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## Inland Rail Programme

# Narrabri to North Star Project

## Environmental Impact Statement

Technical Report 9: **Non-Aboriginal Heritage Impact Statement**

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Image: Newell Highway north of Narrabri, NSW

# Technical Report 9:
# **Non-Aboriginal Heritage Impact Statement**

Image: Railway and Newell Highway north of Narrabri, NSW

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# AUSTRALIAN RAIL TRACK CORPORATION INLAND RAIL NARRABRI TO NORTH STAR EIS

Non-Aboriginal Heritage Impact Statement

## FINAL

**October 2017**

# AUSTRALIAN RAIL TRACK CORPORATION INLAND RAIL NARRABRI TO NORTH STAR EIS

Non-Aboriginal Heritage Impact Statement

## FINAL


Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Australian Rail Track Corporation



| | |
|---|---|
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| Report No. | 3607/R04/V7/Final |
| Date: | October 2017 |



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# Executive Summary

This report details an assessment of the non-Aboriginal heritage impacts of the Narrabri to North Star (NNS) section of Inland Rail.

This non-Aboriginal heritage assessment has been prepared as a part of the environmental impact assessment of the proposed Narrabri to North Star Inland Rail project under Part 5.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Australian Rail Track Corporation Ltd (ARTC) ('the proponent') is seeking approval to construct and operate the Narrabri to North Star section of Inland Rail ('the proposal').This report has been prepared to address the environmental assessment requirements of the Secretary of the Department of Planning and Environment (the SEARs), issued on 8 November 2016.

The proposal is generally located in the existing rail corridor between the town of Narrabri and the village of North Star, via Moree (refer to **Figure 1.1**). The proposal would involve upgrading the existing rail line between Narrabri and North Star, including:

- upgrading the track, track formation, and culverts within the existing rail corridor for a distance of 188 kilometres between Narrabri and North Star
- realigning the track where required within the existing rail corridor to conform with required platform clearances for Inland Rail trains
- providing five new crossing loops within the existing rail corridor, at Bobbiwaa, Waterloo Creek, Tycannah Creek, Coolleearllee, and Murgo
- providing a new section of rail line at Camurra, about 1.6 kilometres long, to bypass the existing hairpin curve (the Camurra bypass)
- removing the existing bridges and providing new rail bridges over the Mehi and Gwydir Rivers and Croppa Creek
- realigning about 1.5 kilometres of the Newell Highway near Bellata, and providing a new road bridge over the existing rail corridor (the Newell Highway overbridge)
- providing a new road bridge over the existing rail corridor at Jones Avenue in Moree (the Jones Avenue overbridge).

Searches of relevant statutory heritage listings indicate that there are three heritage listed items within the NNS rail corridor and eleven additional heritage listed items within the general vicinity (within 500 metres) of the rail corridor.

The potential non-Aboriginal heritage resources of the proposal site generally reflect the documented history of the surrounding region (discussed in **Section 3.0**) and the extant Narrabri to North Star rail alignment. The rail lines which essentially comprise the proposal site were originally constructed between Narrabri and Moree in 1882, Moree to Camurra in 1932 and Camurra to North Star in 1932. The northern section (Boggabilla line) was constructed as a Pioneer Line. The lines have, as a result of the success of the wheat and sheep industries and the trade market between NSW and Queensland, been continually upgraded along the same alignments as the originally constructed lines.

The potential non-Aboriginal heritage resource is considered to be typical of a rail line and includes the rail formation itself with culverts and underbridges of varying construction materials and age, evidence of the former stations and other rail related structures and infrastructure. The grain rail sidings and landmark grain silos dominate the landscape immediately adjacent to the proposal site. There is unlikely to be any archaeological resource with the exception of the potential for archaeological evidence associated with the Steel Bridge camp (a former Aboriginal fringe camp) located at the Mehi River Underbridge.

The current rail line has a strong historical relationship with the construction of branch rail lines and Pioneer Lines in rural NSW at the end of the nineteenth and beginning of the twentieth century. This in turn played a role in encouraging settlement, agricultural and pastoral development in the region, by providing the opportunity to capitalise on the trade market between NSW and Queensland. Consequently, the proposal site, and its individual surviving component elements such as the extant steel truss underbridges, timber constructed underbridges and remnant evidence of former stations, is considered to generally be of local significance.

The Mehi River, Gwydir River and Croppa Creek underbridges are of local significance as significant components of infrastructure, and good examples of steel bridges, constructed on a Pioneer Line using American bridge technology. However, as discussed in **Section 5.3**, although part of a decreasing resource there are other similar examples, both regionally and throughout NSW.

Moree Railway Station is significant as an important location on the 1890s section of the Mungindi Line, being the rail head and the junction of three branch lines as well as a locomotive servicing centre. The remaining station building is of aesthetic significance as a representative example of a standard platform building (OEH Moree Railway Station listing sheet). The Victoria Hotel is a significant and impressive building located close to the railway station. Moree Railway Station, the Victoria Hotel and the Moree Baths are also considered to be of social significance to the local community. Moree Baths are of National significance to the Indigenous Australian community.

The remains of the Edgeroi Woolshed is considered to be of local significance as evidence of a substantial woolshed associated with one of the large early lands grants through to soldier settlement and an important landmark in the area. The Anzac Day Crossing of the Boggabilla Line at Crooble is considered to have significant associations, as a regional meeting point prior to departure to World War I, for the families of local servicemen and women.

In general the impact of the proposal can be considered to comprise the removal of the existing rail line, including rails, sleepers and ballast, and its associated culverts/underbridges (including the Mehi River, Gwydir River and Croppa Creek underbridges) and the construction of a new rail line/underbridges within the same rail corridor. As such the rail line will remain as an easily understood rail line in regional north western NSW. Retaining all evidence of the former rail line, culverts and stations etc as extant today is not feasible as significant upgrades to the formation are required as part of the proposal, in order for the rail line to comply with the Inland Rail required performance specifications. In addition, few identified original elements of the Pioneer Line survive intact, with the exception of the Mehi River, Gwydir River and Croppa Creek underbridges and a small number of railway stations that would warrant consideration of preservation.

With the exception of Moree, Edgeroi, Bellata and Gurley railway stations the majority of the former stations have been previously removed with only occasional earthen embankments or loading banks remaining as evidence of their former locations. The rail line itself has been continually upgraded as

required since its construction as a Pioneer Line and no original features (with the exception of the Mehi River, Gwydir River and Croppa Creek underbridges and a number underbridges with surviving timber components) have been identified or are expected to be found. Statements of Heritage Impact and management recommendations are provided in **Sections 6.2**, **6.3** and **6.4** for the listed and potential heritage items assessed as being of significance potentially impacted by the proposal.

A non-Aboriginal Heritage Management Plan will be prepared for the proposal to address the non-Aboriginal heritage and archaeological management recommendations discussed in this report. The management plan will provide a description of the measures to be implemented to manage and protect non-Aboriginal heritage values within and in the vicinity of the proposal site.

It is possible that dispersed artefacts associated with Aboriginal life at the former Steel Bridge Camp at the Mehi River may be present and this requires consideration under the definition of archaeological 'relics' as provided by the *Heritage Act 1977* (New South Wales (NSW)). Evidence relating to Aboriginal settlement following 'contact' with European settlers is considered to be of significance under both the Heritage Act and the *National Parks and Wildlife Act 1974*. The non-Aboriginal Heritage Management Plan will provide further details of the required archaeological management of the potential evidence for archaeological deposits associated with the Steel Bridge camp at the Mehi River Underbridge. The non-Aboriginal Management Plan will include any requirement for an archaeological methodology and research design to be approved by the Heritage Council.

It is not appropriate, feasible or practical to record the entire Narrabri to North Star section of rail line prior to its removal. Where appropriate in terms of significance and level of proposed impacts, photographic recording has been recommended for certain sites/items as detailed in **Section 6.0**. This recording would be considered to comprise an adequate and appropriate photographic recording of the rail line and its associated elements and will ensure that a full understanding and record of the former Mungindi Branch line and Boggabilla Pioneer Line will be available for future generations. The photographic recording will be undertaken with consideration of Heritage Division, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006).

Interpretation of certain elements of the proposal (the Mehi and Gwydir River Underbridges, Edgeroi, Bellata and Gurley Railway Stations and the Anzac Day Crossing) should be included in an interpretation strategy developed for the proposal.

# Glossary

| | |
|---|---|
| Additional Assessment Areas | Additional area assessed outside the proposal site. It includes an approximate 60 metre buffer around culverts/underbridges and overbridges, an approximate 120 metre buffer around level crossings and some other areas to provide design flexibility for future planning. |
| AHC | Australian Heritage Commission (now Australian Heritage Council) |
| ARHS | Australian Railway Historical Society |
| ARTC | Australian Rail Track Corporation Ltd |
| EP&A Act | *Environmental Planning and Assessment Act 1979* (NSW) |
| EPBC Act | *Environment Protection Biodiversity Conservation Act 1999* |
| Existing Rail Corridor | The corridor within which existing rail infrastructure, subject to works as part of Inland Rail, are located. The existing rail corridor is defined by ARTC to mean everywhere within 15 metres of the outermost rails; or within the boundary fence where boundary fences are provided and are closer than 15 metres; or if the property boundary is less than 15 metres, the property boundary; or a permanent structure such as a fence, wall or level crossing separating the operating rail corridor from eased or non-operational land. |
| Heritage Act | *Heritage Act 1977* (NSW) |
| Heritage Council | NSW Heritage Council |
| Heritage Division | Heritage Division, Office of Environment and Heritage |
| NSW | New South Wales |
| OEH | NSW Office of Environment and Heritage |
| Proposal | The construction and operation of the Narrabri to North Star project |
| Proposal site | The area that would be directly affected by construction works. The proposal site is considered to have a width of 30 metres, providing for a 15 metre buffer on each side of the alignment centreline. It includes the location of proposal infrastructure, the area that would be directly disturbed by the movement of construction plant and machinery, and the location of the storage areas/compounds sites etc, that would be used to construct that infrastructure. |
| Rail line | Rail line within the existing rail corridor |
| SEARs | Environmental assessment requirements of the Secretary of the Department of Planning and Environment |
| SSI | State Significant Infrastructure |

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# Tables

# 1.0 Introduction

## 1.1 Overview

The Australian Government has committed to delivering a significant piece of national transport infrastructure by constructing a high performance and direct interstate freight rail corridor between Melbourne and Brisbane. The Inland Rail programme (Inland Rail) involves the design and construction of a new inland rail connection, about 1,700 kilometres long, between Melbourne and Brisbane. Inland Rail is a transformational rail infrastructure initiative that will enhance Australia's existing national rail network and serve the interstate freight market.

Australian Rail Track Corporation Ltd (ARTC) is seeking approval to construct and operate the Narrabri to North Star section of Inland Rail ('the proposal'), which consists of 188 kilometres of upgraded rail track and associated facilities.

The proposal requires approval from the NSW Minister for Planning under Part 5.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The proposal is also a controlled action under the *Commonwealth Environment Protection Biodiversity Conservation Act 1999* (EPBC Act), and requires approval from the Australian Minister for the Environment and Energy.

This report has been prepared by Umwelt (Australia) Pty Limited (Umwelt) as part of the environmental impact statement (EIS) for the proposal. The EIS has been prepared to accompany the application for approval of the proposal, and addresses the environmental assessment requirements of the Secretary of the Department of Planning and Environment (the SEARs), issued on 8 November 2016.

## 1.2 The Proposal

### 1.2.1 Location

The proposal is generally located in the existing rail corridor between the town of Narrabri and the village of North Star, via Moree. The location of the proposal is shown in **Figure 1.1**.

### 1.2.2 Key Features

The key features of the proposal involve:

- upgrading the track, track formation, and culverts within the existing rail corridor for a distance of 188 kilometres between Narrabri and North Star
- realigning the track where required within the existing rail corridor to conform with required platform clearances for Inland Rail trains
- providing five new crossing loops within the existing rail corridor, at Bobbiwaa, Waterloo Creek, Tycannah Creek, Coolleearllee, and Murgo
- providing a new section of rail line at Camurra, about 1.6 kilometres long, to bypass the existing hairpin curve (the Camurra bypass)
- removing the existing bridges and providing new rail bridges over the Mehi and Gwydir Rivers and Croppa Creek

- realigning about 1.5 kilometres of the Newell Highway near Bellata, and providing a new road bridge over the existing rail corridor (the Newell Highway overbridge)

- providing a new road bridge over the existing rail corridor at Jones Avenue in Moree (the Jones Avenue overbridge).

The key features of the proposal are shown in **Figure 1.2**.

Ancillary work would include works to level crossings, signalling and communications, signage and fencing, and services and utilities.

Further information on the proposal is provided in the EIS.

### 1.2.3 Timing

Subject to approval of the proposal, construction is planned to start in early to mid 2018, and is expected to take about 24 months. Existing train operations along the Narrabri to North Star line would continue prior to, during, and following construction. Inland Rail as a whole is expected to be operational in 2025.

### 1.2.4 Operation

Prior to the opening of Inland Rail as a whole, the proposal would be used by existing rail traffic, which includes trains carrying passengers and grain at an average rate of about four trains per day. It is estimated that the operation of Inland Rail would involve an annual average of about 10 trains per day travelling north of Moree (between North Star and Moree) and 12 trains per day travelling south of Moree (between Moree and Narrabri) in 2025. This would increase to about 19 trains per day north of Moree (between North Star and Moree) and 21 trains per day south of Moree (between Moree and Narrabri) in 2040. The trains would be a mix of grain, intermodal (freight), and other general transport trains.

Once operational in 2020, the proposal would enable increased train running speeds in many areas that are currently the subject of restrictions due to local track conditions. Daily average train volumes are not expected to significantly change until Inland Rail through connection in 2025.

## 1.3 Purpose and Scope of this Report

The purpose of this report is to assess potential non-Aboriginal heritage and archaeological issues from the operation and construction of the proposal, and where required, identify feasible and reasonable mitigation measures.

This Non-Aboriginal Heritage Impact Statement has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs). **Table 1 1** outlines the requirements relevant to this assessment.

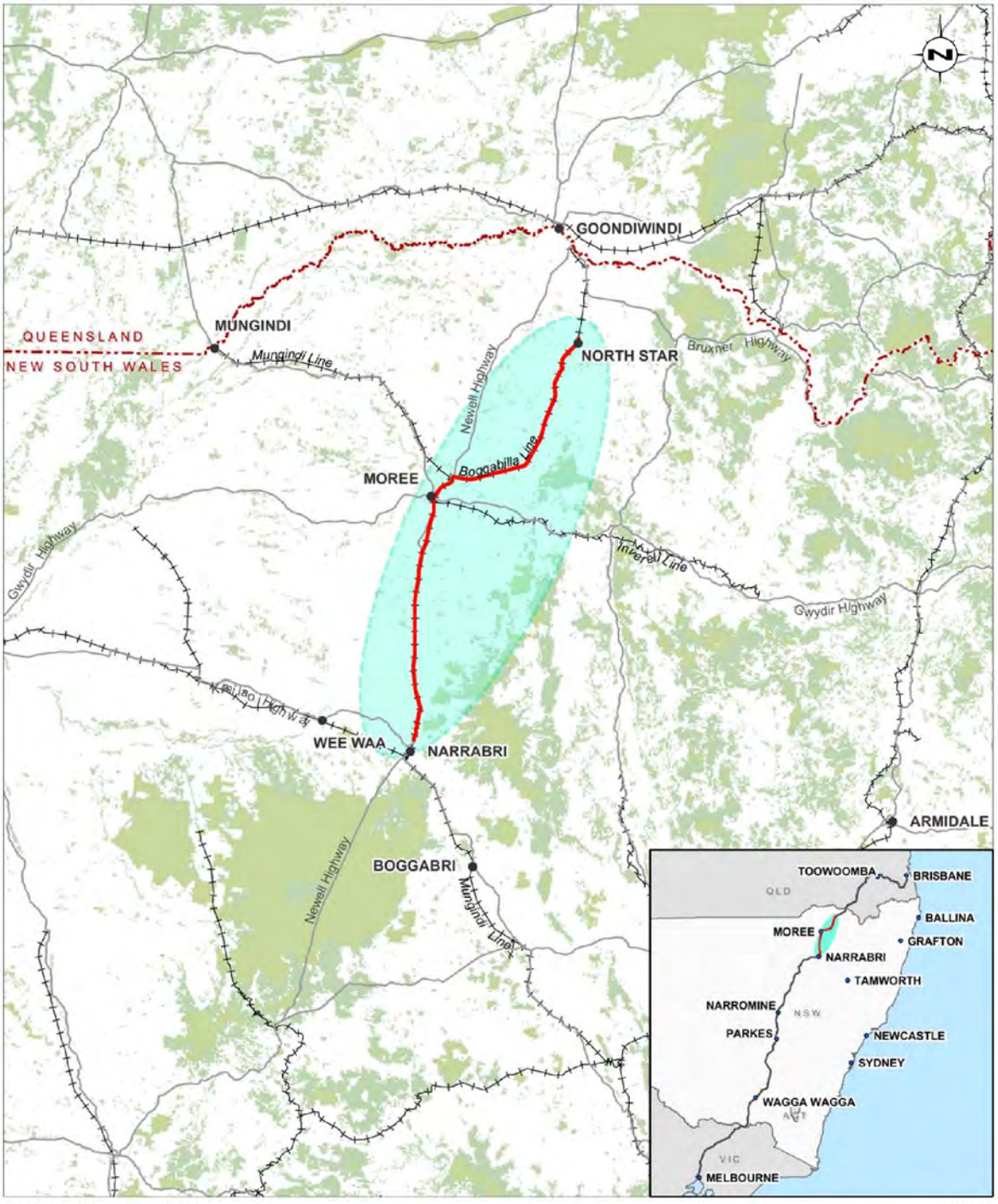


Image Source: GHD (2017)

LEGEND

- Proposal site
- Proposal location
- Main road
- Railway
- State border

FIGURE 1.1

Location of the Proposal

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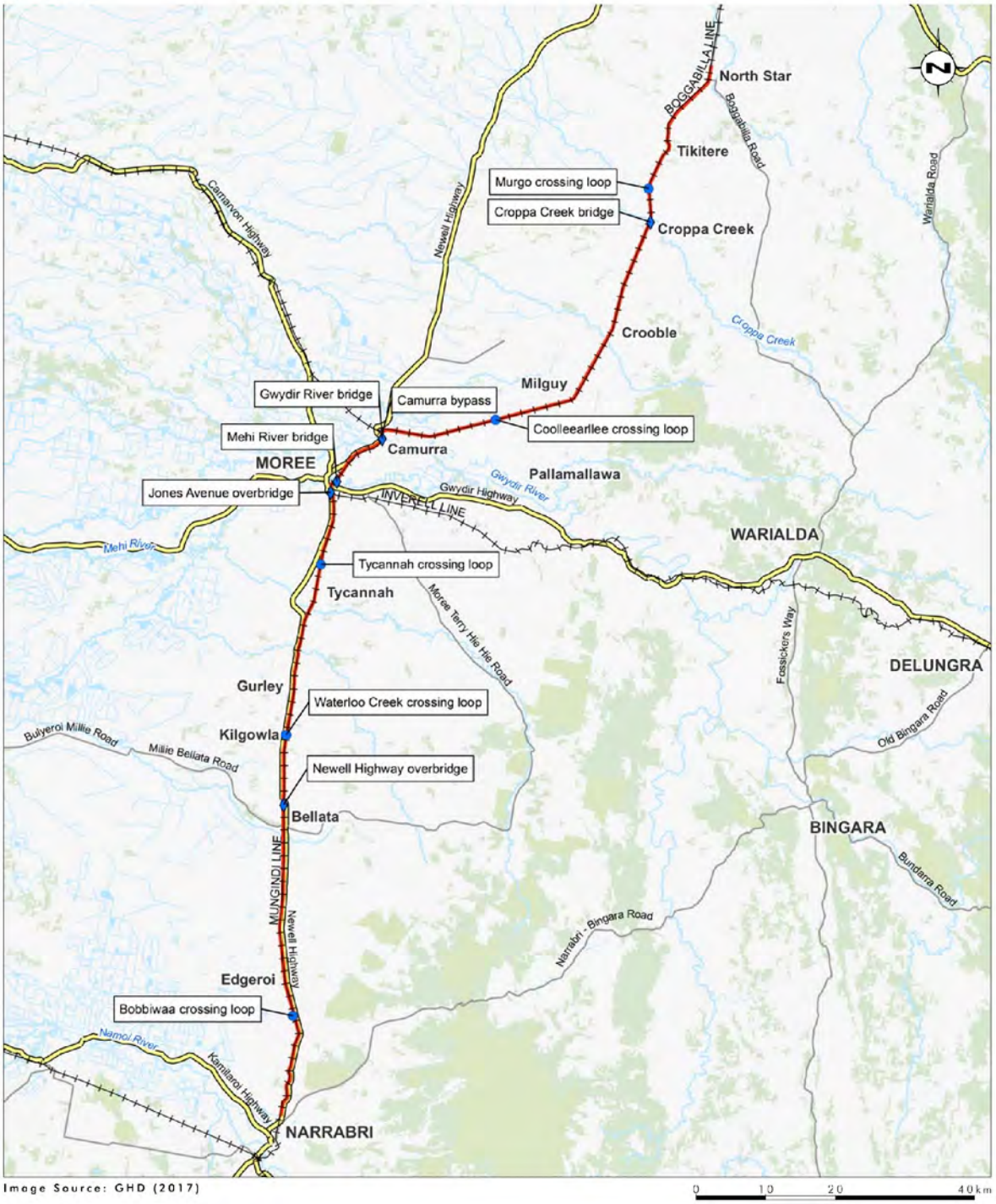


Image Source: GHD (2017)

LEGEND

- New bridge
- Crossing loop
- The proposal
- Railway
- Highway
- Road

FIGURE 1.2

Key Features of the Proposal

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**Table 1.1 Relevant SEARs**

| Requirement for non-Aboriginal Heritage | Where addressed in this report |
|---|---|
| 1. The Proponent must identify and assess any direct and/or indirect impacts (including cumulative impacts) to the heritage significance of:<br>(c) environmental heritage, as defined under the Heritage Act 1977; and<br>(d) items listed on the National and World Heritage lists. | Heritage listed items identified – **Section 2.1** and **4.3**-**4.4**<br>Non-listed items identified – **Sections 4.5**-**4.12**<br>Impacts to listed items – **Section 6.2**-**6.3**<br>Impacts to non-listed items – **Section 6.4** |
| 2. Where impacts to State or locally significant heritage items are identified, the assessment must:<br>(a) include a statement of heritage impact for all heritage items (including significance assessment); | Significance assessment – **Section 5.2**<br>Statement of heritage impacts – **Sections 6.2**-**6.4** |
| (b) consider impacts to the item of significance caused by , but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, visual amenity, landscape and vistas, curtilage, subsidence and architectural noise treatment (as relevant) | **Sections 6.2**-**6.4** |
| (c) outline measures to avoid and minimise those impacts in accordance with the current guidelines; and | **Sections 6.2**-**6.4**<br>**Section 6.5** provides summary of management and mitigation measures |
| (d) be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria). | **Section 1.5.2** |

**Table 1.2** summarises the Office of Environment and Heritage recommendations that were provided to inform the SEARs.

**Table 1.2 OEH Assessment Recommendations for non-Aboriginal Heritage**

| OEH Environmental Assessment Requirements – Heritage | Where addressed in this report |
|---|---|
| The EIS must provide a heritage assessment including but not limited to an assessment of impacts to State and local heritage including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall: | Heritage listed items identified – **Section 2.1** and **4.3**-**4.4**<br>Non-listed items identified – **Sections 4.5**-**4.12** |

| OEH Environmental Assessment Requirements – Heritage | Where addressed in this report |
|---|---|
| a. outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996), | **Sections 6.2**-**6.4**<br>**Section 6.5** provides summary of management and mitigation measures |
| b. be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria), | **Section 1.5.2** |
| c. include a statement of heritage impact for all heritage items (including significance assessment), | Significance assessment – **Section 5.2**<br>Statement of heritage impacts – **Sections 6.2**-**6.4** |
| d. consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and | Statement of heritage impacts – **Sections 6.2**-**6.4** |
| e. where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations. | Archaeological potential – **Section 4.13**<br>Potential impacts and methodology – **Section 6.4.2** |

Specifically, this assessment:

- describes the identified and potential non-Aboriginal heritage items within and in the vicinity of the proposal site
- assesses the non-Aboriginal heritage significance of listed and non-listed heritage items
- assesses the potential of impact to heritage significance by the proposal
- provides management and mitigation strategies for the proposed impacts.

This report does not include an assessment or consideration of any Aboriginal archaeological values or Aboriginal cultural heritage values related to the proposal. Aboriginal archaeological values and cultural heritage values are assessed in the *Australian Rail Track Corporation Inland Rail – Narrabri to North Star Aboriginal Cultural Heritage and Archaeological Assessment* (Umwelt 2017).

## 1.4 Proposal Site Information

The proposal site is the area that would be directly affected by construction works. The proposal site is considered to have a width of 30 metres, providing for a 15 metre buffer on each side of the alignment centreline. It includes the location of proposal infrastructure, the area that would be directly disturbed by the movement of construction plant and machinery, and the location of the storage areas/compounds sites etc, that would be used to construct that infrastructure.

The proposal site traverses three local government areas (LGAs), with the southern section of the proposal located in the Narrabri LGA, the middle section in the Moree Plains LGA, and the northern section in the Gwydir LGA. The three LGAs are predominantly rural, with the main local industries based around agriculture (mainly cotton and grains) and grazing. Moree Plains Shire Council and Gwydir Shire Council both adjoin the NSW-Queensland border.

For the purpose of this assessment, impacts of the proposal on non-Aboriginal heritage were assessed within the proposal site and within additional assessment areas outside the proposal site that included, but were not limited to, the following:

- an approximate 60 metre buffer around culverts, underbridges and overbridges
- an approximate 120 metre buffer around the locations of level crossings.

This is a conservative approach intended to allow for design flexibility for future planning. The need for works in these additional assessment areas would be determined during detailed design.

In addition, construction of the proposal would include ancillary activities such as the establishment of construction compounds, the upgrade of existing access tracks, the construction of new access tracks and works to alter existing powerlines. For the purposes of the current assessment, ground surface impacts associated with ancillary activities were considered to potentially occur within the specified areas that form part of the proposal site.

Two types of construction compound areas are proposed; minor compound/storage areas and larger compound sites. Minor compounds/storage areas are areas that would be used temporarily for the assembly of adjacent infrastructure such as culverts and turnouts. These compounds would be located within the rail corridor. Larger compound sites would be established for general construction activities associated with each stage of work, located within the proposal site.

## 1.5 Non-Aboriginal Heritage Impact Statement

This non-Aboriginal Heritage Impact Statement was prepared by Umwelt for ARTC. Specifically, this assessment examines the historical (non-Aboriginal) heritage and archaeological issues associated with the proposal with the aim of assessing and evaluating the potential heritage impacts associated with the proposal. The report identifies the non-Aboriginal heritage sites contained within and in the vicinity of the Narrabri to North Star (NNS) rail corridor and assesses the significance of any impacts on these sites potentially resulting from the proposal. This report does not include an assessment or consideration of any Aboriginal archaeological values or Aboriginal cultural heritage values related to the proposal. Aboriginal archaeological values and cultural heritage values are assessed in a separate report prepared by Umwelt (2017).

### 1.5.1 Methodology

As outlined in the SEARs, this assessment has been undertaken in accordance with guidelines set out in the *NSW Heritage Manual 1996* (Heritage Office and Department of Urban Affairs & Planning), including *Archaeological Assessments*, *Assessing Heritage Significance*, *Statements of Heritage Impact* and *Heritage terms and Abbreviations* and with consideration of the principles contained in *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999* (Australia ICOMOS. 2013) and the Historical Archaeology Code of Practice (2006).

Key components in the preparation of this report included:

- reviewing relevant heritage databases
- researching, reviewing and compiling the historical context of the proposal site
- undertaking targeted site inspections of the proposal site (10 September 2014 to 14 September 2014 and 23 to 27 May 2016)
- completing an assessment of the significance of the proposal site
- preparing a heritage impact statement for the proposal site
- developing a management strategy for the proposal site.

### 1.5.2 Report Preparation

This non-Aboriginal Heritage Impact Statement was prepared by Tim Adams (Principal Archaeologist), Amanda Reynolds (Senior Archaeologist) and Alison Lamond (Archaeologist). Field surveys were led by Nicola Roche (Principal Archaeologist) and Franz Reidel (Senior Archaeologist). Tim and Franz both meet the NSW Heritage Council's criteria for Excavation Directors.

## 1.6 Structure of this Report

The structure of this report is outlined below.

- **Section** 1 – provides an introduction to the report
- **Section 2** – provides the statutory heritage overview and discusses heritage listings
- **Section 3** – provides a historical context for the proposal site
- **Section 4** – provides the physical context for the proposal site including results of research and site inspections
- **Section 5** – provides the statement of significance for the proposal site
- **Section 6** – provides the heritage impact statement and management strategy for the proposal site
- **Section 7 –** documents the references utilised in the assessment.

# 2.0 Statutory Overview

The *Heritage Act 1977* (NSW) (the Heritage Act) and the *Environmental Planning and Assessment Act 1979* (EP&A Act) are the primary statutory controls protecting historical/European heritage (non-Aboriginal) within NSW.

The proposal will require approval under Part 5.1 of the EP&A Act. The proposal is declared to be development that is State Significant Infrastructure and the Minister for Planning will be the consent authority for the proposal and the relevant approval provisions of the Heritage Act and local planning instruments established under the EP&A Act do not apply.

However, for the purposes of environmental assessment an environmental impact assessment is required to be prepared in accordance with the SEARs. This report comprises the non-Aboriginal Heritage Impact Statement prepared as part of environmental impact assessment.

## 2.1 Heritage Listings

In order to identify if any non-Aboriginal heritage items are located within or in the immediate vicinity of the proposal site and additional assessment areas, desktop searches were conducted of the following heritage registers and local planning instruments:

1) ARTC Section 170 register

2) State Heritage Inventory (including State Heritage register)

3) Australian Heritage Database (including Commonwealth and National heritage lists)

4) Australian Heritage Places Inventory

5) Narrabri Local Environmental Plan 2012

6) Moree Plains Local Environmental Plan 2011

7) Gwydir Local Environmental Plan 2013.

A search encompassing both the proposal site itself and a surrounding area of 500 metres from the proposal site boundaries was undertaken to ensure any statutorily listed heritage items adjacent or within the vicinity were identified to enable consideration of any potential impacts to heritage significance as a result of the proposal.

As detailed in **Table 2.1** and shown on **Figure 2.1** the searches indicate that there are three heritage listed items within the NNS rail corridor and several additional heritage listed items within the general vicinity (within 500 metres) of the rail corridor.

As noted in **Table 2.1** there are no World Heritage or State listed items within or in the general vicinity of the proposal site. The Moree Baths and swimming pool is on the National Heritage List and is located in the general vicinity of the proposal site.

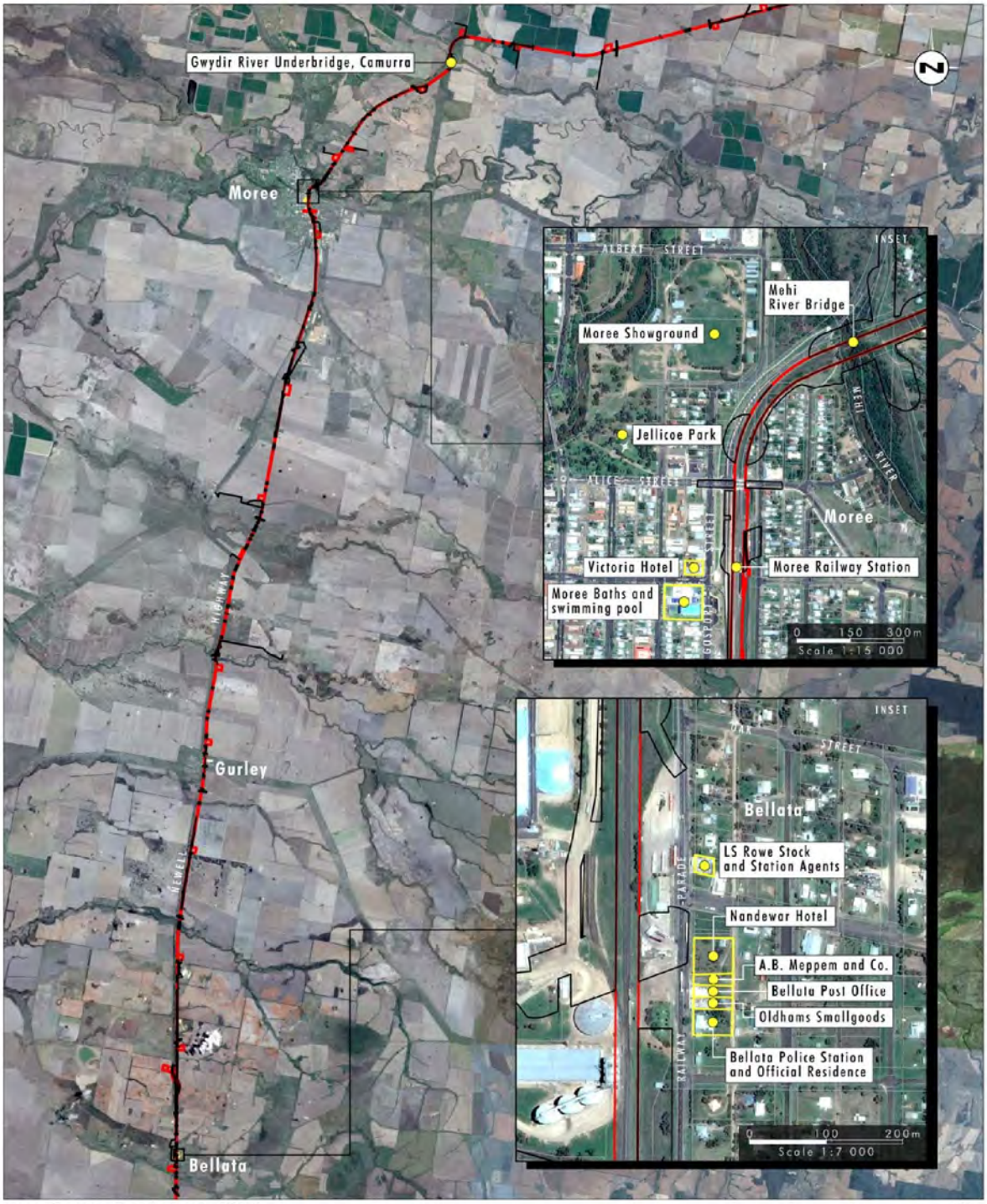



Image Source: Google Earth (2016)
Data Source: Parsons Brinckerhoff (2014), LPI (2016)

**Legend**

- Proposal Site
- Additional Assessment Area
- Listed Heritage Area
- Listed Heritage Item

FIGURE 2.1

**Narrabri to North Star Route**
**Heritage Listed Items**

File Name (A4): R04/3607_148.dgn
20170324 13.33

**Table 2.1 Listed Heritage Items**

| Item Name | Location | Listing | Significance | Distance to Proposal Site |
|---|---|---|---|---|
| Mehi River Bridge | Moree – Mungindi Line<br>666.340 kilometres from Sydney | Australian Rail Track Corporation S170 Heritage & Conservation Register | Local significance | On alignment |
| Moree Railway Station | As listed in LEP:<br>Gosport Street, Moree<br>Adjacent to Lot 158, DP 1157018 | Moree Plains LEP 2011 (brick railway station building) | State significance (on LEP not on State Heritage Register) | On alignment / Immediately adjacent |
| | As listed on S170:<br>Morton Street | Railcorp S170 Heritage & Conservation Register | Local significance | On alignment / Immediately adjacent |
| Gwydir River Bridge | Camurra – Mungindi Line<br>676.220 kilometres from Sydney | Australian Rail Track Corporation S170 Heritage & Conservation Register | Local significance | On alignment |
| Victoria Hotel | 339 Gosport Street, Moree | Moree Plains LEP 2011 | Local significance | Approximately 100 metres to west of proposal site. |
| Moree Baths and swimming pool | Corner of Anne and Warialda Street, Moree | National Heritage List | National Significance | Approximately 100 metres to west of proposal site. |
| Moree Showground | Warialda Street, Moree | Moree Plains LEP 1995 (**not** on Moree Plains LEP 2011) | Local significance<br>**Note recommended for nomination for listing on State Heritage Register** | Approximately 100 metres to northwest of proposal site<br>(Pavilion mentioned in listing, approximately 270 metres to the northwest) |

| Item Name | Location | Listing | Significance | Distance to Proposal Site |
|---|---|---|---|---|
| Jellicoe Park | Frome Street, Moree | Moree Plains LEP 1995 (**not** on Moree Plains LEP 2011) | Local significance<br>**Note recommended for nomination for listing on State Heritage Register** | Approximately 250 metres to west of proposal site. |
| A.B. Meppem and Co. | 30 Railway Parade (Newell Highway), Bellata | Narrabri LEP 2012 | Local significance | Approximately 80 metres to east of proposal site. |
| Bellata Police Station and Official Residence | 24 Railway Parade (Newell Highway), Bellata | NSW Police Force S170 Heritage & Conservation Register | Local significance | Approximately 80 metres to east of proposal site. |
| Oldhams Smallgoods | 26 Railway Parade (Newell Highway), Bellata | Narrabri LEP 2012 | Local significance | Approximately 80 metres to east of proposal site. |
| Post Office | 28 Railway Parade (Newell Highway), Bellata | Narrabri LEP 2012 | Local significance | Approximately 80 metres to east of proposal site. |
| LS Rowe Stock and Station Agents | 40 Railway Parade (Newell Highway), Bellata | Narrabri LEP 2012 | Local significance | Approximately 80 metres to east of proposal site. |
| Nandewar Hotel | Lot 1 Railway Parade (Newell Highway), Bellata | Narrabri LEP 1992.<br>(**not** on Narrabri LEP 2012) | Local significance | Approximately 80 metres to east of proposal site. |

Note that there are numerous additional listed items within Moree – on west side of the Mehi River – between 500 to 1000 metres from the rail line, including Moree Town Centre Conservation Area and State Heritage Register listed Alloway House, 13 Gwydir Street Moree. However, these are not considered to 'in the vicinity' or at risk of any direct or indirect impacts resulting from the proposal (refer to **Section 6.1.** for further discussion of indirect impacts).

