

Beerburrum to Nambour (B2N) Rail Upgrade Project Corduroy Road Discovery Archaeological Assessment Report

Prepared for TMR

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Executive summary

Niche Environment and Heritage Pty Ltd (Niche) was commissioned by TMR (the Proponent) to undertake an archaeological investigation for a discovery made within the footprint of the Beerburrum to Nambour (B2N) Rail Upgrade Project and reported to the Department of Environment and Science (DES) in September 2022 under section 89 (s89) of the *Queensland Heritage Act 1992* (QHA) (the Project). The discovery was described in the s89 as a section of corduroy road in [the] road reserve on Steve Irwin Way associated with works on TMR's B2N Project. The DES response to the discovery, issued via email in October 2022, advised that the corduroy road section exposed is *'like (sic) an early and rare aspect of Qld's road infrastructure'* and requested an archaeological assessment of the discovery.

Niche attended the site on 28 October and 1 November 2022 to record the discovery (the corduroy road). The results of the recording and accompanying preliminary research is outlined in this Archaeological Assessment Report and will be provided to DES by TMR.

During Project works, a small section of the corduroy road was first exposed by TMR using an excavator while assessing the location for an under bore rig and piping to connect water and internet cables beneath Steve Irwin Way. A larger section, 10 m x 8 m, was exposed after initial advice was returned from DES and strip trenches and pits were later used find the north-south extent of the feature. The full extent of the corduroy road is between 40 m – 50 m however only the 10 m x 8 m section was fully exposed and recorded.

Site inspections revealed the feature to be an intact and representative example of a corduroy road. Round, uncut logs were laid parallel running in an east-west direction with no discernible joinery or carpentry other than obvious axe marks on smaller logs. No signs of rot were identified. Although some outer bark was dislodged by pressurised water spray undertaken to clean the site before the recording could be completed, delicate edges remained intact after exposure and the logs remained stable and *in situ* during the recording.

Log sizes vary significantly. The smallest logs were around 600 mm long with a central diameter of 50 mm and the largest at 3900 mm and 4200 mm long with diameters of up to 230 mm. The smaller logs were laid where deviations in tree trunks created large gaps the road.

No artefacts were retrieved during the archaeological recording however, TMR identified and collected parts of a pocket watch (gears only) and a metal nut using a metal detector in the soils near the corduroy road. The exact location of these finds was not recorded. These items contained no marks or other identifying features.

Soil stratigraphy showed a layer of asphalt atop the feature which was revealed via contextual history and maps to be associated with the 1937 road upgrade. The corduroy road is likely to pre-date the 1919 road designation but may have been a factor in the selection of the road alignment.

Conclusion

Preliminary research indicates that the corduroy road adjacent to Steve Irwin Way at Beerburrum within the B2N Project area is a rare and intact example of a corduroy road that is likely associated with the establishment of the North Coast Rail Line and the development of early road networks in the local area.

It is likely that it was laid between 1891 and 1919 but contextual evidence has not been able to narrow these dates.

The corduroy road may meet the thresholds for State and/or local heritage significance.

Recommendations

From the significance assessment of the corduroy road as being of potential State and/or local heritage significance, the following recommendations are made:

- As per the DES response to the s89 notification, the exposed section of corduroy road should be covered in geofabric and backfilled with crusher dust to a depth of 100mm.
- As per the DES response to the s89 notification, any further or additional proposed excavations in the vicinity of the corduroy road require an archaeological investigation to ensure avoidance of further sections of corduroy road.
- If required by DES, undertake further research, including archival research and a comparative analysis, to determine the full history of the corduroy road and its significance at both a State and local level.

Glossary and list of abbreviations

Term or abbreviation	Definition
Burra Charter	The Australia ICOMOS Charter for Places of Cultural Significance (2013)
DES	Department of Environment and Science
NTAQHR	National Trust of Australia (Queensland) Heritage Register
Niche	Niche Environment and Heritage Pty Ltd
PA	Protected Area
QHA	<i>Queensland Heritage Act 1992</i>
QHC	Queensland Heritage Council
QHR	Queensland Heritage Register
SEQ	South East Queensland
SHP	State Heritage Place
TMR	Department of Transport and Main Roads

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1.0 Introduction

Project background and aims

Niche Environment and Heritage Pty Ltd (Niche) was commissioned by TMR (the Proponent) to undertake an archaeological investigation for a discovery made within the footprint of the Beerburrum to Nambour (B2N) Rail Upgrade Project and reported to the Department of Environment and Science (DES) in September 2022 under section 89 (s89) of the *Queensland Heritage Act 1992* (QHA). The discovery, made by TMR during B2N Project works, was described in the s89 as a section of corduroy road in [the] road reserve on Steve Irwin Way associated with works on TMR's B2N Project. TMR noted that further excavations would be required by the B2N Project in the vicinity of the discovery. The DES response to the discovery, issued via email, advised that *'the corduroy road section exposed is like (sic) an early and rare aspect of Qld's road infrastructure that requires careful management,'* and the following actions were required by DES pursuant to section 90 (s90) of the QHA:

- The exposed section of corduroy road is recorded in detail, covered in geofabric and backfilled with crusher dust to a depth of 100mm.
- An archaeological assessment report detailing the discovery is lodge[d] with DES 60 business days on completion of backfilling the discovery.
- All proposed excavations in the vicinity of the current discovery require an archaeological investigation to ensure avoidance of further sections of corduroy road sections, investigation should be done in accordance to DES guidelines, available here: [Guideline: Archaeological investigations \(www.qld.gov.au\)](http://www.qld.gov.au/guideline/archaeological-investigations).

In accordance with this advice, TMR engaged Niche to undertake an archaeological investigation of the corduroy road, undertake preliminary research and prepare an archaeological assessment report to satisfy s90 of the QHA (the Project).

Project location and description

The B2N Rail Upgrade Project includes the duplication of the rail line between Beerburrum and Beerwah, the upgrading of park and ride facilities, and road overpasses. Stage 1 of the B2N Project is approximately 13 km in length starting near Beerburrum in the south and roughly follows the North Coast Line rail corridor north finishing near Bellbird Creek adjacent to Australia Zoo at Landsborough.

During B2N Project works a small section of the corduroy road was first exposed by TMR using an excavator while assessing the location for an under bore rig and piping to connect water and internet cables beneath Steve Irwin Way. A larger section, 10 m x 8 m, was exposed after initial advice was returned from DES and strip trenches and pits were later used find the north-south extent of the feature. The full extent of the corduroy road is between 40 m – 50 m however only the 10 m x 8 m section was fully exposed and recorded (Plates 1 and 2). The corduroy road feature is located approximately 13 m south of a natural creek and identified frog habitat (Plate 3). It is located approximately 9 m west of the Steve Irwin Way road corridor and just north of the Steve Irwin Way intersection with Nursery Road, Glass House Mountains (Figure 1).

