or environments (Representativeness).

Source: Assessing heritage significance (Department of Planning and Environment 2023, p.21).

7.2 ASSESSMENT OF HERITAGE SIGNIFICANCE

Table 7.2 evaluates the potential archaeological resources associated with the project area against the NSW heritage significance assessment criteria. Other heritage values for the project area are assessed within the separate Statement of Heritage Impact (Virtus 2025).

Table 7.2 Assessment of significance for the project area

Criterion	Discussion	Assessment
a) An item is important in the course or pattern of NSW's (or the local area's) cultural or natural history (Historical Significance).	The project area lies within the former Killarney Run, associated with early squatting and pastoralism in the Narrabri region from the 1830s. While no built structures are recorded within the project area itself, historical records indicate a hut, garden, and well were located nearby, suggesting possible ephemeral or ancillary rural activity. The identification of a single green bottle base fragment (although outside the project area) during inspection	Depending on the presence and extent of archaeological resources, the archaeological resource associated with the Narrabri BESS project area has the potential to meet the threshold for local significance under this criterion.

	supports the possibility of low-level use in the nineteenth or early twentieth century.	
b) An item has strong or special association with the life or works of a person, or group of persons of importance in NSW's (or the local area's) cultural or natural history (Associative Significance).	The project area has no known direct association with individuals or groups of historical importance in NSW. The known land use was largely agricultural and pastoral in nature, with no documented links to persons of note.	The potential archaeological resources associated with the project area do not meet the threshold for local significance under this criterion.
c) An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area) (Aesthetic Significance).	The project area was historically used for rural and agricultural purposes and does not contain surviving structures or features demonstrating aesthetic or technical values. The single artefact observed lacks any aesthetic merit.	The potential archaeological resources associated with the project area do not meet the threshold for local significance under this criterion.
d) An item has a strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons (Social Significance).	There is no evidence that the project area was associated with community, cultural, or spiritual activities beyond general rural land use. No social significance has been ascribed to the area in the historical record.	The potential archaeological resources associated with the project area do not meet the threshold for local significance under this criterion.
e) An item has the potential to yield information that will contribute to an understanding of NSW's (or the local area's) cultural or natural history (Research Significance).	Although the project area is considered to have low archaeological potential, subsurface features such as rubbish pits or outstation evidence could survive, particularly nearest to Horse Arm Creek. These could contribute insight into rural life and pastoral operations in marginal areas of squatting runs.	Depending on the presence and extent of archaeological resources, the project area has the potential to meet the threshold for local significance under this criterion.
f) An item possesses uncommon, rare or endangered aspects of NSW's (or the local area's) cultural or natural history (Rarity).	Pastoral and agricultural sites from the squatting period are relatively common across rural NSW. The likelihood of identifying rare or unique features in the project area is low, particularly given the disturbed condition of the project area.	The potential archaeological resources associated with the project area are unlikely to meet the threshold for local significance under this criterion.
g) An item is important in demonstrating the principal characteristics of a class of NSW's (or the local area's) cultural or natural places or environments (Representativeness).	The project area may be representative of rural outstation activity or informal pastoral occupation on the fringes of larger squatting runs.	Depending on the presence and extent of archaeological resources, the project area has the potential to meet the threshold for local significance under this criterion.

7.3 STATEMENT OF ARCHAEOLOGICAL SIGNIFICANCE

The project area forms part of the former Killarney squatting run, an area associated with early pastoral activity in the Narrabri region. Although no structures or improvements are recorded within the project boundary, the presence of a hut, well, and garden mapped just beyond the southern edge suggests that minor or informal occupation may have extended into the project area during the squatting or leasehold phases.

A single artefactual item, a green glass bottle base, was identified during surface inspection of the northern paddock, but is located outside the project area. This item was not associated with any structural features or subsurface remains and is likely to have been displaced by agricultural activity. No other evidence of historical land use or built occupation was identified within the project area.

If present, archaeological remains would likely be shallow, fragmentary, and associated with low-intensity pastoral use such as fence alignments, postholes, or small artefact scatters. These may contribute to a better understanding of informal rural occupation and early squatting-period activity on the margins of the Narrabri district. However, the project area does not demonstrate associative, aesthetic, or social values and any research value is dependent on the presence of well-preserved material.