With the exception of those items discussed below which are located within 100 metres of the proposal site, there are not considered to be any potential direct or indirect impacts (including to landscapes, vistas, or curtilage) to the statutorily listed heritage items listed in **Table 2.1**. As such these items are not discussed further in this report (with the exception of those listed below). Further discussion regarding direct and indirect impacts such as vibration is presented in **Section 6.1**.

Statutorily listed heritage items discussed further in this report comprise:

- Mehi River Underbridge (refer to **Section 4.3.1**)
- Moree Railway Station (refer to **Section 4.3.2**)
- Victoria Hotel, Moree (refer to **Section 4.4.1**)
- Moree Baths and Swimming Pool (refer to **Section 4.4.2**)
- Gwydir River Underbridge (refer to **Section 4.3.3**)
- Various along Railway Parade, Bellata (refer to **Section 4.4.3**).

## 2.2 Consultation

General consultation has been undertaken by GHD/ARTC with government authorities (including, local Councils and community stakeholders) in relation to the proposal (further information is provided in the EIS). No non-Aboriginal heritage issues have been raised with regards to the proposal.

The potential non-Aboriginal heritage impacts associated with the proposal and the recommendations of this report have been broadly discussed with Paul Samaras, ARTC Heritage Manager Enterprise Services. Where appropriate in terms of significance and level of potential proposal impacts the photographic recording of certain elements of the proposal site was discussed as an adequate and appropriate method of recording the rail line and any significant associated elements to ensure that a full understanding and record of the former Pioneer Line will be available for future generations.

Information provided by the Australian Railway Historical Society (ARHS) has been utilised and reproduced within this report.

# 3.0 Historical Context

As part of NSW heritage assessment procedures it is essential to have a full understanding of a site or item based on its historical and physical context. This section of the report provides a historical context for the proposal site and its broader locality to provide an understanding of the significance of any non-Aboriginal heritage or archaeological sites or items within the proposal site.

## 3.1 Aboriginal Cultural Context

In general terms, the majority of sources indicate that the proposal site is located within the country of the Gomeroi People. Sources indicate that the Gomeroi Nation was a nation composed of numerous tribes, with distinct portions per tribe (Howitt in Millis 1992).

One of the first historical accounts of the region comes from the diaries of Thomas Mitchell and records of observations made during his 1832 expedition to record and map a reported large inland river (the Kindur). Mitchell made a range of observations of Aboriginal people living in the region and was, to some extent, reliant on Aboriginal people to guide the expedition.

In terms of resources Milliss (1992) references Aboriginal people in the region consuming a range of plant and animal foods, with a seasonal reliance on the usage of grass seeds (including kangaroo grass) that were processed by grinding seeds into flour for baking. It was noted that a great variety of terrestrial and aquatic animals were used and that, during times of drought, the larger streams and lagoons were targeted for occupation, both for water and the animal resources attracted to the available water.

One of the key themes in the Aboriginal history of the region has been the occurrence of conflict between Aboriginal people and non-Aboriginal settlers. However, during initial expeditions to the area, relations were relatively benign. Non-Aboriginal settlement of the area followed Mitchell's expedition. The increasing use of the area for pastoral purposes not only increased the number of non-Aboriginal people in the region but also presumably placed pressure on the resource base upon which Aboriginal people relied. This in turn resulted in increased interactions between Aboriginal people and the early pastoralists, which in many cases involved in conflict.

Despite some significant variation in historical accounts, it is evident that the period of non-Aboriginal settlement from the late 1830s was characterised by ongoing conflict between Aboriginal and non-Aboriginal people, resulting in the deaths of hundreds of Aboriginal people, both directly (where Aboriginal people were murdered) and indirectly (through the spread of disease and the removal of access to resources). This in turn, resulted in massive impacts on all aspects of Aboriginal life, the implications of which continue to the present day.

In recognition of the impacts of non-Aboriginal settlement, in 1838 a group of concerned individuals (including missionary Lancelot Threlkeld and George Augustus Robinson, who was formerly responsible for the Flinders Island Aboriginal mission) established the Australian Aborigines Protection Society. This organisation became very important in driving the ongoing establishment of missions and reserves in New South Wales and ultimately, in influencing the lives of Aboriginal people.

Key reserves/missions in the region surrounding the proposal site included those at Terry Hie Hie and Euraba (subsequently relocated to Toomelah in 1937), Narrabri and Wee Waa. Missions and reserves were highly regimented and allowed for control of Aboriginal people, including all aspects of life. The systematic practice of the removal of children from their parents has been well documented in current accounts of the Stolen Generation. The removal of children from their parents at Terry Hie Hie is reported to have triggered Aboriginal people to leave the mission and establish informal settlements (fringe camps) on the outskirts of

Moree, including what was referred to as the 'Steel Bridge Camp', located within the proposal site at the crossing of the Mehi River (Briggs-Smith et al, 1999:4). It is noted that the accounts of demolition of the fringe camps imply that it is unlikely that any archaeological evidence of structures associated with the fringe camp at the crossing of the Mehi River will remain present. However, it is possible that dispersed artefacts associated with Aboriginal life at the fringe camp may remain present within the area.

It is important to note that many Aboriginal families in the region retained close links to the railway industry, with many Aboriginal men employed in constructing, maintaining and operating rail lines from the 1930s onwards (based on accounts from several Aboriginal community members). Many Aboriginal people currently living in the area have recollections of parents, grandparents or other family members who travelled extensively through western New South Wales undertaking rail work. Following increased mechanisation of the rail network, this source of employment rapidly dried up.

In terms of contemporary history, it must also be recognised that Moree holds a very important place in Australia's modern history, being a key location in the 1965 'Freedom Rides' which drew attention to ongoing racism and social discrimination in rural New South Wales in particular. This event had implications for ongoing race relations within Australia and occurred within the living memory of members of the present Aboriginal community in the region.

Further details and discussion relating to the ethnohistoric context of the proposal site are provided in the Aboriginal Cultural Heritage and Archaeological Assessment (Technical report 8) prepared for the proposal (Umwelt 2017).

## 3.2 Early Exploration

The wider region is characterised by relatively level country draining into the Darling River by the upper Bogan, the Macquarie, Castlereagh, Gwydir, Namoi and Macintyre Rivers and Boomi Creek. The region was first explored by John Oxley, Surveyor General of NSW from 1812, who discovered the Castlereagh and Peel Rivers. In 1827 to 1829 Captain James Sturt explored the Macquarie and Castlereagh Rivers and discovered that they flowed into the Darling River (Heritage Office 1996:80).

Thomas Mitchell, Surveyor General from 1828 (following John Oxley's death), further explored the region including the Namoi, Gwydir and Macintyre Rivers and the site of Boggabri approximately 50 kilometres to the southeast of Narrabri (Heritage Office 1996:80). Mitchell's expedition 'sealed the future of the inland for pastoral occupancy' as his routes became the basic supply route for future squatting activity (Tindall 1982:6). The map of Mitchell's expeditions '*Map of Australia showing the routes taken by Sir T.L. Mitchell in his expeditions into the interior of New Holland'* shows Mitchell's 1831 route along the Namoi River (the Nammoy) to the Gwydir River (refer to **Plate 3.1**).


**Plate 3.1**

Detail of map showing routes taken by Mitchell.

Includes the 1831 expedition exploring the River Namoi (Nammoy) and River Gwydir – indicated with red arrow.



When Mitchell returned he reported the good pastoral land in the area. In 1835 Charles Coxen further explored the Namoi Plains reporting it to be level country with few trees. The reports of these expeditions provided information to the squatters who followed their routes looking for good pastoral land.

## 3.3 Early Settlement and Land Administration

When European settlers arrived in NSW in the nineteenth century the colonial government claimed all lands for the Crown, with the governor of NSW having exclusive authority to make land grants. Although the Lachlan Plain area was not officially opened up for settlement until the 1840s, the grazing potential of the area was recognised in the early 1800s (Heritage Office 1996:98).

The Australian Agricultural Company (AA Co.) was established in 1824 by an Act of the British Parliament which granted the Company one million acres with the primary purpose of producing wool and other crops for export. The AA Co. also entered the coal industry in the Newcastle area with the intention of exporting coal to India for use by the steamers of the east India Company. The AA Co. held its monopoly over the coal mining industry in the Newcastle area until 1847 when the Company agreed to abandon its protected position in the coal industry in return for the right to sell its estates.

From the 1820s the occupation of Crown land without legal title was a widespread practice and land administration became one of the most important tasks overseen by the colonial government. The colonial authorities attempted to contain settlement by limiting unlicensed occupation inland. In 1826 the Limits of Location were established in NSW by Governor Darling which comprised the geographical limits beyond which settlers would not be permitted to go in search of the land and land grants could only be issued within these boundaries making it illegal to settle the land outside the newly established boundaries. Before 1826, land grants were given exclusively by the Governor. Grants of land were free until 1825 and could consist of up to 30 acres.

The reasoning behind limiting the area available for settlement in the vast regions 'beyond the protection of the military' was given as the vulnerability of squatters to attack by Aboriginal people, drought, flood and starvation (Tindall 1982:5). Pastoralists began entering the region from the south moving north from Mudgee and through the area of Dubbo. The continued push west and north by pastoralists led Sir Ralph Darling (Governor of NSW from 1825 to 1831) to issue a Government Order in 1829 extending the boundaries of settlement (the Limits of Location) to encompass the existing Nineteen Counties surrounding Sydney. The Nineteen Counties effectively became the Limits of Location (refer to **Plate 3.2**); which defined

*...the limits of location to the settled areas or districts, and proclaiming that the 19 counties then existing were considered ample for the requirements of the penal settlement (Tindall 1982:5).*


**Plate 3.2**

Nineteen Counties Map 1958



However, pastoralists wanting to take advantage of the inland grass country did not restrain themselves by the 'limit of location'. They were given the title 'squatters', a term that came to refer to those who extended their activities across the arbitrary boundaries established by the colonial government and became holders of vast tracts of country and wealth (Tindall 1982:5). In 1831 Governor Darling admitted that

*...setting the precise boundaries beyond which settlers were not allowed to receive grants or to lease land did not get away with the problem of cattle being grazed beyond the limits (Tindall 1982:6)*

Governor Darling's successor, Sir Richard Bourke (Governor of NSW from 1831 to 1837), declared that unauthorised occupation must not be permitted to continue whilst it created any title to the land for the occupier (Tindall 1982:6). Pastoralists began moving into the Darling Plains area from the Hunter Valley in the south or the Liverpool Plains in the west. When the AA Co. took over fertile land in the Liverpool Range in 1832 squatters were driven into the New England and Darling Plains areas, with pastoral runs out to Wee Waa and Moree in existence by 1836. The Macintyre and Barwon areas were occupied about 1840.

### 3.3.1 Squatters Map

The term ‘squatter’ (first appearing in 1828) soon came to refer to a person of high social prestige who grazed livestock on a large scale; often having no legal title to the land beyond being the first European to settle on it. Successful squatters were among the wealthiest class of people in the colony and came to be described as the 'squattocracy'. The expanding market for meat due to population growth in NSW and the demand for grazing land to meet the needs of the developing sheep industry, provided impetus for the increased squatting activity during the 1830s.

In 1837, Robert Dixon, an assistant surveyor working in the Surveyor General's Department in Sydney, produced a unique map of NSW which attempted to record the spread of settlement across the colony. It was Dixon's intention to show exactly who owned land in NSW and exactly where that land was, and each property (each piece of 'appropriated land') was annotated with the name of the landholder. As such it shows the acreages of land granted and sold in the colony up to June 1836.

Dixon’s map (full title: *Exhibiting the Situation and Extent of the Appropriated Lands, including the Counties, Towns, Villages, Reserves, Compiled from Authentic Surveys*) is commonly known as ‘the Squatter’s Map’ and comprises the earliest documented attempt to show who owned what land in NSW. Dixon (1800-1858) was an explorer and surveyor born in Durham in 1800 who came to NSW in 1821. From 1826 he was the assistant surveyor in the Surveyor-General’s Department. The 1837 map was produced while Dixon was on leave in London and is reported to have been made using other surveys and documents. Surveyor General Major Thomas Mitchell, who had produced his own less informative map of NSW in 1834 is reported to have been offended by Dixon’s 1837 map and refused to reappoint Dixon on his return to Sydney after nearly 15 years of service (Warden 2010:16-17).

The limits of Dixon’s map generally reflect the western and northern boundaries of the Nineteen Counties (refer to **Plate 3.2**), with no granted land shown to north of the Liverpool Ranges other than a 249,600 acre area of AA Co. land (refer to **Plate 3.3** ).

**Plate 3.3**

Detail of Robert Dixon’s 1837 Map of the Colony

Section of map shows the northwestern limits of granted land with no settlement beyond Liverpool Ranges except for AA Co. land

## 3.4 Early Pastoralism and Land Administration

In 1833 an *Act for Protecting the Crown Lands of the Colony from Encroachment, Intrusion and Trespass* was passed. The Act authorised the Governor to appoint Commissioners of Crown lands. However, the 1833 Act appears to have had little or no impact on the unauthorised occupation of Crown Land. As a result Governor Bourke sought to legalise and regulate squatting through further legislation in 1836 which led to the issuing of licences to settlers to depasture their stock on the vacant Crown lands beyond the Limits of Location. The 1836 Act imposed a £10 licence fee for depasturing on lands beyond the Nineteen Counties. The Act also provided for the appointment of full-time Commissioners of Crown Lands to the districts beyond the 'limits of location' (NSW State Records. nd). These commissioners administered the licensing. However, the imposition of the license fee implied approval for squatting (NSW State Records:Squatters and Graziers nd.).

The concept of areas within and outside the Nineteen Counties was discontinued in 1847. After this time NSW was divided into three areas: Settled (the former Nineteen Counties), Intermediate and Unsettled. Pastoral leases were available in these three areas for one, eight and fourteen years respectively (State Library:Agriculture nd.).

In nineteenth century Australia, the method for establishing a pastoral run or station required the grazier to pay a certain price per head for the number of sheep or cattle on the property which was generally situated on Crown-owned land, and thereafter pay the government an annual rental for the lease on the property, which varied according to the situation and quality of the country, and ranged from £10 to £100 per block of 100 square miles. By May 1880, depending to the quality of the run and the stock, the usual price for a station with 10,000 sheep was about £10,000 and about £3000 for a property with 1000 or 1500 head of cattle. Freehold estates could also be purchased outright in the settled districts near towns and railways from £1 to £5 pounds per acre.

Cattle runs were granted 10 acres per head, while sheep were granted 4 acres per head. There were more cattle runs than sheep stations in the region, with more sheep owners settling further north in New England. The early runs were owned by absentee landowners and this, along with temporary licence restrictions is the reason for the lack of early impressive houses. Ex-convicts and stock keepers were living in huts on the land (Heritage Office 1996: 81). Owners began living on their stations after 1847, meaning better houses began to be built. Cattle stations would employ two to four men, while sheep stations could employ up to 20 men, with neighbours co-operating at annual muster time.

The whole country was subdivided in large runs by 1848 (Heritage Office 1996:80). The south-western pastoral runs were predominantly sheep, while the north and east runs like those in the Namoi and Gwydir pastoral districts were cattle (Heritage Office 1996:80). The rough grazing of the plains, and the danger from dingoes, made the area more suitable for cattle. The cattle were then driven down to fattening pastures in the Hunter region. In 1848 Liverpool Plains had 67 runs with sheep and 94 with cattle while the Gwydir Pastoral district had 26 runs with sheep and 70 with cattle. The holdings could be up to 200,000 acres with the cattle runs being cheaper to run than sheep needing only a few men, a small number of stockyards and a grain paddock. Moving the cattle was also cheaper than transporting wool with only four men needed to take 3590 cattle to the Hunter region (Heritage Office 1996:81).

### 3.4.1 Robertson Land Acts

In 1861 Crown land management was reformed with two pieces of new legislation, which included the introduction of Sir John Robertson's scheme of 'free selection before survey'. The *Crown Lands Alienation Act 1861* dealt with the sale of land and the *Crown Lands Occupation Act 1861* allowed for the leasing of Crown Land (NSW State Records:Archives In Brief nd.).

In 1856 Sir John Robertson was invited to run for (and won) the seat of Phillip, Brisbane and Bligh at the first parliamentary elections. With farmers excluded from leasing and generally in a much inferior position to the squattocracy Robertson was determined to implement land reform and considered the key to basic social reform was change in land policy and the need that settlers, mainly agricultural and with minimum capital, should have ready access to land, even if occupied by lease-holding squatters (Nairn 1976).

At the June 1859 general election Robertson retained his seat, now the Upper Hunter and became leader of the Opposition. On 30 September 1859 the Lands Department was established, with Robertson as the first Secretary for Lands. By September he had his new land legislation ready and brought down the Crown Lands Alienation Bill and the Crown Lands Occupation Bill, embodying free selection before survey; both bills passed their second reading, but in committee in October the vital clause was defeated 33 to 28. With his parliamentary resources exhausted Robertson obtained a dissolution and prepared to fight a general election on the issue in December. The resulting elections were a triumph for Robertson as out of 53 candidates favouring his land bills, 35 were elected. All 14 candidates who openly opposed the bills were defeated. Robertson retired from the premiership on 9 January 1861 to concentrate on carrying his legislation in both assembly and council. He resubmitted his bills on 16 January and they were eventually passed on 24 October (Nairn 1976).

From 1861, the Robertson Act opened all Crown Land for selection until the law changed again in 1884. During this period, land parcels of between 40 and 320 acres could be conditionally purchased without a survey, as long as the purchaser had the funds to improve the land acquired and the intention to occupy it for at least three years. Previously land in settled districts had been sold by auction while vast areas of unsettled grazing lands were leased and licensed to mainly pastoralists. The new legislation made all leasehold land in the Colony available for selection and sale. The legislation also abolished land distinctions used in the Colony, such as settled and unsettled districts, and introduced new land divisions, such as town land, suburban land, first class settled districts and second class settled districts (State Library:Agriculture nd.).

## 3.5 Discovery of Gold

Unlike the Lachlan Plains area to the south, gold was not expected to be found on the alluvial plains. Gold was found to the southeast of the Inland Rail alignment at Nundle and on the Peel River, which is part of the Namoi catchment, however it wasn't found in the Narrabri or Moree Plains areas.

## 3.6 1884 Land Acts and Rural Settlement

The 1880s saw important legislative changes regarding land purchases and thus rural settlement and land exploitation in the area as two new Land Acts were passed in 1884 controlling all Crown Land alienation and occupation. NSW was divided into three Divisions, the Eastern, Central and Western Divisions. The Inland Rail alignment is within the Central Division. The Acts allowed for pastoral leases, annual and special leases, scrub leases and conditional leaseholds. Free selection was still possible but the maximum area was enlarged by permitting the applicant to take up three-quarters of their selection as a Conditional Lease, with the provision that it could later be converted into a Conditional Purchase.

Pastoral landholders were required to divide their land into two sections, the Leasehold area and the Resumed area. The Leasehold area was leased to the runholder for fixed periods. The Resumed portion could be held by them under an annual lease only. It was liable to be resumed for settlement by the Department of Lands. A re-assessment of the nature of pastoral holdings was the central principle enshrined in the new Act. All pastoral land in NSW had to be re-evaluated by the Department. The 1884 Crown Lands Act meant Pastoral Holdings, all of which were given a record number, replaced Pastoral Runs.

Scrub Leases were created by the 1884 Act. These provided for the leasing of areas less than 10,240 acres (4,144 hectares) as scrub lands. A new condition was attached to Scrub Leases by the *1895 Lands Act*. Scrub Leases had been available for land wholly or partly covered by scrub and could be leased by auction, tender or application for terms up to 21 years. The term was extended to 28 years by the 1895 Act. The holder had to destroy the scrub or noxious weeds and keep it free. In the final year of the lease the lessee could apply to convert it to a homestead grant of 640 acres.

The Improvement Lease was also created by the *1895 Lands Act* and allowed the leasing of scrub land not suitable for settlement, up to 28 years. Land classified as scrub or inferior could be taken up under this tenure. They were offered by auction or tender and were available up to a maximum of 20,480 acres. The term was 28 years. Conditions included improving the land under conditions drawn up for each case and the holder had tenant rights to any improvements. There was no compulsory residence requirement.

The Settlement Lease was also created by the *1895 Lands Act*. A Settlement Lease could be taken up for agriculture or grazing with a maximum of 1,280 acres for agricultural use and 10,240 for agriculture plus grazing. The term was 28 years later extended to 40 years. The holder had to reside on the lease for the whole term, enclose the holding within 5 years, and comply with conditions about noxious animals, scrub etc. The holder could apply to convert it to a homestead selection in the final year with an area of 1,280 acres (Kass 2011).

## 3.7 Pastoralist's Maps

William Hanson compiled the 1889 book *Pastoral possessions of NSW* following the 1884 Land Act and the creation of the three divisions. He intended the document to form a summary of NSW's

*...immense pastoral resources, and to be a guide to all who are or may become interested in the further development of this almost terra incognita of New South Wales; in short to afford reliable data on the subject of our possessions not heretofore available to the public at large...The volume may also be acceptable to the capitalist as demonstrating the solid foundation upon which our public securities stand, and the certainty of a steady revenue being derivable from the Pastoral Possessions of the colony (Library of Congress nd).*

Hanson's book is divided into the three sections established by the 1884 Land Acts: the Eastern division, the Central division and the Western division.

There are a number of nineteenth century maps that provide information regarding pastoral runs in nineteenth century NSW. **Figures 3.1** and **3.2** show the proposed rail alignment overlaid onto an 1860 and 1880s pastoralists map respectively. Used in conjunction with William Hanson's *Pastoral possessions of NSW* names and areas of runs can be determined along with ownership details and information regarding license fees, annual rents etc.

The 1860s map (**Figure 3.1**) comprises *Reuss and Browne's Map of New South Wales and part of Queensland showing the relative positions of the pastoral runs, squattages, districts, counties, towns, reserves etc.* The 1886 (**Figure 3.2**) map comprises the *Index map of New South Wales shewing pastoral holdings* prepared by Surveyor General's Office. The rail alignment has been overlaid onto these maps; however it should be noted that the location of the rail alignment (especially on the 1860s map) it approximate due to the scale and common detail with modern mapping available on the early maps.

**Table 3.1** lists the likely names and areas of runs in the area through which the rail alignment passes from the north to the south. Ownership details and information regarding license fees and annual rents are also noted.


Legend

- Proposal Site
- Additional Assessment Area
- Town Location

FIGURE 3.1

Detail of Reuss & Browne's
1860s Map of New South Wales

File Name (A4): R04/3607_084.dgn
20170324 13.35

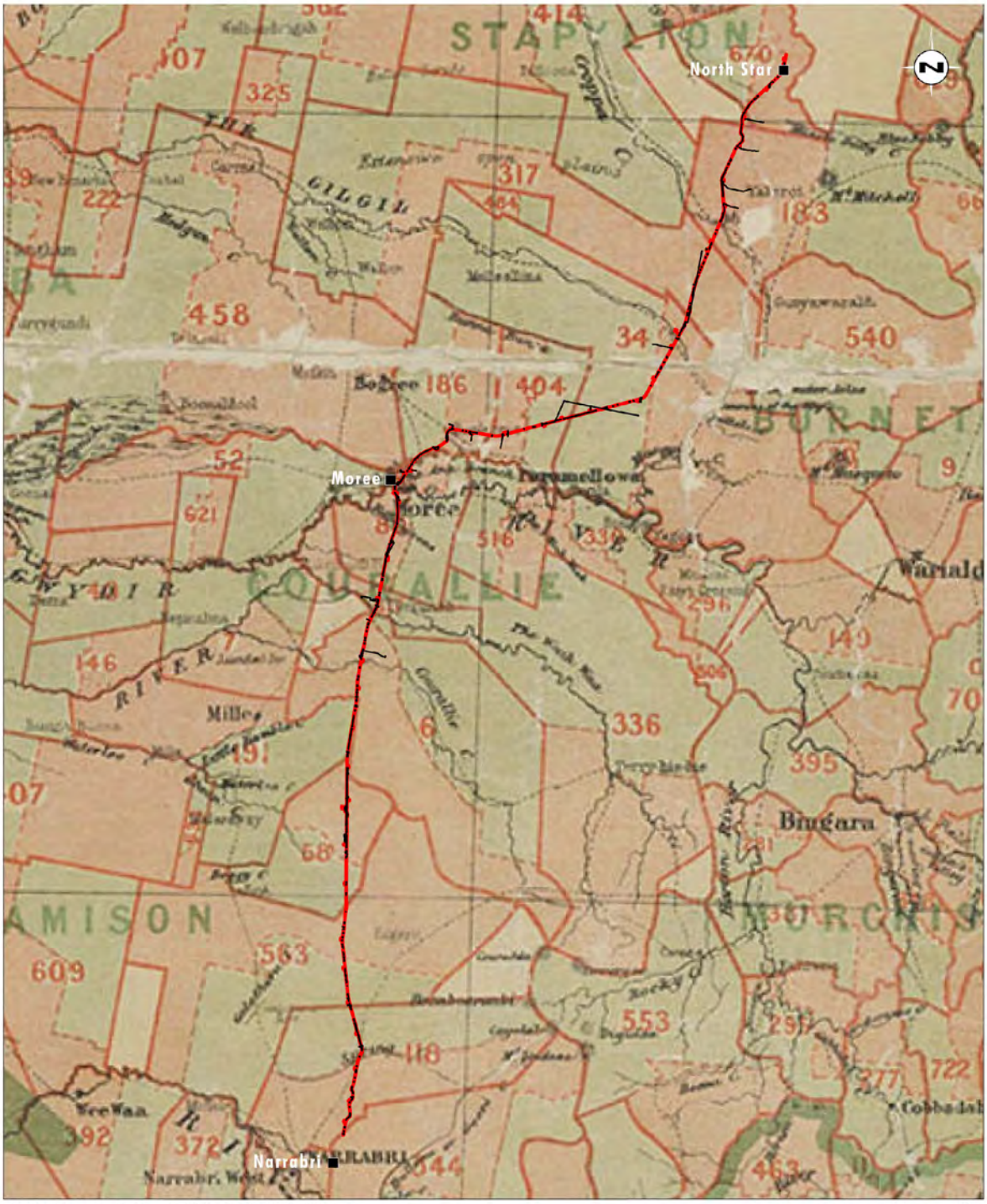



Image Source: National Library of Australia
Data Source: Parsons Brinckerhoff (2014)

**Legend**

- Proposal Site
- Additional Assessment Area
- Town Location

FIGURE 3.2

**Detail of Surveyor General's Office 1886 Map of New South Wales**

**Table 3.1 Pastoral runs formerly located along proposal site**

| Pastoral Holding | Holding Number | Runs | Holder | Leasehold Area | Resumed Area |
|---|---|---|---|---|---|
| Mungle and Wallah | 670 | Mungle<br>Wallah | Bank of New South Wales | 31,700 acres | 31, 765 acres |
| Yalleroi | 183 | Yalleroi<br>No Man's Land<br>Forest Block No. 2<br>Booraba<br>North Murgo<br>Murgo | W.J., H.C., F.H. and A.A. Dangar | 52,410 acres | 55,572 acres |
| Welbon | 317 | Welbon<br>Welbon Back Block No. 1<br>Carreuenga<br>Carreuenga North<br>Carreuenga East<br>Croppa Creek Back Block | Bank of New South Wales (Leaseholder)<br>Charles Stanley Viscount Monck<br>John Ramsay L'Amy<br>(Licensees) | 129,838 acres | 116,289 acres |
| Bogamildi | 34 | Melialma<br>Gourable<br>Ardgowan Plains<br>Yagobi<br>Mosquito Creek | Australasian Mortgage and Agency Company | 138,704 acres | 142,980 acres |
| Taleelari | 404 | Tarilari | Australian Joint Stock Bank | 20,868 acres | 11,380 acres |
| Boolooroo | 186 | Boolooroo | Union Bank of Australia | 16,757 acres | 9,981 acres |
| Brindingabba | 80 | Kilfera<br>Kenmare<br>Killowen<br>Moolort<br>Warroo | Commercial Banking Company of Sydney | 143,520 acres | 138,220 acres |
| Gurley | 6 | Gurley | John Simson | 56,244 acres | 54,141 acres |

| Pastoral Holding | Holding Number | Runs | Holder | Leasehold Area | Resumed Area |
|---|---|---|---|---|---|
| Dobikin | 58 | Woolabra | John Taylor | 17,403 acres | 29,328 acres |
| Egeroi | 563 | Galathra<br>Galathra North<br>Gundemaine<br>Gundemaine North | Australasian Mortgage and Agency Company | 83,217 acres | 68,863 acres |
| Killarney | 118 | Narrabry<br>Bobbiwa | William Frederick Buchanan | 40,680 acres | 44,998 acres |

## 3.8 Survey Marking in New South Wales

The rapid nature of European settlement in NSW resulted in the haphazard occupation of land and the issue of land titles. In 1820 Commissioner Bigge found that

*…through lapse of control and sheer neglect the survey and land branches of the Government had been allowed to run down into a state of chaos (Marshall 2002:120).*

When Sir Thomas Mitchell became Deputy Surveyor General in 1827 he found that settlement was often not progressing as farms were not being granted because of a lack of knowledge of the locality. Governor Darling recognised the advantages of a general trigonometrical survey and in 1828 issued instructions for Mitchell to undertake a trigonometrical survey. The resulting Map of the Nineteen Counties was published in 1835 and covered an area of 38,000 square metres (Marshall 2002:120).

In 1836 the Surveyor General commenced issuing directions applying to the survey and marking of Crown Land in NSW. The first circular in 1836 was issued by Mitchell as a directive to surveyors to improve the marking and identification of corners. Although the instructions indicate that the reference bearing was to be shown on plan as being from the corner of a tree, there is no indication that the trees had to be marked in any particular way (Marshall 2002:12). Marked trees dating to before 1855 are generally quite rare as the early surveys were conducted quickly with minimum of marking and boundary fences erected soon afterwards (Collet 2008). In 1894 it was reported that

*…on surveys of old grants and land purchases…it is common opinion that the majority were seldom measured and rarely marked (Marshall 2002:13).*

The 1848 issued circular contains the first recorded regulations to control the methods of marking and measurement of surveys. The method of 'blazing' lines was first formally introduced in the 1853 instructions for marking Crown Land by Government Surveyors. Prior to this no standard had been adopted, although rock marks were occasionally used. In 1852 an act was passed directing that the official mark for surveys conducted for the government was the broad arrow. However it was reported that in relation to the broad-arrow

*…in practice its employment being tedious, it is limited to principal points (Marshall 2002:117).*

In 1853 the regulations first referred to the numbering of reference trees, and the use of 'lockspits' (Marshall 2002:13). Lockspits were a line of stones radiating away from a corner survey mark and were meant to point to the next corner in a boundary.

Trees were generally blazed with a shoe-shaped mark, generally on both sides, and also marked with a broad arrow if the survey was conducted by the government. The tree could then also be marked with the Parish number or numbers, letters or numbers of the reference station or corner, portion or allotment numbers, or in the case of a reservation, the purpose of the reservation (Marshall 2002:63-68). Homestead leases were to be identified by the number of the lease instead of the parish number (Marshall 2002:43).

## 3.9 Agricultural Training

As early as the 1820s Australia was being promoted as a land of opportunity for settlers with the publication of books and pamphlets regarding farming and land selection designed to help new emigrants and emancipated convicts with the basics of farming. Stories of successful settlers helped promote NSW as the land of opportunity.

By the late nineteenth century the NSW government began to consider providing formal learning for farmers and other agricultural workers. In 1891 the Agricultural Branch of the Department of Mines and Agriculture was established to be responsible for research, education and advice. The Hawkesbury Agricultural College was opened in April 1896 as a college and model farm to provide technological agricultural education. Experimental farms were established in Moree, Bathurst, Wagga Wagga and Wollongbar to test new and modified varieties of crops, new techniques in irrigation or fertilisation and new farm implements (State Library:Agriculture nd.).