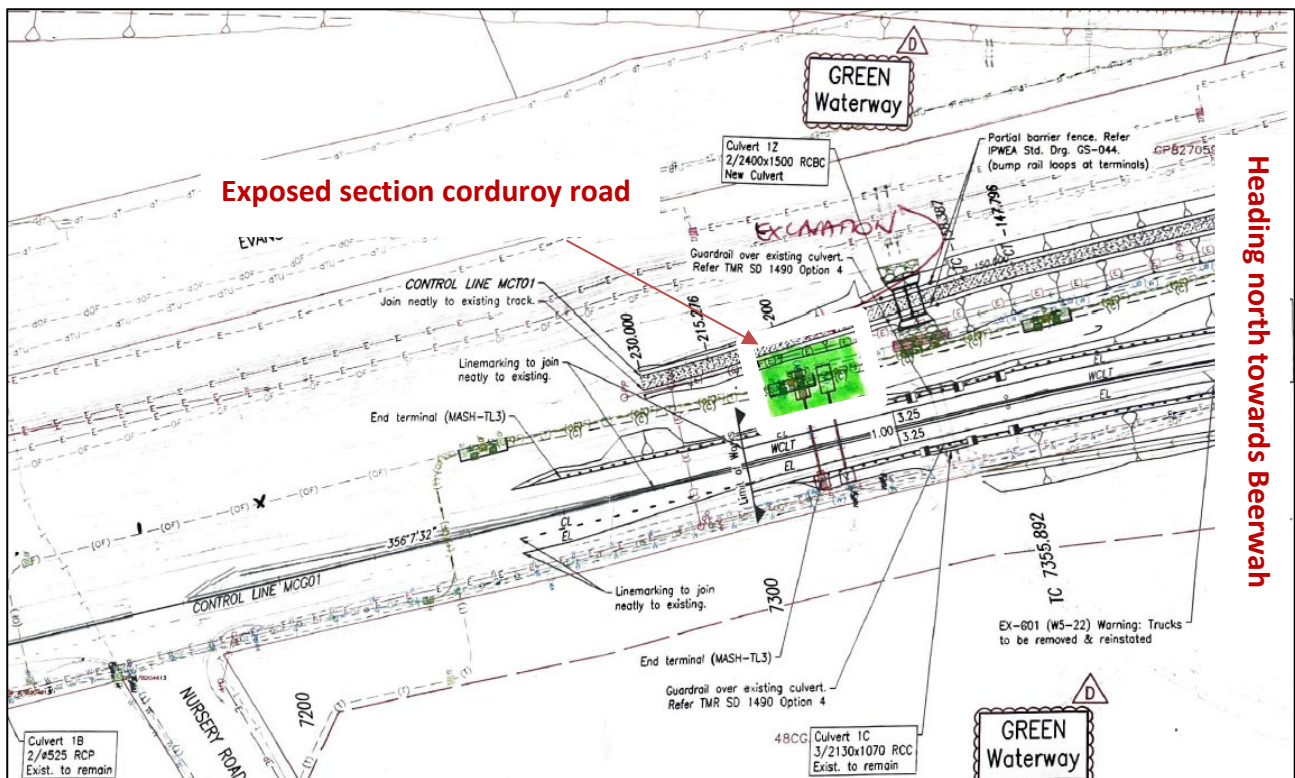


Plate 1. 2022 plan showing location of discovery and assumed extent (Source: Adapted from TMR/Aurecon, B2N Rail Upgrade Project, General Arrangement Sheet 1 of 7, 18/10/2022).

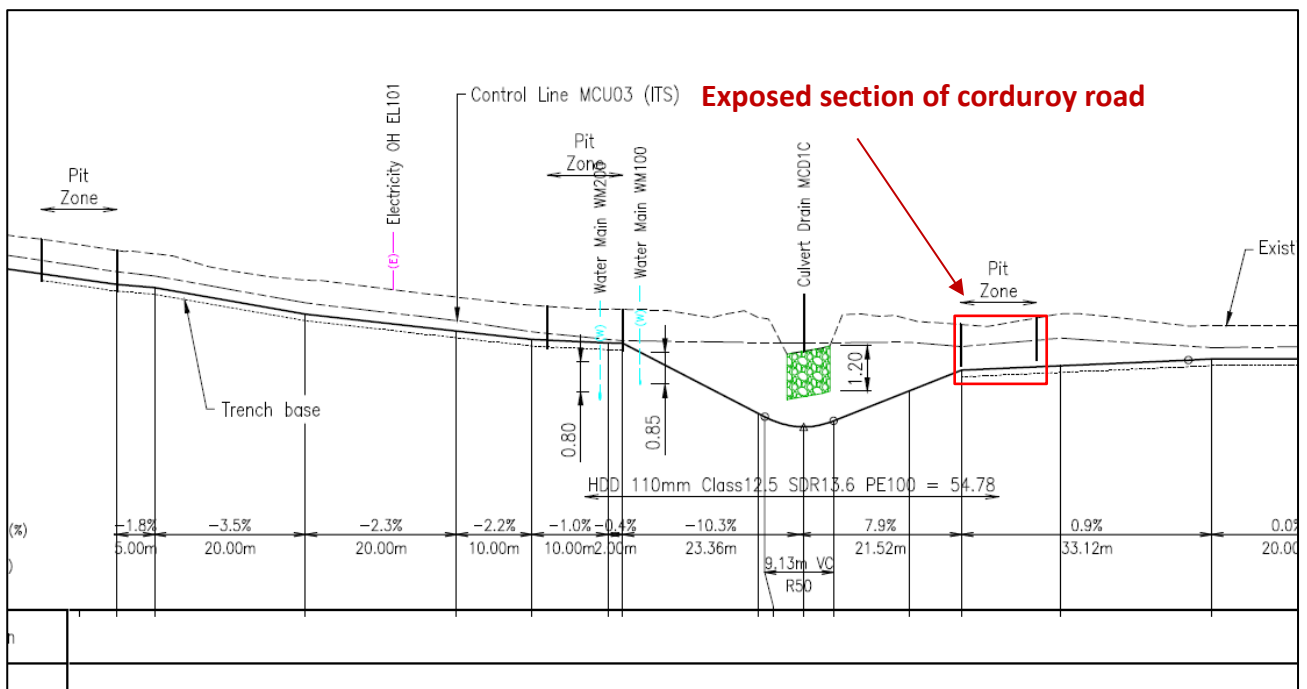


Plate 2. 2022 plan showing location of corduroy road (Source: Adapted from TMR/Aurecon, B2N Rail Upgrade Project, Public Utility and Plant Sheet 1 of 7, 18/10/2022).

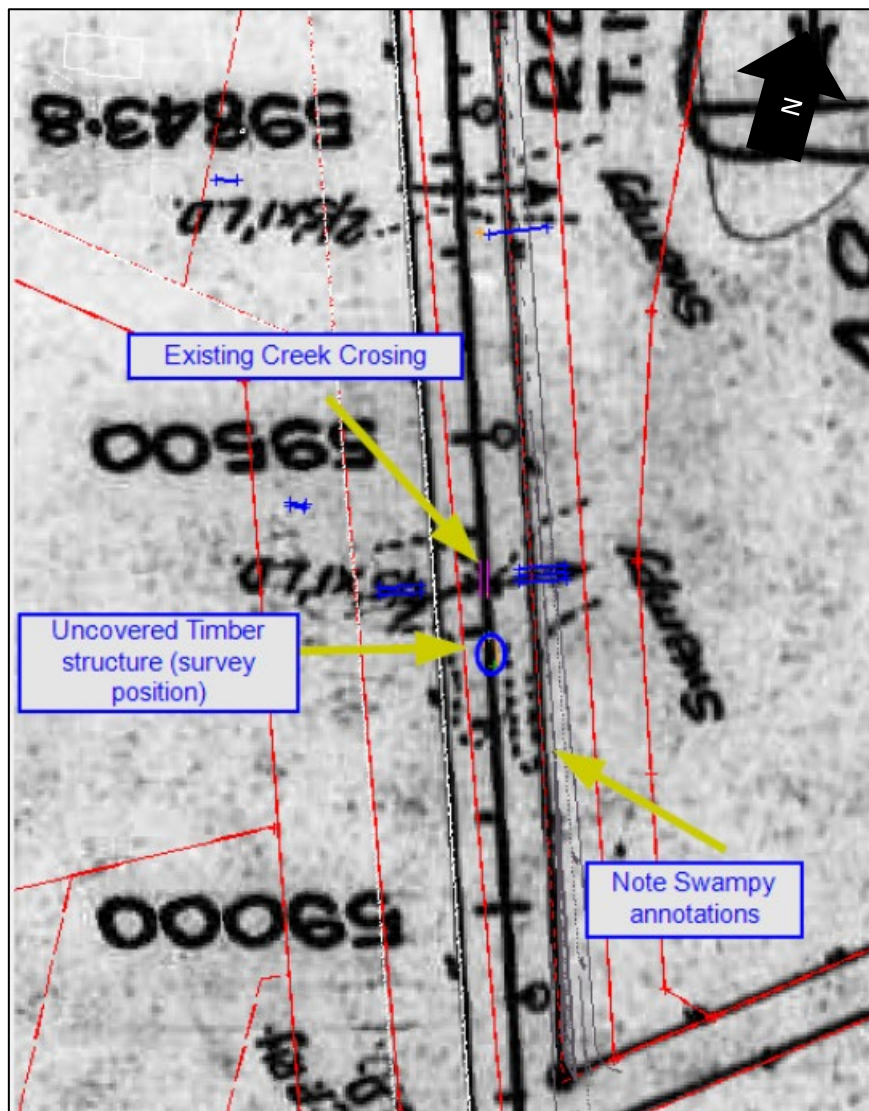


Plate 3. Extract from the 1937 highway upgrade plans with annotations from TMR showing the proximity of the timber structure to the creek crossing (Source: TMR, Plan No. 23752).

