BATTER FROM TOP OF CONCRETE PLINTH AT MAX SLOPE 1:6

CONNECT TO EXISTING PATH

PT/K-01
LD-502
PT/I-01
LD-500
PT/I-02
LD-502

BS/K-01
LD-506
PT
IF
VP
PT
BS
FM
VP/K-04
LD-504
- LD-511

STATUE
MONUMENT
ROCK
PLAQUE
STATUE
MONUMENT

KOONDROOK-MURRABIT ROAD
MURRAY PARADE
BARHAM-KOONDROOK BRIDGE
MURRAY RIVER
KOONDROOK

BBQ
TM
TM/K-01
LD-406

JAMES PARK
KOONDROOK-MURRABIT ROAD
LD-509
IF/K-01
LD-507
LD-508
IF/K-03
LD-510

VP/K-04
LD-503
IF/K-02

LEGEND
EXISTING ELEMENTS

EXISTING TREES
PROTECTED & RETAINED
EXISTING PARK FURNITURE
TO BE RETAINED
SPOT LEVELS
HIGH/LOW TIDE LEVEL
GUARD RAIL

SURFACES & INCIDENTAL WORKS

CONCRETE PATH
STABILISED
GRANITE GRAVEL
HARDWOOD EDGING

NEW FURNITURE INCLUDING INTERPRETATION ELEMENTS

PICNIC TABLE (PT)
REFER DETAIL LD-401
VIEWING PLATFORM (VP)
REFER DETAIL LD-402
BENCH SEAT (BS)
REFER DETAIL LD-403
INFORMATION SHELTER (IF)
REFER DETAIL LD-404
FLOOD MARKER (FM)
REFER DETAIL LD-405
TOWN MARKER (TM)
REFER DETAIL LD-406

PLANTING

MASS PLANTING BED - NATIVE GRASSES & GROUND COVERS
REFER DETAIL 1&2/LD-201
- 100MM TUBES PLANTED @ 6/M²
- 200MM DEPTH CULTIVATION
- 150MM DEPTH TOPSOIL (UNLESS OTHERWISE SHOWN)
- 75MM DEPTH MULCH

MASS PLANTING BED - LOW SHRUBS
REFER DETAIL 3&4/LD-201
- TUBESTOCK @ 1/M² OR AS SHOWN
- 200MM DEPTH CULTIVATION
- 100MM DEPTH TOPSOIL (UNLESS OTHERWISE SHOWN)
- 75MM DEPTH MULCH

TURF
REFER DETAIL 4/LD-201
- MIN. 75MM DEPTH TOPSOIL
- SEEDING AS PER SPECIFICATION

TREE PLANTING

Eucalyptus largiflora - 45L
Back Box
Eucalyptus camaldulensis - 45L
River Red Gum

LOCATION OF INTERPRETIVE ARTWORK

- LD-XXX
1mm ANODIZED ALUMINIUM INTERPRETIVE SIGN WITH 2mm ALUMINIUM BACKING PANEL

RECYCLED TENSION RODS FROM OLD BRIDGE THROUGH TIMBER

C CHANNEL PAINTED GREY

FOR ARTWORK REFER TO DRAWINGS LD-501 & LD-502

1mm ANODISED ALUMINIUM INTERPRETIVE SIGN FIXED TO BACKING PANEL WITH 3M VHB ADHESIVE OR EQUIVALENT

2mm ALUMINIUM BACKING PANEL MILLED FINISH. INSTALLED TO TIMBER BASE WITH 6mm DIA. 316 SS COUNTER SUNK TAMPER-PROOF FIXINGS. MIN 16 SCREWS SPACED EQUALLY AND EVENLY PER PANEL.

SIGNAGE RECESSED BY 3mm

25x150mm TIMBER SLATS

35x190mm TIMBER SLATS

160x75 STEEL CHANNEL PAINTED BRIDGE GREY TO ALIGN WITH TOP OF SLAT TIMBER

3mm ALUMINIUM BACKING PANEL MILLED FINISH. INSTALLED TO TIMBER BASE WITH 6mm DIA. 316 SS COUNTER SUNK TAMPER-PROOF FIXINGS. MIN 16 SCREWS SPACED EQUALLY AND EVENLY PER PANEL.