New immigrants to Australia and returning soldiers were two of the largest target groups in the first half of the twentieth century. Following World War I the Commonwealth and State Governments cooperated to initiate programs to enable returned soldiers to settle on their own farms or secure their own homes (under the War Service Homes Act of 1918 and soldier settlement schemes). While most land made available to returning soldiers was former Crown land, some freehold land was purchased by the Crown and then made available to returned soldiers. Blocks secured by returned serviceman from World War I that had been surrendered to the Crown under the Act were known as Settlement Purchase Areas (SPA).

## 3.10 Wheat Industry

The Australia wheat industry began early in the Colony's life, with Governor Philip establishing a 40 acre government farm at Parramatta in November 1788. The First Fleet brought several types of grain, unsure of what might grow successfully. The harsh soils and lack of farming knowledge of the convicts meant the first crops were unsuccessful. Convict James Ruse requested land to farm near Parramatta and when his crop was successful was granted a 30 acre grant which he named Experiment Farm (State Library:Agriculture). By 1799 there were more than 6,000 acres under cultivation (ABS 2007).

Wheat was grown in the Gurley region in 1937 and by 1938 commercial crops were being grown in the area and sold at Bellata. Soon however the quantities being produced meant wheat was being transported by train to flour mills all over the state. Wheat was stacked in the open by the railway siding for loading on the trains. At Gurley the wheat stacking area was developed with storage sheds constructed and a weighbridge installed to replace the system of weighing every 10th bag on hand scales and averaging the result (Mahaffey, 1989:34).

As settlement around the country grew, especially in Victoria, South Australia and Western Australia, the area of cultivation grew from eight hectares in 1838 to 7,592 hectares by 1844 (ABS, 2007). Irregular wheat exports began in 1845. The AACo moved its headquarters to Goonoo Goonoo in the 1840s but retained the bulk of its land; creating a barrier to the small farmers on some of the best wheat growing land (Heritage Office 1996: 81).

The land between the Liverpool Range and Piligra Scrub, running west out to Dubbo consisted of fertile, well-watered land. As such selection of land in the wider area became popular after 1861, even more so after the *1884 Land Act* which broke the squatters' hold on the land (Heritage Office 1996: 82).

The growth of the wheat industry was improved by the gold rush and the later construction of the inland railways (State Library:Australian Wheat nd.). The invention of machinery such as the scrub roller and the header harvester allowed for the clearing and preparation of large tracts of land, as well as harvesting large areas of crops. Research also improved the industry with wheat varieties more suitable to Australia's environment, mechanical harvesting and more disease resistance crops. In the late 1880s William Farrer bred numerous new wheat varieties, including a drought and disease resistant variety named 'Federation'.

By the early twentieth century experimentation by William Farrar with new varieties of wheat resulted in hardier, pest and rust resistant crops (SLNSW 2013). After arriving in Australia in 1870 Farrer became a tutor at George Campbell's sheep station, Duntroon. Unable to financially buy a pastoral property he qualified as a surveyor in July 1875 and until 1886 worked in the Dubbo, Nyngan, Cobar and Cooma districts with the Department of Lands. Farrer soon focused his interests on wheat-growing believing that the wheat industry's problems were based on the unsuitability of the types sown to Australian conditions. In 1886 he first tried cross-breeding to improve wheat in Australia; at the time cross-breeding was only being attempted in Europe and America. In 1898 he was appointed as wheat experimentalist to the Department of Agriculture. Farrar's Federation variety became the most widely grown of his wheats. Its rapid spread was 'the result of sheer ability to yield well, despite an unattractive appearance in the field'. Although Federation compromised his wish never to release any wheat that was not of top grain quality, it did fulfil his aim to produce a wheat with a short, strong straw suited to Australian methods of harvesting. From 1910 to 1925 Federation was the leading variety for the whole continent. In 1914 twenty two of the twenty nine varieties of wheat being grown across the pastoral districts of NSW were Farrer wheats. His wheats were largely responsible for the extension of wheat-growing into drier or rust-prone districts, while in established areas yields and quality were improved. This resulted in a four-fold increase for the NSW between 1897 and 1915 (Wrigley 1981).

The *1884 Land Act* encouraged smaller leases of mixed farming and the *1895 Homestead Selection Act* encouraged wheat cultivation. This caused a shift in production to wheat, wool and lambs; which was also later boosted by the railway. While the *1884 Land Act* began the reduction of the huge pastoral stations, the resumptions policy of 1895 meant that grants of 10,000 acres replaced the stations of hundreds of thousands of acres. This subdivision turned may leases into wheat-sheep farms, which cover the centre and east of the region (Heritage Office 1996: 82). Soldier settlement after the World War I and private subdivision of land allowed wheat to become a key crop. Early subdivisions were often as small as 200 acres, however twentieth century technological innovations meant that wheat-sheep farms could now be up to 20,000 acres (Heritage Office 1996: 84).

Bulk handling was first phased in during the 1920s and meant that wheat grain did not need to be bagged before being stored and shipped, leading to substantial savings of time and money as well as protection from pests (ABS, 2007). In NSW bulk handling used vertical concrete and steel silos, which had high operating costs during lean years and could not handle large crops of exceptional years. The first country grain silo to be completed in NSW was at Peak Hill in 1918, however drought meant it was not filled until an exceptional crop in 1920 (NSW silos nd.).

In 1915 the Government established a wheat pooling scheme, administered by the Australian Wheat Board (AWB), to assist growers and ensure supply during World War I (ABS 2007). Under the scheme returns from all the crops was pooled and shared fairly among all growers. The AWB ceased operation in 1921, however small regional schemes continued, usually managed by farmer cooperatives. The AWB was established as a statutory authority at the beginning of World War II to handle all matters concerned with wheat disposal during the War. Legislation was passed in 1948 to establish the board during peace time, and it continued until 1999 (ABS, 2007). With the increase in farm mechanization following World War II and the new hardy varieties available wheat become Australia's single most valuable agricultural product.

Wheat growing in the wider Darling Plains area was hindered by high summer rainfalls and entered the area comparatively slowly from the eastern boundary with New England. It eventually spread across the whole area especially with the break-up of the large pastoral stations. The discovery of breeds that could withstand the northern summers, crowned in 1946 with the northern premium hard wheats which demanded high prices and resulted in Moree becoming the centre of an enormous wheat growing region (Heritage Office 1996:84).

## 3.11 Urban Development

Urban development prior to 1850 was limited due to a sparse and poor population. In 1847 Wee Waa had a courthouse and lock-up and Dubbo has commissioner's headquarters and courthouse (Heritage Office 1996: 81). A town site was identified in 1848 for Narrabri. While small villages grew up, travellers recount that the remote country was covered by numerous isolated inns, some of which grew into towns, while others have collapsed in ruin. The Australian writer Henry Lawson described the towns along the rail line as 'consisting of a public house and a general store, with a square tank and a school- house on piles' (Heritage Office 1996: 80).

Settlement and growth came to the region in the 1880s and by 1891 Moree had become a municipality and by 1902 possessed Land Office, newspaper and three churches, as well as physicians, dentists, chemists, solicitors, stock and station agents, tobacconists, bookmakers, plumbers, saddlers, a surveyor, photographer, jeweller, hairdresser, undertaker, coach-builder, brewery, sawmill brickworks and hospital (Heritage Office 1996: 84).

The construction of the inland railway was a very significant development in the late nineteenth century leading to the establishment and survival of villages and towns. The prosperity and growth of villages and towns depended on whether a rail line linked the settlement with the wider NSW.

### 3.11.1 Narrabri

The first squatting run in the area of Narrabri, named 'Nurrabry', was taken up in 1834. A town site was identified in 1848 at the junction of the roads heading to the south and west as the surrounding area had been taken up as sheep and cattle runs, including privately owned land and land owned by the AA Co. A hotel was licensed in 1858 and the town proclaimed in 1860. The importance of the town quickly grew with the building of the courthouse in 1864 to 1865, the commencement of a coach service in 1865 and the opening of the public school in 1868 (OEH, nd.).

Narrabri is situated on the northern edge of the Piligra Scrub which resulted in an important lumber mill being established there (Heritage Office 1996: 84). Wheat growing began in the region in 1873 and the population climbed from 313 in 1871 to 1,977 in 1891. Settlement was assisted by the coming of the railway to Narrabri West in 1882 and the line from Moree to Narrabri opened in 1 April 1897 (OEH nd.).

The proposal site commences approximately 3 kilometres north of Narrabri.

## 3.11.2 Edgeroi

The village of Edgeroi was named after the 150,000 acre Edgeroi Station which was established as one of the region's largest in the early 1880's until it was broken up for soldier settlement blocks after World War II (NSC nd.). A school opened as Edgeroi Station in February 1884, changed its name to Edgeroi in 1901 and closed in December 1978.The railway station opened in April 1897. A post office opened at the railway station 1 August 1912 and moved to a new site 20 August 1913 (refer to **Plate 3.4**) (Forsyth 2002: 29-30).

The woolshed located on Edgeroi (pastoral) station was at one point the largest in the southern hemisphere with 52 stands (refer to **Plate 3.5**) (NSC nd.). The woolshed was located north of the village of Edgeroi and had a separate railway station constructed for it which opened in April 1897 (Woolenget Railway Station) (refer to **Plate 3.5**).

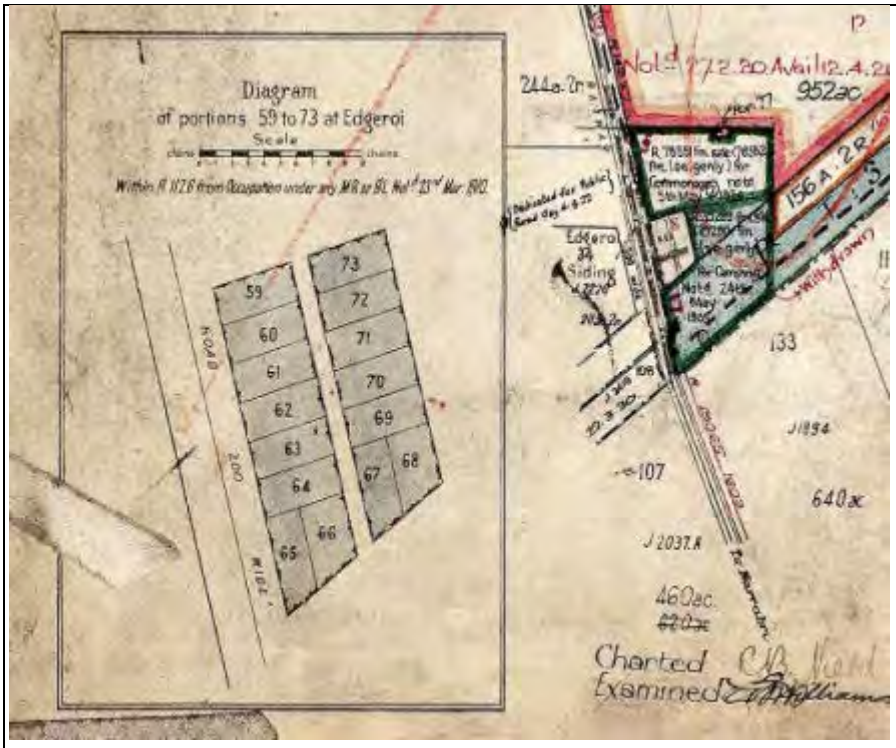



**Plate 3.4**

Detail of 1913 Nundi Parish Map showing the Village of Edgeroi

**Plate 3.5**

Woolshed at Edgeroi Station 1951



### 3.11.3 Bellata

The 1866 Gazetteer lists a pastoral holding in the area of Bellata as being held by Alexander Munro. The holding comprised an area of 9,112 hectares and had a capacity of 4000 sheep (Forsyth 2002: 52-53). Bellata was originally known as Woolabra which is thought to be a corruption of the adjacent parish name 'Woolabrar'. In the late 1800's when there was a shortage in currency in NSW Woolabra produced the Woolabra one pound note, which was legal tender throughout NSW (NSC nd.).

A school opened in March 1889 as Woolabra and changed its name to Bellata in February 1909. A post office opened as Woolabra on 1 September 1899 and changed its name to Bellata on 1 March 1909 (Forsyth 2002: 52-53). A court house (later used as a police station and residence) was constructed on Railway Parade in 1902; the building was designed by the Government Architect WL Vernon (OEH nd.) (refer to **Plate 3.6**). The building is now heritage listed (refer to **Table 2.1**).


**Plate 3.6**

1898 Plan of the Village of Bellata



### 3.11.4 Gurley

Gurley pastoral station boundaries are first described in the 1848 Government Gazette. It is recorded as Gurley and Bumble with an estimated area of 100,000 acres (when surveyed 30 years later in 1879 it was determined it to be 240,000 acres). While the station changed ownership several times it was recorded to have been sold by the Bank of Australasia to E. Hamilton with 8,000 or 9,000 sheep for £2000 in 1847 (Mahaffey, 1989:13-14).

The village of Gurley began with the establishment of a store by Mr Gerald Kaines in a small timber building. A school was opened in January 1873, however it closed in May 1915. The school later reopened at the railway station in February 1920 and closed again July 1926 (Forsyth 2002: 115). The siding (later station) at Gurley was opened in April 1897 and the main industry in the area until the 1930s was sheep raising with the railway being utilised for the transport of wool. The first train from Moree to Narrabri arrived on the first of April carrying two passengers; a Mrs Ritter and her baby daughter Florence. The railway station included a water tank, small station structure, trucking yards and wool-loading dump. A small timber station master's residence with a chimney and water tank was located behind the station (refer to **Plate 3.7**) (Mahaffey, 1989:38). The post office opened as Gurley Siding on the 1 October 1902 and changed its name to Gurley on the 17 January 1917 (Forsyth 2002: 115).

Gurley was proclaimed a village on the 28 May 1913 and subsequently the Land Department released several 6 acre blocks as residential sites (refer to **Plate 3.8**). The hotel was also opened in Gurley in 1913 with the licence transferred from the Millie Village which went into decline after the construction of the railway decreased traffic through the village formerly located on the Narrabri- Moree Road (Mahaffey, 1989:36).

Wheat was introduced to the area in the late 1930s and the Gurley Weigh-bridge Co. Pty. Ltd. Was established and weighbridge was constructed for the weighing of the wheat delivered in bags to the station which was stacked in a shed opposite the railway station, by 1968 the station only accepted bulk wheat (Mahaffey 1989).

**Plate 3.7**

Photograph showing the first Train to arrive at Gurley (April 1897)

Note stationmasters residence behind station building and store in right of photo




**Plate 3.8**

1913 Plan of the Village of Gurley

### 3.11.5 Tycannah

A railway station opened at Tycannah on 1 April 1897. A post office opened 1 January 1927 and closed 30 May 1931 (Forsyth 2002: 256).

### 3.11.6 Moree

The Moree region was first explored by Europeans in 1827 and shortly after settlement began in 1836 in the area (Regis 2002). James Cox was recorded on the pastoral property 'Moree' in August 1844. The population of the region had reached 100 people by 1848. The first general store at Moree was opened in 1852 by James Brand which soon incorporated a post office as recorded in the Government Gazette of 30 August 1853 (Forsyth 2002: 161-162). Surveys for the town of Moree occurred in 1860 and the first sale of town and suburban lots occurred on the 25 June 1862 (Forsyth 2002: 161-162). Within the next ten years the town grew to have three hotels, a butcher, a saddler, a school and a population of 107 (refer to **Plate 3.9**) (Heritage Office 1996: 83). Moree is located within the artesian basin and the first bore was sunk in 1895. While the bore water was unsuitable for irrigation as it contained large proportions of sodium carbonate and sodium chloride it was found to have medicinal properties. As result of its higher temperature it was also used in the wool –scouring industry; an important economic driver for the early development of Moree (Regis 2002).

**Plate 3.9**

1909 Town Map of Moree

#### 3.11.6.1 Moree Railway Station

As discussed in **Section 2.1** Moree Railway Station is listed on the ARTC S170 Heritage & Conservation Register and Moree Plains LEP 2011. The station is located on the Mungindi line. It opened in 1897 and was initially utilised as the major rail head for the large sheep stations in the vicinity. The original station included sheep and cattle yards, a passenger station building and platform, urinals, a goods shed with goods platform, wool loading bank, single-road carriage shed, weighbridge, a station master's residence, and a locomotive servicing depot consisting of a single road engine shed, turntable, water tank, and coal stage. At the opening of the station the Mayor at the time made critical comments as to the modest and utilitarian appearance of the buildings which reflected the cost efficiencies of the pioneer lines (OEH Moree Railway Station Listing Sheet, nd).

By 1904 the importance of Moree Railway Station had increased and it was now a junction station. An island passenger platform was constructed with a new considerably larger timber station building. A brick refreshment room was constructed in 1928 to 1929 which consisted of a bar, dining room, kitchen, cellar (located below the bar), storage facilities and toilets for staff. This building was converted during the 1960s to station management offices (OEH Moree Railway Station Listing Sheet, nd).

Following the opening of the Moree to Inverell branch line in 1901 the locomotive depot was upgraded, the engine shed was extended, and inspection and ash pits, a water tank, and a rest house constructed. The extension of the carriage shed occurred in 1911, additions to the rest house in 1918, as well as a further extension to the engine shed and the installation of new water service facilities in 1930. When the Camurra to Boggabilla branch line opened in 1932 traffic through the station increased and in 1939, a larger 60-foot diameter turntable from Grafton replaced the original 50-foot diameter turntable. By the 1960s steam servicing equipment was gradually removed due to the introduction of diesel-electric locomotives. In 1980 the crew rest house was removed. By the end of the 1990s the depot had been closed, and the majority of its buildings demolished (OEH Moree Railway Station Listing Sheet, nd).

Two cottages are reported to have been constructed on railway land associated with the railway. A station master's cottage was located on Morton Lane and appears to have been built in the early 1900's. A second cottage was constructed at 56 Morton Street during the railway construction period when railway tents were falling into disrepair. The timber and fibro cottage with a corrugated iron skillion roof was constructed of material provided by the railway authority and material purchased from the railway. Both cottages were demolished during the construction of the Moree Bypass and are no longer located within the rail corridor (Regis 2002).

### 3.11.7 Crooble

The Crooble School opened in September 1932 and closed in December 1969. A post office opened 1 March 1938 and closed 31 May 1979 (Forsyth 2002: 232-233). Refer to **Plate 3.10** showing the plan of the Village of Crooble in 1929.

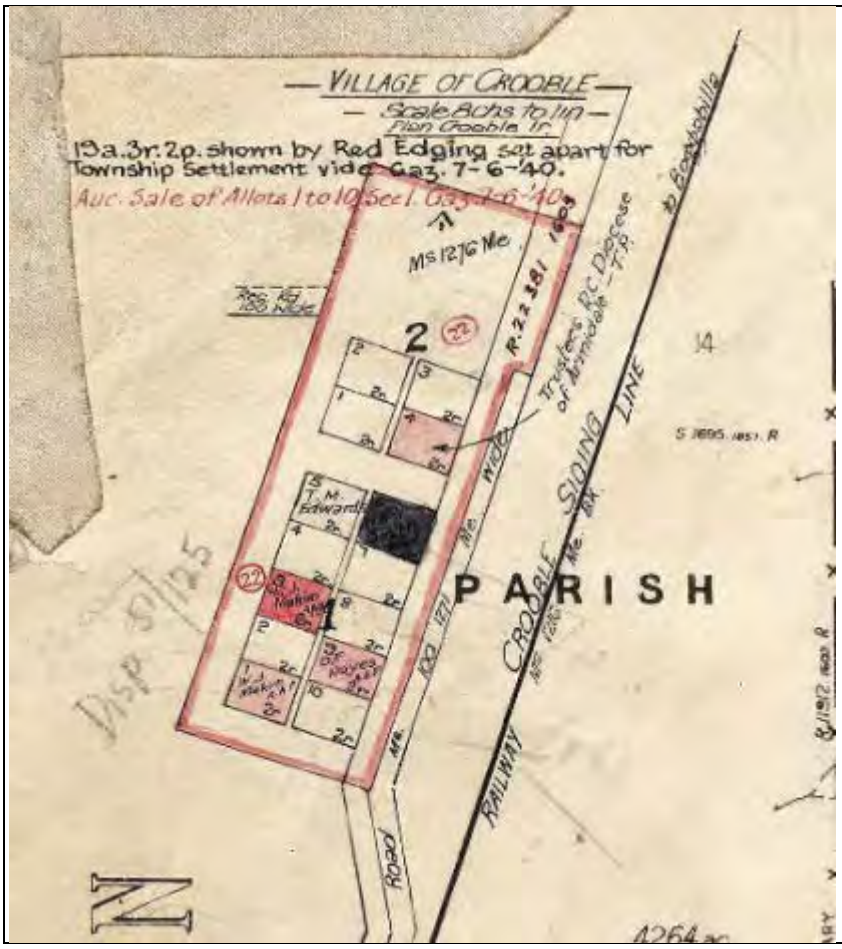



**Plate 3.10**

1928 Plan of the Village of Crooble



## 3.11.8 Croppa Creek

In 1891 Fergus Hume Belford (1851-1902) acquired a crown lease of 18,200 acres on Croppa Creek and called it Belmore. Sections of the lease were heavily timbered. Belford felled and cleared portions of the property and attempted to grow wheat and graze sheep (CCEC 1987:86).

Between 1926 and 1928 it was confirmed that the railway would travel through the area, however the original proposed site of the siding at Croppa Creek was further south at the 443 mile peg and called Poppinguy. This site was determined to be unsuitable so it was moved north to the 445.5 mile peg and renamed Croppa (CCEC 1987:88). In 1929 during the railway construction there were two railway camps south of Croppa Creek, one for married people and one for single men (CCEC 1987:112). The railway station was opened on the 30 June 1932 (nswrail.net nd) and due to confusion between Croppa Railway Station and a property named Croppa, the railway station name was changed to Croppa Creek on the 1 November 1932 (CCEC 1987:88). During the late 1920's Fergus Belford Jnr constructed a house close to where the siding was proposed adjacent to the railway boundary (CCEC 1987:88).

The Croppa Creek Station consisted of a raised platform, waiting room, store room/ticket office, water tank, toilets, and a station master's residence nearby. The 'loop line' had an elevated goods shed, a second raised platform for loading, sheep and cattle yards. A wheat bag stack was located north of the stock yards and in 1963 another loop line to service grain silos was constructed. The weighbridge was constructed in the neighbouring Travelling Stock Route by the local farmers as the Railway Department would not allow its construction on Railway land. As production grew in the 1930s two open sided sheds were constructed beside the railway line to store the bagged wheat (CCEC 1987:119).

In the early 1930s Croppa Creek village consisted of the rail siding, J.A. Macgregor's Store and three or four huts (CCEC 1987:113). Land was resumed from Belford's property Belmore and residential allotments were set aside on the 7 June 1940; by this point Belmore had reduced in size to only 3,867 acres (CCEC 1987:86). **Plate 3.11** shows a 1952 town plan of Croppa Creek; noting that the area was set aside for township settlement in June 1940. A school opened at Croppa Creek village in January 1949 and a post office opened on the 16 August 1937 (Forsyth 2002: 234).

As the railway service declined in the 1960s the yards, 5 ton crane and goods shed were sold. During the early 1980s the line was upgraded with ballast and heavy duty rails and steel sleepers and the siding, ramps and offices were bulldozed 'into a hole in the ground' (CCEC 1987:113).

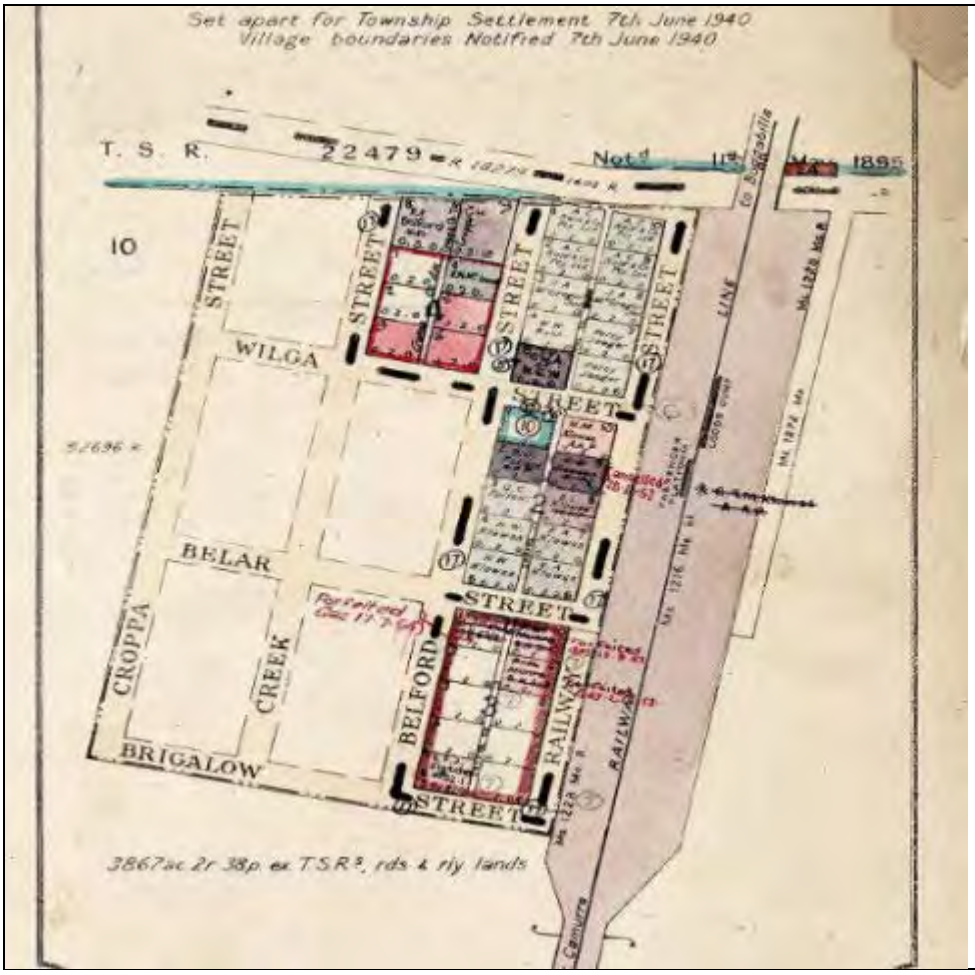



**Plate 3.11**

1952 Town Plan of Croppa Creek



## 3.11.9 North Star

North Star Railway Station was constructed adjoining the small town of Wilby, however the name Wilby was already in use for a town and station in Victoria so the town's name was changed to North Star. A post office opened 17 May 1937 and a school opened January 1939 (Forsyth 2002: 37).

A thousand men were camped at North Star during the construction of the railway as one of the railway gangs was based there (CCEC 1987:112). The 1931 Parish Map of Mingan describes the Village as the 'Private Village of North Star'. It was built on subdivided land owned by the Commercial Banking Company of Sydney (refer to **Plate 3.12**). The land had previously been owned by a David Sutton. The village of North Star is not shown on the 1918 Parish Map.


**Plate 3.12**

Detail of 1931 Parish Map of Mingan

Shows the Village of North Star adjacent to North Star railway station



## 3.12 Railway

The railway spurred the growth of many inland towns, with settlement at Narrabri increasing with its arrival in 1882. Moree expanded with a town hall, grandstand at the oval and boom-style architecture of the 1880s (Heritage Office 1996: 84).

Although the first steam railway between Sydney and Parramatta opened in 1855, the extension west was delayed with the engineering issues presented by the Blue Mountains. Bathurst and Orange were finally reached by rail in the 1870s and the extension of the line to Molong served as the railhead for Parkes and the western districts until the 1890s.

The railways in NSW were built to 2 main standards: main line and branch line / Pioneer Lines. In the period 1910 to 1930 a large number of branch railway lines were constructed through western and north western NSW with the aim of establishing access to wheat growing areas and also reaching the edge of the productive wool growing areas. These branch lines were known as Pioneer Lines (refer to **Section 3.12.1**) which had a cheaper railway construction method than the main rail lines. While larger towns were established independent of (and not dependant on) the railway (Dubbo), urban centres were established as the railway extended through the Darling Plains region (Moree and Narrabri) and smaller towns were created specifically by the arrival of the railway (Bellata) (Heritage Office 1996:80-87). The development of the railway through the region enabled the bulk transportation of wheat and was a major factor in encouraging agricultural expansion through the district as it reduced or eliminated 'the long and costly haul by slow horse transport to distant railheads' (Tindall 1982:28). The inland rail line runs through the heart of the NSW wheat belt.

### 3.12.1 Pioneer Lines

The economic depression of 1889 to 1894 dramatically slowed railway construction in NSW and when expansion of the rail system resumed, it was under a new era of austerity. The most dramatic feature of the change was the advent of the Pioneer Line. These lines were an innovation that represented a shift away from British railway practices to those used in the United States.

Freight rail traffic was considered to be seasonal and not justify the expense of not being utilised for much of the year. In 1894, Chief Railway Commissioner Edward Eddy and Henry Deane, the Engineer-in- Chief for Railway Construction, considered the options available for the construction of branch railway lines. Deane visited North America and Europe to investigate cheaper methods of railway construction. Practices in the USA particularly interested him because of the similar conditions there. Deane noted that it was common to construct lines initially without using ballast. Ballast could be added later as an improvement when the rail line had earned sufficient profits to warrant the added expense. Deane subsequently recommended that the American practices, including limited earth works, a reduced number of sleepers, light rails, the absence of ballast and a 20mph speed limit, were subsequently adopted in NSW (Fraser 1995:54-57, McKillop 2009:46).

The routes (known as Pioneer Lines primarily to serve agricultural areas) were selected to be located where possible beside or between the major inland rivers to minimise the need for construction of expensive bridges. The rail lines were constructed using light rails and low-quality sleepers with no ballast. Rail traffic was kept at a minimum except for the heavy seasonal demand dictated by the agricultural and pastoral industries. Train speeds were initially restricted to 15 miles per hour; which while being acceptable for goods trains was suitable for passenger trains who expected similar speeds to those on the main lines. As a result upgrade works commenced a few years after construction to increase the speed of trains to 30 miles per hour. Railway buildings were austere and of timber construction with station buildings being little more than sheds with minimal public facilities. Any bridges were to be simple short-span timber girder bridges as the cheapest way of water crossing. Deane and his engineers redesigned the timber girder bridge which contributed to the low costs of the Pioneer Lines. The new design changed John Whitton's timber girder bridge design (which had ballasted track supported by deck planks resting on four timber girders) to have an open deck or transom-top (a transom comprises timber laid across girders to attaché rails) eliminating the need for heavy ballast and allowed only three timber girders to be used (Fraser 1995:54-57, McKillop 2009:46). The inexpensive Pioneer Lines were upgraded if they proved to be profitable. The continued success of wheat growing ensured that most of the rail lines were upgraded.

The first Pioneer Lines were completed to Berrigan and Bogan Gate in 1896; essentially to support the wheat industry. The Pioneer Line from Jerilderie to Berrigan (a distance of 34.8 kilometres), opened on 14 October 1896 at a cost of £2036 per mile (McKillop 2009:46).

The Moree to Mungindi line was one of the Pioneer Lines. The line left Moree and travelled north across the Mehi and Gwydir rivers, then northwest from Camurra to Garah. It reached Camurra in 1913 and Mungindi in 1914 (OEH Camurra, Gwydir River Underbridge listing sheet nd).

As discussed, the policy for Pioneer Lines was to avoid expensive infrastructure such as bridges. However this was not always possible as Deane's timber girder bridge design was not able to be used to cross the larger inland rivers such as the Namoi and Gwydir rivers. In these cases large steel bridges were required at the larger river crossings and many were constructed across NSW. On the Mungindi Line bridges were required to be constructed over both the Mehi and Gwydir rivers near Moree and the Boomi River between Weemelah and Mungindi. The Moree to Inverell line also had to cross the Gwydir River which was a major inland river subject to flooding requiring long span high level bridges (OEH Gravesend, Gwydir River Underbridge listing sheet nd).

Prior to 1890 bridges in NSW were generally of British origin. Bridges were often fully imported from England and although more use was gradually made of local fabricators, British bridge technology remained dominant. After 1890 changes to American bridge technology with the development of large, tall steel trusses produced bridges which were cheaper but just as sound and durable as the sturdy British structures making imports of American technology more attractive.

The first of the American-type new long-span steel trusses constructed in NSW was over the Yass River for the 1892 Yass Tramway. This was followed by the five main line truss bridges on the 1894 Lismore to Murwillumbah railway which consolidated the use of American bridge technology and the two 180 foot steel through Pratt trusses crossing the River Gwydir at Gravesend and Camurra. These bridges were designed for the lightweight locomotives and wagons used on the Pioneer Lines and as such were a much lighter structure than those used on main lines. However the steel through Pratt truss bridge was one of the largest bridges used in NSW in the late nineteenth and early twentieth centuries (OEH Gravesend, Gwydir River Underbridge listing sheet nd).

By 1910 the American-type, steel through Pratt truss bridge used on the Mungindi Line and Inverell lines had become the standard for major rail and road bridges in NSW (OEH Camurra, Gwydir River Underbridge listing sheet nd) (refer to **Table 3.2**) .