Initially, a small section of the corduroy road was identified during excavations to place a boring rig and pit required to redirect existing services from the east side of Steve Irwin Way to the west side of Steve Irwin Way. The pit was then extended and approximately 10 m of the corduroy road was exposed showing logs laid in an east-west alignment.

The Contractor engaged by TMR used an excavator and vacuum truck to identify the extent of the corduroy road through a series of strip trenches and small pits between 20 cm and 1 m wide and revealed that the feature extended approximately 40 m – 50 m passing through the natural creek. There is potential for a portion of the road to exist north of the Project area, but this has not been confirmed as the area has not been disturbed by the B2N Project works.

Methodology

A 10 m x 8 m trench had been previously opened by TMR's Contractor using an excavator and vacuum truck to expose the corduroy road. As the trench had been left open between the initial discovery and the archaeological recording, storms and a constant flow of groundwater resulted in a large pool of water and mud over the corduroy road which needed to be drained prior to recording (Plate 4). This was controlled though the Project's groundwater management processes via a pump and drainage hose and using the

vacuum truck to expedite water removal. Pressurised water spray was used to clear the mud off the corduroy road and this resulted in some tree bark being removed from the logs during this process (Plate 5).

The exposed logs and general site context were recorded by SLR photography and through detailed hand-measured drawings. Geofabric was laid over the corduroy road between and after archaeological recording days to prevent further damage.



Plate 4. Corduroy road location before water was drained, 28 October 2022.



Plate 5. Corduroy road after pressurised water spray was used to expose the corduroy road, 28 October 2022.

Authorship and acknowledgements

This report has been written by Rosanna Virzi (Heritage Consultant, Niche) and Dr Christina Amiet (Experienced Heritage Consultant, Niche) and reviewed by Jane Austen (Acting Discipline Manager - Heritage, Niche) and Sher Mitchell (Cultural Heritage Officer, TMR). Maps, drone images and heritage surveying plans have been provided by TMR. All photographs and drawings have been supplied by Niche unless otherwise stated.



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2.0 Regulatory and assessment framework

1.1 Preamble

The management and conservation of historical heritage and archaeological sites is subject to a range of statutory provisions at a Federal, State and local level. This section provides a summary of relevant legislation and associated planning instruments designed to protect, conserve and manage significant heritage items and their values.

2.2 Queensland Heritage Act 1992 (QHA)

The QHA provides for the conservation of Queensland's cultural heritage for the benefit of the community and future generations. Administered by DES, the QHA sets out a framework for identifying and protecting heritage places by establishing the Queensland Heritage Council (QHC), the Queensland Heritage Register (QHR), local heritage registers, regulating development and enabling the management of heritage places through heritage agreements.

The QHR is a record of places of cultural heritage significance to the people of Queensland. Places can be entered in the QHR under two categories - Protected Area (PA) or State Heritage Place (SHP). PAs have strong heritage values that are vulnerable and under threat.

SHPs are places of significance that contribute to our understanding of the wider pattern and evolution of Queensland's history and heritage. SHPs are the most common category in the QHR. A place may be entered in the QHR under this category if it satisfies one or more of eight cultural heritage criteria specified in Section 35 of the QHA.

The criteria are:

- a) The place is important in demonstrating the evolution or pattern of Queensland's history.
- b) The place demonstrates rare, uncommon or endangered aspects of Queensland's cultural heritage.
- c) The place has potential to yield information that will contribute to an understanding of Queensland's history.
- d) The place is important in demonstrating the principal characteristics of a particular class of cultural places.
- e) The place is important because of its aesthetic significance.
- f) The place is important in demonstrating a high degree of creative or technical achievement at a particular period.
- g) The place has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
- h) The place has a special association with the life or work of a particular person, group or organisation of importance in Queensland's history.

Archaeological provisions

Places not listed on the QHR can still have potential to contain archaeological artefacts. It is a requirement under the QHA that any discoveries of important archaeological artefacts are reported to DES. S89 of the QHA states:

A person who discovers a thing the person knows or ought reasonably to know is an archaeological artefact or underwater cultural heritage artefact that is an important source of information about an aspect of Queensland's history must give the chief executive a notice under this section.

Penalties applies for non-compliance with s89. It is also an offence to interfere with an archaeological artefact (i.e. damage, destroy, disturb, expose or move) a reported archaeological artefact without written consent or 'reasonable excuse'.

The corduroy road is not entered on the QHR.

The discovery of the corduroy road was reported to DES via the s89 notification form and procedure. It was assessed at the time of discovery as likely to be a rare aspect of Queensland's road infrastructure.

Local Heritage Registers and Planning Schemes

The QHA enables local governments the option to establish a local heritage register, or to use a planning scheme approved under the *Planning Act 2016* to identify and manage local heritage places.

The corduroy road is not listed on the Sunshine Coast Council register of heritage places (SC6.10 Planning Scheme policy for heritage and character areas overlay code).

2.3 Non-Statutory Standards and Listings

Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (2013)

The Australia ICOMOS Charter for Places of Cultural Significance (2013), or Burra Charter, sets a standard of practice for those who provide advice, make decisions about, or undertake works to places of cultural significance including owners, managers and custodians. The Burra Charter provides specific guidance for physical and procedural actions that should occur in relation to significant places, regardless of their legislative listing. A copy of the 2013 charter can be accessed at: <http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf>.

National Trust of Australia (Queensland)

The National Trust of Australia (Queensland) has been gathering information about heritage places in Queensland for more than three decades and has a list of heritage places, known as the National Trust of Australia (Queensland) Heritage Register (NTAQHR), which includes individual buildings, precincts, natural environment places or culturally significant artefacts. These listings do not attract any legal protection for a place, nor do they put the owner of a listed place under any legal obligation.

The corduroy road is not listed on the NTAQHR.

2. Historical context

2.1 Corduroy Roads

The following is reproduced from the QHR entry for the Corduroy Road Remains, Laidley (QHR No. 600657) and outlines the general context for the use of corduroy roads in Queensland:

The practice of building corduroy roads was common in Europe by the 18th century and was also a common form of construction in America during the post-colonial period. It involved overlapping full or half rounds of logs together transversely and was used in swampy areas as a cheap and simple method of stabilizing road foundations. With the scarcity of labour and financial resources in colonial Queensland, corduroy roads became an important and viable means of dealing with poor road conditions. Moreover, their simple method of construction meant that the employment of an engineer was not required as was the case with the more advanced and more expensive practice of building plank roads, as delineated in 1852 by Captain Payne, a former Royal Engineer, and as tabled in the New South Wales Legislative Council the following year.

While corduroy roads were an effective means of traversing a quagmire, they were far from perfect. With rudimentary suspension systems in coaches of the day, travellers found corduroy sections to be far from comfortable. They were also subject to the kind of disrepair that made travel more precarious, as Nehemiah Bartley noted in his reminiscences of his business trips of 1854-55 to the Darling Downs in Opals and Agates:

"The next day I had to tackle the scrub on the 'Spicer's Peak' Gap. This road . . . had been at one time paved with thick pine logs - a 'corduroy' road, in fact - and, while it lasted, all was well. But, the place was naturally almost a bottomless morass, full of springs; the logs had rotted in the middle, and the sound ends titled up in all directions; a lovely chevaux de frise. It was an awful place for horse, bullock, or vehicle of any kind, to face, the titled logs adding to the pitfalls of the boggy ground".

In remotely settled areas, such as Queensland, there was a scarcity of both population and resources, limiting the options for road construction. Effectively, corduroy roads, while rudimentary, became a standard response to poor road conditions.

3.2 Development of the Glass House Mountains district

The Glass House Mountains were revered by First Nations Peoples in the area and served as a special meeting place for both ceremonial and social purposes. First Nations Peoples 'read' environmental signs and knew that certain events (such as a tree flowering) heralded another food supply. Before the land use changed, First Nations People planned large festivals and gatherings, such as bunya nut festivals, at times when local food sources were peaking. This way a crowd of hundreds of people could be catered for with minimal effort. Early missionaries in this area saw gatherings of thousands of people (QHR 602702).