NOTES
1. ALIGN SIGNAGE WITH TIMBER SLATS.
2. TOLERANCES TO BE COORDINATED BETWEEN SIGNAGE MAKER AND FURNITURE MAKER.
3. ALL SIGN DIMENSIONS TO BE MEASURED ON SITE PRIOR TO MANUFACTURE AND INSTALL.

ROADS AND MARITIME SERVICES
BARHAM-KOONDROOK BRIDGE
LANDSCAPE DESIGN & HERITAGE INTERPRETATION
HERITAGE INTERPRETATION ELEMENTS
PICNIC TABLE (PT)

FOR ARTWORK REFER TO DRAWINGS LD-501 & LD-502

1mm ANODIZED ALUMINIUM INTERPRETIVE SIGN WITH 2mm ALUMINIUM BACKING PANEL

RECYCLED TENSION RODS FROM OLD BRIDGE THROUGH TIMBER

C CHANNEL PAINTED GREY

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25x150mm TIMBER SLATS

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ROADS AND MARITIME SERVICES
BARHAM-KOONDROOK BRIDGE
LANDSCAPE DESIGN & HERITAGE INTERPRETATION
HERITAGE INTERPRETATION ELEMENTS
PICNIC TABLE (PT)

FOR ARTWORK REFER TO DRAWINGS LD-501 & LD-502

1mm ANODIZED ALUMINIUM INTERPRETIVE SIGN WITH 2mm ALUMINIUM BACKING PANEL

RECYCLED TENSION RODS FROM OLD BRIDGE THROUGH TIMBER

C CHANNEL PAINTED GREY

FOR ARTWORK REFER TO DRAWINGS LD-501 & LD-502

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SIGNAGE RECESSED BY 3mm

25x150mm TIMBER SLATS

35x190mm TIMBER SLATS

160x75 STEEL CHANNEL PAINTED BRIDGE GREY TO ALIGN WITH TOP OF SLAT TIMBER

3mm ALUMINIUM BACKING PANEL MILLED FINISH. INSTALLED TO TIMBER BASE WITH 6mm DIA. 316 SS COUNTER SUNK TAMPER-PROOF FIXINGS. MIN 16 SCREWS SPACED EQUALLY AND EVENLY PER PANEL.

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ROADS AND MARITIME SERVICES
BARHAM-KOONDROOK BRIDGE
LANDSCAPE DESIGN & HERITAGE INTERPRETATION
HERITAGE INTERPRETATION ELEMENTS
PICNIC TABLE (PT)
1mm ANODISED ALUMINIUM INTERPRETIVE SIGN FIXED TO BACKING PANEL WITH 3M VHB ADHESIVE OR EQUIVALENT

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125x75 UNEQUAL ANGLES

MORTAR BED

1. ALIGN SIGNAGE WITH TIMBER SLATS.
2. TOLERANCES TO BE COORDINATED BETWEEN SIGNAGE MAKER AND FURNITURE MAKER.
3. ALL SIGN DIMENSIONS TO BE MEASURED ON SITE PRIOR TO MANUFACTURE AND INSTALL.
BARHAM-KOONDOOK BRIDGE
LANDSCAPE DESIGN & HERITAGE INTERPRETATION ELEMENTS
BENCH SEAT (BS)

1. ALIGN SIGNAGE WITH TIMBER SLATS.
2. TOLERANCES TO BE COORDINATED BETWEEN SIGNAGE MAKER AND FURNITURE MAKER.
3. ALL SIGN DIMENSIONS TO BE MEASURED ON SITE PRIOR TO MANUFACTURE AND INSTALL.

INDICATIVE 3D

SCALE: 1:20

PLANT

SECTION

ELEVATION

SHEETS

NOTES

1 mm ANODISED ALUMINIUM INTERPRETIVE SIGN FIXED TO BACKING PANEL WITH 3M VHB ADHESIVE OR EQUIVALENT

2 mm ALUMINIUM BACKING PANEL MILLED FINISH, INSTALLED TO TIMBER BASE WITH 5 mm DIA 316 SS COUNTER SUNK TAMPER-PROOF FIXINGS. MIN 8 SCREWS SPACED EQUALLY AND EVENLY PER PANEL.