**Table 3.2 Railway Steel Truss Bridges Constructed in NSW between 1892 and 1925**

| Year Constructed | Location | Number of Spans and distance |
|---|---|---|
| 1892 | Yass River, Yass | 1 span – 200 feet (61 metres) |
| 1894 | Leycester Creek, Lismore | 3 spans – 120 feet (36.6 metres) |
| | Coopers Creek, Bexhill | 1 span – 120 feet (36.6 metres) |
| | Wilsons River, Eltham | 1 span – 120 feet (36.6 metres) |
| | Pearces Creek, Pearces Cnr | 1 span – 120 feet (36.6 metres) |
| | Dunbible Creek, Dunbible | 1 span – 120 feet (36.6 metres) |
| 1898 | Ironbark Creek, Sandgate | 1 span – 110 feet (33.5 metres) |
| | Styx River, Newcastle | 1 span – 73 feet (22.4 metres) |
| | Liddell Creek, Liddell | 1 span – 73 feet (22.4 metres) |
| 1901 | Gwydir River, Gravesend | 2 spans – 180 feet (54.9 metres) |
| 1902 | Wollondilly River, Goulburn | 2 spans – 120 feet (36.6 metres) |
| | Hunter River, Singleton | 5 spans – 90 feet (27.5 metres) |
| 1903 | Murrumbidgee River, Gundagai | 1 span – 200 feet (61 metres) |
| 1905 | Richmond River, Casino | 1 span – 180 feet (54.9 metres) |
| 1906 | Namoi River, Manilla | 2 spans - 180 feet (54.9 metres) |
| 1907 | Nepean River, Penrith | 1 span – 120 feet (36.6 metres) |

| Year Constructed | Location | Number of Spans and distance |
|---|---|---|
| | | 4 spans – 193 feet (58.8 metres) |
| 1908 | Glennies Creek, Glennies Creek | 4 spans – 129 feet (39.3 metres) |
| 1911 | Hunter River, Oakhampton | 3 spans – 157 feet (48 metres) |
| | Paterson River, Paterson | 1 span – 200 feet (61 metres) |
| | Parramatta Road, Homebush | 2 spans – 73 feet (22.2 metres) |
| 1912 | Ironbark Creek, Sandgate | 1 span – 126 feet (38.4 metres) |
| | Parramatta Road, Lewisham | 1 span – 111 feet (33.8 metres) |
| 1913 | Williams River, Dungog | 1 span – 120 feet (36.6 metres) |
| | Karuah River, Stroud Road | 1 span – 120 feet (36.6 metres) |
| | Avon River, Gloucester | 1 span – 120 feet (36.6 metres) |
| | Manning River, Mt George | 4 spans – 200 feet (61 metres) |
| | Charity Creek, Mt George | 1 span – 120 feet (36.6 metres) |
| | Rocky Falls Creek, Mt George | 1 span – 120 feet (36.6 metres) |
| | Dingo Creek, Wingham | 1 span – 120 feet (36.6 metres) |
| | Gwydir River, Moree | 2 spans – 120 feet (36.6 metres) |
| | Mehi River, Moree | 1 span – 120 feet (36.6 metres) |
| | Hunter River, Muswellbrook | 1 span – 157 feet (48 metres) |
| 1914 | Boomi River, Mungindi | 1 span – 120 feet (36.6 metres) |
| 1915 | Dawson River, Taree | 1 span – 120 feet (36.6 metres) |
| | Lansdowne River, Lansdowne | 1 span – 120 feet (36.6 metres) |
| | Stewarts River, Johns River | 1 span – 120 feet (36.6 metres) |
| | Camden Haven River, Kendall | 1 span – 200 feet (61 metres) |
| | Bellinger River North Arm, Raleigh | 3 spans – 157 feet (48 metres) |
| | Bonville Creek, Bonville | 2 spans – 120 feet (36.6 metres) |
| | Sherwood Creek, Kungala | 1 span – 120 feet (36.6 metres) |
| | Argyle River, Moss Vale | 1 span – 133 feet (40.5 metres) |
| 1916 | Styx River, Newcastle | 1 span – 73 feet (22.4 metres) |

| Year Constructed | Location | Number of Spans and distance |
|---|---|---|
| 1917 | Hastings River, Wauchope | 3 spans – 157 feet (48 metres) |
| | Wilson River, Telegraph Point | 2 spans – 157 feet (48 metres) |
| | Cooperabung Creek, Cooperabung | 1 span – 120 feet (36.6 metres) |
| | Pipers Creek, Kundabung | 1 span – 120 feet (36.6 metres) |
| | Macleay River, Kempsey | 3 spans – 200 feet (61 metres) |
| | Wybong Creek, Sandy Hollow | 1 span – 157 feet (48 metres) |
| 1918 | Lachlan River, Forbes | 1 span – 157 feet (48 metres) |
| | Talbragar River, Elong Elong | 1 span – 120 feet (36.6 metres) |
| 1920 | Railway Parade, Rozelle | 1 span – 90 feet (27.4 metres) |
| | The Crescent, Annandale | 2 spans – 108 feet (32.9 metres) |
| | Wentworth Park Road, Glebe | 1 span – 75 feet (22.9 metres) |
| 1921 | Coxs River, Wallerawang | 1 span – 57 feet (17.4 metres) |
| 1923 | Nambucca River, Macksville | 2 spans – 157 feet (48 metres) |
| | Bellinger River South Arm, Raleigh | 3 spans – 200 feet (61 metres) |
| 1924 | Orara River, Glenreagh | 1 span – 157 feet (48 metres) |
| | Prospect Creek, Carramar | 1 span – 120 feet (36.6 metres) |
| 1925 | Macquarie River, Dubbo | 2 spans – 120 feet (36.6 metres) |
| | Illawarra Lines, Sydenham | 1 span – 123 feet (37.5 metres) |

Information from Fraser 1995:66

### 3.12.2 Railway Lines

**Table 3.3** indicates the existing railway lines proposed to be upgraded by ARTC as part of the Narrabri to North Star section of the Inland Rail project and the dates the lines opened.

**Table 3.3 Existing Rail Lines**

| Rail Line | Extent | Date Opened |
|---|---|---|
| Mungindi Line | Narrabri South Junction to Moree | 1882 |
| | Moree to Camurra | 1913 |
| Boggabilla Branch | Camurra to North Star | 1932 |

The Mungindi Line commences at the major rail centre of Werris Creek before heading north to the town of Mungindi on the Queensland border. Along the line are the major towns of Narrabri and Moree. The line is operational for transporting mainly grain. The final section of the line has been redundant since floodwaters damaged the line in 1974. The Mungindi line opened from Narrabri to Moree on 1 April 1897 as a single track. The construction contract for the rail line between Narrabri and Moree was awarded to W Finlayson, H. Smith and J. Timms on 10 July 1895.

The Boggabilla line runs from Camurra up to the town of Boggabilla on the Queensland border. Planning for the line began in 1902 when a survey was commissioned for a railway line from Moree to Boggabilla. However it was determined the most cost effective route was to branch at Camurra instead of Moree as it would avoid the necessity of a second bridge over the Gwydir River and save 12 miles of track. The plans for the line didn't move forward until 1922 after agitation by farmers and local business men. The proclaimed plan was signed on the 16 February 1926 and it was approved by parliament 15 May 1928 (CCEC 1987:111). It opened as a rail line in 1932, and is currently truncated at North Star (nswrail.net nd.).

The construction works were undertaken by the Department of railways using day labour. As the construction of this branch line was undertaken during the depression there was no shortage of men; large camps sprung up along the alignment where men looking for work on the railway camped. Railway gangs were located at Camurra, Crooble, Croppa Creek, North Star and Boggabilla; 600 men camped at Windridge (south of North Star) and 1000 at North Star. The construction involved clearing siding sites to a width of 2 chains either side of rail centres and the track was cleared to 1 chain width each side. The earthworks were undertaken with draught horses and a single furrow plough, and tip drays for moving earth from cuttings to areas of fill (CCEC 1987:111).

### 3.12.3 Railway Stations

**Tables 3.4** to **3.5** and **Figure 3.3** indicate the railway stations opened along the Mungindi Line between Narrabri and Camurra and the railway stations opened along the Boggabilla Branch Line between Camurra and North Star. The dates the stations opened and closed are also indicated. Details of the railway stations and associated facilities are discussed in **Tables 3.6** and **3.7**.

**Table 3.4 Mungindi Line – Narrabri to Camurra**

| Station | Main Facility | Distance from Sydney (km) | Dates |
|---|---|---|---|
| Narrabri | Station – in use | 569.200 | 1897 – in use |
| Edgeroi | Station – closed | 593.600 | 1897 - ? |
| Woolenget | Unknown – closed | 596.864 | 1901 – 1951 |
| Bellata | Station – in use | 615.460 | 1897 – in use |
| Kilgowla | Unknown – closed | 627.913 | 1906 – 1974 |
| Gurley | Station – closed | 635.400 | 1897 – ? |
| Tycannah | Unknown – closed | 649.232 | |
| Moree | Station–- in use | 665.600 | 1897 – in use |
| Camurra | Station –- closed | 676.904 | 1913 – ? |

Information sourced from NSW Rail nd. and NSW Silos nd.

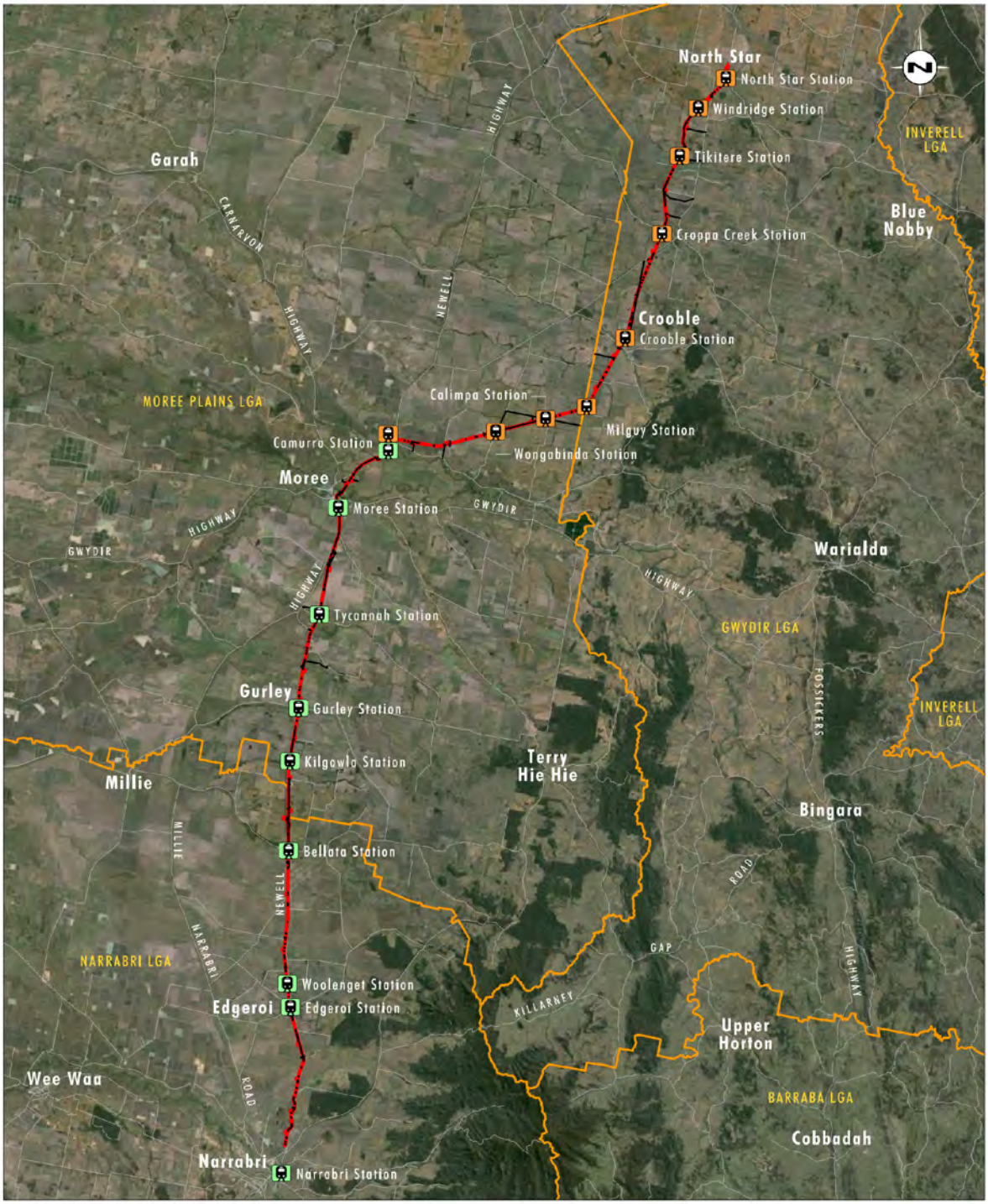



Image Source: Google Earth (2013)
Data Source: Geoscience Australia (2009), Parsons Brinckerhoff (2014)

0 10 20 40km
1:750 000

**Legend**

- Proposal Site
- Additional Assessment Area
- Local Government Area
- Railway Station Location - Mungindi Line
- Railway Station Location - Baggabilla Branch Line

FIGURE 3.3

**Narrabri to North Star Route Railway Station Locations**

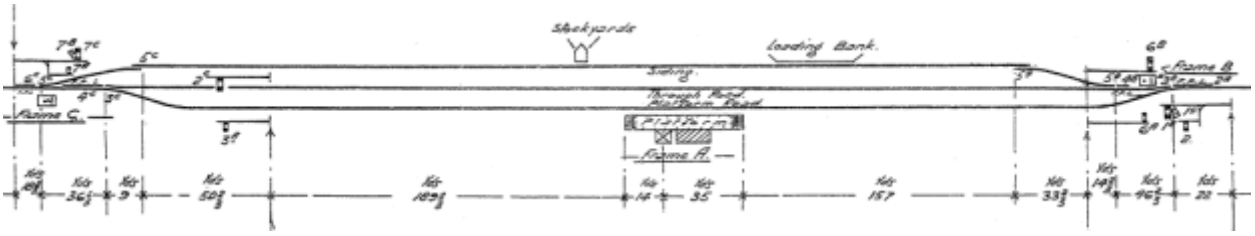
File Name (A4): R04/3607_149.dgn
20170324 13.41

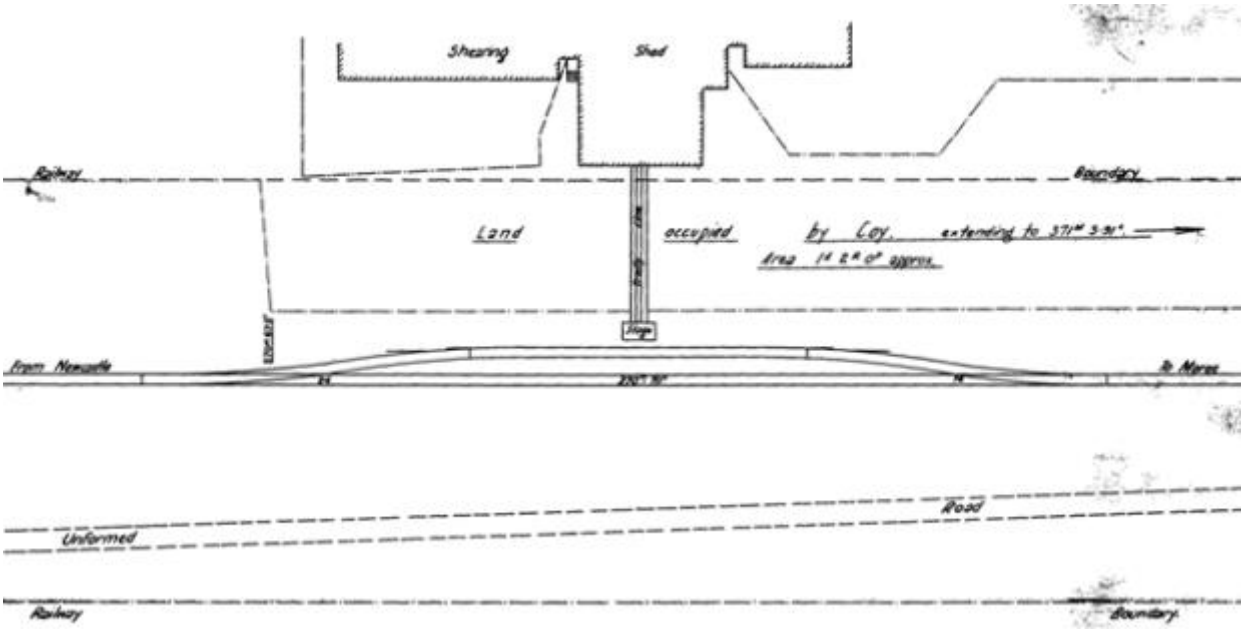
**Table 3.5 Boggabilla Branch – Camurra to North Star**

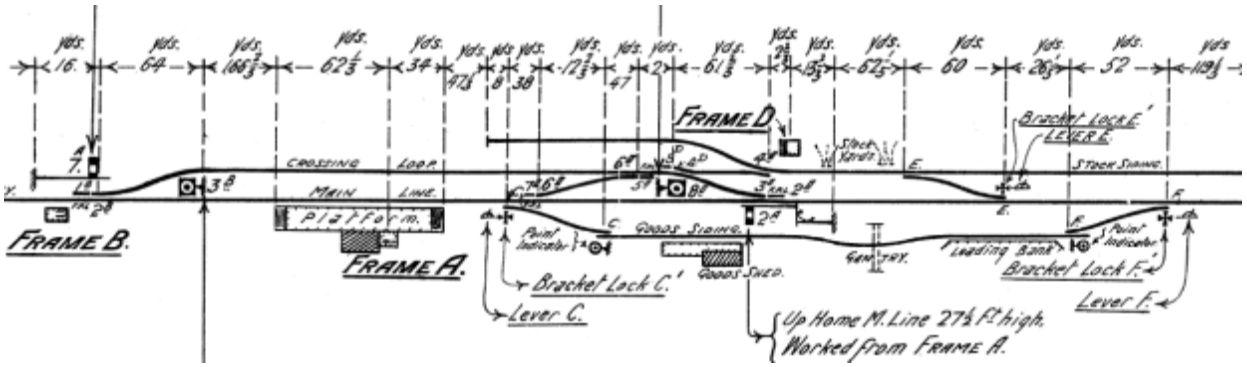
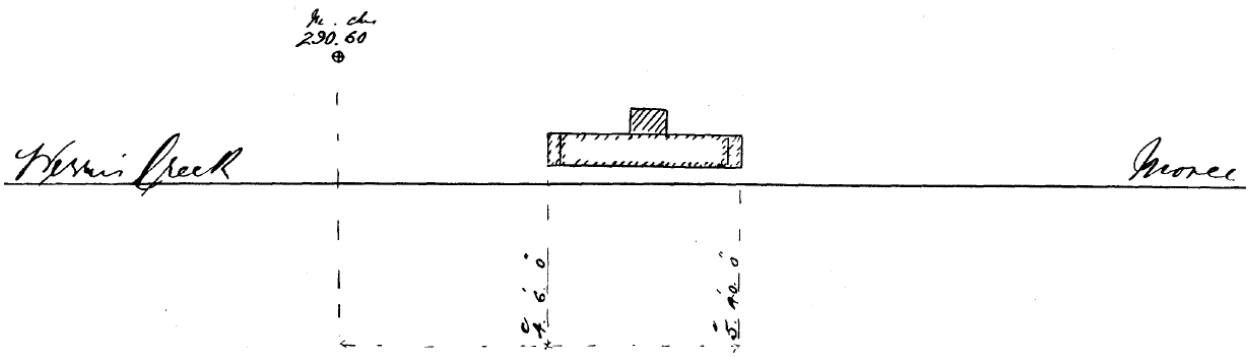
| Station | Main Facility | Distance from Sydney (km) | Dates |
|---|---|---|---|
| Camurra | Station – closed | 676.904 | 1913 – ? |
| Wongabinda | Station – closed | 693.708 | 1932 – 1975 |
| Calimpa | Siding –- closed | 701.100 | 1935 – 1975 |
| Milguy | Station –- closed | 706.800 | 1932 – ? |
| Crooble | Station – closed | 717.900 | 1932 – 1979 |
| Croppa Creek | Station – closed | 733.600 | 1932 – 1976 |
| Tikitere | Unknown – closed | 745.119 | 1934 – 1975 |
| Windridge | Unknown – closed | 752.718 | 1934 – 1975 |
| North Star | Station – closed | 758.570 | 1932 – ? |

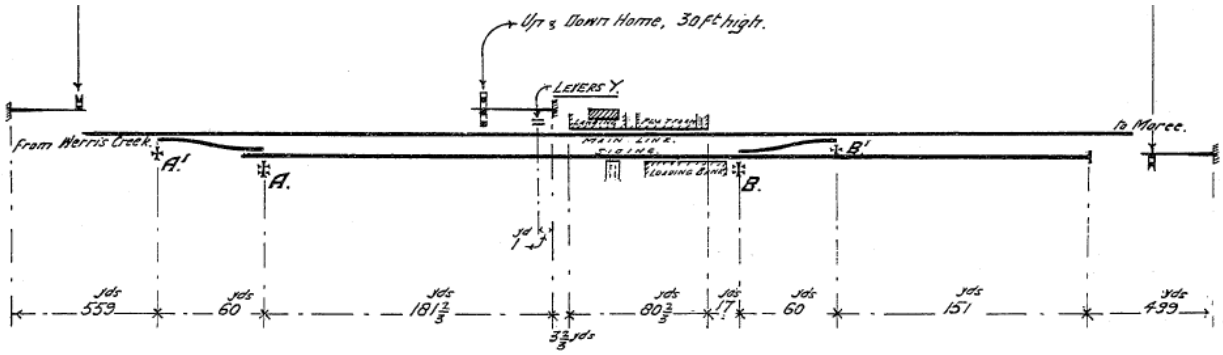
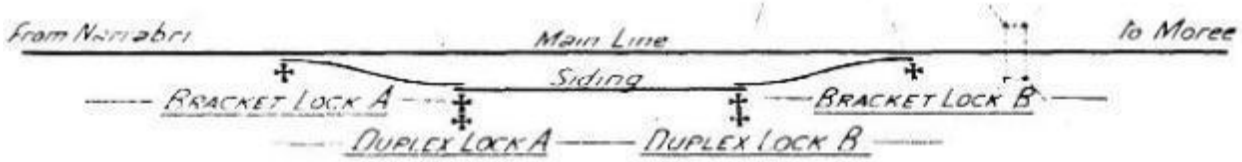
Information sourced from NSW rail nd. and NSW Silos nd.

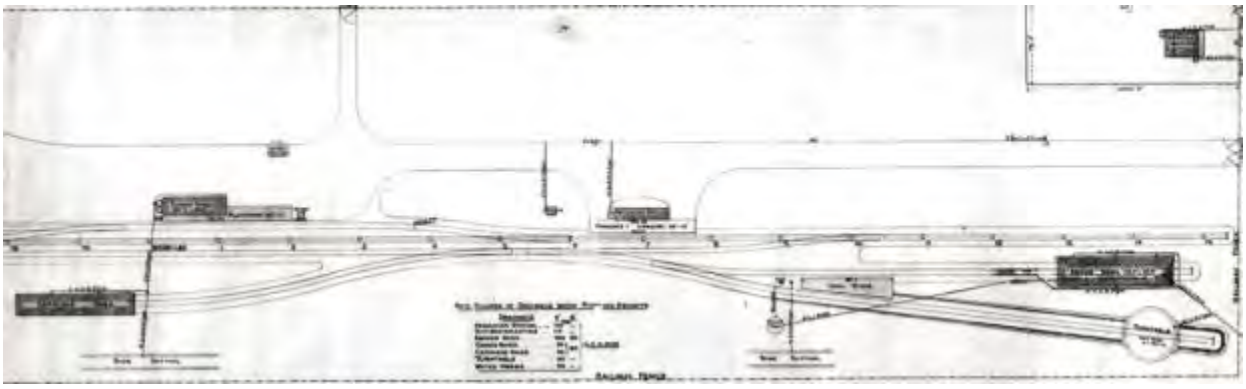
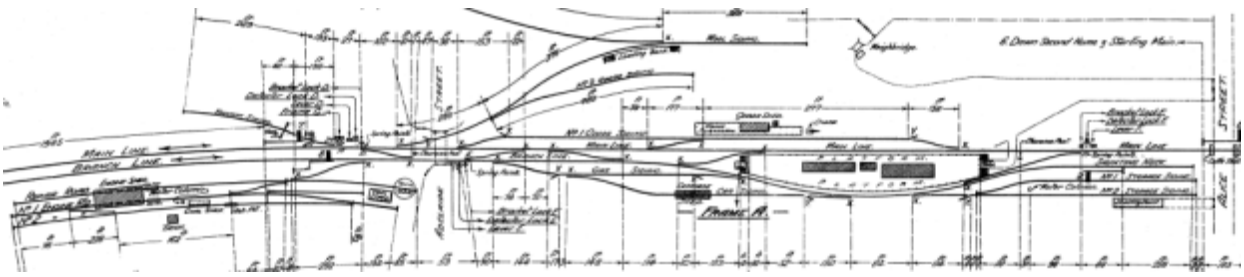
**Table 3.6 Mungindi Line Railway Stations – Narrabri to Camurra**

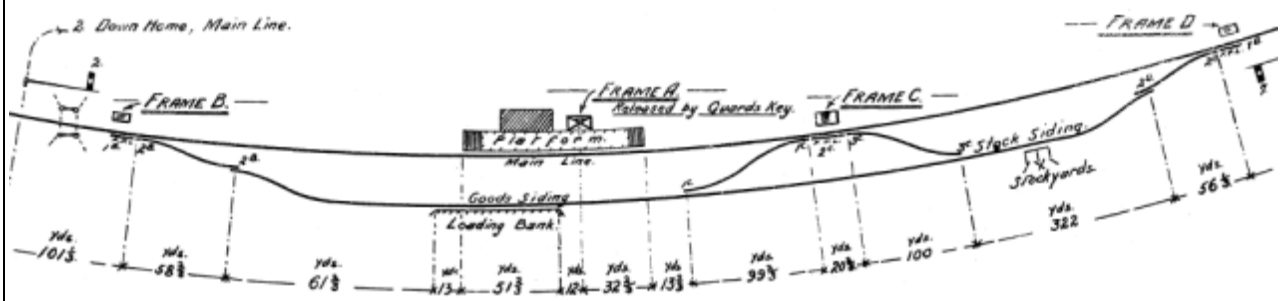
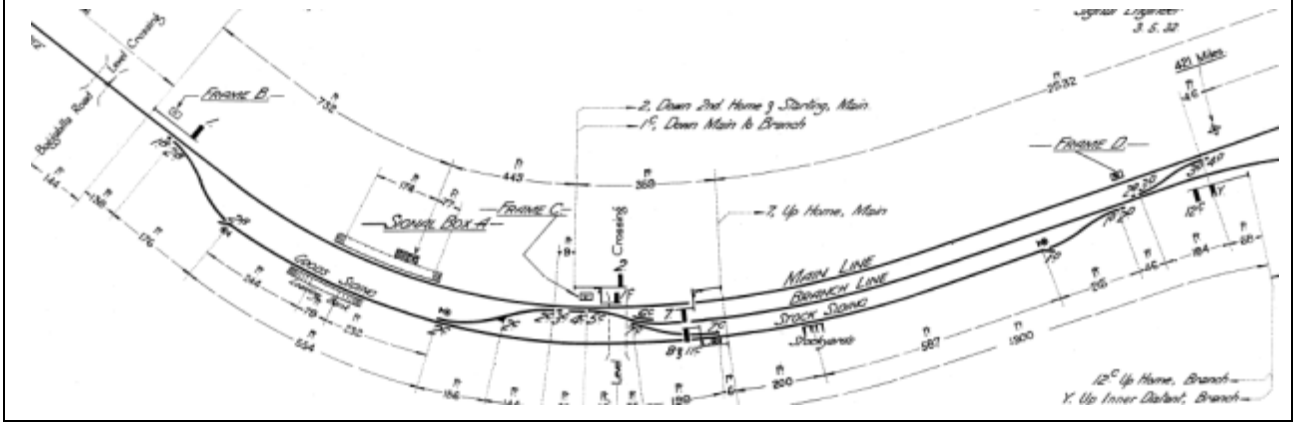
| Station | Discussion |
|---|---|
| Narrabri | Narrabri Station opened on 1 April 1897.<br>Narromine Station is located approximately 3.5 kilometres southeast of southern limit of proposal site. As such it is not considered in detail in this report. |
| Edgeroi | Edgeroi Station was opened on the 1 April 1897, closed 2 February 1972 and reopened November 1993.<br>The platform (35 metres long) was constructed on the up side (east side). A sheet metal 9.1 metres long station building a station masters office and general waiting room was constructed on the platform.<br>A goods and stock siding was constructed on the down side (west side) including a loading bank, stockyards and a grain shed with a capacity of 10,640 bags of wheat. The crossing loop was 392.5 metres long.<br>A station master's residence was constructed in 1914 for a cost of £438.<br>A wheat silo was constructed in 1962 and a wheat depot was constructed in 1966. |
| 1913 Plan of Edgeroi Station<br>  | |

| Station | Discussion |
|---|---|
| Woolenget | Woolenget Station was originally opened as Edgeroi Wool Siding on 9 September 1901. It was renamed Woolenget on 20 September 1904 and closed 18 July 1951. The Edgeroi Wool Siding was constructed at this location as a result of the Edgeroi Pastoral Company woolshed which was located immediately adjacent to the rail line. Refer to plan below showing the shed immediately adjacent to the rail corridor.<br><br>Woolenget became the siding for the New Zealand and Australian Land Co. before the area was broken up for soldier settlement blocks after World War II; after which it was used by Edgeroi Soldier Settlers Co-operative association. |
| Undated plan of Woolenget Station<br>  <br> | |
| Bellata | Bellata Station was originally opened as Woolabra on 1 April 1897. It was renamed Bellata 1 March 1909.<br><br>The platform (87.4 metres long) was constructed on the up side (east side). A timber station building was constructed by W. Mitchell (contracted 18 June 1896) containing a ladies waiting room, general waiting room, a station masters office and a 'out of' room was constructed on the platform.<br><br>The goods siding including a platform, 7.9 metres by 4.8 metres goods shed, 5 tonne crane, and loading bank is located on the east side of the line directly north of the passenger platform. The crossing loop was 664 metres long. The goods yard also included stockyards, a grain shed with a capacity of 12,900 bags of wheat and 20 tonne weighbridge.<br><br>A station master's residence was located to the southeast of the station within the railway land, it was demolished in 1988.<br><br>A wheat depot was built in 1955 and further silos and wheat depots were constructed throughout the early 1950's. |

| Station | Discussion |
|---|---|
| 1911 plan of Bellata Station<br>  | |
| Kilgowla | Although the rail line opened on the 1 April 1897, Kilgowla Station opened later on 12 May 1906. The station closed in 27 July 1974.<br>The Platform (19.8 metres long) was constructed on the down side (west side) and is likely to have included a small shelter shed.<br>The station was named after the name of the property owned by A. W. Meppem that surrounded the station on both sides of the railway. |
| 1911 plan of Kilgowla Station<br>  | |
| Gurley | Gurley Station was opened on the 1 April 1897 and closed in 1973.<br>The platform (91.4 metres long later reduced to 9 metres long) was constructed on the down side (west side). A timber station building contained a general waiting room, ladies waiting room, an 'out of' room and a station masters office. A second station building also of timber containing 5 rooms was also constructed in 1922.<br>A goods and stock siding was constructed on the up side (east side) and included a loading bank, a 10.9 metre by 10.9 metre goods shed, a 10 tonne crane and a grain shed with a capacity of 9,500 bags of wheat. The station yard had a 20 tonne road weighbridge. The crossing loop was 388 metres long and later extended to 639 metres long.<br>A wheat silo and depot were constructed in 1963 and 1968. The good shed was removed in 1973. |

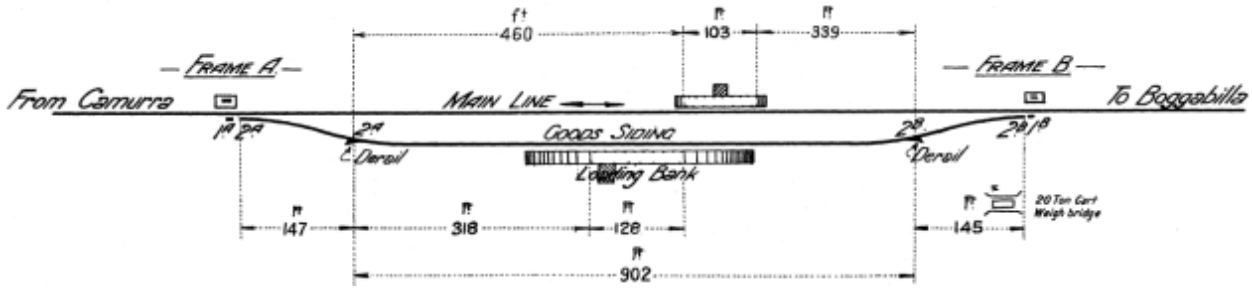
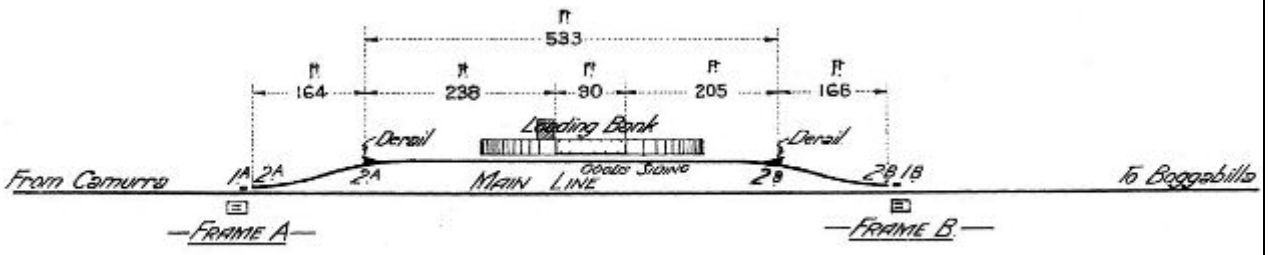
| Station | Discussion |
|---|---|
| 1903 Plan of Gurley Station<br>  | |
| Tycannah | Tycannah Station was opened on the 1 April 1897 and closed 27 July 1974.<br>This station was a goods siding only and there is no evidence that any platforms or buildings were ever constructed. The goods siding was removed on the 27 July 1974. |
| 1927 plan of Tycannah Station<br>  | |

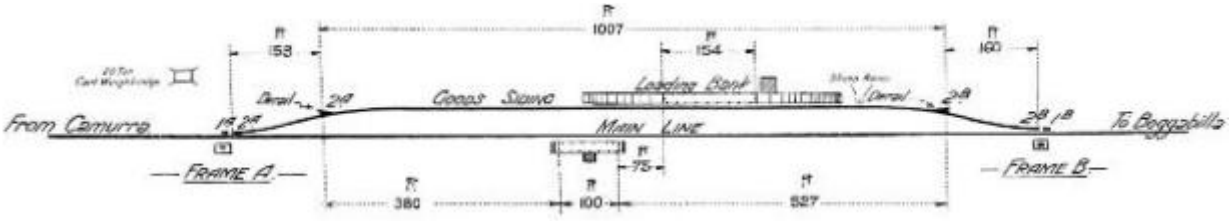
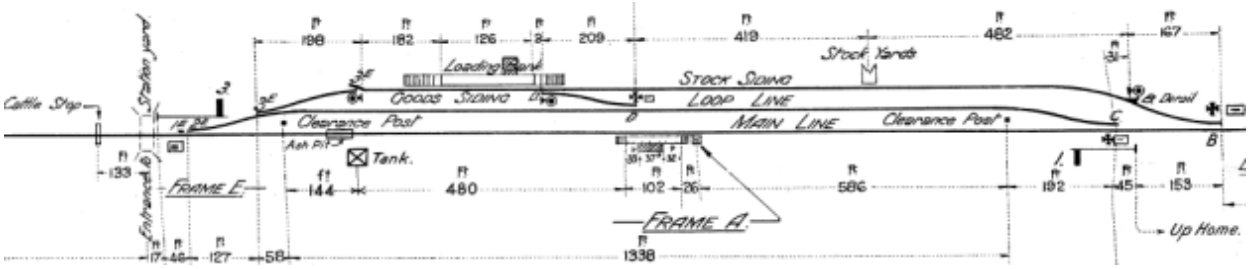
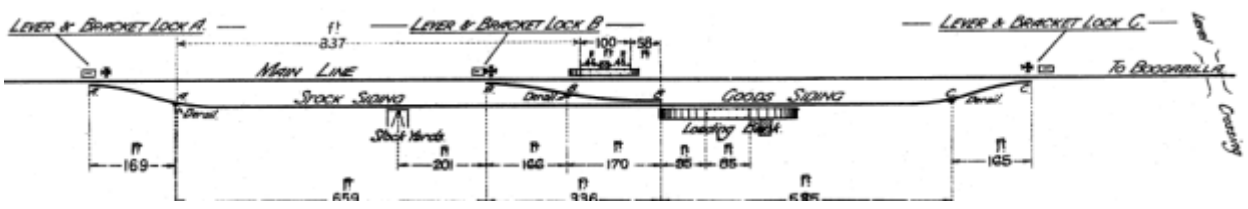
| Station | Discussion |
|---|---|
| Moree | Moree Station was opened on the 1 April 1897 as a terminus. The station area was reconfigured between 1897 and 1929 for the addition of the northern branch lines and the increased capacity required.<br><br>W. Mitchell was contracted on 18 June 1896 to construct the first platform at ground level along with the station building, station masters residence, goods shed, carriage shed and engine shed.<br><br>The second timber station building (32.6 metres long) was constructed in 1904 and contained a men's toilet, store room, ladies waiting room, locker room, meal room, 'out of' room and a traffic inspector's room. The third station building (constructed in 1928 to 1929) was brick built and 24.3 metres long. It included a refreshment room and stationmasters office. The fourth station building was constructed of timber and fibro and contained the booking and parcels office. The fifth station building is the current main building at the station. The brick island platform is 118.2 metres long.<br><br>The early goods yard consisted of a platform, good shed, crane, wool loading bank, and a weighbridge. The early station area also included a carriage shed, engine shed, coal stage and turntable. Later in 1902 a 90 kL water tank was installed.<br><br>The later goods yard included 2 up loop sidings, 2 down goods sidings, a wool siding, a vegetable oil siding and a silo siding. The yard had a 10 tonne crane, 20 tonne weighbridge, a 22.8 metres by 4.8 metres goods shed and a grain shed with an 800 wheat bag capacity.<br><br>A wheat silo and depot were constructed in 1963 and 1967. |
| 1896 plan of Moree Station<br>  | |
| Detail of 1929 plan of Moree Station<br>  | |

