AN HISTORICAL AND ARCHAEOLOGICAL STUDY OF VICTORIA PASS
MT. VICTORIA N.S.W.

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AN HISTORICAL AND ARCHAEOLOGICAL STUDY
OF
VICTORIA PASS
GREAT WESTERN HIGHWAY, MT. VICTORIA, NEW SOUTH WALES.

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PREFACE

This study was commissioned by the Department of Main Roads, Central Mountains District, in May 1988. Its purpose is to examine the area around the historic Victoria Pass Viaduct at Mt. Victoria in the Blue Mountains New South Wales. The study focuses particularly on the 40 metre wide corridor along the path of the highway deviations proposed by the Department of Main Roads, and on the effect such a development would have on the early roads (1832 viaduct and 1907-1912 Berghofer's Pass) in this area.

This study comprises four parts:

1. An historical overview of the site based on primary and secondary research, maps and illustrations.

2. An archaeological survey and recording of the site. This was undertaken by Ms Robyn Stocks, Consulting Archaeologist, in May 1988.

3. A statement of significance which encapsulates the heritage significance of the site based on the historical and archaeological data.

4. An assessment of the impact of the proposed deviations on the site, and guidelines for its conservation.

Sources used for this study are cited in the notes at the end of the report. Various relevant conservation and administrative bodies were also consulted in the course of the study, and their comments have been incorporated in this report.
1. INTRODUCTION

The stone viaduct at Victoria Pass is perhaps one of Australia's finest and best known examples of early colonial road engineering. Built between 1830 and about 1838, after considerable administrative turmoil, it was intended to convey a sense of progress and civilization, for it was evidence of the colony's growing resources and sophistication, in spite of inauspicious beginnings. It was certainly successful in this aim, for travellers rarely failed to bestow lavish praise on it in their journals.

The viaduct was also a practical boon to travellers, since it obviated the extremely steep and circuitous section of the Bathurst Road down Mt. York and via Hartley Vale to the north (See Fig. 1). It has been in almost continuous use since its construction, although from 1912 to about 1920 it was superseded by the winding but less steep Berghofer's Pass to the north. When motor cars became powerful enough to scale the original ascent, Victoria Pass was reopened. The two roads still exist side by side, a physical record of the road-building of different periods, and of the development of road transport.

Although the massive stone walls have survived and so far remain sound under heavy modern vehicles, the original width of the viaduct has become an obstacle and a hazard to the heavy flow of traffic, and alternative locations are again being sought. The deep loop near the base of the
descent, a 1934 Department of Main Roads improvement, is also to be avoided by a new bypass (See Plan 2).

2. HISTORICAL OUTLINE

2.1. Early Blue Mountains Crossings and Roads.

The Blue Mountains have always been a barrier to European movement into the western region of New South Wales and the history of the mountain roads from 1814 to the present is a long and complex one. The Victoria Pass viaduct should be seen as part of this long development, which encompasses numerous lines of road and many phases of road building.

After numerous attempts dating from the early years of the colony, the Blue Mountains were finally crossed in 1813 by three men who happened to find the continuous ridge between Emu Plains and Mt. York. Gregory Blaxland, William Lawson and William Wentworth were searching for fresh grazing lands for the flocks and herds of the Cumberland Plain. There is some uncertainty over where they actually finished their journey, and the value of the land they found, but their crossing of the sandstone barrier itself is undisputed [1]. Surveyor George Evans was despatched by Governor Macquarie soon after to investigate and survey the line, and returned with triumphant news of good, open land around Bathurst beyond the Great Dividing Range. Although Macquarie had no intention of allowing large scale settlement or occupation immediately, he did commission
William Cox in 1814 to take a band of selected convicts and build a rough, narrow road along Evan’s traverse. This road linked, symbolically more than practically, the centre of Sydney with the new country [2]. When free settlers finally began to travel to Bathurst in and after 1818 they found Cox’s road a difficult and dangerous passage. As traffic increased and the road deteriorated, various small deviations were made and new alternatives investigated and prepared. The arrival of Major Thomas Mitchell as Deputy Surveyor General in 1827 marked the beginning of its radical realignment [3].

2.2. Surveyor General Thomas Mitchell.

A skilled draughtsman and surveyor, Mitchell was an ambitious man who saw in the colony of New South Wales numerous ways to both create and bestow a legacy of public works and exploration, and hence to ensure his own fame. He was successful. His ideas about roads revolved about his love of rectilinearity and symmetry, and he found existing colonial roads severely wanting in this respect. He wanted roads to run in straight lines between destinations, to branch off at equal angles and to appear even and balanced on the map. The convict road gangs, established by Governor Darling in 1826 would, he thought, provide the immense labour force necessary to build the “Great Roads” he had in mind, for straight roads in the Australian context meant public works on an enormous scale (See Figure 5) [4].
Soon after his arrival he set about examining the main roads, including the Western Road, and promptly came up with new lines for all of them. He drew up plans and wrote lengthy reports defending and promoting these selections, arguing that since his were the only “correct” lines, they would settle the matter of road tracing “once and for all”.

2.3. Mitchell and the Western Road.

Mitchell was presented with several major obstacles on the Western Road which he particularly sought to avoid: these included the ascent of the ridge at Emu Plains, the descent from the ridge at Mt. York, and the steep incline of Cox’s old road at Mt. Blaxland further west. At Mt. York, Cox’s original pass had already been replaced in 1824 by Lawson’s Long Alley (See Figure 1) [5].

In October 1827 the explorer Hamilton Hume made a journey over Bell’s Line of Road and located a new line from Hartley Vale to Bathurst. Mitchell was sent subsequently to examine Hume’s discovery, but he proposed instead a more direct route to Bathurst, avoiding Mt. Blaxland and descending Mt. York by “an inferior ridge or colline which falls gradually” not far from Cox’s Pass [6]. This line was partly constructed in 1829 under the Surveyor of Roads and Bridges, Edmund Lockyer. It required considerable cutting and filling and heavy masonry.
retaining walls, side drains and culverts. It became known as Lockyer’s Road [7].