FOR ARTWORK REFER TO DRAWINGS LD-505 & LD-506

1 mm ANODISED ALUMINIUM INTERPRETIVE SIGN WITH 2 mm ALUMINIUM BACKING PANEL

RECYCLED TENSION RODS FROM OLD BRIDGE THROUGH TIMBER

FOR ARTWORK REFER TO DRAWINGS LD-505 & LD-506

160 x 180 mm TIMBER SLATS

35 x 190 mm TIMBER SLATS

250 UB PAINTED BRIDGE GREY

CONCRETE FOOTING

180 x 75 mm STEEL CHANNEL PAINTED BRIDGE GREY TO ALIGN WITH TOP OF SLAT TIMBER

1100 mm TIMBER SLATS

3 RODS @ 450 mm

1 mm ANODISED ALUMINIUM INTERPRETIVE SIGN FIXED TO BACKING PANEL WITH 3M VHB ADHESIVE OR EQUIVALENT

2 mm ALUMINIUM BACKING PANEL MILLED FINISH, INSTALLED TO TIMBER BASE WITH 5 mm DIA 316 SS COUNTER SUNK TAMPER-PROOF FIXINGS. MIN 8 SCREWS SPACED EQUALLY AND EVENLY PER PANEL.

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For artwork refer to drawings LD-511.

- Recycled from bridge steel fish belly cross girder.
- 1mm anodized aluminium interpretive sign with 2mm aluminium backing panel mounted on standoffs.
- Secondary interpretive sign showing record water levels.
- Bottom section of steel painted with waterproofing membrane.
- Footing as per engineer's specification.

Notes:
1. All fixings to be tamper proof.

For artwork refer to drawings LD-511.

- Recycled from bridge steel fish belly cross girder.
- 1mm anodized aluminium interpretive sign with 2mm aluminium backing panel mounted on standoffs.

Scale: 1:10

Section: A

Barham-Koondrook Bridge
Landscape Design & Heritage Interpretation
Heritage Interpretation Elements
Flood Marker (FM)

KIS-1607-DWG-LD-405
NOTE 1.
MINIMUM WIDTH OF STEEL FOR STENCIL CUT OUT TO BE CONFIRMED / REVIEWED BY CONTRACTORS / RMS.
### Amendment Description

<table>
<thead>
<tr>
<th>ITEM</th>
<th>LOCATION</th>
<th>THEME</th>
<th>IMAGE 1</th>
<th>TEXT 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT/B-01</td>
<td>SURRAHM</td>
<td>RIVER ENVIRONMENT</td>
<td>[Image]</td>
<td>The vegetation type of Riverina Bioregion occurs on the floodplain of major rivers, in slightly elevated positions that rarely flood, on deposited silts and sands, with fertile alluvial soils. The main vegetation association that occurs within the site is the River Red Gum - Black Box woodland (Eucalyptus camaldulensis) Forest occurs on the Barham side of the river and Black Box (Eucalyptus largiflorens) Woodland, also called Riverina Grassy Woodland, occurs on the Koondrook side. Both associations in their original state would have had trees up to 40m tall with herbaceous grassy groundcover underlay, interspersed with scattered shrubs. Due to the extensive clearing undertaken in the area, there are only remnant patches of this vegetation remaining. It is important to maintain the extent of the River Red Gum and Black Box communities, and to enhance the communities where possible. These communities are essential for providing food and habitat for many native animals and birds across the Murray River Basin and they are culturally significant to Aboriginal people.</td>
</tr>
<tr>
<td>PT/B-02</td>
<td>BARHAM</td>
<td>TRANSPORT</td>
<td>[Image]</td>
<td>In 1877 the site for the township of Koondrook was selected near the junction of Gunbower Creek and the Murray River. Its location was chosen for the township to be built, being equidistant from the only site between Echuca and Swan Hill. This set up great speculation for commanding trade in the region, including the establishment of a flour mill and cattle trade. The idea of a punt crossing over the Murray further established the strategic significance of this crossing. Trade by boat had greatly increased and the construction of a jetty commenced in 1878. With the strong movement of cattle from New South Wales and Queensland, the Koondrook crossing became more significant as a trade link for this stock into Victoria. In 1884 the Koondrook and Burrow Bridge and its strategic location near the Victorian railway system in Hanang emphasised its importance as a trade route. The photo, taken in the late 1880s, shows the punt that crossed the river between Koondrook and Barham, at a site near the Koondrook State School and Road Hill. It is said that the punt operator had a specially trained sheep to lead a flock of sheep on to the punt. This was a very busy crossing place between the states for stock and produce, and a customs house was on the New South Wales side of the Murray River. Source: The Barham-Koondrook Historical Society.</td>
</tr>
</tbody>
</table>