The first European record of the distinctive topography of the Glass House Mountains was made by Captain James Cook on the Endeavour in 1770, who called them Glass House Mountains for the way the landforms resembled glass furnaces in his home country. For many years the area remained out of reach, with the Moreton Bay penal settlement off-limits from 1824 until the 1840s, when early settlers began squatting in the Darling Downs district west of Brisbane.

The area between the Mooloolah and Maroochy Rivers had been closed to settlement prior to 1860 as part of a Reserve proclaimed by Governor Gipps in 1842. The aim of the reserve was to protect the bunya trees

that were highly valued as a food source by the First Nations people. After Queensland separated from New South Wales in 1859, Gipps' proclamation was rescinded by the *Crown Lands Alienation Act 1860*, which allowed for post-survey selection, and timber-getting licenses. It was this early activity in today's Maroochy Shire, along with the discovery of gold at Gympie in 1867, which led to the first European settlement at the Glasshouse Mountains further south (QHR 602702). Timber in particular attracted the early settlers to the Beerwah/ Beerburrum/ Glasshouse Mountains area (Powell 1998a:137).

The discovery of gold in the Gympie region ignited a flurry of activity, with prospectors streaming north to take advantage of the newly discovered gold fields. From 1858 to the 1870s, gold was a key drawcard to those moving into Queensland, and as a result local transportation networks were gradually extended throughout the state to cater for demand. The railways had extended west to Toowoomba in the 1850s, and as a result of the commercial prospects offered by the Gympie goldfields, the tracks north became more frequently travelled. In many cases, as with the Glass House Mountains and present-day Old Gympie Road, the Europeans moving into the area utilised existing tracks that had been long-used by First Nations People.

In 1868 the government made the first attempts to develop a formal road from Brisbane to Gympie, with businesses seizing on the opportunity to establish both coach and accommodation services. Tom Petrie was contracted by the government to blaze a more direct route from Brisbane after the gold discovery. As Cobb and Co., the biggest coaching company in Australia, (Qld Historical Atlas 1990) had announced its intent to run a service when a formal road was completed, Petrie was accompanied by the Cobb and Co. driver Hiram Barnes to blaze the route. Cobb and Co. coaches went through dense rainforest in coastal areas and it took many months to cut a track through the forests between Brisbane and the Gympie goldfields in 1868. Petrie also used Aboriginal guides to assist him in this undertaking (Powell 1998b).

The resulting track along present-day Old Gympie Road was sufficient for people walking or riding to Gympie, but in May 1868 the government allocated £2,700 for the construction of a road trafficable by buggies and wagons. Work on the road, which followed Petrie's track, progressed slowly due to inclement weather and the fact that workers regularly decamped to find greater wealth on the goldfields. Early in October 1868, Cobb and Co.'s representative, Mr Hoyt, accompanied by a government road engineer, Frederick Byerly, took 28 hours travelling time to traverse the new road from Gympie to Brisbane in a two-horse buggy (QHR 602702).

Conversely, funds set aside for the improvement of the road surfaces between Brisbane and Caboolture were requested as at £400, although it was abundantly clear that additional funding would be required before the works were to be completed (*Brisbane Courier*, 1 August 1868: 6).

As a result of the greater financial investment along Old Gympie Road, this route from Brisbane to Gympie became the best known Cobb and Co. stretch in Queensland. The road degenerated quickly however, and in 1871 the English novelist Anthony Trollope was warned against travelling by coach because of the terrible state of the Brisbane to Gympie road. He went regardless, and wrote that *'There is often no road, and the coach is taken at random through the forest. Not infrequently a fallen tree blocks the track...But the great miracle is the sudden pinches, looking as though they were almost perpendicular, down which the coach is taken - and then the equally sharp ascents...'* In 1876 Cobb and Co. ended its passenger service, and it eventually sold its mail run as well, since the mail coach could take up to six days to reach Gympie (QHR 602702).

3.3 Development of Beerburrum

When Queensland was separated from New South Wales in 1859 it had no railway system and only one relatively reliable road, which linked Brisbane and Ipswich. The first railway track was laid between Ipswich and Toowoomba between 1864 and 1867. Laying new lines was expensive because of the distances and difficult terrain involved so priority was given to lines that connected inland resources with the coastal ports. Queensland railways were at first a series of parallel lines rather than a network and urban centres along the coast were linked comparatively late and little by little. A line along the coast north of Brisbane was surveyed in 1882 and approved in 1884 (QHR 602236).

The railway expansion effectively created new opportunities for coaching companies. As the trains disembarked people and goods at the respective stations, the coach services were then in prime position to convey passengers to outlying settlements. However, with the construction of the railway line from Brisbane to Landsborough, the coaching companies lost a valuable source of revenue, as they could not compete with the speed of the trains, particularly when travelling over poor road surfaces.

A Caboolture rail route had been surveyed in 1885 and by 1886 the first section of the North Coast line from Brisbane to Caboolture had commenced construction. In 1888 construction of the remaining sections commenced simultaneously from Caboolture and Gympie.

The Brisbane Courier kept its readers up to date on the construction works, noting in January 1890, that

“On section 2 of the North Coast Railway the fencing is almost completed. All classes of earthworks have made very indifferent progress owing to the wet weather and the holiday. Level crossings are being proceeded with. All the bridges except Mooloolah bridge are practically completed.... All the sidings on section 2 are complete, with the exception of the long loop at Beerburrum. A large repairing gang has been going through section 2 during the month, and it remains to be seen whether the lengths men will be able to bring the road into such a condition that it can be taken over at present, as the continued wet weather will necessitate further repairs.... The station works on section 2 are proceeding but all the works are still backward. No metalling has yet been done, and the yards will hardly be ready by the end of the month. Section No 2 will probably be ready for opening early next month.” (*The Brisbane Courier*, 25 January 1890:6).

The second and third sections of the railway line, between Caboolture and Yandina, were let to Jesser and Co. on 6 December 1888, with the North Coast railway line completed immediately to the east of the Glass House Mountains in c1891. This linked Brisbane, Gympie, Maryborough, Bundaberg and Mount Perry, and dramatically opened up the transportation network in south east Queensland (Harden, 1939: 129).

Typically, the road networks in areas of settlement were centred around the railway stations as the main source of supplies, transport and resources, and as with Laidley and Toowoomba, the North Coast Railway's construction saw a corresponding road network develop in the Beerburrum, Caboolture, and Landsborough area for the benefit of timber getters, settlers and sawmill workers hoping to establish themselves in the district. However, as a result of the completed railway line, the mail service, then held in the local area by McCallum Coaches, lost the valuable contract to the railways.

The 1888 railway survey plans for the site near Beerburrum, being part of Section 2 Caboolture to Landsborough (Harden, 1939:129), had indicated several areas of swampy ground, including one near the location of the corduroy road as 'ti tree swamp.' (Plate 6) Given the relative distance from the corduroy road to a nearby creek, however, any structural works are more likely to have been the result of road stabilisation rather than other engineering works such as a rudimentary bridge over a waterway. The

instability of the road surface would have required some stabilising before it was suitable for bullocks and carts to access the forthcoming Beerburrum Railway Station.