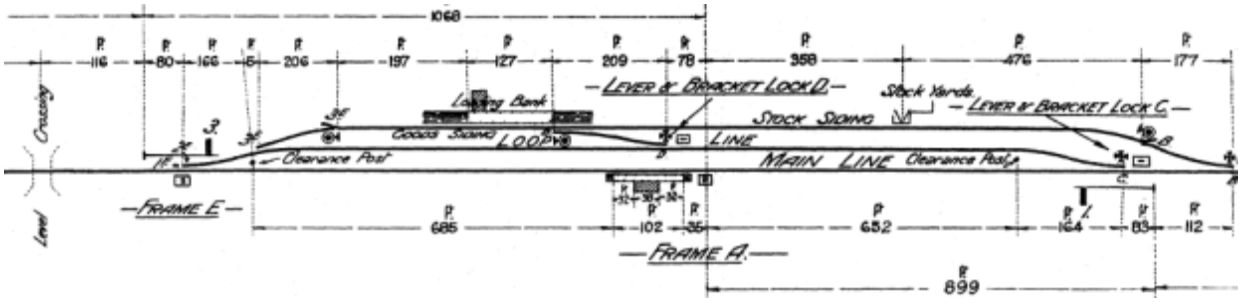
| Station | Discussion |
|---|---|
| Camurra | Camurra Station opened 29 September 1913, when construction began in February 1911 the station was originally named Boolooroo.<br><br>The original platform (76.2 metres long) was constructed on the down line (west side) with a timber station building constructed by the public works department. It was 15.8 metres long and contained general and ladies waiting rooms. A goods and stock siding was constructed on the up line (east side) and included a loading bank and stock siding.<br><br>Camurra Station was reconfigured with the construction of the Boggabilla Branch line which opened in 1932.<br><br>The new platform (48.1 metres long) was also constructed on the down line (west side) with a second timber station building (3.6 metres long) containing a general waiting room.<br><br>A goods and stock siding was constructed on the up side (east side) including a loading bank and stock siding. The loading bank was removed in 1975. |
| 1913 plan of Camurra Station<br>  | |
| 1932 plan of Camurra Station<br>  | |

Information in **Table 3.5** provided by ARHS and Forsyth 2002

**Table 3.7 Boggabilla Branch Railway Stations – Camurra to North Star**

| Station | Discussion |
|---|---|
| Camurra | Refer to **Table3.6** |
| Wongabinda | Wongabinda Station opened 20 June 1932. The station was closed 20 February 1975.<br>The platform was constructed on the north side of the line and a goods siding on the south side of the line. The goods siding consisted of a loading bank and included a 20 tonne weighbridge. |
| 1932 plan of Wongabinda Station<br>  | |
| Calimpa | Calimpa Station opened 20 June 1932. The station was closed 1 December 1987.<br>A goods platform (10.3 metres long) was constructed on the down line (north side) with loading and wool banks. No main line station platform was constructed |
| 1932 plan of Calimpa Station<br>  | |
| Milguy | Milguy Station opened 20 June 1932 and closed prior to 14 November 1983.<br>Platform (30.1 metres long) constructed on the up side (east side) of the line and a goods and stock siding on the down side (west side) of the line.<br>The station had a standard Pc. 1 type station building constructed of concrete containing a waiting room and 'out of' room. The goods and stock siding included a loading bank and stock yards.<br>Wheat depots were constructed in 1955 and 1970.<br>On the 14 November 1983 the station building was demolished. |

| Station | Discussion |
|---|---|
| 1932 plan of Milguy Station<br>  | |
| Crooble | Crooble Station opened 20 June 1932 and closed 2 December 1987.<br>Platform (30.4 metres long) was constructed on the up side (east side) of the line and a goods and stock siding on the down side (west side) of the line. The station also included a 1022 metre long loop line.<br>The station had a standard Pc. 1 type station building constructed of concrete containing a waiting room, out of room, station masters office and living room. The goods and stock siding included a loading bank, wool bank, 5 tonne crane, stock yards and a 90 kL water tank.<br>In 1963 a wheat silo was built. On the 24 November 1978 the goods siding and loading bank were removed. |
| 1932 plan of Crooble Station<br>  | |
| Croppa Creek | Croppa Creek Station opened as Croppa on the 20 June 1932 and was renamed Croppa Creek on the 1 November 1932. The station closed 2 December 1987.<br>Platform (31.9 metres long) was constructed on the down side (west side) of the line and a goods and stock siding on the east side of the line. The station had a standard Pc. 1 type station building constructed of concrete containing a waiting room, out of room and was later demolished. The goods and stock siding included a loading bank, and stock yards.<br>In 1963 a wheat silo was built and in 1968 a wheat depot was constructed. On the 7 July 1976 tenders were called for the removal of the stock yards. |
| 1932 plan of Croppa Station<br>  | |

| Station | Discussion |
|---|---|
| Tikitere | The line opened 20 June 1932, and Tikitere Station opened in June 1934. The station closed 20 February 1975.<br><br>The station was an operation for a nearby pastoral holding. There are no recorded details of any formal platform or buildings constructed. Tikitere was likely only a siding with a plan similar to Tycannah. |
| Windridge | The line opened 20 June 1932, and Windridge Station opened in May 1934. The station closed 20 February 1975.<br><br>There are no recorded details of any formal platform or buildings constructed. Windridge was likely only a siding with a plan similar to Tycannah. |
| North Star | North Star Station opened on the 20 June 1932 at the town of Wilby (renamed North Star). The station closed 2 December 1987.<br><br>Platform (102 feet long) constructed on the east side of the line and a goods and stock siding on the west side of the line. Additions of a ladies waiting room and toilets were made to the station in 1945.<br><br>The goods and stock siding included a loading bank, and stock yards. A 3 tonne crane moved from Glennies Creek was erected in 1937 and in 1941 a goods shed from North Goulburn was re-erected at the station.<br><br>Wheat depots were constructed in 1955 and 1965. On the 20 February 1984 the stock yards were removed and on the 10 September 1985 the station masters cottage was demolished. |
| 1932 plan of North Star<br>  <br> | |

Information in **Table 3.6** provided by ARHS and Forsyth 2002

## 3.13 Grain Silos and Sidings

The first country silo constructed in NSW was at Peak Hill. Although other silos were under construction at the same time, Peak Hill was the first silo to begin operating in 1918. Little wheat was delivered to the Peak Hill silo until 1920 as the previous two years were very dry with only 12 to 14 inches of rain recorded (NSW silos nd). An article from The Sydney Mail August 14 1918 reports:

*A satisfactory trial was recently made at Peak Hill (writes our correspondent) of the first of the completed silos for the bulk handling of wheat. Many farmers were present from the neighbouring districts, as well as from distant parts of the state and from Victoria, to witness the demonstration. Two truckloads of wheat were brought up for the test, and about a dozen wheat lumpers were instructed to take the bags from the trucks, cut them open, and empty the contents into what is called the receiving grating of the elevator leg. The machinery was driven by a Ronaldson oil engine. It soon became apparent that although the men were going as fast as they could possibly go, the receiving grating, was eating up the wheat faster than they could put it in, notwithstanding that the engine was only going at a medium rate of speed. A number of farmers then took a hand at opening the bags with pocket-knives. The truck of 200 bags was put through in 18 minutes, at a rate of about 2000 bushels an hour. It is estimated with a greater engine speed, 2300 bushels per hour could be handled. The elevator leg mentioned is part of the machinery to be installed in the future, when the grain will be received in bulk and emptied direct into the leg grating. It will also be necessary, one day to load grain in bulk from the silo to the trucks, and with a leg of this capacity, four trucks per hour, will be easily loaded (NSW Silos nd.).*

Although train stations along the rail line between Narrabri to Camurra were opened progressively from 1897 and Camurra to North Star from 1932, grain silos were not constructed along the lines until those at Narrabri in 1934. Until the silos were constructed, wheat would have been loaded direct from the farmers' wagons. Of the stations along the lines discussed in this report the following have associated grain silo facilities (from NSWsilos nd.):

- Narrabri (opened 1934)
- Edgeroi (dates unknown)
- Bellata (opened 1955)
- Gurley (dates unknown)
- Moree (dates unknown)
- Milguy (opened 1955)
- Crooble (opened 1966)
- Croppa Creek (opened 1968)
- North Star (opened 1955).

## 3.14 Historical Themes

A historical theme is a research tool, which can be used at the national, state or local level to aid in the identification, assessment, interpretation and management of heritage places (AHC 2001:1). Nine national historical themes have been identified by the Australian Heritage Commission (AHC now Australian Heritage Council). The Heritage Division, OEH has identified thirty-five historical themes for understanding the heritage of NSW. The development of the proposal site is broadly reflective of the history of the local region, and can be assessed in the context of the broader historic themes defined by the Heritage Division, OEH and AHC. In accordance with the Heritage Division and AHC framework of historic themes, the themes in **Table 3.8** are relevant to the proposal site and locality.

**Table 3.8 Historical Themes Relevant to the Proposal site and Locality**

| National | National Sub Themes | NSW Themes | Local Themes | Examples |
|---|---|---|---|---|
| Peopling Australia | Living as Australia's earliest inhabitants<br>Adapting to diverse environments<br>Migrating<br>Promoting settlement | Convict<br>Migration | Activities relating to incarceration, transport, reform, accommodation and working during the convict period in NSW.<br>Activities associated with the resettling of people from one place to another and the impacts of such movements. | Landscapes of control, convict built structure. |
| Developing local, regional and national economies | Surveying the continent | Exploration | Looking for overland stock routes<br>Looking for land with agricultural potential<br>Laying out boundaries | Explorers routes<br>Early mapping |

| National | National Sub Themes | NSW Themes | Local Themes | Examples |
|---|---|---|---|---|
| Developing local, regional and national economies | Developing Primary Production | Pastoralism | Activities associated with the breeding, raising, processing and distribution of livestock for human use. | Rural landscape, hay barn, dairy, vineyard, farmstead, fencing, shed, orchard. |
| | | Agriculture | Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes. | Pastoral landscape, homestead, fencing, well, water trough, shearing shed. |
| | | Mining | Activities associated with identification, extraction, processing and distribution of mineral ores. | Mining field or landscape, mine, quarry, processing plant, miner's office, collier, mine shaft. |
| Developing local, regional and national economies | Moving Goods and People | Transport<br>Building and maintaining railways | Activities associated with moving goods and people from one place to another, and systems for the provision of such services. | Highway, lane, stock route, bridge, footpath, aerodrome, horse yard.<br>Rail lines and stations. |

| National | National Sub Themes | NSW Themes | Local Themes | Examples |
|---|---|---|---|---|
| Building settlements, towns and cities | Making settlements to serve rural Australia<br>Supplying Urban Services | Land Tenure<br>Utilities<br>Accommodation | Activities and processes for identifying forms of ownership and occupancy of land.<br>Activities associated with the provision of services, especially on a communal basis.<br>Activities associated with the provision of accommodation, and particular types of accommodation. | Fence, survey mark, subdivision pattern, stone wall.<br>Bridge, culvert, weir, well, cess pit, reservoir, dam.<br>Homestead, cottage, house site (archaeological site). |
| Governing | Governing Australia as a province of the British Empire<br>Governing Australia's colonial possessions<br>Administering Australia | Government and administration | Activities associated with the governance of local areas, regions, the State and the nation.<br>Activities associated with maintaining, promoting and implementing criminal and civil law and legal processes. | Land administration and legislation |
| Educating | Training people for the workplace | Education | Activities associated with teaching | Agricultural training |

# 4.0 Physical Context

This section discusses the potential heritage items and potential historical archaeological resource present within, and in the vicinity, of the proposal site, identified through a search of relevant heritage registers, previous heritage studies in the area, historical research and field survey. This information, in conjunction with the historical context (refer to **Section 3.0**), forms the basis of the significance assessment (refer to **Section 5.0**) and management strategy (refer to **Section 6.0**).

## 4.1 Physical Context of the Rail Line

As discussed in **Section 1.4**, the proposal will generally be located along the existing rail alignment within the rail corridor between Narrabri and North Star in north-western NSW (refer to **Figure 1.2**). The rail corridor is generally defined by fences located approximately 20 metres either side of the rail line, however in some sections where fences are not present the rail corridor may be wider, extending out to about 30 to 40 metres from the rail line. At locations where construction works compounds are proposed the proposal site will extent outside of the rail corridor. The proposal site varies along the length of the proposal depending on the construction activities that are to take place in any given area.

The proposal site is typical of the Border Rivers/Gwydir and Darling Riverine Plains regions. The southern end of the proposal site is located immediately north of Narrabri on an embankment above the Namoi River. The alignment traverses the Gwydir River floodplain. The northern end at North Star is located south of the Macintyre River within the Border Rivers basin. The proposal site crosses 90 watercourses including rivers (Mehi River and Gwydir River), creeks (such as Croppa Creek, Mulgate Creek, Bobbiwa Creek, Gehan Creek, Tookey Creek and Gil Gil Creek) and other intermittent watercourses and canals constructed to convey irrigation waters.

The majority of the proposal site has been heavily modified by past and ongoing rail disturbances, including clearance and maintenance of the rail corridor, and surrounding agricultural activities.

## 4.2 Site Survey

### 4.2.1 2014 Field Survey

A targeted survey was conducted over the course of five (5) days from 10 September 2014 to 14 September 2014. The inspections, which covered the whole of the Narrabri to North Star rail alignment, were undertaken with the intention of inspecting and undertaking preliminary recording of the location, nature and current condition of:

- any sites (both Aboriginal and historical) identified during the database and literature review
- any additional sites (both Aboriginal and historical) identified during the field survey
- broad scale evaluation of landscape with reference to potential cultural heritage considerations.

Field survey was completed for the existing section of the rail line from south to north, commencing at Narrabri and concluding at North Star.

All watercourses and associated culverts and underbridges along the existing rail line were inspected to identify any that have the potential for any heritage significance (refer to **Section 4.5**).

### 4.2.2 2016 Field Survey

An additional targeted field survey along the proposal site was undertaken from 23 to 27 May 2016 along the Narrabri to North Star rail alignment focusing on the former railway stations located along the rail line, items with a statutory heritage listing and any additional potential items identified during the research component of this report. Field survey was again completed for the existing section of the rail line from south to north, commencing at Narrabri and concluding at North Star. All of the listed heritage items and potential heritage items identified within 500 metres of the proposal site during the surveys are shown on **Figure 4.1**.

## 4.3 Listed Heritage Items within the Proposal Site

The statutory heritage searches indicate that there are three locally listed heritage items within the proposal site:

- Moree Mehi River Underbridge (State Government Database number 4281692)
- Moree Railway Station (State Government Database number 4801208)
- Camurra Gwydir River Underbridge (State Government Database number 4281693)

These are listed in **Table 4.1**, identified on **Figure 2.1** and discussed below.

**Table 4.1 Listed Heritage Items within Proposal site**

| Location and Underbridge ID (chainage) | Description | Co-ordinates | Listings |
|---|---|---|---|
| Mehi River Underbridge, Moree | Moree – Mungindi Line<br>666.340 kilometres from Sydney | 776507.82 E<br>6736809.22 N | Australian Rail Track Corporation S170 Heritage & Conservation Register<br>Local significance |
| Moree Station – includes brick railway station building | As listed in LEP:<br>Gosport Street, Moree<br>Adjacent to Lot 158, DP 1157018<br>As listed on S170:<br>Morton Street | 776200.59 E<br>6736184.52 N | Moree Plains LEP 2011<br>State significance (on LEP **not** on State Heritage Register)<br>Railcorp S170 Heritage & Conservation Register<br>Local significance |
| Gwydir River Underbridge, Camurra | Camurra – Mungindi Line<br>676.220 kilometres from Sydney | 783498.32 E<br>6743161.41 N | Australian Rail Track Corporation S170 Heritage & Conservation Register<br>Local significance |

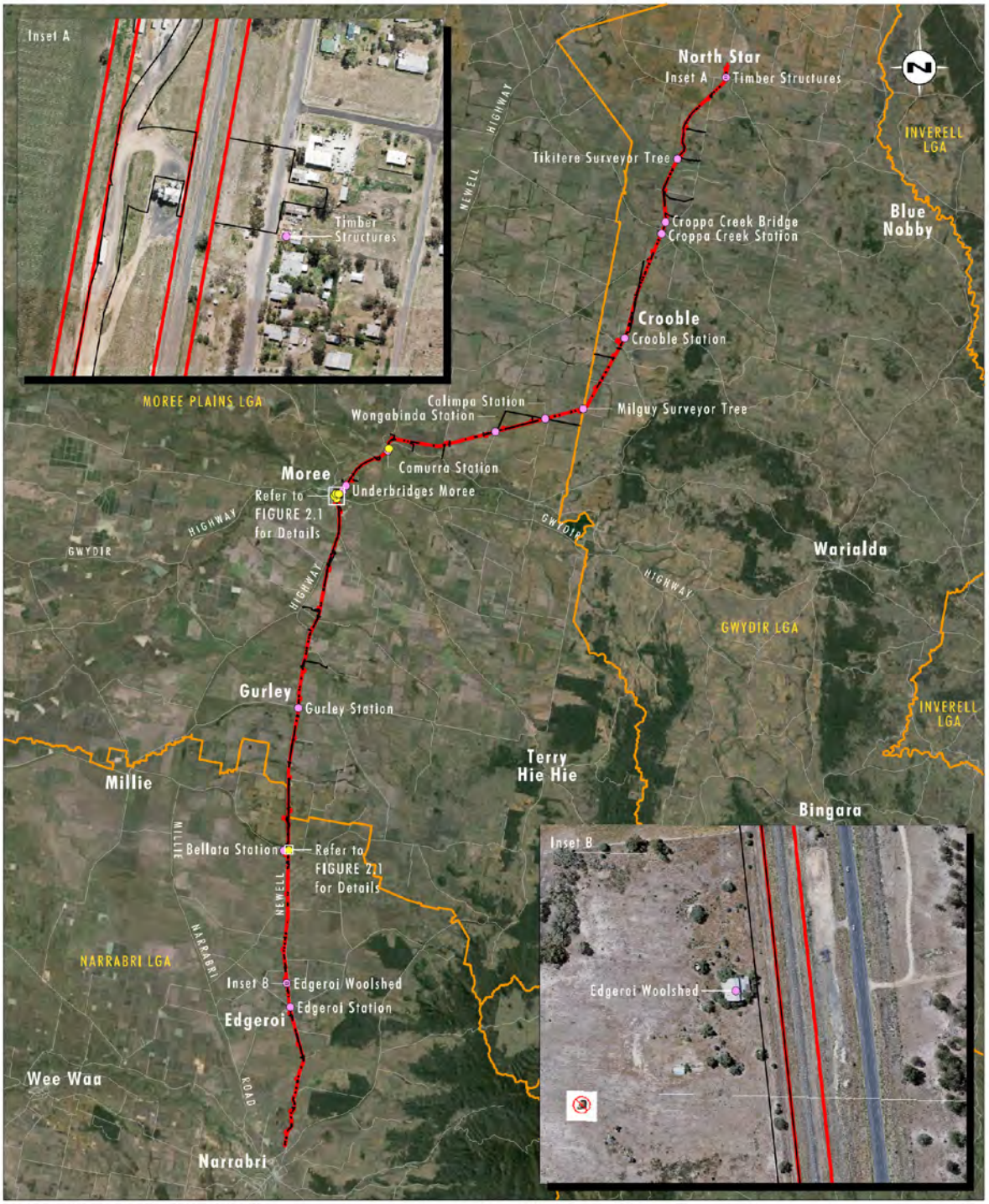



Image Source: Google Earth (2013)
Data Source: Geoscience Australia (2009), Parsons Brinckerhoff (2014)

0 50 100 200m
Inset Scale 1:5 000

0 10 20 40km
Main Scale 1:750 000

**Legend**

- Proposal Site
- Additional Assessment Area
- Local Government Area
- Listed Heritage Item
- Potential Heritage Item Requiring Management

FIGURE 4.1

**Listed Heritage and Identified Potential Heritage Items within 500 Metres of the Proposal Area**

File Name (A4): R04/3607_151.dgn
20170815 16.06

### 4.3.1 Moree Mehi River Underbridge

The Mehi River Underbridge is a steel Pratt truss bridge designed by Harvey Dare from the Railway Construction Branch, Department of Public Works. It comprises a single 36.6 metre (120 feet) steel through Pratt truss flanked at each end by a 20.10 metre (66 feet) steel, through plate web girder then 7.3 metre (24 feet) timber openings. The main bridge is on concrete piers. The rail line reached Camurra from Moree in 1913 after crossing both the Mehi and Gwydir Rivers. The bridge was constructed by 1913. The bridge retains its original fabric (OEH Moree, Mehi River Underbridge listing sheet nd).

The ARTC draft updated listing boundary (refer to **Plate 4.5**) of the bridge includes:

*The railway corridor commencing at rail distance 666.340 on the Moree side of the bridge, and extends to a point 20 metres on the northern or Boggabilla side of the bridge structure. The listing includes the steel truss span, the adjacent steel approach spans, and the timber spans on both sides of the steel bridge structures, piers, abutments and earthworks relating to the bridge structure within the railway property boundaries (ARTC 2012).*

**Plate 4.1**

Mehi River Bridge view to east.

Photograph shows timber approach span, piers and abutments on Moree side of bridge

© Umwelt, 2016

**Plate 4.2**

Mehi River Bridge view to southwest

Photograph shows timber approach span, steel approach span and steel truss span of bridge

© Umwelt, 2016

**Plate 4.3**

Mehi River Bridge view to west

Photograph shows steel approach span and steel truss span from Moree side of bridge



**Plate 4.4**

Mehi River Bridge view to northwest

Photograph shows steel truss span and steel approach span from Boggabilla side bridge. Newell Highway road bridge is visible on west side of bridge.

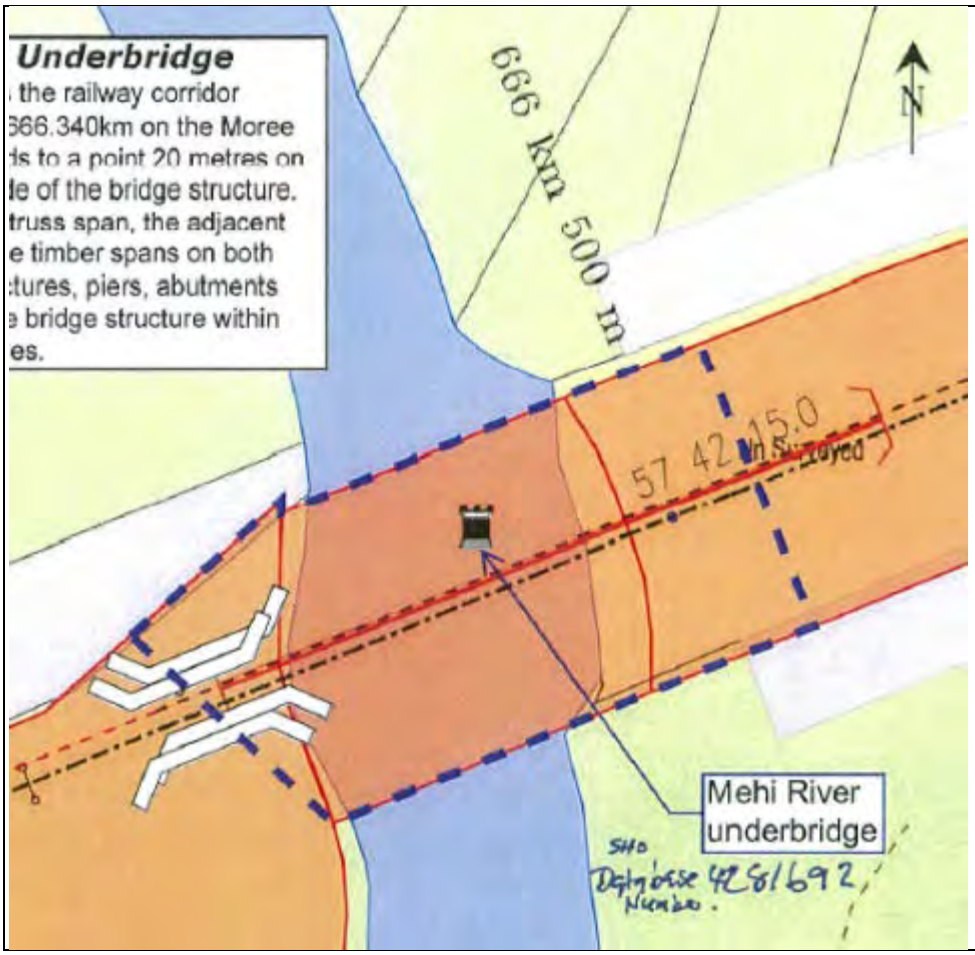



**Plate 4.5**

Moree – Mehi River Underbridge Listing Boundary



### 4.3.2 Moree Railway Station

As discussed in **Section 2.1** Moree Railway Station is listed on the ARTC S170 Heritage & Conservation Register and Moree Plains LEP 2011 (refer to **Plate 4.6**). The station comprises a brick and timber faced island platform (built 1903 to 1904) with a brick built station building utilised as a railway refreshment room (built 1928 to 1929) (refer to **Plates 4.7** and **4.8**).

The original passenger platform and station was constructed to the north of the current station area in 1897. In 1903-04 a new island passenger platform and passenger station was erected in the station's current location (replacing a temporary sleeper platform and waiting shed constructed in 1902). The new timber built station building accommodated both rail staff and the public. The 1904 station building was supplemented by a goods 'out of' room, originally constructed at the northern end of the new island platform. This was relocated in 1928 to 1929 to immediately north of the 1904 station building to provide space for the new brick refreshment room facility. In 2009 the 1904 timber station building was removed following serious fire damage (OEH Moree Railway Station Listing Sheet).

Note that the majority of the structures formerly associated with the station have been removed – compare **Plates 4.7** and **4.8** with **4.9**. In addition to the platform and station building the Moree Railway Station originally included sheep and cattle yards, urinals, a goods shed with goods platform, wool loading bank, single-road carriage shed, weighbridge, a station master's residence, and a locomotive servicing depot consisting of a single road engine shed, turntable, water tank, and coal stage (OEH Moree Railway Station Listing Sheet).


**Plate 4.6**

Moree Railway Station Group S170 listing plan



**Plate 4.7**

View to south of Moree Station

Shows brick faced island platform and refreshment room. Existing noise bund on east side of station is on left of photograph

**Plate 4.8**

View to south of Moree Station

Shows timber faced island platform and refreshment room. Existing noise bund on east side of station is on left of photograph



**Plate 4.9**

Pre 1912 photograph of Moree Station

View to the south showing roof of timber station building (to rear) removed in 2009 and former timber goods room



### 4.3.3 Camurra Gwydir River Underbridge

The Camurra Gwydir River Underbridge is a steel Pratt truss bridge designed by Harvey Dare from the Railway Construction Branch, Department of Public Works (refer to **Plates 4.10** to **4.13**). It was built to carry the single track rail line from Moree to Camurra and comprises two 36.6 metre (120 feet) steel through Pratt trusses on concrete piers and flanked by timber beam spans. The rail line reached Camurra from Moree in 1913; the bridge was constructed by 1913. The bridge retains its original fabric (OEH Camurra, Gwydir River Underbridge listing sheet nd). The bridge is located approximately 10 kilometres to the north of Moree.

The ARTC draft updated listing boundary (refer to **Plate 4.14**) of the bridge includes

*...the railway corridor commencing at the start of the bridge on the Moree side and extends to the northern or Boggabilla end of the bridge. The listing includes the 2 steel truss spans and the timber approach spans, piers, abutments and earthworks relating to the bridge structure within the railway property boundaries (ARTC 2012).*

Note the Gwydir River Underbridge is located within the proposal site. The existing Newell Highway road bridge is located about 50 metres to the west of the Gwydir River Underbridge.

**Plate 4.10**

Gwydir River Bridge view to east

Photograph shows timber approach span, piers and abutments on Boggabilla (north) side bridge.



**Plate 4.11**

Gwydir River Bridge view to southeast

Photograph shows the two steel truss spans from Boggabilla (north) side bridge.

**Plate 4.12**

Gwydir River Bridge view to southwest

Photograph shows the two steel truss spans from Boggabilla (north) side bridge.



**Plate 4.13**

Gwydir River Bridge view to southwest

Photograph shows timber approach span, piers and abutments on Boggabilla (north) side bridge.

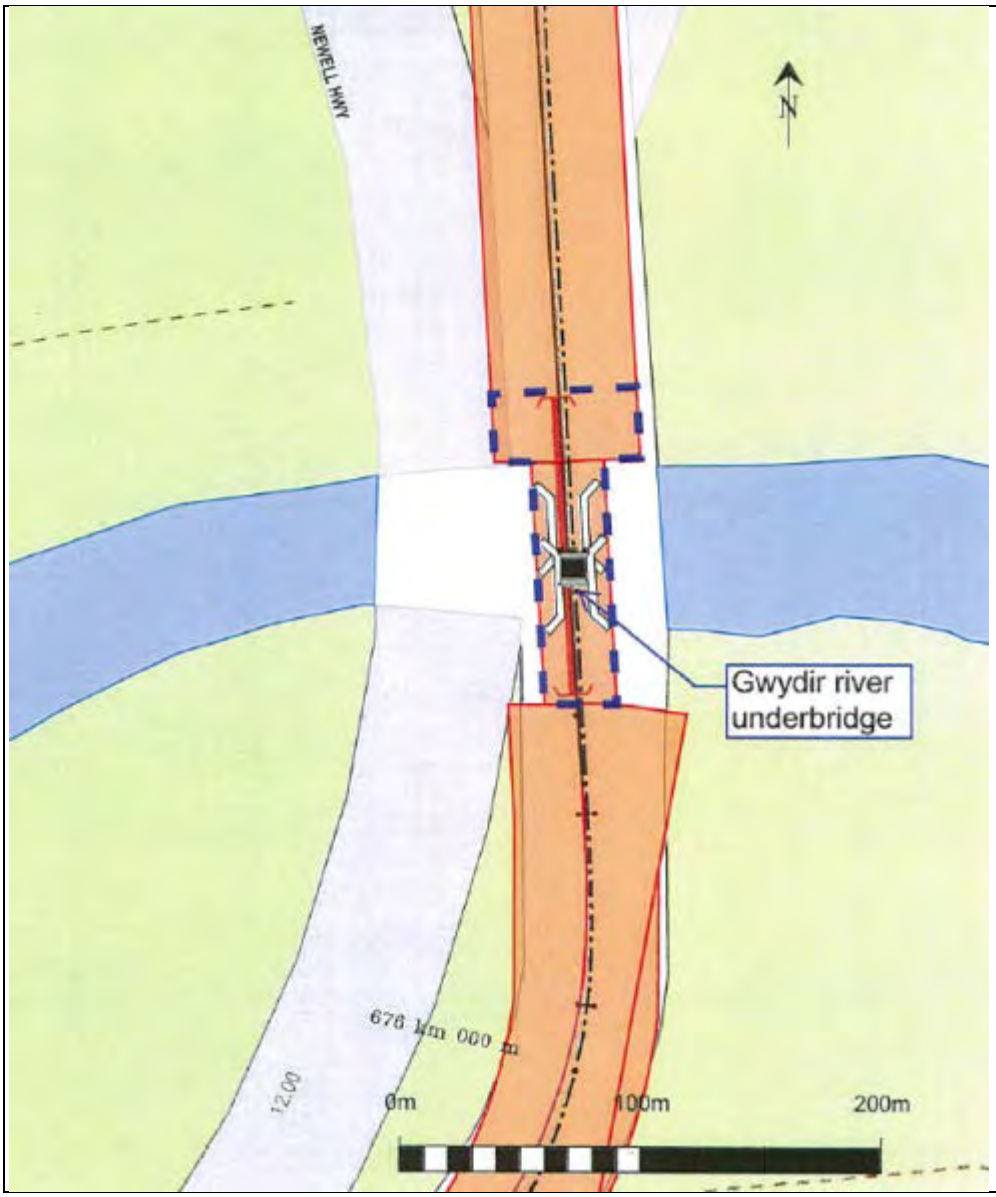



**Plate 4.14**

Camurra – Gwydir River Underbridge listing boundary



## 4.4 Listed Heritage Items in the Vicinity of the Proposal Site

The statutory heritage searches indicate that there are several heritage listed items within the general vicinity (within 100 metres) of the proposal site that require consideration of potential heritage impacts. These are listed in **Table 4.2**, identified on **Figure 2.1** and discussed below.

**Table 4.2 Listed Heritage Items in the Vicinity of the Proposal site**

| Item Name | Location | Listing and Significance | Distance to Proposal Site |
|---|---|---|---|
| Victoria Hotel | 339 Gosport Street, Moree | Moree Plains LEP 2011<br>Local significance | Approximately 100 metres to west of proposal site. |
| Moree Baths and swimming pool | Corner of Anne and Warialda Street, Moree | National Heritage List<br>National Significance | Approximately 100 metres to west of proposal site. |

| Item Name | Location | Listing and Significance | Distance to Proposal Site |
|---|---|---|---|
| A.B. Meppem and Co. | 30 Railway Parade (Newell Highway), Bellata | Narrabri LEP 2012<br>Local significance | Approximately 80 metres to east of proposal site. |
| Bellata Police Station and Official Residence | 24 Railway Parade (Newell Highway), Bellata | NSW Police Force S170 Heritage & Conservation Register<br>Local significance | Approximately 80 metres to east of proposal site. |
| Oldhams Smallgoods | 26 Railway Parade (Newell Highway), Bellata | Narrabri LEP 2012<br>Local significance | Approximately 80 metres to east of proposal site. |
| Post Office | 28 Railway Parade (Newell Highway), Bellata | Narrabri LEP 2012<br>Local significance | Approximately 80 metres to east of proposal site. |
| LS Rowe Stock and Station Agents | 40 Railway Parade (Newell Highway), Bellata | Narrabri LEP 2012<br>Local significance | Approximately 80 metres to east of proposal site. |
| Nandewar Hotel | Lot 1 Railway Parade (Newell Highway), Bellata | Narrabri LEP 1995<br>Local significance | Approximately 80 metres to east of proposal site. |

### 4.4.1 Victoria Hotel, Moree

Victoria Hotel is located at 339 Gosport Street, on the corner of Anne and Gosport Streets, approximately 100 metres west of Moree Station. Constructed in 1918 the hotel is a two-storey weatherboard and galvanised steel building with a wide timber verandah with original balustrade. The building is considered to be a significant building in the vicinity of the railway station and a remnant of post-World War I Moree (Regis Consulting 2002:16.11-12) (refer to **Plates 4.15** to **4.17**).

Victoria Hotel is located outside the proposal site approximately 100 metres from the proposal site and separated from it by Gosport Street, car parking, a nature strip and the recently constructed Moree Bypass which is immediately adjacent to the existing rail corridor (refer to **Plate 4.17**). Access to the Moree Railway Station is via a pedestrian underpass running beneath the Moree Bypass.


**Plate 4.15**

View to northwest of Victoria Hotel




**Plate 4.16**

View to west of Victoria Hotel



**Plate 4.17**

View to west of Victoria Hotel from Moree Station platform.

Victoria Hotel (on right) and Moree Baths (on left) are located approximately 100 metres from the platform

### 4.4.2 Moree Baths and Swimming Pool

Moree Baths and swimming pool is located on the northern end of the block bounded by Gosport, Anne and Warialda Streets, approximately 100 metres west of the railway line south of Moree Station. The main building is accessed from Anne Street rather than Gosport Street. The baths originally opened in 1895 when the first bore tapped into the Great Artesian Basin; providing heated mineral waters. The baths have been rebuilt and upgraded several times since 1895. The current complex of three tiled pools was constructed in 1977 (refer to **Plate 4.18**).

In 1965 student protest actions at the Moree Baths as a part of the Freedom Rides highlighted the racial discrimination and segregation experienced by Aboriginal people in Australian rural towns and the outback and forced the broader Australia community to look at the way it treated its Indigenous population. The protest was an important contributor to the climate of opinion which resulted in a yes vote in the 1967 referendum to change the Australian Constitution regarding the status of Aboriginal Australians (AHD nd.).

Moree Baths are located outside the proposal site approximately 70 metres from the proposal site and separated from it by Gosport Street, car parking, a nature strip and the recently constructed Moree Bypass which is immediately adjacent to the existing rail corridor (refer to **Plate 4.17**). Access to the Moree Railway Station is via a pedestrian underpass from Gosport Street running beneath the Moree Bypass.


**Plate 4.18**

Moree Baths and Swimming Pool entrance on Anne Street



### 4.4.3 Railway Parade Bellata Listed Items

There are several heritage items along Newell Highway in Bellata with a local heritage listing (refer to **Plates 4.19** to **4.21**). The listed items comprise timber and corrugated iron structures fronting Railway Parade (the Newell Highway as it passes through Bellata) located approximately 80 metres from the centre line of the main rail line. As such they are located approximately 65 metres from the proposal site boundaries.

The listed heritage items comprise:

- Bellata Police Station and Official Residence – 24 Railway Parade (Newell Highway)

- Oldhams Smallgoods - 26 Railway Parade (Newell Highway)
- Post Office – 28 Railway Parade (Newell Highway)
- A. B. Meppem and Co. – 28 Railway Parade (Newell Highway)
- LS Rowe Stock and Station Agents – 40 Railway Parade (Newell Highway)
- Nandewar Hotel – Lot 1 Railway Parade (Newell Highway).

**Plate 4.19**

View to east of heritage items in Bellata

Showing A.B. Meppem and Co. (left), Post Office (centre) and Oldhams Smallgoods (right) on Railway Parade



**Plate 4.20**

View to north of heritage items in Bellata

Showing frontages of Oldhams Smallgoods (foreground) and Post Office

**Plate 4.21**

View to northeast of heritage items in Bellata

Showing LS Rowe Stock and Station Agents on Newell Highway



## 4.5 Potential Heritage Items Within and In Vicinity of the Proposal Site

**Table 4.3** discusses the broad range of potential heritage items identified within and in the vicinity of the proposal site. These are discussed in more detail below.

**Table 4.3 Potential Heritage Items (with no statutory listing)**

| Item | Location | Description |
|---|---|---|
| Rail line | Along entire proposal site | Rail line and associated underbridges / culverts |
| Rail stations and associated rail infrastructure | Along entire proposal site | Station platforms and buildings, loading banks, station signs, landmark signals, rail signage, rail crossings, communication line power poles |
| Grain rail sidings located adjacent to existing rail corridor | Outside but adjacent to proposal site - particularly at station locations | Grain rail sidings including grain silos and associated sheds, loading banks and other infrastructure |
| Buildings and rural structures and infrastructure located adjacent to existing rail corridor | Occasional locations along rail line – particularly in vicinity of station locations | Houses, shearing sheds, cattle yards, loading ramps and other rural infrastructure |
| Towns / villages and former village locations | Outside but adjacent to proposal site - particularly at station locations | Towns / villages and former village locations along rail line |
| Surveyors Blazes | Along proposal site | Historical scarred trees |

## 4.6 Rail Line, Underbridges and Culverts

The Mungindi Railway Line opened from Narrabri to Moree on 1 April 1897 as a single track branch line. The Boggabilla Railway Line from Camurra to North Star opened as a rail line in 1932. The Boggabilla line was constructed as an inexpensive Pioneer Line with the intent of upgrading the line if it proved profitable. The success of the wheat and sheep industry in the region ensured that the line was upgraded. The lines existing today comprise a much upgraded rail line following the same alignment as the original branch and Pioneer Line, with upgraded culverts and underbridges, and track side signage.

Underbridges are considered to comprise structures supporting the rail track that pass over waterways and include culvert structures. During the design process for the proposal all underbridges were assessed for compliance with the Inland Rail performance specification. Any underbridges and culverts that did not comply, were identified as having limited life spans, or cannot be feasibly made to comply, are proposed to be replaced as part of the proposal.

As such there are numerous underbridges along the rail alignment that are proposed to be replaced. The majority of these underbridges / culverts are various types of metal pipe or concrete box structures comprising examples of typical utilitarian rural rail underbridges that would have originally been constructed of timber but have been modified as part of past maintenance works. These are not considered to have any potential heritage significance and are not considered further in this report.

Croppa Creek underbridge (735.115) comprises a steel span constructed half-through bridge on concrete piers with concrete abutments located across Croppa Creek on the north side (Boggabilla side) of Croppa Creek railway station (refer to **Plates 4.22** and **4.23**). Although the policy for Pioneer Lines was to avoid expensive infrastructure such as bridges, Deane's timber girder bridge design was not able to be used to cross the larger inland rivers and creeks along the Boggabilla (and other) line. The Croppa Creek underbridge (and the heritage listed Mehi River Underbridge and the Gwydir River Underbridge) is an example of the need to construct a larger expensive steel bridge along a Pioneer Line.

**Plate 4.22**

Croppa Creek Underbridge

**Plate 4.23**

Croppa Creek Underbridge



There are also a number of underbridges surviving along the rail corridor which still have timber components in addition to early concrete modifications (generally in the form of concrete piers rather than timber piers or trestles) and better reflect the timber girder bridge design utilised on Pioneer Lines. These in general are likely to be more representative of the earlier types of underbridge constructed along the rail line to Deane's timber girder bridge design and are detailed in **Table 4.4**.

**Table 4.4 Timber Constructed Underbridges**

| Location and Underbridge ID (chainage) | Description | Photograph |
|---|---|---|
| Moree<br>666.645 | 17 concrete or timber piers supporting timber girder/beam.<br>Vertical concrete abutments. |  |

| Location and Underbridge ID (chainage) | Description | Photograph |
|---|---|---|
| Moree<br>666.945 | 12 concrete or timber piers supporting timber girder/beam.<br>Concrete piers have timber headers.<br>Vertical concrete abutments. |  |
| Moree<br>667.21 | 13 concrete or timber piers supporting timber girder/beam<br>Concrete piers have timber headers<br>Vertical concrete abutments. |  |
| Moree<br>667.37 | 13 concrete or timber piers/trestles supporting timber girder/beam<br>Some concrete piers have timber headers<br>Vertical concrete abutments. |  |

| Location and Underbridge ID (chainage) | Description | Photograph |
|---|---|---|
| Moree<br>667.945 | 14 concrete or timber piers/trestles supporting timber girder/beam<br>Concrete piers have timber headers<br>Vertical concrete abutments. |  |

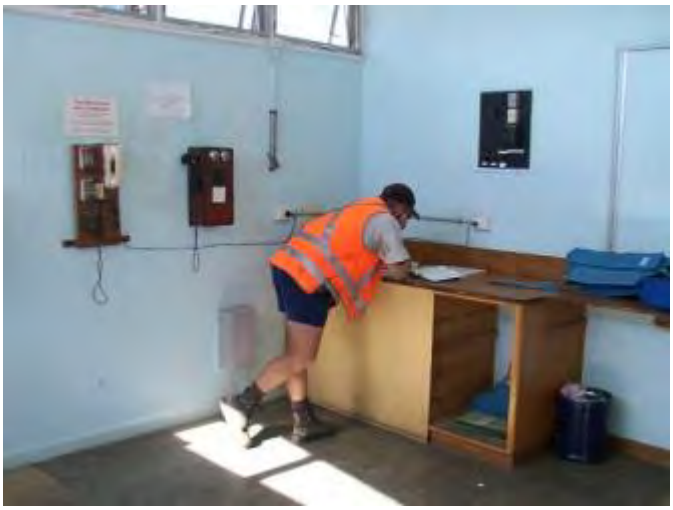
All photographs in Table 4.6 © Umwelt, 2014.

## 4.7 Railway Stations

There are 13 former railway stations and two existing railway stations (Moree and Bellata) located within the proposal site and one former and one existing railway station (Camurra and Narrabri respectively) located within the vicinity of the proposal site. All the stations are closed (with the exception of Narrabri, Moree and Bellata) and in general there is limited remaining evidence of the stations themselves with the exception of raised earthen embankments indicating former station platform or rail siding loading banks; with many of the stations being demolished in the 1970s and 1980s. **Table 4.5** lists the former train stations located within and adjacent to the proposal site and discusses what physical evidence of the former stations can be identified today with consideration of the evidence provided by the station layout plans discussed in **Table 3.4**. As discussed, Narrabri Railway Station is located approximately 3.5 kilometres southeast of southern limit of proposal site. As such it is not considered in detail in this report.

**Table 4.5 Former railway stations within and in vicinity of the proposal site**

| Station | Description | Photographs |
|---|---|---|
| Edgeroi | View to east showing Edgeroi Station including concrete faced platform with station building (small passenger shelter and safework room). Station sign remains in place. |  |

| Station | Description | Photographs |
|---|---|---|
| | View to south showing Edgeroi Station platform, station building and station sign with main line and grain siding line.<br>Note platform and station building are likely the original built in the late nineteenth century. |  |
| | Interior view of abandoned safework room. |  |
| | 2001 photograph of safework room still in use.<br>*Photograph: NSWrail.net* |  |
| Woolenget | General view to south of Woolenget Station area. No evidence of siding remains.<br>Abandoned woolshed located 40 metres to west of main line is likely remains of the Edgeroi Woolshed (refer to **Section 4.9.1**). |  |

| Station | Description | Photographs |
|---|---|---|
| Bellata | View to south of Bellata Station showing platform, simple shelter, station sign, main line and grain siding line and staff hut.<br><br>The shelter on the platform is unlikely to be the original station building. |  |
| | View to northeast of Bellata Station showing platform, simple shelter, and staff hut.<br><br>No evidence of the station master's residence reported as being demolished in 1988. |  |
| | View to north of Bellata Station showing south end of platform (including steps), main line and grain siding line. |  |
| Kilgowla | General view to south of Kilgowla Station. No remains evident. |  |

| Station | Description | Photographs |
|---|---|---|
| | View to east of typical level crossing on the rail line located immediately south of Kilgowla. |  |
| Gurley | View to southeast of Gurley Station showing platform with small staff hut, station sign and main line.<br>Original timber station buildings have been removed. Goods shed reported as having been removed in 1973 – original station buildings may have been removed at same time. |  |
| | View to southeast of Gurley Station showing platform with small staff hut, station sign and main line. Platform includes railing constructed from rail track and former communication line power pole. |  |

| Station | Description | Photographs |
|---|---|---|
| | View to north of Gurley Station. Grain silos located to south of Gurley Station in centre distance of photograph.<br>There is no evidence of the small timber station master's residence formerly located behind the station (refer to **Plate 3.7**). |  |
| | View to north of Gurley Station showing rear of earthen embankment constructed for concrete faced platform. Grain silos located to south of Gurley Station in centre distance of photograph. |  |
| Tycannah | No evidence that any platform or buildings were ever constructed.<br>Likely former rail siding only – removed in 1974. | |
| Moree | View to south of Moree Station showing timber faced side of island platform and refreshment room.<br>Little other evidence for associated facilities which were generally removed progressively from the 1980s. |  |
| | View to south of Moree Station showing brick faced side of island platform and refreshment room. |  |

| Station | Description | Photographs |
|---|---|---|
| Camurra | View to west showing small concrete platform (3 metres by 3 metres) at junction (677.500 kilometres from Sydney).<br>Located outside proposal site main works corridor.<br>No evidence of former main line station, platform or of goods siding loading bank which was removed in 1975. |  |
| Wongabinda | View to west of Wongabinda Station showing concrete faced loading bank of goods siding on west side of rail line (less than 10 metres from rail line).<br>No evidence for former main line station platform on north side. |  |
| | View to southwest of Wongabinda Station showing concrete faced loading bank of goods siding on west side of rail line. |  |

| Station | Description | Photographs |
|---|---|---|
| Calimpa | View to east of Calimpa Station showing concrete faced loading bank of good siding on north side of rail line (less than 10 metres from rail line). No evidence of siding line. |  |
| | View to northeast of Calimpa Station showing concrete faced loading bank of goods siding on north side of rail line. |  |
| Milguy | View to northeast of Milguy station area. No evidence remains of the station.<br>The station building is reported to have been demolished in 1983. |  |
| Crooble | View to west of Crooble Station showing former goods siding loading bank.<br>No other evidence remains – much of Crooble Station and siding area is reported to have been removed in 1978. |  |

| Station | Description | Photographs |
|---|---|---|
| | 1980 photograph of former Crooble Station.<br>*Photograph: NSWrail.net* |  |
| Croppa Creek | View to south of Croppa Creek Station showing remains of former goods siding loading bank on east side of rail line.<br>Croppa Creek siding and offices are reported to have been bulldozed in the early 1980s. |  |
| | View to southeast of Croppa Creek Station showing remains of former goods siding loading bank on east side of rail line. |  |
| Tikitere | No evidence that any platform or buildings were ever constructed.<br>Likely former rail siding only with a plan similar to Tycannah. | |
| Windridge | No evidence that any platform or buildings were ever constructed.<br>Likely former rail siding only with a plan similar to Tycannah. | |

| Station | Description | Photographs |
|---|---|---|
| North Star | View to west of North Star Station showing station sign with main rail line behind.<br>No evidence for former station or goods siding. |  |
| | View to southwest of North Star Station showing station sign with main rail line behind. Station sign comprises only evidence of former station and was likely retained and installed in alongside rail line at edge North Star Community Park. Pepper trees indicate likely location of former station. |  |
| | 2000 photograph of former North Star Station.<br><br>*Photograph: NSWrail.net* |  |

| Station | Description | Photographs |
|---|---|---|
| | View to northwest to grain siding at North Star. |  |
| | View to west from Edward Street of tree lined access across North Star Community Park to approximate former North Star Station location. Main rail line is approximately 70 metres from Edward Street. |  |

All photographs in Table 4.6 © Umwelt, 2014 & 2016 unless indicated otherwise

## 4.8 Grain Rail Sidings

Existing grain rail sidings with grain silos and associated structures and other infrastructure are generally immediately adjacent to the proposal site and as such are not expected to be impacted by the proposal. No proposed compounds located outside the rail corridor / main corridor works are located within the area of a grain siding. In places, existing overhead powerlines are proposed to be replaced within the general areas of the grain sidings, however these works are not expected to result in any impacts to the grain sidings or silos.

Note that in 2003 the State Library of NSW commissioned the photographic recording of every grain silo across country NSW. The photographs are located in the NSW State Library archives and available online at http://nswsilos.com.au/. The State Library's intent was also to collect historical and cultural information on these landmark structures.

## 4.9 Other Buildings and Rural Structures in the Vicinity of the Proposal Site

In general, with the exception of the former Woolshed at Woolenget Station there are no other identified non rail (or grain siding) related structures or items within or in the vicinity of the proposal site at risk of impact as a result of the proposal. Further discussion regarding buildings within towns and villages along the railway line is provided in **Section 4.10**.

### 4.9.1 Edgeroi Woolshed

Woolenget Station was originally opened as Edgeroi Wool Siding in 1901 and changed its name to Woolenget in 1904. The Edgeroi Wool Siding was originally constructed at this location as a result of the Edgeroi Pastoral Company woolshed which was located immediately adjacent to the rail line. The woolshed is reported to have been the largest in the southern hemisphere with 52 stands (refer to **Plate 3.5**) (NSC nd.). The former woolshed located immediately adjacent (to the west of) to the rail corridor (approximately 10 metres from the fence marking the edge of the rail corridor) is extant evidence of what remains of the Edgeroi Pastoral Company woolshed (refer to **Plates 4.24** to **4.26**). Much of the structure of the woolshed has been removed since 1951 when Woolenget Railway Station closed (compare **Plates 4.24** to **4.26** and **Plate 4.27**).

Note the interior of the woolshed or its immediate surroundings were not inspected during the field survey as the building is located on private land outside the proposal site.


**Plate 4.24**

View to south from approximate location of former Woolenget Station

Showing location of Edgeroi Woolshed in relation to the rail line



**Plate 4.25**

View to northwest of Edgeroi Woolshed

Fenceline marks rail corridor boundary

**Plate 4.26**

View to west of Edgeroi Woolshed

Fenceline marks rail corridor boundary



**Plate 4.27**

Woolshed at Edgeroi Station - 1951



## 4.10 Villages and towns

As discussed in **Section 3.11** the construction of the railway was a very significant development in the late nineteenth and early twentieth century leading to the establishment and survival of villages and towns. With the exception of Moree, the proposal site and in particular the main corridor works, is within the existing rail corridor outside but adjacent to any existing (or former) villages or towns.

As previously discussed, the proposal site comprises the existing rail line and entails upgrading the rail line to ensure it meets the required Inland Rail performance specification. The upgrading of the existing rail line results in no, or only very minor, change to its overall alignment, location and function. As a result, in general the proposal is not expected to result in any non-Aboriginal heritage impacts to any of the towns and villages (or former village locations) located in the vicinity of the rail line. As such with the exception of

Moree, Bellata and North Star existing, or former, villages and towns in the vicinity of the proposal site are not discussed further in this report except in relation to the historical context and significance of the rail line and proposal site in general.

### 4.10.1 Moree

As discussed in **Sections 4.3.2** and **4.4.2** the proposal site passes through the centre of Moree. Heritage listed Moree Railway Station is within the proposal site and heritage listed Victoria Hotel and Moree Baths and Swimming Pools are in the vicinity of the proposal site.

### 4.10.2 Bellata

As discussed in **Section 4.3.3 t**here are several heritage items along Newell Highway in Bellata with a local heritage listing. The listed items comprise timber and corrugated iron structures fronting Railway Parade (the Newell Highway as it passes through Bellata) located approximately 80 metres from the centre line of the main rail line. As such they are located approximately 65 metres from the proposal site.

### 4.10.3 North Star

The proposal site passes along the west side of the township of North Star, on the west side of North Star Community Park. The proposal site is separated from the town by the Community Park and Edward Street. There are a number of timber and corrugated iron structures fronting Edward Street (the main street of North Star) located approximately 80 metres from the centre line of the main rail line (refer to **Plates 4.28** to **4.29**). As such they are located approximately 65 metres from the proposal site. The buildings likely date to 1930s when the railway line came through the area.

**Plate 4.28**

View to south along Edward Street North Star

North Star Community Park is on the right of the photograph

**Plate 4.29**

View to east of building on Edward Street North Star



## 4.11 Anzac Day Crossing

Anzac Day Crossing is reported to have been located just south of Crooble station. The crossing is reported to have been a regional meeting point prior to departure to WWI and still used today on Anzac Day. There are likely associations with Crooble Memorial Hall

## 4.12 Surveyors Trees

Two trees with surveyor's blazes were identified during field survey of the proposal site. The trees are located immediately outside the proposal site and are discussed in **Table 4.6**.

**Table 4.6 Identified Surveyor's Trees**

| Surveyor's Tree | Photographs | |
|---|---|---|
| Tree is marked with the number 84 approximately 1.5 metres above ground.<br>The blaze is ovoid in shape, with substantial regrowth around the wound.<br>Tree species is a casuarina.<br>Location – Milguy. Approximately 706.5 kilometres from Sydney (228174 E, 6749730 N).<br>Located 7 metres outside the proposal site. |  |  |
| Tree is marked with the number '54' located approximately 1 metre above the ground. Inverted 'V' / top of arrow located at top of blaze. The blaze is ovoid in shape.<br>Tree species is a Budda/False Sandalwood (*Eremophila mitchelli*) approximately 30 cm in diameter.<br>Location – Tikitere. Approximately 744.5 kilometres from Sydney (239546 E, 6785324 N).<br>Located 15 metres outside the proposal site |  |  |

Photographs in Table 4.7 © Umwelt, 2014 & 2016

## 4.13 Potential Archaeological Resource

The proposal site comprises a late nineteenth century rail branch line and extant redundant Pioneer Rail lines constructed across an area with little known previous development with the potential to result in a non-Aboriginal archaeological resource. As such, it is considered unlikely for there to be any intact historical archaeological remains within the proposal site. The only exception is the Steel Bridge Camp located on the west side of the Mehi River at Moree (refer to **Section 4.13.1**)

### 4.13.1 Steel Bridge Camp

As discussed in **Section 3.1**, the removal of children from their parents at Terry Hie Hie is reported to have triggered Aboriginal people to leave the mission and establish informal settlements (fringe camps) on the outskirts of Moree, including what was referred to as the 'Steel Bridge Camp', located within the proposal site on the west side of the Moree Mehi River Underbridge. It is noted that the demolition of the fringe camps and their likely temporary nature of construction suggest that it is unlikely that any archaeological evidence of structures associated with the fringe camp at the crossing of the Mehi River will remain present. However, it is possible that dispersed artefacts at the crossing of the Mehi River associated with Aboriginal life at the former fringe camp may be present and as such will need consideration under the definition of archaeological 'relics' as provided by the Heritage Act. These potential dispersed artefacts would likely be located at fairly shallow depths unless associated with deeper features such as refuse pits.

The Heritage Act defines a 'relic' as any deposit, object or material evidence that:

- relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement; and

- is of State or local heritage significance. Noting it is accepted that evidence relating to Aboriginal settlement following 'contact' with European settlers is considered to be of significance under both the Heritage Act and the *National Parks and Wildlife Act 1974*.

## 4.14 Summary of Historical, Archaeological and Physical Contexts

The potential non-Aboriginal heritage resource of the proposal site generally reflects the documented history of the surrounding region (discussed in **Section 3.0**) and the extant rail line; which comprise the Mungindi branch line between Narrabri and Camurra and the Boggabilla branch line between Camurra and North Star.

The rail lines which essentially comprise the proposal site were originally constructed between Narrabri and Moree in 1882, Moree to Camurra in 1932 and Camurra to North Star in 1932. The northern section (Boggabilla line) was constructed as a Pioneer Line. The lines have, as a result of the success of the wheat and sheep industries and the trade market between NSW and Queensland, been continually upgraded along the same alignments as the originally constructed lines.

The potential non-Aboriginal heritage resource, and likely absence of any archaeological resource, is considered to be typical of a rail line and includes the rail formation itself with culverts and underbridges of varying construction materials and age, evidence of the former stations and other rail related structures and infrastructure. The grain rail sidings and landmark grain silos dominate the landscape immediately adjacent to the proposal site.

# 5.0 Significance

## 5.1 Introduction

An assessment of significance is undertaken to explain why a particular place is important and to enable appropriate site management to be determined. In accordance with the SEARs for the proposal, this section of the report comprises a significance assessment of the non-Aboriginal heritage items within and in the vicinity of the proposal site.

Cultural significance is defined by the Australian ICOMOS Burra Charter 1999 (the Burra Charter) as meaning 'aesthetic, historic, scientific or social value for past, present or future generations' (Article 1.2). The Burra Charter was written to explain the basic principles and procedures that should be followed in looking after important places. Cultural significance is defined as being present in the 'fabric, setting, use, associations, meanings, records, related places and related objects'. The fabric of a place refers to its physical material and can include built elements, sub surface remains and natural material (Australia ICOMOS 2013).

## 5.2 Basis of Assessment

The NSW Heritage Manual (1996), published by the then NSW Heritage Office and Department of Urban Affairs and Planning, sets out a detailed process for conducting assessments of heritage significance. The manual provides a set of specific criteria for assessing the significance of an item, including guidelines for inclusion and exclusion.

The seven criteria defined by the Heritage Division, OEH, and used by the NSW Heritage Council as an assessment format within NSW are outlined below:

Criterion (a) an item is important in the course, or pattern, of NSW's cultural or natural history;

Criterion (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 cultural or natural history;

Criterion (c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

Criterion (d) an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons;

Criterion (e) an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history;

Criterion (f) an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history; and

Criterion (g) an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments.

The following significance assessment is based upon the above seven criteria.

As a component of the holistic concept of significance, archaeological significance has been described as a measure by which a site may contribute knowledge, not available from other sources, to current research themes in historical archaeology and related disciplines (Bickford and Sullivan, 1984 19-26). Archaeology is concerned with material evidence and the archaeological record may provide information not available from other sources. An archaeological study focuses on the identification and interpretation of material evidence to explain how and where people lived, what they did and the events that influenced their lives.

Considerations material to the study of the archaeology include:

- whether a site, or the fabric contained within a site, contributes knowledge or has the potential to do so. If it does, the availability of comparative sites and the extent of the historical record should be considered in assessing the strategies that are appropriate for the management of the site

- the degree and level at which material evidence contributes knowledge in terms of 'current research themes in historical archaeology and related disciplines'.

Following Bickford and Sullivan's work on archaeological significance (1984, 19-26) the following questions can be used as a guide to assessing the significance of an archaeological site:

- Can the site contribute knowledge that no other resource can?

- Can the site contribute knowledge that no other site can?

- Is this knowledge relevant to general questions about human history or other substantive questions relating to Australian history, or does it contribute to other major research questions?

The Heritage Council of NSW recognises four levels of significance for heritage in NSW: Local, State, National and World. An item has local heritage significance when it is important to the local area. An item has state heritage significance when it is important in NSW. Most heritage items in NSW are of local significance.

### 5.2.1 Significance of the Heritage Items/Sites within and in the Immediate Vicinity of the Proposal Site

The significance of the proposal site and the listed and potential heritage sites/items located within and in the vicinity of the proposal site (refer to **Section 4.0**) is discussed in **Table 5.1** below.

**Table 5.1 Assessment of significance of potential heritage sites/items**

| Heritage Division Standard Criteria | Statement of Significance |
|---|---|
| Criterion (a)<br>Historical | The proposal site essentially comprises the existing rail corridor of the Mungindi Branch Line between Narrabri South Junction and Camurra and the Boggabilla Branch Line between Camurra and North Star. The Mungindi Branch Line commenced at the major urban rail centre of Werris Creek and reached Narrabri and Moree (where it ended) in 1897. The continuation of the line out to Mungindi was constructed in 1913 to 1914 as one of the low cost NSW Pioneer Lines which were built through western and north western NSW. The Boggabilla Branch Line opened as a Pioneer Line in 1932. These lines were constructed with the aim of establishing access to wheat growing areas and also reaching the edge of the productive wool growing areas. As such the proposal site demonstrates the pattern of land use and development in the area and has associations with the broader development of the region including its early exploration, settlement, development of major towns and exploitation for pastoral and agricultural purposes.<br><br>The stations located along the rail line, in addition to the rail line itself (including underbridges and associated rail infrastructure), have historical association with the expansion of the NSW rail network through the region and its role in encouraging urban, agricultural and pastoral development. Underbridges can provide examples of the differing and changing construction techniques used to raise the rail line.<br><br>The grain rail sidings, grain silos and associated other structures and infrastructure located immediately adjacent to the proposal site are closely associated with the rail line and comprise significant landmark features throughout the region.<br><br>The locations of towns, small villages and former village locations adjacent to the rail line contribute to the history of the development of the area as the rail line led to the establishment and survival of a number of these villages and towns. Buildings such as the Victoria Hotel in Moree located close to the rail line and station are closely associated with the history and development of Moree; especially with the post war years.<br><br>With the exception of the rail line and its associated structures, stations and other infrastructure the proposal site itself is unlikely to contain significant non-Aboriginal heritage or archaeological remains associated with the development history of the area.<br><br>**Steel Truss Bridges**<br><br>The Mehi River, Gwydir River and Croppa Creek underbridges comprise major infrastructure elements on a Pioneer Line demonstrating that the policy to avoid expensive infrastructure such as steel bridges was not always possible in areas with large inland rivers and creeks. |

| Heritage Division Standard Criteria | Statement of Significance |
|---|---|
| | **Moree Railway Station**<br><br>Moree Railway Station has been assessed as being historically significant as part of the Mungindi Branch Line which was constructed during the 1890s to capitalise on trade market between NSW and Queensland. Moree was a significant location in the line as the rail head until the line was extended to Mungindi, as a junction of three branch lines and as a locomotive servicing centre (OEH Moree Railway Station listing sheet).<br><br>**Edgeroi Woolshed**<br><br>Although outside the rail corridor the former Edgeroi Woolshed also demonstrates the pattern of land use and historical development of the area; including the sub-division of large early land grants like the 150,000 acre Edgeroi Station for soldier settlement blocks after World War II. However it has been considerably altered through the removal of large parts of its structure and, in general, it is unlikely to provide information not already known from the historical record. |
| Criterion (b)<br><br>Associative | Although the proposal site can be considered to have associations with the people who constructed and worked on the railway in addition to the agriculturalists and pastoralists who depended on it, the proposal site is not known to have any strong or special associations of particular significance.<br><br>Note, with the exception of the Moree Baths, this report does not consider any Aboriginal historic associations with the proposal site, refer to *ARTC Inland Rail Narrabri to North Star Aboriginal Cultural Heritage and Archaeological Assessment* (Umwelt 2017) for consideration of any such associations or connections.<br><br>Accordingly, in general the potential heritage sites/items identified within the proposal site do not meet this criterion.<br><br>**Moree Baths and Swimming Pool**<br><br>Moree Baths and Swimming Pool is assessed as being significant as a result of its association with the life and works of the Aboriginal activist Dr Charles Nelson Perrurle Perkins AO. The events at the Moree baths in 1965, and the wider Freedom Ride, established Charles Perkins as an iconic figure for Aboriginal People and brought him into public prominence as a leading Aboriginal activist. The protest was an important contributor to the climate of opinion which resulted in a yes vote in the 1967 referendum to change the Australian Constitution regarding the status of Indigenous Australians. |

| Heritage Division Standard Criteria | Statement of Significance |
|---|---|
| Criterion (c)<br>Aesthetic | The proposal site may demonstrate some aesthetic significance as an example of a pioneer rail line and earlier branch line with adjacent associated grain rail sidings and landmark grain silos crossing a rural landscape. However, there are many other similar examples of branch and Pioneer Lines with associated grain rail sidings throughout NSW.<br>**Steel Truss Bridges**<br>The Mehi River Underbridge is located immediately outside Moree and has landmark and scenic qualities in both an urban and rural setting. Although partially shielded by trees, the Mehi River Underbridge is an identifiable landmark from the banks of the Mehi River or when travelling across the Moree Bypass (A39) road bridge. Gwydir River and Croppa Creek underbridges have landmark and scenic qualities in a rural setting. The Gwydir River Underbridge is an impressive bridge with two steel truss spans highly visible when travelling across the Gwydir River road bridge at Camurra. The Croppa Creek underbridge is an isolated steel span constructed half-through bridge on concrete piers.<br>**Moree Railway Station**<br>Although not having specific aesthetic or technical significance, Moree Railway Station is considered aesthetically significant as an early 1900s constructed railway building (OEH Moree Railway Station listing sheet).<br>**Victoria Hotel Moree**<br>Victoria Hotel Moree is a significant and impressive building located close to the railway station.<br>**Edgeroi Woolshed**<br>The Edgeroi Woolshed is located immediately adjacent to the rail line and stands out as a landmark feature of the landscape from the Newell Highway. It is considered to have aesthetic values as a dilapidated structure standing in a rural landscape that demonstrates local vernacular construction. |

| Heritage Division Standard Criteria | Statement of Significance |
|---|---|
| Criterion (d)<br>Social | It is considered unlikely that the potential historical (non-Aboriginal) heritage resource of the proposal site in general, and particularly any archaeological remains that survive there, would have a strong or special association with any previous or contemporary particular community or group.<br><br>As the Inland Railway includes Pioneer Lines constructed with the aim of establishing access to wheat and wool growing areas, the proposal site (and its component elements such as underbridges) demonstrates an important and integral part of the history of the pattern of settlement and development in the area from the early to mid-nineteenth century, and is typical of a rail line crossing a large rural landscape within the wider regional area.<br><br>Note, with the exception of the Moree Baths, this report does not consider any Aboriginal social, cultural or spiritual associations with the proposal site, refer to *ARTC Inland Rail – Parkes to Narromine Aboriginal Cultural Heritage and Archaeological Assessment* (Umwelt 2017) for consideration of any such associations with both traditional and modern Aboriginal ways of life.<br><br>**Moree Railway Station**<br><br>Moree Railway Station is considered to be of social significance to the local community as it has provided an important source of employment, trade and social interaction for over a century. It contributes to the local community's sense of place and provides an important connection to the community's past (OEH Moree Railway Station listing sheet).<br><br>**Victoria Hotel Moree**<br><br>Victoria Hotel Moree has social significance as a meeting place for local residents and visitors to Moree.<br><br>**Moree Baths and Swimming Pool**<br><br>The Moree Baths have been assessed to have national significance to the Indigenous Australian community as the 1965 student protest actions at the Moree baths highlighted the racial discrimination and segregation experienced by Aboriginal people in Australian rural towns and the outback and forced the broader Australia community to look at the way it treated its Indigenous population. The protest was an important contributor to the 1967 referendum to change the Australian Constitution regarding the status of Aboriginal Australians.<br><br>**Mehi River Underbridge**<br><br>The Mehi River Underbridge, including its approaches is a historical and physical landmark on the outskirts of Moree and is likely to have some significance with the community and the community's sense of place as a frequently seen landmark. It is visible from the banks of the Mehi River and the Moree Bypass bridge crossing to the north of the underbridge. |

| Heritage Division Standard Criteria | Statement of Significance |
|---|---|
| | **Anzac Day Crossing**<br>The Anzac Day Crossing of the rail line at Crooble would be considered to have special associations, as a regional meeting point prior to departure to World War I, for the families of local servicemen and women.<br>**Edgeroi Woolshed**<br>The Edgeroi Woolshed stands out as a landmark feature from the Newell Highway in the flat rural landscape. It may have some significance with the community and the community's sense of place as a frequently seen landmark and ruin standing in the rural landscape. |
| Criterion (e)<br>Scientific | As the proposal site comprises a late nineteenth century rail branch line and extant redundant Pioneer Rail lines constructed across an area with little known previous development with the potential to result in an archaeological resource there are unlikely to be any intact historical archaeological remains within the proposal site.<br>A high degree of intactness in the archaeological resource is necessary before a substantive contribution can be made to the research potential and hence, the ability of the archaeological resource to answer research questions for the site. Any archaeological evidence associated with the pre rail use and development of the proposal site (such as for early settlement, grazing, agriculture and land clearing) is likely to be patchy at best, and it would be impossible to specify what such remains may entail and where they would be located.<br>In general the existing rail line formation (including extant 'early' underbridges, station locations, former loading banks, disused communication lines and power poles etc) comprises a typical example of rural rail line. The extant underbridges with surviving timber components discussed in **Section 4.6** (for example the two located at Moree 667.37 and 667.945 - refer to **Table 4.4**) reflect modified versions of Deane's timber girder bridge design utilised on Pioneer Lines.<br>Station layout plans provide evidence of what was likely constructed at each station in terms of platforms, station buildings and loading banks. In general there is limited extant evidence of the stations themselves. Platforms and embankments would have generally comprised simply constructed earthen embankments faced with timber (for example at North Star) or concrete (for example at Edgeroi – refer to **Table 4.5**). Station buildings outside the main centre of Moree, would have been simple functional structures (for example at Edgeroi – refer to **Table 4.5**). Any evidence of the former locations of platforms or loading banks is in the form of existing earthen embankments which would not be considered to comprise 'relics' under the Heritage Act and as such have no archaeological significance. There would not be expected to be any archaeological resource associated with the rail line itself which is currently, and since its construction in the late nineteenth and early twentieth century always has been, a rail line. |

| Heritage Division Standard Criteria | Statement of Significance |
|---|---|
| | Surveyors trees are evocative of the activities of surveyors and can provide evidence of the different types of survey marks used throughout NSW. They can illustrate the methods and procedures typically used by surveyors throughout rural NSW to mark trees in order to assist in the location of boundaries.<br><br>While the proposal site does demonstrate the use and historical development of the area, in particular its use as a rail line, in general the proposal site is considered to have little research potential and is unlikely to provide further information regarding the history and development of the area not already known.<br><br>**Steel Bridge Camp**<br><br>As discussed, it is possible that dispersed artefacts will be present on the west bank of the Mehi River in the vicinity of the Mehi River Underbridge abutment associated with Aboriginal life at the former fringe camp (refer to **Section 4.13.1**). Any such artefacts would be of high Aboriginal cultural significance. Any archaeological evidence associated with the fringe camp may be of high significance.<br><br>**Steel Truss Bridges**<br><br>The Mehi River, Gwydir River and Croppa Creek underbridges demonstrate that the policy to avoid expensive infrastructure such as steel bridges was not always possible in areas with large inland rivers and creeks. These impressive steel bridges reflect the change from British to American bridge technology in the late nineteenth century which by the time of their construction in 1913 had become the standard for bridge construction in NSW.<br><br>**Moree Railway Station**<br><br>Although Moree Railway Station has some unusual features they are not considered to be of exception importance. These features include island platform layout on a single line (other examples include at Casino, Dungog, and Kiama) and a refreshment room built to the design of a standard early 1900s station building (OEH Moree Railway Station listing sheet). |
| Criterion (f)<br><br>Rarity | The rail line itself and associated potential heritage sites/items identified within the proposal site, including remains of former rail loading banks, platforms and underbridges, are typical of structures associated with rail lines throughout NSW and are unlikely to meet these criteria.<br><br>The potential heritage resources associated with the proposal site are not associated with an unusual or remarkable aspect of the region's history. Although any heritage resource within the proposal site is part of an ever decreasing resource, in general the resource does not meet these criteria.<br><br>The Edgeroi Woolshed was once considered to be the largest in the southern hemisphere, although there were sheds of similar size elsewhere in the area (for example at Gurley). The Edgeroi Woolshed has had much of its fabric removed. |

| Heritage Division Standard Criteria | Statement of Significance |
|---|---|
| Criterion (g)<br>Representativeness | The potential heritage sites/items identified within and in the vicinity of the proposal site are generally representative of the structures items/sites typically found associated with late nineteenth century branch lines and early twentieth century Pioneer rail lines in regional NSW and of rural infrastructure in general.<br>**Steel Truss Bridges**<br>The Mehi River, Gwydir River and Croppa Creek underbridges are good representative examples of steel through (or half through in the case of Croppa Creek) bridges.<br>**Moree Railway Station**<br>Moree Railway Station building is representative of similar railway architecture found at many other railway station across the NSW (OEH Moree Railway Station listing sheet). |

### 5.2.2 Archaeological Significance

Archaeological significance is directly linked to the archaeological (or scientific) research potential of an archaeological site or resource. An archaeological site comprises below ground archaeological 'relics' which can be broadly described as physical evidence of building foundations, occupation/archaeological deposits, features and artefacts (Heritage Office and DUAP, 1996b:2).

The Heritage Act defines a 'relic' as any deposit, object or material evidence that:

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

The research already undertaken as part of the proposal has included an evaluation of available documentary evidence which provides information regarding the use and development of the area. It is considered unlikely for any substantial intact archaeological remains to be present within the proposal site.

As discussed, there is potential for dispersed archaeological evidence associated with an Aboriginal fringe camp to be present in the area of the Mehi River Underbridge (refer to **Section 4.13.1**). Sites of this type are rare and this period of occupation across New South Wales is poorly documented. As such, if present, archaeological remains associated with the fringe camp may have high research potential. Rail tracks (both existing and former) and associated extant rail related earthen embankments comprising locations of former platforms and loading banks would be considered to comprise works or structures rather than 'relics' as defined by the Heritage Act.

As such, in general, with the exception of the potential high significance of any potential fringe camp archaeological deposits at the Mehi River Underbridge, no other potential historical archaeological resource has been identified within the proposal site. As a result, the three questions derived from Bickford and Sullivan's work on archaeological significance (discussed in **Section 5.2**) are not discussed further and archaeological significance and potential in general (with the exception of the potential fringe camp deposits) is not discussed further in this report.

### 5.2.3 Condition and Integrity of Items/Sites within the Proposal Site

This section addresses matters that combine with the assessment of significance to allow a formal Heritage Impact Statement to be appropriately validated. The condition and integrity of items/sites is considered as part of the assessment of heritage significance.

A heritage item is said to have integrity if its fabric is still largely intact. The rail line which essentially makes up the proposal site and associated culverts and underbridges (including the Mehi River, Gwydir River and Croppa Creek underbridges) are largely intact and in good condition. Although modified and upgraded, a number of smaller underbridges appear to retain some of their original timber components which may reflect Deane's timber girder bridge design utilised on Pioneer Lines. However in general any other potential non-Aboriginal heritage resource within the proposal site, for example former stations and loading banks, is in a poor physical condition represented by the locations of former stations and other rail structures / infrastructure with varying degrees of intact fabric. The majority of station platforms and loading banks have been removed or are evident only as a raised earthen bank.

Many of Moree Railway Station's component elements, such as the timber station building, have been removed resulting in the stations integrity being diminished. However the island platform and 1929 constructed refreshment room are in good condition. Although the Victoria Hotel in Moree has been modified it retains a certain degree of intact fabric, details and integrity.

Edgeroi Woolshed has been considerably altered through the removal of large parts of its structure. Note that the woolshed is on private land and it was not inspected as part of the preparation of this report. As such, the integrity of its internal components is not known.

## 5.3 Comparable Steel Truss Underbridges

As discussed in **Section 3.12.1** by 1910 the American-type, steel through Pratt truss bridge had become the standard for major rail and road bridges in NSW. There were approximately 60 steel truss railway bridges constructed in NSW between 1892 and 1925 (refer to **Table 3.2**).

The 2011 ARTC Section 170 Heritage and Conservation Register lists over 20 steel truss underbridges. Additional steel truss underbridges are also listed on Local Environmental Plans. As such there are many steel truss bridges for both rail and road in NSW including examples in the immediate region of the proposal site which are similar to the Mehi River, Gwydir River and Croppa Creek underbridges discussed in this report. A number of comparable steel truss rail bridges in the region are discussed below in addition to a road bridge over the Gwydir River.

**Weemelah, Boomi River Railway Bridge (Moree Plains LEP listing)**

The Weemelah, Boomi River Railway Bridge, located on the Moree to Mungindi Line780.767 kilometres from Sydney, is an intact example of a steel Pratt truss bridge designed by Harvey Dare from the Railway Construction Branch, Department of Public Works. It comprises a single 36.6 metre (120 feet) steel through Pratt truss on concrete piers originally flanked by timber beam spans. The timber trestle approaches either side of bridge were burnt in approximately 1980, following which rail services were suspended beyond Weemelah (OEH Weemelah, Boomi River Railway bridge listing sheet nd).

**Gravesend, Gwydir River Underbridge (Moree Plains LGA)**

The Gravesend, Gwydir River Underbridge, located on the Moree to Inverell line 723.69 kilometres from Sydney, is an example of an early American Pratt truss bridge that retains its original fabric and structural integrity. It was designed by the engineering staff at New South Wales Government Railways (NSWGR), made by Handyside & Co., England and erected by Mountney & Co., Pyrmont, Sydney. The bridge comprises of two 55 metre (180 feet) steel through Pratt trusses and the span is on concrete piers. The bridge is one of the oldest and one of the largest of the initial group of American trusses built in NSW before World War I. It is also one of the first steel through Pratt truss bridges on a NSW Pioneer Line (OEH Gravesend, Gwydir River Underbridge listing sheet nd).

**Manilla, Namoi River Underbridge (Tamworth Regional LGA)**

The Manilla, Namoi River Underbridge, located on the Barraba Branch line which extended north from Tamworth along the broad Manilla valley to the town of Barraba, is an example of an American Pratt truss bridge and one of a few constructed before World War I. It was designed by J W Roberts, design engineer of the Railway Construction Branch, Department of Public Works, made by Clyde Engineering, Sydney and erected by day labour. It comprises a 2-span, riveted steel, American Pratt truss bridge with spans of 54.9 metres (180 feet) flanked by a steel through plate web girder at each end and all on concrete piers (OEH Manilla, Namoi River Underbridge listing sheet nd).

**The Bridge over Gwydir River (RTA Bridge No. 2767) at Gravesend**

The Bridge over Gwydir River (RTA Bridge No. 2767) at Gravesend was constructed in 1930 and comprises two 43 metre steel Pratt through trusses over the main river channel flanked by smaller spans. On each side of the trusses are 22 metre steel half-through plate web girders, then two 11 metre span steel beams and concrete slabs terminating on a concrete spill-through abutment. The truss piers comprise pairs of octagonal concrete columns tied by a simple rectangular concrete diaphragm. The approach piers are smaller but match the appearance of the main piers. The bridge is 6.4 metres wide between kerbs (OEH Bridge over Gwydir River listing sheet nd).

## 5.4 Summary Statement of Significance

The proposal site comprises the existing rail corridor of the Mungindi Branch Line between Narrabri and Camurra and the Boggabilla Branch Line between Camurra and North Star. The Mungindi Branch line commenced at the major urban rail centre of Werris Creek and reached Narrabri and Moree (where it ended) in 1897. The continuation of the line out to Mungindi was constructed in 1913 to 1914 as one of the low cost NSW Pioneer Lines which were built through western and north western NSW. The Boggabilla Line was also constructed as a Pioneer Line. The proposal site demonstrates and contributes to an important part of the history of the pattern of settlement and development in the region.

The proposal site has strong historical relationships with the construction of branch rail lines and Pioneer Lines in rural NSW at the end of the nineteenth and beginning of the twentieth century. These rail lines had an important role in encouraging settlement, and agricultural and pastoral development in the region and capitalised on the trade market between NSW and Queensland. As such the proposal site, and its individual surviving component elements such as the extant steel truss underbridges, timber constructed underbridges and remnant evidence of former stations, is considered to generally be of local significance.

The Mehi River, Gwydir River and Croppa Creek underbridges are of local significance as significant components of infrastructure, and good examples of steel bridges, constructed on a Pioneer Line using American bridge technology. However, as discussed in **Section 5.3**, although part of a decreasing resource there are other similar examples, both regionally and throughout NSW. If present 'contact period'

archaeological remains at the Mehi River Underbridge are considered to have high research potential and be of high significance.

Moree Railway Station is significant an important location on the 1890s section of the Mungindi Line, being the rail head and the junction of three branch lines as well as a locomotive servicing centre. The remaining station building is of aesthetic significance as a representative example of a standard platform building (OEH Moree Railway Station listing sheet). The Victoria Hotel is a significant and impressive building located close to the railway station. Both Moree Railway Station, the Victoria Hotel and the Moree Baths are also considered to be of social significance to the local community. Moree Baths are of National significance to the Indigenous Australian community.

The remains of the Edgeroi Woolshed is considered to be of local significance as evidence of a substantial woolshed associated with one of the large early lands grants through to soldier settlement and an important landmark in the area.

The two surveyors trees identified adjacent to the proposal site are considered to be of local significance as providing evidence of the activities of surveyors and the different the methods and procedures typically used by surveyors throughout rural NSW to mark trees in order to assist in the location of boundaries.

The Anzac Day Crossing of the Boggabilla Line at Crooble would be considered to have significant associations, as a regional meeting point prior to departure to WWI, for the families of local servicemen and women.

# 6.0 Heritage Impact Statement and Management Strategy

This section provides a heritage impact statement and management strategy for the heritage sites/items within and where relevant within the vicinity of the proposal site. The heritage impact statement identifies the potential impacts from the proposal on all known and potential heritage sites/items identified within, and where relevant within the vicinity of, the proposal site. The impacts are assessed against the significance of the respective elements.

The Burra Charter's options for managing non-Aboriginal heritage include maintenance, preservation, restoration, reconstruction, adaptation and interpretation, or a combination of these (Australia ICOMOS. 2013).

As discussed in **Section 1.2** the proposal is generally located in the existing rail corridor between the towns of Narrabri and North Star in NSW and involves the upgrading of the existing rail line between Narrabri and North Star (refer to **Figure 1.1**) including:

- upgrading the track, track formation, and culverts within the existing rail corridor for a distance of 188 kilometres between Narrabri and North Star
- realigning the track where required within the existing rail corridor to minimise the radius of tight curves
- providing five new crossing loops within the existing rail corridor, at Bobbiwaa, Waterloo Creek, Tycannah Creek, Coolleearllee, and Murgo
- providing a new section of rail line at Camurra, about 1.6 kilometres long, to bypass the existing hairpin curve
- providing three new rail bridges over the Mehi and Gwydir rivers and Croppa Creek
- realigning about 1.5 kilometres of the Newell Highway near Bellata, and providing a new road bridge over the existing rail corridor
- providing a new road bridge over the existing rail corridor at Jones Avenue in Moree.

## 6.1 Potential Impacts of the Proposal

The proposal has the potential for impacts on both heritage items within the rail corridor and items in the vicinity. Direct impacts affect heritage items located within the proposal site, while indirect impacts can occur both inside and outside the proposal site. Types of direct and indirect impacts along with the potential impacts of this proposal are discussed below.

### 6.1.1 Direct Impacts

Direct heritage impacts are considered to be those that may arise as a primary consequence of a project or change of use of an area (note that this is not relevant to the Inland Rail as the use of the proposal site will remain a rail line).

Direct impacts can result in the physical loss of part or all of an item or place, and/or changes to its setting. Setting is considered to include the surroundings of an item or place, its local context and can include present and past relationships to the surrounding landscape. Direct impacts resulting in physical loss are usually permanent and irreversible; they generally occur as a consequence of construction and are usually confined within the development footprint. Direct impacts that affect setting may occur as a consequence of construction or operation of a development and may have an effect some distance from the development. Assessment of impacts on setting refers to perceptible visual and aural (noise) effects that can be appreciated at a given time. Such impacts may be temporary or permanent, reversible or irreversible depending on the extent to which the cause of the impact can be removed. Impacts may also be transient where occurrence is sporadic or of limited duration, for example, related to hours of operation or the frequency of passage of vehicles (ICOMOS 2011). Changes to setting can also be considered to comprise an indirect impact. Impacts to setting are further discussed in **Section 6.1.2** and where relevant in item specific heritage impact discussions in **Sections 6.2** to **6.5**.

The majority of the main corridor works (upgrading the existing track and track formation) fall within the existing rail corridor (generally approximately 15 metres from outer rail).

Existing high voltage overhead power lines require alteration where they currently cross the rail corridor. This is due to the increases in clearances from the rail due to the double stacking arrangement that is a fundamental performance criteria of the Inland Rail. Works include dropping the existing lines and erecting new lines with greater clearance. As such there are not expected to be any additional power poles required or any impact as a result of works associated with replacing overhead powerlines.

In general the impact of the proposal can be considered to comprise the removal of the existing rail line, including rails, sleepers and ballast, and its associated culverts/underbridges (including the Mehi River, Gwydir River and Croppa Creek underbridges) and the construction of a new rail line within the same rail corridor. As such the rail line will remain as an easily understood rail line in regional north western NSW.

Retaining all evidence of the former rail line, culverts and stations etc as extant today is not feasible as significant upgrades to the formation are required as part of the proposal in order for the rail line to comply with the Inland Rail required performance specifications. In addition few identified original elements of the Pioneer Line survive intact, with the exception of the Mehi River, Gwydir River and Croppa Creek underbridges and a small number of railway stations.

With the exception of Moree, Edgeroi, Bellata and Gurley railway stations, the majority of the former stations have been previously removed, with only occasional earthen embankments or loading banks remaining as evidence of their former locations. The rail line itself has been continually upgraded as required since its construction as a Pioneer Line, and no original features (with the exception of the Mehi River, Gwydir River and Croppa Creek underbridges and a number underbridges with surviving timber components) have been identified or are expected to be found.

Statements of Heritage Impact are provided in **Section 6.2**, **6.3** and **6.4** for the listed and potential heritage items potentially impacted by the proposal and summarised in **Table 6.1**

### 6.1.2 Indirect Impacts

Indirect impacts are considered to be those that may arise as a secondary consequence of construction or operation of a project, and can result in physical loss or changes to the setting of an item or place beyond a project area.

Indirect impacts relevant to the proposal include vibration and visual impacts which have the theoretical potential to damage/destroy/disturb or dominate/detract from a non-Aboriginal heritage items or place or its setting.

ACARP Report (No. C14057) Effect of Blasting on Infrastructure recommends 'safe' vibration limits for heritage structures such as those used by British Standard BS7385. Annex A of the British Standard BS7385:Part2:1993 for the Evaluation and Measurement for Vibration in Buildings states that:

*...the age and existing condition of a building are factors to consider in assessing the tolerance to vibration. If a building is in a very unstable state, then it will tend to be more vulnerable to the possibility of damage arising from vibration or any other ground-borne disturbance British Standard BS7385:7.*

The British Standard BS7385 further discusses that 'a building of historical value should not (unless it is structurally unsound) be assumed to be more sensitive' (British Standard BS7385:5). The German standard DIN 4150: Part 3 Effects of Vibration on Structures includes a building type 'Particularly Sensitive' which is assigned vibration limits of 3 mm/s (at less than 10Hz), 3 to 8 mm/s (at 10-50Hz) and 8 to 10 mm/s (at 50-100Hz). Swiss Standard SN640 312:1978 also includes a 'Particularly Sensitive' structural type which is assigned vibration limits of 3 mm/s (at 10 to 30Hz) and 3 to 5 mm/s (at 30 to 60 Hz).

Australian Standard AS 2187.2-2006 Explosives—Storage and use Part 2: Use of Explosives no longer references 'sensitive or heritage structure'. The previous AS 2187.2-1993 indicated a conservative vibration level of 5 mm/s should be assigned to 'sensitive or heritage structures'. In the absence of a current Australian Standard which refers to structural vibration in buildings or heritage structures specifically, or any building specific assessment of the relevant sites/items considered in this report, a conservative peak particle velocity limit of between 3 to 5 mm/s is considered to be appropriate when assessing heritage structures. Note however, heritage type structures should also be considered on an individual basis in terms of their structural integrity; as an abandoned semi-derelict and dilapidated structure would likely be more sensitive to vibration induced damage than a well maintained and regularly utilised building.

The *Australian Rail Track Corporation Inland Rail Narrabri to North Star Noise and Vibration Assessment* (GHD 2017) identified that the expected magnitude of ground vibration resulting from general construction activities is not expected to be sufficient to cause damage if the equipment operates at distances greater than 35 metres from heritage buildings and structures. Piling activities have the potential to exceed structural vibration values for 'heritage structures at distances of 180 metres from the activity for impact piling, 50 metres for vibratory piling and 35 metres for bored piling'(GHD 2017). Operational vibration resulting from the proposal is not expected to result in any structural damage and vibration is predicted to remain within acceptable levels (GHD 2017).

Potential heritage items such as station buildings and sidings are located within, and in the vicinity of, the proposal site. As discussed, with consideration to potential structural damage resulting from vibration impacts caused by general construction activities, the expected magnitude of ground vibration should not be sufficient to cause damage if the equipment operates at distances greater than 35 metres from any potential heritage buildings and structures. While it is recognised that there are items located within this 35 metre buffer, levels measured on other similar projects indicate that vibration limits are not expected to exceed a 3 mm/s and therefore vibration damage is not expected for structures immediately adjacent to construction activities.

As such, with the exception of the Mehi and Gwydir River Underbridges, there are not considered to be any significant potential direct or indirect impacts to any statutorily listed heritage items as a result of the proposal.

All of the heritage items are currently located in proximity to a rail corridor and in many cases the heritage items existence is due to past and current associations with the railway line. The proposal comprises the removal of the existing rail line and the construction of a new rail line within the same rail corridor. As such, it is considered likely that the associations, setting, vistas and curtilage of the heritage items (both listed and potential) in relation to the rail line will essentially remain the same and as such will not be impacted.

The proposal does create the potential for intermittent visual impacts as a result of the increased traffic on the railway line and temporary impacts during construction; however these are again related specifically to the continued and ongoing use of the railway line. As a result, the upgrade of the existing line does not change the setting or character of these heritage items and in general has at most a low visual impact. Impacts to setting, vistas and curtilage are further considered where relevant in item specific heritage impact discussions in **Sections 6.2** to **6.5**.

The *Australian Rail Track Corporation Inland Rail – Narrabri to North Star Landscape and Visual Assessment* (URBIS 2017) concluded that the proposal is unlikely to result in a high visual impact once construction has been completed, given the proposal predominately entails the reinstatement of an existing rail corridor. The proposal to primarily upgrade existing railway tracks was assessed as resulting in changes to the existing setting which would be difficult to perceive, given they are such a small component within the wider landscape, in both agricultural and urban areas (URBIS 2017).

## 6.2 Listed Heritage Items within the Proposal Site

### 6.2.1 Moree Mehi River and Gwydir River Underbridges

#### 6.2.1.1 Moree Mehi River Underbridge

As discussed, the Moree Mehi River Underbridge is a steel Pratt truss bridge designed by Harvey Dare from the Railway Construction Branch, Department of Public Works. The bridge retains its original fabric and is of local significance as a significant component of infrastructure, and a good example of a steel Pratt truss bridge (with a single 36.6 metre (120 feet) steel through Pratt truss), constructed on a Pioneer Line using American bridge technology. Although part of a decreasing resource there are other similar examples, both regionally and throughout NSW (refer to **Section 5.3**). The Mehi River Underbridge is located on the east side of Moree and is an identifiable landmark from the banks of the Mehi River or when travelling across the Moree Bypass (A39) road bridge.

The ARTC draft updated listing boundary (refer to **Plate 4.2**) of the bridge includes

*The railway corridor commencing at rail distance 666.340 on the Moree side of the bridge, and extends to a point 20 metres on the northern or Boggabilla side of the bridge structure. The listing includes the steel truss span, the adjacent steel approach spans, and the timber spans on both sides of the steel bridge structures, piers, abutments and earthworks relating to the bridge structure within the railway property boundaries (ARTC 2012).*

### 6.2.1.2 Gwydir River Underbridge

As discussed, the Camurra Gwydir River Underbridge is a steel Pratt truss bridge designed by Harvey Dare from the Railway Construction Branch, Department of Public Works. The bridge retains its original fabric and is of local significance as a significant component of infrastructure, and a good example of a steel Pratt truss bridge (with two 36.6 metre (120 feet) steel through Pratt trusses), constructed on a Pioneer Line using American bridge technology. Although part of a decreasing resource there are other similar examples, both regionally and throughout NSW.

The ARTC draft updated listing boundary (refer to **Plate 4.1**) of the bridge includes

*...the railway corridor commencing at the start of the bridge on the Moree side and extends to the northern or Boggabilla end of the bridge. The listing includes the 2 steel truss spans and the timber approach spans, piers, abutments and earthworks relating to the bridge structure within the railway property boundaries (ARTC 2012).*

### 6.2.1.3 Heritage Impact Statement

The proposal comprises upgrading the rail infrastructure online, as determined through an options assessment process. This would involve building a new bridge in the same location as the existing bridge, and upgrading the rail tracks and formation along the existing alignment. The existing bridges would be removed prior to construction of the new infrastructure. The new bridges would be wider than the existing bridges to allow for bored piles and headstocks to be located under the existing bridges. This would minimise changes to the existing alignment, and reduce property acquisition. In addition upgrading the rail infrastructure online and removing the existing bridges would minimise ongoing maintenance requirements and potential safety issues.

The proposed new bridges will likely be functional rail bridges with a lesser mass and scale than the existing heritage listed bridges (refer to attached preliminary underbridge design drawings). Removal of the existing Mehi and Gwydir River Underbridge and constructing a new bridge is not considered to be a preferred option in terms of the heritage significance of the listed underbridges. The Burra Charter advocates a cautious approach to change: “do as much as necessary to care for the place and to make it useable, but otherwise change it as little as possible so that its cultural significance is retained” (Australia ICOMOS 2013).

The following discussion assesses the impact of the demolition on the significance of the Mehi and Gwydir River Underbridges in accordance with questions in the Heritage Office guideline Statement of Heritage Impact (2002).

**The following aspects of the proposal respect or enhance the heritage significance of the item or conservation area for the following reasons:**

The demolition of the Mehi and Gwydir River Underbridges is not considered to respect or enhance the heritage significance of the underbridges.

**The following aspects of the proposal could detrimentally impact on heritage significance. The reasons are explained as well as the measures to be taken to minimise impacts:**

The demolition of the Mehi and Gwydir River Underbridges will detrimentally impact on heritage significance as it entails the complete removal of the underbridges and construction of replacement bridges.

Mitigation measures that should be implemented include:

- Undertaking a photographic/archival recording to ensure that a full understanding and record of the Mehi and Gwydir River Underbridges and their association with the construction of Pioneer rail lines is documented and will be available for future generations.
- Development and implementation of an interpretation strategy, in consultation with the community and Moree Plains Shire Council.

**The following sympathetic solutions have been considered and discounted for the following reasons:**

An assessment of all potential options for the new bridges has been undertaken including the following options:

- Retain bridges and build new bridges offline
- Remove bridges and build new bridges online
- Remove bridges and build new bridges offline

The preferred option identified through the options assessment process was to remove and rebuild online. Further information on the options is provided in the EIS. Three broad options were considered in terms of how the proposal route would interface with the Mehi and Gwydir River Underbridges (and the Croppa Creek Underbridge). These comprised:

- Option 1 Do nothing – involved assessing the existing bridges to see if they meet ARTC design requirements and as such could be retained in situ and utilised as part of the proposal. This option was discounted as the existing bridges do not meet ARTC design requirements for use as operational bridges.
- Option 2 Online replacement – involves decommissioning and demolishing the existing bridges. The bridges would then be replaced with a reinforced concrete bridge along a similar alignment to the existing bridges. This option would be selected to minimise project scope and reduce project property acquisition requirements.
- Option 3 Offline replacement – involves realigning the existing track away from the existing structure to enable construction of a new reinforced concrete bridges. The existing bridges would be demolished, and the new bridges would be constructed close to the existing bridges (about ten metres). Offline replacement has the additional benefit of allowing existing rail operations to continue during construction of the new bridges.

Option 2 was selected as the preferred option at this stage of the design. The decision was taken after considering safety, alignment design, property impacts, constructability and cost criteria.

**Discussion**

As discussed, while there are other similar examples, both regionally and throughout NSW, the Mehi and Gwydir River Underbridges are part of a decreasing resource. As discussed, the options assessment process identified online replacement, however the preferred option in terms of retaining heritage significance would be to retain at least one of the underbridges and construct a new bridge alongside the existing rather than demolishing both the Mehi and the Gwydir Underbridges. The retention in situ of the Mehi River Underbridge would ensure that at least one of the steel Pratt truss bridges designed by Harvey Dare, constructed on a Pioneer Line using American bridge technology, likely as part of the same works program and in the same time period (1913) is retained as a sample of Pioneer Line underbridges. With its location immediately outside Moree providing easier accessibility and greater potential for interpretation and

maintenance, consultation could be undertaken with Moree Plains Shire Council in relation to retaining the Mehi River Underbridge in terms of appropriate uses, maintenance and ownership of the retained underbridge; noting that in the Burra Charter maintenance comprises continuous protective care.

If detailed design of a replacement bridge allows, an alternative (not preferable) to retaining the entire underbridge is the retention one or a number of the piers; which could then form part of the future interpretation of the former underbridges. However, it is understood that retaining piers within the Mehi River itself would affect the hydraulics around the bridge piers creating potential loss of capacity for conveying floods and as such is not favourable.

If a pier is to be retained, or if the entire underbridge is retained in situ (the preferred option is terms of retaining heritage significance), the pier on the west bank of the Mehi River alongside the existing pathway would provide a suitable and appropriate location for interpretive signage.

**Recommendation**

A photographic/archival recording is recommended to be undertaken of the existing heritage listed underbridges prior to the commencement of any works in this part of the proposal site with the potential to result in any changes to the existing bridges or their setting. The photographic recording will be undertaken in accordance with the Heritage Division, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006).

The proposed photographic recording will ensure that a full understanding and record of Mehi and Gwydir River Underbridges and their association with the construction of Pioneer rail lines is documented and will be available for future generations. The report would include photographs of the context and setting of the underbridge.

In addition to its photographic recording it is recommended that interpretation be developed, in consultation with the community and Moree Plains Shire Council, to ensure information regarding these significant bridges is accessible and available for the community to understand (refer to **Section 6.7** for further discussion about interpretation).

### 6.2.2 Moree Railway Station

**Heritage Impact Statement**

Moree Railway Station is significant as an important location on the 1890s section of the Mungindi line; being the rail head and the junction of three branch lines as well as a locomotive servicing centre. The remaining brick 1928 to 1929 constructed station building (refreshment room) is of aesthetic significance as a representative example of a standard platform building (OEH Moree Railway Station listing sheet). The railway station contributes to the local community's sense of place and provides an important connection to the community's past. It is assessed as being of local significance.

The key elements of the proposal in the vicinity of Moree Railway Station comprise:

- Jones Avenue overbridge (located over 600 metres to the south of the station. Any works are unlikely to result in any heritage impacts to the station)
- Stormwater works
- Active pedestrian level crossing at Moree Station
- Track works around Moree station.

Through Moree the proposal will follow the existing alignment and includes a track slew of 125 millimetres to enable clearance from the existing station platform. The major change to the existing operation of Moree Station comprises changing the boarding platform used by the Sydney Trains explorer service from the Down (West) platform to the Up (East) platform (GHD 2016). Other than this operational change there are not considered to be any alterations to the historic island platform layout and refreshment room built to the design of a standard early 1900s station building. The proposal comprises the removal of the existing rail line and the construction of a new rail line within the same rail corridor. As such, it is considered likely that the associations, setting, vistas and curtilages of the station in relation to the rail line will essentially remain the same and as such its heritage significance will not be impacted.

Although the proposal site passes through the heritage listed boundary of Moree Station, the remaining features of the station, including the island platform layout and refreshment room are not proposed to be directly impacted by the proposal. There is little other evidence for other associated facilities or elements at Moree Station which were generally removed progressively from the 1980s. The station will remain a functioning railway station; easily recognisable and understandable as such. Although no changes to the platform and associated station building are proposed as part of the works, they are located within the proposal site's main corridor works and as such there may be potential for direct physical impacts to the existing station platform and station building during construction as a result of their close proximity to areas of works.

This report does not include detailed consideration of the structural integrity of Moree Railway Station. Although vibration levels resulting from the construction and operation of the proposal are not expected to exceed 3 mm/s, the railway station is located immediately adjacent to the proposal site and as such there may be potential for indirect impacts to occur, caused by vibration, as a result of the construction and operation of the proposal. As such it is recommended the mitigation measures detailed in Section 7.3 of *Australian Rail Track Corporation Inland Rail Narrabri to North Star Noise and Vibration Assessment* (GHD 2017) be considered and implemented. Depending on the final design of the proposed fence and walls along the rail alignment as it passes through Moree, the construction of the proposed fence and walls will create an additional physical and visual barrier between the station and the town of Moree. However, the station already has a degree of separation as a result of the existing rail corridor fencing and the Moree Bypass on the west side of the rail line and by an existing earthen embankment/noise bund on the east side of the station running parallel to Morton Street.

As discussed, the station is significant as an important location on the 1890s section of the Mungindi Line with an extant station building representative of a standard platform building (OEH Moree Railway Station listing sheet). In addition, the station is also considered to be of social significance to the local community. While, depending on final design, the proposed fence and walls will create an additional physical and visual barrier, the proposal is not considered to impact the assessed heritage significance of Moree Station and the significance of the station, or its statutory listing, which will essentially remain the same.

**Recommendation**

A photographic/archival recording is recommended to be undertaken of Moree Station and its current context and setting prior to the commencement of any works in this part of the proposal site with the potential to result in any direct construction impacts, indirect vibration impacts or changes to the setting of the station. The photographic recording will be undertaken in accordance with the Heritage Division, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006).The proposed photographic recording will ensure that a full understanding and record of the surviving elements of Moree Railway Station are documented in their current context and setting.

As the proposal site passes through the heritage listed boundary of Moree Station the potential for impacts resulting from exceedances of appropriate structural vibration values will be managed in accordance with the recommendations of the *Australian Rail Track Corporation Inland Rail – Narrabri to North Star Noise*

*and Vibration Assessment* (GHD 2017); including where appropriate a condition report and vibration monitoring. As discussed in **Section 6.1.2** a conservative peak particle velocity limit of between 3 to 5 mm/s is considered to be appropriate when assessing heritage structures (refer to **Section 6.1.2**).

The current heritage listed elements of Moree Railway Station area, including the island platform and station building should be protected from direct (accidental) impacts during construction works.

## 6.3 Listed Heritage Items within the Vicinity of the Proposal site

### 6.3.1 Victoria Hotel

**Heritage Impact Statement**

The Victoria Hotel is a significant and impressive building located close to the railway station and considered to be of social significance to the local community. There are not expected to be any non-Aboriginal l heritage impacts to the assessed heritage significance of the Victoria Hotel as a result of the proposal.

Victoria Hotel is located outside the proposal site; approximately 70 metres to the west and separated from the proposal site by Gosport Street, car parking, a nature strip and the recently constructed Moree Bypass which is immediately adjacent to the existing rail corridor. Access to the Moree Railway Station is via a pedestrian underpass running beneath the Moree Bypass. The Victoria Hotel has no identifiable non-Aboriginal heritage associations with Moree Railway Station other than proximity and accessibility. The proposal is not expected to change the current connections to and from the Victoria Hotel and More Railway Station.

The proposal comprises the removal of the existing rail line and the construction of a new rail line within the same rail corridor. As such, it is considered likely that the setting, vistas and curtilages of the hotel in relation to the rail line will essentially remain the same and as such will not be impacted.

This report does not include detailed consideration of the structural integrity of the heritage listed Victoria Hotel however there are not expected to be any impacts to the building as a result of vibration associated with the construction or operation of the proposal. Vibration levels resulting from the construction and operation of the proposal are not expected to exceed 3 mm/s However, mitigation measures detailed in *Australian Rail Track Corporation Inland Rail Narrabri to North Star Noise and Vibration Assessment* (GHD 2017) should be considered and implemented where appropriate.

**Recommendation**

No non-Aboriginal heritage management measures are required in relation to the Victoria Hotel as part of the proposal.

### 6.3.2 Moree Baths and Swimming Pool

**Heritage Impact Statement**

Moree Baths and Swimming Pool are of significanceto the local community and of National significance to the Indigenous Australian community. The baths have been rebuilt and upgraded several times since construction in 1895. The current complex of three tiled pools was constructed in 1977 (refer to **Section 4.4.3**).

Moree Baths are located outside the proposal site; approximately 70 metres to the west and separated from the proposal site by Gosport Street, car parking, a nature strip and the recently constructed Moree Bypass which is immediately adjacent to the existing rail corridor. Access to the Moree Railway Station is via a pedestrian underpass running beneath the Moree Bypass. The Moree Baths have no identifiable non-Aboriginal heritage associations with Moree Railway Station other than proximity and accessibility. The proposal is not expected to change the current connections to and from Moree Baths and More Railway Station.

The proposal comprises the removal of the existing rail line and the construction of a new rail line within the same rail corridor. As such, it is considered likely that the setting, vistas and curtilages of the Baths in relation to the rail line will essentially remain the same and as such will not be impacted.

This report does not include detailed consideration of the structural integrity of the heritage listed Moree Baths and Swimming Pool however there are not expected to be any impacts to the building as a result of vibration associated with the construction or operation of the proposal. Vibration levels resulting from the construction and operation of the proposal are not expected to exceed 3 mm/s. However, mitigation measures detailed in *Australian Rail Track Corporation Inland Rail Narrabri to North Star Noise and Vibration Assessment* (GHD 2017) should be considered and implemented where appropriate.

The proposal will have no impact on the Moree Baths associations with Dr Charles Perkins or the Freedom Rides. There are not expected to be any non-Aboriginal heritage impacts to the Moree Baths and Swimming Pool as a result of the proposal.

**Recommendation**

No non-Aboriginal heritage management measures are required in relation to the Moree Baths and Swimming Pool as part of the proposal.

### 6.3.3 Bellata

**Heritage Impact Statement**

There are several heritage items along the Newell Highway (Railway Parade) in Bellata with a local heritage listing (refer to **Section 4.4.3**). The listed items comprise timber and corrugated iron structures fronting Railway Parade located approximately 80 metres from the centre line of the main rail line. As such they are located approximately 65 metres from the proposal site boundaries.

The proposal site comprises the existing rail line and entails upgrading the rail line to ensure it meets the required Inland Rail performance specification. The proposal site passes along the west side of the township of Bellata, between the town and the grain siding with its associated landmark grain storage facilities. The proposal site is separated from the township by a service station with truck stop and Railway Parade. The upgrading of the existing rail line results in no, or only very minor, change to its overall alignment, location and function.

The proposal site itself is the area in which direct impacts are likely to occur.

The proposal comprises the removal of the existing rail line and the construction of a new rail line within the same rail corridor. As such it is considered that the rail line will remain an easily understood rail line in regional north western NSW and the associations, setting, vistas and curtilages of Bellata and the heritage listed items within Bellata to the rail line will likely essentially remain the same.

As a result, in general the proposal has no potential non-Aboriginal heritage impact to the town of Bellata or its heritage listed items.

This report does not include detailed consideration of the structural integrity of the heritage listed buildings along Railway Parade however there are not expected to be any impacts to the buildings as a result of vibration associated with the construction or operation of the proposal. Vibration levels resulting from the construction and operation of the proposal are not expected to exceed 3 mm/s.

**Recommendation**

The *Australian Rail Track Corporation Inland Rail Narrabri to North Star Noise and Vibration Assessment* indicates no potential for indirect impacts to the timber and corrugated iron structures fronting Railway Parade. As such no non-Aboriginal heritage management measures are required in relation to the town of Bellata and its heritage listed items as part of the proposal.

The proposed photographic recording of various elements of the Narrabri to North Star rail lines, including the Bellata Railway Station area, will include contextual photographs showing relationships between the rail line, station areas and the neighbouring Railway Parade streetscape and listed heritage items.

## 6.4 Potential non-Aboriginal Heritage Items within and in the Vicinity of the Proposal site

### 6.4.1 Croppa Creek Underbridge

**Heritage Impact Statement**

As discussed in **Section 4.5**, during the design process for the proposal all underbridges were assessed for compliance with the Inland Rail performance specification. Any underbridges and culverts that did not comply, were identified as having limited life spans, or cannot be feasibly made to comply, are proposed to be replaced as part of the proposal. As such, the Croppa Creek Underbridge will be demolished and a new bridge constructed either online or offline.

The Croppa Creek Underbridge comprises a steel span constructed half-through bridge. Although not heritage listed, the bridge retains its original fabric and is of local significance as a significant component of infrastructure, and a good example of a steel bridge constructed on a Pioneer Line. Although part of a decreasing resource there are other similar examples, both regionally and throughout NSW.

The Croppa Creek Underbridge is located over one kilometre to the north of the township of Croppa Creek and approximately 60 kilometres northeast of Moree (chainage 735.115). The underbridge is not easily accessible and there are no significant easily accessible views to the underbridge as there are no access roads and no road crossing of Croppa Creek in the vicinity. The closest crossing of Croppa Creek being the Myall Downs Road crossing approximately 2.75 kilometres to the east.

**Recommendation**

A photographic/archival recording is recommended to be undertaken of the existing underbridge prior to the commencement of any works in this part of the proposal site with the potential to result in any impacts to the bridge or changes to its setting. The photographic recording will be undertaken in accordance with the Heritage Division, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006) and include photographs of the setting and context of the underbridge and its approaches.

The proposed photographic recording will ensure that a full understanding and record of Croppa Creek Underbridge and its association with the construction of Pioneer rail lines is documented and will be available for future generations. The report would include photographs of the approaches to the

underbridge and its setting and as such comprise part of a detailed record of the former Pioneer Line and its surviving component elements.

### 6.4.2 Steel Bridge Camp

**Heritage Impact Statement**

As discussed in **Section 4.13** and in the *Australian Rail Track Corporation Inland Rail – Narrabri to North Star Aboriginal Cultural Heritage and Archaeological Assessment* prepared for the proposal (Umwelt 2017) the Steel Bridge Camp was located within the proposal site on the west side of the Moree Mehi River Underbridge. While accounts of the demolition of fringe camps imply that it is unlikely that any archaeological evidence of structures associated with the camp at the crossing of the Mehi River will remain present, it is possible that dispersed artefacts associated with Aboriginal life at the fringe camp may remain present within the area.

Although the exact location of the fringe camp is not known the demolition of the existing underbridge and construction of new reinforced concrete bridge has the potential to impact any archaeological remains or artefacts associated with the camp that may be present within the proposal site on the west bank of the Mehi River.

**Recommendation**

The methodology for the archaeological management of potential archaeological evidence associated with the former fringe camp at the Mehi River Underbridge will depend on the final option and design of the proposed upgrade of the Mehi River crossing, to be determined during the detailed design project phase. A detailed methodology including the development of a research design and archaeological investigation methodology will be prepared as part of the non-Aboriginal Heritage Management Plan and be approved by the Heritage Council.

### 6.4.3 Underbridges

**Heritage Impact Statement**

As discussed, during the design process for the proposal all underbridges were assessed for compliance with the Inland Rail performance specification. Any underbridges and culverts that did not comply, were identified as having limited life spans, or cannot be feasibly made to comply, are proposed to be replaced as part of the proposal.

As such, there are numerous underbridges along the proposal site that are proposed to be replaced. The majority of these underbridges/culverts are various types of metal pipe or concrete box structures comprising examples of typical utilitarian rural rail underbridges that would have originally been constructed of timber but have been modified as part of past maintenance works. In general these are not considered to have any potential heritage significance. There are a number of underbridges surviving along the alignment which are entirely constructed of timber or have timber components in addition to early concrete modifications. These in general are likely to be more representative of the earlier types of underbridge constructed along the rail line (refer to **Table 4.2** for details) and of local significance as examples of surviving component elements of the construction and ongoing use of branch rail lines and Pioneer Lines in rural NSW at the end of the nineteenth and beginning of the twentieth century. Note that none of the existing underbridges with timber components are considered to comprise examples of intact original timber girder underbridges designed by Henry Deane (refer to **Section 3.12.1**). The proposal will impact all of the surviving timber underbridges and underbridges with timber components, therefore impacting the significance of these items. However these impacts to heritage significance will be mitigated by following the recommendations provided below.

**Recommendation**

A photographic/archival recording is planned to be undertaken of the following underbridges (as detailed in **Table 4.4**) prior to the commencement of any works with the potential to impact the rail line or underbridges:

- Moree 666.645
- Moree 666.945
- Moree 667.210
- Moree 667.370
- Moree 667.945.

The photographic recording will be undertaken with consideration of Heritage Division, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006).

The proposed photographic recording will ensure that a full understanding and record of the former Pioneer rail line and its associated infrastructure is documented and will be available for future generations. The report would include photographs of the rail line itself in the locations of the underbridges and any other rail related infrastructure such as former station locations (refer to **Section 6.4.3**) and as such comprise a detailed record of the former Pioneer Line and its surviving component elements.

### 6.4.4 Former Railway Stations

**Heritage Impact Statement**

Although many of the stations have been previously impacted with the majority of evidence for station platforms, siding loading banks and associated station buildings being demolished and removed in the 1970s and 1980s there are a number of railway stations on the Mungindi Line that survive fairly intact; these comprise Edgeroi Station, Bellata Station and Gurley Station. In contrast there are few intact railway stations on the Boggabilla Line; other than the concrete faced loading banks at Wongabinda, Calimpa and Croppa Creek.

Railway station locations such as Croppa Creek (bulldozed in the early 1980s), Bellata (masters residence demolished in 1988), Gurley (goods shed removed in 1973), Camurra (loading bank removed in 1973), Crooble (loading bank and goods siding removed in 1978), Milguy (station building demolished 1983), North Star (stock yards and station masters house removed in 1974 to 1975) have reports of various component elements being removed or the station area being entirely removed through the 1970s and 1980s (refer to **Table 3.6**). In addition, reports regarding Croppa Creek Railway Station indicate that in the 1980s the rail line was upgraded with ballast and heavy duty rails and steel sleepers installed. It is likely that much of the line underwent similar upgrades resulting in the removal of the majority of the earlier facilities (refer to **Section 3.11.8**).

This report does not include detailed consideration of the structural integrity of the extant railway stations of Edgeroi, Bellata and Gurley. However although the railway stations are located immediately adjacent to the proposed rail line there are not expected to be any impacts to the extant railway stations or their component elements as a result of vibration associated with the construction or operation of the proposal. Vibration levels resulting from the construction and operation of the proposal are not expected to exceed 3 mm/s. However, mitigation measures detailed in ARTC Narrabri to North Star Inland Rail Noise and Vibration Assessment (GHD 2017) should be considered and implemented where appropriate.

As a result of the proximity of surviving earthen embankments / loading banks etc that in general comprise the majority of any remaining evidence of the former railway stations, it is likely that such evidence will be impacted to some extent as part of the main corridor works.

**Recommendation**

A photographic/archival recording is planned to be undertaken of any remaining evidence of the former stations located along the Narrabri to North Star rail lines prior to the commencement of any works with the potential to impact the former station areas. The photographic recording will be undertaken with consideration of Heritage Division, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006) and form part of a photographic recording report produced for the proposal which will include the station areas and underbridges. The photographic recording will include contextual photographs showing relationships between the rail line, station areas, neighbouring streetscapes within the town and village areas and the associated grain rail sidings and silos.

The intact railway stations of Edgeroi Station, Bellata Station and Gurley Station should be retained *in situ* as examples of stations constructed as part of the rail line, protected during construction works and included in any interpretation strategy developed for the proposal (refer to **Section 6.7**).

**Table 6.1** considers the impacts at each station location and recommends any management (for example photographic recording) specific to that location.

**Table 6.1 Impacts and Recommended Management Measures for Railway Stations**

| Station | Remains | Impact | Recommended Management |
|---|---|---|---|
| Edgeroi | Main rail line.<br>Grain siding line.<br>Concrete faced platform with station building (likely the original building built in the late nineteenth century).<br>Station sign. | Main rail line removed as part of main corridor works.<br>Station platform, station building and grain siding line have the potential to be impacted as part of main corridor works.<br>Potential impacts from vibration. | Photographic recording.<br>The station platform and associated building and station sign should be retained *in situ* as an intact example of station buildings constructed as part of the rail line.<br>Station area should be protected from direct (accidental) impacts during construction works. |
| Woolenget | Main Rail line.<br>No evidence of former station or siding. | Main rail line removed as part of main corridor works. | No management required.<br>Note former Edgeroi woolshed discussed in **Section 6.4.5**. |

| Station | Remains | Impact | Recommended Management |
|---|---|---|---|
| Bellata | Main rail line.<br>Platform, simple shelter, station sign, grain siding line and staff hut. | Main rail line removed as part of main corridor works.<br>Station platform, station building and grain siding line have the potential to be impacted as part of main corridor works.<br>Potential impacts from vibration. | Photographic recording.<br>The station platform and associated building and station sign should be retained *in situ* as an intact example of station buildings constructed as part of the rail line.<br>Station area should be protected from direct (accidental) impacts during construction works. |
| Kilgowla | Main rail line.<br>No evidence of former Station. | Main rail line removed as part of main corridor works. | No management required |
| Gurley | Main rail line.<br>Platform with small staff hut and station sign. | Main rail line removed as part of main corridor works.<br>Platform with small staff hut and station sign have the potential to be impacted as part of main corridor works.<br>Potential impacts from vibration. | Photographic recording.<br>The station platform and associated building and station sign should be retained *in situ* as an intact example of station buildings constructed as part of the rail line.<br>Station area should be protected from direct (accidental) impacts during construction works. |
| Tycannah | Main rail line.<br>No evidence of siding. | Main rail line removed as part of main corridor works. | No management required |
| Moree | Main rail line.<br>Heritage listed island platform with refreshment room. | Main rail line removed as part of main corridor works.<br>Noise walls and fence construction.<br>Potential impacts from vibration. | Photographic recording.<br>Heritage listed island platform and refreshment room should be left *in situ* and protected from direct (accidental) impacts during construction works.<br>Note Moree Station impacts are discussed in detail in **Section 6.2.2** |

| Station | Remains | Impact | Recommended Management |
|---|---|---|---|
| Camurra | Main rail line.<br>Concrete platform at junction. | Located outside of proposal site main works corridor. | No management required |
| Wongabinda | Main rail line.<br>Concrete faced loading bank of former goods siding. | Main rail line removed as part of main corridor works.<br>Former loading bank likely removed as part of main corridor works. | Photographic recording |
| Calimpa | Main rail line.<br>Concrete faced loading bank of former goods siding. | Main rail line removed as part of main corridor works.<br>Former loading bank likely removed as part of main corridor works. | Photographic recording |
| Milguy | Main rail line.<br>No evidence of station remains. | Main rail line removed as part of main corridor works. | No management required |
| Crooble | Main rail line.<br>Former goods siding loading bank. | Main rail line removed as part of main corridor works.<br>Former loading bank likely removed as part of main corridor works. | Photographic recording |
| Croppa Creek | Main rail line.<br>Former goods siding loading bank. | Main rail line removed as part of main corridor works.<br>Former loading bank likely removed as part of main corridor works. | Photographic recording |
| Tikitere | Main rail line.<br>No evidence of siding. | Main rail line removed as part of main corridor works. | No management required |
| Windridge | Main rail line.<br>No evidence of siding. | Main rail line removed as part of main corridor works. | No management required |

| Station | Remains | Impact | Recommended Management |
|---|---|---|---|
| North Star | Main rail line.<br>Former station sign.<br>No evidence for former platform, station buildings or goods siding. | Main rail line removed as part of main corridor works. | No management required.<br>Station sign should be retained i*n situ* (or re-instated following construction) alongside the rail corridor in North Star Community Park. |

### 6.4.5 Grain Rail Sidings

The existing grain rail sidings with their landmark grain silos and associated structures are generally located immediately adjacent to, but outside, the proposal site and as such are not expected to be impacted by the proposal. No proposed compounds or access roads, located outside the rail corridor, are expected to directly impact the area of a grain siding or grain silo. In certain locations existing overhead powerlines are proposed to be replaced within the general areas of the grain sidings, however these works are not expected to result in any impacts to the grain sidings or silos (refer to **Section 6.1**).

This report does not include detailed consideration of the structural integrity of the grain rail sidings or grain silos however there are not expected to be any impacts to the grain sidings and associated silos as a result of vibration associated with the construction or operation of the proposal. Vibration levels resulting from the construction and operation of the proposal are not expected to exceed 3 mm/s. However, mitigation measures detailed in ARTC Parkes to Narromine Inland Rail Noise and Vibration Assessment (GHD 2017) should be considered and implemented where appropriate. The proposal comprises the removal of the existing rail line and the construction of a new rail line within the same rail corridor. As such, it is considered that the rail line will remain an easily understood rail line in regional north western NSW and the associations, setting, vistas and curtilages of rail sidings in relation to the rail line will likely essentially remain the same.

The State Library of NSW commissioned photographic recording of NSW grain silos comprises an existing valuable and important photographic record of NSW grain silos; including those within close proximity to the proposal site.

Apart from potential temporary impacts during construction, there are no expected impacts to the grain rail sidings and their landmark silos as a result of the proposal.

**Recommendation**

The proposed photographic recording of elements of the existing rail line discussed above (including station areas) will include contextual photographs showing relationships between the rail line, its stations and the grain rail sidings and silos.

### 6.4.6 Edgeroi Wool shed

**Heritage Impact Statement**

The woolshed at the former Woolenget Railway Station is located approximately 25 metres from the proposal site (refer to **Figure 4.1).** The woolshed is considered to be of local significance as the remains of a substantial woolshed associated with one of the large early land grants in the region and utilised through to the soldier settlement period settlement. It is a recognisable landmark in the area.

The interior of the woolshed or its immediate surroundings were not inspected during the field survey as the building is located on private land outside the proposal site.

The proposal comprises the removal of the existing rail line and the construction of a new rail line within the same rail corridor, as such it is considered that the rail line will remain as an easily understood rail line in regional north western NSW and the associations, setting, vistas and curtilages of the woolshed in relation to the rail line will likely essentially remain the same. This report does not include detailed consideration of the structural integrity of the former woolshed. The former woolshed comprises a timber framed corrugated iron clad structure located adjacent to the proposal site and as such there may be potential for indirect impacts to occur, caused by vibration, as a result of the construction and operation of the proposal. Vibration levels resulting from the construction and operation of the proposal are not expected to exceed 3 mm/s. However, mitigation measures detailed in ARTC Narrabri to North Star Inland Rail Noise and Vibration Assessment (GHD 2017) should be considered and implemented where appropriate.

**Recommendation**

Subject to the agreement of the owner, a photographic/archival recording is planned to be undertaken of the woolshed prior to the commencement of any works in the area. The photographic recording will be undertaken with consideration of Heritage Division, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006) and form part of the proposed photographic recording report produced for the proposal which will include the station areas and underbridges. The photographic recording will include contextual photographs of the woolshed's relationship with the rail line and inspection and recording of the interior and surrounds of the woolshed.

As part of the archival recording, further research should be undertaken to fully understand and document the history of occupation and use of the Edgeroi Pastoral Station and the woolshed. This documentation will provide contextual historic information to accompany the archival recording.

The rail corridor, and proposal site, boundary should be clearly defined during construction in this area to ensure no direct (accidental) impacts occur to the former woolshed.

### 6.4.7 Anzac Day Crossing

**Heritage Impact Statement**

The Anzac Day Crossing of the Boggabilla Line at Crooble is considered to have potential significant associations, as a regional meeting point prior to departure to World War II, for the families of local servicemen and women and as such be of local significance.

The crossing is within the proposal site and as such will be directly impacted as part of the main corridor works. However, in terms of significance the fabric of the crossing is not considered to be important and as long as a functional crossing is available at the location there are not expected to be any non-Aboriginal heritage impacts to the Anzac Day Crossing.

**Recommendation**

A level crossing at the location of the former Anzac Day Crossing south of Crooble should be incorporated into the design of the proposal. Further research should be undertaken to clarify the location of the former Anzac Day Crossing, including consultation with the local Crooble and Croppa Creek community, Gwydir Family History Society and Gwydir Shire Council and to assist in the development of suitable interpretation to ensure its significance is understood and communicated with the community.

### 6.4.8 Towns and Villages

**Heritage Impact Statement**

The proposal site comprises the existing rail line and entails upgrading the rail line to ensure it meets the required Inland Rail performance specification. The upgrading of the existing rail line results in no, or only very minor, change to its overall alignment, location and function. As a result, in general the proposal has no potential non-Aboriginal heritage impact to any of the towns and villages (or former village locations) located in the vicinity of the rail line with the exception of Moree, Bellata and North Star. Moree and Bellata are discussed in **Sections 6.2.2** and **6.3.3** respectively.

The proposal site passes along the west side of the township of North Star, on the west side of North Star Community Park; separated from the township by the Community Park and Edward Street. A number of timber and corrugated iron buildings front Edward Street (the main street of North Star) approximately 65 metres from the proposal site boundaries. However the additional assessment areas (which include Edward Street) are essentially immediately adjacent to the timber and corrugated iron buildings fronting Edward Street (refer to **Figure 4.1**).

This report does not include detailed consideration of the structural integrity of the buildings along Edward Street however there are not expected to be any impacts to the buildings as a result of vibration associated with the construction or operation of the proposal. Vibration levels resulting from the construction and operation of the proposal are not expected to exceed 3 mm/s. However, mitigation measures detailed in *Australian Rail Track Corporation Inland Rail - Narrabri to North Star Noise and Vibration Assessment* (GHD 2017) should be considered and implemented where appropriate.

Note that as discussed, depending on final design, it is considered unlikely that there will be any impacts associated with the additional assessment areas. The proposal site itself is the area in which direct impacts are likely to occur.

In addition, the proposal comprises the removal of the existing rail line and the construction of a new rail line within the same rail corridor, as such it is considered that the rail line will remain as an easily understood rail line in regional north western NSW and the associations, setting, vistas and curtilages of North Star in relation to the rail line will likely essentially remain the same.

**Recommendation**

Mitigation measures detailed in *Australian Rail Track Corporation Inland Rail - Narrabri to North Star Noise and Vibration Assessment* (GHD 2017) should be considered and implemented where appropriate in relation to the potential for indirect impacts to the timber and corrugated iron structures fronting Edward Street in North Star.

### 6.4.9 Surveyors Trees

**Heritage Impact Statement**

The two surveyors trees identified adjacent to the proposal site will not be removed as part of the proposal (refer to **Table 4.7**).

The trees could be considered to have local significance as contributing to the history of settlement in the area as boundary markers. However, they are not considered to date to early or significant properties.

**Recommendation**

The proposal site boundary should be clearly defined during construction in the area of the two surveyors trees to ensure no direct (accidental) impacts occur to the trees during construction.

## 6.5 Summary of Management and Mitigation Recommendations

A non-Aboriginal Heritage Management Plan will be prepared for the proposal to address the non-Aboriginal heritage and archaeological management recommendations associated with the proposal discussed in this report. The management plan will provide a description of the measures to be implemented to manage and protect non-Aboriginal heritage values within and in the vicinity of the proposal site.

A summary of the proposed management and mitigation recommendations detailed in **Section 6** is provided in **Table 6.2**.

**Table 6.2 Summary of Management and Mitigation Recommendations**

| Item | Report Section | Management/Mitigation Recommendations |
|---|---|---|
| Moree Mehi River Underbridge | Section 6.2.1 | • Undertake photographic archival recording.<br>• Develop interpretation in consultation with the community and Moree Plains Shire Council. |
| Moree Railway Station | Section 6.2.2 | • Retain *in situ*.<br>• Undertake photographic archival recording<br>• The potential for impacts resulting from exceedances of appropriate structural vibration values will be managed in accordance with the recommendations of the *Australian Rail Track Corporation Inland Rail – Narrabri to North Star Noise and Vibration Assessment* (GHD 2017). |
| Gwydir River Underbridge | Section 6.2.3 | • Undertake photographic archival recording.<br>• Develop interpretation in consultation with the community and Moree Plains Shire Council. |
| Victoria Hotel, Moree | Section 6.3.1 | • No management required. |
| Moree Baths and Swimming Pool | Section 6.3.2 | • No management required. |

| Item | Report Section | Management/Mitigation Recommendations |
|---|---|---|
| Bellata (Multiple locally heritage listed Items along the Newell Highway (Railway Parade)) | Section 6.3.3 | • None required as the Noise and Vibration Impact Assessment does not indicate the proposal exceeds appropriate structural vibration values. |
| Croppa Creek Underbridge | Section 6.4.1 | • Undertake photographic archival recording. |
| Steel Bridge Camp | Section 4.13.1 | • The non-Aboriginal Heritage Management Plan prepared for the proposal will include an archaeological investigation methodology and research design of the potential archaeological evidence associated with the former Steel Bridge Camp at the Mehi River Underbridge. |
| Moree 666.645 Underbridge | Section 6.4.2 | • Undertake photographic archival recording. |
| Moree 666.945 Underbridge | Section 6.4.2 | • Undertake photographic archival recording. |
| Moree 667.210 Underbridge | Section 6.4.2 | • Undertake photographic archival recording. |
| Moree 667.37 Underbridge | Section 6.4.2 | • Undertake photographic archival recording. |
| Moree 667.945 Underbridge | Section 6.4.2 | • Undertake photographic archival recording. |
| Edgeroi Station | Section 6.4.3 | • Undertake photographic archival recording.<br>• The station platform and associated building and station sign should be retained *in situ* as an intact example of station buildings constructed as part of the rail line.<br>• Station area should be protected from direct (accidental) impacts during construction works. |
| Woolenget Station | Section 6.4.3 | • No management required. |
| Bellata Station | Section 6.4.3 | • Undertake photographic archival recording.<br>• The station platform and associated building and station sign should be retained *in situ* as an intact example of station buildings constructed as part of the rail line.<br>• Station area should be protected from direct (accidental) impacts during construction works. |

| Item | Report Section | Management/Mitigation Recommendations |
|---|---|---|
| Kilgowla Station | Section 6.4.3 | • No management required. |
| Gurley Station | Section 6.4.3 | • Undertake photographic archival recording.<br>• The station platform and associated building and station sign should be retained *in situ* as an intact example of station buildings constructed as part of the rail line.<br>• Station area should be protected from direct (accidental) impacts during construction works. |
| Tycannah Station | Section 6.4.3 | • No management required. |
| Camurra Station | Section 6.4.3 | • No management required. |
| Wongabinda Station | Section 6.4.3 | • Undertake photographic archival recording. |
| Calimpa Station | Section 6.4.3 | • Undertake photographic archival recording. |
| Milguy Station | Section 6.4.3 | • No management required. |
| Crooble Station | Section 6.4.3 | • Undertake photographic archival recording. |
| Croppa Creek Station | Section 6.4.3 | • Undertake photographic archival recording. |
| Tikitere Station | Section 6.4.3 | • No management required. |
| Windridge Station | Section 6.4.3 | • No management required. |
| North Star Station | Section 6.4.3 | • No management required.<br>• Station sign should be retained i*n situ* (or re-instated following construction) alongside the rail corridor in North Star Community Park. |
| Grain Silos and Sidings | Section 6.4.4 | • Photographic archival recording of elements of the existing rail line discussed above (including station areas) will include contextual photographs showing relationships between the rail line, its stations and the grain rail sidings and silos. |
| Edgeroi Woolshed | Section 6.4.5 | • Undertake photographic archival recording, further research should be undertaken to fully understand and document the history of occupation and use of the Edgeroi Pastoral Station and the woolshed.<br>• The rail corridor, and proposal site, boundary should be clearly defined during construction in this area to ensure no direct (accidental) impacts occur to the former woolshed. |

| Item | Report Section | Management/Mitigation Recommendations |
|---|---|---|
| Anzac Day Crossing | Section 6.4.6 | • A level crossing at the location of the former Anzac Day Crossing south of Crooble should be incorporated into the design of the proposal.<br>• Further research should be undertaken to clarify the location of the former Anzac Day Crossing with the local Crooble and Croppa Creek community, Gwydir Family History Society and Gwydir Shire Council and to assist in the development of interpretation material. |
| North Star (timber and corrugated Iron buildings fronting Edward Street) | Section 6.4.7 | • Mitigation measures detailed in *Australian Rail Track Corporation Inland Rail - Narrabri to North Star Noise and Vibration Assessment* (GHD 2017) should be considered and implemented where appropriate. |
| Surveyor Tree Milguy | Section 6.4.8 | • The proposal site boundary should be clearly defined during construction in the area of the surveyors tree to ensure no direct (accidental) impacts occur during construction. |
| Surveyor Tree Tikitere | Section 6.4.8 | • The proposal site boundary should be clearly defined during construction in the area of the surveyors tree to ensure no direct (accidental) impacts occur during construction. |

## 6.6 Photographic Recording

A photographic recording comprises an archival record of a heritage place or object which may include sites, buildings, structures and movable items of heritage significance. The purpose of a photographic recording is to document a heritage item for future generations; as making a photographic record of a heritage place or object documents it for the future, before it is lost or changed, either by progressive alterations or by the ravages of time (Heritage Office 2006). The photographic recording will be undertaken with consideration of Heritage Division, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006).

It is not appropriate, feasible or practical to record the entire Narrabri to North Star section of rail line prior to its removal. Table 6.2 lists all items where it is recommended that photographic recording be undertaken. It is assessed that this will comprise an adequate and appropriate photographic recording of the rail line and its associated elements and will ensure that a full understanding and record of the former Mungindi Branch line and Boggabilla Pioneer Line will be available for future generations.

## 6.7 Interpretation

As discussed, the Burra Charter's options for managing non-Aboriginal heritage include maintenance, preservation, restoration, reconstruction, adaptation and interpretation, or a combination of these (Australia ICOMOS. 2013).

Pioneer Lines were constructed in rural NSW at the beginning of the twentieth century; encouraging settlement and agricultural and pastoral development throughout the region. The proposal site, and its

individual surviving component elements such as the extant steel and timber constructed underbridges and remnant evidence of former stations, is considered to generally be of local significance. As the proposal comprises upgrading the existing track, any remaining evidence related to construction of the Pioneer Line will be removed. As discussed, undertaking photographic recording of elements of the rail line is considered to comprise adequate and appropriate recording of the rail line and its associated elements; ensuring that a full understanding and record of the former Pioneer Line will be available for future generations.

The long linear nature of the Narrabri to North Star rail lines within a rural environment makes interpretation problematic. However the proposal site does form a significant part of the history of the pattern of settlement and development in the region and warrants the development and implementation of an interpretation strategy. Interpretation of certain elements of the proposal (the Mehi and Gwydir River underbridges, Edgeroi, Bellata and Gurley Railway Stations and the Anzac day Crossing) should be included in any interpretation strategy developed for the proposal.

The Heritage Division, OEH identifies interpretation as an integral part of the conservation and management of NSW's heritage. An Interpretation Strategy would provide a concept and framework for the interpretation of the existing rail line and associated features in order to communicate its significance to all stakeholders.

## 6.8 Unexpected Finds

### 6.8.1 Section 146 Heritage Act 1977 (NSW)

In the unlikely event that unexpected archaeological remains or potential heritage items not identified as part of this report are discovered during construction of the proposal, all works in the immediate area should cease, the remains and potential impacts should be assessed by a qualified archaeologist or heritage consultant and, if necessary, the Heritage Division, OEH notified in accordance with Section 146 of the *Heritage Act 1977* (NSW).

If an archaeological relic is located as part of the proposal a S146 Discovery of a Relic notification form must be completed and submitted to the Heritage Division, OEH.

### 6.8.2 Human Skeletal Material

In the unlikely event that a potential burial site or potential human skeletal material is exposed within the proposal site, the following procedure should be followed in accordance with the Policy Directive – Exhumation of Human Remains (NSW Department of Health 2008), Skeletal Remains – Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977 (NSW Heritage Office 1998) and the Aboriginal Cultural Heritage Standards and Guidelines Kit (NPWS 1997):

- as soon as remains are exposed, work is to halt immediately to allow assessment and management
- contact local police, OEH and the Heritage Division
- a physical or forensic anthropologist should inspect the remains *in situ*, and make a determination of ancestry (Aboriginal or non-Aboriginal) and antiquity (pre-contact, historic or forensic)
- if the remains are identified as forensic the area is deemed as crime scene
- if the remains are identified as Aboriginal, the site is to be secured and OEH and all registered Aboriginal parties are to be notified in writing

- if the remains are non-Aboriginal (historical) remains, the site is to be secured and the Heritage Division is to be contacted.

The above process functions only to appropriately identify the remains and secure the site. From this time, the management of the remains is to be determined through liaison with the appropriate stakeholders (NSW Police Force, forensic anthropologist, OEH, Heritage Division, registered Aboriginal parties etc) and in accordance with the *Public Health Act 1991*.

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