Accordingly, the archaeological resource has the potential to meet the threshold for local significance under Criterion (a) Historical Significance, Criterion (e) Research Potential, and Criterion (g) Representativeness. However, this significance remains conditional upon the presence, integrity, and context of archaeological material.

7.4 SUMMARY

The archaeological resources within the project area, if realised, may reflect aspects of informal squatting-era and pastoral land use in the Narrabri region and could warrant management depending on their significance and integrity. However, current evidence is limited to a single displaced artefact with no associated features, and there are no mapped structures or recorded improvements within the project area boundary.

While the project area may have potential local heritage significance under Criteria (a), (e), and (g), this is contingent on the discovery of intact archaeological deposits capable of yielding new or meaningful insights into early rural occupation patterns. Given the lack of such evidence to date, and the fragmentary nature of any likely remains as evidenced in the inspection, the potential archaeological resource is unlikely to meet the definition of a *relic* under the Heritage Act at either a State or local level of heritage significance. Therefore, no excavation permit under the *Heritage Act* is required.

8. Assessment of the project

8.1 PROPOSED WORKS

The proposed development involves the construction and operation of the Stoney Creek Battery Energy Storage System (BESS) on land at 41 Stoney Creek Road, Narrabri. The project area comprises rural land currently used for agricultural purposes and includes previously disturbed areas associated with cultivation and energy infrastructure.

Key components of the proposed works include:

- Installation and operation of a BESS including battery enclosures, inverters, HV Switch rooms, Control rooms and transformers on hardstand. Earthworks will be required on the project area to create the flood mitigation platform level.
- Associated upgrades and connection into the Narrabri 132/66kV Substation, including construction of an overhead or underground 132 kV transmission line to facilitate connection, associated high voltage steel poles, increase in hardstand area and establishment of easements.
- Associated ancillary infrastructure including security fencing, landscaping, access and internal roads, fire water tanks, temporary parking.
- Decommissioning.

Construction of the Project is anticipated to take approximately 12–14 months. The operational period is expected to be more than 20 years. Construction of the Project will require heavy vehicles, plant, and equipment for the transportation and installation of components. The Project will require earth-moving equipment for civil, foundation and road works, cable trenching equipment, forklifts, and cranes subject to detailed design to install the BESS and complete ancillary works. The maximum impact depth for construction is anticipated to be no more than 2 m.

It is anticipated that the construction and commissioning phase will last approximately 12–14 months. Over that time, the main construction activities will include:

- Mobilisation and establishment of access, temporary construction facilities and laydown area.
- Transport of construction personnel, associated heavy and light vehicles, and materials to and from the project area on a day-to-day basis, dependent on construction schedule.
- Road works to formalise internal access road to accommodate heavy vehicles and two new driveways crossing to Stoney Creek Road.
- Clearing and grubbing, cut, fill and compaction activities to create level pads.
- Installation of drainage systems.
- Installation of concrete footings or piles to support transformers, BESS containers, inverters, HV switch rooms and control building(s) and other outdoor electrical infrastructure.
- Delivery and placement of all equipment on the footings/pads.
- Electrical connection and testing of all cabling systems.
- Construction of an overhead 132 kV TL or underground 132 kV transmission line to facilitate connection to the existing Narrabri 132/66 kV substation and associated high voltage steel poles.
- Construction of hardstand, paved internal roads, control room, switchgear, transformers, circuit breakers, harmonic filters, auxiliary underground cables, car parking, lay down area, landscaping, security fencing/lighting, and a demountable building used for operation, maintenance and storage.
- Construction of ancillary works including:
 - Parking area
 - Stormwater management infrastructure

- CCTV, security lighting and fencing
- Fire Water Tanks

The BESS will operate as a self-contained facility, requiring only periodic maintenance access. All proposed works are confined to the project area and do not extend beyond the defined development footprint.

8.2 KEY CONSTRAINTS & MANAGEMENT

This assessment has identified minimal constraints in relation to heritage within the project area. The project area comprises cultivated rural land and energy infrastructure easements that have undergone significant prior disturbance. A single artefact of potential historical interest, a green glass bottle base, was identified during surface inspection but was isolated, displaced, and lacked contextual integrity. The bottle glass which also has possible edge flaking is located outside the project area, and is addressed further in the ACHA (Virtus 2025) developed for the project. Despite the project area's proximity to the Narrabri Cemetery, it is not associated with burial activity. Historical research confirms the area was used for rural activity and lacks evidence of mortuary use.