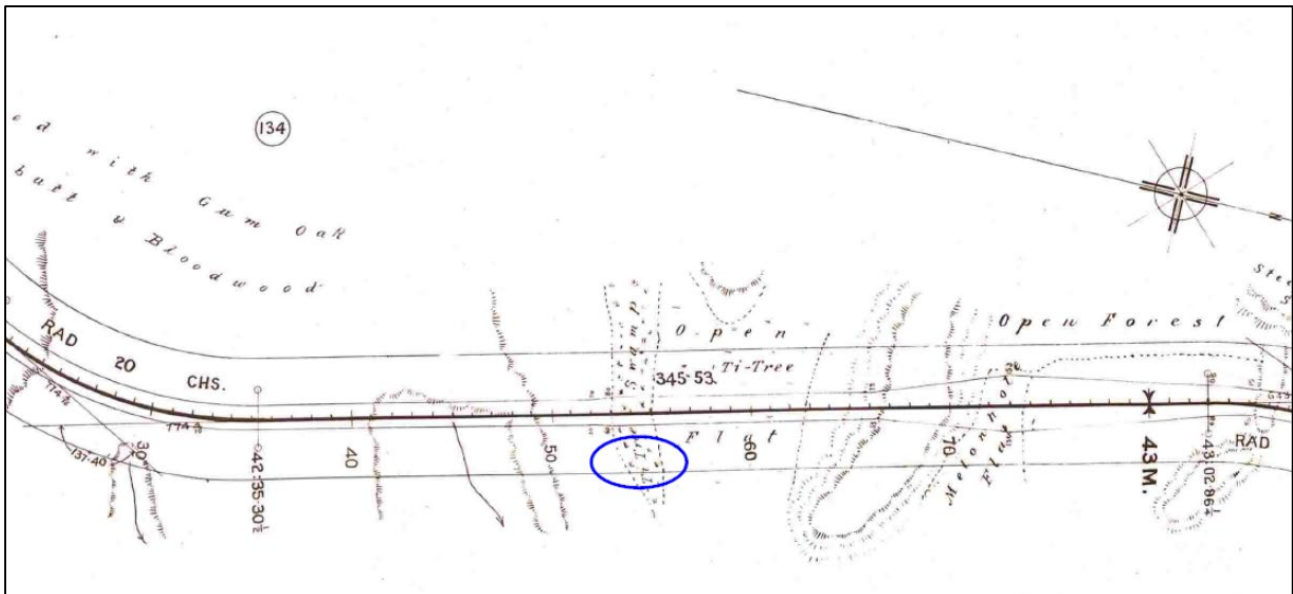


Plate 6. Detail of 1888 Railway Survey Plan showing the existence of 'ti tree swamp' in proximity to the subject site (Source: TMR).

The 1888 survey also included a width of road corridor adjacent to the rail line, indicating that this was intended to be part of the overall development process. As the area in the 1892 cadastral map was identified as Crown Land, any roadworks in the area was unlikely to have been the work of a private individual or business, but rather contracted for general and public use. Equally, the principal route for the Cobb and Co. coaches ran along a parallel road north, along Old Gympie Road, indicating that any road improvements in the Beerburrum area was not likely to have been a result of economic investment on their part, particularly this late in the development of south east Queensland's road transport network.

The passing of the *North Coast Railway Act in 1910* (the Act) facilitated the linking of the separate regional divisions of Queensland Railways into one network, through extending the state's coastal route. The passing of the Act provided a major impetus for increased spending and construction works on the Queensland railway network. New stations were built along the main lines in places such as Brisbane, Gympie and Townsville between 1910 and 1917. A corresponding development of improved locomotive technology, rolling stock, and railway infrastructure in general characterised this period, along with the construction of new rural branch lines throughout Queensland (QHR 602036). From the 1860s, Queensland railway stations were predominantly built in timber, with only a small number of masonry stations built in major urban centres like Brisbane and Toowoomba. As with most outlying stations, Beerburrum was a timber structure, designed to be a practical response to the available resources in the district.

Coinciding with this early twentieth century growth in the number of stations and the improvement in railway technology was a programme of settlement initiated by the government in the Beerburrum area. In 1910 Beerburrum became a staff station on the railway line and a station master was appointed. The land around Beerburrum was poor, but this did not affect the decision to establish the largest soldier settlement in Australia there (Powell 1998a: 327)

As early as 1915 the Queensland Government had been looking for vacant land suitable for settlement by returned soldiers. The Department of Lands stated that Queensland's vast areas of crown land and varying

climates provided more opportunities than any other state of Australia for the settling of returned soldiers, both Australian and British. It was envisaged that the land would be suitable for lighter farming activities such as fruit and vegetable growing, poultry-raising and bee-keeping (QHR 602678).

The first land chosen for soldier settlement in Queensland was 53,000 acres (21,448.34 hectares) near the Beerburrum railway siding on the North Coast railway line. This mostly dry sclerophyll forest and wallum heathland had been leased to the Australian Government in 1910 as a military reserve for 30 years at a peppercorn rent. From 1913 the Australian government paid an annual rent of £1 subject to the right of resumption by the State of Queensland if required for State purposes. In 1916 the area was returned to the Queensland Government for soldier settlement (QHR 602678).

From 1916 a large area of land in the Beerburrum district was used for soldier resettlement. This stretched from Beerburrum to the Glass House Mountains in the north, southwards to Elimbah and eastwards to Pumicestone Passage. Beerburrum Soldier Settlement was the first and largest of the approximately two dozen soldier settlements established in Queensland. Over the course of the scheme (1916–1929) approximately 2,500 returned soldiers were settled on the land in Queensland, including at least 400 at Beerburrum itself.

Work had begun immediately on analysis and surveying of the land. Beerburrum had been chosen as the centre of the soldier settlement because of satisfactory soil tests, water availability and the existing railway siding. Surveyor Muntz was given the task of dividing this large area into portions of suitable land varying in size from approximately 20 to 40 acres. To ensure that each settler received a fertile selection, the surveyor was to mark his boundaries so that each portion would be equally productive.

By July 1917, 28 returned soldiers had been allotted an area of 760 acres and 54 acres had been cleared, ploughed and planted with pineapples. One acre was similarly planted with oranges. Altogether 145 acres had been cleared, 11 houses had been erected and 17 farms had been fenced. Ringbarking had been completed on a further 100 acres. Two huts and eating facilities for 24 men had been erected, as well as a storeroom and quarters for the supervisor at the State Farm. In addition, several wells had been sunk, yielding good water. The area for township purposes had been reserved, the road reserve formally dedicated and a general store erected.

By January 1919, 96 soldier settlers were residing on the Beerburrum Soldier Settlement, increasing to 175 in July. With accompanying dependants, the total population was estimated at 400. Based on this population growth and the proximity of the soldier settlements in relation to the early road, it is likely that the corduroy road was established by this date at the latest (Plate 7).

To contribute to the sense of security and stability of the settlement, the State Government built administration buildings, blacksmith shop, school, school of arts, two stores, two butcher's shops, a barber, bakehouse, six residences for employees, an accommodation (boarding) house, depot store, kitchen, barracks and hospital. *Pugh's Queensland Directory* for 1925 noted that Beerburrum had a medical centre, a school, a hall and a fruit-preserving co-operative. However, many farms proved unsuccessful and farmers turned to the timber industry to survive.

Timber plantations began in earnest in the area in the early 1930s, with large areas dedicated to the production of timber for domestic and export markets. (Powell 1998a:97).

3.4 Changes to the road surface and alignment

The next major change to the area was the result of the introduction of motor vehicles for recreational and travel purposes. Whilst coaches, sulkies and buggies had made do with more rough and ready roadways, the growing popularity of cars on south east Queensland roads from the 1920s-1930s meant that the government had to upgrade its road network. The 1937 highway upgrade plans show a low lying, swampy area, approximately 200 m long at the location of the corduroy road and around this time the roadway was upgraded with asphalt coating, to improve the quality and safety of the driving experience; physical evidence of this layer of asphalt laid over the top of the earlier roadway and the corduroy road is present in the site stratigraphy (see also Plate 15) (Veal et al. 2013).

In 1967-1977, the Bruce Highway was upgraded further, with a new alignment and asphalt surface that ran alongside the earlier roadway. The Main Roads Department plan for Beerwah Parish, dated 1967, included reference to a 'log culvert' indicating that such structures were encountered by surveyors at the time – this does not suggest, however, that the culvert referred to was the corduroy road exposed by the B2N Project works, merely that such items were found and often noted.

With motor vehicles, trucks and road transportation not as reliant upon the railway lines as in earlier generations, the decision was made to construct a new alignment to meet the needs of the modern travellers that was in close proximity to the earlier road, but structurally more stable and less prone to the vicissitudes of the weather. Known as the Glasshouse Mountain Tourist Route (State Route 6), the road was renamed Steve Irwin Way in 2007.

3. Physical evidence

3.1 Site investigation results

Archaeological recording of the corduroy road was undertaken over two days on 28 October 2022 and 1 November 2022.