### Scales

![Image](scale_image.png)

### Notes

- TO BE INSTALLED ON PICNIC TABLE AS DETAILED IN LD-01

---

**ROADS AND MARITIME SERVICES**

**BARRAHM-KOONDROOK BRIDGE**

**LANDSCAPE DESIGN & HERITAGE INTERPRETATION**

**HERITAGE INTERPRETATION DETAILS**

**PICNIC TABLE ARTWORK**

FILE No. 16_07

DRAWING DWG_LD_501

PRINTED DATE 23/05/2017

SHEET No. 15

KIS-1607-DWG-LD-501
This part of the Murray River is famous for its Red Gum Forests. The first white settlers harvested timber for fence posts, housing, and fuel. Red Gum forests were utilised extensively during the paddle-steamers, railway and gold era, especially with the operation of quartz reef mining during the 1860s and 1870s. Commercial sawmills were established along the creeks and rivers of the Cohuna, Latchford and Koondrook districts to access the forests of Gannawarra Island. With the opening of the railway from Melbourne to Echuca in 1854, several mills were set up in the area to provide Red Gum to the export markets of the British colonies which were heavily engaged in railway and wharf building. Sawmills were the largest employer in the district from 1874 until the decline of river boats from the 1880s. Building of barges and paddle steamers was undertaken at Koondrook by Arbuthnot, and Chidlow. The Arbuthnot Sawmill at Koondrook, opened by Alexander (Sandy) Arbuthnot in 1888, Koondrook became important for timber production and the port was heavily reliant on the local saw mill. It was commented that the "streets were paved with sawdust". Arbuthnot Sawmill is still operating today. It provides timber to commercial building and trade centres across Australia as well as supplying the local red gum furniture industry. Koondrook is today credited as the main production centre in Australia for quality Red Gum timber and furniture. Source: Gannawarra Shire Heritage Study Stage One Vol.1 Thematic Environmental History. Source: Barham-Koondrook Bridge, Truck and Victorian approach Span Restoration. RDF. Feb, 2016. In late 19th century there were a small group of indigenous people living in the shire area which some were employed on sheep and cattle stations. There was an Aboriginal cricket team from Melool station near Koondrook. Infilling of creeks and rivers in the area, along the major river systems, people remained hunter-gatherers, exploiting the natural resources available to them. As trade networks expanded the items that were not available locally began to be traded. In late 19th century there was a small group of Aboriginal people living in the shire area which some were employed on sheep and cattle stations. There was an Aboriginal cricket team from Melool station near Koondrook. Arbuthnot (Sandy) Sawmill, is still operating today. It provides timber to commercial building and trade centres across Australia as well as supplying the local red gum furniture industry. Koondrook is today credited as the main production centre in Australia for quality Red Gum timber and furniture. Source: Gannawarra Shire Heritage Study Stage One Vol.1 Thematic Environmental History. Source: Barham-Koondrook Bridge, Truck and Victorian approach Span Restoration. RDF. Feb, 2016. 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New South Wales gives the best timber in the world for bridge building. In 1896, J.J. C. Bradfield, famous for the design of the Sydney Harbour Bridge, reported on the comparative strength of iron and timber, and found that, for the same weight, iron is more than three times stronger than iron in tension, and almost twice as strong as iron in compression.

Further testing confirmed that the hardwood timbers of NSW are second to none in Australia, and indeed compared favourably, both for strength and durability, with any timber in the world. Between 1858 and 1859, over 285,000 cubic feet of hardwood was shipped to Sydney from New England, and much of this was destined for the construction of bridges.

There can be categorised into five types, each designed by one of five exceptional engineers who applied their sound engineering principles to design elegant and durable timber truss bridges that continue to carry vehicles today that are larger and heavier than the original designers could possibly have imagined. The de Burgh truss is the fourth type, and was designed by E.M. de Burgh.

Ernest Moxey de Burgh (1863-1926) was born and educated in Ireland. After graduating, he worked on the diversification of the world’s first underwater tunnel, and also worked on the construction of the Sydney Harbour Bridge. de Burgh was made a consulting engineer to the NSW Department of Public Works in 1897.

Within two years he was in charge of the construction of metal bridges across the Murray River and Snowy River, and then designed and supervised the construction of many other bridges throughout the State, including Barham Bridge, which he designed.