Based on current evidence, the archaeological resource within the project area does not meet the threshold to be defined as a *relic* under the NSW *Heritage Act 1977*. No standing heritage structures, recorded historical features, or intact archaeological deposits were identified.

Although the archaeological potential is considered low, minor subsurface remains such as postholes or artefact scatters cannot be fully ruled out. To manage this residual risk, Table 8.1 summarises proportionate management measures for implementation during the construction phase:

Constraint	Management
Low archaeological potential within a cultivated rural context • No mapped structures or built features occur within the project area. • No evidence of historical burial activity or associated infrastructure has been identified, and the risk of encountering fugitive or unmarked graves is considered low. • Only one isolated artefact was identified during inspection, likely displaced by agricultural activity. • The project area is not considered to contain relics under the NSW <i>Heritage Act 1977</i>.	• No further archaeological assessment is required prior to construction. • No excavation permit is required under the <i>Heritage Act</i>. • All site personnel should be made aware of heritage obligations through an Unexpected Finds Protocol included in the Construction Environmental Management Plan (CEMP). • If unexpected archaeological material (e.g. structural remains, artefact concentrations) or human remains are encountered, works in the immediate area should cease, and qualified personnel should assess whether the material warrants further investigation or notification under the <i>Heritage Act</i>.
• Surface grading, trenching, and subsurface services installation • These activities may intersect shallow subsurface contexts, though archaeological potential remains low.	

9. Conclusions and recommendations

This Historical Archaeological Assessment (HAA) has assessed the potential for historical archaeological resources within the development footprint of the proposed Stoney Creek Battery Energy Storage System (BESS), located at 41 Stoney Creek Road, Narrabri.

The project area comprises cultivated rural land with prior disturbance associated with agriculture and existing infrastructure. One green glass bottle base fragment was identified during surface inspection likely displaced by historical or recent land use. The bottle glass which also has possible edge flaking is located outside the project area and is addressed further in the ACHA (Virtus 2025) developed for the project.

No other features or subsurface structural remains were observed.

Key findings of this assessment are as follows:

- The project area forms part of the historic Killarney squatting run, with mapped improvements (a hut, garden, and well) located immediately south of the project area, indicating the potential for low-level historical activity.
- While the project area may contain minor archaeological resources such as postholes or shallow artefact scatters, no intact deposits or structural remains were identified.
- A single bottle base was identified during the inspection however, it lacks clear contextual integrity and is not currently associated with subsurface archaeological features. As such, it is not assessed to meet the definition of a relic under the *NSW Heritage Act 1977* based on current evidence. The bottle glass (which also has possible edge flaking) is located outside the project area, and is addressed further in the ACHA (Virtus 2025) developed for the project.
- The archaeological potential of the project area is considered low, and the likelihood of encountering significant or research-valuable historical archaeological material is minimal.
- Given the absence of any potential historical archaeological remains of State or local heritage significance, no excavation permit is required under the Heritage Act.

9.1 RECOMMENDATIONS

While no historical heritage impacts are expected as a result of the proposed works, it is recommended that the following safeguards be implemented in the event of any unexpected historical archaeological material or human remains being encountered during construction:

1. Works may proceed with caution

As the proposed development does not involve any ground disturbance within the curtilage of the Narrabri Cemetery and has been assessed as having little to no impact on historical heritage values, works may proceed with caution. If any historical archaeological material or human remains associated with the cemetery or otherwise are identified, all works must stop in accordance with the procedures outlined below.

2. Unexpected finds procedure

An unexpected finds procedure must be in place for the duration of the project. In the event that suspected historical heritage items (such as artefacts, building materials, or subsurface features) are encountered:

- All works in the immediate vicinity must cease immediately.
- The find must be protected with a suitable buffer and clearly marked or fenced off.
- A suitably qualified historical archaeologist must be engaged to assess the find and provide advice on its significance.
- If the item is determined to meet the definition of a relic under the *Heritage Act 1977*, Heritage NSW must be notified, and appropriate management measures put in place.
- Works must not recommence in the affected area until written advice is received from the archaeologist and/or Heritage NSW confirming the appropriate course of action.

While a formal heritage induction is not considered necessary for this project, key site personnel should be made aware of the unexpected finds procedure and their responsibilities under the *Heritage Act 1977* in the unlikely event that historical material or human remains are encountered.

3. Unexpected Human Remains Procedure

In the event that suspected human remains are encountered:

- Works must stop immediately.
- The area must be secured and cordoned off.
- NSW Police must be notified without delay.
- No further works may proceed until written clearance is provided by NSW Police.
- If the remains are determined to be of historical or archaeological origin, Heritage NSW must be contacted, and a suitable plan of management must be developed in consultation with relevant authorities.
- Works must not resume until written advice is provided by Heritage NSW or the consulting archaeologist.

10. References

- ATCJ. 1901. 'In the Narrabri District.' *Australian Town and Country Journal (Sydney, NSW: 1870 – 1919)*, September 21, 30.
- Australia ICOMOS. 2013. 'The Burra Charter and Indigenous Cultural Heritage Management'.
- Babie, P. (2016) 'Property, choice and obligation: The Australian law of leases and licences', in Esmaeili, H. and Grigg, B. (eds) *The Boundaries of Australia Property Law*. Cambridge: Cambridge University Press, pp. 180–201
- Department of Environment and Planning. 2023. *Guidelines for Preparing a Statement of Heritage Impact*.
- Department of Planning and Environment. 2022. *Relics of Local Heritage Significance: A Guide for Minor Works with Limited Impact*.
- Department of Planning and Environment. 2023. *Assessing Heritage Significance: Guidelines for Assessing Places and Objects against the Heritage Council of NSW Criteria*.
- Department of Planning and Environment (NSW). 2023. *Assessing Heritage Significance*. Parramatta, NSW: Environment and Heritage, Department of Planning and Environment (NSW).
- Empire. 1874. 'A Tour to the North'. *Empire (Sydney, NSW: 1850 – 1875)*, February 24, 4.
- Schwager, Kate. 2018. 'History of Narrabri'. <https://www.narrabri.net/Home/History-of-Narrabri>.
- ICOMOS (Australia). 2013. *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*. Australia ICOMOS.
- Museums of History NSW. 2022 Limits of location, Stories. Available at: <https://mhns.w.au/stories/convict-sydney/limits-location/> (Accessed: 20 May 2025).
- NSW Heritage Council, 2022. *Investigating Heritage Significance*.
- OzArk, 2020. *Aboriginal Cultural Heritage Study*.
- Oxley, J. 1820. Journals of Two Expeditions to the Interior of NSW in 1817 and 1818. John Murray, London.
- Parry, Naomi. 2019. *A Thematic History of Liverpool Plains Shire for Liverpool Plains Shire Council*.
- Pickard, John. 2008. 'Shepherding in Colonial Australia'. *Rural History* 19(1):55–80. doi:10.1017/S0956793307002300.
- Roberts, Stephen H. 1970. *The Squatting Age in Australia 1835–1847*.
- Rolls, E. A Million Wild Acres: 200 years of man and Australian forest. Reprinted 2011, Hale & Iremonger, Sydney
- SLR. 2025. *Land Resource Assessment: Stoney Creek Battery Energy Storage System (BESS)*
- State Library of NSW. 2023 Australian Agricultural and Rural Life: Squattocracy, Stories. Available at: <https://www.sl.nsw.gov.au/stories/australian-agricultural-and-rural-life/squattocracy> (Accessed: 20 May 2025)



- Stuart, I. 1999 *Squatting landscapes in south-eastern Australia (1820–1895)*. University of Sydney.
- Tindale, N. B. 1974. *Aboriginal Tribes of Australia: Their Terrain, Environmental Controls, Distribution, Limits and Proper Names*. Canberra, A.C.T: Australian National University Press.
- TNWC. 1933. 'Killarney Station'. *The North Western Courier (Narrabri, NSW: 1913 – 1955)*, September 7, 2.
- Virtus Heritage. 2025 *Aboriginal Archaeological Assessment: Stoney Creek Battery Energy Storage System (BESS), Narrabri NSW*.
- Virtus Heritage. 2025 *Aboriginal Cultural Heritage Assessment: Stoney Creek Battery Energy Storage System (BESS), Narrabri NSW*.
- Virtus Heritage. 2025 *Statement of Heritage Impact: Stoney Creek Battery Energy Storage System (BESS), Narrabri NSW*.