Recent rain had filled the trench with over 18 inches of water (Plate 8) and prior to recording, this had to be drained via a pump and drainage hose and using the vacuum truck. A thick layer of mud covered the corduroy road following drainage and a pressurised water spray was used to clear the mud to facilitate recording (Plates 9 to 12). Some tree bark was lost from the logs during this process.



Plate 8. Location of corduroy road showing water levels, looking west, 28 October 2022. Railway line indicated by yellow arrows.



Plate 9. Thick layer of mud covering corduroy road, looking east, 28 October 2002.



Plate 10. Corduroy road following pressurised water spray to remove mud, looking north east.



Plate 11. Corduroy road following pressurised water spray to remove mud, looking east. Note lighter areas where tree bark has been lost.

The inspection revealed the feature to be an intact and representative example of a corduroy road. Round, unmilled logs were laid parallel running in an east-west direction with no discernible joinery or carpentry other than obvious axe marks on smaller logs (Plate 12). The corduroy road is in good condition and intact. No signs of rot were identified. Although some outer bark was dislodged during the process of removing the mud layer, delicate edges remained intact after exposure and the logs remained stable and *in situ* during the recording. A TMR drone image showing part of the cleaned corduroy road is provided in Plate 13.

Log sizes vary. The smallest logs were recorded at around 600 mm long with a central diameter of 50 mm and the largest at 3900 mm and 4200 mm long with diameters of up to 230 mm (see Appendix A).

The smaller logs were laid where deviations in tree trucks created large gaps the corduroy road. No artefacts were retrieved during the archaeological recording however, TMR later identified and collected parts of a pocket watch (gears only) and a metal nut using a metal detector in the soils near the corduroy road (Table 1). The exact location was not recorded. These items contained no marks or other identifying features



Plate 12. Close up of log ends showing axe marks.



Plate 13. Drone Image with feature extracted, orientation north south (source: TMR).

Table 1. Additional finds retrieved via metal detector (TMR).

Item	Uses /age	Location/ coordinates	Images (source: TMR)
Metal nut	Unable to be determined	Unknown, in soils near corduroy road	
Pocket watch gears, no case	Unable to be determined	Unknown, in soils near corduroy road	

The site stratigraphy showed processes of deposition associated with the both the 1937 highway and the later 1967 upgrade. A layer of asphalt, used to surface the 1937 highway is seen in the site stratigraphy approximately 40 cm above the corduroy road (Plate 14). Above this, the stratigraphy becomes more difficult to define however, it appears that the area was filled to provide more stability and lessen the slope of the gully west of the 1967 highway upgrade.

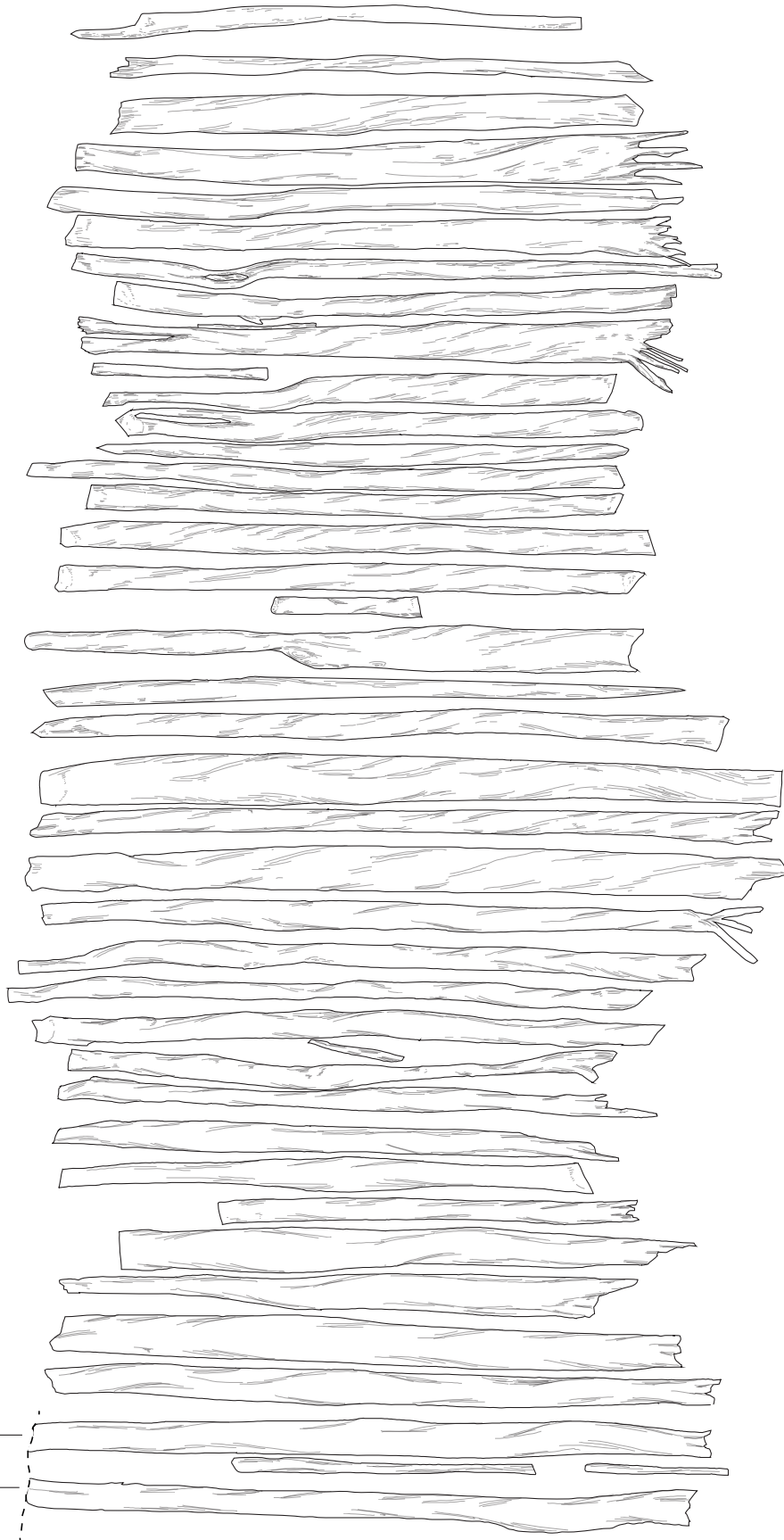


Plate 14. Trench stratigraphy northern wall, looking north. Asphalt layer from 1937 road construction indicated by yellow arrows.

Previous investigations by TMR determined the extent of the corduroy road in the vicinity of Project works through a series of strip trenches and small pits between 20 cm and 1 m wide and revealed that the feature extends approximately 40 m – 50 m (Plate 15).



Plate 15. Strip trench showing southern extent of corduroy road indicated by yellow arrow, looking north.



trunks continue
into section

4. Interpretation

4.1 Interpretation

There are several examples of corduroy roads entered in the QHR in South East Queensland (SEQ). These include Corduroy Road Remains, Laidley (QHR 600657), Spicers Gap Road Conservation Park (QHR 601732) and Pettigrew's Cooloola Timber Tramway Complex (QHR 602819). While some are remnants or partial corduroy roads they represent a common, rudimentary type of road building once common throughout SEQ. These roads are older than the B2N Project corduroy road discovery at Beerburrum, however they do not appear to be in as good condition or as intact.

One other corduroy road of local heritage significance has been recorded on the Sunshine Coast within the Maroochy Wetlands Sanctuary at Webley Road/ Sports Road (Sunshine Coast Council Planning Scheme Schedule 6, heritage ID: BLI9). The road consists of timber log side beams with smaller logs placed across and fastened with spikes. Where the Webley Road example uses spikes to fasten the logs together, no fastenings were identified on the corduroy road at the Project location. Known examples of corduroy roads are rare in the local government area.

Preliminary research has indicated that the corduroy road is closely associated with the North Coast railway line which linked Brisbane, Gympie, Maryborough, Bundaberg and Mount Perry. The North Coast railway line was completed in 1890-1891 and dramatically opened up the transportation network in SEQ. As found elsewhere in SEQ (such as Laidley in the 1850s), the railway construction saw a corresponding road network develop. The 1888 railway plan for the area shows notation referring a road corridor adjacent to the main rail line. The railway plan notes this area as 'ti tree swamp' which infers the need for a stable (or at least reinforced) road structure. Further, the 1892 cadastral map identifies this area as Crown land, not under freehold or grant to settlers, meaning that corduroy road, if constructed at this time, was for general or public use.

It is also possible that the corduroy road, as part of the earlier road alignment, played a part in the establishment of soldier resettlement in the Beerburrum area. In 1916 a large area of land in the Beerburrum district was set aside for the soldier resettlement scheme. This stretched from Beerburrum to Glass House Mountains in the north, southwards to Elimbah and eastwards to Pumicestone Passage. Beerburrum Soldier Settlement was the first and largest of the approximately two dozen soldier settlements established in Queensland. Over the course of the scheme (1916-1929) approximately 2,500 returned soldiers were settled on the land in Queensland, including at least 400 at Beerburrum. The roadway was not formally dedicated until 1919, at a time when the soldier resettlement was at its peak and when land allotments were designated on survey plans. The corduroy road was later upgraded and surfaced with asphalt in the late 1930s as part of the broader Bruce Highway works.

Based on the structure of the corduroy road and available research it is likely that the corduroy road was constructed c.1890-1919, in association with the development of the railway line and associated road networks, and possibly in response to the soldier settlement area and subsequent increase in population. The corduroy road pre-dates the 1919 road designation but may have been a factor in the selection of road alignment.

5. Assessment of heritage significance

5.1 Methodology for assessing heritage significance

Framework

The DES guideline, *Assessing cultural heritage significance: Using the cultural heritage criteria* (Heritage Branch, Department of Environment and Heritage Protection (DEHP, now DES) 2013) provides the framework for the following significance assessment and Statement of Significance against the eight (8) criteria of the QHA. These guidelines incorporate the principles of cultural heritage significance identified in the Burra Charter into a framework currently accepted by the QHC.

The threshold indicators for entering places in the QHR are outlined in the DES guideline. These threshold indicators include:

- Regional importance.
- Earliness.
- Representativeness.
- Distinctiveness/Exceptionality.
- Rarity.
- Intactness.

DES has identified that the corduroy road is likely to be both early and rare and therefore has the potential to meet Criterion A and B. For completeness, the corduroy road has been assessed against all eight of the QHA criteria in Table 2 below. Note: only preliminary research has been undertaken for this report and further research is required to provide an extensive or definitive assessment of the corduroy road.

Table 2: Cultural significance evaluation criteria (DEHP 2013).

Criteria	Value	Discovery has the potential to meet the criteria – State significance	Discovery meets or does not meet the criteria – local significance
Criterion A	Historic	May meet threshold The corduroy road demonstrates the evolution of Queensland's early road network, likely to be associated with the development of the 1891 North Coast railway line. The railway line opened up transportation routes and services across Queensland. It is also possible that the corduroy road, as part of the earlier road alignment, played a part in the establishment of soldier resettlement in the Beerburrum area however further research is required to verify any association.	May meet threshold The corduroy road is an example of a response to the need for a passable route through a swampy area. As a local rudimentary corduroy road it is likely to be associated with the development of the railway line, completed in 1891, which opened up transportation routes in the local area.
Criterion B	Rarity	May meet threshold The corduroy road is a rare, intact example of the response to early road construction in low lying and swampy areas in Queensland to facilitate the	May meet threshold The corduroy road is a rare and intact example of this type of rudimentary road construction. One other corduroy road of local heritage significance has

		movement of people and goods. While there are several other examples of corduroy roads entered in the QHR in SEQ, (including Corduroy Road Remains, Laidley (QHR 600657), Spicers Gap Road Conservation Park (QHR 601732) and Pettigrew's Cooloola Timber Tramway Complex (QHR 602819)), these examples do not appear to be as intact or have the same level of integrity as this corduroy road.	been recorded on the Sunshine Coast within the Maroochy Wetlands Sanctuary at Webley Road/ Sports Road (Sunshine Coast Council Planning Scheme Schedule 6, heritage ID: BLI9). This example uses spikes to fasten the logs together whereas no fastenings were identified with this corduroy road in the Project location. Known examples of corduroy roads are rare in the local government area.
Criterion C	Potential information	May meet threshold The corduroy road is both early and intact and it has the potential to reveal more information about nineteenth century corduroy road construction, materials and the selection of early transport routes through swampy and low lying areas to enable the movement of people and goods. As an intact example, the corduroy road may aid comparative analysis of similar places.	May met threshold The corduroy road is both early and intact and it has the potential to reveal more information about nineteenth century corduroy road construction, materials and the selection of early transport routes through swampy and low lying areas to enable the movement of people and goods throughout the local government area.
Criterion D	Representativeness	May meet threshold The corduroy road is an intact, representative example of a once common technique of road building. The construction of the corduroy road, consisting of cut logs laid parallel to each other over low lying or swampy land to form a passable road, demonstrates the principle characteristics of corduroy road construction. While there are several other examples of corduroy road construction on the QHR, this example appears to be more intact and have a higher level of integrity.	May meet threshold The corduroy road is an intact, representative example of a once common technique of road building. The construction of the corduroy road, consisting of cut logs laid parallel to each other over low lying or swampy land to form a passable road, demonstrates the principle characteristics of a corduroy road. One other local example of a corduroy road has been identified in the Sunshine Coast Council Planning Scheme, however this example has a different construction method using spikes to fasten the logs together.
Criterion E	Aesthetics	Does not meet	Does not meet
Criterion F	Creative/technical achievement	Does not meet	Does not meet
Criterion G	Social	Does not meet	Does not meet
Criterion H	Association	Does not meet	Does not meet

6.2 Statement of cultural significance

The corduroy road has potential to meet State and local significance.

The corduroy road is an early and intact example of the response to early road construction in low lying and swampy areas in Queensland to facilitate the movement of people and goods. The establishment of Queensland railways saw a corresponding network of roads develop across the State and based on preliminary research, it is likely that the corduroy road is a public road, associated with these early road networks.

While there are several other examples of corduroy roads entered in the QHR in SEQ, (including Corduroy Road Remains, Laidley (QHR 600657), Spicers Gap Road Conservation Park (QHR 601732) and Pettigrew's Cooloola Timber Tramway Complex (QHR 602819)), these examples do not appear to be as intact or have the same high level of integrity as this corduroy road. The corduroy road has the potential to yield further information about nineteenth century corduroy road construction, materials and the selection of early transport routes through swampy and low lying areas to enable the movement of people and goods. As an intact example, the corduroy road may aid comparative analysis of similar places.

The corduroy road is an intact representative example of a once common technique of road building that is now rare. The construction of the corduroy road, consisting of cut logs laid parallel to each other over low lying or swampy land to form a passable road, demonstrates the principle characteristics of corduroy road construction. One other local example of a corduroy road has been identified in the Sunshine Coast Council Planning Scheme, however this example has a different construction method using spikes to fasten the logs together.

6. Conclusions and recommendations

Conclusions

Preliminary research indicates that the corduroy road adjacent to Steve Irwin Way at Beerburrum within the B2N Project area is a rare and intact example of a corduroy road that is likely associated with the establishment of the North Coast Rail Line and the development of early road networks in the local area. It is likely that it was laid between 1891 and 1919 but contextual evidence has not been able to narrow these dates.

The corduroy road may meet the thresholds for State and/or local heritage significance.

Recommendations

From the significance assessment of the corduroy road as being of potential State and/or local heritage significance, the following recommendations are made:

- As per the DES response to the s89 notification, the exposed section of corduroy road should be covered in geofabric and backfilled with crusher dust to a depth of 100mm.
- As per the DES response to the s89 notification, any further or additional proposed excavations in the vicinity of the corduroy road require an archaeological investigation to ensure avoidance of further sections of corduroy road.
- If required by DES, undertake further research, including archival research and a comparative analysis, to determine the full history of the corduroy road and its significance at both a State and local level.