It was said that although he was often ‘a stubble crik [sic] expression of the same time he possessed that characteristics that will not endure, but that are just as unique today as when they were first built.’ He was regarded as one of the oldest of the original engineers of the Govt. Bridge Dept. There were 23 de Burgh timber truss bridges constructed in New South Wales, all between 1900 and 1926.

The earlier timber truss bridges designed in the 1890s to 1899, made use of the vast resource of large, strong and durable NSW hardwoods. However, as the comparative strength and durability of NSW hardwoods became known around the world, so much of it was reported that these earlier timber truss bridges could no longer be built.

The later bridges, designed in the 1900s to 1926, made use of the strength and durability of NSW hardwoods, but limited the sizes of these timbers to smaller sections which were still readily available at the time.

In addition to the introduction of a new truss type, de Burgh, the bridge designer, also brought innovations to the fabrication design of timber truss bridges with his use of reinforced concrete abutments (as both are piers covering capstones). Timbers were used to form the substructure and central framework, and then the pier cap. He used precast concrete capstones, which were then built to the design.

The de Burgh truss includes the greatest variety of materials found in any of the NSW timber truss bridges, including mass concrete and reinforced concrete girder, rolled steel (bottom chords), cast steel (weather blocks), wrought iron (cross-girders), cast-iron (spreader blocks), iron and wrought iron (wrought iron articulated block) and, of course, timber top chords, verticals, bearers and stringers (top and bottom). Timbers were used throughout the design and construction of the bridge, and in so doing, the original designer built bridges that are still standing, and more importantly, are still in environmental harmony with their settings.

The following are some of the key elements that were designed by E.M. de Burgh.

- The design of the top chord anchor block assembly, which is made up of wrought iron and wrought iron (wrought iron articulated block) and, of course, timber top chords, verticals, bearers and stringers (top and bottom). Timbers were used throughout the design and construction of the bridge, and in so doing, the original designer built bridges that are still standing, and more importantly, are still in environmental harmony with their settings.

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The bottom chords of de Burgh trusses were made of two parallel steel plates. This is different from the earlier timber truss bridges which had timber bottom chords, and is also different from the later timber truss bridges which had rolled steel channel sections for the bottom chords.

The main difference between the de Burgh truss and all other timber truss types is that in the de Burgh truss, the metal tension rods are diagonal rather than vertical. Diagonal tension rods are significantly more complicated to connect than vertical tension rods, so de Burgh introduced a pinned connection at the base and an anchor block connection at the top, unique to this truss type.

There were two advantages to the diagonal tension rods. Firstly, the configuration gives greater stiffness than other truss types. Secondly, the timber lengths for the verticals were minimised.

Details of the pin connection and bracing rods.

Source: Bridge over Murray River at Barham-Koondrook. Original Plans. Sheet 6 of 20
During the peak period of the Murray River traffic, the lift span had to be lifted as many as three times a day for the paddle steamers.

At one time the Marion got stuck under the lift span, and great difficulty was experienced in lifting it. Cargo steamers transported goods to the local stores, unloading at the Koondrook wharf, and sometimes at the site of the present Barham Tennis Courts. When the lift mechanisms failed on one occasion, eight paddle steamers were tied up at Barham and Koondrook.

JACK NIXON, a former grocery boy at Nixon's store, remembers that when the "Marion" became stuck under the bridge, sacks of potatoes were used to weigh it down to release it.

At although the lift towers were made higher at a later date to allow passage of 3-decker tourist boats, this expense was unwarranted as very few have since made the trip up this part of the river.

In late 19th century there were a small group of indigenous people living in the shire area which some were employed on sheep and cattle stations. There was an Aboriginal cricket team from Melool station near Koondrook.

Barapa Barapa consisted of eight clans ranging across the larger language group area, which was situated across both Victoria and New South Wales. They responded with enthusiasm, and every available man, woman, and child crowded on the decks. But still there was not enough room to get under the bridge, until finally the bridgekeeper and his men were able to position piles under the central span and raise it on extra foot or so to enable the Marion slowly to squeeze underneath.

According to Chris's 1983 mapping, the proposed activity area lay within the Barapan language group, which forms a part of the West Koondrook language area.

The Murra-Water clan was situated around Koondrook/Barham. Information about the clan comes from A. 1963 235 in Clarke, 1990:391 of Gannawarra Station.

Barapa Barapa economy would have focused very much on the major events such as the Murray River and its associated resources.