It was early in 1830 on another journey when it occurred to Mitchell that a pass might be made spanning a deep abyss at Mt. Victoria which would cut off the displeasingly roundabout route via Mt. York. Such a pass would demonstrate the colony’s progress as well as enhancing his own reputation. In spite of the fact that heavy construction was halfway complete on Lockyer’s Road, which Mitchell himself had selected, he was so convinced of the new route that work there was abruptly halted and the convict gangs moved to Mt. Victoria in January 1830. A map was hurriedly produced showing Lockyer’s Line from Mt. York to Bathurst as a “road cleared by mistake” (See Figure 2.) [8]

A great struggle ensued between Mitchell and Governor Darling over this action, for the line had been relocated without official approval, and Darling was infuriated by the amount of road construction work which Mitchell’s new lines entailed. The conflict was the eruption of a long-simmering feud between the two over several issues concerning Mitchell’s manner, work and administration [9]. In July 1830 Darling declared to Mitchell via the Colonial Secretary:

... without meaning to doubt the superiority of the projected line over others, ... his Excellency [considers] that unless the disadvantages of any existing line of road are of a very serious nature, it is better under present circumstances, to put up with them than commence a new line which cannot be
completed but at a considerable expense and abandonment of that which has been accomplished at the cost of years of labour. [10]

Darling insisted that he had instructed Mitchell to realign the road only beyond the mountains. Mitchell replied with typical fervour:

I defy any man ever to point out any material improvement in the lines laid down by me; for they have been marked only after a more careful survey of the ground than is made for such purpose even in Europe... [11]

He continued his campaign, pointing out the extent of blasting operations already complete (See Figure 3) and stating that the work would take only six weeks to complete (a considerable exaggeration), and eventually Darling relented. The gangs were back at Mt. Victoria by 24 September 1830 under the direction of Assistant Surveyor P. Elliot [12].

2.4. Construction of the Pass

Although he was not an engineer himself, Mitchell had a sharp eye for engineering skills in others and he was quick to apply them to his projects. Up to about 1820 men with such skills were few and far between, but the end of the Napoleonic Wars, and the growth of the colony had resulted in the arrival of a number of military men and civilians who were capable of the ambitious structures Mitchell had in mind. The works at Mt. Victoria may well have been inspired by the massive buttressed retaining
walls built under the supervision of Lieutenant Percy Simpson on the Great North Road near Wiseman's Ferry from 1829 [13]. On both North and West roads Mitchell took credit for works designed and supervised by his subordinates, whose names thus sank into obscurity.

Assistant Surveyor Elliott had arrived in the colony with recommendations from the renowned British road builder Thomas Telford, with whom he had worked and from whom he had acquired his considerable skills. He was assigned to the Western Road in 1830, arriving at Cox's River near Hartley in March, and was placed in charge of the gangs stationed at various points along the mountain road - No. 20 Road Party was at Pulpit Hill, near present-day Katoomba; Nos. 2 and 6 Iron Gangs were at and near Mt. York, No. 1 Iron Gang was on the "Western Mountains" beyond Hartley, and a Bridge Party was stationed near Bathurst [14]. Elliot had approximately 250 men under his control, and he found them "extremely troublesome characters to deal with". Many absconded, and, if captured, were difficult to punish, since they had to be marched either to Emu Plains or to Bathurst for this purpose. Sometimes the contractor engaged to provide rations "failed to perform his contract" causing rebelliousness and increased abscondings [15]. The convicts probably lived in slab and bark huts at a stockade at Hartley in the valley below the Pass during construction. There was also another camp at the bottom of Soldiers Pinch near Blackheath to the south-east [16]. The
men in the Iron Gangs had their ankles shackled together by chains as they worked; the better-behaved men in the road parties did not.

When permission was finally given for work to go ahead at Mt. Victoria, Elliot reported that work on the viaduct was progressing quickly:

I have much pleasure in informing you that we are making very great progress with the Pass down Mt. Victoria, the Retaining Wall for the embankment is commenced and proceeding rapidly. I have not the least hesitation in saying that in two months more the most part of it will be complete. [17]

From the floor of the steep-sided valley, fine ashlar masonry walls rose to form a ramp over which the road was to pass. The north wall was reinforced by buttresses, whose course beds were tilted to add to the batter and stability (See Figures 4, 7-8, 10-11). The structure originally had low simple parapet walls (See Figure 4) while the present more decorative parapet is evidently a later addition. The convicts cleared, blasted and excavated the line with simple tools such as cross-cut saws, hoes, spades and hatchets, hand held jumpers (drills), hammers and gunpowder [18]. The rock brought down was broken down for road fill and stone blocks were formed with mauls, wedges and chisels. Earth and rock were moved by oxen drawing small carts. The viaduct was filled at the same rate as the walls rose in stages to the necessary height (Compare to Figure 5).
Figure 4: "Victoria Pass", T.L. Mitchell, c. 1831 showing the Pass complete with its original simple parapet wall. (Source: Mitchell Library, T.L. Mitchell, Report ... on Roads, 1856)
Figure 5: "Convicts building the road over the Blue Mountains", Charles Rodius, 1833. This view is taken on Mitchell’s Pass at Emu Plains, and presents a scene similar to that at Victoria Pass two years earlier. (Source: Rex Nan Kivell Collection, National Library of Australia).
Elliot was removed to a new station at Myrtle Creek on the Great South Road in January 1831 and replaced by John Nicholson who also supervised the Roads and Bridges Department generally from Parramatta [19]. By May 1831 he estimated that it would be at least another ten months before the road between Mt. Victoria and Bathurst would be finished, with its force of five hundred men and the use of 4224 pounds of gunpowder [20].

Victoria Pass was officially opened by Governor Bourke, Darling’s successor, in October 1832. This meant that it was traversable, but belies the fact that work went on, possibly to 1838. In December 1835, Mitchell reported that a road party was required there "for the completion of the work already well advanced there" [21] and in 1838 the artist Conrad Martens sketched the pass with work underway by means of a crude cranage of timber beams and slings (See Figure 6).

Maintenance was carried out during the 1840s by convicts under the direction of Captain J.E. Bull, stationed at a stockade at Blackheath. During 1847 he reported that "Mount Victoria Pass [was] kept good and the road from it to Hartley crowned and repaired to the extent of one and a half miles ..."[22].
Figure 6: "Pass of Mount Victoria", Conrad Martens, 1838, showing work underway with crude craneage of timber beams and scaffolding. Note also the post and rail fence. (Source: Mitchell Library ZPL PX24 p.40).
Figure 7: "Accident on the Road at Victoria Pass" William R. Govett, c. 1835, showing the surveyor Govett at the dramatic scene. (Source: Mitchell Library)
2.5. Subsequent History.

The pass at Mt. Victoria was lavishly praised by travellers in their accounts, as Mitchell hoped it would be. Charles Darwin described it in 1836 as "worthy of any line of road in England" [23]. Artists and photographers continued to be inspired by the magnitude of the work, and its spectacular setting, and numerous sketches, paintings and later photographs of it appeared (Figures 8-11). However, the old mountain roads were less used and less maintained after the extension of the railway over the Blue Mountains in the 1860s, and many parts fell into decay.

The introduction and spread of the motor car in Australia after 1905 brought roads back into importance. At the same time, the Blue Mountains had become a favoured holiday location for people eager to escape, temporarily at least, the ills of the crowded city, and the wealthiest of these owned motor cars. At this stage, the cars were not powerful enough to scale the incline at Victoria Pass, and local councillor J.W. Berghofer, first president of Blaxland Shire, lobbied for the construction of an easier alternative. The result was an extensive deviation running below the old viaduct on the slopes to the north (See Figure 12). It was built between 1907 and 1912, and features rubble retaining walls, stone and pipe culverts and substantial cuttings (See Figure 13) [24]. Although it was of easier grades, it curved sharply along the mountain’s edge, crossing the old road to Mt. York near the junction with Lawson’s Long Alley. The new pass was in use
Figure 8: "Mt. Victoria - descending", J.G. Sawkins, 1852-53. The simple, low parapet wall is still in situ. (Source: Mitchell Library ZPX D10 f2)
Figure 9: "Mt. Victoria Pass", Eugene Von Guerard, 1859. This is thought to be the area of the present-day Western Loop at the base of the pass. (Source: Mitchell Library ZDG* D17).
Sketch showing the different lines of road descending from the Blue mountains towards Ballarat.
Figure 10  "Viaduct on Mt. Victoria" William Leigh, 1854.
(Source: Mitchell Library, ZPX A 1988).
Figure 11: An early photograph of the viaduct, circa 1890, showing the more recent parapet wall (already damaged), post and rail fence and quarried cuttings. (Source: Mitchell Library, S.P.F.)
between 1912 and about 1920, when motor cars had become powerful enough to negotiate the old viaduct. For a time both roads were used, but in 1933-34, the Department of Main Roads improved Victoria Pass by widening it and reconstructing the gravel pavement. The present deep loop below it (the Western Loop discussed below) was also constructed to replace the irregular alignment of Berghofer's Pass (See Figure 14). The pass was later surfaced with bitumen [25]. In 1979 Berghofer's Pass was included in a network of signposted walking tracks along historic early mountains crossings by the N.S.W. Department of Lands [26].

Victoria Pass thus remains the only one of the five early mountain passes of the Great Western Highway still in use. While it was for many years one of the strongest links in the highway to the west, the volume of modern traffic now renders it a hazard in the modern road system. This report was commissioned as part of initial investigations into yet another new descent.
Parish of Harrow - County of Cook
Land District of Lithgow - Land Board District of Orange

Scale 1/10 chain to an inch. BLUE MOUNTAINS SHIRE AND BLAXLAND SHIRE.

Width of proposed road 100 links

Land proposed to be resumed under Public Works Act, 1902, shown by light red color, within par. 14.

The proposed road is already marked in the main road reserve and shown by red hatching.

Crown land proposed to be dedicated to Public Road under Section 14 New Towns Act, 1884. Shown by dark red color. Parts of road proposed to be subject to the control of the Shire Councils under the Local Govt Act 1902. Shown by hatching.

The whole length of deviation is formed and in use. (See paper 5.1)

Proposed Resumption & Gaz. 4th Dec 1912 Folio 7172.
Resumption & Dedication Gaz 5th Feb 1913 Folio 871.

Devation & closing of this part. Gaz 28.2.50 No. 53 250 see R 19415 map.

The whole length of deviation is formed and in use. (See paper 5.1)

Figure 12: Extract from "Plan of Proposed Deviation of Main Western Road known as Berghoff Road (Parramatta Road)."

J. H. Neale
W. H. Cummings
J. H. Neale
SHIRE
SHIRE

32 ac
69 ac

263.46.06

The English Scottish and Australian Chartered Bank
60 ac ex rd

Theodore Anthony Clark

Figure 13: Extract from "Plan of Proposed Deviation of Main Western Road known as Berghoff Road (Parramatta Road)."

J. H. Neale
W. H. Cummings
J. H. Neale
SHIRE
SHIRE

32 ac
69 ac

263.46.06

The English Scottish and Australian Chartered Bank
60 ac ex rd
Figure 13: "The New Victoria Pass, Mt. Victoria, Blue Mts.", postcard, c. 1912, showing the winding Berghofer's Pass, with the old line of road above.
(Source: Mitchell Library, S.P.F.)
3. ARCHAEOLOGICAL INVESTIGATION

This section is based on the observations and report of Robyn Stocks, the consulting archaeologist for this project who examined and recorded the study area in May, 1988. It is divided into two sections in accordance with the proposed new work, viz: Area 1: the Viaduct and its vicinity, and Area 2: The Western Loop area. Conservation problems and guidelines for the study area are discussed in Section 5.

3.1. Area 1: The Viaduct and vicinity

3.1.1. The Viaduct

The 1830s viaduct is of Type 3b (ashlar - see stonework typology, Appendix) sandstone masonry work and extends for 107 meters on the north side and 67 meters on the south side of the road. Two heavy stone buttresses reinforce the north wall - these will be referred to as the east and west buttresses (See photos 1-5). The structure is in sound condition at present, but an overgrowth of trees, bracken and blackberries could pose a future threat, and they also hinder visibility of the structure. The top of the viaduct, including coping courses and parapet wall have been damaged, and several stones lie in the gully below (Photo 7). At the east end of the north wall the old stonework abuts a cliff face and partly extends below it where the natural stone is undermined by erosion (See photo 6). Inscriptions A & B are located above this cliff face (See 3.1.2. below).
The valley slope below the north side of the viaduct is extremely steep and likely to be liable to slippage and erosion. It is covered with debris of all sorts, including rubbish thrown out of cars, wood and metal road posts and railings, bottles, bricks, coal, fallen rock and dressed stones. The western end of the north wall is also partly hidden by vegetation and debris, and by loose stones which has fallen from the unstable cliff/cutting along the south side of the road below the viaduct (See Plan 3 and Photo 8) and subsequently pushed over the northern edge of the viaduct. The danger of rockfall is also a problem for the continued use of the present road alignment. Some wire fencing material has been used in an attempt to stabilize this slope.

3.1.2. The Inscriptions

Three rock inscriptions were located and recorded near the east end of the viaduct, as shown in Plans 5-7. Inscriptions A & B are at present in the path of the proposed new bridge, while inscription C is located on the opposite side of the road (See Photo 9).

Inscriptions A and B are located 31.4 to 37.6 m. east of the eastern end of the east buttress. Inscription A is on a vertical rock face which faces west towards the viaduct, while Inscription B is on the horizontal rockface just above ground level below inscription A. Inscription A
includes five names: "E. Drew, D. Gallagher, R. Scott, R. Budin, S Budin" set one below the other within a rectangle with a naive triangular pediment above it, and flanked on either side by the numbers "18" and "96". On the north side of the rock are the initials "L H R" and the word "OCTR" below (See Photo 10). Inscription B comprises surveyor's marks, including "D1", and "F" with a triangular indentation below. Both A and B are located at the top of the undermined rock cliff abutting the north viaduct wall.

Inscription C is located southeast of the viaduct opposite A and B, on a rock face high above the road, facing north-northwest. It comprises the phrase "Bridge men left in the lurch" and, set apart, the name "D. Crozier" with initials D.S. below (See Photo 11).

Interpretation

Inscriptions A and C are curious and interesting, but as with all such casual and unofficial records, their origin and significance are obscure and can only be guessed at. The plaintive message of inscription C could possibly have been etched by an original convict Bridge Party of the 1830s, perhaps stranded at the isolated pass without food or other necessities. This was quite a common occurrence in the period, since distances were enormous, and ration contractors unscrupulous and unreliable. Supervisors and overseers found it difficult to make men work in these conditions. The degree of weathering, the crudity of the
letters, and the dotted pick and chisel marks on some of the letters are all compatible with this interpretation, as is the term "bridge men" for an early Bridge Party. Similar early graffiti has been found on high cuttings above the large works on the Great North Road.

The names in Inscription A, on the other hand, are neater, more stylized, more evenly spaced and better-defined, and together with the setting of rectangle and pediment suggests someone with time at their disposal to carve as they fancied. It has been suggested that the names are those of another work party in 1896, but there is no other evidence of such road work in this period, and the carving seems too elaborate and time-consuming for men sent to mend the road. The etching more strongly suggests a group of travellers stopping at their leisure to inspect the old viaduct and enjoy the views. By 1896 the mountains did draw such groups, particularly wealthy, leisured young men who included the wonders of the Blue Mountains and Jenolan Caves in their world-wide jaunts. It seems likely that this carving may be a record of one such visit, and in its present context of a busy, dangerous highway, it conjures up a period of slower, quieter more leisurely mode of travel and sightseeing. These interpretations, although made in the light of known historical data, are still conjectural. The engravings, like many of the old relics of the Blue Mountains associated with early crossings, will always be mysterious, and open to speculation.
Inscription B comprises old survey and bench marks although their meaning is not known. They represent official survey activities in the area.

3.1.3. Berghofer’s Pass.

The 1907-1912 road runs along the slope approximately 40 m. to the north of the viaduct and parallel to it (See Photo 13). From around the 260 chain mark of the new corridor (See Plan 3) eastwards this road is in good condition; to the west it deteriorates somewhat. It features pavement of broken stone and earth and at the 260 chain mark there is a well-preserved culvert approximately 3 m. wide comprising earthenware pipe, roughly cut rubble stone wing walls, and a smaller inlet on the south side of the road to allow the passage of water (See Photos 15-16). The cuttings and slopes above Berghofer’s Pass are very steep, in parts almost vertical, with an unstable rock face of poor quality shale/sandstone at the east end of the study area. Part of this appears to have been used as a quarry (See Photo 14).

3.1.4. Corridor of the Proposed Road and Bridge.

The corridor runs in between the two earlier roads as shown in Plan 3, in a west-south-west direction. Its south edge leaves the present road at the point where inscriptions A and B are located, just east and almost abutting the eastern end of the north viaduct wall. On the north sides of the new road, retaining walls are planned at
either end of the bridge, and the centre of this bridge will run almost above the culvert on Berghofer's Pass. The proposed road rejoins the present road approximately 40 m. below/west of the end of the old viaduct wall. The deviation would thus cut off the curved and narrow section of the old viaduct altogether, although it would be only 20 m. away at most. The new roadway (20 m. wide) would approximately double the width of the present roadway on the viaduct.

The corridor as marked by stakes by the Department of Main Roads runs over extremely steep slopes below the viaduct, now covered with rocks, debris and vegetation. This made the archaeological survey and visibility difficult (Photos 17-19). No further archaeological features were located along the corridor apart from a pile of cut stones just north of the centreline at 250 chains. These have either fallen from the viaduct or were cut and stockpiled for use on Berghofer's Pass. They are not considered to be significant, although if from the viaduct, they should be reinstated.

3.2. Area 2: The Western Loop

This area, located downhill from the viaduct, near the base of the Pass, comprises the configuration of three different alignments: the 1830 Mitchell road; the 1907-1912 Berghofer's Pass; and the 1934 loop in use at present (See Plan 8).
3.2.1. Mitchell's 1830 alignment

The original alignment of the road here ran in a shallow curve north of the present-day deep loop of the highway (See Figure 9). It coincides more or less with the corridor of the proposed bypass. Archaeological examination revealed that any early road construction features have already been obliterated by disturbance - the old road has been modified and used as access for heavy vehicles, and gravel dumps are located at the western end (See photos 20 and 21).

3.2.2. Berghofer's Pass

The 1907-1912 deviation formed two loops south of the 1830 line, presumably to improve the grades. Today it is difficult to see why this was necessary, particularly in this elaborate form (See Plan 8). Berghofer's Pass veered south from the original road, curving around to the north, then east (See Figure 12), and rejoining the old road at the 520 chain mark on the proposed bypass. It was thus a much longer and more sinuous line.

In 1934 this section of Berghofer's Pass was, in turn, bypassed by the present Western Loop, which was superimposed on it, leaving one portion of the loop on the east side, and a more extensive portion on the west side intact, as shown in Figure 14 and Plan 8. At this stage the old Mitchell alignment was still considered a public road.

Berghofer's Pass in these early loops still retains several archaeological features. The eastern section cut
off by the present road remains as a small section of rough cutting in the east side of the present roadway slope, and a small area of flat ground, now cut by a drain (See photo 22). The more extensive western section, within the curve of the present-day road loop, is still visible, and retains a surface of earth and broken stones of various sizes up to approximately 10 cm. This appears to be the top of the road-fill itself, rather than remnants of a Macadamized pavement (See Photo 24) [27]. An earthen side-drain runs along the eastern edge of the south end. There is a squarish indentation (6 m. x 7 m.) on the north side of the road cut into the low embankment, 65 m. from the western end. Its origin is unknown at this stage. The re-entry at the western end is quite distinct; the south exit is steep and has been disturbed. Truck bodies and other rubbish lie in the area of the old loop.

The remainder of Berghofer's Pass, to the east of the proposed deviation, and clear of it, also features original structures, including remnants of a retaining wall on its northern embankment, beginning 27 m. east of the 160 chain marker. This wall is of irregular type 1b-2a stonework (See Appendix 1) and is up to 3-4 courses high. It runs in approximately the same position as a farm boundary fence, although varying in parts to 1-2 m. north of it. The wall continues eastwards for 35.9 m., and abuts a partly collapsed culvert at that point. This culvert outlet is 1.4 m. high and is set approximately 1 m. north of the boundary fence. Much of the stonework of the outlet has
collapsed, and part of the earthenware pipe is dislodged (See Photos 26-28).

This section of Berghofer's Pass is the beginning of the Lands Department's walking track along the old road towards Mt. York (Photo 25). Part of the road, however, is evidently on private property.

3.2.3. Corridor of the Proposed Bypass

The proposed bypass appears to coincide with the original 1830 alignment, but since the latter has already been disturbed and destroyed, the proposed development does not pose a conservation threat. At the eastern end the new alignment crosses the farm boundary, and it runs well clear of the remaining sections of Berghofer's Pass in this area. Three dumps were located in the general vicinity of the corridor (See Plan 8). Dump A, located 39 m. south of the centre line of the proposed road and 12 m. east of the 360 chain marker, comprises modern materials including metal, bottles and bottle glass, insulators and so on. Dump B, located close to the 160 chain marker, where the new bypass joins the present road on the east, comprises a scatter of ceramic and glass sherds, including some black, blue and brown transfer-printed ware, probably dating from the late nineteenth century. These artefacts are located in the topsoil/road fill. Dump C is located below a tree growing from the retaining wall just west of the collapsed culvert (See Photo 27). It comprises ceramic, glass,
metal, dating from 1950's to the present. From this survey, these dumps appear to have very little or no significance archaeologically, although excavation might reveal something of more interest.
GREAT WESTERN HIGHWAY
MOUNT VICTORIA
Proposed New Bridge and Approaches
at Victoria Pass
ARCHAEOLOGICAL SURVEY MAY 1988
FOR DEPARTMENT OF MAIN ROADS

PLAN 1 • LOCATION
GREAT WESTERN HIGHWAY
MOUNT VICTORIA
Proposed New Bridge and Approaches
at Victoria Pass
ARCHAEOLOGICAL SURVEY MAY 1988
FOR DEPARTMENT OF MAIN ROADS

PLAN 2
STUDY AREA SHOWING
PROPOSED DEVIATIONS
IN AREAS 1 AND 2
G. KARJKENIUS, MAY 88
GREAT WESTERN HIGHWAY

ARCHAEOLOGICAL SURVEY MAY 1988
FOR DEPARTMENT OF MAIN ROADS

PLAN   INSCRIPTION   LOCATION OF A, B, & C.
SURVEY  E. STOCKES
DRAWN  C. KARGENS

GREAT WESTERN HIGHWAY
MOUNT VICTORIA
Proposed New Bridge and Approaches at Victoria Pass

END OF VIADUCT
25.2m TO EAST BUTTRESS

END OF VIADUCT
25.2m TO EAST BUTTRESS

INSRIPTION A
SEE PLAN 6

INSRIPTION B
SEE PLAN 6

INSRIPTION C
SEE PLAN 7

ON VERTICAL FACE

ON VERTICAL FACE

ON VERTICAL FACE

STEPS

STEPS

STEPS

CUT FACE

GREAT WESTERN HIGHWAY
MOUNT VICTORIA
Proposed New Bridge and Approaches at Victoria Pass
ARCHAEOLOGICAL SURVEY MAY 1988
FOR DEPARTMENT OF MAIN ROADS

PLAN   INSCRIPTION   LOCATION OF A, B, & C.
SURVEY  E. STOCKES
DRAWN  C. KARGENS
GREAT WESTERN HIGHWAY
MOUNT VICTORIA

Proposed New Bridge and Approaches
at Victoria Pass

ARCHAEOLOGICAL SURVEY MAY 1988
FOR DEPARTMENT OF MAIN ROADS

PLAN
INSCRIPTION
SURVEY
DRAWN
5
A VIEW TO EAST
R. STOCKS
G. KARSKENS

INSCRIPTION • A VIEW TO EAST
SURVEY • R. STOCKS
DRAWN • G. KARSKENS
GREAT WESTERN HIGHWAY
MOUNT VICTORIA

Proposed New Bridge and Approaches
at Victoria Pass

ARCHAEOLOGICAL SURVEY MAY 1988
FOR DEPARTMENT OF MAIN ROADS

PLAN : 6
INSCRIPTION : B - SURVEY MARKS
SURVEY : R. STOCKS
DRAWN : G. KARSKENS
BRIDGE
MEN
LEFT IN THE LURCH

FLAT ROCK FACE

NATURAL SEAM

D. CROZIER
D.S.

GREAT WESTERN HIGHWAY
MOUNT VICTORIA

Proposed New Bridge and Approaches at Victoria Pass

ARCHAEOLOGICAL SURVEY MAY 1988
FOR DEPARTMENT OF MAIN ROADS

PLAN: 7
INSCRIPTION: 6
VIEW TO SOUTH
SURVEY: R. STOCKS
DRAWN: G. KARSKENS
1. View of the viaduct to the east showing the north wall and buttresses.

2. View of the viaduct to the west, showing north wall and western buttress. The cutting right of the safety ramp is an unstable zone.
3. North wall of the viaduct from below, view to south, showing stonework and buttress.

4. View of the eastern buttress showing stonework
5. View of the eastern buttress; note amount of fill collected in the corner, the slightly convex profile of the buttress and the tilted beds of the courses.

6. The east end of the north wall abuts and is built partly under a rockface. The rock is undermined at its base. Inscriptions A and B are located at the top of this rock face.
7. A dressed stone, dislodged from the viaduct, lies in the steep valley below.

8. Unstable cutting on the south side just west of the viaduct. Fallen rock from this point has been pushed over the viaduct into the valley.
9. Location of inscriptions A, B and C. The staff on left is above A and B; Inscription C is on a rock face on the opposite side of the road.

10. Inscription A on a vertical rockface east of the eastern end of the viaduct (north side) including five names and the date "1896".
11. Inscription C on a vertical rockface east of the eastern end of the viaduct, (south side) reads "BRIDGE MEN LEFT IN THE LURCH".

12. View of the viaduct to the west from beside Inscription C. The benched stone in the foreground may have been a quarry site.
13. Berghofer's Pass at around the 280 chain mark, view to the east. The staff lies over the culvert under the roadway. The proposed bridge will run just right of the road here.

14. Berghofer's Pass, view to the west showing high quarry or cutting on the left. This appears to be unstable.
15. Culvert on Berghofer's Pass at the 260 chain mark. Curved stone wing walls surround the earthenware pipe outlet. The viaduct is visible in the background.

16. Inlet of culvert on Berghofer's Pass at the 260 chain mark, showing stonework and pipe.
17. Slope between the viaduct and Berghofer's Pass (right), 9 m. west of the 240 chain mark in the corridor of the new bypass.

18. Approach to the viaduct, view to east from the last (340 chain) marker. The steep slopes here are covered with stone rubble.
19. The steep slope on the north side of the highway, with Berghofer's Pass below, at the extreme east end of the proposed bypass (near 180 chain marker).

20. The western end of the proposed western loop bypass, showing markers, gravel dumps and the bulldozed road along the line of the original 1830 alignment (view to east).
21. Bulldozed road along line of the original 1830 alignment, and of the proposed bypass.

22. Remnant of rough cutting on old Berghofer's Pass east of present Western loop (view to northeast).
23. South side of present Western Loop, with exit of old Berghofer's Pass at staff on opposite side of the road.

24. Surface of Berghofer's Pass north of Western Loop showing broken stone, (view to east).
25. Beginning of walking track along Berghofer's Pass, on the north side of the present road, east of Western Loop and proposed bypass.

26. Retaining wall and collapsed culvert (centre-left) on Berghofer's Pass east of proposed bypass and below the present highway.
27. Retaining wall on Berghofer’s Pass (see photo 26) east of proposed bypass and below present highway. Dump C is located below the tree growing in the wall in the centre.

28. View of collapsed stone and earthenware pipe culvert on Berghofer’s Pass east of proposed bypass.
29. Area of proposed Western Loop bypass near farm fence line with white markers in centre, distance (view to southeast).

30. Area of proposed Western Loop bypass at 180 chain marker in vicinity of artefact scatter of Dump B (view to northwest).
4. STATEMENT OF SIGNIFICANCE

The statement of significance, defining the reasons for the cultural importance of Victoria Pass based on the foregoing analysis, is divided into four inter-related parts dealing with 1. the site as a whole; 2. Victoria Pass Viaduct; 3. Berghofer's Pass and, 4. the inscriptions.

4.1. Significance of the Site of the Whole.

The significance of the site generally, including Victoria Pass Viaduct, Berghofer's Pass and the inscriptions in the setting of steep slopes and immense rocky outcrops, lies in the physical illustration it provides of several important historical themes. First, the site was an important link in the road which allowed European expansion to the westward over the barrier of the Blue Mountains. Second, it mirrors the development of road transport in accordance with various requirements such as volume of traffic and nature of vehicles, set within the severe topographic constraints of the area. Third, it neatly encapsulates the similarities and differences between road engineering of the 1830s and 1910s, since a direct comparison of alignment, grades and structures of the two roads is possible.
4.2. **Significance of Victoria Pass Viaduct**

Victoria Pass Viaduct is important because:

1. It is a component in the series of five roads made between 1814 and 1912 in order to achieve the descent from the mountains, and is still the most impressively engineered of all. As such it was also a vital link in the early Western Highway and has borne traffic between the coast and the inland region for over 150 years.

2. It has powerful symbolic significance. It was built specifically to convey and reinforce the impression that New South Wales during the 1830s had a glorious future as part of the Empire. Engineering feats such as this, defying and defeating natural obstacles as they did, were clear evidence of a progressive and civilized state.

3. It is important evidence of the advanced state of engineering in the colony during the "Great Roads" period, and of the skills and knowledge brought by men such as Assistant Surveyor Elliot.

4. It is a museum of convict work and achievements, and still graphically illustrates the difficult, dangerous and laborious nature of their work on early roads.

4.3. **Significance of the Inscriptions at Victoria Pass**

Inscriptions A, B and C are significant because they are mostly likely to be interesting and curious reminders of the area's and road's development and use. Inscription C
possibly dates from the 1830s, recalling the difficulties and deprivations of the convict period, and the isolation of this spot then; Inscription B includes the marks of surveyors sent to officially plot and plan the area; Inscription A appears to represent a group of leisurely travellers, probably mountain sightseers who moved slowly along the old road in 1896, and paused to carve their names carefully at what was already, by that time, an historic site.
5. CONSERVATION CONSIDERATIONS AND GUIDELINES

The Mt. Victoria Pass site has national, state and local cultural significance, and it thus requires careful consideration in terms of future conservation, particularly in the light of the new work proposed. The site is also sensitive in terms of its topography and instability, and so devising appropriate new development for the site will be difficult and challenging.

The following comments and recommendations are made in accordance with the Australian Icomos Charter for the Conservation of Places of Cultural Significance (The Burra Charter), and after consultation with relevant conservation bodies.

5.1. Consultation with Other Organisations

Contact was made with the National Trust of Australia (New South Wales) via its Industrial Archaeology Research Officer, Richard Mackay, and through the Bridges Sub-Committee, a liaison committee which has representatives from the Trust, the Department of Main Roads, and the Department of Planning. The proposed bypass at Mt. Victoria adjacent to the viaduct was considered by the Trust, along with representatives from Lithgow City Council, Orange Crown Lands Office, the National Parks and Wildlife Service, Department of Main Roads and the Heritage and Conservation Branch of the Department of Environment and Planning, in July 1986. An on-site meeting was held
and the matter discussed. The Trust provided the following summation:

It would seem that there is no prudent and feasible alternative to the construction of this bypass; however, it is considered that careful design work is required so as to minimize its visual impact on the escarpment, on the existing viaduct, on Berghofer's Pass, and on historic features associated with all of the above. It is strongly recommended that the National Trust maintain close contact with the Department at all stages of the design phase. [28]

Another recommendation was that the site, including the inscriptions, be subject to a "thorough assessment" by a consultant. This report fulfils this recommendation.

The National Parks and Wildlife Service representative indicated that an aboriginal site survey should be carried out. This was done as part of the archaeological field work for this report. No aboriginal sites were found.

The representatives of the Department of Lands (Orange Crown Lands Office) indicated that they wish to have the existing "Mitchell's Pass" viaduct retained within an area developed with public amenities. More recent contact with the Orange Crown Lands Office via Alan Carey on the issue revealed concern for the preservation of Berghofer's Pass, where the Department's walking track is located, and a recommendation that damage to the culvert on it in Area 1 be avoided if at all possible.

The issue was again discussed by National Trust and Department of Main Roads representatives at a meeting of
the Trust's Bridges Sub-Committee on 9 June, 1988 (B.S.C./42). The Committee reaffirmed its acceptance that a new bypass at the Viaduct was unavoidable, and resolved:

1. to recommend that a complete Conservation Plan be drawn up for the proposed work,
2. that the National Trust and Heritage Council of New South Wales be available to review designs and give assistance by suggesting improvements where necessary,
3. that the inscriptions A and B should, if possible, not be moved from their original location.

5.2. Recommendations - Area 1: Viaduct and Vicinity

5.2.1. The Viaduct

The stone viaduct appears at present to be sound, although a full assessment by an architect or engineer experienced in conservation matters would be desirable. Vegetation growing near or on the walls should be cleared to avoid future damage. The damaged coping/parapet courses should be repaired by the reinstating or replacement of missing or damaged stones. It is noted that the re-routing of the road here would remove the potential for further damage by traffic. The slopes below the north wall are barely accessible and have been made unsightly by the dumping of rubbish and fallen stone. This detracts from the site considerably, as well as partly obscuring the viaduct itself. This area should be upgraded by clearing
rubbish, removing exotic weeds and the future avoidance/discouragement of dumping and littering.

If the new bypass is to go ahead, it also is important at this stage to plan for the future use, and make provision for the management and maintenance of the old viaduct, in order to ensure its preservation.

5.2.2. The Inscriptions

At present, inscriptions A and B lie in the path of the proposed bypass, and would either be destroyed or removed if the development as planned went ahead. Inscription C is unaffected by the new bypass.

The Burra Charter states, with respect of removal of items of heritage significance, that:

Article 9: A building or work should remain in its historical location. The moving of all or part of a building or work is unacceptable unless this is the sole means of ensuring its survival.

Although the inscriptions might better be described as "relics", than as buildings or works, it is considered desirable to leave them in their present location, if possible, in line with the Burra Charter resolution. This could be done by easing the line of the new bypass slightly to the north and possibly north-east. Realigning in this way would also give a greater space between the new road and the east end of the north wall, which is also highly desirable.

In the event that such a modification is impossible, it is considered that these inscriptions could be removed
to another location close by (for example, a little to the south, or to the opposite side of the road near inscription C) without compromising their significance to a great extent. It should be stressed that this should be a last resort, and, if done, should involve the removal of as much of the entire rock as possible. Given the undermined nature of the cliff-side at this point, such removal could prove costly and difficult. The cutting out of the inscriptions as slabs and "remounting" them artificially elsewhere would be most unsympathetic treatment and is not recommended at all.

5.2.3. Berghofer's Pass

This section of Berghofer's Pass is in generally good condition but could be affected by the proposed development in several ways:

1. By the proximity of the new work to the old road. Plan 3 shows the new bridge passing almost over the south end of the culvert at the 260 chain mark. The location of new pylons and the appearance of the new bridge in relation to the old culvert and road should thus be considered in the designs for the new bridge.

2. By the likely use of Berghofer's Pass as a construction access route by heavy vehicles and machinery, which may result in damage to the formation and culvert. Measures should be taken to avoid such damage as far as possible through protection and careful handling procedures.
3. By the danger of possible slippages and rockfalls from the slopes above Berghofer's Pass during construction as a result of the work itself, vibrations and the use of explosives. Material brought down may cover/damage the roadway and fill over the culvert. Again, measures should be taken to avoid such damage.

5.2.4. The Corridor of the Proposed Bypass.

Apart from inscriptions A and B, described above, no significant archaeological features were located in the corridor of the proposed new work in Area 1. Nevertheless, there are important conservation considerations involved in the necessary proximity of the new work to both the viaduct and Berghofer's Pass and the impact the work would have on the site.

First, in aesthetic terms, the new retaining wall and bridge with its 20 m. wide deck would easily interfere with the appearance and setting and spatial arrangement of both the old roads, and particularly the viaduct. On the east side of the new work almost abuts the old wall, which would also result in an unfortunate juxtaposition of new and old materials. This does not mean that a satisfactory solution is not possible. There are examples of new bridges blending in with old very effectively - for example the new Aberdeen Bridge at Aberdeen is set within a few metres of the old, but does not detract from it [29].
The possibilities of appropriate design, scale, height, colour, materials and perhaps screening vegetation should all be thoroughly investigated in the planning of the new structure, and expert advice sought from the National Trust and New South Wales Heritage Council at each stage of the designing process.

Second, the effects of construction work on Area 1 should also be carefully considered before work goes ahead, particularly in terms of disturbance to the already unstable slopes which may in turn damage or undermine the viaduct wall, or damage or cover Berghofer's Pass.

On the positive side, the development could in the end actually assist in the conservation of Area 1, particularly if designed and executed sympathetically. It would relieve the viaduct of its present heavy load of traffic, and the associated damage incurred. This would also allow people once more to inspect the grand work and its associated carvings and setting and at their leisure, something impossible at present. The viaduct could be linked with existing popular Historic Crossing Walking Tracks, as administered by the Department of Lands; this would be appropriate, since it is already closely connected historically, to the other early roads. With proper clearing, repair and maintenance, the area would be an accessible site of major heritage significance, and a showpiece of conservation management.
6. **Recommendations - Area 2: Western Loop**

Area 2 presents few of the difficulties for conservation affecting Area 1. Although the corridor of the new bypass runs along the line of the original 1830s highway alignment, any remnant of this early section of road has already been destroyed by the area's use for heavy vehicle access and dumps. No other significant archaeological features were located in the corridor, and so there are no objections to the line as proposed.

Considerations which do affect Area 2 include the avoidance of damage to the remaining part of the Berghofers Pass in the vicinity - the old loops within the present Western Loop, and the section running east of the proposed bypass. Again, the careless use of heavy vehicles and machinery may unnecessarily affect the old road adjacent to the new works. The dumps A, B and C do not appear to have any significance, but ought to be kept under observation, if affected by the new work, and an archaeologist called in if anything of potential significance is located.
NOTES


3. See Karskens, *Cox's Road*, Section 4.0.


7. Archives Office of New South Wales, (hereafter A.O.N.S.W.), Lockyer to MacLeay (Colonial Secretary) January 1829, Colonial Secretary In-Letters, Papers re Bathurst Road and Southern Roads, 1827 - 1849, C.O.D. 27.


10. Ibid.


13. For discussion, See Karskens "The Finest Improvement . . ."

14. A.O.N.S.W. Mitchell to MacLeay 8 February 1831, Colonial Secretary In-Letters, 4/2102; see the series of letters from Elliot to Mitchell in 1830 in Surveyors to Surveyor General, 2/1534.

15. See series of letters from Elliot to Mitchell in A.O.N.S.W., Surveyors to Surveyor General, 1830, 2/1534.


17. A.O.N.S.W., Elliot to Mitchell, 27 September, 1830, in Surveyors to Surveyor General, 2/1534.


19. A.O.N.S.W., See series letters in Surveyors to Surveyor General, 2/1534.

20. A.O.N.S.W., Nicholson to MacLeay, 11 May 1831, in Colonial Secretary In-Letters, Special Bundles, Roads in the Colony 1827-1834, 4/2256.

21. A.O.N.S.W., Mitchell to MacLeay 12 December 1835, in Colonial Secretary In-Letters, Special Bundles, Roads and Bridges in the Colony, 1835-51, 2/1855.

22. A.O.N.S.W., Captain Bull to Mortimer Lewis (Government Architect) 20 December 1847, Government Architect's Correspondence, Blue Mountains Road, 2/635.

23. Charles Darwin, reprinted in George Mackaness Fourteen Journeys; See also the other descriptions of the pass collected in this volume.


26. Pers. Com. Stuart Moar, Department of Lands, Sydney; See also the pamphlet "History of the Blue Mountains Crossings" published by the Department.

27. This is in accordance with findings of Higginbotham report on Berghofer Pass cited above, p. 30.


29. Pers. Com. Richard Mackay, Industrial Archaeology Research Officer, National Trust of Australia (N.S.W.); See also R. Mackay, "Conservation and Industrial Archaeology: Recent Work by the National Trust (N.S.W.)" Australian Journal of Historical Archaeology, 4, 1986, p. 15.
This typology of stonework was devised for a recent study of the Great North Road, in order to categorize in a simple and rapid fashion, the wide range of stonework found there. The typology was based on the simple schemes outlined by nineteenth century writers who divided masonry into three categories - rubble, coursed and ashlar work. The disparate nature of colonial road work required that each of these categories be subdivided according to the standards of dressing, jointing and coursing as follows:

**Type la:** The most primitive standard of rubble work comprises field stones (sometimes broken), possibly sorted into roughly similar sizes, and simply stacked. These walls flank slight embankments and are usually no more than 60 cm. in height.

**Type lb:** This type comprises stones which are roughly faced or shaped with a stone axe or hammer and then stacked, with no attempt at coursing or jointing, though less haphazard than Type la.

**Type 2a:** The stones have been roughly squared with an axe or hammer and there are vague attempts at coursing and jointing.

**Type 2b:** Stones are better prepared allowing rough open jointing, and definite though inconsistent coursing. Sometimes the faces are tooled. This type can be employed in quite substantial walls.

**Type 3a:** These walls are rough approximations of ashlar work. The stones are evenly dressed, faced and matched, the coursing is consistent and of even height, though not always level; the joints are fairly tight. The walls are battered and usually laid in consistent random bonding.

**Type 3b:** The most sophisticated style answering the description of ashlar work. The stones are dressed to given dimensions, forming a perfectly smooth face with tight bedding and perpendicular joints, and even and consistently horizontal courses.
Archaeological Survey of Mt. Victoria Viaduct and the Western Loop.


Roll 1.

NO.

1.01 Northeast corner of Victoria Pass Viaduct where it abuts cliff face (view to southwest).

1.02 As above

1.03 As above

1.04 Fallen dressed stone just east of eastern buttress, north side of viaduct, view to S.W.

1.05 Eastern buttress of viaduct, view to S.S.W.

1.06 As above

1.07 Western buttress and part of viaduct wall, view to S.W.

1.09 Culvert on Berghofer’s Pass at 260 chains, (outlet). View to south.

1.10 Culvert on Berghofer’s Pass at 260 chains, (inlet). View to north.

1.11 As above, detail.

1.12 Berghofer’s Pass from 240 chain mark. Staff lying above the south culvert wall. View to S.W.

1.13 Berghofer’s Pass from 280 chain mark. Staff lying above culvert as it runs below the road. View to East.

1.14 Berghofer’s Pass showing unstable cliff face along south side, east of culvert. View to S.W.

1.15 Berghofer’s Pass, as above. View to south.

1.16 As above, view to East

1.17 As above, staff on road, road in good condition, View to East.

1.18 Slope above Berghofer’s Pass at 9 m. west of 240 chain mark near the group of fallen stones. View to West.
1.19 Slope between viaduct and Berghofer's Pass from 280 chain marker on centre line of corridor. 240 chain mark behind trees to extreme left. View to East.

1.20 Slope above Berghofer's Pass at 300 chain mark, view to East.

1.21 View of Viaduct approach from last (340) chain) marker, view to East.

1.22 Inscription C, S.E. of viaduct, view to S.E.

1.23 Location of inscription C, staff leaning against rock face, with viaduct in background. N.B. benching of rock in foreground. View to West.

1.24 West end of viaduct, north side, view to East.

1.25 As above.

Roll 2.

2.01 Unstable cliff face south side and west of viaduct. View to S.W.

2.02 Viaduct showing western buttress, view to East.

2.03 Top of Western buttress, view to southwest

2.04 Inscription A, northeast of viaduct, view to East.

2.05 As above

2.06 Slope between viaduct and Berghofer's Pass from east end of proposed bypass near 180 chain marker. View to West.

2.07 As above.

2.08 View of road from above east end of viaduct. Staff lying above Inscription A, Inscription C on opposite side of road. View to east.

2.09 View of Western Loop area showing south side from boundary fence. View to S.E.

2.10 As above, further along corridor of proposed bypass showing markers. View to S.E.

2.11 Markers for new road follow the old alignment of Mitchell's road along bulldozed track. View to S.E.
2.12 West entrance of Berghofer's Pass off the present Western Loop, between white posts to left. View to south.

2.13 Surface of Berghofer's Pass loops. View to north.

2.14 Rectangular cut made in embankment, along north side of Berghofer's Pass. View to North.

2.15 Slope of bulldozed road, east end, beside present road. New road markers run along fenceline along right. View to West.

2.16 West entrance to Berghofer's Pass walking track, view to East. Yellow marker marks east end of proposed road.

2.17 Centre line markers from 180 chain marker running along fence line. View to N.W.

2.18 Collapsed culvert on Berghofer's Pass east of proposed bypass, view to south.

2.19 Culvert and retaining wall on Berghofer's Pass east of proposed bypass, view to S.W.

2.20 Detail of retaining wall on Berghofer's Pass, showing tree growing from wall where Dump C is located. View to S.S.W.

2.21 View of collapsed culvert on Berghofer's Pass east of proposed bypass. View to S.

2.22 East side of present Western Loop. View to S.W.

2.23 As above, showing east cutting for old Berghofer's Pass loop. View to N.E.

2.24 Shaved-back cutting and safety ramp on Western Loop, view to S.W.

2.25 Western Loop, south end, with exit of old Berghofer's Pass on opposite side of road. View to west.

2.26 Detail of above.