CHASM STREAM RAILWAY LINE, SEDDONVILLE: AN ARCHAEOLOGICAL ASSESSMENT

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Looking east along towards the 'start' of the Chasm Stream railway line (although the sign refers to 'Chasm Creek', topographic maps call the relevant stream Chasm Stream).

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INTRODUCTION

Land Information New Zealand (LINZ) manage some unallocated Crown land at Seddonville, which is the site of a former railway line (Figure 1 and Figure 2). Until recently, this section of railway line has been a public walk but recent concerns about the safety of two bridges on the railway line/walk led to the closure of the walk. The bridges cross Chasm Stream and Page Stream, and as such, this section of railway line is referred to as the 'Chasm Stream railway line' throughout this assessment. Colliers subsequently commissioned this assessment on behalf of LINZ, to determine whether or not – and to what extent – the archaeological provisions of the Historic Places Act apply to the Chasm Stream railway line. This line comprises the line itself, two bridges and a tunnel. The assessment has been prepared in accordance with NZHPT (2006) guidelines on preparing an archaeological assessment. At this stage there is no proposal to alter the archaeological site.

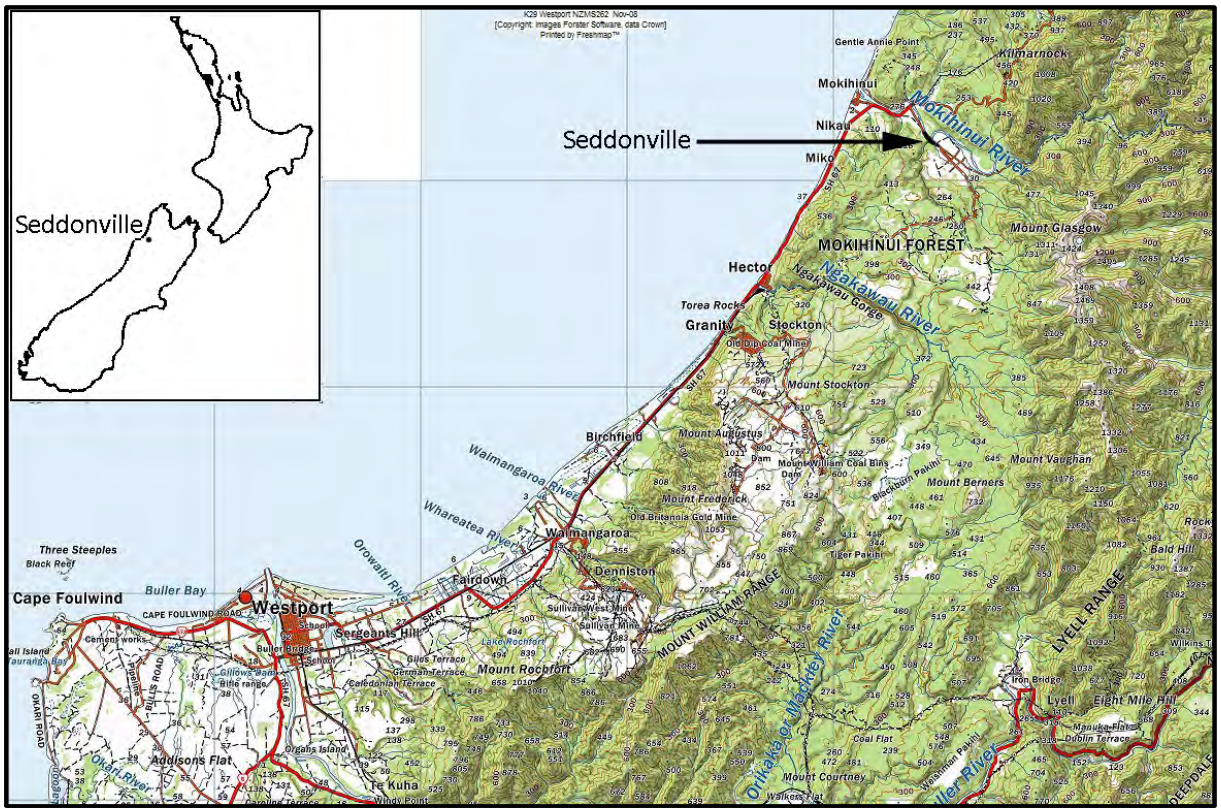


Figure 1. The Buller region, showing the location of Seddonville. Image: Freshmap.

Figure 2.The red line on this aerial photograph shows the location and extent of the Chasm Stream railway line. The two bridges that remain in situ on the line cross Chasm Stream and Page Stream. Image: Google Earth.

STATUTORY REQUIREMENTS

The Historic Places Act 1993 provides protection for archaeological sites and is administered by the New Zealand Historic Places Trust. Under section 2 of the act an archaeological site is defined as:

> "…any place in New Zealand that –
>
> (a)Either –
>
> (i) Was associated with human activity that occurred before 1900; or
>
> (ii) Is the site of a wreck of any vessel where that wreck occurred before 1900; and
>
> (b) Is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand."

Under the Historic Places Act, anyone who wishes to destroy, damage or modify an archaeological site requires an authority to do so under section 11 or 12 of the Act. It is illegal to destroy damage or modify an archaeological site without an authority from the Historic Places Trust. The Act allows up to 3 months for a decision to be made on the authority after the authority application has been lodged (the authority application will be lodged within 10 working days of being received, if all the required information is present). If granted, an authority has a life of up to five years. An authority may be granted with conditions, such as archaeological survey, monitoring and/or excavation. Any archaeologist carrying out work as a condition of the authority must be approved by the Trust under section 17 of the Historic Places Act. Once the authority has been granted, there is a statutory 15

working day stand-down period before earthworks can begin. This is one of the standard conditions of an archaeological authority.

Summary of the timeframes associated with applying for an archaeological authority:

- An application for an archaeological authority will not be lodged if insufficient information is provided. Instead, a request for information will be sent to the applicant.
- Following lodgement of the application, the Historic Places Trust has 3 months to process the application.
- After the authority has been granted, there is a 15 working day stand-down period before earthworks can begin.

It is illegal to destroy, damage or modify an archaeological site without an archaeological authority. Legal action may result if the site is destroyed, damaged or modified without an archaeological authority or if the conditions of the authority are not complied with.

METHODS

Historical research focused largely on the *Appendix to the Journals of the House of Representatives*, and supplemented with information in historic newspapers and provided by Colliers. Some additional information was supplied by the Department of Conservation. One file could not be consulted as part of this work. This was a 1920s file in the Wellington office of Archives New Zealand, which related to the bridge over Chasm Stream. KiwiRail do not hold any files that relate to this section of railway line, or the structures on it (H. Fear, pers. comm.).

Katharine Watson and Alex Scahill visited the site on 23 October 2013, and walked the length of the Chasm Stream railway line. During this visit, the areas were visually inspected and the archaeological features found recorded, using GPS, photographs and measurements. Safety concerns prevented the detailed recording of some components of the bridges (the water level in the streams was particularly high at the time of the site visit, due to recent heavy rainfall, and the banks of the streams were vey slippery). The terms used to describe the features on the railway line are drawn from Breen and Nelson (2006a, 2006b).

PHYSICAL ENVIRONMENT

The Chasm Stream railway line runs along the true left bank of the Mokihinui River, and it is quite literally sandwiched between the Mokihinui-Seddonville Road and the Mokihinui River. The railway formation is still mostly quite clear of overgrowth, although there is regenerating native bush on both sides of the old line.

HISTORICAL BACKGROUND

The first recorded European discovery of coal in the Buller area was made by Thomas Brunner and Charles Heaphy in 1846, when they found coal near the Nile River (to the north of Charleston). Thirteen years later, in 1859, John Rochfort also saw coal in this area, as well as in the Waimangaroa River. The following year, Julius von Haast was undertaking a geological exploration of this part of the South Island and recorded bituminous coal between Mt Rochfort and Mt William. Haast called the valley where this seam outcropped ‘Coalbrookdale’. This discovery piqued the interest of the Nelson Provincial Government, who sent James Burnett to carry out a geological survey of the area. On the basis of his survey, Burnett estimated that Haast’s Coalbrookdale would yield some 72 million tons of coal (Morgan 1915: 31).

It is not known when coal was first mined in the Buller district, but in 1867 James Hector recorded that coal mining had been undertaken "some years previously" on the Mokihinui River. This early effort appears to have been stymied by transport difficulties, a factor that was to characterise many Buller coal mining efforts (Morgan 1915: 32). It was not until the 1870s that serious mining efforts began to get underway, with these focused on Denniston and the Waimangaroa. The 1880s saw interest in the Mokihinui area rekindle.

In June 1885 part of the Buller Coal Reserve on the south side of the Mokihinui River at Coal Creek was leased by the Mokihinui Coal Company Ltd (*AJHR* 1887 C8: 2; Figure 3 and Figure 4). The company immediately set to work constructing a railway line from their mine at Coal Creek to a point on the Mokihinui River approximately one mile (1.61 km) above the river mouth (*AJHR* 1886 C4a: 15). The railway line cost around £25, 000 to construct (*AJHR* 1889 I6: 33). Where the railway terminated on the Mokihinui River the company also constructed a wharf and staiths (*AJHR* 1886 C4a: 15; 1889 I6: 33).

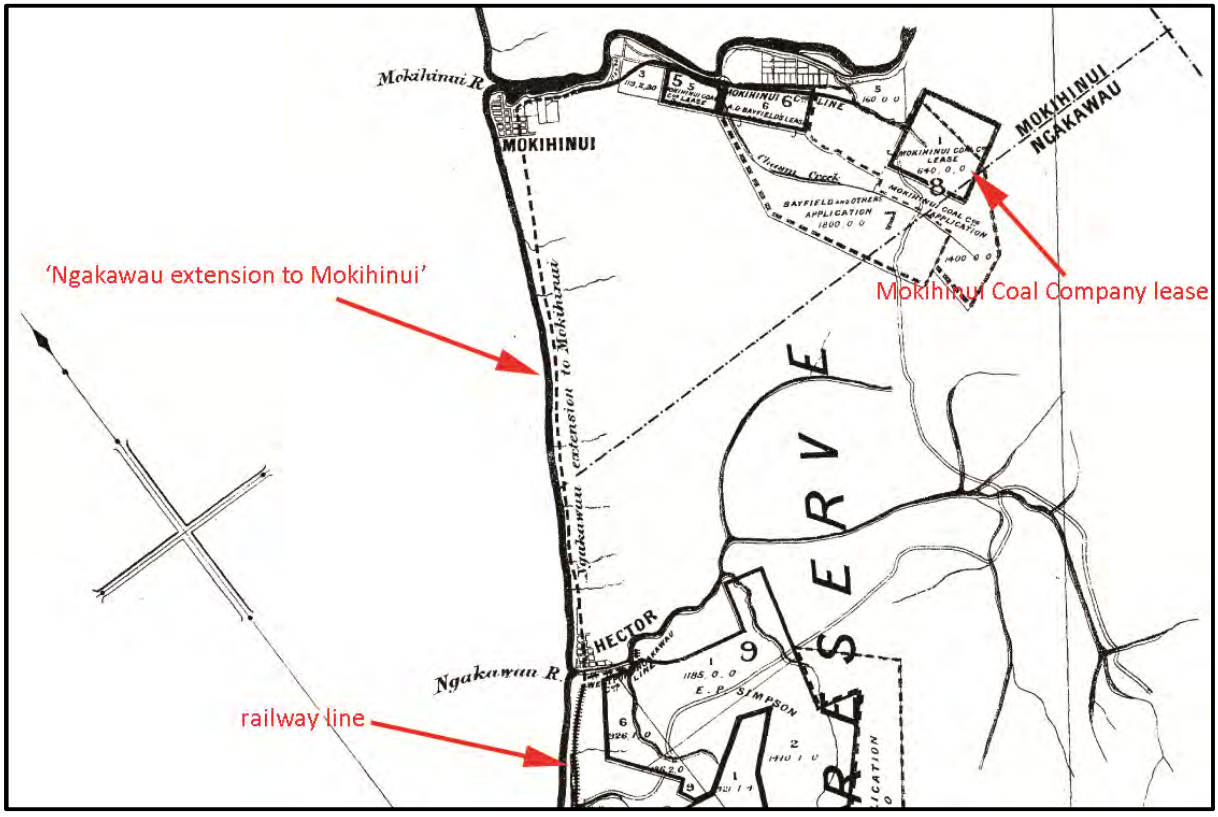


Figure 3. The Mokihinui coal field, and the Mokihinui Coal Company lease (*AJHR* 1889 I6:).

Newspaper reports indicate the formation (i.e. the earthworks) for the line was complete in November 1885, when the steel rails and a locomotive arrived (via boat) at the Mokihinui River mouth. The company already had coal trucks at Mokihinui (*EP* 24/11/1885: 2).

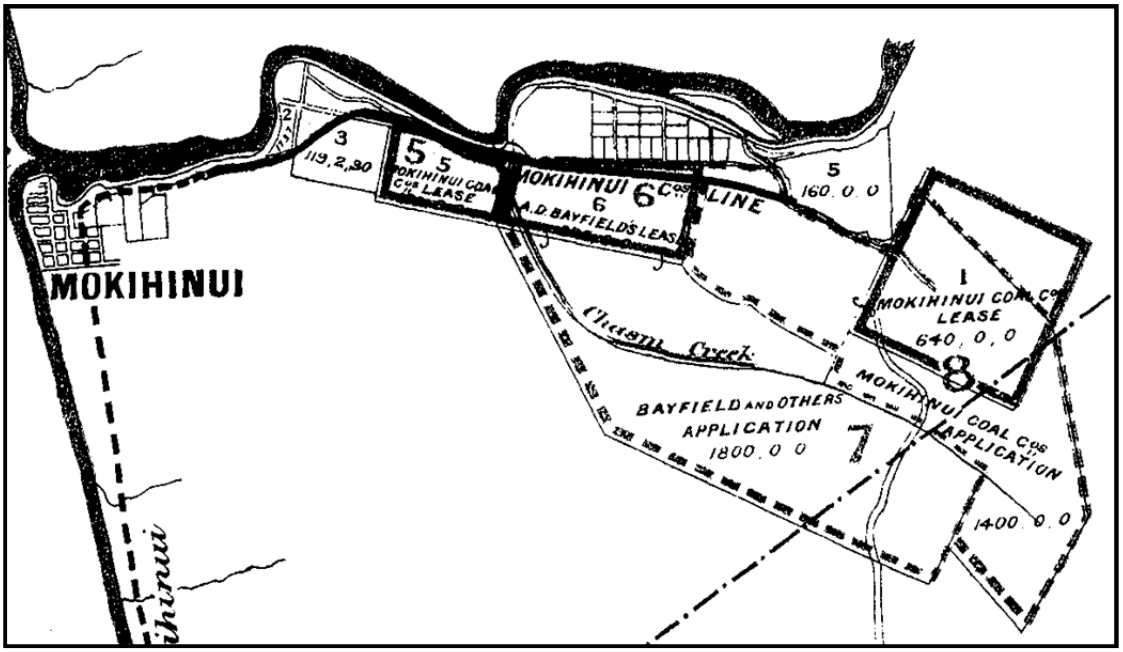


Figure 4. Detail of Figure 3, showing the Mokihinui coal field (*AJHR* 1889 I6). The Mokihinui Coal Company's mining leases are on the south bank of the Mokihinui River and up Coal Creek. The company's railway line runs along the northern boundary of the first and up Coal Creek to terminate at the second. The third lease that the company applied for (in 1889) is with a dashed line. The lease applied for by the New Cardiff Coal Company in 1889 is also shown by dashed line. The mining lease already held by Mr Bayfield, one of the original directors of the New Cardiff Coal Company, is adjacent on the south bank of the Mokihinui River.

A few details regarding the construction of the railway are available in reports made to the government after the line was completed. Two bridges, one across Chasm Stream and the other across Page's Stream, and a tunnel were constructed for the line. The timber used for both the sleepers and the bridges was cut from trees growing along the route. The section of line between Chasm Stream and Pages Stream had to be reconstructed when it was found that both the Chasm Stream bridge and the cutting were too high. Both the bridge and the cutting were lowered 10 inches before work on the line continued (*AJHR* 1894 I9: 44).

This infrastructure was intended to facilitate the transport of coal from the Mokihinui Coal Company's mine to Westport via railway and boat. Hopes were high for the success of this mode of transport, as an obstructive sand bar in the river had been removed a short time previously. However, the removal of this bar did not sufficiently mitigate the shallow depth of the river and by 1889 the difficulties in shipping coal between the mine and Westport had become apparent (*AJHR* 1889 I6: 33). The provision of railway transport between the coal field and the port therefore became crucial for the success of the mining operations.

By the end of the 1880s the potential of the Mokihinui coal field had been recognised by the government and by other investors (*AJHR* 1889 I6: iii). The Mokihinui Mining Company held two mining leases of 800 acres total at Coal Creek and had applied for another 1400 acres (*AJHR* 1889 I6: 11; Figure 4). The company had invested a considerable amount in infrastructure and opening up the mine, but up to that point the mine had produced little. Despite the low output the company invested in a lightdraught steamer to transport coal from their staiths to Westport. Messrs Bayfield, Grant and Rowland had also applied for 1800 acres under the guise of the New Cardiff Coal Company (also referred to as the Cardiff Coal Company and the Westport Cardiff Coal Company; *AJHR* 1889 I6: ii; Figure 4). While this company had previously acquired a prospecting license for this land they had not invested in any infrastructural improvements and it is possible that they expected

future output could be transported along the Mokihinui Coal Company railway line (*AJHR* 1889 I6: 109).

Heightened interest in the Mokihinui coal field motivated earnest discussion about connecting the Mokihinui Coal Company's railway with the government's coastal railway line (*AJHR* 1889 I6: ii-iii). The government line ran north from Westport but terminated short of the Ngakawau River. Laying approximately seven miles (11.2 km) of rail would connect the government line to that of the Mokihinui Coal Company. Increased competition in the coal trade (and a consequent reduction in coal prices) and increased revenue for Westport Harbour were touted as further incentive for the connection between the two lines being made. This connecting line had been surveyed at some point before 1889 and was considered an easy and cheap undertaking. However, there was some suggestion that a line held by a private company, such as the Mokihinui Coal Company, would be injurious to public interest (*AJHR* 1889 I6: 58). It is possible that those with interests in the Mokihinui coal field and not associated with the Mokihinui Coal Company, such as the New Cardiff Coal Company, objected to the former company's potential monopoly of transport infrastructure.

The relationship between the Mokihinui Coal Company and the New Cardiff Company appears to have been antagonistic from the beginning. In 1889 the Mokihinui Coal Company objected to the New Cardiff Coal Company's lease application. The latter's application surrounded the former's lease on two boundaries and prevented them from working half of their lease from their base of operations at Coal Creek. The company was criticised in a report to the Government in 1889 for failing to prospect their lease effectively in order to prevent such a situation. However, their investment in infrastructure was commended and the report noted that the New Cardiff Company was yet to make such a commitment (*AJHR* 1896 I6: 109).

The following year saw no improvement in the Mokihinui Coal Company's coal yield and development at the mine was described as "lamentably slow" (*AJHR* 1890 C3: 193). This did not prevent further infrastructural investment, with the arrival of a steamer with a carrying capacity of 400 tonnes for the transport of coal to Westport. Things looked up for the company briefly in 1891 when it secured a contract for the supply of 15,000 tonnes of coal to government railways. However, that same year their new steamer was wrecked on the Mokihinui River and the company was forced to give up the contract (*AJHR* 1891 C2: 10).

The wreck of the Mokihinui Coal Company's steamer reinforced opinion (evident in the government reports since 1889) that the Mokihinui coal field would not be profitable until a railway line was constructed for the transport of coal to Westport (*AJHR* 1889 I6: ii-iii, 1890 C3: 193). Therefore, the following year the Westport-Ngakawau Railway Extension Act 1890 was passed, authorising the expenditure of £36,000 to connect the coastal government line to the Mokihinui Coal Company's railway. The money was to come from the Westport Harbour Board (*AJHR* 1894 I9: 1).

This was followed by a formal agreement between the New Zealand Railway Commissioners and the Mokihinui Coal Company, determining the means by which the part-public part-private line was to be run (*AJHR* 1891 D1: 1-2; Figure 5). While the company was to equip and maintain their own portion of the railway line, the commissioners were to be responsible for running goods and passengers along the full extent of the railway between Westport and the Mokihinui Coal Company mine. The commissioners therefore had right of approval with regard to the rates charged by the company for transport over their portion of the railway. In return, the Mokihinui Coal Company was to supply the coal needed for running the trains at a fixed rate of 10s. By 1891 work on the railway was well underway (*AJHR* 1891 C2: 10).

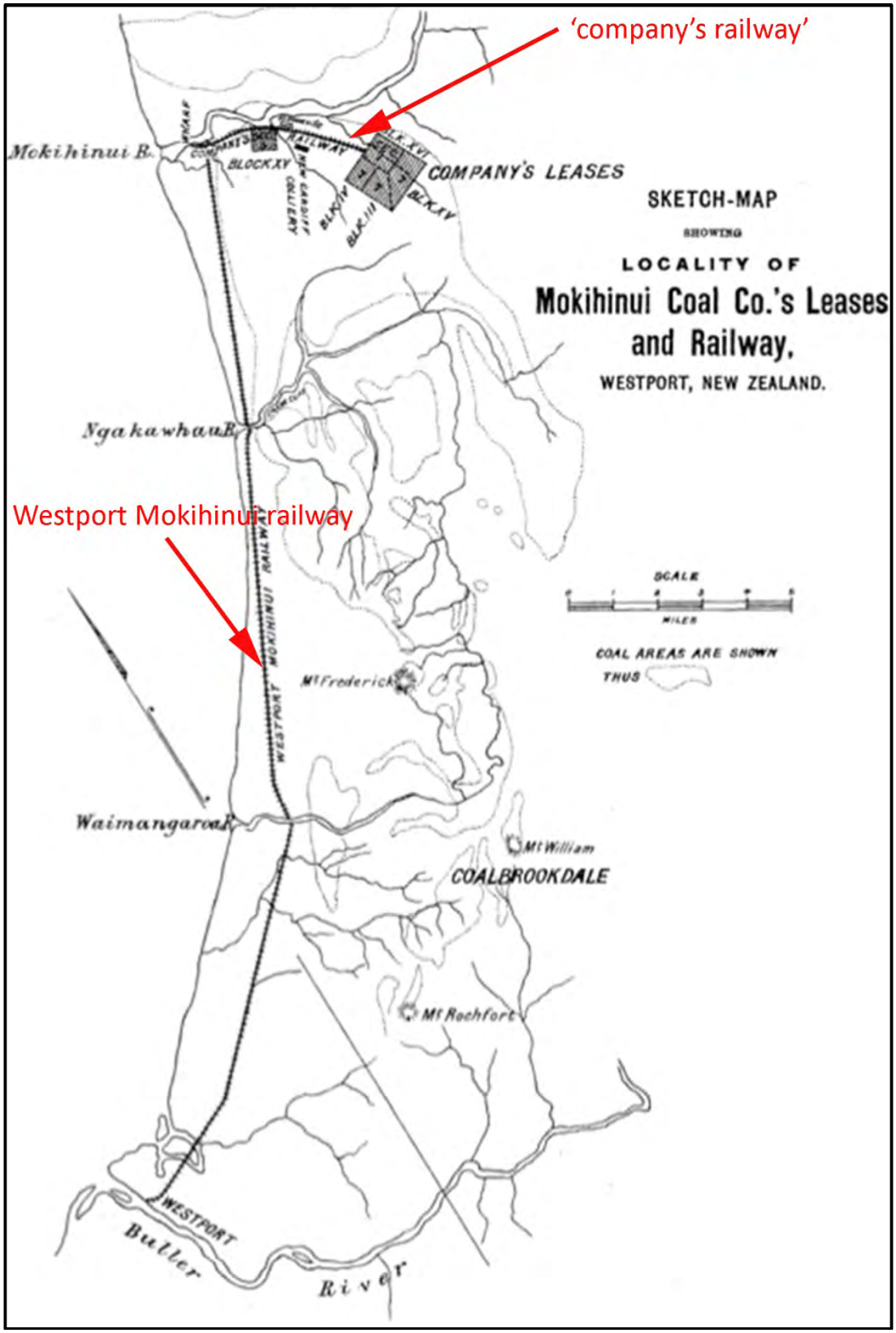


Figure 5. The full extent of the Westport-Mokihinui Railway in relation to the Mokihinui coal field. The portions of railway constructed by the government and the Mokihinui Coal Company are defined (*AJHR* 1899 C8).

The railway connection was complete in August 1893, and opened by Premier Richard Seddon (MCH 2012a). Reference was made to the "starting" of both the Mokihinui and New Cardiff (now known as

the Westport Cardiff Coal Company) mines in government reports (*AJHR* 1893 C3: xvii, 1894 D1: x; Figure 5). While both mines had previously been operational, the belief in the positive effect of the railway seems to have been so great that the mines only really "started" after its completion. The new railway and the consequent mining impetus created demand for homesteads and settlements in the Mokihinui river valley. As a result the township of Seddonville was established in 1893, named for Premier Richard Seddon (*AJHR* 1893 C3: xvii).

Unfortunately, the antagonism between the two Mokihinui coal mining companies impeded the output of the Westport Cardiff mine, despite the renewed sense of industry (*AJHR* 1894 D1: x). A dispute arose regarding the rates the Westport Cardiff company had to pay the Mokihinui company for haulage over their part of the line. The Westport Cardiff Coal Company had constructed a branch railway from their mine to join the new Westport-Mokihinui railway line. This branch railway met the line at a point on the Mokihinui Coal Company's part of the line, and so in order to transport coal to Westport the company was required to pay haulage rates for use of approximately 1 mile 22 chains (1.81 km) of the private line. The haulage rates, set by the Mokihinui Coal Company in conjunction with the New Zealand Railway Commissioners as per the 1891 agreement, were perceived as excessive by the Westport Cardiff Coal Company. Having no means to transport their coal the Westport Cardiff mine was forced to close for a period in 1894, despite having bins filled with coal waiting for transport (*AJHR* 1894 D1: x, 1894 I9: 88).

In order to settle the dispute the government arranged to purchase the full extent of the railway for £15,745, after careful valuation of the line had been made (*AJHR* 1895 D1: x). The money for this purchase were provided by the Westport Harbour Board on the provision that future profits from the working of the line were received by that body. Of the money used to purchase the railway line, £1,245 was paid to the Working Railways Department for the purpose of ensuring the line was in a good state of repair. The department reported that the railway needed more sleepers and new ballast added, and the line itself needed lifting and straightening. The bridges also needed strengthening, the formation needed draining and several slips had to be removed. This work was undertaken and completed in 1896 (*AJHR* 1895 D2b: 42).

Despite the sale of their railway, the Mokihinui Coal Company was in financial difficulty by 1895 (*AJHR* 1895 C3b: 4). The coal produced by the mine proved too soft to be profitable and several obstructive faults were identified when the mine attempted to extend operations. As a result, the company suspended their operations. The mine was subsequently worked by a cooperative company, the Knights of Labour, but was handed back to the Mokihinui Coal Company in 1896 when it encountered difficulty disposing of the soft coal and was unable to make wages (*AJHR* 1896 C3: 159-160). The Mokihinui Coal Company mine seems to have been worked sporadically in 1897, but by 1898 the company had gone into liquidation (*AJHR* 1897 C1: 17, C3: 156, 1898 C1: 15). The following year their mining lease was sold to the government (*AJHR* 1899 C3: 168).

In contrast, the government purchase of the railway seemed to have a positive effect on the Westport Cardiff Coal Company, at least in the short term. After reopening following the haulage dispute, the mine struck good quality coal and began turning an impressive profit (*AJHR* 1897 C3: 156). In 1897 the mine employed 78 workers. The following year, when the Mokihinui Coal Company mine closed, the Westport Cardiff mine had a high output and in 1899 they extended their workings over Chasm Stream (*AJHR* 1898 C1: 15, 1899 C3: 168). However, their success was short-lived. After continuously encountering faults and soft coal the company ceased operations in September 1899. The following year the mine was flooded when a fire was identified in part of the mine. The Westport Cardiff Coal Company went into liquidation and the mine was sold to the government (*AJHR* 1901 C3a: 2).

The closure of both mines had a negative effect on the township of Seddonville, as the majority of residents had been employed on the Mokihinui coal field. The closures also meant that there was almost no freight being run along the railway line. The residents of Seddonville petitioned the government to open a state mine at Mokihinui. The government was looking to select a location for a state coal mine as a result of the State Coal Mines Act 1901 and so the Seddonville State Mine was opened in 1903 (MCH 2012b). However, the same problems encountered by the Mokihinui and Westport Cardiff companies – faults and soft coal – also plagued the state mine and it was closed in 1914 (MCH 2012b; Figure 6).

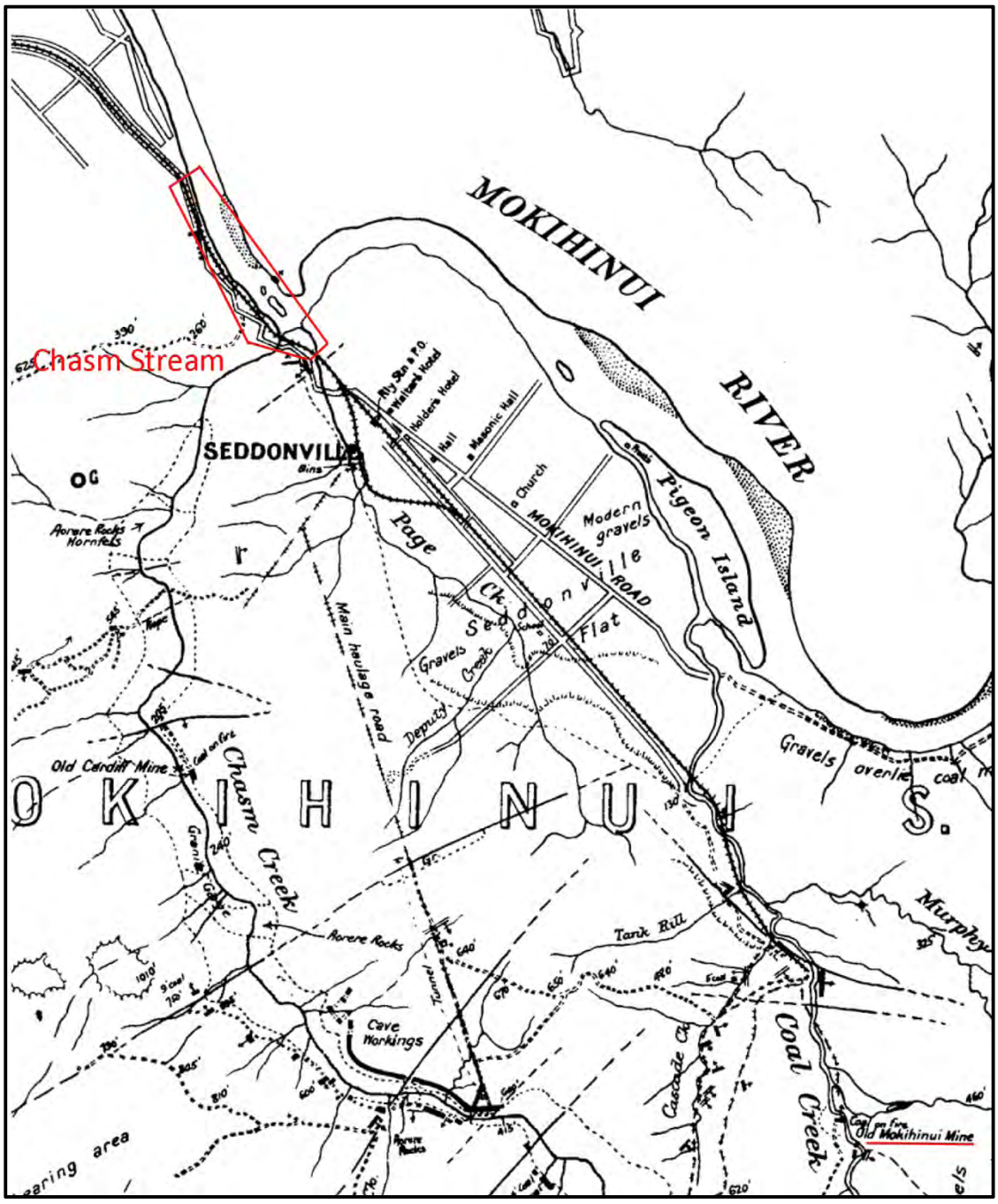


Figure 6. The Seddonville area, 1911 (*AJHR* 1911 C9). The extent of the railway line that was investigated as part of this assessment is outlined in red. Note the location of the 'Old Mokihinui Mine' at lower right.

Despite the decline in freight, trains continued to run along the Westport-Mokihinui Railway until the 1980s. One of the industries that helped keep the line open was, once again, coal mining, this

time in the form of the Charming Creek coal mine. This mine opened in the 1920s, and used its own tramway (now the Charming Creek walkway) from the mine to Ngakawau to transport coal until about 1958. From the late 1950s, the Charming Creek Road (from the mine to Seddonville) and the Westport-Mokihinui railway line was used to transport coal. The company built a private siding at Seddonville to facilitate this operation. In April 1976, the Charming Creek Coal Company was informed that the Ngakawau-Seddonville railway line would be closed in July of that year. The company protested this development, based on the cost of moving the siding, and the lack of other suitable options, not to mention the fact that the mine only had 5-6 years left. In the end, these protests were successful and the line – and mine – remained open until 1 May 1981 (Breen and Findlater 2008: 32-39).

The section of railway line between the old Mokihinui Coal Company mine and Seddonville was closed in 1974, and the Ngakawau-Seddonville line was closed in 1981 (MCH 2012c).

Following the closure of the Ngakawau-Seddonville line – and the subsequent lifting of the rails – the Chasm Stream railway line was turned into a walkway by the New Zealand Walkways Commission, and the management of the walkway was transferred to the Department of Conservation (DOC) in 1987, when that department came into being. In the early 2000s, a local community group also became involved in managing the walkway. DOC ended its role at Chasm Stream in 2011 (DOC 2011). Correspondence held in the DOC file indicates that Telecom laid a cable down the centre of the embankment in the early 2000s.

PREVIOUS ARCHAEOLOGICAL WORK

The Chasm Stream railway line has not previously been recorded as an archaeological site, or been the subject of any archaeological investigations (Figure 7). Recorded archaeological sites in the vicinity of the railway line are L38/7 (a track that connected the Lyell and the Mokihinui), L38/21 (a 1935 saw mill), L28/28 (a track that connected Seddonville and the Mokihinui Forks, and probably the same site as L28/7) and L28/31 (a bridge that was part of the road to Karamea).

Archaeological work has been carried out on a number of related sites, including several bridges that were one part of this railway line: Bridge 126 Stillwater-Ngakawau line (SNL; over Deadmans Creek; recorded as archaeological site K29/81), Bridge 127 SNL (K29/80), Bridge 130 SNL (over the Whareatea River; K29/71) and Bridge 148 SNL (on the southern edge of Granity; L28/25).

Another related archaeological site has been recorded in some detail. In 2008, Jackie Breen and Amy Findlater recorded the Charming Creek walkway. This walk follows an old tramway from the Ngakawau bins to the remains of the Charming Creek coal mine, at the southern end of Charming Creek Road. Charming Creek Road, which was completed in 1948, runs from that mine to Seddonville. The Charming Creek tram serviced both timber milling and coal mining concerns in the area, the remains of which also survive.

Although not directly related, archaeological work has also been undertaken at the Conns Creek rail yards (K29/54) at the base of the Denniston incline (the Conns Creek yards were connected with the Stillwater-Ngakawau line by a branch line from Waimangaroa; Watson 2010). This work involved an archaeological survey of the yards and was completed following a topographic survey of the area by Chris J. Coll Surveyors.

Figure 7. Recorded archaeological sites in the vicinity of the Chasm Stream railway line. Image: ArchSite.

RESEARCH RESULTS

History

Little historical information relating to the construction and/or maintenance of the Chasm and Page stream bridges was located, with no newspaper references to either bridge, or the tunnel. Plans supplied by Colliers indicate that the renewal of Bridge 37 (the bridge over Chasm Stream) was proposed in 1901, when it was proposed to install a plate iron girder bridge, but the original form of the bridge is not shown (see A3 fold-out plan). Similarly, there is a plan for one of the piers on Bridge 38 (the bridge over Page Creek), dated to 1903 (see A3 fold-out plan). It is not known if this was drawn as part of the wholesale modification of the bridge, or if just one pier was replaced at this time. Work on other bridges on the section of railway between Westport and Seddonville in recent years has indicated that a number were modified substantially in 1900-1901 (Loader 2010).

Figure 8 shows a train crossing the Chasm Stream bridge in 1968. It is interesting to note that the train is carrying milled timber and coal.

Figure 8. A train crossing the Chasm Stream bridge in 1968 (McClare 1968).

Archaeology[1]

The Chasm Stream railway line is 900 m long, and runs along the south bank of the Mokihinui River. The former railway line meets the Mokihinui-Seddonville Road at each end, and there were no doubt level crossings in these areas, prior to the line being lifted. The line was walked from west to east for the archaeological survey (Figure 9).

[1] Appendix 1 contains a full list of waypoints, grid references and descriptions.

Figure 9. The waypoints recorded during the archaeological survey. Full details about each waypoint are provided in Appendix 1.

The former railway line is in good condition, as is perhaps to be expected for a line that has been maintained and used as a walkway since it ceased to function as a railway line. It ranges in width from 3 m wide (including a side drain; waypoint 741) to 6.7 m (at the west end; waypoint 736). It is only 6.7 m wide for a short distance and the reason for this width is not clear. It is possible that it related to a level crossing, or that there was a building here. In some places, the original ballast surface is visible (Figure 10). No sleepers or rails remain in situ – these were no doubt lifted and retained for use elsewhere when the line was decommissioned.

Figure 10. Looking west along the Chasm Stream railway line, waypoint 736. Ballast is visible on the embankment.

Most of the Chasm Stream railway line is benched, or in cuttings. There are short sections on a built-up embankment at each end of the line, where it meets the road. There are five cuttings, the longest of which is 87 m long (waypoints 752-754), and the deepest was approximately 10 m deep (Figure 11 and Figure 12). Each of the cuttings has a side drain (on the south side) and the longest cutting has a drain on both sides for part of its length (Figure 13). This cutting also had a cut-out through the north wall, which allowed water from the drain to run out of the cutting (waypoint 753; Figure 14). The cut-out is 7 m long and 550 mm wide, and the corresponding drain is 500 mm wide and 150 mm deep. There are no drains on the embankments (where the water would have been able to percolate down through the ballast, or run off the sides). As well as the cuttings, there is one tunnel, which is 3.1 m wide and 73 m long (waypoint 749; Figure 15). No drains were visible in the tunnel. At the east end of the tunnel was a mid-late 20th century concrete retaining wall, built to shore up the road above.

Figure 11. Looking east down the cutting at waypoint 744. This is 3.6 m wide at the base and approximately 27 m long, with a side drain on the south (right) side.

Figure 12. The cutting at waypoint 746. This was 23 m long, and 3.7 m wide, with a side drain on the south (right) side.

Figure 13. The side drain in the cutting in Figure 11.

Figure 14. The cut-out on the north side of the longest cutting (waypoint 753).

Figure 15. The west end of the tunnel, which is 3.1 m wide and 73 m long.

As well as the drains, there are two modern plastic culverts (waypoints 739 and 741) and one concrete culvert (waypoint 748, just west of the tunnel mouth). The plastic culverts are likely to be completely modern i.e. it is unlikely that they replaced an earlier feature, but probably had to be installed once the side drains were no longer maintained. The round concrete culvert, while not necessarily original, almost certainly dates to the railway era, and would have carried water from the drain away from the tunnel.

There are also two modern footbridges on the Chasm Stream railway line, both of which are built from a combination of 'railway' and modern materials (waypoints 742 and 745 – Footbridge 1 and 2 respectively). Both footbridges may have replaced railway culverts. Figure 16 shows Footbridge 1, which crossed a cut-out that carried water from the drain on the south side of the railway line formation. The only fabric in this structure that may be original, in situ material are the ballast guards at each end, and the railway irons holding these in place (Figure 17). Amongst the re-used fabric in the bridge are the beams on the outside edges of the bridge platform and the beams that support the bridge. No date stamps were visible on any of these elements. There is a vertical railway iron in the regenerating bush on the outside edge of the railway line immediately east of the footbridge (at waypoint 743).

Figure 16. Footbridge 1, at waypoint 742, looking east.

Figure 17. The west end of Footbridge 1, showing the ballast guard at that end.

Footbridge 2 (at waypoint 745) has been built over what was clearly an old culvert, which carried water from a stream that flowed through the railway formation (Figure 18). A stone-lined channel had been formed (and its base lined with concrete) for the stream to run through (Figure 19). There is also stone revetting on the corner of the railway formation on the east side of this bridge, and concrete between the edge of the stone channel and the revetting (Figure 20). The form and nature

of this channel suggested that it was built during the railway era, and possibly during the 19th century.

Figure 18. Footbridge 2 at waypoint 745, looking east.

Figure 19. The stone-lined channel under Footbridge 2.

Figure 20. Stone revetting on the corner of the railway formation on the east side of Footbridge 2. Note the concrete in the foreground.

As with Footbridge 1, Footbridge 2 had been built using a mixture of railway and modern fabric, including beams that were second hand in 1974 and 1979 (Figure 21). It is not clear whether these beams were installed here in the 1970s (when the railway was still functioning), or if the timbers were added here when the footbridge was built. Recycled bridge beams were also used in the bridge platform. These dated from 1963 (Figure 22).

Figure 21. A bridge beam date-stamped SH79, indicating that it was a second hand beam installed in 1979, Footbridge 2. Note also the timber the scale is sitting on. Its function is not clear.

Figure 22. A bridge beam date-stamped 63 (indicating it was installed in 1963, although not necessarily in this location), Footbridge 2.

In the river below this footbridge were four or five railway cars, which appeared to have been dumped here deliberately, possibly to shore up the river bank, as the current swirls and eddies in here. When these were dumped is not known, although the cars appeared to date to the 20th century.

Bridge 37 (waypoint 751)[2]

Bridge 37 is a three-span bridge, supported by four piers, that curves to the left (Figure 23 and Figure 24). The spans comprise two beams, bolted together, with cross-members running at right-angles between them (Figure 25). This type of span is known as a built-beam. These are clearly not the plate iron girders that were proposed in 1901. Date stamps were only visible on Span 1: the top beam was stamped 03 (1903) and the bottom 60 (1960), indicating that neither beam was original, and suggesting that, even if plate iron girders were not installed in 1901, modifications were made to the bridge in the early 20th century.

[2] Safety concerns prevented detailed recording of some components of this bridge.

Figure 23. Looking west along Bridge 23.

The ballast guards at each end of the bridge were modern tanalised timber, but the concrete piers in front of each of them (Piers 1 and 4) were probably original (Figure 26). Piers 2 and 3 both had three piles with a raker on each side and bracing and waling, as well as a cap and beams (Figure 27). The bolster on Pier 2 was second hand and had been installed in 1967. Piles 2 and 3 in Pier 2 had no date stamps, and Pile 1 had been stumped in 1974. It was not possible to get close enough to see any date stamps on Pier 3.

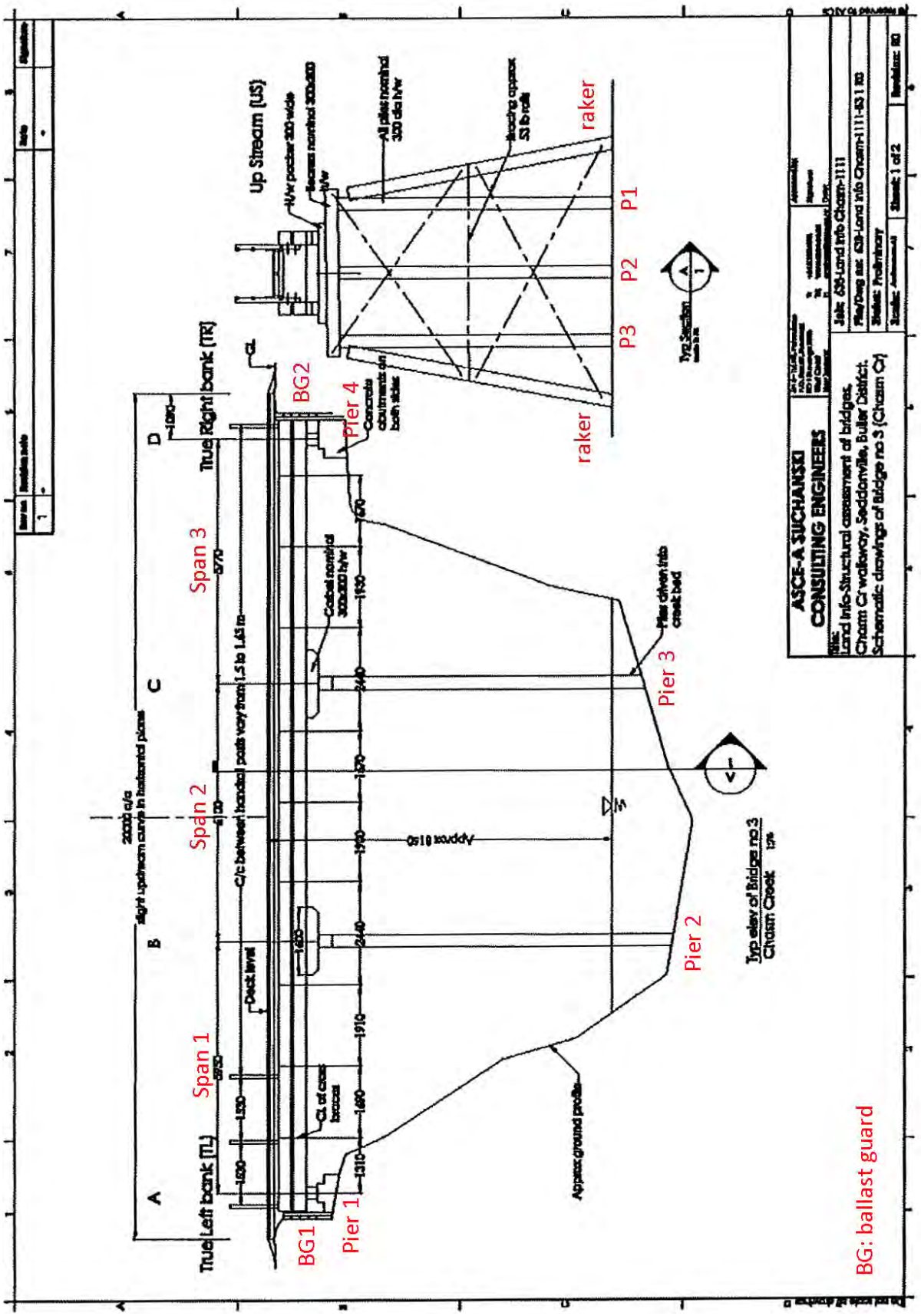


Figure 24. Bridge 37. Image supplied by Colliers, author's annotations in red.

Figure 25. The structure of the spans, Bridge 37.

Figure 26. Ballast guard 1 (the modern tanalised timber at rear left) and Pier 1 (the concrete structure in the foreground). Ballast guard 2 and Pier 4 (at the east end of the bridge) were of the same fabric.

Figure 27. Pier 2, with various components labelled.

In summary, then, Piers 1 and 4 of Bridge 37 are the only components of the bridge that can confidently be said to date to the 19th century, although it is quite possible that any of the undated fabric also dates to that century.

Bridge 38 (waypoint 755)[3]

Bridge 38 has four spans sitting on five piers (Figure 28). The spans are the same built-beam spans as on Bridge 37, although these ones have cross bracing underneath (Figure 29 and Figure 30). There are timber ballast guards at each end of the bridge, with piers immediately in front of them (Figure 31). Piers 2, 3 and 4 are of the same design as those on Bridge 37: three piles, two rakers, a cap and two beams (Figure 32). There are some differences, however. Pier 2 has two square cross-section piles and Pier 4 has one square cross-section pile (as opposed to the more usual round piles). Also, these piers have bracing but not waling. Piers 1 and 5 both have three piles and a cap.

The following elements date stamps were observed 02 (Pile 2, Pier 1), 03 (Pile 2, Pier 2), 62 (Pile 2, Pier 3; cap, Pier 4; lower beam, Span 2), 63 (Pile 3, Pier 3), 73 (lower beam, Span 3) and SH71/4 (Pile 1, Pier 5). No date stamps could be seen on any of the other timbers. As such, it is difficult to say when the other timbers were installed, and whether or not any pre-1900 fabric remains in situ on the bridge, but the possibility cannot be discounted.

[3] Safety concerns prevented detailed recording of some components of this bridge.

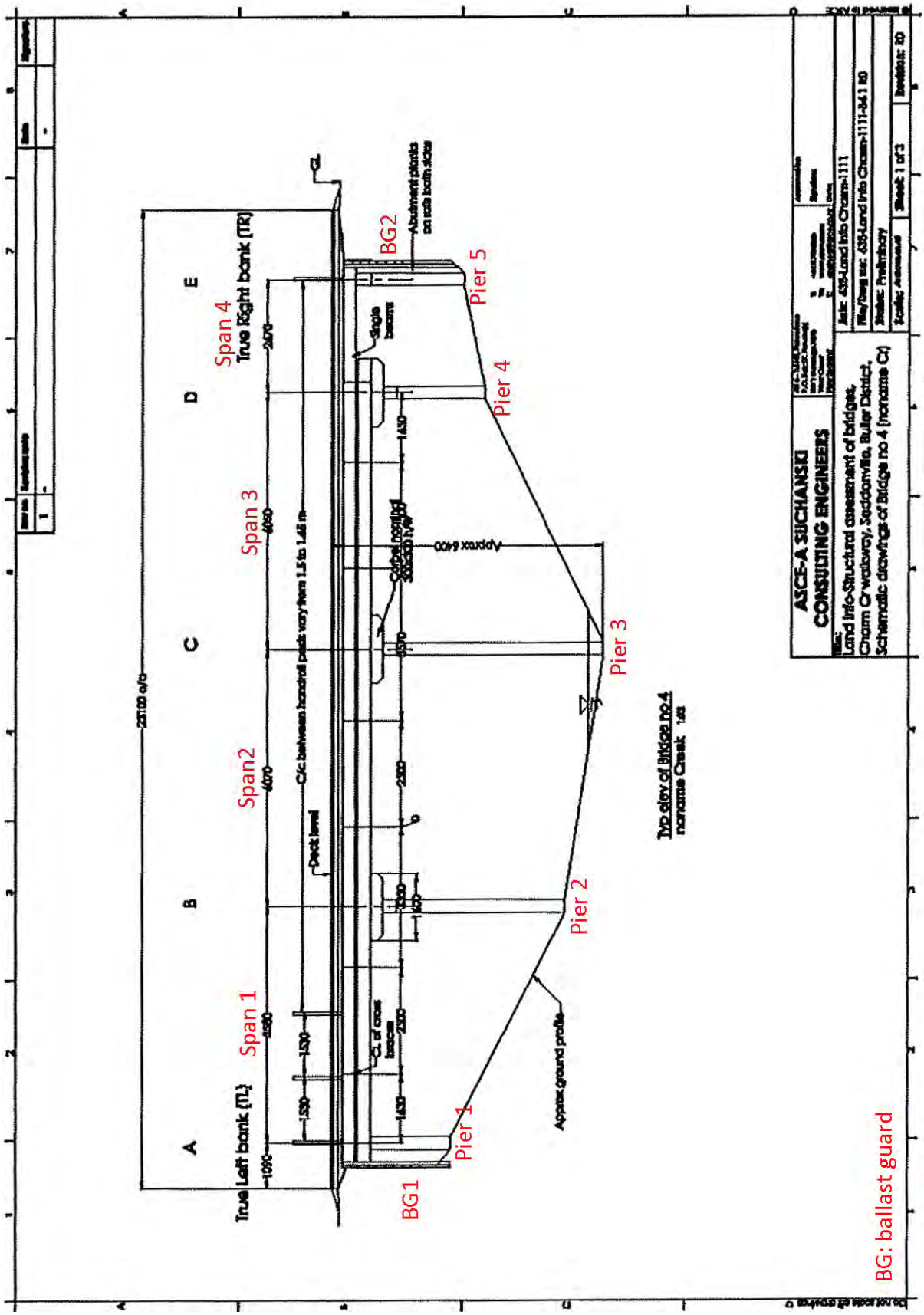


Figure 28. Bridge 38. Image supplied by Colliers. Author's annotations in red.

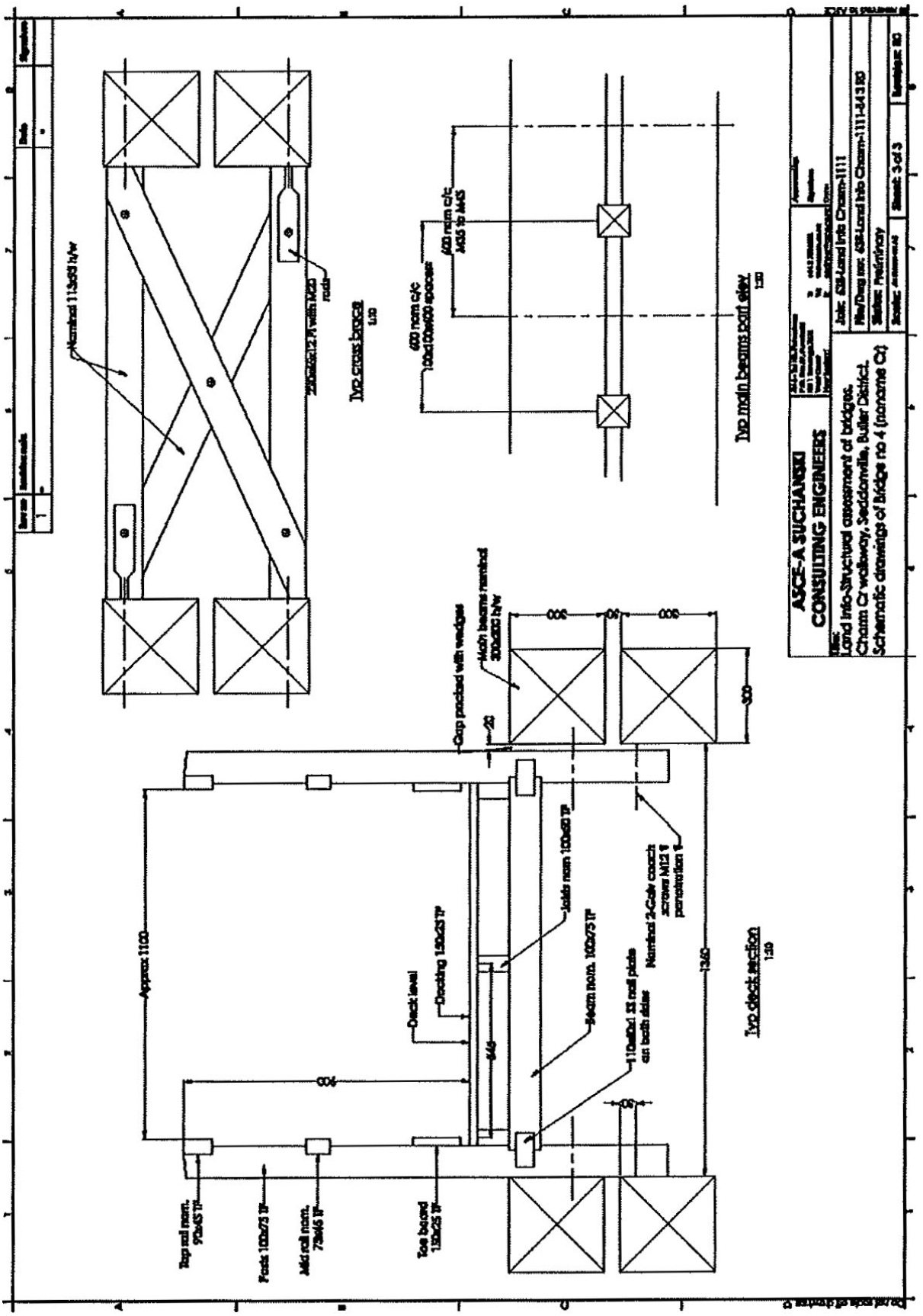


Figure 29. Details of Bridge 38, showing the cross bracing (top left), built-beam (top right) and a cross section through the bridge, as it is today (bottom). Image supplied by Colliers.

Figure 30. Cross-bracing under the bridge decking, Bridge 38.

Figure 31. Ballast guard 1 with Pile 1 of Pier 1 in front of it. (Refer to Figure 24 for the numbering system used for the piles – the upstream pile is always Pile 1).

Figure 32. Looking east under Bridge 37, with Pier 2 in the foreground.

ARCHAEOLOGICAL AND OTHER VALUES

The NZHPT recommend using the following criteria to assess the values of an archaeological site:

- The **condition** of the site.
- Does the site possess **contextual value**?
- Is the site unusual, **rare** or unique, or notable in any other way in comparison to other sites of its kind?
- **Information potential**.
- Does the site have any special **cultural associations** for any particular communities or groups, e.g. Maori, European, Chinese.
- **Amenity value** (e.g. educational, visual, landscape). Does the site have potential for public interpretation and education?

Values have been assessed as being low, moderate or high. Because this assessment has been carried out in relation to the Historic Places Act, the values assessment has focused on the pre-1900 components of the site. The values of each of the four main features – the railway formation (i.e. the railway track), the tunnel, Bridge 37 and Bridge 38 – are summarised in Table 1. There is a separate discussion of the context and amenity value of these features below.

Table 1. Summary of the archaeological values of the railway formation, tunnel and Bridges 37 and 38.

Archaeological value	Railway formation		Tunnel		Bridge 37		Bridge 38	
	Value	**Notes**	**Value**	**Notes**	**Value**	**Notes**	**Value**	**Notes**
Condition	Moderate	Rails & sleepers lifted but the formation has not been subject to scouring, slumping, etc.	Moderate-high		Low-moderate?	Difficult to assess because the amount of pre-1900 fabric remaining cannot be determined.	Low-moderate?	Difficult to assess because the amount of pre-1900 fabric remaining cannot be determined.
Context								
Rarity	Low		Moderate	There are 5 tunnels on the SNL, and 18 on the Midland line. Only 1 of these dates to the 19th century, the rest being on 20th century sections of railway line.	Low-moderate	21 pre-1900 bridges remain on the SNL, but these are the only bridges that remain on the Mokihinui-Seddonville section.	Low-moderate	25 pre-1900 bridges remain on the SNL, but these may be the only bridges that remain on the Mokihinui-Seddonville section.
Information potential	Low	Excavation of test trenches could yield the exact details of the embankment formation, benching, etc, observed during the survey.	Low	Full dimensions of the tunnel could be recorded to yield information about tunnel requirements & the amount of rock blasted.	Moderate	Detailed analysis & recording would yield detailed information about the construction & maintenance of the bridge & changes over time. Possibility of timber analysis.	Moderate	Detailed analysis & recording would yield detailed information about the construction & maintenance of the bridge & changes over time. Possibility of timber analysis.
Cultural associations	Low	None known.	Low	None known.	Low	None known.	Low	None known.
Amenity value	Moderate-high		Moderate-high		Moderate-high		Moderate-high	
Overall	Moderate		Moderate		Moderate		Moderate	

Context

The context of these features can be assessed on two levels. They were built as part of the Mokihinui Coal Company's railway line to the mouth of Mokihinui River, but were subsequently subsumed into a railway that extended from Stillwater (near Greymouth) to Seddonville. The survival of these contexts is quite different. While traces of the line from the Mokihinui River mouth to the former mine site can still be seen today, the formation is by no means complete, and most structural features (e.g. bridges) have been removed. Little is believed to survive at the mine site (J. Breen, pers. comm.).

In contrast, most of that much larger railway line is still a functioning railway (known as the SNL, or Stillwater Ngakawau line), with the exception of the section from Ngakawau to Mokihinui. As with the section of line from Mokihinui to the former mine site, traces of the line from Ngakawau to Mokihinui are still visible today, including some bridge abutments/ballast guards. Twenty-one bridges from the 19th century remain in situ on the SNL, along with a number of other bridges that are original (if not built prior to 1900 i.e. the section of line they are on was built after 1900).

So, on the one hand, the context of the features is low, and on the other it is high.

Amenity value

The amenity value of the features has been rated moderate-high for a number of reasons. Firstly, the features form a neat and interesting cluster together. Secondly, these features were built by the Mokihinui Coal Company, a company that represents the northern-most mining in the Buller coal field. The Buller coal field has been hugely important in the history and development of the West Coast since Europeans first discovered coal there. Coal has shaped much of the development of the region, and continues to do so today, from the development of transport networks (the railways, wharves and roads) to the provision of jobs and economic stimulus to the development of both tourism and environmental protests. Without coal, the Buller region would have a very different history.

Remains of the Buller coal field survive throughout the region, and in numerous forms, from the mines themselves to the transport networks, and the towns that supported them. The most famous are those at Denniston, but there are many more besides: Stockton, Millerton, Koranui, the 20th century mines on the Denniston plateau, Charming Creek, the towns, the bins, the inclines, the list goes on. Much less of this landscape survives in the northern part of the coal field, and yet it was incredibly important, as home to one of the first State coal mines (the Seddonville coal mine which, in part, grew out of the Mokihinui Coal Company's mine), and through this the area – and the Chasm Stream railway line – have associations with Premier Richard Seddon, for whom the town (and later the mine), was named.

The continued operation of the railway line until 1981 also owes much to coal, and the activities of the Charming Creek mine, and the remains of the railway line form another component of that mine's landscape.

Today, the Chasm Stream railway line serves as a reminder of that history, and of how coal shaped this particular part of the Buller. It is also a rather picturesque walk on Crown land, and an easy way to see the spectacular Chasm Stream.

Summary

Overall, the Chasm Stream railway line is of moderate archaeological value. The components that make up this railway line are not rare, and their condition is in some cases difficult to assess, as is their context. They are of low or moderate information potential and moderate-high amenity value.

ASSESSMENT OF EFFECTS

As there is no proposal at this stage, no assessment of effects has been carried out.

DISCUSSION AND CONCLUSIONS

The remains of the Chasm Stream railway line comprise the railway formation, a tunnel and Bridges 37 and 38, and have been assessed as being of moderate archaeological value. Of these features, both the formation (including the drains, cuttings and cut-outs) and the tunnel were built prior to 1900. There were bridges over both Chasm Stream and Pages Stream prior to 1900, but little of the fabric of either bridge could be conclusively dated to the 19th century. Piers 1 and 4 of Bridge 37 (Chasm Stream) were almost certainly built prior to 1900, and it is almost certain that some of the undated fabric of each bridge pre-dates 1900.

The following recommendations are made:

- If LINZ intends to carry out any modifications to these features, they will need to apply for an authority to destroy, damage or modify an archaeological site under section 11 of the Historic Places Act.
- It is recommended that an assessment of effects, including recommendations for mitigation, is carried out before such an authority is sought.

As a result of this work, the Chasm Stream railway line has been recorded as archaeological site L38/36 (see attached).

REFERENCES

Abbreviations

AJHR – Appendix to the Journals of the House of Representatives

MCH – Ministry for Culture and Heritage

NZRM – The New Zealand Railways Magazine

Appendix to the Journals of the House of Representatives. [online]. Available at: <http//:www.atojs.natlib.govt.nz>.

Breen, J. and Findlater, A., 2008. Charming Creek walkway historic heritage assessment and baseline inspection report. Unpublished report for the Department of Conservation, Buller Kawatiri area office.

Breen, J. and Nelson, M., 2006a. A guide to historic track baseline inspections and definitions. Part 1: track types and feature definitions. Unpublished report for the Department of Conservation, West Coast Conservancy.

Breen, J. and Nelson, M., 2006b. A guide to historic track baseline inspections and definitions Part 2: tramways and water race tracks. Unpublished report for the Department of Conservation, West Coast Conservancy.

DOC, 2011. Newspaper article: 'Doc pulls out of Chasm Creek', 21/2/2011. File reference: RVA-9-7-11-5.

Loader, Fran. 2010. Stillwater-Westport Heritage Bridges Draft 3. Unpublished report for KiwiRail.

McClare, G., 1968. Train on Chasm Creek bridge, 1968. [online] Available at: < http://www.nzhistory.net.nz/media/photo/train-chasm-creek-bridge>.

Ministry for Culture and Heritage, 2012a. Coal is discovered - Seddonville. [online] Available at: < http://www.nzhistory.net.nz/culture/seddonville/coal-discovery>.

Ministry for Culture and Heritage, 2012b. Seddonville State Mine. [online] Available at: < http://www.nzhistory.net.nz/culture/seddonville/state-mine>.

Ministry for Culture and Heritage, 2012c. Seddonville Rail Heritage. [online] Available at: < http://www.nzhistory.net.nz/culture/seddonville/railway-line >.

Morgan, P. G., 1915. *The Geology and Mineral Resources of the Buller-Mokihinui Subdivision, Westport Division*. New Zealand Geological Survey Bulletin No. 17. New Zealand Department of Mines, Wellington.

NZHPT, 2006. Guidelines for Writing Archaeological Assessments. Archaeological Guidelines Series No. 2. New Zealand Historic Places Trust, Wellington.

The New Zealand Railways Magazine. [online] Available at: < http://nzetc.victoria.ac.nz/>.

Watson, K., 2010. Conns Creek: Baseline inspection and historic values assessment. Unpublished report for the Department of Conservation.

APPENDIX 1: WAYPOINTS

The line was walked from west to east for the archaeological survey.

Name	Altitude	NZTMEast	NZTMNorth	Description	Width
736	20	1514421	5400689	Start of the track. Photo taken looking east. Vegetation growing on each side of the embankment. Ballast visible in patches on the surface.	6.7 m
737	20	1514456	5400638	Embankment. No evidence of sleepers/rails.	3.2 m
738	19	1514488	5400581	Embankment.	
739	20	1514554	5400484	Plastic culvert used to channel a drain through the embankment. There is not likely to have been a culvert here originally (railway culverts tend to be much larger than this.	
740	20	1514506	5400534	The formation is benched from this point east. There is a very overgrown drain between the formation and the bench wall (not possible to get a clear picture here). The drain is 650 mm wide & 300 mm deep.	
741	22	1514553	5400491	Another modern culvert. Photo taken just east of this point, showing some of the bed rock left in situ to form a small cutting, approx 10 m long. Drain continues.	3 m
742	20	1514596	5400439	Modern foot bridge over old culvert. Original fabric includes: ballast guards at each end & railway irons holding these in place. The modern bridge sits on what are probably old bridge beams (two at each end). The culvert carries water from the drain at the base of the bench. The bridge re-uses two old beams, one on each side.	
743	21	1514600	5400438	There is a railway iron on the outside edge of the embankment on the east side of the bridge, 380 mm long.	
744	22	1514606	5400434	West end of a cutting, which is several metres deep. Drain continues. Approx 27 long.	3.6 m
745	22	1514617	5400406	Modern bridge built with old material. Ballast guards at east end may be original. Sits over a stone-lined & concreted channel, which may be original. The only date-stamped items are post-1900 (1906/1963, 1974, 1979). Four railway carriages in the river below, possibly used to shore up the bank. On the east side of the bridge, on the south side of the embankment, is an area approx 20 m long and max 5 m wide, with a big rock face above and a slight overhang. It's possible that rock was blasted from here for the track surface.	
746	21	1514640	5400403	Start of a cutting at the end of the overhang area. Drain continues (550 mm wide, 200 mm deep). Approx 23 m long, then continues to run through a smaller cutting for another 10 m, then back to a benched formation.	3.7 m
747	21	1514667	5400349	5 m long cutting. Drain	
748	22	1514675	5400339	A concrete culvert runs under the track, draining the side drain (which runs east at this point).	
749	22	1514671	5400331	Mouth of tunnel. 73 m long.	3.1 m

750	21	1514712	5400258	Other end of the tunnel. There is a concrete retaining wall above the track at this point. Probably mid-C20th in date, & relates to the road above.	
751	21	1514738	5400242	Bridge 37. On a curve. Sleepers & railway irons removed. Four piers of 3 piles each. Three spans. Most elements do not have a visible date. Those that do are SH67, ST74, 1903, 1960.	
752	18	1514779	5400234	Line benched from 751 to this point, & then into a cutting. A vertical railway iron (860 mm long) standing on the north side of the railway formation. Drains.	
753	17	1514802	5400227	A cut-out runs north through the cutting wall, carrying water from the drain on the north side, which ends at this point (the drain on the south side continues). Approx 7 m long & 550 mm wide. The drain is 500 mm & 150 mm deep.	
754	17	1514855	5400192	End of cutting, where a vehicle track runs over its edge from the road to the track - this has damaged the wall of the cutting.	
755	16	1514877	5400178	Bridge 38. No sleepers/rails. Five piers. Three spans? Dates: 1902, 1903, SH1971, SH1974, 1962, 1963, 1973.	
756	13	1515039	5400047	Embankment ends. 1250 mm high railway iron here that could have been part of a gate on the north side of the embankment, at the end of the track. It's painted white & has a couple of possible brackets and a timber fragment. There is a wooden fencepost 2 m east of this (1445 mm high).	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

ARCHSITE archaeological site recording scheme

Summary Site Record

NZAA SITE NUMBER: L28/36

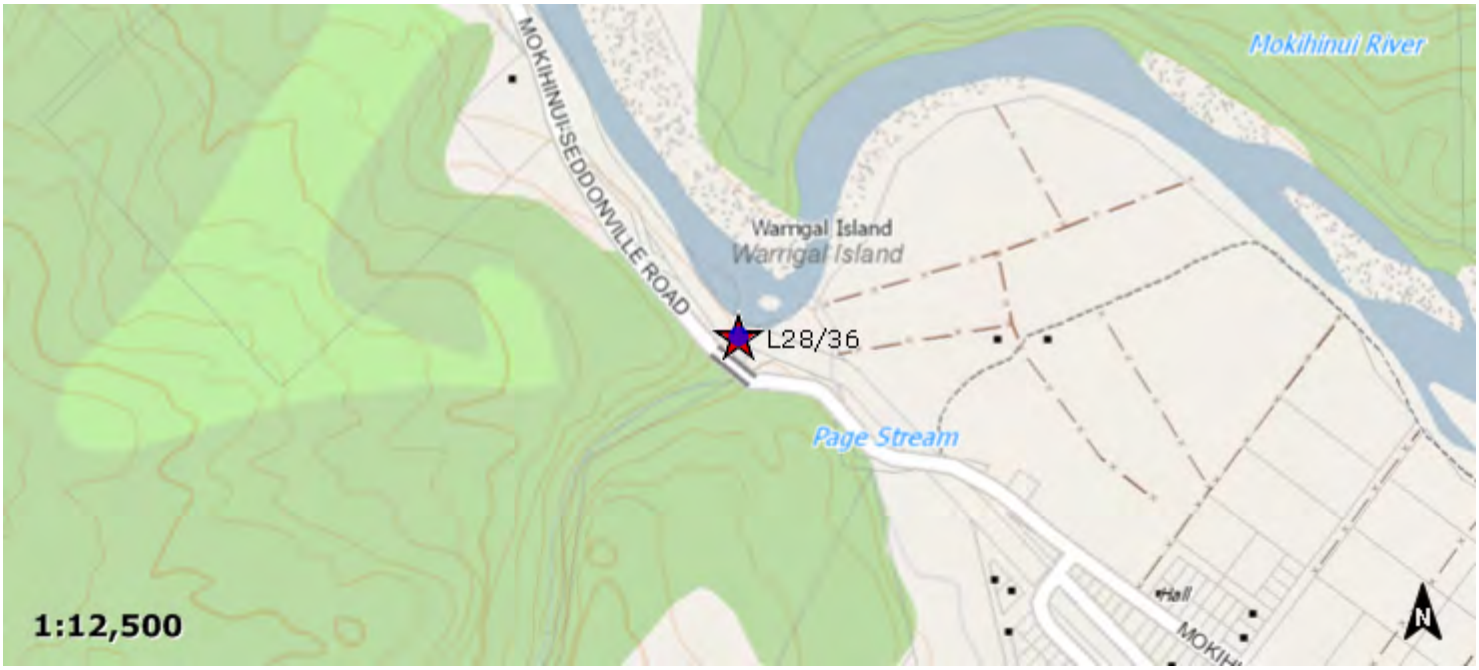
SITE TYPE: Transport/ communication

SITE NAME(s): Mokihinui-Seddonville railway line

Record last updated: 20/11/2013

SITE COORDINATES (NZTM) Easting: 1514739 **Northing:** 5400235 **Source:** Handheld GPS

IMPERIAL SITE NUMBER: **METRIC SITE NUMBER:**



Finding aids to the location of the site

Between the Mokihinui-Seddonville Road & the Mokihinui River.

Brief description of the site

The site of a 19th century railway line.

Condition of the site when last visited

Good – Majority of visible features are intact, but some minor loss of definition and/or damage

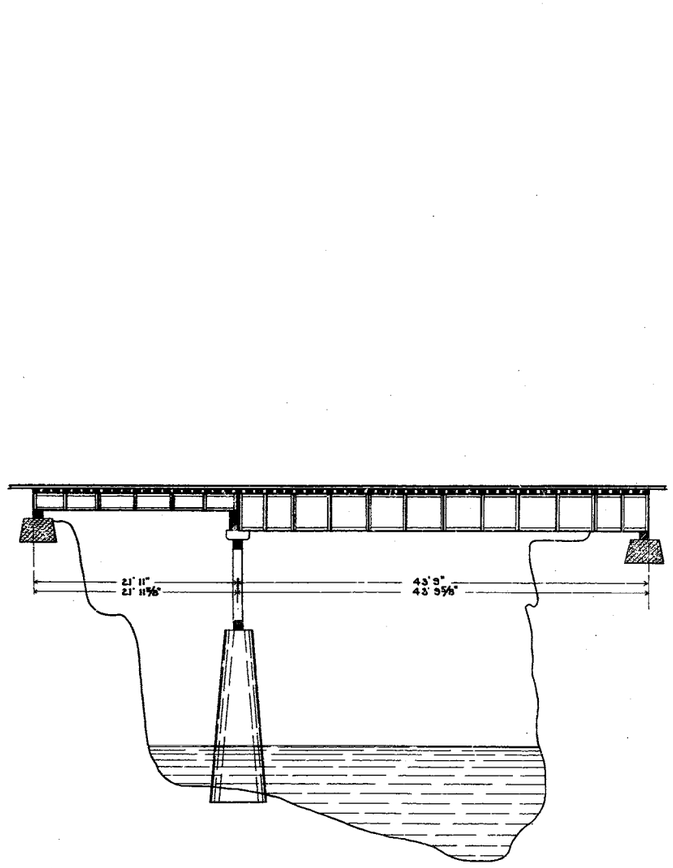
This report contains a summary of the information about this site held in ArchSite. For a complete Site Record Form containing all the recorded information, please contact the Central Filekeeper.

For further information please contact:

NZAA Central Filekeeper
c/- Te Papa Atawhai Department of Conservation
P.O. Box 10-420
Wellington 6043
New Zealand
Email centralfilekeeper@doc.govt.nz

L.R.
29.1.1901.

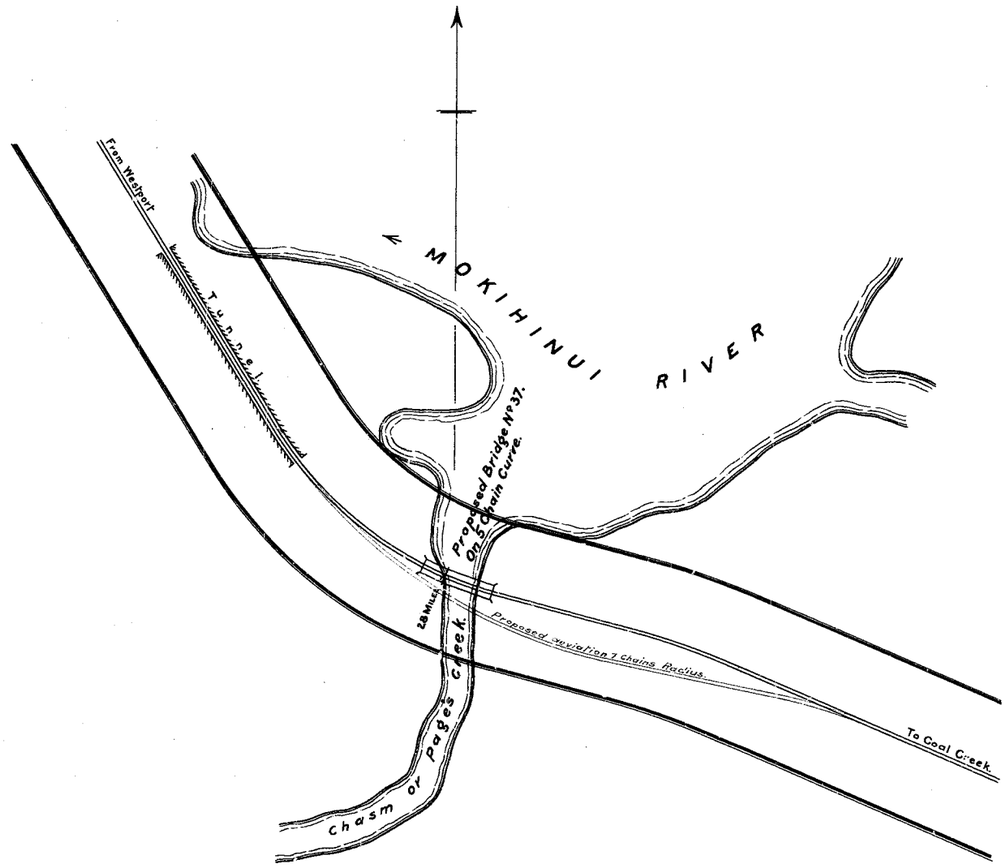
PROPOSED RENEWAL OF BRIDGE Nº 37.
— WESTPORT SECTION.—



— LONGITUDINAL SECTION.—

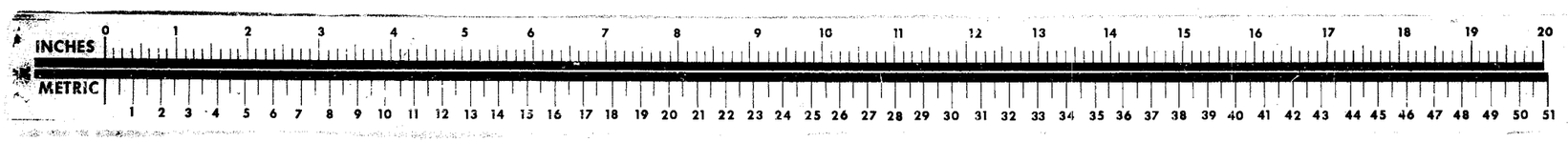
Proposed Plate Iron Girder Bridge.

— Scale 8 Feet 1 Inch.—



ALIGNMENT PLAN.

— Scale 1 Chain = 1 Inch.—



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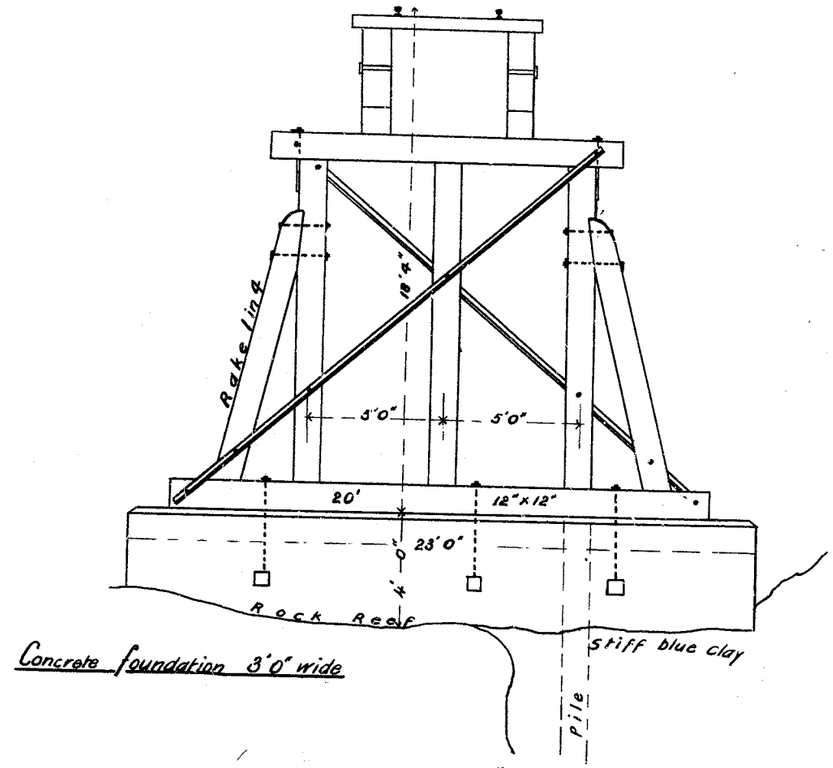

Westport Section

Pier N°2 at bridge 38

Scale 4 feet = 1 inch

SEDGWICK BRANCH

11870