In terms of subsistence, irrespective of differences of higher populations along the major Murray River, the人们 continued to be small, traditional hunter-gatherers, exploiting the natural resources available in the area and using trade networks to obtain those items that were not available locally.

In late 19th century there was a small group of indigenous people living in the area and the above clan names were employed on sheep and cattle stations. There was an Aboriginal cricket team from Melool station near Koondrook.

(Gannawarra R.S. Vol. 1, p.25,26.)
This section of Murray River habitat provides wildlife connectivity between areas of remnant vegetation at Campbell State Forest to the north-west and the Koondrook-Pericoota Forest to the south-east.

The River Red Gum Forest and the Blackbox Woodland, provide habitat for many fauna, including:

- *Myotis macropus* (Southern Myotis), Bats. These are often seen in the Forest Red Gum trees and were often under the old bridge.
- Sugar gliders (*Petaurus breviceps*)
- Koalas (*Phascolarctos cinereus*)
- Sulphur Crested Cockatoo (*Cacatua galerita*)
- Black Box woodlands provide significant habitat to a diversity of bird species including the brush thornbill (*Acanthiza xenodochia*) and the superb parrot (*Polytelis swainsonii*)
- Kangaroos, Echidnas and Wombats would be expected to occur in the proposal area.
- Commonly occurring reptiles including snakes, lizards and turtles would occur in the proposal area.

**AQUATIC FAUNA**

Aquatic habitats, associated with the Murray River include riparian vegetation and woody debris along the river corridor, which provide refuge and foraging habitat for aquatic fauna such as frogs, reptiles and invertebrates.

- The aquatic environments of the Murray River contain potential habitat for a number of threatened fish occurring in the locality, namely the Eel-Tailed catfish (*Tandanus tandanus*) Silver Perch (*Bidyanus bidyanus*) and Murray Cod (*Maccullochella peelii*). These species are known to occur in the Murray River.
- Other aquatic fauna seen in the river include Golden Perch (yellow belly), Silver Fish (bream), Red Fin (English perch), Freshwater Murray Cod (fish) and yabbies.

Source: Wakool Shire Council website
The Koondrook Barham Red Gum Statue River Walk is an initiative of the local redgum industry and commenced in November 2002 with the carving of Alexander “Sandy” Arbuthnot. The walk continues to be a work in progress with the addition of new sculptures each year. Red Gum sculptures are carved by chainsaw at the Koondrook Barham Redgum Showcase event in November each year. Kevin Guilders, a world-renowned chainsaw carver from Melbourne, has produced most of the sculptures in the Walk. The carvings depict wildlife and local people who are significant to the region. The walk is one of the region’s newest tourist attractions and generates significant interest amongst visitors to the area.

Source: www.murrayriver.com.au

1. TO BE INSTALLED ON INFORMATION SHELTER AS DETAILED IN LD-404
2. FOR ALL OTHER TEXT & IMAGE REFER TO LD-588 & LD-509

NOTES

TOWN MARKER
The Town Markers use elements of the historic bridge. The steel plate has been recycled from the bottom chord whilst the timber elements are recycled from the vertical truss posts.
The Bridge over the Murray River at Barham consists of a wrought iron vertical-lift span with length 58 ft, two composite truss, wrought iron and steel De Burgh truss spans with length approximately 105 ft, and two truss beam spans with height of 31 ft each.

The bridge is largely two lanes wide and has a clearance over the normal water level of 4 ft, when the lift is open.

The upper framework of the lift span consists of four wrought iron lattice towers with longitudinal wrought iron lattice girders and transverse planks locked together connecting the towers at the upper level. The supports of the lift span consist of two pairs made from pairs of cast iron fabricated from curved and shaped wrought iron plates riveted together, joined with cross ties forming elliptical boxes for improved aesthetics. The spans then continue as cast iron concrete filled tubes below the waterline.

The two approach spans are De Burgh trusses consisting of a steel bottom chord, vertical truss piers and diagonal steel tension members.

Source: www.murrayriver.com.au

CONSTRUCTION OF THE BRIDGE

The following for a bridge at Barham commenced in the 1890s and in June 1900 the PWD engineer E. M. De Burgh took evidence at Kerang and Koondrook in reference to "the matter."

It was found that there were at least 200 new settlers within a 50 miles radius of Barham and Koondrook plus the town of Echuca itself, making the need for a bridge evident. The purchase of land on both sides of the river was necessary for the construction of the bridge, and the landowners were paid accordingly.