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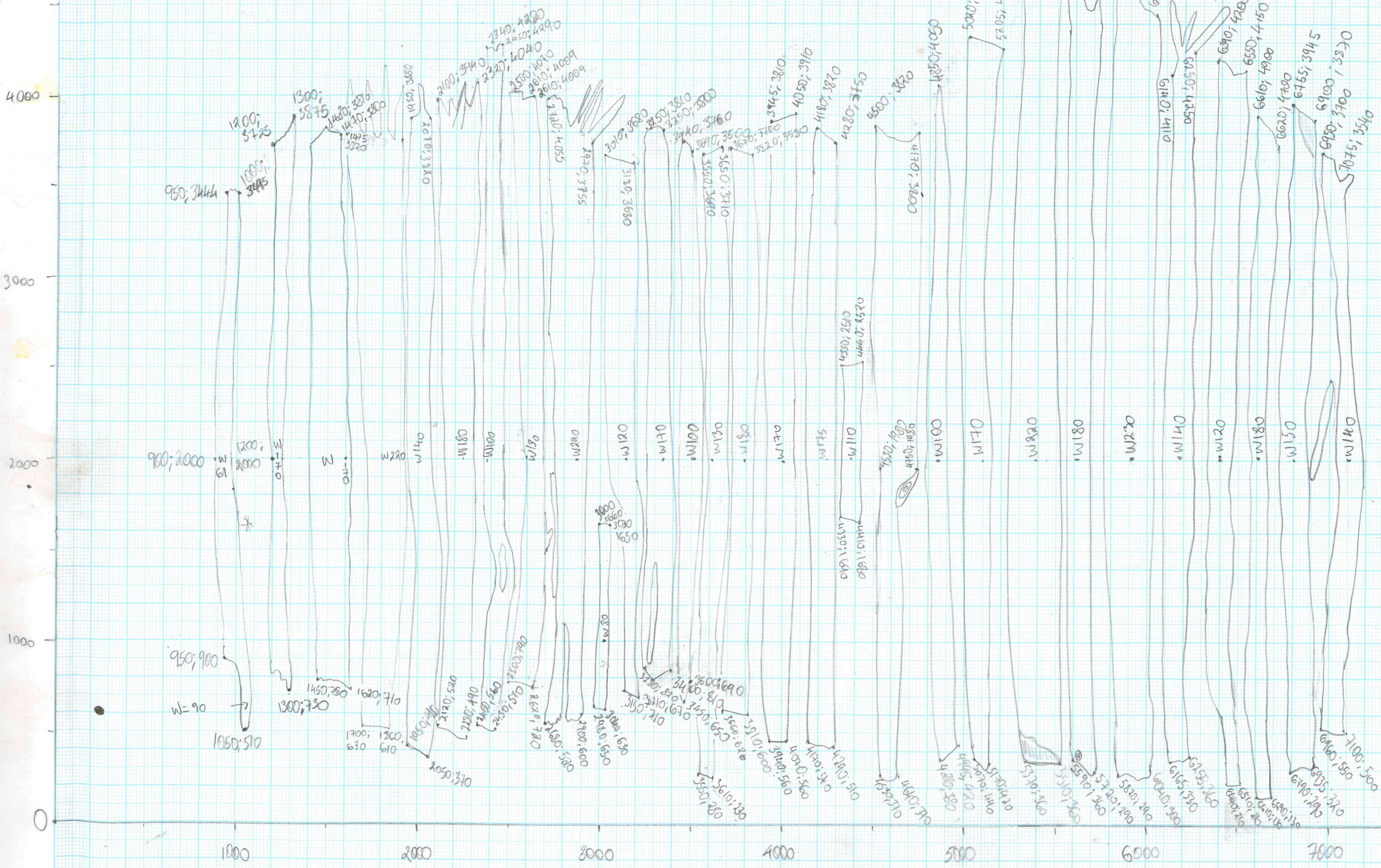
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Appendix A: Site drawings

#6105 BAN - Corduroy Road - 28/10/22 / 1/11/22

XC, RV, CB, CA

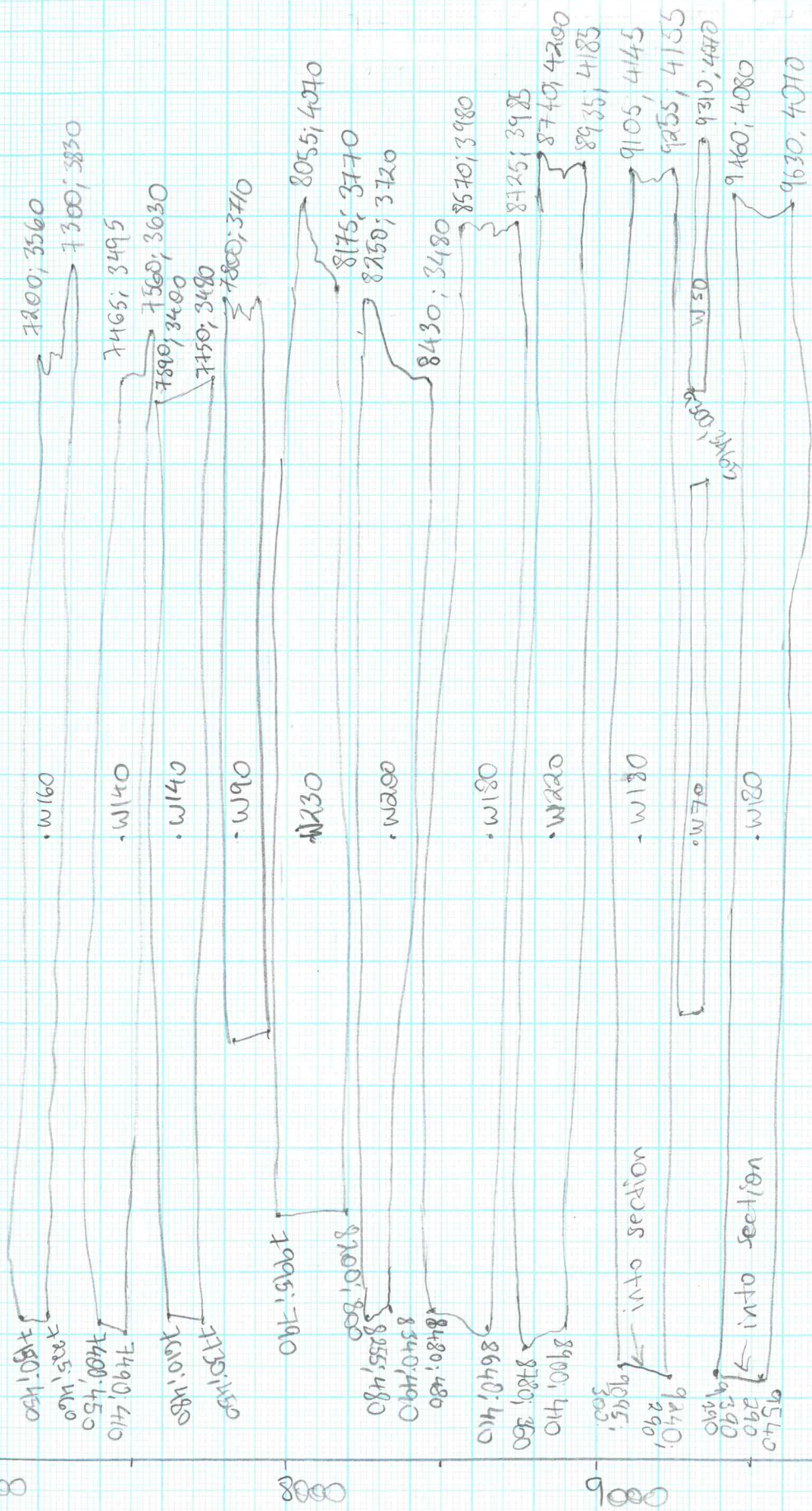
← N



Baseline; Offset
Measurements in mm

G05 B2N - Cordway Road 1/11/22
 xc, cb, rv

← N



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Freshwater
Marine and coastal
Research and monitoring
Wildlife Schools and training

Heritage management

Aboriginal heritage
Historical heritage
Conservation management
Community consultation
Archaeological, built and landscape values

Environmental management and approvals

Impact assessments
Development and activity approvals
Rehabilitation
Stakeholder consultation and facilitation
Project management

Environmental offsetting

Offset strategy and assessment (NSW, QLD, Commonwealth)
Accredited BAM assessors (NSW)
Biodiversity Stewardship Site Agreements (NSW)
Offset site establishment and management
Offset brokerage
Advanced Offset establishment (QLD)