Tenders for the construction of a "steel lift" bridge on the Murray River at Barham and Koondrook were called for in the NSW Government Gazette on the 10th of March 1902. The Bridge was tendered for construction by June 1903, with funding provided jointly by NSW and Victoria.

The bridge for this bridge was obtained from the north-east coast of NSW with the wrought iron and steel coming from Scottish and structural members fabricated in Ballarat at the Eureka Iron Works.

The cost of the bridge was approximately £13,100 and the contract was awarded by Mr. E. M. De Burgh to Mr. Arthur A. McDonald and Co., who named the bridge "the Barham Bridge." The bridge was officially opened with a number of Federal and State ministers attending the event.

The opening ceremony and banquet were attended by residents of both towns and represented by the presence of the town's mayor. The presence of the mayor was significant in that it signified the importance of the bridge in connecting the two towns. The bridge was opened to traffic on 8th October 1904, with the first passenger train passing over it.

The Barham Bridge was designed by engineer E. M. De Burgh with construction completed in 1904. The design is an adaptation of his previous design of a Colom Bridge and the design incorporates improvements on the trusses and Mandurah Bridge design.

ECONOMY

The original settlement of Barham was typical of numerous other towns along the Murray River. Their development is attributed to being those sites where deep water allowed for river ports and also the region where the river could be easily crossed.

Barham is the result of the first lease taken up in the western Wakool region. It was acquired by Edward Green, who named the property 'Barham' after his wife's family.

Early settlers mainly consisted of pastoralists moving north from Victoria that primarily used the land for wool production and by 1853 most of the better river locations were occupied by these squatters. Gold rushes during the 1850s shifted the land usage from wool production to beef cattle breeding in order to meet the demand from increased pastoral populations.

However, this shift was short lived and by the 1860s the wool industry dominated once again. The diminution of wool continued until the 1880s when production of wool increased dramatically. Finally, by 1890 a site for the township of Barham was surveyed and the first lots were sold.

South of the Murray River, Koondrook became important for timber production and the port was heavily reliant on the local saw mill. It was commented that the streets were paved with sawdust.

Due to the increase in economic activity and local population the passage at Barham became an important link between southern parts of new South Wales and northern Victoria. Prior to the construction of the bridge a punt served as the only local crossing over the river.

The punt was considered to be inconvenient and unreliable due to its limited operating hours and old age, as it was previously used at Echuca for 30 years before being moved to Barham. Furthermore, the puntists would avoid the crossing as usage frequently decreased the value of stock due to "knowledge about"

Source: Volume 1: Vertical Lift Span Bridges - Moa Vale Spans Bridge Study - Project, 22/10/1989, GHD

ROSS WARD & RODERICK BRIDGE LANDSCAPE DESIGN & HERITAGE INTERPRETATION HERITAGE INTERPRETATION DETAILS INFORMATION SHELTER ARTWORK II

FILE No. 16_07
TRACKING DWG_LD_508
PRINTED DATE 23/06/2017
SHEET No. 22

This sheet may be prepared using colour and may be incomplete or copies.

Co-ordinate System: MGA Zone 56
Height Datum: A.H.D.

DESIGNED: WROCK
REVISED: JVG

KIS-1607-DWG-LD-508
NOTES

1. TO BE INSTALLED ON INFORMATION SHELTER AS DETAILED IN LD-404

ROADS AND MARITIME SERVICES
BARRAM-KOONDOOK BRIDGE
LANDSCAPE DESIGN & HERITAGE INTERPRETATION
HERITAGE INTERPRETATION DETAILS
INFORMATION SHELTER ARTWORK IV

FILE No. 16_07
DRAWING DWG_LD_510
PRINTED DATE 23/05/2017
SHEET No. 24

KIS-1607-DWG-LD-510
Level are at the Barham streamflow gauge 406605 located on the downstream side of the Barham-Koondrook bridge. The peak flood levels were sourced from the NSW Government Waterinfo website.

2. Gauge zero datum is 71.28 m AHD. Note that prior to 1998, the gauge zero datum was specified to be 71.435 m AHD. During 1998 or thereabouts, this was corrected to the current value of 71.28 m AHD following an AHD 'datum shift' at Barham. The absolute elevation of the gauge zero is understood to have not changed since 1905.


Notes: